HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
3430 Court House Drive ■ Ellicott City, Maryland 21043 ■ 410-313-2350
Voice/Relay

Amy Gowan, Director FAX 410-313-3467

May 19, 2021

Ed Hereth
Idiot's Delight Corporation & Idiot's Delight, LLC
2550 Florence Road
Woodbine, MD 21797

RE: WP-21-077 Patuxent Mitigation Bank

Dear Mr. Hereth:

This letter is to inform you that your request for alternative compliance to the Howard County Subdivision and Land Development Regulations for the subject project was reviewed.

On April 29, 2021 and pursuant to Section 16.116(d), the Director of the Department of Planning and Zoning, Director of the Department of Public Works and Administrator of the Office of Community Sustainability considered and **approved** your request for alternative compliance with respect to **Section 16.116(a)(1)** and **Section 16.116(a)(2)** of the Subdivision and Land Development Regulations to restore 3.54 acres of wetlands and 11,750 feet of stream, and to create an additional 16.98 acres of wetlands. Please see the attached Final Decision Action Report for more information.

On April 29, 2021 and pursuant to Section 16.1216, the Director of the Department of Planning and Zoning, Director of the Recreation and Parks and Administrator of the Office of Community Sustainability considered and **approved** your request for a variance with respect to **Section 16.1201(v)** and **Section 16.1205(a)(3)** of the Subdivision and Land Development Regulations to use the 30.7-acre Limit of Disturbance as the gross tract area for determining the forest conservation obligation and to remove 34 specimen trees. Please see the attached Final Decision Action Report for more information.

On April 27, 2021 and pursuant to Section 16.104, the Director of the Department of Planning and Zoning considered and **approved** your request for alternative compliance with respect to **Section 16.115(c)** and **Section 16.155(a)(1)** of the Subdivision and Land Development Regulations to temporarily disturb 27.7 acres of floodplain and to use the alternative compliance plan exhibit as a substitute for a Site Development Plan.

The Department of Planning and Zoning hereby determines that you have demonstrated to its satisfaction that strict enforcement of Section 16.115(c) would result in an unreasonable hardship or practical difficulty. This determination is made with consideration of your alternative compliance application and the four (4) items you were required to address, pursuant to Section 16.104(a)(1):

1. **Strict conformance with the requirements will deprive the applicant of rights commonly enjoyed by others in similar areas.**

   The stream and wetland restoration project is intended to improve the conditions within the 100-year floodplain. The project aims to preserve, enhance and restore wetlands and streams through floodplain restoration and reconnection. The project will help to improve water quality, remediate existing impairments and increase habitat. Due to the nature of the project, the floodplain will be temporarily impacted and materials

will be temporarily stored within the floodplain. There are no structures or impervious surfaces proposed within the floodplain. Strict conformance with the regulations would not allow the project to provide the intended value of restoring the environmental resources and reconnecting the stream to its floodplain.

2. **Uniqueness of the property or topographical conditions would result in practical difficulty; other than economic, or unreasonable hardship from strict adherence to the regulations.**

   The uniqueness of the property, topographical conditions and the nature of the project result in practical difficulty from strict adherence to the regulations. The stream and wetland restoration project is intended to improve the conditions within the 100-year floodplain.

3. **The Variance will not confer to the applicant a special privilege that would be denied to other applicants.**

   The variance will not confer to the applicant a special privilege that would be denied to other applicants. There are no structures or impervious surfaces proposed as part of this project. The project is intended to restore the floodplain, stream and wetlands to remediate existing impairments, improve water quality and increase habitat.

4. **The modification is not detrimental to the public health; safety or welfare, or injurious to other properties.**

   The approval will not have a negative impact on public interests since the project is intended to improve water quality, stream corridor habitat and flood resiliency. All sediment and erosion control regulations will be enforced during construction.

The Department of Planning and Zoning hereby determines that you have demonstrated to its satisfaction that strict enforcement of Section 16.155(a)(1) would result in an unreasonable hardship or practical difficulty. This determination is made with consideration of your alternative compliance application and the one (1) item you were required to address, pursuant to Section 16.104(a)(1):

1. **Unreasonable hardship or practical difficulties may result from strict compliance with the regulations.**

   The exhibits included with the Alternative Compliance application include Stream Restoration Design Plans, Sediment and Erosion Control Plans, Forest Conservation Plans and Planting Plans. A construction cost estimate has been included, as well as the pre-submission community meeting minutes and notifications. No public improvements or impacts to existing public infrastructure are proposed. Strict compliance with the regulations would result in an unreasonable hardship for the applicant, since the various plan exhibits will serve as an acceptable substitute for a Site Development Plan.

Approval of this Alternative Compliance is subject to the following conditions:

1. All disturbed areas within the 100-year floodplain shall be stabilized and seeded or planted after construction is complete, in accordance with the alternative compliance plan exhibit.

2. The applicant shall obtain all required authorizations and permits from the Maryland Department of the Environment and the U.S. Army Corps of Engineers for disturbances within the floodplain. Provide approval letters from MDE and/or USACE with the grading permit application.

3. The alternative compliance plan exhibit shall serve as the substitute for a site development plan. No disturbance is permitted beyond the 30.7-acre limit of disturbance as shown on the alternative compliance exhibit, unless it can be sufficiently demonstrated by the applicant to be justified.

4. Electronic originals of the alternative compliance plan exhibit shall be submitted to the Department of Planning & Zoning for signatures within 30 days of the approval of this alternative compliance request (on or before June 18, 2021). The posting of surety and payment of all required fees shall be completed prior to submission of the electronic originals (contact the Development Engineering Division for more information).

5. The applicant shall comply with all grading permit requirements from the Department of Inspections, Licenses & Permits and Howard Soil Conservation District.

Indicate this alternative compliance petition file number, request, section of the regulations, action, conditions of approval and date on all related plans and grading/building permits. This alternative compliance approval will remain valid for one year from the date of this letter or as long as a grading plan is being actively processed in accordance with the processing provisions of the Regulations.

If you have any questions, please contact Eric Buschman at (410) 313-2350 or email at ebuschman@howardcountymd.gov.

Sincerely,

DocuSigned by:
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Anthony Cataldo, AICP, Chief
Division of Land Development

cc: Research *[Section 16.1205(a)(3) - 34 tree req/ 34 tree app]*
DED
DLD - Julia Sauer
Real Estate Services
Marian Honeczy- DNR
Mike Galvin, PE- JMT, Inc.

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Voice/Relay

Amy Gowan, Director FAX 410-313-3467

ALTERNATIVE COMPLIANCE
FINAL DECISION ACTION REPORT

DEPARTMENT OF PLANNING AND ZONING
DEPARTMENT OF PUBLIC WORKS
OFFICE OF COMMUNITY SUSTAINABILITY

RE: **WP-21-077 Patuxent Mitigation Bank**
Request for an alternative compliance to Section 16.116(a)(1) and Section 16.116(a)(2) of the Subdivision and Land Development Regulations.

Applicant: Ed Hereth
Idiot's Delight Corporation & Idiot's Delight, LLC
2550 Florence Road
Woodbine, MD 21797

Pursuant to Section 16.116(d), the Director of the Department of Planning Zoning, Director of the Department of Public Works and the Administrator of the Office of Community Sustainability considered and **approved** the applicants request for an alternative compliance with respect to **Section 16.116(a)(1)** and **Section 16.116(a)(2)** of the Subdivision and Land Development Regulations. The purpose is to restore 3.54 acres of wetlands and 11,750 feet of stream, and to create an additional 16.98 acres of wetlands. The Directors deliberated the application in a meeting on April 29, 2021.

Each Department hereby determines that the applicant has demonstrated to its satisfaction that strict enforcement of the above-cited regulation would result in unreasonable hardship or practical difficulty. This determination is made with consideration of the alternative compliance application and the seven (7) items the applicant was required to address, pursuant to Section 16.104(a)(1) and Section 16.116(d):

1. **Strict conformance with the requirements will deprive the applicant of rights commonly enjoyed by other in similar areas.**
   The project is intended to expand and improve the functions of the existing stream and wetland system. Strict conformance with the regulations would not allow the project to proceed, since grading and removal of vegetation within the stream and wetland buffers is critical to the restoration project. The entire limits of grading will be stabilized and re-seeded or planted after construction is complete.

2. **The uniqueness of the property or topographical conditions would result in practical difficulty, other than economic, or unreasonable hardship from strict adherence to the regulations.**
   The uniqueness of the property, topographical conditions and the nature of the project result in practical difficulty from strict adherence to the regulations. The restoration project is intended to improve the conditions within the stream and wetland system.

3. **The variance will not confer to the applicant a special privilege that would be denied to other applicants.**

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The variance will not confer to the applicant a special privilege that would be denied to other applicants. There are no structures or impervious surfaces proposed as part of this project. The project is intended to restore the stream and wetlands to remediate existing impairments, improve water quality and increase habitat.

4. **The modification is not detrimental to the public health, safety or welfare, or injurious to other properties.**
   The project will not have a negative impact on public interests since the project is intended to improve water quality, stream corridor habitat and flood resiliency. All sediment and erosion control regulations will be enforced during construction.

5. **Any area of disturbance is returned to its natural condition to the greatest extent possible.**
   After construction is complete, the wetlands, streams and buffers will be restored to their natural state by the planting of a robust mix of native wetland-appropriate vegetation and the removal of invasive species. The project will alter the hydrology to enhance the wetlands, increase connectivity to the floodplain and create microtopography to improve wetland function. The proposed stream system will develop a low-energy floodplain where the stream floods frequently in a non-erosive manner. The site will be monitored after construction to ensure survival of the plantings and to control invasive species.

6. **Mitigation is provided to minimize adverse impacts to water quality and fish, wildlife, and vegetative habitat.**
   Strict adherence to erosion and sediment control regulations will be required. The contractor will be required to disturb only the areas which can be stabilized daily. In accordance with MD Dept. of Natural Resources, a fish relocation plan will be implemented to minimize impacts during construction. The project is intended to enhance water quality and fish and wildlife habitat. The project will also remove invasive species and plant native vegetation within the wetlands and buffers.

7. **Grading, removal of vegetative cover and trees, or construction shall only be the minimum necessary to afford relief and to the extent required to accommodate the necessary improvements.**
   A major component of the project is the removal of accumulated sediment and non-hydric soils within the floodplain, which will result in the grading and removal of vegetation in large areas within the wetlands and buffers. The proposed design and associated impacts are the minimum necessary to achieve the project goals of improved water quality, stream corridor habitat and flood resiliency. In areas of mature forest and where the stream abuts existing high-quality wetlands, the limits of disturbance are restricted to the minimum area needed to improve habitat for trout and other species in the cold-water fishery.

Directors Action: Approval of alternative compliance of Section 16.116(a)(1) and Section 16.116(a)(2) is subject to the following conditions:

1. All disturbed areas within the streams, wetlands and their buffers shall be stabilized and replanted with native vegetation after construction is complete, as shown on the alternative compliance planting plans.

2. The applicant shall obtain all required authorizations and permits from the Maryland Department of the Environment and the U.S. Army Corps of Engineers for disturbances within the streams, wetlands and 25’ wetland buffer. Provide approval letters from MDE and/or USACE with the grading permit application.

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Amy Gowan
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Amy Gowan, Director
Department of Planning and Zoning

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DocuSigned by:
Thomas Meunier
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Thomas Meunier, Director
Department of Public Works

DocuSigned by:
Joshua Feldmark
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Joshua Feldmark, Administrator
Office of Community Sustainability

cc: Research
DED
OCS, Joshua Feldmark
DPW, Thomas Meunier
Mike Galvin, PE- JMT, Inc.

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ALTERNATIVE COMPLIANCE
FINAL DECISION ACTION REPORT

DEPARTMENT OF PLANNING AND ZONING
DEPARTMENT OF RECREATION AND PARKS
OFFICE OF COMMUNITY SUSTAINABILITY

RE: **WP-21-077 Patuxent Mitigation Bank**
Request for a variance to Section 16.1201(v) and Section 16.1205(a)(3) of the Subdivision and Land Development Regulations.

Applicant: Ed Hereth
Idiot's Delight Corporation & Idiot's Delight, LLC
2550 Florence Road
Woodbine, MD 21797

Pursuant to Section 16.1216, the Director of the Department of Planning Zoning, Director of the Department of Recreation and Parks and the Administrator of the Office of Community Sustainability considered and **approved** the applicants request for a variance with respect to **Section 16.1201(v)** and **Section 16.1205(a)(3)** of the Forest Conservation Regulations. The purpose is to use the 30.7-acre Limit of Disturbance as the gross tract area for determining the forest conservation obligation and to remove 34 specimen trees. The Directors deliberated the application in a meeting on April 29, 2021.

Each Department hereby determines that the applicant has demonstrated to its satisfaction that strict enforcement of the above-cited regulation would result in an unwarranted hardship. This determination is made with consideration of the alternative compliance application and the six (6) items the applicant was required to address, pursuant to Section 16.1216:

1. **Describe the special conditions peculiar to the property which would cause the unwarranted hardship.**
   In accordance with the forest conservation regulations, the entirety of all parcels impacted by the proposed work are to be used to define the net tract area for forest conservation computations. The total area of the two parcels is 178.8 acres, but the Limit of Disturbance for the project is only 30.7 acres. Impacts to specimen trees are required to restore the floodplain and wetlands. The existing streams are incised with high banks which will require extensive grading to adjust the channel geometry and elevations. An average of 4 feet of excavation will occur across the floodplain, which will require extensive clearing within the project limits. The existing stream has significantly disturbed the critical root zones of many of the specimen trees, which subjects the trees to natural fall as a result of un-checked channel erosion. The limits of clearing have been minimized to avoid impacts to mature forests and high-quality wetlands.

2. **Describe how enforcement of the regulations would deprive the landowner of rights commonly enjoyed by others in similar areas.**
   Stream restoration projects are typically reviewed as linear projects, since they are likely to stretch across multiple parcels. If the entirety of both parcels were required to be used as the gross tract area, the Forest Stand Delineation and Forest Conservation Plans would need to be expanded to include the additional area outside of

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the project limits. This would not provide a benefit to the project or to the plan review process. If the regulations were strictly enforced, the project would not be able to proceed since the impacts to specimen trees cannot be avoided while still achieving the goals of the project. The project would also not be accepted as a compensatory stream and wetland mitigation bank.

3. **Verify that the granting of a variance will not adversely affect water quality.**
   A major goal of the project is to improve water quality. Reconnecting the floodplain to groundwater should increase baseflow input, which will improve thermal buffering and decrease stream temperature. Forest stands with poor health will be replaced with high-quality, interconnected floodplain forests. The proposed design and planting plan will result in a net increase in forest coverage in the project area as compared to the existing condition.

4. **Verify that the granting of a variance will not confer on the applicant a special privilege that would be denied to other applicants.**
   The granting of a variance will not confer on the applicant a special privilege that would be denied to other applicants. Stream restoration projects are typically reviewed as linear projects since they are likely to stretch across multiple parcels. The LOD has been designed to minimize impacts to forest resources while still allowing for the project goals to be met.

5. **Verify that the variance request is not based on conditions or circumstances which are the result of actions by the applicant.**
   The variance request is not based on conditions or circumstances which are the result of actions by the applicant. Historic agricultural practices and alterations to the stream channel have contributed to the impairment of the stream and wetland system.

6. **Verify that the condition did not arise from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property.**
   The condition did not arise from a condition relating to land or building use on a neighboring property.

Directors Action: Approval of alternative compliance of Section 16.1201(v) and Section 16.1205(a)(3) is subject to the following conditions:

1. The removal of the 34 specimen trees is permitted as shown on the alternative compliance plan exhibit. The removal of any additional specimen tree is not permitted under this alternative compliance request.

2. The applicant shall plant a minimum of 68 native shade trees with a planting size of 3+" DBH within the project limits to mitigate the removal of the 34 specimen trees. The locations, species and planting techniques shall comply with the alternative compliance planting plans. The trees shall be monitored for at least 3 growing seasons and replaced in-kind if the plantings do not survive.

3. Prior to application for grading permits to initiate construction, a redline to the offsite Forest Conservation Bank plan must be approved by DPZ to reflect the transfer of credits to satisfy the forest conservation obligation for this project. The 30.7-acre Limit of Disturbance shall be used as the gross tract area for determining the forest conservation obligation.

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Amy Gowan
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Amy Gowan, Director
Department of Planning and Zoning

DocuSigned by:
Raul Delerme
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Raul Delerme, Director
Department of Recreation and Parks

DocuSigned by:
Joshua Feldmark
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Joshua Feldmark, Administrator
Office of Community Sustainability

cc: Research
DED
OCS, Joshua Feldmark
DRP, Raul Delerme
Mike Galvin, PE- JMT, Inc.

Howard County Maryland
Department of Planning and Zoning
3430 Courthouse Drive, Ellicott City, MD 21043 (410) 313-2350

DPZ Office Use only:
File No. WP-21-077
Date Filed

ALTERNATIVE COMPLIANCE APPLICATION

Site Description: 2551 and 2570 Florence Road

Subdivision Name/Property Identification: Idiots Delight / Account IDs: 1404335171 and 1404335198

Location of property: Parcels north and south of Shaffersville Road near intersection of Shaffersville Road and Florence Road in Woodbine, MD

Existing Use: Low Density Residential and Mixed Use **Proposed Use:** Low Density Residential and Mixed Use

Tax Map: 0006 / 0007 **Grid:** 0024 / 0024 **Parcel No:** 0127 / 0471 **Election District:** 4 / 4

Zoning District: RC-DEO **Total site area:** 87.94 ac / 90.94 ac

Please list all previously submitted or currently active plans on file with the County (subdivision plans, Board of Appeals petitions, alternative compliance petitions, etc.). If no previous plans have been submitted, please provide a brief history of the site and related information to the request:

Previous Alternative Compliance Petition: WP-21-017
Current ECP Submission: ECP-21-032
Johnson, Mirmiran, and Thompson (JMT) is proposing to create the Patuxent Mitigation Bank, which will preserve, enhance, and restore wetlands and streams through floodplain restoration and reconnection along a reach of Cabin Branch measuring approximately 5,979 linear feet. Overall, this project will enhance 3.54 acres of wetland, create 16.98 acres of wetland, preserve 7.73 acres of wetland, and restore and preserve approximately 11,750 linear feet of stream to remediate existing impairments that compromise habitat in the stream channel as well as the adjacent floodplain. A virtual Pre-Submission Community Meeting for this project was held on October 1, 2020 at 6:00 pm.

In the area below, the petitioner shall enumerate the specific numerical section(s) from the Subdivision and Land Development Regulations for which an alternative compliance is being requested and provide a brief summary of the request. Please use the additional page if needed.

Section Reference No.	Brief Summary of Request
Section 16.155(a)(1)(ii) - Waiver of Site Development Plan	The project proposes to create the Patuxent Mitigation Bank, which will preserve, enhance, and restore wetlands and streams through floodplain restoration and reconnection along a reach of Cabin Branch with the purpose of remediating existing impairments by increasing in-stream habitat for cold water species and improving water quality. Overall, this project will enhance 3.54 acres of wetland, create 16.98 acres of wetland, preserve 7.73 acres of wetland, and restore and preserve approximately 11,750 linear feet of stream. The bank will provide wetland and stream credits that can be purchased by private, county, state, or federal parties to meet compensatory mitigation requirements per authorizations under Section 404 of the Clean Water Act. We are requesting a waiver of the requirement to prepare a Site Development Plan for the proposed project. Instead of a Site Development Plan, an Alternative Compliance Application has been prepared, and includes Stream Restoration Design Plans, Sediment and Erosion Control Plans, a Forest Stand Delineation with associated Plans, Forest Conservation Plans, and Landscaping Plans. These exhibits include much of the information required for a Site Development Plan and serve as an acceptable substitute. Please see attached for additional information.
Section 16.1201(v) - Definition of net tract area for forest conservation computations	Per Forest Conservation regulations (Subtitle 12), the entirety of all parcels impacted by the proposed work are to be used to define the net tract area for Forest Conservation Worksheet (FCW) computations. For this project, the total area of all parcels involved is 178.88 acres. The project involves actual disturbance on only a small portion (30.7 acres) of the total parcel area, and the results of the project are intended to preserve, restore, and otherwise enhance environmental features. We are requesting approval to use the Limit of Disturbance (LOD) of 30.7 acres as the Total (Gross) Tract Area on the FCW. The 100-year floodplain comprises 27.74 acres within the 30.7-acre LOD, resulting in a Net Tract Area of 2.96 acres on the FCW. The total reforestation and afforestation required for the project is 1.10 acres. Although the project will include tree planting to enhance ecological function, we understand that the on-site tree planting cannot count towards Forest Conservation requirements. Therefore, with this Alternative Compliance Application, we are also requesting approval to meet the reforestation and afforestation requirement via purchase of retention credit from an Approved Forest Conservation Bank. Thus, 2.20 acres of credit would be purchased, in compliance with the required 2:1 ratio for using forest retention to meet reforestation and afforestation requirements. Please see attached for additional information.

Section Reference No.	Brief Summary of Request
Section 16.1205(a)(3) - Removal of Specimen Trees	We are requesting a waiver from the requirement to leave (retain) trees 30 inches in diameter or greater in an undisturbed condition. The proposed stream restoration design requires the creation of a stable planform, cross section, and profile geometry that will extend to the LOD. In some portions of the floodplain, approximately four feet of excavation will be required. The LOD has been minimized to the greatest extent practical while maximizing restoration effectiveness. The proposed design includes 34 trees with a DBH of 30 inches or greater that would necessarily be removed during project construction. Please see attached for additional information.

Signature of Property Owner: **Date:**

Signature of Petitioner Preparer: **Date:**

Name of Property Owner: Ed Hereth

Address: 2550 Florence Road

City, State, Zip: Woodbine, Maryland, 21797

E-Mail:

Phone No.:

Contact Person: Ed Hereth

Name of Petition Preparer: Mike Galvin, P.E.

Address: 40 Wight Avenue

City, State, Zip: Hunt Valley, Maryland 21030

E-Mail: mgalvin@jmt.com

Phone No.: 410-316-2471

Contact Person: Mike Galvin, P.E.

☒ **Owner's Authorization Attached**

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PATUXENT MITIGATION BANK

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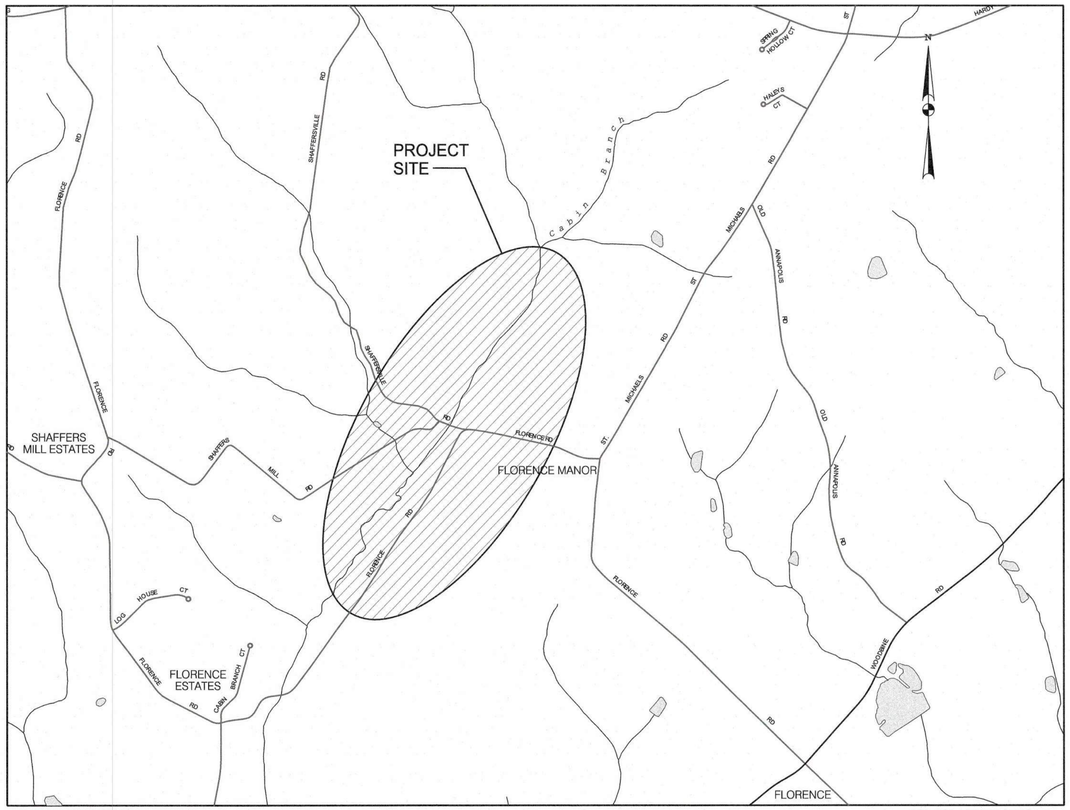

HOWARD COUNTY, MD — SCALE: 1"=1,000' — PROJECT LENGTH: 11,750 L.F.

HORIZONTAL DATUM	NAD 8391
VERTICAL DATUM	NAVD 88

1000' 0 1000' 2000'

SCALE: 1"=1000'

GENERAL INFORMATION

1. THE SUBJECT PROPERTIES ARE ZONED RC-DEO/RURAL CONSERVATION IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING REGULATIONS.
2. THE DEPARTMENT OF PLANNING AND ZONING HAS APPROVED MULTIPLE ALTERNATIVE COMPLIANCE REQUESTS FOR THIS PROJECT UNDER THE FILE NUMBER "WP-21-077 PATUXENT MITIGATION BANK." SEE DESCRIPTIONS OF THESE REQUESTS AND SUBSEQUENT ON SHEET 2.
3. NO STRUCTURES OR SUBDIVISIONS ARE PROPOSED: THEREFORE THIS PLAN IS NOT REQUIRED TO MEET THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
4. THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
5. THIS PROJECT COMPLIES WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE PURCHASE OF 1.5-ACRES OF CREDIT FROM THE REGAN PROPERTY FOREST CONSERVATION BANK (SDP-16-015).
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF MDSHA.
7. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
8. THE COORDINATES SHOWN HEREON ARE BASED ON GPS CONTROL.
9. NO WATER LINES EXIST WITHIN PROJECT LIMIT, PER UTILITY DESIGNATION.
10. NO SEWER LINES EXIST WITHIN PROJECT LIMIT, PER UTILITY DESIGNATION.
11. EXISTING UTILITIES ARE BASED ON FIELD SURVEYS AND AVAILABLE RECORD DRAWINGS.
12. THE WETLAND DELINEATIONS FOR THIS PROJECT WAS PERFORMED BY JMT ON JANUARY 28 AND APRIL 23, 2019.
13. THIS SURVEY WAS BASED ON A FIELD-RUN TOPOGRAPHIC SURVEY PERFORMED BY JMT IN OCTOBER, NOVEMBER, & DECEMBER 2019 AND REFLECTS SITE CONDITIONS AS OF THAT DATE. LIDAR AND GIS TOPOGRAPHIC DATA WAS USED FOR ALL AREAS OUTSIDE OF THE FIELD-RUN TOPOGRAPHIC SURVEY.
14. ALL WORK SHALL CONFORM TO THE MDE BEST MANAGEMENT PRACTICES FOR WETLANDS AND WATERWAYS AS LISTED IN THE REQUIREMENTS OF THE NONTIDAL WETLANDS AND WATERWAYS PERMIT APPROVED ON T.B.D. (MDE TRACKING #19-NT-3135201960966).
15. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
16. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND JMT DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR THOSE CHANGES.
17. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
18. THE APPLICANT SHALL OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND U.S. ARMY CORPS OF ENGINEERS FOR DISTURBANCES WITHIN THE FLOODPLAIN, WETLANDS, STREAMS AND THEIR BUFFERS. REFERENCE THE APPLICABLE MDE OR USACOE PERMITS OR TRACKING NUMBERS ON THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT AND ANY BUILDING OR GRADING PERMITS.
19. ONCE PROJECT IS COMPLETE, THE LIMIT OF DISTURBANCE SHALL BE RESTORED TO ITS PREVIOUS CONDITION THROUGH STABILIZATION AND REPLANTING OF FOREST RESOURCES.
20. THE PROPOSED PROJECT IS WITHIN A MALPF EASEMENT (FILE #13-79-03 A & B). THE PROJECT RECEIVED APPROVAL FROM MALPF ON JANUARY 28, 2020 TO PLACE A STREAM RESTORATION OVERLAY EASEMENT OVER THE PROPOSED PROJECT.
21. THIS PROJECT IS LOCATED WITHIN A TIER II WATERSHED. ACCORDING TO MARYLAND'S FINAL 2016 INTEGRATED REPORT OF SURFACE WATER QUALITY, THE STREAMS WITHIN THE PROJECT SITE FALL WITHIN CATEGORY 2 (MEETING SOME BUT NOT ALL WATER QUALITY STANDARDS). A TMDL SPECIFIC TO CABIN BRANCH DOES NOT EXIST WITHIN THE PROJECT LIMITS.

MDE BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAIN

1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS TO BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2) PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3) DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6) RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7) ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER TO CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE IS TO NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA IS TO BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8) AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9) TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

   USE III-P WATERS (NON-TIDAL COLD WATER AND PUBLIC WATER SUPPLY): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCT 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.

10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES TO BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11) CULVERTS TO BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

PROJECT NARRATIVE:

THE PATUXENT MITIGATION BANK PROJECT IS LOCATED IN HOWARD COUNTY, MD, APPROXIMATELY 3.28 MILES SOUTHEAST OF THE MD ROUTE 27 AND US ROUTE 70 INTERCHANGE. THE PROJECT LIMITS INCLUDE CABIN BRANCH (MAIN STEM) AND NUMEROUS UNNAMED TRIBUTARIES TO CABIN BRANCH. ALONG THE MAIN STEM, THE PROJECT LIMITS START APPROXIMATELY 2,130 LINEAR FEET UPSTREAM FROM SHAFFERSVILLE ROAD TO THE DOWNSTREAM LIMIT 3,130 LINEAR FEET DOWNSTREAM OF SHAFFERSVILLE ROAD. THE PROJECT IS CURRENTLY WITHIN A MALPF EASEMENT.

CABIN BRANCH IS A DIRECT TRIBUTARY TO THE PATUXENT RIVER AND IS LOCATED WITHIN THE PIEDMONT PHYSIOGRAPHIC PROVINCE AND FLOWS PRIMARILY IN A SOUTHERN DIRECTION BEGINNING NEAR HARDY ROAD IN POPLAR SPRINGS, MD. THE DRAINAGE AREA TO THE MAIN STEM AT THE DOWNSTREAM PROJECT LIMITS IS APPROXIMATELY 2.92 SQUARE MILES. THE CABIN BRANCH WATERSHED IS LOCATED WITHIN THE BRIGHTON DAM DRAINAGE BASIN (MDE 8-DIGIT BASIN CODE 02131108) AND IS CLASSIFIED AS A USE III-P (NATURALLY REPRODUCING TROUT WATERS AND PUBLIC WATER SUPPLY) WATERWAY. AS SUCH IN-STREAM WORK IS PROHIBITED DURING A CLOSURE PERIOD FROM OCTOBER 1ST THROUGH APRIL 30TH.

THE PROPOSED IMPROVEMENTS TO CABIN BRANCH AND ITS TRIBUTARIES WILL FOCUS ON RESTORING IMPAIRED RESOURCES AND AQUATIC AND TERRESTRIAL HABITATS TO PROVIDE WATER QUALITY IMPROVEMENTS AND BIOLOGICAL UPLIFT AND DIVERSITY. THERE ARE ALSO ECOLOGICALLY VALUABLE RESOURCES WITHIN THE PROJECT LIMITS THAT WILL BE PRESERVED AND/OR ENHANCED. THE IMPROVEMENTS WILL BE ACCOMPLISHED THROUGH STREAM CHANNEL AND MINOR GRADING IN AREAS ADJACENT TO HIGH QUALITY RESOURCES, AS WELL AS THE REMOVAL OF THE OVERBURDEN OF NUTRIENT RICH AND HIGHLY ERODIBLE MODERN VALLEY SEDIMENTS IN OTHER PARTS OF THE PROJECT. THE GENERAL RESTORATION STRATEGY WILL BE A COMBINATION OF A HABITAT AND GEOMORPHIC IMPROVEMENTS AND, WHERE APPLICABLE, THE CONVERSION OF HIGHLY INCISED AND IMPAIRED EXISTING RESOURCES TO A FORMER LOW ENERGY, STABLE FLOW REGIME WHERE FEASIBLE. THE DESIGN STRATEGIES ARE INTENDED TO REESTABLISH AND/OR CREATE A DENSE RIPARIAN ROOT SYSTEM WHICH PROMOTES GREATLY INCREASED SEDIMENT AND NUTRIENT PROCESSING AND THE PROTECTION OF BOTH CHANNEL BANKS AND THE FLOODPLAIN SURFACE FROM EROSIVE FLOWS. WITHIN THE PROPOSED CHANNELS, THE DESIGNS ARE INTENDED TO REESTABLISH THE INTERACTION OF GROUNDWATER AND SURFACE WATER VITAL TO THE BIOCHEMICAL CYCLING OF NUTRIENTS AT THE GROUNDWATER/SURFACE WATER INTERFACE OR HYPORHEIC ZONE. THIS INTERACTION WILL SERVE TO MAINTAIN CHANNEL BASE FLOWS DURING DRY PERIODS AND REGULATE WATER TEMPERATURE YEAR-ROUND PROVIDING INCREASED BIOLOGICAL FUNCTION. PROPOSED CHANNEL GEOMETRY AND STABILITY AND HABITAT STRUCTURES ARE INTENDED TO INCREASE IN-STREAM BIO-DIVERSITY.

NO IMPERVIOUS SURFACES ARE PROPOSED AND THEREFORE NO SWM IS REQUIRED. EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED THROUGHOUT THE DURATION OF THE PROJECT, INCLUDING PUMP-AROUNDS TO ALLOW DRY WORKING CONDITIONS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson — CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 7/9/2021
DocuSigned by: — CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7/9/2021
DocuSigned by: Amy Gowan — DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE 7/12/2021

OWNERS /DEVELOPER CERTIFICATION:

"WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

DocuSigned by: Michael Galvin 7/8/2021 — OWNER'S /DEVELOPER'S SIGNATURE	DATE 6/14/21
Michael Galvin, Project Manager — PRINTED NAME AND TITLE	

DESIGN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DocuSigned by: Michael Galvin 7/8/2021 — DESIGNER'S SIGNATURE	DATE 6/14/21
Michael Galvin — PRINTED NAME	MD REGISTRATION NO. 44076 P.E., R.L.S., OR R.L.A. (CIRCLE ONE)

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE 6/9/2023."

DocuSigned by: Michael Galvin

OWNER /DEVELOPER INFORMATION:

JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

LANDOWNER INFORMATION:

IDIOTS DELIGHT INC
2570 FLORENCE RD
WOODBINE, MD 21797
PARCEL: 127
ELECTION DISTRICT: 9A
ZONING: RC-DEO
TAX MAP: 6

IDIOTS DELIGHT CORPORATION II
2551 FLORENCE RD
WOODBINE, MD 21797
PARCEL: 471
ELECTION DISTRICT: 9A
ZONING: RC-DEO
TAX MAP: 7

SITE ANALYSIS:

TOTAL AREA OF DISTURBANCE:	30.97 AC
TOTAL CUT VOLUME:	41,599 CY
TOTAL FILL VOLUME:	7,394 CY

PERMITS /APPROVALS

AGENCY	PERMIT #	DATE APPROVED
MDE JOINT PERMIT APPLICATION	19-NT-3135201960966	04/21/2021
MDE DAM SAFETY	N/A	N/A
HOWARD SOIL CONSERVATION DISTRICT	GP-21-012	30% 09/15/2020 65% 12/21/2020 FINAL 06/03/2021
NOTICE OF INTENT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY	MDRCN05PS	
ALTERNATIVE COMPLIANCE FROM HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS	WP-21-077	05/19/2021

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION

BY: PCRAWFORD -

SURVEY BOOK NO.

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ABBREVIATIONS

ACCEL – ACCELERATION
A.A.S.H.T.O. – AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ADT – AVERAGE DAILY TRAFFIC
AHD – AHEAD
APPROX. – APPROXIMATE
℄ : BℓL – BASELINE
BK – BACK
BIT. – BITUMINOUS
B.C. – BITUMINOUS CONCRETE
B.M. – BENCH MARK
BOT. – BOTTOM
CC – CENTER OF CURVE
CATV – CABLE TELEVISION
C.B.R. – CALIFORNIA BEARING RATIO
℄ : CℓL–CENTERLINE
CL. – CLASS
CLF – CHAINLINK FENCE
CMP – CORRUGATED METAL PIPE
C.O. – CLEANOUT
COMB. – COMBINATION
CONC. – CONCRETE
CONSTR. – CONSTRUCTION
COR. – CORNER
CORR. – CORRECTION
CPP–SP – CORRUGATED POLYETHYLENE PIPE – TYPE 'S'
DC – DEGREE OF CURVE
D.H.V. – DESIGN HOURLY VOLUME
D.I. – DROP INLET
DIA. – DIAMETER
D.O. – DOUBLE OPENING
ELEC. – ELECTRIC
E – EXTERNAL DISTANCE
EA. – EACH
E.B. – EASTBOUND
ELEV. – ELEVATION
E.R.C.C.P. – ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE
ES – END SECTION
EX. – EXISTING
FT. – FEET
F : FL – FLOWLINE
F.B.D. – FLAT BOTTOM DITCH
F.H. – FIRE HYDRANT
FWD. – FORWARD
G – GAS
GAB – GRADED AGGREGATE BASE
G.V. – GAS VALVE
H.B. – HANDBOX
H.D.P. – HIGH DENSITY POLYETHEYLENE
HDWL. – HEADWALL
IN. – INCH
I.S.T. – INLET SEDIMENT TRAP
INV. – INVERT
J.B. – JUNCTION BOX
K – K INLET
L – LENGTH
L.F. – LINEAR FEET
L.L. – LIQUID LIMIT
L.P. – LIGHT POLE
MAC. – MACADAM
LT. – LEFT
M.C. – MOISTURE CONTENT
MAX. – MAXIMUM
M.D.D. – MAXIMUM DRY DENSITY
MOD. – MODIFIED
MIN. – MINIMUM
N – NORTH
N.B. – NORTHBOUND
N.E. – NORTHEAST
N.P. – NON–PLASTIC
O.C. – ON CENTER
OCF – ORANGE CONSTRUCTION FENCE
OHE – OVERHEAD ELECTRIC
O.M. – OPTIMUM MOISTURE
PAVT. – PAVEMENT
PC – POINT OF CURVATURE
PCC – POINT OF COMPOUND CURVATURE
P℄ – POINT OF CROWN
PGE – PROFILE GRADE ELEVATION
P.G.L. – PROFILE GRADE LINE
PGL – PROFILE GROUND LINE
PR – POINT OF ROTATION
PI – POINT OF INTERSECTION
P.O.C. – POINT ON CURVE
P.O.T. – POINT ON TANGENT
PPWP – POLYVINYL CHLORIDE PROFILE WALL PIPE
PROP. – PROPOSED
P.R.C. – POINT OF REVERSE CURVE
PT. – POINT
PT – POINT OF TANGENCY
PVC – POINT OF VERTICAL CURVATURE
PVI – POINT OF VERTICAL INTERSECTION
PVRC – POINT OF VERTICAL REVERSE CURVE
PVT – POINT OF VERTICAL CURVE TANGENCY
R – RADIUS
R.F. – ROCK FRAGMENTS
RT. – RIGHT
H.E.R.C.P. – HORIZONTAL ELLIPITICAL REINFORCED CONCRETE PIPE
RW : R℄W – RIGHT OF WAY
RCP – REINFORCED CONCRETE PIPE
R.C.C.P. – REINFORCED CEMENT CONCRETE PIPE
R.Q.D. – ROCK QUALITY DESIGNATION
R.M. – ROOTMAT
S – SOUTH
SAN. – SANITARY SEWER
SB : S℄B – SOUTH BOUND
S.D. – STORM DRAIN
S.D.D. – SURFACE DRAIN DITCH
SE – SUPER ELEVATION
SF – SILT FENCE
SHT. – SHEET
S.P.P. – STRUCTURAL PLATE PIPE
S.P.T. – STANDARD PENETRATION TESTING
SSD – STOPPING SIGHT DISTANCE
SSF – SUPPER SILT FENCE
STD. – STANDARD
STA. – STATION
SO. – SINGLE OPENING
S.Y. – SQUARE YARDS
SWM – STORMWATER MANAGEMENT
T – TANGENT
TEL. – TELEPHONE
T.C. – TOP OF COVER
T.G. – TOP OF GRATE
TℓL : TL – TRAVERSE LINE
T.M. – TOP OF MANHOLE
TP – TRAVERSE POINT
TS – TEMPORARY SWALE
T.S. – TOP OF SLAB
TYP. – TYPICAL
U.G. – UNDERGROUND
U.P. – UTILITY POLE
U.S.D.A. – UNITED STATES DEPARTMENT OF AGRICULTURE
VCL – VERTICAL CLEARANCE
V.C.L. – VERTICAL CURVE LENGTH
W – WATER
W.B. – WESTBOUND
WB – WETLAND BUFFER
W.M. – WATER METER
W.S. – WRAPPED STEEL
W.V. – WATER VALVE
HMA – HOT MIX ASPHALT
H.P.–HIGH POINT

CONVENTIONAL SIGNS

PROPOSED MEDIAN BARRIER
ELECTRICAL HAND BOX – SIGNALS (H.B.)
FLOW LINE
STATE, COUNTY OR CITY LINES
PROPOSED TRAFFIC BARRIER
EXISTING TRAFFIC BARRIER
EXISTING FENCE LINE
RIGHT OF WAY LINE
EXISTING ROADWAY
RAILROAD
BASE OR SURVEY LINE (31 +50 32)
FIRE HYDRANT (F.H.)
HISTORIC BOUNDRY
TRAVERSE POINT
EXISTING GROUND CONTOURS (5') (265)
EXISTING GROUND CONTOURS (1') (264)
LIMIT OF DISTURBANCE (LOD)
MAILBOX (M.B.)
PROPOSED PIPE/CULVERT
EXISTING SANITARY SEWER LINE (SAN)
GROUND ELEVATION (DATUM LINE 175.81)
GRADE ELEVATION (DATUM LINE 260.22)
EXISTING PIPE/CULVERT
EXISTING DROP INLET
INLET PROTECTION (IP, CIP, SIP)
SILT FENCE (SF)
SUPER SILT FENCE (SSF)
SANDBAGS
REMOVABLE PUMPING STATION/SUMP PIT (RPS/SP)
PORTABLE SEDIMENTATION TANK (PST)
SPECIMEN TREE WITH CRITICAL ROOT ZONE (T–3)

EXISTING 100–YEAR FLOODPLAIN
PROPOSED 100–YEAR FLOODPLAIN
UTILITY POLE
WETLAND
WETLAND BUFFER (B)
WATERS OF THE US (WUS)
EXISTING STREAMBANK BUFFER
PROPOSED STREAMBANK BUFFER
HEDGE /TREE LINE
SIGN
LIGHT POLE
SANITARY (8" SAN, H/C, S3, S3)
WATER (WV, 24"W)
GAS
ELECTRIC (UNDERGROUND) (E, JB)
ELECTRIC (OVERHEAD) (POLE #, OHW, POLE #)
TELEPHONE (UNDERGROUND) (T, TMH, T)
TELEPHONE (OVERHEAD) (POLE #, T/OH, POLE #)
STREAM FLOW ARROWS
EXISTING TREES
SOILS BOUNDARY
STABILIZED CONSTRUCTION ENTRANCE (SCE)
CREATED FLOODPLAIN WETLAND LIMITS
MULCH ACCESS ROAD
TIMBER MAT ACCESS ROAD
STAGING AND STOCKPILE AREA
PROPOSED STREAM CHANNEL
LOG VANE
DIGGER LOG
RANDOM BOULDER PLACEMENT
LOG J HOOK VANE
ROCK CROSS VANE
ROCK J HOOK VANE
TOE WOOD STRUCTURE
CLASS '01' RIPRAP
CLASS 'I' RIPRAP
ERODIBLE SOILS (15% SLOPE)
STEEP SLOPES & ERODIBLE SOILS (20% SLOPES OR GREATER)

GENERAL NOTES

1. TO PROTECT AQUATIC SPECIES, IN–STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM: USE III–P (NONTIDAL COLD WATER AND PUBLIC WATER SUPPLY). IN–STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OF OCTOBER 1 TO APRIL 30, INCLUSIVE, DURING ANY YEAR.
2. HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM. (NAD 8391)
3. VERTICAL CONTROL: THE LOCATION AND ELEVATION OF BENCHMARKS ARE SHOWN ON THE PLANS. ALL ELEVATIONS ARE IN FEET AND ARE BASED ON NAVD 88 DATUM.
4. MATERIALS SALVAGED: MATERIAL SALVAGED DURING CONSTRUCTION TO BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
5. THE CONTRACTOR IS TO USE SALVAGED TOPSOIL FOR ALL GRADED AREAS THAT HAS A SLOPE OF 3:1 OR STEEPER. FOR ALL OTHER GRADED AREAS OUTSIDE OF THE PROPOSED FLOODPLAIN, 4" TOPSOIL SHOULD BE USED UNLESS OTHERWISE NOTED.
6. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AT ALL TIMES, EXCEPT IN PROPOSED WETLAND AREAS.
7. UTILITIES: THE LOCATIONS OF UNDERGROUND UTILITIES AND AERIAL UTILITY APPURTENANCES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS TO VERIFY ALL UTILITY LOCATIONS PRIOR TO GRADING.
8. TOPOGRAPHIC SURVEY CONDUCTED BY JMT (2019).
9. PRIOR TO CONSTRUCTION /SITE DISTURBANCE, THE CONTRACTOR SHALL WALK THE SITE WITH THE ENGINEER TO REVIEW THE LOD AND REVIEW WHAT TREES WITHIN THE LOD ARE TO BE PRESERVED THROUGHOUT CONSTRUCTION, THE CONTRACTOR SHALL WORK WITH THE ENGINEER TO REVIEW EACH GRADING UNIT PRIOR TO DISTURBANCE AND ADDRESS THE PRESERVATION OF EXISTING SITE FEATURES, TREES, AND IN–CHANNEL HABITATS PRIOR TO DISTURBANCE. CHANNEL AND FLOODPLAIN STAKEOUT SHALL BE REVIEWED SIMILARLY WITH THE CONTRACTOR PRIOR TO SITE DISTURBANCE.
10. THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER, WILL PLACE EXCESS WOODY DEBRIS UPON THE FINAL FINISHED GRADING SURFACE. NO WOODY DEBRIS FROM THE PROJECT SHALL BE CHIPPED FOR MULCH. NO WOODY DEBRIS SHALL BE EXPORTED, OR OTHERWISE DISPOSED OF OFFSITE.
11. PLACED WOODY DEBRIS SHALL NOT BE EXCAVATED INTO THE FLOODPLAIN SURFACE, BUT PLACED AGAINST OTHER PIECES TO BE ELEVATED ABOVE THE FLOODPLAIN. STANDING WOODY DEBRIS IS PREFERRED PLACEMENT WHERE SIZE AND TYPE OF MATERIALS ALLOW.
12. WHERE THE LOD CROSSES EXISTING WETLANDS, THE ENGINEER SHALL DIRECT GRADING TO MINIMIZE THE RISK OF SECONDARY IMPACTS TO WETLANDS OUTSIDE OF THE LOD. THE ENGINEER MAY DIRECT THE USE OF SMALL BERMS, GRADING DIFFERENCES, DRAINAGE BLOCKAGES, AND OTHER MINOR CHANGES TO GRADING OR PLACEMENT OF LOGS AND EROSION AND SEDIMENT CONTROL MATTING TO ACCOUNT FOR PRESENT SITE CONDITIONS.
13. THE CONTRACTOR SHALL LEAVE GRADED AREAS ROUGH; SMALL DIVOTS, BUMPS, AND DEPRESSIONS LESS THAN +/– 0.2' ARE ACCEPTABLE AND SHALL BE CONSIDERED MICROTOPOGRAPHY. BACK–DRAGGED GRADING IS NOT NECESSARY AND DISCOURAGED. THE ENGINEER WILL PROVIDE GUIDANCE IN THE FIELD AS TO ACCEPTABLE MICROTOPOGRAPHY.
14. SMALL FLOODPLAIN DEPRESSIONS ARE INCORPORATED AS PART OF THIS GRADING PLAN, AND DESIGNED TO INTERACT WITH WOODY DEBRIS PLACEMENT PER THE DIRECTION OF THE ENGINEER.

    FESCUES, ANNUAL RYE, AND LESPEDEZA SPECIES SHALL NOT BE USED ON THIS PROJECT, EVEN THOUGH THEY ARE IN THE APPROVED MDE SEED MIXES. ONLY NATIVE SPECIES SHALL BE USED TO STABILIZE THE SITE. SEE
15. PERMANENT SEEDING SPECIFICATIONS.

    MULTIPLE STRUCTURES REQUIRE THE USE OF SALVAGED SITE LOGS WHICH MEET SPECIFIED REQUIREMENTS.
16. IN THE EVENT THAT NO SALVAGED MATERIAL FROM THE SITE IS AVAILABLE MEETING SPECIFICATION, THE CONTRACTOR SHALL FURNISH THESE MATERIALS FROM APPROVED OFFSITE SOURCES AT NO ADDITIONAL COST.
17. FISH RELOCATIONS AND BEST MANAGEMENT PRACTICES ARE REQUIRED AS PART OF A FISH RECOVERY AND RELOCATION PLAN. SEE SPECIFICATIONS.
18. FISH PASSAGE SHALL BE MAINTAINED THROUGH THE STRUCTURES INSTALLED ON THIS PROJECT.
19. THE OWNER /ENGINEER WILL HAVE MONITORING APPARATUS TO MONITOR ENVIRONMENTAL VARIABLES ACTIVE DURING CONSTRUCTION. THESE MAY ONLY BE DISTURBED IN COORDINATION WITH THE OWNER /ENGINEER.

PERMITS /APPROVALS — ALTERNATIVE COMPLIANCE SUMMARY TABLE

PETITION FILE NUMBER	REQUEST	SECTION OF THE REGULATIONS	ACTION	CONDITIONS OF APPROVAL	DATE
WP–21–077	TO RESTORE 3.54 ACRES OF WETLANDS AND 11,750 FEET OF STREAM, AND TO CREATE AN ADDITIONAL 16.98 ACRES OF WETLANDS.	16.116(a)(1) & 16.116(2)(2)	APPROVAL	1. ALL DISTURBED AREAS WITHIN THE STREAMS, WETLANDS AND THEIR BUFFERS SHALL BE STABILIZED AND REPLANTED WITH NATIVE VEGETATION AFTER CONSTRUCTION IS COMPLETE, AS SHOWN ON THE ALTERNATIVE COMPLIANCE PLANTING PLANS. 2. THE APPLICANT SHALL OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE U.S. ARMY CORPS OF ENGINEERS FOR DISTURBANCES WITHIN THE STREAMS, WETLANDS AND 25* WETLAND BUFFER. PROVIDE APPROVAL LETTERS FROM MDE AND/OR USACE WITH THE GRADING PERMIT APPLICATION.	05/19/2021
WP–21–077	TO USE THE 30.7–ACRE LIMIT OF DISTURBANCE AS THE GROSS TRACT AREA FOR DETERMINING THE FOREST CONSERVATION OBLIGATION AND TO REMOVE 34 SPECIMEN TREES.	16.1201(v) & 16.1205(a)(3)	APPROVAL	1. THE REMOVAL OF THE 34 SPECIMEN TREES IS PERMITTED AS SHOWN ON THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT. THE REMOVAL OF ANY ADDITIONAL SPECIMEN TREE IS NOT PERMITTED UNDER THIS ALTERNATIVE COMPLIANCE REQUEST. 2. THE APPLICANT SHALL PLANT A MINIMUM OF 68 NATIVE SHADE TREES WITH A PLANTING SIZE OF 3+" DBH WITHIN THE PROJECT LIMITS TO MITIGATE THE REMOVAL OF THE 34 SPECIMEN TREES. THE LOCATIONS, SPECIES AND PLANTING TECHNIQUES SHALL COMPLY WITH THE ALTERNATIVE COMPLIANCE PLANTING PLANS. THE TREES SHALL BE MONITORED FOR AT LEAST 3 GROWING SEASONS AND REPLACED IN–KIND IF THE PLANTINGS DO NOT SURVIVE. 3. PRIOR TO APPLICATION FOR GRADING PERMITS TO INITIATE CONSTRUCTION, A REDLINE TO THE OFFSITE FOREST CONSERVATION BANK PLAN MUST BE APPROVED BY DPZ TO REFLECT THE TRANSFER OF CREDITS TO SATISFY THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT. THE 30.7–ACRE LIMIT OF DISTURBANCE SHALL BE USED AS THE GROSS TRACT AREA FOR DETERMINING THE FOREST CONSERVATION OBLIGATION.	05/19/2021
WP–21–077	TO TEMPORARILY DISTURB 27.7 ACRES OF FLOODPLAIN AND TO USE THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT AS A SUBSTITUTE FOR A SITE DEVELOPMENT PLAN	16.115(c) & 16.155(a)(1)	APPROVAL	1. ALL DISTURBED AREAS WITHIN THE 100–YEAR FLOODPLAIN SHALL BE STABILIZED AND SEEDED OR PLANTED AFTER CONSTRUCTION IS COMPLETE, IN ACCORDANCE WITH THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT. 2. THE APPLICANT SHALL OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE U.S. ARMY CORPS OF ENGINEERS FOR DISTURBANCES WITHIN THE FLOODPLAIN. PROVIDE APPROVAL LETTERS FROM MDE AND/OR USACE WITH THE GRADING PERMIT APPLICATION. 3. THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT SHALL SERVE AS THE SUBSTITUTE FOR A SITE DEVELOPMENT PLAN. NO DISTURBANCE IS PERMITTED BEYOND THE 30.7–ACRE LIMIT OF DISTURBANCE AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT, UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED. 4. ELECTRONIC ORIGINALS OF THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT SHALL BE SUBMITTED TO THE DEPARTMENT OF PLANNING & ZONING FOR SIGNATURES WITHIN 30 DAYS OF THE APPROVAL OF THIS ALTERNATIVE COMPLIANCE REQUEST (ON OR BEFORE JUNE 18, 2021). THE POSTING OF SURETY AND PAYMENT OF ALL REQUIRED FEES SHALL BE COMPLETED PRIOR TO SUBMISSION OF THE ELECTRONIC ORIGINALS (CONTACT THE DEVELOPMENT ENGINEERING DIVISION FOR MORE INFORMATION). 5. THE APPLICANT SHALL COMPLY WITH ALL GRADING PERMIT REQUIREMENTS FROM THE DEPARTMENT OF INSPECTIONS, LICENSES & PERMITS AND HOWARD SOIL CONSERVATION DISTRICT.	05/19/2021

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson (DocuSigned by) — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
(DocuSigned by) — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan (DocuSigned by) — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 24076 — PROFESSIONAL ENGINEER
DocuSigned by: Michael Galvin — 2D0B0B2280404C...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 24076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	**CONTACT**
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

ABBREVIATIONS /GENERAL NOTES

SCALE N/A DATE JUNE, 2021 PROJECT NO. 18–01655–001
DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A
DRAWING NO. GN– 1 OF 1 SHEET NO. 2 OF 116

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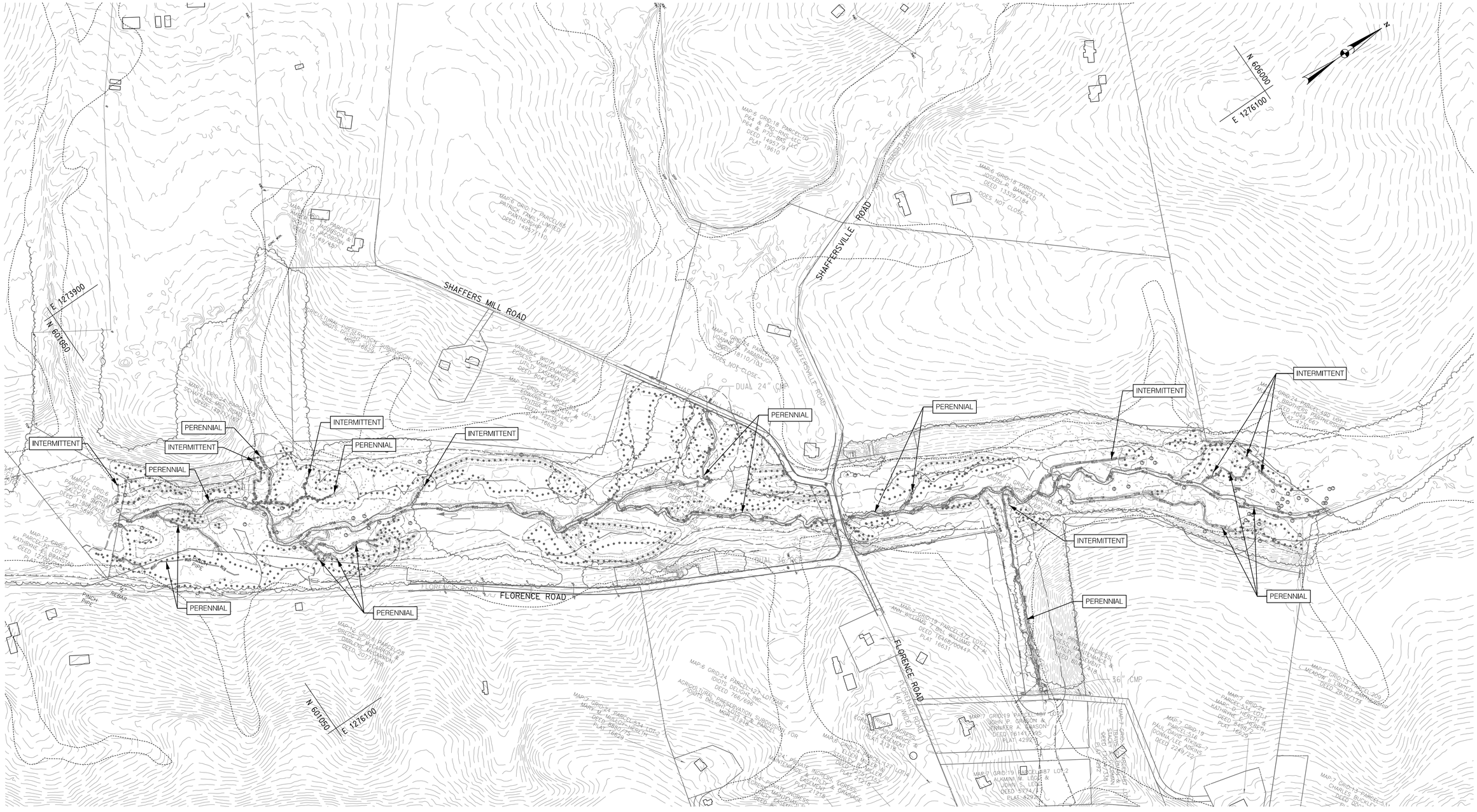
SHAFFERS MILL ROAD
SHAFFERSVILLE ROAD
FLORENCE ROAD
E 1273900
N 601050
N 606000
E 1276100
N 601050
E 1276100
INTERMITTENT
PERENNIAL
DUAL 24" CMP
DUAL 36" CMP
36" CMP
MAP 6 GRID 17 PARCEL 168 PATRICK FAMILY LIMITED PARTNERSHIP DEED 14937/410
MAP 6 GRID 18 PARCEL 70 P64 & P70 BRHC LLC DEED 14957/91 PLAT 19610
MAP 7 GRID 18 PARCEL 71 JACQUELYN BARNFIELD DEED 13339/184 -DOES NOT CLOSE-
MAP 6 GRID 24 PARCEL 128 DEED 7810/703 -DOES NOT CLOSE-
MAP 6 GRID 24 PARCEL 127 IDIOTS DELIGHT, INC. DEED 766/698
MAP 7 GRID 19 PARCEL 187 LOT 1 JOHN P. GRASON & JENNIFER A. GRASON DEED 16141/195 PLAT 42927
MAP 7 GRID 19 PARCEL 187 LOT 2 ALKMINI M. LEGOS & JOHN S. LEGOS DEED 19724/1 PLAT 42927
MAP 7 GRID 19 PARCEL 516 DAVID ATKINS & DONNA LEE ATKINS DEED 2249/272
MAP 7 GRID 19 PARCEL 309 MEADOW II LIMITED PARTNERSHIP DEED 4235/173
MAP 7 GRID 19 PARCEL 534 LOT 1 CATHERINE PERETTI & KATHERINE PERETTI DEED 8486/2 PLAT 16670
MAP 7 GRID 19 PARCEL 534 LOT 2 CATHERINE PERETTI & KATHERINE PERETTI DEED 8486/2 PLAT 16670
MAP 12 GRID 6 PARCEL 2 DEED 1287/197 PLAT 5496
MAP 12 GRID 6 PARCEL 32 KATHERINE T. ABRAMS DEED 1374/0040 PLAT 5496
MAP 6 GRID 24 PARCEL 43 SHAFFERS MILL ROAD DEED 1273/197
MAP 6 GRID 24 PARCEL 134 DEED 9551/775 PLAT 16670
MAP 6 GRID 6 PARCEL 128 MICHAEL T. MCMAHON & ANGELENE MCMAHON DEED 5277/508
MAP 6 GRID 6 PARCEL 32 ARTHUR D. JAMESON & JAMESON DEED 1549/453
AGRICULTURAL PRESERVATION SUBDIVISION FOR IDIOTS DELIGHT FARM MDE 16818
VARIABLE WIDTH INGRESS, EGRESS, MAINTENANCE & UTILITY EASEMENT DEED 8041/424
MAP 7 GRID 24 PARCEL 134 LOT 3 ERNARDO W. HEATH & ONTESSA L. HEATH DEED 2215/ PLAT 16670
MAP 7 GRID 24 PARCEL 134 LOT 2 DEED 9551/775 PLAT 16670
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT & DRAINAGE
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
PRIVATE INGRESS, EGRESS & UTILITY EASEMENT 218
FLORENCE ROAD 40' WIDE
FLORENCE ROAD
CONSTRUCTION ENTRANCE
CONSTRUCTION ENTRANCE
CONSTRUCTION ENTRANCE

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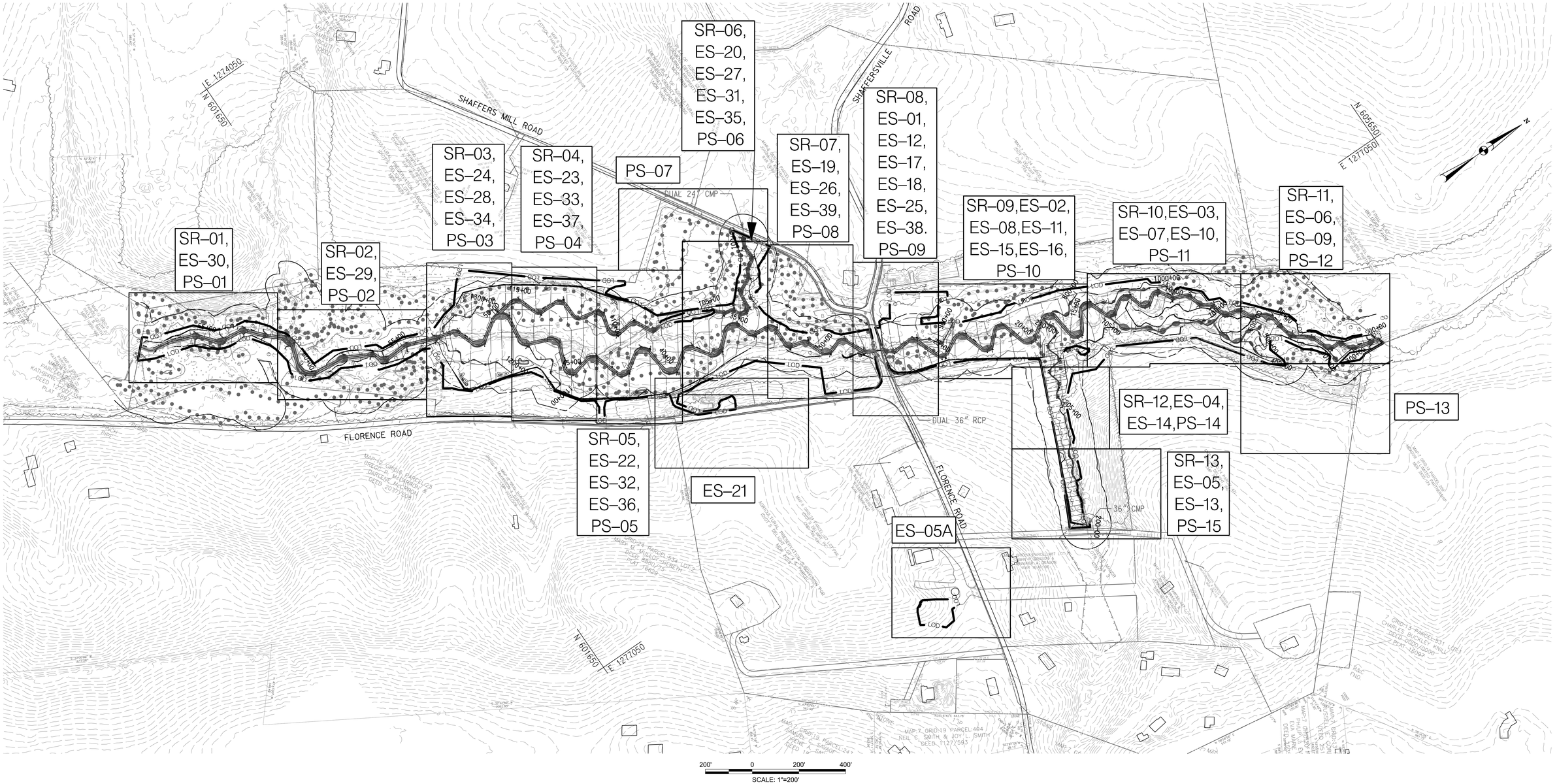

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
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APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gronan	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

KEY MAP

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18–01655–001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A
DRAWING NO.	KM – 1 OF 1	SHEET NO.	4 OF 116

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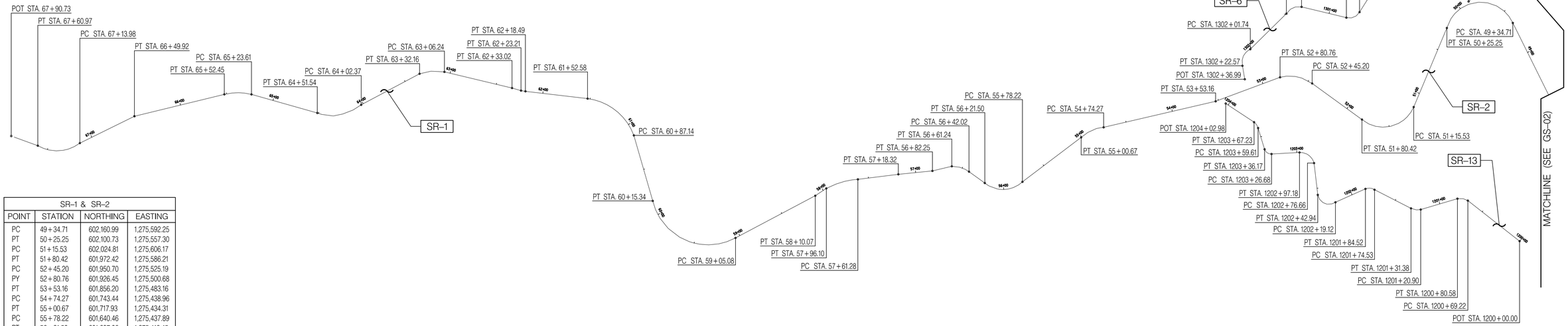

SR–8A			
POINT	STATION	NORTHING	EASTING
POT	116+05.52	602,135.35	1,275,547.30

SR–6			
POINT	STATION	NORTHING	EASTING
POT	1200+00.00	602,092.20	1,275,483.57
PT	1300+25.83	602,070.47	1,275,476.01
PC	1300+65.13	602,034.35	1,275,491.51
PT	1300+81.29	602,019.59	1,275,488.45
PC	1301+29.82	601,987.11	1,275,452.38
PT	1301+48.38	601,969.89	1,275,449.24
PC	1302+01.74	601,917.35	1,275,458.56
PT	1302+22.57	601,900.67	1,275,468.27
POT	1302+36.99	601,894.68	1,275,481.38

SR–1 & SR–2			
POINT	STATION	NORTHING	EASTING
PC	49+34.71	602,160.99	1,275,592.25
PT	50+25.25	602,100.73	1,275,557.30
PC	51+15.53	602,024.81	1,275,606.17
PT	51+80.42	601,972.42	1,275,586.21
PC	52+45.20	601,950.70	1,275,525.19
PY	52+80.76	601,926.45	1,275,500.68
PT	53+53.16	601,856.20	1,275,483.16
PC	54+74.27	601,743.44	1,275,438.96
PT	55+00.67	601,717.93	1,275,434.31
PC	55+78.22	601,640.46	1,275,437.89
PT	56+21.50	601,607.06	1,275,416.45
PC	56+42.02	601,600.11	1,275,397.15
PT	56+61.24	601,588.39	1,275,382.28
PT	56+82.25	601,568.78	1,275,374.72
PT	57+18.32	601,537.17	1,275,357.36
PC	57+61.28	601,499.02	1,275,337.59
PT	57+96.10	601,466.22	1,275,326.66
PT	58+10.07	601,452.25	1,275,326.43
PC	59+05.08	601,357.88	1,275,315.50
PT	60+15.34	601,308.05	1,275,234.05
PC	60+87.14	601,330.69	1,275,165.91
PT	61+52.58	601,312.40	1,275,106.40
PT	62+18.49	601,262.78	1,275,063.02
PT	62+23.21	601,259.36	1,275,059.76
PT	62+33.02	601,253.12	1,275,052.18
PC	63+06.24	601,204.02	1,274,997.87
PT	63+32.16	601,181.28	1,274,984.69
PC	64+02.37	601,112.12	1,274,976.82
PT	64+51.54	601,069.15	1,274,957.76
PC	65+23.61	601,023.05	1,274,902.37
PT	65+52.45	600,999.51	1,274,886.16
PT	66+49.92	600,908.37	1,274,851.60
PC	67+13.98	600,844.97	1,274,842.38
PT	67+60.97	600,806.93	1,274,819.52
POT	67+90.73	600,789.61	1,274,795.33

SR–13			
POINT	STATION	NORTHING	EASTING
POT	1200+00.00	602,036.85	1,275,785.72
PC	1200+69.22	602,016.07	1,275,719.70
PT	1200+80.58	602,008.18	1,275,711.80
PC	1201+20.90	601,969.83	1,275,699.35
PT	1201+31.38	601,962.09	1,275,692.53
PC	1201+74.53	601,941.50	1,275,654.61
PT	1201+84.52	601,934.13	1,275,648.46
PC	1202+19.12	601,900.10	1,275,642.21
PT	1202+42.94	601,889.16	1,275,625.26
PC	1202+76.66	601,904.89	1,275,595.44
PT	1202+97.18	601,898.56	1,275,577.51
PC	1203+26.68	601,873.35	1,275,562.21
PT	1203+36.17	601,870.13	1,275,553.99
PC	1203+59.61	601,877.17	1,275,531.63
PT	1203+67.23	601,877.15	1,275,524.15
POT	1204+02.98	601,863.66	1,275,491.05

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
DocuSigned by: 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan 7/12/2021
DIRECTOR, OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	" I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 , EXPIRATION DATE: 6/9/2023 ."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

GEOMETRY SHEET

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY JMB LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. GS–01 OF 04 SHEET NO. 5 OF 116

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Sunday, June 13, 2021 AT 08:38 PM

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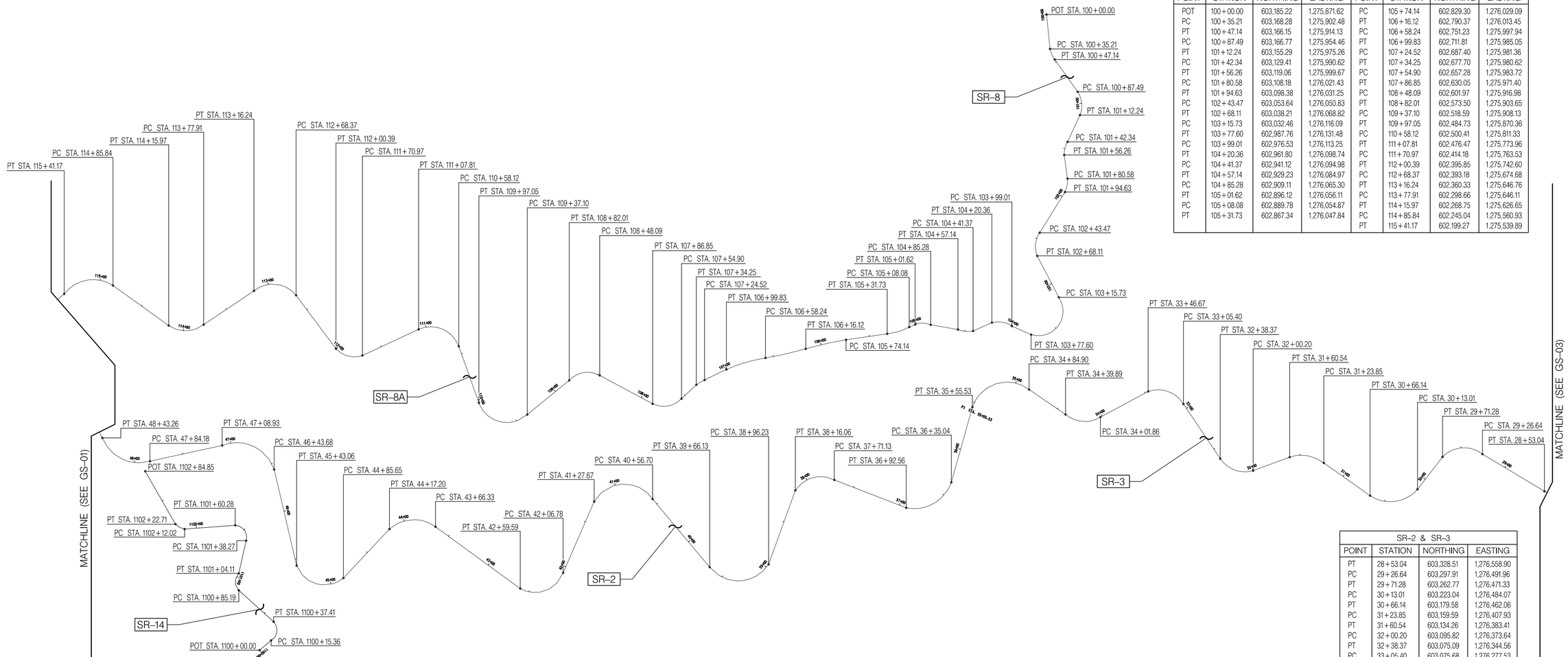

SR–8 & SR–8A							
POINT	STATION	NORTHING	EASTING	POINT	STATION	NORTHING	EASTING
POT	100+00.00	603,185.22	1,275,871.62	PC	105+74.14	602,829.30	1,276,029.09
PC	100+35.21	603,168.28	1,275,902.48	PT	106+16.12	602,790.37	1,276,013.45
PT	100+47.14	603,166.15	1,275,914.13	PC	106+58.24	602,751.23	1,275,997.94
PC	100+87.49	603,166.77	1,275,954.46	PT	106+99.83	602,711.81	1,275,985.05
PT	101+12.24	603,155.29	1,275,975.26	PC	107+24.52	602,687.40	1,275,981.36
PC	101+42.34	603,129.41	1,275,990.62	PT	107+34.25	602,677.70	1,275,980.62
PT	101+56.26	603,119.06	1,275,999.67	PC	107+54.90	602,657.28	1,275,983.72
PC	101+80.58	603,108.18	1,276,021.43	PT	107+86.85	602,630.05	1,275,971.40
PT	101+94.63	603,098.38	1,276,031.25	PC	108+48.09	602,601.97	1,275,916.98
PC	102+43.47	603,053.64	1,276,050.83	PT	108+82.01	602,573.50	1,275,903.65
PT	102+68.11	603,038.21	1,276,068.82	PC	109+37.10	602,518.59	1,275,908.13
PC	103+15.73	603,032.46	1,276,116.09	PT	109+97.05	602,484.73	1,275,870.36
PT	103+77.60	602,987.76	1,276,131.48	PC	110+58.12	602,500.41	1,275,811.33
PC	103+99.01	602,976.53	1,276,113.25	PT	111+07.81	602,476.47	1,275,773.96
PT	104+20.36	602,961.80	1,276,098.74	PC	111+70.97	602,414.18	1,275,763.53
PC	104+41.37	602,941.12	1,276,094.98	PT	112+00.39	602,395.85	1,275,742.60
PT	104+57.14	602,929.23	1,276,084.97	PC	112+68.37	602,393.18	1,275,674.68
PC	104+85.28	602,909.11	1,276,065.30	PT	113+16.24	602,360.33	1,275,646.76
PT	105+01.62	602,896.12	1,276,056.11	PC	113+77.91	602,298.66	1,275,646.11
PC	105+08.08	602,889.78	1,276,054.87	PT	114+15.97	602,268.75	1,275,626.65
PT	105+31.73	602,867.34	1,276,047.84	PC	114+85.84	602,245.04	1,275,560.93
				PT	115+41.17	602,199.27	1,275,539.89

SR–2 & SR–3			
POINT	STATION	NORTHING	EASTING
PT	28+53.04	603,328.51	1,276,558.90
PC	29+26.64	603,297.91	1,276,491.96
PT	29+71.28	603,262.77	1,276,471.33
PC	30+13.01	603,223.04	1,276,484.07
PT	30+66.14	603,179.58	1,276,462.06
PC	31+23.85	603,159.59	1,276,407.93
PT	31+60.54	603,134.26	1,276,383.41
PC	32+00.20	603,095.82	1,276,373.64
PT	32+38.37	603,075.09	1,276,344.56
PC	33+05.40	603,075.68	1,276,277.53
PT	33+46.67	603,053.27	1,276,246.63
PC	34+01.86	602,998.40	1,276,240.66
PT	34+39.89	602,970.64	1,276,218.33
PC	34+84.90	602,954.41	1,276,176.34
PT	35+55.53	602,896.59	1,276,158.58
PC	36+35.04	602,835.57	1,276,209.55
PT	36+92.56	602,783.07	1,276,204.84
PC	37+71.13	602,738.73	1,276,139.98
PT	38+16.06	602,700.05	1,276,126.24
PC	38+96.23	602,634.91	1,276,172.98
PT	39+66.13	602,583.80	1,276,141.42
PC	40+56.70	602,575.17	1,276,051.27
PT	41+27.67	602,524.61	1,276,019.77
PC	42+06.78	602,457.51	1,276,061.62
PT	42+59.59	602,412.45	1,276,050.15
PC	43+66.33	602,376.89	1,275,949.50
PT	44+17.20	602,336.83	1,275,924.84
PC	44+85.65	602,269.96	1,275,939.44
PT	45+43.06	602,237.80	1,275,902.06
PC	46+43.68	602,274.38	1,275,808.32
PT	47+08.93	602,244.52	1,275,758.18
PC	47+84.18	602,174.85	1,275,729.75
PT	48+43.26	602,148.26	1,275,682.81

SR–14			
POINT	STATION	NORTHING	EASTING
POT	1100+00.00	602,158.01	1,275,951.58
PC	1100+15.36	602,173.30	1,275,950.07
PT	1100+37.41	602,186.18	1,275,935.83
PC	1100+85.19	602,175.05	1,275,889.36
PT	1101+04.11	602,184.82	1,275,875.19
PC	1101+38.27	602,209.82	1,275,851.92
PT	1101+60.28	602,209.56	1,275,832.77
PC	1202+12.02	602,164.84	1,275,806.73
PT	1102+22.71	602,160.03	1,275,797.35
POT	1102+84.85	602,165.05	1,275,735.42

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

GEOMETRY SHEET

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY JMB LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. GS–02 OF 04 SHEET NO. 6 OF 116

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Sunday, June 13, 2021 AT 08:39 PM

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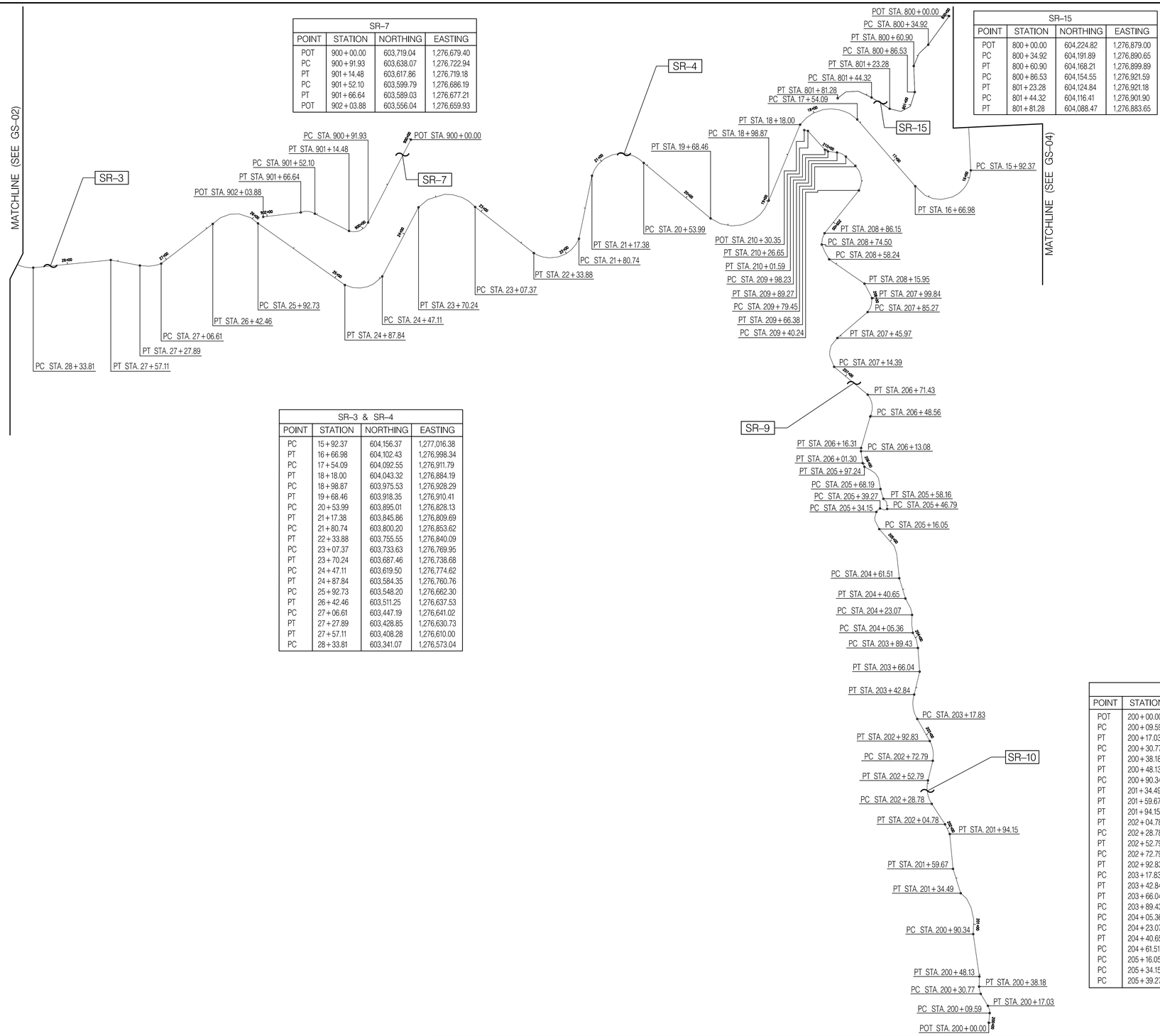

SR–7			
POINT	STATION	NORTHING	EASTING
POT	900+00.00	603,719.04	1,276,679.40
PC	900+91.93	603,638.07	1,276,722.94
PT	901+14.48	603,617.86	1,276,719.18
PC	901+52.10	603,599.79	1,276,686.19
PT	901+66.64	603,589.03	1,276,677.21
POT	902+03.88	603,556.04	1,276,659.93

SR–15			
POINT	STATION	NORTHING	EASTING
POT	800+00.00	604,224.82	1,276,879.00
PC	800+34.92	604,191.89	1,276,890.65
PT	800+60.90	604,168.21	1,276,899.89
PC	800+86.53	604,154.55	1,276,921.59
PT	801+23.28	604,124.84	1,276,921.18
PC	801+44.32	604,116.41	1,276,901.90
PT	801+81.28	604,088.47	1,276,883.65

SR–3 & SR–4			
POINT	STATION	NORTHING	EASTING
PC	15+92.37	604,156.37	1,277,016.38
PT	16+66.98	604,102.43	1,276,998.34
PC	17+54.09	604,092.55	1,276,911.79
PT	18+18.00	604,043.32	1,276,884.19
PC	18+98.87	603,975.53	1,276,928.29
PT	19+68.46	603,918.35	1,276,910.41
PC	20+53.99	603,895.01	1,276,828.13
PT	21+17.38	603,845.86	1,276,809.69
PC	21+80.74	603,800.20	1,276,853.62
PT	22+33.88	603,755.55	1,276,840.09
PC	23+07.37	603,733.63	1,276,769.95
PT	23+70.24	603,687.46	1,276,738.68
PC	24+47.11	603,619.50	1,276,774.62
PT	24+87.84	603,584.35	1,276,760.76
PC	25+92.73	603,548.20	1,276,662.30
PT	26+42.46	603,511.25	1,276,637.53
PC	27+06.61	603,447.19	1,276,641.02
PT	27+27.89	603,428.85	1,276,630.73
PT	27+57.11	603,408.28	1,276,610.00
PC	28+33.81	603,341.07	1,276,573.04

SR–9 & SR–10							
POINT	STATION	NORTHING	EASTING	POINT	STATION	NORTHING	EASTING
POT	200+00.00	603,695.68	1,277,718.78	PC	205+46.79	603,899.69	1,277,244.85
PC	200+09.59	603,701.84	1,277,711.43	PT	205+58.16	603,902.28	1,277,234.44
PT	200+17.03	603,704.42	1,277,704.56	PC	205+68.19	603,905.41	1,277,224.92
PC	200+30.77	603,705.28	1,277,690.84	PT	205+97.24	603,904.76	1,277,197.93
PT	200+38.18	603,708.02	1,277,684.02	PT	206+01.30	603,905.36	1,277,193.91
PT	200+48.13	603,713.85	1,277,675.96	PC	206+13.08	603,910.62	1,277,183.38
PC	200+90.34	603,732.49	1,277,638.09	PT	206+16.31	603,912.56	1,277,180.79
PT	201+34.49	603,745.13	1,277,597.95	PC	206+48.56	603,937.45	1,277,160.30
PT	201+59.67	603,752.46	1,277,573.85	PT	206+71.43	603,947.63	1,277,141.15
PT	201+94.15	603,769.23	1,277,543.73	PC	207+14.39	603,935.90	1,277,099.83
PT	202+04.78	603,770.85	1,277,533.23	PT	207+45.97	603,954.55	1,277,078.22
PC	202+28.78	603,771.46	1,277,509.23	PC	207+85.27	603,993.63	1,277,073.99
PT	202+52.79	603,781.41	1,277,488.11	PT	207+99.84	604,004.87	1,277,065.18
PC	202+72.79	603,796.34	1,277,474.80	PT	208+15.95	604,006.89	1,277,049.20
PT	202+92.83	603,804.86	1,277,457.09	PC	208+58.24	603,991.79	1,277,009.71
PC	203+17.83	603,807.02	1,277,432.18	PC	208+74.50	603,993.97	1,276,993.62
PT	203+42.84	603,818.15	1,277,410.63	PT	208+86.15	604,002.59	1,276,985.97
PT	203+66.04	603,835.36	1,277,395.07	PC	209+40.24	604,054.38	1,276,970.36
PC	203+89.43	603,847.15	1,277,374.87	PT	209+66.38	604,065.23	1,276,948.45
PC	204+05.36	603,851.46	1,277,359.69	PC	209+79.45	604,062.63	1,276,935.65
PC	204+23.07	603,860.83	1,277,344.75	PT	209+89.27	604,057.75	1,276,927.33
PT	204+40.65	603,864.60	1,277,327.74	PC	209+98.23	604,051.01	1,276,921.42
PC	204+61.51	603,870.91	1,277,307.85	PT	210+01.59	604,049.47	1,276,918.44
PC	205+16.05	603,882.01	1,277,256.74	PT	210+26.65	604,046.16	1,276,893.60
PC	205+34.15	603,889.26	1,277,241.21	POT	210+30.35	604,043.61	1,276,890.92
PC	205+39.27	603,894.25	1,277,240.41				

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

GEOMETRY SHEET

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY JMB LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. GS–03 OF 04 SHEET NO. 7 OF 116

BY: PCrawford –

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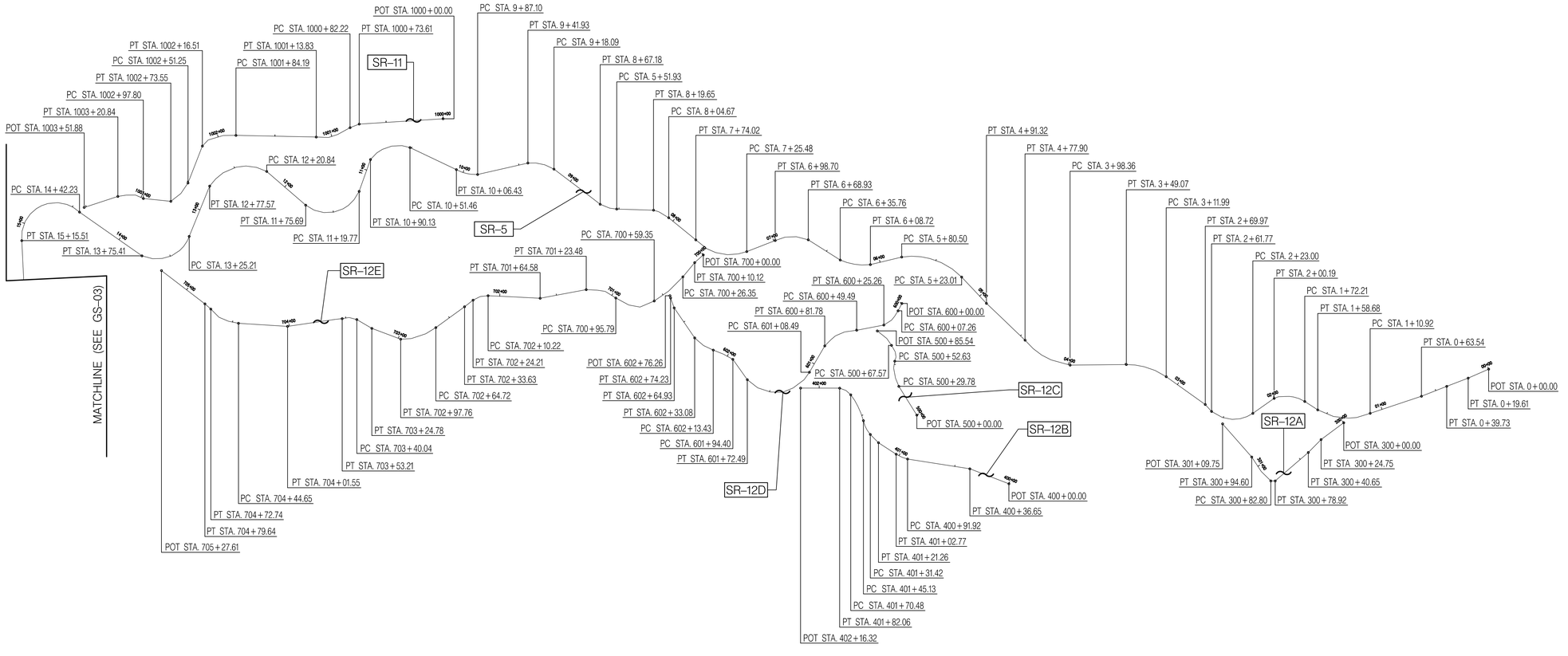
SR–11			
POINT	STATION	NORTHING	EASTING
POT	1000+00.00	604,561.60	1,277,071.79
PT	1000+73.61	604,498.39	1,277,034.06
PC	1000+82.22	604,490.01	1,277,032.12
PT	1001+13.83	604,460.91	1,277,022.11
PC	1001+84.19	604,403.73	1,276,981.10
PT	1002+16.51	604,374.17	1,276,972.16
PC	1002+51.25	604,345.47	1,276,991.74
PT	1002+73.55	604,323.95	1,276,996.50
PC	1002+97.80	604,305.48	1,276,980.78
PT	1003+20.84	604,288.10	1,276,966.67
POT	1003+51.88	604,258.31	1,276,957.91



SR–12E			
POINT	STATION	NORTHING	EASTING
POT	700+00.00	604,682.06	1,277,299.29
PT	700+10.12	604,672.03	1,277,300.62
PC	700+26.35	604,656.41	1,277,305.04
PC	700+59.35	604,623.71	1,277,308.29
PC	700+95.79	604,597.49	1,277,287.06
PT	701+23.48	604,580.23	1,277,266.35
PT	701+64.58	604,542.63	1,277,249.75
PC	702+10.22	604,506.33	1,277,222.09
PT	702+24.21	604,493.24	1,277,217.85
PT	702+33.63	604,483.84	1,277,218.40
PC	702+64.72	604,452.76	1,277,219.23
PT	702+97.76	604,421.60	1,277,210.19
PT	703+24.78	604,406.11	1,277,188.06
PC	703+40.04	604,399.66	1,277,174.22
PT	703+53.21	604,389.52	1,277,166.29
PT	704+01.55	604,346.22	1,277,144.79
PC	704+44.65	604,312.29	1,277,118.22
PT	704+72.74	604,299.38	1,277,094.23
PT	704+79.64	604,297.69	1,277,087.54
POT	705+27.61	604,282.80	1,277,041.94

SR–12D			
POINT	STATION	NORTHING	EASTING
POT	600+00.00	604,801.45	1,277,432.93
PC	600+07.26	604,795.04	1,277,436.33
PT	600+25.26	604,777.70	1,277,439.57
PC	600+49.49	604,755.51	1,277,429.85
PT	600+81.78	604,724.66	1,277,425.38
PC	601+08.49	604,700.51	1,277,436.79
PT	601+72.49	604,651.95	1,277,411.39
PC	601+94.40	604,651.58	1,277,389.48
PC	602+13.43	604,642.02	1,277,373.07
PT	602+33.08	604,634.65	1,277,355.06
PT	602+64.93	604,634.72	1,277,323.21
PT	602+74.23	604,637.09	1,277,314.21
POT	602+76.26	604,637.72	1,277,312.29

SR–12C			
POINT	STATION	NORTHING	EASTING
POT	500+00.00	604,756.82	1,277,521.09
PC	500+29.78	604,758.11	1,277,491.34
PC	500+52.63	604,767.65	1,277,471.13
PC	500+67.57	604,773.16	1,277,458.10
POT	500+85.54	604,770.06	1,277,440.59

SR–12B			
POINT	STATION	NORTHING	EASTING
POT	400+00.00	604,789.27	1,277,616.36
PT	400+36.65	604,768.47	1,277,586.18
PC	400+91.92	604,728.33	1,277,548.20
PT	401+02.77	604,722.50	1,277,539.09
PT	401+21.26	604,715.42	1,277,522.01
PC	401+31.42	604,713.62	1,277,512.01
PC	401+45.13	604,715.49	1,277,498.56
PC	401+70.48	604,719.16	1,277,473.64
PT	401+82.06	604,714.45	1,277,463.30
POT	402+16.32	604,686.25	1,277,443.86

SR–12A			
POINT	STATION	NORTHING	EASTING
POT	300+00.00	605,061.51	1,277,738.31
PT	300+24.75	605,036.78	1,277,739.24
PT	300+40.65	605,021.16	1,277,742.22
PT	300+78.92	604,983.12	1,277,746.41
PC	300+82.80	604,979.93	1,277,744.20
PT	300+94.60	604,978.01	1,277,717.47
POT	301+09.75	604,973.39	1,277,679.02

SR–5							
POINT	STATION	NORTHING	EASTING	POINT	STATION	NORTHING	EASTING
POT	0+00.00	605,192.82	1,277,771.44	PT	6+98.70	604,741.19	1,277,324.58
PT	0+19.61	605,173.55	1,277,767.75	PC	7+25.48	604,715.12	1,277,318.47
PT	0+39.73	605,153.99	1,277,763.08	PT	7+74.02	604,684.13	1,277,284.74
PT	0+63.54	605,130.79	1,277,757.72	PC	8+04.67	604,675.53	1,277,255.31
PC	1+10.92	605,085.26	1,277,744.59	PT	8+19.65	604,668.33	1,277,242.30
PT	1+58.68	605,049.08	1,277,716.12	PC	8+51.93	604,642.28	1,277,223.24
PC	1+72.21	605,043.89	1,277,703.62	PT	8+67.18	604,632.67	1,277,211.55
PT	2+00.19	605,023.29	1,277,686.17	PC	9+18.09	604,616.74	1,277,163.20
PC	2+23.00	605,000.48	1,277,686.45	PT	9+41.93	604,600.92	1,277,145.87
PT	2+61.77	604,971.61	1,277,664.58	PC	9+87.10	604,558.92	1,277,129.24
PT	2+69.97	604,970.48	1,277,656.45	PT	10+06.43	604,545.99	1,277,115.19
PC	3+11.99	604,956.07	1,277,616.98	PC	10+51.46	604,523.41	1,277,076.22
PT	3+49.07	604,933.30	1,277,588.40	PT	10+90.13	604,488.96	1,277,065.27
PC	3+98.36	604,892.37	1,277,560.95	PC	11+19.77	604,464.97	1,277,082.68
PT	4+77.90	604,872.22	1,277,520.58	PT	11+75.69	604,419.48	1,277,066.14
PT	4+91.32	604,862.57	1,277,474.77	PC	12+20.84	604,408.08	1,277,022.45
PC	5+23.01	604,857.74	1,277,443.45	PT	12+77.57	604,359.58	1,277,004.72
PC	5+80.50	604,824.34	1,277,399.26	PC	13+25.21	604,319.80	1,277,030.94
PT	6+08.72	604,979.98	1,277,389.21	PT	13+75.41	604,276.02	1,277,021.57
PC	6+35.76	604,778.47	1,277,370.92	PC	14+22.23	604,252.61	1,276,958.99
PT	6+68.93	604,765.40	1,277,340.44	PT	15+15.51	604,196.74	1,276,950.98

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Amy Gowan — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

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HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

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SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
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F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. GS–04 OF 04 SHEET NO. 8 OF 116

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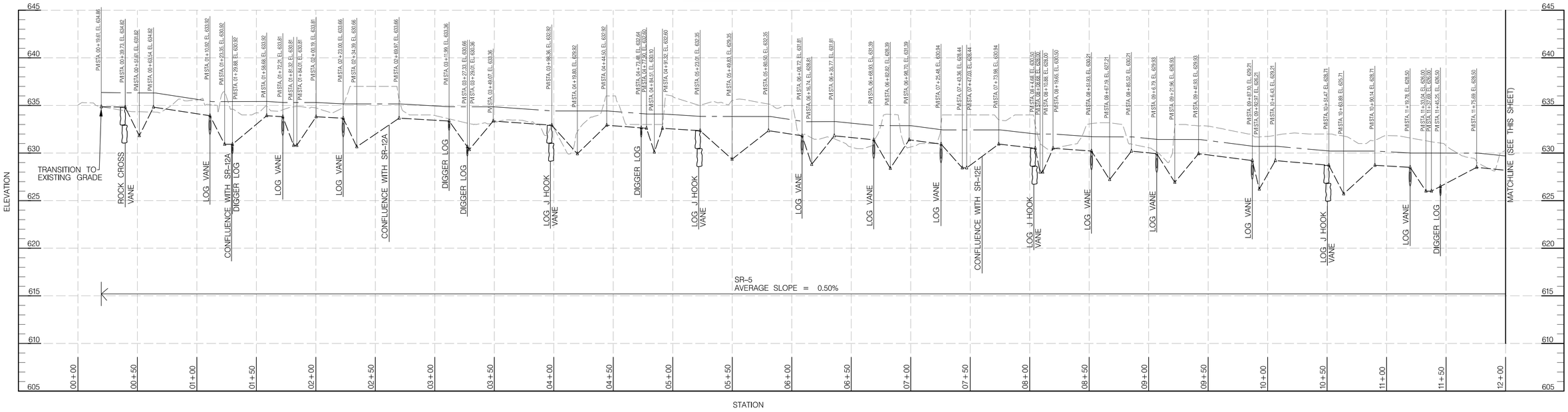
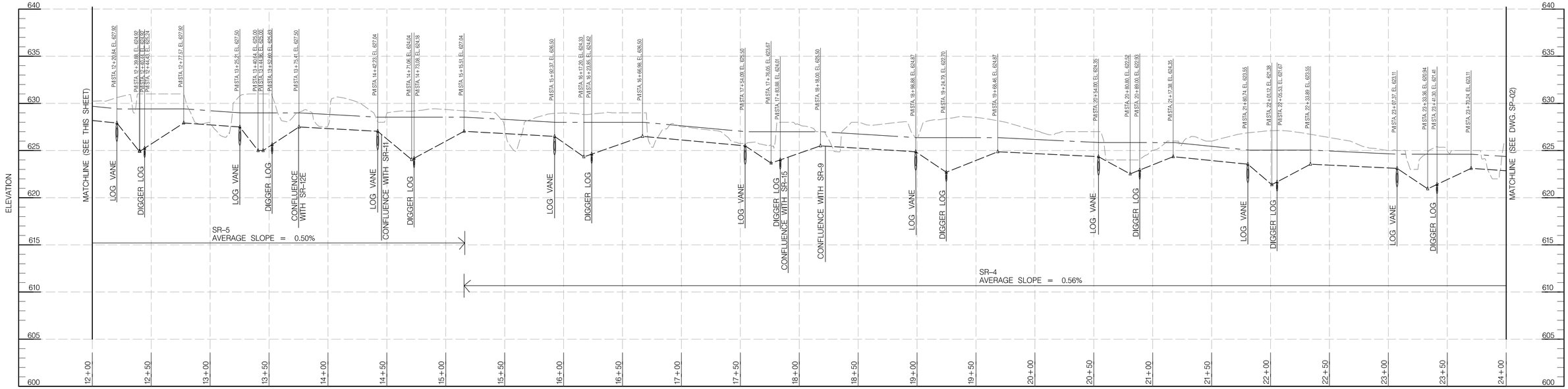
PROFILE FOR REACH SR-5



PROFILE FOR REACHES SR-4 AND SR-5



LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE.
REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF DEVELOPMENT ENGINEERING DIVISION — DATE
Chief Engineer — 7/9/2021
CHIEF DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
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"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by: Michael Galvin
2008BDB2258540A...

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SP – 01 OF 09 SHEET NO. 9 OF 116

BY: PCrawford –

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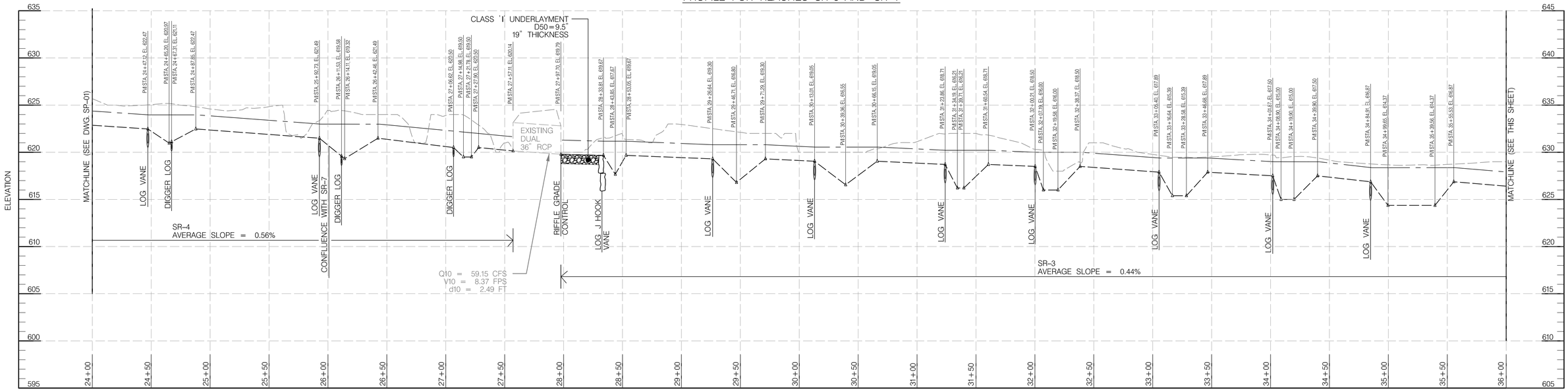
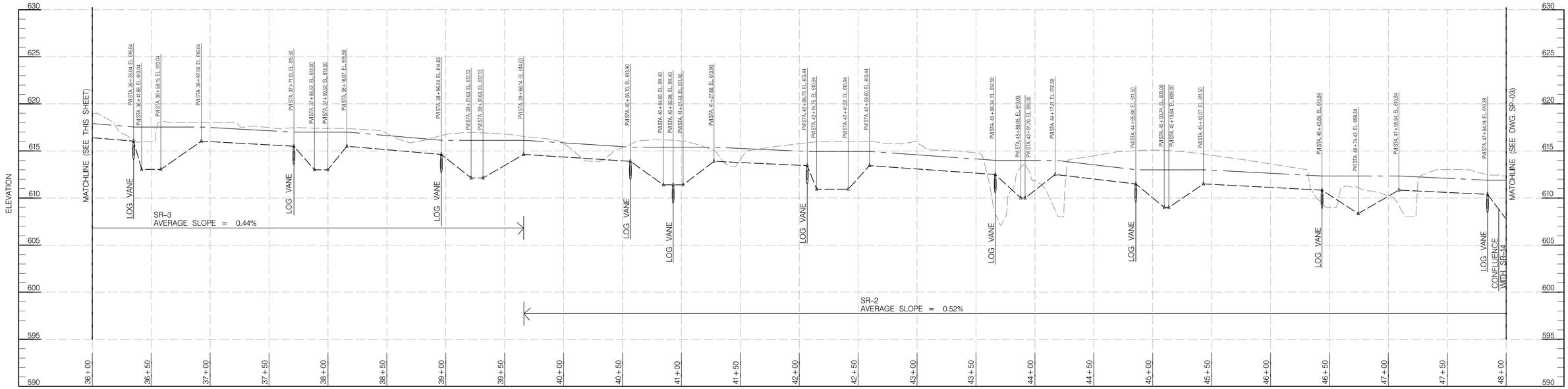
Sunday, June 13, 2021 AT 08:55 PM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

PROFILE FOR REACHES SR–3 AND SR–4



PROFILE FOR REACHES SR–2 AND SR–3



LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE. REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 7/9/2021
DATE

DIRECTOR, DEPT. OF PLANNING & ZONING
Amy Gowan — 7/12/2021
DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SP – 02 OF 09 SHEET NO. 10 OF 116

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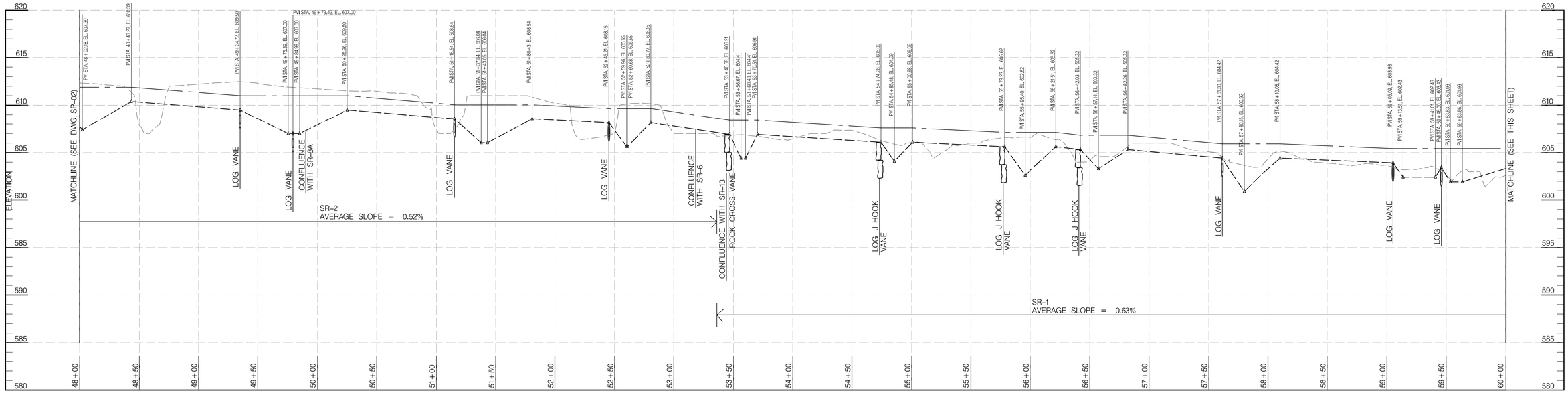
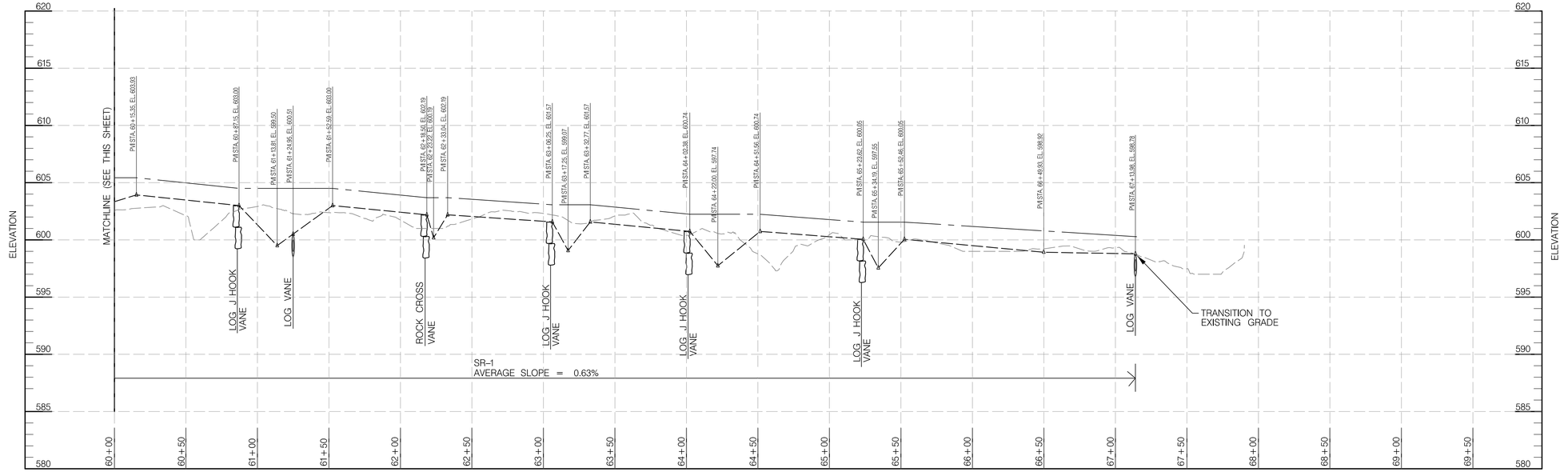
PROFILE FOR REACHES SR-1 AND SR-2



PROFILE FOR REACH SR-1



LEGEND

EXISTING GROUND

FLOODPLAIN/BANKFULL ELEV.

PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE. REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Amy Gowan — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER / DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SP – 03 OF 09 SHEET NO. 11 OF 116

BY: PCrawford –

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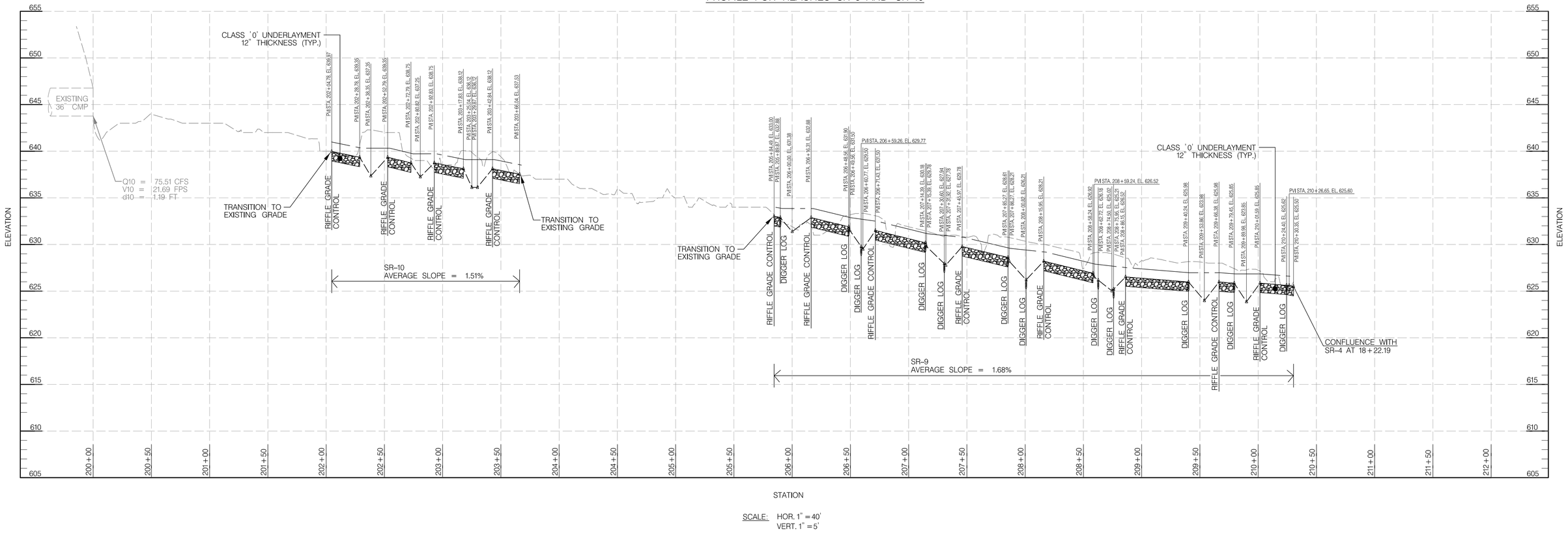
Sunday, June 13, 2021 AT 09:05 PM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

PROFILE FOR REACHES SR-9 AND SR-10



SCALE: HOR. 1" = 40'
VERT. 1" = 5'

LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE. REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Signature — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Signature — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
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40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
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CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by: Michael Galvin
A0088D6229B34DA...

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC — COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC — LOGMILE N/A
CHECKED BY JJM — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. SP – 04 OF 09 — SHEET NO. 12 OF 116

BY: PCrawford –

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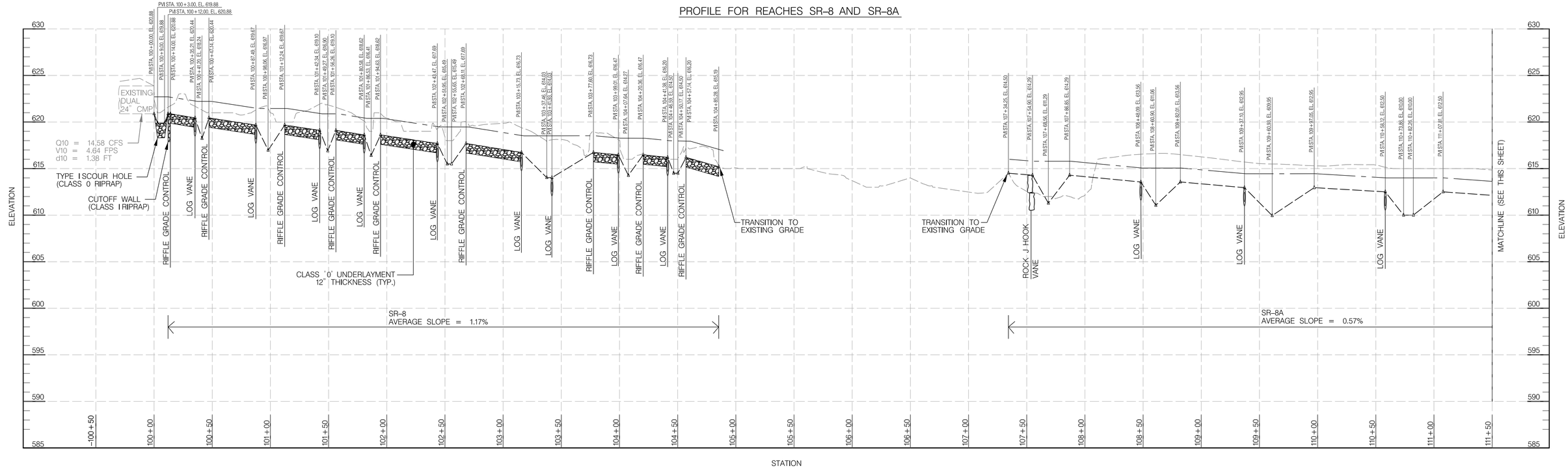
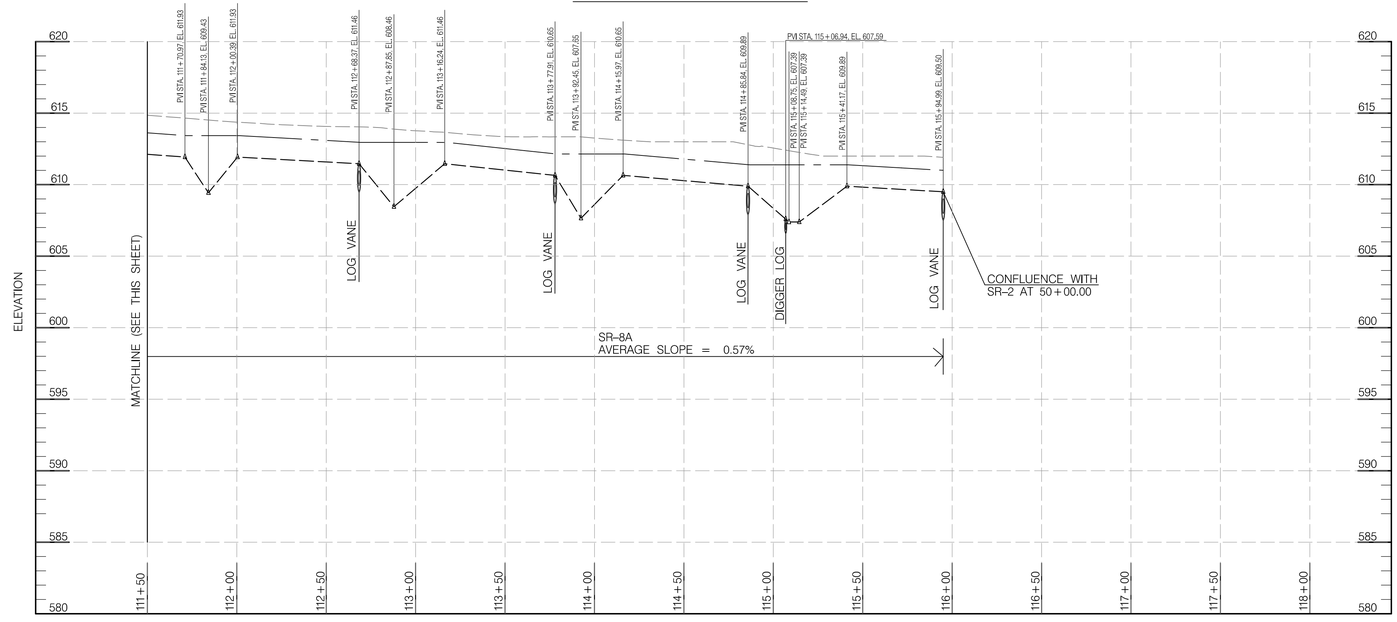
PROFILE FOR REACHES SR-8 AND SR-8A



PROFILE FOR REACH SR-8A



LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE.
REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
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CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC — COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC — LOGMILE N/A
CHECKED BY JJM — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. SP – 05 OF 09 — SHEET NO. 13 OF 116

BY: PCrawford –

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Tuesday, June 15, 2021 AT 09:00 AM

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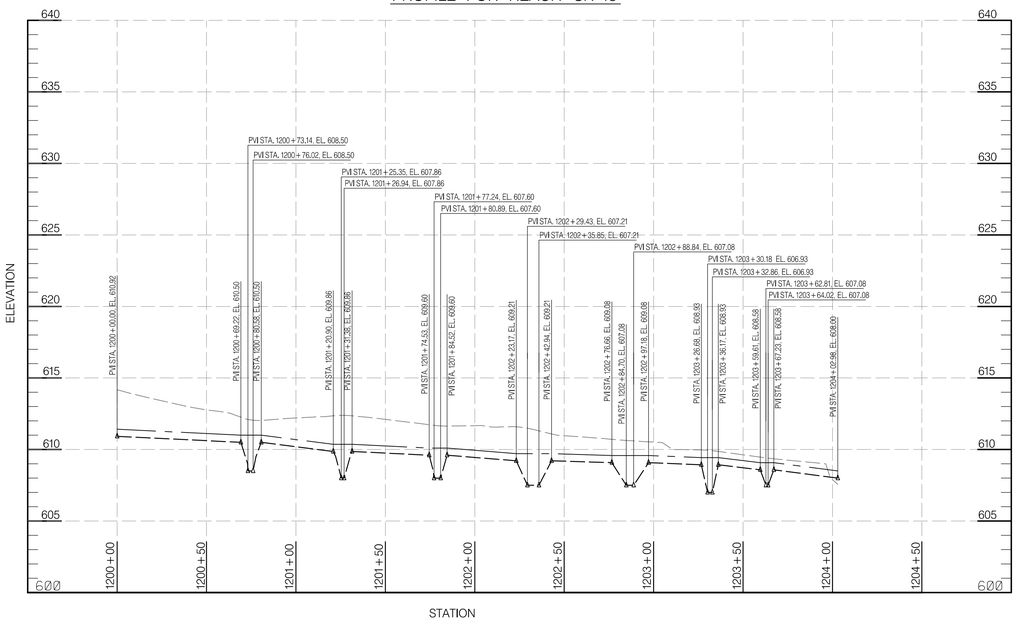
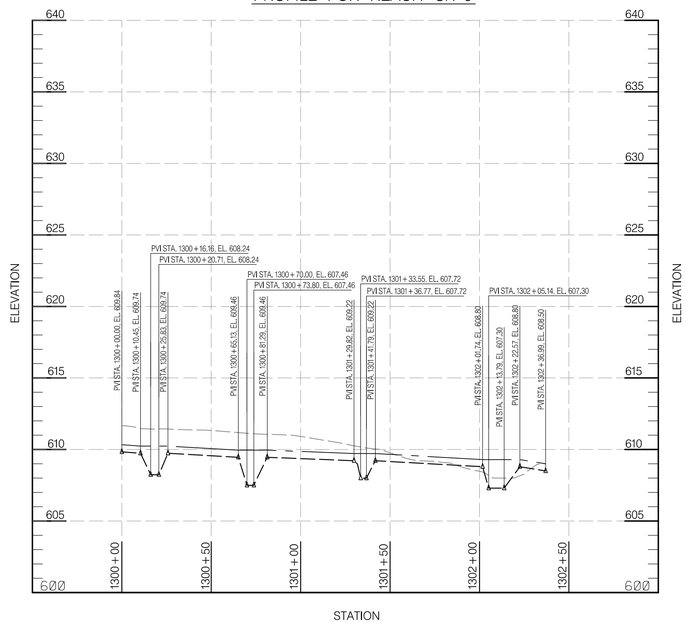
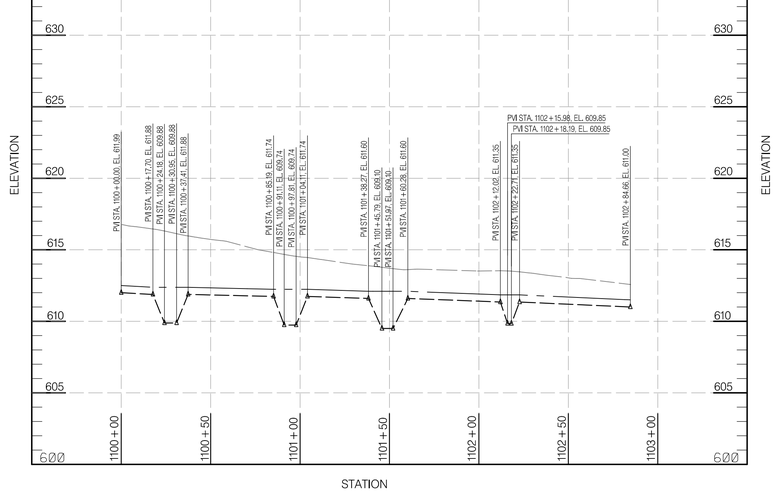
PROFILE FOR REACH SR-13



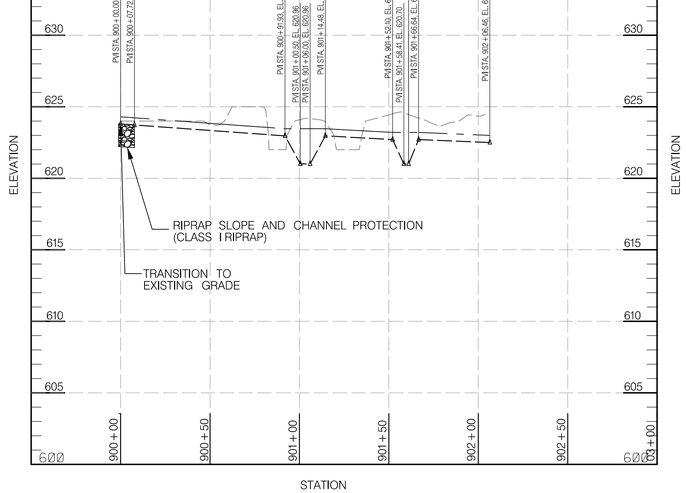
PROFILE FOR REACH SR-6



PROFILE FOR REACH SR-14



PROFILE FOR REACH SR-7



LEGEND

EXISTING GROUND

FLOODPLAIN/BANKFULL ELEV.

PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE. REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Amy Gowan — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Lynda Eisenberg — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SP – 06 OF 09 SHEET NO. 14 OF 116

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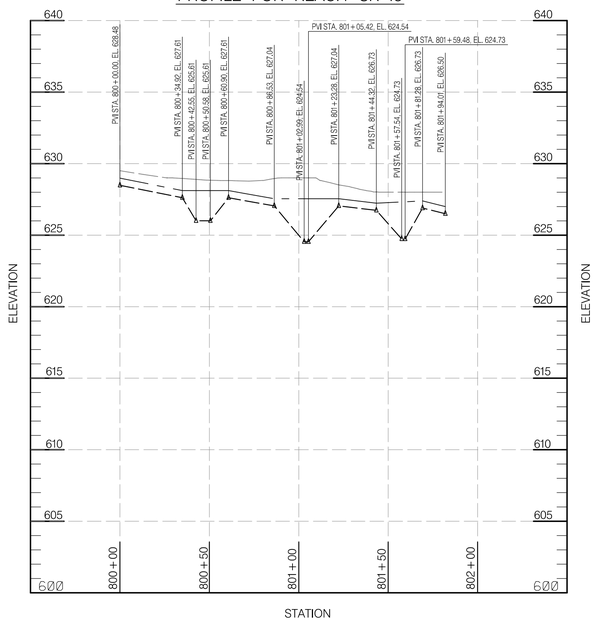
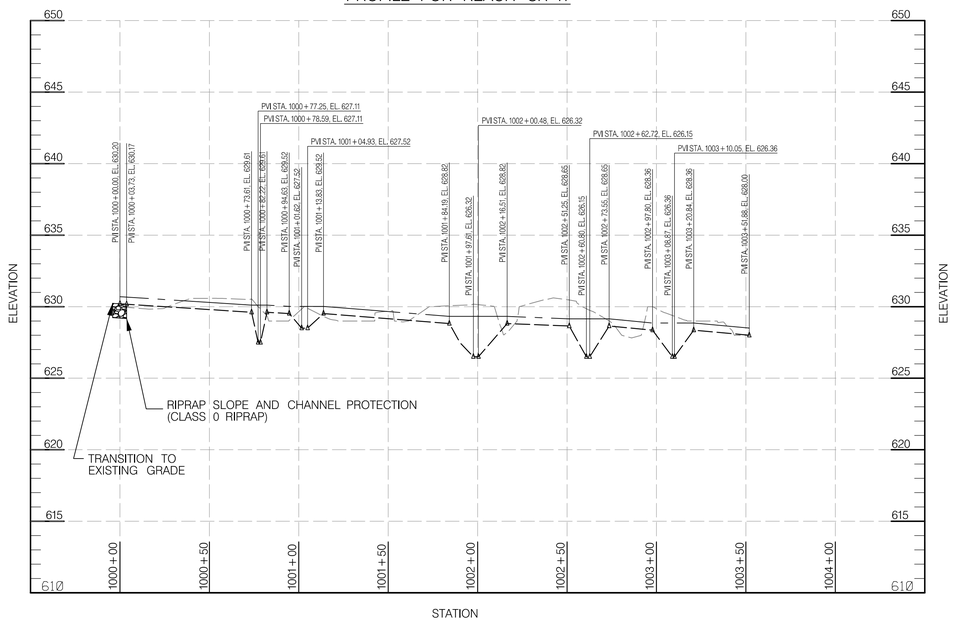
PROFILE FOR REACH SR–15



PROFILE FOR REACH SR–11



PROFILE FOR REACH SR–12E*

*CREDITED AS PART OF SR–12.

LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE. REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

DocuSigned by: Michael Galvin — 2008B0B62B884DA...

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SP – 07 OF 09 SHEET NO. 15 OF 116

O:\2018\18655.001 Patuxent Mitigation_CAD\pdf\Pa-0907_Patuxent.dgn
Sunday, June 13, 2021 AT 09:10 PM

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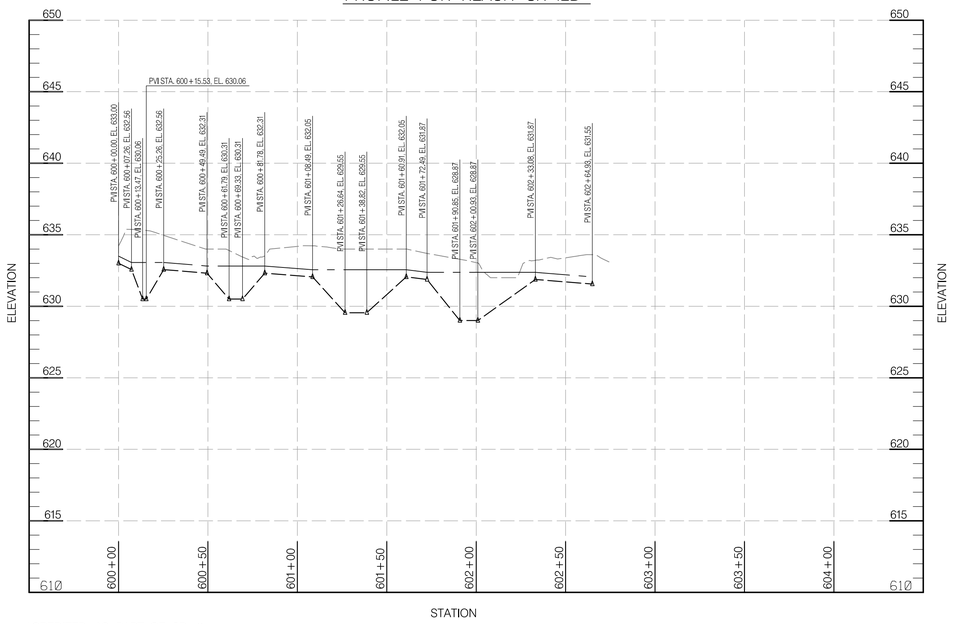
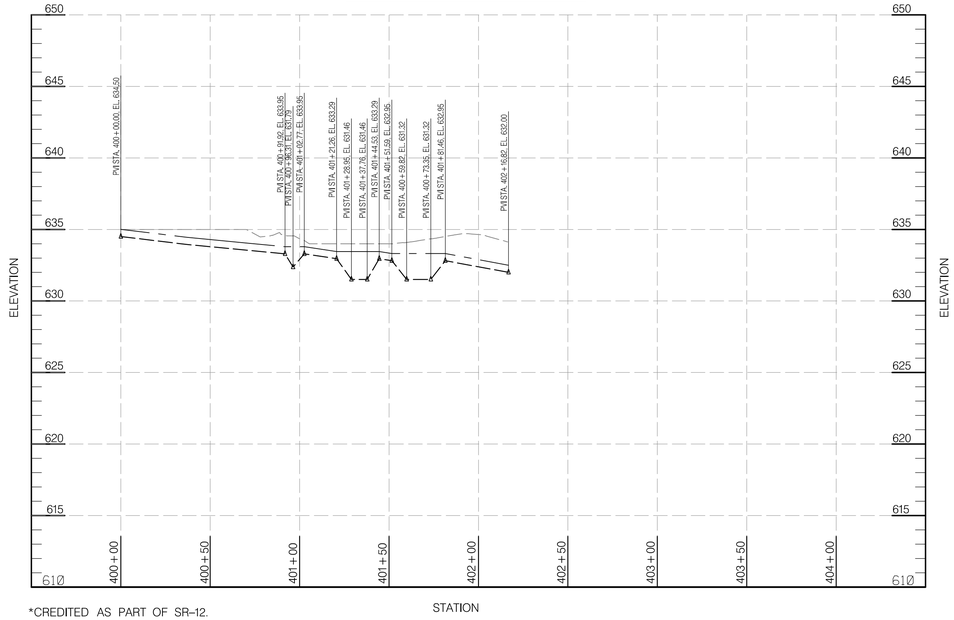
PROFILE FOR REACH SR-12D*



*CREDITED AS PART OF SR-12.

PROFILE FOR REACH SR-12B*



*CREDITED AS PART OF SR-12.

LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE.
REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Groman — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
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PROFESSIONAL CERTIFICATION
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CONTACT
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COCKEYSVILLE, MD 21030
TEL: 410-316-2471

Docu Signed by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC — COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC — LOGMILE N/A
CHECKED BY JJM — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. SP – 08 OF 09 — SHEET NO. 16 OF 116

BY: PCrawford –

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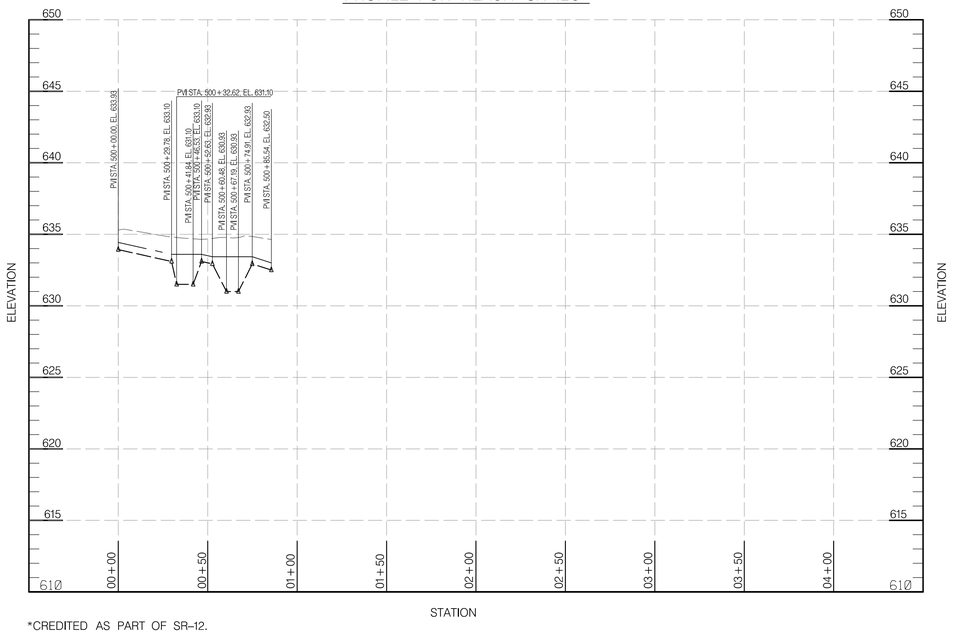
Sunday, June 13, 2021 AT 09:14 PM

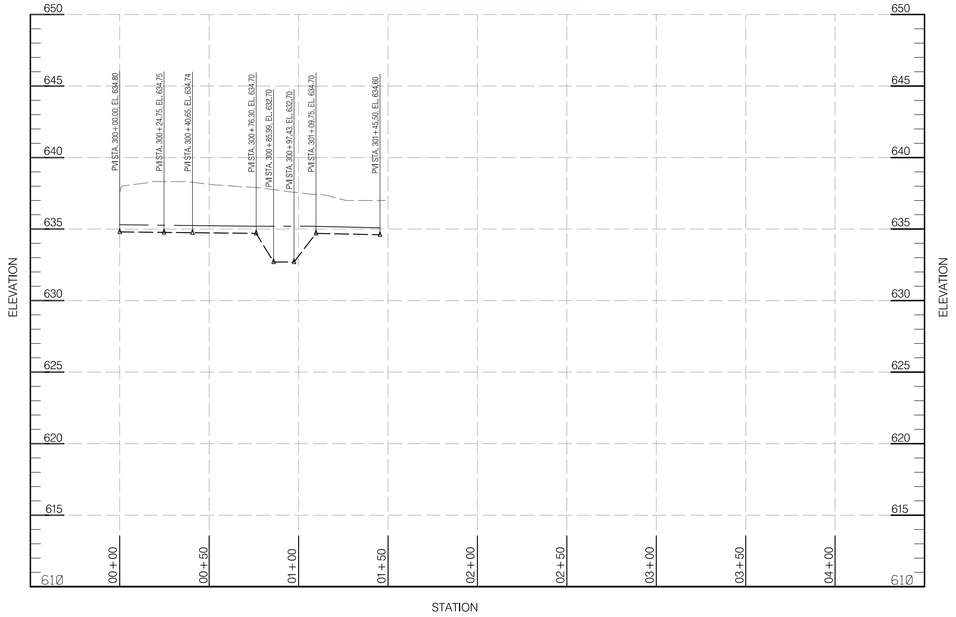
DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

PROFILE FOR REACH SR-12C*



*CREDITED AS PART OF SR-12.

PROFILE FOR REACH SR-12A*



*CREDITED AS PART OF SR-12.

LEGEND

EXISTING GROUND
FLOODPLAIN/BANKFULL ELEV.
PROPOSED GROUND

SCALE: HOR. 1" = 40'
VERT. 1" = 5'

NOTE:
CENTER POINT OF POOLS ARE SLIGHTLY OFFSET FROM BASELINE.
REFER TO STREAM RESTORATION PLANS FOR POSITIONING.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Groman — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin
2D0BBDB225854DA...

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PROFILE

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC
DRAWN BY KNH/PVC
CHECKED BY JJM
F.A.P. NO. N/A
COUNTY HOWARD COUNTY
LOGMILE N/A
HORIZONTAL SCALE N/A
VERTICAL SCALE N/A

DRAWING NO. SP – 09 OF 09 SHEET NO. 17 OF 116

BY: PCrawford –

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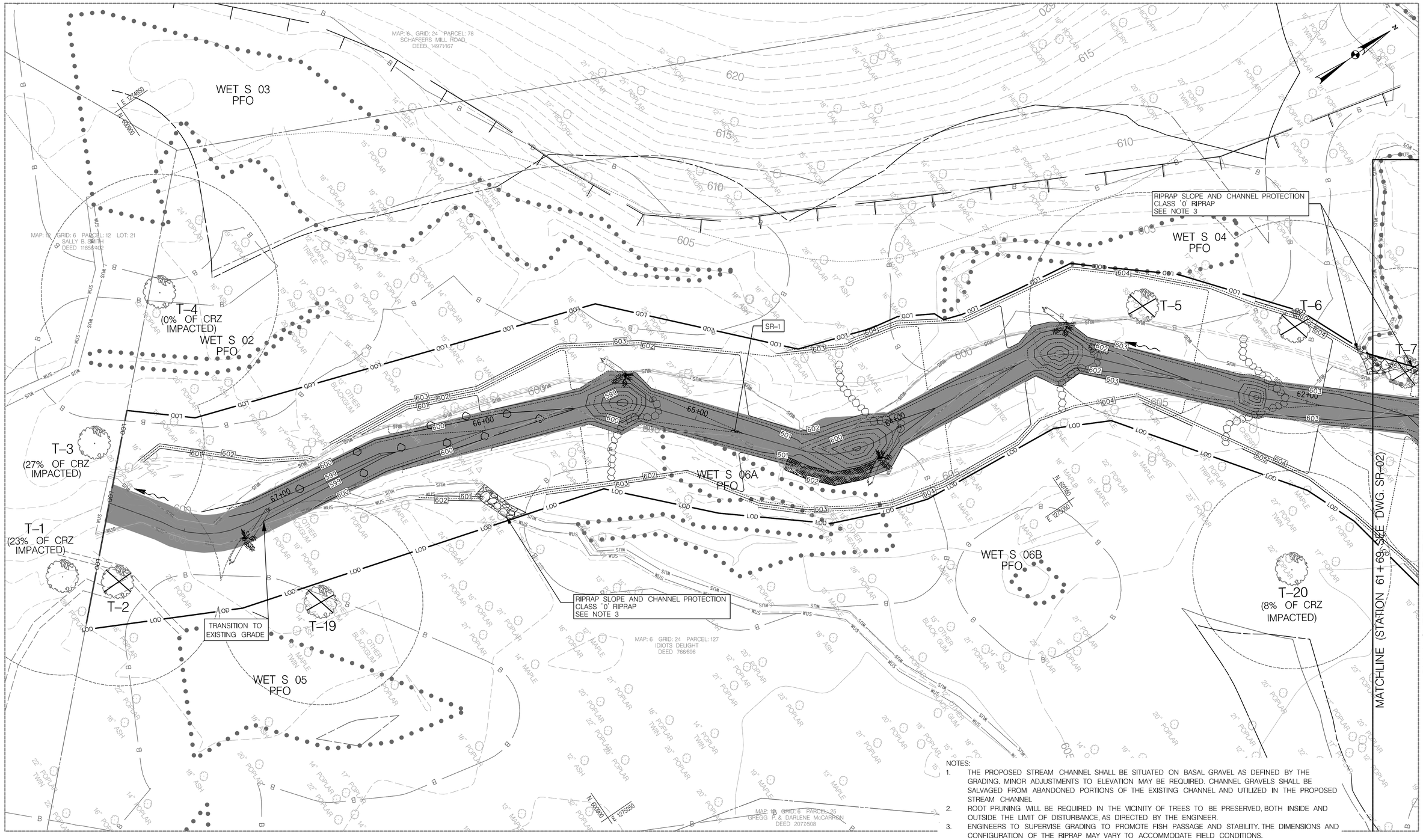

NOTES:

1. THE PROPOSED STREAM CHANNEL SHALL BE SITUATED ON BASAL GRAVEL AS DEFINED BY THE GRADING. MINOR ADJUSTMENTS TO ELEVATION MAY BE REQUIRED. CHANNEL GRAVELS SHALL BE SALVAGED FROM ABANDONED PORTIONS OF THE EXISTING CHANNEL AND UTILIZED IN THE PROPOSED STREAM CHANNEL
2. ROOT PRUNING WILL BE REQUIRED IN THE VICINITY OF TREES TO BE PRESERVED, BOTH INSIDE AND OUTSIDE THE LIMIT OF DISTURBANCE, AS DIRECTED BY THE ENGINEER.
3. ENGINEERS TO SUPERVISE GRADING TO PROMOTE FISH PASSAGE AND STABILITY. THE DIMENSIONS AND CONFIGURATION OF THE RIPRAP MAY VARY TO ACCOMMODATE FIELD CONDITIONS.
4. ALL PROPOSED STREAM CHANNELS ARE CLASSIFIED AS PERENNIAL HEADWATER UNLESS OTHERWISE NOTED.

JMT®
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson (Signature)	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
(Signature)	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gowan (Signature)	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
20088D8225854DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN	DATE JUNE, 2021	PROJECT NO.	18-01655-001
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-01 OF 15 SHEET NO. 18 OF 116

BY: PCrawford –

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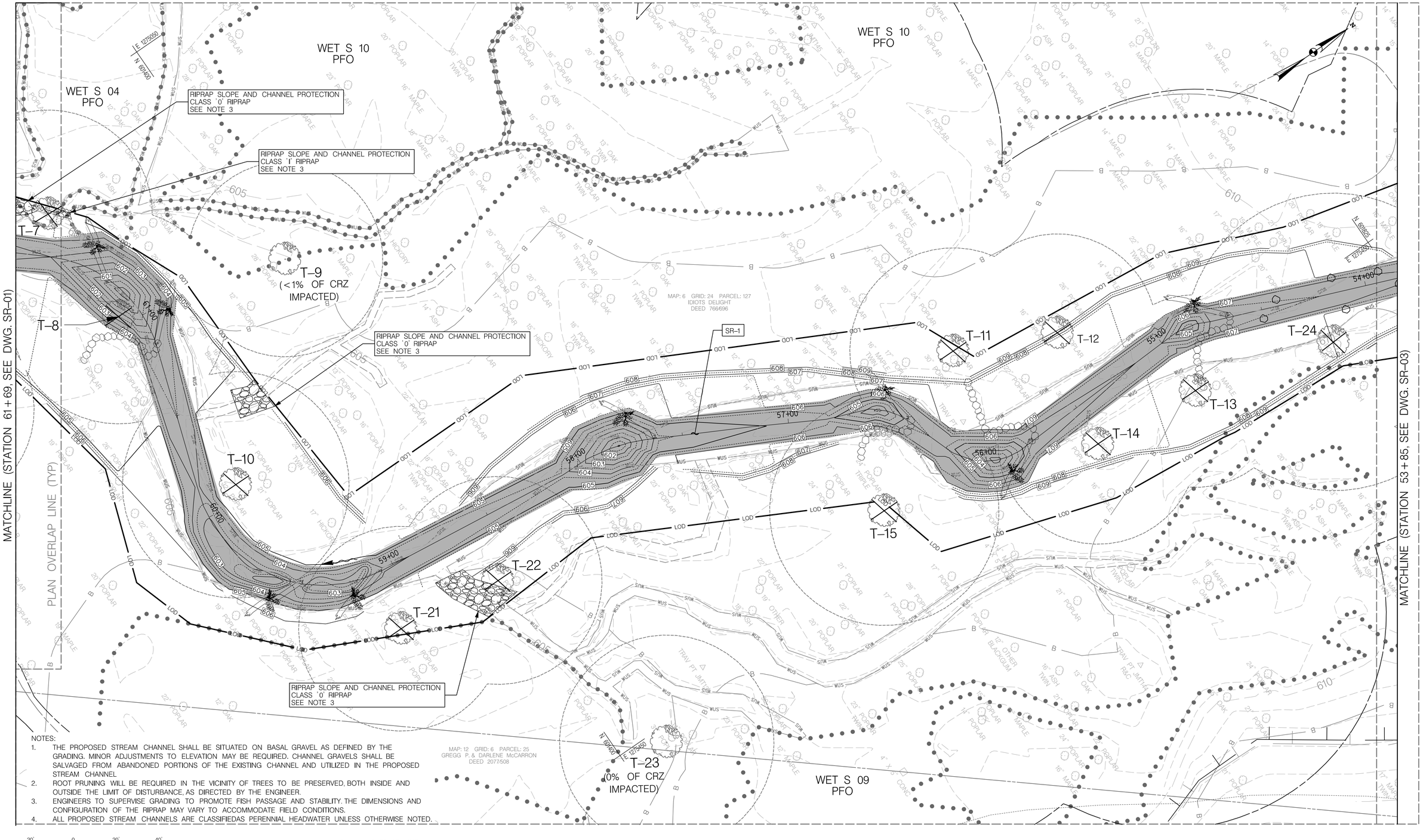

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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Amy Gronan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
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CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR-02 OF 15 SHEET NO. 19 OF 116

BY: PCrawford –

O:\2018\1801655_001_Patuxent_Mitigation_(CADD)\pSR-P002_Patuxent.dgn
Sunday, June 13, 2021 AT 09:32 PM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

PLAN OVERLAP LINE (TYP)

MATCHLINE (STATION 48+87, SEE DWG. SR-04)

WET S 08
PFO

SR-8A

SR-2

SR-6

SR-13

SR-1

T-28
(15% OF CRZ
IMPACTED)

T-25

MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696

MAP: 12 GRID: 6 PARCEL: 25
GREGG P. & DARLENE McCARRON
DEED 2077/508

MATCHLINE (STATION 53+82, SEE DWG. SR-02)

NOTES:
1. THE PROPOSED STREAM CHANNEL SHALL BE SITUATED ON BASAL GRAVEL AS DEFINED BY THE GRADING. MINOR ADJUSTMENTS TO ELEVATION MAY BE REQUIRED. CHANNEL GRAVELS SHALL BE SALVAGED FROM ABANDONED PORTIONS OF THE EXISTING CHANNEL AND UTILIZED IN THE PROPOSED STREAM CHANNEL
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3. ALLAS PERENNIAL HEADWATER UNLESS OTHERWISE NOTED. PROPOSED STREAM CHANNELS ARE CLASSIFIED

20' 0 20' 40'
SCALE: 1" = 20'

DENOTES PLAN OVERLAP LINE

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED - DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Amy Gowan — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
14076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SR-03 OF 15 SHEET NO. 20 OF 116

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Sunday, June 13, 2021 AT 09:33 PM

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MATCHLINE (STATION 43+59, SEE DWG. SR-05)

MATCHLINE (STATION 48+87, SEE DWG. SR-03)

SR-8A

SR-14

SR-2

WET S 11
PEM

WET S 08
PFO

T-27

MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696

MAP: 12 GRID: 5 PARCEL: 25
GREGG P. & DARLENE MCCARRON
DEED 2017/508

FLORENCE RD

TRAV PT JMT137

TRAV PT JMT138

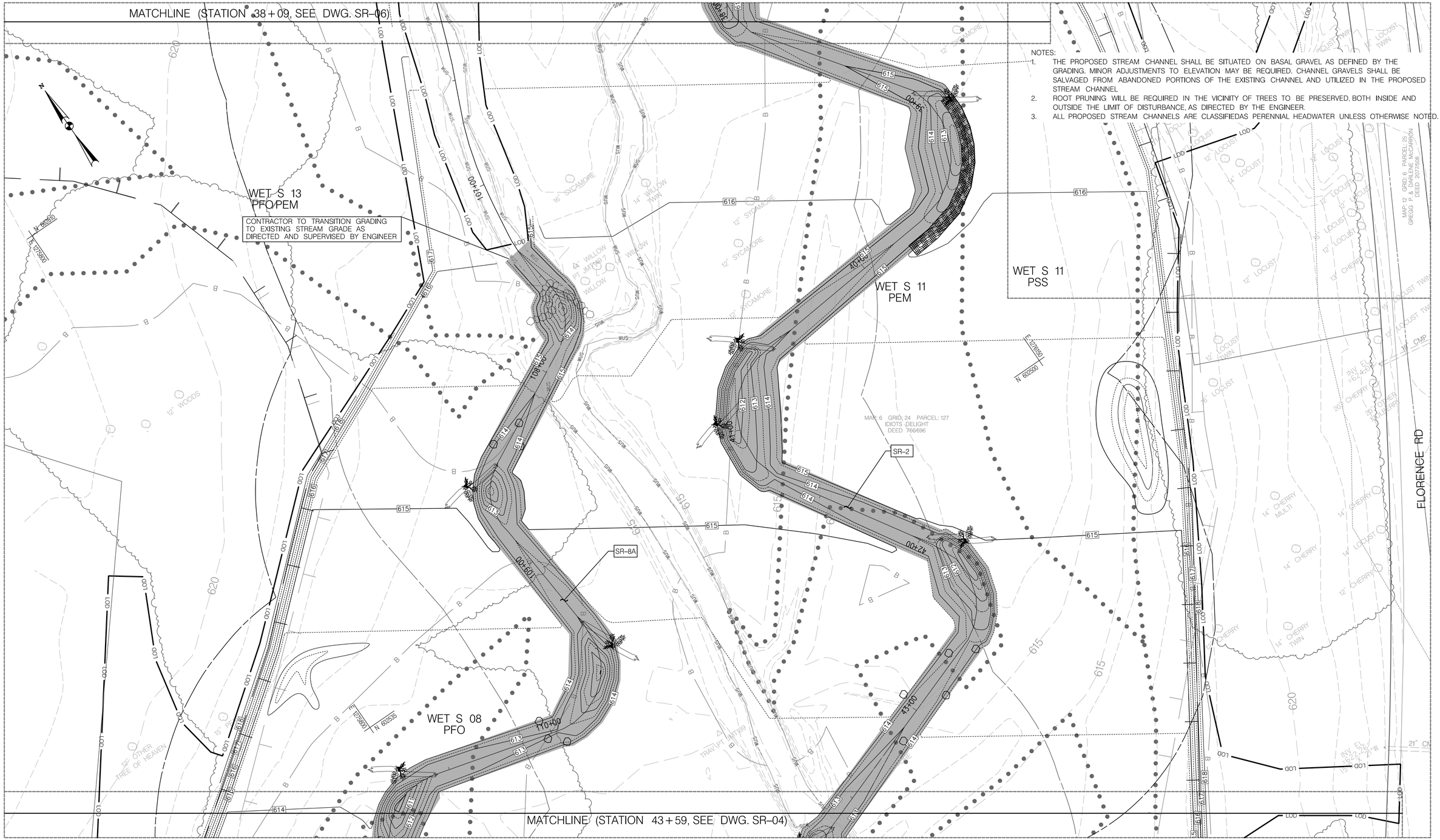
N 602520
E 1270350

E 1272690
N 602200

E 1272690
N 602200

11+00
11+00
11+00

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57



NOTES:
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20' 0 20' 40'
SCALE: 1" = 20'

DENOTES PLAN OVERLAP LINE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — DATE 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Chad Edmondson — DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT
Amy Gowan — DATE 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-05 OF 15 SHEET NO. 22 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 09:35 PM

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MATCHLINE (STATION 33+36, SEE DWG. SR-07)

MATCHLINE (STATION 38+09, SEE DWG. SR-05)

SHAFFERS MILL RD

WET S 14
PFO/PEM

WET S 13
PFO/PEM

WET S 11
PEM

WET S 11
PSS

MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696

MAP 6 GRID 24 PARCEL 78
JOANNE M RAPPOLD-LUSH
DEED 1810/0001

SR-3

SR-8

RIFFLE GRADE CONTROL TYP.

TYPE I SCOUR HOLE CLASS '0' RIPRAP

CONTRACTOR TO TRANSITION GRADING TO EXISTING STREAM GRADE AS DIRECTED AND SUPERVISED BY ENGINEER

24" CMP

24" CMP

N 602020
E 1276900

N 602265
E 1273990

N 602860
E 1276800

NOTES:
1. THE PROPOSED STREAM CHANNEL SHALL BE SITUATED ON BASAL GRAVEL AS DEFINED BY THE GRADING. MINOR ADJUSTMENTS TO ELEVATION MAY BE REQUIRED. CHANNEL GRAVELS SHALL BE SALVAGED FROM ABANDONED PORTIONS OF THE EXISTING CHANNEL AND UTILIZED IN THE PROPOSED STREAM CHANNEL
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20' 0 20' 40'
SCALE: 1" = 20'

PLAN OVERLAP LINE (TYP) ---------- DENOTES PLAN OVERLAP LINE

NOTE:

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR, DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR-06 OF 15 SHEET NO. 23 OF 116

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Sunday, June 13, 2021 AT 09:37 PM

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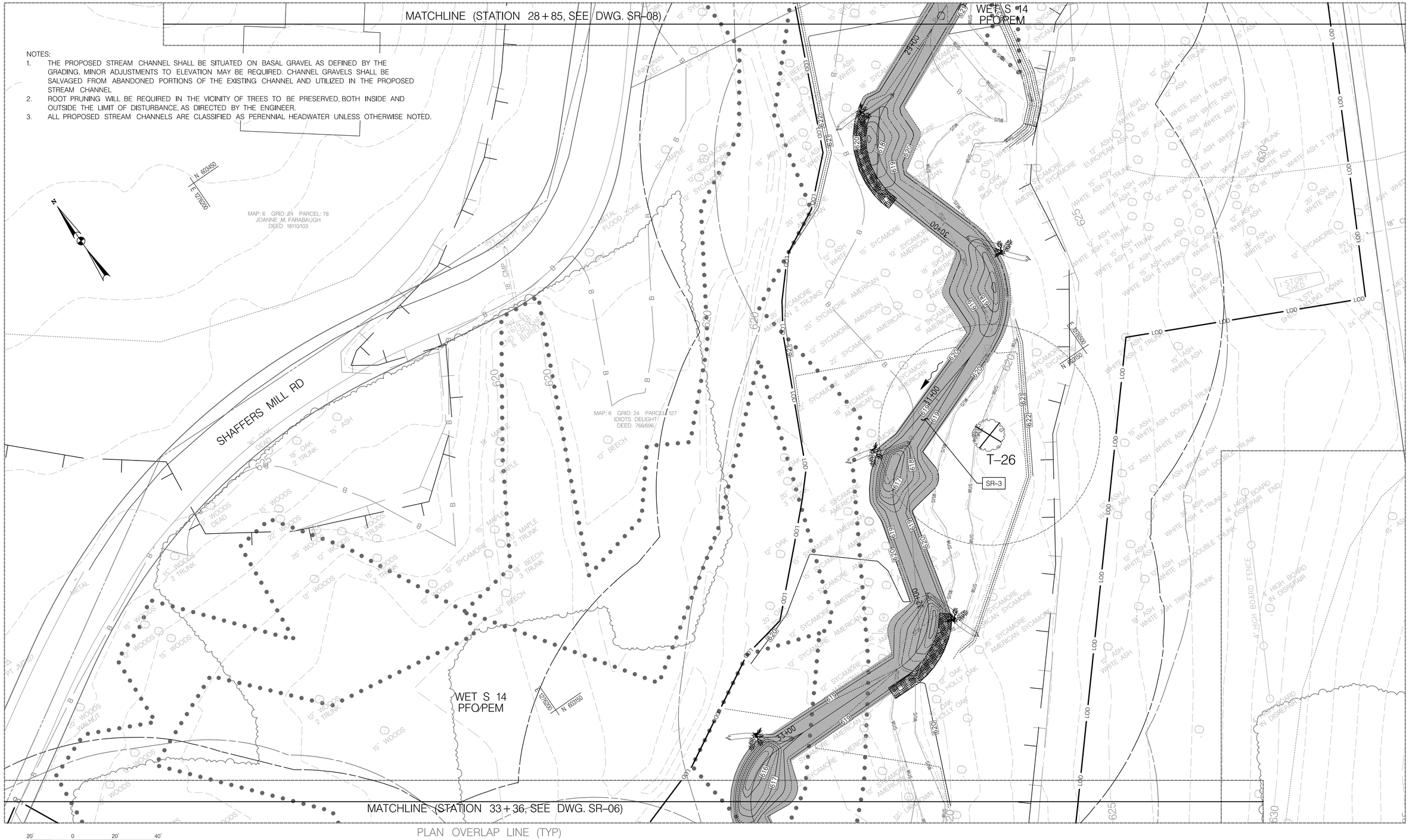
PLAN OVERLAP LINE (TYP)



PLAN OVERLAP LINE (TYP)

20' 0 20' 40'
SCALE: 1" = 20'

BY: PCrawford

JMT
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

---------- DENOTES PLAN OVERLAP LINE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021
Amy Gowan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER
DocuSigned by: Michael Galvin

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MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-07 OF 15 SHEET NO. 24 OF 116

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Sunday, June 13, 2021 AT 09:38 PM

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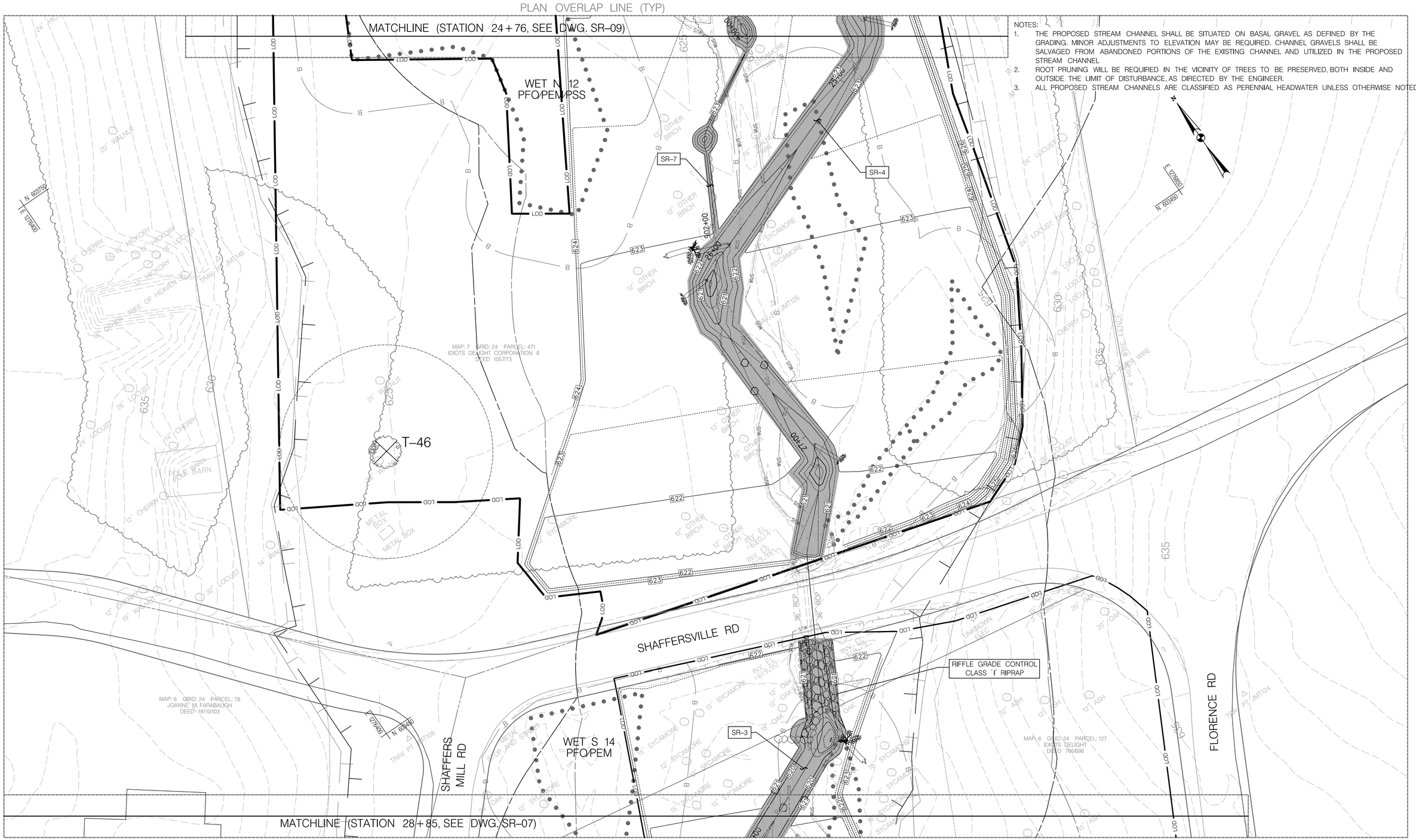

NOTES:

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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Groman — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin — 2008BDB225854DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-08 OF 15 SHEET NO. 25 OF 116

BY: PCrawford –

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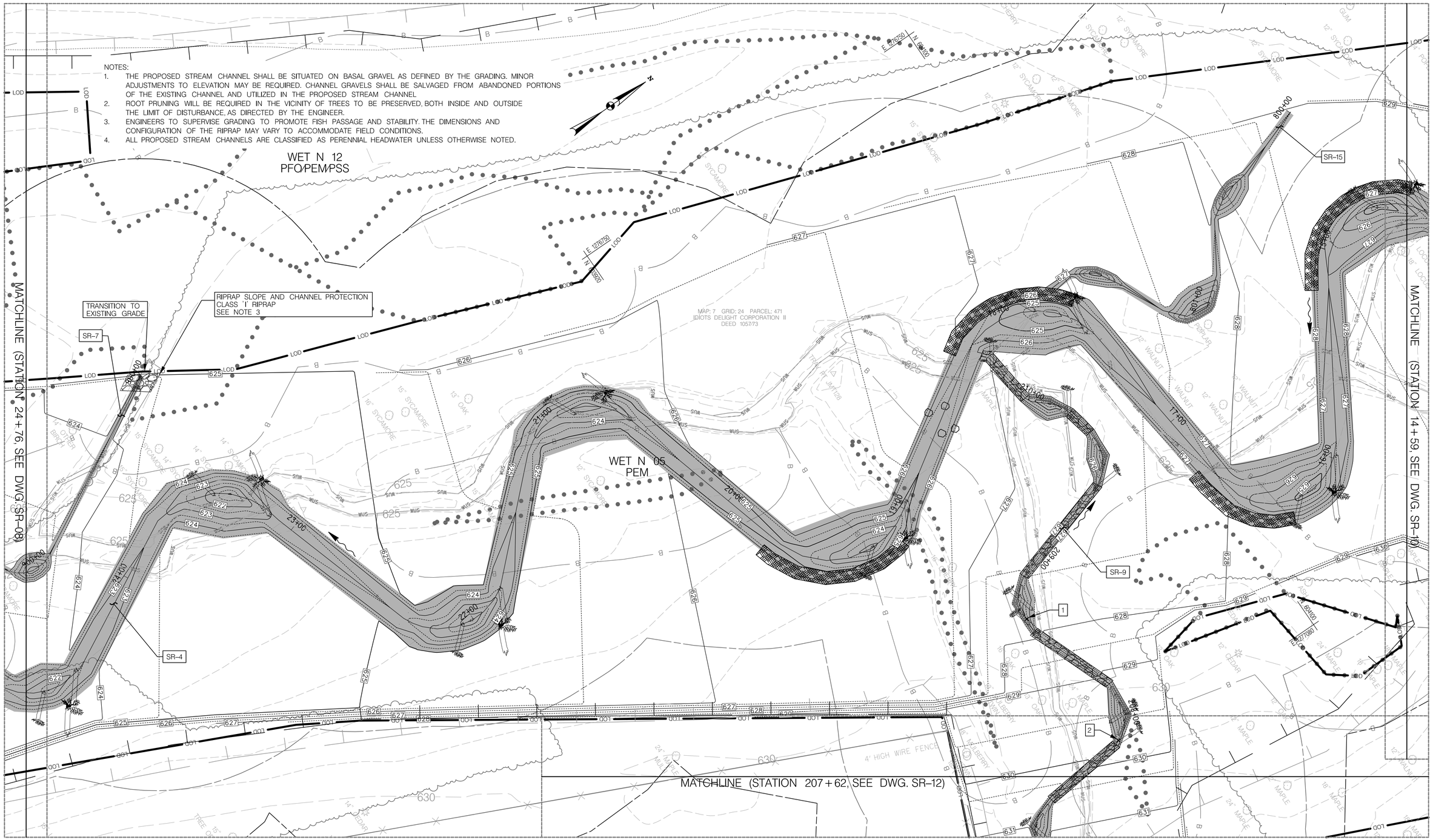

20' 0 20' 40'
SCALE: 1" = 20'

DENOTES PLAN OVERLAP LINE

DIGGER LOG INVERT SCHEDULE	
POINT	ELEVATION
1	626.52
2	628.21

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Amy Gronan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 , EXPIRATION DATE: 6/9/2023 ."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by:
Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR-09 OF 15 SHEET NO. 26 OF 116

BY: PCrawford –

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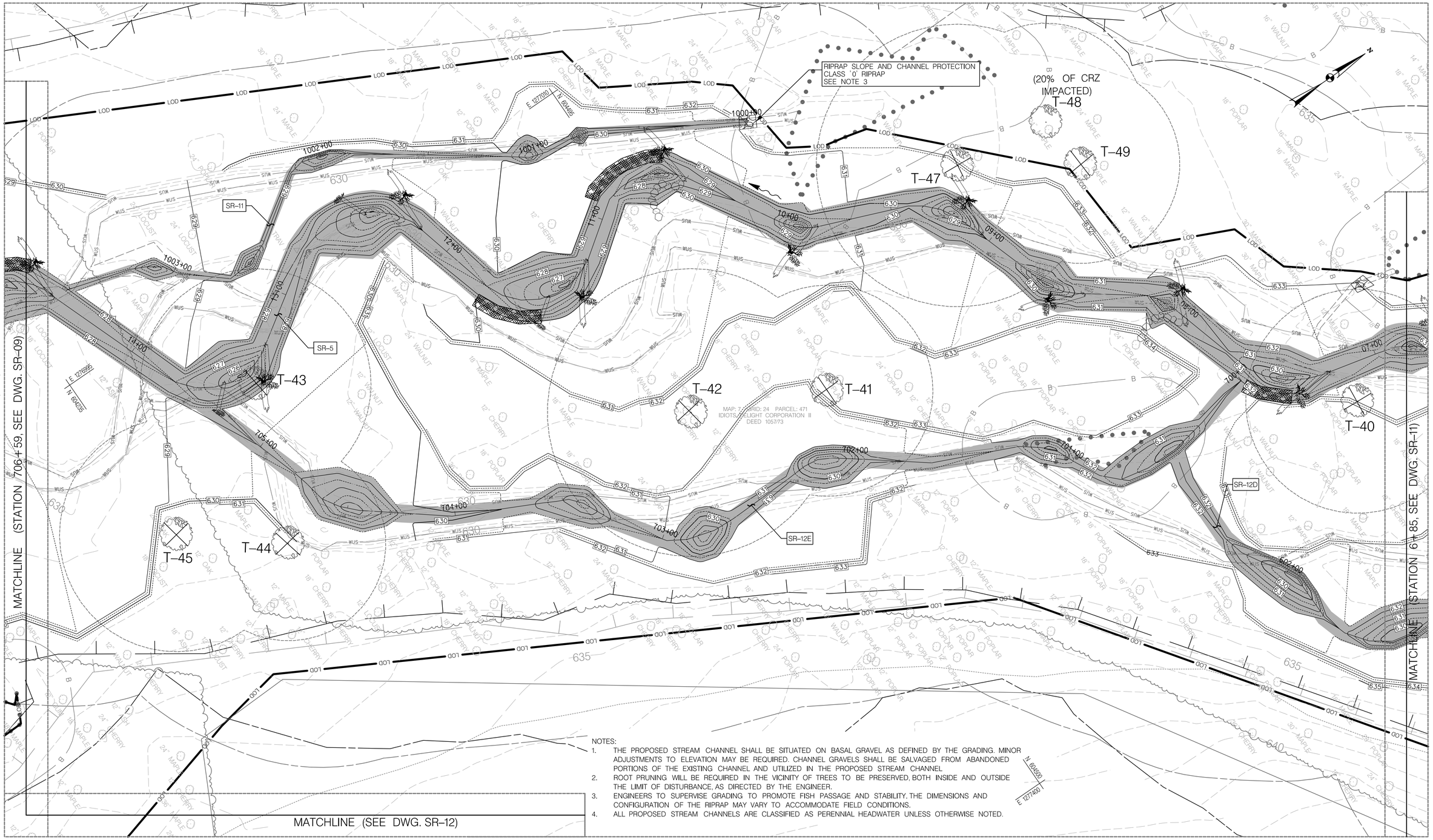

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20' 0 20' 40'
SCALE: 1" = 20'

DENOTES PLAN OVERLAP LINE

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR, DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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DocuSigned by: Michael Galvin — 2D0B0B3D2A8F4CB...

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18–01655–001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. SR–10 OF 15 SHEET NO. 27 OF 116

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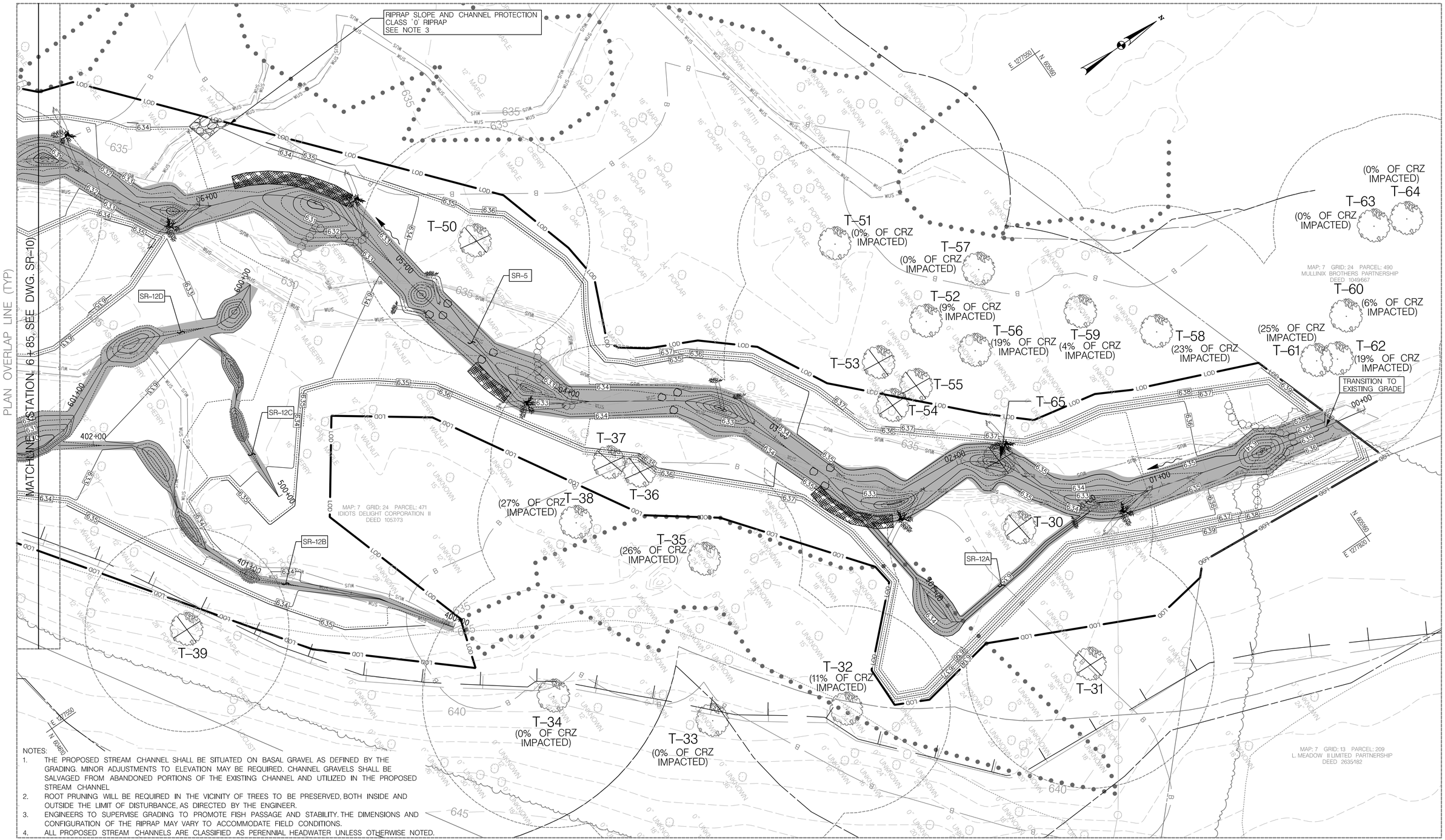

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20' 0 20' 40'
SCALE: 1" = 20'

---------- DENOTES PLAN OVERLAP LINE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Groman	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin
E0000000000000

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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-11 OF 15 SHEET NO. 28 OF 116

BY: PCrawford –

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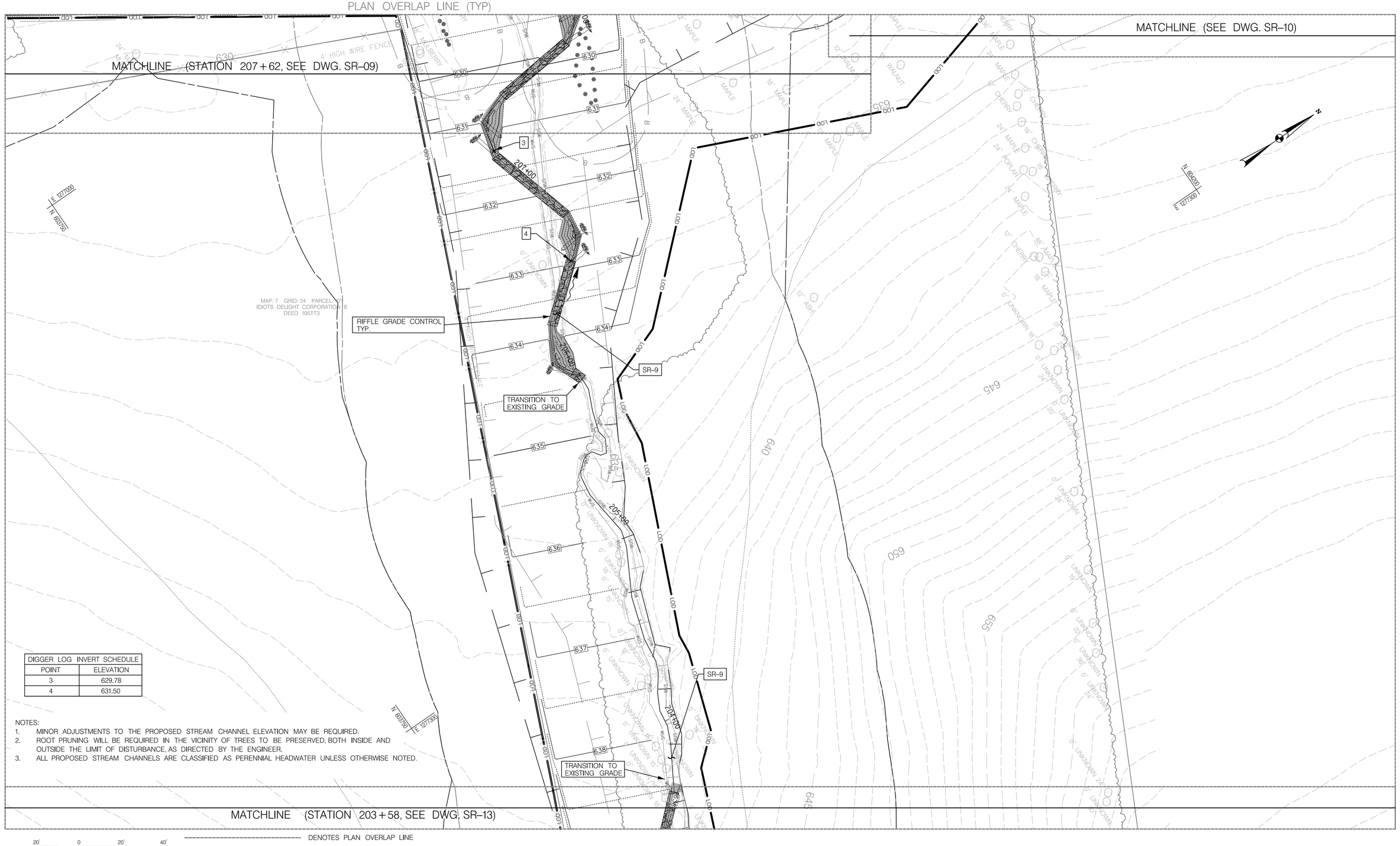

DIGGER LOG INVERT SCHEDULE	
POINT	ELEVATION
3	629.78
4	631.50

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Chad Edmondson	7/9/2021
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	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gowan	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin

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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-12 OF 15 SHEET NO. 29 OF 116

BY: PCrawford –

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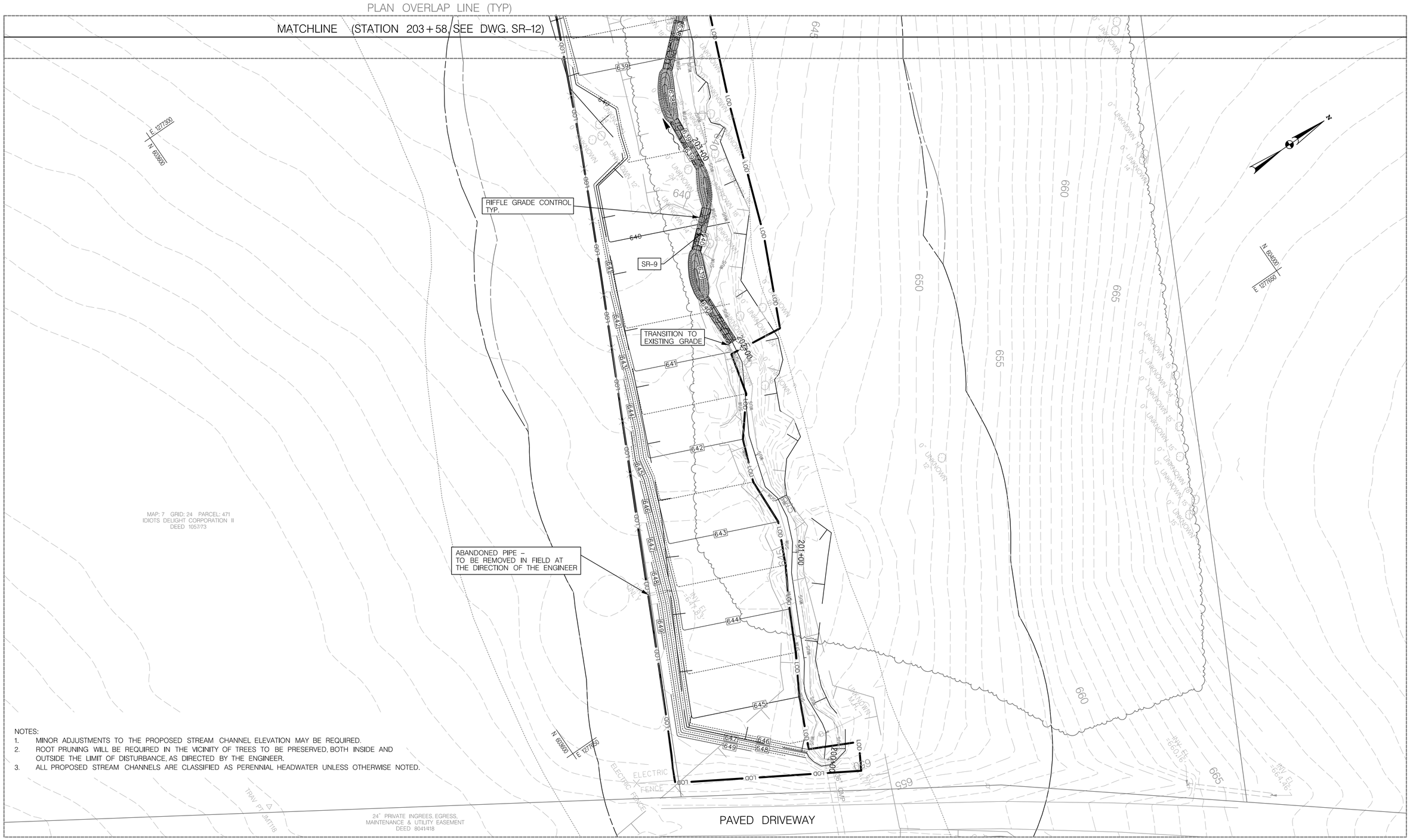

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20' 0 20' 40'
SCALE: 1" = 20'

---------- DENOTES PLAN OVERLAP LINE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gromen	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION PLAN

SCALE AS SHOWN	DATE JUNE, 2021	PROJECT NO. 18-01655-001	
DESIGNED BY KNH/PVC		COUNTY HOWARD COUNTY	
DRAWN BY KNH/PVC		LOGMILE N/A	
CHECKED BY JJM		HORIZONTAL SCALE N/A	
F.A.P. NO. N/A		VERTICAL SCALE N/A	
DRAWING NO. SR-13	OF 15	SHEET NO. 30 OF 116	

BY: PCrawford –

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RIFFLE SCHEDULE SR–1, SR–2, SR–3, SR–4, SR–5

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	20.11	0.002	634.86	636.36	638.42	634.82	636.32	636.32	NO	TRANSITION TO EXISTING GRADE
R–2	47.46	0.019	634.82	636.32	636.32	633.92	635.42	635.42	NO	CONFLUENCE WITH SR–12A OCCURS AFTER THIS RIFFLE
R–3	13.53	0.008	633.92	635.42	635.42	633.81	635.31	635.31	NO	
R–4	22.81	0.0067	633.81	635.31	635.31	633.66	635.16	635.16	NO	
R–5	42.03	0.007	633.66	635.16	635.16	633.36	634.86	634.86	YES	
R–6	49.29	0.009	633.36	634.86	634.86	632.92	634.42	634.42	YES	
R–7	33.40	0.0096	632.92	634.42	634.42	632.60	634.10	634.10	YES	
R–8	31.68	0.008	632.60	634.10	634.10	632.35	633.85	633.85	NO	
R–9	28.22	0.019	632.35	633.85	633.85	631.81	633.31	633.31	NO	
R–10	33.17	0.0125	631.81	633.31	633.31	631.39	632.89	632.89	NO	
R–11	26.78	0.017	631.39	632.89	632.89	630.94	632.44	632.44	NO	CONFLUENCE WITH SR–12E OCCURS AFTER THIS RIFFLE
R–12	30.70	0.0144	630.94	632.44	632.44	630.50	632.00	632.00	NO	
R–13	32.29	0.009	630.50	632.00	632.00	630.21	631.71	631.71	NO	
R–14	21.27	0.013	630.21	631.71	631.71	629.93	631.43	631.43	NO	
R–15	45.18	0.016	629.93	631.43	631.43	629.21	630.71	630.71	NO	
R–16	44.96	0.011	629.21	630.71	630.71	628.71	630.21	630.21	NO	
R–17	29.64	0.007	628.71	630.21	630.21	628.50	630.00	630.00	NO	
R–18	45.16	0.013	628.50	630.00	630.00	627.92	629.42	629.42	NO	
R–19	47.64	0.0087	627.92	629.42	629.42	627.50	629.00	629.00	NO	
R–20	66.81	0.007	627.50	629.00	629.00	627.04	628.54	628.54	NO	CONFLUENCE WITH SR–11 & SR–12E OCCURS AT THIS RIFFLE
R–21	76.86	0.007	627.04	628.54	628.54	626.50	628.00	628.00	NO	
R–22	87.12	0.0114	626.50	628.00	628.00	625.50	627.00	627.00	NO	CONFLUENCE WITH SR–15 OCCURS AFTER THIS RIFFLE
R–23	80.88	0.0079	625.50	627.00	627.00	624.87	626.37	626.37	YES	CONFLUENCE WITH SR–9 OCCURS AT THIS RIFFLE
R–24	85.54	0.006	624.87	626.37	626.37	624.35	625.85	625.85	NO	
R–25	63.36	0.0126	624.35	625.85	625.85	623.55	625.05	625.05	NO	
R–26	73.49	0.006	623.55	625.05	625.05	623.11	624.61	624.61	NO	
R–27	76.91	0.0084	623.11	624.61	624.61	622.47	623.97	623.97	NO	
R–28	104.89	0.0093	622.47	623.97	623.97	621.49	622.99	622.99	NO	CONFLUENCE WITH SR–7 OCCURS AFTER THIS RIFFLE
R–29	64.16	0.0155	621.49	622.99	622.99	620.50	622.00	622.00	YES	
R–30	29.21	0.0123	620.50	622.00	622.00	620.14	622.00	624.06	NO	
R–31	36.11	0.0033	619.79	622.00	621.29	619.67	621.17	621.17	NO	
R–32	73.46	0.005	619.67	621.17	621.17	619.30	620.80	620.80	YES	
R–33	41.73	0.006	619.30	620.80	620.80	619.05	620.55	620.55	NO	
R–34	57.71	0.006	619.05	620.55	620.55	618.71	620.21	620.21	NO	
R–35	39.66	0.0053	618.71	620.21	620.21	618.50	620.00	620.00	NO	
R–36	67.03	0.009	618.50	620.00	620.00	617.89	619.39	619.39	NO	
R–37	55.19	0.0071	617.89	619.39	619.39	617.50	619.00	619.00	NO	
R–38	45.02	0.014	617.50	619.00	619.00	616.87	618.37	618.37	NO	
R–39	79.52	0.0105	616.87	618.37	618.37	616.04	617.54	617.54	NO	
R–40	78.57	0.0068	616.04	617.54	617.54	615.50	617.00	617.00	NO	
R–41	80.17	0.0109	615.50	617.00	617.00	614.63	616.13	616.13	NO	
R–42	90.57	0.008	614.63	616.13	616.13	613.90	615.40	615.40	NO	
R–43	79.11	0.0059	613.90	615.40	615.40	613.44	614.94	614.94	NO	
R–44	106.74	0.0088	613.44	614.94	614.94	612.50	614.00	614.00	YES	
R–45	68.45	0.0146	612.50	614.00	614.00	611.50	613.00	613.00	NO	
R–46	100.62	0.0065	611.50	613.00	613.00	610.84	612.34	612.34	YES	
R–47	75.25	0.006	610.84	612.34	612.34	610.39	611.89	611.89	YES	CONFLUENCE WITH SR–14 OCCURS AFTER THIS RIFFLE
R–48	91.45	0.0098	610.39	611.89	611.89	609.50	611.00	611.00	YES	CONFLUENCE WITH SR–8A OCCURS AFTER THIS RIFFLE
R–49	90.29	0.0106	609.50	611.00	611.00	608.54	610.04	610.04	YES	
R–50	64.78	0.006	608.54	610.04	610.04	608.15	609.65	609.65	YES	
R–51	65.91	0.019	608.15	609.65	609.65	606.91	608.41	608.41	YES	CONFLUENCE WITH SR–6 & SR–13 OCCURS AT THIS RIFFLE
R–52	103.77	0.008	606.91	608.41	608.41	606.09	607.59	607.59	YES	
R–53	77.55	0.006	606.09	607.59	607.59	605.62	607.12	607.12	NO	
R–54	20.51	0.015	605.62	607.12	607.12	605.32	606.82	606.82	NO	
R–55	79.03	0.011	605.32	606.82	606.82	604.42	605.92	605.92	NO	
R–56	95.01	0.005	604.42	605.92	605.92	603.93	605.43	605.43	NO	
R–57	71.81	0.013	603.93	605.43	605.43	603.00	604.50	604.50	NO	
R–58	65.91	0.012	603.00	604.50	604.50	602.19	603.69	603.69	NO	
R–59	73.22	0.008	602.19	603.69	603.69	601.57	603.07	603.07	NO	
R–60	69.61	0.012	601.57	603.07	603.07	600.74	602.24	602.24	NO	
R–61	72.07	0.010	600.74	602.24	602.24	600.05	601.55	601.55	NO	
R–62	97.47	0.012	600.05	601.55	601.55	598.92	600.42	600.42	YES	
R–63	64.06	0.002	598.92	600.42	600.42	598.78	602.49	600.28	YES	TRANSITION TO EXISTING GRADE

RIFFLE SCHEDULE SR–6

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	10.45	0.010	609.84	610.34	610.34	609.74	610.24	610.24	NO	
R–2	39.31	0.007	609.74	610.24	610.24	609.46	609.96	609.96	NO	
R–3	48.53	0.005	609.46	609.96	609.96	609.22	609.72	609.72	NO	
R–4	59.94	0.007	609.22	609.72	609.72	608.80	609.30	609.30	NO	
R–5	14.42	0.021	608.80	609.30	609.30	608.50	609.00	609.00	NO	

RIFFLE SCHEDULE SR–7

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	91.93	0.009	623.79	624.29	624.29	622.96	623.46	623.46	NO	
R–2	37.62	0.007	622.96	623.46	623.46	622.70	623.20	623.20	NO	
R–3	39.82	0.006	622.70	623.20	623.20	622.50	623.00	623.00	NO	

RIFFLE SCHEDULE SR–8, SR–8A

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	21.21	0.021	620.88	622.68	622.68	620.44	622.24	622.24	NO	
R–2	40.34	0.019	620.44	622.24	622.24	619.67	621.47	621.47	NO	
R–3	30.09	0.019	619.67	621.47	621.47	619.10	620.90	620.90	NO	
R–4	24.33	0.020	619.10	620.90	620.90	618.62	620.42	620.42	NO	
R–5	48.84	0.019	618.62	620.42	620.42	617.69	619.49	619.49	NO	
R–6	47.62	0.020	617.69	619.49	619.49	616.73	618.53	618.53	NO	
R–7	21.41	0.012	616.73	618.53	618.53	616.47	618.27	618.27	NO	
R–8	21.02	0.013	616.47	618.27	618.27	616.20	618.00	618.00	NO	
R–9	28.13	0.0359	616.20	618.00	618.00	615.19	616.99	616.99	NO	TRANSITION TO EXISTING GRADE
R–10	20.65	0.010	614.50	616	616	614.29	615.79	615.79	NO	
R–11	61.24	0.012	614.29	615.79	615.79	613.56	615.06	615.06	YES	
R–12	55.10	0.011	613.56	615.06	615.06	612.95	614.45	614.45	NO	
R–13	61.07	0.007	612.95	614.45	614.45	612.50	614.00	614.00	YES	
R–14	63.16	0.009	612.50	614.00	614.00	611.93	613.43	613.43	YES	
R–15	67.97	0.007	611.93	613.43	613.43	611.46	612.96	612.96	YES	
R–16	61.67	0.013	611.46	612.96	612.96	610.65	612.15	612.15	YES	
R–17	69.86	0.011	610.65	612.15	612.15	609.89	611.39	611.39	YES	
R–18	53.82	0.007	609.89	611.39	611.39	609.50	611.00	611.00	YES	CONFLUENCE WITH SR–2

RIFFLE SCHEDULE SR–9

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	5.38	0.01	633.00	634.00	634.00	632.88	633.88	633.88	NO	TRANSITION TO EXISTING GRADE
R–2	32.24	0.030	632.88	633.88	633.88	631.90	632.90	632.90	NO	
R–3	42.96	0.031	631.50	632.50	632.50	630.18	631.18	631.18	NO	
R–4	39.3	0.030	629.78	630.78	630.78	628.61	629.61	629.61	NO	
R–5	42.28	0.031	628.21	629.21	629.21	626.92	627.92	627.92	NO	
R–6	54.09	0.010	626.52	627.52	627.52	625.98	626.98	626.98	NO	
R–7	13.07	0.010	625.98	626.98	626.98	625.85	626.85	626.85	NO	
R–8	25.05	0.010	625.85	626.85	626.85	625.60	626.60	626.60	NO	
R–9	3.70	0.026	625.60	627.00	627.00	625.50	626.50	626.50	NO	CONFLUENCE WITH SR–4

RIFFLE SCHEDULE SR–10

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	24.00	0.026	639.97	640.97	640.97	639.35	640.35	640.35	NO	TRANSITION TO EXISTING GRADE
R–2	20.00	0.030	639.35	640.35	640.35	638.75	639.75	639.75	NO	
R–3	25.00	0.025	638.75	639.75	639.75	638.12	639.12	639.12	NO	
R–4	23.20	0.025	638.12	639.12	639.12	637.53	638.53	638.53	NO	TRANSITION TO EXISTING GRADE

RIFFLE SCHEDULE SR–11

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	73.61	0.008	630.20	630.70	630.70	629.61	630.11	630.11	NO	
R–2	12.41	0.007	629.61	630.11	630.11	629.52	630.02	630.02	NO	
R–3	70.36	0.010	629.52	630.02	630.02	628.82	629.32	629.32	NO	
R–4	34.74	0.005	628.82	629.32	629.32	628.65	629.15	629.15	NO	
R–5	24.25	0.012	628.65	629.15	629.15	628.36	628.86	628.86	NO	
R–6	31.05	0.011	628.36	628.86	628.86	628.00	628.50	628.50	NO	CONFLUENCE WITH SR–5

BY:. PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Docusigned by: Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Docusigned by: Amy Groman — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION STRUCTURE TABLES

SCALE N.T.S. DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SR–14 OF 15 SHEET NO. 31 OF 116

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RIFFLE SCHEDULE SR–12A

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	24.75	0.002	634.80	635.30	635.30	634.75	635.25	635.25	NO	CONFLUENCE WITH SR–5
R–2	15.90	0.001	634.75	635.25	635.25	634.74	635.24	635.24	NO	
R–3	35.65	0.001	634.74	635.24	635.24	634.70	635.20	635.20	NO	
R–4	35.75	0.003	634.70	635.20	635.20	634.60	635.10	635.10	NO	CONFLUENCE WITH SR–5

RIFFLE SCHEDULE SR–12B

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	91.92	0.006	634.50	635.00	635.00	633.95	634.45	634.45	NO	
R–2	18.49	0.036	633.95	634.45	634.45	633.29	633.79	633.79	NO	
R–3	7.06	0.047	633.29	633.79	633.79	632.95	633.45	633.45	NO	
R–4	35.36	0.027	632.95	633.45	633.45	632.00	632.50	632.50	NO	CONFLUENCE WITH SR–12D

RIFFLE SCHEDULE SR–12C

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	29.78	0.028	633.93	634.43	634.43	633.10	633.60	633.60	NO	
R–2	6.10	0.028	633.10	633.60	633.60	632.93	633.43	633.43	NO	
R–3	10.63	0.040	632.93	633.43	633.43	632.50	633.00	633.00	NO	CONFLUENCE WITH SR–12D

RIFFLE SCHEDULE SR–12D

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	7.26	0.061	633.00	633.50	633.50	632.56	633.06	633.06	NO	
R–2	24.22	0.010	632.56	633.06	633.06	632.31	632.81	632.81	NO	
R–3	26.7	0.010	632.31	632.81	632.81	632.05	632.55	632.55	NO	
R–4	11.58	0.015	632.05	632.55	632.55	631.87	632.37	632.37	NO	
R–5	31.85	0.010	631.87	632.37	632.37	631.55	632.05	632.05	NO	CONFLUENCE WITH SR–12E

RIFFLE SCHEDULE SR–12E

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	26.35	0.004	632.00	632.50	632.50	631.90	632.40	632.40	NO	CONFLUENCE WITH SR–5
R–2	12.92	0.012	631.90	632.40	632.40	631.74	632.24	632.24	NO	
R–3	69.23	0.001	631.74	632.24	632.24	631.65	632.15	632.15	NO	
R–4	31.09	0.016	631.65	632.15	632.15	631.15	631.65	631.65	NO	
R–5	27.02	0.012	631.15	631.65	631.65	630.82	631.32	631.32	NO	
R–6	59.04	0.024	630.82	631.32	631.32	629.43	629.93	629.93	NO	
R–7	47.97	0.019	629.43	629.93	629.93	628.50	629.00	629.00	NO	CONFLUENCE WITH SR–5

RIFFLE SCHEDULE SR–13

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	69.22	0.006	610.92	611.42	611.42	610.50	611.00	611.00	NO	
R–2	40.32	0.016	610.50	611.00	611.00	609.86	610.36	610.36	NO	
R–3	43.14	0.006	609.86	610.36	610.36	609.60	610.10	610.10	NO	
R–4	38.65	0.010	609.60	610.10	610.10	609.21	609.71	609.71	NO	
R–5	33.71	0.004	609.21	609.71	609.71	609.08	609.58	609.58	NO	
R–6	29.5	0.005	609.08	609.58	609.58	608.93	609.43	609.43	NO	
R–7	23.44	0.015	608.93	609.43	609.43	608.58	609.08	609.08	NO	
R–8	35.75	0.016	608.58	609.08	609.08	608.00	608.50	608.50	NO	CONFLUENCE WITH SR–1

RIFFLE SCHEDULE SR–14

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	17.70	0.006	611.99	612.49	612.49	611.88	612.38	612.38	NO	
R–2	47.78	0.003	611.88	612.38	612.38	611.74	612.24	612.24	NO	
R–3	34.16	0.004	611.74	612.24	612.24	611.60	612.10	612.10	NO	
R–4	51.75	0.005	611.60	612.10	612.10	611.35	611.85	611.85	NO	
R–5	61.95	0.006	611.35	611.85	611.85	611.00	611.50	611.50	NO	CONFLUENCE WITH SR–2

RIFFLE SCHEDULE SR–15

RIFFLE #	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER	NOTES
			THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.		
R–1	34.92	0.025	628.48	628.98	628.98	627.61	628.11	628.11	NO	
R–2	25.63	0.022	627.61	628.11	628.11	627.04	627.54	627.54	NO	
R–3	21.05	0.015	627.04	627.54	627.54	626.73	627.23	627.23	NO	
R–4	12.73	0.018	626.73	627.23	627.23	626.50	627.00	627.00	NO	CONFLUENCE WITH SR–4

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
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MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

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WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

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DRAWN BY KNH\PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N\A VERTICAL SCALE N./A

DRAWING NO. SR–15 OF 15 SHEET NO. 32 OF 116

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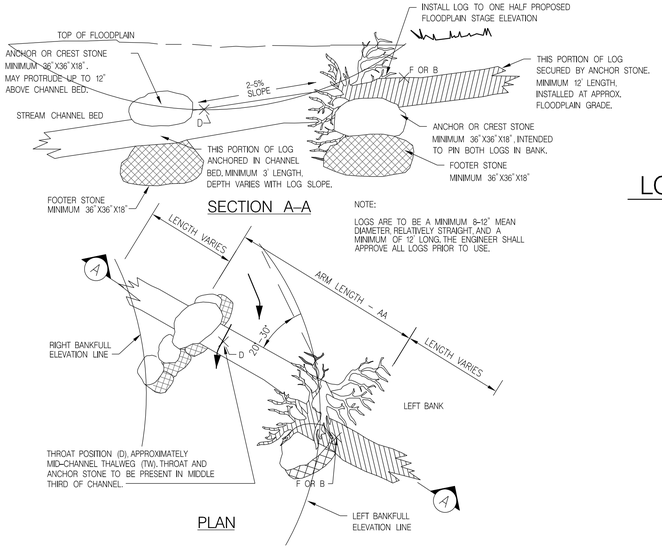
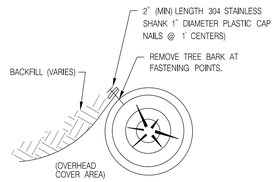


DIGGER LOG DETAIL

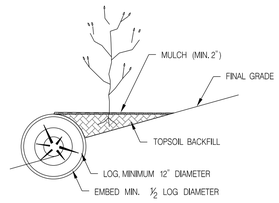
NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION MAY VARY AS DIRECTED BY ENGINEER. USED FOR SMALL-SCALE GRADE CONTROL IN THALWEG GRADING



LOG GEOTEXTILE FASTENING DETAIL

NOT TO SCALE

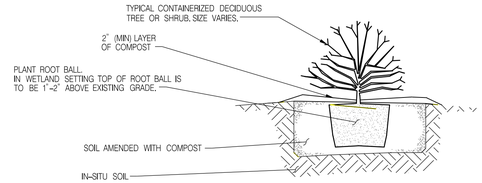


NOTES:

1. TO BE USED AS PART OF WOODY DEBRIS PLACEMENT.
2. EXCAVATE AREA TO PLACE LOG IN TO ½ DIAMETER OF LOG AND BACKFILL UP GRADIENT WITH TOPSOIL FILL.
3. PLANT PER DETAILS ON THIS SHEET.
4. THIS WOODY DEBRIS PLACEMENT PRACTICE IS TO BE USED TO ACCOMMODATE MINOR GRADE CHANGES AROUND EXISTING TREES AND OTHER AT-GRADE FEATURES TO BE PRESERVED.

LOG PLANTING TERRACE DETAIL

NOT TO SCALE, TO BE USED AT DIRECTION OF ENGINEER



NOTES:

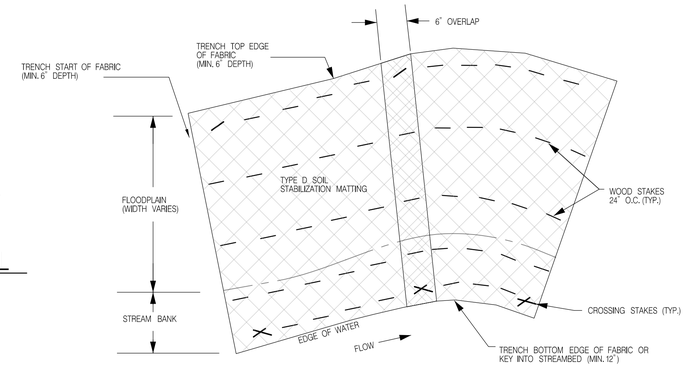
1. SHRUB PIT CONFORMS WITH DEPTHS AND WIDTHS IN SPECIFICATIONS.
2. PRUNE SHRUBS ONLY AFTER INSTALLED AND AFTER THE PLANT HAS BEEN SUFFICIENTLY WATERED.
3. MULCH DIAMETER OF PLANTING HOLE, MINIMUM 2' DEPTH, WITH COMPOST.

CONTAINER STOCK PLANTING DETAIL

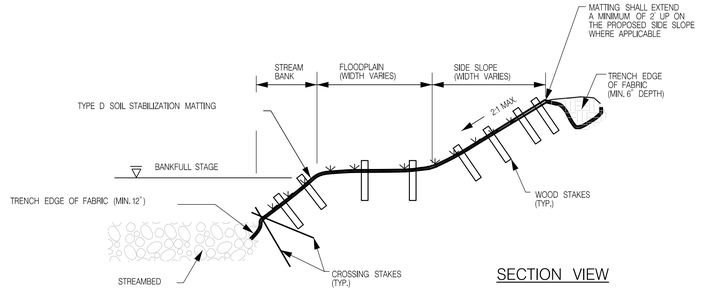
NOT TO SCALE

STREAMBANK/FLOODPLAIN STABILIZATION DETAILS

NOT TO SCALE



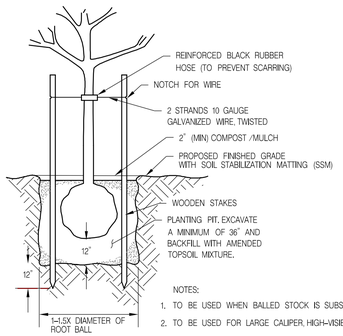
PLAN VIEW



SECTION VIEW

NOTES:

1. TYPE D SOIL STABILIZATION MATTING (SSM) SHALL BE OVERLAPPED 'SHINGLE' STYLE OR PERPENDICULAR TO THE CHANNEL, WITH THE UPSTREAM SECTION OF MATTING OVERLAPPING THE NEXT DOWNSTREAM SECTION OF MATTING.
2. SPECIFIED SEED MIX SHALL BE APPLIED FIRST AND IMMEDIATELY COVERED WITH THE SSM.
3. THE SSM SHALL BE 100 PERCENT BIODEGRADABLE COIR FIBER MATTING.
4. THE SSM SHALL CONFORM TO THE SPECIFICATIONS.
5. WOOD CROSSING STAKES SHALL BE UTILIZED TO SECURE ENDS OF THE SSM WHERE IT IS NOT FEASIBLE TO TRENCH OR KEY-IN THE END OF THE FABRIC.
6. WOOD STAKES SHALL BE UNTREATED HARDWOOD OR SOUTHERN YELLOW PINE WITH A SAW-FORMED POINT ON ONE END, 1 INCH BY 2 INCHES IN SIZE AND A MINIMUM OF 18 INCHES IN LENGTH.
7. STAPLES ARE NOT AN ACCEPTABLE SUBSTITUTE FOR STAKES.
8. IN THE EVENT OF LOSS OF FABRIC PRIOR TO GROWTH OF VEGETATION, THE CONTRACTOR SHALL INSTALL NEW SEED AND TOPSOIL TO PROPOSED FINISHED GRADE AND RE-MAT AREAS AT NO ADDITIONAL COST TO THE AUTHORITY.

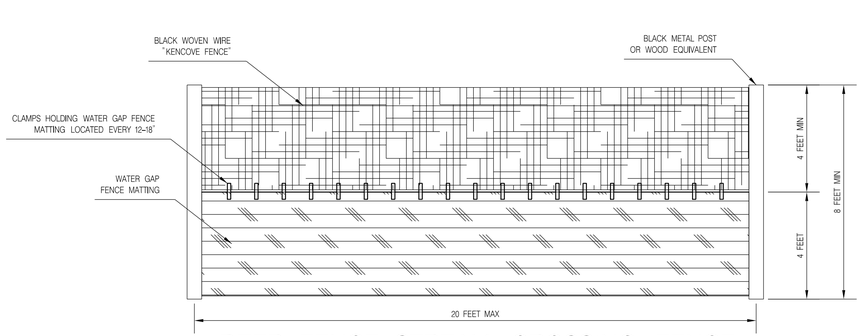


NOTES:

1. TO BE USED WHEN BALLED STOCK IS SUBSTITUTED FOR CONTAINERIZED.
2. TO BE USED FOR LARGE CALIPER, HIGH-VISIBILITY PLANTINGS.

BALLED TREE PLANTING AND STAKING DETAIL

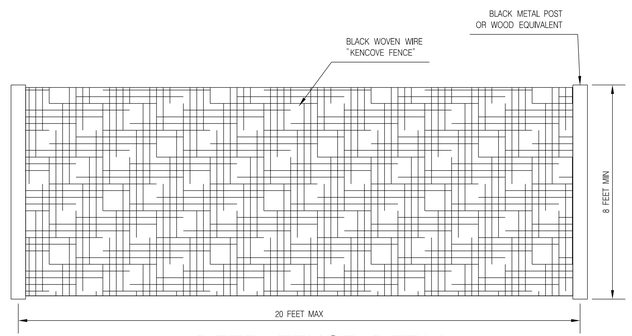
NOT TO SCALE



DEER FENCE STREAM CROSSING FENCE

NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.



DEER FENCE DETAIL

NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Amy Groner — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
DocuSigned by: — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION DETAILS

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. **SRD – 1** OF **3** SHEET NO. 33 OF 116

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Sunday, June 13, 2021 AT 09:59 PM

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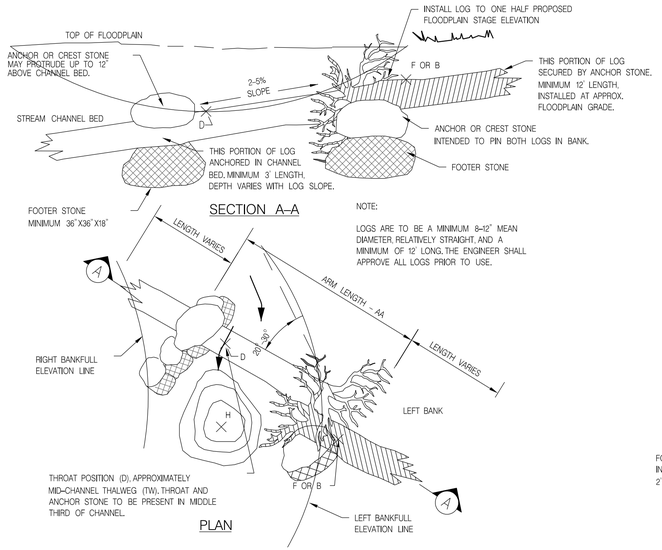
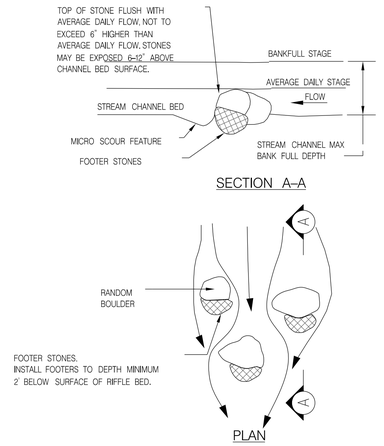


LOG VANE DETAIL

NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION MAY VARY AS DIRECTED BY ENGINEER. USED FOR SMALL-SCALE GRADE CONTROL IN THALWEG GRADING

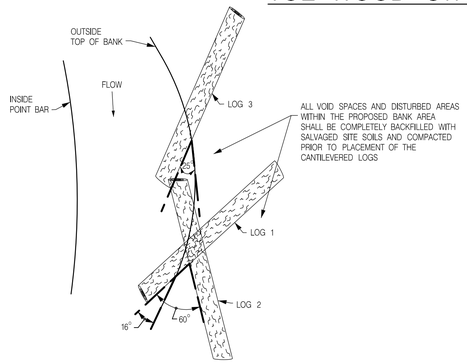


RANDOM BOULDER PLACEMENT

NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.

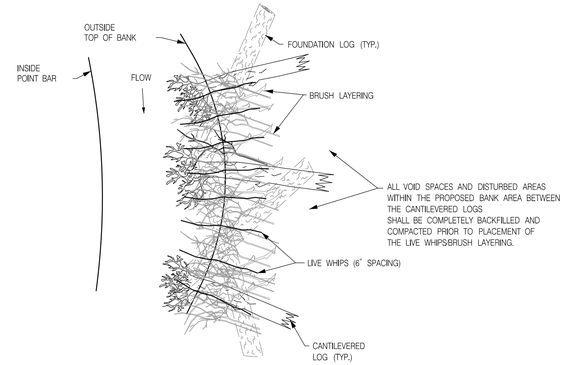
TOE WOOD STRUCTURE DETAILS



FOUNDATION LOGS – PLAN VIEW

NOTES:

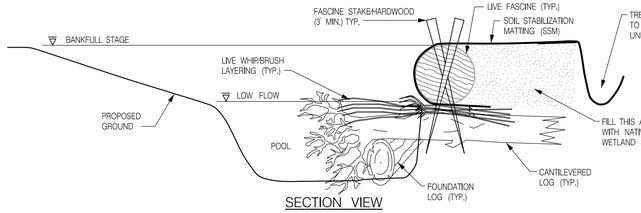
1. LOGS UTILIZED SHALL HAVE A DIAMETER OF 6" TO 8" AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
2. LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH, WITH 60% OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
3. FOUNDATION LOG 2 SHALL BE PLACED ON TOP OF FOUNDATION LOG 1.
4. EXACT ANGLES AND PLACEMENT OF THE LOGS WILL BE SITE DEPENDENT BASED ON LOCAL SITE CONDITIONS.
5. FOUNDATION LOGS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF THE CANTILEVERED LOGS.



CANTILEVERED LOGS & LIVE BRUSH LAYERING /MATTRESS PLACEMENT – PLAN VIEW

NOTES:

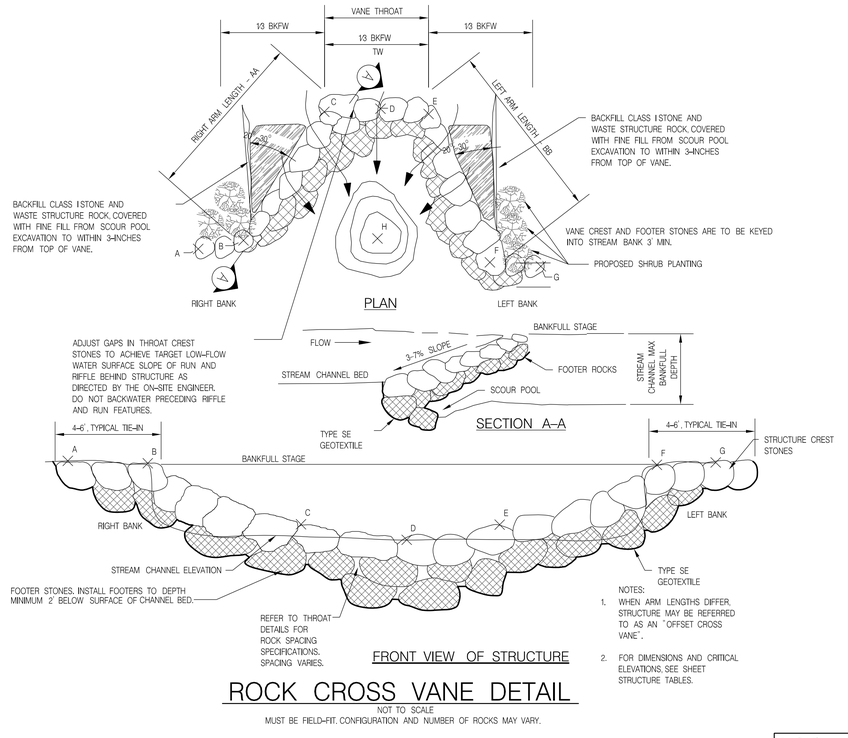
1. CANTILEVERED LOGS SHALL HAVE A DIAMETER OF 6" TO 8" WITH ROOT WAD INTACT AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
2. CANTILEVERED LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH AND PLACED ON TOP OF THE FOUNDATION LOGS WITH ⅔ OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
3. LIVE BRUSH LAYER OR MATTRESS MATERIAL SHALL BE PLACED IN BETWEEN THE PARALLEL TO CONTILEVERED LOGS.
4. ALL FOUNDATION AND CANTILEVERED LOGS AND BRUSH LAYER SHALL REMAIN PERMANENTLY SUBMERGED TO PREVENT WOOD DETERIORATION.
5. FILL IN AND COMPACT ALL VOID SPACES BETWEEN CANTILEVERED LOGS PRIOR TO PLACEMENT OF THE LIVE BRUSH LAYERING/MATTRESSES.
6. BRUSH LAYER WILL CONSIST OF SCRAP TREE BRANCHES/TOPS OF TREES HARVESTED IN APPROVED LIMIT OF DISTURBANCE.



SECTION VIEW

NOTES:

1. SOIL STABILIZATION MATTING SHALL BE PLACED ON TOP OF LIVE BRUSH LAYERING /MATTRESSES AND WRAPPED AROND THE FRONT FACE OF THE INSTALLED LIVE FASCINE ACCORDING THE DETAILS.
2. A SILL LOG SHALL BE INSTALLED FLUSH WITH THE PROPOSED FLOODPLAIN SURFACE, DEFINING THE UPSTREAM AND DOWNSTREAM LIMITS OF THE TOEWOOD SECTION AS SHOWN ON THE PLAN SHEETS.
3. SEE THE BRUSH LAYERING /MATTRESSES (LIVE WHIP PLANTING SCHEDULE) ON SHEET SLP-8 FOR SIZES AND SPECIES.
4. LIVE WHIPS SHALL BE LAID FLAT AND PLACED ON 6" CENTERS WITHIN THE BRUSH LAYER.
5. SEE PLAN SHEETS FOR LOCATIONS.



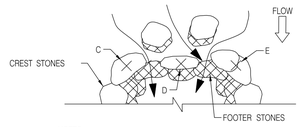
NOTES:

1. WHEN ARM LENGTHS DIFFER, STRUCTURE MAY BE REFERRED TO AS AN "OFFSET CROSS VANE".
2. FOR DIMENSIONS AND CRITICAL ELEVATIONS, SEE SHEET STRUCTURE TABLES.

ROCK CROSS VANE DETAIL

NOT TO SCALE

MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



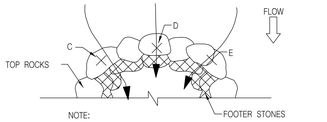
NOTES:

1. GAP CREST STONES 6 – 12" TO MANIPULATE AVERAGE DAILY FLOW WATER SURFACE FOR DESIRED SLOPE OF RIFFLE UPSTREAM OF STRUCTURE AND FOR FISH PASSAGE.
2. FOOTER STONES ARE FIT FLUSH AND FORM A CONTINUOUS THROAT AND SHOULD BE SUBMERGED UNDER AVERAGE DAILY FLOW CONDITIONS.

BROKEN THROAT DETAIL

NOT TO SCALE – NOT PROPOSED AT THIS TIME

(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)



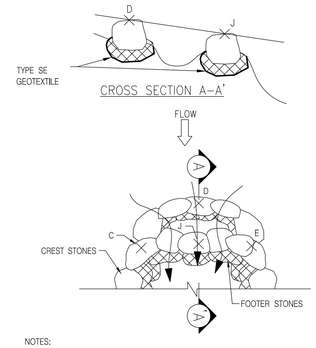
NOTE:

GAP THROAT CREST AND FOOTER STONES SO GAP IS LESS THAN D50 OF RIFFLE MATERIAL OR WITH NO GAP FOR MAXIMUM AVERAGE DAILY FLOW WATER SURFACE INFLUENCE.

CLOSED-GAP THROAT DETAIL

NOT TO SCALE

(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)



NOTES:

1. ALLOW NO MORE THAN 6" DROP IN AVERAGE DIALY FLOW WATER SURFACE BETWEEN STEPS.
2. UPSTREAM THROAT MAY BE BROKEN AS IN VIEW 1, COUPLED WITH STEP FOR FLOW DIVERSITY.
3. INVERT OF THROAT VARIES.

STEPPED THROAT DETAIL (AS DIRECTED)

NOT TO SCALE – NOT PROPOSED AT THIS TIME

(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES, NOT USED FOR THIS PROJECT, BUT AVAILABLE FOR IN-FIELD CHANGES AS REQUIRED)

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 24076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin — 2008B0B22B854DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

STREAM RESTORATION DETAILS

SCALE N.T.S. DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. SRD – 2 OF 3 SHEET NO. 34 OF 116

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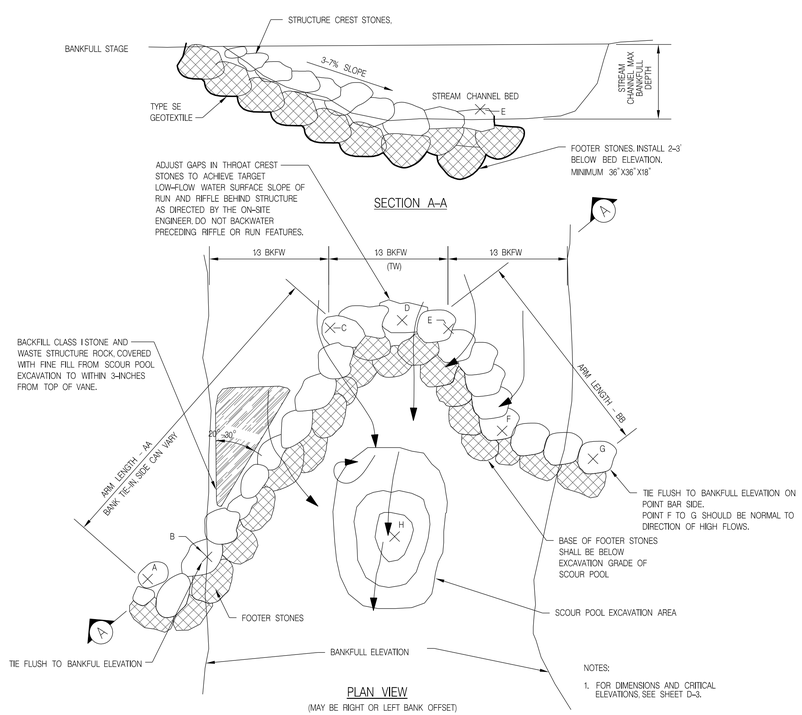
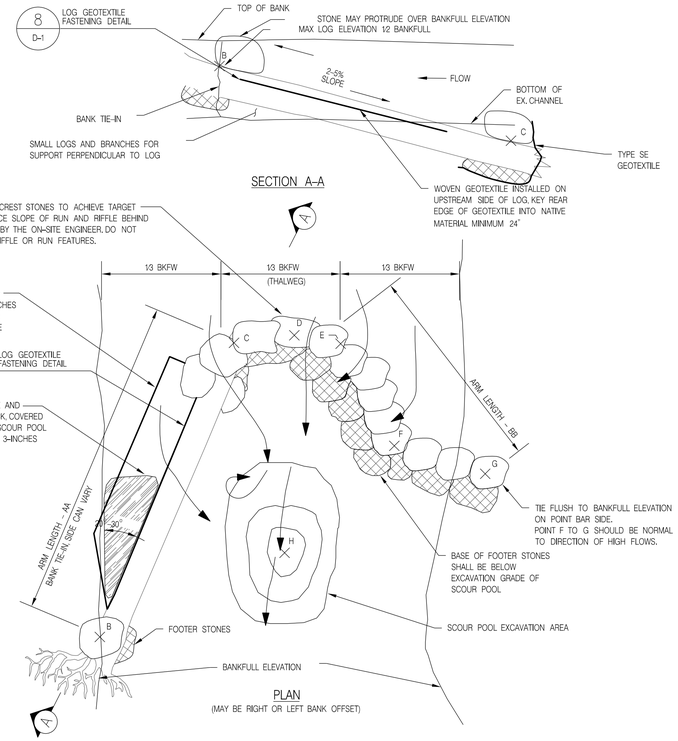


ROCK J HOOK VANE DETAIL

N.T.S.

MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



LOG J HOOK VANE DETAIL

NOT TO SCALE

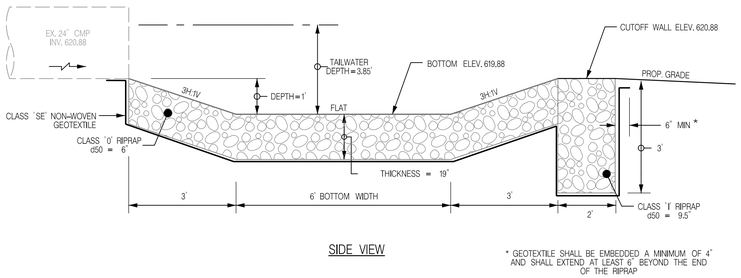
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.

NOTES:

1. FOR DIMENSIONS AND CRITICAL ELEVATIONS, SEE SHEET D-3.

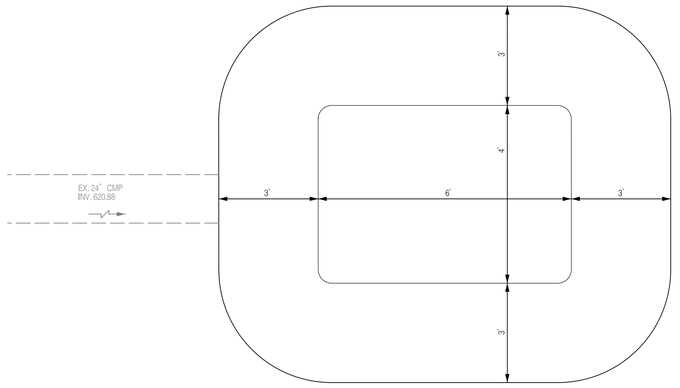
PLUNGE POOL DETAIL

N.T.S.



SIDE VIEW

* GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 4' AND SHALL EXTEND AT LEAST 6' BEYOND THE END OF THE RIPRAP



PLAN VIEW

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
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APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
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DIRECTOR, THE DEPT. OF PLANNING & ZONING	DATE

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DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
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Docusigned by: Michael Galvin

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HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

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STREAM RESTORATION DETAILS

SCALE N.T.S.	DATE JUNE, 2021	PROJECT NO. 18-01655-001	
DESIGNED BY KNH-PVC		COUNTY HOWARD COUNTY	
DRAWN BY KNH-PVC		LOGMILE N/A	
CHECKED BY JJM		HORIZONTAL SCALE N./A	
F.A.P. NO. N/A		VERTICAL SCALE N./A	
DRAWING NO. SRD – 3 OF 3		SHEET NO. 35 OF 116	

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Sunday, June 13, 2021 AT 10:02 PM

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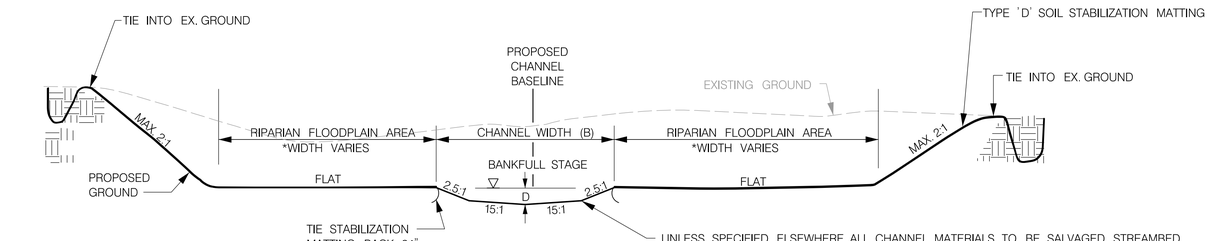
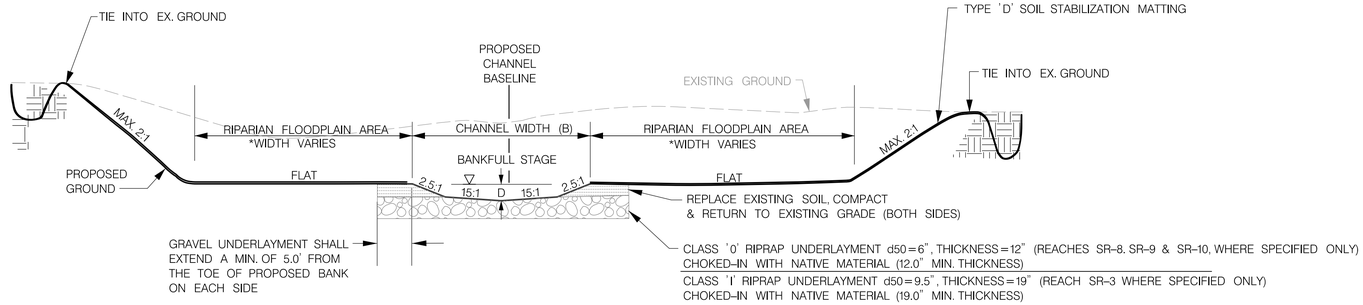
TYPICAL CROSS SECTIONS

N.T.S.



RIFFLE SECTION

N.T.S.



RIFFLE UNDERLAYMENT SECTION

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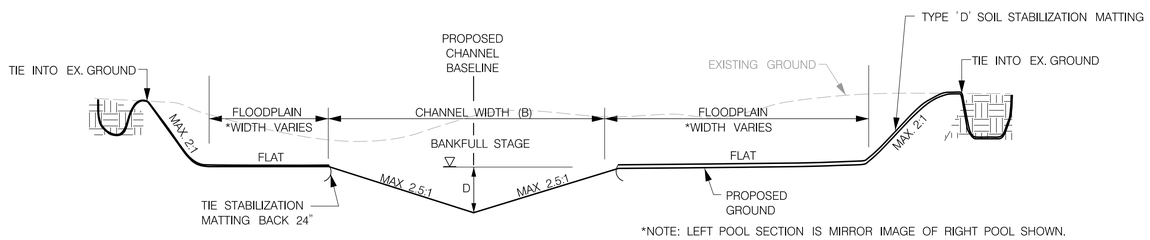
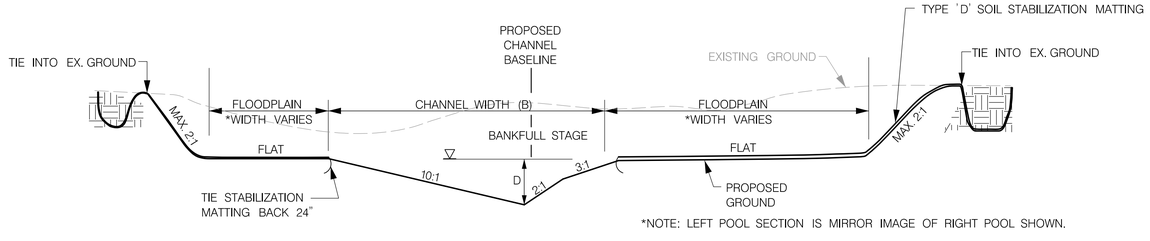


*NOTE: LEFT POOL SECTION IS MIRROR IMAGE OF RIGHT POOL SHOWN.

'B' STREAM POOL SECTION

N.T.S.



*NOTE: LEFT POOL SECTION IS MIRROR IMAGE OF RIGHT POOL SHOWN.

'C' STREAM POOL SECTION

N.T.S.

POOL DIMENSION TABLE							
LOCATION	STATION	STREAM TYPE	BANKFULL DEPTH (D)	CHANNEL WIDTH (B)	BOUNDARY SHEAR WITHIN BANKFULL CHANNEL (LB/SF)	PROPOSED D50 RIFFLE MATERIAL SIZE (MM)	CRITICAL/DESIGN SHEAR VALUE (LB/SF)
SR–1	53+38.65 TO 67+13.98	B	1.5 FT	17.5 FT	0.38	23.68	0.30
SR–2	39+66.14 TO 53+38.65	C	1.5 FT	16.0 FT	0.31	23.68	0.30
SR–3	27+97.70 TO 39+66.14	C	1.5 FT	16.0 FT	0.26	23.68	0.30
SR–4	15+15.51 TO 27+57.11	C	1.5 FT	16.0 FT	0.34	23.68	0.30
SR–5	0+00.00 TO 15+15.51	C	1.5 FT	16.0 FT	0.30	23.68	0.30
SR–6	1300+00.00 TO 1302+36.99	B	0.5 FT	3.0 FT	0.07	23.68	0.30
SR–7	900+00.00 TO 902+03.88	B	0.5 FT	3.0 FT	0.07	23.68	0.30
SR–8	100+00.00 TO 104+85.28	B	1.8 FT	14.0 FT	0.79	152	1.89
SR–8A	107+34.25 TO 116+05.52	C	1.5 FT	16.0 FT	0.34	23.68	0.30
SR–9	205+84.49 TO 210+30.35	B	1.0 FT	4.5 FT	0.57	152	1.89
SR–10	202+04.78 TO 203+66.04	B	1.0 FT	4.5 FT	0.51	152	1.89
SR–11	1000+00.00 TO 1003+51.88	B	1.0 FT	4.0 FT	0.07	23.68	0.30
SR–12A	300+00.00 TO 301+48.47	B	1.0 FT	4.0 FT	0.09	23.68	0.30
SR–12B	400+00.00 TO 402+16.32		1.0 FT	4.0 FT			
SR–12C	500+00.00 TO 500+85.54		1.0 FT	4.0 FT			
SR–12D	600+00.00 TO 602+74.23		1.0 FT	8.0 FT			
SR–12E	700+00.00 TO 705+27.61		1.0 FT	8.0 FT			
SR–13	1200+00.00 TO 1204+02.98	B	0.5 FT	3.0 FT	0.08	23.68	0.30
SR–14	1100+00.00 TO 1102+84.85	B	0.5 FT	3.0 FT	0.04	23.68	0.30
SR–15	800+00.00 TO 801+81.28	B	0.5 FT	3.0 FT	0.12	23.68	0.30

*BASED ON THE BOUNDARY SHEAR WITHIN THE BANKFULL CHANNEL

POOL DIMENSION TABLE			
LOCATION	STATION	STREAM TYPE	BANKFULL DEPTH (D)
SR–1	53+38.65 TO 67+13.98	B	3.5 – 5.0 FT
SR–2	39+66.14 TO 53+38.65	C	3.5 – 4.0 FT
SR–3	27+97.70 TO 39+66.14	C	3.5 – 4.0 FT
SR–4	15+15.51 TO 27+57.11	C	3.0 – 3.67 FT
SR–5	0+00.00 TO 15+15.51	C	4.5 FT
SR–6	1300+00.00 TO 1302+36.99	B	2.0 – 2.5 FT
SR–7	900+00.00 TO 902+03.88	B	2.5 FT
SR–8	100+00.00 TO 104+85.28	B	4.0 – 4.5 FT
SR–8A	107+34.25 TO 116+05.52	C	4.0 – 4.5 FT
SR–9	205+84.49 TO 210+30.35	B	2.5 – 3.0 FT
SR–10	202+04.78 TO 203+66.04	B	2.5 – 3.0 FT
SR–11	1000+00.00 TO 1003+51.88	B	2.5 – 3.0 FT
SR–12A	300+00.00 TO 301+48.47	B	2.5 FT
SR–12B	400+00.00 TO 402+16.32		2.0 FT
SR–12C	500+00.00 TO 500+85.54		2.5 FT
SR–12D	600+00.00 TO 602+74.23		2.5 – 3.5 FT
SR–12E	700+00.00 TO 705+27.61		2.0 – 3.0 FT
SR–13	1200+00.00 TO 1204+02.98	B	2.0 – 2.5 FT
SR–14	1100+00.00 TO 1102+84.85	B	2.0 – 3.0 FT
SR–15	800+00.00 TO 801+81.28	B	2.5 – 3.0 FT

NOTES:

1. POOL CROSS-SECTION REPRESENTS THE MAXIMUM POOL CONDITION. POOL CROSS-SECTION WILL NEED TO TRANSITION INTO RIFFLE CROSS-SECTION.
2. THE FLOODPLAIN AREAS SHOWN AS FLAT ON THE TYPICAL SECTIONS, WILL ACTUALLY CONTAINED VARIED MICROTOPOGRAPHY TO BE CREATED DURING CONSTRUCTION UNDER THE GUIDANCE OF THE DESIGNATED SPECIALIST.
3. MAXIMUM SHEAR STRESS, VELOCITY AND DEPTH OVER THE FLOODPLAIN FOR THE 10-YR STORM ARE AS FOLLOWS: T10 = 1.15 LB/SF, V10 = 2.49 FT/S, d10 = 0.42 FT.
4. THE TARGET SHEAR STRESS FOR BOTH INTERIM AND PERMANENT STABILIZATION CONDITIONS IS 2 LB/SF BASED ON THE PAPER, "STABILITY THRESHOLDS FOR STREAM RESTORATION MATERIALS" BY CRAIG FISCHENICH (MAY 2021). THE PAPER STATES THAT THERE IS A PERMISSIBLE SHEAR STRESS OF 1.2 – 2.5 LB/SF BASED ON A COMBINATION OF LONG NATIVE GRASSES AND HARDWOOD TREE PLANTING ELEMENTS. THE MAXIMUM SHEAR STRESS OVER THE FLOODPLAIN FOR THE 10-YEAR STORM IS 1.15 LB/SF WHICH IS WITHIN THE ACCEPTABLE RANGE OF PERMISSIBLE STRESSES. THE PROPOSED NATIVE GRASSES WILL DULLY ESTABLISH WITHIN 6-12 MONTHS. TREES AND SHRUBS WILL PROVIDE ADDITIONAL ROOTING STABILITY WITHIN 2-3 YEARS. THE MATTING PROPOSED IS RATED FOR 4-6 YEARS BEFORE SIGNIFICANT DEGRADATION OCCURS.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

TYPICAL SECTIONS

SCALE N.T.S. DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. TS– 1 OF 1 SHEET NO. 36 OF 116

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Sunday, June 13, 2021 At 10:04 PM

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20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson (Signature)	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Kent Sheubrooks (Signature)	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gowan (Signature)	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
20068DB0235854DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18–01655–001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS–01 OF 15 SHEET NO. 37 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 10:18 PM

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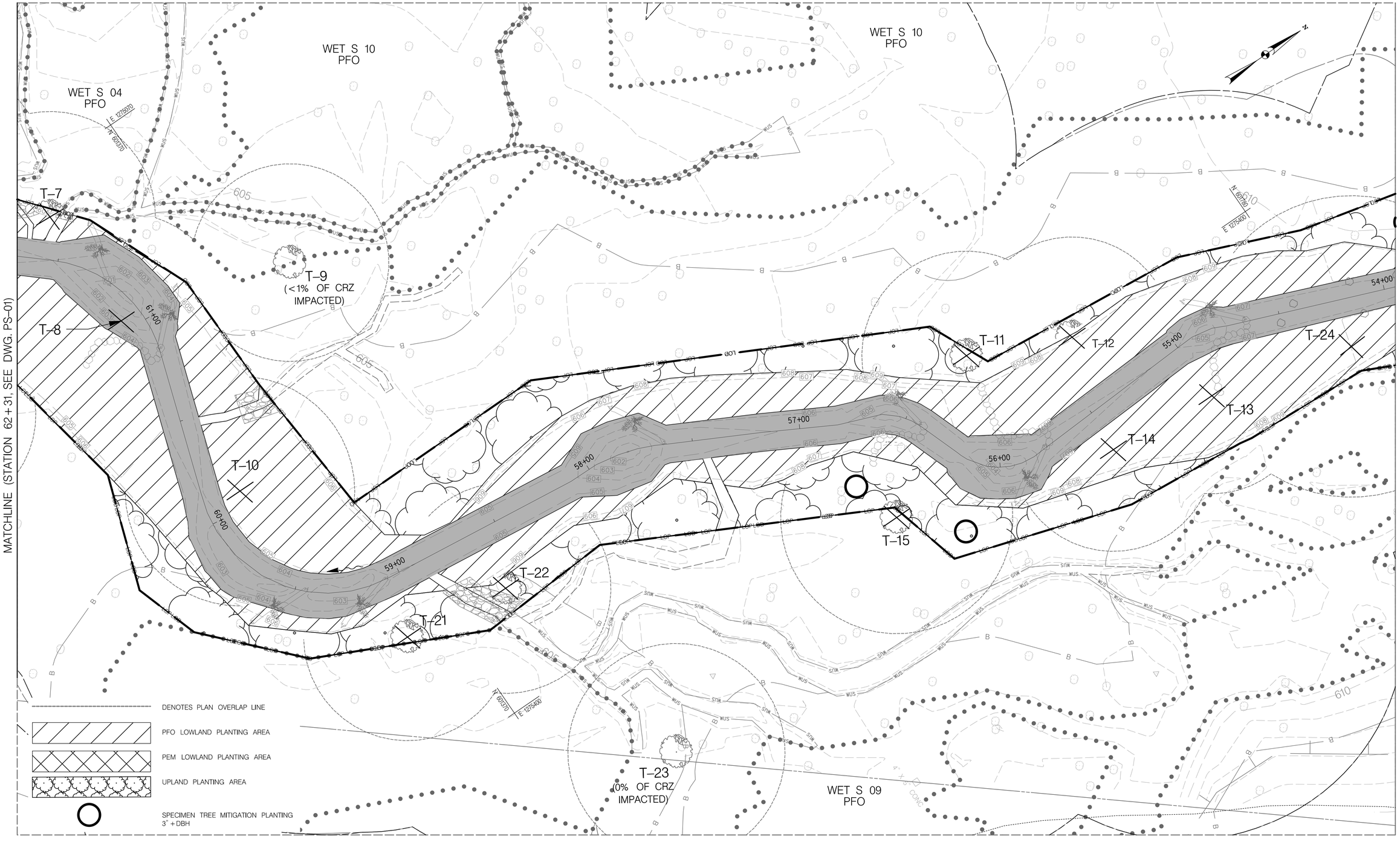

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Groman — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

PROFESSIONAL CERTIFICATION
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OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS-02 OF 15 SHEET NO. 38 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 10:20 PM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

MATCHLINE (STATION 48+47, SEE DWG. PS–04)

WET S 08
PFO

WET S 10
PFO

T–28
(15% OF CRZ
IMPACTED)

T–25

N 61000
E 123000

E 122920
N 61000

E 123080
N 61000

50+00
51+00
52+00
53+00
116+00
120+00
120+50
120+75
120+90
121+00
120+00
120+25
120+40
120+60
120+80
121+00
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127+20
127+40
127+60
127+80
128+00
128+20

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

MATCHLINE (STATION 43+59, SEE DWG. PS–05)

WET S 11
PEM

WET S 08
PFO

T-27

111+00
112+00
113+00
114+00
115+00
44+00
45+00
46+00
47+00
48+00
49+00
1100+00
1101+00
1102+00

N 602815
E 1278035

N 602775
E 1278095

INV. EL.
=622.24'

15" CMP

FLORENCE RD

DENOTES PLAN OVERLAP LINE

PFO LOWLAND PLANTING AREA

PEM LOWLAND PLANTING AREA

UPLAND PLANTING AREA

SPECIMEN TREE MITIGATION PLANTING
3" + DBH

MAP: 12 GRID: 6 PARCEL: 25
GREGG P. & DARLENE McCARRON DEED 2077/508

PLAN OVERLAP LINE (TYP)

MATCHLINE (STATION 48+87, SEE DWG. PS–03)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021
Amy Gowan — 7/12/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. **PS–04** OF 15 SHEET NO. 40 OF 116

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Sunday, June 13, 2021 AT 10:23 PM

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MATCHLINE (STATION 38+09, SEE DWG. PS–06)

MATCHLINE (SEE DWG. PS–07)

DENOTES PLAN OVERLAP LINE

PFO LOWLAND PLANTING AREA

PEM LOWLAND PLANTING AREA

UPLAND PLANTING AREA

SPECIMEN TREE MITIGATION PLANTING 3" + DBH

WET S 13
PFO/PEM

WET S 11
PEM

WET S 11
PSS

WET S 08
PFO

N 602845
E 1079835

E 1270864
N 602578

E 1270394
N 602578

39+00
40+00
41+00
42+00
43+00
107+00
108+00
109+00
110+00

FLORENCE RD

MAP 12 GRID 6 PARCEL 25
GREGG P. & ARLENE M. CARRON
DEED 2077/508

PLAN OVERLAP LINE (TYP)

MATCHLINE (STATION 43+59, SEE DWG. PS–04)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. PS–05 OF 15 SHEET NO. 41 OF 116

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Sunday, June 13, 2021 AT 10:25 PM

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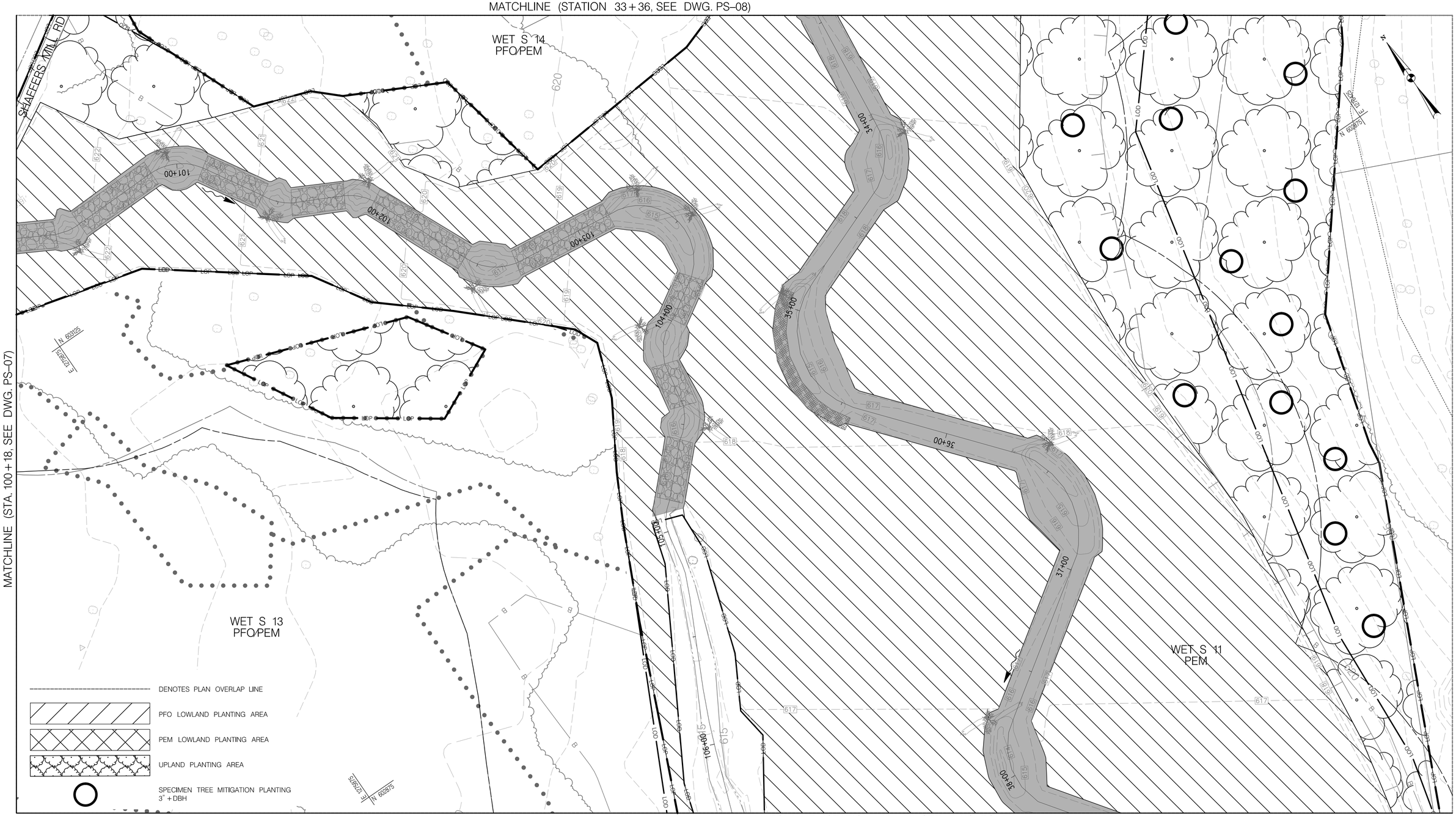
MATCHLINE (STATION 33+36, SEE DWG. PS–08)

MATCHLINE (STA. 100+18, SEE DWG. PS–07)


SHAEFFERS MILL RD
WET S 14
PFO/PEM
WET S 13
PFO/PEM
WET S 11
PEM
101+00
102+00
103+00
104+00
105+00
106+00
24+00
35+00
36+00
37+00
38+00
620
615
617
N 529859
E 1078574
N 529859
E 1078574
N 529875
E 1078575
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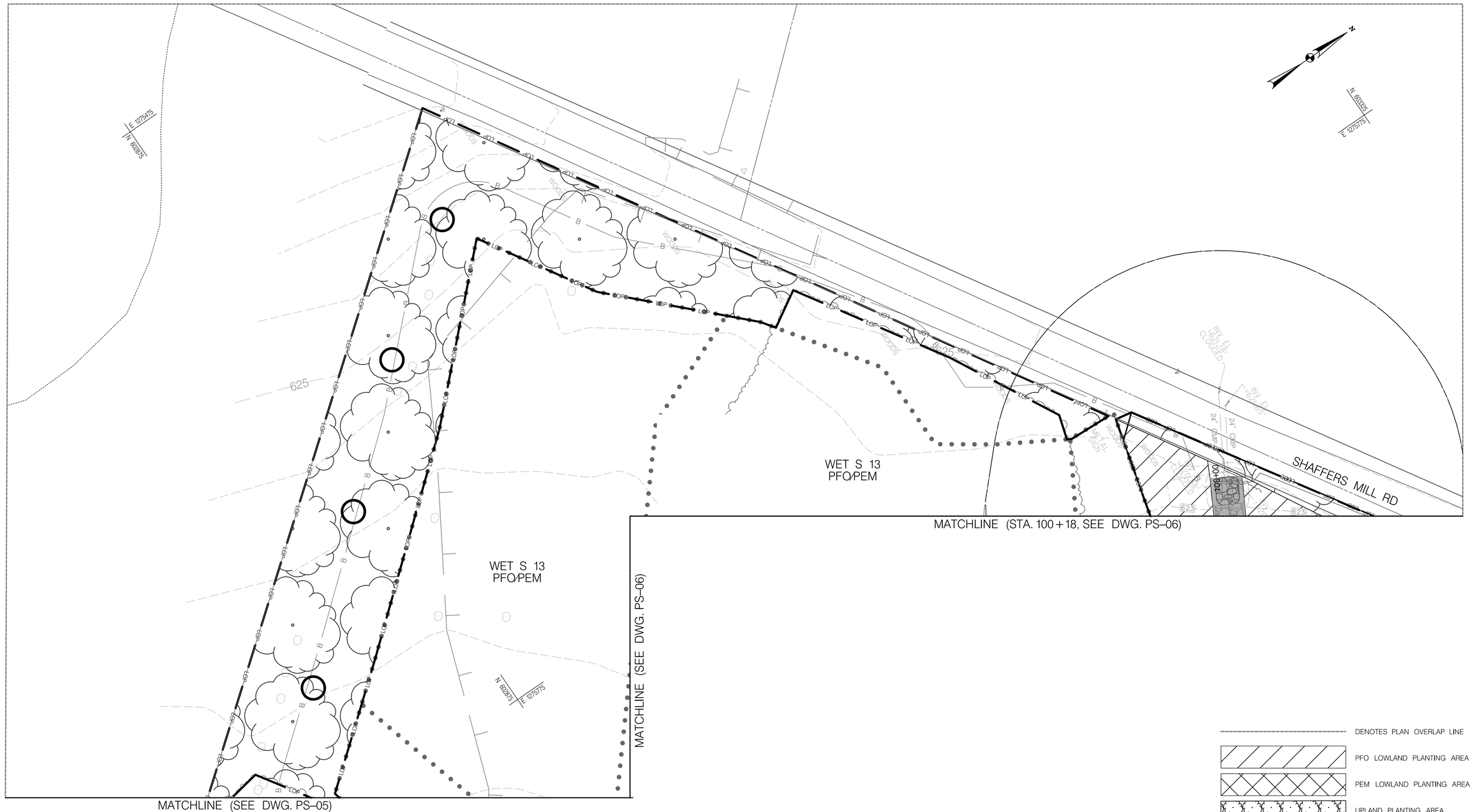
E 1078575

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57



DENOTES PLAN OVERLAP LINE

PFO LOWLAND PLANTING AREA

PEM LOWLAND PLANTING AREA

UPLAND PLANTING AREA

SPECIMEN TREE MITIGATION PLANTING 3" + DBH

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gronan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
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CONTACT
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40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

DocuSigned by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. PS-07 OF 15 SHEET NO. 43 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 10:28 PM

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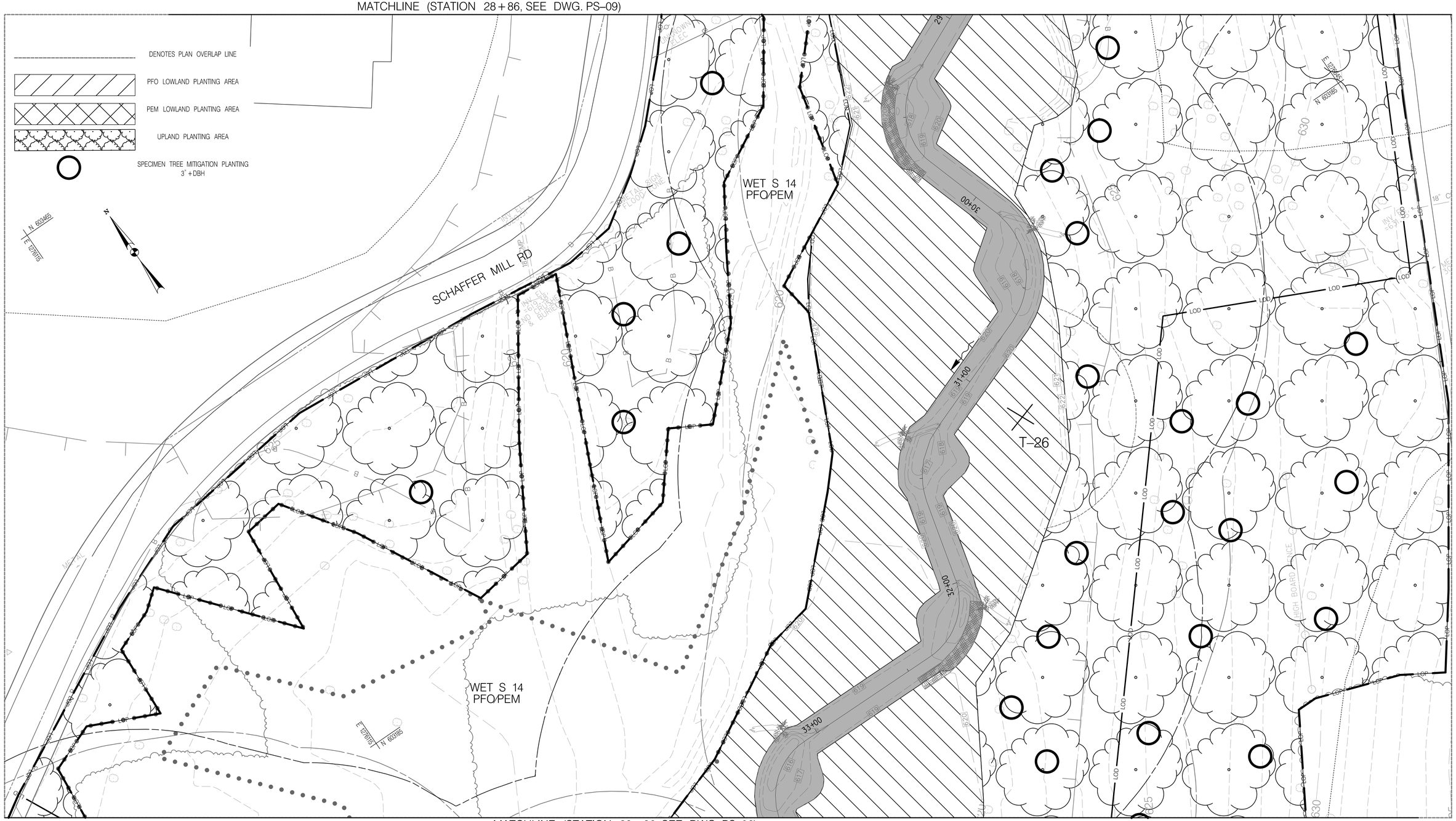
MATCHLINE (STATION 28+86, SEE DWG. PS-09)



MATCHLINE (STATION 33+36, SEE DWG. PS-06)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL AREAS CLEARED WITHIN THE LOD ARE TO BE REPLANTED AS SHOWN IN THE LANDSCAPING PLANS.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF DEVELOPMENT ENGINEERING DIVISION	DATE
Chad Edmondson	7/9/2021
CHIEF DIVISION OF LAND DEVELOPMENT	DATE
Amy Gronan	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin
2008BC8E2353DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS-08 OF 15 SHEET NO. 44 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 10:48 PM

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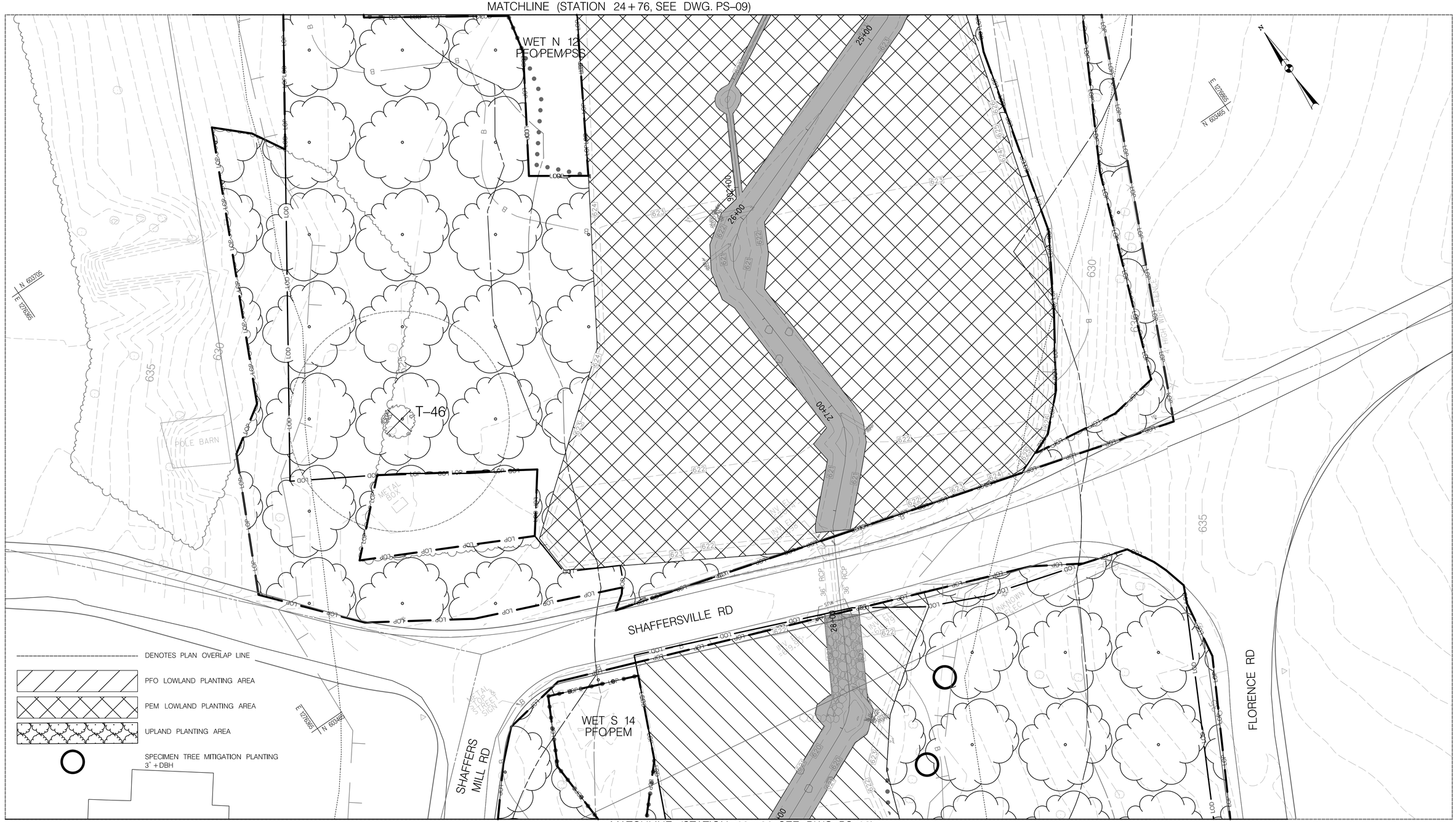

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson (Signature)	7/9/2021
CHIEF DEVELOPMENT ENGINEERING DIVISION	DATE
(Signature)	7/9/2021
CHIEF DIVISION OF LAND DEVELOPMENT	DATE
Amy Gronan (Signature)	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS-09 OF 15 SHEET NO. 45 OF 116

BY: PCrawford –

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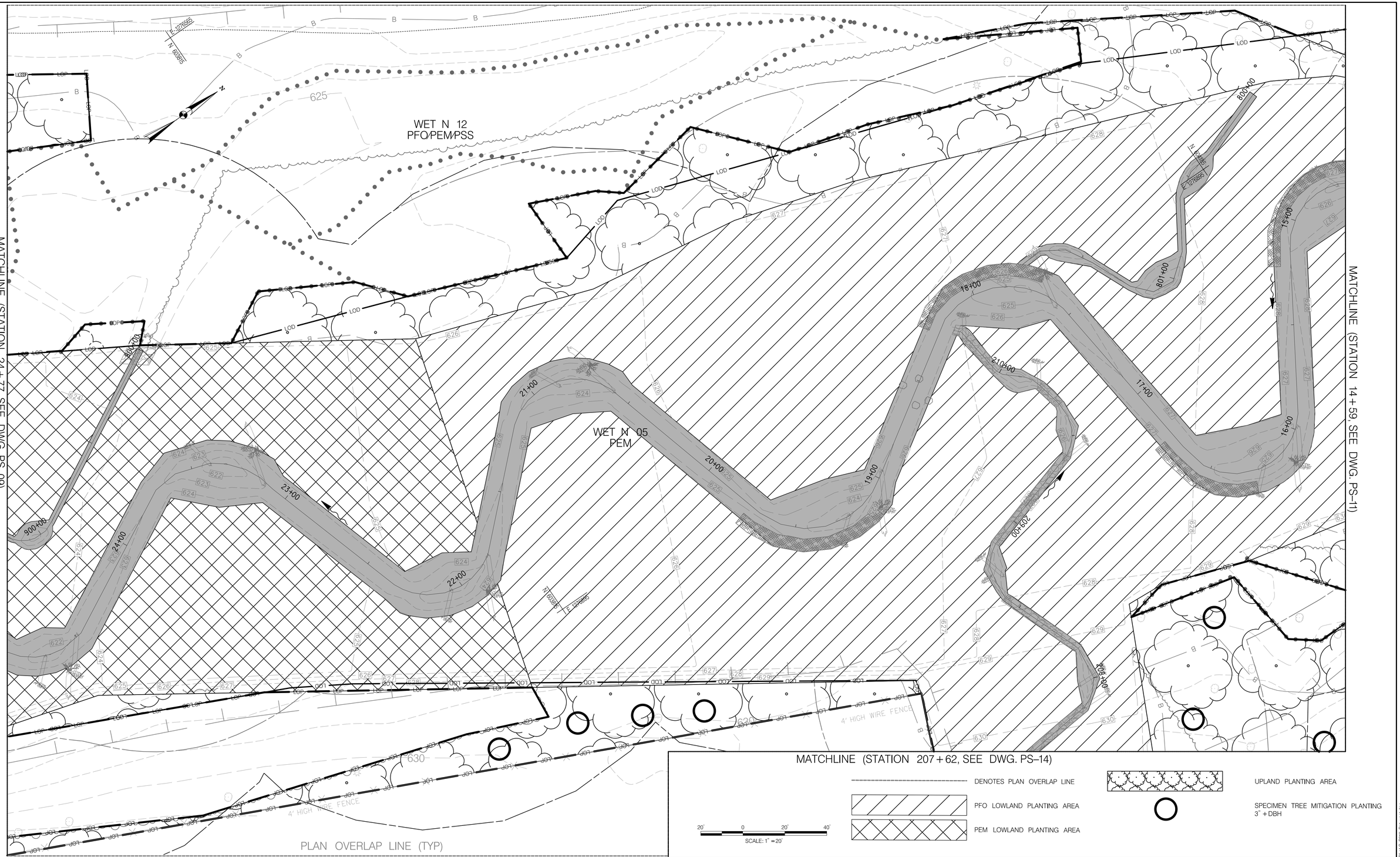

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

NOTES:
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APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Kent Sheubrooks — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gronan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
Docu Signed by: Michael Galvin

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC — COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC — LOGMILE N/A
CHECKED BY JJM — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. PS-10 OF 15 — SHEET NO. 46 OF 116

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MATCHLINE (STATION 14+59, SEE DWG. PS-10)

MATCHLINE (STATION 6+85, SEE DWG. PS-12)

MATCHLINE (STATION 207+62, SEE DWG. PS-14)

PLAN OVERLAP LINE (TYP)

(20% OF CRZ IMPACTED)
T-48

T-49

T-47

T-43

T-42

T-41

T-40

T-45

T-44

E 1278915
N 604305

N 604155
E 1277285

N 604315
E 1277365

1000+00
1001+00
1002+00
1003+00
1004+00
07+00
08+00
09+00
10+00
11+00
12+00
13+00
14+00
700+00
701+00
702+00
703+00
704+00
705+00

DENOTES PLAN OVERLAP LINE

PFO LOWLAND PLANTING AREA

PEM LOWLAND PLANTING AREA

UPLAND PLANTING AREA

SPECIMEN TREE MITIGATION PLANTING
3" + DBH

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
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APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Digitally signed by	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gowan	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

BY: PCrawford –

STATE OF MARYLAND
MICHAEL R. GALVIN
21076
PROFESSIONAL ENGINEER

Docusigned by:
Michael Galvin
20088D82258404...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN	DATE JUNE, 2021	PROJECT NO. 18-01655-001	
DESIGNED BY KNH/PVC		COUNTY HOWARD COUNTY	
DRAWN BY KNH/PVC		LOGMILE N/A	
CHECKED BY JJM		HORIZONTAL SCALE N./A	
F.A.P. NO. N/A		VERTICAL SCALE N./A	

DRAWING NO. PS-11 OF 15 SHEET NO. 47 OF 116

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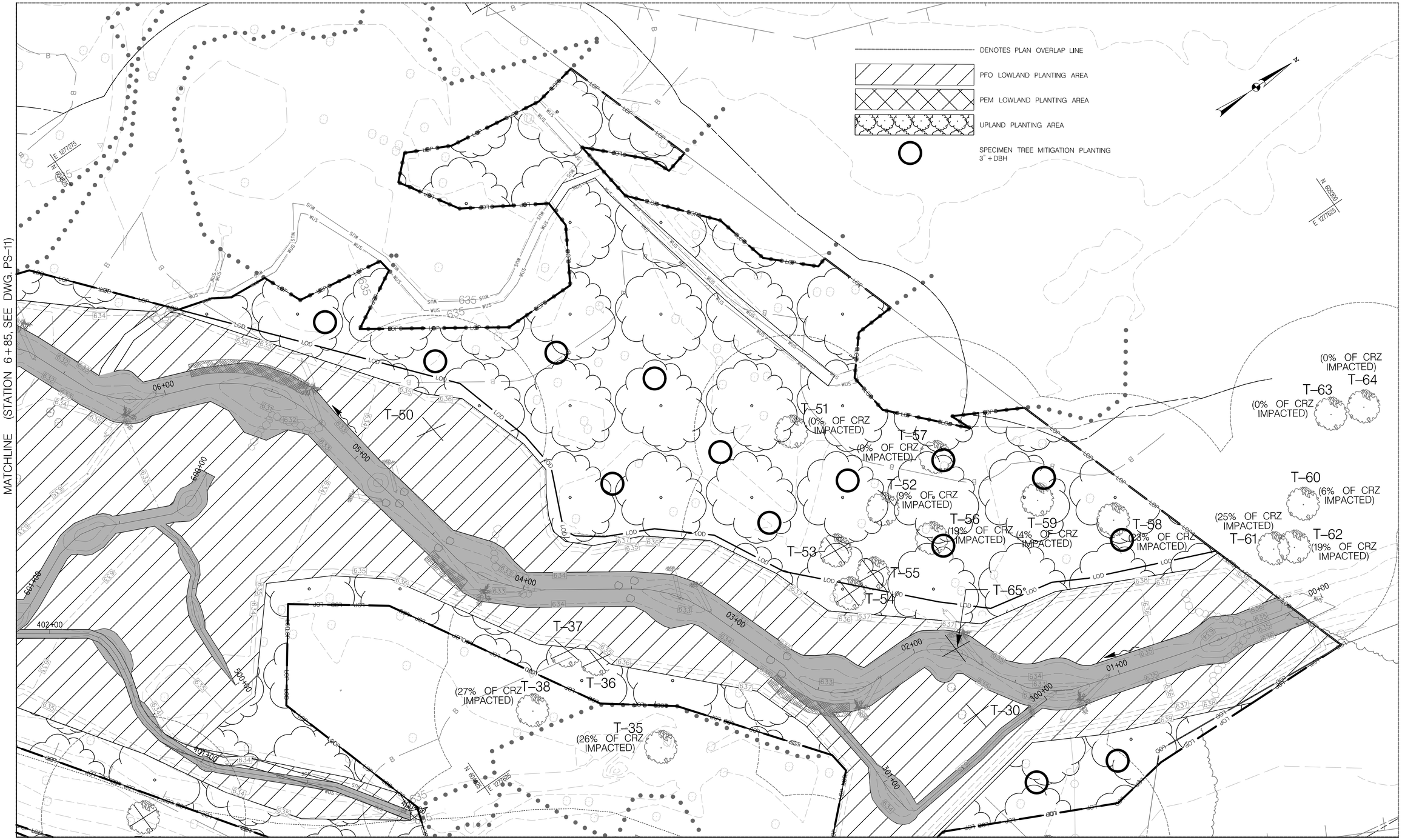

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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Gowan	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Designed by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS-12 OF 15 SHEET NO. 48 OF 116

BY: PCrawford –

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Sunday, June 13, 2021 AT 10:56 PM

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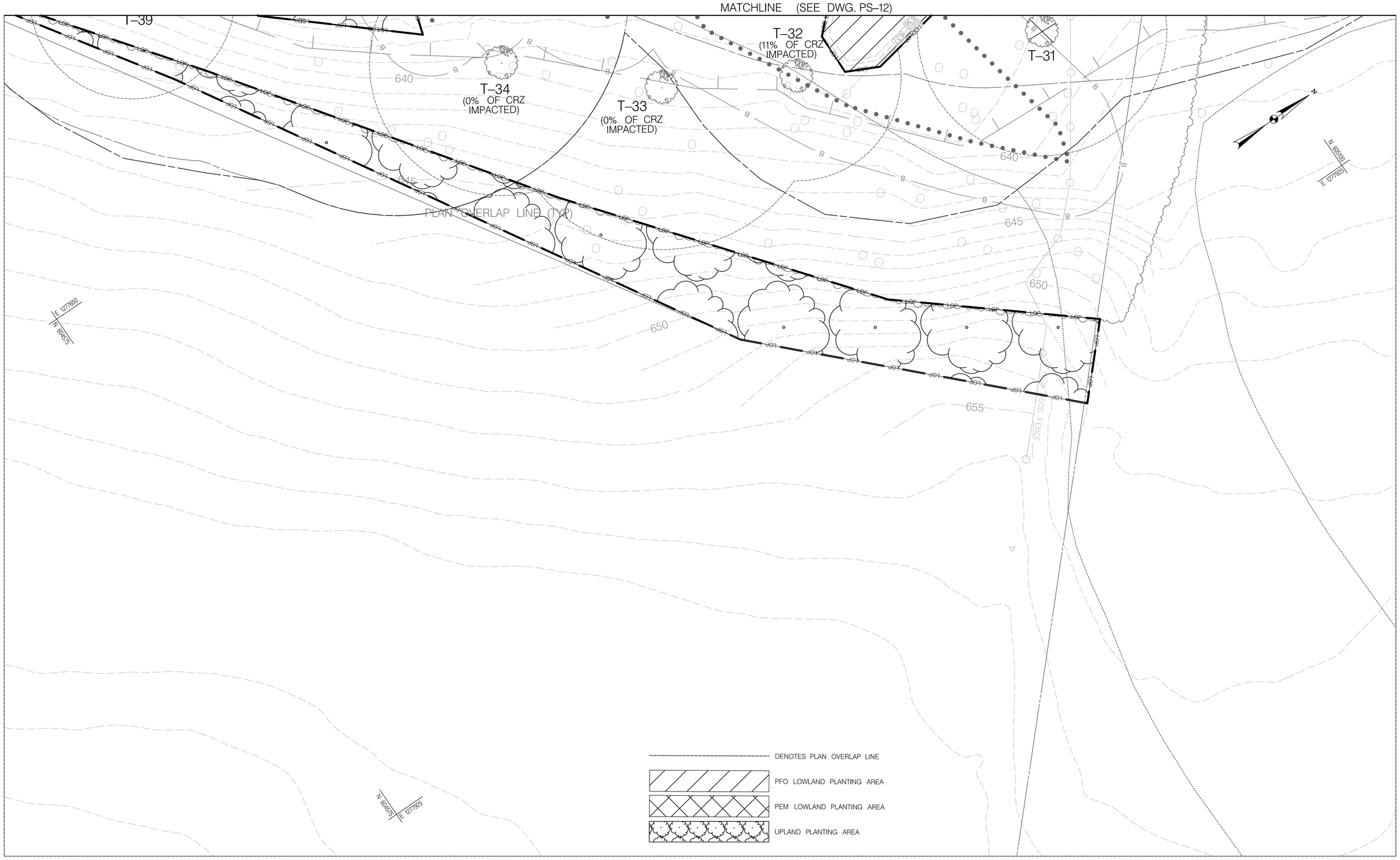

NOTES:
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Chad Edmondson (Signature)	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Kent Sheubrooks (Signature)	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Groman (Signature)	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
ZZ0BBDB0ZZ0BBDB...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS-13 OF 15 SHEET NO. 49 OF 116

BY: PCrawford –

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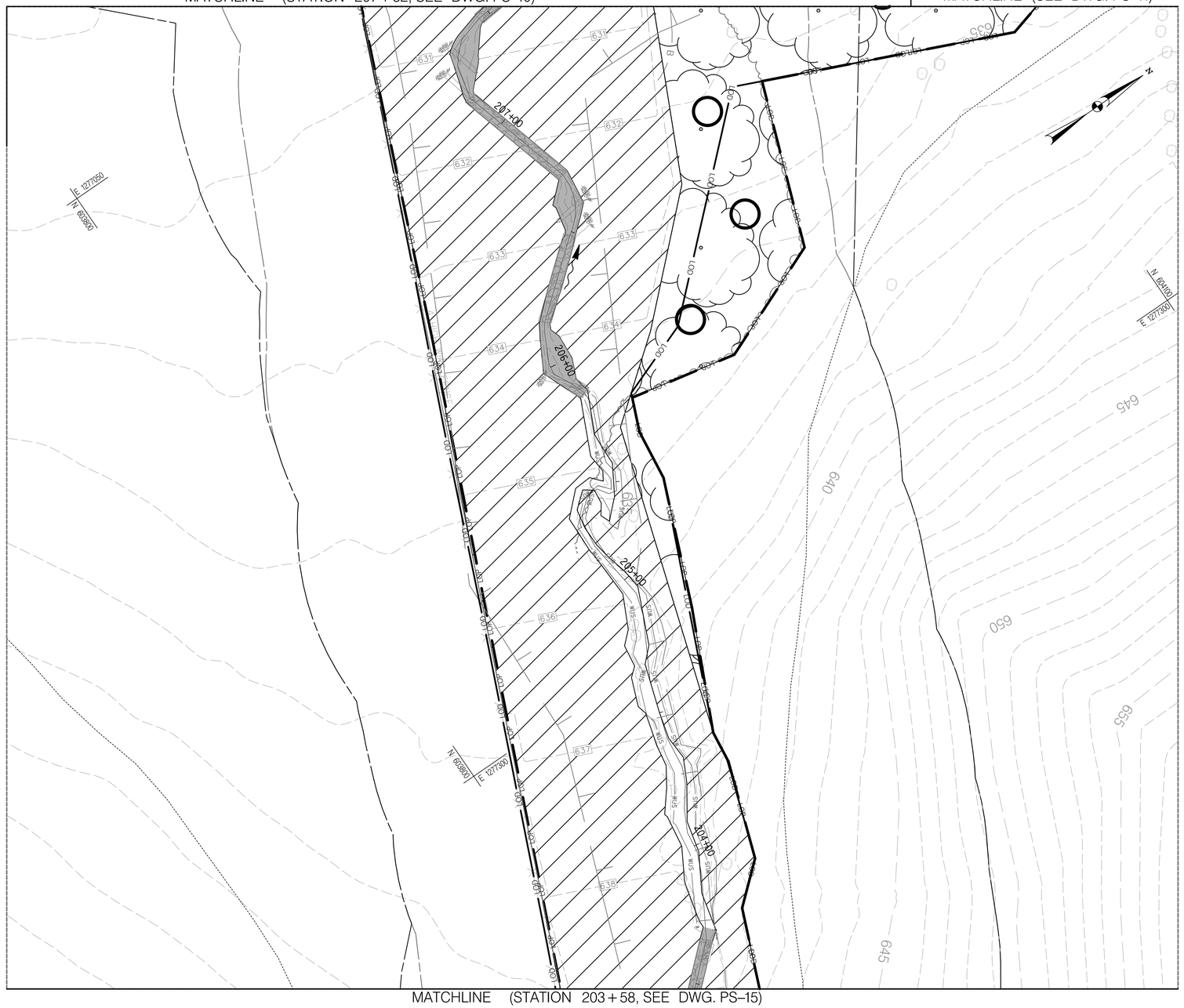

DENOTES PLAN OVERLAP LINE

PFO LOWLAND PLANTING AREA

PEM LOWLAND PLANTING AREA

UPLAND PLANTING AREA

SPECIMEN TREE MITIGATION PLANTING 3" +DBH

NOTES:
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20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
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PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. PS–14 OF 15 SHEET NO. 50 OF 116

BY: PCrawford –

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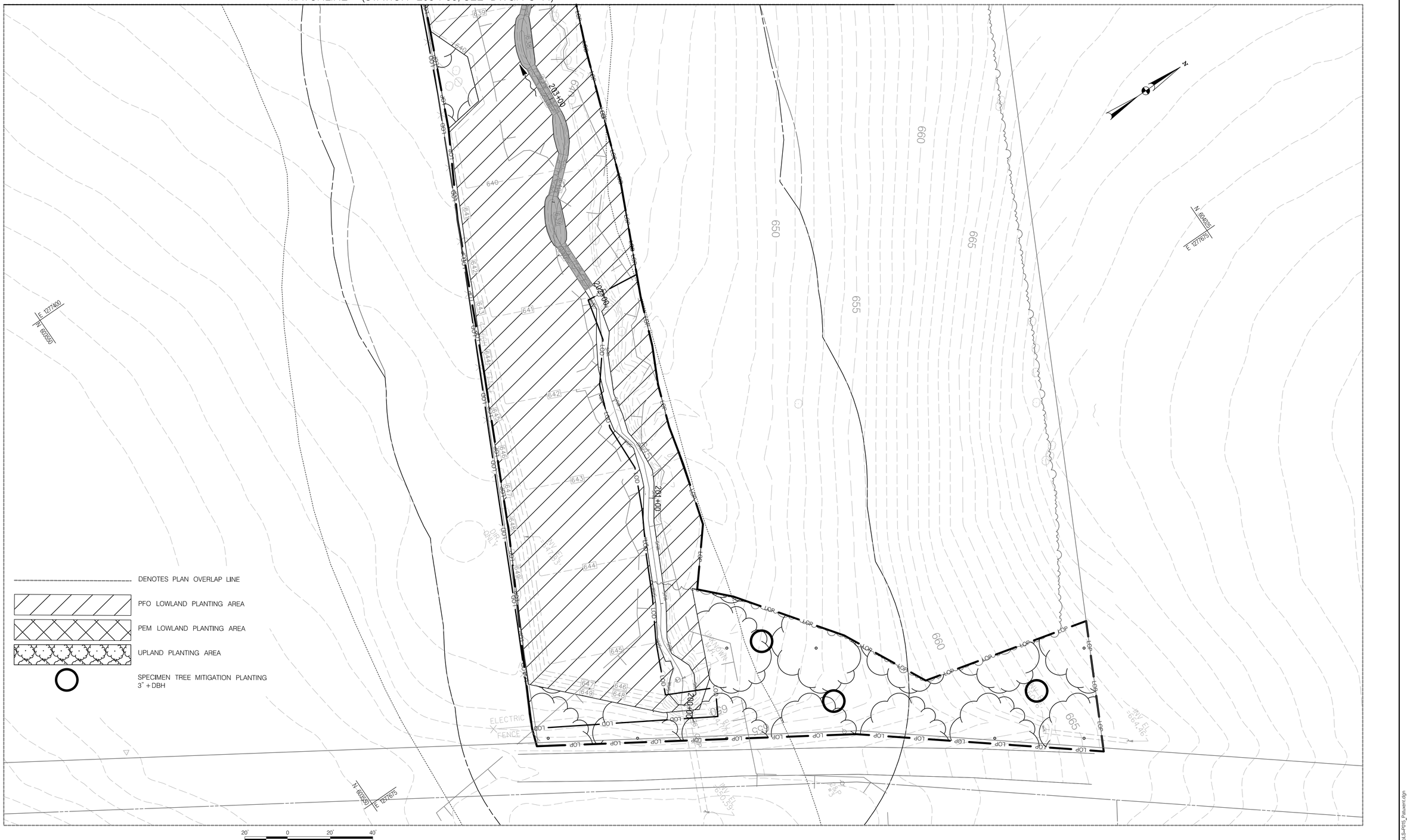
PLAN OVERLAP LINE (TYP.)

MATCHLINE (STATION 203+58, SEE DWG. PS–14)



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PFO WETLAND TREE PLANT SCHEDULE (TOTAL)*

QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT. CLASS	SPACING/REMARKS
906	AR	Acer rubrum	Red Maple	1" cal.	#7	10' o.c.
905	AS	Acer saccharinum	Silver Maple	1" cal.	#7	10' o.c.
905	AA	Cornus sericea	Redosier Dogwood	Multi-stem, 4' tall	#7	10' o.c.
905	BC	Taxodium distichum	Bald Cypress	1" cal.	#7	10' o.c.
905	BN	Betula nigra	River Birch	1"-3" cal.**	#7, b&b**	10' o.c.
905	PO	Plantanus occidentalis	American Sycamore	1"-3" cal.**	#7, b&b**	10' o.c.
905	QB	Quercus bicolor	Swamp White Oak	1" cal.	#7	10' o.c.
905	QP	Quercus palustris	Pin Oak	1" cal.	#7	10' o.c.
905	SN	Salix nigra	Black Willow	1" cal.	#7	10' o.c.

PEM WETLAND TREE PLANT SCHEDULE (TOTAL)*

QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT. CLASS	SPACING/REMARKS
57	AR	Acer rubrum	Red Maple	1" cal.	#7	12' o.c.
57	AS	Acer saccharinum	Silver Maple	1" cal.	#7	12' o.c.
57	AA	Cornus sericea	Redosier Dogwood	Multi-stem, 4' tall	#7	12' o.c.
57	BC	Taxodium distichum	Bald Cypress	1" cal.	#7	12' o.c.
57	BN	Betula nigra	River Birch	1"-3" cal.**	#7, b&b**	12' o.c.
57	PO	Plantanus occidentalis	American Sycamore	1"-3" cal.**	#7, b&b**	12' o.c.
57	QB	Quercus bicolor	Swamp White Oak	1" cal.	#7	12' o.c.
57	QP	Quercus palustris	Pin Oak	1" cal.	#7	12' o.c.
57	SN	Salix nigra	Black Willow	1" cal.	#7	12' o.c.

UPLAND TREE PLANT SCHEDULE (TOTAL)*

QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT. CLASS	SPACING/REMARKS
384	RP	Robinia pseudoacacia	Black Locust	1" cal.	#7	12' o.c.
384	AS	Acer saccharum	Sugar Maple	1"-3" cal.**	#7, b&b**	12' o.c.
384	JV	Juniperus virginiana	Eastern Red Cedar	1" cal.	#7	12' o.c.
384	CC	Cercis canadensis	Eastern Redbud	1" cal.	#7	12' o.c.
383	QP	Quercus phellos	Willow Oak	1" cal.	#7	12' o.c.
383	LT	Liriodendron tulipfera	Tulip Poplar	1"-3" cal.**	#7, b&b**	12' o.c.
383	NS	Nyssa sylvatica	Black Gum	1" cal.	#7	12' o.c.
383	QR	Quercus rubra	Northern Red Oak	1" cal.	#7	12' o.c.
383	QM	Quercus macrocarpa	Bur Oak	1" cal.	#7	12' o.c.

*NO TREES ARE TO BE PLANTED ON SEWER LINES OR MANHOLES, 10' CENTER TO CENTER.
**SPECIMEN TREE MITIGATION PLANTINGS: 102 TREES OF THE SELECTED SPECIES MUST BE PLANTED WITH A DBH OF AT LEAST 3" CAL. AS A B&B.
SEE PLANTING PLANS FOR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL COORDINATE ALL LOCATIONS WITH JMT PRIOR TO PLANTING.

LIVE FASCINE PLANT SCHEDULE (TOTAL)

BOTANICAL NAME	COMMON NAME	LENGTH OF WHIP	DIAMETER OF FASCINE	LENGTH (FT)
Cornus amomum	Silky Dogwood	6' to 8'	8"	850
Cornus sericea	Red-Osier Dogwood	6' to 8'	8"	850
Salix exigua ssp. interior	Sandbar Willow	6' to 8'	8"	850
Salix sericea	Silky Willow	6' to 8'	8"	850

NOTE: EQUAL QUANTITIES OF ALL 4 SPECIES SHALL BE COMBINED TO FORM EACH FASCINE BUNDLE

FLOODPLAIN SEED MIX

SEED MIX	PERCENT (%) BY WEIGHT
Panicum clandestinum /Deertongue	20.6
Elymus riparius /Riverbank Wildrye, PA Ecotype	20.0
Andropogon gerardii/Big Bluestem	10.0
Carex lurida /Lurid (Shallow) Sedge, PA Ecotype	10.0
Carex vulpinoidea /Fox Sedge	10.0
Carex scoparia /Blunt Broom Sedge, PA Ecotype	8.0
Panicum virgatum /Switchgrass	8.0
Verbena hastata /Blue Vervain, PA Ecotype	4.0
Juncus effusus /Soft Rush	3.0
Asclepias incarnata /Swamp Milkweed, PA Ecotype	1.0
Aster novae-angliae /New England Aster, PA Ecotype	1.0
Desmodium paniculatum /Panicledleaf Ticktrefoil, PA Ecotype	1.0
Eupatorium fistulosum /Joe Pye Weed, PA Ecotype	1.0
Eupatorium perfoliatum /Boneset, PA Ecotype	0.7
Helenium autumnale /Common Sneezeweed, PA Ecotype	0.5
Monarda fistulosa /Wild Bergamot, PA Ecotype	0.5
Vernonia noveboracensis /New York Ironweed, PA Ecotype	0.5
Mimulus ringens /Square Stemmed Monkeyflower, PA Ecotype	0.2

*APPLIED AT 20 LBS/ACRE
**APPLIED WITH LOLIUM MULTIFLORUM/ANNUAL RYEGRASS AT 30 LBS/ACRE

UPLAND SEED MIX

SEED MIX	PERCENT (%) BY WEIGHT
Sorghastrum nutans /Indiangrass, PA Ecotype	53.0
Elymus virginicus /Virginia Wildrye, PA Ecotype	15.0
Tridens flavus / Purpletop, VA Ecotype	8.0
Andropogon gerardii/Big Bluestem	5.0
Chamaecrista fasciculata /Partridge Pea, PA Ecotype	5.0
Rudbeckia hirta / Blackeyed Susan, NC Ecotype	3.0
Lespedeza virginica /Slender Lespedeza, VA Ecotype	2.0
Asclepias syriaca /Common Milkweed, PA Ecotype	1.0
Aster novae-angliae /New England Aster, PA Ecotype	1.0
Aster sagittifolius /Arrowleaf (Sagittate) Aster, PA Ecotype	1.0
Heliopsis helianthoides /Oxeye Sunflower, PA Ecotype	1.0
Penstemon digitalis /Tall White Beardtongue, PA Ecotype	1.0
Penstemon hirsutus /Hairy Beardtongue	1.0
Senna hebecarpa /Wild Senna, VA & WV Ecotype	1.0
Solidago juncea /Early Goldenrod, VA Ecotype	1.0
Monarda fistulosa /Wild Bergamot, PA Ecotype	0.8
Pycnanthemum tenuifolium /Narrowleaf Mountainmint	0.3

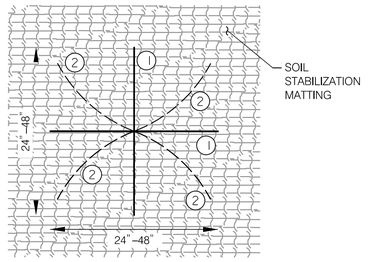
*APPLIED AT 20 LBS/ACRE
**APPLIED WITH LOLIUM MULTIFLORUM/ANNUAL RYEGRASS AT 30 LBS/ACRE

SEED MIX SCHEDULE (TOTAL)

SEED MIX	SQUARE YARDS (SY)
FLOODPLAIN SEED MIX	98,837
UPLAND SEED MIX	55,212

NOTE: FLOODPLAIN SEED MIX INCLUDES ALL RESTORED AND ENHANCED WETLANDS.

TREE & SHRUB INSTALLATION THROUGH SOIL STABILIZATION MATTING



1. MAKE CUT WITH SHARP KNIFE THROUGH SOIL STABILIZATION MATTING - SEE SOLID LINE IN DIAGRAM ABOVE. NOTE THAT ALL CUTS IN THE MATTING SHALL BE A MINIMUM OF 2 FEET CLEAR OF ALL MATTING SEAMS, OVERLAPS AND EDGES.
2. TEMPORARILY PIN BACK MATTING WITH 4 STAPLES TO INSTALL TREE OR SHRUB - SEE DASHED LINE IN DIAGRAM ABOVE.
3. INSTALL PLANT THROUGH PINNED BACK MATTING. INSTALL PLANT AT PROPER GRADE TO GROUND PLANE.
4. REMOVE 4 STAPLES PLACED IN STEP 2 ABOVE THAT WERE USED TO TEMPORARILY PIN BACK THE MATTING DURING ROOT BALL INSTALLATION.
5. PLACE 4 STAPLES IN EACH OF FOUR CUT SECTIONS TO WELL ANCHOR SOIL STABILIZATION MATTING BACK OVER TOP OF THE ROOT BALL.
6. FOR TREE INSTALLATIONS, INSTALL TREE STAKES THROUGH MATTING, ONCE RE-ANCHORED OVER ROOT BALL.

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Groman — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
Digitally signed by Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM - HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

PLANTING NOTES AND DETAILS

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. PD - 1 OF 1 SHEET NO. 52 OF 116

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Monday, June 14, 2021 AT 08:13 AM

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HOWARD COUNTY SPECIFICATIONS

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID) 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

   A. PRIOR TO THE START OF EARTH DISTURBANCE,
   B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
   C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
   D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	65.313	ACRES
AREA DISTURBED:	30.97	ACRES
AREA TO BE ROOFED OR PAVED	0.00	ACRES
AREA TO BE VEGETATIVELY STABILIZED	28.87	ACRES
TOTAL CUT	41,599	CU. YDS.
TOTAL FILL	7,394	CU. YDS.
OFF-SITE WASTE/BORROW AREA LOCATIONS:	OFFSITE LOCATION WITH AN ACTIVE GRADING PERMIT, TO BE APPROVED BY CID INSPECTOR	

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

   -INSPECTION DATE
   -INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   -NAME AND TITLE OF INSPECTOR
   -WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   -BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
   -EVIDENCE OF SEDIMENT DISCHARGES
   -IDENTIFICATION OF PLAN DEFICIENCIES
   -IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   -IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   -COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   -PHOTOGRAPHS
   -MONITORING/SAMPLING
   -MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   -OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF HSCD APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR RE-DISTRIBUTION ON FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR BE IMBRICATED AT 25' MINIMUM INTERVALES, WITH LOWER ENDS CURLED UPHILL BY 2' ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

   -USE I AND IP MARCH 1 - JUNE 15
   -USE III AND IIIP OCTOBER 1 - APRIL 30
   -USE IV MARCH 1 - MAY 31

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES

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

EFFECTS ON WATER QUALITY AND QUANTITY

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

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

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER.

2. IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.

3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.

4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

DEFINITION

ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

CRITERIA

A. INCREMENTAL STABILIZATION - CUT SLOPES

1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.

2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):

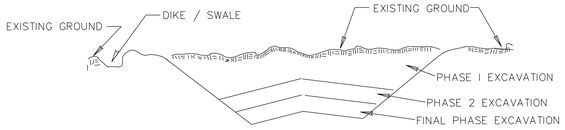
A. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.

B. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.

C. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.

D. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

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



INCREMENTAL STABILIZATION - CUT

B. INCREMENTAL STABILIZATION - FILL SLOPES

1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.

2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.

3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):

A. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.

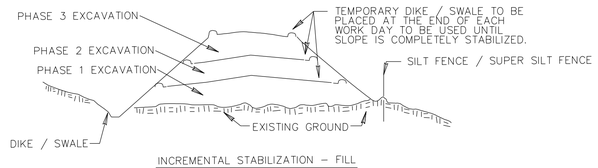
B. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.

C. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.

D. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.

E. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

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



INCREMENTAL STABILIZATION - FILL

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 ½ INCHES IN DIAMETER. 5% 4 INCHES IN DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

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

NOTE:

SOIL BOUNDARIES AND TABLE OF K-FACTORS CAN BE SEEN ON THE SITE ANALYSIS DATA SHEETS.

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docusigned by: Kathy M. Anderson — 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Docusigned by: Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Docusigned by: Amy Gowan — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM - HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL NOTES

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. **EN-1** OF **5** SHEET NO. 53 OF 116

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Monday, June 14, 2021 AT 08:20 AM

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B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING

1. SPECIFICATIONS

A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING.

NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

CRITERIA

SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

Hardiness Zone (from Figure B.3): 6A				Fertlizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
Annual Ryegrass	40	3-15 to 5-31 and 8-1 to 9-30	0.5 in.	436 lb/ac (10lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
Foxtail Millet	30	6-1 TO 7-31	0.5 in.		
Pearl Millet	20	6-1 TO 7-31	0.5 in.		

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEEDING MIXTURES

1. GENERAL USE
   a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
   b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
   c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
   d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

PERMANENT SEEDING SUMMARY

Hardiness Zone (from Figure B.3): 6A Seed Mixture (from Table B.3):								Lime Rate
MIX	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
1	Switch Grass	10	3-15 to 5-31 and 6-1 to 6-15	1/2 in.	45 lb/ac (1.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	2 tons /ac (90 lb/1000 sf)
	Creeping Red Fescue	15	3-15 to 5-31 and 6-1 to 6-15	1/2 in.				
	Wild Indigo	2	3-15 to 5-31 and 6-1 to 6-15	1/2 in.				
8	Tall Fescue	100	3-15 to 5-31 and 8-1 to 9-30	1/2 in.				

PERMANENT SEEDING SUMMARY FOR WETLANDS

Hardiness Zone (from Figure B.3): 6A Seed Mixture (from Table B.3):					FertlizerRate (10-20-20)			Lime Rate
MIX	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
3	Sheep Fescue	20	3-15 to 5-31 and 6-1 to 6-15	1/2 in.	45 lb/ac (1.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	2 tons /ac (90 lb/1000 sf)
	Redtop	1	3-15 to 5-31 and 6-1 to 6-15	1/2 in.				
	Canada Wild Rye	3	3-15 to 5-31 and 6-1 to 6-15	1/2 in.				
	Common Lespedeza	10	3-15 to 5-31 and 6-1 to 6-15	1/2 in.				

2. TURFGRASS MIXTURES
   a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
   b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OT PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MAISTURE BY WEIGHT.
      iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 17TO 3 POUNDS PER 1000 SQUARE FEET.

      NOTES:
      SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77 "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"

      CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION. AND ASSURES A PURE GENETIC LINE.
   c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

      CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
   d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS OR ON ADVERSE SITES.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

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

MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEP THAN 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

NOTE:
SOIL BOUNDARIES AND TABLE OF K-FACTORS CAN BE SEEN ON THE SITE ANALYSIS DATA SHEETS.

BY: PCrawford

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by: Shelly M. Hall — 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM - HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL NOTES

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001
DESIGNED BY KNHPVC COUNTY HOWARD COUNTY
DRAWN BY KNHPVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. EN - 2 OF 5 SHEET NO. 54 OF 116

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Monday, June 14, 2021 AT 08:32 AM

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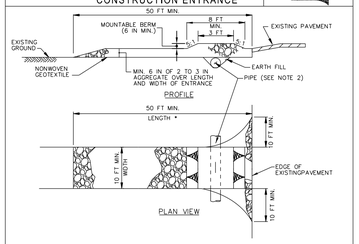
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



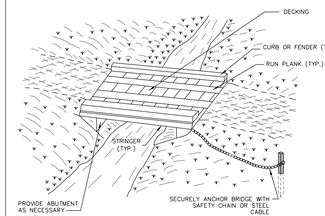
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*)50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB



NOTE: TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB

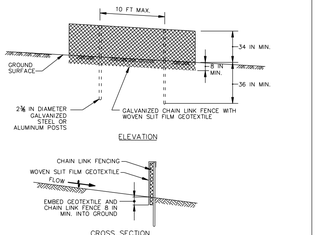
CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
3. CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
4. USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
5. SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
6. SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
7. INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
8. ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
9. AREAS DISTURBED DURING BRIDGE INSTALLATION AND\OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
10. STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.
11. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2¾ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2¼ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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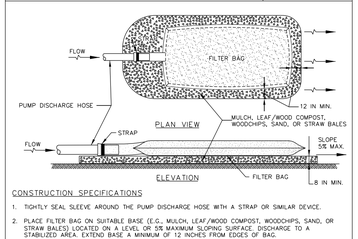
DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE, DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D–4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
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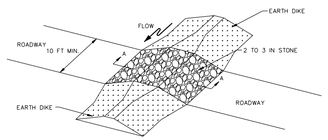
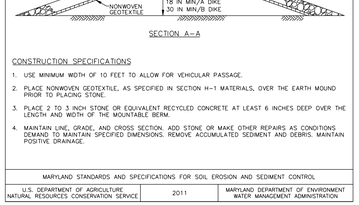
DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB





CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
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H.1 STANDARDS AND SPECIFICATIONS FOR MATERIALS

Table H.1: Geotextile Fabrics

		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec^{-1}		0.28 sec^{-1}		1.1 sec^{-1}	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

[1] All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

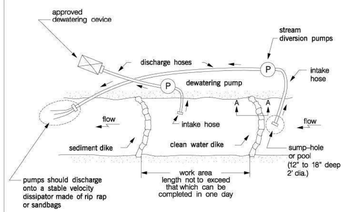
1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

MGWC 1.2: PUMP-AROUND PRACTICE

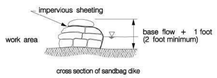
7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See *Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction*).
9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or sod and matting as specified on the plans.
10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence . Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE

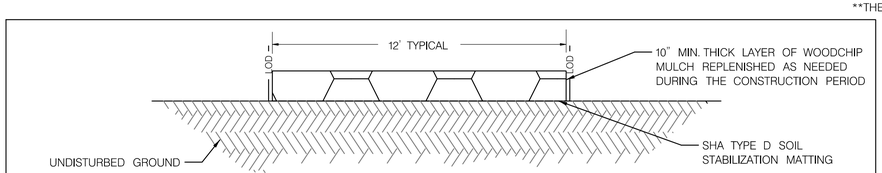
PLAN VIEW



SECTION A–A



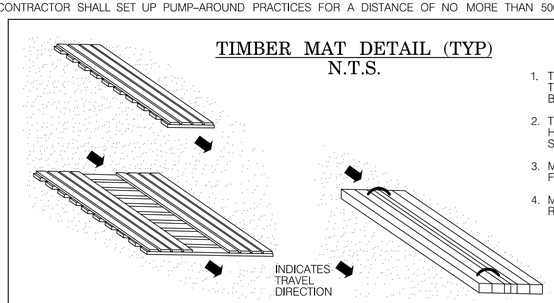
*MINIMUM PUMP AROUND CAPACITY = 1356 GPM (FOR INFORMATIONAL PURPOSES ONLY)
**THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.



1. ACCESS ROUTES TO BE VERIFIED BY THE ENGINEER AT PRE CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
2. SHA TYPE D SOIL STABILIZATION MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC. OVERLAP FABRIC BY 18" MIN. AT SEAMS.
3. CONTRACTOR SHALL MAINTAIN TEMPORARY ACCESS ROAD THROUGHOUT CONSTRUCTION PERIOD.

TEMPORARY MULCH ACCESS ROAD
N.T.S.

TIMBER MAT DETAIL (TYP)
N.T.S.



1. TIMBERS SHOULD BE HELD TOGETHER USING BOLTS OR CABLES TO PROVIDE A SURFACE LARGE ENOUGH FOR THE EQUIPMENT BEING USED.
2. TIMBER MATS ARE TO BE AVAILABLE FOR USE WHEN OPERATING HEAVY EQUIPMENT THROUGH WETLAND AREAS AND\OR OVER SHALLOW SANITARY SEWERS TO PREVENT DAMAGE.
3. MATS SHALL BE PLACED END–TO–END TO FORM A CONTINUOUS SPAN FOR THE ENTIRE LENGTH OF THE AREA TO BE PROTECTED.
4. MATS SHALL BE INSPECTED FREQUENTLY AND MAINTAINED OR REPLACED AS NECESSARY TO ENSURE THEIR PROPER FUNCTION.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Signature on File — 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature on File — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Signature on File — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Signature on File — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Digitally signed by Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL DETAILS

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001
DESIGNED BY KNH\PVC COUNTY HOWARD COUNTY
DRAWN BY KNH\PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N\A VERTICAL SCALE N./A

DRAWING NO. **EN – 3** OF **5** SHEET NO. 55 OF 116

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Monday, June 14, 2021 AT 08:35 AM

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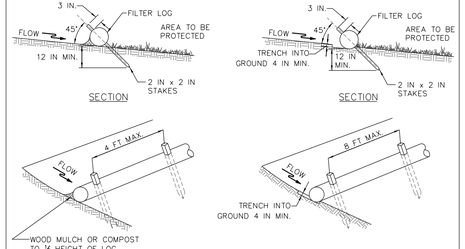
DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.



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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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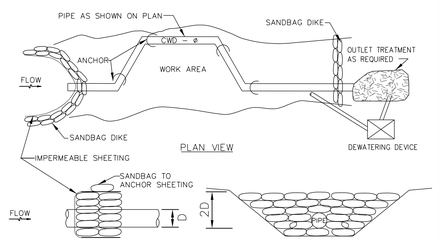
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL: CWD – 12

DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION.



CONSTRUCTION SPECIFICATIONS

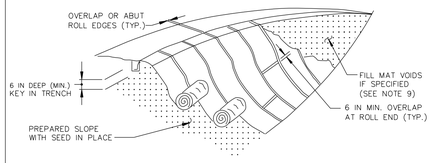
1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLENT RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSSMS – 2 lb/ft²



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

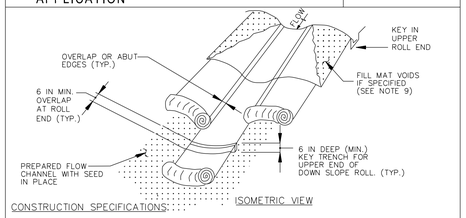
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

*TO BE TYPE D STABILIZATION MATTING AS DESCRIBED IN SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC – 2 lb/ft²



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

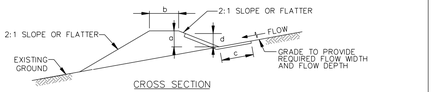
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

*TO BE TYPE D STABILIZATION MATTING AS DESCRIBED IN SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1

PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.



DIKE TYPE	A	B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTH DIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

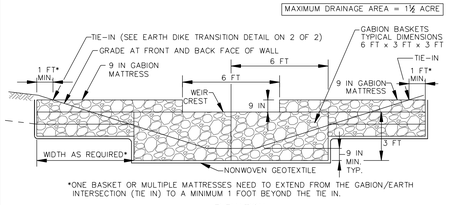
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE



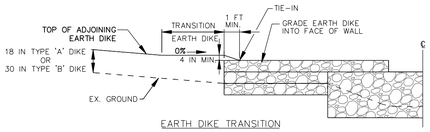
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H–1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

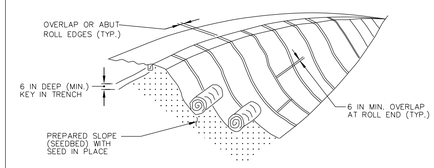
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS – 2 lb/ft²



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

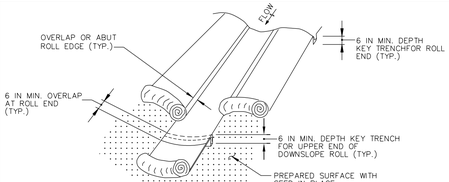
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

*TO BE TYPE D STABILIZATION MATTING AS DESCRIBED IN SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: TSSMC – 2 lb/ft²



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY–IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUO

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SEQUENCE OF CONSTRUCTION

1. MDE TRACKING/PERMIT NUMBER IS 19-NT-3135/201960966 . IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OF OCTOBER 1 TO APRIL 30.

2. CONTRACTOR SHALL OBTAIN GRADING PERMIT FROM HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS PRIOR TO BEGINNING CONSTRUCTION. THE REFERENCE NUMBER TO THE NPDES PERMIT IS MDRCN040Z.

3. CONTRACTOR SHALL CONTACT HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES, AND PERMITS AT (410) 313-1855 TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN.

4. WATERWAY CONSTRUCTION TO BE DONE IN ACCORDANCE WITH MDE STANDARDS AND DETAILS AS SHOWN ON THE PLANS.

5. CONTRACTOR SHALL DISTURB ONLY AS MUCH AREA THAT CAN BE BROUGHT TO FINAL GRADE AND STABILIZED AT THE END OF EACH DAY. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL STABILIZE ANY DISTURBED AREA WITHIN THE LOD NOT DIRECTED TO AN EROSION AND SEDIMENT CONTROL DEVICE AND AS NOTED. ALL DISTURBED AREAS ARE TO BE STABILIZED AS SHOWN ON THE LANDSCAPING PLANS.

6. WHERE PUMP AROUND PRACTICES ARE UTILIZED, THE EXACT LOCATION OF THE HOSES AND FILTER BAG MAY BE MODIFIED IN THE FIELD BASED ON EXISTING CONDITIONS. ANY ADJUSTMENTS MUST BE APPROVED BY THE INSPECTOR. THE MINIMUM PUMP AROUND CAPACITY IS 1356 GPM. REFER TO DETAIL ON EN-3.

7. WORK WITHIN THE FLOODPLAIN SHALL BE CONDUCTED IN AN ORDER WHICH DOES NOT REQUIRE THE CONTRACTOR TO TRACK OVER FINISHED GRADING OR CROSS OVER THE STREAM IN ANY AREAS OTHER THAN THOSE SHOWN ON THE PLANS. THE ACCESS ROAD AND ANY STOCKPILE AREAS WILL BE REMOVED DURING THE FLOODPLAIN GRADING WORK IN EACH CONSTRUCTION PHASE AND SHALL NOT BE REMOVED UNTIL EACH WORK AREA IS PERMANENTLY STABILIZED.

8. THE STREAM WORK IS DIVIDED INTO PHASES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. WORK IS TO OCCUR UPSTREAM OF THE CULVERT ALONG SHAFFERSVILLE ROAD FIRST (PHASES 1 – 6) AND THEN DOWNSTREAM OF THE SHAFFERSVILLE ROAD CULVERT (PHASES 7–13). PHASE 7, WHICH IS THE INSTALLATION OF CONTROLS DOWNSTREAM OF SHAFFERSVILLE ROAD, MAY BEGIN WHEN THE CONTRACTOR BEGINS PHASE 6, PER THE DETAILED SEQUENCE OF CONSTRUCTION DIRECTIONS PROVIDED BELOW. ACREAGE PROVIDED FOR EACH PHASE INCLUDES THE 0.39 ACRES ASSOCIATED WITH THE ON-SITE STOCKPILE AREA.

STREAM CONSTRUCTION PHASES 1–6 – UPSTREAM OF SHAFFERSVILLE ROAD TOTAL LOD = 12.58 AC

STREAM CONSTRUCTION PHASE 1 LOD = 2.44 AC / DURATION = 15 DAYS

9. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 1 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

10. CLEAR AND GRUB FOR THE MINIMUM AREA REQUIRED FOR INSTALLATION OF THE STABILIZED CONSTRUCTION ENTRANCES (SCE) INSTALL STABILIZED CONSTRUCTION ENTRANCES (SCE–1, SCE–2, & SCE–6), MULCH ACCESS ROADS (MAR–A, MAR–B, MAR–C & MAR–D), TIMBER MAT ACCESS ROADS (TAR–A, TAR–B & TAR–C), TEMPORARY ACCESS BRIDGES (TB–1 & TB–2), CLEAR WATER DIVERSION PIPES (CWD–1 & CWD–2) WITH RIPRAP SLOPE AND CHANNEL PROTECTION, SUPER SILT FENCE (SSF–1 THROUGH SSF–4), ORANGE CONSTRUCTION FENCE (OCF–1 & OCF–2), EARTH DIKES (ED–1 & ED–2), TEMPORARY GABION OUTLET STRUCTURE (TGOS–1), TEMPORARY STAGING AND STOCKPILE AREAS, AND ON-SITE STOCKPILE AREA AS SHOWN ON DRAWINGS ES–1 THROUGH ES–5A. PLEASE NOTE, STABILIZED CONSTRUCTION ENTRANCE (SCE–6), ON-SITE STOCKPILE AREA, ORANGE CONSTRUCTION FENCE (OCF–1), EARTH DIKES (ED–1 & ED–2), AND TEMPORARY GABION OUTLET STRUCTURE (TGOS–1) AS SEEN ON DRAWING ES–5A, TO STAY IN PLACE THROUGH PHASE 13. PROCEED TO PHASE 2, 3, AND/OR 4 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 2 (STA. 00+00 TO STA. 17+27, STA. 300+00 TO STA. 301+48, STA. 700+00 TO STA. 700+22, STA. 704+79 TO STA. 705+28, STA. 800+00 TO STA. 801+33 & STA. 1000+00 TO STA. 1003+52) LOD = 6.47 AC / DURATION = 38 DAYS

11. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 2 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

12. INSTALL PUMP–AROUND PRACTICE (PAP 2–1), SAND BAG DIKES (SBD 2–1 & SBD 2–2), FILTER BAG (FB 2–1), SUPER SILT FENCE (SSF–6 THROUGH SSF–9) AND TEMPORARY STAGING AREAS AS SHOWN ON DRAWINGS ES–6 THROUGH ES–8.

13. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 00+00 TO STA. 17+27, STA. 300+00 TO STA. 301+48, STA. 700+00 TO STA. 700+22, STA. 704+79 TO STA. 705+28, STA. 800+00 TO STA. 801+33 AND STA. 1000+00 TO STA. 1003+52. CONCURRENTLY REMOVE MULCH ACCESS ROAD (MAR–B), TEMPORARY STAGING AREAS AND ASSOCIATED SUPER SILT FENCE (SSF–6 THROUGH SSF–9) AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 00+00 TO STA. 17+27 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THESE AREAS AS SHOWN ON THE PLANS.

14. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 2–1), SAND BAG DIKES (SBD 2–1 & SBD 2–2) AND FILTER BAG (FB 2–1). PROCEED TO PHASE 3, 4, AND/OR 5 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 3 (STA. 400+00 TO STA. 402+16, STA. 500+00 TO STA. 500+86, STA. 600+00 TO STA. 602+74 & STA. 700+22 TO STA. 704+79) LOD = 5.76 AC / DURATION = 20 DAYS

15. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 3 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

16. INSTALL PUMP–AROUND PRACTICE (PAP 3–1), SAND BAG DIKES (SBD 3–1 & SBD 3–2), FILTER BAG (FB 3–1), SUPER SILT FENCE (SSF–10, SSF–11 & SSF–12) AND TEMPORARY STAGING AREAS AS SHOWN ON DRAWINGS ES–9 THROUGH ES–10.

17. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 400+00 TO STA. 402+16, STA. 500+00 TO STA. 500+86, STA. 600+00 TO STA. 602+74 AND STA. 700+22 TO STA. 704+79. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–B & MAR–C), TEMPORARY STAGING AREAS AND ASSOCIATED SUPER SILT FENCE (SSF–10, SSF–11 & SSF–12) AS GRADING IS PERFORMED. INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THESE AREAS AS SHOWN ON THE PLANS.

18. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 3–1), SAND BAG DIKES (SBD 3–1 & SBD 3–2) AND FILTER BAG (FB 3–1). PROCEED TO PHASE 4 AND/OR 5 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 4 (STA. 21+00 TO STA. 27+57) LOD = 3.22 AC / DURATION = 13 DAYS

19. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 4 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

20. INSTALL PUMP–AROUND PRACTICE (PAP 4–1), SAND BAG DIKES (SBD 4–1 & SBD 4–2) AND FILTER BAG (FB 4–1) AS SHOWN ON DRAWINGS ES–11 THROUGH ES–12.

21. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 21+00 TO STA. 27+57 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. FILL THE EXISTING CHANNEL FROM STA. 21+00 TO STA. 27+57 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

22. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 4–1), SAND BAG DIKES (SBD 4–1 & SBD 4–2) AND FILTER BAG (FB 4–1). PROCEED TO PHASE 5 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 5 (STA. 202+04 TO STA. 203+66 & STA. 205+85 TO STA. 210+16) LOD = 2.59 AC DURATION = 11 DAYS

23. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 5 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

24. INSTALL PUMP–AROUND PRACTICES (PAP 5–1 & PAP 5–2), SAND BAG DIKES (SBD 5–1, SBD 5–2, & SBD 5–3), AND FILTER BAG (FB 5–1) AS SHOWN ON DRAWINGS ES–13 THROUGH ES–15.

25. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 200+00 TO STA. 210+16 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–C & MAR–D), TIMBER MAT ACCESS ROAD (TAR–C), TEMPORARY ACCESS BRIDGE (TB–2), CLEAR WATER DIVERSION PIPE (CWD–2), SUPER SILT FENCE (SSF–4) AND TEMPORARY STAGING AND STOCKPILE AREA AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 200+00 TO STA. 210+16 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

26. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICES (PAP 5–1 & PAP 5–2), SAND BAG DIKES (SBD 5–1, SBD 5–2, & SBD 5–3), AND FILTER BAG (FB 5–1). PROCEED TO PHASE 6 AND PHASE 7 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 6 (STA. 17+27 TO STA. 21+00 & STA. 210+16 TO STA. 210+31) LOD = 3.19 AC

27. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 6 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

28. INSTALL PUMP–AROUND PRACTICES (PAP 6–1 & 6–2), SAND BAG DIKES (SBD 6–1, SBD 6–2 & SBD 6–3), AND FILTER BAG (FB 6–1) AS SHOWN ON DRAWING ES–16 TO ES–17.

29. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 17+27 TO STA. 21+00 AND STA. 210+16 TO STA. 210+31, AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–A & MAR–B), TIMBER MAT ACCESS ROADS (TAR–A & TAR–B), TEMPORARY ACCESS BRIDGE (TB–1), SUPER SILT FENCE (SSF–1, SSF–2, & SSF–3), AND CLEAR WATER DIVERSION AND SANDBAGS (CWD–1) AS PROPOSED GRADING IS PERFORMED. ENSURE THAT GRADING IS STABILIZED AT THE END OF EACH DAY. FILL THE EXISTING CHANNEL FROM STA. 17+27 TO STA. 21+00 AND STA. 210+16 TO STA. 210+31 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

30. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 6–1 & 6–2), SAND BAG DIKES (SBD 6–1, SBD 6–2 & SBD 6–3), FILTER BAG (FB 6–1) AND TEMPORARY STAGING AND STOCKPILE AREA. PROCEED TO PHASE 7 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 7–13 – DOWNSTREAM OF SHAFFERSVILLE ROAD LOD = 18.90 AC

STREAM CONSTRUCTION PHASE 7 LOD = 3.79 AC / DURATION = 19 DAYS

31. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 7 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

32. CLEAR AND GRUB FOR THE MINIMUM AREA REQUIRED FOR INSTALLATION OF THE STABILIZED CONSTRUCTION ENTRANCES (SCE). INSTALL STABILIZED CONSTRUCTION ENTRANCES (SCE–3, SCE–4 & SCE–5), MULCH ACCESS ROADS (MAR–E, MAR–F, MAR–G, MAR–H, MAR–I, MAR–J, MAR–K, MAR–L, & MAR–M), TIMBER MAT ACCESS ROADS (TAR–D, TAR–E, TAR–F, TAR–G, TAR–H, TAR–I & TAR–J), TEMPORARY ACCESS BRIDGES (TB–3, TB–4 & TB–5), CLEAR WATER DIVERSION PIPES (CWD–3, CWD–4, CWD–5, CWD–6 & CWD–7) WITH RIPRAP SLOPE AND CHANNEL PROTECTION, SUPER SILT FENCE (SSF–15 THROUGH SSF–31), FILTER LOGS (FL–1 & FL–2) AND TEMPORARY STAGING AND STOCKPILE AREAS AS SHOWN ON DRAWINGS ES–18 TO ES–24. PROCEED TO PHASE 8, 9, AND/OR 10 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 8 (STA. 28+59 TO STA. 36+29) LOD = 4.03 AC / DURATION = 15 DAYS

33. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 8 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

34. INSTALL PUMP–AROUND PRACTICE (PAP 8–1), SAND BAG DIKES (SBD 8–1 & SBD 8–2), AND FILTER BAG (FB 8–1) AS SHOWN ON DRAWINGS ES–25 THROUGH ES–27.

35. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 28+59 TO STA. 36+29 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. FILL THE EXISTING CHANNEL FROM STA. 28+59 TO STA. 36+29 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

36. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 8–1), SAND BAG DIKES (SBD 8–1 & SBD 8–2) AND FILTER BAG (FB 8–1). PROCEED TO PHASE 9, 10, AND/OR 11 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 9 (STA. 53+36 TO STA. 67+50 & STA. 1203+98 TO STA. 1204+03) LOD = 6.07 AC / DURATION = 25 DAYS

37. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 9 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

38. INSTALL INSTALL PUMP–AROUND PRACTICE (PAP 9–1), SAND BAG DIKES (SBD 9–1 & SBD 9–2), FILTER BAG (FB 9–1), SUPER SILT FENCE (SSF–32 THROUGH SSF–38) AND TEMPORARY STAGING AREAS AS SHOWN ON DRAWINGS ES–29 THROUGH ES–30.

39. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 53+36 TO STA. 67+50 AND STA. 1203+98 TO STA. 1204+03. CONCURRENTLY REMOVE TEMPORARY STAGING AREAS AND ASSOCIATED SUPER SILT FENCE (SSF–32 THROUGH SSF–38) AS PROPOSED GRADING IS PERFORMED. INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THESE AREAS AS SHOWN ON THE PLANS. FILL THE EXISTING CHANNEL FROM STA. 53+36 TO STA. 67+50 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

40. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 9–1), SAND BAG DIKES (SBD 9–1 & SBD 9–2), AND FILTER BAG (FB 9–1). PROCEED TO PHASE 10 AND/OR 11 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 10 (STA. 100+00 TO STA. 104+91) LOD = 2.50 AC / DURATION = 10 DAYS

41. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 10 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

42. INSTALL PUMP–AROUND PRACTICE (PAP 10–1), SAND BAG DIKES (SBD 10–1 & SBD 10–2) AND FILTER BAG (FB 10–1) AS SHOWN ON DRAWING ES–31.

43. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 100+00 TO STA. 104+91 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR –G, MAR–H, & MAR–I), TIMBER MAT ACCESS ROADS (TAR–F & TAR–G), CLEAR WATER DIVERSION PIPES (CWD–4), SUPER SILT FENCE (SSF–18 & SSF–19) AND FILTER LOG (FL–1) AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 100+00 TO STA. 104+91 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

44. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 10–1), SAND BAG DIKES (SBD 10–1 & SBD 10–2), FILTER BAG (FB 10–1). PLEASE NOTE THAT THE STABILIZED CONSTRUCTION ENTRANCE (SCE–4) IS TO REMAIN IN PLACE. PROCEED TO PHASE 11 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 11 (STA. 43+66 TO STA. 53+36, STA. 109+99 TO STA. 116+06, STA. 1100+00 TO STA. 1105+70, STA. 1200+00 TO STA. 1203+98 & STA. 1300+00 TO STA. 1302+37) LOD = 10.15 AC / DURATION = 47 DAYS

45. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 11 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

46. INSTALL PUMP–AROUND PRACTICE (PAP 11–1), SAND BAG DIKES (SBD 11–1 & SBD 11–2) AND FILTER BAG (FB 11–1) AS SHOWN ON DRAWINGS ES–32 THROUGH ES–34.

47. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 43+66 TO STA. 53+36, STA. 109+99 TO STA. 116+06, STA. 1100+00 TO STA. 1105+70, STA. 1200+00 TO STA. 1203+98 AND STA. 1300+00 TO STA. 1302+37. INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–E, MAR–K, MAR–L & MAR–M), TIMBER MAT ACCESS ROAD (TAR–J), FILTER LOGS (FL–2), SUPER SILT FENCE (SSF–22, SSF–23, SSF–25, SSF–26, SSF–27, SSF–28, SSF–29, SSF–30, THROUGH SSF–31) CLEAR WATER DIVERSION PIPE (CWD–7), TEMPORARY ACCESS BRIDGE (TB–5) AND TEMPORARY STAGING AND STOCKPILE AREA AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 43+66 TO STA. 53+36 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

48. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICE (PAP 11–1), SAND BAG DIKES (SBD 11–1 & SBD 11–2) AND FILTER BAG (FB 11–1). PLEASE NOTE THAT THE STABILIZED CONSTRUCTION ENTRANCE (SCE–6) IS TO REMAIN IN PLACE. PROCEED TO PHASE 12 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 12 (STA. 36+29 TO STA. 43+66 & STA. 107+34 TO STA. 109+99) LOD = 5.70 AC / DURATION = 19 DAYS

49. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 12 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

50. INSTALL PUMP–AROUND PRACTICES (PAP 12–1 & PAP 12–2), SAND BAG DIKES (SBD 12–1, SBD 12–2, SBD 12–3 & SBD 12–4) AND FILTER BAG (FB 12–1) AS SHOWN ON DRAWINGS ES–35 THROUGH ES–37.

51. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 36+29 TO STA. 43+66 AND STA. 107+34 TO STA. 109+99 TO STA. 110+00 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–E, MAR–F, MAR–J & MAR–K), TIMBER MAT ACCESS ROADS (TAR–D, TAR–E, TAR–H & TAR–I), TEMPORARY ACCESS BRIDGES (TB–3 & TB–4), FILTER LOGS (FL–1), SUPER SILT FENCE (SSF–20, SSF–21, SSF–22, & SSF–24), CLEAR WATER DIVERSION PIPES (CWD–3, CWD–5 & CWD–6) AND TEMPORARY STAGING AND STOCKPILE AREA AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 36+29 TO STA. 43+66 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

52. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE PUMP–AROUND PRACTICES (PAP 12–1 & PAP 12–2), SAND BAG DIKES (SBD 12–1, SBD 12–2, SBD 12–3 & SBD 12–4) AND FILTER BAG (FB 12–1). PLEASE NOTE THAT THE STABILIZED CONSTRUCTION ENTRANCE (SCE–5) IS TO REMAIN IN PLACE. PROCEED TO PHASE 13 OF CONSTRUCTION.

STREAM CONSTRUCTION PHASE 13 (STA. 27+97 TO STA. 28+59) LOD = 1.21 AC / DURATION = 3 DAYS

53. CONTRACTOR TO PERFORM STAKEOUT OF PHASE 13 LOD AND HOLD MEETING WITH EROSION AND SEDIMENT CONTROL INSPECTOR AND MDE INSPECTOR.

54. INSTALL PUMP–AROUND PRACTICE (PAP 13–1), SAND BAG DIKES (SBD 13–1, SBD 13–2) AND FILTER BAG (FB 13–1) AS SHOWN ON DRAWINGS ES–38 THROUGH ES–39.

55. WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, EXCAVATE AND GRADE THE PROPOSED STREAM AND FLOODPLAIN FROM STA. 27+97 TO STA. 28+59 AND INSTALL ALL IN–STREAM AND FLOODPLAIN STRUCTURES WITHIN THIS AREA AS SHOWN ON THE PLANS. CONCURRENTLY REMOVE MULCH ACCESS ROADS (MAR–E), SUPER SILT FENCE (SSF–15 THROUGH SSF–17) AND TEMPORARY STAGING AND STOCKPILE AREA AS PROPOSED GRADING IS PERFORMED. FILL THE EXISTING CHANNEL FROM STA. 27+97 TO STA. 28+59 AND INSTALL REMAINING FLOODPLAIN STRUCTURES WITHIN THE WORK AREA AS SHOWN ON THE PLANS.

56. THE STOCKPILE AREA SHOWN ON SHEET 62A IS TO BE RETURNED TO THE EXISTING GRADE, AS WASTE IS TRANSFERRED TO AN OFFSITE LOCATION WITH AN ACTIVE GRADING PERMIT, TO BE APPROVED BY THE CID INSPECTOR.

57. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, CONTRACTOR TO REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROLS.

MAINTENANCE OF STREAM FLOW NOTES

1. SAND BAGS FOR PUMP–AROUND PRACTICE ARE TO BE ONE (1) FOOT ABOVE BASE FLOW ELEVATION (2–FOOT MINIMUM)

2. TWENTY–FOUR (24) HOUR PUMPING WILL BE CONDUCTED FOR ALL PUMP–AROUND PRACTICES THAT REQUIRE IT PER THE SEQUENCE OF CONSTRUCTION.

ADDITIONAL NOTES

1. LOD SHOWN ON ALL ESC SHEETS IS WITHIN ALL PERMANENT AND TEMPORARY EASEMENTS AS SHOWN ELSEWHERE IN THE PLAN SET.

2. CONTRACTOR IS NOT TO IMPACT WORK THAT HAS BEEN COMPLETED IN PREVIOUS PHASES.

3. TEMPORARY PULL OVER LANES WILL BE DETERMINED WITH THE CONTRACTOR AND INSPECTOR IN THE FIELD AS NEEDED.

4. ALL STAGE AND STOCKPILE AREAS ARE TO BE STABILIZED WITH DOUBLE STRAW MATTING.

5. CONTRACTOR MAY PERFORM CONSTRUCTION OF PHASES 2, 3, AND 4 CONCURRENTLY.

6. CONTRACTOR MAY PERFORM CONSTRUCTION OF PHASES 8, 9, AND 10 CONCURRENTLY.

7. AT NO POINT SHALL THE ACTIVE LOD BE LARGER THAN 20 ACRES.

OWNERS /DEVELOPER CERTIFICATION:

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

DocuSigned by: Michael Galvin 2D0B8D82258540A... — 7/12/21

OWNER'S /DEVELOPER'S SIGNATURE — DATE

Michael Galvin, Project Manager

PRINTED NAME AND TITLE

DESIGN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DocuSigned by: Michael Galvin 2D0B8D82258540A... — 7/12/21

DESIGNER'S SIGNATURE — DATE

Michael Galvin

PRINTED NAME

MD REGISTRATION NO. 44076 (P.E.) R.L.S., OR R.L.A. (CIRCLE ONE)

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — 7/13/2021 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — 7/13/2021 DATE

Chief, Division of Land Development — 7/13/2021 DATE

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — 7/13/2021 DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin 2D0B8D82258540A...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE. COCKEYSVILLE, MD 21030	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. _____, EXPIRATION DATE: _____."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL DETAILS

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. EN – 5 OF 5 SHEET NO. 57 OF 116

BY: PCrawford –

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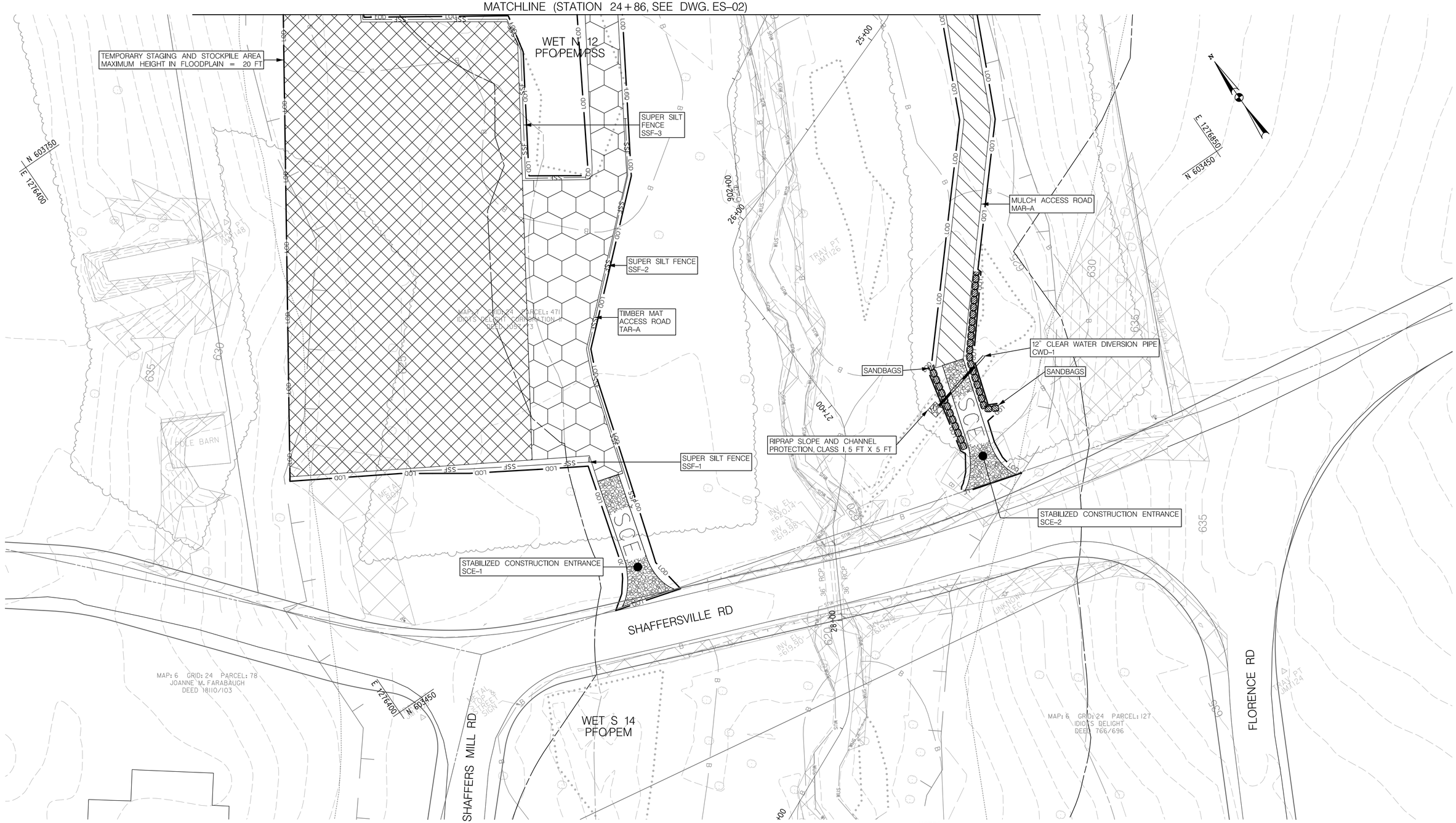

NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JMT®
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docusigned by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: [signature] 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin
2008BC8D23B54DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 01-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-01 OF 39 SHEET NO. 58 OF 116

BY: PCrawford –

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Monday, June 14, 2021 AT 09:00 AM

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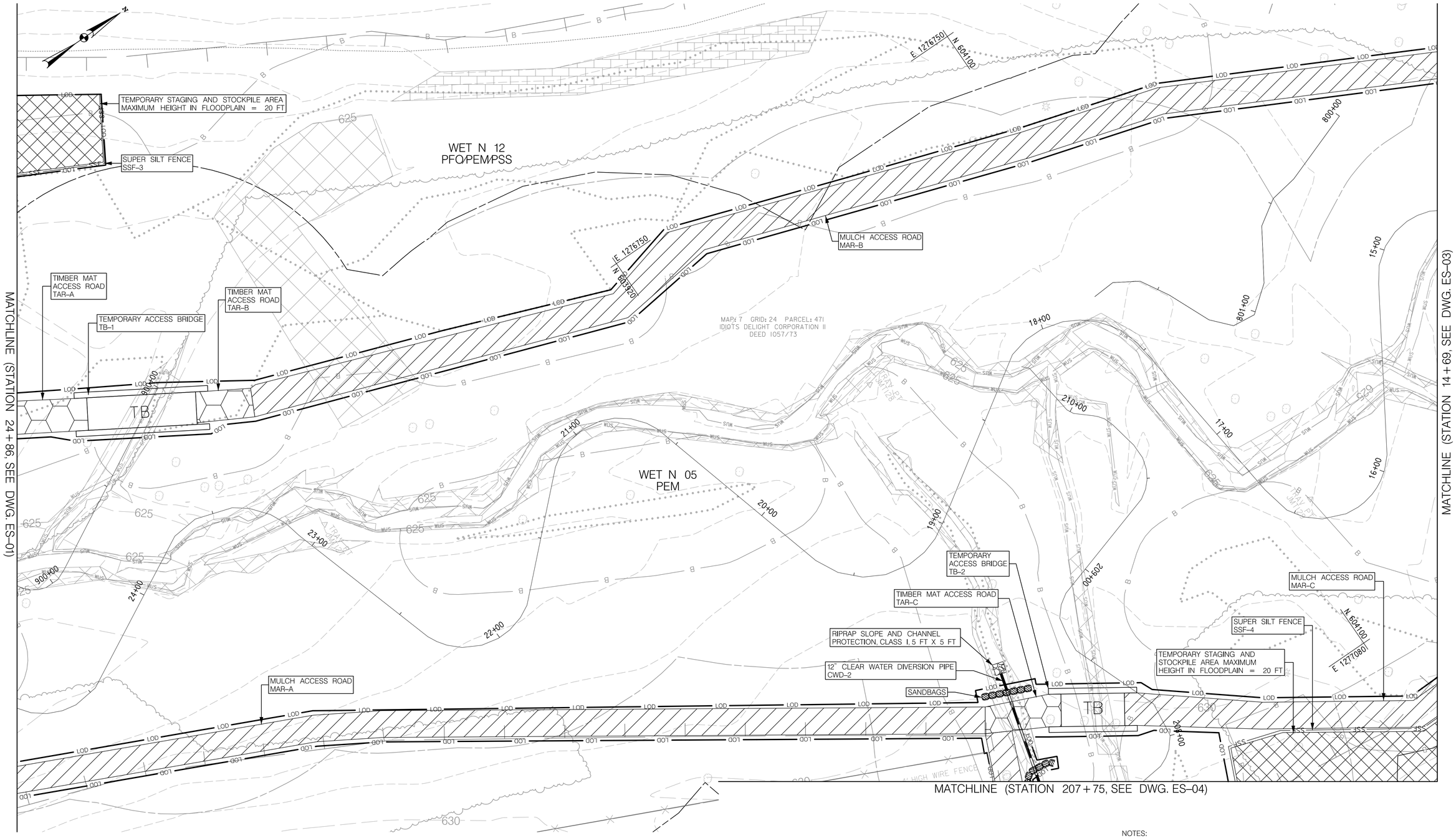

NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 01-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-02 OF 39 SHEET NO. 59 OF 116

BY: PCrawford –

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Monday, June 14, 2021 AT 09:12 AM

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MULCH ACCESS ROAD
MAR–B

LOD

E 1277100
N 604650

1000+00
1001+00
1002+00
1003+00
10+00
11+00
12+00
13+00
14+00
09+00
08+00
07+00
700+00
701+00
702+00
703+00
704+00
705+00
602+00

630
635
640

TRAY #1
UNIT 30

SSM
WUS
SSF

E 1277100
N 604200

MULCH ACCESS ROAD
MAR–C

SUPER SILT FENCE
SSF–4

TEMPORARY STAGING AND STOCKPILE AREA
MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

N 604650
E 1277450

MAP: 7 GRID: 24 PARCEL: 471
IDIOTS DELIGHT CORPORATION II
DEED 1057/73

MATCHLINE (STATION 14+69, SEE DWG. ES–02)

MATCHLINE (SEE DWG. ES–04)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by: Kathy M. Neff
HOWARD SOIL CONSERVATION DISTRICT — 7/12/2021 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/9/2021 DATE

DocuSigned by: Kelly M. Sheubrooks
CHIEF, DIVISION OF LAND DEVELOPMENT — 7/9/2021 DATE

DocuSigned by: Amy Gowan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — 7/12/2021 DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 24076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
ZD0B8C8B2258A0K...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 01–03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH-PVC COUNTY HOWARD COUNTY
DRAWN BY KNH-PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–03 OF 39 SHEET NO. 60 OF 116

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Monday, June 14, 2021 AT 09:13 AM

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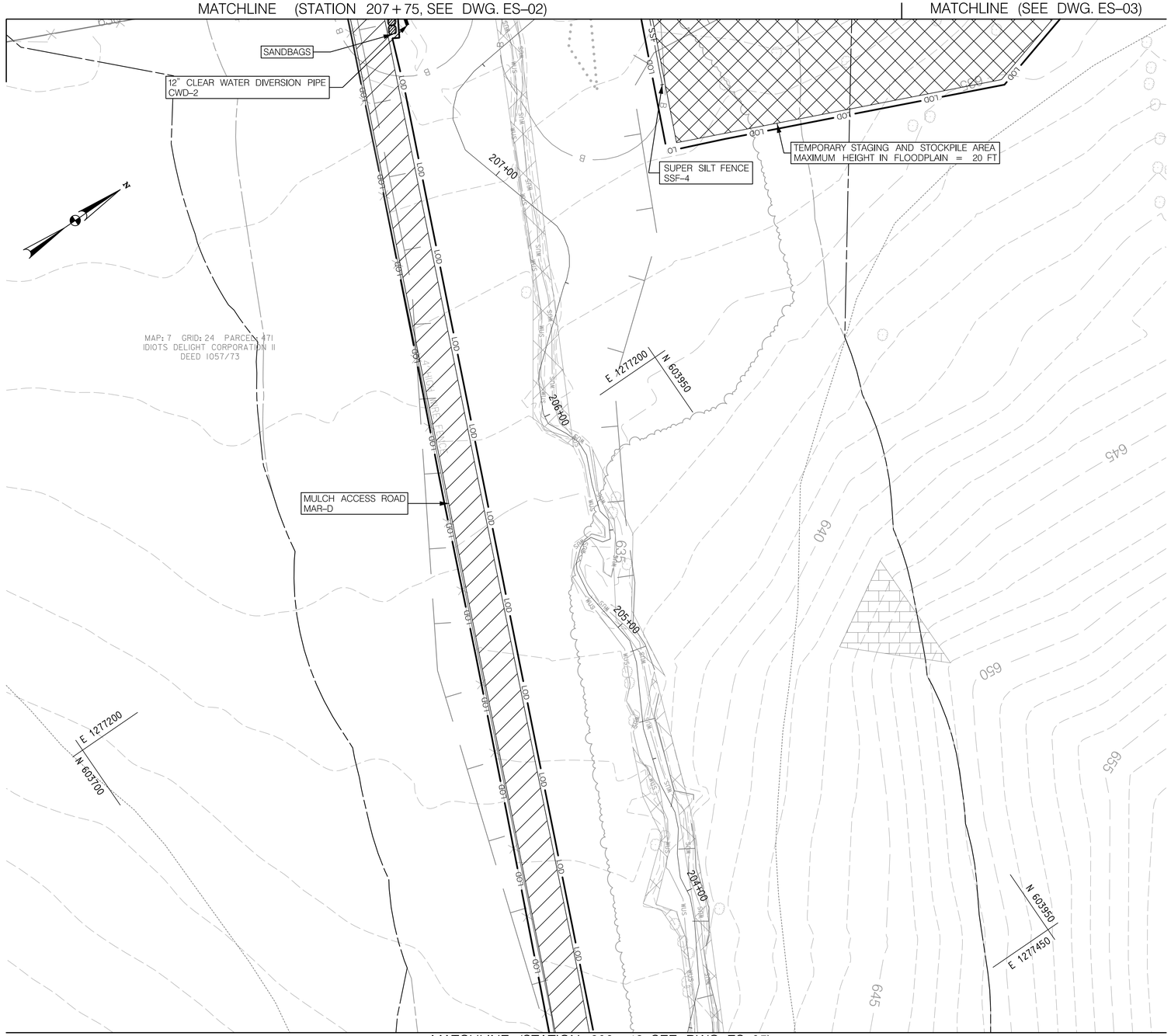

NOTES:
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2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docusigned by: Kathleen M. Hall — 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Docusigned by: Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Docusigned by: Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin
2D0B8D8D2258424...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 01–04

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–04 OF 39 SHEET NO. 61 OF 116

BY: PCrawford –

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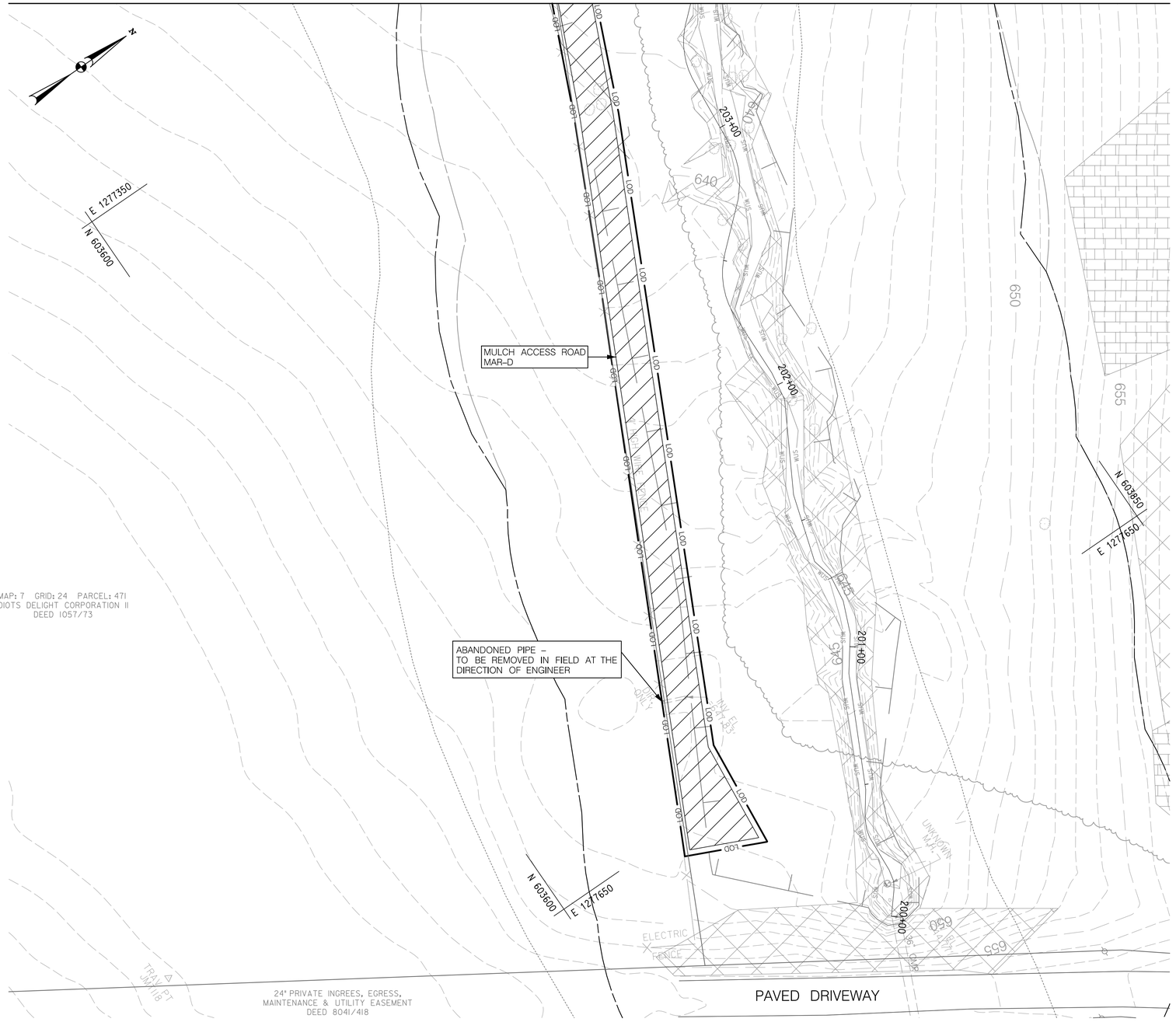

NOTES:

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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Designed by: [signature]
HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

Chief, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

Amy Gowan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

Designed by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 01-05

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-05 OF 39 SHEET NO. 62 OF 116

BY: PCrawford –

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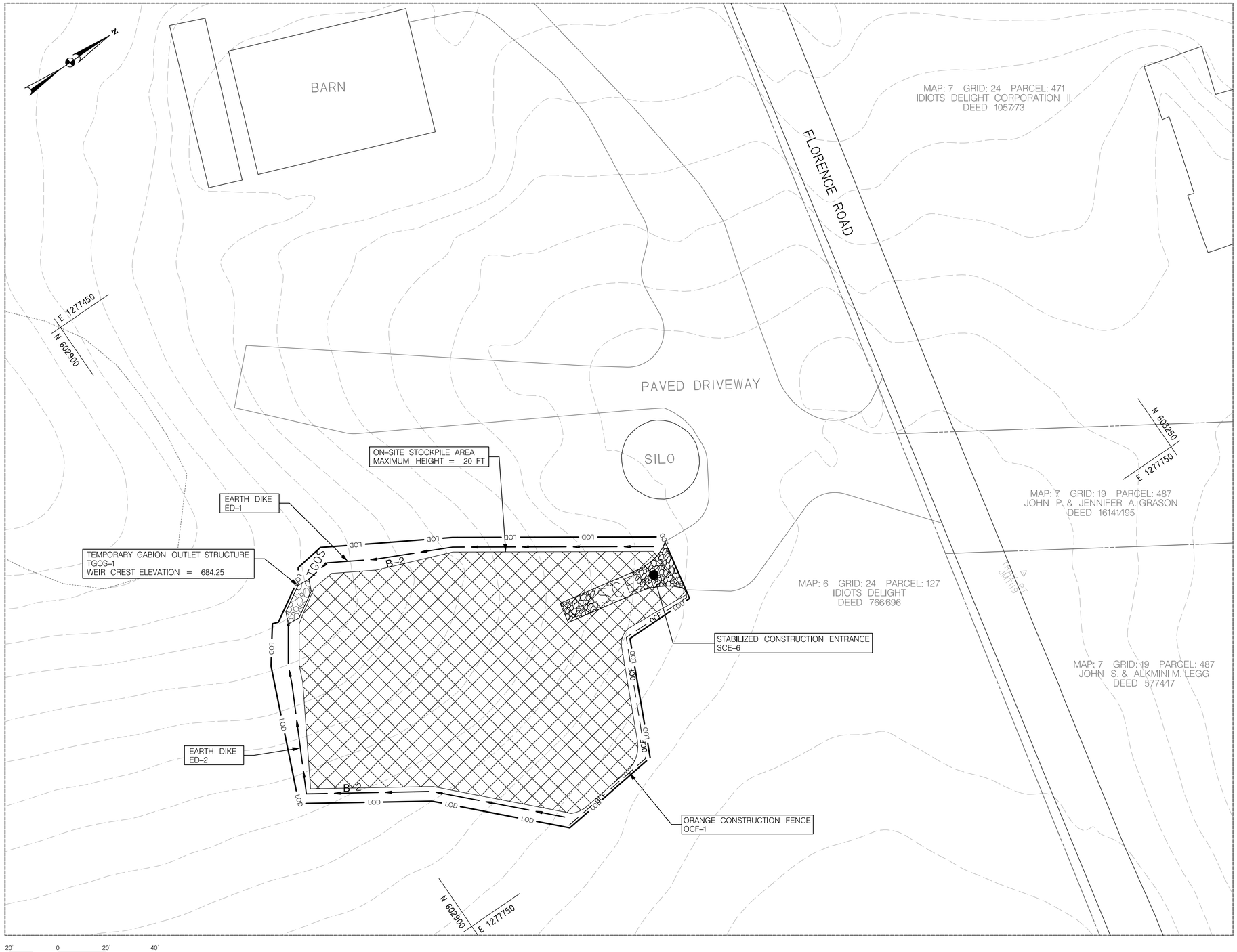

20' 0 20' 40'
SCALE: 1" = 20'

NOTE: STOCKPILE IS TEMPORARY. REMOVE TO EXISTING GRADE AS WASTE IS TRANSFERRED TO AN OFFSITE LOCATION WITH AN ACTIVE GRADING PERMIT, TO BE APPROVED BY CID INSPECTOR.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

BY: PCrawford –

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN– PHASE 01–05A

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH-PVC COUNTY HOWARD COUNTY
DRAWN BY KNH-PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–05A OF 39 SHEET NO. 62A OF 116

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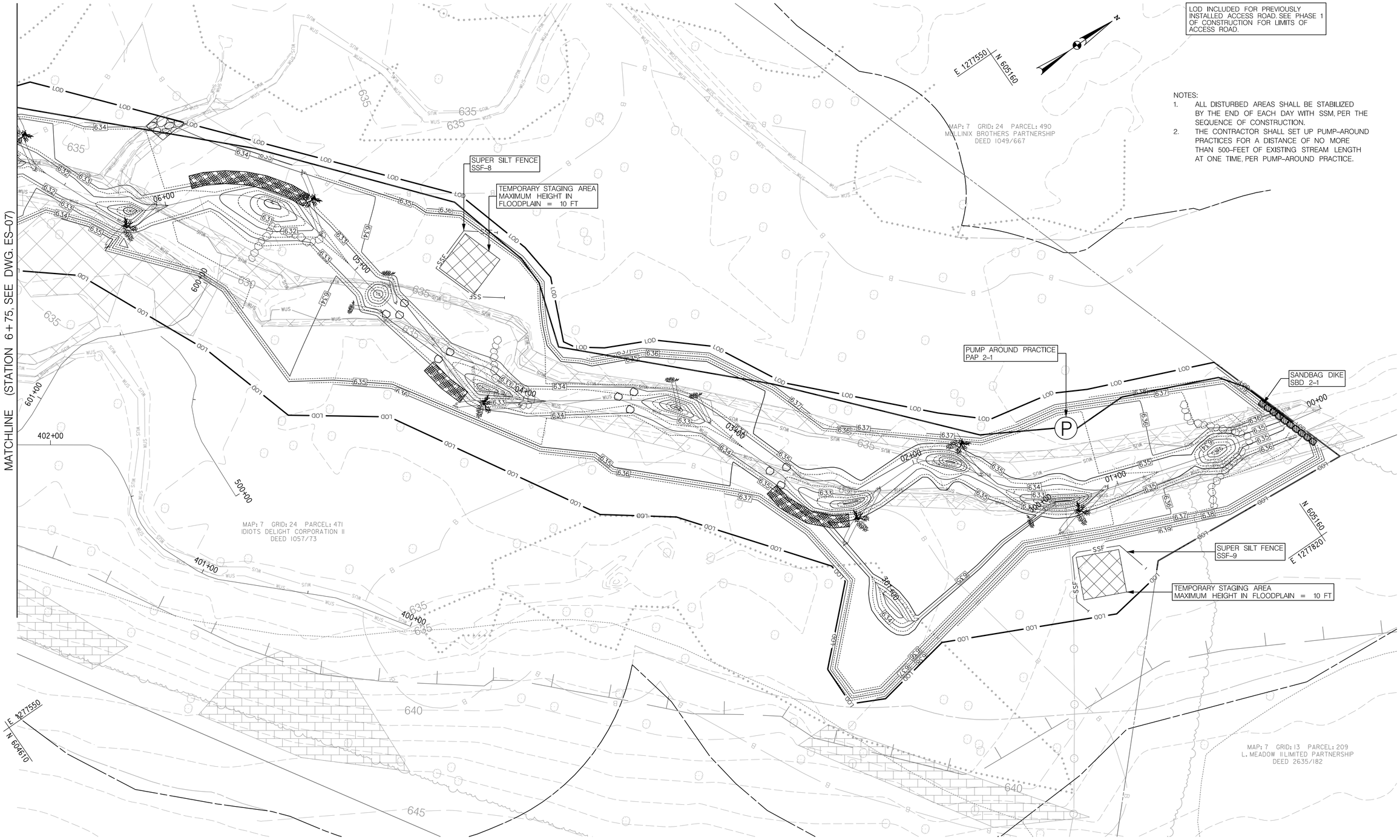

NOTES:

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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 02-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-06 OF 39 SHEET NO. 63 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 04:29 PM

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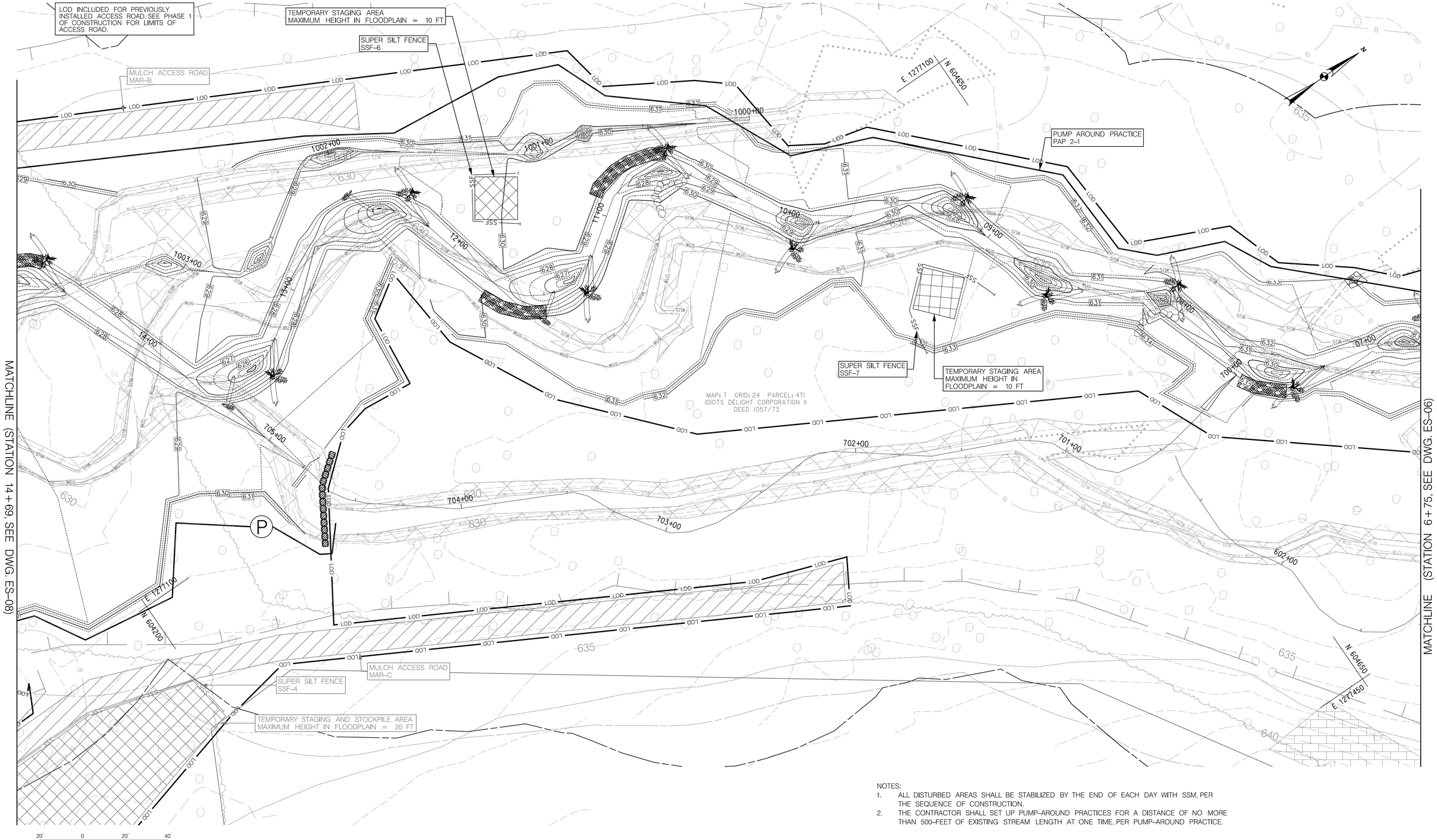

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Signature by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
Chad Edmondson 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
Docu Signed by: Michael Galvin
ZD0BBC0B2238BCAC

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 02-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-07 OF 39 SHEET NO. 64 OF 116

BY: KHiggins –

\\jmt.corp.local\jmtdfs\2018\18016555_001_Patuxent_Mitigation_\CADD\Erosion Sediment Plan Sheets\pES-P0202_Patuxent.dgn
Monday, June 14, 2021 AT 10:18 AM

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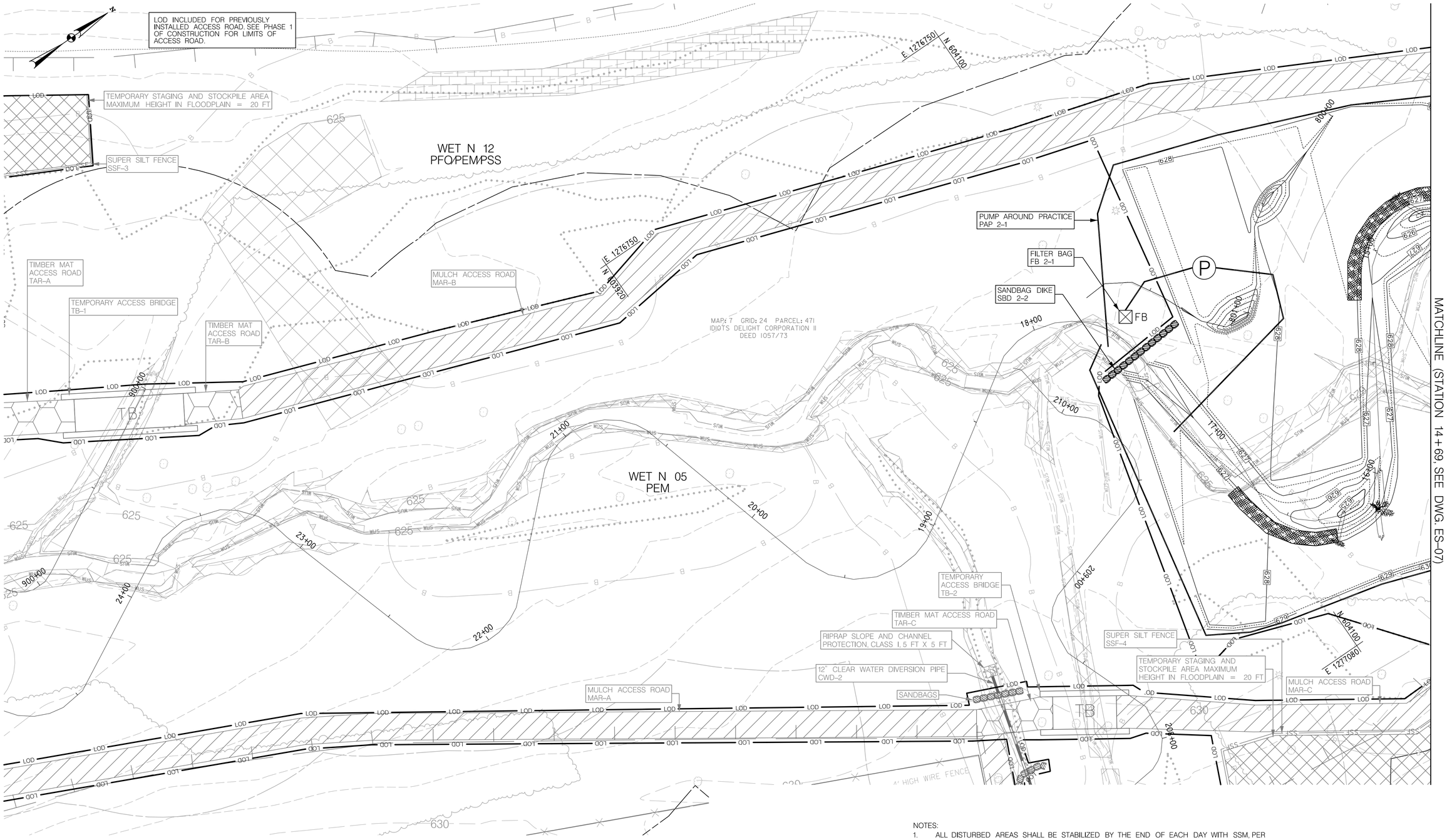

NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DocuSigned by: Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
DocuSigned by: [signature] 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
DocuSigned by: Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
DocuSigned by: [signature]

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 02-03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-08 OF 39 SHEET NO. 65 OF 116

BY: KHiggins –

\\jmt.corp.local\jmtdfs\2018\180655_001_Patuxent_Mitigation_\CADD\Erosion Sediment Plan Sheets\pES-P0203_Patuxent.dgn
Monday, June 14, 2021 AT 10:21 AM

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MATCHLINE (STATION 6+75, SEE DWG. ES-10)

LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 1 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

E 1277550 N 605160

N 605160 E 1277820

E 1277550 N 604610

SUPER SILT FENCE SSF-10

TEMPORARY STAGING AREA MAXIMUM HEIGHT IN FLOODPLAIN = 10 FT

PUMP AROUND PRACTICE PAP 3-1

SANDBAG DIKE SBD 3-1

MAP: 7 GRID: 24 PARCEL: 471
IDIOTS DELIGHT CORPORATION II
DEED 1057/73

MAP: 7 GRID: 24 PARCEL: 490
MULLINIX BROTHERS PARTNERSHIP
DEED 1049/667

MAP: 7 GRID: 13 PARCEL: 209
L. MEADOW II LIMITED PARTNERSHIP
DEED 2635/182

SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 03-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES-09 OF 39 SHEET NO. 66 OF 116

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Monday, June 14, 2021 AT 10:53 AM

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LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 1 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

MULCH ACCESS ROAD MAR–B

E 1277100 / N 604650

1000+00 1001+00 1002+00 1003+00 10+00 11+00 12+00 13+00 14+00 09+00 08+00 07+00 700+ 701+00 702+00 703+00 704+00 705+00

FILTER BAG FB 3–1

SANDBAG DIKE SBD 3–2

PUMP AROUND PRACTICE PAP 3–1

SUPER SILT FENCE SSF–11

SUPER SILT FENCE SSF–12

SUPER SILT FENCE SSF–4

MULCH ACCESS ROAD MAR–C

TEMPORARY STAGING AREA MAXIMUM HEIGHT IN FLOODPLAIN = 10 FT

TEMPORARY STAGING AND STOCKPILE AREA MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

MAP: 7 GRID: 24 PARCEL: 471
IDIOTS DELIGHT CORPORATION II
DEED 1057/173

E 1277100 / N 604200

N 604550 / E 1277450

MATCHLINE (STATION 6+75, SEE DWG. ES–09)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471

DocuSigned by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 03–02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–10 OF 39 SHEET NO. 67 OF 116

\\jmt.com\local\jmtdfs\2018\180655_00_Phase_Mitigation_CAD\Erosion Sediment Plan Sheets\pESA-P0602_Phase4.dgn
Monday, June 14, 2021 AT 11:03 AM

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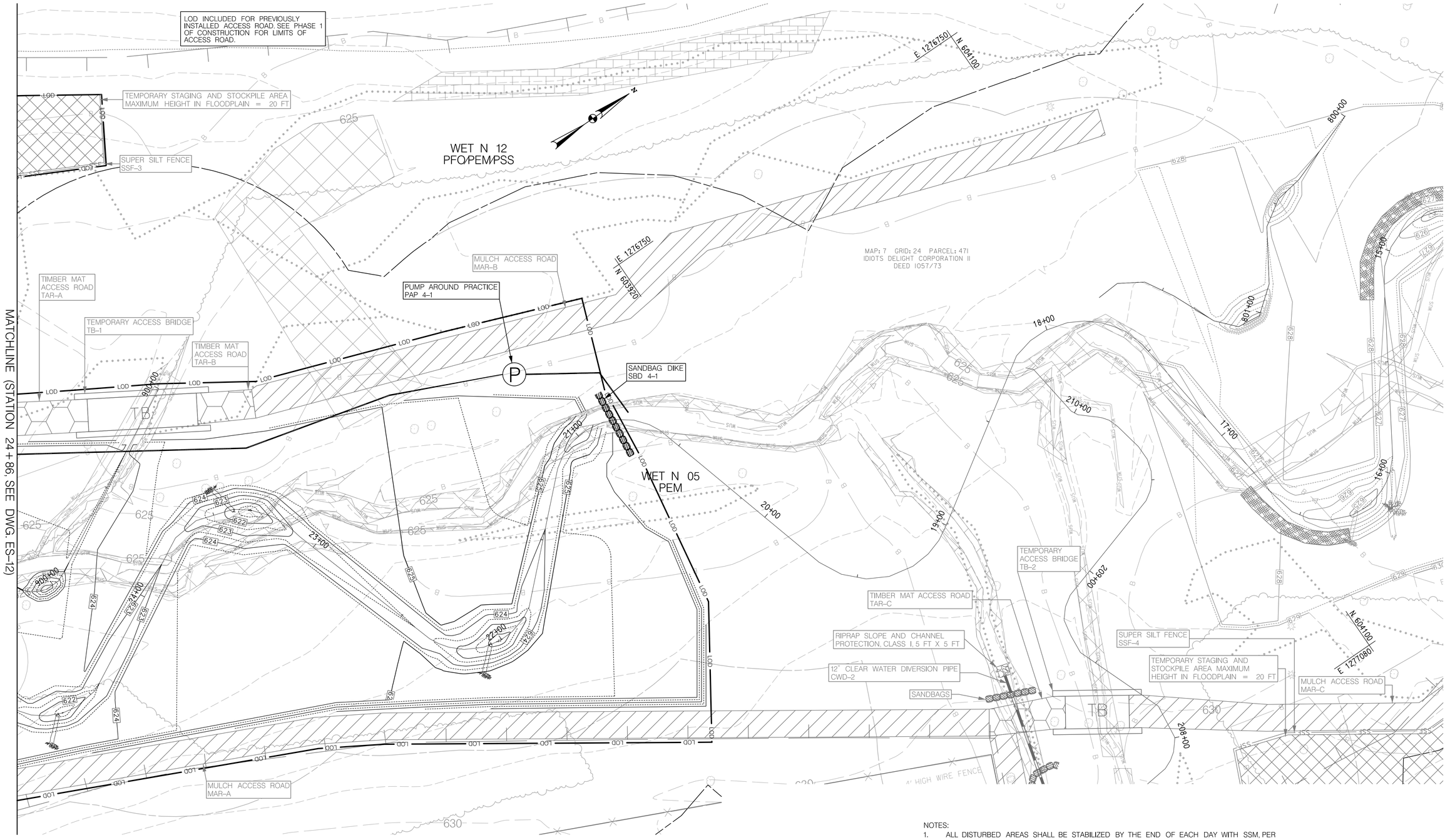

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docu Signed by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE
Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER
Docu Signed by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 04-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-11 OF 39 SHEET NO. 68 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 11:05 AM

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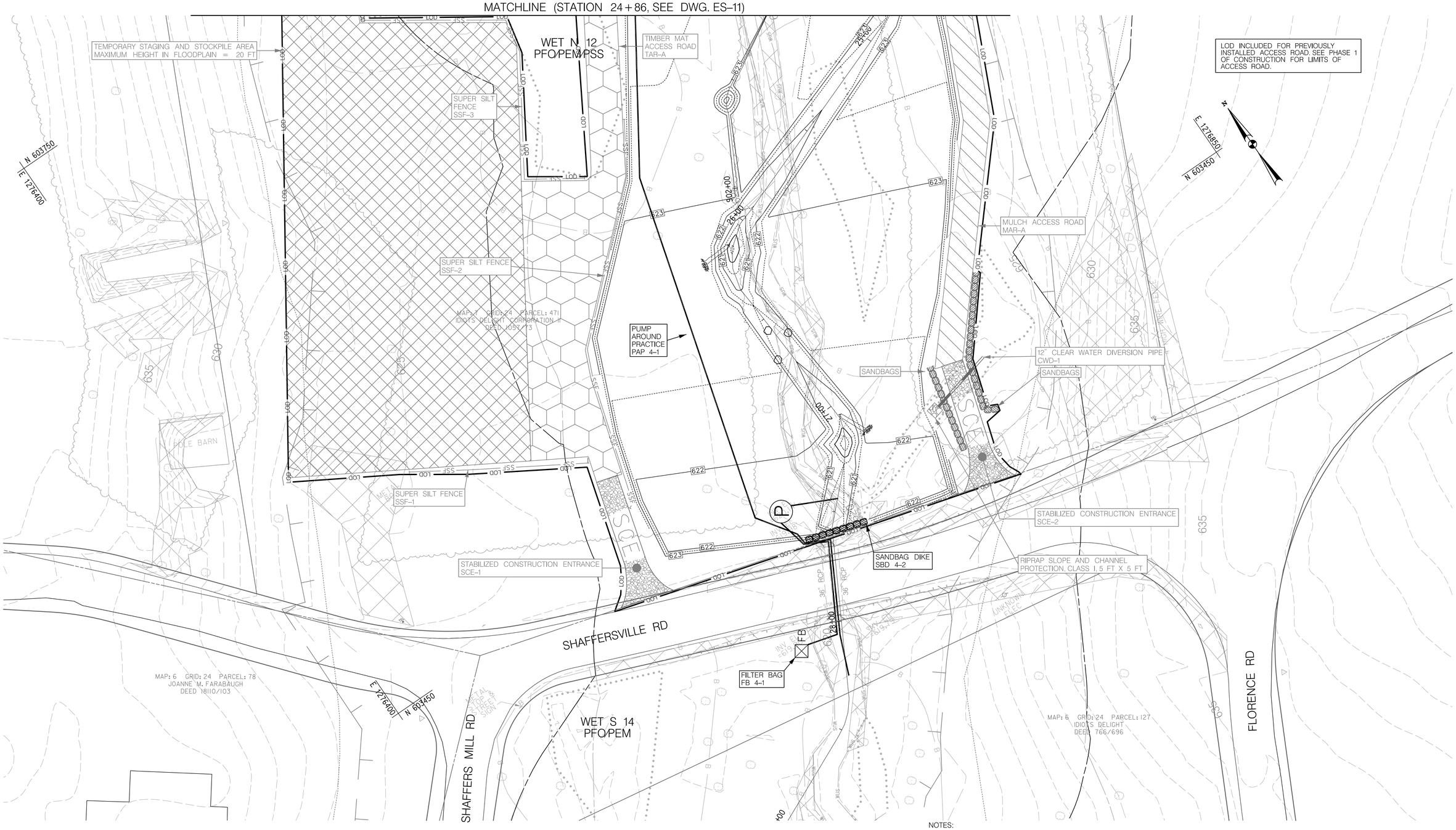

NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 04-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC — COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC — LOGMILE N/A
CHECKED BY JJM — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. ES-12 OF 39 — SHEET NO. 69 OF 116

BY: KHiggins –

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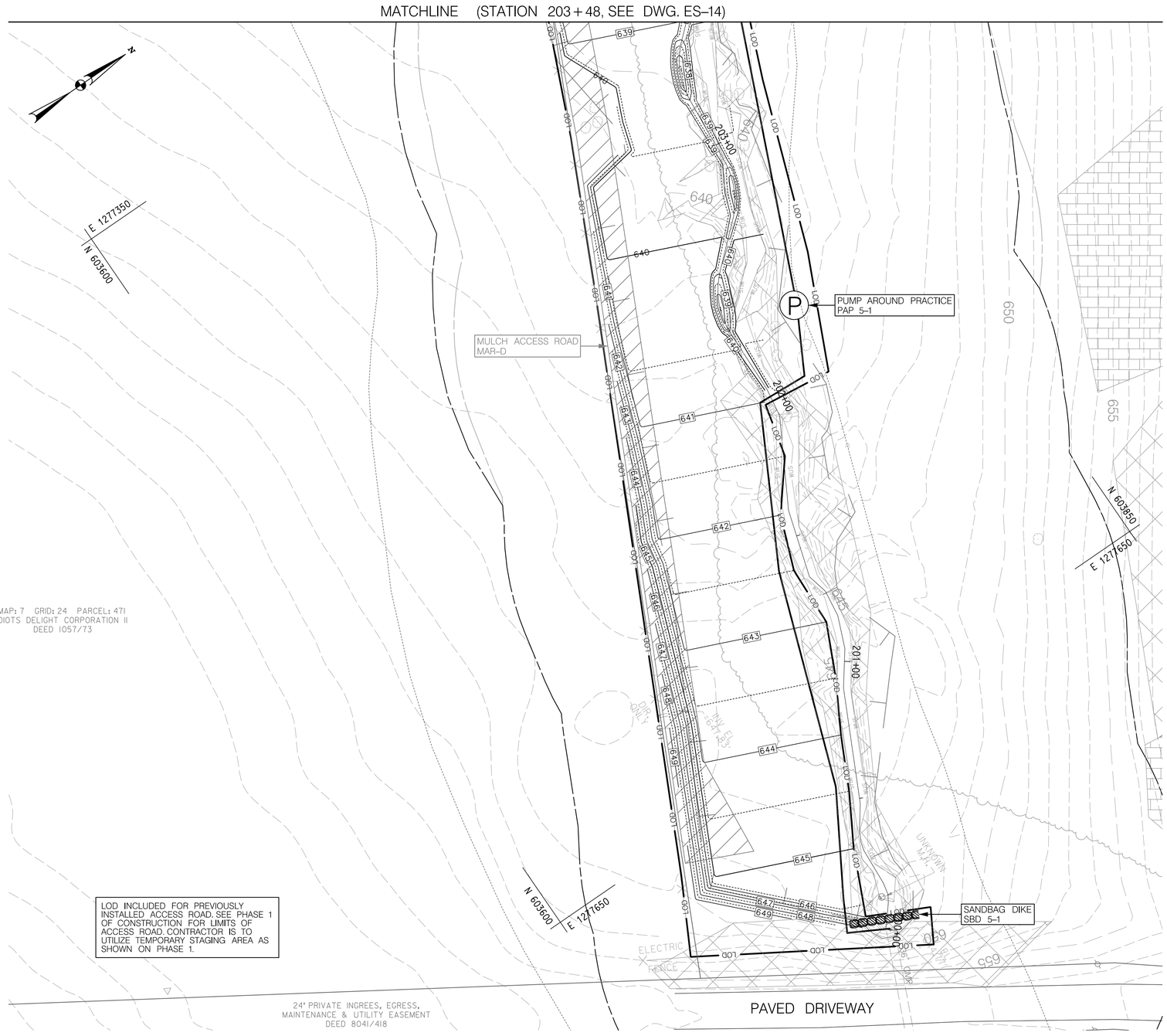

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SMM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: [signature] 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gronan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin
ZD08BC8223B54DA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	**CONTACT**
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 05-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-13 OF 39 SHEET NO. 70 OF 116

BY: KHiggins –

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MATCHLINE (STATION 207+75, SEE DWG. ES–15)

12" CLEAR WATER DIVERSION PIPE
CWD–2

SUPER SILT FENCE
SSF–4

TEMPORARY STAGING AND STOCKPILE AREA
MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

MAP: 7 GRID: 24 PARCEL: 471
IDIOTS DELIGHT CORPORATION II
DEED 1057/73

PUMP AROUND PRACTICE
PAP 5–2

MULCH ACCESS ROAD
MAR–D

E 1277200
N 604000

N 603700
E 1277200

N 604000
E 1277400

LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 1 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD. CONTRACTOR IS TO UTILIZE TEMPORARY STAGING AREA AS SHOWN ON PHASE 1.

SANDBAG DIKE
SBD 5–2

PUMP AROUND PRACTICE
PAP 5–1

207+00
206+00
205+00
204+00

MATCHLINE (STATION 203+48, SEE DWG. ES–13)

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 05–02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. ES–14 OF 39 SHEET NO. 71 OF 116

\\jmt.com\local\proj\2018\18016655_001_Patuxent_Mitigation_CADD\Erosion Sediment Plan Sheets\pES-P0502_Patuxent.dgn
Monday, June 14, 2021 AT 11:29 AM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 1 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

TEMPORARY STAGING AND STOCKPILE AREA MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

SUPER SILT FENCE SSF–3

WET N 12 PFO/PEM/PSS

E 1276750
N 604100

E 1276150
N 603920

MULCH ACCESS ROAD MAR–B

TIMBER MAT ACCESS ROAD TAR–A

TEMPORARY ACCESS BRIDGE TB–1

TIMBER MAT ACCESS ROAD TAR–B

MAP: 7 GRID: 24 PARCEL: 471
IDJOTS DELIGHT CORPORATION II
DEED 1057/73

SANDBAG DIKE SBD 5–3

PUMP AROUND PRACTICE PAP 5–2

FB

FILTER BAG FB 5–1

WET N 05 PEM

TEMPORARY ACCESS BRIDGE TB–2

TIMBER MAT ACCESS ROAD TAR–C

RIPRAP SLOPE AND CHANNEL PROTECTION, CLASS I, 5 FT X 5 FT

12" CLEAR WATER DIVERSION PIPE CWD–2

SANDBAGS

TEMPORARY STAGING AND STOCKPILE AREA MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

SUPER SILT FENCE SSF–4

N 604100
E 1277080

MULCH ACCESS ROAD MAR–C

MULCH ACCESS ROAD MAR–A

TEMPORARY STAGING AND STOCKPILE AREA MAXIMUM HEIGHT IN FLOODPLAIN = 25 FT

MATCHLINE (STATION 207+75, SEE DWG. ES–14)

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR, DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 05–03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–15 OF 39 SHEET NO. 72 OF 116

I:\jmt.corp.local\projects\2018\18016655_001_Patuxent_Mitigation_1_CADD\Erosion Sediment Plan Sheets\pl05-#0503_Patuxent.dgn
Monday, June 14, 2021 AT 11:30 AM

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LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 1 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

TEMPORARY STAGING AND STOCKPILE AREA
MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

SUPER SILT FENCE
SSF–3

TIMBER MAT ACCESS ROAD TAR–A

TEMPORARY ACCESS BRIDGE TB–1

TIMBER MAT ACCESS ROAD TAR–B

MULCH ACCESS ROAD MAR–B

MULCH ACCESS ROAD MAR–A

E 1276750
N 604100

E 1276750
N 603920

E 1277080
N 604100

WET N 12
PFO/PEM/PSS

WET N 05
PEM

MAP: 7 GRID: 24 PARCEL: 471
IDJOTS DELIGHT CORPORATION II
DEED 1057/73

FILTER BAG
FB 6–1

SANDBAG DIKE
SBD 6–3

SANDBAG DIKE
SBD 6–2

SANDBAG DIKE
SBD 6–1

PUMP AROUND PRACTICE
PAP 6–1

PUMP AROUND PRACTICE
PAP 6–2

MATCHLINE (STATION 24+86, SEE DWG. ES–17)

NOTES:
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20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

BY: KHiggins –

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — A 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 06–01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. ES–16 OF 39 SHEET NO. 73 OF 116

I:\jmt-corp-local\projects\2018\18655_00_Patuxent_Mitigation_(JA430)\Erosion Sediment Plan Sheets\pES-P0601_Patuxent.dgn
Monday, June 14, 2021 AT 11:31 AM

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NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Designed by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 06-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. ES-17 OF 39 SHEET NO. 74 OF 116

BY: KHiggins –

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NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR, DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07–01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. ES–18 OF 39 SHEET NO. 75 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 11:44 AM

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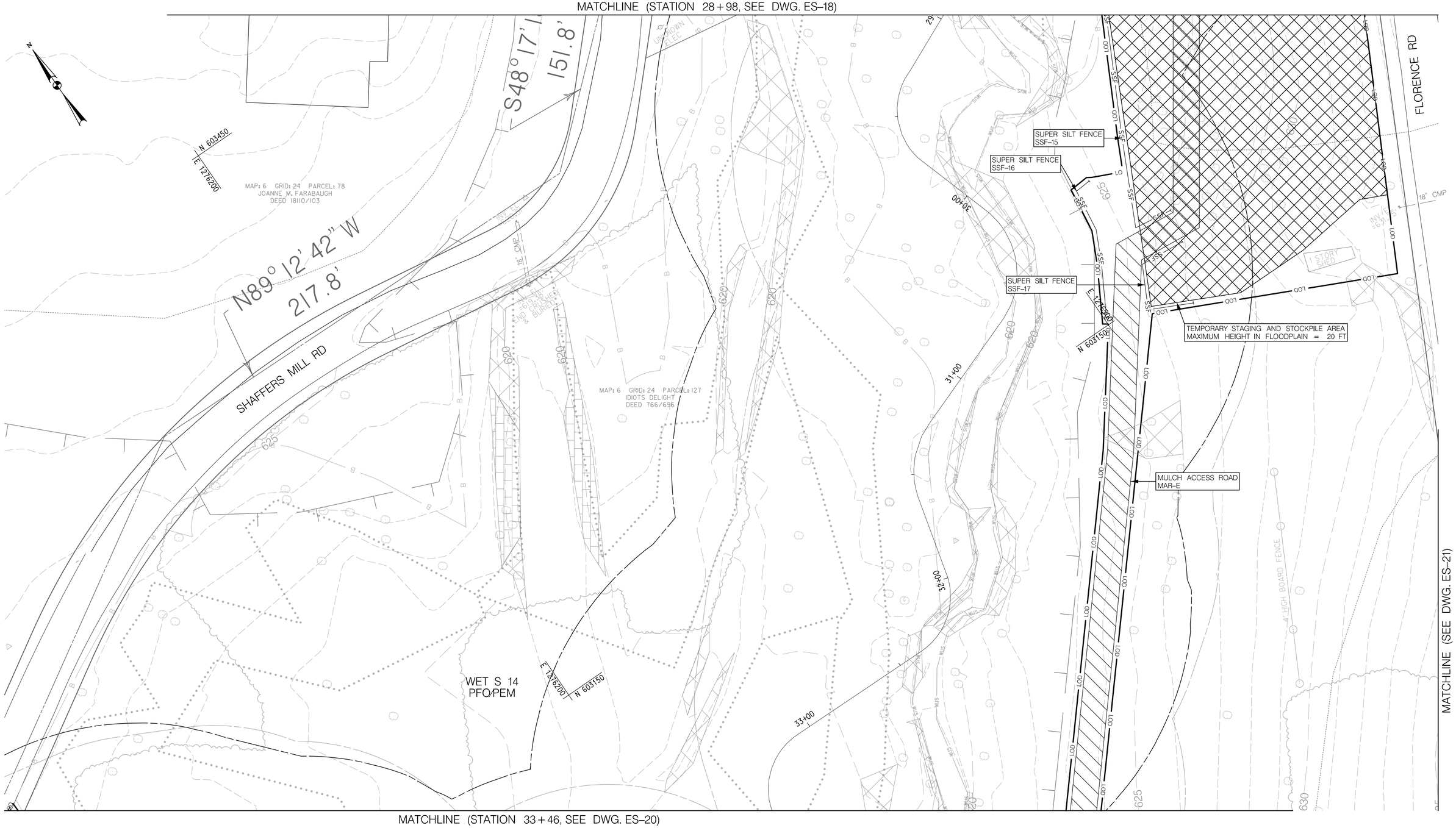

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by:
HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by:
Chad Edmondson
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

DocuSigned by:
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DocuSigned by:
Amy Gowan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

DocuSigned by:
Michael Galvin
2008BC8223B4CA...

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-19 OF 39 SHEET NO. 76 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 04:31 PM

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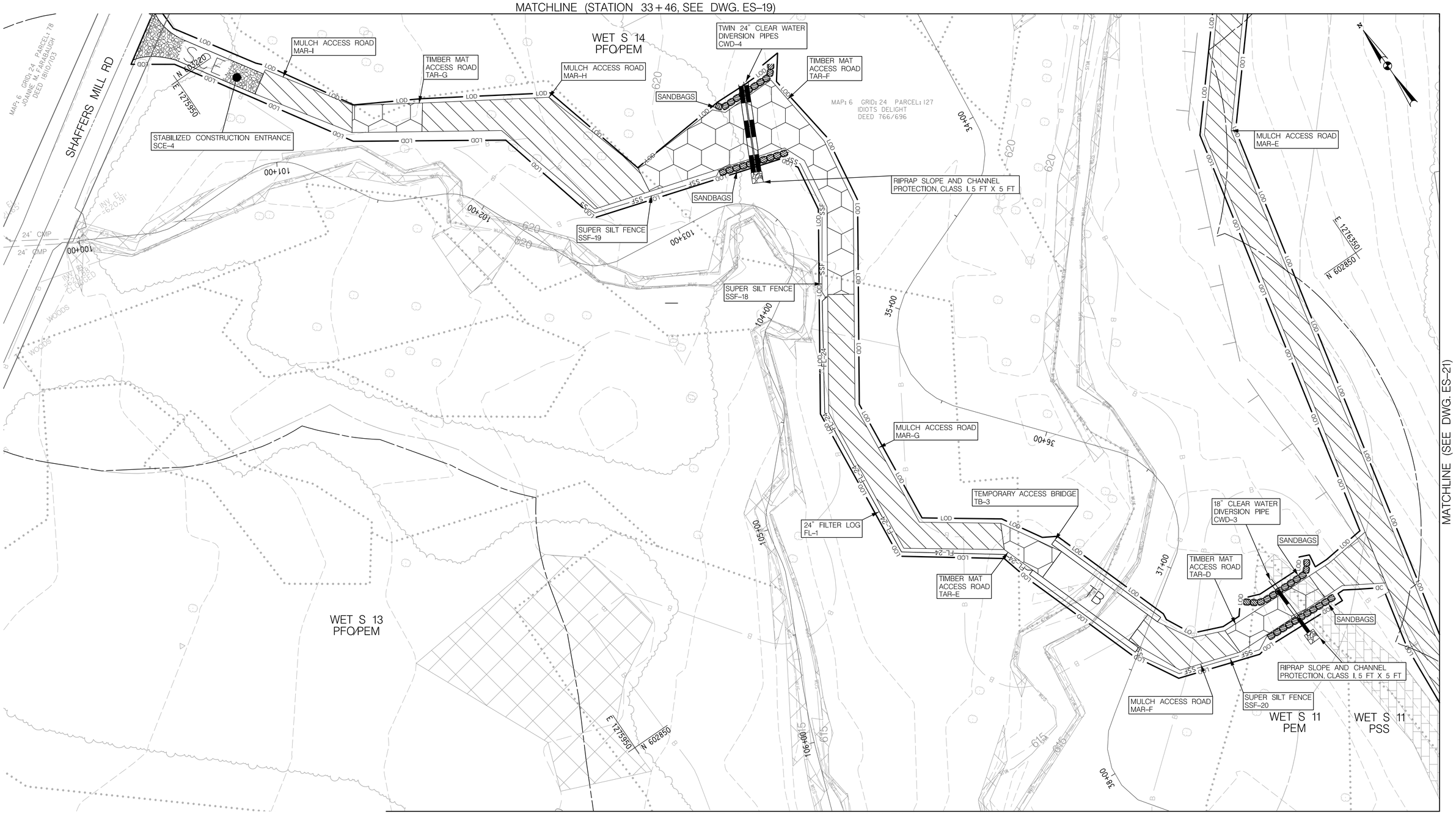

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07-03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-20 OF 39 SHEET NO. 77 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 11:47 AM

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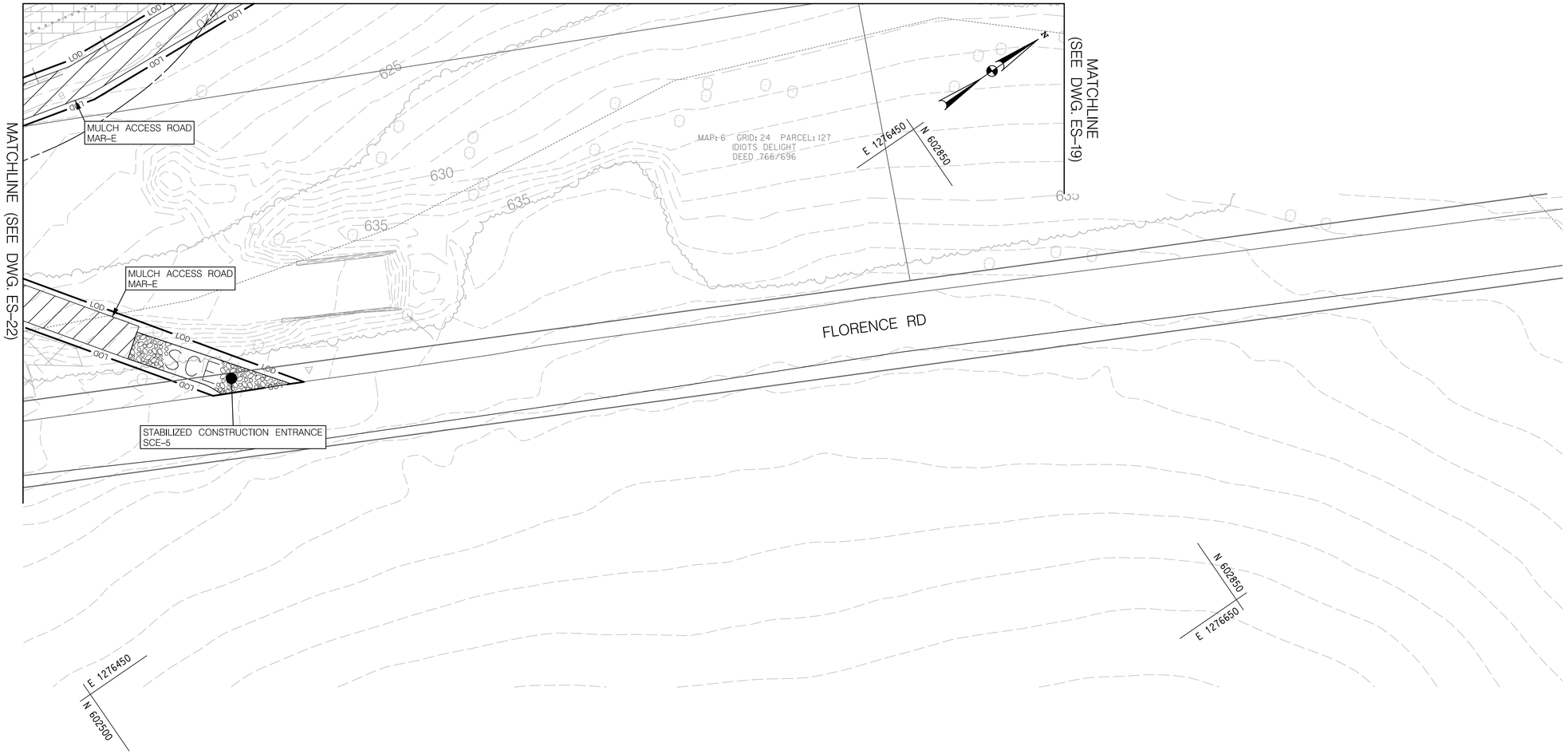

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07-04

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES-21 OF 39 SHEET NO. 78 OF 116

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Monday, June 14, 2021 AT 11:48 AM

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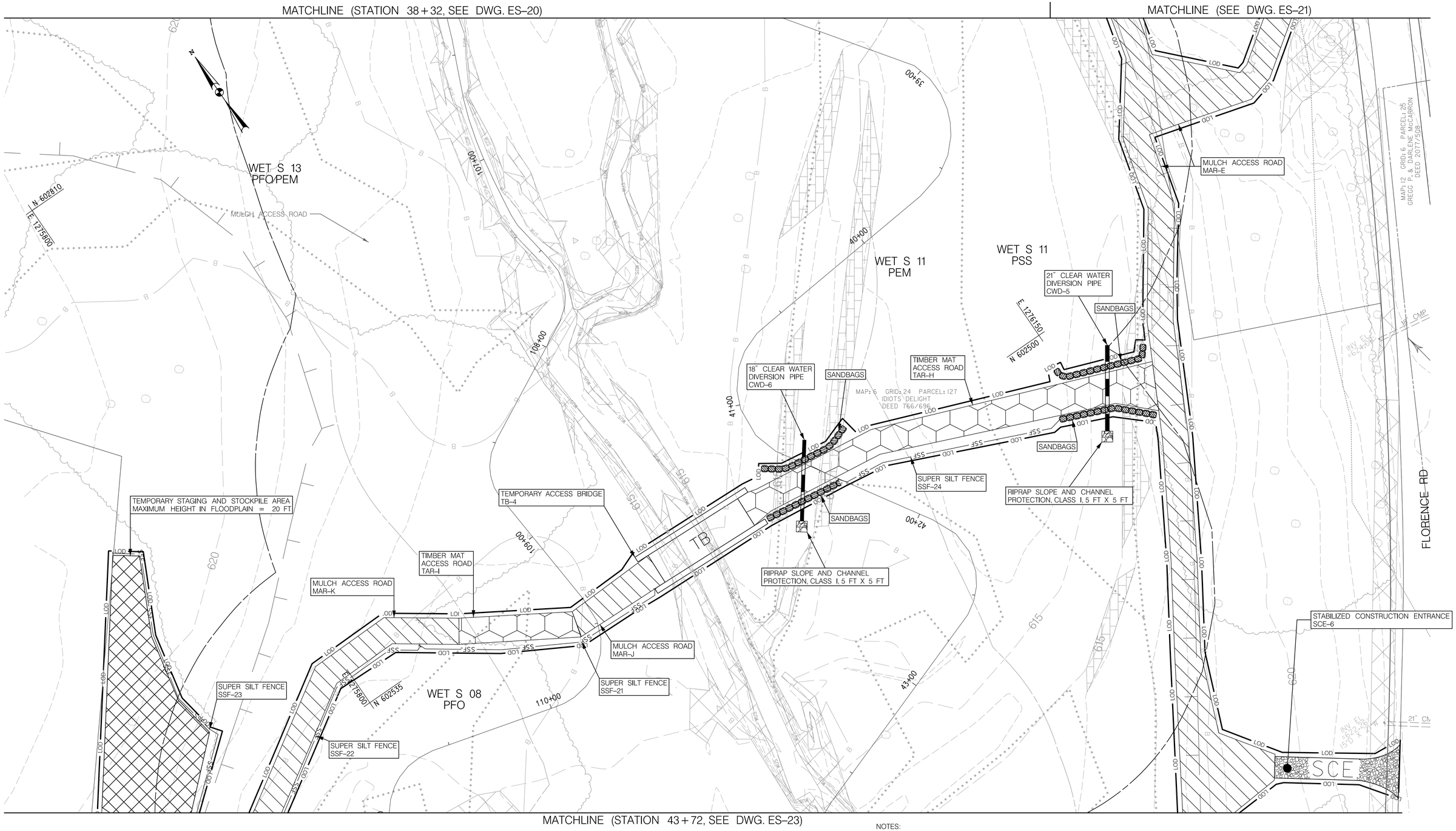

NOTES:
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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docusigned by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07-05

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-22 OF 39 SHEET NO. 79 OF 116

BY: KHiggins –

\\jmt.corp.local\jmtdfs\2018\18016655_001_Patuxent_Mitigation_\CADD\Erosion Sediment Plan Sheets\pES-P0705_Patuxent.dgn
Monday, June 14, 2021 AT 11:50 AM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

MATCHLINE (STATION 43+72, SEE DWG. ES–22

MULCH ACCESS ROAD MAR–K

SUPER SILT FENCE SSF–22

SUPER SILT FENCE SSF–23

SUPER SILT FENCE SSF–25

TEMPORARY STAGING AND STOCKPILE AREA MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

MULCH ACCESS ROAD MAR–L

WET S 08
PFO

WET S 11
PEM

MULCH ACCESS ROAD MAR–E

MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696

N 602250 E 1276000

N 602050 E 1276000

N 602250 E 1276500

INV. EL. =622.24

INV. EL. =622.15

N38°52'50"E 756.08'

MAP: 12 GRID: 6 PARCEL: 25
GREGG P. & DARLENE MCCANNON
DEED 1000/208

15" CM

MATCHLINE (STATION 49+09, SEE DWG. ES–24)

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07–06

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH-PVC COUNTY HOWARD COUNTY
DRAWN BY KNH-PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–23 OF 39 SHEET NO. 80 OF 116

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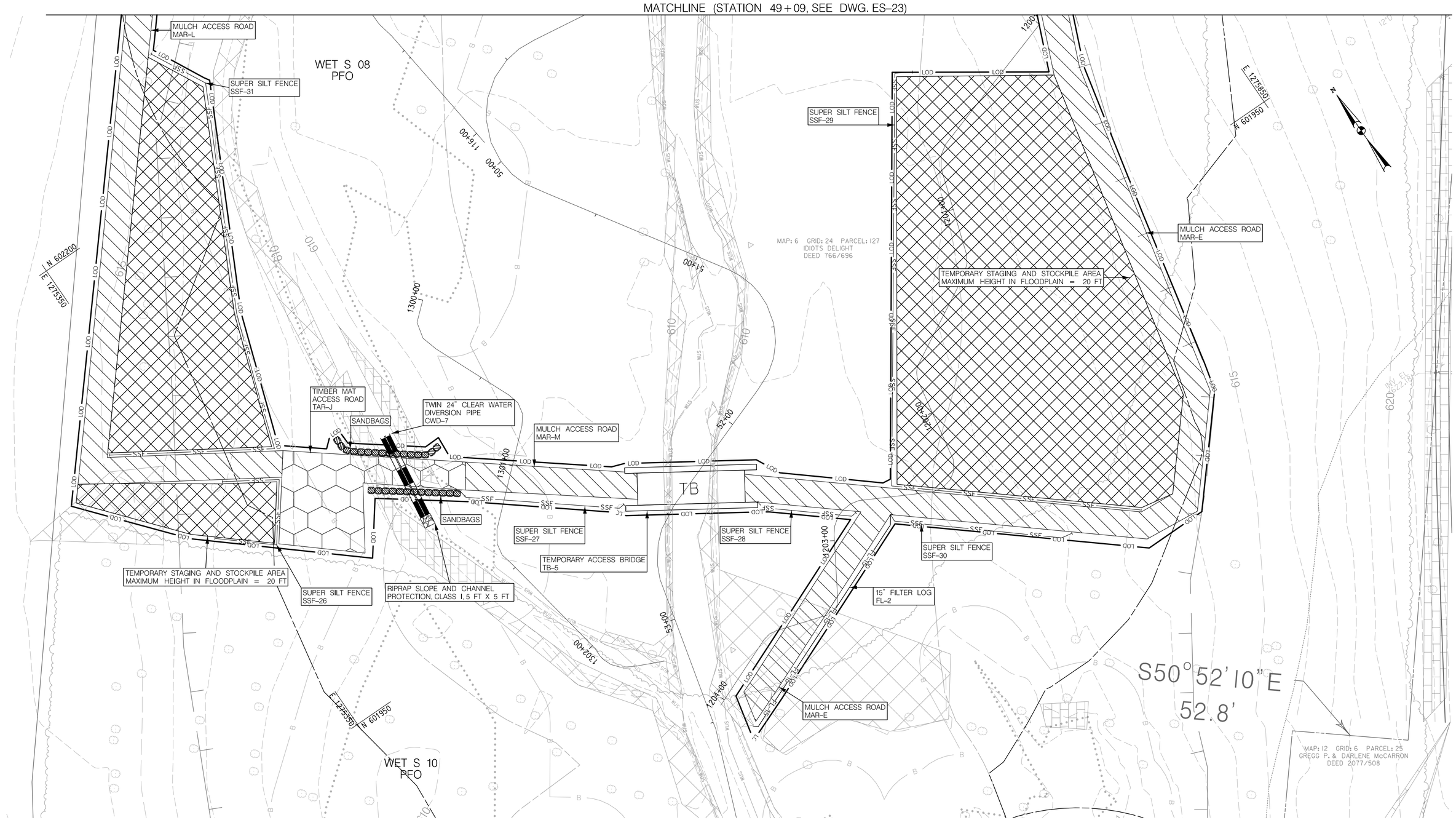

NOTES:
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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Signature by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson 7/9/2021
CHIEF DEVELOPMENT ENGINEERING DIVISION — DATE

Signature by: 7/9/2021
CHIEF DIVISION OF LAND DEVELOPMENT — DATE

Amy Gowan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 07-07

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-24 OF 39 SHEET NO. 81 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 11:55 AM

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20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

DocuSigned by: Cathy Sr. Ad — 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gowan — 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 4076 · PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 08-01

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18-01655-001		
DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. ES-25 OF 39 — SHEET NO. 82 OF 116

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Monday, June 14, 2021 AT 11:57 AM

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20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

Docu Signed by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 08-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-26 OF 39 SHEET NO. 83 OF 116

BY: KHiggins –

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Monday, June 14, 2021 AT 11:58 AM

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MATCHLINE (STATION 33+46, SEE DWG. ES–26)

SHAFFERS MILL RD

MAP: 6 GRID: 24 PARCEL: 78
JOANNE M. FAABAUGH
DEED 1810/103

MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696

WET S 14
PFO/PEM

WET S 13
PFO/PEM

WET S 11
PEM

WET S 11
PSS

MULCH ACCESS ROAD MAR–I

TIMBER MAT ACCESS ROAD TAR–G

MULCH ACCESS ROAD MAR–H

TWIN 24" CLEAR WATER DIVERSION PIPES CWD–4

TIMBER MAT ACCESS ROAD TAR–F

MULCH ACCESS ROAD MAR–E

STABILIZED CONSTRUCTION ENTRANCE SCE–4

SANDBAGS

SUPER SILT FENCE SSF–19

SUPER SILT FENCE SSF–18

RIPRAP SLOPE AND CHANNEL PROTECTION, CLASS I, 5 FT X 5 FT

MULCH ACCESS ROAD MAR–G

PUMP–AROUND PRACTICE PAP 8–1

SANDBAG DIKE SBD 8–2

TEMPORARY ACCESS BRIDGE TB–3

24" FILTER LOG FL–1

FILTER BAG FB 8–1

TIMBER MAT ACCESS ROAD TAR–E

TIMBER MAT ACCESS ROAD TAR–D

18" CLEAR WATER DIVERSION PIPE CWD–3

SANDBAGS

SANDBAGS

RIPRAP SLOPE AND CHANNEL PROTECTION, CLASS I, 5 FT X 5 FT

MULCH ACCESS ROAD MAR–F

SUPER SILT FENCE SSF–20

24" CMP

24" CMP

INV. EL. 620.95'

INV. EL. 620.55'

INV. EL. 620.28' CLOSED

TRAV. PT. JMT142

TRAV. PT. JMT300

TRAV. PT. JMT141

N 602320
E 1275950

E 1276350
N 602850

E 1275950
N 602850

100+00
101+00
102+00
103+00
104+00
105+00
36+00
37+00
38+00

LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 7 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND
MICHAEL R. GALVIN
PROFESSIONAL ENGINEER
No. 44076

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 08–03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–27 OF 39 SHEET NO. 84 OF 116

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Monday, June 14, 2021 AT 11:59 AM

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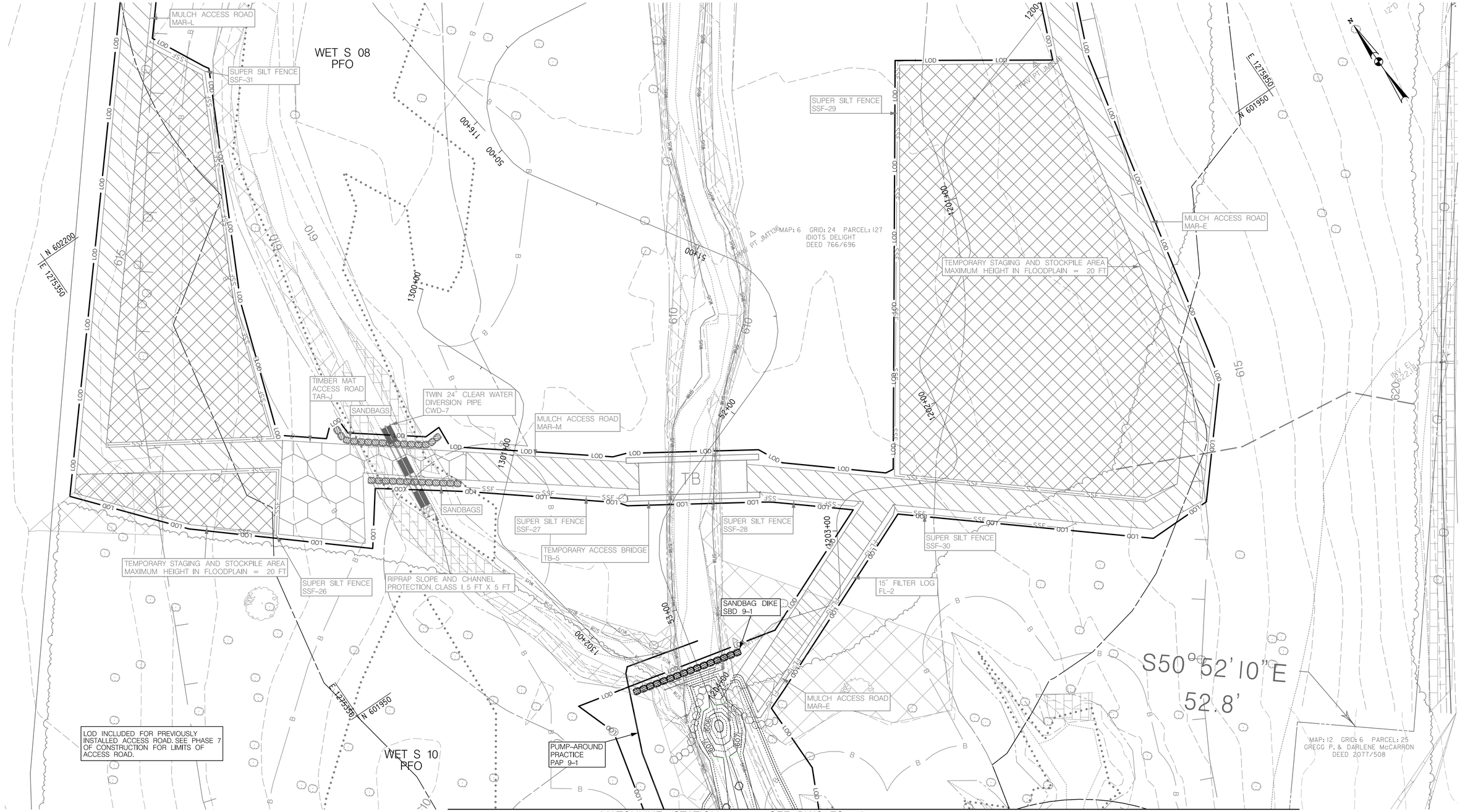

NOTES:
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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Designed by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Designed by: Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Designed by: [signature] 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Designed by: Amy Gronan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Designed by: Michael Galvin
Z0080082253EMJK

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 09-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-28 OF 39 SHEET NO. 85 OF 116

BY: KHiggins –

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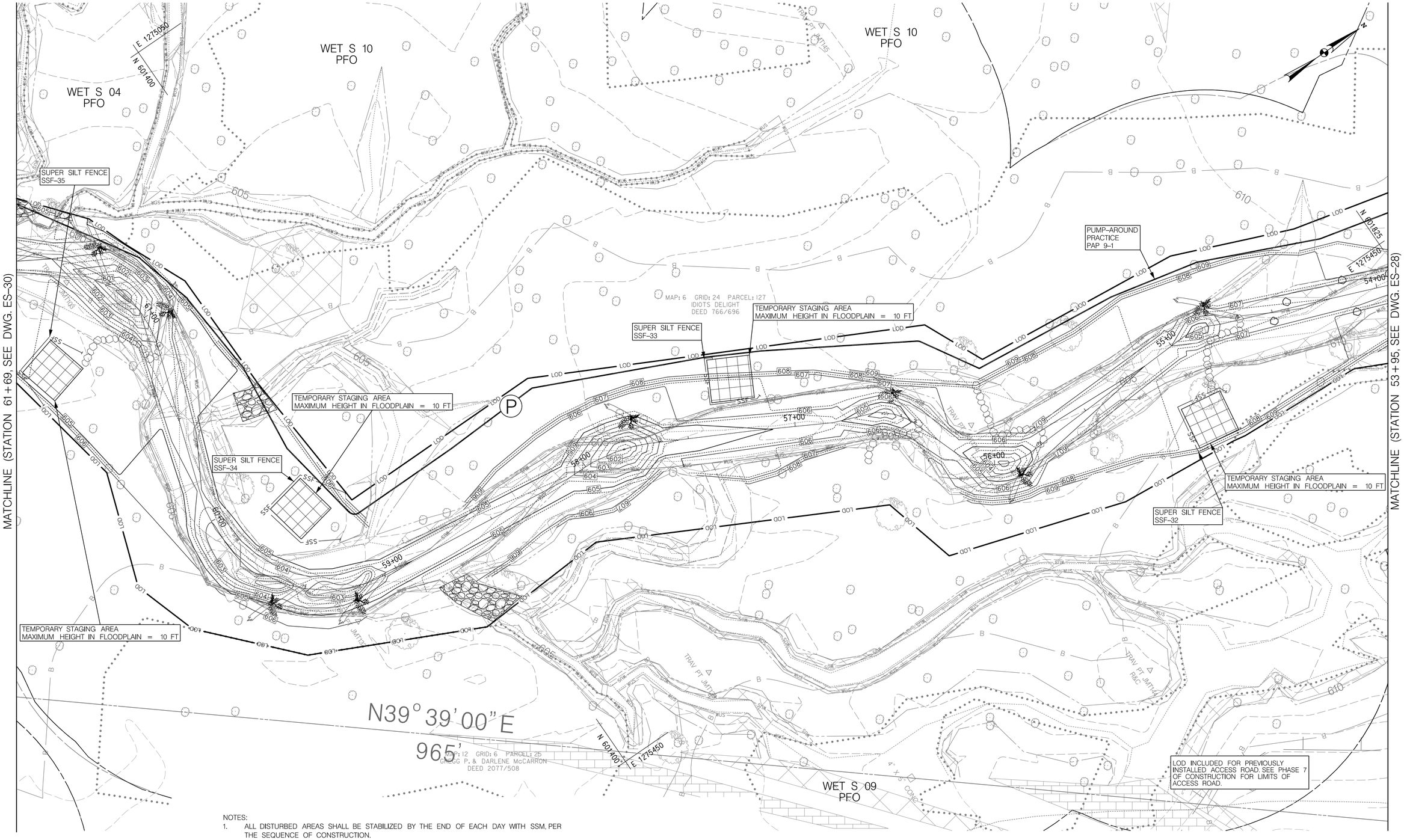

NOTES:

1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

BY: KHiggins –

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

Docu Signed by: Michael Galvin

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 09-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-29 OF 39 SHEET NO. 86 OF 116

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Monday, June 14, 2021 AT 12:25 PM

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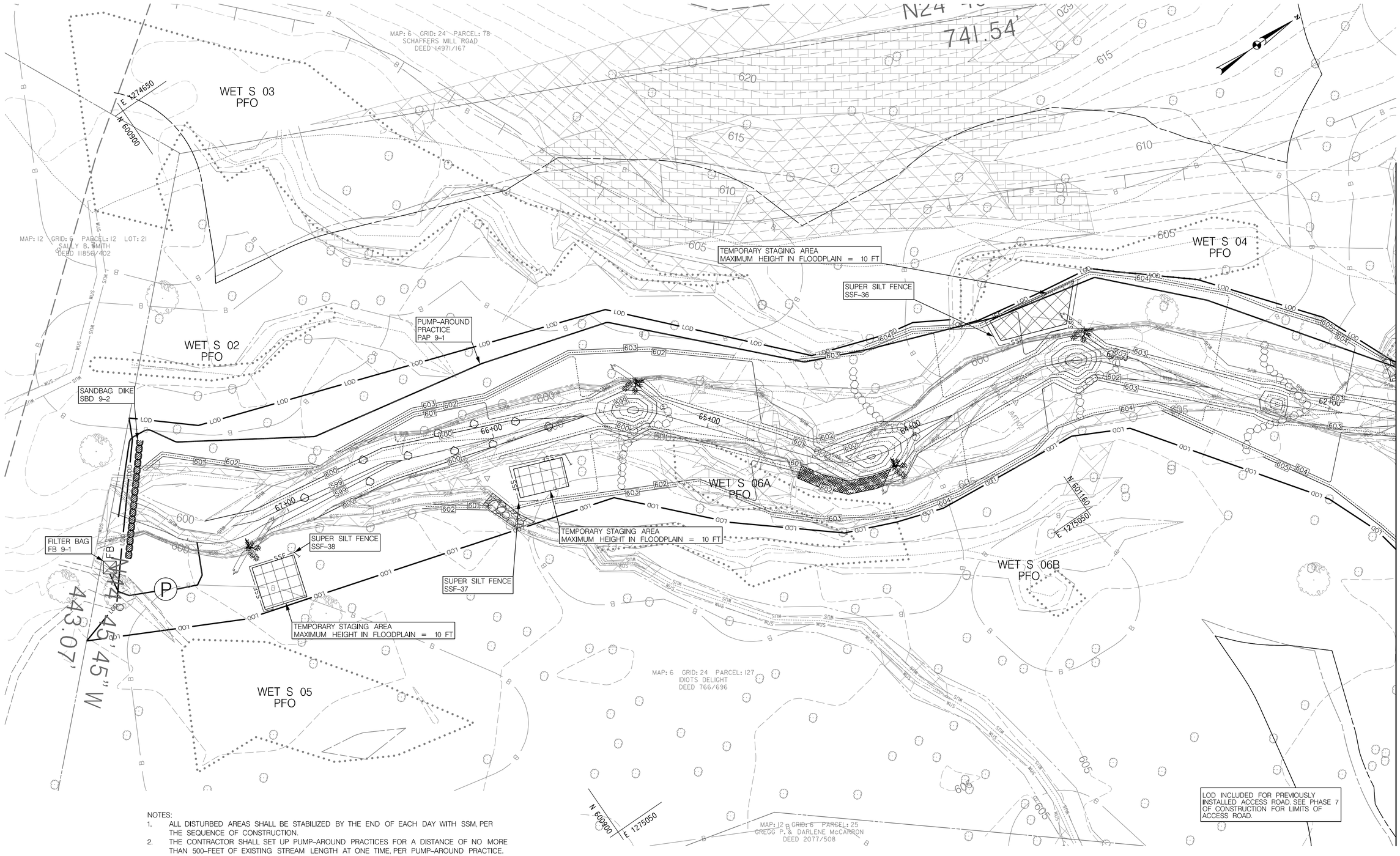

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: KHiggins –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

Docusigned by: [signature] 7/12/2021
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Docusigned by: [signature] 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Docusigned by: [signature] 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Docusigned by: [signature] 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Docusigned by: [signature]

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 09-03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES-30 OF 39 SHEET NO. 87 OF 116

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Monday, June 14, 2021 AT 12:26 PM

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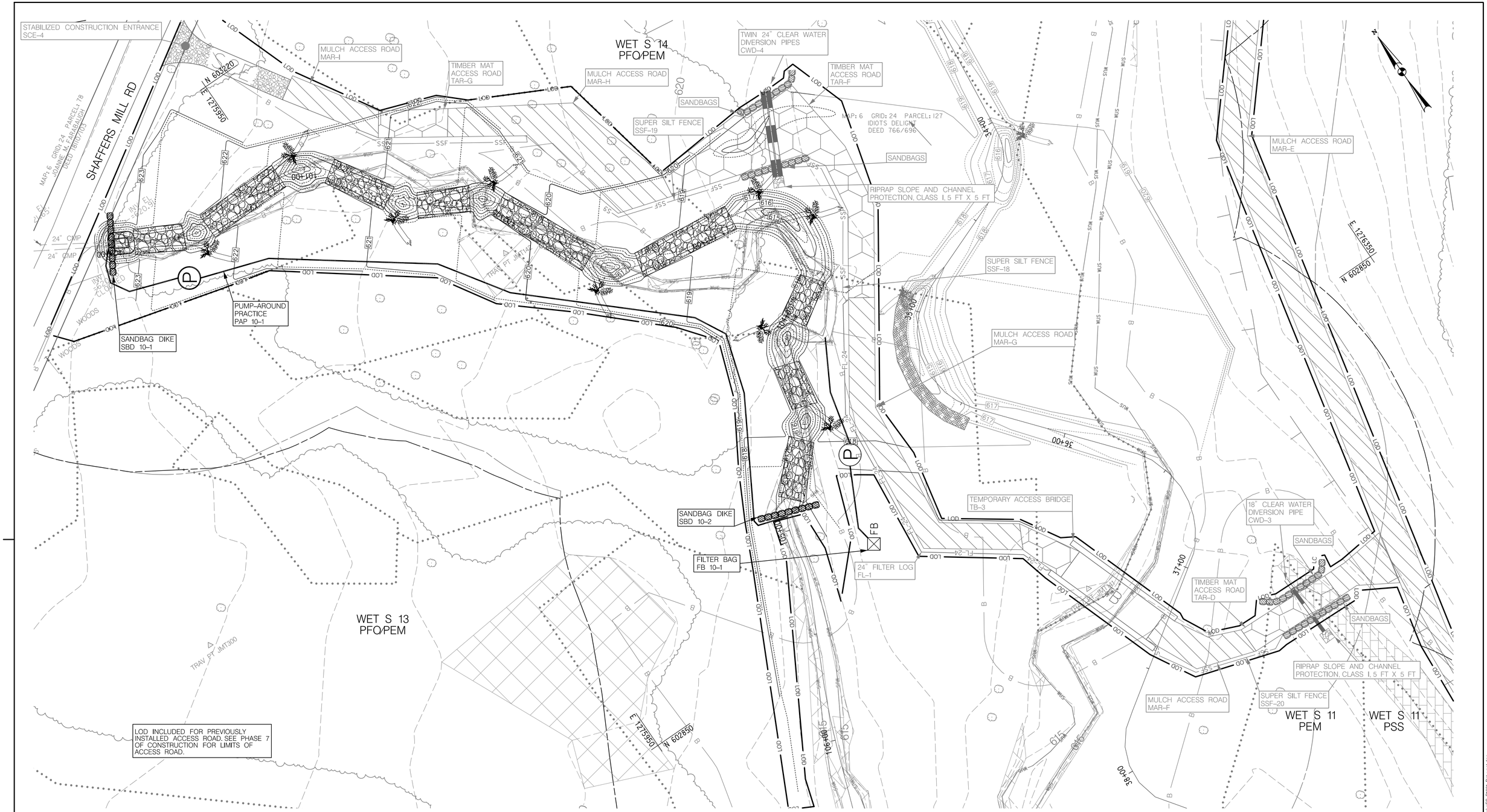

NOTES:
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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 10-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-31 OF 39 SHEET NO. 88 OF 116

BY: PCrawford –

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Monday, June 14, 2021 AT 12:20 PM

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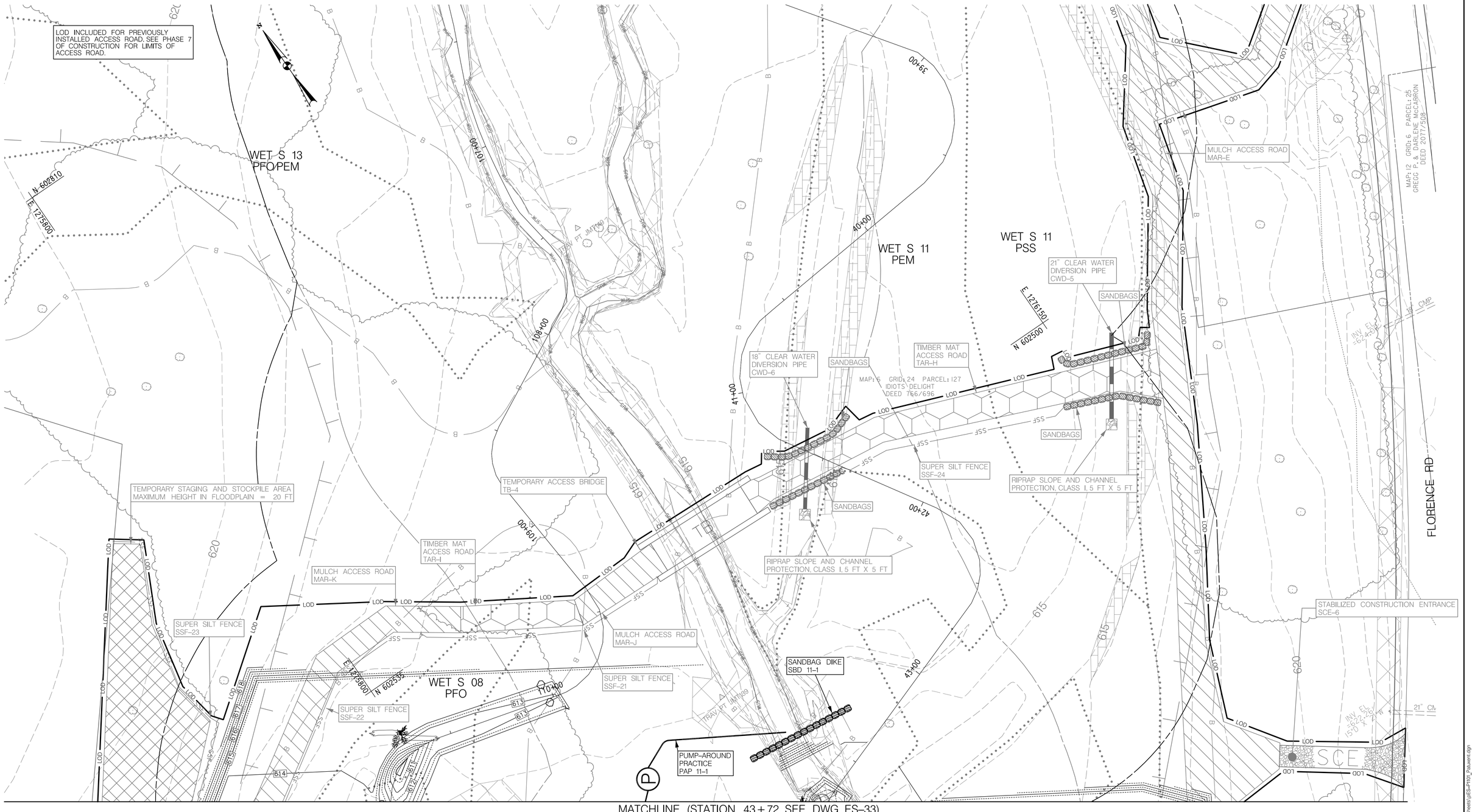

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20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DesignSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 11-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-32 OF 39 SHEET NO. 89 OF 116

BY: PCrawford –

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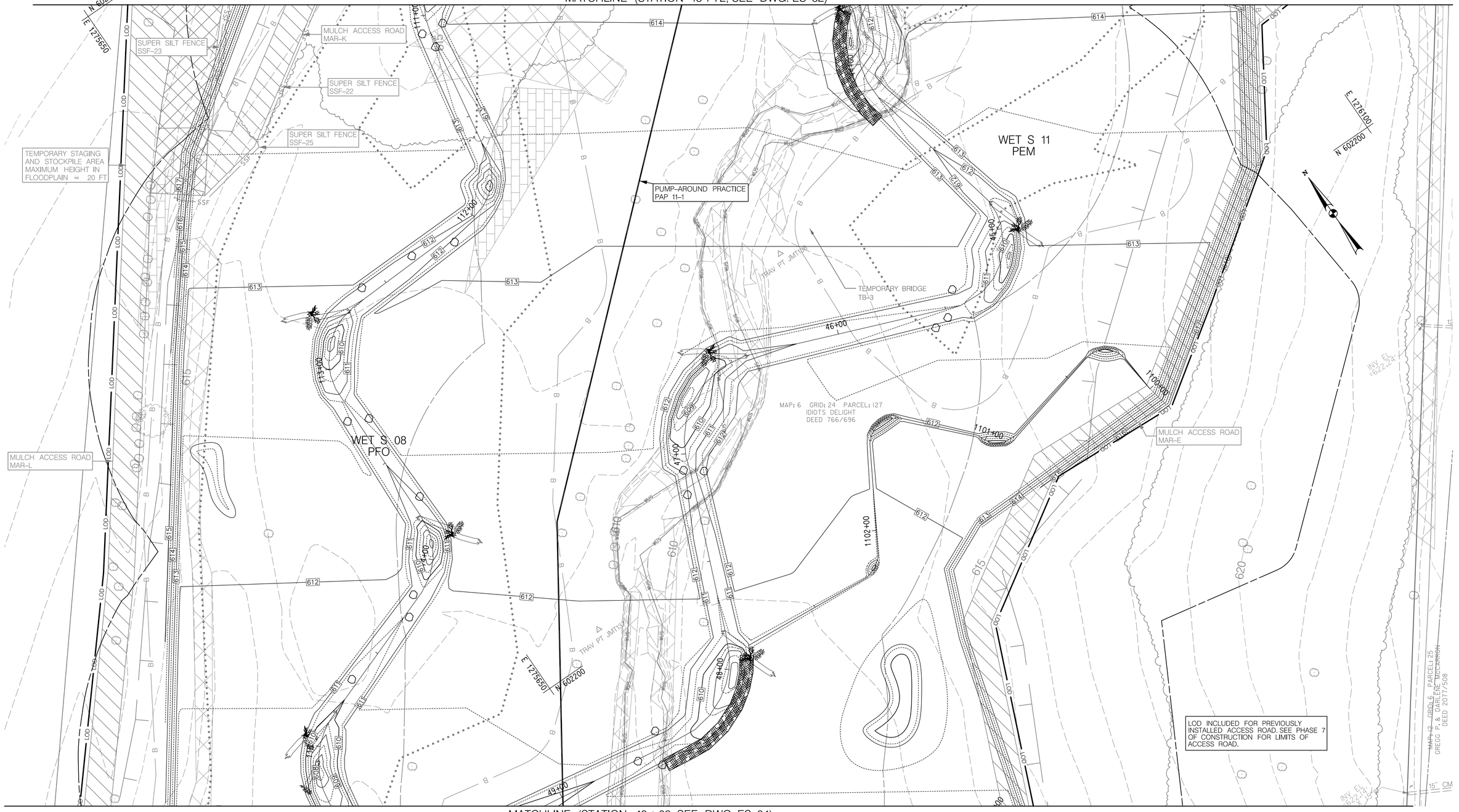

NOTES:
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2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

Amy Gowan — DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

DesignedBy: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 11-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-33 OF 39 SHEET NO. 90 OF 116

BY: PCrawford –

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Monday, June 14, 2021 AT 12:14 PM

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MATCHLINE (STATION 49+09, SEE DWG. ES-33)

20' 0 20' 40'
SCALE: 1" = 20'

NOTES:
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JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Designed by: Michael Galvin

DESIGN PROFESSIONAL
MICHAEL GALVIN
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVENUE,
COCKEYSVILLE, MD 21030
TEL: 410-316-2471
EMAIL: MGalvin@jmt.com

OWNER /DEVELOPER INFORMATION
JOHNSON, MIRMIRAN & THOMPSON
40 WIGHT AVE.
COCKEYSVILLE, MD 21030

PROFESSIONAL CERTIFICATION
"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."

CONTACT
MICHAEL GALVIN
40 WIGHT AVE.
COCKEYSVILLE, MD 21030
TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 11-03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-34 OF 39 SHEET NO. 91 OF 116

BY: PCrawford –

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Monday, June 14, 2021 AT 12:13 PM

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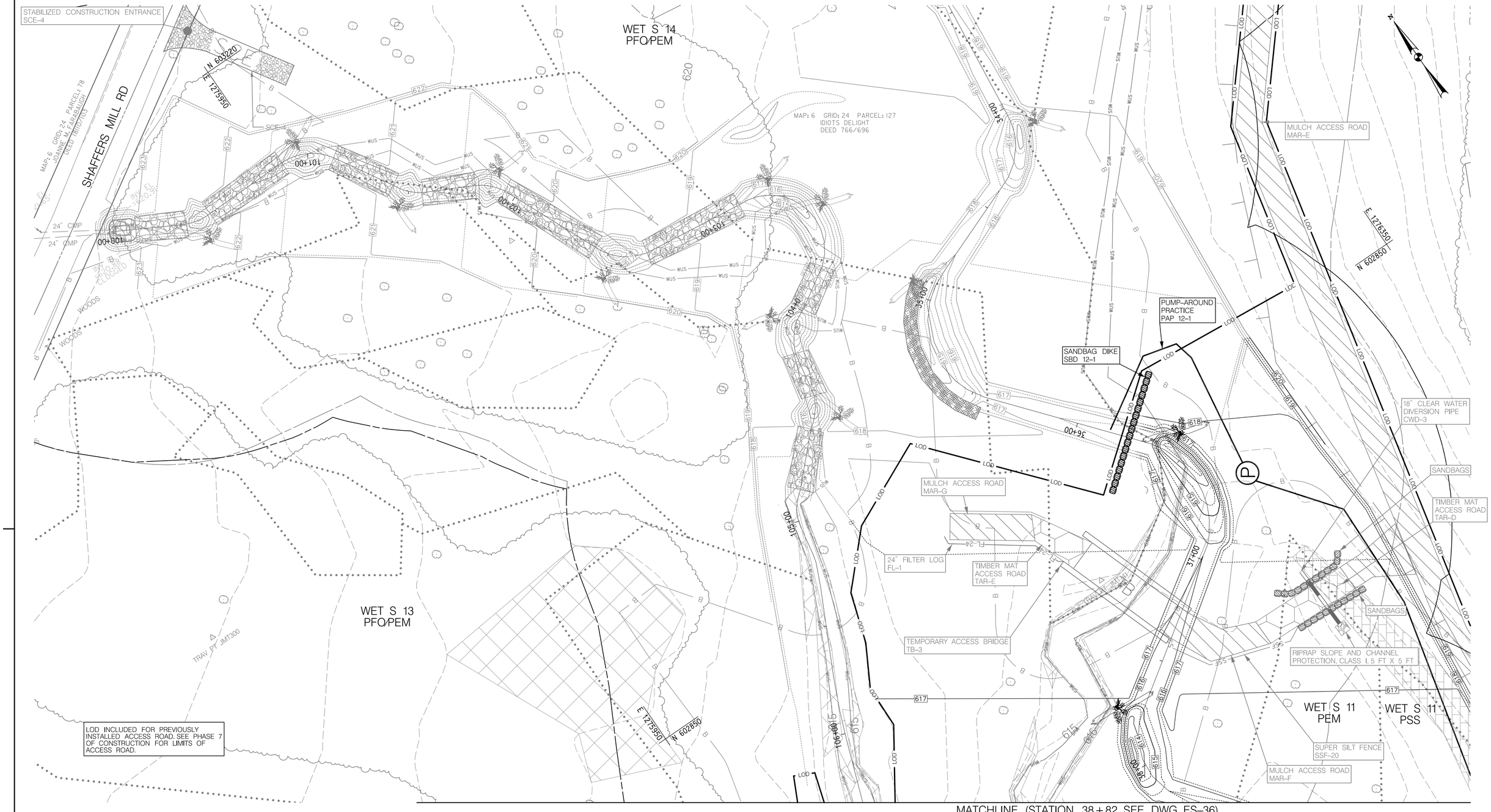
STABILIZED CONSTRUCTION ENTRANCE
SCE-4
SHAFFERS MILL RD
MAP: 6 GRID: 24 PARCEL: 78
JOANNE M ARRABAUGH
DEED 6117/103
WET S 14
PFO/PEM
MAP: 6 GRID: 24 PARCEL: 127
IDIOTS DELIGHT
DEED 766/696
N 603220
E 1275950
24" CMP
24" CMP
INV. EL. 620.5
INV. EL. 620.5
INV. EL. 620.5

DocuSign Envelope ID: 3A344C09-8D90-4AA3-8A39-6646BD963E57

MATCHLINE (STATION 38+32, SEE DWG. ES–35)

WET S 13
PFO/PEM

N 602810
E 1215900

SANDBAG DIKE
SBD 12–3

PUMP–AROUND PRACTICE
PAP 12–2

WET S 11
PEM

MAP: 6 GRID: 24 PARCEL: 127
KNOTS DELIGHT
DEED 766/696

WET S 11
PSS

21" CLEAR WATER
DIVERSION PIPE
CWD–5

MULCH ACCESS ROAD
MAR–E

MAP: 12 GRID: 6 PARCEL: 25
GREGG P. & DARLENE MCCABRON
DEED 2077/0062

E 1216150
N 602500

INV. EL.
62.55 ft

18" CLEAR WATER
DIVERSION PIPE
CWD–6

SANDBAGS

TIMBER MAT
ACCESS ROAD
TAR–H

SUPER SILT FENCE
SSF–24

RIPRAP SLOPE AND CHANNEL
PROTECTION, CLASS I, 5 FT X 5 FT

TEMPORARY ACCESS BRIDGE
TB–4

TIMBER MAT
ACCESS ROAD
TAR–I

MULCH ACCESS ROAD
MAR–K

MULCH ACCESS ROAD
MAR–J

STABILIZED CONSTRUCTION ENTRANCE
SCE–6

LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 7 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

E 1215900
N 602550

WET S 08
PFO

SANDBAG DIKE
SBD 12–4

PUMP–AROUND PRACTICE
PAP 12–1

SUPER SILT FENCE
SSF–22

SUPER SILT FENCE
SSF–21

MATCHLINE (STATION 43+72, SEE DWG. ES–37)

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP–AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500–FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP–AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND
MICHAEL R. GALVIN
44076
PROFESSIONAL ENGINEER

Digitally signed by Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 12–02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES–36 OF 39 SHEET NO. 93 OF 116

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Monday, June 14, 2021 AT 12:1 PM

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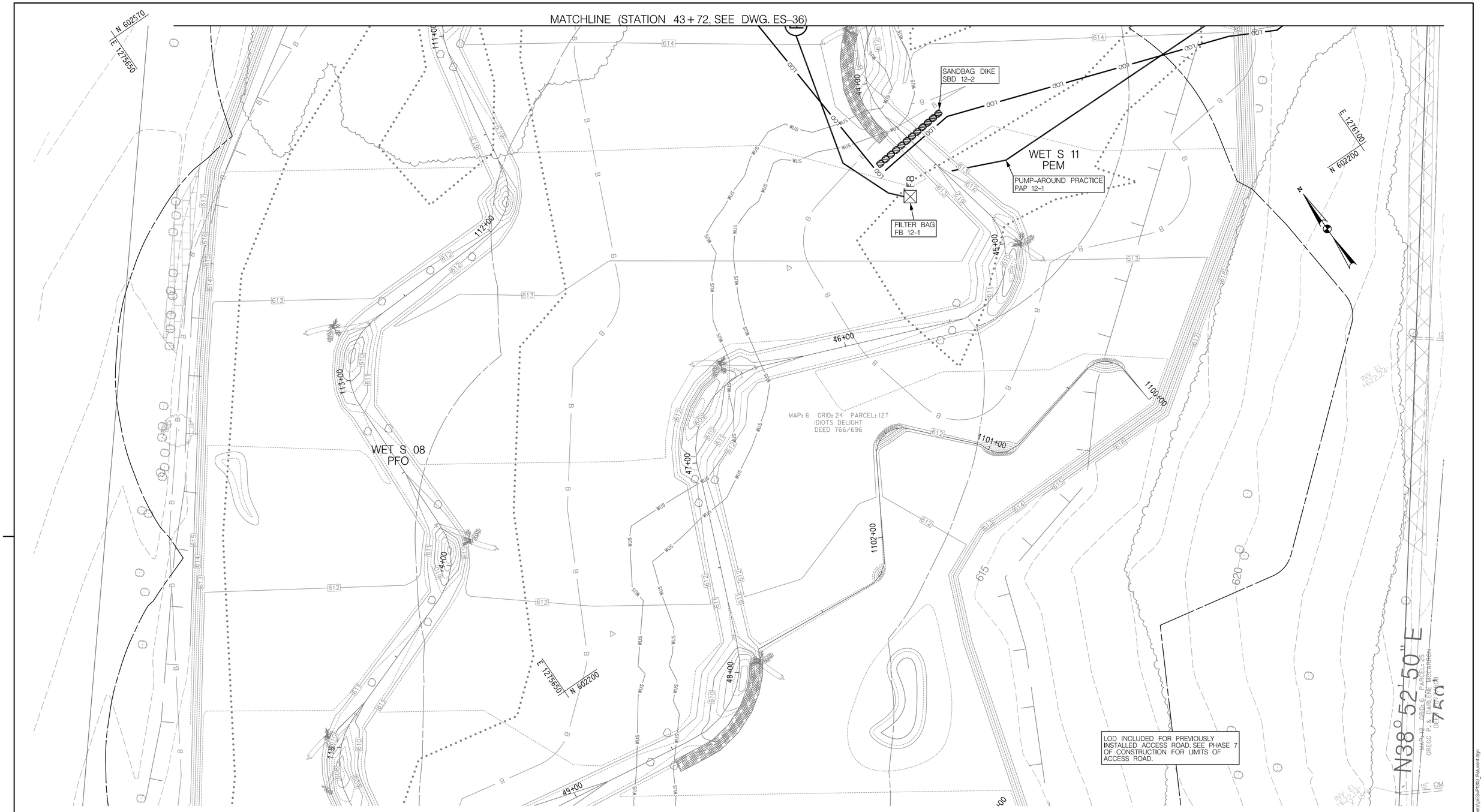

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20' 0 20' 40'
SCALE: 1" = 20'

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Digitally signed by Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE., COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE., COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 12-03

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES-37 OF 39 SHEET NO. 94 OF 116

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LOD INCLUDED FOR PREVIOUSLY INSTALLED ACCESS ROAD. SEE PHASE 7 OF CONSTRUCTION FOR LIMITS OF ACCESS ROAD.

WET N 12
PFO/PEM/PSS

N 603750
E 1276400

TRAV PT JMT148

MAP: 7 GRID: 24 PARCEL: 471
IDIOTS DELIGHT CORPORATION II
DEED 1057/73

S43° 02' 46" E
255.61'

N74° 12' 43" W
345.53'

N77° 28' 34" W
243.65'

E 1276950
N 603450

25+00
26+00
27+00
28+00

INV. EL. 620.41

STABILIZED CONSTRUCTION ENTRANCE
SCE-3

TEMPORARY STAGING AND STOCKPILE AREA
MAXIMUM HEIGHT IN FLOODPLAIN = 20 FT

SANDBAG DIKE
SBD 13-1

SHAFFERSVILLE RD

SUPER SILT FENCE
SSF-15

MAP: 6 GRID: 24 PARCEL: 471
IDIOTS DELIGHT
DEED 566/496

MULCH ACCESS ROAD
MAR-E

PUMP-AROUND
PRACTICE
PAP 13-1

MAP: 6 GRID: 24 PARCEL: 78
JOANNE M. FARABAUGH
DEED 1811O/103

E 1276400
N 603450

TRAV PT JMT108

SHAFFERS MILL RD

WET S 14
PFO/PEM

FILTER BAG
FB 13-1

SANDBAG DIKE
SBD 13-2

TRAV PT JMT124

FLORENCE RD

MATCHLINE (STATION 28+98, SEE DWG. ES-39)

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

20' 0 20' 40'
SCALE: 1" = 20'

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — 7/12/2021 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/9/2021 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 7/9/2021 DATE

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — 7/12/2021 DATE

STATE OF MARYLAND
MICHAEL R. GALVIN
A-44076
PROFESSIONAL ENGINEER

DocuSigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 13-01

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY KNH/PVC COUNTY HOWARD COUNTY
DRAWN BY KNH/PVC LOGMILE N/A
CHECKED BY JJM HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. ES-38 OF 39 SHEET NO. 95 OF 116

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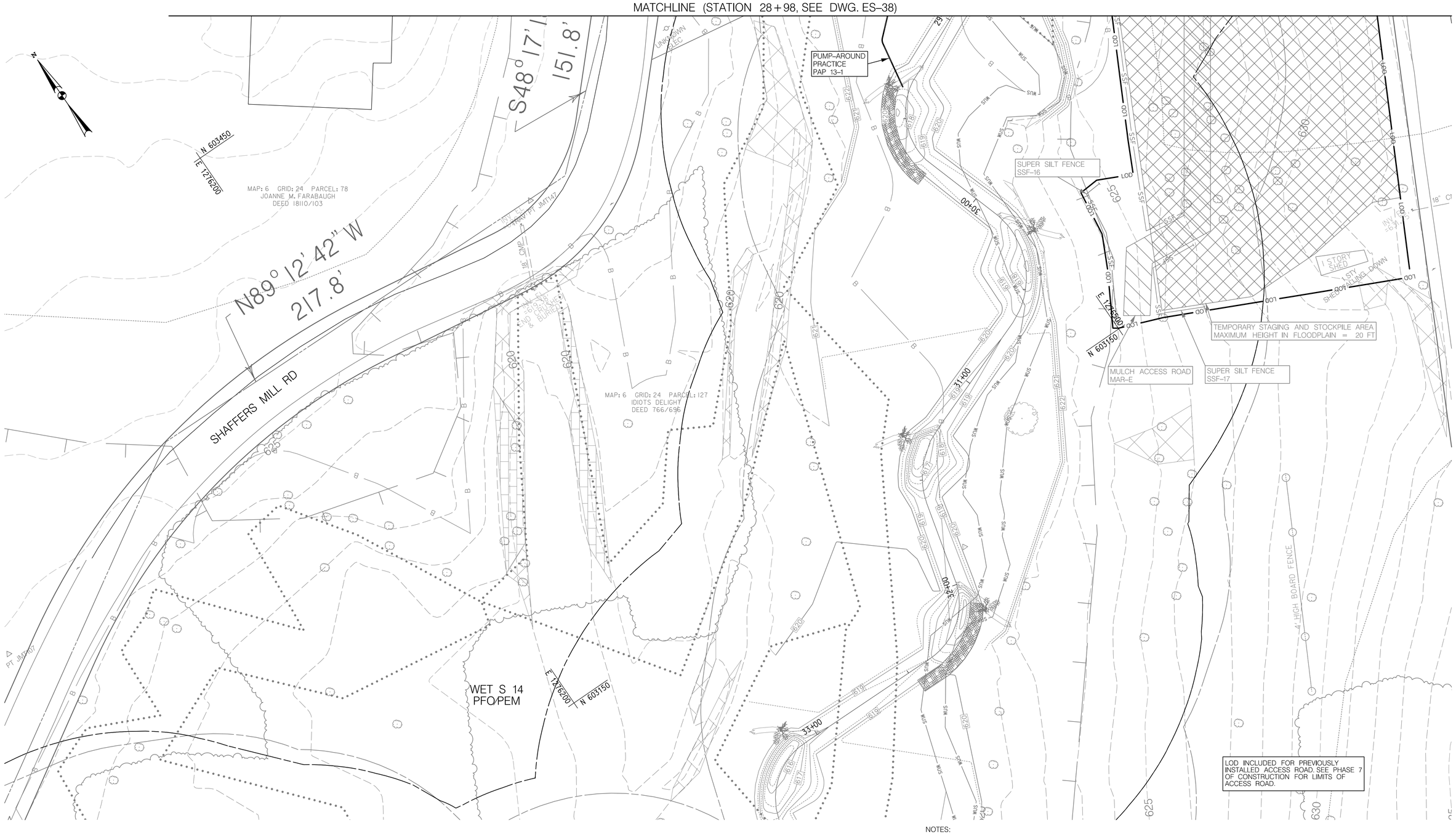

NOTES:
1. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF EACH DAY WITH SSM, PER THE SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL SET UP PUMP-AROUND PRACTICES FOR A DISTANCE OF NO MORE THAN 500-FEET OF EXISTING STREAM LENGTH AT ONE TIME, PER PUMP-AROUND PRACTICE.

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

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

HOWARD SOIL CONSERVATION DISTRICT — DATE: 7/12/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE: 7/12/2021

STATE OF MARYLAND — MICHAEL R. GALVIN — 44076 — PROFESSIONAL ENGINEER

Docu Signed by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410-316-2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076, EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410-316-2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

EROSION AND SEDIMENT CONTROL PLAN – PHASE 13-02

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18-01655-001

DESIGNED BY	KNH/PVC	COUNTY	HOWARD COUNTY
DRAWN BY	KNH/PVC	LOGMILE	N/A
CHECKED BY	JJM	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. ES-39 OF 39 SHEET NO. 96 OF 116

BY: PCrawford –

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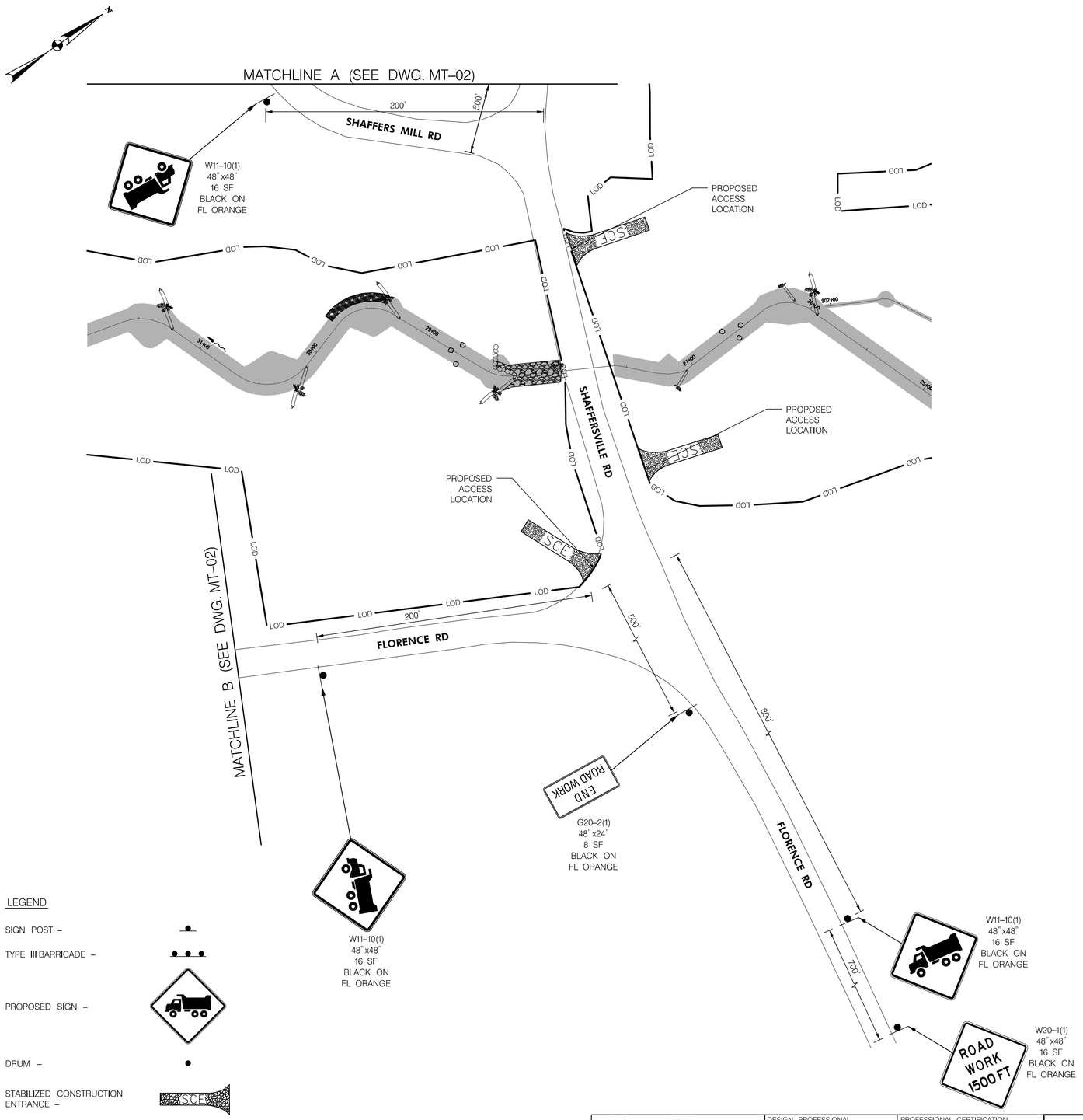


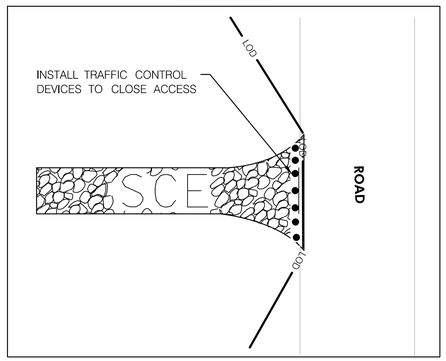
SEQUENCE OF MOT CONSTRUCTION

1. INSTALL ALL TRAFFIC CONTROL WARNING SIGNS AS SHOWN IN PLANS.
2. IMPLEMENT FLAGGING OPERATION AS SPECIFIED IN THE MD SHA STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD NO. 104.02–10 AND 104.02–14 SHALL BE UTILIZED WHEN INSTALLING STABILIZED CONSTRUCTION ENTRANCES.
3. CONSTRUCT PROJECT ELEMENTS PER THE SEQUENCE OF CONSTRUCTION (DRAWING EN–5).
4. AFTER EACH WORK DAY INSTALL TRAFFIC CONTROL DEVICES AS SHOWN IN THE PROPOSED ACCESS LOCATION DETAIL. DEVICES CAN BE SHIFTED OR REMOVED FOR CONSTRUCTION ACCESS.
5. REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

FLAGGING OPERATION

1. FLAGGERS SHALL BE UTILIZED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 104.15 AND SECTION 9.0 ON MARYLAND STANDARDS 104.00–11 AND 104.00–12.
2. FLAGGING OPERATIONS SHALL BE LIMITED TO OFF–PEAK HOURS FROM 9:00 AM–4:00 PM, UNLESS PERMISSION IS GRANTED BY THE ENGINEER PER THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
3. FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000 FEET FROM THE ADVANCE FLAGGER SIGN. FLAGGERS SHALL BE INCIDENTAL TO THE MAINTENANCE OF TRAFFIC ITEM.
4. ALL FLAGGERS SHALL BE CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA).

PROPOSED ACCESS LOCATION DETAIL
NOT TO SCALE



GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION WORK ZONE TRAFFIC CONTROL TYPICALS IN CATEGORY 1 OF THE BOOK OF STANDARDS, THE 2011 MDMUTCD AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND, THESE PLANS, AND THE OTHER CONTRACT DOCUMENTS.
2. ALL TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE TO MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 104.08.
3. ADVANCE WARNING SIGNS SHALL BE INSTALLED AT A MINIMUM SPACING OF 200 FEET FROM ANY EXISTING SIGN, THE DISTANCES SHOWN ON THE PLANS HAVE BEEN DESIGNED FOR THIS REQUIREMENT AND SHOULD BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. TYPICAL APPLICATIONS TO BE USED FOR OFF–PEAK HOUR WORK MAY BE MODIFIED AS REQUIRED BASED ON FIELD CONDITIONS, AS DIRECTED BY THE ENGINEER.
5. ALL EXISTING SIGNS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION UNLESS A CHANGE IS SHOWN ON THE PLAN AND/OR AS DIRECTED BY THE PROJECT ENGINEER. SIGNS THAT ARE NOT APPLICABLE FOR A PARTICULAR STAGE SHALL BE REMOVED OR COMPLETELY COVERED WITH NON– TRANSPARENT MATERIAL.
6. REFER TO MD STD. NOS. 104.00–06 – 104.00–08, SECTION 4.0 SIGNS, AND MD STD. NOS. 104.01–17A – 104.01–17D FOR TEMPORARY SIGNS AND SUPPORTS.
7. ALL TEMPORARY SIGNING SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
8. CONSTRUCTION & WORKER'S VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE.
9. ALL VEHICLES IN THE WORK AREA SHALL DISPLAY FLASHING LIGHTS INSTALLED FOR THE PURPOSE OF WARNING APPROACHING DRIVERS OF A VEHICULAR TRAFFIC HAZARD REQUIRING UNUSUAL CARE IN APPROACHING, OVER TAKING OR PASSING. AMBER SERVICE LIGHTS SHALL BE ON UNLESS BEHIND PROTECTIVE BARRIER OR CHANNELIZING DEVICES, SEE MD SHA STANDARDS 104.01–18A AND 104.01–18B.
10. EXCAVATIONS IN AREAS WHERE THE WORK BUFFER IS LESS THAN 10' SHALL BE BACKFILLED WITH GRADED AGGREGATE BASE FOR MOT PRIOR TO THE END OF THE WORK DAY IN CONFORMANCE WITH STD NO. MD 104.01–28.
11. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE STORED OFF THE TRAVEL LANES. EQUIPMENT AND MATERIALS SHALL BE OUTSIDE OF THE CLEAR ZONE OR BEHIND BARRIER AT ALL TIMES AS APPROVED BY THE ENGINEER.
12. HOWARD COUNTY BUREAU OF ENGINEERING/TRANSPORTATION PROJECTS DIVISION (410–313–2014) SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY WORK.
13. THESE TRAFFIC CONTROL PLANS ARE THE MINIMUM REQUIREMENT FOR THE FOR THE CONDITION SET FORTH, THE ENGINEER MAY REQUIRE ADDITIONAL TRAFFIC CONTROL MEASURES AS DEEMED NECESSARY. ANY CHANGES TO THE TCP SHALL BE SUBMITTED TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, TRAFFIC DIVISION FOR REVIEW AND APPROVAL.
14. THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, TRAFFIC DIVISION RESERVES THE RIGHT TO MODIFY OR ADJUST THE PLAN TO FIT SITE CONDITIONS AT ANY TIME.

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Amy Groner	7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Amy Groner	7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING	DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 24076 · PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 EXPIRATION DATE: 6/9/2023."
OWNER /DEVELOPER INFORMATION	CONTACT
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE, COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS

CONSTRUCTION DOCUMENTS

MAINTENANCE OF TRAFFIC PLAN

SCALE	AS SHOWN	DATE	JUNE, 2021
PROJECT NO.	18–01655–001		
DESIGNED BY	DJD	COUNTY	HOWARD COUNTY
DRAWN BY	DJD	LOGMILE	N/A
CHECKED BY	JMC	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. **MT–01** OF **2** SHEET NO. 97 OF 116

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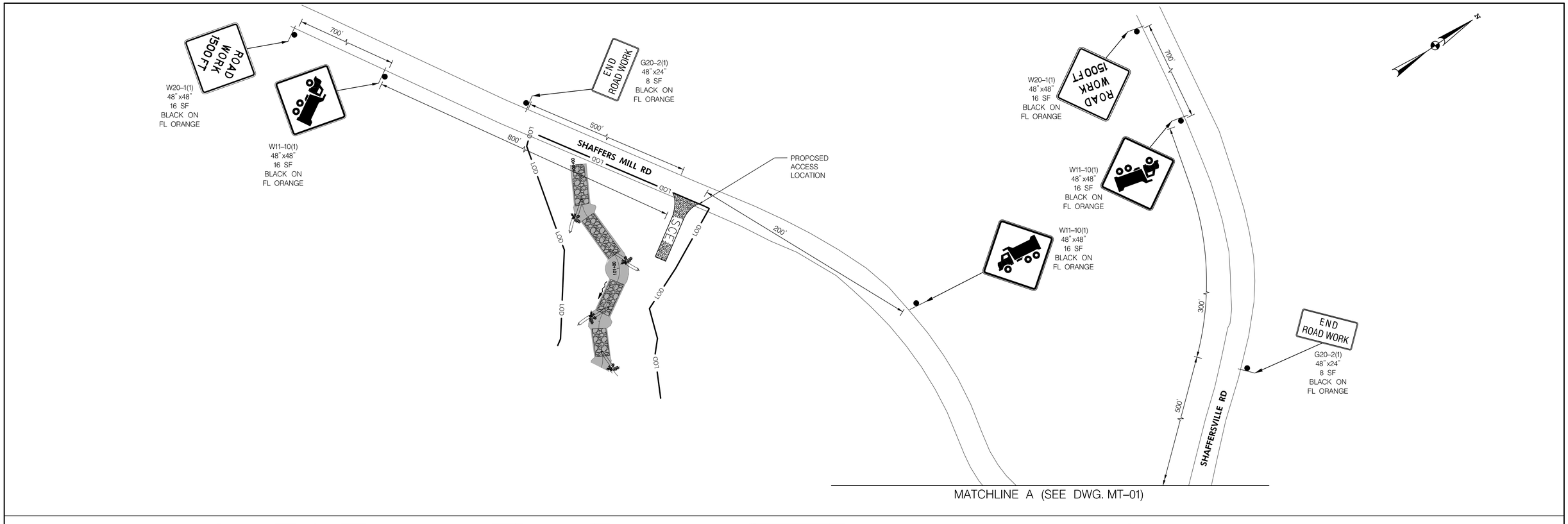

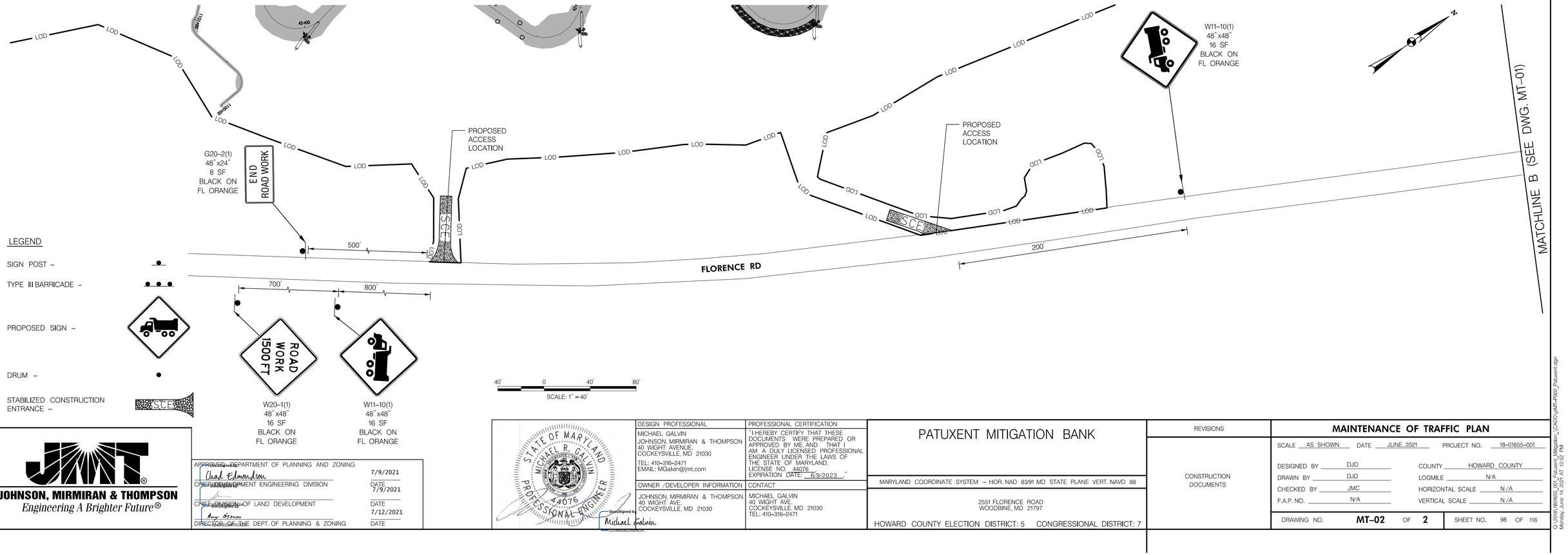

BY: PCrawford –

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Amy Gowan — 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Lynda Eisenberg — 7/12/2021
DIRECTOR, DEPT. OF PLANNING & ZONING — DATE

STATE OF MARYLAND · MICHAEL R. GALVIN · 44076 · PROFESSIONAL ENGINEER

Docusigned by: Michael Galvin

DESIGN PROFESSIONAL	PROFESSIONAL CERTIFICATION
MICHAEL GALVIN JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVENUE, COCKEYSVILLE, MD 21030 TEL: 410–316–2471 EMAIL: MGalvin@jmt.com	" I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44076 , EXPIRATION DATE: 6/9/2023 ."
OWNER /DEVELOPER INFORMATION	**CONTACT**
JOHNSON, MIRMIRAN & THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	MICHAEL GALVIN 40 WIGHT AVE. COCKEYSVILLE, MD 21030 TEL: 410–316–2471

PATUXENT MITIGATION BANK

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS
CONSTRUCTION DOCUMENTS

MAINTENANCE OF TRAFFIC PLAN

SCALE AS SHOWN DATE JUNE, 2021 PROJECT NO. 18–01655–001

DESIGNED BY DJD COUNTY HOWARD COUNTY
DRAWN BY DJD LOGMILE N/A
CHECKED BY JMC HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. **MT–02** OF **2** SHEET NO. 98 OF 116

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Monday, June 14, 2021 AT 12:52 PM

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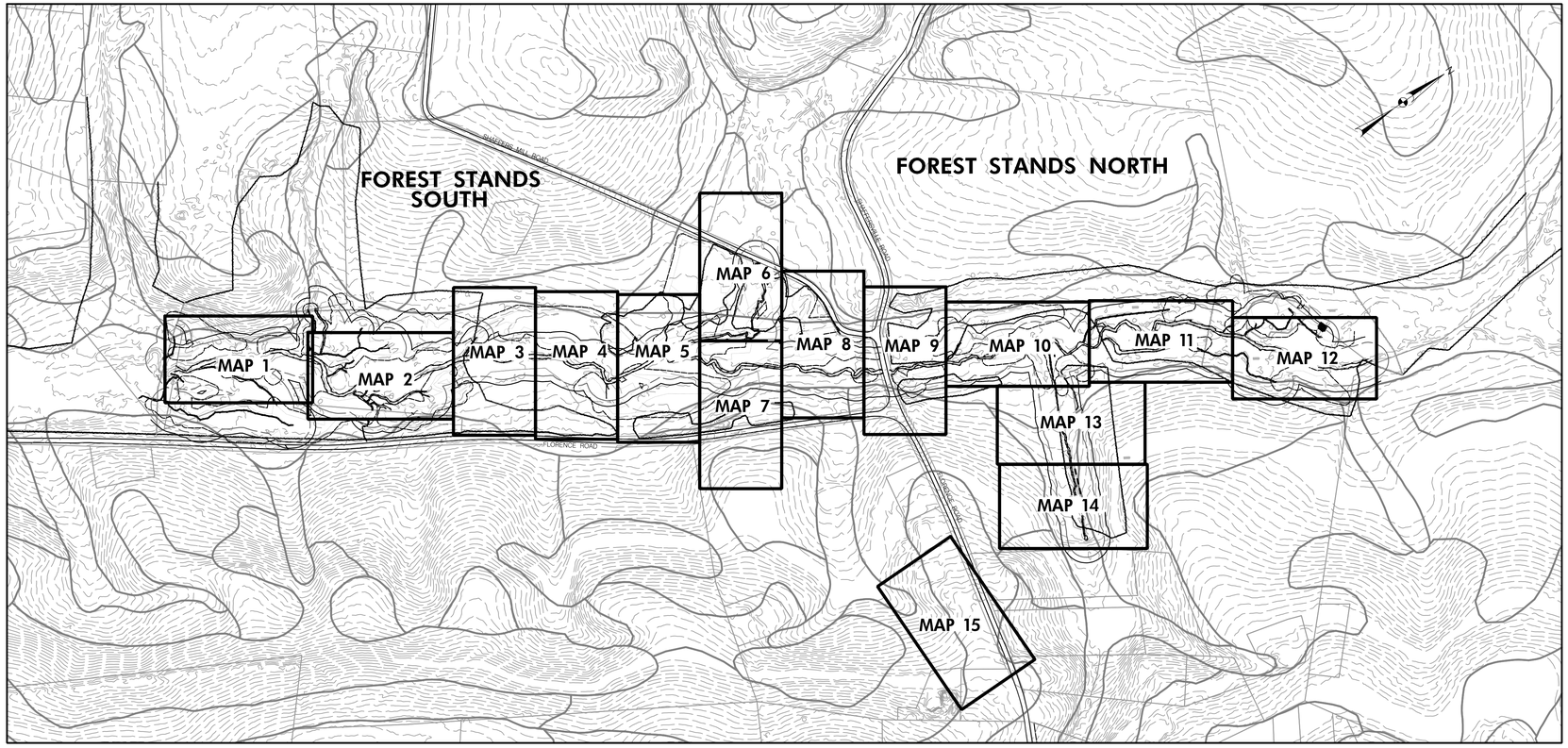
PATUXENT MITIGATION BANK
FOREST CONSERVATION PLAN
HOWARD COUNTY, MD



PATUXENT MITIGATION FSD NOTES	
1.	FOREST STAND DELINEATION FIELD WORK WAS CONDUCTED ON MARCH 10, 11, AND 12, 2020 BY MICHAEL MCCORMICK, ANDREW SUMMERS, JESSICA LORD, AND CHRIS JOHNSON, FROM JOHNSON, MIRMIRAN & THOMPSON (JMT).
2.	THE TRACT AREA USED FOR THE FOREST STAND DELINEATION IS 31.1 ACRES.
3.	APPROXIMATELY 10.2 ACRES OF FOREST WERE DELINEATED WITHIN THE TRACT AREA. FOREST STAND (FS) NUMBERING WAS DIVIDED BY NORTH AND SOUTH OF FLORENCE ROAD/SHAFFERSVILLE ROAD. FIVE FOREST STANDS WERE DELINEATED ON THE NORTH SIDE OF FLORENCE ROAD/SHAFFERSVILLE ROAD (FS 1 N - FS 5 N). SIX FOREST STANDS WERE DELINEATED ON THE SOUTH (FS 1 S - FS 6 S).
4.	AREAS DESIGNATED AS "TREE GROUPS" DO NOT MEET THE DEFINITION OF FOREST, EITHER DUE TO SIZE/WIDTH OR STEMS PER ACRE PRESENT.
5.	A MAJORITY OF THE TRACT AREA LIES WITHIN A 100-YEAR FLOODPLAIN MODELED BY JMT.
6.	A WETLAND AND WATERWAY INVESTIGATION WAS PERFORMED BY JMT BETWEEN JANUARY AND APRIL 2019. JMT IDENTIFIED 26 NON-TIDAL WETLANDS AND 30 WATERWAYS.
7.	LAND USE WITHIN THE TRACT AREA CONSISTS OF AGRICULTURE AND LOW-DENSITY RESIDENTIAL. THE TRACT AREA IS ZONED AS RC-DEO (RURAL RESIDENTIAL).
8.	THE ENTIRE TRACT AREA OCCURS WITHIN THE MDE 8-DIGIT BRIGHTON DAM WATERSHED (MDE # 02131108) AND USGS 8-DIGIT PATUXENT WATERSHED (#02060006). THE MAINSTEM OF THE PROJECT (WUS 01/CABIN BRANCH), IS A CONFLUENT TO THE PATUXENT RIVER, AND IS DESIGNATED AS USE III-P WATERWAY.
9.	SPECIMEN TREES (ANY TREE GREATER THAN OR EQUAL TO 30"DBH) WERE MEASURED WITH A DIAMETER MEASURING TAPE AT 4.5 FEET ABOVE GROUND SURFACE. 34 SPECIMEN TREES WERE IDENTIFIED WITHIN OR NEAR THE TRACT AREA. REFER TO THE TREE TABLE LOCATED ON SHEET 20.
10.	NO STATE OR COUNTY CHAMPION TREES ARE LOCATED WITHIN THE TRACT AREA.
11.	THE SOUTHERN PORTION OF THE TRACT AREA CONTAINS ONE AREA THOUGHT TO BE A PREVIOUS/EXPIRED MARYLAND DEPARTMENT OF AGRICULTURE (MDA) PLANTING SITE. THE NORTHERN PORTION OF THE STUDY AREA HAS THREE AREAS ASSUMED TO BE MDA PLANTINGS.
12.	JMT CONTACTED THE MARYLAND DEPARTMENT OF NATURAL RESOURCES (MDNR) ENVIRONMENTAL REVIEW PROGRAM (ERP) IN A LETTER DATED JULY 18, 2018 TO DETERMINE IF THE PROPOSED PROJECT MAY ADVERSELY IMPACT ANY ANADROMOUS OR FINFISH SPECIES. MDNR ERP RESPONDED IN A LETTER DATED AUGUST 24, 2018, STATING IN ORDER TO PROTECT SPAWNING TROUT WITHIN CABIN BRANCH, NO WORK MAY TAKE PLACE WITHIN STREAMS BETWEEN OCTOBER 1 AND APRIL 30 OF EACH YEAR. MDNR ERP ALSO RECOMMENDS THAT THE APPLICANT STRICTLY ADHERE TO THE APPROVED SEDIMENT AND EROSION CONTROL PLAN IN ORDER TO MINIMIZE IMPACTS TO WETLANDS AND/OR MATURE FOREST VEGETATION.
13.	JMT CONTACTED THE MARYLAND DEPARTMENT OF NATURAL RESOURCES (MDNR) WILDLIFE & HERITAGE SERVICE (W&HS) IN A LETTER DATED JULY 18, 2018, TO DETERMINE IF THE PROPOSED PROJECT MAY ADVERSELY IMPACT ANY KNOWN FEDERAL OR STATE- LISTED RARE, THREATENED, OR ENDANGERED SPECIES. MDNR WILDLIFE & HERITAGE SERVICE RESPONDED IN A LETTER DATED AUGUST 7, 2018 STATING THAT NO KNOWN FEDERAL OR STATE- LISTED RARE, THREATENED, OR ENDANGERED SPECIES WILL AFFECTED BY THIS
14.	JMT CONTACTED THE MARYLAND HISTORIC TRUST (MHT) IN A LETTER DATED JULY 18, 2018 TO DETERMINE IF THE PROPOSED PROJECT MAY IMPACT KNOWN HISTORICAL SITES. MHT RESPONDED IN A LETTER DATED AUGUST 6, 2018 STATING THAT THERE ARE NO HISTORIC PROPERTIES OR CULTURAL RESOURCES AFFECTED BY THIS UNDERTAKING.
15.	THROUGH COORDINATION WITH USFWS, NO FEDERALLY LISTED RTE SPECIES ARE KNOWN TO EXIST IN THE TRACT AREA, OTHER THAN OCCASIONAL TRANSIENT INDIVIDUALS. HOWEVER, THE PRESENCE OF NWI WETLANDS WAS NOTED IN THE WETLAND SECTION OF THE ONLINE SELF CERTIFICATION LETTER, DATED JULY 18, 2018.
16.	IT SHOULD BE NOTED THAT ALL FOREST WITHIN THE LOD WILL BE REMOVED. TREE REPLACEMENT ON SITE WILL NOT BE CREDITED TOWARD FOREST CONSERVATION MITIGATION REQUIREMENTS. AS OF THE DRAFTING OF THIS PLAN, FOREST CLEARING MITIGATION REQUIREMENTS WILL BE MET THROUGH THE PURCHASE OF FOREST MITIGATION BANK CREDITS.
17.	HOWARD COUNTY GIS DATA WAS USED FOR THE FOLLOWING BASE MAPPING: ROADWAYS, TOPOGRAPHY, AND PARCEL/PROPERTY IDENTIFICATION DATA.

RESOURCE DATA TABLE	
RESOURCE	TRACT AREA (31.0 Acres)
FOREST (AC.)	11.43 AC
NON-TIDAL WETLANDS (AC.)	2.7 AC
NON-TIDAL WETLAND BUFFERS (AC.)	5.8 AC
FORESTED NON-TIDAL WETLANDS (AC.)	0.5 AC
STREAM BUFFER (AC.)	19.70
FORESTED STREAM BUFFER (AC)	7.6 AC
STEEP SLOPES 15-25%	0 SF
STEEP SLOPES > 25%	0 SF
100-YEAR FLOODPLAIN (AC)	27.70
100-YEAR FLOODPLAIN WITHIN FOREST (AC)	10.89 AC
MEASUREMENTS DISPLAYED IN THE TABLE ABOVE ARE REPRESENTATIVE OF NATURAL RESOURCES WITHIN THE TRACT AREA ONLY.	

SOILS TABLE					
Soil Symbol	**Soil Description**	**Prime Farmland**	**Hydric Soils**	**Hydric Rating**	**K-Factor**
Co	Codorus and Hatboro silt loams, 0 to 3 percent slopes	Not Prime Farmland	Partially Hydric (33-65%)	35	0.32
BrC	Brinklow channery loam, 8 to 15 percent slopes	Farmland of Statewide Importance	Not Hydric (0%)	0	0.20
GgB	Glenelg loam, 3 to 8 percent slopes	All areas are Prime Farmland	Not Hydric (0%)	0	0.24
GgC	Glenelg loam, 8 to 15 percent slopes	Farmland of Statewide Importance	Not Hydric (0%)	0	0.24
GmA	Glenville silt loam, 0 to 3 percent slopes	All areas are Prime Farmland	Predominantly Non-Hydric (1-32%)	10	0.43
GmB	Glenville silt loam, 3 to 8 percent slopes	All areas are Prime Farmland	Predominantly Non-Hydric (1-32%)	10	0.37
MaD	Manor loam, 15 to 25 percent slopes	Not Prime Farmland	Not Hydric (0%)	0	0.28
OcB	Occoquan loam, 3 to 8 percent slopes	All areas are Prime Farmland	Not Hydric (0%)	0	0.37

BY: PCrawford –

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND 6/14/21

DocuSigned by: Michael Galvin 2D5B0D8225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

PATUXENT MITIGATION BANK
FOREST CONSERVATION PLAN

300' 0 300' 600'
SCALE: 1"=300'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP KEY MAP

SCALE 1" = 300' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY N/A COUNTY HOWARD COUNTY
DRAWN BY LS LOGMILE N/A
CHECKED BY MC HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. OF SHEET NO. 99 OF 116

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SURVEYED TREE

CRITICAL ROOT ZONE

PROPOSED TREE REMOVAL

FS 1–1 FOREST PLOT

LOD LIMIT OF DISTURBANCE

TPF TREE PROTECTION FENCE

TPF–RP TREE PROTECTION AND ROOT PRUNING

WUS WUS WATERWAY

STREAM BUFFER

FOREST STAND BOUNDARY

WETLAND BOUNDARY

B B WETLAND BUFFER

100–YEAR FLOODPLAIN

WOODS LINE

TREE GROUP

600 PROPOSED CONTOURS

EXISTING MINOR CONTOUR

600 EXISTING MAJOR CONTOUR

GnB Co SOIL BOUNDARY/MAP UNIT

FOREST CONSERVATION WORKSHEET FOR PATUXENT MITIGATION BANK

Net Tract Area

A.	Total (Gross) Tract Area	A =	31.00
B.	Area within 100-year Floodplain	B =	27.70
C.	Other Deductions (Identify:_____)	C =	0.00
D.	Net Tract Area	D =	3.30

Land Use Category

Insert the number "1" under the appropriate land use (limit to only one entry)

Resid. Rural LD	Resid. Rural MD	Resid. Suburban	Inst./ Linear	Retail/Ind./ Office	Mixed Use/ PUD
0	0	0	1	0	0

E.	Afforestation Threshold	(Net Tract Area x 15%)	E =	0.50
F.	Reforestation Threshold	(Net Tract Area x 20%)	F =	0.70

Existing Forest Cover

G.	Existing Forest Cover within the Net Tract Area	G =	0.50
H.	Area of Forest above Afforestation Threshold	H =	0.00
I.	Area of Forest above Reforestation Threshold	I =	0.00

Break Even Point

J.	Break Even Point	J =	0.00
K.	Forest Clearing Permitted without Mitigation	K =	0.00

Proposed Forest Clearing

L.	Total Area of Forest to be Cleared	L =	0.50
M.	Total Area of Forest to be Retained	M =	0.00

Planting Requirements Inside Watershed

N.	Reforestation for Clearing above the Reforestation Threshold	N =	0.00
P	Reforestation for Clearing below the Reforestation Threshold	P =	1.00
Q.	Credit for Retention above the Reforestation Threshold	Q =	0.00
R.	Total Reforestation Required	R =	1.00
S.	Total Afforestation Required	S =	0.00
T	Total Reforestation and Afforestation Requirement	T=	1.00
U	75% of Total Obligation (Retention + Planting)	U=	0.80
V	Planting Required Onsite to meet 75% Obligation	V=	0.80

Planting Requirements Outside Watershed

W.	Total Planting within Development Site Watershed	W=	0.00
X.	Total Afforestation Required	X=	0.00
Y.	Remaining Planting within Watershed for Reforestation Credit	Y=	0.00
Z.	Reforestation for Clearing above the Reforestation Threshold	Z=	0.00
AA.	Reforestation for Clearing below the Reforestation Threshold	AA=	1.50
BB.	Credit for Retention above the Reforestation Threshold	BB=	0.00
CC.	Total Reforestation Required	CC=	1.50
DD.	Total Afforestation and Reforestation Requirement	DD=	1.50

Date: JUNE 2021

NOTE:

THIS PROJECT COMPLIES WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE PURCHASE OF 1.5–ACRES OF CREDIT FROM THE REGAN PROPERTY FOREST CONSERVATION BANK (SDP–16–015).

Patuxent Mitigation Bank - Specimen Tree Table

Tree #	Sheet #	DBH	Common Name	Scientific Name	Condition	Comments	Retain/Remove	CRZ (Radius)	Impacted CRZ %
T-1	1	30.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	45.8	23%
T-2	1	31.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	47.3	Tree Within LOD
T-3	1	34.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	51.0	27%
T-4	1	36.8	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	55.2	0%
T-5	1	35.3	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	53.0	Tree Within LOD
T-6	1	33.1	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	49.7	Tree Within LOD
T-7	2	32.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	48.8	Tree Within LOD
T-8	2	33.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	50.3	Tree Within LOD
T-9	2	30.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	45.8	<1%
T-10	2	35.4	Tulip Poplar	*Liriodendron tulipifera*	Good	Located on eroded bank	Remove	53.1	Tree Within LOD
T-11	2	32.3	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	48.5	Tree Within LOD
T-12	2	31.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	46.5	Tree Within LOD
T-13	2	30.1	Tulip Poplar	*Liriodendron tulipifera*	Fair		Remove	45.2	Tree Within LOD
T-14	2	31.2	Tulip Poplar	*Liriodendron tulipifera*	Fair	Located on eroded bank	Remove	46.8	Tree Within LOD
T-15	2	31.0	Tulip Poplar	*Liriodendron tulipifera*	Fair		Remove	46.5	60%
T-19	1	31.7	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	47.6	38%
T-20	1	30.8	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	46.2	8%
T-21	2	32.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	48.0	Tree Within LOD
T-22	2	32.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	48.8	Tree Within LOD
T-23	2	33.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	50.3	0%
T-24	2	46.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	69.8	Tree Within LOD
T-25	3	30.5	Red Maple	*Acer rubrum*	Good		Remove	45.8	Tree Within LOD
T-26	8	34.6	American Sycamore	*Platanus occidentalis*	Good		Remove	51.9	Tree Within LOD
T-27	4	34.9	Tulip Poplar	*Liriodendron tulipifera*	Poor	Poison ivy vines	Remove	52.4	Tree Within LOD
T-28	3	34.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	51.8	15%
T-29	N/A	45.5	Red Maple	*Acer rubrum*	Poor	Barbed wire through trunk	Retain	68.3	N/A
T-30	12	40.8	Tulip Poplar	*Liriodendron tulipifera*	Good	**Removed by landowner as of 5-19-20**	N/A	61.2	Tree Within LOD
T-31	12	38.1	Tulip Poplar	*Liriodendron tulipifera*	Good	**Removed by landowner as of 5-19-20**	N/A	57.2	N/A
T-32	12	31.9	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	47.9	11%
T-33	12	49.4	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	74.1	0%
T-34	12	40.4	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	60.6	0%
T-35	12	30.2	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	45.3	26%
T-36	12	38.4	Tulip Poplar	*Liriodendron tulipifera*	Fair	**Removed by landowner as of 5-19-20**	N/A	57.6	Tree Within LOD
T-37	12	36.5	Tulip Poplar	*Liriodendron tulipifera*	Fair	Decay	Remove	54.8	Tree Within LOD
T-38	12	30.3	Black Cherry	*Prunus serotina*	Good		Retain	45.5	27%
T-39	12	31.4	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	47.1	35%
T-40	11	34.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	51.8	Tree Within LOD
T-41	11	32.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	48.8	Tree Within LOD
T-42	11	44.3	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	66.5	Tree Within LOD
T-43	11	35.5	Tulip Poplar	*Liriodendron tulipifera*	Fair	Poison ivy vines	Remove	53.3	Tree Within LOD
T-44	11	30.0	Tulip Poplar	*Liriodendron tulipifera*	Fair	Located on eroded bank	Remove	45.0	Tree Within LOD
T-45	11	36.0	Pin Oak	*Quercus palustris*	Fair	Poison ivy vines	Remove	54.0	Tree Within LOD
T-46	9	33.4	Black Walnut	*Juglans nigra*	Fair	Poison ivy vines	Remove	50.1	Tree Within LOD
T-47	11	43.5	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	65.3	Tree Within LOD
T-48	11	30.5	Sweet Gum	*Liquidambar styraciflua*	Poor	Poison ivy vines	Retain	45.8	20%
T-49	11	30.5	Red Maple	*Acer rubrum*	Good		Remove	45.8	33%
T-50	12	35.2	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	52.8	Tree Within LOD
T-51	12	30.0	Pin Oak	*Quercus palustris*	Good		Retain	45.0	0%
T-52	12	34.2	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	51.3	9%
T-53	12	47.7	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	71.6	38%
T-54	12	34.2	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	51.3	Tree Within LOD
T-55	12	34.2	Tulip Poplar	*Liriodendron tulipifera*	Good		Remove	51.3	39%
T-56	12	34.9	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	52.4	19%
T-57	12	37.3	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	56.0	0%
T-58	12	39.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	58.5	23%
T-59	12	32.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	48.0	4%
T-60	12	30.1	Black Oak	*Quercus velutina*	Good		Retain	45.2	6%
T-61	12	31.8	Black Oak	*Quercus velutina*	Good		Retain	47.7	25%
T-62	12	31.6	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	47.4	19%
T-63	12	31.0	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	46.5	0%
T-64	12	32.3	Tulip Poplar	*Liriodendron tulipifera*	Good		Retain	48.5	0%
T-65	12	30.6	Sugar Maple	*Acer saccharum*	Fair	Poison ivy vines/on eroded bank	Remove	45.9	Tree Within LOD

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT — 6/14/21

DocuSigned by: Michael Galvin 2D0B0D8235854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD #3044) DATE

Approved, Department of Planning and Zoning

DocuSigned by: Chad Edmondson — Chief, Development Engineering Division — 7/9/2021

DocuSigned by: Chief, Division of Land Development — 7/9/2021

DocuSigned by: Amy Gowan — Director, Department of Planning and Zoning — 7/12/2021

PATUXENT MITIGATION BANK
FOREST STAND DELINEATION

N.T.S.

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

LEGEND & SPECIMEN TREE LIST

SCALE NTS DATE JUNE 2021 PROJECT NO. 18–01655–001

DESIGNED BY N/A COUNTY HOWARD COUNTY

DRAWN BY LS /AS LOGMILE N/A

CHECKED BY MC HORIZONTAL SCALE N/A

F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. OF SHEET NO. 100 OF 116

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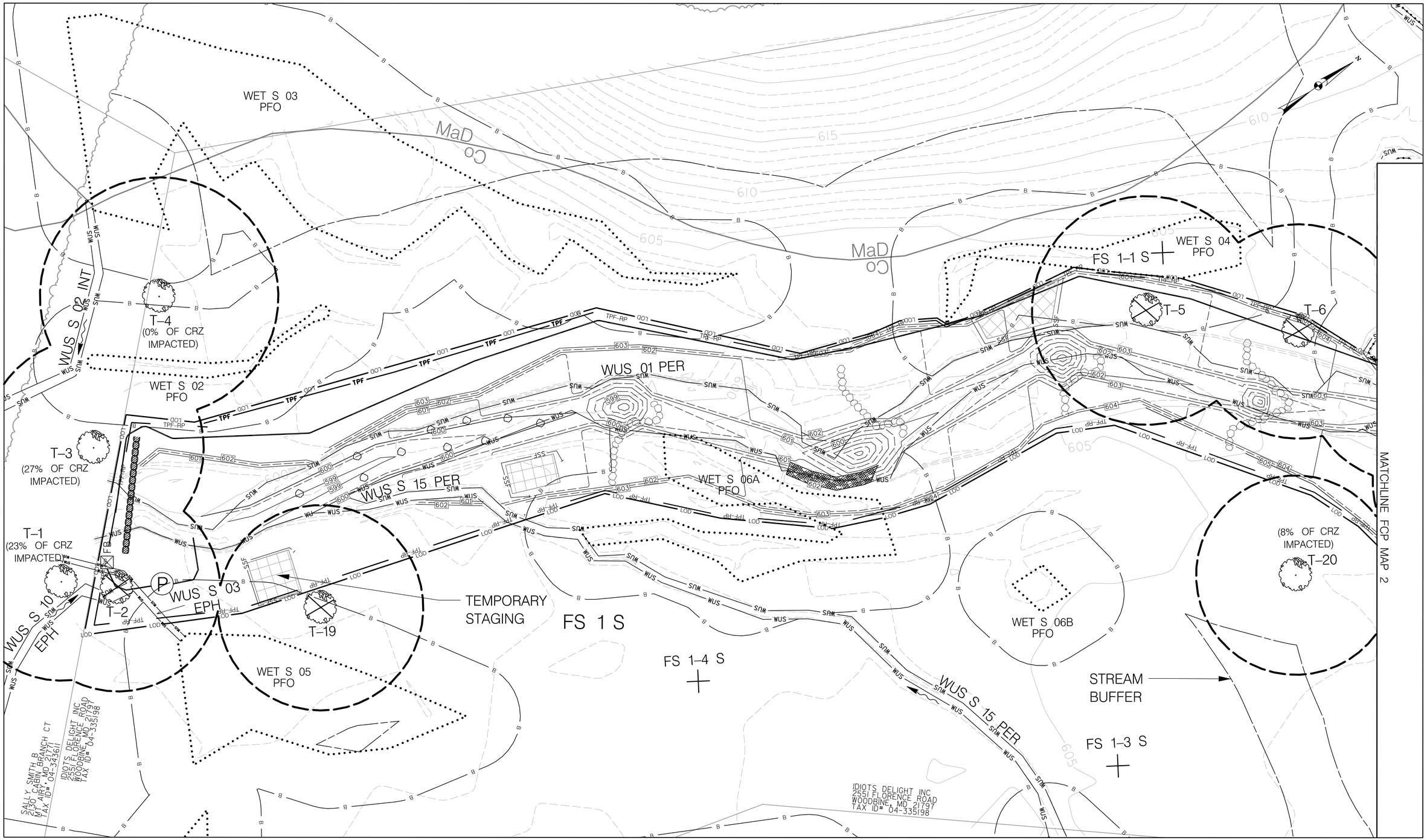

BY: PCrawford –

JMT®

LANDSCAPE ARCHITECT
No. 3044
TOBI L. KESTER
STATE OF MARYLAND
6/14/21

DocuSigned by:
Michael Galvin
2DDBBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'
MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797
HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 1

SCALE 1" = 20' DATE MARCH 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 101 OF 116

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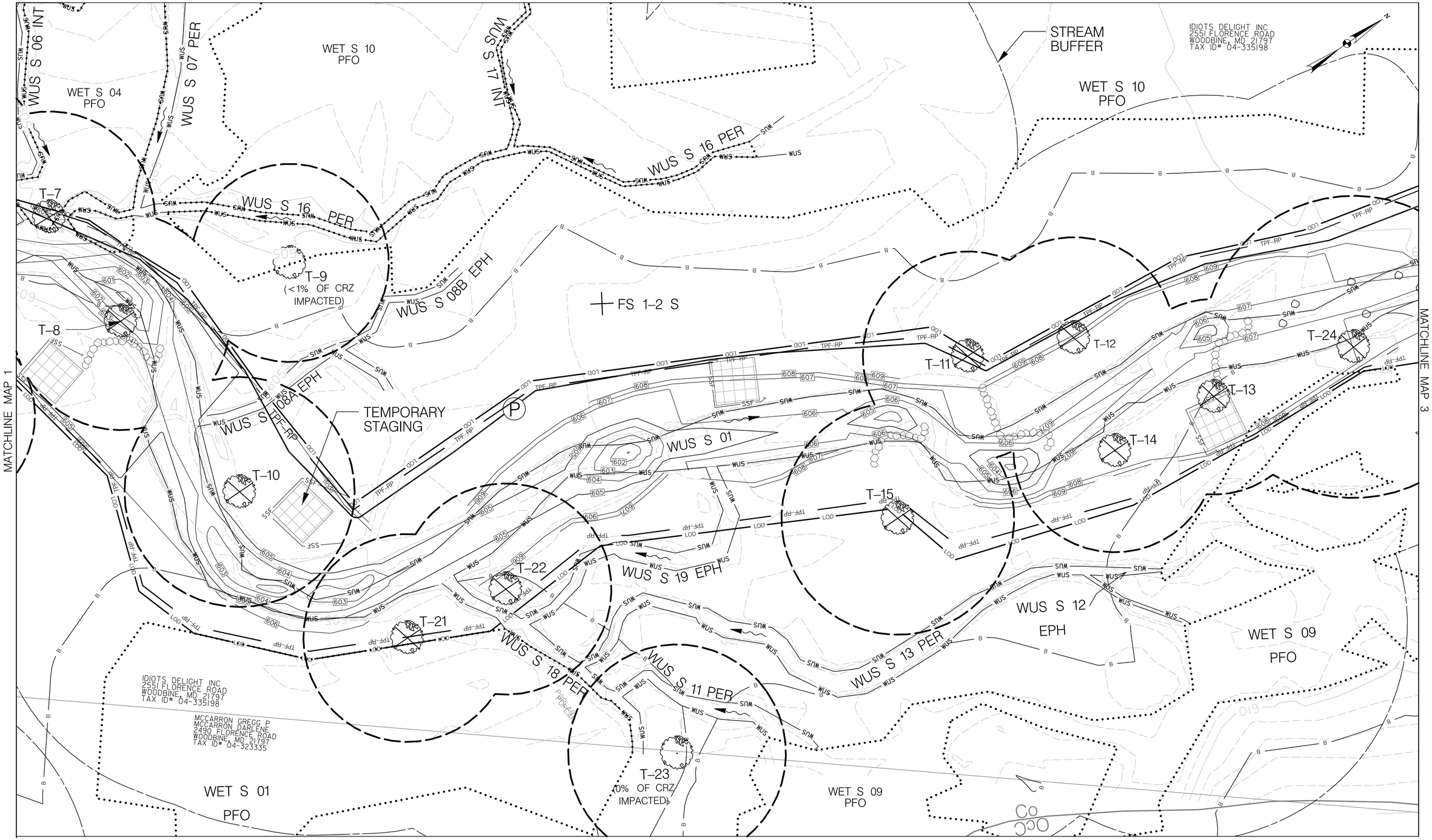

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT
No. 3044
TOBI L. KESTER
STATE OF MARYLAND
6/14/21

DocuSigned by:
Michael Galvin
2016BDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/12/2021
Amy Gronan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

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FCP MAP 2

SCALE 1" = 200' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 102 OF 116

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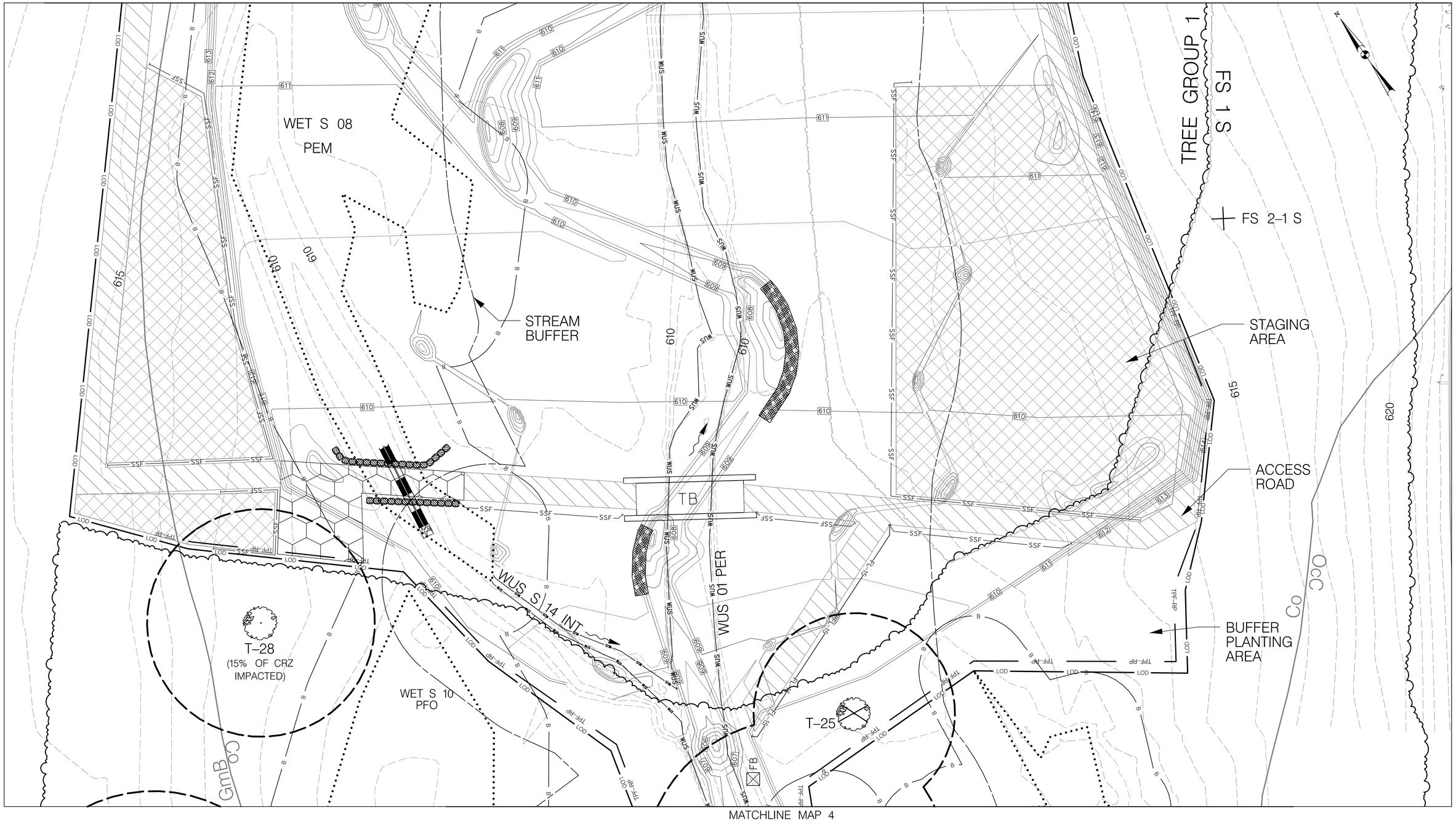
MATCHLINE MAP 2



MATCHLINE MAP 4

BY: PCrawford –

DocuSigned by:
Michael Galvin
2E8B8D9D225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson 8E5B5A8A4C5A455...
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

DocuSigned by: Amy Gowan 6A1A7A8A4C5A455...
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

PATUXENT MITIGATION BANK
FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

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FCP MAP 3

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. OF SHEET NO. 103 OF 116

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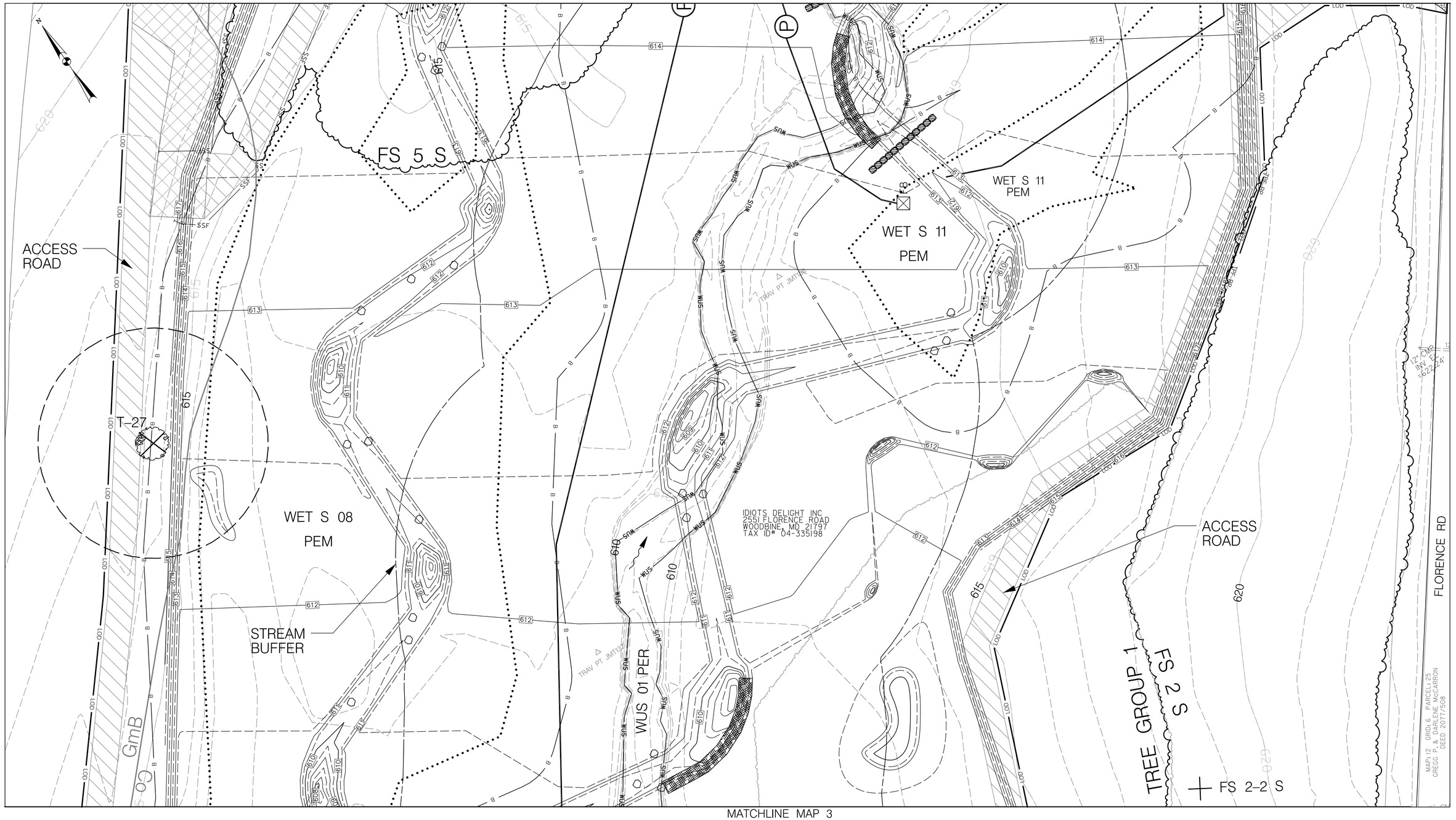
MATCHLINE MAP 5



MATCHLINE MAP 3

BY: PCrawford –

JMT®

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

DocuSigned by: Michael Galvin 2D4BBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/12/2021
Amy Gronan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 4

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 104 OF 116

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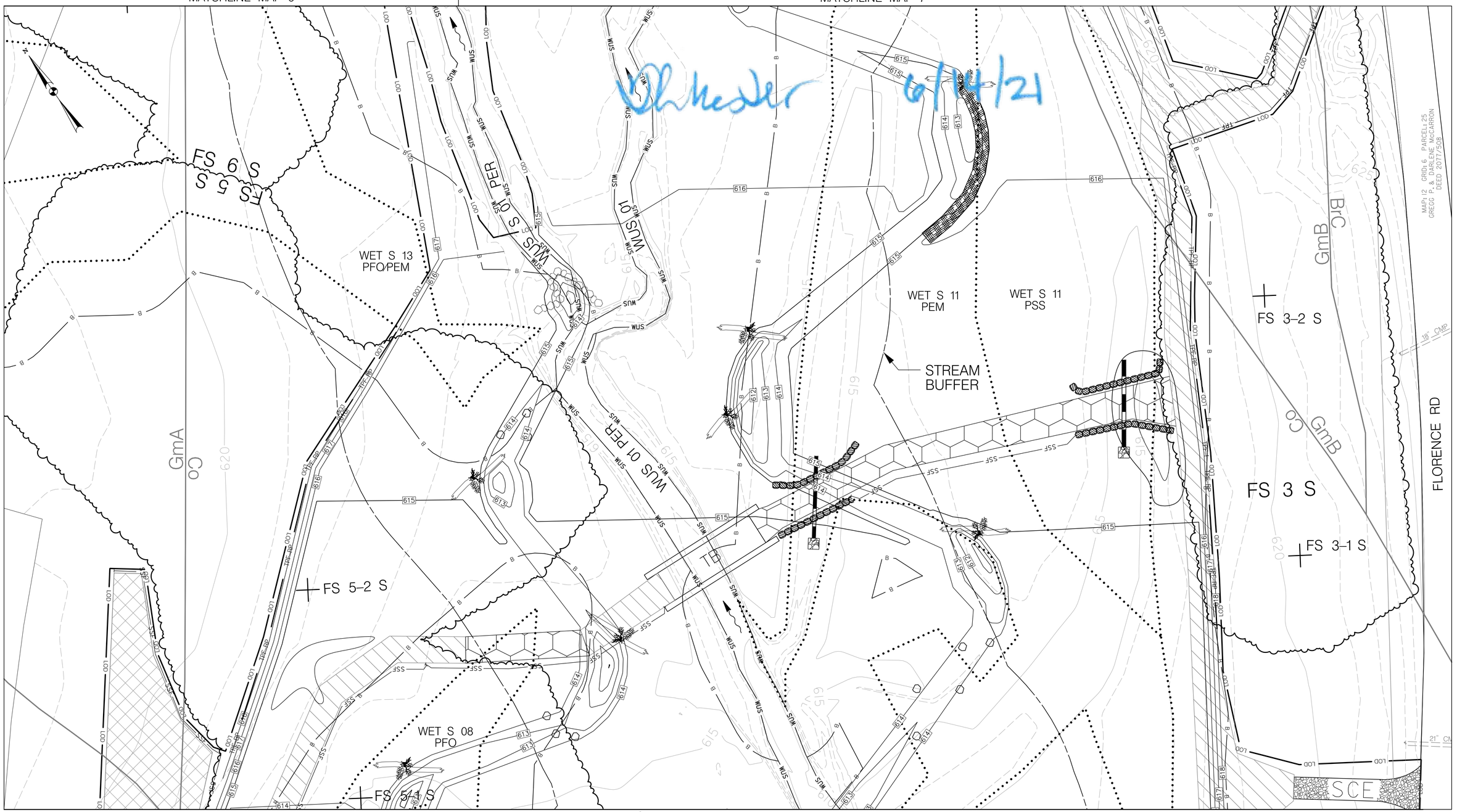
MATCHLINE MAP 6

MATCHLINE MAP 7



MATCHLINE MAP 4

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

DocuSigned by: Michael Galvin 2D9BBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

DocuSigned by:

APPROVED: DEPARTMENT OF PLANNING AND ZONING — 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021
DocuSigned by:
APPROVED: DEPARTMENT OF LAND DEVELOPMENT — DATE 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

PATUXENT MITIGATION BANK
FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797
HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 5

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY N/A COUNTY HOWARD COUNTY
DRAWN BY LS LOGMILE N/A
CHECKED BY MC HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. OF SHEET NO. 105 OF 116

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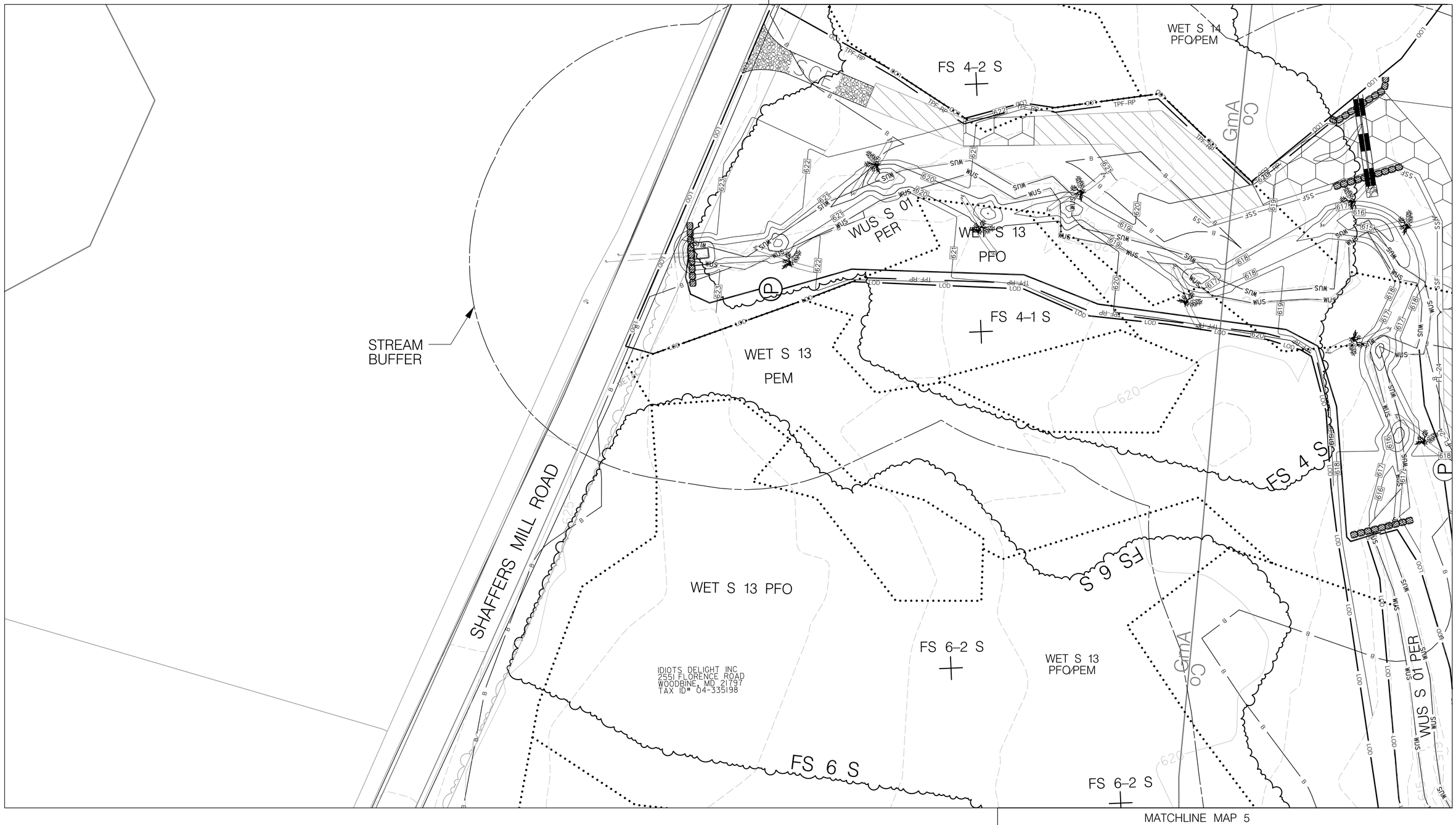

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

DocuSigned by: Michael Galvin 2D9BBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

DocuSigned by:

APPROVED: DEPARTMENT OF PLANNING AND ZONING — DATE 7/9/2021

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

DocuSigned by:

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'

SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 6

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18–01655–001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 106 OF 116

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Monday, June 14, 2021 AT 10:32 AM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

MATCHLINE MAP 8

WET S 14
PEM/PFO

WUS 01

STREAM BUFFER

TREE GROUP 2

FS 3-3 S

FS 3 S

FLORENCE ROAD

IDIOTS DELIGHT INC
2551 FLORENCE ROAD
WOODBINE, MD 21797
TAX ID# 04-335198

WET S 11
PEM

WET S 11
PSS

MATCHLINE MAP 6

MATCHLINE MAP 5

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

DocuSigned by:
Michael Galvin
2E6B8D92256540A...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DocuSigned by:
Chad Edmondson
8EE8A4A0F4955...

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

DocuSigned by:
Amy Gowan
C5F0CA0A3449418...

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

PATUXENT MITIGATION BANK
FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 7

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. OF SHEET NO. 107 OF 116

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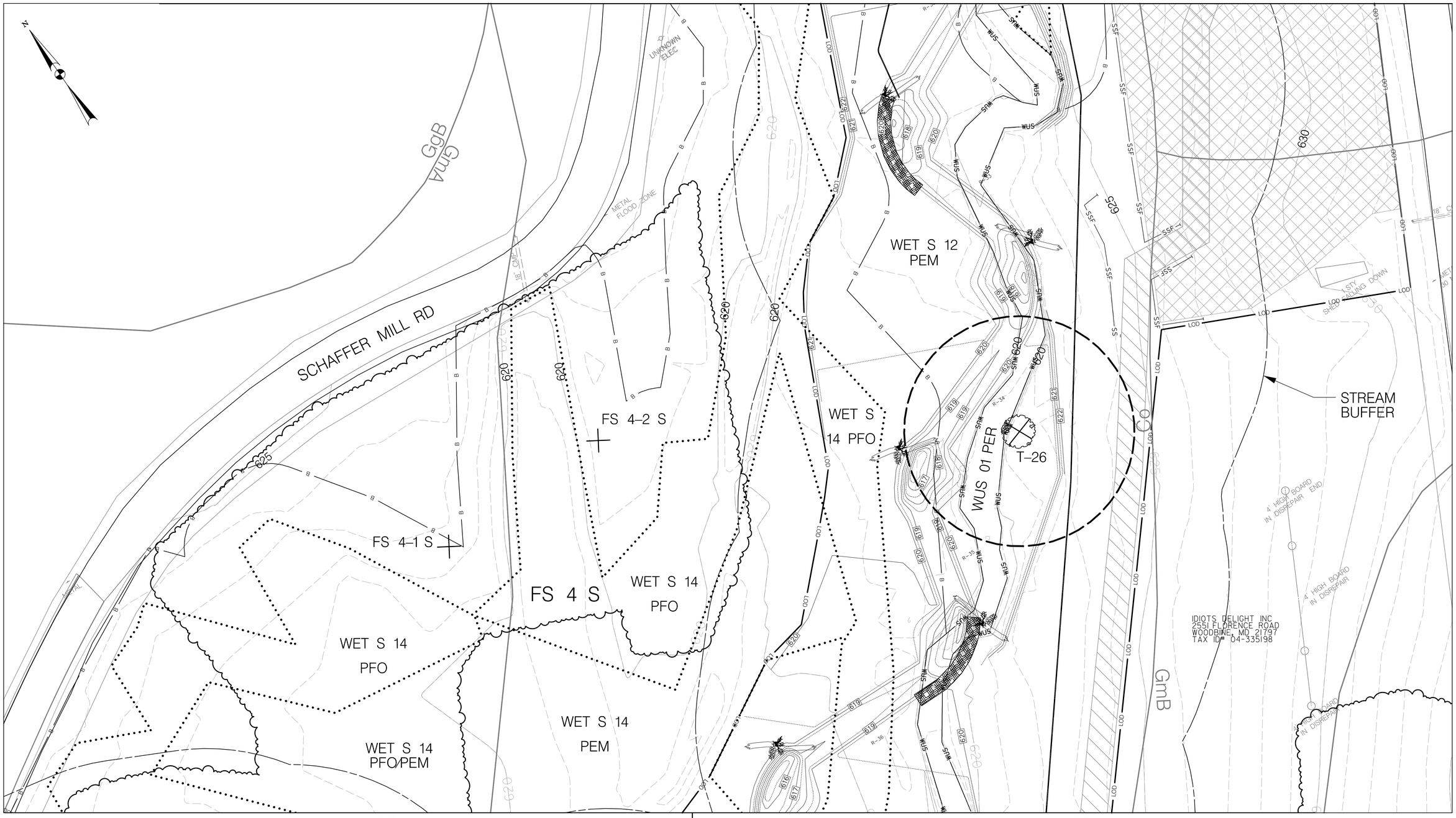
MATCHLINE MAP 9



MATCHLINE MAP 6

MATCHLINE MAP 7

BY: PCrawford

DocuSigned by:
Michael Galvin
2D4BBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

DLKester 6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: DEPARTMENT OF LAND DEVELOPMENT
Amy Gronan 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 8

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 108 OF 116

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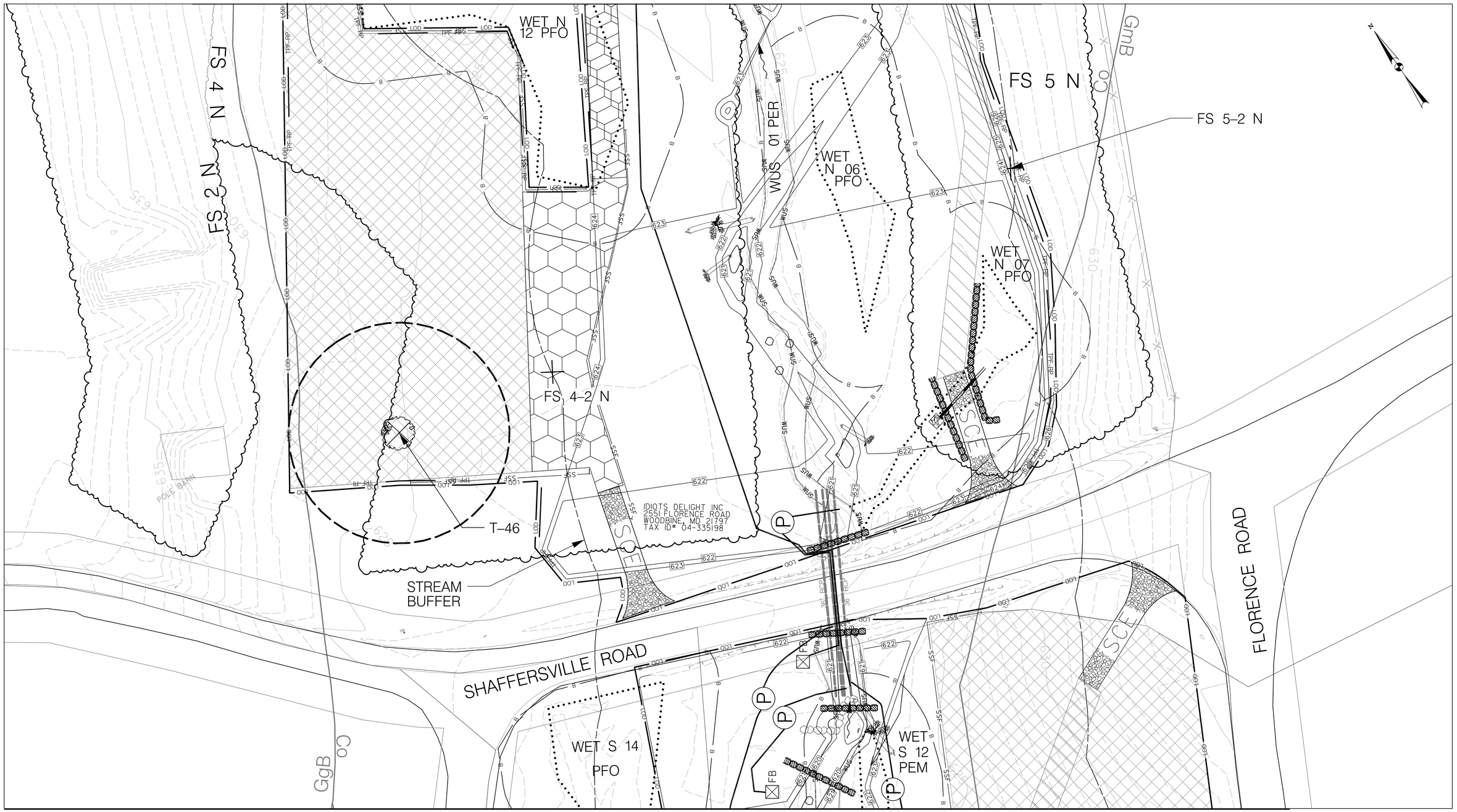
MATCHLINE MAP 10



MATCHLINE MAP 8

BY: PCrawford

JMT

LANDSCAPE ARCHITECT
No. 3044
TOBI LEE KESTER
STATE OF MARYLAND

6/14/21

DocuSigned by:
Michael Galvin
2D0BBDB2258540A...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

DocuSigned by:
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson
7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DocuSigned by:
CHIEF, DIVISION OF LAND DEVELOPMENT
Amy Gowan
7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 9

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18–01655–001

DESIGNED BY N/A
DRAWN BY LS
CHECKED BY MC
F.A.P. NO. N/A

COUNTY HOWARD COUNTY
LOGMILE N/A
HORIZONTAL SCALE N/A
VERTICAL SCALE N/A

DRAWING NO. OF SHEET NO. 109 OF 116

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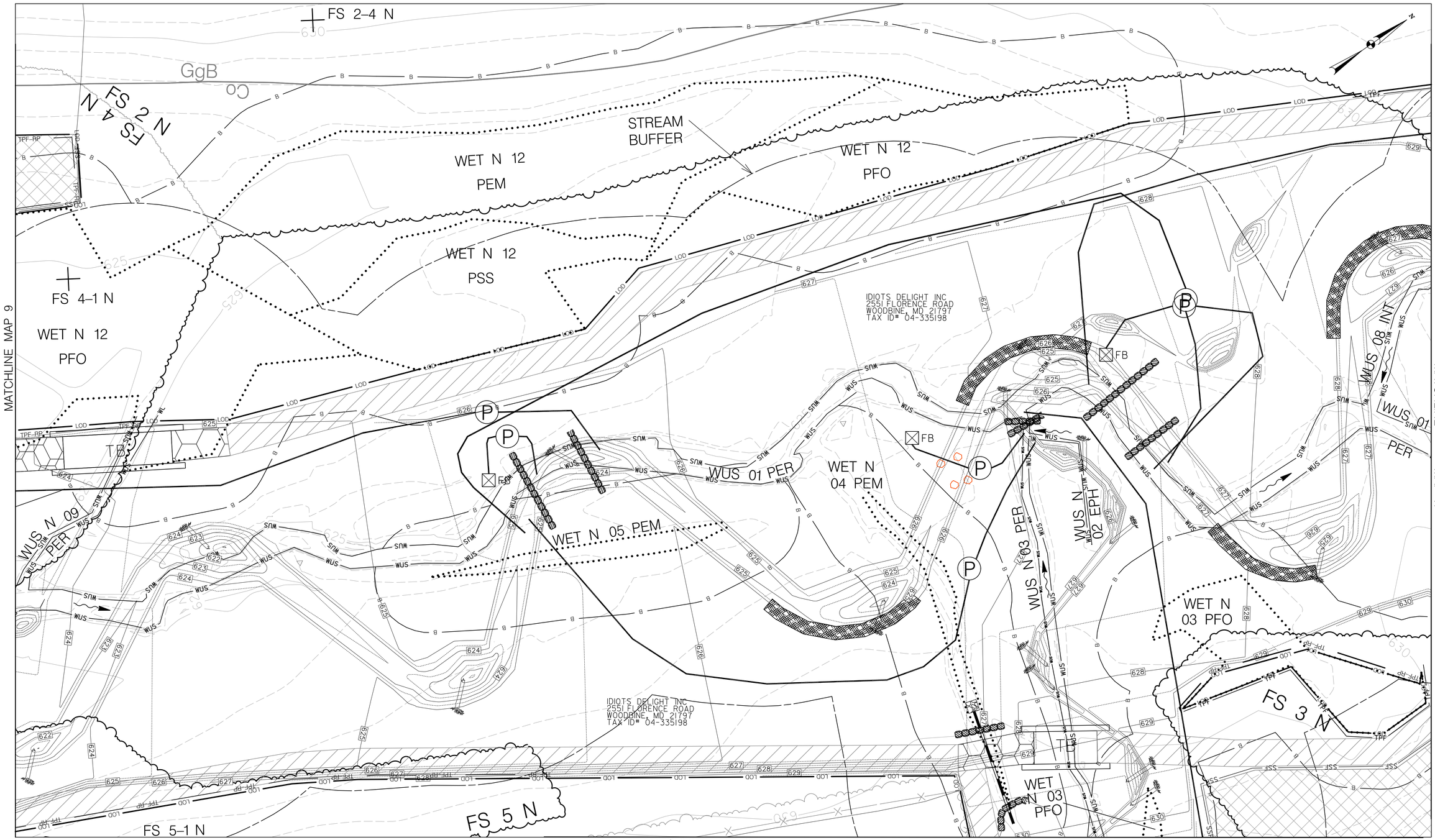

BY: PCrawford –

JMT®

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND 6/14/21

DocuSigned by: Michael Galvin 2D8BBD8225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Edmondson 7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/12/2021
Amy Gronan
DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 10

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 110 OF 116

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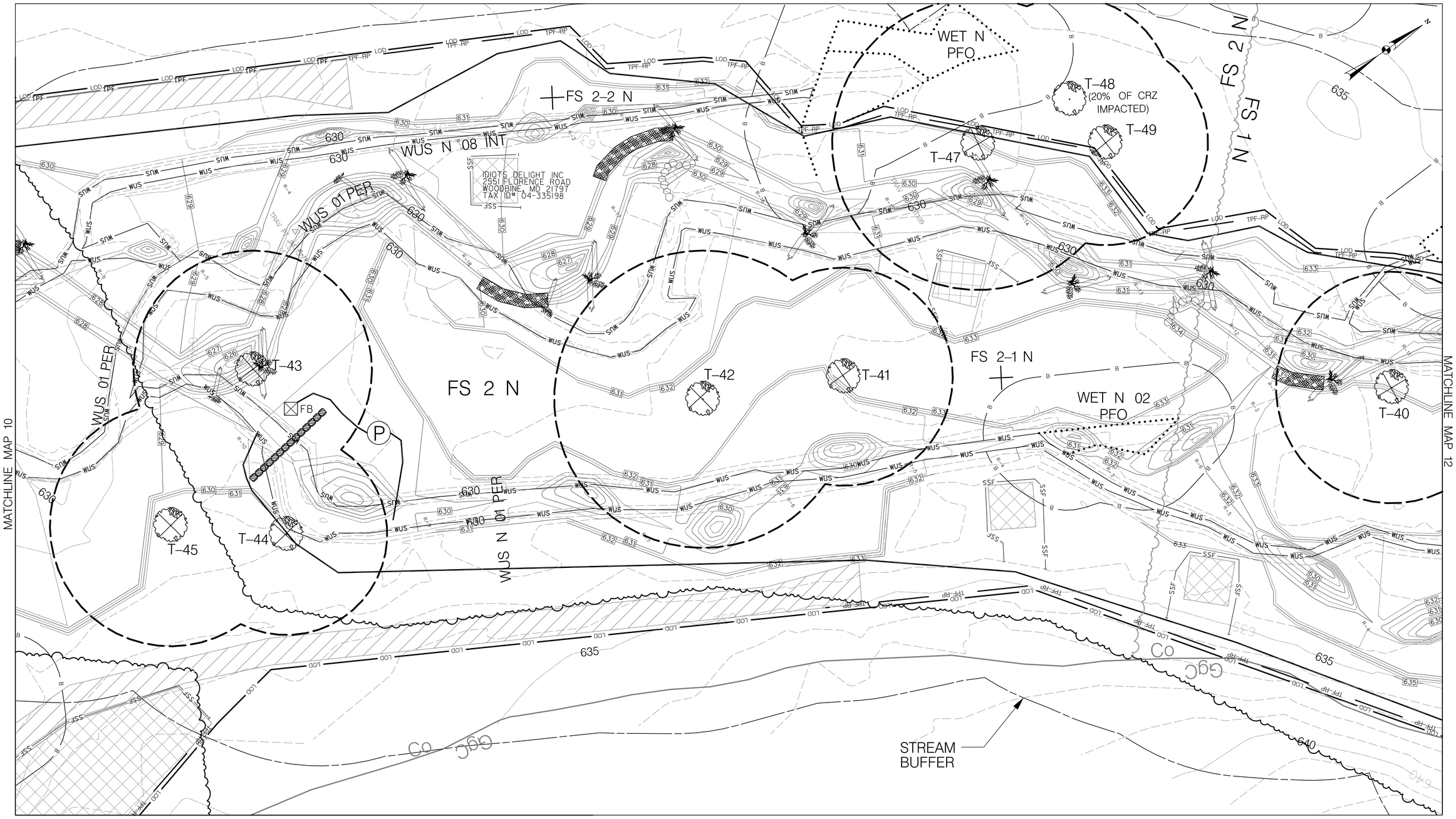

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND 6/14/21

DocuSigned by: Michael Galvin 2D0BBDB225854DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

DLKester 6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson 7/9/2021

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Amy Gronan 7/12/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'

SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 11

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. OF SHEET NO. 111 OF 116

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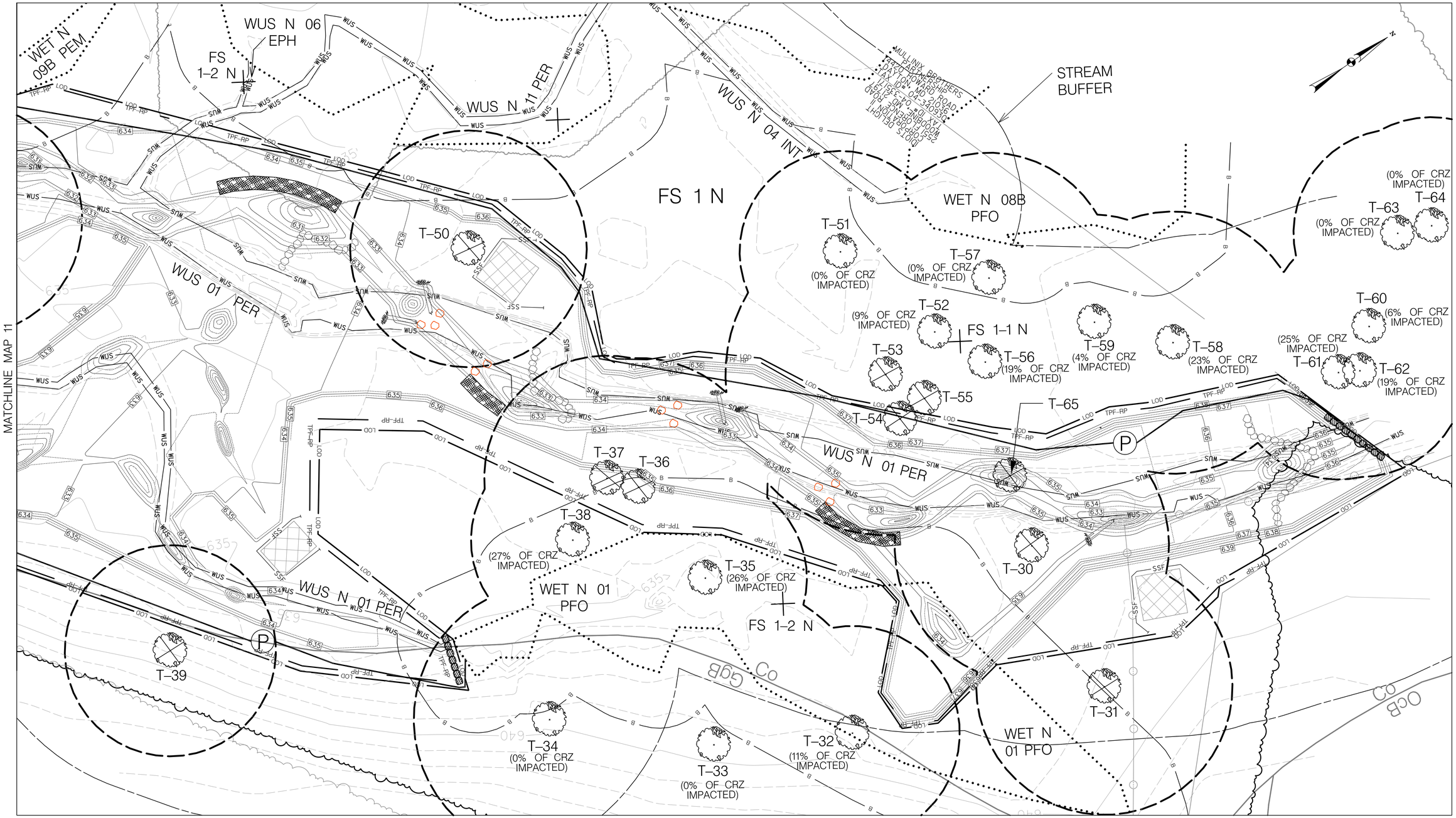

BY: PCrawford –

DocuSigned by:
Michael Galvin
2D3B0D22585404A...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 12

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY N/A COUNTY HOWARD COUNTY
DRAWN BY LS LOGMILE N/A
CHECKED BY MC HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. OF SHEET NO. 112 OF 116

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Monday, June 14, 2021 AT 10:47 AM

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MATCHLINE MAP 10

MATCHLINE MAP 11

IDIOTS DELIGHT INC
2551 FLORENCE ROAD
WOODBINE, MD 21797
TAX ID# 04-335198

STREAM BUFFER

ACCESS ROAD

WET N 03 PFO

FS 3 N

FS 3-2 N

SWM 03 PER

Co GmB

GmB

Co

GmB

Co GmB

P

MATCHLINE MAP 14

BY: PCrawford –

JMT

LANDSCAPE ARCHITECT
No. 3044
TOBI LOUISE KESTER
STATE OF MARYLAND

6/14/21

DocuSigned by:
Michael Galvin
2E0B8D922564DA...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

TOBI L. KESTER PLA (MD PLA #3044) DATE 6/14/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/2021

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/9/2021

DIRECTOR OF THE DEPT. OF PLANNING & ZONING — DATE 7/12/2021

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'
SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 13

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY N/A COUNTY HOWARD COUNTY
DRAWN BY LS LOGMILE N/A
CHECKED BY MC HORIZONTAL SCALE N./A.
F.A.P. NO. N/A VERTICAL SCALE N./A.

DRAWING NO. OF SHEET NO. 113 OF 116

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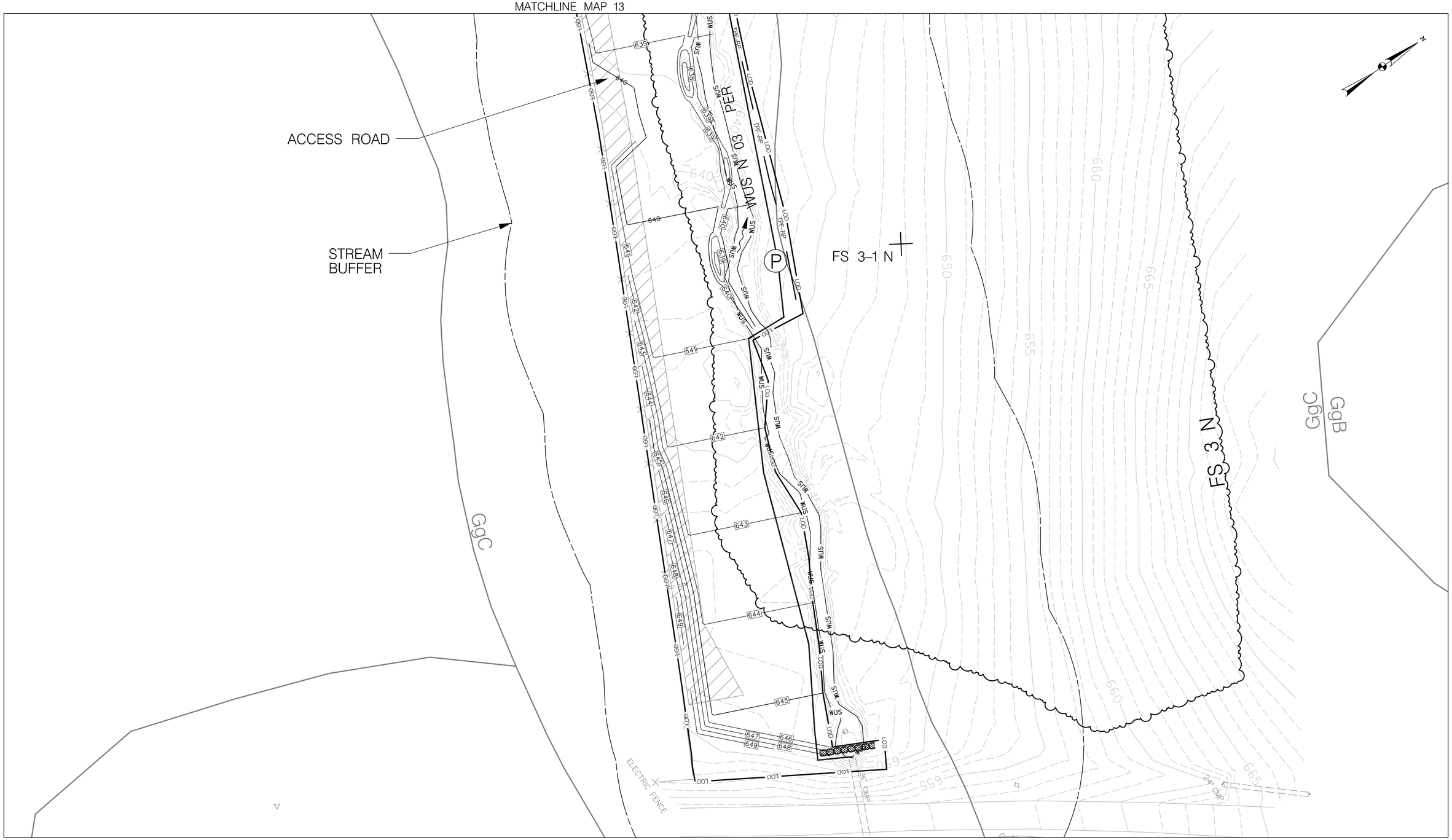
Monday, June 14, 2021 AT 10:49 AM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

MATCHLINE MAP 13



BY: PCrawford

JMT

LANDSCAPE ARCHITECT No. 3044 TOBI LOUISE KESTER STATE OF MARYLAND

6/14/21

DocuSigned by: Michael Galvin 2D38BDB2258540A...

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.

6/14/21

TOBI L. KESTER PLA (MD PLA #3044) DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING	DocuSigned by: Chad Edmondson	7/9/2021
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DocuSigned by:	DATE 7/9/2021
CHIEF, DIVISION OF LAND DEVELOPMENT	DocuSigned by: Amy Gross	DATE 7/12/2021
DIRECTOR OF THE DEPT. OF PLANNING & ZONING		DATE

PATUXENT MITIGATION BANK FOREST CONSERVATION PLAN

20' 0 20' 40'

SCALE: 1" = 20'

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797

HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FCP MAP 14

SCALE 1" = 20' DATE JUNE 2021 PROJECT NO. 18-01655-001

DESIGNED BY	N/A	COUNTY	HOWARD COUNTY
DRAWN BY	LS	LOGMILE	N/A
CHECKED BY	MC	HORIZONTAL SCALE	N./A
F.A.P. NO.	N/A	VERTICAL SCALE	N./A

DRAWING NO. OF SHEET NO. 114 OF 116

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Monday, June 14, 2021 AT 11:00 AM

DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

N

IDIOTS DELIGHT INC
2551 FLORENCE ROAD
WOODBINE, MD 21797
TAX ID# 04-335198

FLORENCE ROAD

GgB
GgC

GgB
GmB

OcC

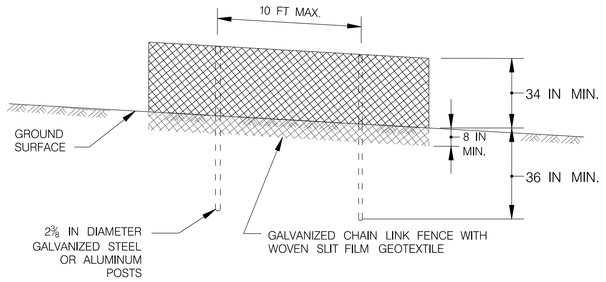
STOCKPILE

LOD
LOD
LOD

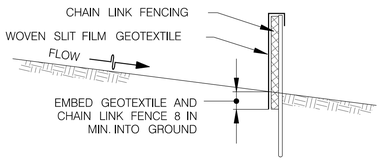
DocuSign Envelope ID: 3A344C09-8D90-4A43-8A39-6646BD963E57

DETAIL E– SUPER SILT FENCE

STANDARD SYMBOL
SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.

2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.

3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

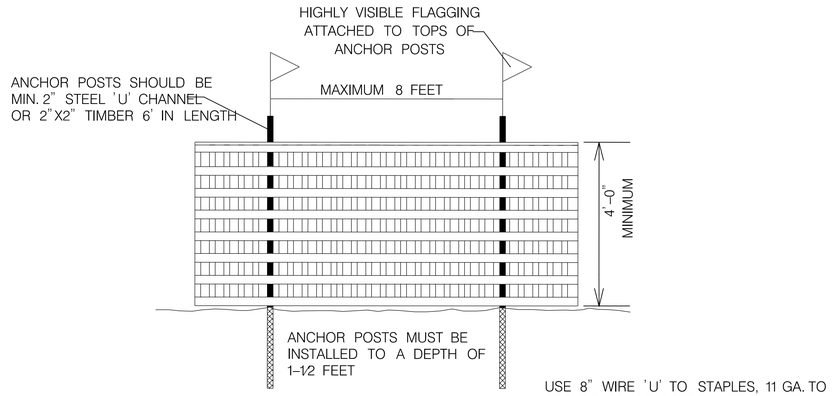
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.

7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

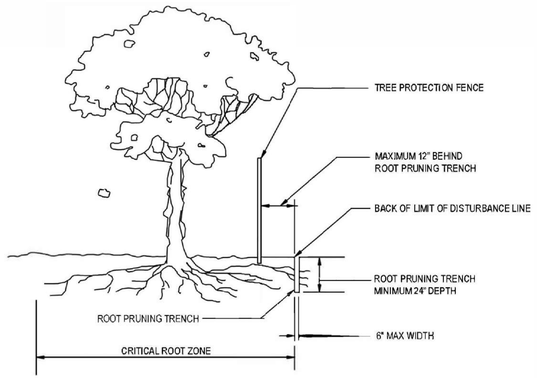
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TREE PROTECTION FENCE
TEMPORARY ORANGE CONSTRUCTION FENCE



NOTES

1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOREST PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST IMPACT PLAN REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. PROTECTION SIGNS MUST BE USED. THE DISTANCE EACH SIGN SHALL NOT BE GREATER THAN 100 LF
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION
7. FOR ADDITIONAL REQUIREMENTS, SEE MDSHA STANDARD SPECIFICATIONS SECTION 104.20



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. ROOT PRUNING SHALL BE PERFORMED AS SHOWN ON TH PLANS UNLESS AN EXACT LOCATION OF THE TRENCH IS OTHERWISE DIRECTED IN THE FIELD IN COORDINATION WITH A FOREST CONSERVATION (FC) INSPECTOR, LANDSCAPE ARCHITECT, LICENCED TREE CARE EXPERT, OR OTHER COUNTY 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.

NTS

ROOT PRUNING DETAIL

BY: KHiggins –

LANDSCAPE ARCHITECT No. 3044 TOBI L. KESTER STATE OF MARYLAND
6/14/21

DocuSigned by: Michael Galvin
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CODE.
6/14/21
TOBI L. KESTER PLA (MD #3044) DATE

Approved, Department of Planning and Zoning

DocuSigned by: Chad Edmondson
Chief, Development Engineering Division 7/9/2021

DocuSigned by:
Chief, Division of Land Development 7/9/2021

DocuSigned by: Amy Gowan
Director, Department of Planning and Zoning 7/12/2021

PATUXENT MITIGATION BANK
FOREST STAND DELINEATION

N.T.S.

MARYLAND COORDINATE SYSTEM – HOR. NAD 8391 MD STATE PLANE VERT. NAVD 88

2551 FLORENCE ROAD
WOODBINE ROAD, MD 21797
HOWARD COUNTY ELECTION DISTRICT: 5 CONGRESSIONAL DISTRICT: 7

REVISIONS: 0

NOT FOR CONSTRUCTION

FOREST CONSERVATION DETAILS

SCALE N.T.S. DATE MARCH 2021 PROJECT NO. 18–01655–001

DESIGNED BY N/A COUNTY HOWARD COUNTY
DRAWN BY LS /AS LOGMILE N/A
CHECKED BY MC HORIZONTAL SCALE N./A
F.A.P. NO. N/A VERTICAL SCALE N./A

DRAWING NO. OF SHEET NO. 116 OF 116

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