

SITE DEVELOPMENT PLAN

ELLA L. McADOO SUBDIVISION—LOTS 3 & 4

7461 MONTEVIDEO ROAD
 PLAT 25974–25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
 TAX MAP 43 GRID 16 PARCEL 96
 1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

GENERAL NOTES

- Site Data: Property Address: 7461 Montevideo Road, Jessup, MD 20794. Tax Map 43; Grid 16; 1st Election District Parcel 96; Liber 17487 Folio 377; Area = 4.22 ac.±
- The subject property is zoned M-2 per the 10/6/13 Comprehensive Zoning Plan.
- Public water and sewer exists on-site. There will be no impacts to these utilities as a result of this development. The existing unpermitted water connection to the rear garage building will be removed as part of this plan.
- There are floodplains, wetlands, wetland buffers, streams and stream buffers located on-site.
- Per FEMA (FIRM Map) 24027C0170D a FEMA delineated floodplain exists within the subject property. The floodplain area above the FEMA floodplain was computed by FSH in February 2021.
- An alternative compliance request from Sections 16.115(c)(2) and 16.116(a) was denied under WP-18-135 on June 28, 2018. The reasons for denial are as follows:
 - All existing disturbances to floodplain, wetlands, streams and their buffers shall be removed and the property shall be restored to its previous condition.
 - The unpermitted 24" RCP shall be removed from the perennial stream and the entire stream channel and 50' buffer shall be restored to its previous condition. The stream restoration must be approved on a site development plan and must comply with all MD Department of the Environment requirements.
 - All wetlands shall be restored to their previous condition both onsite and on adjacent Parcel 586. All unpermitted gravel, structures, fill material and construction materials shall be removed from the wetlands and 25' wetland buffers. The wetland restoration must be approved on a site development plan and must comply with all MD Department of the Environment requirements.
 - All gravel, paving, structures and construction materials shall be removed from the 50' stream buffers and floodplain.
 - The offsite forest conservation easement on Parcel 586 shall be restored through the replanting of forest resources. Approval of a redline revision to the approved Forest Conservation Plan and the posting of financial surety will be required.
 - The requested waivers are a self created hardship. The applicant failed to demonstrate that compliance with the applicable regulations would result in extraordinary hardship or practical difficulty since usable unencumbered area exists onsite.
 - The applicant failed to demonstrate that the proposal has no feasible alternatives to impacting environmental features and buffers.
 - The applicant failed to demonstrate that the as-built environmental impacts will not nullify the intent and purpose of the Subdivision and Land Development Regulations. The intent of the Regulations is to preserve and protect natural resources including wetlands, streams, floodplain and wooded areas by avoiding or minimizing impacts. Section 16.114 of the Howard County Code requires that development of a site preserve existing natural features to accommodate the site's unique topography, wetlands, streams, floodplain and forests. Section 16.1205 considers forested streams, wetlands and buffers as the highest priority areas for protection.
- An alternative compliance request from Sections 16.115(c)(2), 16.116(a)(1) and 16.116(a)(2)(iv) was approved under WP-19-074 on 3/13/19 subject to the following conditions.
 - Approval of site development plan will be required for the proposed stream and wetland restoration, construction of the paved areas and associated site improvements, and establishment of the existing use. A site development plan for stream and wetland restoration shall be submitted to DPZ within 90 days (on or before June 11, 2019). The site development plan shall demonstrate compliance with all Maryland Department of the Environment requirements for stream and wetland restoration and mitigation.
 - A pre-submission community meeting will be required prior to acceptance of a site development plan for stream and wetland restoration or site improvements in accordance with Sections 16.128 and 16.156(a) of the Subdivision and Land Development Regulations.
 - The proposed stream crossing shall be the minimum width required for safe single-lane vehicular traffic. All remaining sections of the existing 24" HDPE pipe shall be removed from the stream channel as shown on the plan exhibit.
 - All equipment, storage materials, gravel and pavement shall be removed from the wetlands, streams and their required buffers. The portion of the existing rear garage building and adjacent concrete pad and retaining wall will be permitted to remain within the stream buffer as shown on the plan exhibit. The existing carport structure shall be removed from the wetland and wetland buffer.
 - All disturbed areas within the stream and wetland buffers shall be replanted with a mix of native canopy and understorey trees. The species, density and planting specifications shall be shown on the site development plan and shall be in accordance with the Forest Conservation Manual. The plantings will be bonded with a Developer Agreement and inspected for survivability as part of the site development plan approval.
 - All driveways, parking areas and storage areas shall be constructed of asphalt or concrete surface and identified on the site development plan. The storage areas shall be square or rectangular in shape and clearly defined on the plan by dimension and use.
 - A physical barrier shall be constructed along the stream and wetland buffers adjacent to any pavement or storage area. The physical barrier shall be approved by DPZ on a site development plan and shall consist of fencing, guardrail or other permanent structure to discourage encroachment into the environmental areas.
 - Forest conservation for Lots 3 and 4 shall be addressed on the site development plan in accordance with Section 16.1202 of the Howard County Code. The forest conservation calculations will be based on the existing conditions prior to the unpermitted disturbance. Aerial photographs prior to 2017 can be used to determine the extent of the previous treeline. The site contains priority areas for forest conservation and any obligation should be satisfied onsite through the recordation of forest conservation easements. The restored environmental areas will be the highest priority for retention within an easement. A forest stand delineation and forest conservation plan will be required as part of the site development plan.
 - The applicant shall coordinate with the owner of adjacent Parcel 586 to restore the existing forest conservation easement to its previous condition through the replanting of forest resources. A revision to the approved forest conservation plan will be required to identify the reforestation areas and planting specifications. The plantings will be bonded with a Developer Agreement and inspected for survivability as part of the site development plan approval and/or a redline revision to the approved site development plan for Parcel 586.
 - Stormwater management specifications will be required on the site development plan. The use of non-structural practices will not be permitted since the site includes vehicle maintenance. No part of the stormwater management facilities will be permitted within an environmental area buffer. Outfall pipes may be permitted within buffers on a case-by-case basis by DPZ as determined as part of the environmental concept plan and/or site development plan review process.
 - The site development plan shall identify all existing and proposed utilities and their connections to public infrastructure. This includes house connections and associated meter locations. NOTE: The Planning Director also approved the necessary disturbance request included with the alternative compliance petition for a portion of the existing driveway entrance, parking and retaining wall adjacent to Montevideo Road to remain within the 50' stream buffer in accordance with Section 16.116(c) of the Subdivision and Land Development Regulations. The driveway entrance was created by Howard County after the vertical realignment of Montevideo Road was completed under a capital project. The driveway entrance existed when the current owner purchased the property in 2017. To accommodate safe two-way traffic into and out of the property, the owner constructed a short timber retaining wall (under 3-feet in height). In accordance with the Design Manual, commercial driveway entrances must be at least 24' wide and the existing entrance is approximately 27' wide.
- The purpose of this plan is to restore unpermitted activities to the stream, wetlands, buffers and 100-year floodplain, see MDE/Site Name PAF 18-3072 and Howard County DPZ enforcement case CE-17-246. Grading activities and removal of existing gravel, culvert pipe, contractor equipment and a carport structure are proposed within the environmental areas. The proposed work is necessary to comply with MD Department of the Environment requirements to abate an active violation. The construction work is necessary to restore the stream and wetlands to their previously undisturbed condition. The application is also proposing a single stream crossing that enables access to an existing unpermitted garage building in the rear of the site.

GENERAL NOTES (con't.)

- To the best of our knowledge there are no historic structures or cemeteries on-site.
- This property is subject to the Amended 5th edition of the Howard County Subdivision and Land Development Regulations.
- Field run boundary and topographic survey (within projects disturbed area) was performed by FSH Associates in December 2017, March 2018 and April 2019.
- The existing topography outside of the projects disturbed area was taken from Howard County GIS.
- Forest stand was delineated by Exploration Research Inc. in March 2019.
- The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code and Forest Conservation Act. No clearing, grading or construction is permitted within the Forest Conservation Easement, however Forest Management Practices as defined in the Deed of Forest Conservation Easement are allowed. The total forest conservation obligation is met on-site by 2.0 acres of Retention and 0.4 acres of Reforestation (0.1 acres in Easement 1 and 0.3 acres in Easement 2). An additional obligation of 0.1 acres of Reforestation was required off-site due to unpermitted disturbances within the existing Forest Conservation Easement (SDP-16-064). This creates a total reforestation obligation of 0.5 acres, and a surety amount requirement of \$10,890. (planting of 21,780 s.f. x \$0.50/s.f.). The forest conservation surety will be posted with the Developer's Agreement for this plan.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety in the amount of \$3,300.00 for 11 shade trees (6 trees for specimen tree mitigation, 4 perimeter landscaping and 1 parking lot landscaping) has been posted with the Developer's Agreement.
- On March 8, 2018, members of the Maryland Department of Environment Compliance Program led the effort to investigate the extent of fill placed over nontidal wetlands. Backhoe test pits TP 1-3 were initially excavated to determine the extent of fill over pre-existing wetlands with additional test pits (TP 4-8) placed as directed by MDE and described by Stephen Huber, Sr. Environmental Specialist of ERI to complete the investigation. All test pits were left open and field surveyed before backfilling. It was agreed that test pits which revealed pre-existing gravel pavement would represent the upland limit of fill over wetlands by the current owner. Test pits (TP-1 to TP-3) were described by MDE in a compliance report by Ms. Punam Tyagi dated March 8, 2018 as revealing original soil surface to be 36 in. deep and hydric soil indicators of low chroma and depletions. (Munsell soil color chart 10YR 3/2 and 10 YR 5/2). Additional test pits (TP-4 to TP-8) were opened up for observation on March 9th and were described by Mr. Huber on March 9, 2018. The MDE approved Environmental Restoration Plan, showing the test pit locations, has been included within this SDP set, see sheet 14.
- No clearing, excavating, filling, altering drainage, or impervious paving, may occur on land located in a floodplain unless required or authorized by the Department of Planning and Zoning upon the advice of the Department of Inspections, Licenses and Permits, the Department of Public Works, the Department of Recreation and Parks, the Soil Conservation District, or the Maryland Department of the Environment. Any proposed construction of a structure located within a floodplain shall be subject to the requirements of the Howard County Building Code.
- Outdoor lighting mounted onto the existing structures exists on-site. All outdoor lighting shall comply with Section 134.0 of the Zoning Regulations.
- The existing portion of the carport to remain and the existing garage building must be appropriately permitted or they will have to be removed.
- No grading, removal of vegetative cover or trees, paving and new structures shall be permitted within the wetlands, streams or their required buffers, forest conservation easement areas or 100-year floodplain, except as approved on this plan.
- The following DPZ file references apply to this plan: WP-18-135, WP-19-074, CE-17-246, ECP-19-053, WP-20-088, F-22-014 & Plat 25893-25894, F-22-034.
- In accordance with Section 16.128 of the Subdivision & Land Development Regulations a presummission community meeting was held at 6:30 p.m. on 5/21/19 at the Elkridge Public Library.
- Two parking spaces are required for the existing dwelling and provided within the existing asphalt parking pad in front of house. The owner determined that the remaining parking needs of the site for the employees are met by 11 parking spaces, which are provided at the rear of the site.
- Waiver Petition WP-20-088.

On May 7, 2020 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 a variance with respect to Section 16.116(a)(1) and Section 16.116(a)(2)(iv) of the Subdivision and Land Development Regulations to restore a wetland and associated wetland buffer, to restore a perennial stream and associated 50 ft buffer, to construct SWM outfalls and to permit an existing stream crossing, auto repair building and driveway entrance to remain within the 50 ft stream buffer. Please see the attached Final Decision Action Report for more information.

On May 7, 2020 and pursuant to Section 16.1216, the Director of the Department of Planning and Zoning, Director of the Department of Recreation and Parks and Administrator of the Office of Community Sustainability considered and approved your request for a variance with respect to Section 16.1205(a)(3) and Section 16.1209(b)(1) of the Subdivision and Land Development Regulations to remove three (3) specimen trees and to reduce the 75 ft minimum width requirement for Forest Conservation Easements along the perennial streams. Please see the attached Final Decision Action Report for more information.

On May 6, 2020 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)(2) of the Subdivision and Land Development Regulations to construct two (2) outfalls within the 100-year floodplain.

The Department of Planning and Zoning hereby determines that you have demonstrated to its satisfaction that strict enforcement of Section 16.115(c)(2) would result in unwarranted hardship. 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):

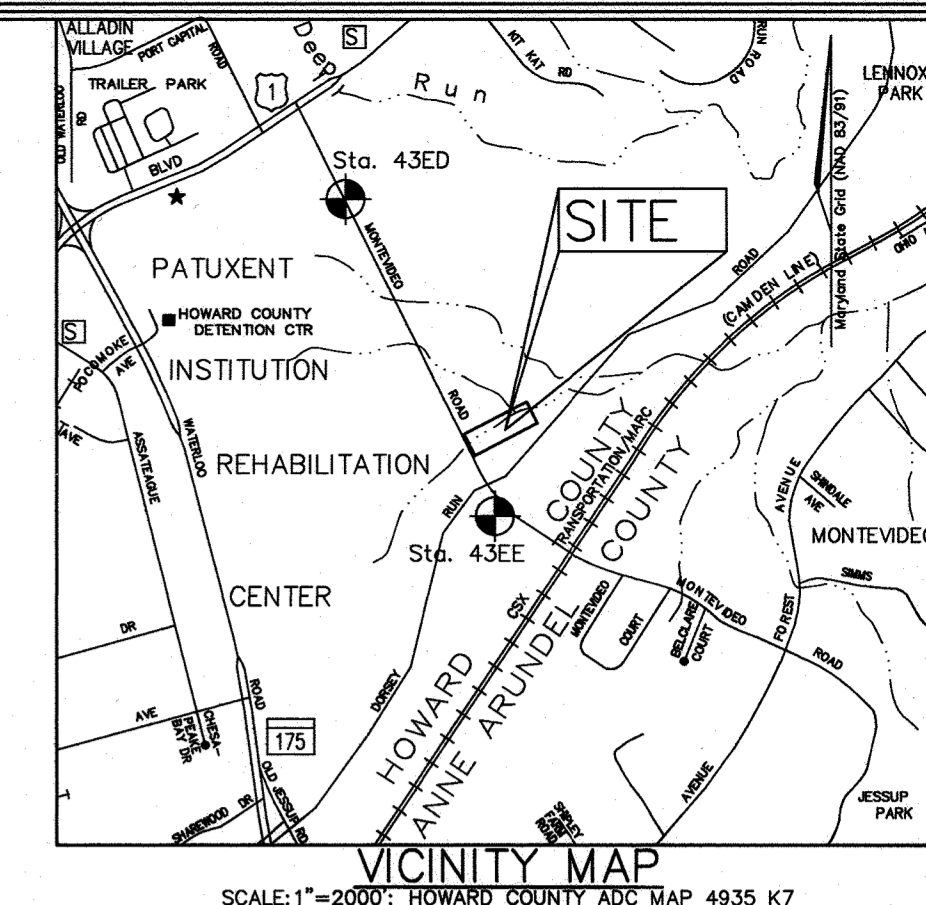
Section 16.115(c)(2)-No clearing, excavating, filling, altering drainage, or impervious paving, may occur on land located in a floodplain.

GENERAL NOTES (con't.)

- Waiver Petition WP-20-088 (con't.). Approval of this Alternative Compliance is subject to the following conditions:
 - Stormwater management specifications will be required on the site development plan. The use of non-structural practices will not be permitted since the site includes vehicle maintenance. No part of the stormwater management facilities will be permitted within an environmental area or buffer. Outfall pipes may be permitted on a case-by-case basis by DPZ as determined as part of the environmental concept plan and/or site development plan review process. All stormwater management devices shall be appropriately constructed, inspected and maintained in accordance with the approved plans.
 - All driveways, parking areas and storage areas shall be constructed of asphalt or concrete surface and identified on the site development plan. The storage areas shall be square or rectangular shaped and clearly defined on the plan by dimension and use.
 - The site development plan shall identify all existing and proposed utilities and their connections to public infrastructure. This includes house connections and associated meter locations. The proposed utility connections to the existing garage building shall be located entirely within the paved areas.
- Directors Action:** Approval of alternative compliance of Section 16.116(a)(1) and Section 16.116(a)(2)(iv) is subject to the following conditions:
 - Approval of a site development plan will be required for the proposed stream and wetland restoration and construction of the paved areas and associated site improvements. The site development plan shall demonstrate compliance with all Maryland Department of the Environment requirements for stream and wetland restoration and mitigation.
 - The proposed stream crossing shall be the minimum width required for safe single-lane vehicular traffic. All remaining sections of the existing 24" HDPE pipe shall be removed from the stream channel, as shown on the alternative compliance plan exhibit.
 - All equipment, storage materials, gravel and pavement shall be removed from the wetlands, streams and their required buffers. The existing garage building and adjacent concrete pad, existing driveway entrance and timber retaining wall will be permitted to remain within the stream buffer, as shown on the alternative compliance plan exhibit.
 - The existing oil tank in the rear of the garage building shall be removed from within the 50' stream bank buffer. A replacement location shall be identified on the site development plan.
 - The existing carport structure shall be removed from the wetland and 25' wetland buffer.
 - All disturbed areas within the wetlands, wetland buffers and stream buffers shall be replanted with a mix of native canopy and understorey trees. The species, density and planting specifications shall be approved by DPZ on a site development plan and shall be in accordance with the Forest Conservation Manual. The plantings will be bonded with a Developer Agreement and inspected for survivability as part of the site development plan approval.
 - A permanent barrier shall be constructed along the edge of the proposed pavement adjacent to any stream buffer, wetland buffer or forest conservation easement to discourage encroachment or dumping within the environmental areas. The barrier shall consist of guardrail or chain-link fencing at least 6' in height with posts set in concrete and shall be installed in the locations shown on the alternative compliance plan exhibit. Construction details shall be included on the site development plan.

Directors Action: Approval of alternative compliance of Section 16.1205(a)(3) and Section 16.1209(b)(1) is subject to the following conditions:

- Forest conservation for Lots 3 and 4 shall be addressed on the site development plan in accordance with Section 16.1202 of the Howard County Code. The forest conservation calculations will be based on the existing conditions prior to the unpermitted disturbance. Aerial photographs prior to 2017 can be used to determine the extent of the existing forest resources. The site contains priority areas for forest conservation and any obligation shall be satisfied onsite through the recordation of forest conservation easements. A forest stand delineation and forest conservation plan will be required as part of the site development plan.
- The reduction of the minimum 75' width requirement for forest conservation easements along the perennial streams, per Section 16.1209(b)(1), is permitted as shown on the alternative compliance plan exhibit. All on-site sensitive areas including floodplain, wetlands, wetland buffers and stream buffers shall be protected within forest conservation easements, except for the existing driveway entrance and timber retaining wall, existing 20" sewer right-of-way, proposed stream crossing and stormwater management outfalls as shown on the plan exhibit.
- The removal of the three specimen trees (ST #2, #3 and #5) 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. The developer shall plant six (6) minimum-caliper native shade trees in addition to the required wetland and stream buffer restoration plantings to mitigate the removal of the three specimen trees. The six trees shall be planted within the proposed forest conservation easements to ensure long-term protection. All necessary planting details shall be included on the site development plan. These trees will be bonded along with the required restoration plantings as part of the Developer Agreement.
- The applicant shall coordinate with the owner of adjacent Parcel 586 to restore the offsite wetland and existing forest conservation easement to its previous condition through the removal of gravel and replanting of forest resources. Planting details shall be included on the site development plan. The plantings will be bonded with a Developer Agreement and inspected for survivability as part of the site development plan approval. Written authorization from the owner of Parcel 586 shall be submitted to DPZ with the site development plan.



BENCHMARKS
 Denotes Howard County Geodetic Control (Stamped brass or aluminum disc set on top of a 3' deep column of concrete.)
 43ED-N 548,525.015 E 1,376,023.094 (NAD 83/91) Elev. 210.200 (NGVD 88)
 43EE-N 545,238.207 E 1,377,580.450 (NAD 83/91) Elev. 192.103 (NGVD 88)

SITE ANALYSIS DATA

- Total area of site = 4.22 ac.±
- Wetlands, Wetland Buffers, Streams and Stream Buffers exist on site.
- A FEMA delineated 100-year floodplain exists on-site.
- Existing forest area on site = 1.64 ac.±
- Area of 15% and greater slopes = 0
- Limits of Disturbance area = 1.03 ac.±
- Proposed impervious area = 0.63 ac.±
- Erodible soils (K > 0.35) = 0.72 ac.±
- Existing site use: Contractor's Yard
- Proposed site use: Contractor's Office/Outdoor Storage Facility, Motor Vehicle/Construction Equipment Maintenance and Repair Shop and Residential Dwelling
- 100 Year Floodplain Area = 1.80 ac.±
- Wetland Area = 0.04 ac.±
- Wetland Buffer Area = 0.19 ac.±
- Stream Buffer Area = 2.50 ac.±
- Parking Spaces Required = 13 spaces*
- Parking Spaces Provided = 13 spaces*

* Based on 11 Spaces for Employees and 2 Spaces for the Existing Residence.

ADDRESS CHART

LOT/PARCEL	STREET
3 / 96	7461 Montevideo Road
4 / 96	7461 Montevideo Road

SHEET INDEX

DESCRIPTION	SHEET No.
Cover Sheet-Notes & Vicinity Map	1 of 16
Site Development Plan	2 of 16
Grading, Sediment and Erosion Control Plan	3 of 16
Sediment and Erosion Control Notes & Details	4 of 16
Proposed Paving Plan & Details	5 of 16
SWM ESD and SD Drainage Area Map & Details	6 of 16
Storm Drain & Temporary Diversion Pipe Profiles and Details	7 of 16
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ADS Stormtech SWM Chamber Details	9 of 16
ADS Stormtech SWM Chamber and Contech WQ Jellyfish Filter Details	10 of 16
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Landscape & Forest Conservation Plan	13 of 16
Environmental Restoration Plan	14 of 16
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Easement Plan	16 of 16

PURPOSE NOTE: The purpose of this plan is to restore unpermitted activities to the stream, wetlands, buffers and 100-year floodplain, see MDE/Site Name PAF 18-3072 and Howard County DPZ enforcement case CE-17-246.

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ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
 7461 MONTEVIDEO ROAD
 PLAT 25974–25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
 TAX MAP 43 GRID 16 PARCEL 96
 1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/17/22

 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/22/22

 DIRECTOR DATE 3/22/22

PROFESSIONAL CERTIFICATION

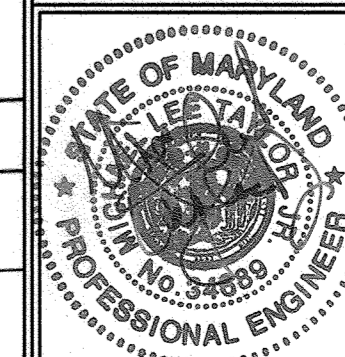
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

OWNER/DEVELOPER

7461 Montevideo Road, LLC
 7461 Montevideo Road
 c/o Ivis Taparines
 2842 Stuart Drive
 Falls Church, VA 22042
 Tel: 703-538-0992

PERMIT INFORMATION CHART

Name	Section/Area	Lot/Parcel No.
7461 Montevideo Road, LLC	N/A	Lots 3 & 4 Parcel 96
Plot # Deed Ref. Grid	Zoning	Tax Map No.
25974-17487/377 16	M-2	43
		Elect. District
		1st
		Census Tract
		6012.03

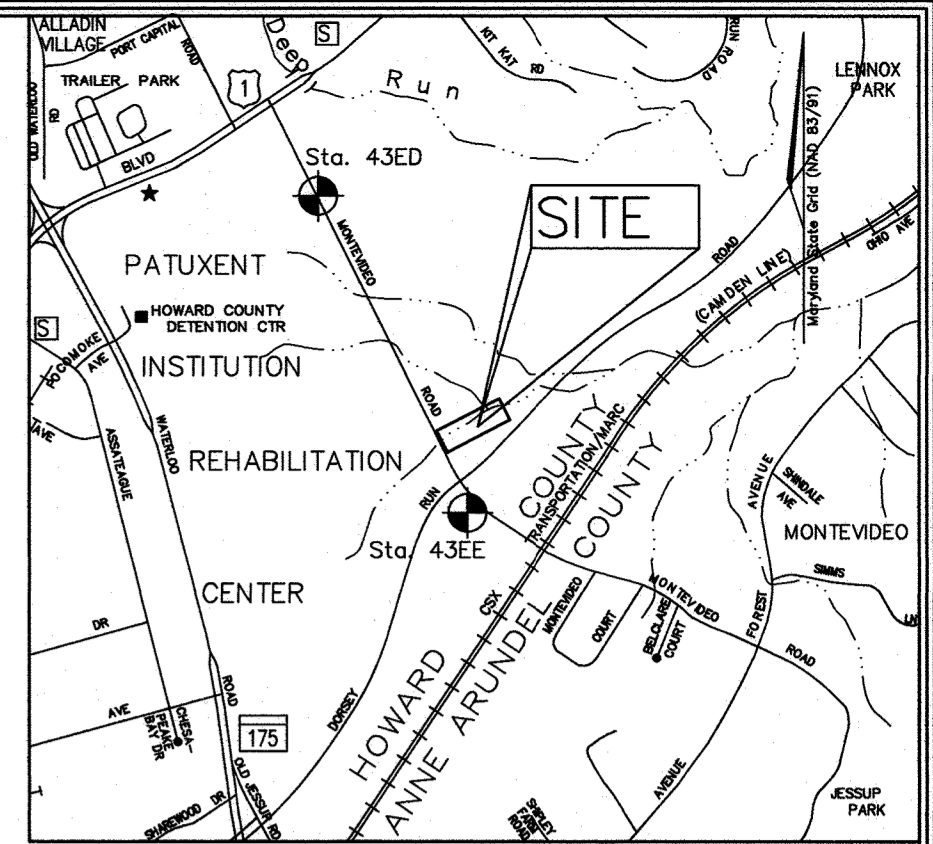


FSH Associates

Engineers Planners Surveyors
 6338 Howard Lane, Elkridge, MD 21075
 Tel: 410-567-5200 Fax: 410-796-1562
 E-mail: info@fshri.com

DESIGN BY: MLT
 DRAWN BY: CRH2
 CHECKED BY: ZYF
 SCALE: 1" = 30'
 DATE: February 10, 2022
 W.O. No.: 4059
 SHEET No.: 1 OF 16

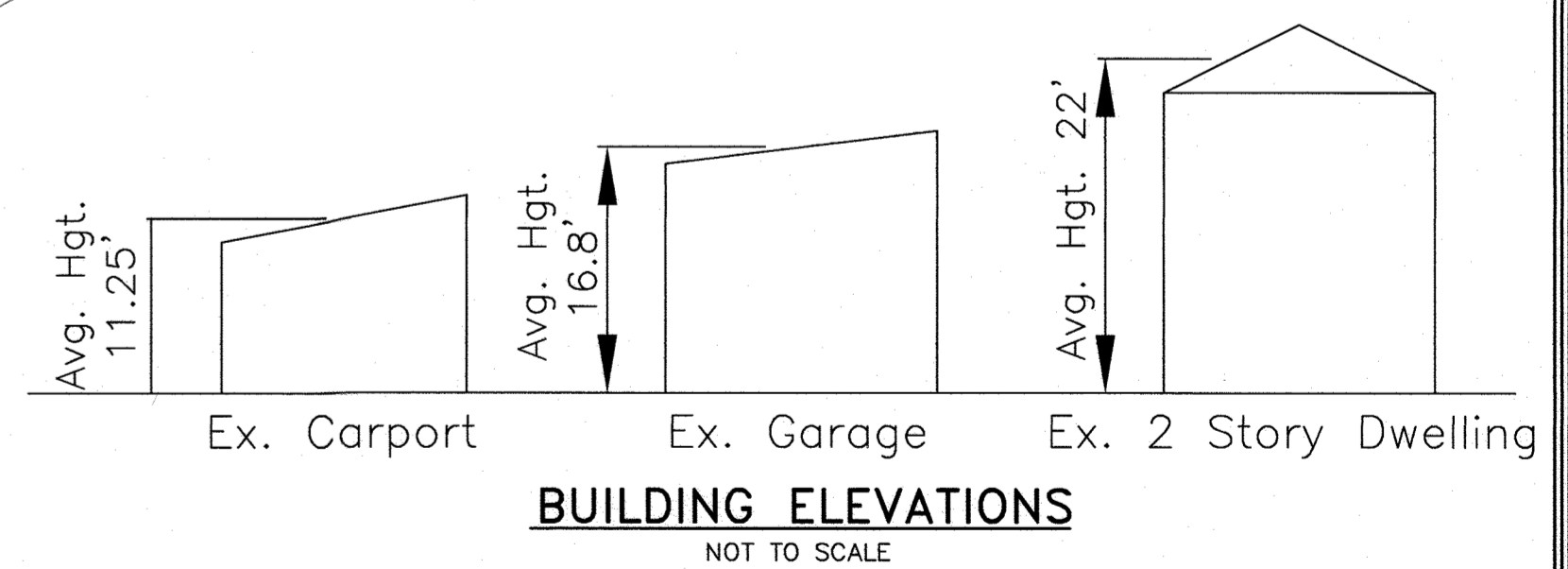
NOTE: SEE SHEET 5 FOR
DETAILED GRADING OF THE
PROPOSED PAVING



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(NAD 83/91) Elev. 210.200 (NGVD 88)
43E-E 545,238.207 E 1,377,580.450
(NAD 83/91) Elev. 192.103 (NGVD 88)

LEGEND

Existing Tree Line	
Proposed Tree Line	
Existing Contour 10' Interval	
Existing Contour 2' Interval	
Existing Contour 1' Interval	
Proposed Contour	
Property Boundary	
50' Stream Bank Buffer	
Ex. Stream Banks	
Ex. Wetlands	
25' Wetlands Buffer	
Public 100-Year Floodplain, Drainage & Utility Easement	
100-Year FEMA Floodplain	
Existing Fence Line	
Test Pit Location	
Existing Retaining Wall	
Specimen Tree w/ Critical Root Zone	
Specimen Tree To Be Removed Per WP-20-088	
Proposed Reinforced Concrete	
Existing Asphalt	
Existing Gravel	
Public Forest Conservation Easement Retention Area	
Public Forest Conservation Easement Restoration Area	
Wetland Restoration Area Offsite	
Existing House / Structure	
Proposed Asphalt (SWM Obligation Areas)	
Soils Line	
Proposed Guard Rail Barrier (See Detail, Sheet 7)	
Ex. Outdoor Lighting	



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP	'K' FACTOR
CoD	Croom and Evesboro soils, 10 to 15 percent slopes	C	0.28
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D	0.37
SrC	Sassafras and Croom soils, 5 to 10 percent slopes	B	0.32
UFA	Urban land-Fallsington complex, 0 to 2 percent slopes	D	0.20
Utd	Urban land-Udorthents complex, 0 to 15 percent slopes	D	

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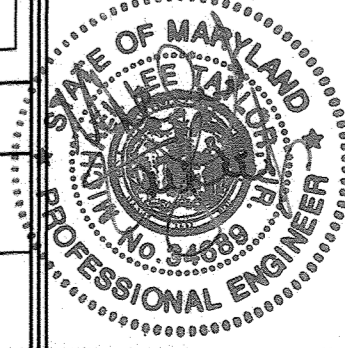
PERMIT INFORMATION CHART

Name: Ella L. McAdoo Subdivision	Section/Area: N/A	Lot/Parcel No.: Lots 3 & 4 Parcel 96
Plat # Deed Ref. Grid: 25974-17487/377 16	Zoning: M-2	Tax Map No.: 43
	Elect. District: 1st	Census Tract: 6012.03

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c/o Ivis Tapanes
2842 Stuart Drive
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Tel: 703-538-0992

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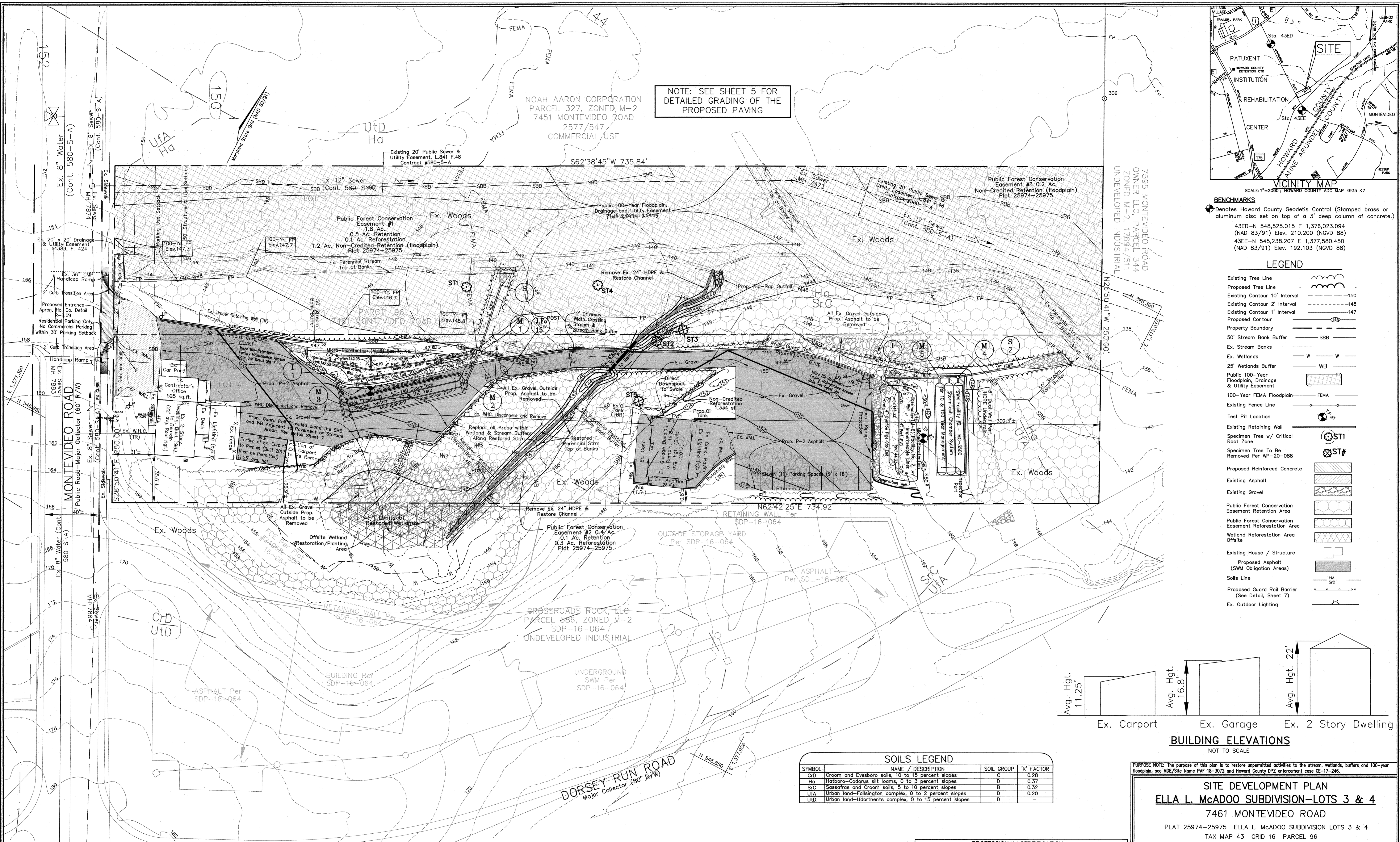
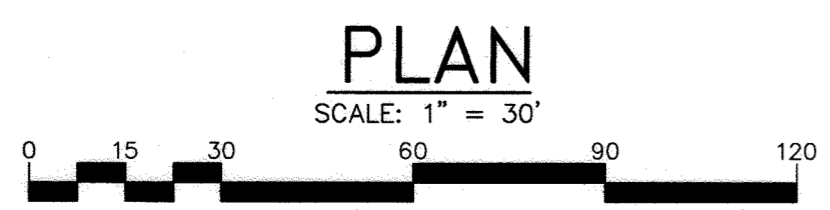


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DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 30'
DATE: February 10, 2022
W.O. No.: 4059
SHEET No.: 2 OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

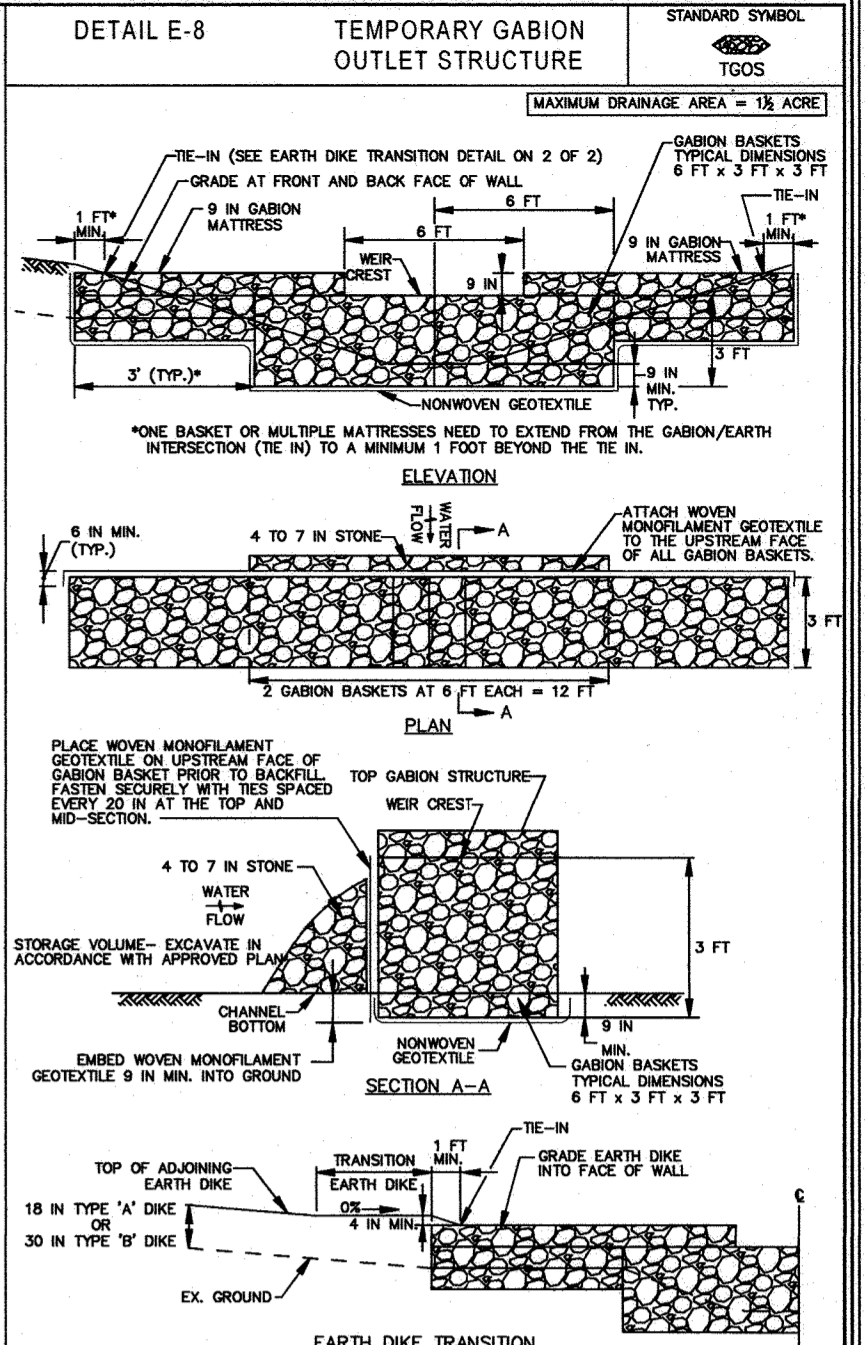
CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 2/17/22
CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 2/22/22
DIRECTOR: *[Signature]* DATE: 2/22/22



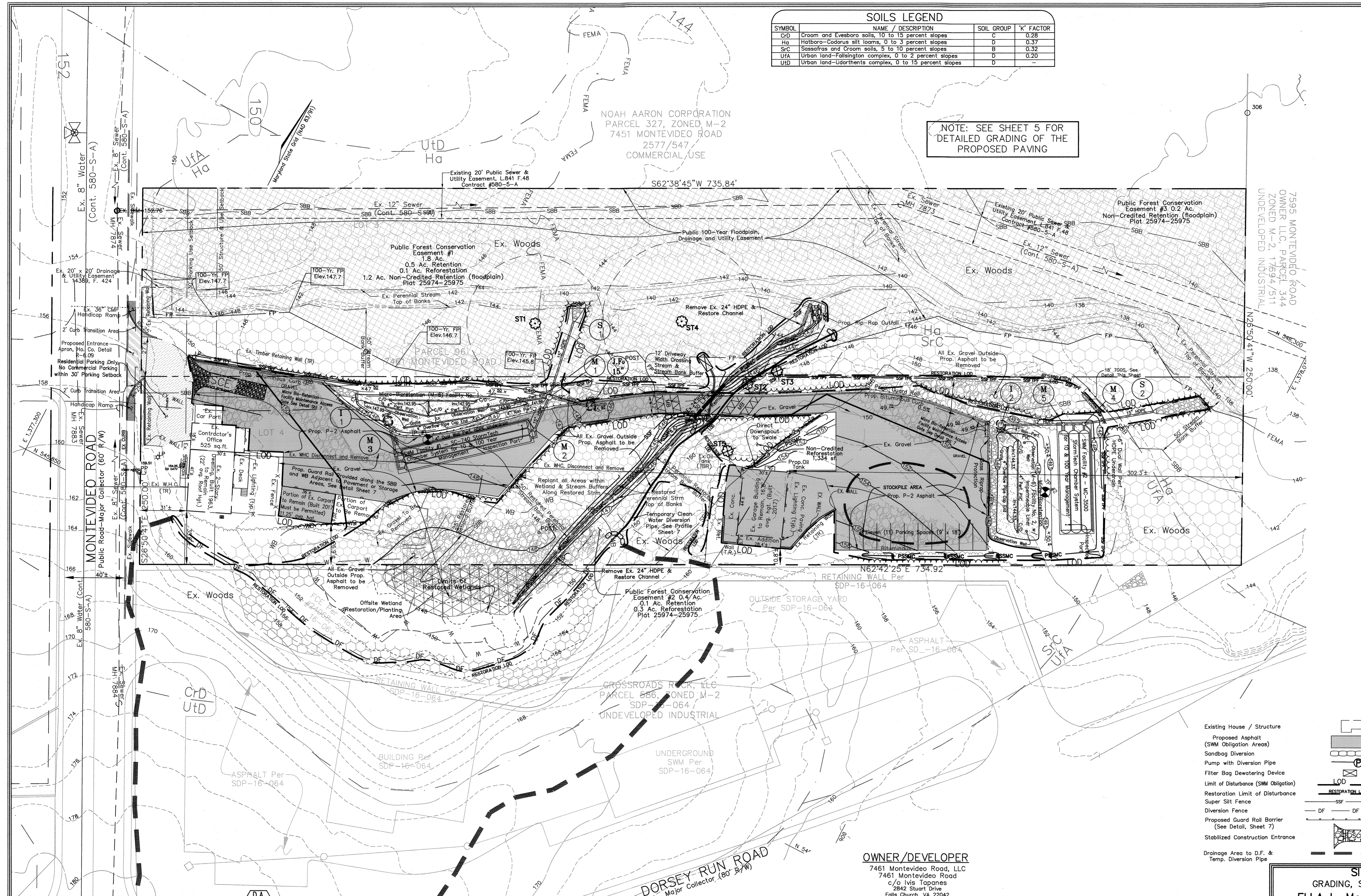
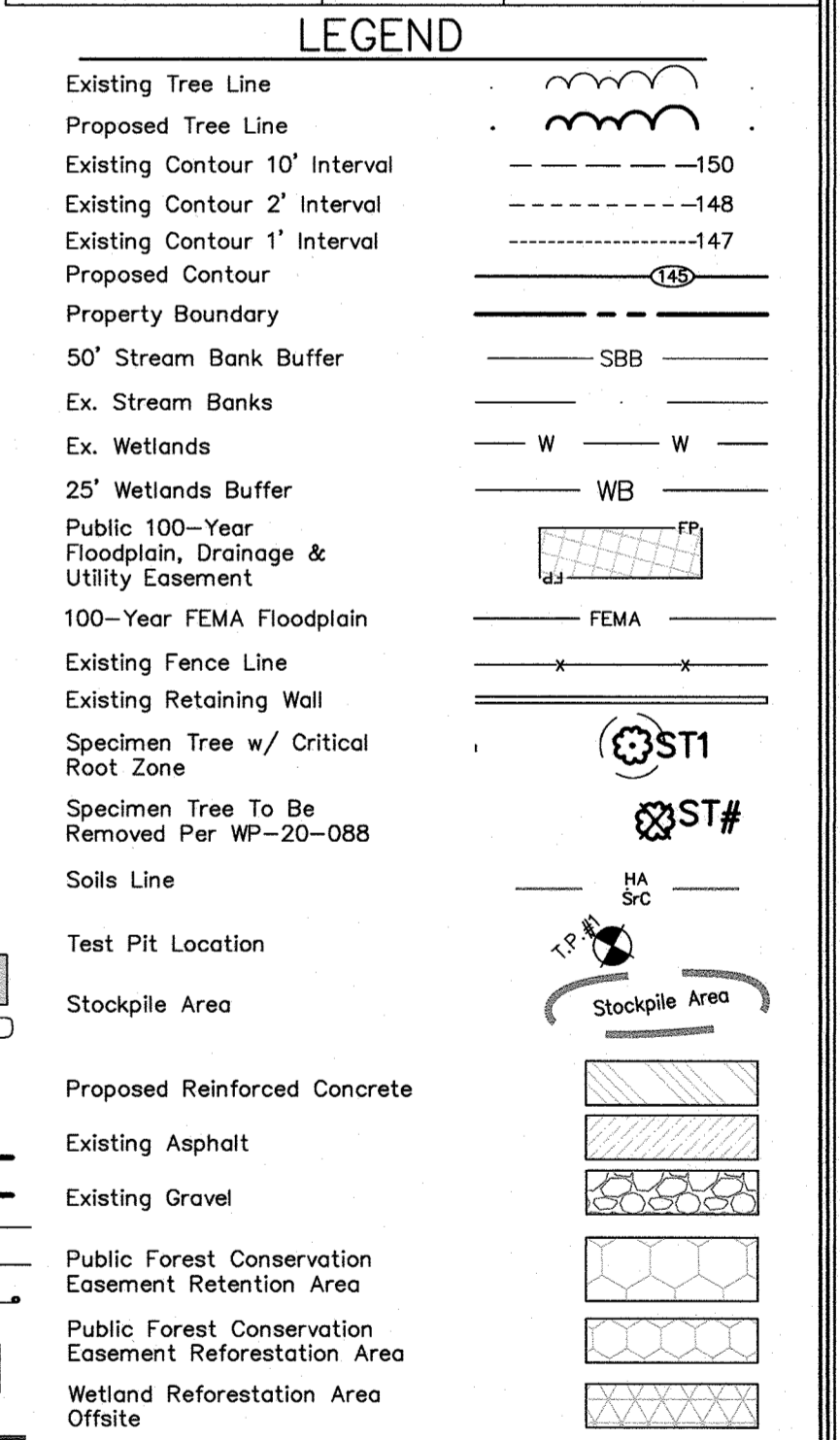
SYMBOL	NAME / DESCRIPTION	SOIL GROUP	K' FACTOR
CrD	Croom and Evesboro soils, 10 to 15 percent slopes	C	0.28
Ha	Hatboro-Cadorus silt loams, 0 to 3 percent slopes	D	0.37
Src	Sassafras and Croom soils, 5 to 10 percent slopes	B	0.32
Ufa	Urban land-Fallingston complex, 0 to 2 percent slopes	D	0.20
Utd	Urban land-Udortheis complex, 0 to 15 percent slopes	D	-

NOTE: SEE SHEET 5 FOR DETAILED GRADING OF THE PROPOSED PAVING

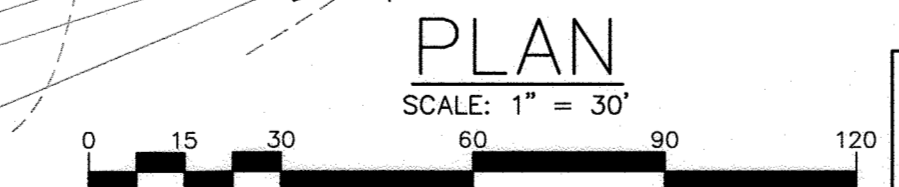
NOAH AARON CORPORATION
PARCEL 327, ZONED M-2
7451 MONTEVIDEO ROAD
2577/547
COMMERCIAL USE



- NOTES:
1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED A MINIMUM PRESERVED VEGETATION 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. SHOW 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 1 1/2 INCH STONE OR HEAVIER.
 3. USE NONWOVEN AND WOVEN MONOLAMINAR GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
 4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
 5. DRAIN THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 8 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
 6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT REINFORCED CONCRETE WITHOUT REMOVAL OF WEIR CREST.
 7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 6 INCHES LOWER THAN THE TOP OF THE ADJOINING GABION.
 8. PROVIDE A MINIMUM WEIR CREST OF 4 FEET.
 9. ATTACH WOVEN MONOLAMINAR GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
 10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO 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.
- MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE, 2011
MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES CONSTRUCTION SERVICE



Area = 1.51 acres
D.A. = 0.19
T.C. = 5 min. (minimum)
1 (2-YR) = 5.9
2-YR Q = 1.69 c.f.s.
DRAINAGE AREA TO D.F. AND TEMPORARY DIVERSION PIPE



OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapones
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Abraham Britsch 02/25/22
HOWARD SCD DATE

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. #34689, Expiration Date: 7/08/2023.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
W. Allen 3/17/22
CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE
J.P. 3/22/22
CHIEF, DIVISION OF LAND DEVELOPMENT EB DATE
Angie 3/22/22
DIRECTOR DATE

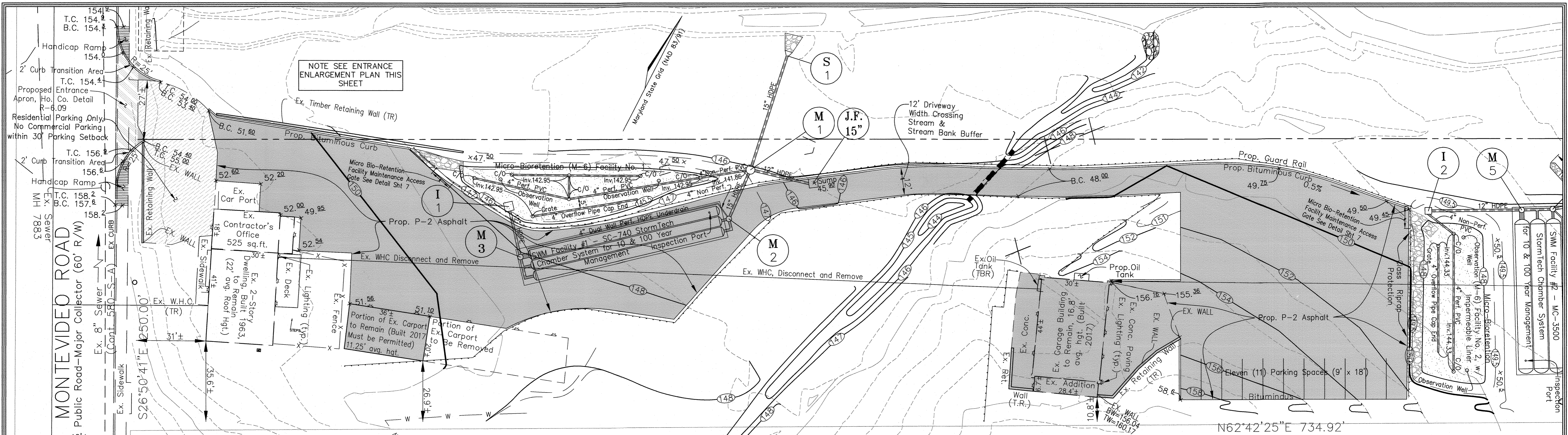
DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Michael L. Taylor 2/10/22
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Michael L. Taylor 2/10/22
SIGNATURE OF ENGINEER DATE
MICHAEL L. TAYLOR

SITE DEVELOPMENT PLAN
GRADING, SEDIMENT & EROSION CONTROL PLAN
ELLA L. McADOO SUBDIVISION-LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 30'
DATE: February 10, 2022
W.O. No.: 4059
SHEET No.: 3 OF 16

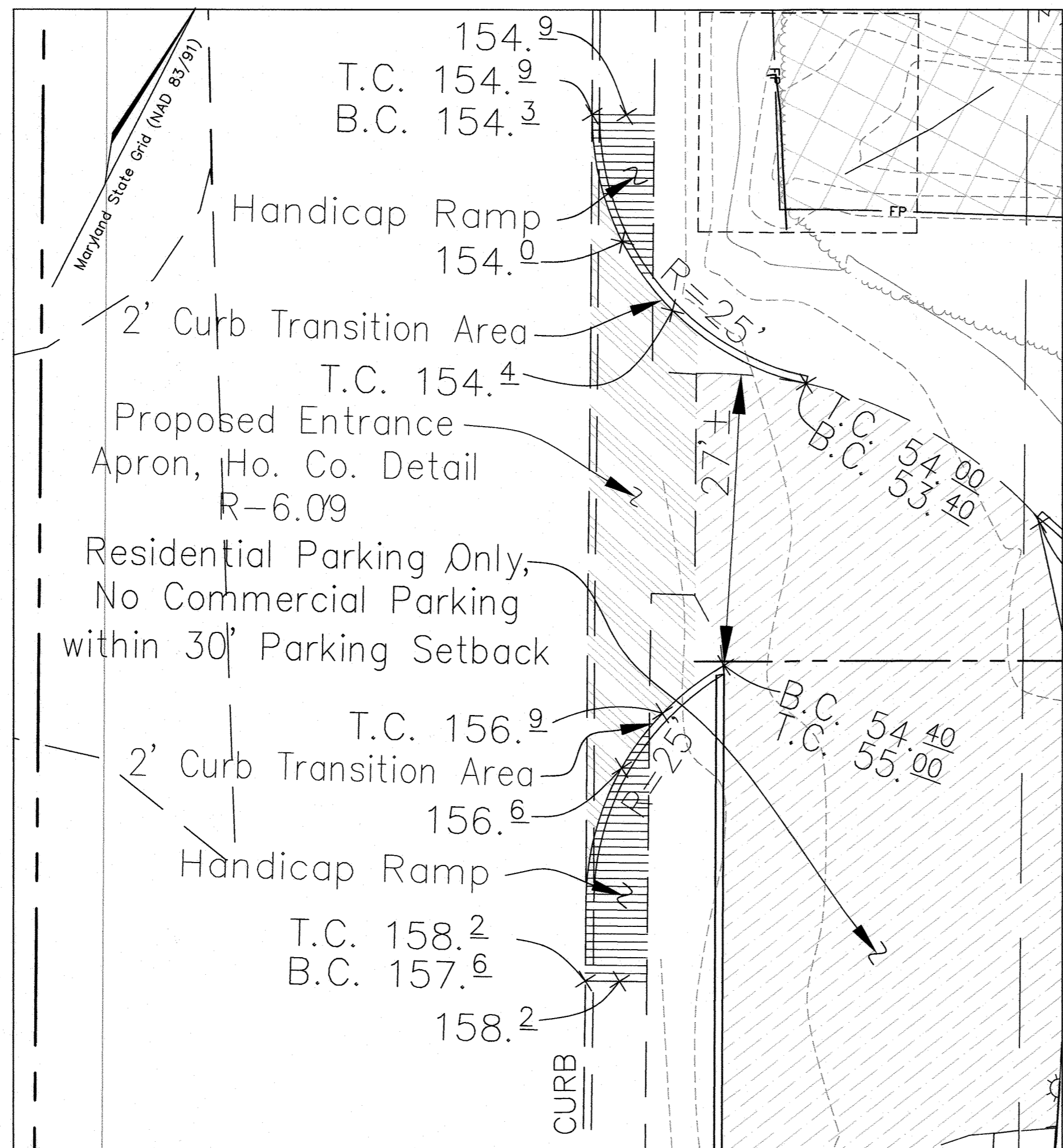
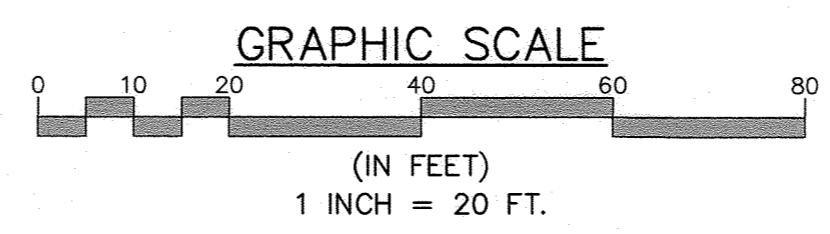
FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsh.com



PROPOSED PAVING PLAN

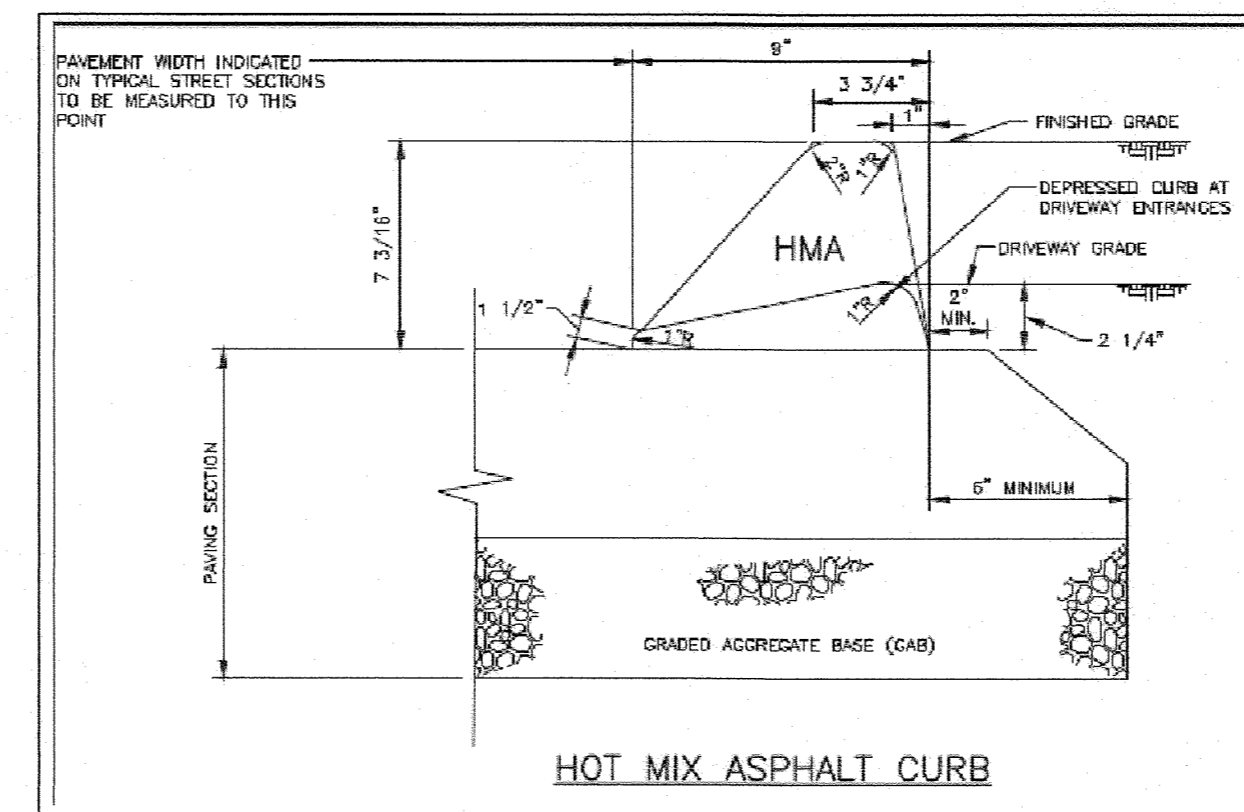
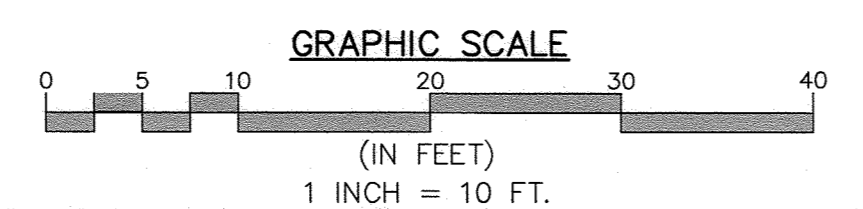
SCALE: 1"=20'

- Proposed Reinforced Concrete
- Proposed Asphalt
- Existing House / Structure
- Existing Asphalt
- Proposed Guard Rail Barrier (See Detail, Sheet 7)



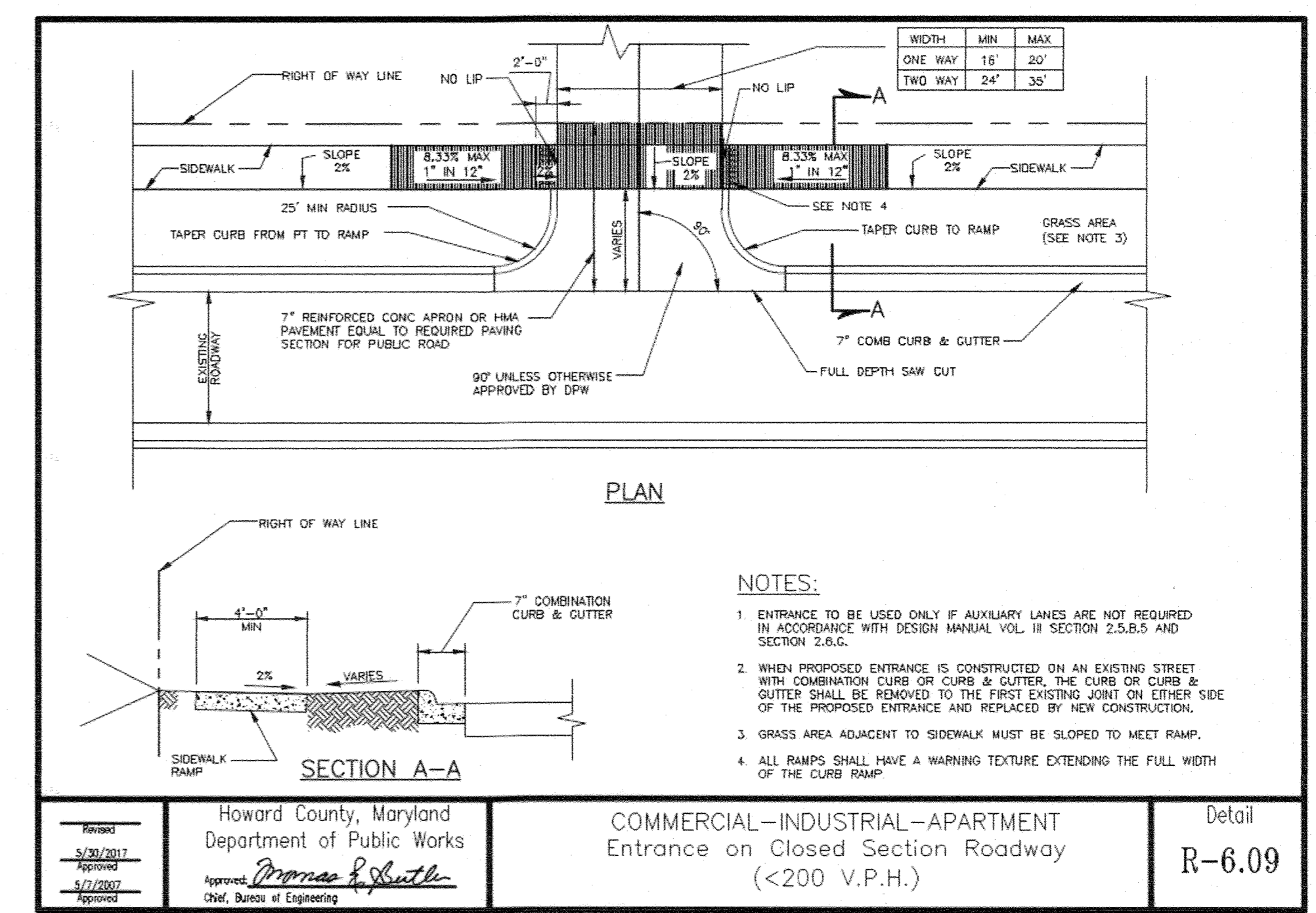
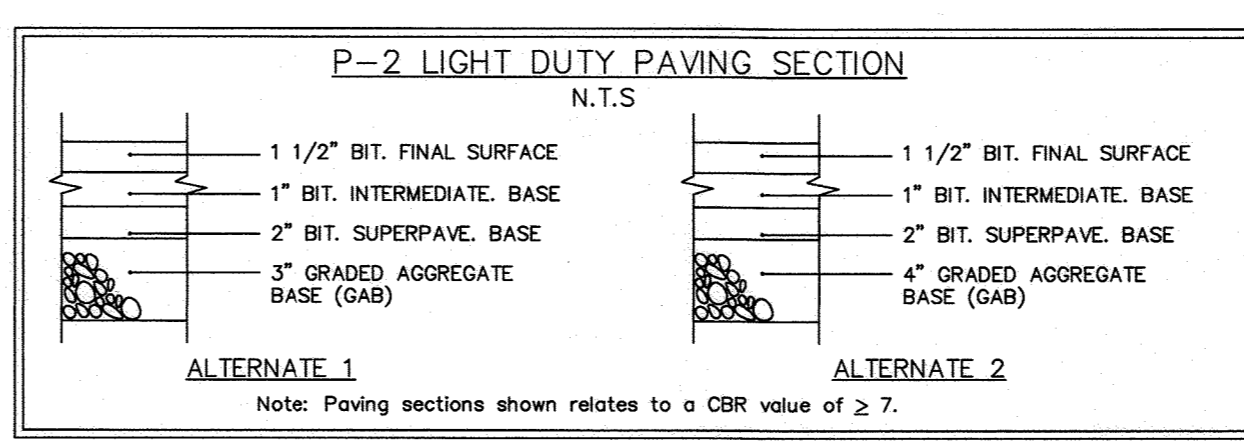
ENTRANCE ENLARGEMENT PLAN

SCALE: 1"=10'



BITUMINOUS CURB DETAIL

PER HOWARD COUNTY STANDARD R-3.01 NOT TO SCALE



- NOTES:**
- ENTRANCE TO BE USED ONLY IF AUXILIARY LANES ARE NOT REQUIRED IN ACCORDANCE WITH DESIGN MANUAL VOL. II SECTION 2.5.8.5 AND SECTION 2.6.C.
 - WHEN PROPOSED ENTRANCE IS CONSTRUCTED ON AN EXISTING STREET WITH COMBINATION CURB OR CURB & GUTTER, THE CURB OR CURB & GUTTER SHALL BE REMOVED TO THE FIRST EXISTING JOINT ON EITHER SIDE OF THE PROPOSED ENTRANCE AND REPLACED BY NEW CONSTRUCTION.
 - GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
 - ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH OF THE CURB RAMP.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/17/22
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 3/22/22
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 3/22/22
DIRECTOR

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
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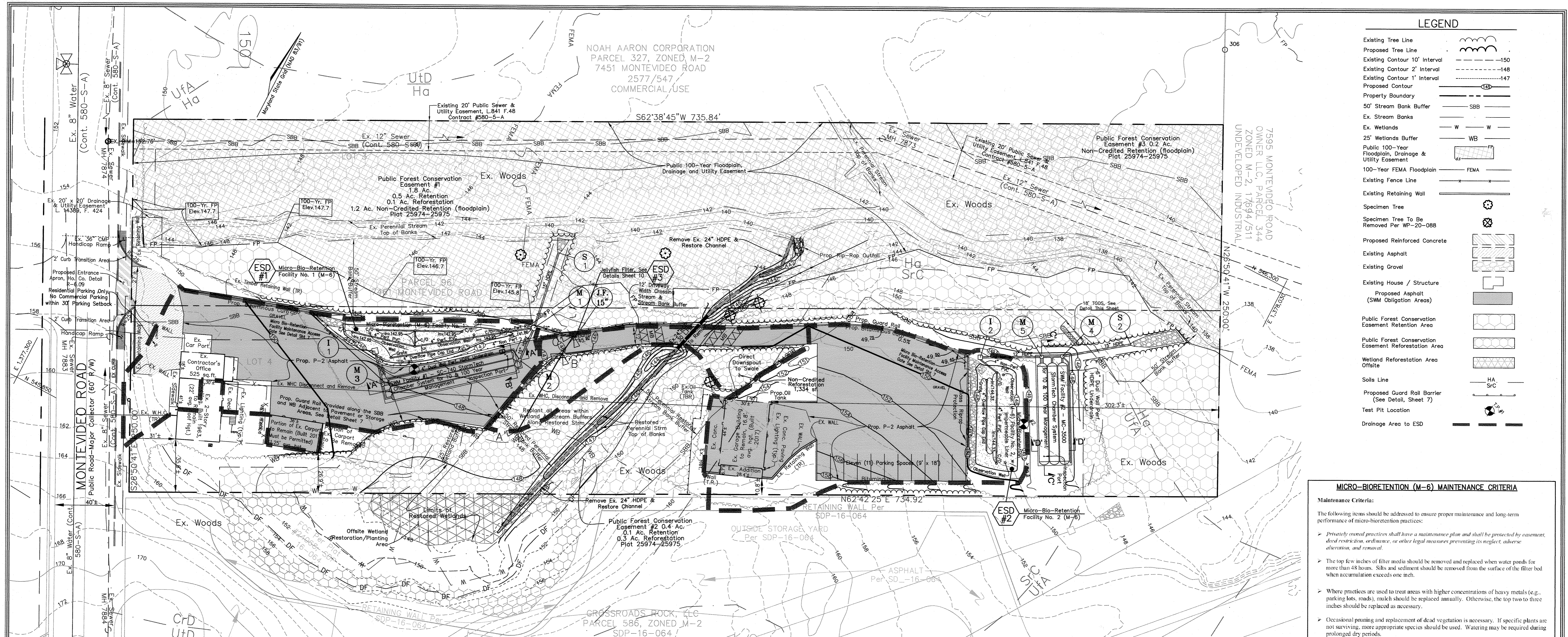
PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

**SITE DEVELOPMENT PLAN
PROPOSED PAVING PLAN & DETAILS**

ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6338 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fshri.com

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1"=30'
DATE: February 10, 2022
W.O. No.: 4059
SHEET No.: 5 OF 16



LEGEND

- Existing Tree Line
- Proposed Tree Line
- Existing Contour 10' Interval
- Existing Contour 2' Interval
- Existing Contour 1' Interval
- Proposed Contour
- Property Boundary
- 50' Stream Bank Buffer
- Ex. Stream Banks
- Ex. Wetlands
- 25' Wetlands Buffer
- Public 100-Year Floodplain, Drainage & Utility Easement
- 100-Year FEMA Floodplain
- Existing Fence Line
- Existing Retaining Wall
- Specimen Tree
- Specimen Tree To Be Removed Per WP-20-088
- Proposed Reinforced Concrete
- Existing Asphalt
- Existing Gravel
- Existing House / Structure
- Proposed Asphalt (SWM Obligation Areas)
- Public Forest Conservation Easement Retention Area
- Public Forest Conservation Easement Reforestation Area
- Wetland Reforestation Area Offsite
- Soils Line
- Proposed Guard Rail Barrier (See Detail, Sheet 7)
- Test Pit Location
- Drainage Area to ESD

MICRO-BIORETENTION (M-6) MAINTENANCE CRITERIA

Maintenance Criteria:

The following items should be addressed to ensure proper maintenance and long-term performance of micro-bioretention practices:

- Privately owned practices shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration, and removal.
- The top few inches of filter media should be removed and replaced when water ponds for more than 48 hours. Silt and sediment should be removed from the surface of the filter bed when accumulation exceeds one inch.
- Where practices are used to treat areas with higher concentrations of heavy metals (e.g., parking lots, roads), mulch should be replaced annually. Otherwise, the top two to three inches should be replaced as necessary.
- Occasional pruning and replacement of dead vegetation is necessary. If specific plants are not surviving, more appropriate species should be used. Watering may be required during prolonged dry periods.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CRD	Croam and Evesboro soils, 10 to 15 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
SC	Sossafra and Croam soils, 5 to 10 percent slopes	B
UFA	Urban land-Fallingston complex, 0 to 2 percent slopes	D
UD	Urban land-Urdenths complex, 0 to 15 percent slopes	D

MICRO-BIORETENTION PLANTING REQUIREMENTS

HERBACEOUS SPECIES (Pick One or More from List)

- ANDROPOGON VIRGINICUS (BROOMSEDGE)
- PANICUM VIRGATUM (SWITCHGRASS)
- RUDBECKIA LACINIATA (TALL CONEFLOWER)
- VERNONIA NOVEBORACENSIS (NEW YORK IRONWEED)

PLANTING NOTES

- Planting shall be done when temperatures are above freezing, the ground is soft free, and the soil is in a workable condition.
- Excavate holes 18" o.c. sufficient in size to receive the root spread and backfill around plants with topsoil and tamp soil to hold plant in place. Plant in alternate rows.
- Thoroughly water each plant immediately following planting. Under no condition shall plants not be watered in the same day of planting.
- Water application shall be applied at a rate that will provide moisture penetration throughout the entire root zone with a minimum of water run-off. Planting beds shall be watered at such frequency as weather conditions require to maintain soil moisture within the rootzone.
- Contractor shall replace dead or dying plants with the same size and type as specified.

NOTE: All 4" PVC underdrain pipes are sloped at 0.0%

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE: 3/17/22

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE: 3/22/22

DIRECTOR *[Signature]* DATE: 3/22/22

TEST PIT CHART

⊙ DENOTES TEST PIT

T.P. No.	TOP GROUND ELEV.	BOTTOM TEST PIT ELEV.	REMARKS
1	148.2	139.2	Water Encountered, 24 hr. Depth at 6', Elev. 142.2
2	147.8	137.8	No Rock or Water Encountered

STORMWATER MANAGEMENT INFORMATION CHART

LOT/PARCEL NUMBER	FACILITY NAME AND NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	H.O.A.	MAINTAINS	MISC.
Lot 3 & 4	Micro-Bioretention Facility No.1	Micro-Bioretention (1)	-	Yes	No	Owner Maintained	
Lot 3 & 4	SWM Facility No.1	ADS StormTech Chamber (1)	-	Yes	No	Owner Maintained	
Lot 3 & 4	J.F. 15"	Contech Jellyfish Structure (1)	-	Yes	No	Owner Maintained	
Lot 3	Micro-Bioretention Facility No.2	Micro-Bioretention (1)	-	Yes	No	Owner Maintained	
Lot 3	SWM Facility No.2	ADS StormTech Chamber (1)	-	Yes	No	Owner Maintained	

SWM ESD SUMMARY TABLE

ESD Practice	Drainage Area	Impervious Area	ESDv Prov'd.	Rev Prov'd.
Micro-Bioretention (M-6) ESD #1	19,852 sq.ft.	14,636 sq.ft.	2,326 cu.ft.	406 cu.ft.
Micro-Bioretention (M-6) ESD #2	20,238 sq.ft.	13,387 sq.ft.	2,105 cu.ft.	-
Jellyfish Filter S-3 ESD #3	5,863 sq.ft.	2,269 sq.ft.	195 cu.ft.	-
		Total ESDv Prov'd. =	4,626 cu.ft.±	

STORMWATER MANAGEMENT SUMMARY

Total L.O.D. Area = 44,706 sq.ft. ± = 1.03 ac.±

Proposed Impervious Area = 27,388 sq.ft. ± = 0.63 ac.±

% Impervious Area = 61%

Target P_e = 1.95"

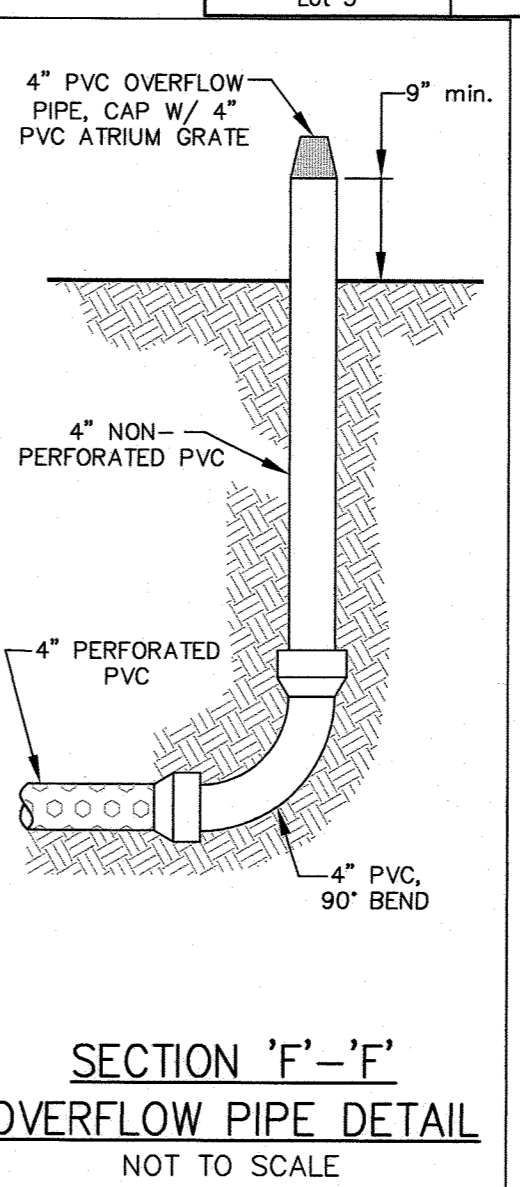
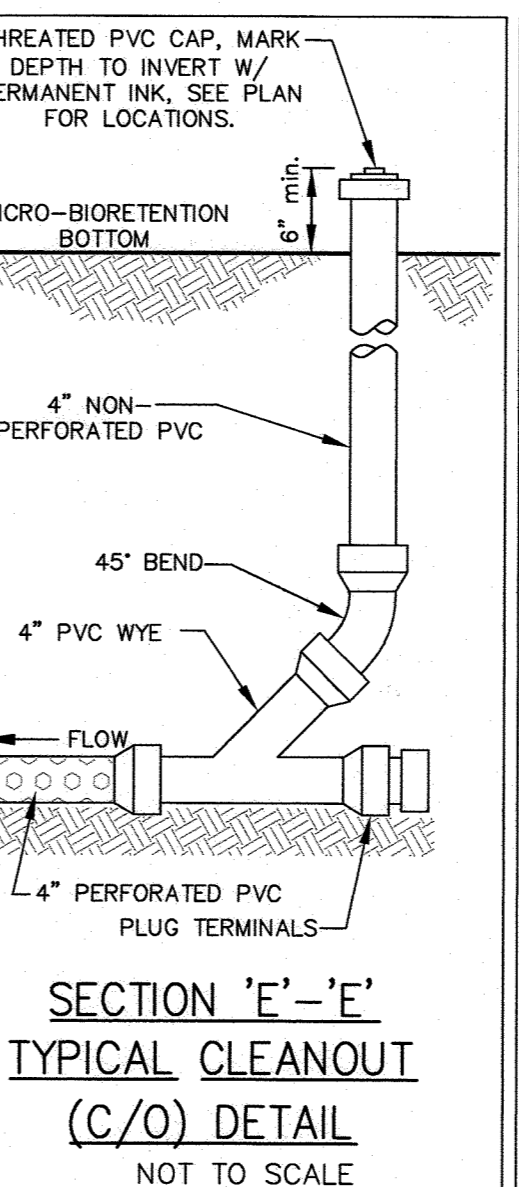
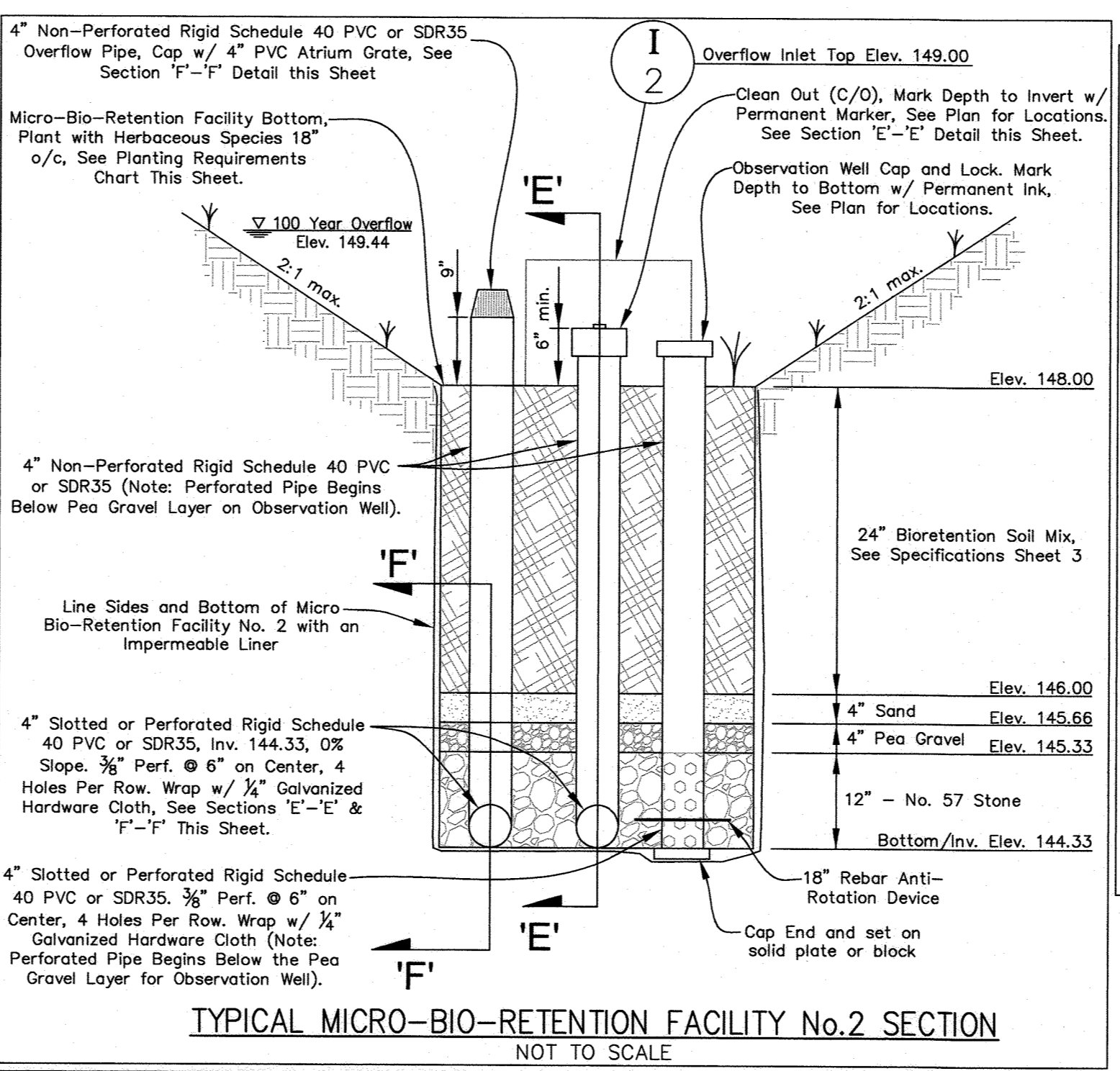
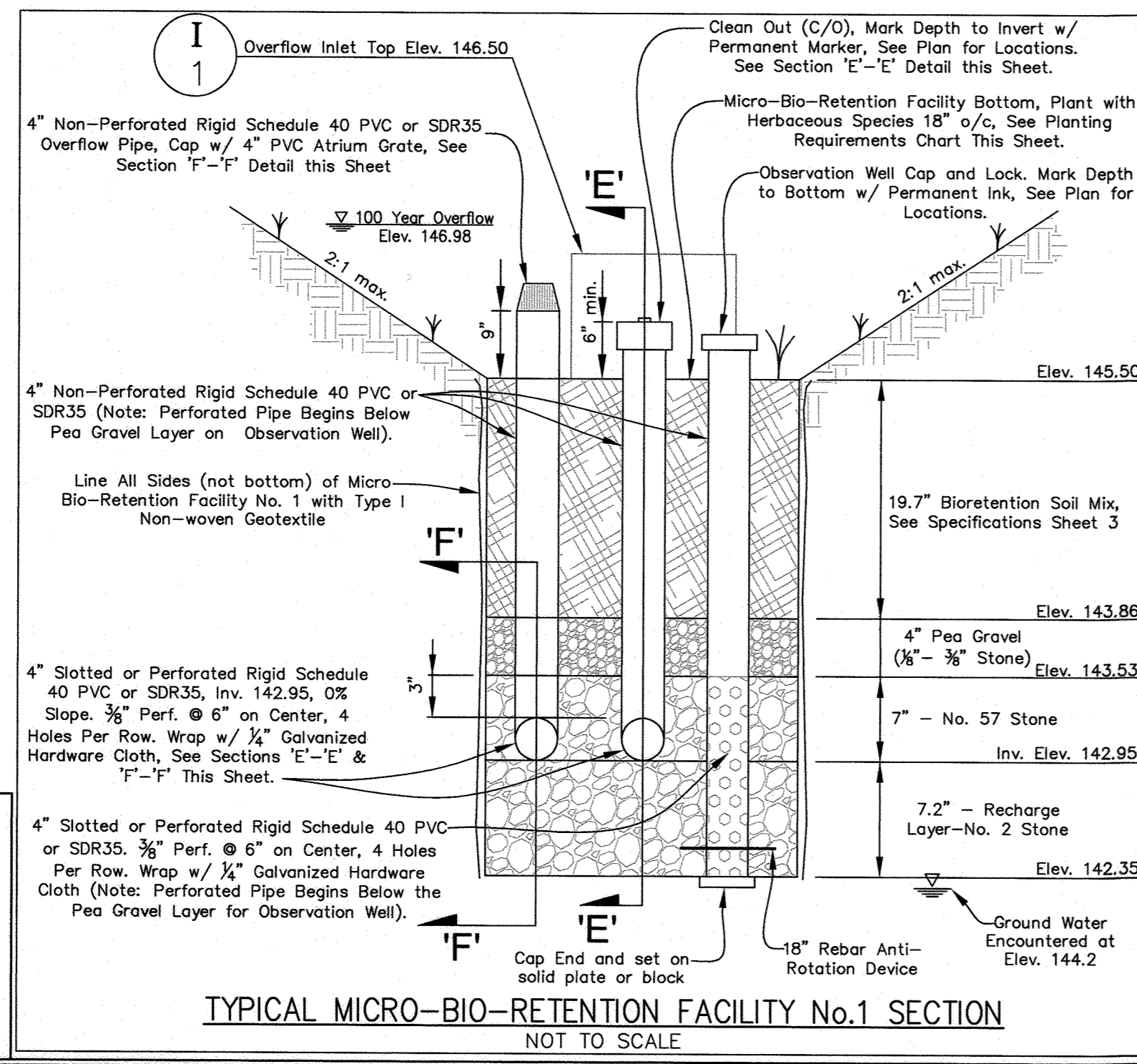
Provided P_e = 1.95"

Target ESDv = 4,359 cu.ft.±

Provided ESDv = 4,626 cu.ft.±

Required Rev = 402 cu.ft.±

Provided Rev = 406 cu.ft.±



SITE DEVELOPMENT PLAN

STORMWATER MANAGEMENT ESD AND STORM DRAIN DRAINAGE AREA MAP AND DETAILS

ELLA L. McADOO SUBDIVISION—LOTS 3 & 4

7461 MONTEVIDEO ROAD

PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4

TAX MAP 43 GRID 16 PARCEL 96

1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

DESIGN BY: M.L.T.

DRAWN BY: GRH2

CHECKED BY: ZYF

SCALE: 1" = 30'

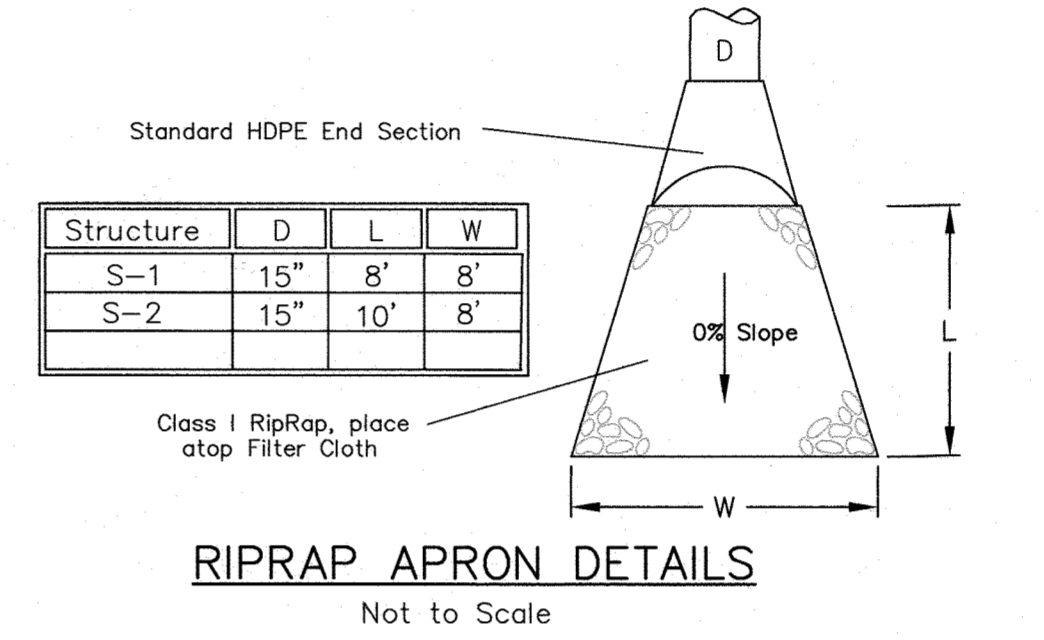
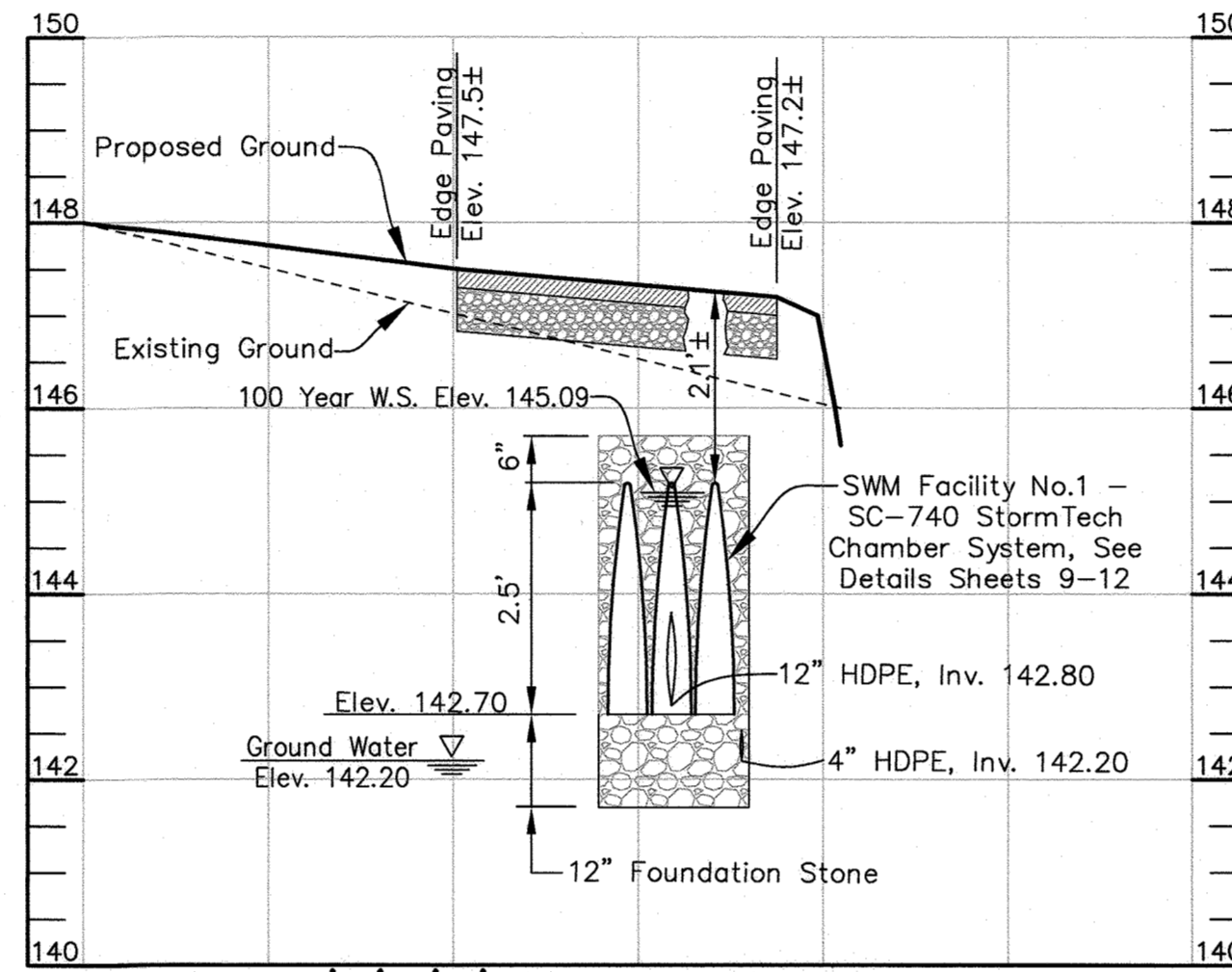
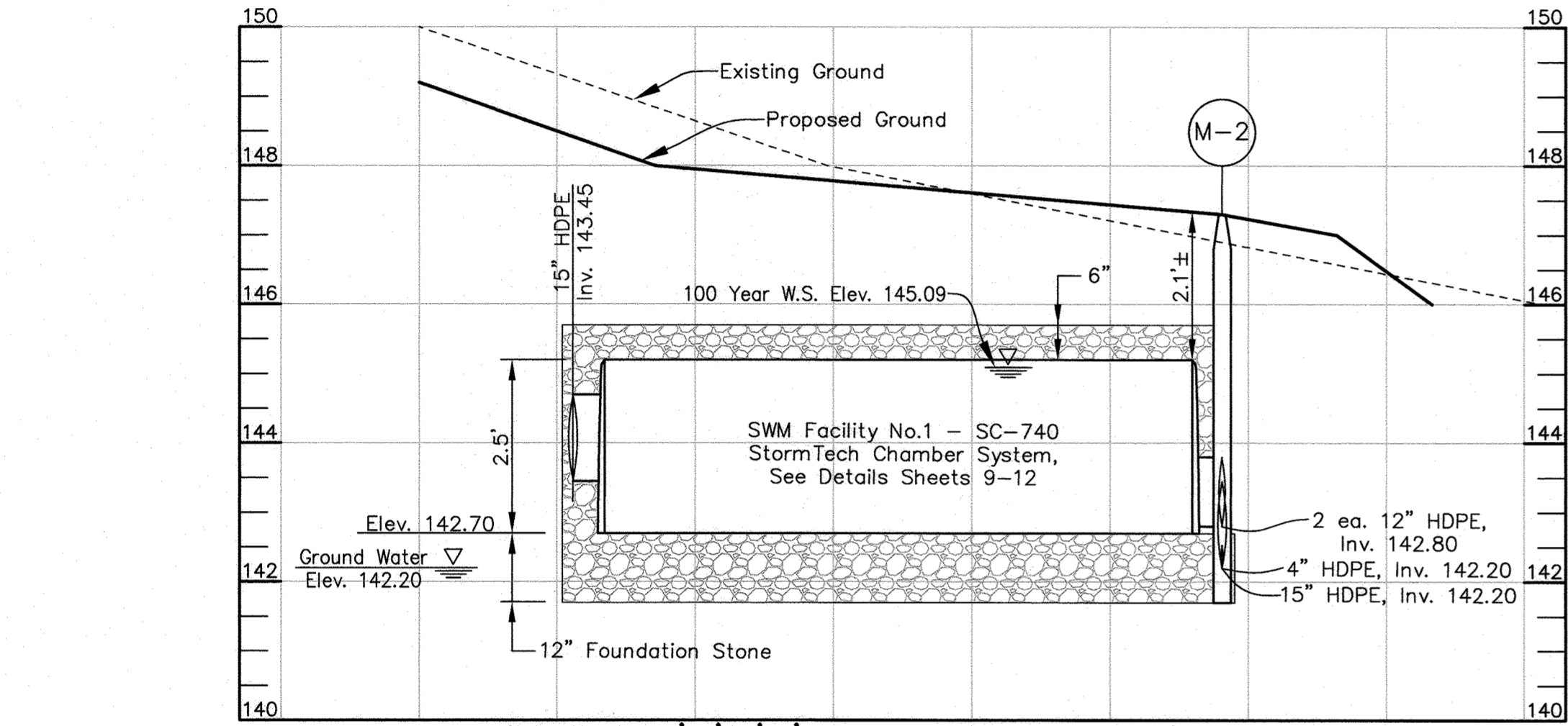
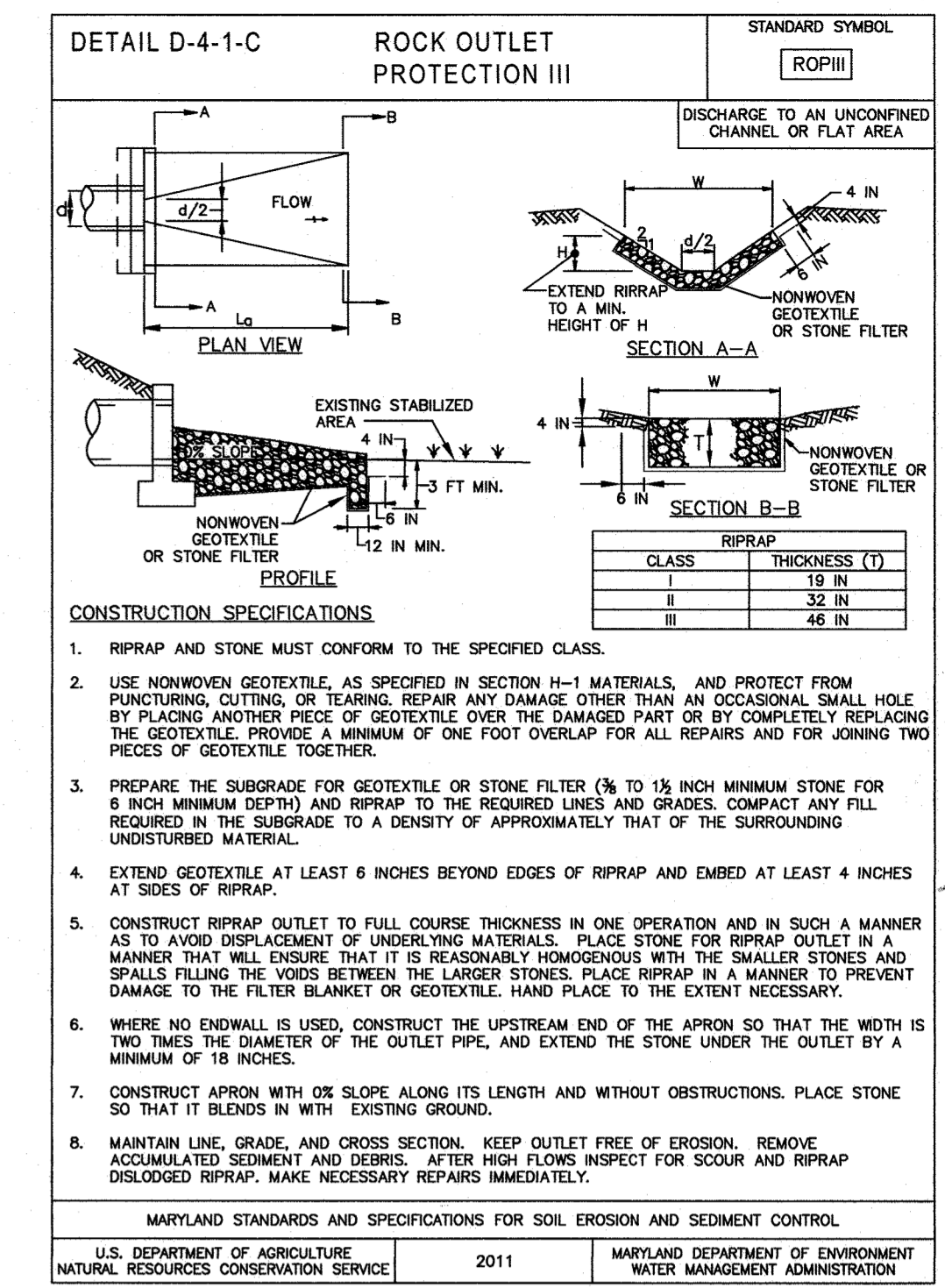
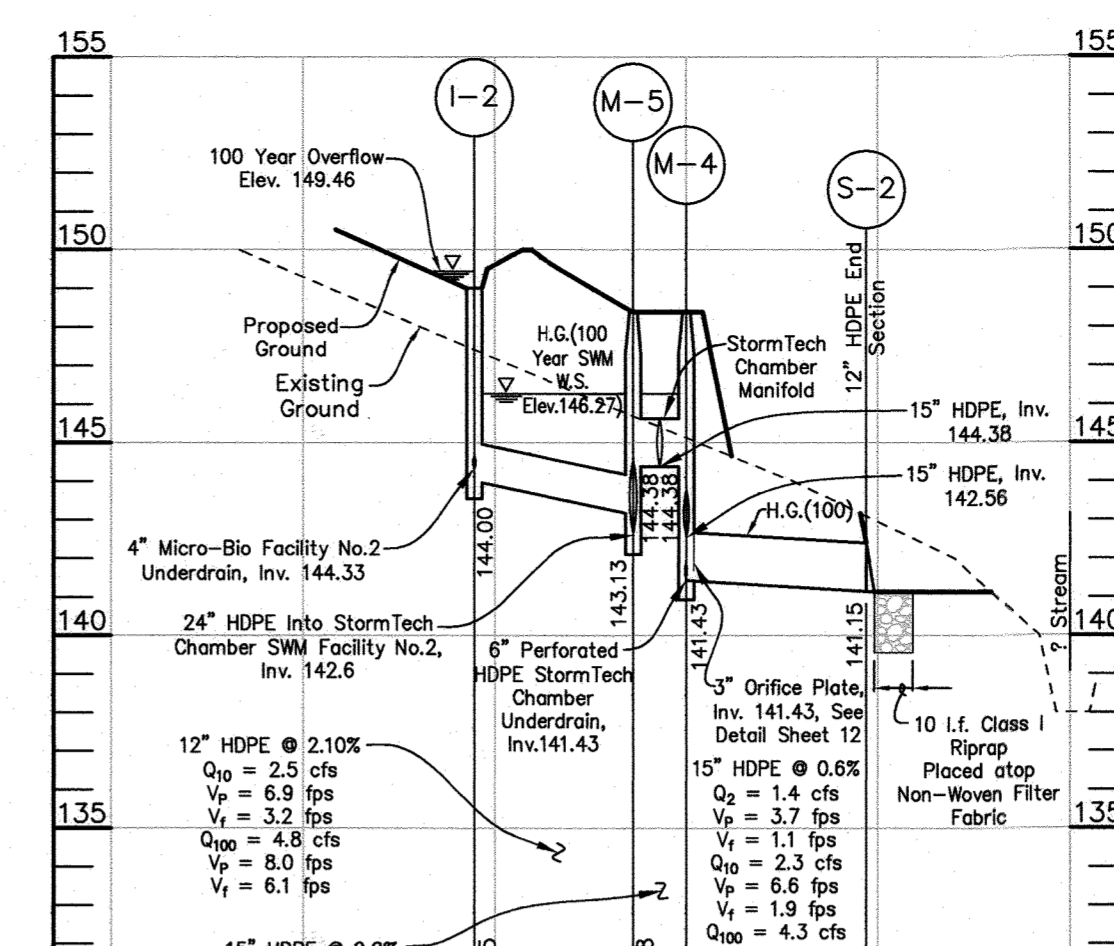
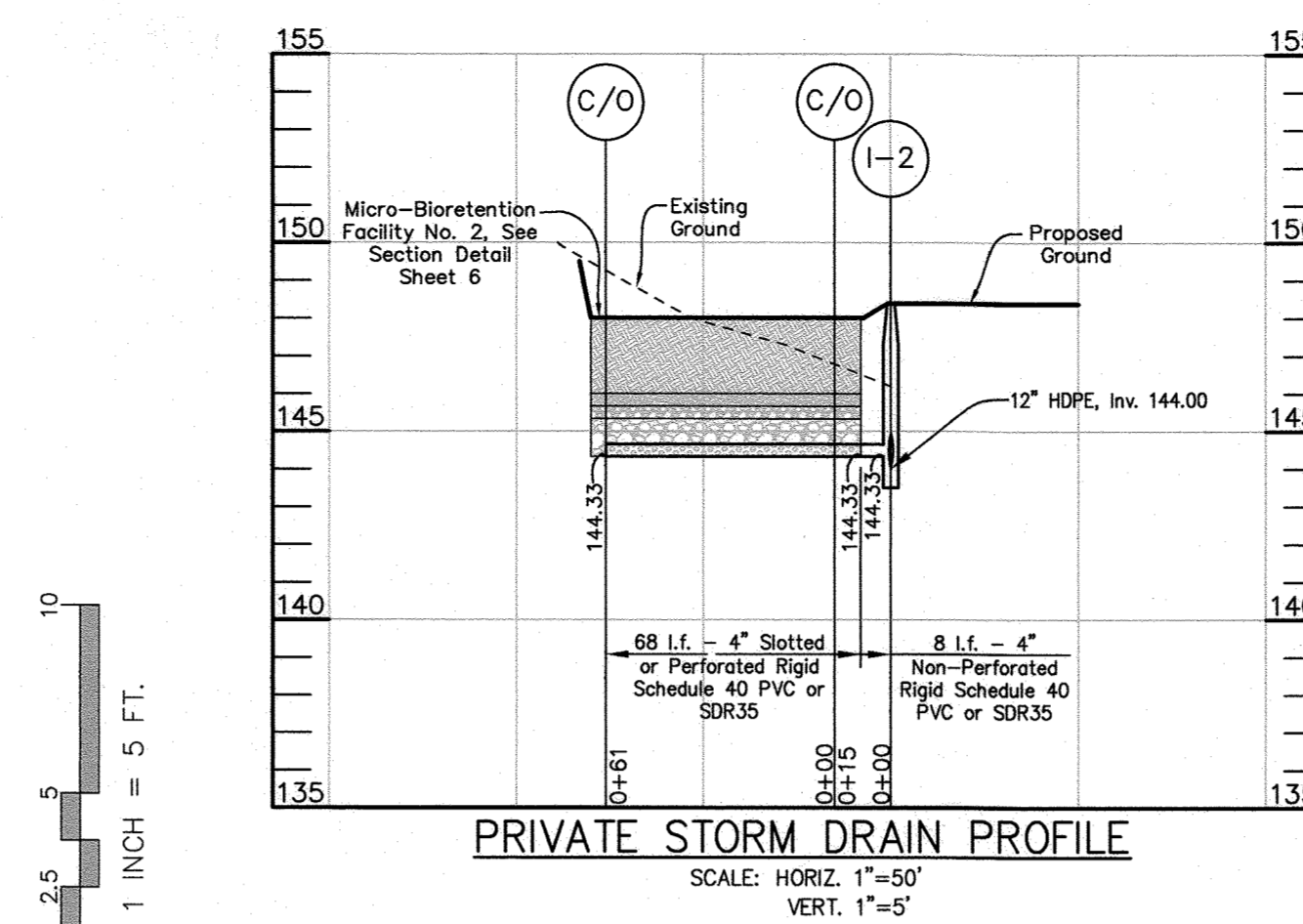
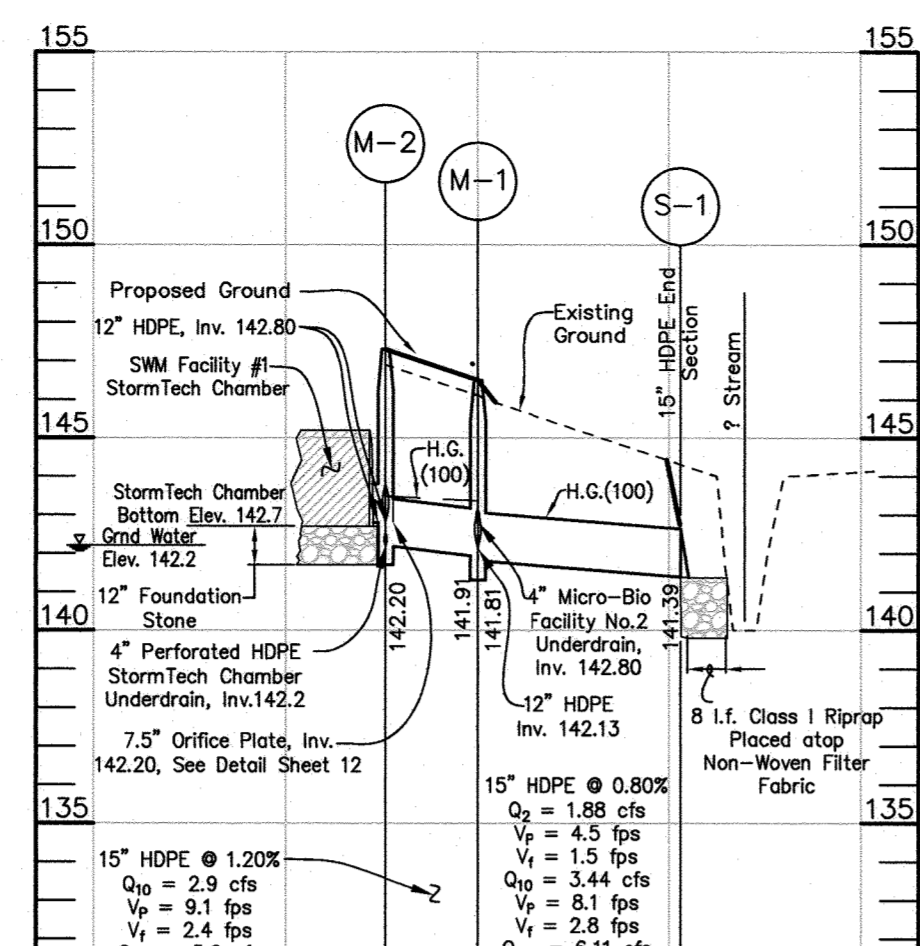
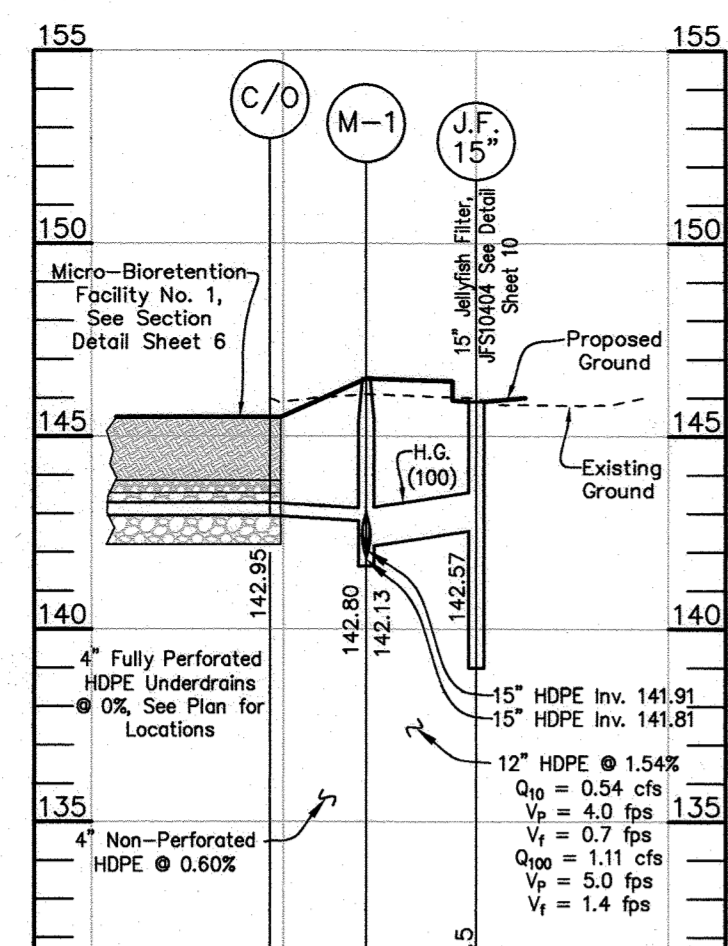
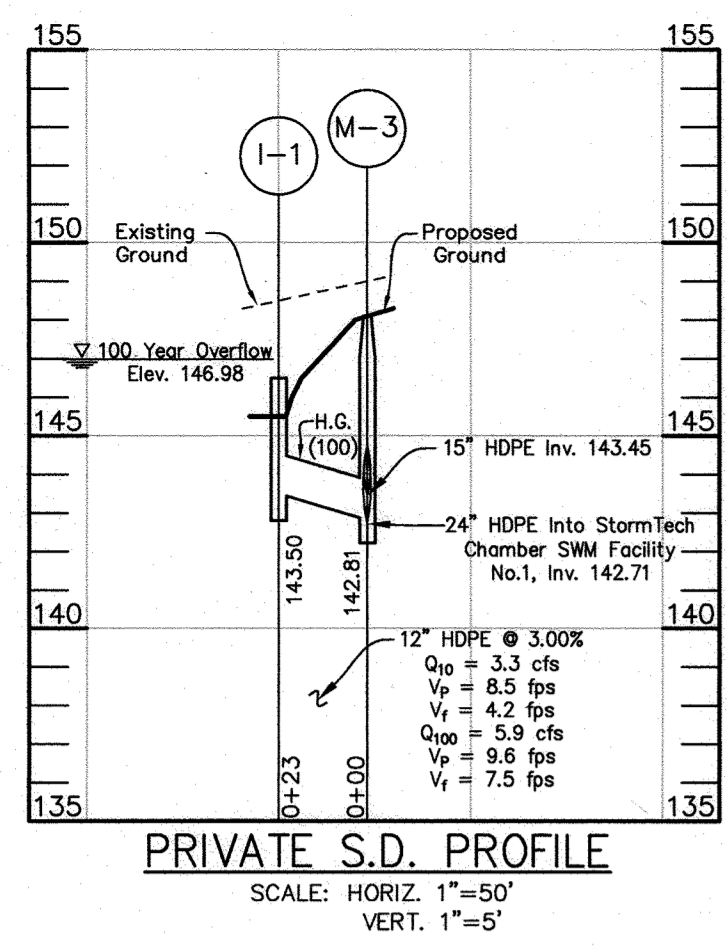
DATE: February 10, 2022

W.O. No.: 4059

SHEET No.: 6 OF 16

FSH Associates
Engineers Planners Surveyors
6350 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsher.com

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. #34689, Expiration Date: 7/08/2023.



PIPE SCHEDULE**

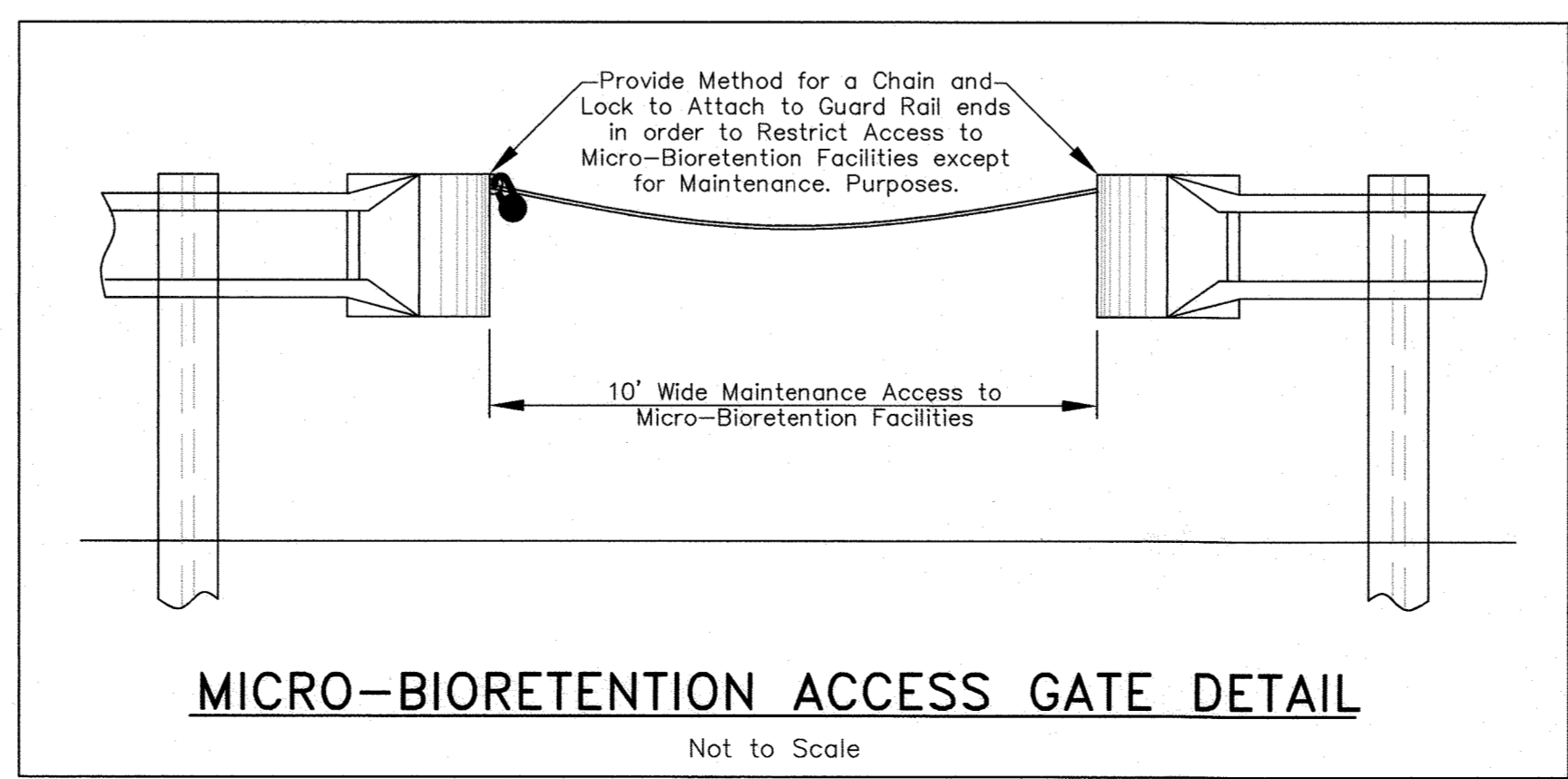
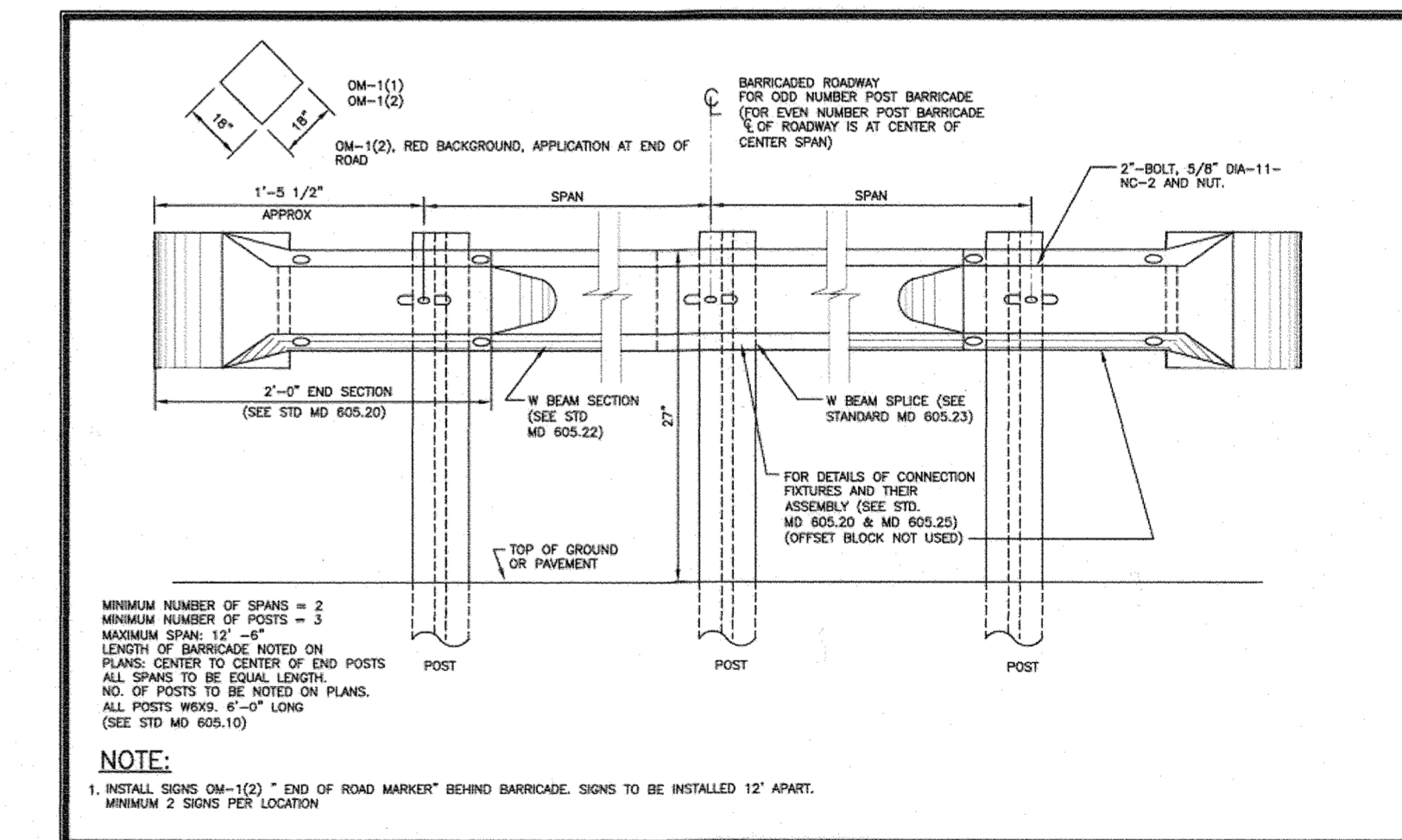
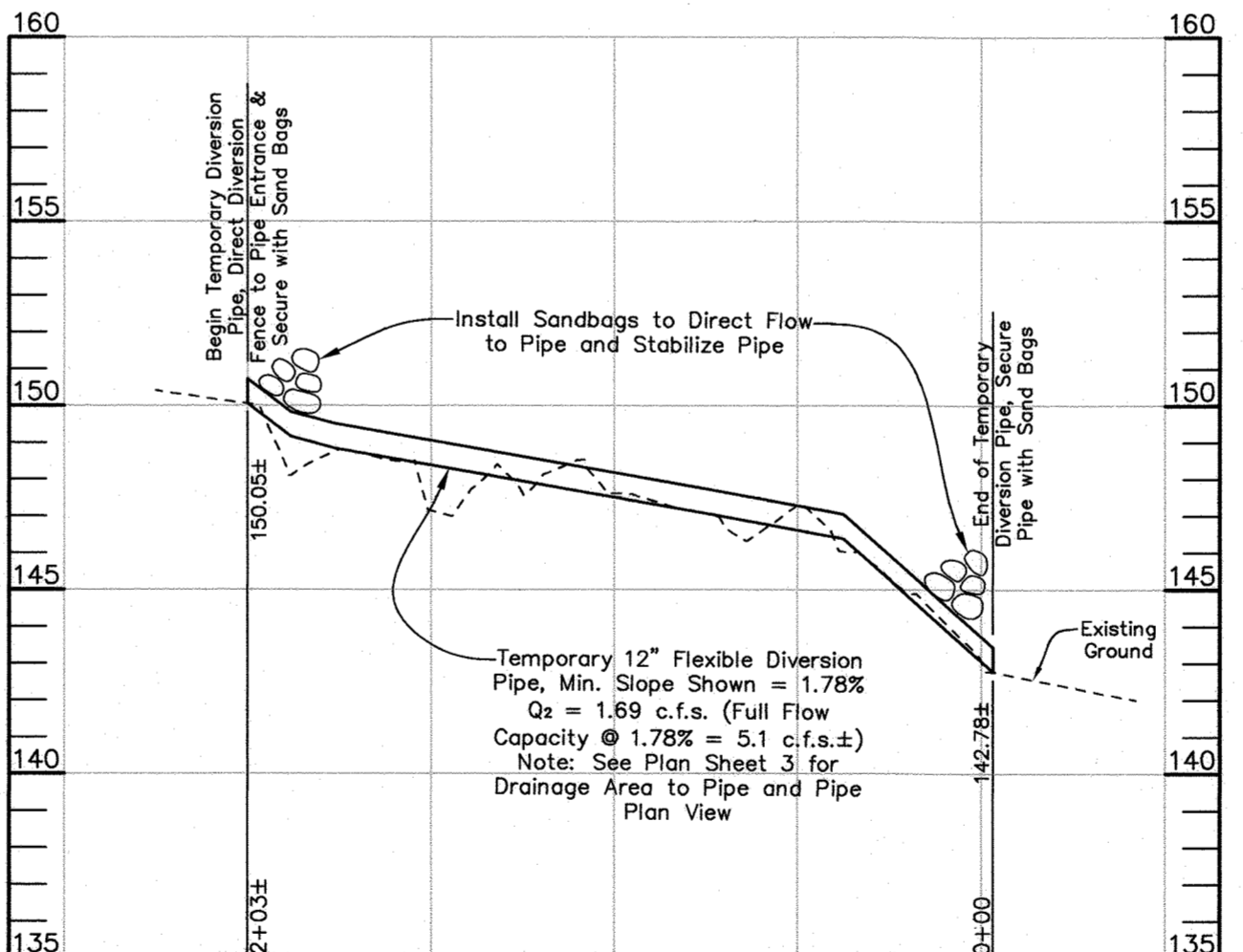
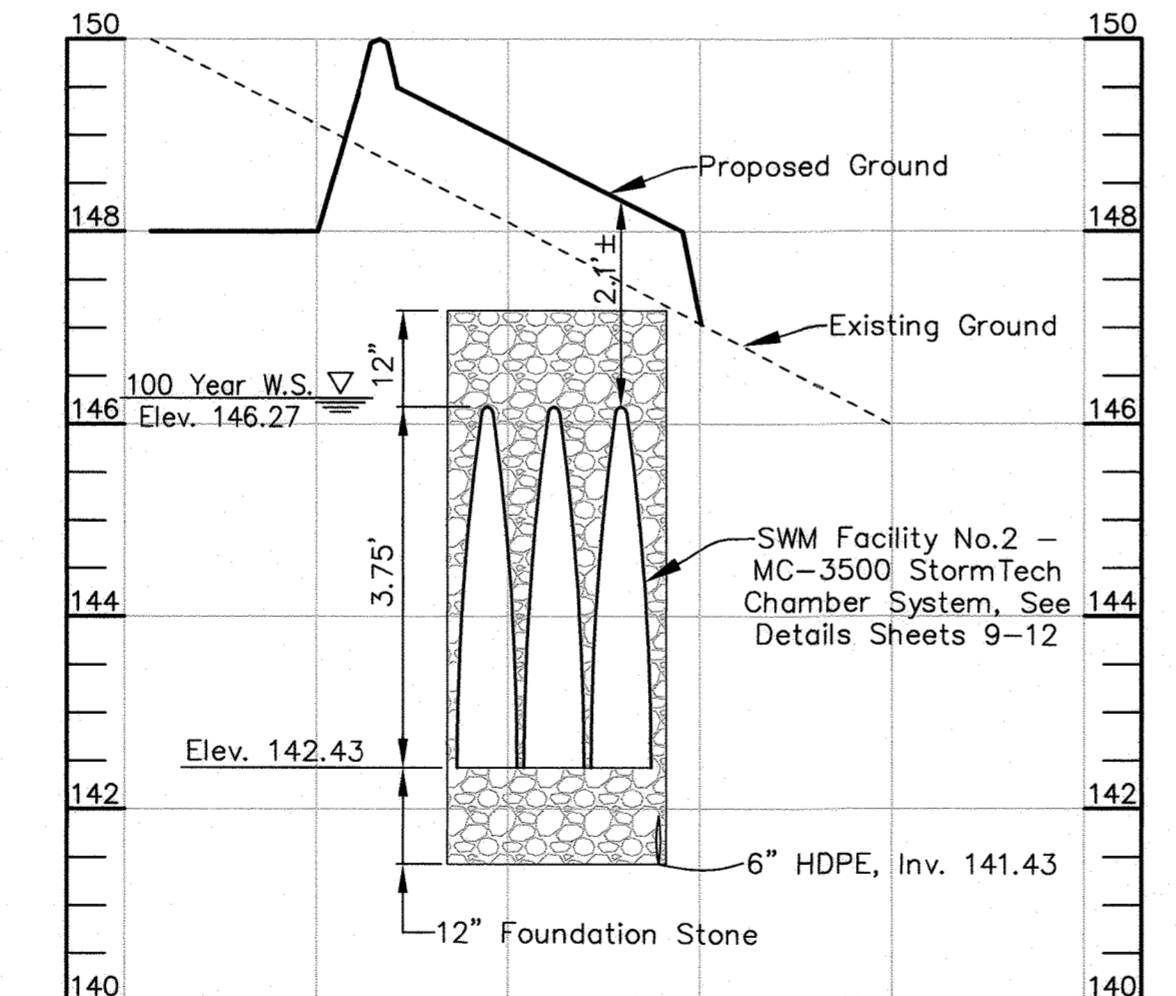
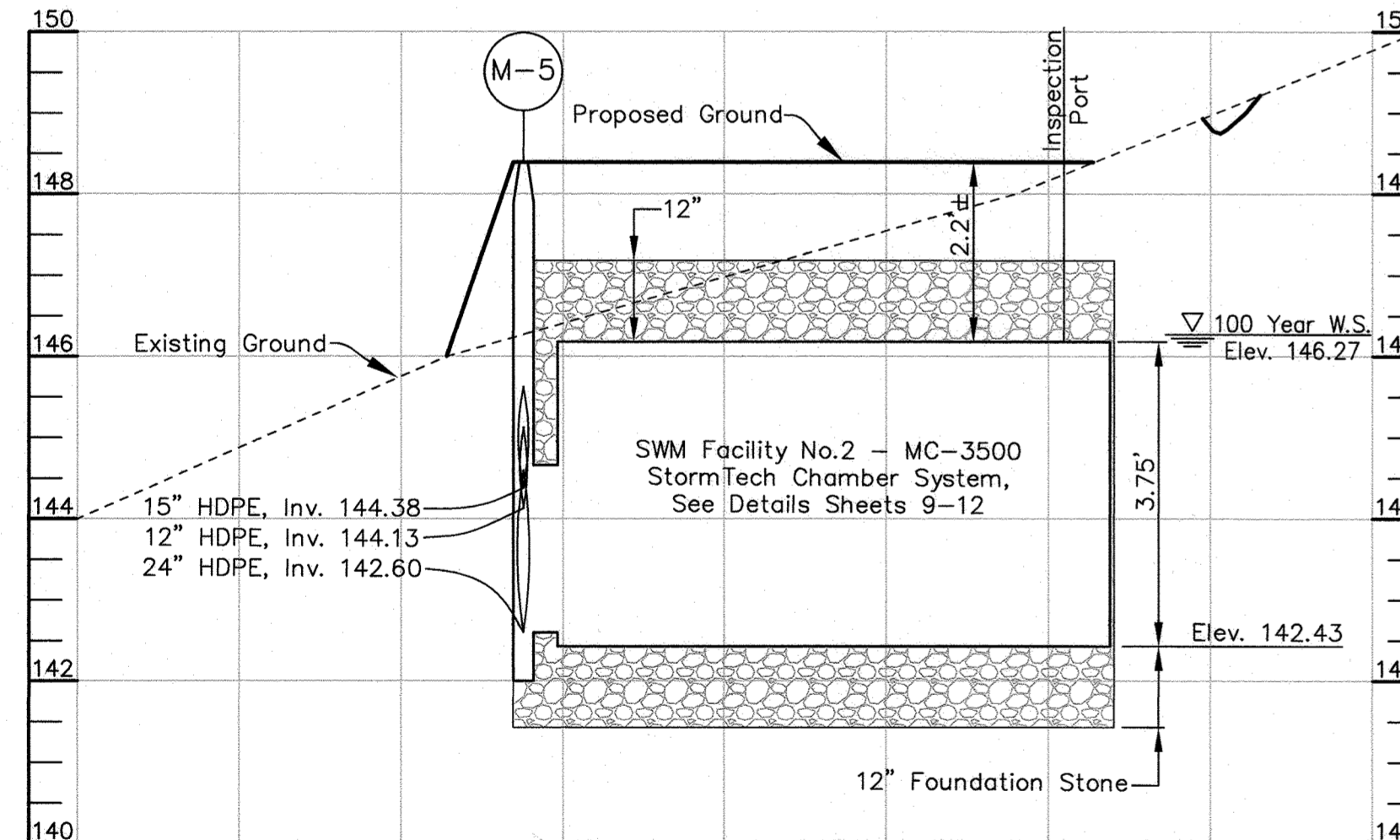
SIZE	TYPE	LENGTH
4"	Dual Wall Non-Perforated HDPE (StormTech Chamber Underdrain)	8'
4"	Dual Wall Perforated HDPE (StormTech Chamber Underdrain)	87'
6"	Dual Wall Perforated HDPE (StormTech Chamber Underdrain)	73'
4"	Non-Perforated Schedule 40 PVC or SDR35	80'
4"	Fully-Perforated Schedule 40 PVC or SDR35	336'
12"	HDPE	93'
15"	HDPE	124'

** Note: The pipe schedule does not include the manifold and stub pipes on ADS StormTech Chambers.

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	LOCATION*	ELEV.	TOP IN	INV. OUT	REMARKS
M-1	Shallow Precast M.H.	N 546,041.39 E 1,377,594.17	146.50	142.80/142.13/141.91	141.81	Ho. Co. Detail G-5.12
M-2	ADS Nyloplast M.H.	N 546,017.63 E 1,377,595.62	147.30	142.80/142.80/142.20	142.20	30" Nyloplast MH, See Details Shts 9-12
M-3	ADS Nyloplast M.H.	N 545,980.20 E 1,377,521.14	148.10	143.45/142.61	142.71	30" Nyloplast MH, See Details Shts 9-12
M-4	ADS Nyloplast M.H.	N 546,189.54 E 1,377,918.95	148.39	144.38/142.56/141.43	141.43	30" Nyloplast MH, See Details Shts 9-12
M-5	ADS Nyloplast M.H.	N 546,182.86 E 1,377,806.84	148.39	143.13/144.38	142.60	30" Nyloplast MH, See Details Shts 9-12
I-1	Precast Yard Inlet	N 545,977.68 E 1,377,506.19	146.50	-	143.50	Ho. Co. Detail G-4.12
I-2	Precast Yard Inlet	N 546,163.43 E 1,377,870.16	149.00	144.33	144.00	Ho. Co. Detail G-4.12
S-1	15" HDPE End Section	N 546,093.68 E 1,377,585.55	142.64	141.39	141.37	ADS Flored End Section
S-2	15" HDPE End Section	N 546,218.06 E 1,377,956.32	142.40	141.15	141.14	ADS Flored End Section
J.F.15	15" Jellyfish Filter JFS10404	N 546,048.95 E 1,377,621.64	145.90	-	142.57	Cortech Jellyfish Filter, See Details Sht 10

* All locations are to the center of structure except for the end sections which are the point where the end section connects to the pipe.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

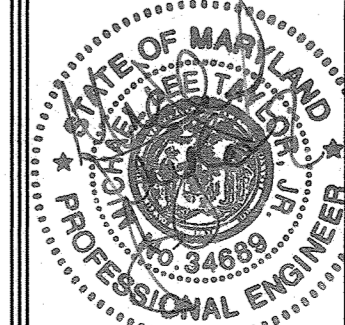
CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/17/22 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/22/22 DATE

DIRECTOR 3/22/22 DATE

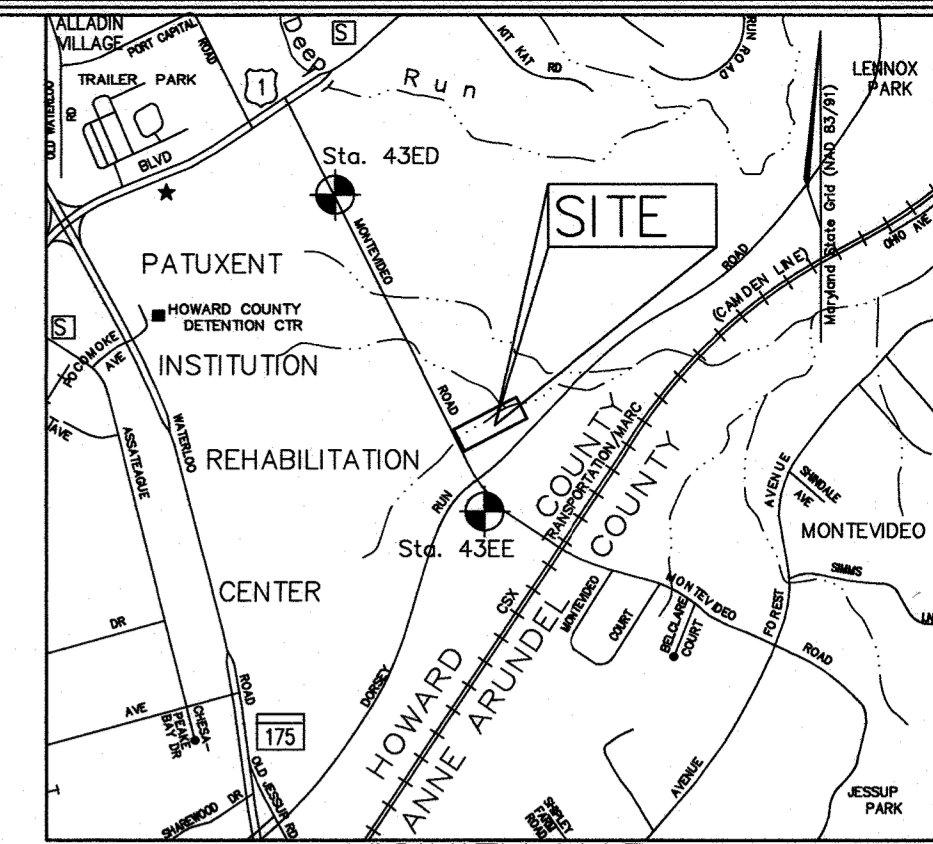
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OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992



SITE DEVELOPMENT PLAN
STORM DRAIN & TEMPORARY DIVERSION PIPE PROFILES, AND DETAILS
ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1"=30'
DATE: February 10, 2022
W.O. No.: 4059
SHEET No.: 7 OF 16



BENCHMARKS
 Denotes Howard County Geodetic Control (Stamped brass or aluminum disc set on top of a 3' deep column of concrete.)
 43ED-N 548,525.015 E 1,376,023.094 (NAD 83/91) Elev. 210.200 (NGVD 88)
 43EE-N 545,238.207 E 1,377,580.450 (NAD 83/91) Elev. 192.103 (NGVD 88)

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CrD	Croom and Evesboro soils, 10 to 15 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
SrC	Sassafras and Croom soils, 5 to 10 percent slopes	B
UFA	Urban land-Fallsington complex, 0 to 2 percent slopes	D
UTD	Urban land-Urthenths complex, 0 to 15 percent slopes	D

GENERAL NOTES

- The limit of disturbance (LOD) was used as the limiting downstream drainage area line for calculating the 10 and 100 year stormwater management obligations. This LOD does not include the restoration area disturbances.
- The land use condition for existing conditions is considered entirely wooded except for the existing house along Montevideo Road. This condition conservatively approximates the land use condition prior to the land disturbances.

SWM RUNOFF SUMMARY

AREA	EXISTING CONDITIONS			ELEVATION
	10-YEAR Q(cfs)	ELEVATION	100-YEAR Q(cfs)	
Ex. D.A. #1 (Ø Strm.)	2.9 c.f.s.	143.61	7.7 c.f.s.	145.09
AREA	PROPOSED CONDITIONS			ELEVATION
	10-YEAR Q(cfs)	ELEVATION	100-YEAR Q(cfs)	
Prop. D.A. #1	2.9 c.f.s.	143.61	5.0 c.f.s.	145.09
SWM Facility #1 (Outflow)	1.5 c.f.s.	143.61	2.4 c.f.s.	145.09
J.F.-15 (Jellyfish Filter)	0.60 c.f.s.	143.61	1.1 c.f.s.	145.09
Prop. D.A. #2	2.5 c.f.s.	143.73*	4.7 c.f.s.	146.27*
SWM Facility #2 (Outflow)	0.35 c.f.s.*	143.73*	0.51 c.f.s.*	146.27*
Prop. D.A. #3	0 c.f.s.	143.73*	1.4 c.f.s.	146.27*
Total Prop. Flow Ø Strm.	2.1 c.f.s.	143.73*	4.6 c.f.s.	146.27*

*All data within the SWM Runoff Summary table was taken derived from the TR-20 routings except for SWM Facility No. 2. The TR-20 routing of SWM Facility No. 2 resulted in a zero (0) discharge rate and therefore no elevation could be determined. As a result the discharges and elevations at SWM Facility No. 2 were determined from a HydroCAD Routing.

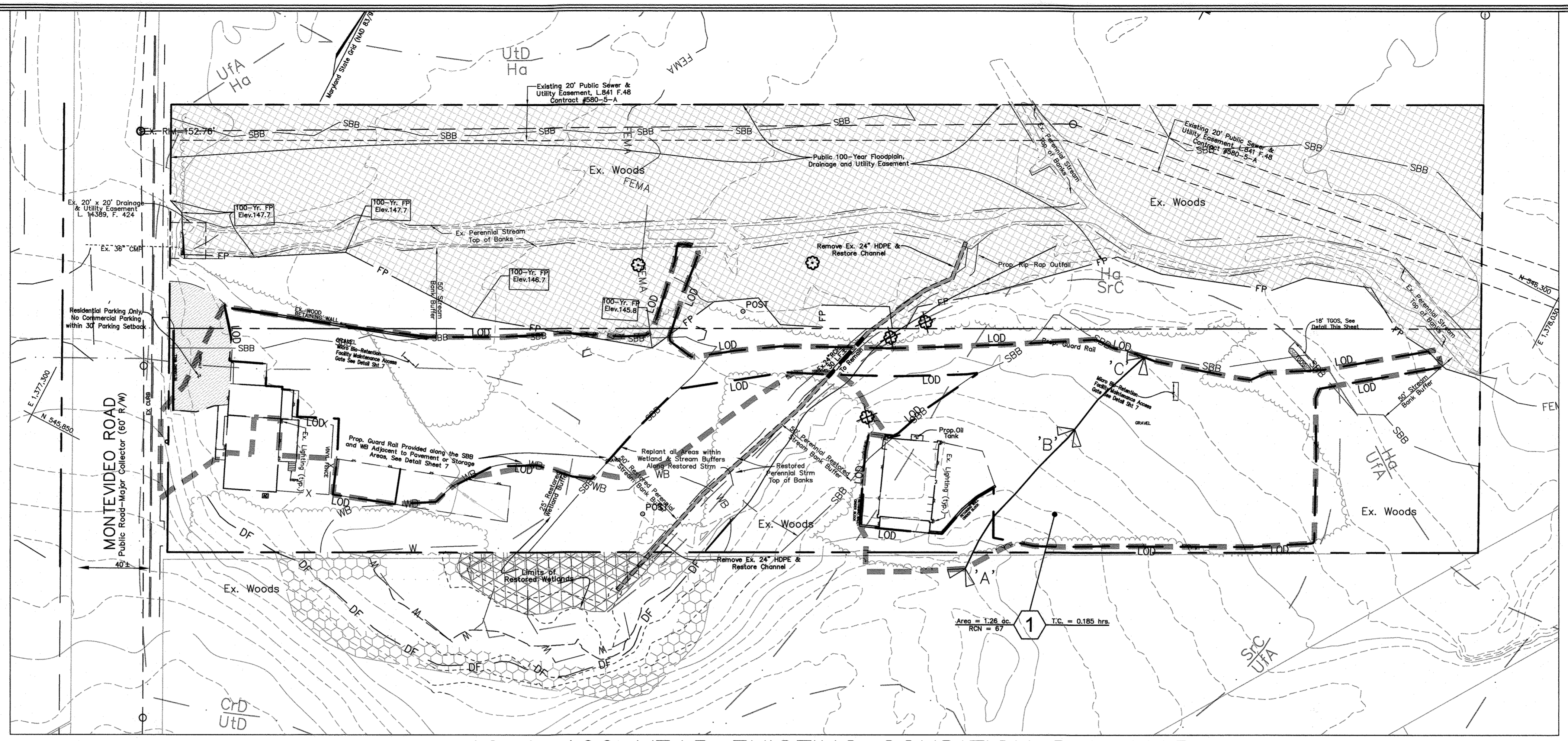
PROFESSIONAL CERTIFICATION
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

SITE DEVELOPMENT PLAN
SWM 10 & 100 YEAR DRAINAGE AREA MAPS
ELLA L. McADOO SUBDIVISION-LOTS 3 & 4
 7461 MONTEVIDEO ROAD
 PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
 TAX MAP 43 GRID 16 PARCEL 96
 1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

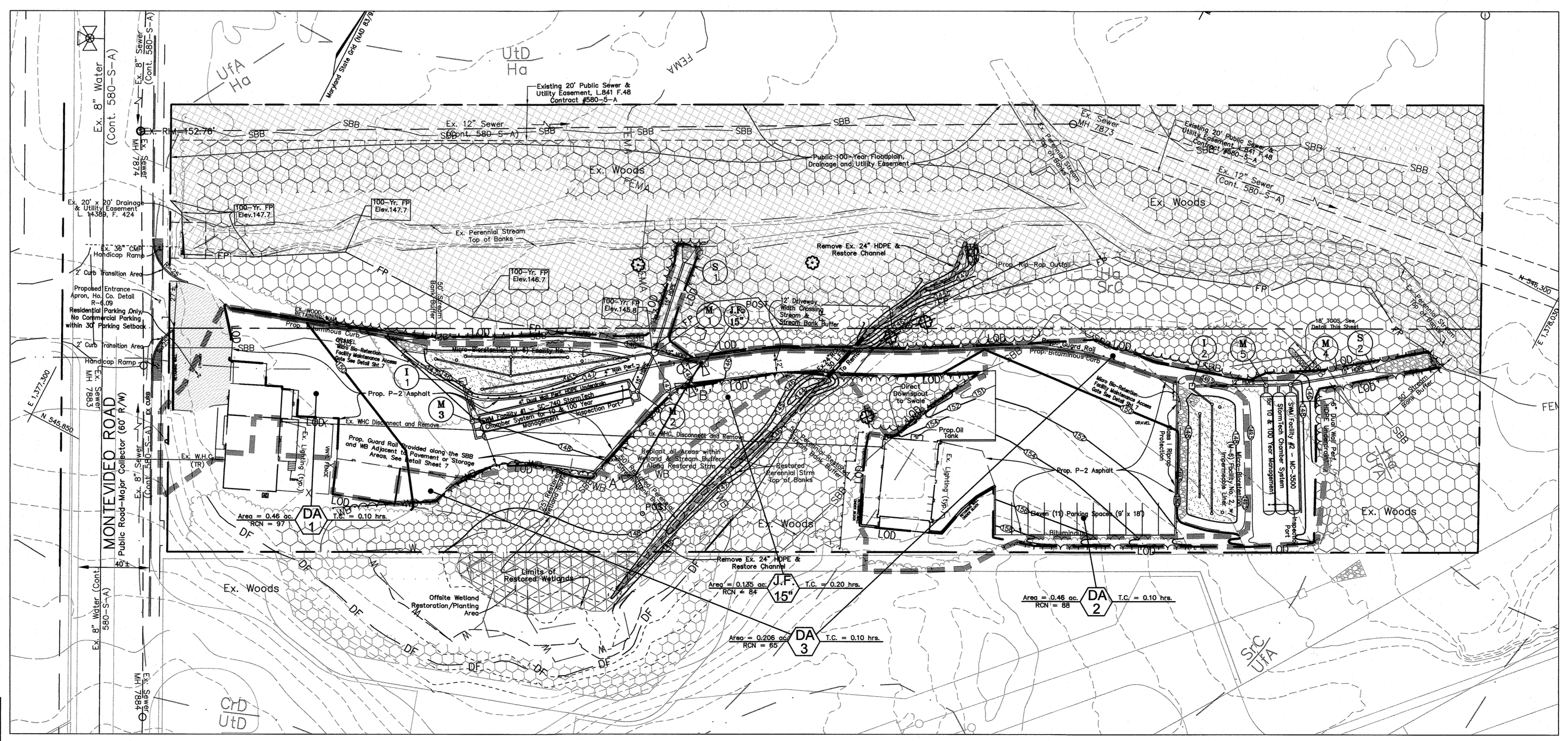
OWNER/DEVELOPER
 7461 Montevideo Road, LLC
 7461 Montevideo Road
 c/o Ivis Tapanes
 2842 Stuart Drive
 Falls Church, VA 22042
 Tel: 703-538-0992

FSH Associates
 Engineers Planners Surveyors
 6338 Howard Lane, Elkridge, MD 21075
 Tel: 410-567-5200 Fax: 410-798-1562
 E-mail: info@fsheri.com

DESIGN BY: MLT
 DRAWN BY: CRH2
 CHECKED BY: ZYF
 SCALE: 1" = 30'
 DATE: February 10, 2022
 W.O. No.: 4059
 SHEET No.: 8 OF 16



10 & 100 YEAR EXISTING CONDITION D.A. MAP
 SCALE: 1" = 40'



10 & 100 YEAR PROPOSED CONDITION D.A. MAP
 SCALE: 1" = 40'

LEGEND

- Existing Tree Line
- Proposed Tree Line
- Existing Contour 10' Interval
- Existing Contour 2' Interval
- Existing Contour 1' Interval
- Proposed Contour
- Property Boundary
- 50' Stream Bank Buffer
- Ex. Stream Banks
- Ex. Wetlands
- 25' Wetlands Buffer
- Public 100-Year Floodplain, Drainage & Utility Easement
- 100-Year FEMA Floodplain
- Existing Fence Line
- Existing Retaining Wall
- Specimen Tree
- Specimen Tree To Be Removed Per WP-20-088
- Proposed Reinforced Concrete
- Existing Asphalt
- Existing House / Structure
- Proposed Asphalt (SWM Obligation Areas)
- Limit of Disturbance (SWM Obligation)
- Soils Line
- Proposed Guard Rail Barrier (See Detail, Sheet 7)
- Drainage Area Line
- Time of Concentration
- Public Forest Conservation Easement Retention Area
- Public Forest Conservation Easement Restoration Area
- Wetland Restoration Area Offsets

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3/17/22

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 3/23/22

DIRECTOR DATE: 3/22/22

PROJECT INFORMATION	
ENGINEERED BY	GREG MOORE
PRODUCT MANAGER	443.221.5480 GREGORY.MOORE@ADS-PIPE.COM
ADS SALES REP	DON GREICO 410.699.9992 DON.GREICO@ADS-PIPE.COM
PROJECT NO.	8154472



7461 MONTEVIDEO ROAD ELKRIDGE, MD

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LB/SQ IN, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONES/ROCKS LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4" (20-60 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
- CONTACT STORMTECH AT 1-888-892-2894 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LB/SQ IN, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONES/ROCKS LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
- CONTACT STORMTECH AT 1-888-892-2894 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

8003 ADS, INC.

8003 ADS, INC.

ISOLATOR ROW INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e., industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc., all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

MAINTENANCE

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45° are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.

StormTech Isolator Row (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row.

ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

STEP 1

Inspect Isolator Row for sediment. *

A) Inspection ports (if present)

- Remove lid from floor box frame
- Remove cap from inspection riser
- Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
- If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Rows

- Remove cover from manhole at upstream end of Isolator Row
- Using a flashlight, inspect down Isolator Row through outlet pipe
 - Mirrors on poles or cameras may be used to avoid a confined space entry
 - Follow OSHA regulations for confined space entry if entering manhole
- If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2

Clean out Isolator Row using the JetVac process.

- A fixed flow cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- Apply multiple passes of JetVac until backflush water is clean
- Vacuum manhole sump as required

STEP 3

Replace all caps, lids and covers, record observations and actions.

STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.

SAMPLE MAINTENANCE LOG

Date	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)	Sediment Depth (1)-(2)	Observations/Actions	Inspector
3/15/11	6.3 ft	none		New installation. Fixed point is C1 frame at grade.	DSM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.2 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DSM

* In addition inspect the Outlet Control Structure Manholes M-2 and M-4 and Clean-out all Debris and Vacuum Out as needed.

PROPOSED LAYOUT - SWM #1

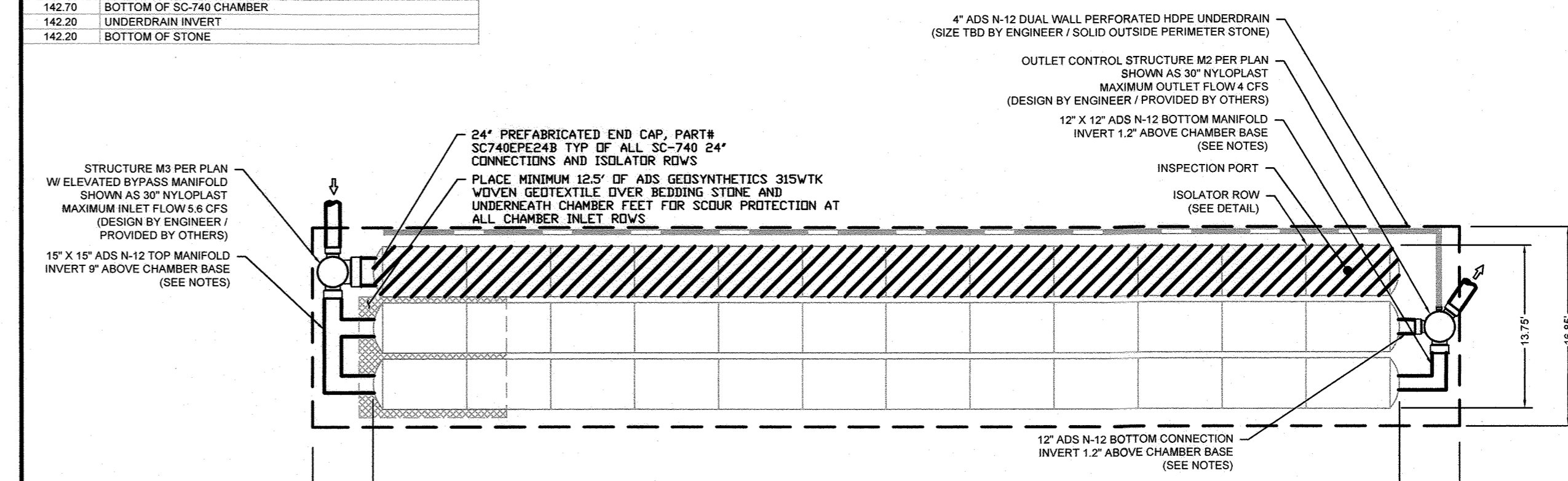
36	STORMTECH SC-740 CHAMBERS
8	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
8	STONE BELOW (in)
40	% STONE VOID
2287	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
1539	SYSTEM AREA (SF)
228	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - SWM #1

153.20	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
147.20	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
146.70	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
146.70	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
146.70	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
145.70	TOP OF STONE
145.20	TOP OF SC-740 CHAMBER
143.45	15" TOP MANIFOLD INVERT
142.80	12" BOTTOM MANIFOLD CONNECTION INVERT
142.71	24" ISOLATOR ROW CONNECTION INVERT
142.70	BOTTOM OF SC-740 CHAMBER
142.20	UNDERDRAIN INVERT
142.20	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSTALLED SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



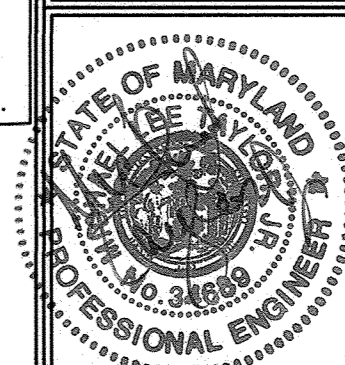
SWM FACILITY No. 1

Date	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)	Sediment Depth (1)-(2)	Observations/Actions	Inspector

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. #34689, Expiration Date: 7/08/2023.

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0292

ADS STORMTECH SWM CHAMBER DETAILS
ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND



FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1582
E-mail: info@fsh.net

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: February 10, 2022
W.O. No.: 3910
SHEET No.: 9 OF 16

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

3/1/22
5/10/22
5/22/22

PROPOSED LAYOUT - SWM #2

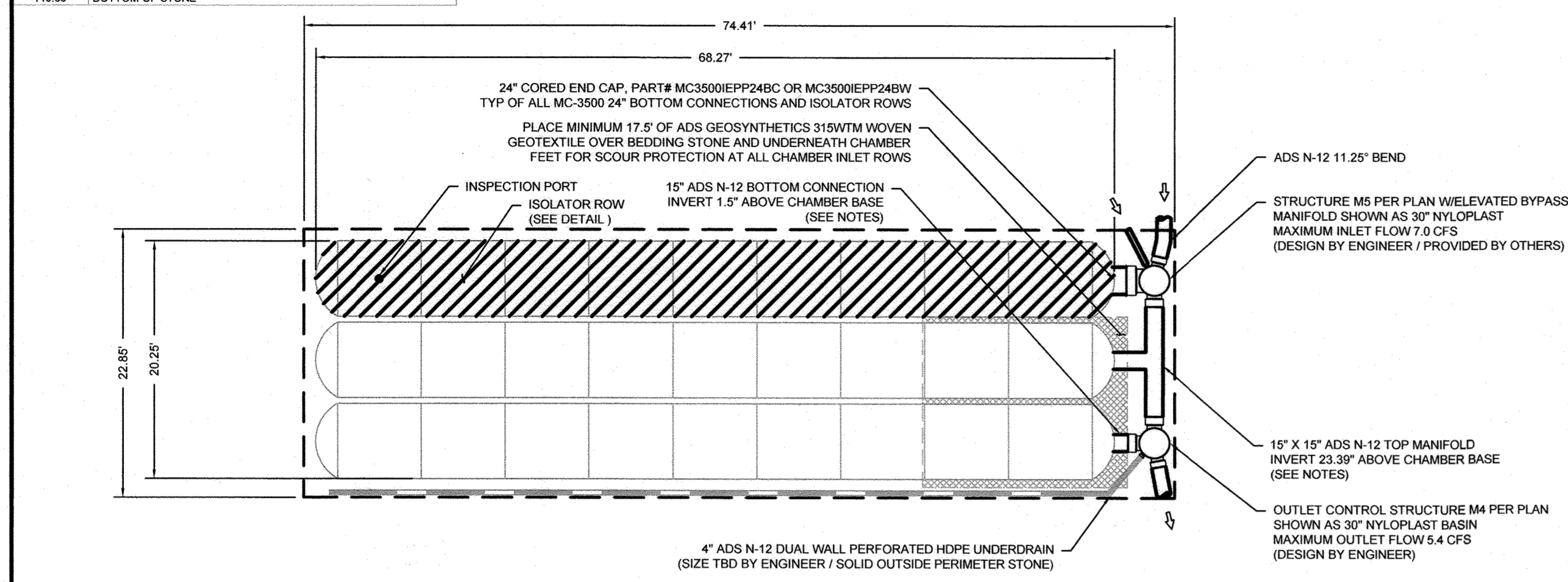
27	STORMTECH MC-3500 CHAMBERS
6	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (IN)
18	STONE BELOW (IN)
40	% STONE VOID
5,875	INSTALLED SYSTEM VOLUME (CF) ABOVE ELEVATION 141.43 (PERIMETER STONE INCLUDED)
1,700	SYSTEM AREA (SQ)
195	SYSTEM PERIMETER (IN)

PROPOSED ELEVATIONS - SWM #2

153.93	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
147.93	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
147.43	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
147.43	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
147.43	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
146.93	TOP OF STONE
145.93	TOP OF MC-3500 CHAMBER
144.13	15" TOP MANFOLD INVERT
142.35	24" ISOLATOR ROW CONNECTION INVERT
142.18	BOTTOM OF MC-3500 CHAMBER
141.43	UNDERDRAIN INVERT
140.88	BOTTOM OF STONE

NOTES

- MANHOLE SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANHOLE SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANHOLE COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE IN-SITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.



SWM FACILITY No. 2

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19 DRAWN: GDL CHECKED: CJD
PROJECT # 5154472

Stormtech
4640 TRUMAN BLVD
HILLIARD, OH 43026

ADS
4640 TRUMAN BLVD
HILLIARD, OH 43026

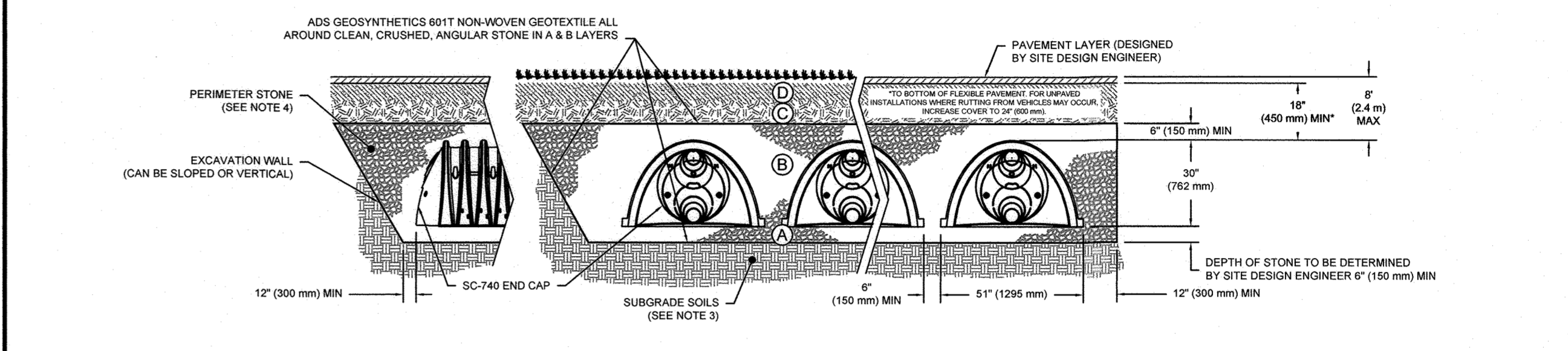
SHEET 4 OF 11

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('A' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBODIMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACTION OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SWM FACILITY No. 1

NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 580 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

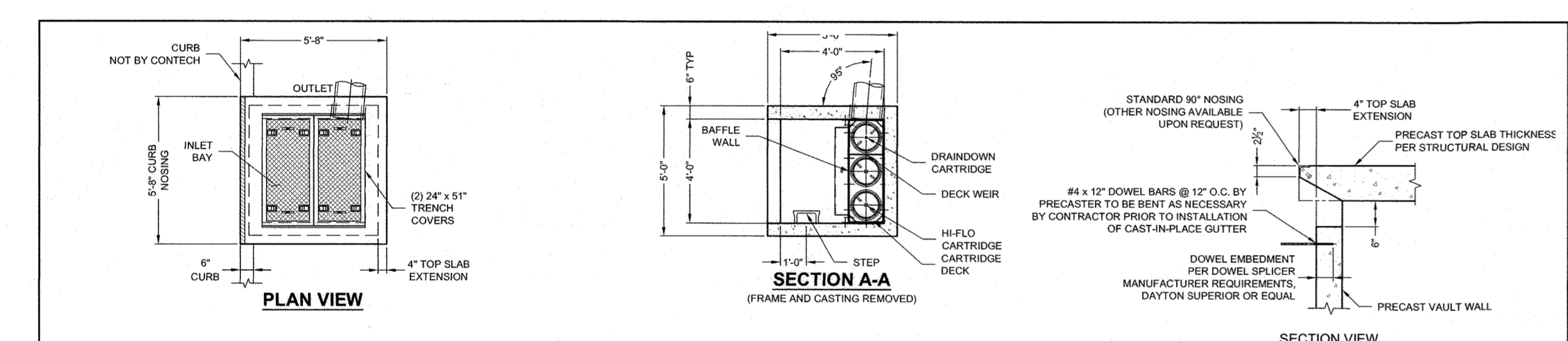
7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19 DRAWN: GDL CHECKED: CJD
PROJECT # 5154472

Stormtech
4640 TRUMAN BLVD
HILLIARD, OH 43026

ADS
4640 TRUMAN BLVD
HILLIARD, OH 43026

SHEET 5 OF 11



JELLYFISH FILTER J.F.-15"
OPERATION AND MAINTENANCE FOR JELLYFISH STRUCTURE
Operation and Maintenance requirements for the Jellyfish structure are found on the Contech Engineered Solutions LLC webpage, <https://www.conteches.com/technical-guides/search?filter=AJRLL50QEO>

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR SHALL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED MATERIALS) ON FLEXIBLE DECK.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED BROKEN RUNOFF.
- CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (966) 740-5316.

GENERAL NOTES:

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. WWW.CONTECHES.COM
- JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE DETAILS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 7' AND GROUNDWATER ELEVATION AT 140' OR BELOW. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
2	15" HI-FLO CARTRIDGE (35 mm ORIFICE)	CONTECH
1	15" DRAINDOWN CARTRIDGE (20 mm ORIFICE)	CONTECH
0	CARTRIDGE BLANK	CONTECH
1	JELLYFISH VAULT 3-CARTRIDGE DECK, STANDARD	CONTECH
1	JELLYFISH VAULT BAFFLE	CONTECH
2	24" x 51" TRENCH COVER EJ #47514031	CONTECH
2 PCS	2 1/2" x 48" TRENCH FRAME EJ #47300311	CONTECH
6	STEPS	CONTECH

CONTECH PROPOSAL DRAWING

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19 DRAWN: GDL CHECKED: CJD
PROJECT # 5154472

Stormtech
4640 TRUMAN BLVD
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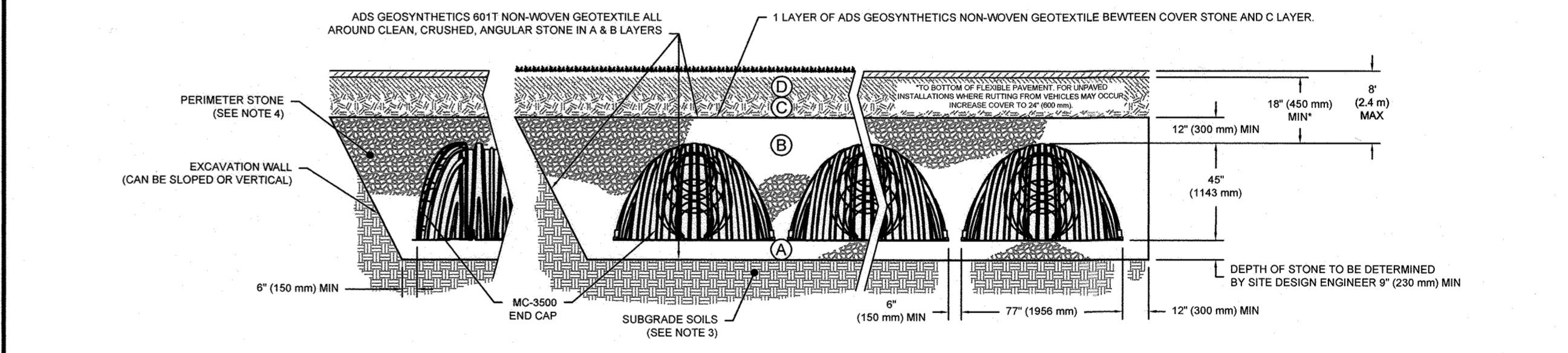
SHEET 1 OF 1

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBODIMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 4	PLATE COMPACTION OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

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- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SWM FACILITY No. 2

NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 450S DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 580 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19 DRAWN: GDL CHECKED: CJD
PROJECT # 5154472

Stormtech
4640 TRUMAN BLVD
HILLIARD, OH 43026

ADS
4640 TRUMAN BLVD
HILLIARD, OH 43026

SHEET 6 OF 11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3/17/22
CHIEF, DEVELOPMENT ENGINEERING DIVISION

3/22/23
CHIEF, DIVISION OF LAND DEVELOPMENT

3/22/23
DIRECTOR

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

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. #34689, Expiration Date: 7/08/2023.

ADS STORMTECH SWM CHAMBER AND CONTECH WQ JELLYFISH FILTER DETAILS
ELLA L. McADOO SUBDIVISION-LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: February 10, 2022
W.O. No.: 3910
SHEET No.: 10 OF 16

SC-740 ISOLATOR ROW DETAIL

COVER ENTIRE ISOLATOR ROW WITH ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE 8' (2.4 m) MIN WIDE

STORMTECH HIGHLY RECOMMENDS FLEXSTORM PURE INSERTS IN ANY UPSTREAM STRUCTURES WITH OPEN GRATES

ELEVATED BYPASS MANIFOLD

CATCH BASIN OR MANHOLE

24" (600 mm) HDPE ACCESS PIPE REQUIRED USE FACTORY PRE-FABRICATED END CAP PART # SC740EPE24B

OPTIONAL INSPECTION PORT

SC-740 CHAMBER

SC-740 END CAP

TWO LAYERS OF ADS GEOSYNTHETICS 315WTV WOVEN GEOTEXTILE BETWEEN FOUNDATION STONE AND CHAMBERS 5' (1.5 m) MIN WIDE CONTINUOUS FABRIC WITHOUT SEAMS

SC-740 ISOLATOR ROW DETAIL

NTS

SWM FACILITY No. 1

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT

A. INSPECTION PORTS (IF PRESENT)

A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN

A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED

A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG

A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)

A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

B. ALL ISOLATOR ROWS

B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW

B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE

B.3. MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY

B.4. FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE

B.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS

A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED

B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN

C. VACUUM STRUCTURE JUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

* In addition inspect the Outlet Control Structure Manholes M-2 and M-4 and Clean-out all Debris and Vacuum Out as needed.

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19
DRAWN: [Signature]
CHECKED: [Signature]
PROJECT # 218472

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

Stormtech

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

ADS

SHEET 7 OF 11

MC-3500 ISOLATOR ROW DETAIL

COVER PIPE CONNECTION TO END CAP WITH ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE

STORMTECH HIGHLY RECOMMENDS FLEXSTORM PURE INSERTS IN ANY UPSTREAM STRUCTURES WITH OPEN GRATES

ELEVATED BYPASS MANIFOLD

CATCH BASIN OR MANHOLE

24" (600 mm) HDPE ACCESS PIPE REQUIRED USE FACTORY PRE-CORED END CAP PART # MC3500EPP24BC OR MC3500EPP24BW

OPTIONAL INSPECTION PORT

MC-3500 CHAMBER

MC-3500 END CAP

TWO LAYERS OF ADS GEOSYNTHETICS 315WTV WOVEN GEOTEXTILE BETWEEN FOUNDATION STONE AND CHAMBERS 8.25' (2.51 m) MIN WIDE CONTINUOUS FABRIC WITHOUT SEAMS

MC-3500 ISOLATOR ROW DETAIL

NTS

SWM FACILITY No. 2

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT

A. INSPECTION PORTS (IF PRESENT)

A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN

A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED

A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG

A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)

A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

B. ALL ISOLATOR ROWS

B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW

B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE

B.3. MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY

B.4. FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE

B.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS

A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED

B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN

C. VACUUM STRUCTURE JUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

* In addition inspect the Outlet Control Structure Manholes M-2 and M-4 and Clean-out all Debris and Vacuum Out as needed.

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19
DRAWN: [Signature]
CHECKED: [Signature]
PROJECT # 218472

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

Stormtech

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

ADS

SHEET 8 OF 11

UNDERDRAIN DETAIL

NTS

STORMTECH CHAMBERS

STORMTECH END CAP

OUTLET MANIFOLD

FOUNDATION STONE BENEATH CHAMBERS

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE

SECTION A-A

SECTION B-B

DUAL WALL PERFORATED HDPE UNDERDRAIN

FOUNDATION STONE BENEATH CHAMBERS

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE

NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER
4" (100 mm) TYP FOR SC-310 & SC-180LP SYSTEMS
6" (150 mm) TYP FOR SC-740, DC-780, MC-3500 & MC-4500 SYSTEMS

SC-740 TECHNICAL SPECIFICATION

NTS

90.7" (2304 mm) ACTUAL LENGTH

85.4" (2169 mm) INSTALLED LENGTH

BUILD ROW IN THIS DIRECTION

START END

OVERLAP NEXT CHAMBER HERE (COVER SMALL CORRUGATION)

39.3" (744 mm)

45.9" (1166 mm)

51.0" (1295 mm)

12.2" (310 mm)

30.0" (762 mm)

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4" (130 m³)	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET (1.30 m³)	45.9 CUBIC FEET (1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET (2.12 m³)	74.9 CUBIC FEET (2.12 m³)
WEIGHT	75.0 lbs.	75.0 lbs.

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06PC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EPE08B / SC740EPE08PC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.5" (13 mm)
SC740EPE08T / SC740EPE08PC	8" (200 mm)	12.2" (310 mm)	14.5" (368 mm)	0.6" (15 mm)
SC740EPE10T / SC740EPE10PC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EPE10B / SC740EPE10PC	10" (250 mm)	13.4" (340 mm)	12.5" (318 mm)	0.7" (18 mm)
SC740EPE12T / SC740EPE12PC	12" (300 mm)	14.7" (373 mm)	—	1.2" (30 mm)
SC740EPE12B / SC740EPE12PC	12" (300 mm)	14.7" (373 mm)	—	—
SC740EPE15T / SC740EPE15PC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	—
SC740EPE15B / SC740EPE15PC	15" (375 mm)	18.4" (467 mm)	—	1.3" (33 mm)
SC740EPE18T / SC740EPE18PC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EPE18B / SC740EPE18PC	18" (450 mm)	19.7" (500 mm)	—	1.6" (41 mm)
SC740EPE24B	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

ALL STUBS EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2894.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.

SWM FACILITY No. 2

MC-3500 TECHNICAL SPECIFICATION

NTS

VALLEY STIFFENING RIB

CREST

WEB LOWER JOINT CORRUGATION

FOOT

UPPER JOINT CORRUGATION

BUILD ROW IN THIS DIRECTION

86.0" (2184 mm) INSTALLED

90.0" (2286 mm) ACTUAL LENGTH

43.0" (1143 mm)

77.0" (1956 mm)

43.0" (1143 mm)

75.0" (1905 mm)

22.2" (564 mm) INSTALLED

25.7" (653 mm)

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 43.0" X 86.0" (3.11 m³)	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET (3.11 m³)	109.9 CUBIC FEET (3.11 m³)
MINIMUM INSTALLED STORAGE*	179.0 CUBIC FEET (5.06 m³)	179.0 CUBIC FEET (5.06 m³)
WEIGHT	134 lbs.	134 lbs.

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2" (1.905 m X 1.143 m X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET (0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET (1.28 m³)
WEIGHT	49 lbs. (22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 6" (152 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PRE-FABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500EPP06T	6" (150 mm)	33.2" (844 mm)	—
MC3500EPP06B	6" (150 mm)	31.16" (791 mm)	0.86" (21 mm)
MC3500EPP08T	8" (200 mm)	—	0.81" (21 mm)
MC3500EPP08B	8" (200 mm)	29.04" (738 mm)	0.63" (16 mm)
MC3500EPP10T	10" (250 mm)	—	—
MC3500EPP10B	10" (250 mm)	26.36" (670 mm)	1.35" (34 mm)
MC3500EPP12T	12" (300 mm)	—	—
MC3500EPP12B	12" (300 mm)	23.39" (594 mm)	—
MC3500EPP15T	15" (375 mm)	—	1.50" (38 mm)
MC3500EPP15B	15" (375 mm)	20.03" (509 mm)	—
MC3500EPP18T	18" (450 mm)	—	1.77" (45 mm)
MC3500EPP18B	18" (450 mm)	—	—
MC3500EPP24T	24" (600 mm)	14.48" (368 mm)	—
MC3500EPP24B	24" (600 mm)	—	2.06" (52 mm)
MC3500EPP30B	30" (750 mm)	—	2.75" (70 mm)

CUSTOM PRE-CORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (305-600 mm) SIZE ON SIDE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

NOTE: ALL DIMENSIONS ARE NOMINAL.

7461 MONTEVIDEO ROAD
ELK RIDGE, MD

DATE: 11/04/19
DRAWN: [Signature]
CHECKED: [Signature]
PROJECT # 218472

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

Stormtech

4640 TRUHEMAN BLVD
HILLIARD, OH 43026

ADS

SHEET 9 OF 11

ADS STORMTECH SWM CHAMBER DETAILS

ELLA L. McADOO SUBDIVISION—LOTS 3 & 4

7461 MONTEVIDEO ROAD

PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4

TAX MAP 43 GRID 16 PARCEL 96

1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION [Signature] 3/17/22 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT [Signature] 3/23/22 DATE

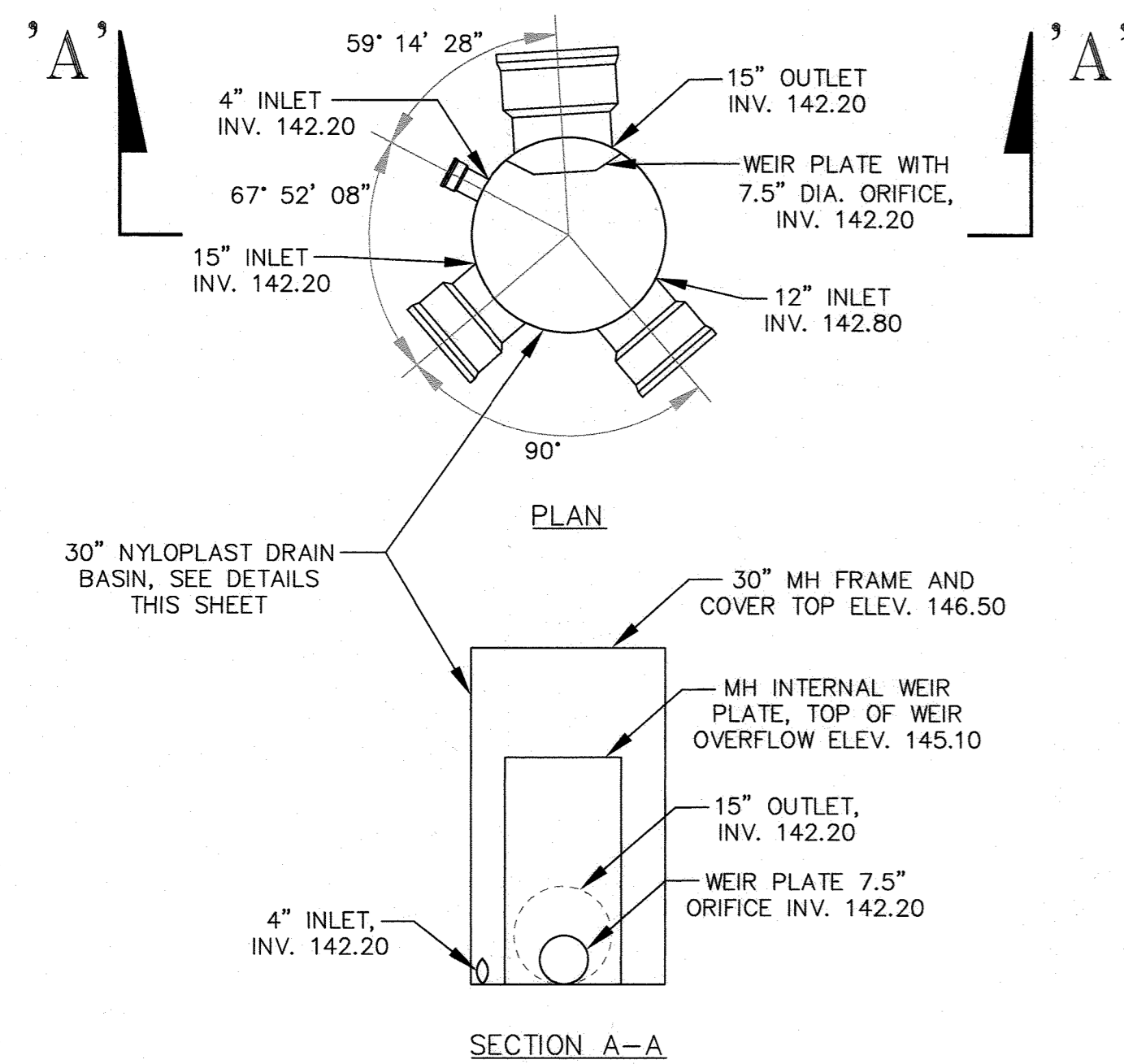
DIRECTOR [Signature] 3/22/22 DATE

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapares
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

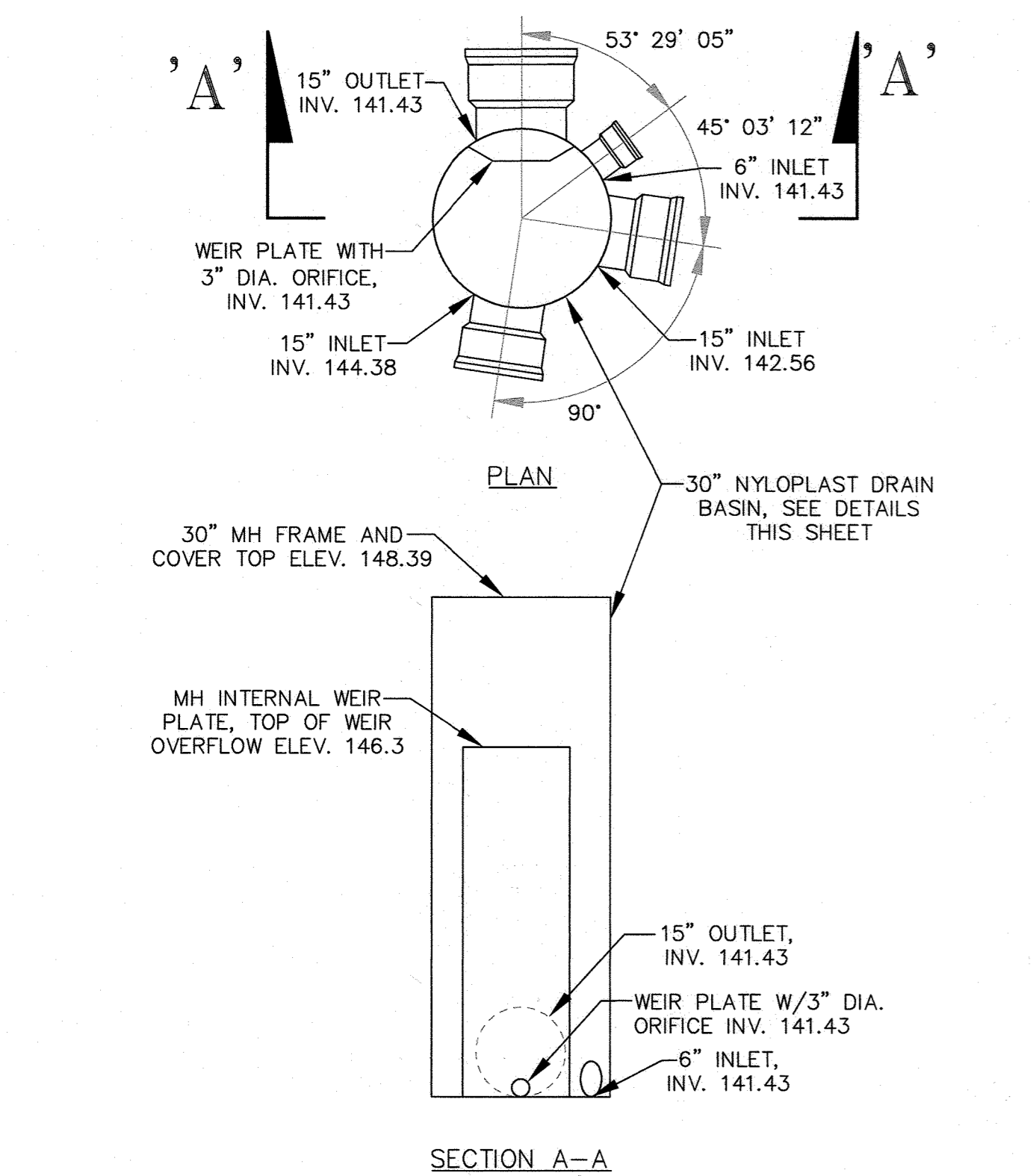
PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: February 10, 2022
W.O. No.: 3910
SHEET No.: 11 OF 16

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsh.com



M 2 CONTROL STRUCTURE MANHOLE NO. 2 DETAIL
SCALE: 1" = 2'



M 4 CONTROL STRUCTURE NYLOPLAST MANHOLE NO. 4 DETAIL
SCALE: 1" = 2'

CONTROL STRUCTURES INSPECTION AND MAINTENANCE

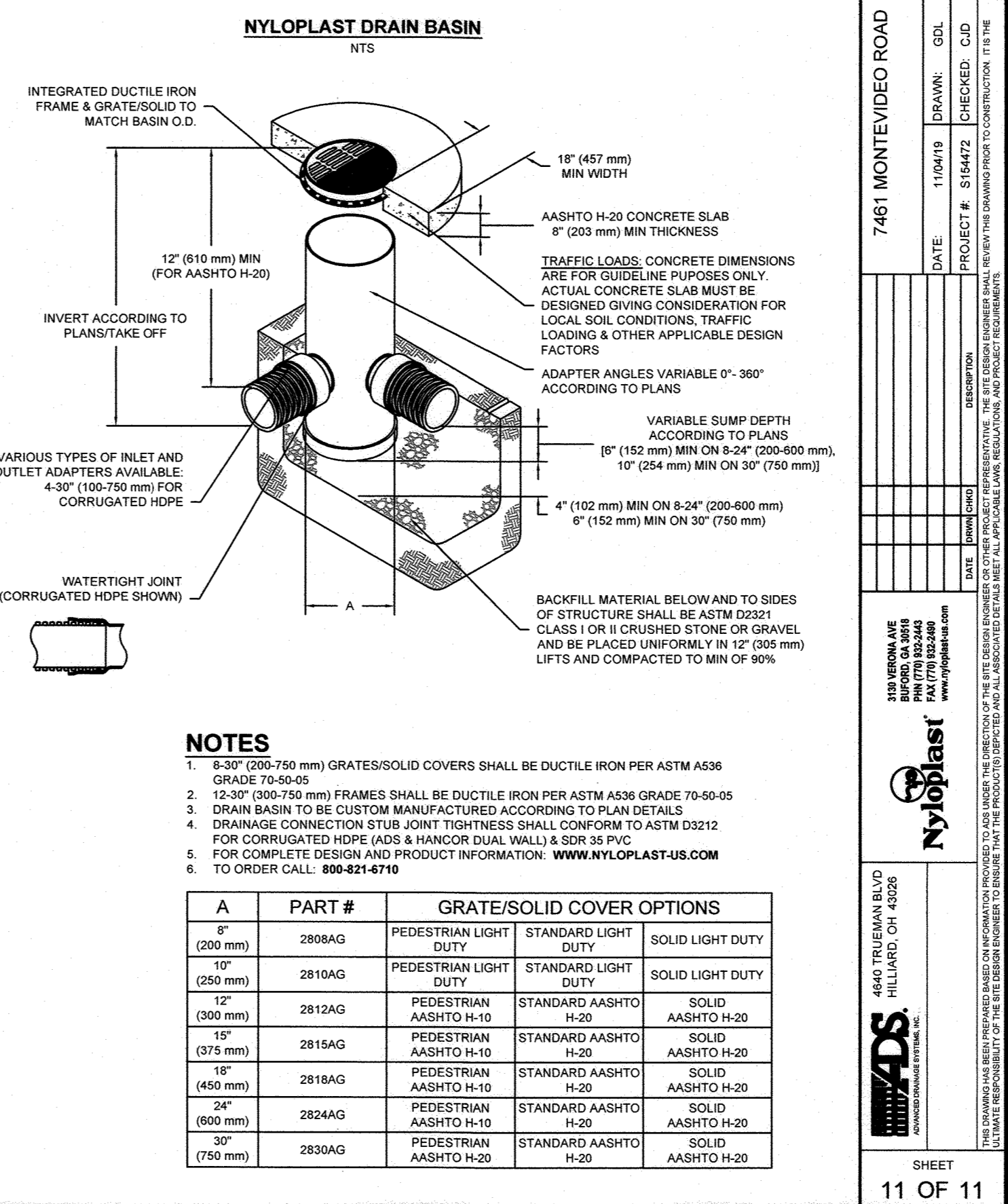
- Inspect every 6 months during the first year of operation. Adjust the inspection interval, one year max., based on previous observations of sediment accumulation and high water elevations.
- Clean-out all Debris and Vacuum Out as needed.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3/17/22
DATE

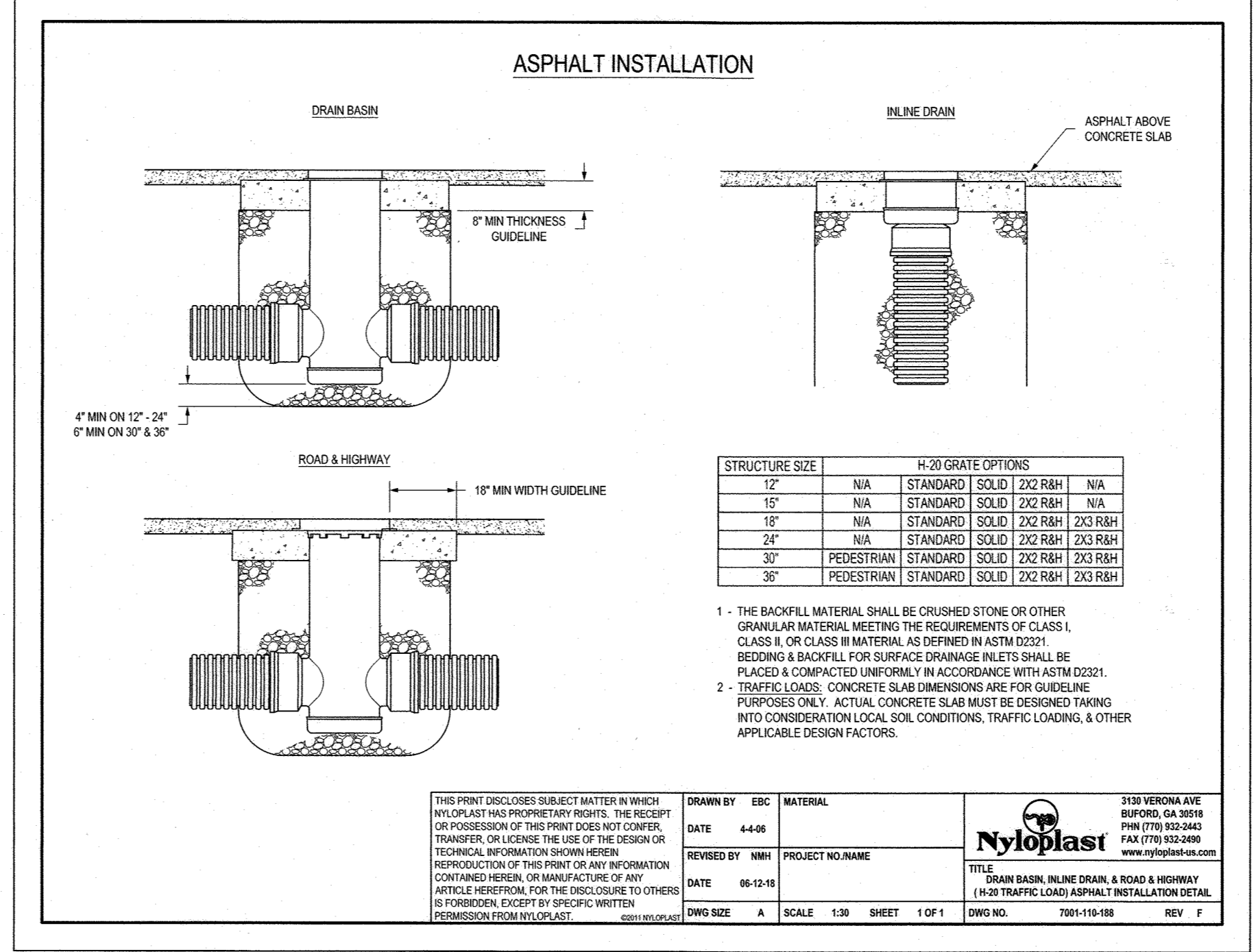
3/22/22
DATE

3/22/22
DATE



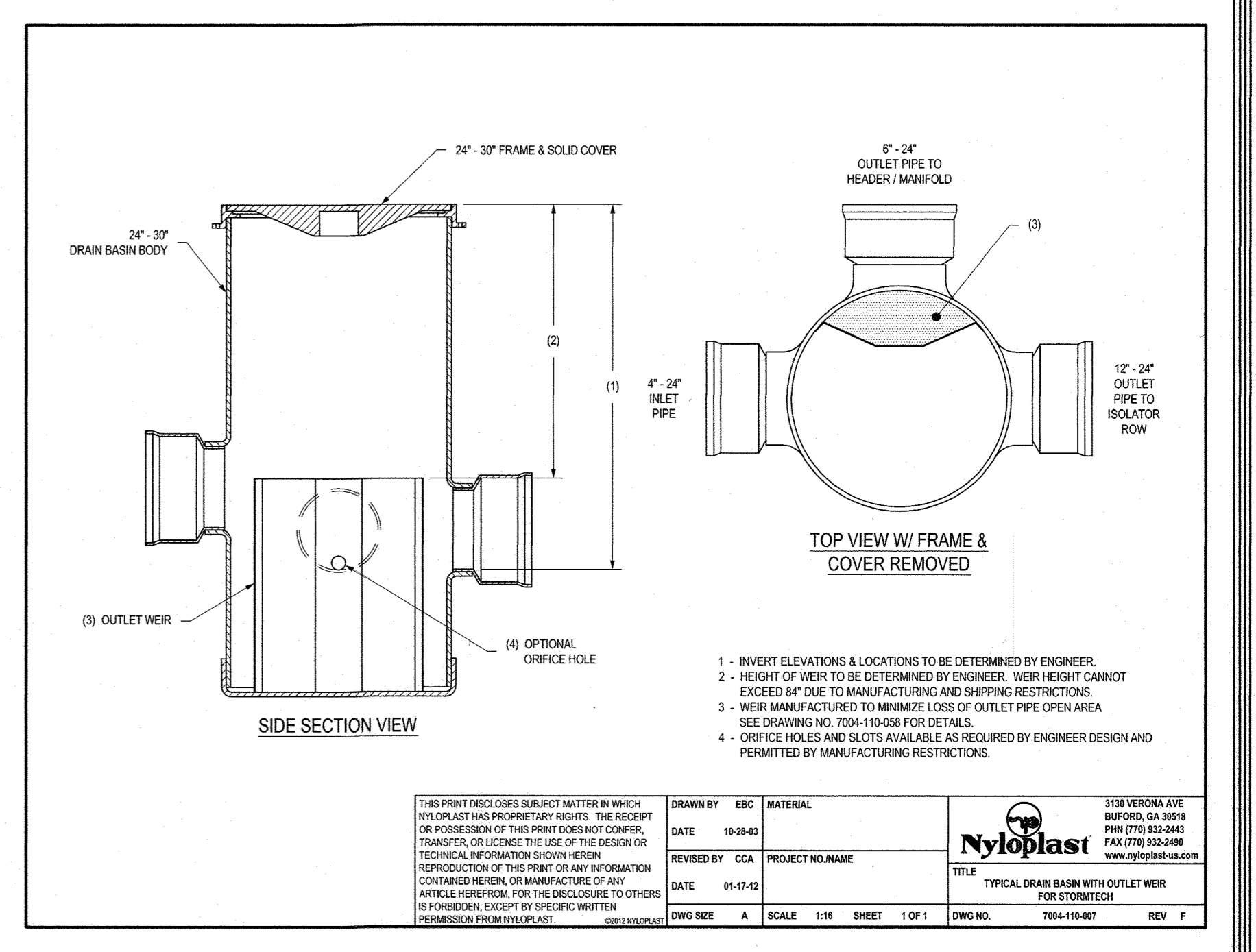
NOTES

- 6-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
- 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM
- TO ORDER CALL: 800-821-6710



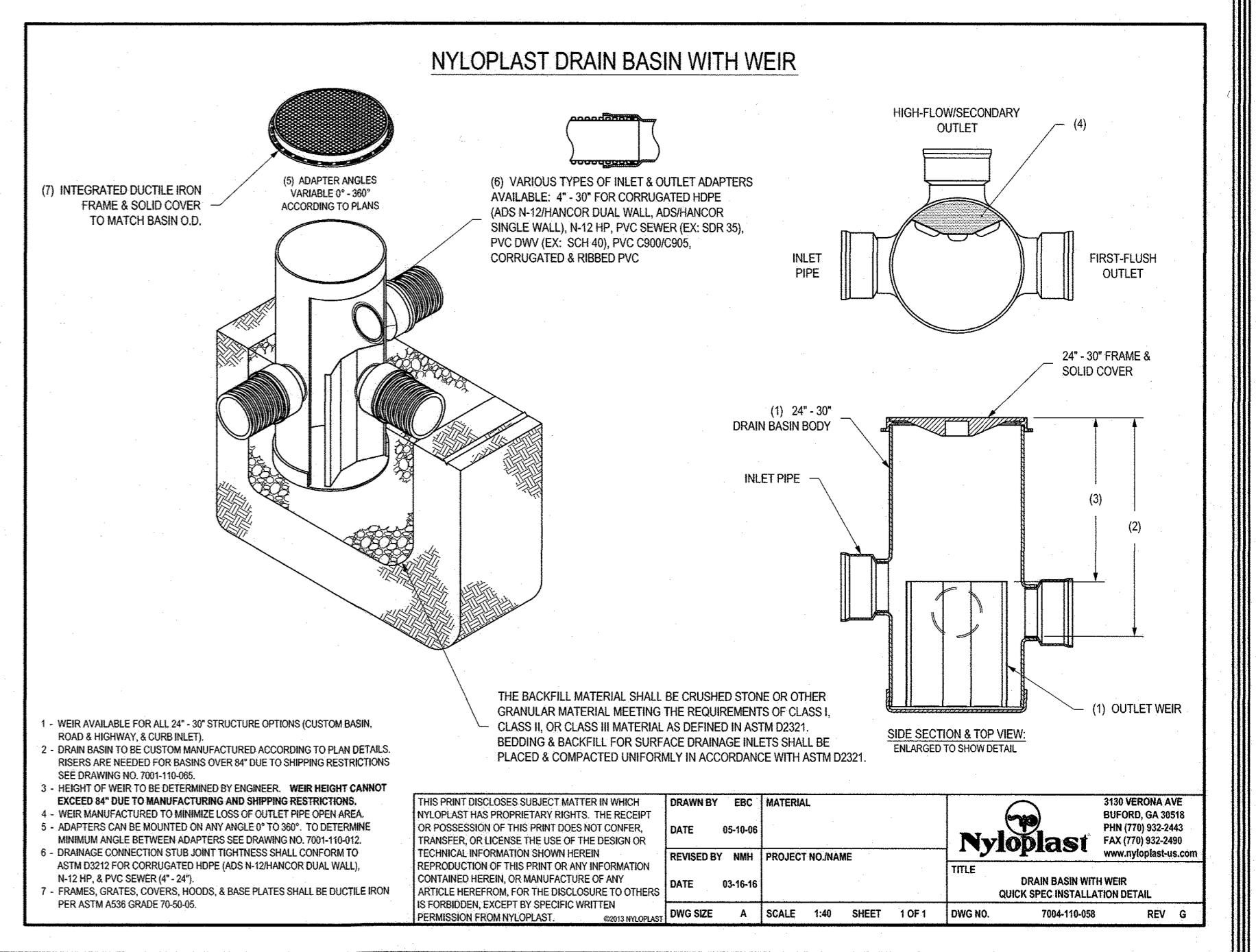
NOTES

- THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.
- TRAFFIC LOADS, CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.



NOTES

- WEIR HEIGHT TO BE DETERMINED BY ENGINEER. WEIR HEIGHT CANNOT EXCEED 9" DUE TO MANUFACTURING AND SHIPPING RESTRICTIONS.
- WEIR MANUFACTURED TO MINIMIZE LOSS OF OUTLET PIPE OPEN AREA. SEE DRAWING NO. 700-110-050 FOR DETAILS.
- ORIFICE HOLES AND SLOTS AVAILABLE AS REQUIRED BY ENGINEER DESIGN AND PERMITTED BY MANUFACTURING RESTRICTIONS.



NOTES

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- WEIR MANUFACTURED TO MINIMIZE LOSS OF OUTLET PIPE OPEN AREA. SEE DRAWING NO. 700-110-050 FOR DETAILS.
- ORIFICE HOLES AND SLOTS AVAILABLE AS REQUIRED BY ENGINEER DESIGN AND PERMITTED BY MANUFACTURING RESTRICTIONS.

OWNER/DEVELOPER

7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

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. #34689, Expiration Date: 7/08/2023.

ADS NYLOPLAST SWM CONTROL STRUCTURE DETAILS

ELLA L. McADOO SUBDIVISION-LOTS 3 & 4

7461 MONTEVIDEO ROAD

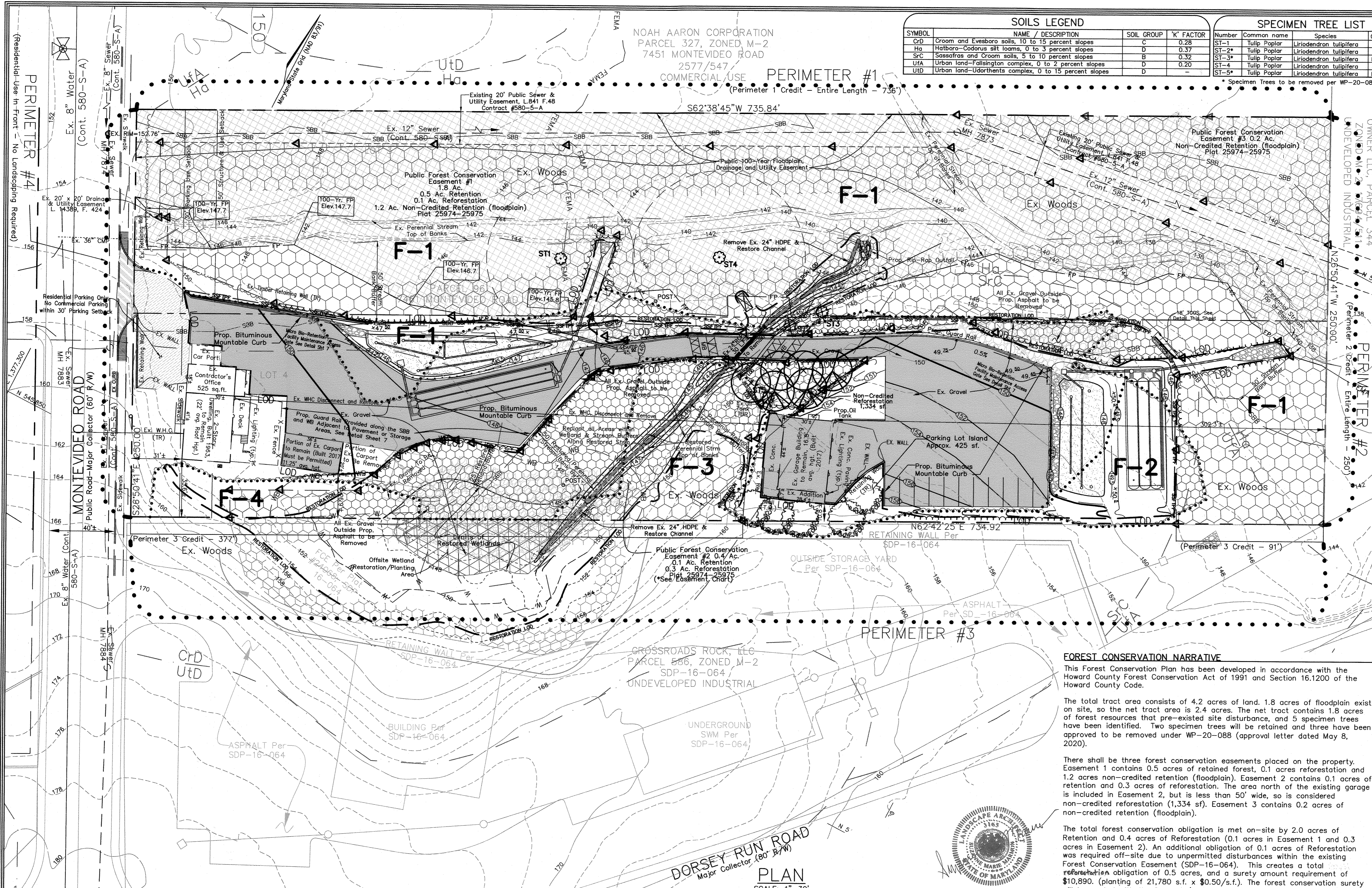
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4

TAX MAP 43 GR16 PARCEL 96

1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fshenr.com

DESIGN BY: MLT
DRAWN BY: CRH2
CHECKED BY: ZYF
SCALE: 1" = 50'
DATE: February 10, 2022
W.O. No.: 3910
SHEET No.: 12 OF 16



SOILS LEGEND				SPECIMEN TREE LIST			
SYMBOL	NAME / DESCRIPTION	SOIL GROUP	K ¹ FACTOR	Number	Common name	Species	Condition DBH
CrD	Croom and Evesboro soils, 10 to 15 percent slopes	C	0.28	ST-1	Tulip Poplar	Liriodendron tulipifera	Good 30.4"
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D	0.37	ST-2*	Tulip Poplar	Liriodendron tulipifera	Fair 32.7"
SrC	Sassafras and Croom soils, 5 to 10 percent slopes	B	0.32	ST-3*	Tulip Poplar	Liriodendron tulipifera	Fair/Poor 33.5"
UA	Urban land-Fallsington complex, 0 to 2 percent slopes	D	0.20	ST-4	Tulip Poplar	Liriodendron tulipifera	Good 35.4"
UID	Urban land-Udartshe complex, 0 to 15 percent slopes	D	-	ST-5*	Tulip Poplar	Liriodendron tulipifera	Fair/Poor 36.5"

LEGEND	
Existing Contours	--- 422 ---
Property Boundary	-----
Existing Treeline	~~~~~
Proposed Treeline	~~~~~
Wetland	W W
Wetland Buffer	WB WB
Ex. Stream Banks	-----
Stream Bank Buffer	SBB
Public 100-Year Floodplain, Drainage & Utility Easement	-----
100 Yr FEMA Floodplain	-----
Specimen Tree w/ Critical Root Zone (To Remain)	ST#
Specimen Tree To Be Removed Per WP-20-088	ST#
Public Forest Conservation Easement Retention Area	-----
Public Forest Conservation Easement Restoration Area	-----
Wetland Restoration Area - Offsite	-----
Forest Conservation Easement Signage	▲
Combination Super Silt Fence/ Tree Protection Fence	SS/TF
Proposed Guard Rail Barrier (See detail, sheet 7)	-----

FOREST CONSERVATION WORKSHEET	
Net Tract Area	Acres
A. Total Tract Area	4.2
B. Area Within 100 Year Floodplain	1.8
C. Other deductions	--
D. Net Tract Area	2.4
Zoning Use Category: COMMERCIAL/INDUSTRIAL	
Land Use Category	
E. Afforestation Minimum (15% x D)	0.4
F. Conservation Threshold (15% x D)	0.4
Existing Forest Cover	
G. Existing Forest on Net Tract Area	1.8
H. Forest Area Above Afforestation Threshold	1.4
I. Forest Area Above Conservation Threshold	1.4
Breakeven Point	
J. Breakeven	0.9
K. Clearing Permitted without Mitigation	0.9
Proposed Forest Clearing	
L. Forest Areas to be Cleared	1.2
M. Forest Areas to be Retained	0.6
Planting Requirements Inside Watershed	
N. Reforestation for Clearing Above Threshold	0.6
P. Reforestation for Clearing Below the Threshold	0
Q. Credit for Retention Above Conservation Threshold	0.2
R. Total Reforestation Required	0.4
S. Total Afforestation Required	0
T. Total Reforestation and Afforestation Requirement	0.4*
U. 75% of Total Obligation (Retention + Planting)	0.8
V. Planting Required Onsite to Meet 75% Obligation	0.2
Planting Requirements Outside Watershed	
W. Total Planting within Development Site Watershed	0.4*
X. Total Afforestation Required	0
Y. Remaining Planting w/ WS for Reforestation Credit	0.4
Z. Reforestation for clearing above the Rf Threshold	0
AA. Reforestation for clearing below the Rf Threshold	0
BB. Credit for Retention above the Rf Threshold	0
CC. Total Reforestation Required	0
DD. Total Afforestation and Reforestation Requirement	0
*0.4 Acre Reforestation requirement (T) shall be met with 0.4 Ac planted on-site as shown in Total Planting (W) and Easement Table, this sheet.	

FOREST CONSERVATION NARRATIVE

This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Act of 1991 and Section 16.1200 of the Howard County Code.

The total tract area consists of 4.2 acres of land. 1.8 acres of floodplain exist on site, so the net tract area is 2.4 acres. The net tract contains 1.8 acres of forest resources that pre-existed site disturbance, and 5 specimen trees have been identified. Two specimen trees will be retained and three have been approved to be removed under WP-20-088 (approval letter dated May 8, 2020).

There shall be three forest conservation easements placed on the property. Easement 1 contains 0.5 acres of retained forest, 0.1 acres reforestation and 1.2 acres non-credited retention (floodplain). Easement 2 contains 0.1 acres of retention and 0.3 acres of reforestation. The area north of the existing garage is included in Easement 2, but is less than 50' wide, so is considered non-credited reforestation (1,334 sq. ft.). Easement 3 contains 0.2 acres of non-credited retention (floodplain).

The total forest conservation obligation is met on-site by 2.0 acres of Retention and 0.4 acres of Reforestation (0.1 acre in Easement 1 and 0.3 acres in Easement 2). An additional obligation of 0.1 acres of Reforestation was required off-site due to unpermitted disturbances within the existing Forest Conservation Easement (SDP-16-064). This creates a total reforestation obligation of 0.5 acres, and a surety amount requirement of \$10,890. (planting of 21,780 s.f. x \$0.50/s.f.). The forest conservation surety will be posted with the Developer's Agreement for this plan.

FOREST STAND CHART				
STAND	AREA	DOMINANT VEGETATION	CONDITION	PRIORITY
F1	1.3 Ac.	Tulip Poplar, Sweetgum, Red Maple, Beech	Excellent	FP; Stream
F2	0.1 Ac.	Same as F1	Poor	none
F3	0.2 Ac.	Red Maple	Fair	none
F4	0.1 Ac.	Tulip Poplar, Red Maple, Beech, Am. Holly	Good	Wetland; WB; Stream

LANDSCAPE PLANT LIST (Perimeters and Parking)				
KEY	QUAN.	BOTANICAL/COMMON NAME	SIZE	NOTE
○	5	Quercus palustris Pin Oak	2 1/2"-3" Cal.	B & B

LANDSCAPE PLANT LIST (WP-20-088 Req'd)				
KEY	QUAN.	BOTANICAL/COMMON NAME	SIZE	NOTE
⊗	3	Acer rubrum 'Armstrong' Armstrong Columnar Red Maple	3"-3 1/2" Cal.	B & B
⊗	3	Nyssa sylvatica Black Gum	3"-3 1/2" Cal.	B & B

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of Parking Spaces	11
Number of Trees Required (1/20 spaces)	1
Number of Plants Required	1
Shade Trees	1
Other Trees (2:1 substitution)	--

SCHEDULE A PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO PERIMETER PROPERTIES			ADJACENT TO ROADWAYS
	1	2	3	
Perimeter/Frontage Designation	1	2	3	4
Linear Feet of Roadway	736'	250'	735'	None**
Frontage/Perimeter	736'	250'	735'	--
Credit for Existing Vegetation (Yes, No, Linear Feet)	Yes* (736')	Yes* (250')	Yes* (467')	--
Remaining Perimeter Length	0	0	268'	--
Credit for Wall, Fence or Berm (Yes, No, Linear Feet)	No	No	No	--
Number of Plants Required	1:60 0	1:60 0	1:60 4	--
Shade Trees	--	--	--	--
Evergreen Trees	--	--	--	--
Shrubs	--	--	--	--
Number of Plants Provided	--	--	--	--
Shade Trees	--	--	--	--
Evergreen Trees	--	--	--	--
Ornamental Trees	--	--	--	--
Shrubs	--	--	--	--

FOREST CONSERVATION EASEMENT TABLE*		
EASEMENT	TYPE	AREA (AC.)
1	RETENTION REFORESTATION NON-CREDIT RETENTION	0.5 0.1 1.2
2	RETENTION REFORESTATION**	0.1 0.3
3	NON-CREDIT RETENTION	0.2
TOTAL		2.4

GENERAL FOREST CONSERVATION NOTES

- Per a Merlin search in October 2019, there are no historical sites or features or cemeteries; rare, threatened or endangered species; or critical habitats for rare, threatened or endangered species on the project site.
- Project site is located in the Patapsco River watershed, 02-13-09.
- All Super Silt Fence (SSF) along Limit of Disturbance (LOD) shall be combined with Tree Protection Fencing (TPF). See Sheet 15 for detail.

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, License No. #3165, Expiration Date: 10/22/2022.

ERI
ENVIRONMENTAL | SURVEYING | ENGINEERING

6339 Howard Lane
Elkridge, MD 21075
p: 410-567-5210
f: 410-796-1562
e: info@ERIspe.com

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3/17/22
DATE

3/22/22
DATE

3/22/22
DATE

DEVELOPER'S BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

2/11/22
DATE

* Credit taken for existing trees and replaced trees to remain
** Residential use in front, no roadway landscape requirement

OWNER/DEVELOPER

7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanas
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

LANDSCAPE & FOREST CONSERVATION PLAN

ELLA L. McADOO SUBDIVISION--LOTS 3 & 4

7461 MONTEVIDEO ROAD

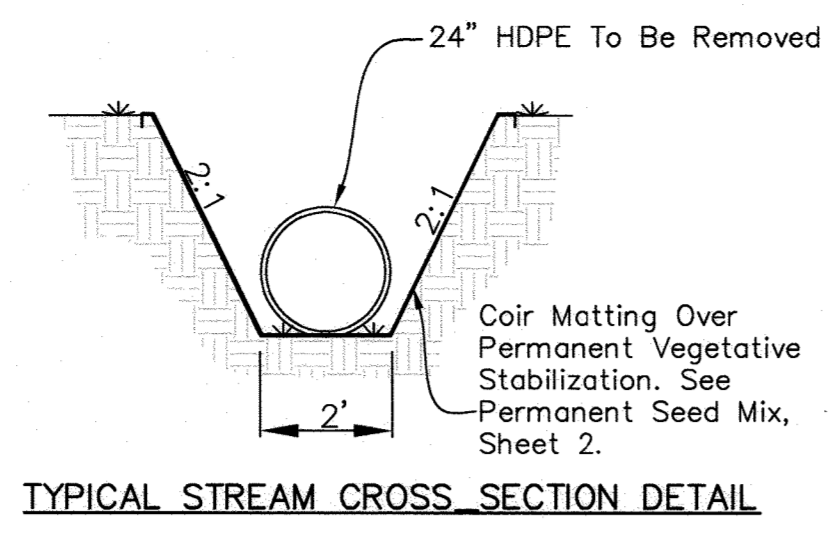
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96

1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

DESIGN BY: SMM
DRAWN BY: SMM
CHECKED BY: SLH
SCALE: 1"=30'
DATE: February 10, 2022
W.O. No.: 4059
SHEET No.: 13 OF 16

TEST PIT PROFILES	
By Stephen L. Huber	
Depth (Inches)	Description
TP-4	
0-25	Fill material - coarse sand and gravel 2-3 in. aggregates
25-30	10 yr. 2/1 SIL Ab horizon with abundant roots
30+	10 yr. 3/1 (50%) 10 yr. 4/1 50% SIL
	Water Table 28 in.
TP-5	
0-15	Fill material - coarse sand and gravel 2-3 in. aggregates
15-24	10 yr. 2/1 SIL Ab horizon with abundant roots
24-28	10 yr. 3/1 (98%) 5 yr. 4/4 2% SIL
	No Water Table observed
TP-6	
0-6	Fill material - coarse sand and gravel 2-3 in. aggregates
6-12	10 yr. 3/1 SIL Ab horizon with abundant roots
12-28	10 yr. 5/4 (100%) SIL
	No Water Table Observed. No hydric soil component.
TP-7	
0-32	Fill material - coarse sand and gravel 2-3 in. aggregates
32+	10 yr. 3/1 SL Ab horizon with abundant roots
	Water Table observed 24 in.
TP-8	
0-14	Fill material - coarse sand and gravel 2-3 in. aggregates (recent)
14-30	Asphalt millings and 1/2" aggregate (pre-existing surface)
24-28	10 yr. 3/1 (50%) 10 yr. 4/1 (50%) SIL
	Water Table observed 24 in.



LEGEND

- Existing Contour 10' Interval - 150
- Existing Contour 2' Interval - 148
- Existing Contour 1' Interval - 147
- Proposed Contour - 145
- Property Boundary - ---
- Stream Bank Buffer - SBB
- Ex. Stream Banks - ---
- Ex. Wetlands - W
- Ex. 100-Year Floodplain - ---
- Existing Fence Line - x-x
- Existing Retaining Wall - ---
- Test Pit - TP4
- Ex. Pipe to be Removed - ---
- Wetland Restoration Planting Area - [Hatched Area]
- Existing Gravel - ---
- Existing House / Structure - [Outline]
- Buried A Horizon - Ab
- Water Level, March 9, 2018 - [Symbol]

VICINITY MAP
SCALE: 1"=1000'

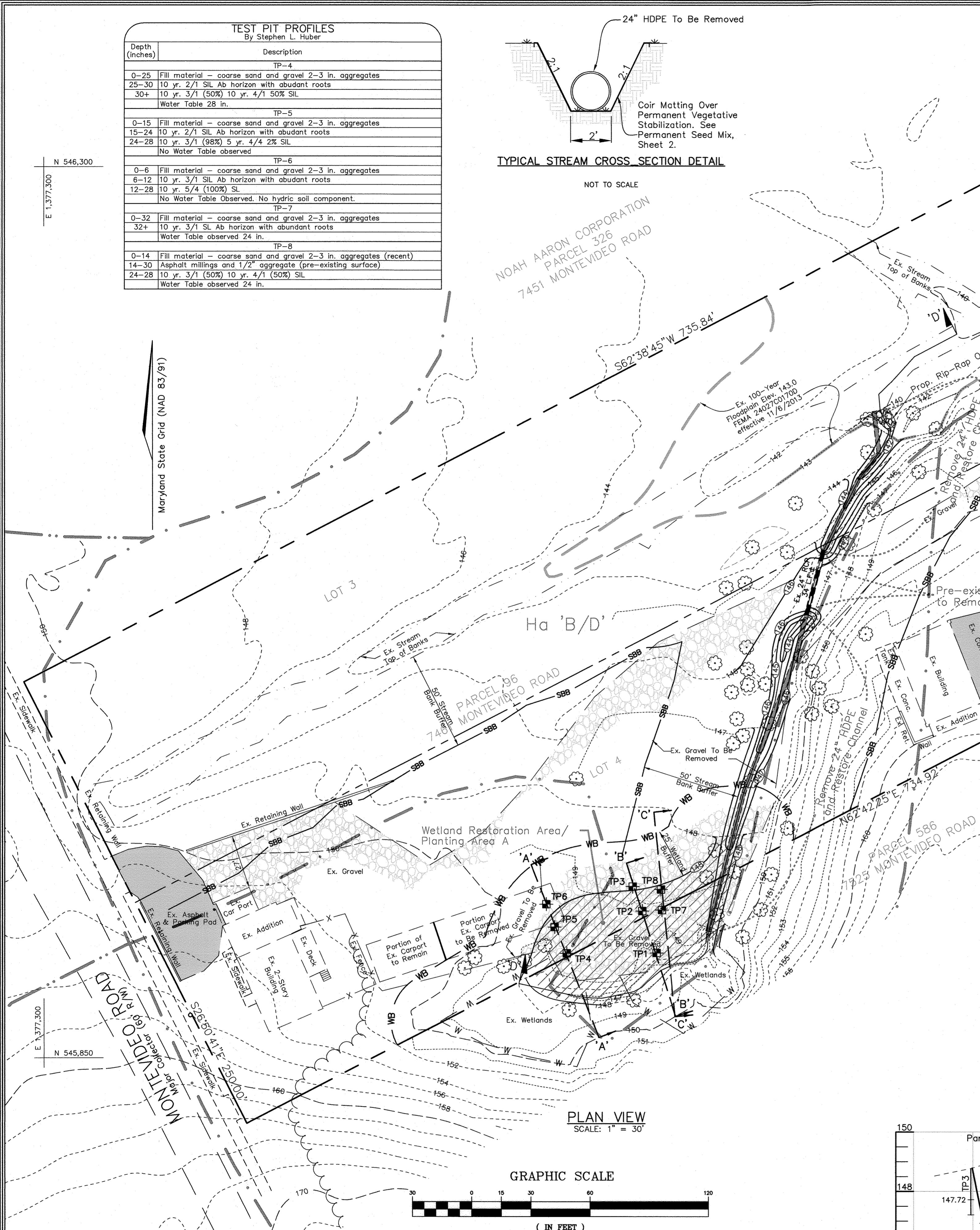
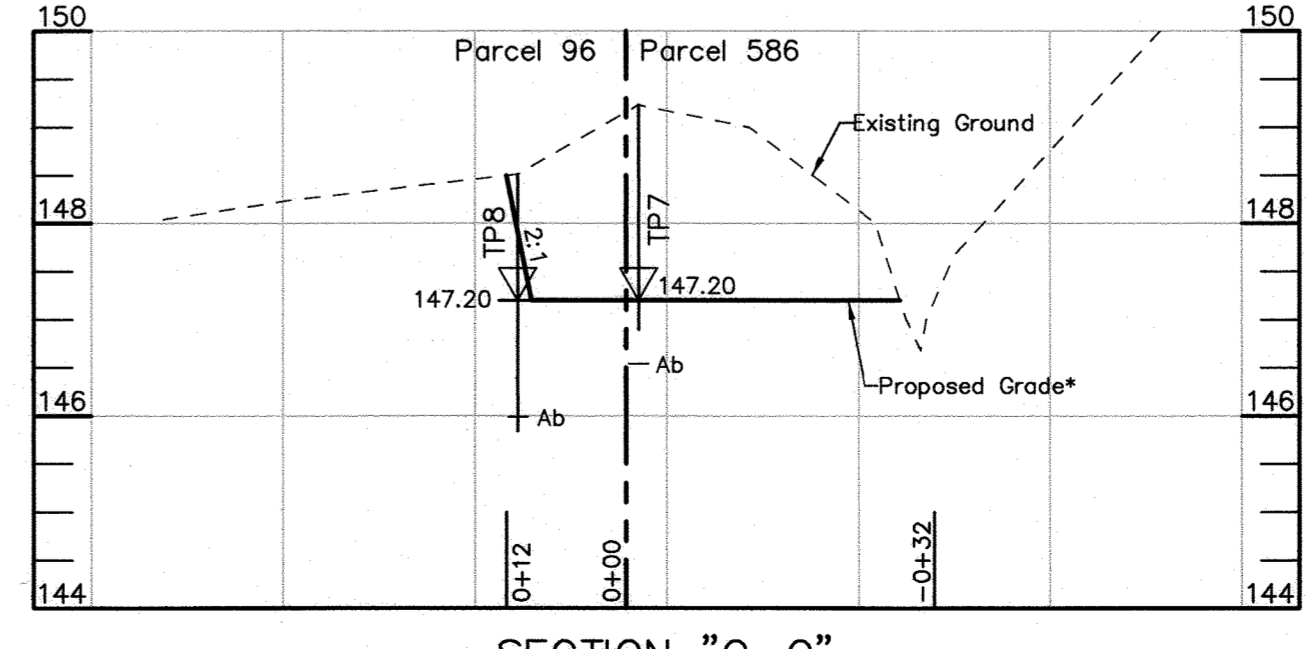
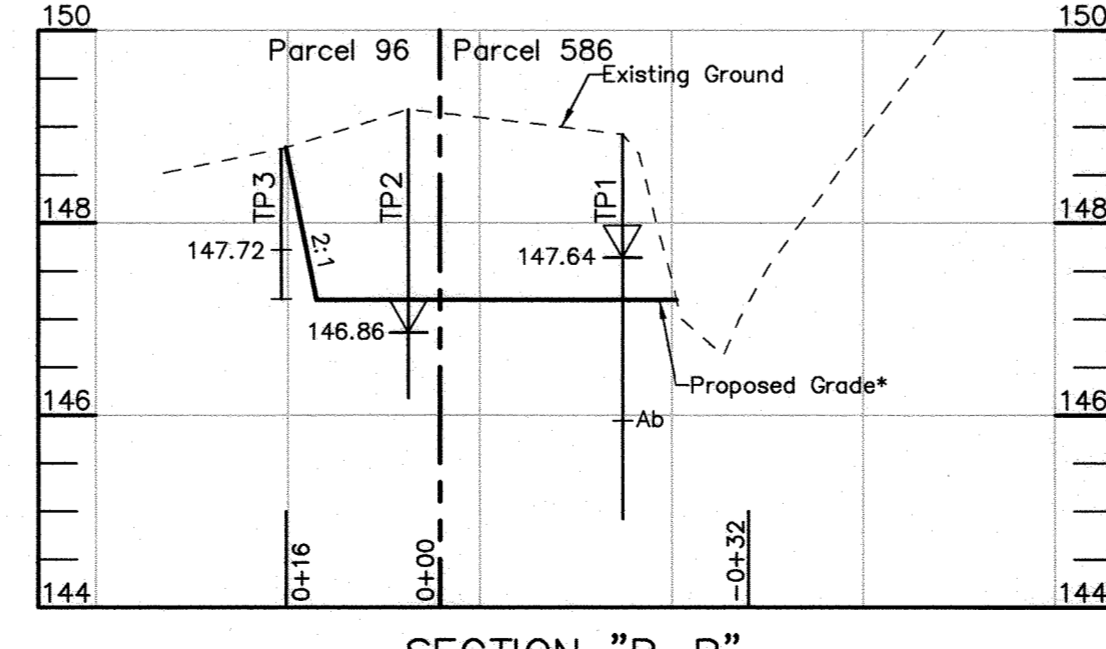
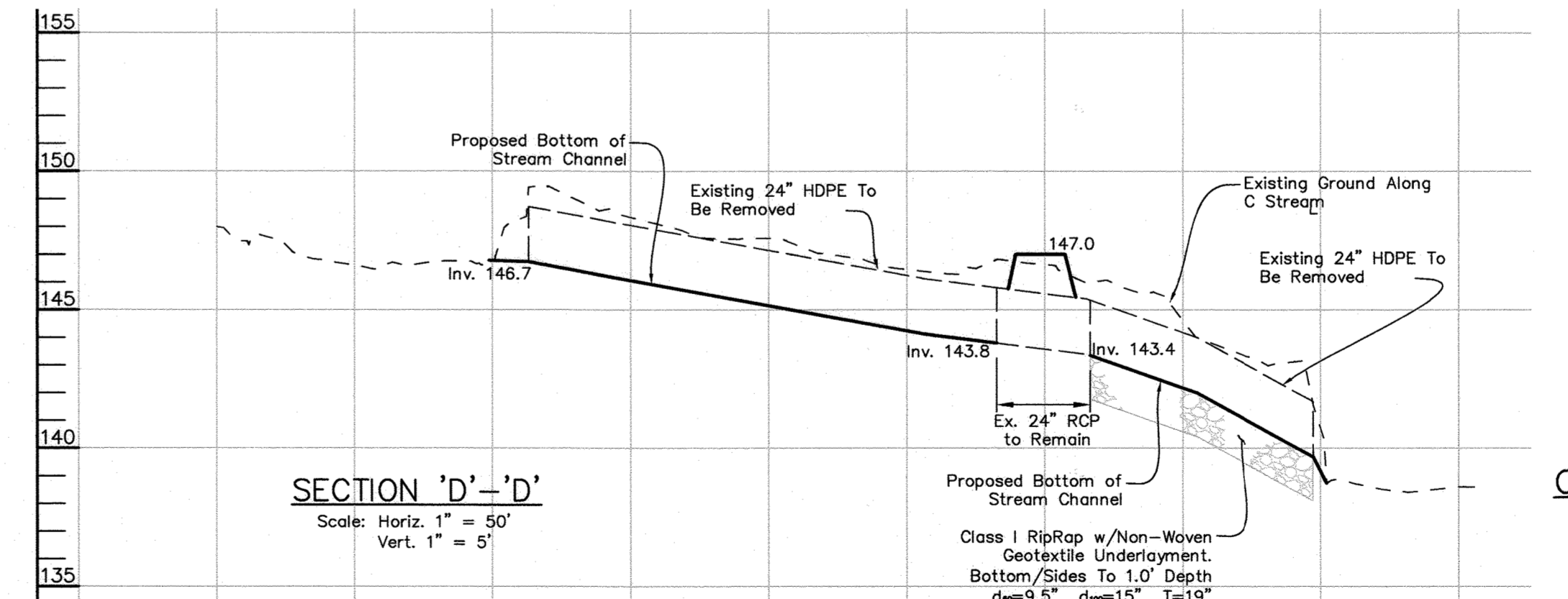
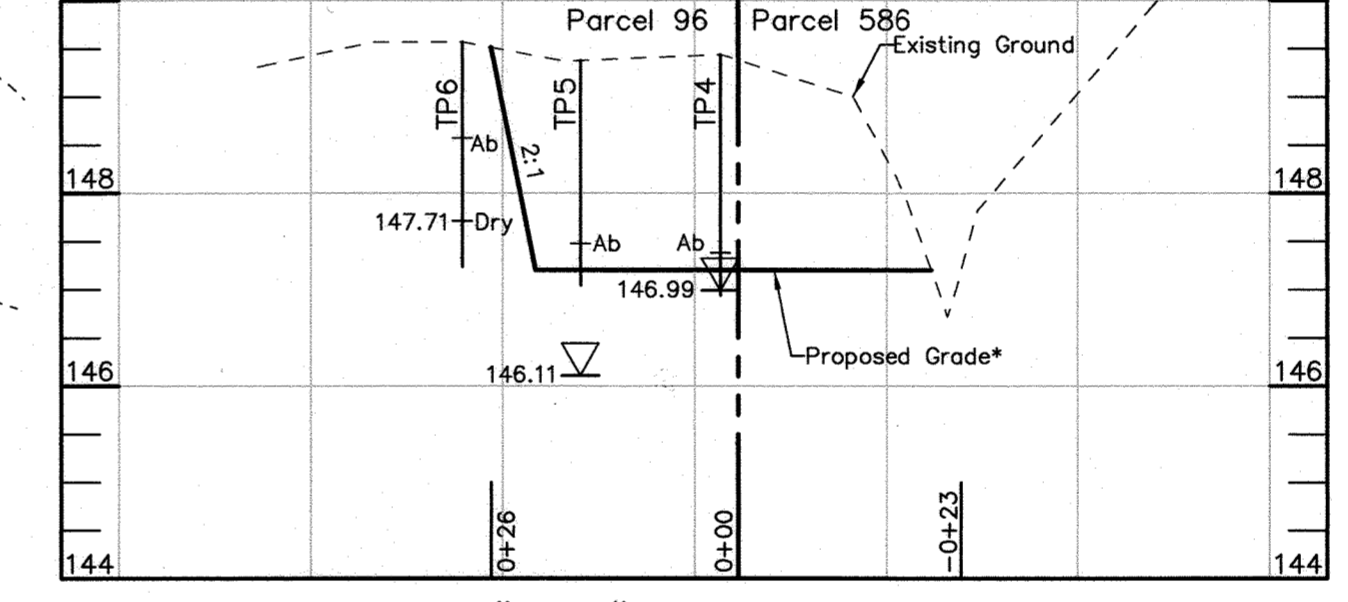
- GENERAL NOTES**
- 1) A BOUNDARY SURVEY WAS NOT PERFORMED.
 - 2) BEARING AND DISTANCE OBTAINED FROM LIBER 14389 FOLIO 429/430
 - 3) TAX MAP 43 PARCEL 96.
 - 4) PLAT No. J-4148B-04, CAPITAL PROJECT No. J-4148B
 - 5) FIELD WORK COMPLETED ON 12/28/17 AND MARCH 2018.
- SITE INVESTIGATION NARRATIVE**
- This plan serves to address the restoration efforts required to re-establish wetlands and waterways that were impacted as a result of development operations on the site and off the site. Fill material, including sand gravel and soil had been placed and a 24 in. HDPE pipe had been installed within a stream channel to expand an existing gravel parking and equipment storage yard in September-October of 2017. Grading and filling of a nontidal wetland had also occurred on the adjacent property (7525 Montevideo Road, Parcel 586 Crossroads Rock LLC). The limit of disturbance including grading and excavation on Parcel 586 was surveyed located and the wetlands limit as shown on the approved site plan (SDP-16-064) assumed to be the jurisdictional limits.
- On March 8, 2018, members of the Maryland Department of Environment Compliance Program led the effort to investigate the extent of fill placed over nontidal wetlands. Backhoe test pits TP 1-3 were initially excavated to determine the extent of fill over pre-existing wetlands with additional test pits (TP 4-8) placed as directed by MDE and described by Stephen Huber, Sr. Environmental Specialist of ERI to complete the investigation. All test pits were left open and field surveyed before backfilling.
- It was agreed that test pits which revealed pre-existing gravel pavement would represent the upland limit of fill over wetlands by the current owner.
- Test pits (TP-1 to TP-3) were described by MDE in a compliance report by Ms. Punam Tyagi dated March 8, 2018 as revealing original soil surface to be 36 in. deep and hydric soil indicators of low chroma and depletions, (Munsell soil color chart 10YR 3/2 and 10 YR 5/2).
- Additional test pits (TP-4 to TP-8) were opened up for observation on March 9th and were described by Mr. Huber on March 9, 2018.

SITE RESTORATION SUMMARY

As a result of this investigation, it was determined that 2,940 Sq. Ft. of palustrine forested nontidal wetland was disturbed on the adjacent Crossroads Rock LLC property and 1,930 Sq. Ft. of palustrine wetland was disturbed on the 7461 Montevideo Road LLC property.

Restoration efforts for nontidal wetland areas will involve removal of and offsite disposal of all recent fill material placed over wetlands, and the replanting of 1 in. caliper trees and containerized shrubs. In addition, the 24 in. HDPE will be removed and the channel restored to a stable profile and cross section, seeded and protected with a suitable ECM.

All proposed restoration efforts will be proposed under a Howard County approved site development or grading only plan and offsite restoration efforts undertaken with the approval of the current landowner.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/22/22
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/22/22
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/22/22
DIRECTOR DATE

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. #34689, Expiration Date: 7/08/2023.

FCP and Landscape Plan By:

ERI
ENVIRONMENTAL | SURVEYING | ENGINEERING

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Iapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

ENVIRONMENTAL RESTORATION PLAN
ELLA L. McADOO SUBDIVISION-LOTS 3 & 4
7461 MONTEVIDEO ROAD
PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fshinc.com

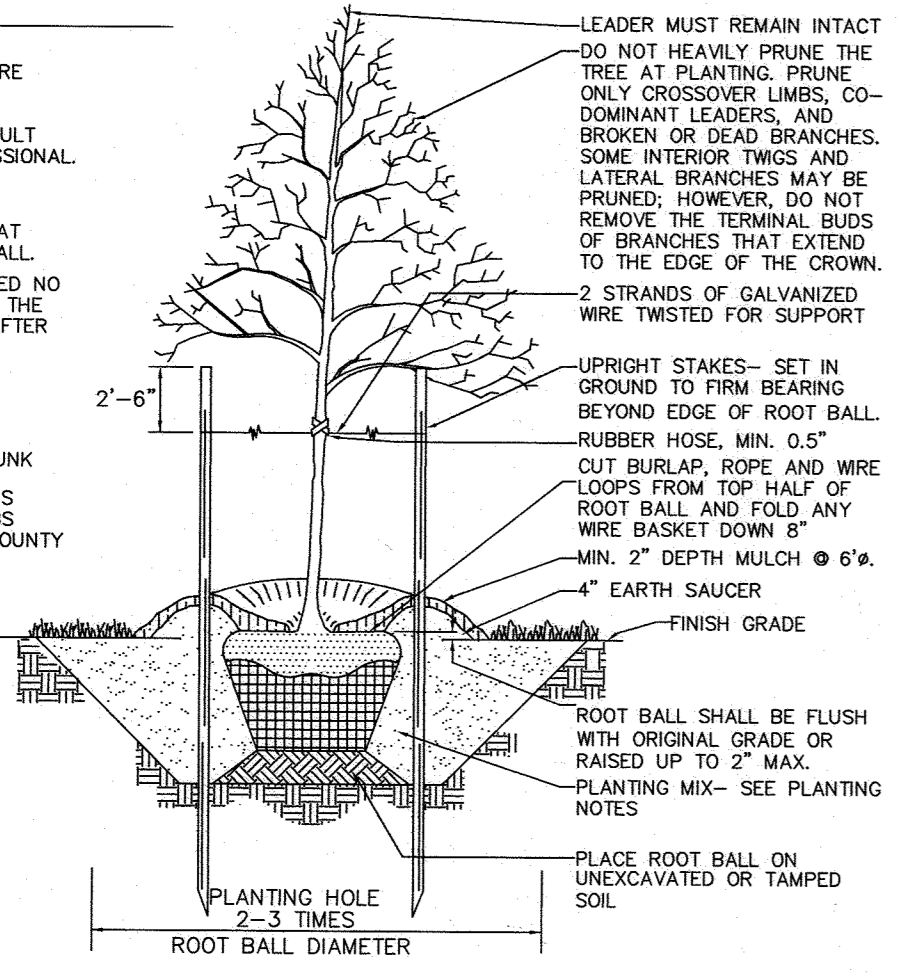
DESIGN BY: SLH
DRAWN BY: CRH2/SMM
CHECKED BY: ZYF
SCALE: As Shown
DATE: February 10, 2022
W.O. No.: 2750/4059
SHEET No.: 14 OF 16

Drawn by: M. V. V. PALERIO/PRODUCTION DRAWING/068_SDP_SIT11.DWG Plotted by: Michael Taylor on 02/10/2022

LANDSCAPE NOTES (See Sheet 13 for Landscape Schedules.)

- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to applicable plans and certificates.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety in the amount of \$3,300.00 for 11 shade trees (6 trees for specimen tree mitigation, 4 perimeter landscaping and 1 parking lot landscaping) has been posted with the Developer's Agreement.

- NOTES**
- CONSULT INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES FOR FURTHER DETAILS OF PLANTING SPECIFICATIONS, OR CONSULT WITH A QUALIFIED PROFESSIONAL.
 - EACH TREE SHALL BE PLANTED SUCH THAT THE TRUNK PLANE IS VERTICAL AT THE TOP OF THE ROOT BALL.
 - STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
 - PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
 - KEEP MULCH 1" FROM TRUNK FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
 - TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TYPICAL TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE

FCE #1 REFORESTATION AREA : 4,905 Sq. ft. (0.1 Ac)
0.1 acre x 200 TPA = 20 trees and shrubs required

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
4	Acer rubrum	Red Maple	1" cal.	12-18' o.c.	5-7 Gallon Container Grown with Tree Shelters
4	Liquidambar styraciflua	Sweetgum	1" cal.	12-18' o.c.	
4	Nyssa sylvatica	Black Gum	1" cal.	12-18' o.c.	
4	Platanus occidentalis	American Sycamore	1" cal.	12-18' o.c.	
4	Quercus palustris	Pin Oak	1" cal.	12-18' o.c.	

FCE #2 REFORESTATION AREA : 13,428 Sq. ft. (0.3 Ac)
0.3 acre x 200 TPA = 60 trees required

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
12	Acer rubrum	Red Maple	1" cal.	12-18' o.c.	5-7 Gallon Container Grown with Tree Shelters
12	Liquidambar styraciflua	Sweetgum	1" cal.	12-18' o.c.	
12	Nyssa sylvatica	Black Gum	1" cal.	12-18' o.c.	
12	Platanus occidentalis	American Sycamore	1" cal.	12-18' o.c.	
12	Quercus palustris	Pin Oak	1" cal.	12-18' o.c.	

WETLAND REFORESTATION AREA (offsite) : 4,870 Sq. ft. (0.1 Ac)
0.11 acre x 200 TPA = 22 trees + 6 shrubs required by MDE

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
5	Acer rubrum	Red Maple	1" cal.	12-18' o.c.	5-7 Gallon Container Grown with Tree Shelters
5	Nyssa sylvatica	Black Gum	1" cal.	12-18' o.c.	
6	Platanus occidentalis	American Sycamore	1" cal.	12-18' o.c.	
6	Quercus palustris	Pin Oak	1" cal.	12-18' o.c.	
2	Cornus amomum	Silky Dogwood	1/4" Caliper	8-14' o.c.	1-3 Gallon Container
2	Lindera benzoin	Spicebush	1/4" Caliper	8-14' o.c.	
2	Viburnum dentatum	Arrowwood Viburnum	1/4" Caliper	8-14' o.c.	

SEQUENCE OF CONSTRUCTION

- Restore wetland area and stream per MDE-approved plan (see Sheet 14).
- Remove gravel within planting areas with County inspector verification of limits.
- Aerate planting areas except in vicinity of root zone of existing trees.
- If needed, add 6" topsoil to planting areas.
- Maintain newly-planted trees for 3 growing seasons.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3/17/22 DATE
3/22/22 DATE
3/22/22 DATE

DEVELOPER'S BUILDER'S CERTIFICATE

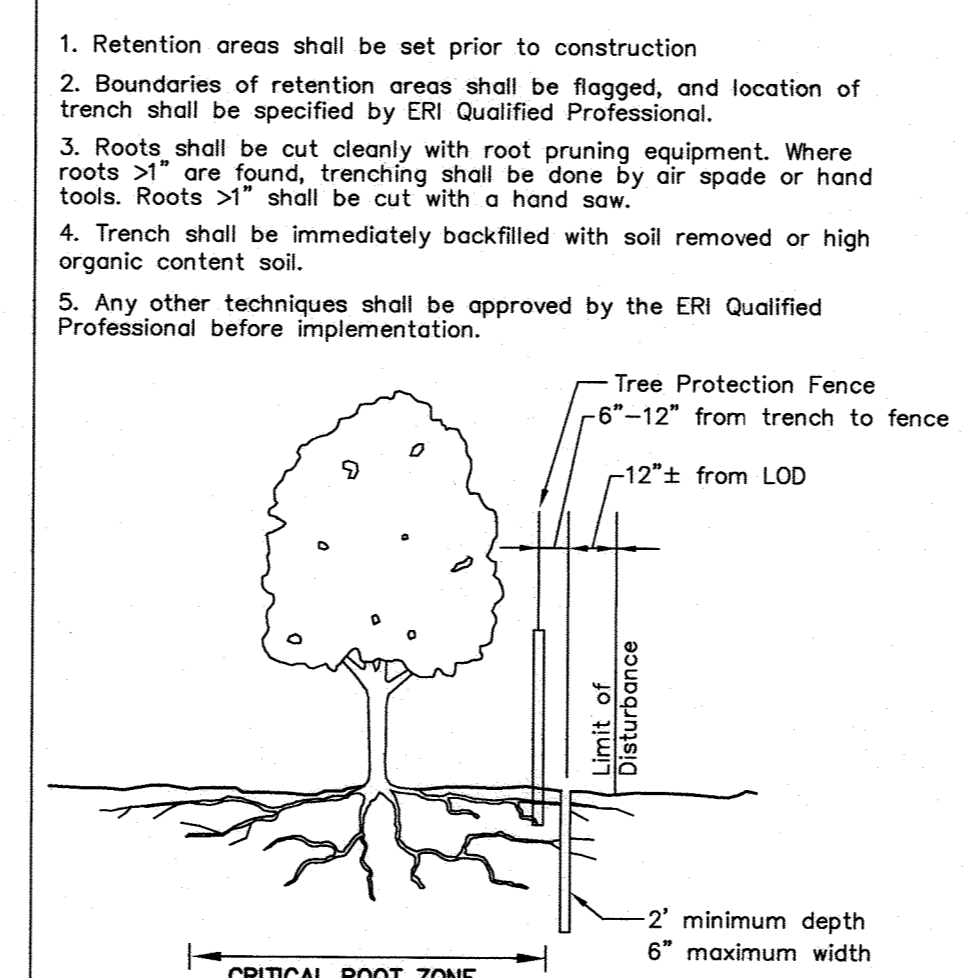
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

2/16/22 SIGNATURE OF DEVELOPER DATE

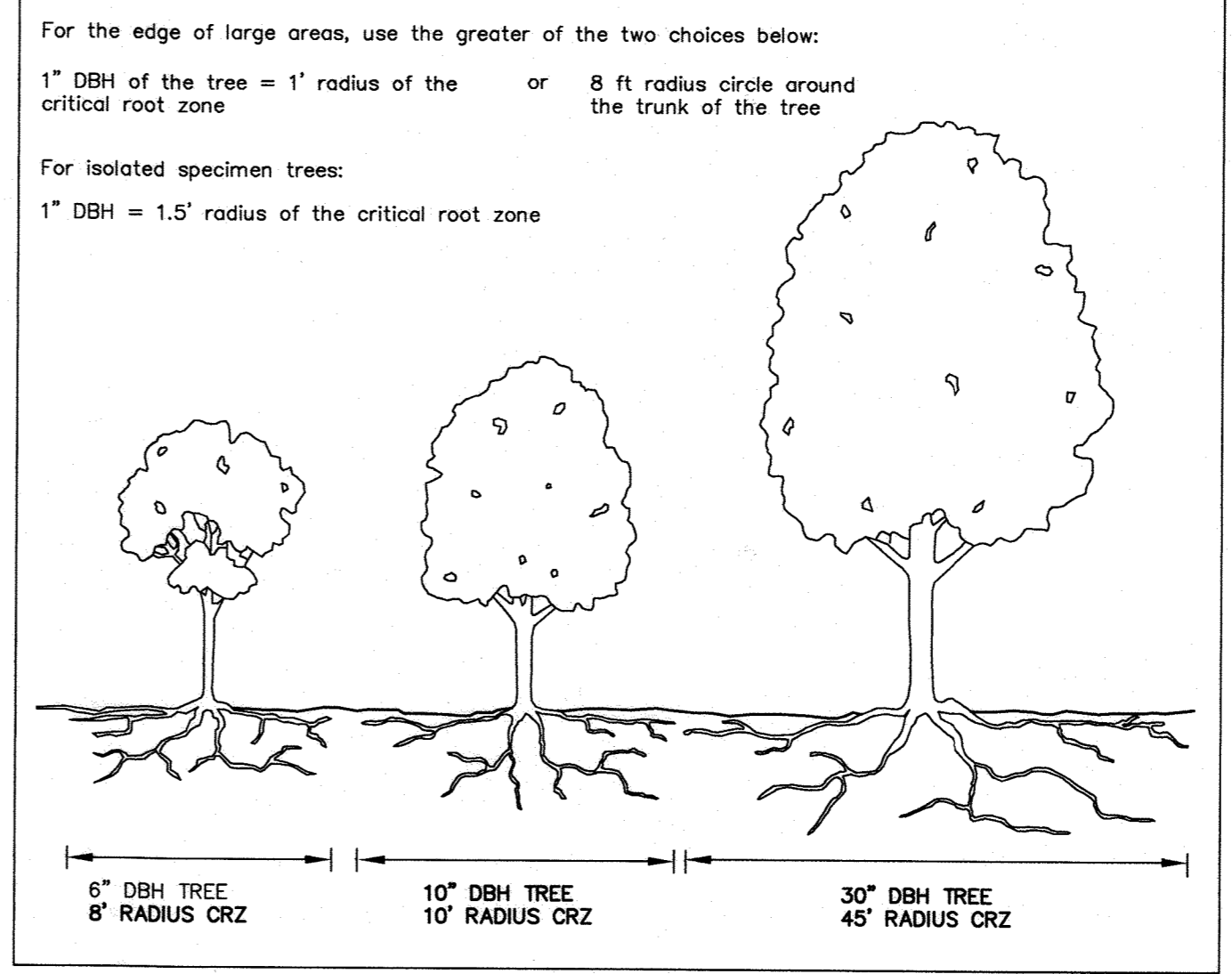
MANAGEMENT NOTES FOR FOREST RETENTION AREAS

- All proposed activities shall adhere to the conditions, schedules and terms of an approved sediment control and erosion plan.
- After the boundaries of the retention area have been staked and flagged and before any disturbance has taken place on-site, a preconstruction meeting at the construction site shall take place. The developer, contractor or project manager, and appropriate County inspectors shall attend.
- Tree protection for all retained areas:
 - All retention areas within 50 feet of proposed construction activities shall be protected by highly visible, well anchored temporary protection devices (silt fence or blaze orange plastic mesh).
 - All protection devices shall be in place prior to any grading or land clearing.
 - All protection devices shall be properly maintained and shall remain in place until construction has ceased.
 - Attachment signs, fencing or other objects to trees is prohibited.
 - No equipment, machinery, vehicles, materials or excessive pedestrian traffic shall be allowed within protected areas.
- If the critical root zone (see detail) is affected by construction activities such as grade change, digging for foundations and roads or utility installation:
 - Prune roots with a clean cut using proper pruning equipment (see root pruning detail).
 - Water and fertilize as needed.
- Post-Construction Phase
 - Inspect existing trees around the perimeter of disturbed limits for evidence of soil compaction, root injury, limb injury, or other stress signs and correct with proper management techniques such as root or limb pruning, soil aeration, fertilization, crown reduction or watering. Inspection and evaluation shall be performed by a Maryland licensed tree expert.
 - Inspect for dead or dying trees or limbs which may pose safety hazard and remove.
 - No burial of discarded materials will occur onsite within the conservation areas.
 - No burning within 100 feet of wooded area.
 - All temporary forest protection structures will be removed after construction. Temporary signage shall be replaced with permanent signage on posts in locations shown.
 - Following completion of construction, prior to use, the County inspector shall inspect the entire area.

ROOT PRUNING



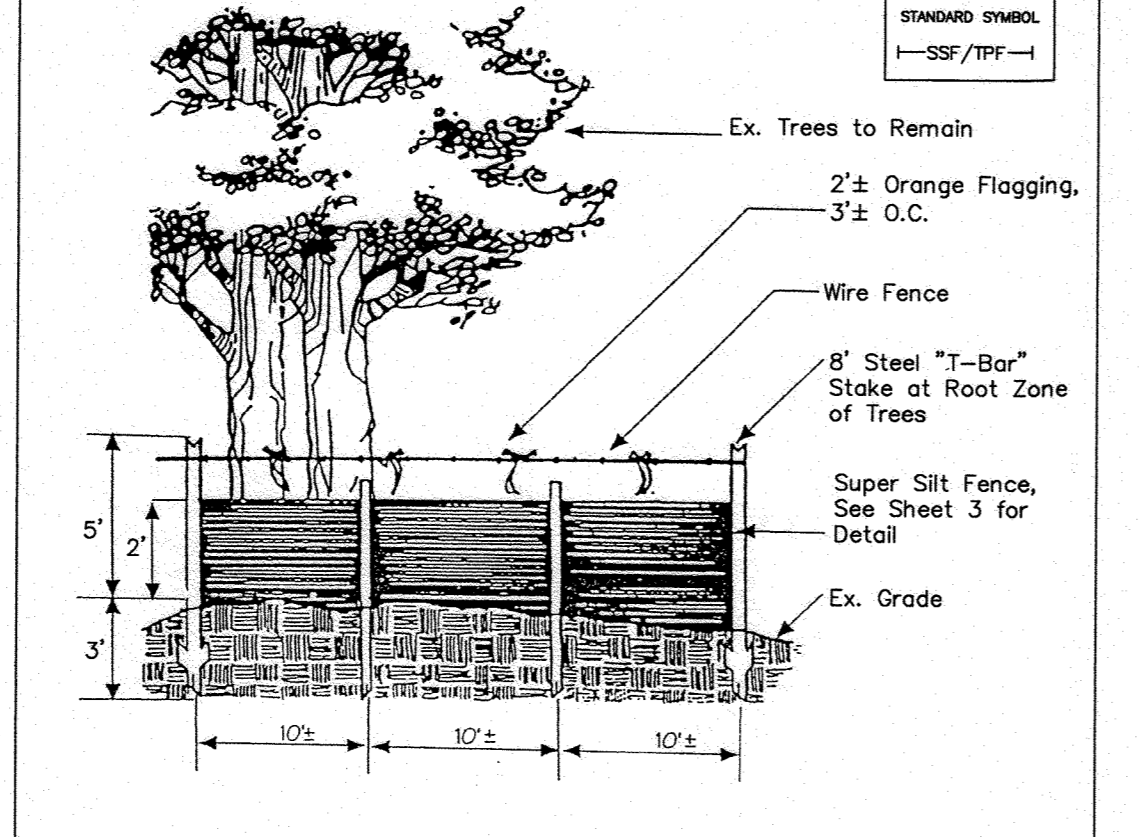
CRITICAL ROOT ZONE



INSTALLATION OF NURSERY STOCK

- Substitutions in plant species or size shall be made only with written approval of Maryland Department of the Environment (MDE) or Howard County DPZ.
- Plant material shall be nursery grown in Maryland, Delaware, New Jersey, Pennsylvania, Virginia, or West Virginia and from Plant Hardiness Zone 5a, 5b, 6a, 6b, 7a, and covered by a woven tarp when transported.
- References: Comply with the following:
 - American Association of Nurserymen (AAN) "American Standard for Nursery Stock."
 - Nomenclature: In accordance with HORTUS III by L.H. Bailey.
- Transport and handle plants so that foliage, roots, or balls are protected from breakage, sun, and winds. Tap roots or feeder roots of plants allowed to dry out or which have been damaged or disturbed root balls shall be cause for rejection of plant.
- Planting seasons as follows:
 - Deciduous: October 15-May 1
 - Evergreens/Conifers: Spring: March 15-May 15; Fall: August 15-November 15
 - Bare Root Plants: March 25-April 15. Bare root plants shall not be planted during periods of freezing temperature.
- Guarantees:
 - All plants in a dead or dying condition shall be removed and replaced at no charge to the owner. A plant shall be considered dead when the main leader has died back, and/or 25% of the plant is dead.
 - The Guarantee period shall commence at the time of initial acceptance by the owner and continue one (1) year from that date.
 - Replacement material shall be the same size as the original material. Methods of installation shall be identical to the original.
 - Conditions for replacement shall not be placed upon the owner. Consideration of mutual agreements will be used to determine final replacement responsibility.
- Plants (General Requirements):
 - Plants shall be sound, vigorous, and free from diseases, harmful insects and their eggs.
 - They shall have healthy, normal tops and root systems.
 - They shall be nursery grown stock, freshly dug. No heeled in, cold storage or collected stock.
 - Plants cut back from larger grades to meet requirement shall not be accepted.
 - Plants shall not be pruned prior to delivery.
- Planting depth shall be the same as that of the nursery.
- Planting sites shall be twice the diameter of the root ball.
- No soil is to be placed on top of the root ball.
- Backfill material shall be 1/2 organic compost unless otherwise specified.

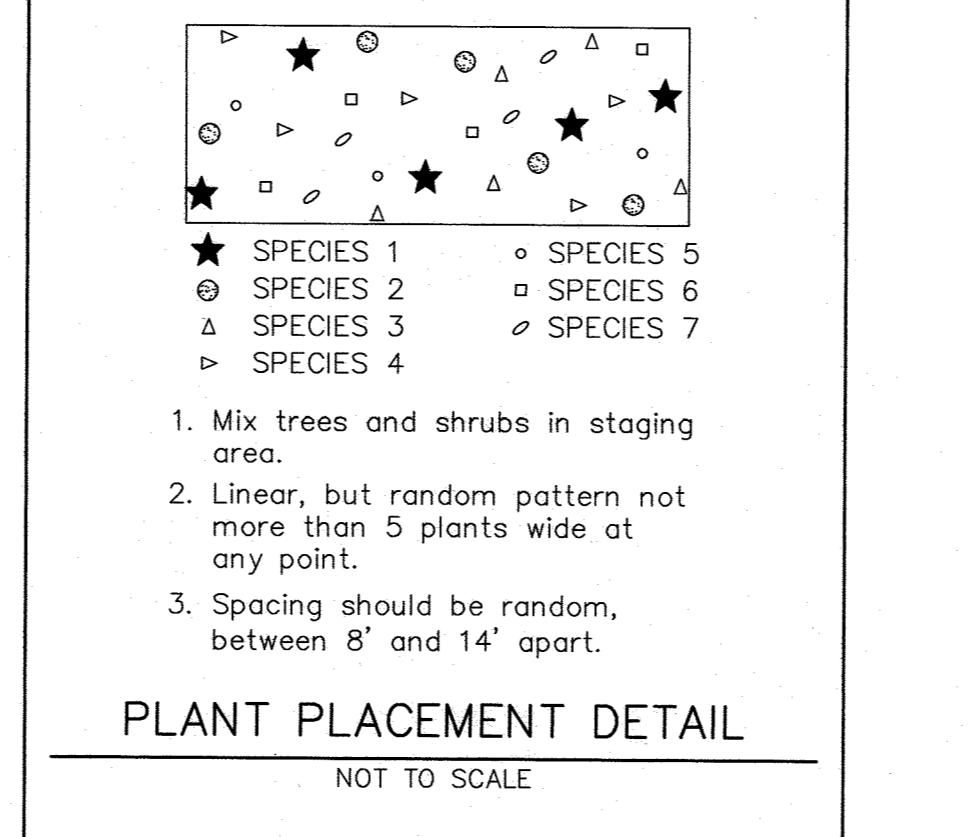
COMBINATION TREE PROTECTION FENCE/SSF DETAIL



- Notes:**
- Silt fence to be heeled into the soil.
 - Wire, snow fence, etc. for tree protection only.
 - Boundaries of Retention Area will be established as part of the forest conservation plan review process.
 - Boundaries of Retention Area should be staked and flagged prior to installing device.
 - Avoid root damage when placing anchor posts.
 - Device should be properly maintained throughout construction.
 - Protection signs are also required, see Figure C-4.
 - Locate fence outside the Critical Root Zone.

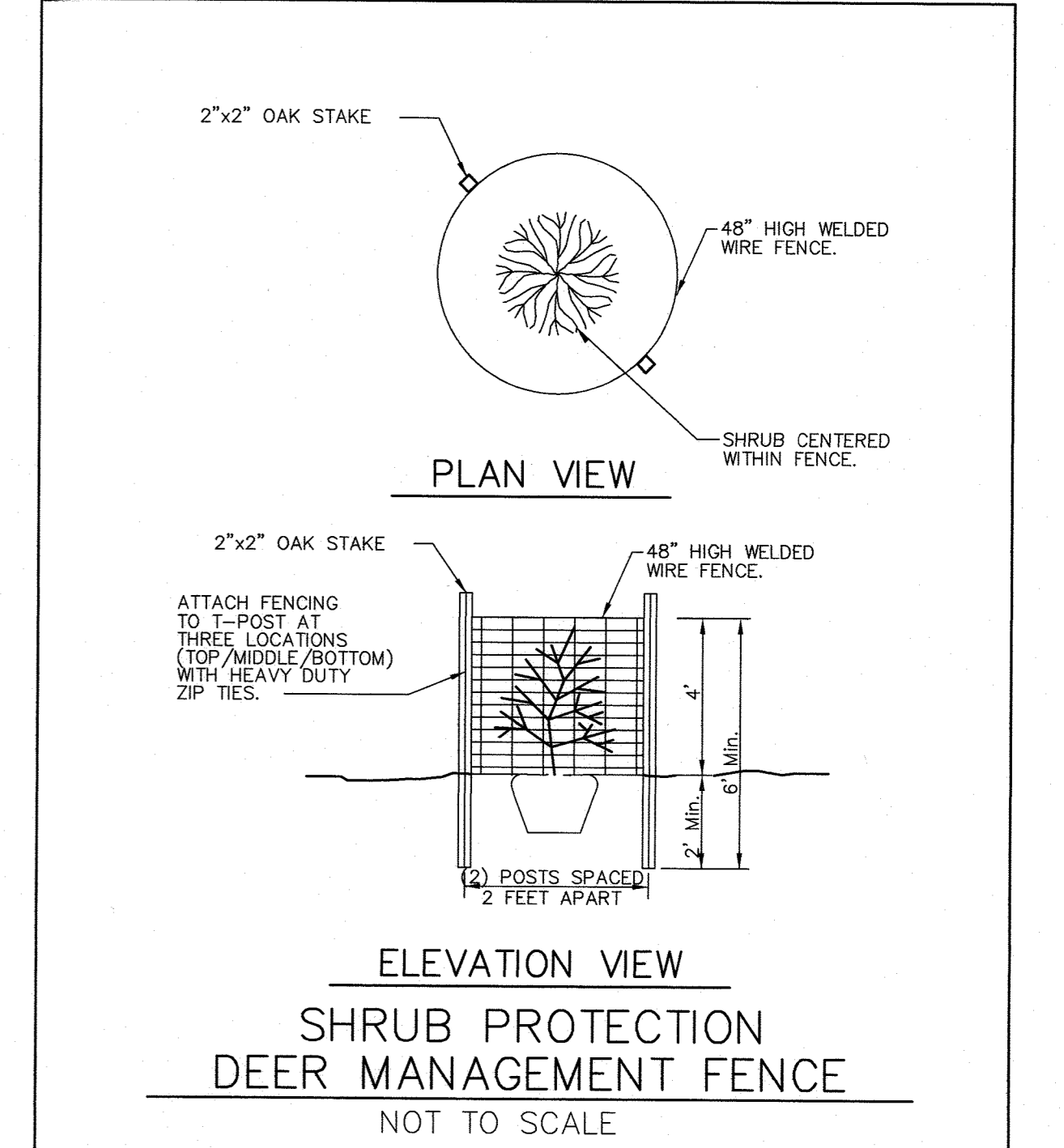
Source: Adapted from Steve Clark & Associates/ACRT, Inc.

PLANT PLACEMENT DETAIL



SOIL PROTECTION ZONE NOTES

- The Soil Protection Zone shall include all areas contained outside the Limit of Disturbance (LOD).
- Where possible, the Soil Protection Zone shall extend to the drip line of specimen trees. For other groups of trees, the zone shall be the drip line or 40% of the height of the tree, whichever is greater.
- No construction activity is permitted within the Soil Protection Zone, except as shown within the LOD.
- If soil has been compacted or grading has taken place in the vicinity of the Soil Protection Zone, root pruning shall be implemented per Root Pruning detail, shown on this plan.
- Root pruning shall occur prior to the beginning of construction.
- Prior to construction, the Limits of Disturbance shall be marked and a Maryland licensed tree expert shall determine which trees will need preventative treatment or removal.
- Tree maintenance and removal shall be undertaken by a Maryland licensed tree expert to ensure damage to surrounding trees is minimized.



SITE PREPARATION

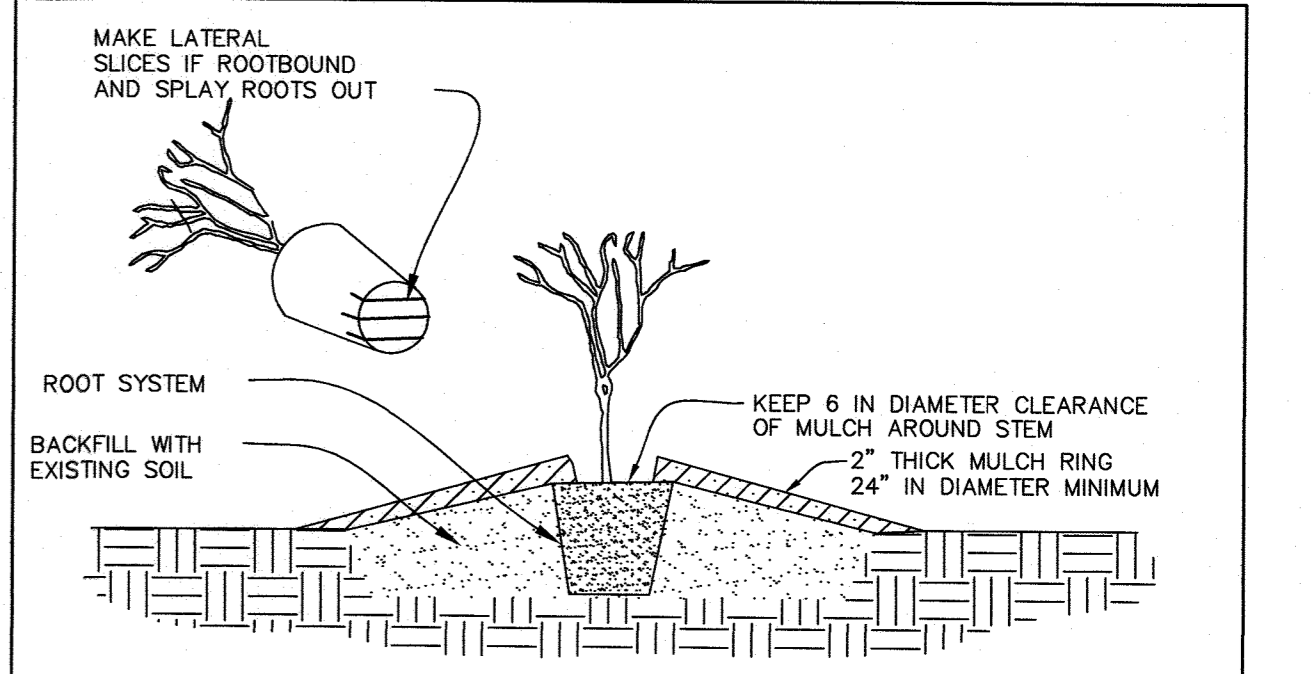
- Access to planted area to be coordinated with the adjacent property owner.
- The contractor shall notify MDE Utility at 1-800-257-7777 at least 48 hours prior to any excavation work being done.

MAINTENANCE OF PLANTINGS

- Maintenance of plantings shall last for a period of three (3) growing seasons.
- Plantings will be examined bi-annually by installation contractor to insure that tree/shrub protection shelters are intact and secured.

GUARANTEE REQUIREMENTS

- A 80% survival rate of restoration plantings will be required for the three (3) year growing period.
- Replacements required to meet the 80% threshold shall be made as necessary within the beginning of the third growing season (March 1 to May 15).
- All stakes and tree shelters shall be removed as directed by MDE (wetland area plantings), Howard County (reforestation plantings), or after the 5th growing season.



CONTAINER PLANTING

- PLANTING PROCEDURE FOR CONTAINER GROWN PLANTS
- REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
 - USE A KNIFE TO CUT THROUGH BOTTOM HALF OF THE ROOT BALL AND SPLAY OUT ROOTS.
 - PLANT SHRUBS ON FORMED UP MOUNDS 4" ABOVE THE EXISTING GRADE WITH EXISTING GRADE. WHEN HIGH WATER TABLE CONDITIONS EXIST, OTHERWISE PLANT FLUSH WITH EXISTING GRADE.
 - PLANTING HOLE TO BE 2-3 TIMES THE DIAMETER OF THE CONTAINER.
 - INSERT FERTILIZER TABLET, BACKFILL 2/3 OF THE ROOT BALL AND WATER.
 - AFTER WATER PERCOLATES, BACKFILL HOLE TO TOP OF ROOT BALL AND GENTLY TAMP SOIL TO FIRM CONTACT WITH PLANT.
 - APPLY MULCH RING AROUND PLANT KEEPING A 6 IN CLEARANCE FROM STEM.

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, License No. #3165, Expiration Date: 10/22/2022.

ERI ENVIRONMENTAL | SURVEYING | ENGINEERING

6339 Howard Lane ElkrIDGE, MD 21075 p: 410-567-5210 f: 410-796-1562 e: info@ERIperts.com

LANDSCAPING, FOREST CONSERVATION AND ENVIRONMENTAL RESTORATION NOTES & DETAILS

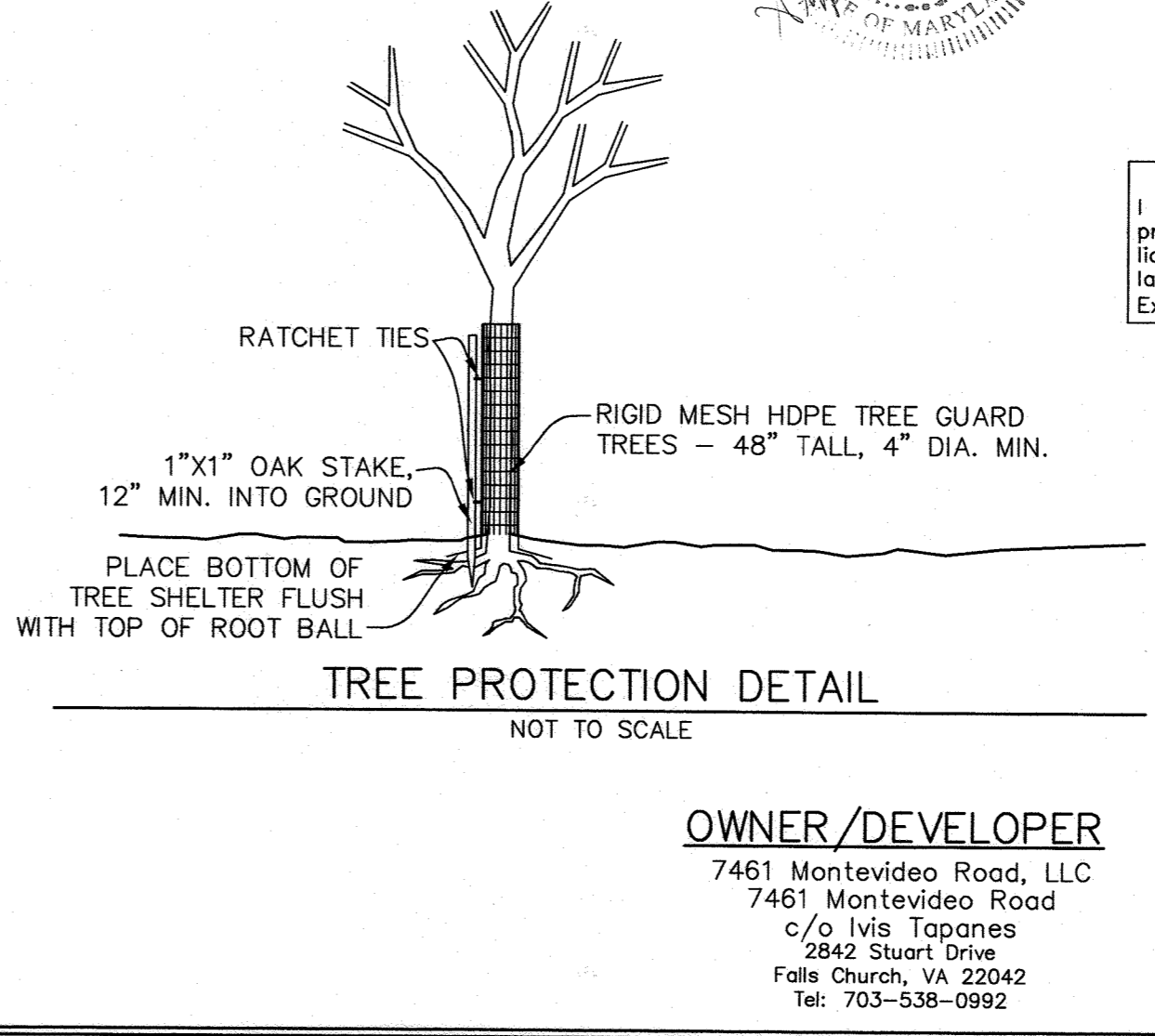
ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
7461 MONTEVIDEO ROAD

PLAT 25974—25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
TAX MAP 43 GRID 16 PARCEL 96
1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER
7461 Montevideo Road, LLC
7461 Montevideo Road
c/o Ivis Tapanes
2842 Stuart Drive
Falls Church, VA 22042
Tel: 703-538-0992

DESIGN BY: SMW
DRAWN BY: SMW
CHECKED BY: SLH
SCALE: As Shown
DATE: February 10, 2022
W.G. No.: 4059
SHEET No.: 15 OF 16

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, ElkrIDGE, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsh.com



SIGNAGE NOTE: All tree protection signs shall be placed on metal "T" posts or pressure treated wood poles. NO attachment of signs to trees is permitted.

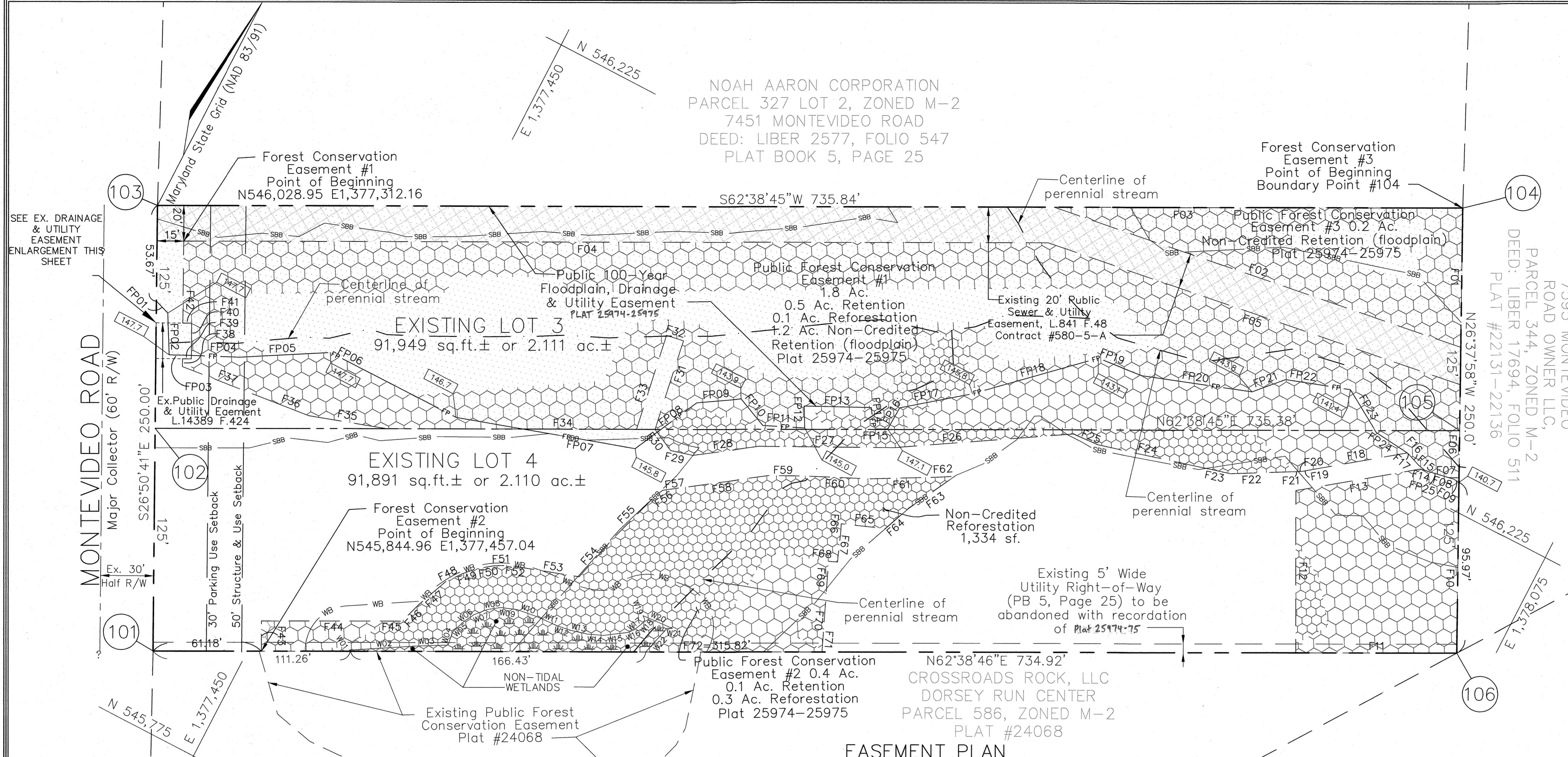
NOAH AARON CORPORATION
 PARCEL 327 LOT 2, ZONED M-2
 7451 MONTEVIDEO ROAD
 DEED: LIBER 2577, FOLIO 547
 PLAT BOOK 5, PAGE 25

LEGEND

	Public Forest Conservation Easement
	Public 100-Year Floodplain, drainage & utility easement
	Existing Public Sewer & Utility Easement
	Existing Public Drainage & Utility Easement
	Parcel Boundary
	Property Line
	Building Restriction Line (BRL)
	Adjacent Off-site Property Line
	Floodplain Line
	50' Stream Bank Buffer
	Ex. Stream Banks
	Ex. Wetlands
	25' Wetlands Buffer Floodplain Elevation

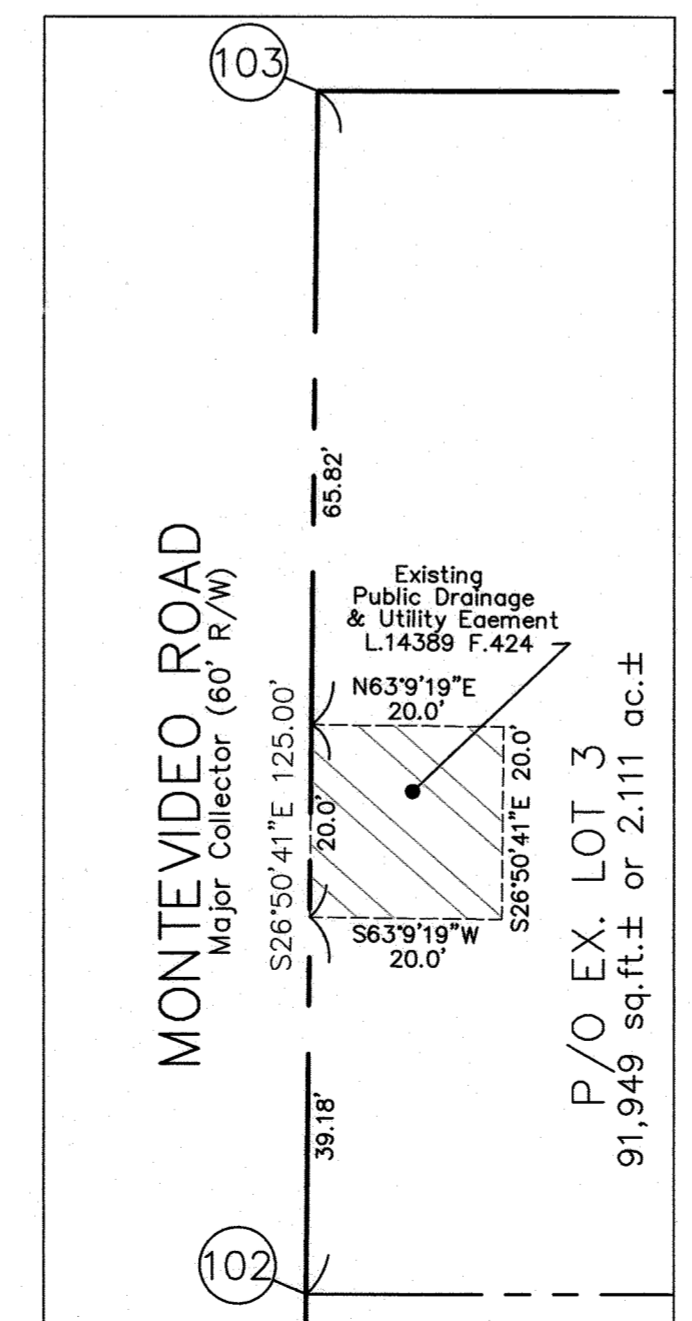
Wetlands Line Table

Line #	Distance	Bearing
W01	0.721	N62° 29' 12.61"W
W02	36.416	N58° 53' 07.47"E
W03	19.083	N60° 46' 41.44"E
W04	7.848	N08° 33' 45.73"W
W05	7.993	N19° 43' 13.54"E
W06	7.615	N28° 04' 37.63"E
W07	7.623	N41° 19' 29.83"E
W08	7.971	N53° 27' 29.47"E
W09	9.585	N70° 05' 41.31"E
W10	11.390	N82° 12' 54.44"E
W11	12.988	N86° 29' 42.91"E
W12	7.628	N81° 21' 23.73"E
W13	9.783	N75° 01' 39.08"E
W14	8.960	N67° 10' 53.08"E
W15	14.296	N55° 45' 24.76"E
W16	3.932	N38° 07' 36.18"E
W17	4.818	N23° 35' 32.33"E
W18	2.988	N14° 43' 59.29"E
W19	2.712	N50° 03' 06.80"W
W20	18.070	N85° 48' 36.19"E
W21	3.030	S63° 41' 38.65"W
W22	17.976	S14° 48' 08.75"W



EASEMENT PLAN
 SCALE: 1" = 30'

Line #	Distance	Bearing	Line #	Distance	Bearing	Line #	Distance	Bearing	Line #	Distance	Bearing
F01	78.151	S26° 37' 58.06"E	F18	56.512	S52° 36' 33.96"W	F35	44.538	S71° 59' 08.54"W	F54	26.198	N14° 10' 27.53"E
F02	242.273	S81° 27' 46.30"W	F19	3.885	S52° 39' 07.78"W	F36	22.323	S83° 34' 15.24"W	F55	37.405	N17° 21' 12.82"E
F03	230.308	N62° 38' 44.72"E	F20	2.008	S59° 44' 16.49"W	F37	54.156	S83° 43' 19.20"W	F56	4.375	N27° 38' 32.64"E
F04	487.398	N62° 38' 44.72"E	F21	2.035	S61° 42' 03.82"W	F38	4.370	N26° 50' 41.00"W	F57	8.087	N54° 41' 34.25"E
F05	245.494	N81° 27' 46.30"E	F22	36.075	S60° 43' 33.70"W	F39	5.000	N63° 09' 19.00"E	F58	51.280	N54° 47' 45.04"E
F06	52.231	S26° 37' 58.06"E	F23	18.922	S74° 44' 22.15"W	F40	20.000	N26° 50' 41.00"W	F59	20.095	N62° 55' 32.50"E
F07	5.858	S63° 22' 01.94"W	F24	57.787	S74° 44' 22.15"W	F41	5.000	S63° 09' 19.00"W	F60	37.165	N65° 03' 41.69"E
F08	2.996	N79° 16' 53.76"E	F25	14.919	S86° 18' 02.37"W	F42	45.953	N26° 50' 41.00"W	F61	39.036	N61° 15' 50.73"E
F09	3.478	S85° 29' 29.06"E	F26	101.374	S58° 12' 10.36"W	F43	17.000	N27° 21' 14.20"W	F62	9.375	N59° 06' 33.83"E
F10	95.971	S26° 37' 58.06"E	F27	76.421	S63° 06' 23.16"W	F44	72.002	N62° 38' 45.80"E	F63	31.876	S27° 55' 05.83"W
F11	90.830	S62° 38' 45.81"W	F28	37.387	S54° 58' 16.33"W	F45	7.229	N62° 38' 45.80"E	F64	17.178	S21° 39' 01.55"W
F12	91.253	N27° 21' 14.19"W	F29	12.668	S74° 51' 50.45"W	F46	14.073	N17° 40' 33.53"E	F65	24.956	S68° 44' 40.48"W
F13	71.228	N52° 47' 11.36"E	F30	14.775	N64° 06' 53.03"W	F47	18.410	N22° 09' 58.26"E	F66	5.000	S23° 25' 19.46"E
F14	2.818	N79° 16' 53.76"E	F31	52.276	N09° 35' 45.59"W	F48	11.399	N36° 46' 58.08"E	F67	16.601	S21° 10' 31.91"E
F15	4.992	N77° 34' 46.25"W	F32	10.000	S80° 01' 09.47"W	F49	8.237	N43° 06' 43.01"E	F68	5.021	S67° 34' 52.31"W
F16	7.717	N69° 19' 56.48"W	F33	55.402	S09° 37' 33.47"E	F50	9.860	N53° 07' 26.77"E	F69	28.519	S23° 13' 56.30"E
F17	1.426	N75° 41' 13.10"W	F34	140.676	S62° 38' 45.26"W	F51	8.622	N60° 32' 42.66"E	F70	21.137	S23° 13' 56.30"E
						F52	8.928	N72° 03' 23.02"E	F71	1.510	S23° 13' 56.30"E
						F53	31.145	N71° 40' 52.59"E	F72	315.817	S62° 38' 45.81"W



EXISTING PUBLIC DRAINAGE & UTILITY EASEMENT ENLARGEMENT VIEW
 SCALE: 1" = 20'

Line #	Distance	Bearing	Line #	Distance	Bearing
FP01	9.238	S70° 54' 26.98"E	FP16	13.684	N02° 12' 18.82"E
FP02	23.449	S29° 20' 29.48"E	FP17	41.847	N51° 38' 02.17"E
FP03	7.753	N63° 22' 49.50"E	FP18	73.716	N46° 48' 41.35"E
FP04	32.122	N64° 41' 12.33"E	FP19	26.176	N84° 05' 29.43"E
FP05	51.211	N59° 39' 13.66"E	FP20	62.957	N70° 58' 56.25"E
FP06	79.445	N89° 43' 01.16"E	FP21	20.234	N42° 31' 35.97"E
FP07	102.470	N72° 22' 17.72"E	FP22	36.889	N71° 23' 17.33"E
FP08	43.234	N25° 59' 44.09"E	FP23	28.107	S58° 46' 51.10"E
FP09	24.999	N57° 47' 42.30"E	FP24	20.889	S84° 18' 49.91"E
FP10	19.301	S66° 44' 50.75"E	FP25	13.919	N79° 16' 53.76"E
FP11	23.647	N66° 04' 50.55"E			
FP12	12.329	N28° 23' 59.40"W			
FP13	37.811	N63° 49' 58.64"E			
FP14	12.143	S34° 16' 04.15"E			
FP15	7.727	N62° 41' 02.23"E			

*NOTE: F17, F16, F15, F08 and F09 are shared/coincidental lines between Floodplain and Forest Conservation.

PROPERTY BOUNDARY COORDINATE TABLE

NO.	NORTHING	EASTING
101	545,816.847	1,377,402.701
102	545,928.376	1,377,346.254
103	546,039.906	1,377,289.807
104	546,378.019	1,377,943.370
105	546,266.275	1,377,999.407
106	546,154.532	1,378,055.444

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

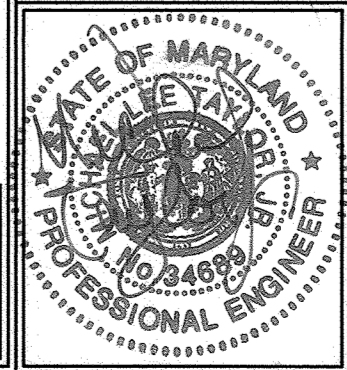
CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 3/22/22

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3/22/22

DIRECTOR
 DATE: 3/22/22

OWNER/DEVELOPER
 7461 Montevideo Road, LLC
 7461 Montevideo Road
 c/o Ivis Tapanes
 2842 Stuart Drive
 Falls Church, VA 22042
 Tel: 703-538-0992

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. #34689, Expiration Date: 7/08/2023.



FSH Associates
 Engineers Planners Surveyors
 6339 Howard Lane, Elkridge, MD 21075
 Tel: 410-567-5200 Fax: 410-796-1592
 E-mail: info@fshri.com

DESIGN BY: SMM
 DRAWN BY: SMM
 CHECKED BY: SLH
 SCALE: As Shown
 DATE: February 10, 2022
 W.O. No.: 4059
 SHEET No.: 16 OF 18

EASEMENT PLAN
ELLA L. McADOO SUBDIVISION—LOTS 3 & 4
 7461 MONTEVIDEO ROAD
 PLAT 25974-25975 ELLA L. McADOO SUBDIVISION LOTS 3 & 4
 TAX MAP 43 GRID 16 PARCEL 96
 1st ELECTION DISTRICT ZONED: M-2 HOWARD COUNTY, MARYLAND