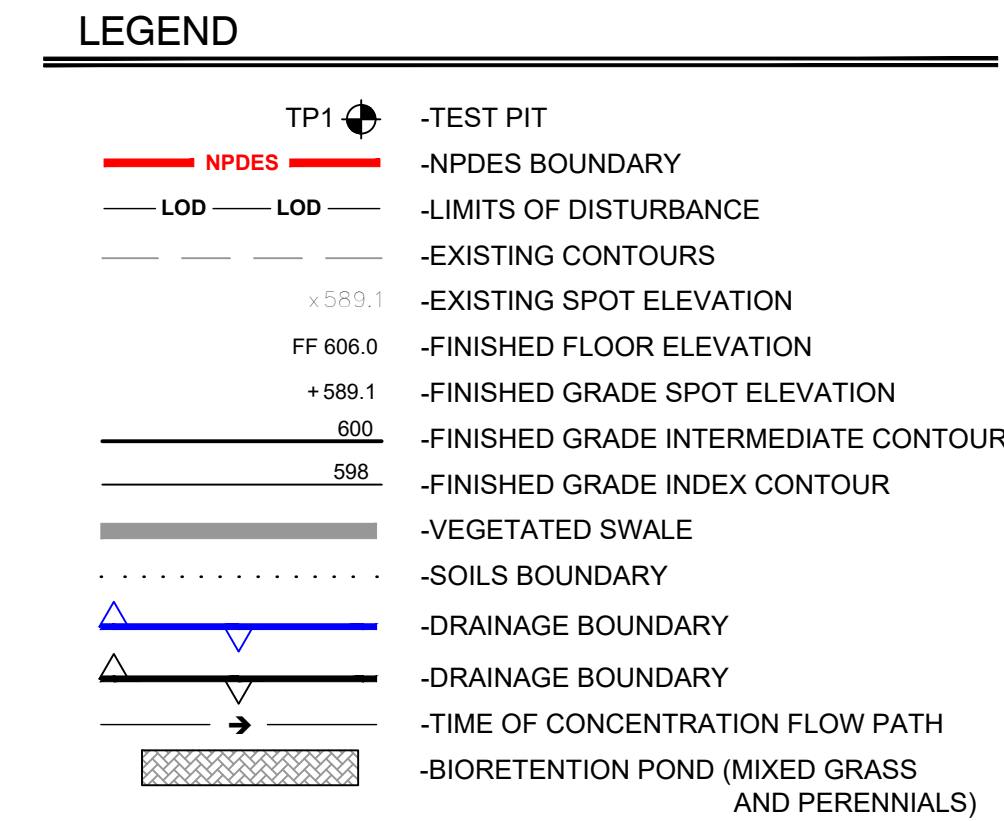




SEQUENCE OF CONSTRUCTION

A copy of the erosion and sediment control narrative shall be provided to the contractor. Contractor is to familiarize him/herself with the erosion and sediment control narrative and plans prior to construction.

Contractor shall contact Cumberland County Conservation District (717-240-7812), West Pennsboro Township (717-243-0220) and Frederick, Seibert and Associates (717-701-8111) at least seven (7) days prior to the start of construction to schedule a preconstruction meeting.

Contractor to notify the PA One Call System (1-800-242-1776) for the location of existing underground utilities at least three (3) days prior to starting any earth disturbance activities.

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas. All embankment slopes shall be tracked prior to stabilization. As soon as slopes, channels, ditches and other disturbed areas reach final grade they must be stabilized. This site is in a special protection watershed, upon completion or temporary cessation of earth disturbance activity that portion of the site must be immediately stabilized. As disturbed areas within a project approach final grade, preparations should be made for seeding and mulching to begin. In no case should an area exceeding 15,000 square feet, which is to be stabilized by vegetation, reach final grade without being seeded and mulched.

1. Field identify/stake the limits-of-disturbance (LOD) and proposed ESC/PCSM BMPs. Install protective fence around PCSM BMPs as shown. Avoid driving across infiltration BMPs. It is recommended that the LOD be staked at minimum 50' intervals.
2. Install rock construction entrance #1 and #2. Install Concret Washouts.
3. Install perimeter filter barriers (compost filter socks) #1, #2, #3, #4, #5, #6, #7, #8, #9, and #10.

Critical Stage Sinkhole/Depression Repair (See "Critical Stages" Section)

5. Notify Licensed Professional a minimum of five (5) working days prior to beginning work on Sinkhole/Depression repair.
6. Repair the sinkholes that currently exist on site.
7. Inspect the depressions as listed on the Existing Conditions plan and determine if they need repaired prior to any mass earthwork.

Critical Stage Sediment Basins #1 and #2 (See "Critical Stages" Section)

8. Notify Licensed Professional a minimum of five (5) working days prior to beginning work on Sediment Basins #1 and #2.

9. Strip topsoil necessary to complete the construction of basins #1 and #2. Stockpile topsoil where shown, stabilize and place filter sock around lower side. Install Baffles #1, #2, #3, & #4 where shown.
10. Grade in Swale #3 and install erosion control matting.
11. Install the rock filter barrier. See Enlargement Plan #2.
12. Strip topsoil necessary to complete rough grading of site. Stockpile topsoil, stabilize and place filter sock around lower side.
13. Begin rough grading site beginning downstream by sediment basins and working toward access roads. Grade the entire site at once. Rough grade SWM Pond BMPs, removing soil to 1' above the proposed infiltration bottom of ponds.

NOTE: Do not grade in driveway & parking area located between Sediment Basin #1 and warehouse B to allow for sediment basin required capacity (North of Warehouse Building B) and limit total disturbance.

NOTE: Contractor shall limit earthwork activity to the maximum extent practicable in order to leave as little unstabilized area exposed at any given time as possible.

14. Simultaneously with overall site grading, install bypass pipe systems E-27, E-2 to E-4 & E-5, E-16 to E-17 & E-18, and E-22 to E-23. Install starting at the outlet and work upstream. Install rip rap outlet protection at all outlets. Install diversion berms after bypass pipes are completed.

Critical Stage Subsurface Infiltration Basins (See "Critical Stages" Section)

15. Notify Licensed Professional a minimum of five (5) days prior to beginning work on Subsurface Infiltration Basins.

16. Simultaneously with overall site grading, install Subsurface Infiltration Basin BMPs SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, and SS-7. Contractor to contact Engineer of record to inspect basin bed prior to stone installation.
17. Install the storm drain lines that connect to the subsurface infiltration basins. Install snouts and inlet filter bags simultaneously with inlet installation in the respective inlets as shown on the storm drain profiles.
18. Install outlet structure starting downstream and working upstream to connection. Install roof drain collector pipes and cap at building. Install inlet filter bags and snouts in inlets immediately as inlet is installed. (See PCSM Details for Snout Detail).
19. Grade roadways and install utilities and storm drains within the roadway. Road shall be stabilized with stone subbase once subgrade is complete. Install snouts and filter bags in the inlets once installed.
20. Complete grading of the building pads and parking areas.
21. Prepare building pads. Grading operations shall be performed in a manner that does not concentrate flow to perimeter control measures nor exceed the minimum drainage areas to the sediment basins.
22. Once building pads and foundation are complete, building construction may begin.
23. All concrete washing shall be in approved concrete washout areas.
24. Install site water, sewer, and storm drain lines in accordance with the "Pipeline and Utility Erosion and Sediment Control Notes".
25. Storm drain junctions for roof drains shall be temporarily blocked until connections are completed. Install snouts in all Roof drain junction boxes. Install inlet filter bags and snouts as inlets are brought to grade. Install rip rap outlet protection. (See PCSM Details for Snout Detail).
26. Grade drive aisles and parking areas, including the area between Sediment Basin #1 and warehouse building B. Stone base shall be placed within four (4) days of subgrade being established. Dewater sediment basin #1 as needed in order to fill in basin #1 area.
27. Grade and stabilize swales #1 and #2 with matting and per the permanent seeding specifications.
28. Place topsoil and stabilize per the permanent seeding specifications.

Critical Stage PCSM Pond BMP Installation (See "Critical Stages" Section)

29. Notify a Licensed Professional a minimum of three (3) working days prior to beginning work on PCSM BMPs P-1, P-2, P-3, P-4, P-5, and P-7. Convert Sediment Basins #1, and #2 to PCSM BMPs P-3 and P-6 following the "Sediment Basin Conversion" Notes. PCSM BMPs shall be constructed after the upstream drainage area is stabilized. Infiltration BMPs shall be constructed during the growing season. See "PCSM Sequence of Construction" for construction of PCSM BMPs. A "Licensed Professional" is required to verify the following stages of construction:

- a. Outlet Structure Construction
- b. Berm and Core Trench Construction
- c. Infiltration BMP Excavation
- d. Stone and Underdrain Installation
- e. Planting Soil Installation

30. Clear Site of debris and all unwanted materials. All waste material shall be recycled or disposed of in accordance with the "Recycling & Disposal of Materials" notes.
31. Disturbed areas shall be stabilized and any affected BMPs shall be repaired immediately. Temporary BMPs may not be removed until a minimum 70% perennial vegetative cover is well-established across the entire upslope contributing drainage area. All areas proposed to be paved must be paved or have compacted stone base in place.
32. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Cumberland County Conservation District for a final inspection prior to the removal of any remaining BMPs. Any areas disturbed during BMP removal shall be immediately stabilized.

SUBSURFACE BMP INSTALLATION

Notify Licensed Professional and Conservation District a minimum of five (5) working days prior to beginning subsurface BMP installation. A "Licensed Professional" is required to verify the specifications listed under the critical stages.

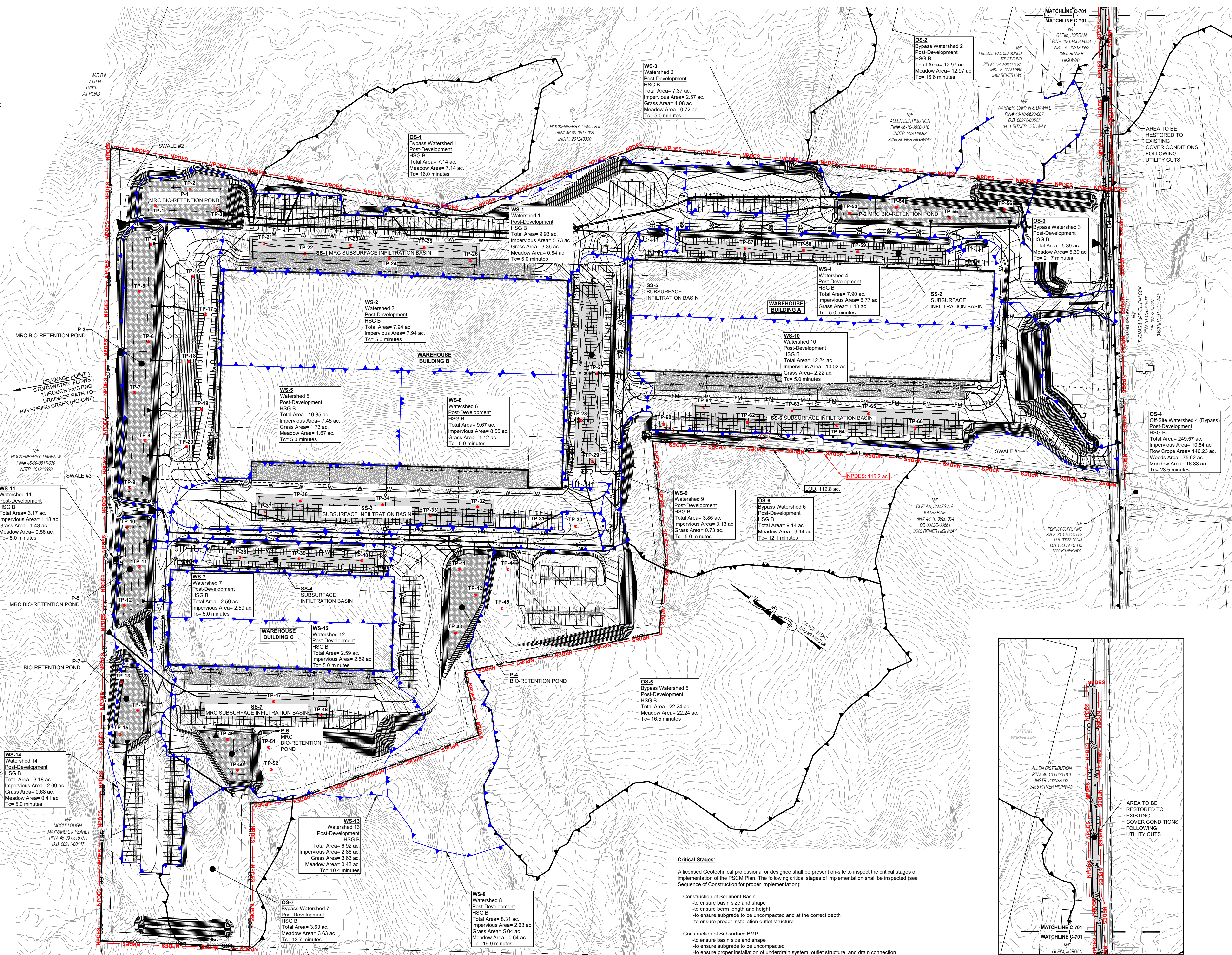
1. Excavate the area of the subsurface BMP.
2. Install geotextile fabric and underdrain pipes at the proposed bottom of the excavated area. Connect associated storm drain system pipes and cap until extended at a later date. In areas where the existing grade is below the stone bottom grade, fill with an Engineer approved filtration soil media to the proposed grade before installing the fabric and underdrain pipes.
3. Install stone storage area to the proposed depth. Install geotextile fabric on all sides and top of the stone storage area, completely wrapping the system in fabric.
4. Compact topsoil on top of the system and grade up to final grade.
5. Stabilize the area and remove necessary Erosion and Sediment Control measures once stabilized.

SEDIMENT BASIN CONVERSION

Notify Licensed Professional and Conservation District a minimum of three (3) working days prior to beginning sediment basin conversion. A "Licensed Professional" is required to verify the conversion to a permanent PCSM BMP.

Note: Conversion of sediment basin to permanent stormwater facility shall be completed within the growing season. All sediment deposited within the culvert/storm drains shall be removed prior to conversion.

1. The sediment storage zone shall be dewatered by pumping through a filter bag to a permanently stabilized area. Remove accumulated sediment according to the "Import/Export Fill" notes.
2. Install borehole to soils to raise the bottom of the basin from the installation elevation of 583.00 to the underdrain installation elevation of 585.00.
3. Install minimum 2 foot high stone filter berm and outlet structures.
4. Fine grade bottom of basin and berm.
5. Permanently stabilize the bottom of basins with the seed mix and plugs listed in the details.
6. After basins have a uniform perennial vegetative cover well established, remove necessary ESC BMPs.



Critical Stages:

A licensed Geotechnical professional or designee shall be present on-site to inspect the critical stages of implementation of the PCSM Plan. The following critical stages of implementation shall be inspected (see Sequence of Construction for proper implementation).

Construction of Sediment Basin

- to ensure basin size and shape
- to ensure berm length and height
- to ensure subgrade to be uncompacted and at the correct depth
- to ensure proper installation outlet structure

Construction of Subsurface BMP

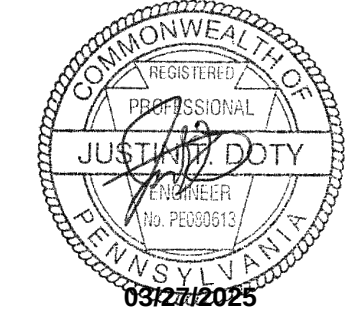
- to ensure basin size and shape
- to ensure subgrade to be uncompacted
- to ensure proper installation of underdrain system, outlet structure, and drain connection
- to determine where a 2' soil media buffer is necessary at basin bottom

Construction of Bio-Retention BMP

- to ensure basin size and shape
- to ensure subgrade to be uncompacted
- to ensure proper installation of underdrain system, outlet structure, and drain connection

Sinkhole/Depression Inspection and Repair

- to ensure depression is repaired properly
- to monitor if any new depressions/sinkholes develop during construction



Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania.
License # PE080813
Expiration Date: 03/27/2025



DATE	DESCRIPTION	MARK
01/26/24	Revised per Tomlinson Engineers Comments	
05/02/24	Revised per CCOO Kevin Comments	
12/22/24	Revised per DEP/CCO Tech Comments	
03/27/25	Revised per Elected Review Comments	
03/28/25	Revised per 2nd Elected Review Comments	

AAMPA HOLDINGS - RITNER HWY

SITUATED APPROXIMATELY 1/4 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-230)

WEST PENNSBORO TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA

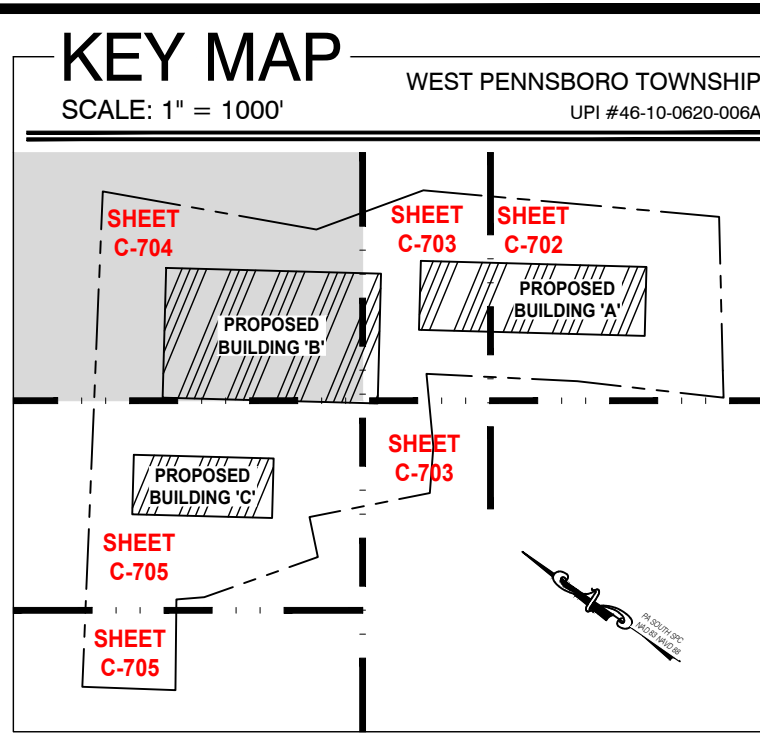
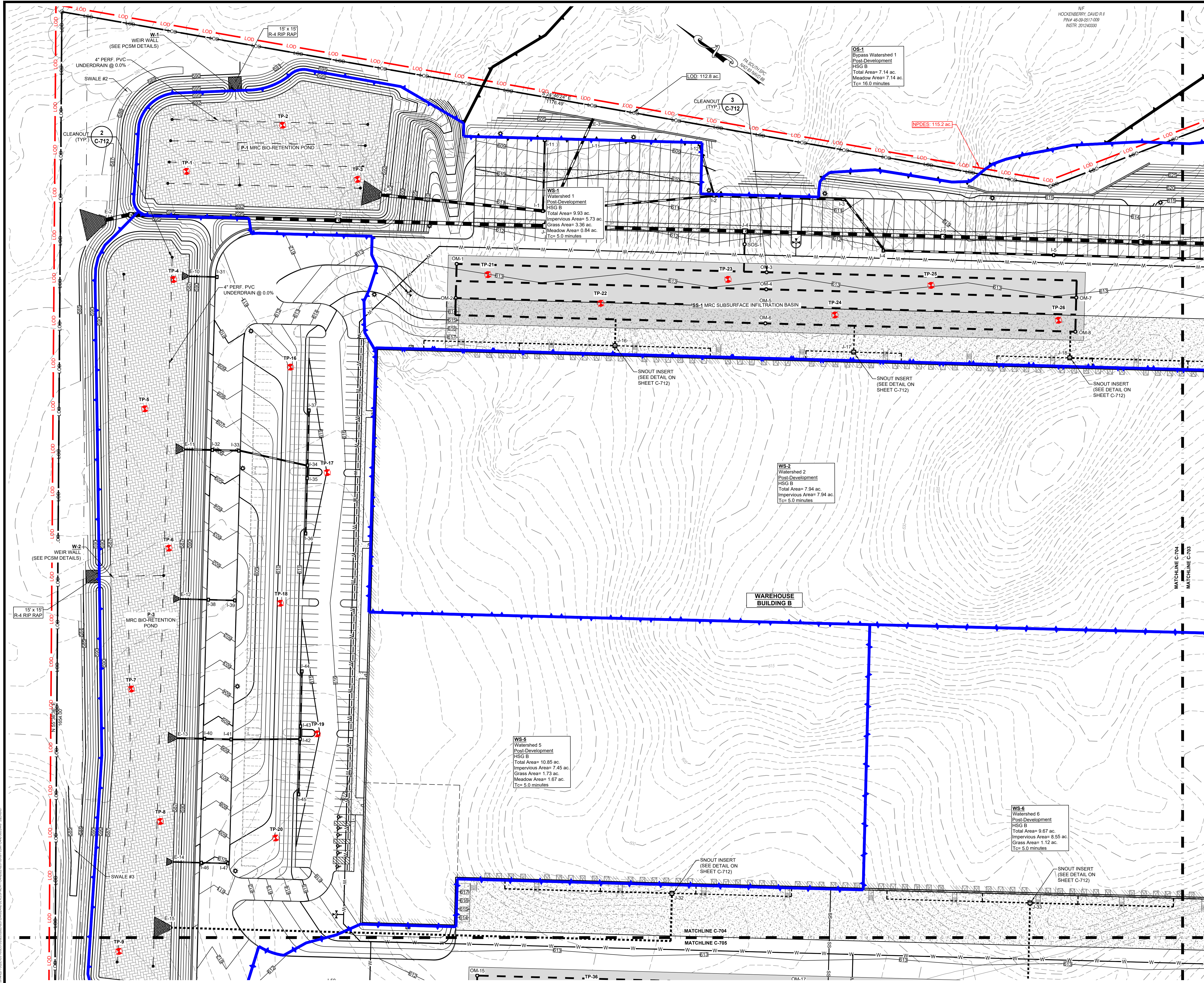
AAMPA HOLDINGS, LLC
1515 WEST COMMERCE AVENUE, SUITE 303, CARLSLE, PA 17013
(223) 580-4040

PROJECT NO.	2022-0251
DWY BY	CMH
DATE	11-15-2023
PROJECT MANAGER	JTD
EMAIL	JTD@sa-inc.com
PROPERTY INFORMATION	46-10-0620-006A
SCALE	1" = 150'
SHEET TITLE	PCSM PLAN

PCSM PLAN

C-701
SHEET 52 OF 63

* A BLANKET EASEMENT IS APPLIED TO THIS SITE FOR STORMWATER MANAGEMENT INSPECTIONS *



COMMONWEALTH OF PENNSYLVANIA

PROFESSIONAL ENGINEER

JUSTIN J. DOTY

PA # 2003041

03/27/2025

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000013
Expiration Date: 03-27-2025

Frederick Seibert & Associates, Inc.

CIVIL ENGINEERS • SURVEYORS • LANDSCAPE ARCHITECTS • LAND PLANNERS

108 SOUTH POTOMAC STREET
PHILADELPHIA, PA 19106
772.571.0007
772.571.0111

DATE

01/09/24

01/09/24

12/02/24

03/07/25

03/28/25

MARK

DESCRIPTION

Revised per Township Engineer Comments

Revised per DEP/PCSD Tech Comments

Revised per Finalized Review Comments

Revised per 2nd Elevated Review Comments

PROJECT NO.

2022-0251

DWN BY

CMH

DATE

11-15-2023

PROJECT MANAGER

JTD

EMAIL

JDoty@fsa-inc.com

PROPERTY INFORMATION

46-10-0620-006A

SCALE

1" = 50'

SHEET TITLE

PCSM PLAN

C-704

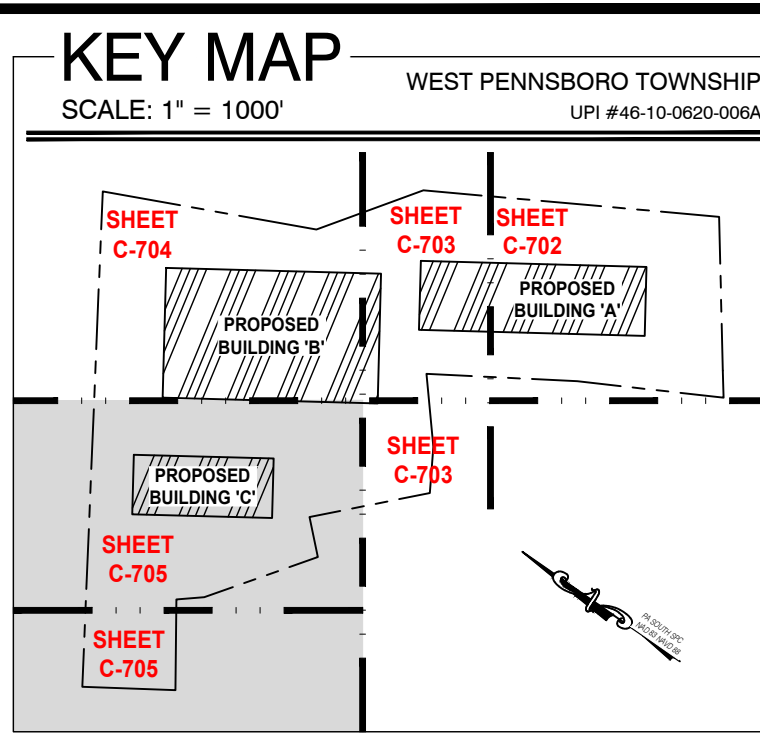
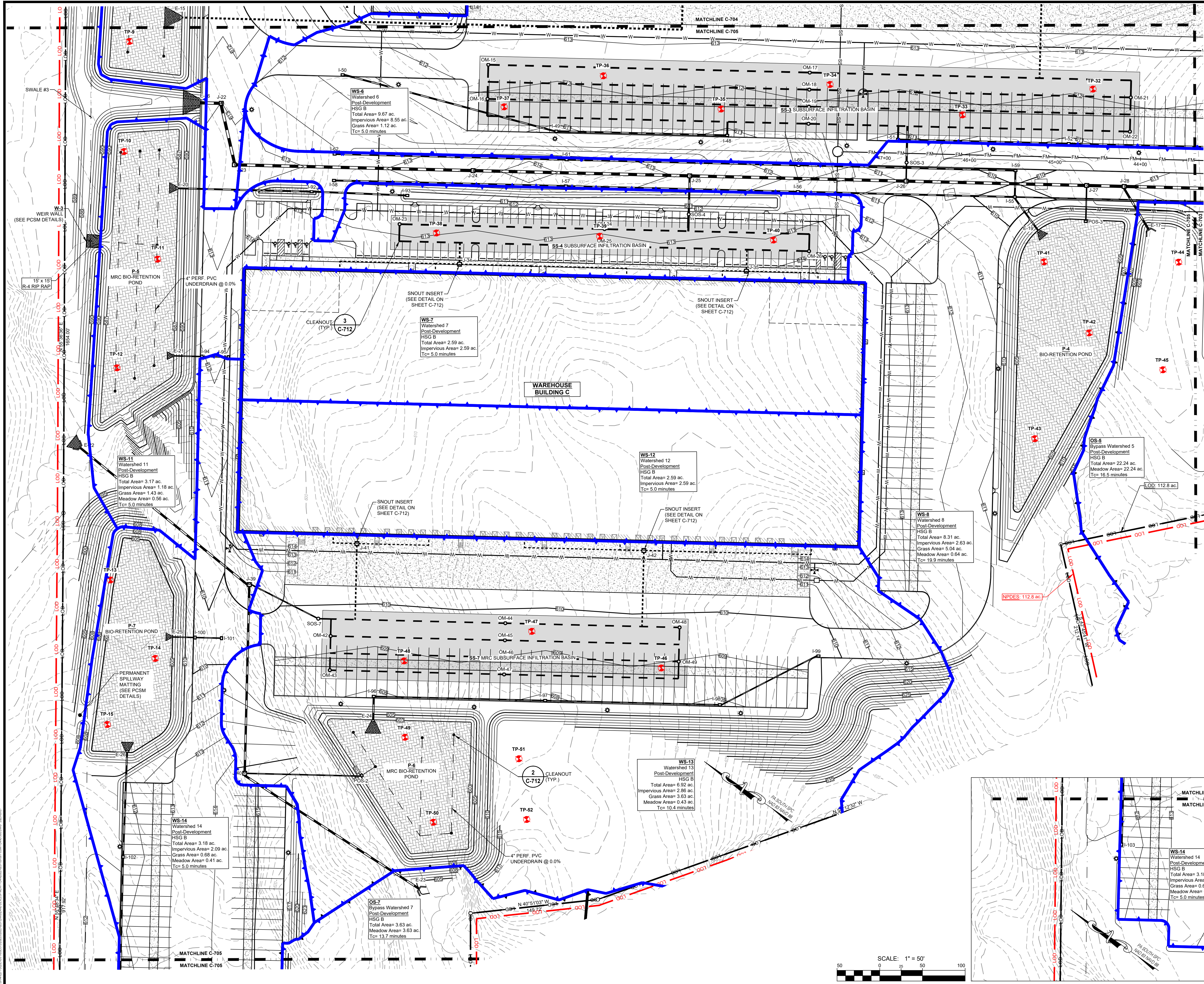
SHEET 55 OF 63

AAMPA HOLDINGS - RITNER HWY

SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-202)

WEST PENNSBORO TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA

AAMPA HOLDINGS, LLC
1514 WEST COMMERCE AVENUE, SUITE 203, CHARLISLE, PA 17013
(223) 530-4040



COMMONWEALTH OF PENNSYLVANIA

PROFESSIONAL ENGINEER

JUSTIN J. DOTY

PA. REG. NO. 12030011

03/22/2025

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania.

PA. REG. NO. 12030011

Expiration Date: 03-22-2025

Frederick Seibert & Associates, Inc.

20 WEST BALTIMORE STREET

108 SOUTH POTOMAC STREET

PHILADELPHIA, PA 19103

NEW YORK, NY 10003

717.257.1811

717.257.1807

DATE

01/09/24

01/09/24

12/02/24

03/07/25

03/28/25

MARK DESCRIPTION

Revised per Township Engineer Comments

Revised per DEP/PCSD Tech Comments

Revised per Finalized Review Comments

Revised per 2nd Elevated Review Comments

AAMPA HOLDINGS - RITNER HWY

SITUATED APPROXIMATELY 1/4 MILE FROM SOUTHWEST CORNER OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-203)

WEST PENNSBORO TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

AAMPA HOLDINGS, LLC

1514 WEST COMMERCIAL AVENUE, SUITE 203, CHALISLE, PA 17013

(223) 330-4340

PROJECT NO.

2022-0251

DATE

11-15-2023

PROJECT MANAGER

JTD

EMAIL

JDoty@sa-inc.com

PROPERTY INFORMATION

46-10-0620-006A

SCALE

1" = 50'

SHEET TITLE

PCSM PLAN

C-705

SHEET 56 OF 63

Contractor Notes

- The contractor shall be responsible for obtaining any required permits for the construction proposed on this plan.
- The contractor shall be responsible for the replacement of any damaged or destroyed existing site features that are to remain.
- All improvements shall meet the requirements of West Pottsville Township.
- The contractor shall be responsible for all traffic control, trench barricading, covering, sheeting and shoring, in accordance with applicable federal, state and local requirements.
- The location of existing underground utilities must be field verified by the contractor prior to construction, excavation and blasting.
- The contractor shall take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage done due to the contractor's negligence shall be immediately and completely repaired at the contractor's expense.
- The contractor shall legally dispose of all underground and above ground structures, features, and materials as required for the construction of the improvements shown on this plan.
- The contractor shall ensure the positive drainage away from all buildings.
- The contractor shall coordinate any and all utility service extensions/terminations with the utility owner.
- The contractor is responsible for all field testing and "record drawings" as required by various authority requirements.
- The contractor shall notify the appropriate authorities at least 10 days prior to the commencement of construction.
- The contractor shall call PoOne Call prior to beginning construction.

Post-Construction Stormwater Management (PCSM) Standard Notes:

PCSM Requirements:

A licensed professional or a designee shall be present onsite and be responsible during critical stages of implementation of the approved PCSM Plan. The critical stages may include the installation of the underground treatment or storage BMPs, structurally engineered BMPs, other BMPs as deemed appropriate by the department or the conservation district.

The PCSM Plan, inspection reports, and monitoring records shall be available for review and inspection by the department or the conservation district.

PCSM Long-Term Operations and Maintenance Requirements:

The permittee or co-permittee shall be responsible for long-term operation of the PCSM BMPs unless a different person is identified in the notice of termination and has agreed to the long-term operation and maintenance of the PCSM BMPs. A permittee or co-permittee that fails to transfer the long-term operation and maintenance of the PCSM BMP or otherwise fails to comply with this requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM BMPs located on the property.

Notice of Termination and Recording of Plan

If the permittee is the landowner and will agree to be responsible for long-term operation and maintenance of the PCSM BMPs:

- An instrument will be signed by the permittee (as both grantor and grantee) and notarized. The instrument, along with attachments, shall (to satisfy 25 Pa. Code §102.8(m)(2)):
 - identify the PCSM BMP(s),
 - provide for the necessary access related to long-term operation and maintenance of the PCSM BMP(s), and
 - provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP(s) is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees.
- The above instrument and attachments listed below shall be recorded within 45 days of permit issuance or authorization. The proof of filing the instrument and attachments shall be provided to the Department or conservation district within 90 days of permit issuance or authorization.
 - approved PCSM plan
 - operation and maintenance plan (synonymous with the long-term operation and maintenance schedule included within the PCSM plan)
- An operation and maintenance agreement will not need to be signed or recorded in this scenario because the permittee is the landowner.
- Unless the location and dimensions of the PCSM BMPs on the record drawings are the same as those on the PCSM plan, there are no subsurface BMPs, all BMPs are non-engineered and require minimal maintenance, and the operation and maintenance plan has not changed, the instrument will need to be amended in preparation for permit termination. The amended instrument will be recorded with the following attachments:
 - record drawings which accurately reflect as-built conditions
 - operation and maintenance plan (synonymous with the long-term operation and maintenance schedule included within the record drawings)
- The permittee shall provide "proof of filing" the instrument and attachments in the form of a receipt from the county Recorder of Deeds Office and complete Section 7. b of the NOT form.

Post-Construction Stormwater Management Operation and Maintenance Owner/Operation:

AAMPA Holdings, LLC
1514 W. Commerce Ave., Suite 203
Carlisle, PA 17013

General Notes:

- All stormwater conveyances and BMPs shown on this plan shall be constructed by the contractor in accordance with the design, conditions and specifications identified on this plan. Ownership, operation, and maintenance of the storm water management facilities shall be the responsibility of the landowner, his successors and assigns in perpetuity, unless specifically identified otherwise herein.
- Stormwater management conveyances and BMPs shall be operated and maintained in good working condition to ensure that they perform their design function, in a manner acceptable to the township and county.
- The owner shall inspect each stormwater management conveyance and BMP after each 1" rainfall event or at the minimum schedule noted on this plan. Appropriate action shall be taken to ensure that repair, replacement or other routine maintenance of the BMPs to ensure proper function and operation. All maintenance costs shall be borne by the owner. A written report documenting each inspection and all BMP repair and maintenance activities shall be kept by the property owner.
- Municipal and county officials and their agents or employees shall have the right of access for inspection and shall have the right at their discretion to maintain or repair the facilities as necessary to restore them to their design conditions. The cost to complete the maintenance or repair shall be borne by the responsible property owner(s).

Recycling & Disposal of Materials:

Wastes generated following the construction of this project shall be recycled if at all possible. This shall include the trash and sediment that may wash into the PCSM BMPs. Any materials that cannot be recycled or reused shall be disposed of properly. If soil and/or rock disposal or borrow areas are required, approved erosion and sedimentation controls shall be implemented at these areas that meet chapter 102 and/or other state and federal regulations.

All building materials and wastes must be removed from the site and recycled or disposed in accordance with the department's solid waste management regulations at 25 Pa. Code 260.1 et seq. 271.1, and 267.1 et seq. No building materials or waste unused building materials shall be burned, buried, dumped or discharged at the site.

Permanent Stabilization

- Permanent stabilization is defined as a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
- All topsoil shall be replaced at a minimum depth of at least 6 inches in order to promote stormwater infiltration and permanent vegetative stabilization on all disturbed areas to be permanently revegetated.
- All topsoil shall be loosened to a depth of at least 4 inches. All objectionable material larger than 2 inches shall be removed.
- Contractor shall provide soil testing pH before implementing permanent seeding. Lime/stone and fertilizer shall be applied uniformly in areas to be seeded and worked into the soil to a depth of 2 inches. In the absence of soil testing, apply limestone and fertilizer per the application rate specified below:
 - Limestone - pulv ag at 6 tons per acre.
 - Fertilizer - 100 lbs/acre N, 200 lbs/acre P205, 200 lbs/acre K2O
- Mulch of long stem straw shall be applied at an even application rate of 3 tons per acre with a surface covering of 100%. Mulch shall be either mechanically stabilized or stabilized by use of a tackifier.
- Hydroseed is not considered stabilized until it germinates.

Areas of Minimized Total Disturbance - Grading

- Area shall not be subject to grading or movement of existing soils
- Existing native vegetation in a healthy condition may not be removed
- Invasive non-native vegetation may be removed
- Pruning or other required maintenance of vegetation is permitted. Additional planting is permitted
- Area shall be protected by having limits of disturbance clearly shown on all construction drawings and delineated in the field.
- The area not subject to grading shall be clearly delineated on the Stormwater Management Plan. If future grading or disturbance of this area occurs, subsequent stormwater management must be provided to address disturbance.
- Area shall not be located on the development project.

GEOTECHNICAL NOTES (from report by ECS Mid Atlantic, LLC Report dated May 30, 2023)

- Full-time observation of the excavation and construction of all basins by the authorized ECS representative to verify that suitable conditions are present.
- The construction of basins may encounter conditions that were not anticipated as a result of subsurface exploration, as a result, the following sequence of items is to address these construction related difficulties or discrepancies with the design assumptions:
 - If redoximorphic features (soil mottling and coloration patterns formed by the reduction of iron and/or manganese from saturated conditions in soil) are encountered:
 - A qualified professional should determine if the features observed are associated with a historic condition (associated with fill, previous site condition, or natural coloration) or are associated with conditions that could presently occur (seasonal variations in the water table).
 - Evaluate the elevation of the features relative to the proposed design elevation of the SWM feature and determine if the size and elevation of the SWM feature can be adjusted to alleviate the condition.
 - Retain ECS and Engineer to evaluate alternate design concepts. Alternate design proposed by the Professional should be submitted to the Township for approval.
- If the field verified infiltration rates are excessively high (greater than 6 inches per hour):
 - Determine the extent of the materials exhibiting the high infiltration rates through a combination of visual-manual classification, hand probing, density testing, or other suitable methods as determined by ECS.
 - Overexcavate the materials to the depth where the material type changes or a maximum depth of 2 feet, whichever is encountered first.
- If excessive rates are associated with weathered or broken rock, the rock surface should be examined by ECS, prior to replacement of suitable material.
- Replace the excavated material with finer grained materials approved by ECS. Suitable soil mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor generally conforming to the table below, with field infiltration rates post placement determined by ECS.

RECOMMENDED SOIL MEDIA BLEND								
Permissible Soil Types for Soil Media, based on USDA Classification	Ranges of USDA Particle Size Percentages						Typical Infiltration Rates for Permissible Soil Types (in/hr)*	
	Sand		Silt		Clay			
	Min	Max	Min	Max	Min	Max	Min	Max
Sand, Loamy Sand, Sandy Loam, Loam	50	100	0	50	0	20	0.5	6.0

- Materials should be lightly tracked into place in non-structural areas.
- If material replacement is required in structural areas (Ex: below-grade SWM facilities in paved areas), material placement specifications, including materials type, mix ratio, compactive effort and required density should be determined by ECS. Technical recommendations should be sealed by ECS and submitted to the Township for approval.
- If the field verified infiltration rates are excessively low (less than 0.1 inches per hour):
 - Determine the extent of the materials exhibiting the low infiltration rates through a combination of visual-manual classification, hand probing, density testing, or other suitable methods as determined by ECS.
 - Overexcavate the materials to the depth where the material type changes or a maximum depth of 2 feet, whichever is encountered first.
 - If bedrock is encountered, the rock should be removed to a minimum depth of 2 feet below the bottom of the basin and should be examined by ECS, prior to replacement of suitable material.
- Replace the excavated material with more coarsely grained materials approved by ECS. Suitable soil mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor, and subject to testing and approval by ECS.
- Suitable soil mixtures may consist of materials blended by volume ratios as determined by ECS.
- Materials should be lightly tracked into place in non-structural areas.
- If material replacement is required in structural areas (Ex: below-grade SWM facilities in paved areas), material placement specifications, including materials type, mix ratio, compactive effort and required density should be determined by ECS. Suitable soil mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor generally conforming to the table above, with field infiltration rates post placement determined and approved by ECS.

Ownership, Operation and Maintenance Notes:

- All stormwater conveyances and BMPs shown on this plan shall be constructed by the contractor in accordance with the design, conditions and specifications identified on this plan. Ownership, operation, and maintenance of the storm water management facilities shall be the responsibility of the landowners (Appalachian Asset Management), his successors and assigns in perpetuity, unless specifically identified otherwise herein.
- The owner shall inspect each stormwater management conveyance and BMP after each 1" rainfall event or at the minimum schedule noted on this plan. Appropriate action shall be taken to ensure that repair, replacement or other routine maintenance of the BMPs to ensure proper function and operation. All maintenance costs shall be borne by the owner. A written report documenting each inspection and all BMP repair and maintenance activities shall be kept by the property owner.
- A written report documenting each inspection and all BMP repair and maintenance activities shall be kept by the property owner.
- Municipal and county officials and their agents or employees shall have the right of access for inspection and shall have the right at their discretion to maintain or repair the facilities as necessary to restore them to their design conditions. The cost to complete the maintenance or repair shall be borne by the responsible property owner(s).
- Any debris, sediment, contamination, spills, replaced structures, etc. should be disposed of in a composting facility, trash container, or disposed or recycled in a manner as per the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq. 271.1 and 267.1 et seq. 265 Pa. Code 102.4(b)(5)(x).

Bio-retention Pond:

- Schedule:
- Inspect two times per year
 - Inspect after runoff events greater than 1"
- Inspection/Maintenance:
- Inspect vegetation along the surface of the basins for any bare spots. Vegetation should be maintained in good condition. Repair and revegetate any bare spots
 - Vehicles should not be parked or driven on the basins. Care should be taken to avoid excessive compaction by mowers
 - Inspect basin after runoff events to ensure drawdown in 72 hours. Check outlet spillway to ensure there is no damage and it is functioning properly. Repair outlet spillway as necessary to restore to design conditions. Soil amendments may need to be added and/or repaired to ensure infiltration.
 - Inspect for an accumulation of sediment or debris. Remove any accumulated sediment from basins as necessary. Properly dispose of sediment.
 - Repair/replace any disturbed areas with bio-retention soils to ensure proper infiltration.
 - Vegetation should be inspected for unwanted or invasive growth. Unwanted growth should be removed and reseeded as necessary.
 - Inspect for signs of water contamination/spills. Properly remove.
 - Inspect for sinkholes. Repair as per Sinkhole Repair Detail
 - Inspect for rills or gullies. These areas should be filled with topsoil, stabilized with erosion control matting, and reseeded.
 - Vegetation should be inspected for unwanted or invasive growth. Unwanted growth should be removed and reseeded as necessary.
 - Watering may need to be done during dry periods to maintain vegetative cover.
 - Mow only as appropriate for vegetative cover species

Subsurface Basin:

- Schedule:
- Inspect on a quarterly basis
 - After every storm event greater than 1"
- Inspection/Maintenance:
- Inspect for structural integrity and operation of the system, outlet structure, inlet structures, and appurtenances. Inspect for surface depressions or other signs of potential structural deficiencies. Repair as necessary to design conditions.
 - Inspect after runoff events to ensure drawdown in 7 days.
 - Inspect for sediment and debris accumulation in system and connected structures. Remove any sediment and debris as necessary. Properly dispose of sediment.
 - Ensure that outlet structure and all appurtenances, water quality devices, and inlets are free of debris and have clear opening as designed. Remove and dispose of any accumulated debris.
 - Inspect for sinkholes. Repair as per Sinkhole Repair Detail.
 - Inspect for signs of water contamination/spills. Properly remove.
 - Inspect catch basins and inlet (upgradient of the BMP). Remove sediment and debris as necessary.
 - Inspections of BMPs can be performed via the inspection/maintenance ponds, upstream inlet, and outlet structure. Each of these features can be accessed by removing the lid at the surface for a visual inspection for debris or collected sediment. Check the condition of all access points with a flashlight. Use a mirror on a pole or other device to check for sediment accumulation within the system if sediment is observed. The depth should be measured, recorded in the inspection log and removed as per Maintenance Notes below.
 - If standing water is found within the BMP after 72 hours following a storm event, refer to Maintenance Steps below.
 - Additional Maintenance:
 - If standing water is found within the BMP, the water shall be pumped out into the system outlet structure to dewater the system, and the system may be televised to try and determine the cause of the standing water. If no issue is found, the system should be inspected following the next three rain events exceeding 0.25 inches. If the system is still found to not be dewatering, an engineer shall be consulted for an evaluation of the facility in order to develop a revised system design for PADEP or Conservation District approval.
 - Vegetation tributary to the BMP shall be maintained in accordance with the approved plan and township ordinance.
 - Remove accumulated sediment and debris from the BMP as required. Sediment shall be removed via back-flushing per the instruction below prior to reaching the height of 3". Properly dispose of sediment in accordance with PADEP regulations. Floatable debris that may impact the operation of the inlet structures shall be removed immediately.
 - To back-flush the system, pump water into the system through maintenance ponds as rapidly as possible. Water should be pumped into all maintenance ponds. The turbulent action of the water will suspend sediments, which may be pumped out via one of the inlet structures.
 - Ideally, perform this maintenance within 24 hours of a rainfall event so the runoff entering the system will aid in the sediment suspension and reduce the volume removed, sediment that is removed, sediment-laden water should be captured for disposal or pumped through a filter bag. Properly dispose of sediment in accordance with all federal, state, and local regulations.

Stormwater Pipes and Appurtenances:

- Schedule:
- Inspect on a quarterly basis
 - After every storm event greater than 1"
- Inspection/Maintenance:
- Inspect stormwater pipes for debris and/or sediment. Remove and/or flush debris and/or sediment from stormwater pipes and dispose of sediment in accordance with current sediment disposal procedures.
 - Inspect the structural integrity of stormwater pipes and appurtenances. Repair or replace damaged pipes and appurtenances.
 - Inspect Snout for structural integrity. Repair or replace any damaged parts of the snout or the entire snout structure.

Riprap Outlet Protection:

- Schedule:
- Inspect on a quarterly basis
 - After every storm event greater than 1"
- Inspection/Maintenance:
- Inspect for erosion at outlets.
 - Inspect for loss of riprap.
 - If the specified riprap size is not adequate to control erosion, install a riprap of a larger size.
 - Replace riprap, as needed to maintain the original design specifications.

Landscaping & Vegetation:

- Inspect monthly during the growing season (April through November)
- Inspection/Maintenance:
 - Inspect for dead portion of the plantings. Remove dead portion and dispose at an approved compost facility.
 - Inspect for dead plantings. Remove dead plantings and dispose in an approved composting facility. Replace dead plantings.
 - Inspect for diseased portion of plantings and for insects that may damage plant material. Remove diseased portion of plantings and dispose in an approved compost facility. Treat unaffected plantings for any insects that may damage plantings. If plantings is too diseased, replace as necessary.

FlexStorm Inlet Filter Protection:

- Schedule:
- Inspect following rain events greater than 1/2"
 - Inspections should occur a minimum of 3 times per year, and in snowfall affected regions, inspections prior to and after snowfall season.

Inspection/Maintenance:

- Empty the filter bag manually or by industrial vacuum taking care not to damage the geotextile bag when more than half filled or during scheduled inspection period.
 - Remove compacted silt from sediment bag and flush with medium spray.
 - "PCP" style bags should be pressed or wrung to recover retained oils.
 - Oil skimmer pouches solidify and darken when saturated, indicating time for replacement.
 - Dispose of all oil-contaminated products and recovered oils in accordance with EPA Guidelines. Oil skimmer pouches, since a solidifier, will not leach and can be disposed of directly.
 - Inspect and replace bag if torn or punctured.
- Replacement:
- Remove the bag by loosening or cutting off clamping band.
 - Take the new correctly sized sediment bag and secure hose clamping band to the frame channel as previously removed.
 - Ensure bag is secure and there is no slack around perimeter.

Snout:

- Inspection/Maintenance:
- Monthly monitoring for the first year of a new installation after the site has been stabilized is a recommended practice.
 - Measurements should be taken after each rain event of 0.5 inches or more, or monthly, as determined by local weather conditions.
 - Checking sediment depth and noting the surface pollutants in the structure will be helpful in planning maintenance.
 - The pollutants collected in SNOUT equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment on the bottom of the structure.
 - It is best to schedule maintenance based on the solids collected in the sump.
 - The structure should be cleaned when sump is half full (e.g. when 2 feet of material collects in a 4 foot sump, clean it out).
 - Structures should also be cleaned if a spill or other incident causes a larger than normal accumulation of pollutants in a structure.
 - Maintenance is best done with a vacuum truck.
 - In the case of an oil spill, the structure should be checked and if needed, replaced or serviced immediately.
 - All collected wastes must be handled and disposed of according to local environmental requirements.
 - To maintain the SNOUT hood, an annual inspection of the anti-siphon vent and access hatch are recommended. A simple flushing of the vent, or a gentle rodding with a flexible wire are all that's typically needed to maintain the anti-siphon properties. Opening and closing the access hatch once a year ensures a lifetime of trouble-free service.

MATERIAL SPECIFICATIONS FOR BIO-RETENTION PONDS				
MATERIAL	SPECIFICATION	SIZE	NOTES	
PLANTINGS	SEE PLANT LIST	N/A	PLANTINGS ARE SITE-SPECIFIC	
PLANTING SOIL (1.5' - 4' DEPTH)	TOPSOIL 30 - 60% SAND 30 - 40% COMPOST 20 - 30%	N/A	USDA SOIL TYPE SANDY LOAM OR LOAM, CLAY CONTENT < 10%	
MULCH	COMPOST OR LEAF MULCH PREFERRED, TRIPLE SHREDDED HARDWOOD ALLOWED		MULCH AROUND TREES ONLY TO CREATE LANDSCAPE BED (SEE LANDSCAPE PLAN)	
GRAVEL	AASHTO M-43	NO. 57 AGGREGATE		
SAND	AASHTO M-6 OR ASTM C-33	0.02" TO 0.04"		
GEOTEXTILE	CLASS "C"-APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A		

Specifications for Bio-retention Ponds:

- Material Specifications

The allowable materials to be used in bio-retention ponds are detailed in "Material Specifications".

- Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bio-retention ponds that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quack grass, Johnson grass, or other noxious weeds.

The planting soil shall be tested and shall meet the following criteria:

- porosity 0.30 or greater
- pH range 6.5 - 7.5
- organic matter 1.5 - 4% (by weight)
- magnesium 35 lb./ac
- phosphorus (phosphate - P2 O5) 75 lb./ac
- potassium (potash - K2 O) 85 lb./ac
- soluble salts not to exceed 500 ppm

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

- Vegetation

Recommended plant material for bio-retention ponds can be found in Appendix B of the PA Stormwater Best Management Practices Manual.

- Execution

- Subgrade preparation
 - Existing sub-grade in Bio-Retention Ponds shall NOT be compacted or subject to excessive construction equipment traffic.
 - Initial excavation can be performed during rough site grading but shall not be carried to within one foot of the final bottom elevation. Final excavation should not take place until all disturbed areas in the drainage area have been stabilized.
 - Where erosion of sub-grade has caused accumulation of fine materials and/or surface ponding in the graded bottom, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 8 inches with a York rake or equivalent by light tractor.
 - Bring sub-grade of bio-retention pond to line, grade, and elevations indicated. Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction. All bio-retention ponds shall be level grade on the bottom.
 - Halt excavation and notify engineer immediately if evidence of sinkhole activity or pinnacles of carbonate bedrock are encountered in the bio-retention area.
- Bio-Retention Pond Installation Sequence

Contact "Licensed Professional" prior to beginning work of bio-retention pond. Critical stages requiring verification are:

 - Berm construction, core trench installation, bed excavation, planting soil installation & landscape installation.
 - Upon completion of sub-grade work, the Engineer shall be notified and shall inspect at his/her discretion before proceeding with bio-retention installation.
 - Planting soil shall be placed immediately after approval of sub-grade preparation/bed installation. Any accumulation of debris or sediment that takes place after approval of sub-grade shall be removed prior to installation of planting soil at no extra cost to the Owner.
 - Install planting soil (exceeding all criteria) in 18-inch maximum lifts and lightly compact (tamp with backhoe bucket or by hand). Keep equipment movement over planting soil to a minimum - do not over compact. Install planting soil to grades indicated on the drawings.
 - Plant trees, plugs and/or shrubs according to supplier's recommendations and only from mid-March through the end of June and from mid-September through mid-November.
 - Protect Bio-retention Ponds from sediment at all times during construction. Hay bales, diversion berms and/or other appropriate measures shall be used at the toe of slopes that are adjacent to bio-retention ponds to prevent sediment from washing into these areas during site development.
 - When the site is fully vegetated and the soil mantle stabilized the plant designer shall be notified and shall inspect the bio-retention pond drainage area at his/her discretion before the area is brought online and sediment control devices removed.
 - Water vegetation at the end of each day for two weeks after planting is completed.

General Landscape Notes:

- Landscape contractor shall notify PA One Call 48 hours prior to any digging or planting.
- Landscape contractor shall install all plant material in a timely fashion.
- Landscape contractor shall be responsible for all maintenance prior to final acceptance by Owner.
- Plants shall be in accordance with the current issue of American Standards for Nursery Stock published by the American Association of Nurserymen.
- Plant material shall be inspected yearly in order to remove and replace diseased or dead vegetation.
- Landscape contractor shall provide a one-year 80% care and replacement warranty foral planting beginning after installation and inspection of all plants.

Maintenance Notes:

- NOTE: OWNER IS RESPONSIBLE FOR COMPLETION OF A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES.
- Owner to remove silt/sediment if the accumulation of sediment exceeds one inch within the bio-retention pond.
 - All trash and debris shall be removed from the bio-retention pond as necessary.
 - While vegetation is being established, pruning and weeding may be required. Weeds should be removed thereafter by hand.
 - Debris may also need to be removed approximately twice per year. Perennial plantings may be cut down at the end of the growing season.
 - Mulch around trees should be re-spread when erosion is evident and be replenished annually.
 - Bio-retention ponds shall be inspected at least twice per year for sediment buildup, erosion, vegetative conditions, etc.
 - During periods of extended drought, bio-retention ponds may require watering.
 - Trees and shrubs should be inspected twice per year to evaluate health.
 - Bio-retention ponds are designed to dewater in 72 hours or less. If Rain Garden is not dewatering in 72 hours, maintenance/repair shall be performed to remedy the problem.

Maximize Protection of Drainageways:

The site drains generally from South to North over land, eventually reaching the Big Spring Creek. Existing grade and slope is minimal on the majority of the property. Proposed impervious areas shall transport stormwater to the proposed Bio-retention Pond and Subsurface Basin. There is little to no impact on drainage patterns surrounding this lot.

Thermal Impacts:

The PCSM plan proposes both surface and subsurface BMPs that will capture runoff from the warehouses and parking areas, temporarily store, and then slowly discharging into the downstream natural flow paths, preventing warm water from moving downstream. The first flush of all potential storm events will be completely stored in the subsurface of the proposed BMPs reducing the temperature of the water and the thermal impact downstream.

Downstream Impacts:

Proposed impervious surfaces will drain to the fourteen proposed stormwater BMP's. These BMP's include bio-retention ponds and subsurface infiltration basins, some of both which are Management Release Concept. The proposed BMP's will decrease the post development volume generated by the 2 year storm event to less than pre-development conditions. The peak flows for all storm events are also decreased to or below pre-development levels. Water quality was also achieved by use of a bio-retention pond and infiltration. Therefore, based on the aforementioned criteria, there is no negative downstream impact as a result of this project. This project will preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream.

PNDI AVOIDANCE MEASURES

The proposed project is located within the vicinity of northern long-eared bat spring staging/fall swarming habitat. To ensure take is not reasonably certain to occur, do not conduct tree removal from May 15 to August 15. The U.S. Fish and Wildlife Service determined take is not reasonably certain to occur from tree removal if activities are avoided during the pup season (i.e., the range of time when females are close to giving birth (i.e., two weeks prior to birth) and have non-volant (i.e., unable to fly) young). For more information, see the Interim Voluntary Guidance for the Northern Long-Eared Bat: Forest Habitat Modification.

SEEDING/STABILIZATION NOTES

- As disturbed areas within a project approach final grade, preparations should be made for seeding and mulching to begin. In no case should an area exceeding 15,000 square feet, which is to be stabilized by vegetation, reach final grade without being seeded and mulched.
- TEMPORARY SEEDING (TEMPORARY STABILIZATION)

Seed: Annual Ryegrass 40 lbs/acre
Fertilizer: 10-10-10 @ 500 lbs/acre
Mulch: Straw 3 tons/acre (Straw and hay mulch should be anchored immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil. This method is limited to slopes no steeper than 3:1. The machinery should be operated on the contour. Note: Crimping of hay or straw by running over it with tracked machinery is not recommended.)
Lime: One ton/acre

All diversions, channels, sediment traps and stockpiles shall be stabilized immediately. Any disturbed area on which activity has ceased and which will remain exposed shall be stabilized immediately. During non-germinating periods, mulch shall be applied at the recommended rates. Disturbed areas which are not at finished grade and which will be redisturbed within 1 year may be stabilized in accordance with the Temporary Seeding Specifications. Disturbed areas which are either at finished grade or will not be redisturbed within 1 year shall be stabilized in accordance with the Permanent Seeding Specifications.
- PERMANENT SEEDING (PERMANENT STABILIZATION)

Nurse Crop: Annual Ryegrass 10 lbs/acre (PLS)
Seed (Mix 2): Kentucky bluegrass 25 lbs/acre, plus Redtop 3 lbs/acre or Perennial ryegrass 15 lbs/acre (PLS)
Critical areas (Mix 3): Birdfoot Trefoil 6 lbs/acre, plus Tall Fescue 30 lbs/acre (PLS)
Lime: Six tons/acre
Fertilizer: Soil tests are recommended. In the absence of a soil test apply at the rate of 10-10-20 @ 1000 lbs/acre
Mulch: Straw 3 tons/acre
Asphalt: SS-1 or Equivalent 150 Gal./acre

- SEED DATES

March 15th - May 15th
August 15th - October 15th
All areas shall be permanently seeded and mulched within one (1) week of reaching final grade, if in seeding season, otherwise temporary seeding requirements shall be met. All areas seeded with a temporary mixture will receive a permanent seed mixture during the first growing season following the finished grading. Areas with permanent slopes of 2:1 or greater shall be stabilized using crown vetch, as per the requirements of standard and specifications for critical areas stabilization (with ground covers, vines, shrub, and trees).

MULCH APPLICATION RATES

Application Rate (Min.)				
Mulch Type	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	Notes
Straw	3 Tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chipped or finely broken
Hay	3 Tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Cellulose	1,500 lb.	35 lb.	310 lb.	Do not use alone in winter, during hot and dry weather or on steep slopes (> 3:1)
Wood Chips	1,000 lb. Cellulose 4.6 Tons	25 lb. 183-275 lb.	210 lb. 1,650-2,300 lb.	When used over straw or hay May prevent germination of grasses and legumes

Straw and hay mulch should be anchored immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil. This method is limited to slopes no steeper than 3:1. The machinery should be operated on the contour. Note: Crimping of hay or straw by running over it with tracked machinery is not recommended.)

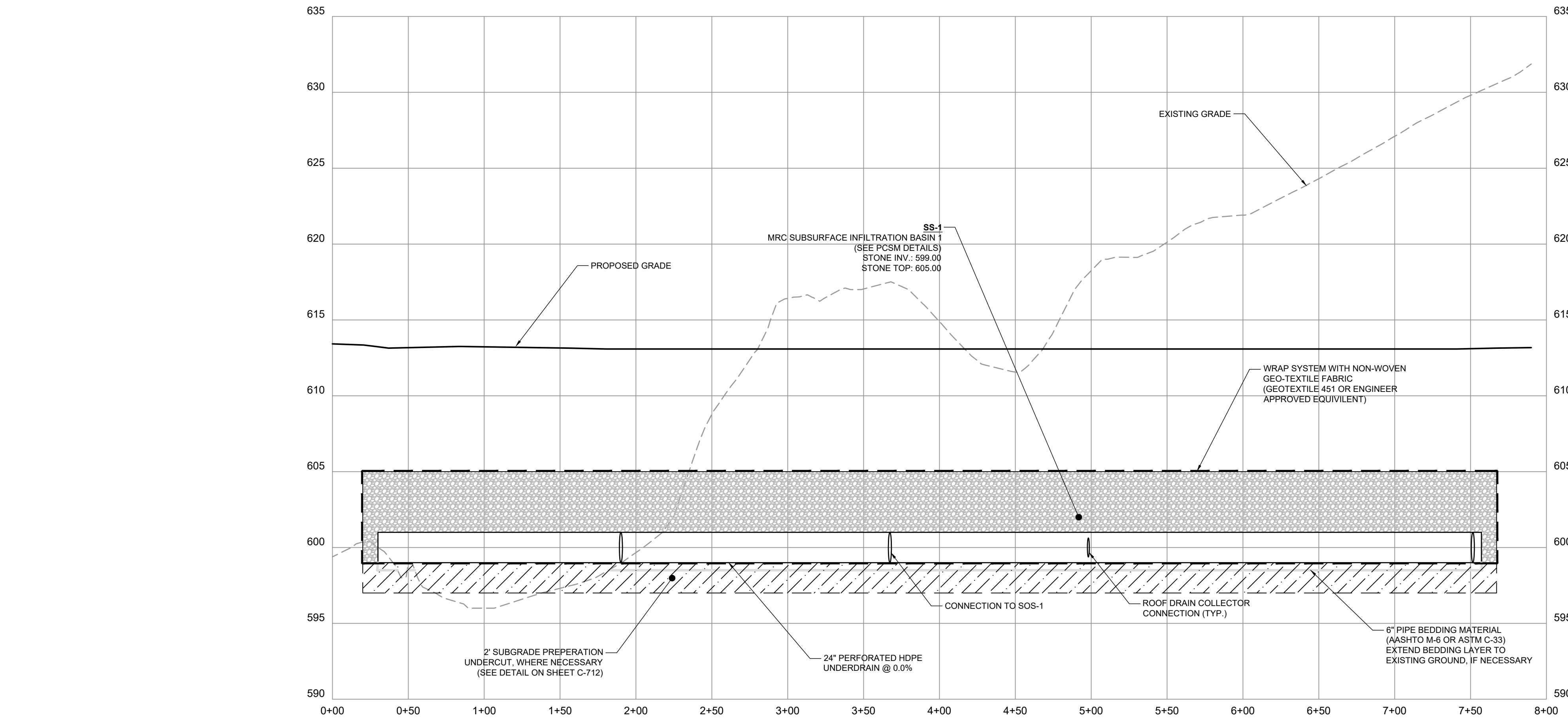
Polymeric and gum tackifiers mixed and applied according to manufacturer's recommendations may be used to tack mulch.

Synthetic binders, or chemical binders, may be used as recommended by the manufacturer to anchor mulch provided sufficient documentation is provided to show they are non-toxic to native plant and animal species.

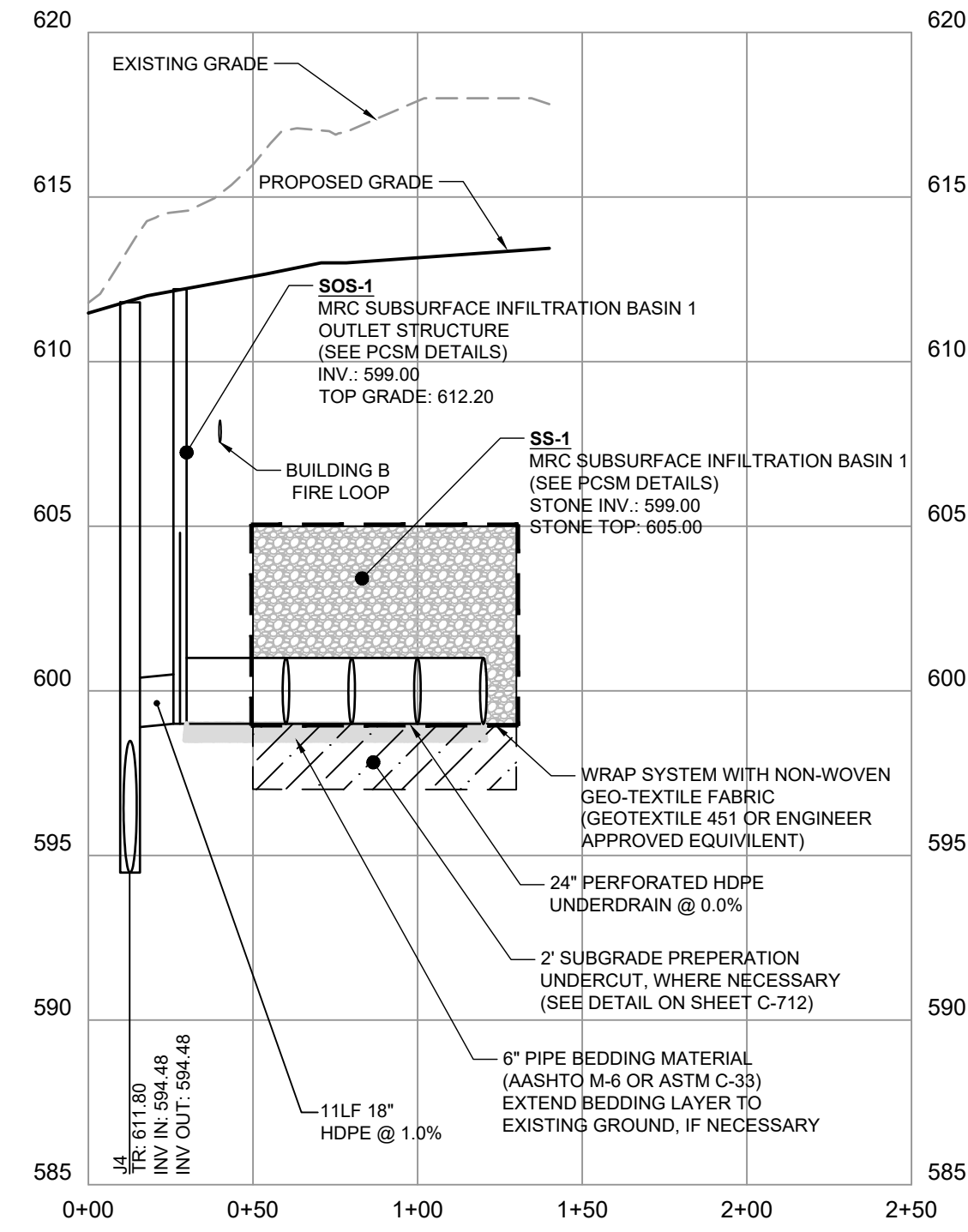
SOIL USE LIMITATIONS/RESOLUTIONS

SOIL NAME	CUTBANKS CAVE	CONCRETE/STEEL	DROUGHT	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/ SEASONAL HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/ LANDSIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
Duffield	X	C/S		X			X	X	X	X	X		X	X		X
Huntington	X	C			X		X	X	X	X	X	X	X	X		
Hagerstown	X	S		X		X	X	X	X	X	X	X	X	X		X
	CUTBANKS WILL BE LIMITED TO 3:1. MAXIMUM SLOPE															
	STORMDRAIN PIPES ARE PROPOSED TO BE HDPE															
	DISTURBED AREAS SHALL BE LIMITED TO MINIMUM NECESSARY FOR CONSTRUCTION IN PROCESS															
	IF GROUNDWATER IS ENCOUNTERED WHEN EXCAVATING, WATER SHALL BE PUMPED INTO A FILTER BAG															
	IF SATURATED SOILS ARE ENCOUNTERED, A GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS FOR REMEDIATION. DE-WATERING MAY BE NECESSARY DURING CONSTRUCTION															
	PER MRG SOIL SURVEY THIS SOIL SERIES IS NOT HYDRIC.															
	IF UNSUITABLE SOILS ARE ENCOUNTERED, A GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS FOR REMEDIATION.															
	INFILTRATION BWMPs HAVE BEEN TESTED FOR ADEQUATE PERCOLATION															
	IF PIPING IS ENCOUNTERED, A GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS FOR REMEDIATION.															
	TOPSOIL SHALL BE TESTED AND AMENDED, AS NECESSARY.															
	ADEQUATE BASE WILL BE PROVIDED FOR PAVED AREAS AND FOUNDATIONS WILL EXTEND BELOW FROST LINE.															
	ADEQUATE BASE WILL BE PROVIDED FOR PAVED AREAS TO AVOID SHRINK/SWELL DAMAGE.															
	IF SINKHOLES ARE ENCOUNTERED, A GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS FOR REMEDIATION.															
	IF GROUNDWATER IS ENCOUNTERED WHEN EXCAVATING, WATER SHALL BE PUMPED INTO A FILTER BAG OUTLETING ON AN EXISTING STABILIZED AREA.															

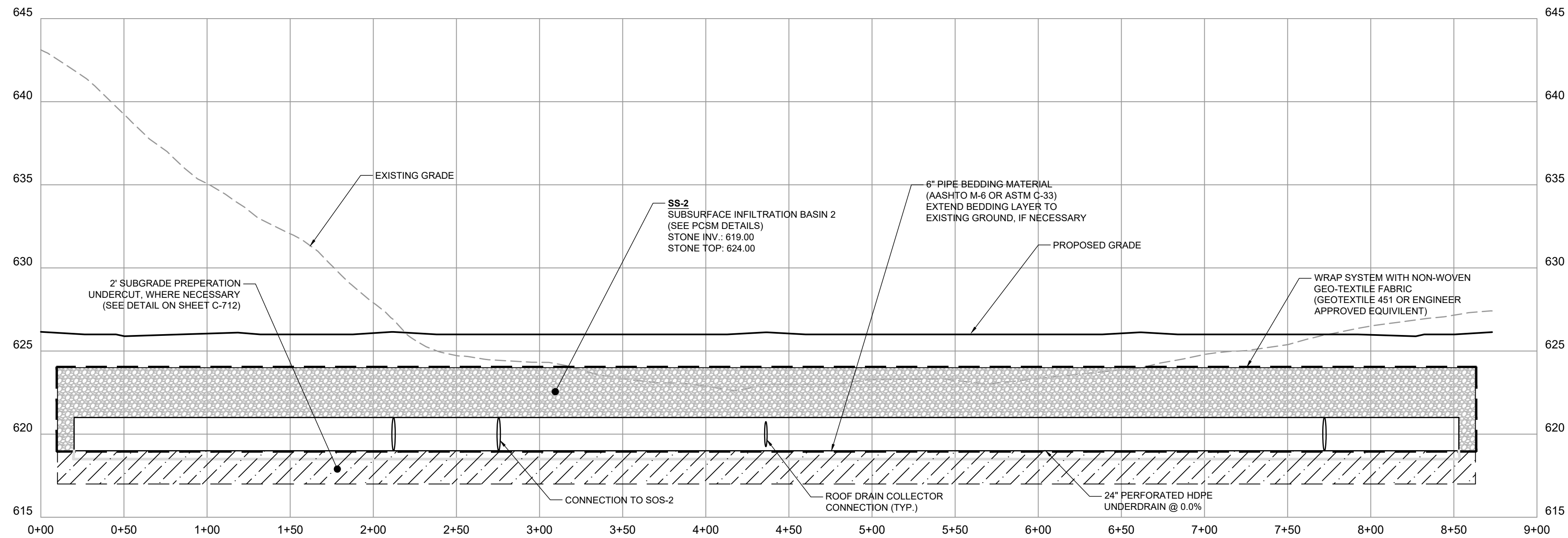
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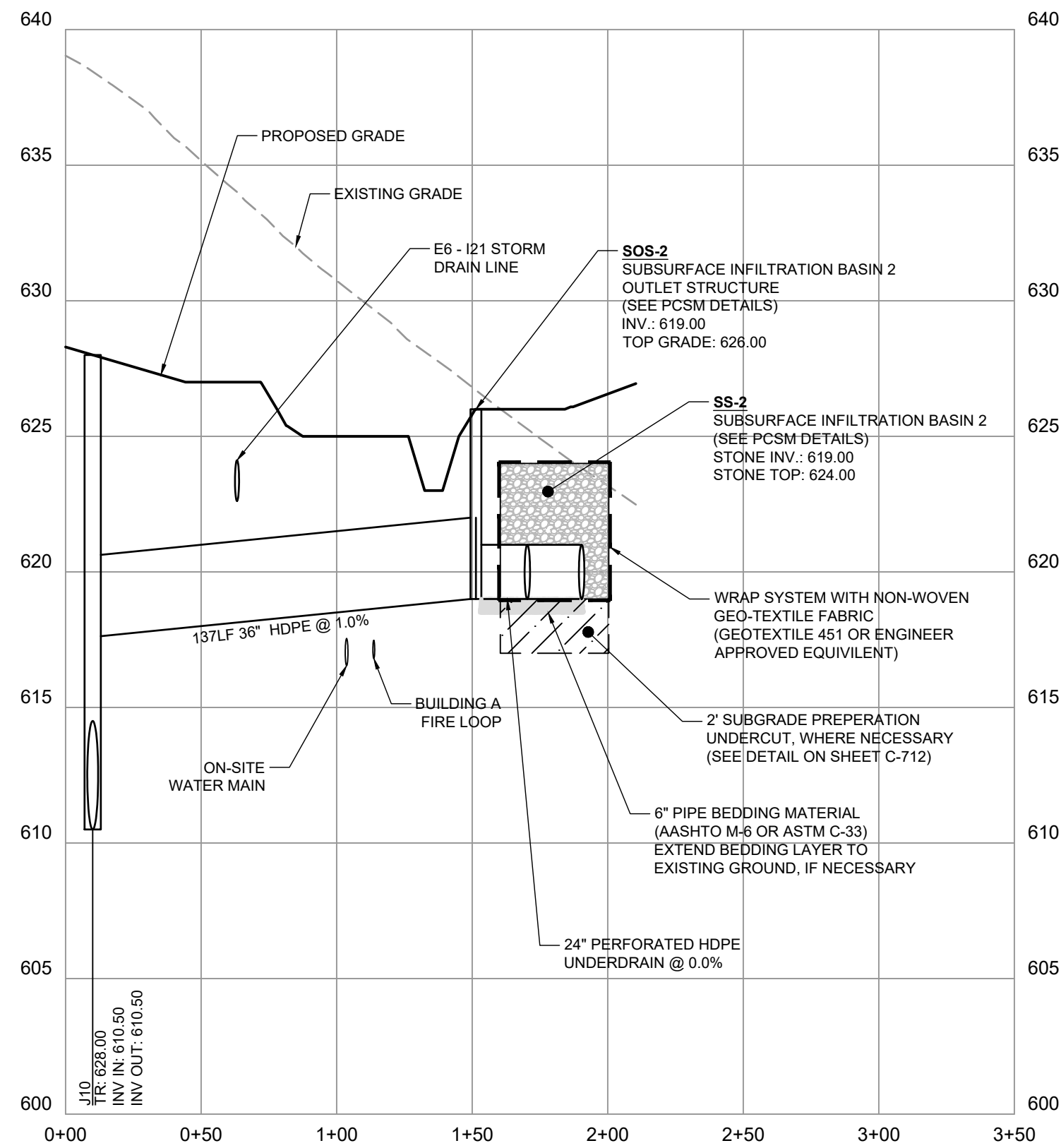
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(SS-1) MRC SUBSURFACE INFILTRATION BASIN 1 CROSS SECTION
SCALE: H 1"=50', V 1"=5'



(SS-2) SUBSURFACE INFILTRATION BASIN 2 PROFILE
SCALE: H 1"=50', V 1"=5'



(SS-2) SUBSURFACE INFILTRATION BASIN 2 CROSS SECTION
SCALE: H 1"=50', V 1"=5'



Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000813
Expiration Date: 03/27/2025

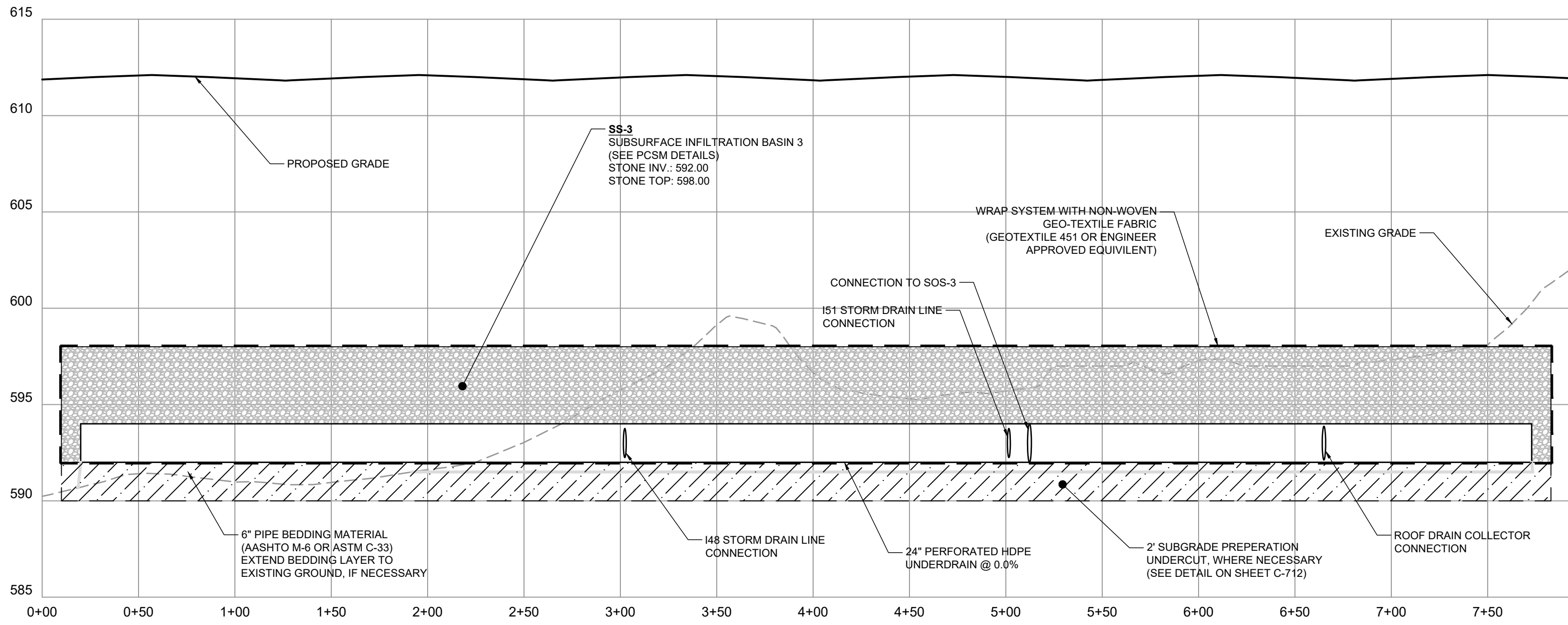
FSA
FREDERICK SEIBERT & ASSOCIATES, INC.
CIVIL ENGINEER • SURVEYOR • LANDSCAPE ARCHITECTS • LAND PLANNERS
108 SOUTH POTOMAC STREET
PHILADELPHIA, PA 19107
215.761.8300
www.fsa-inc.com

DATE	DESCRIPTION
01/06/24	Revised per Township Engineer Comments
12/22/24	Revised per DEP/CDOT Tech Comments
03/07/25	Revised per Finalized Review Comments
03/28/25	Revised per 2nd Elevated Review Comments

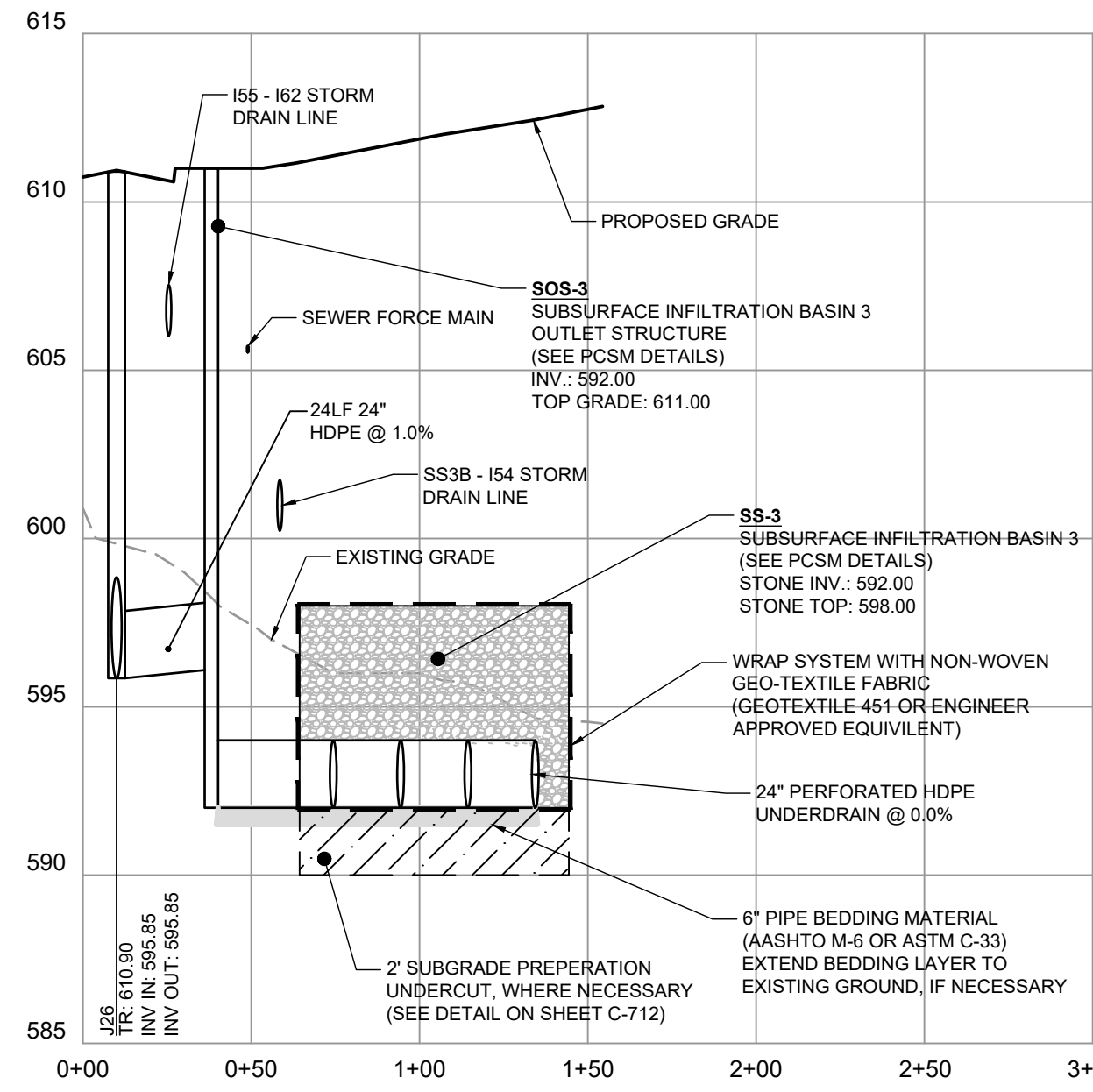
AMPA HOLDINGS - RITNER HWY
SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-1) AND CENTREVILLE ROAD (PA-202)
WEST PENNSBORO TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA
AMPA HOLDINGS, LLC
1514 WEST COMMERCE AVENUE, SUITE 203, CHARLISLE, PA 17013
(223) 536-4040

PROJECT NO.	2022-0251
DWN BY	CMH
DATE	11-15-2023
PROJECT MANAGER	JTD
EMAIL	JDoty@fsa-inc.com
PROPERTY INFORMATION	46-10-0620-006A
SCALE	N.T.S.

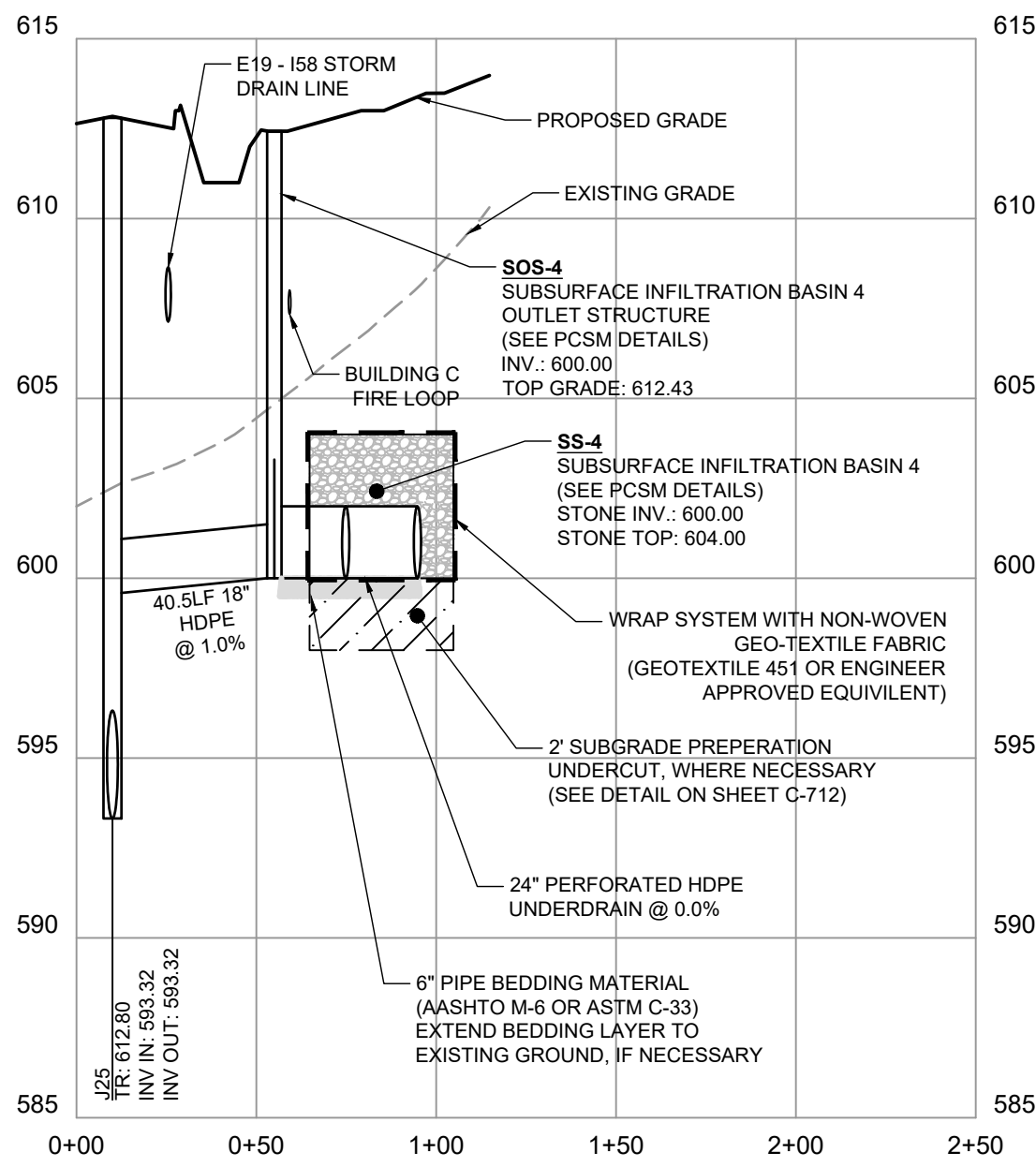
PCSM
DETAILS



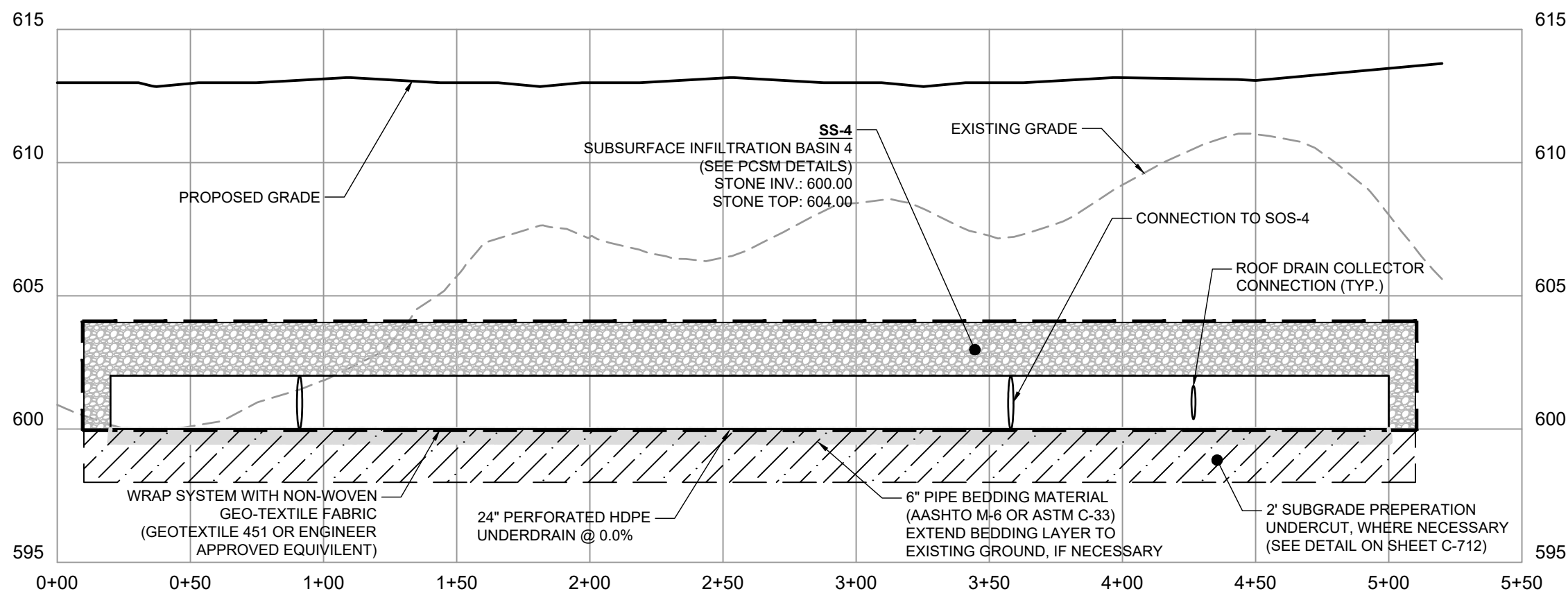
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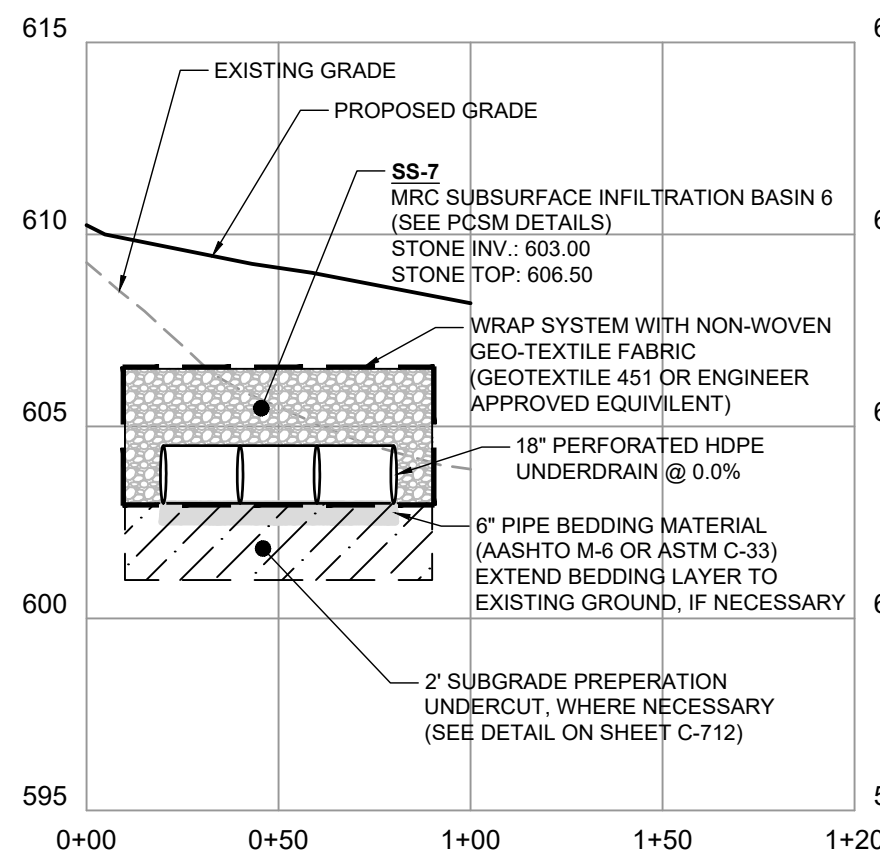
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CROSS SECTION
SCALE: H 1"=50', V 1"=5'



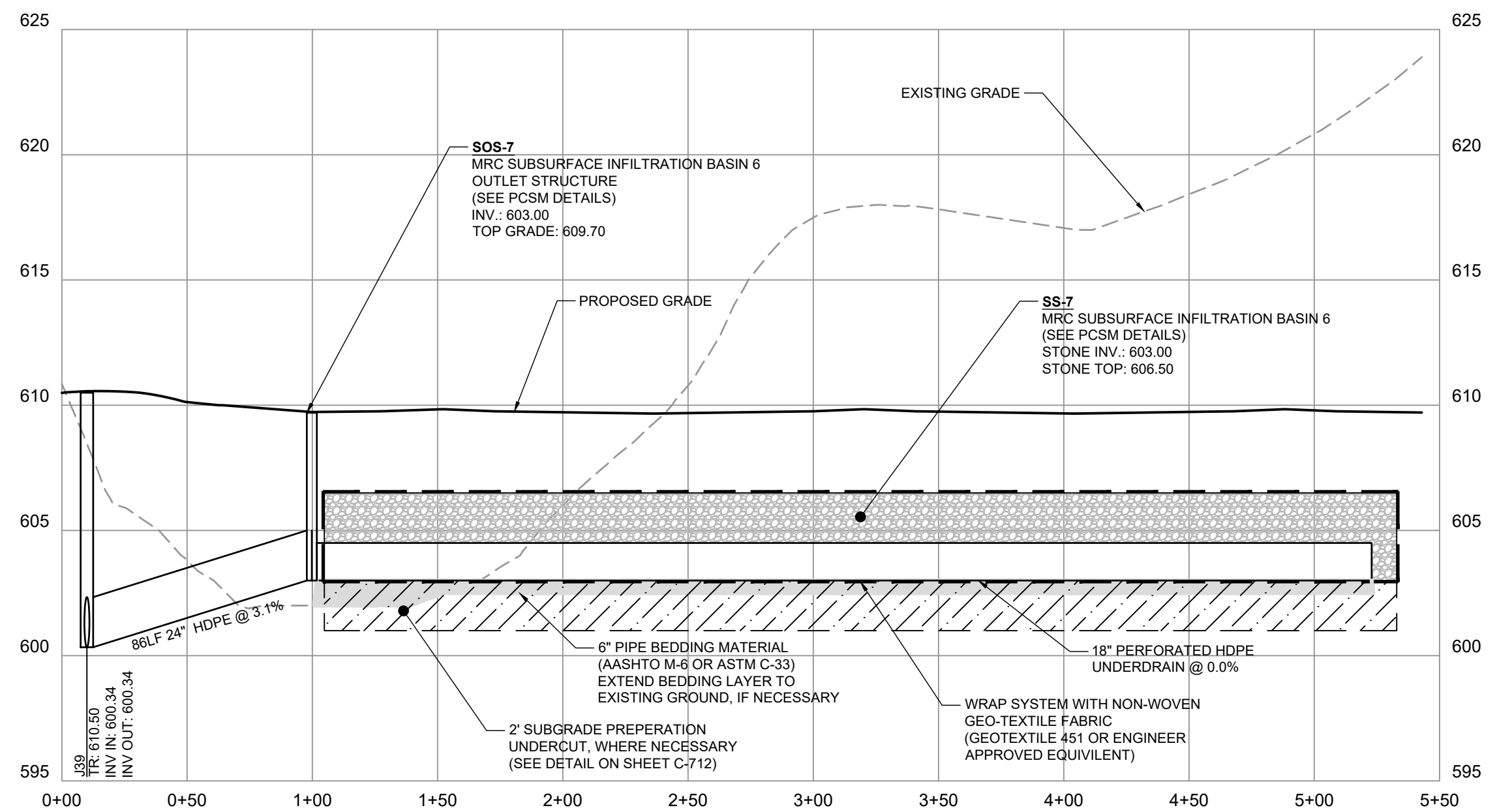
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CROSS SECTION
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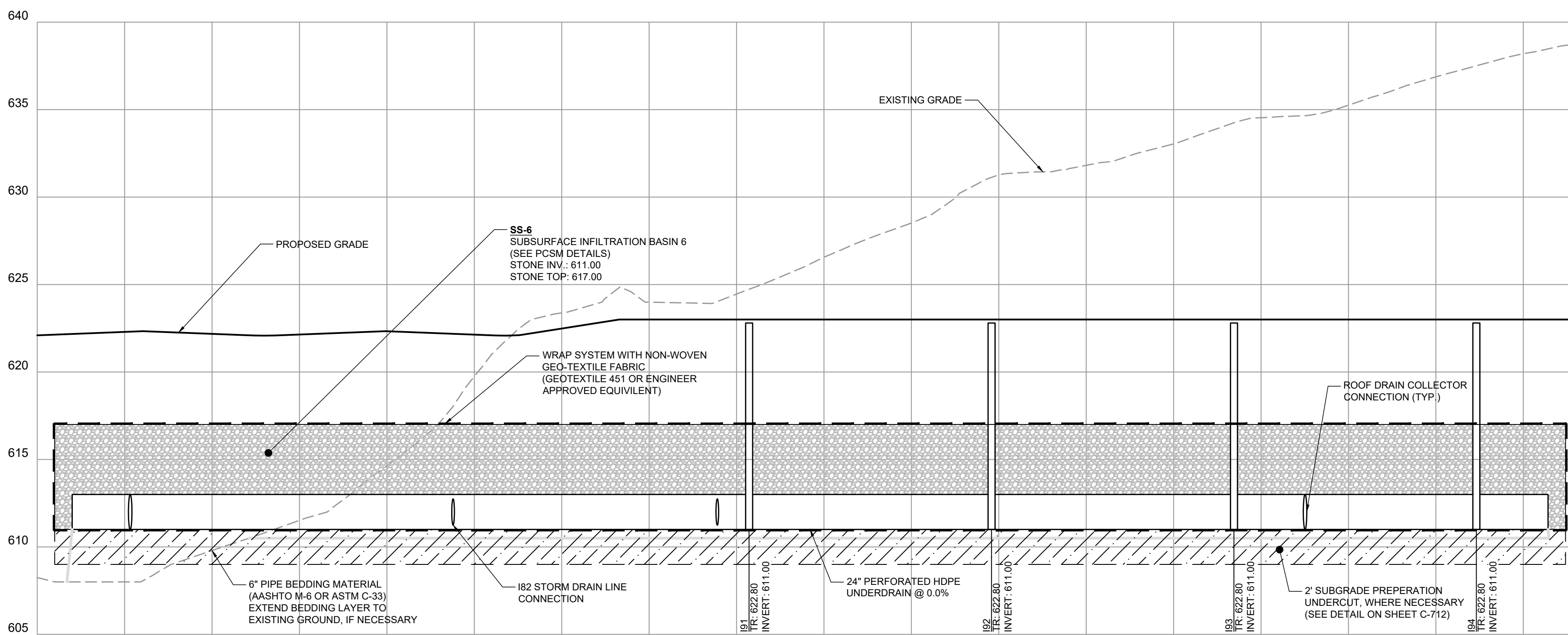
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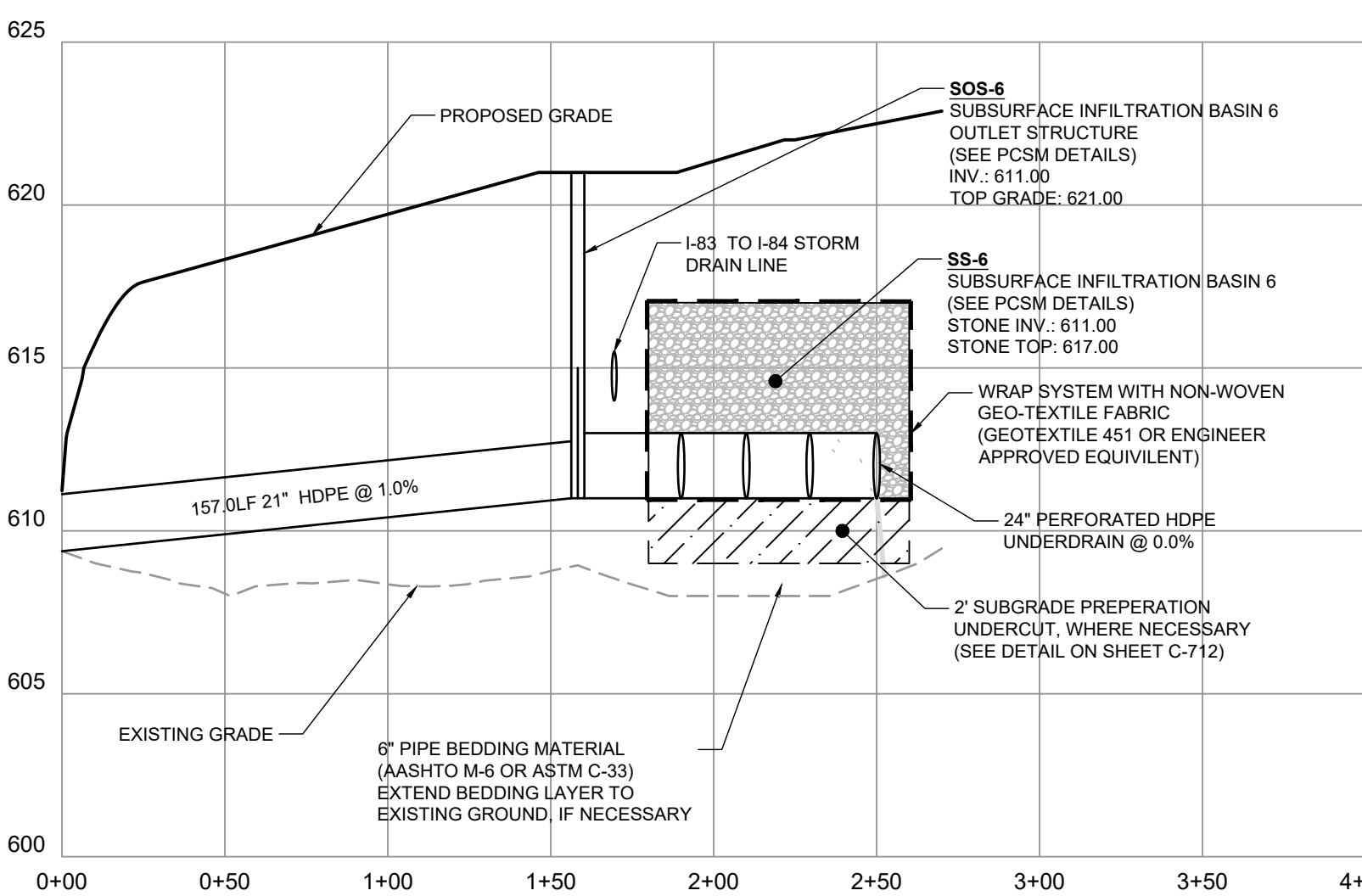
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CROSS SECTION
SCALE: H 1"=50', V 1"=5'



(SS-7) MRC SUBSURFACE INFILTRATION BASIN 7 PROFILE
SCALE: H 1"=50', V 1"=5'



(SS-6) SUBSURFACE INFILTRATION BASIN 6 PROFILE
SCALE: H 1"=50', V 1"=5'



(SS-6) SUBSURFACE INFILTRATION BASIN 6
CROSS SECTION
SCALE: H 1"=50', V 1"=5'



Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000013
Expiration Date: 03/27/2025

FSA
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150 SOUTH POTOMAC STREET
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215.761.8800
771.275.7281

DATE	DESCRIPTION
01/06/24	Reviewed per Tomlinson Engineering Comments
12/02/24	Reviewed per DEP/CDOT Tech. Comments
03/07/25	Reviewed per Elizabeth Review Comments
03/26/25	Reviewed per 2nd Elizabeth Review Comments

AAMPA HOLDINGS - RITNER HWY

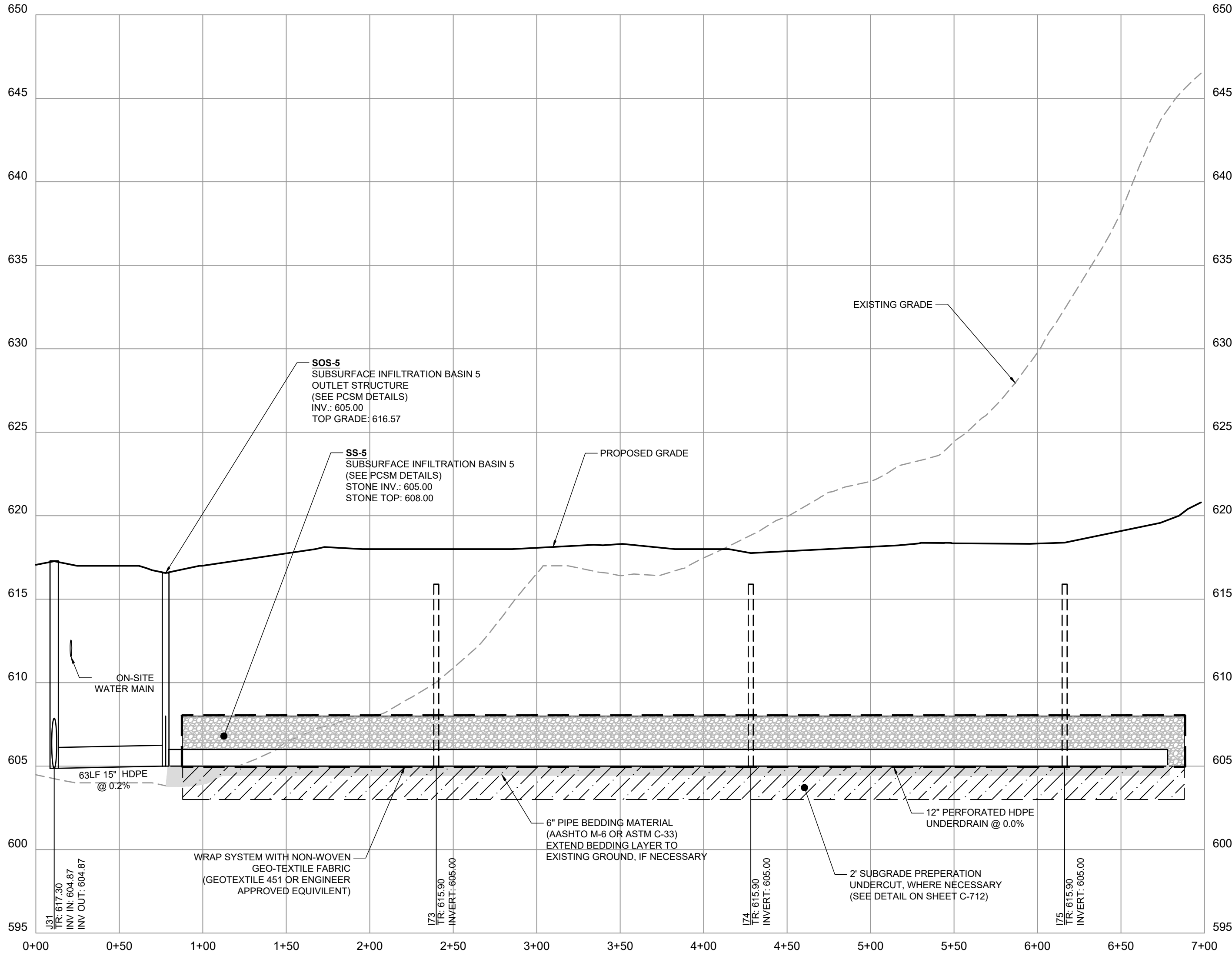
SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-230)

WEST PENNSBORO TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

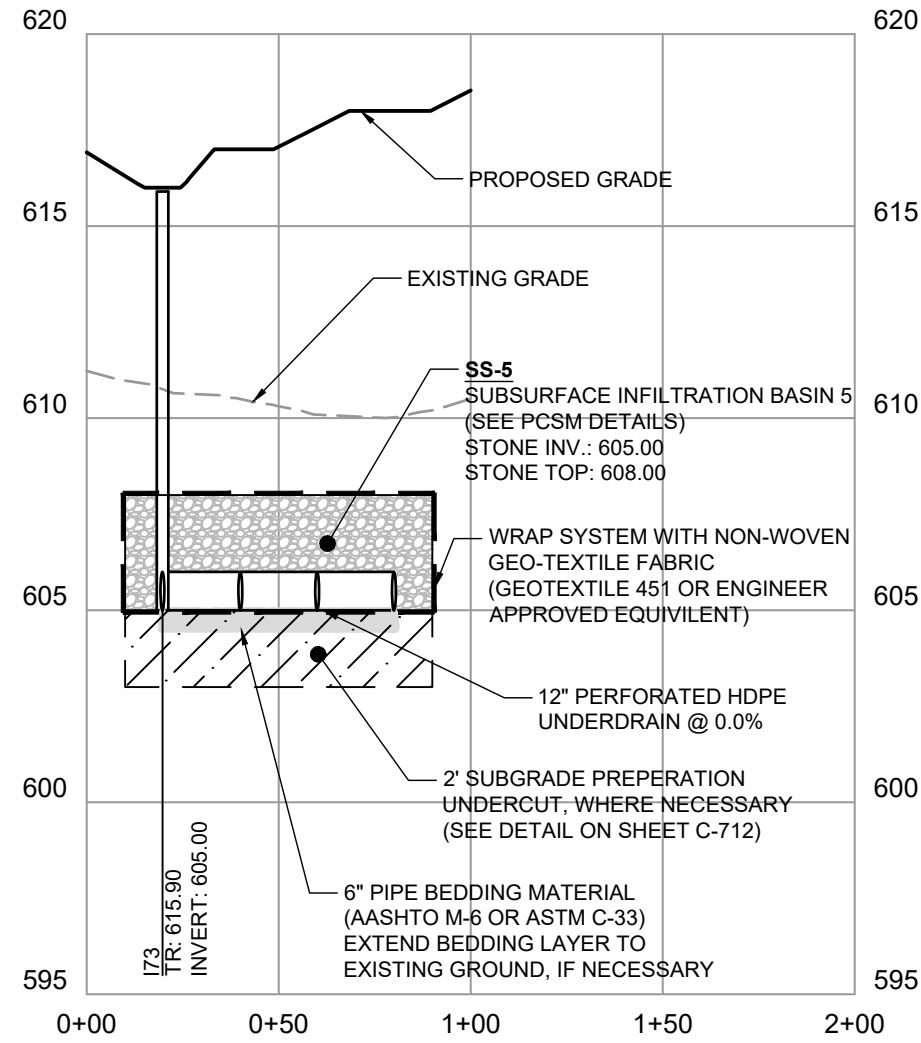
AAMPA HOLDINGS, LLC
1514 WEST COMMERCE AVENUE, SUITE 203, CHALISLE, PA 17013
(223) 536-4040

PROJECT NO.	2022-0251
DWN BY	CMH
DATE	11-15-2023
PROJECT MANAGER	JTD
EMAIL	JDoty@fsa-inc.com
PROPERTY INFORMATION	46-10-0620-006A
SCALE	N.T.S.
SHEET TITLE	PCSM DETAILS

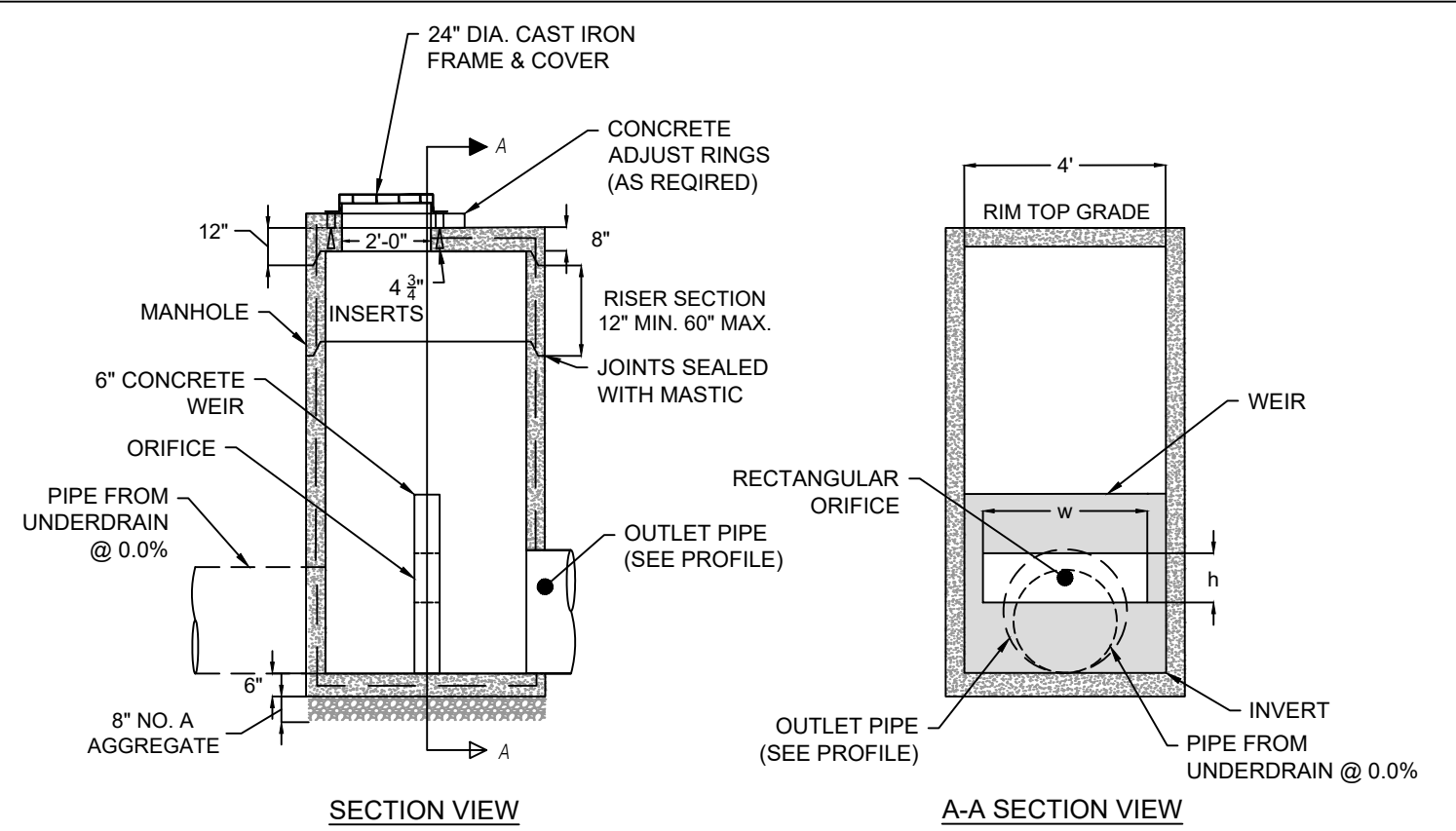
PCSM
DETAILS
C-708
SHEET 59 OF 63



(SS-5) SUBSURFACE INFILTRATION BASIN 5 PROFILE
SCALE: H 1"=50', V 1"=5'

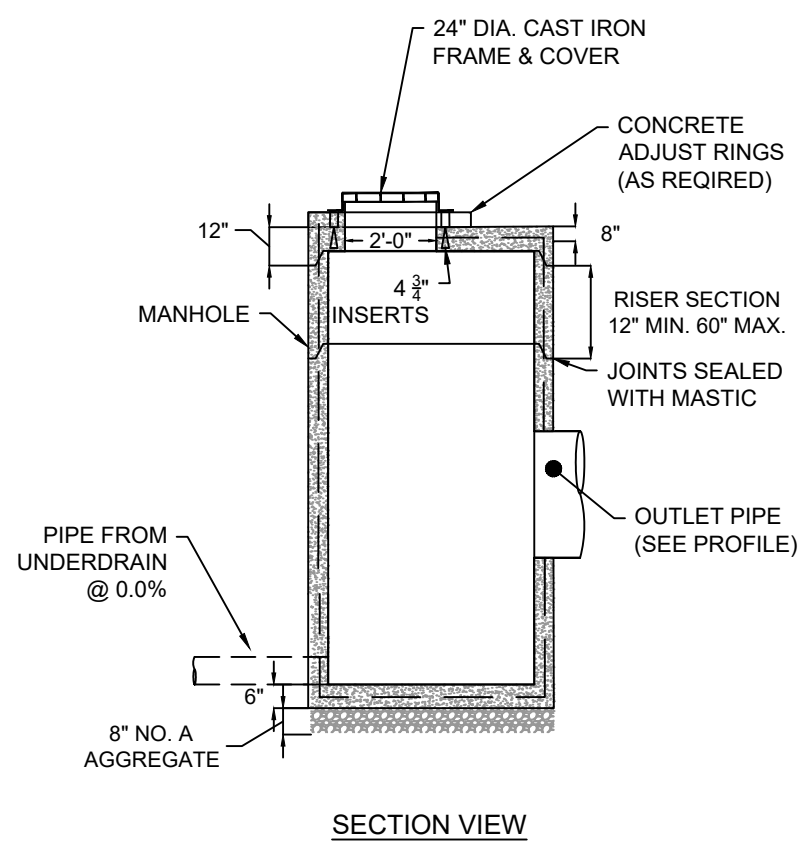


(SS-5) SUBSURFACE INFILTRATION BASIN 5
CROSS SECTION
SCALE: H 1"=50', V 1"=5'



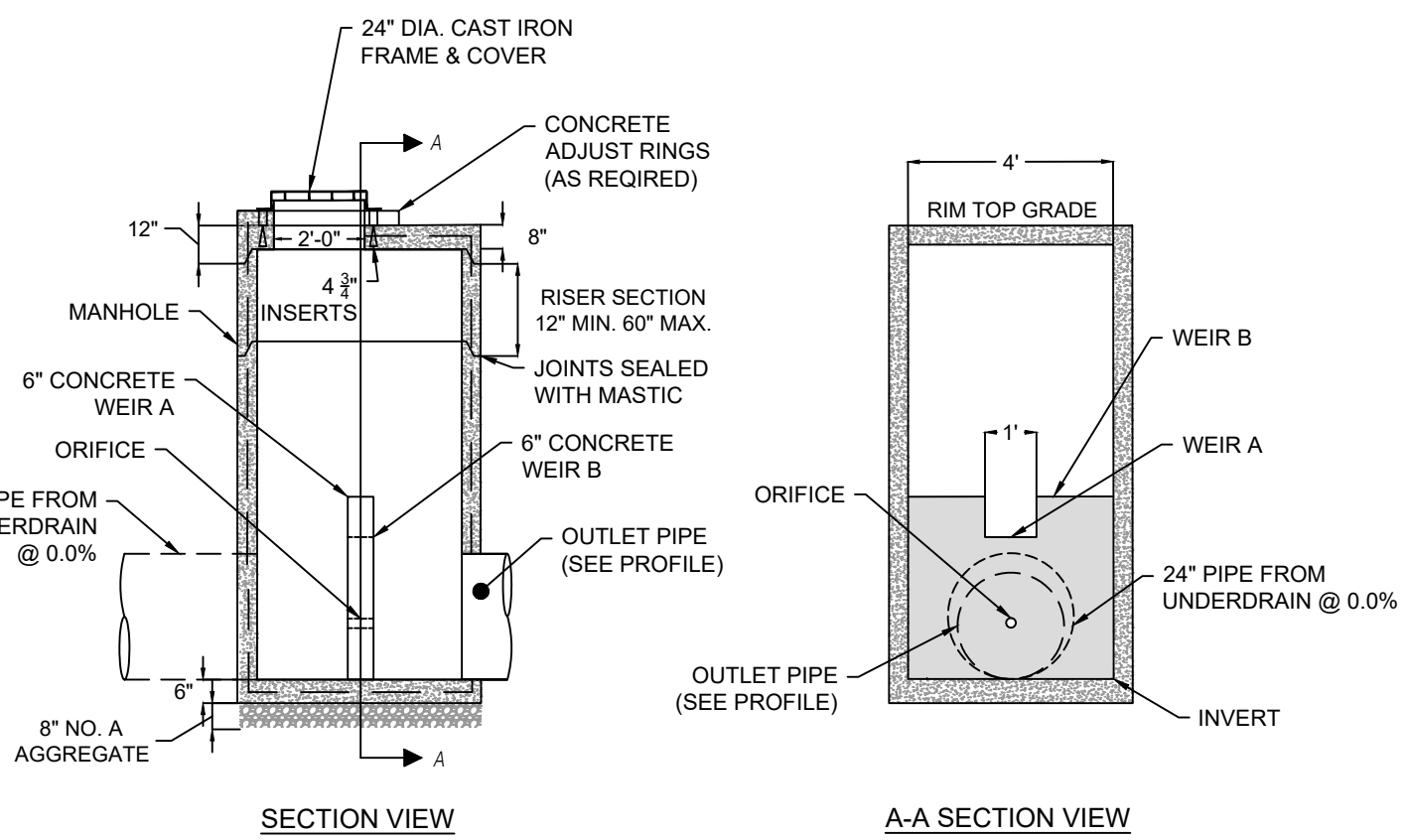
OUTLET STRUCTURE	RIM TOP GRADE	O.S. INV.	UNDER DRAIN INV.	ORIFICE INV.	ORIFICE HEIGHT (H)	ORIFICE WIDTH (W)	WEIR INV.	OUTLET PIPE DIA.	OUTLET PIPE INV.
SOS-2	626.00	619.00	619.00	619.50	15"	36"	622.00	36"	619.00
SOS-4	612.43	600.00	600.00	601.50	6"	12"	603.30	18"	600.00
SOS-5	616.57	605.00	605.00	607.00	6"	12"	608.00	15"	605.00
SOS-6	621.00	611.00	611.00	613.00	6"	12"	615.00	21"	611.00

SUBSURFACE INFILTRATION BASIN OUTLET STRUCTURE SECTION
NOT TO SCALE



OUTLET STRUCTURE	RIM TOP GRADE	O.S. INV.	UNDER DRAIN INV.	OUTLET PIPE DIA.	OUTLET PIPE INV.
SOS-3	611.00	592.00	592.00	24"	596.10

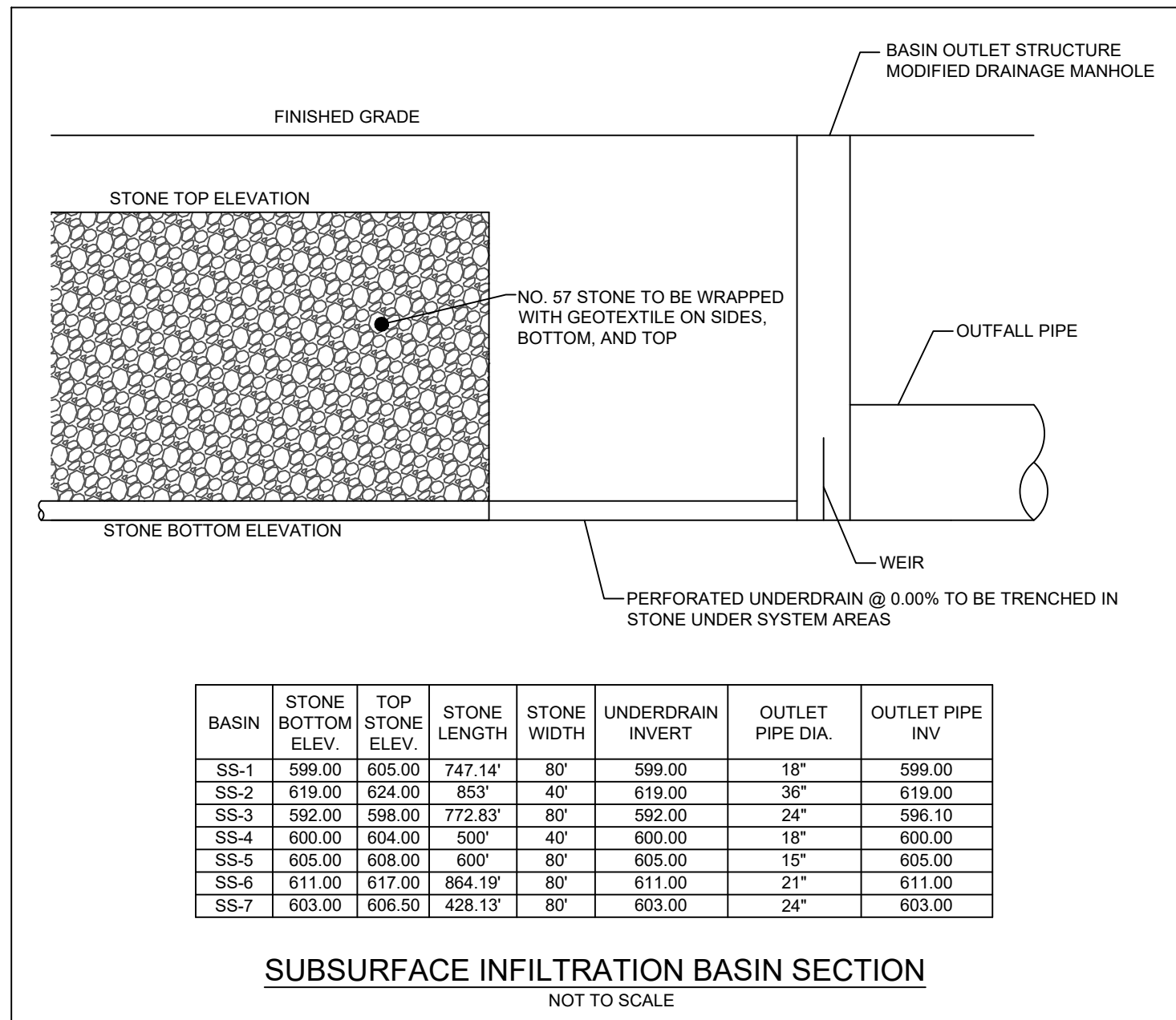
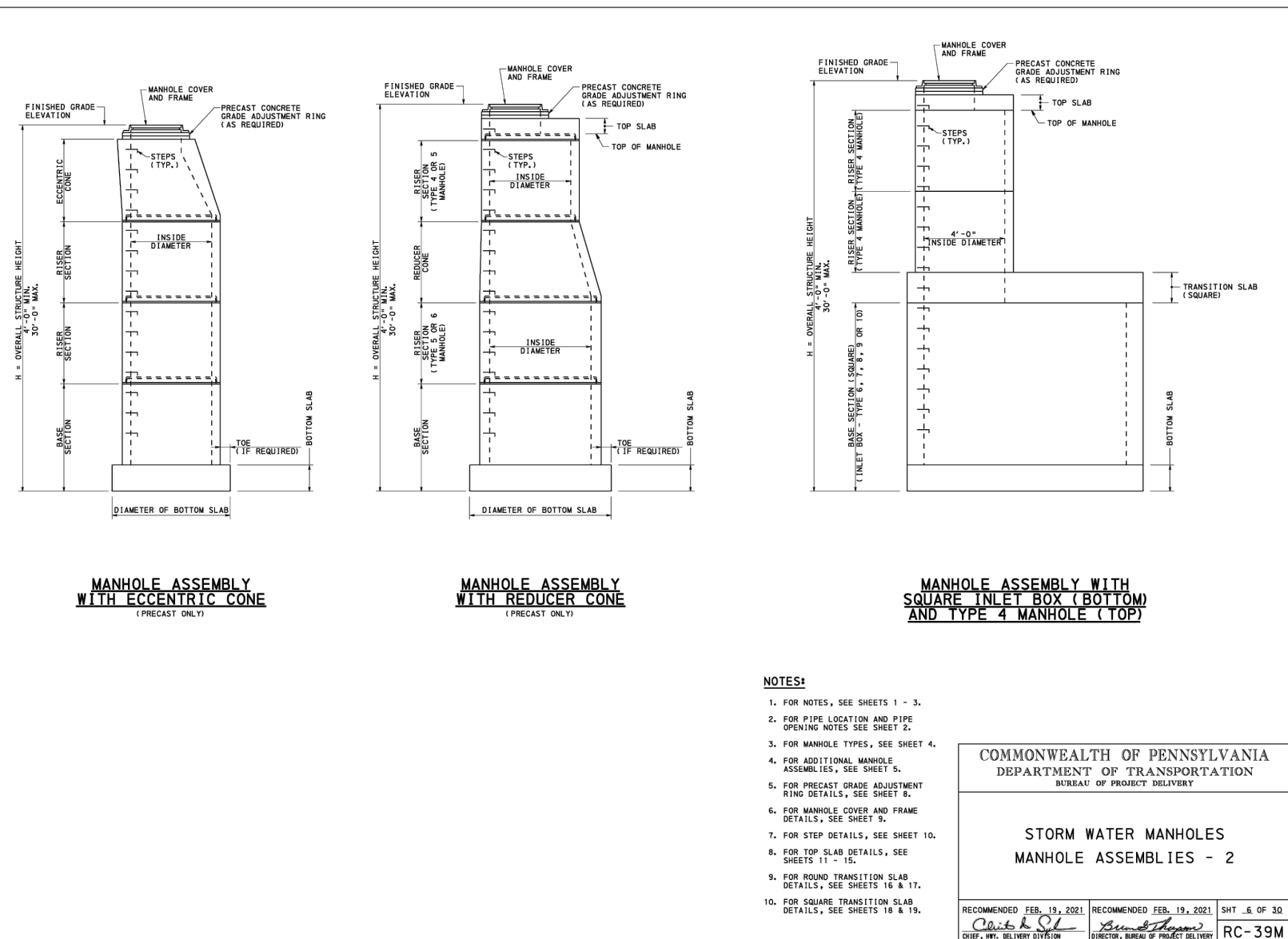
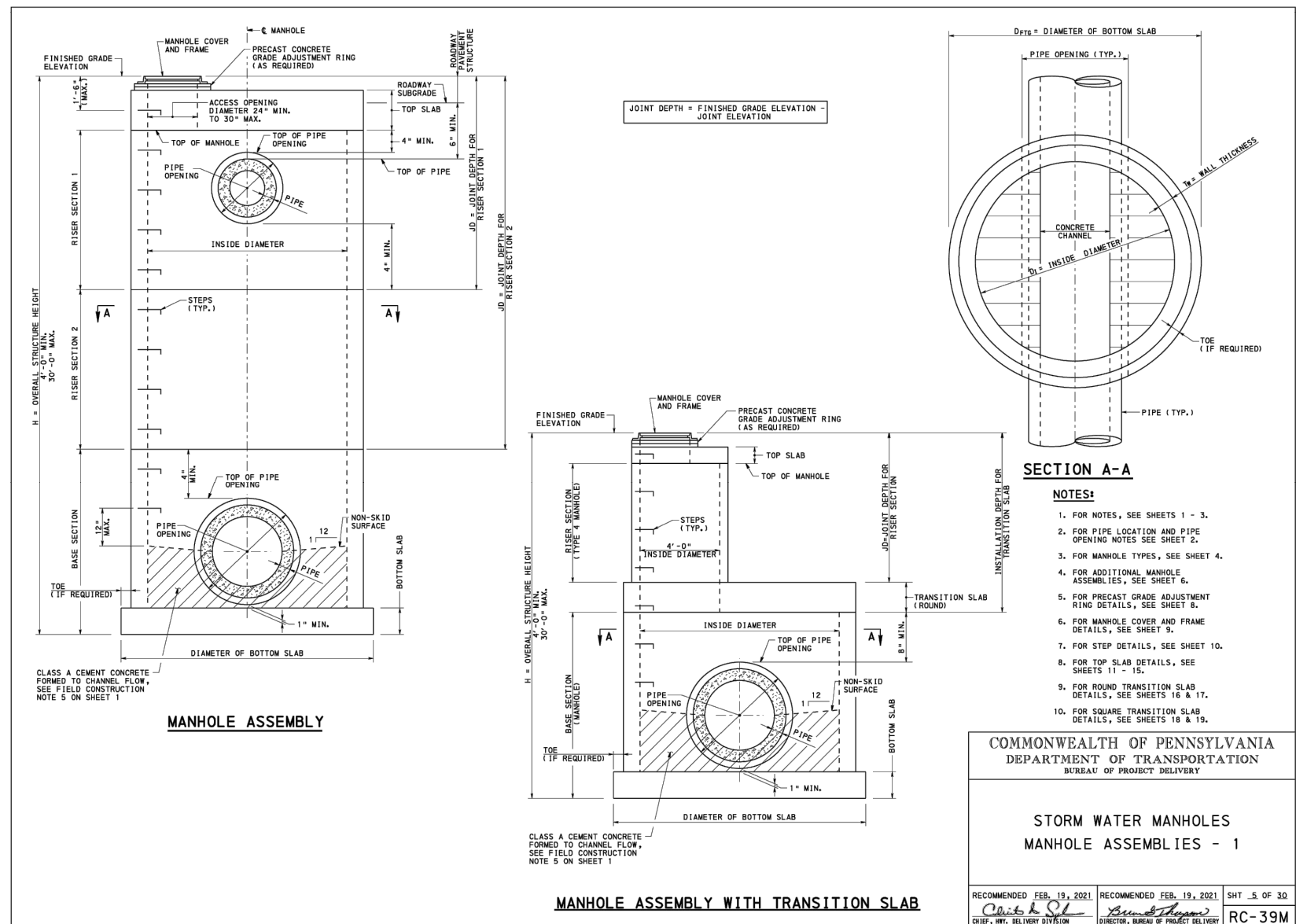
SOS-3 SUBSURFACE INFILTRATION BASIN OUTLET STRUCTURE SECTION
NOT TO SCALE



OUTLET STRUCTURE	RIM TOP GRADE	O.S. INV.	UNDER DRAIN INV.	ORIFICE INV.	ORIFICE DIA.	WEIR A INV.	WEIR B INV.	OUTLET PIPE DIA.	OUTLET PIPE INV.
SOS-1	612.20	599.00	599.00	600.00	2.1"	602.30	604.80	18"	599.00
SOS-7	609.70	603.00	603.00	604.00	1.5"	605.00	605.70	24"	603.00

MRC SUBSURFACE INFILTRATION BASIN OUTLET STRUCTURE SECTION
NOT TO SCALE

SUBSURFACE INFILTRATION BASIN OBSERVATION MANHOLE SCHEDULE		
STRUCTURE NO.	RIM ELEVATION	INVERT ELEVATION
OS-1	612.90	599.00
OS-2	613.64	599.00
OS-3	612.80	599.00
OS-4	613.17	599.00
OS-5	613.45	599.00
OS-6	613.85	599.00
OS-7	613.10	599.00
OS-8	613.85	599.00
OS-9	625.83	619.00
OS-10	626.20	619.00
OS-11	625.87	619.00
OS-12	626.25	619.00
OS-13	625.83	619.00
OS-14	626.20	619.00
OS-15	612.60	592.00
OS-16	611.82	592.00
OS-17	612.52	592.00
OS-18	612.21	592.00
OS-19	611.90	592.00
OS-20	611.58	592.00
OS-21	612.18	592.00
OS-22	611.40	592.00
OS-23	612.64	600.00
OS-24	612.83	600.00
OS-25	613.38	600.00
OS-26	613.80	600.00
OS-27	616.44	605.00
OS-28	617.00	605.00
OS-29	616.55	605.00
OS-30	617.55	605.00
OS-31	617.95	605.00
OS-32	617.95	605.00
OS-33	617.79	605.00
OS-34	619.00	605.00
OS-35	622.56	611.00
OS-36	621.65	611.00
OS-37	622.50	611.00
OS-38	622.58	611.00
OS-39	623.26	611.00
OS-40	623.23	611.00
OS-41	623.36	611.00
OS-42	609.35	603.00
OS-43	608.60	603.00
OS-44	609.70	603.00
OS-45	609.34	603.00
OS-46	609.00	603.00
OS-47	608.58	603.00
OS-48	609.70	603.00
OS-49	609.00	603.00



BASIN	STONE BOTTOM ELEV.	TOP STONE ELEV.	STONE LENGTH	STONE WIDTH	UNDERDRAIN INVERT	OUTLET PIPE DIA.	OUTLET PIPE INV.
SS-1	599.00	605.00	747.14'	80"	599.00	18"	599.00
SS-2	619.00	624.00	863"	40"	619.00	36"	619.00
SS-3	592.00	598.00	772.83'	80"	592.00	24"	596.10
SS-4	600.00	604.00	500"	40"	600.00	18"	600.00
SS-5	605.00	608.00	600"	80"	605.00	15"	605.00
SS-6	611.00	617.00	864.19'	80"	611.00	21"	611.00
SS-7	603.00	606.50	428.13'	80"	603.00	24"	603.00

SUBSURFACE INFILTRATION BASIN SECTION
NOT TO SCALE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
PA-2025-0251
03/27/2025

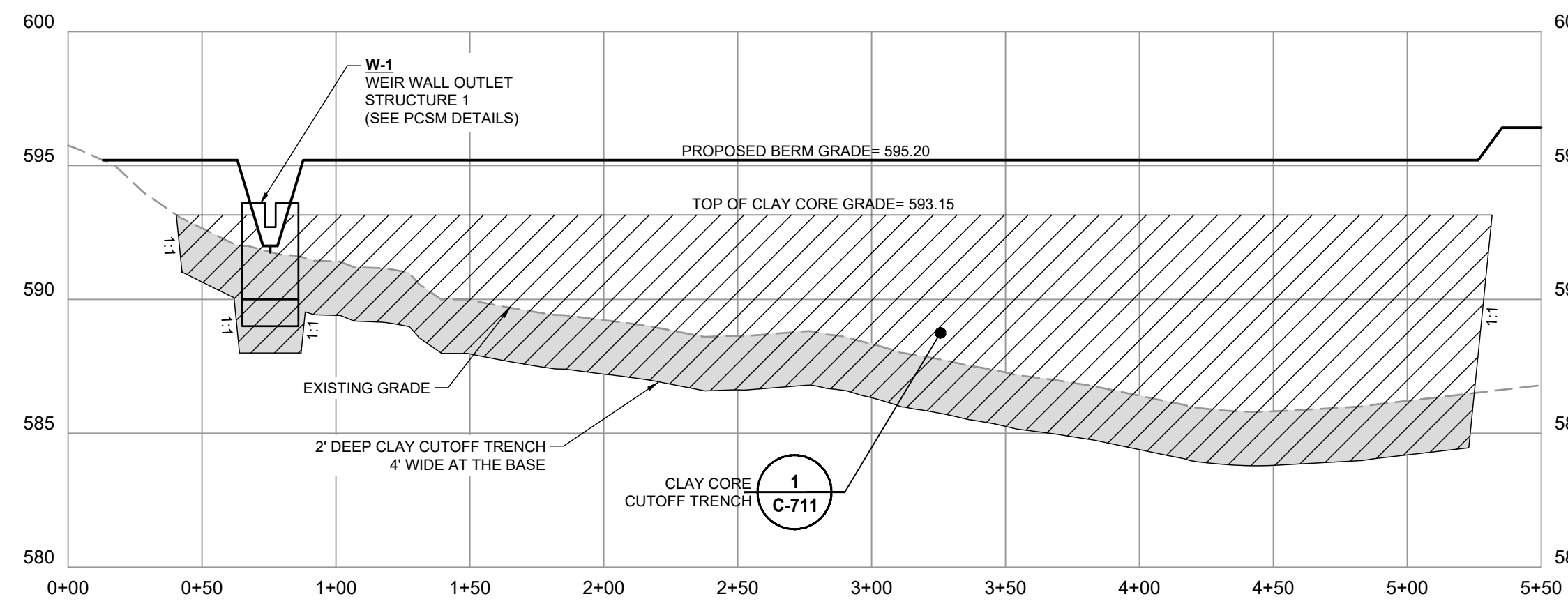
Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000813
Expiration Date 06-30-2025

FOR THE CLIENT
AMPA HOLDINGS - RITNER HWY
SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-1) AND CENTERVILLE ROAD (PA-230)
WEST PENNSYLVANIA TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA
1514 WEST COMMERCE AVENUE, SUITE 203, CHALISLE, PA 17013
(223) 536-4040

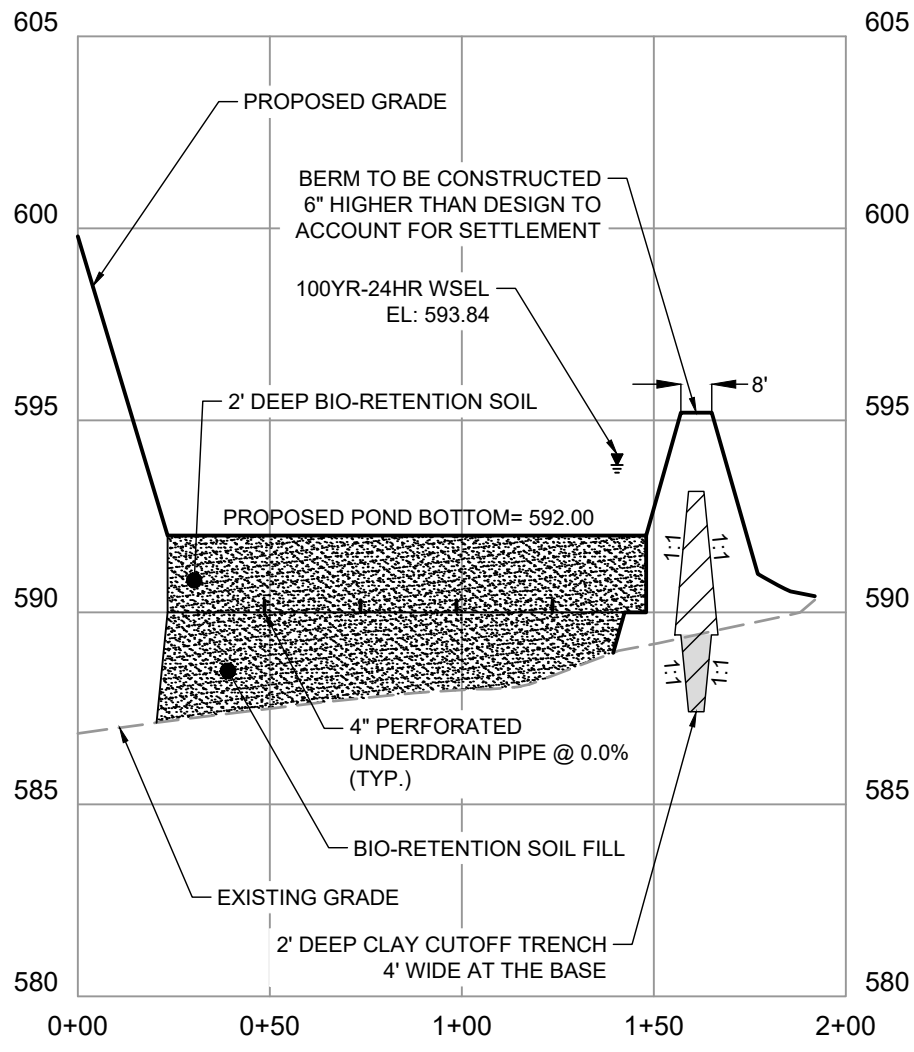
FOR THE ENGINEER
FSA
CIVIL ENGINEER • SURVEYOR • LANDSCAPE ARCHITECT • LAND PLANNERS
108 SOUTH POTOMAC STREET
PHILADELPHIA, PA 19106
801.791.3830
717.275.7251

PROJECT NO. 2022-0251
DATE 11-15-2023
DWN BY CMH
PROJECT MANAGER JTD
EMAIL jdoty@fss-inc.com
PROPERTY INFORMATION
46-10-0620-006A
SCALE N.T.S.
SHEET TITLE
PCSM DETAILS
C-709
SHEET 60 OF 63

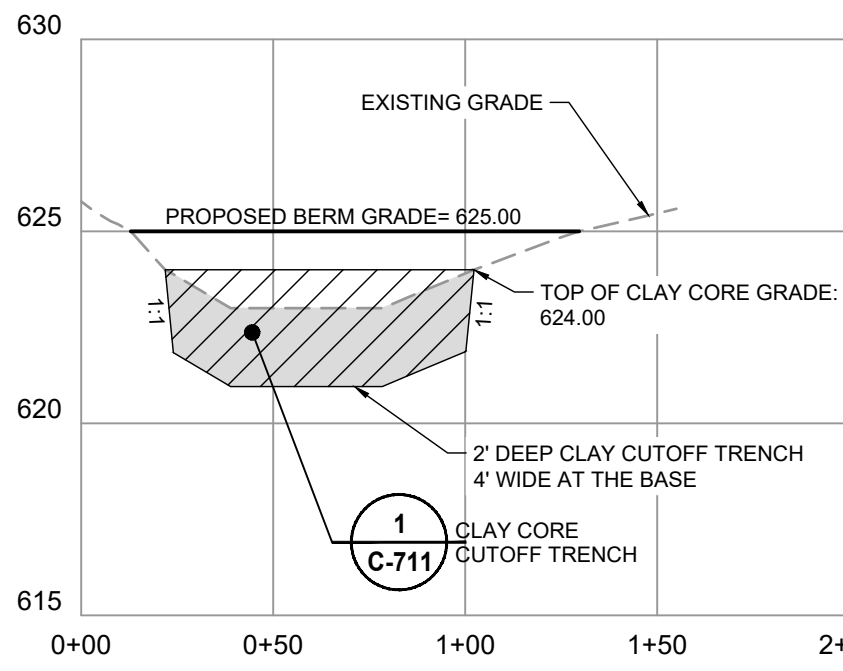
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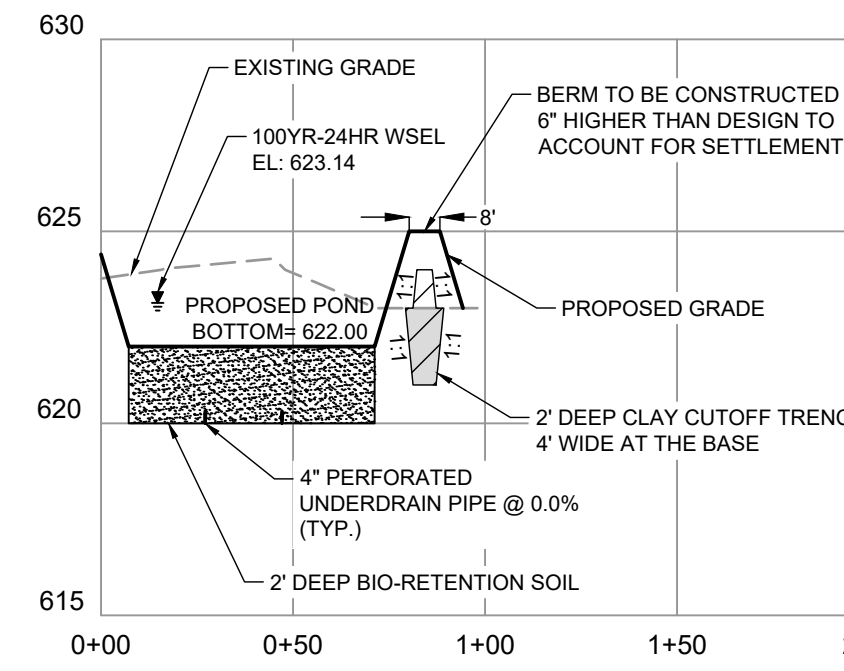
(P-1) MRC BIO-RETENTION POND 1 BERM PROFILE
SCALE: H 1"=50', V 1"=5'



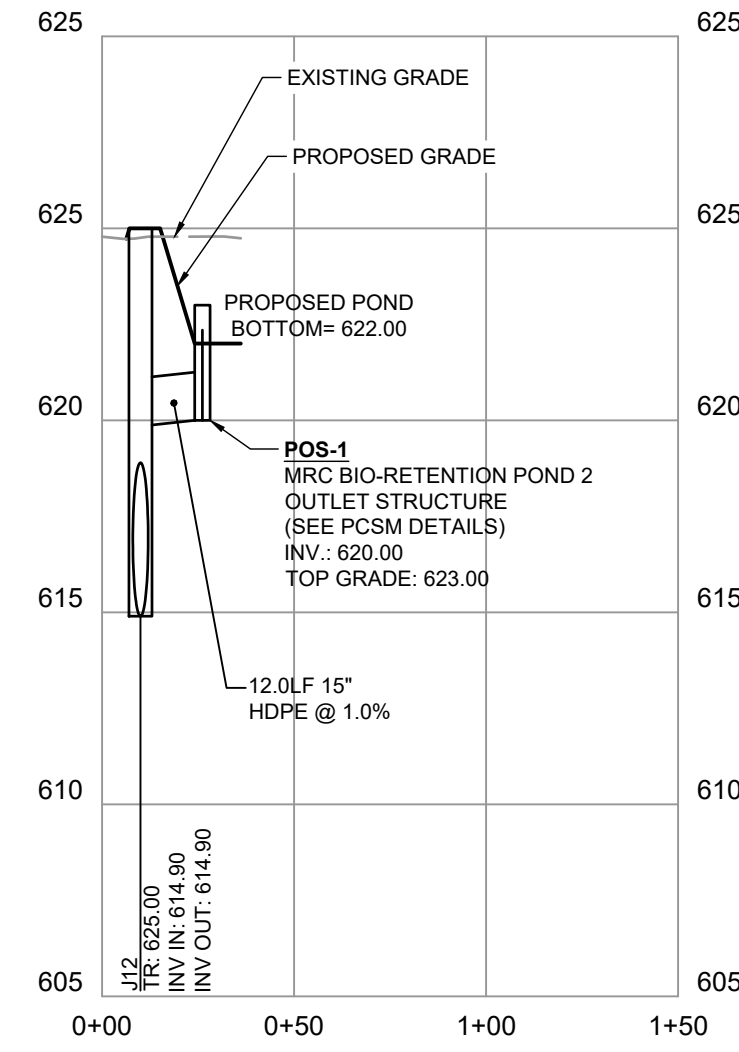
(P-1) MRC BIO-RETENTION POND 1
CROSS-SECTION
SCALE: H 1"=50', V 1"=5'



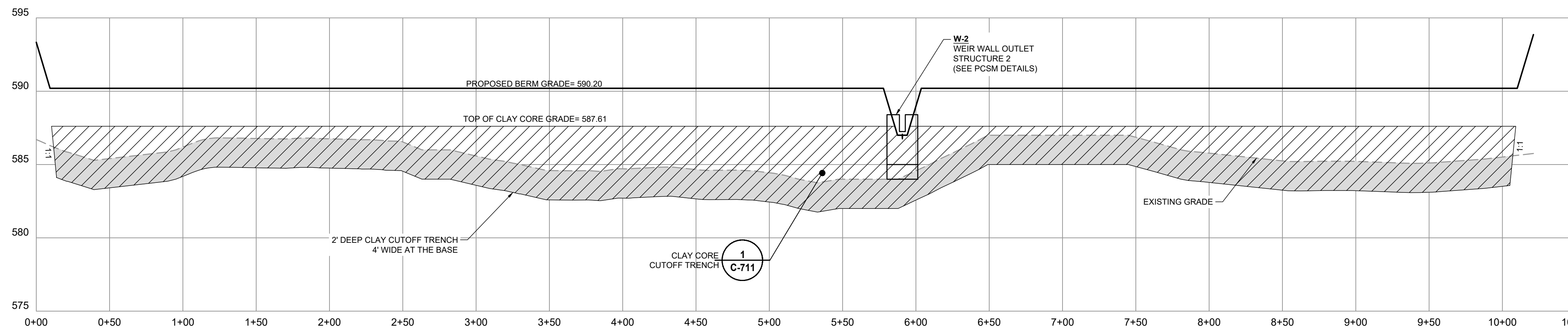
(P-2) MRC BIO-RETENTION POND 2
BERM PROFILE
SCALE: H 1"=50', V 1"=5'



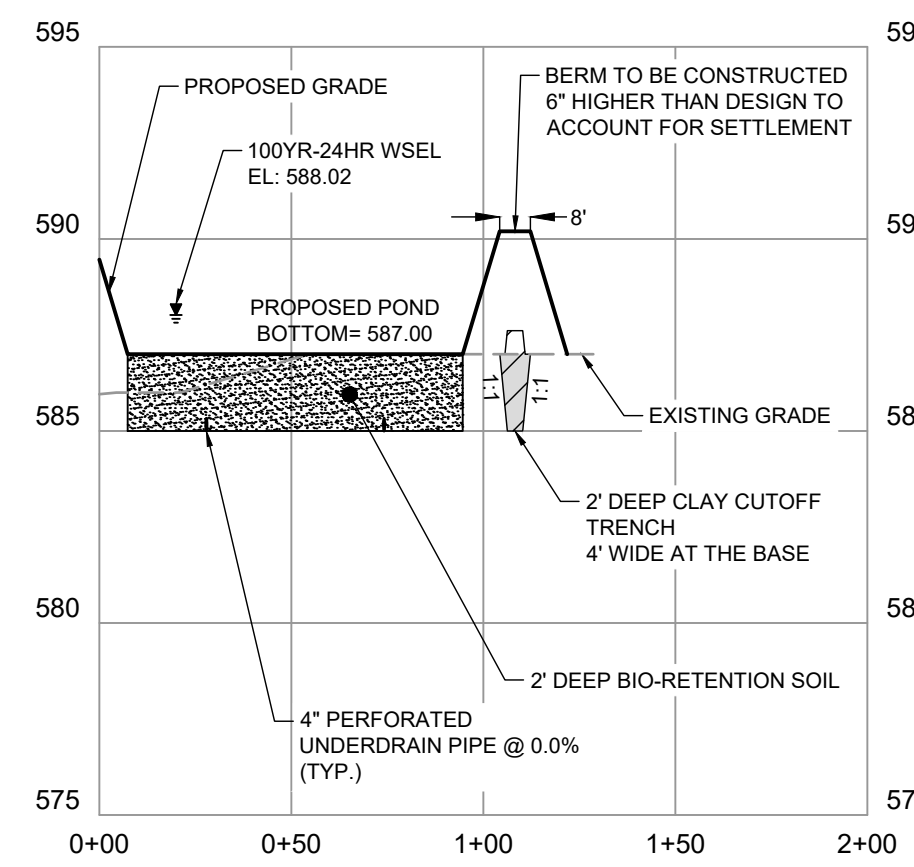
(P-2) MRC BIO-RETENTION POND 2
CROSS-SECTION
SCALE: H 1"=50', V 1"=5'



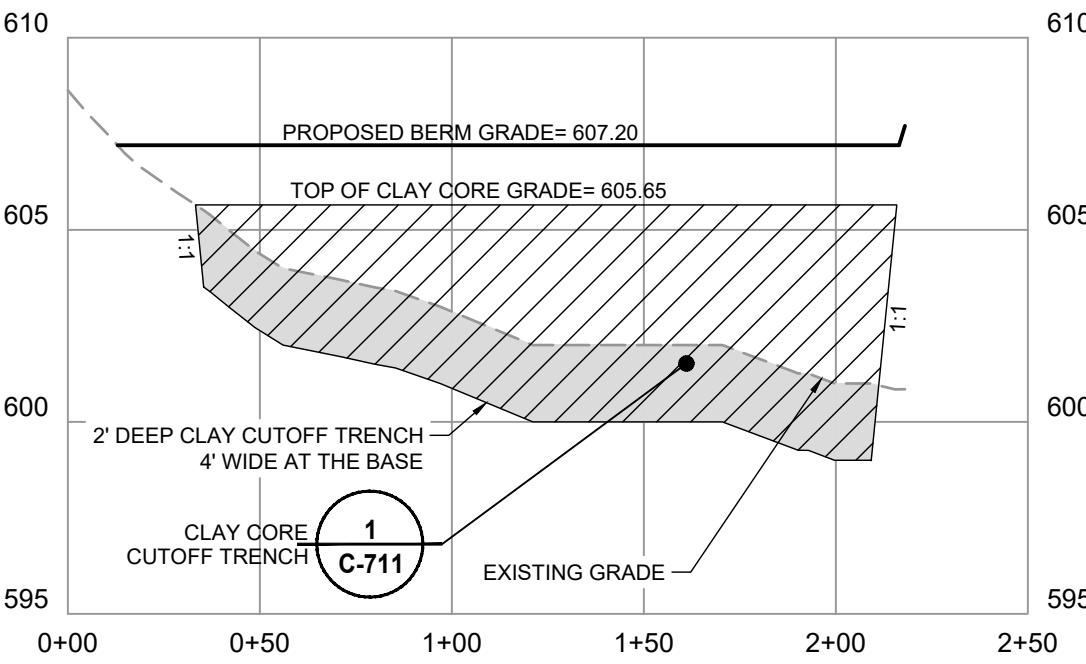
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OUTLET PROFILE
SCALE: H 1"=50', V 1"=5'



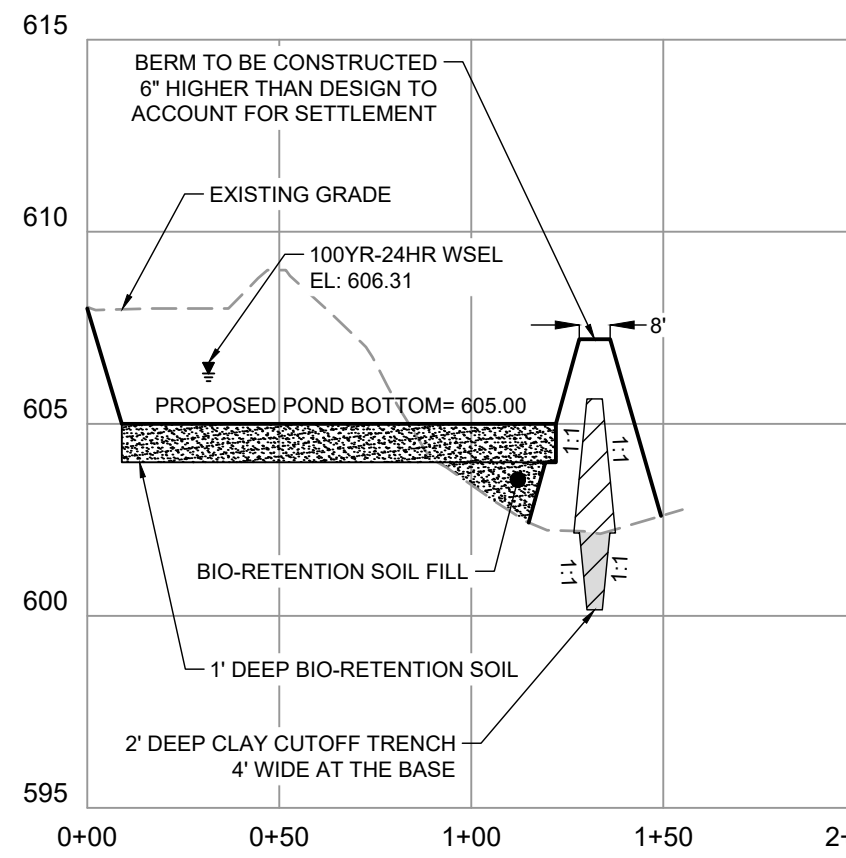
(P-3) MRC BIO-RETENTION POND 3 BERM PROFILE
SCALE: H 1"=50', V 1"=5'



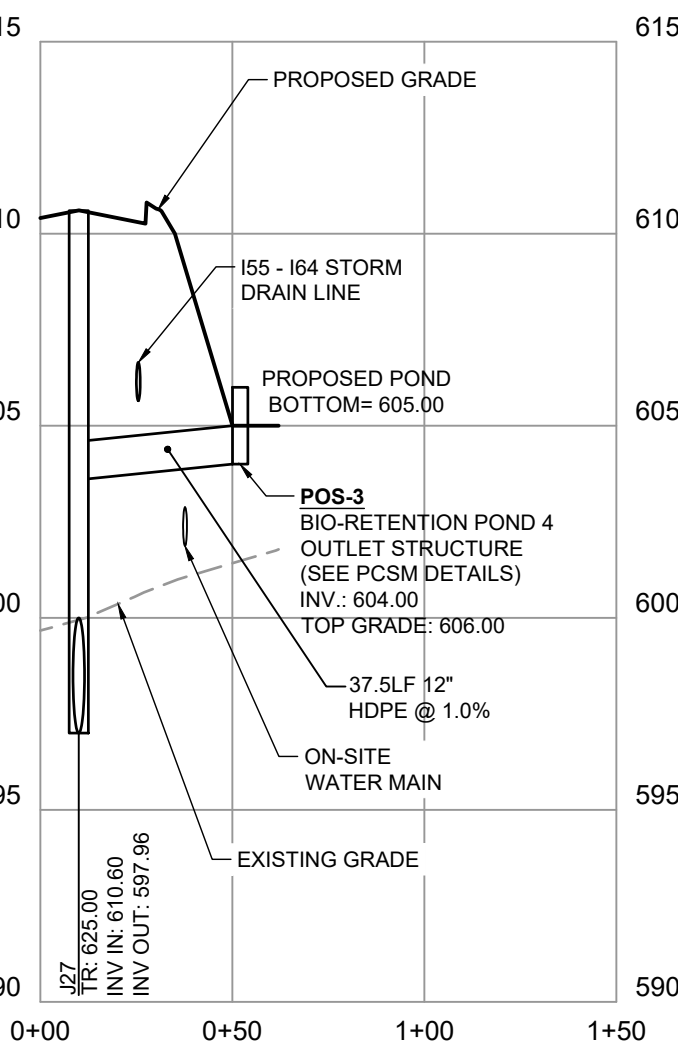
(P-3) MRC BIO-RETENTION POND 3
CROSS-SECTION
SCALE: H 1"=50', V 1"=5'



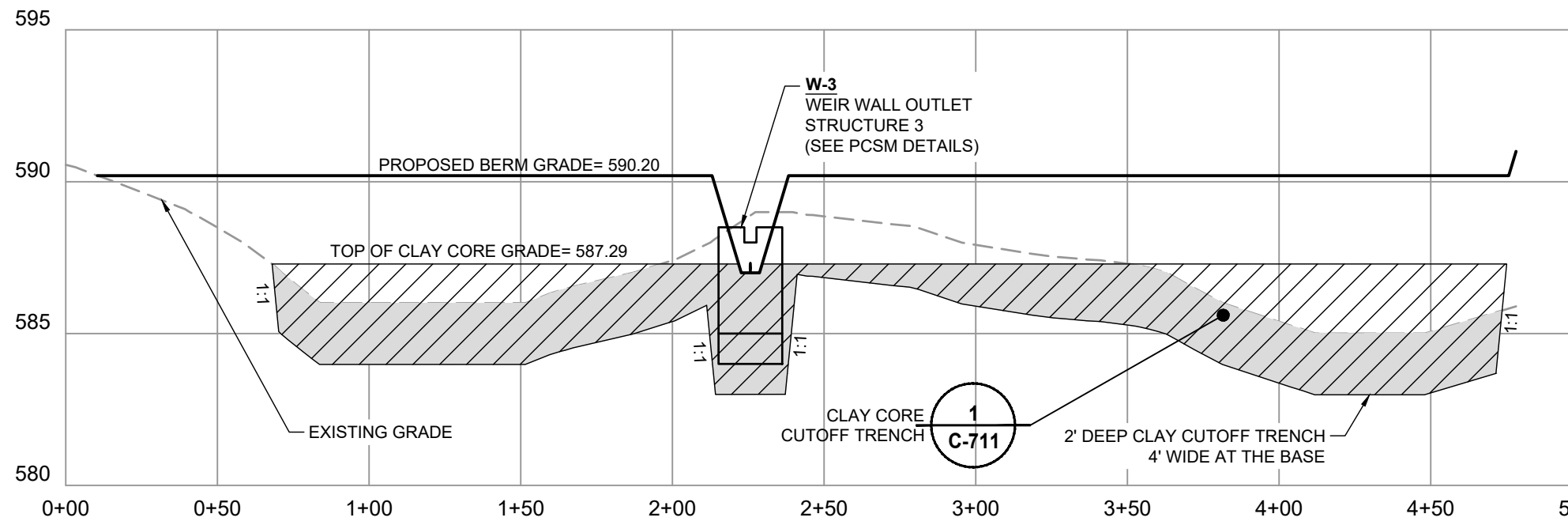
(P-4) BIO-RETENTION POND 4 BERM PROFILE
SCALE: H 1"=50', V 1"=5'



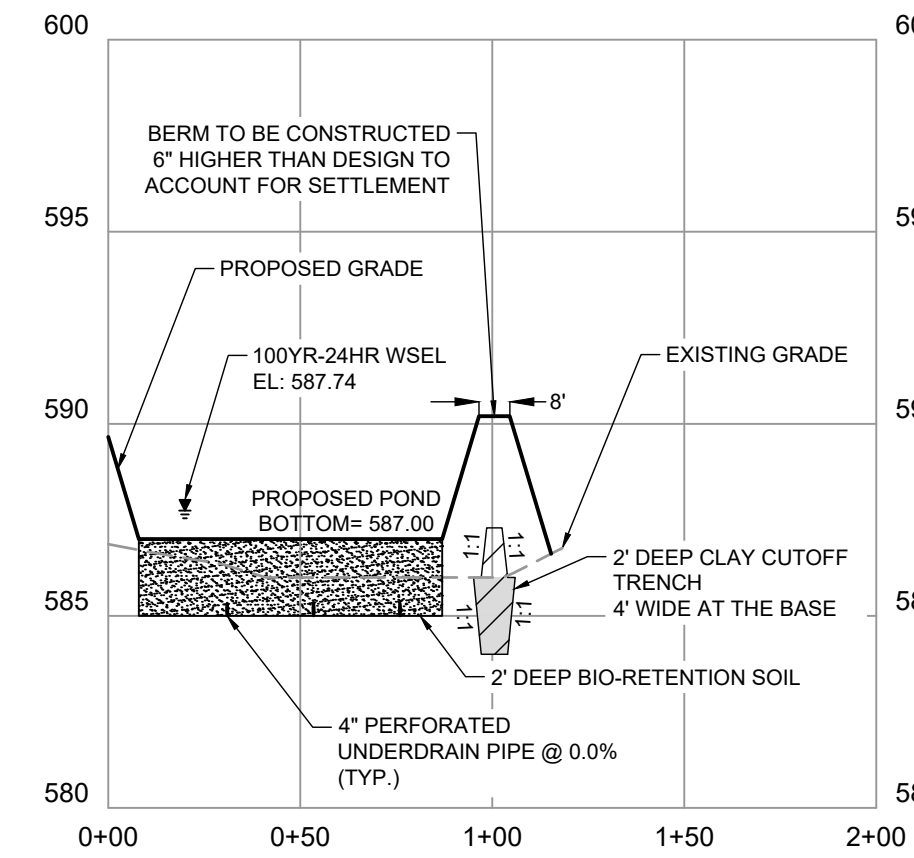
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CROSS-SECTION
SCALE: H 1"=50', V 1"=5'



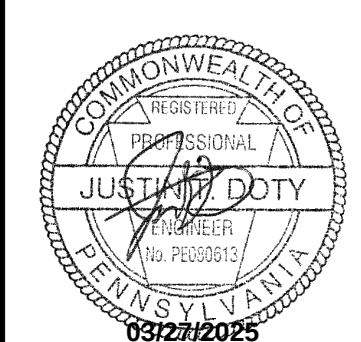
(P-4) BIO-RETENTION POND 4
OUTLET PROFILE
SCALE: H 1"=50', V 1"=5'



(P-5) MRC BIO-RETENTION POND 5 BERM PROFILE
SCALE: H 1"=50', V 1"=5'



(P-5) MRC BIO-RETENTION POND 5
CROSS-SECTION
SCALE: H 1"=50', V 1"=5'



Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000913
Expiration Date: 03/27/2025

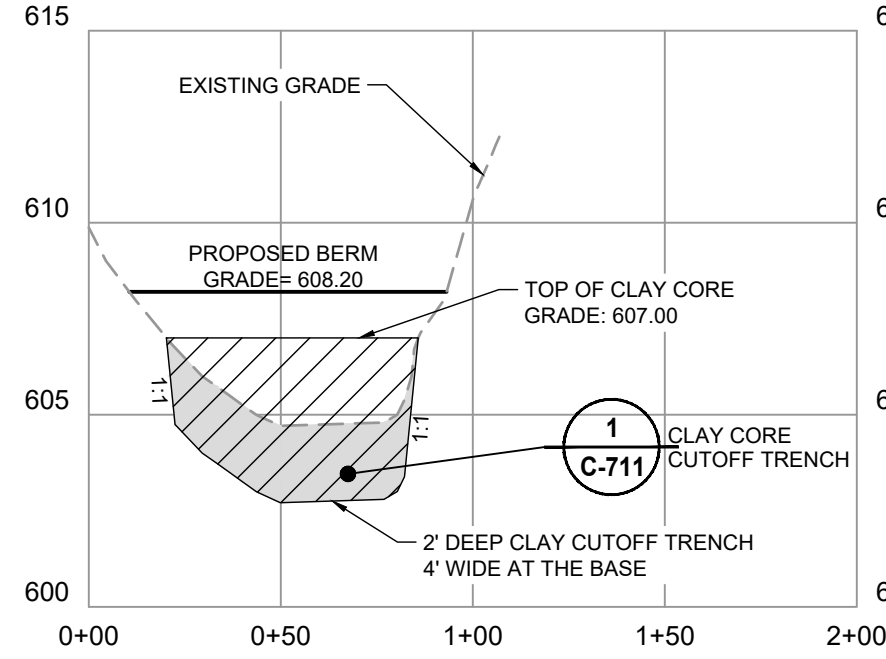
Frederick Seibert & Associates, Inc.
Civil Engineer • Surveyors • Landscape Architects • Land Planners
108 SOUTH POTOMAC STREET
PHILADELPHIA, PA 19106
215.581.8000
215.581.8007
717.275.1251
717.275.1251

DATE	DESCRIPTION
01/06/24	Revised per Township Engineer Comments
12/02/24	Revised per DEP/CDOT Tech Comments
03/07/25	Revised per Finalized Review Comments
03/26/25	Revised per 2nd Elevated Review Comments

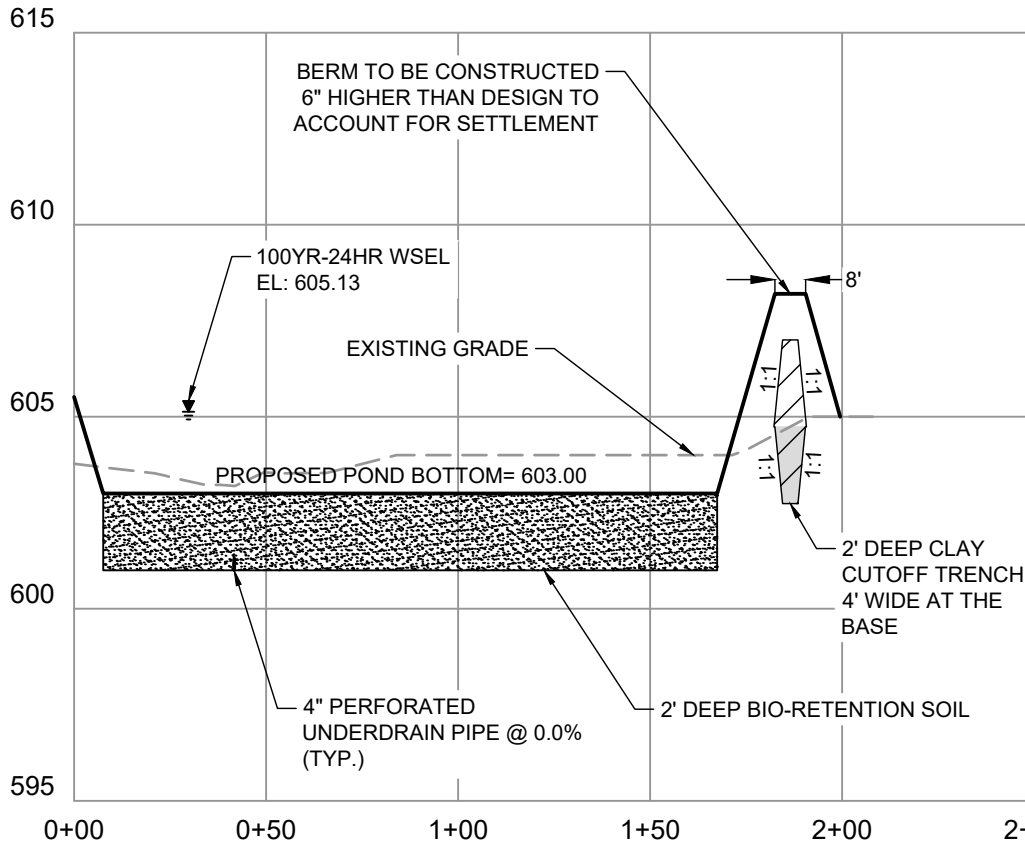
AAMPA HOLDINGS - RITNER HWY
SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-202)
WEST PENNSBORO TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA
AAMPA HOLDINGS, LLC
1514 WEST COMMERCE AVENUE, SUITE 203, CHARLISLE, PA 17013
(223) 536-4040

PROJECT NO.	2022-0251
DWN BY	CMH
DATE	11-15-2023
PROJECT MANAGER	JTD
EMAIL	JDoty@fsa-inc.com
PROPERTY INFORMATION	46-10-0620-006A
SCALE	N.T.S.
SHEET TITLE	PCSM DETAILS

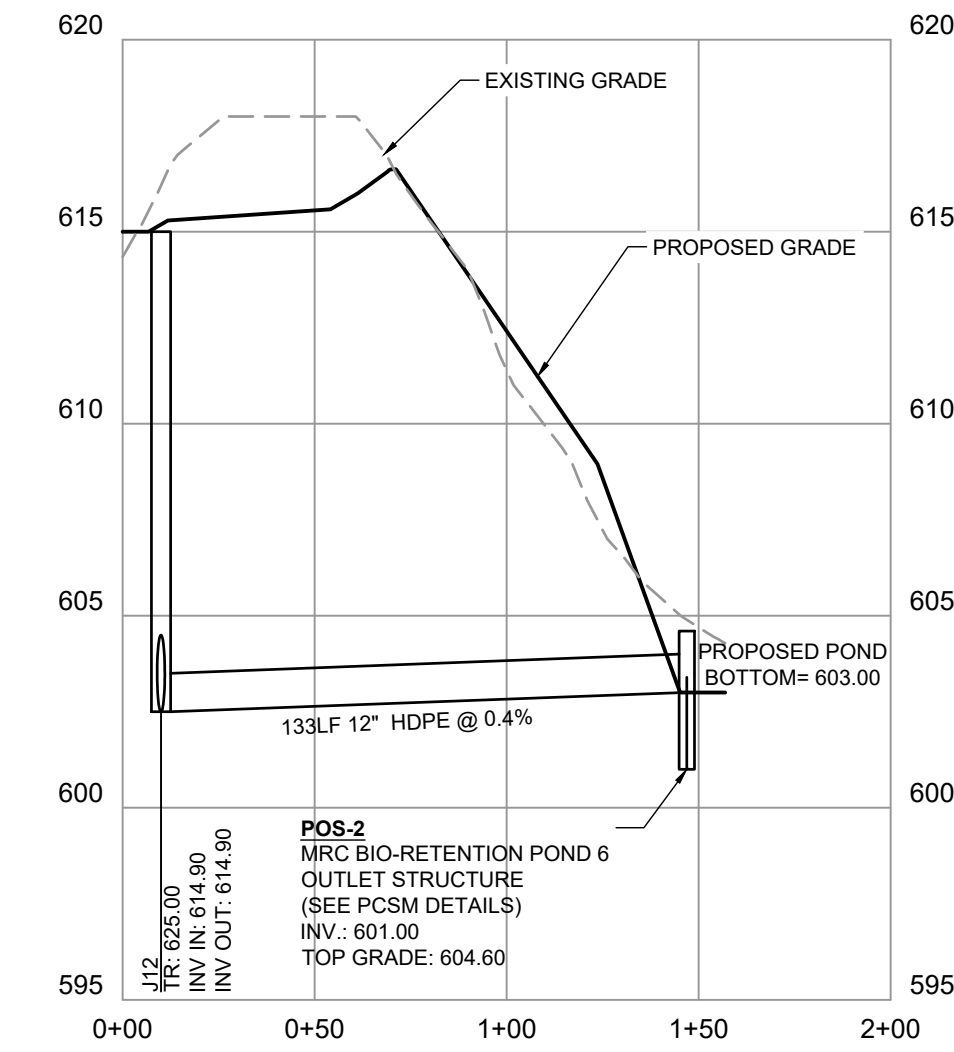
PCSM
DETAILS
C-710
SHEET 61 OF 63



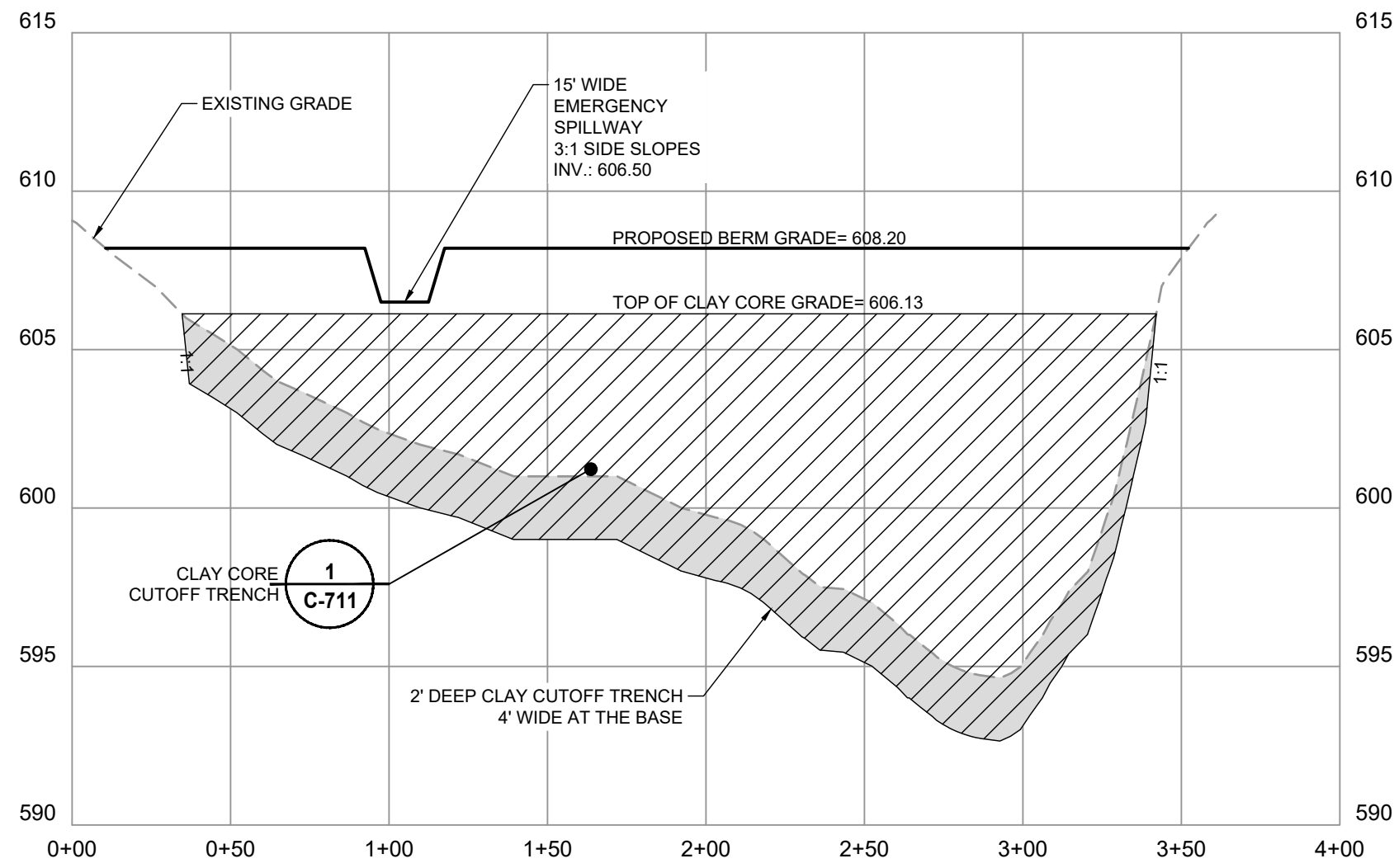
(P-6) MRC BIO-RETENTION POND 6 BERM PROFILE
SCALE: H 1"=50', V 1"=5'



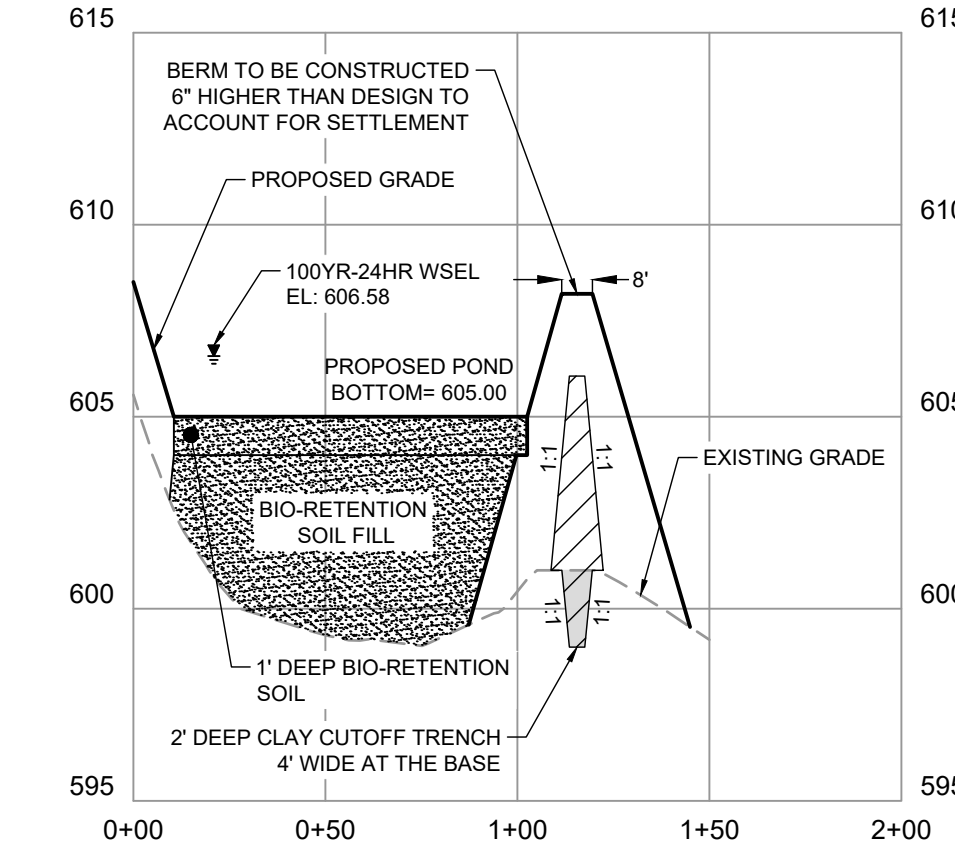
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SCALE: H 1"=50', V 1"=5'



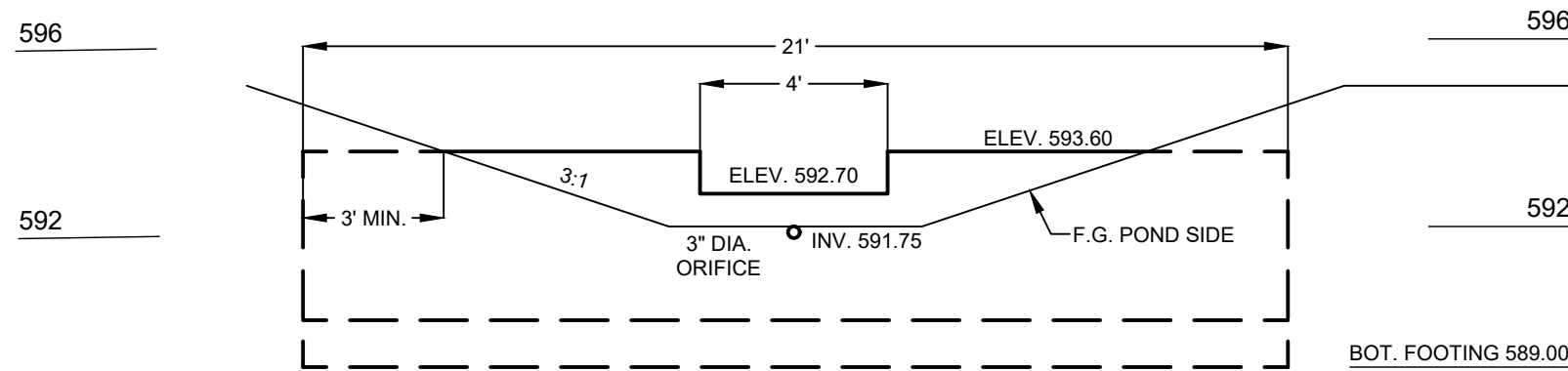
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SCALE: H 1"=50', V 1"=5'



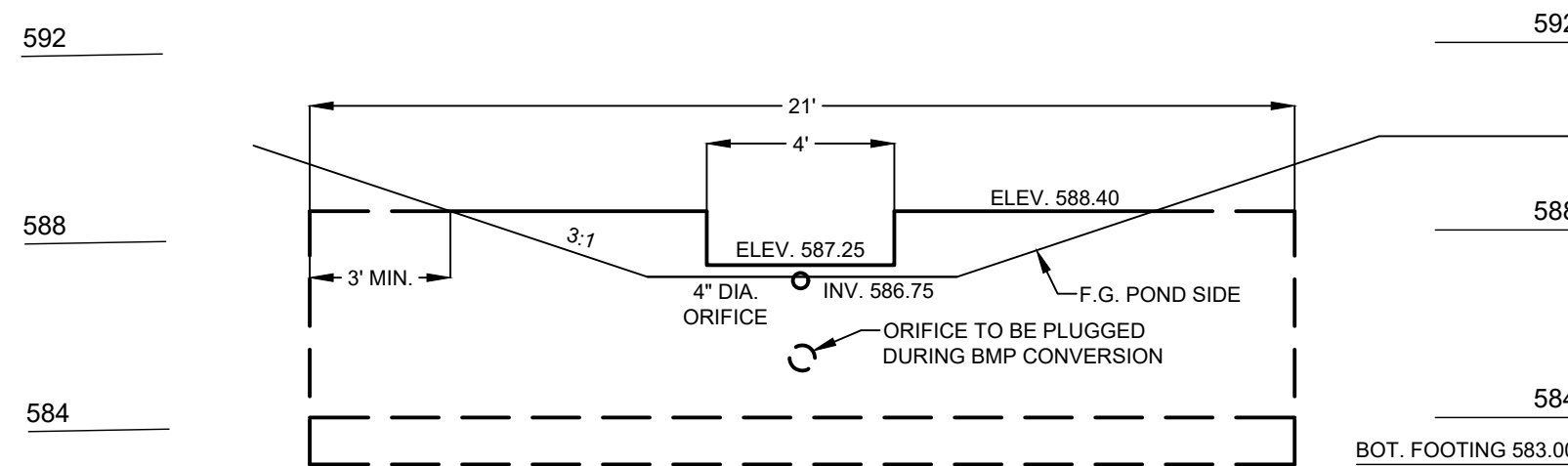
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SCALE: H 1"=50', V 1"=5'



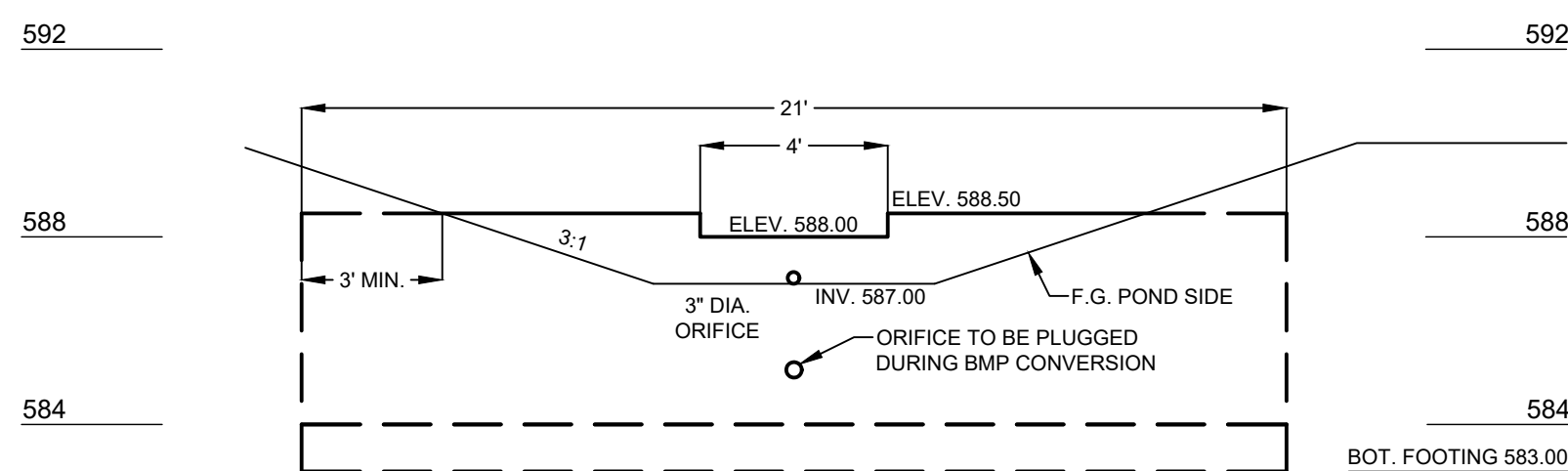
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SCALE: H 1"=50', V 1"=5'



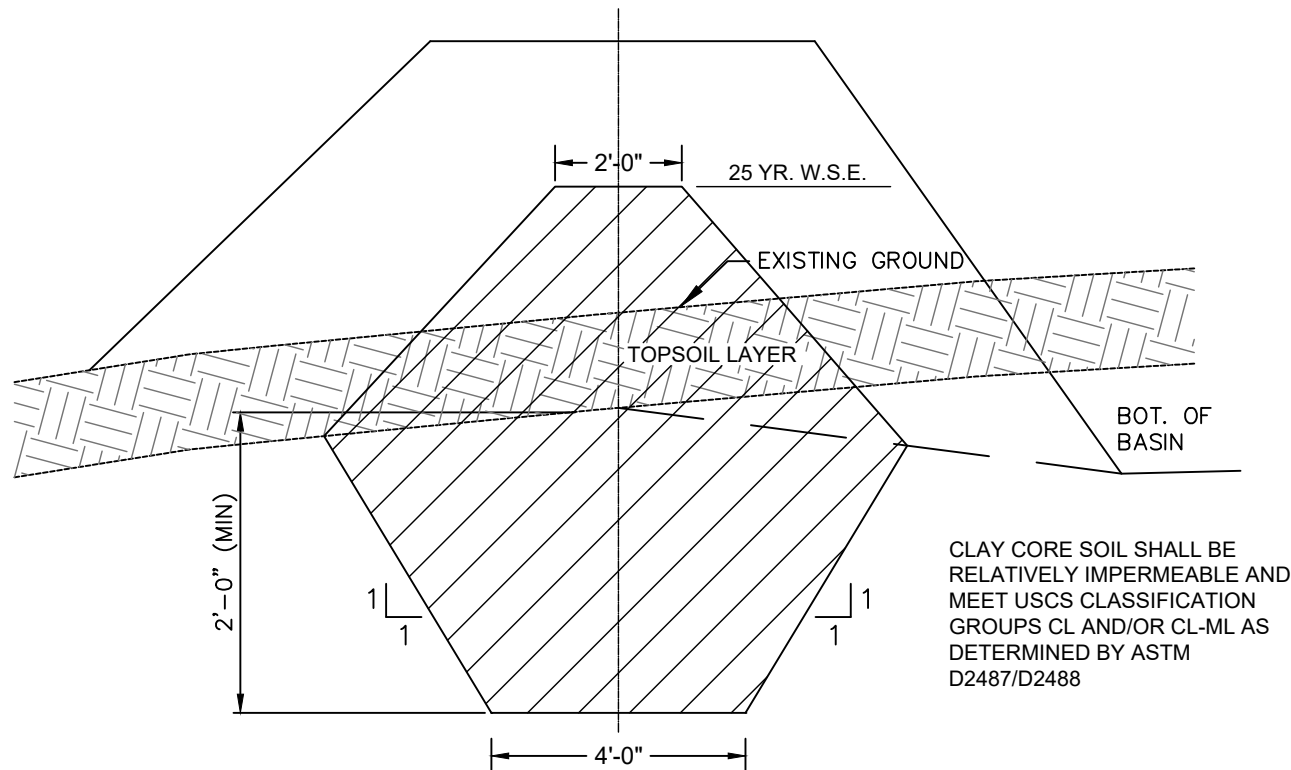
W-1
P-1 WEIR WALL CROSS-SECTION
SCALE: 1"=4' HORIZ., 1"=4' VERT.



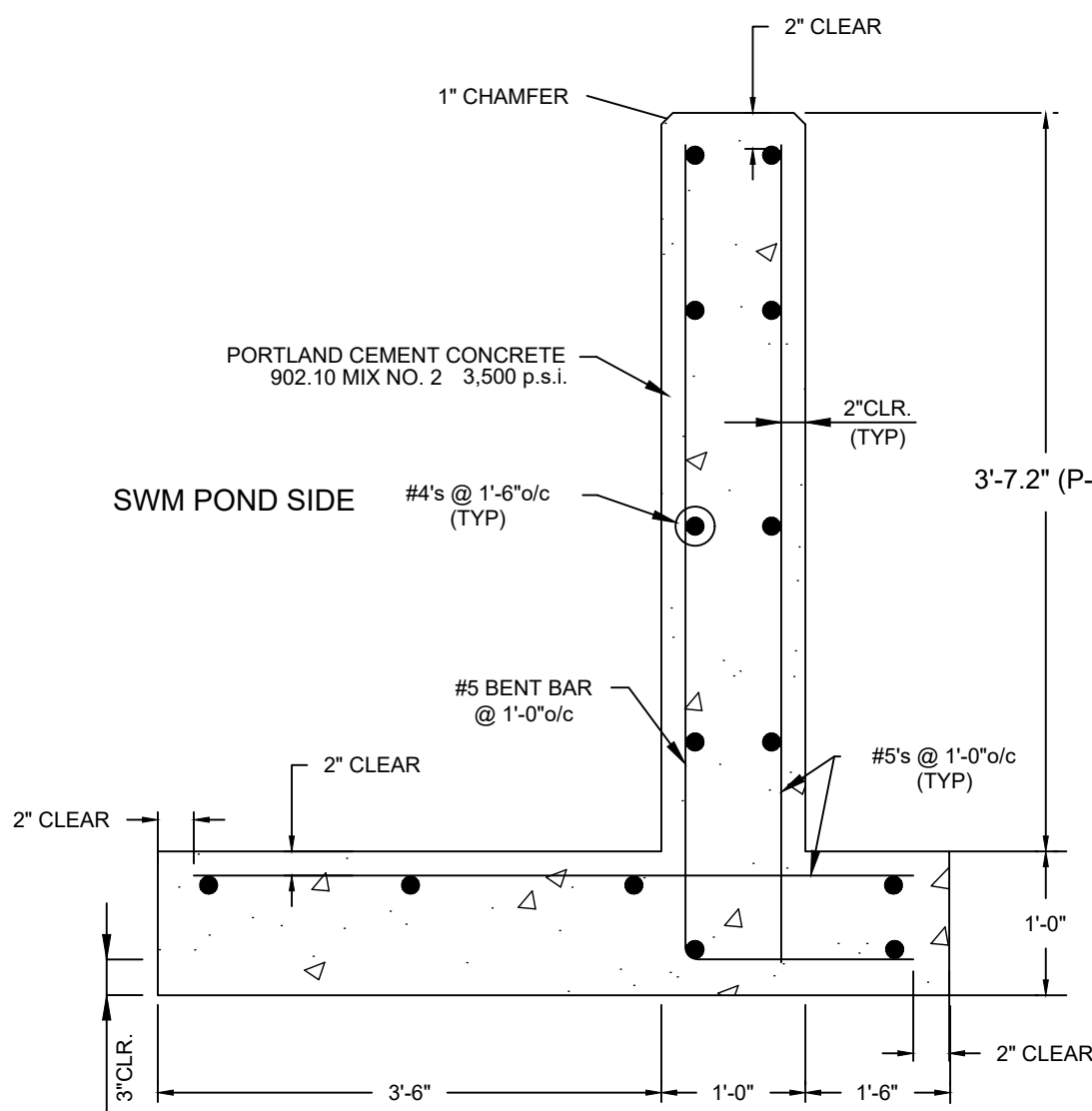
W-2
P-3 WEIR WALL CROSS SECTION
SCALE: 1"=4' HORIZ., 1"=4' VERT.



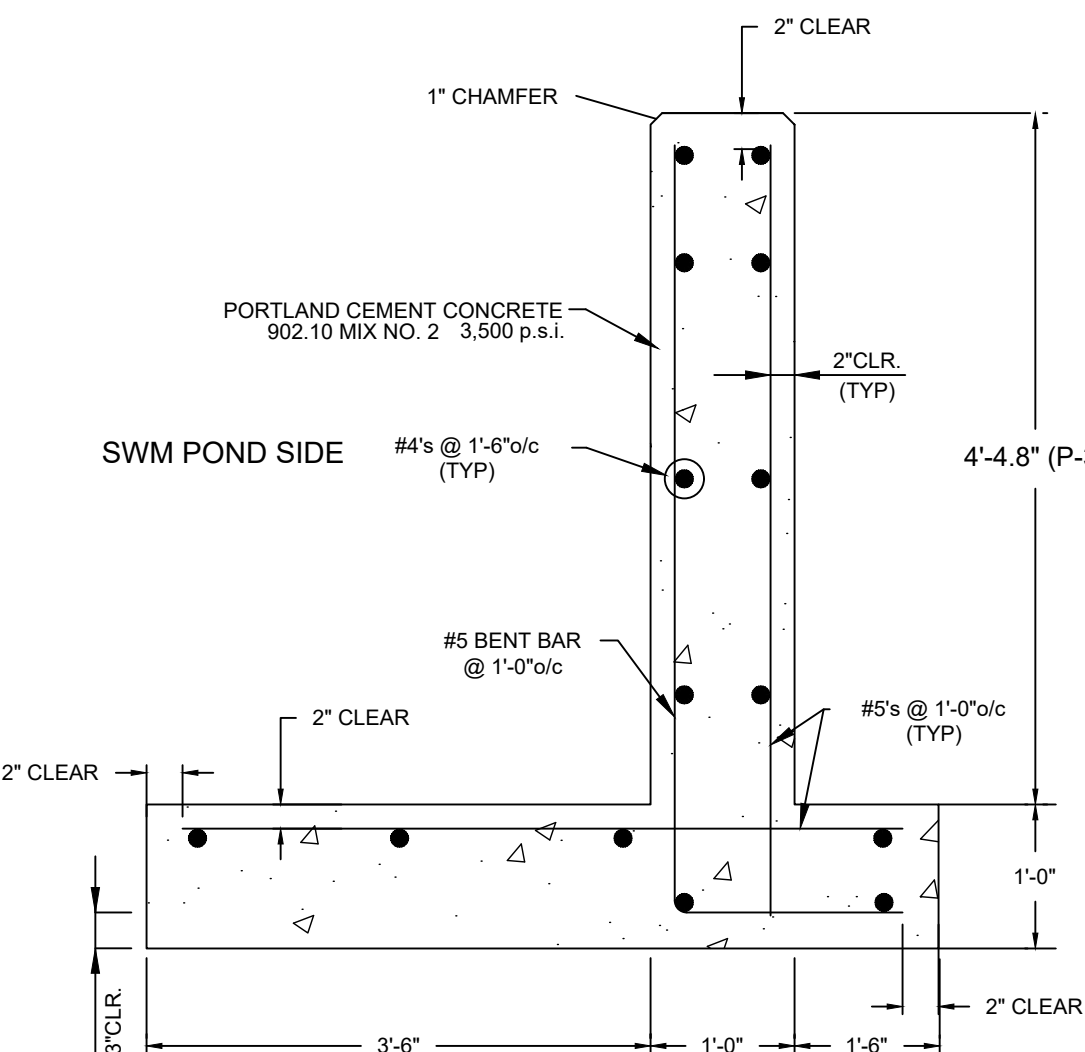
W-3
P-5 WEIR WALL CROSS SECTION
SCALE: 1"=4' HORIZ., 1"=4' VERT.



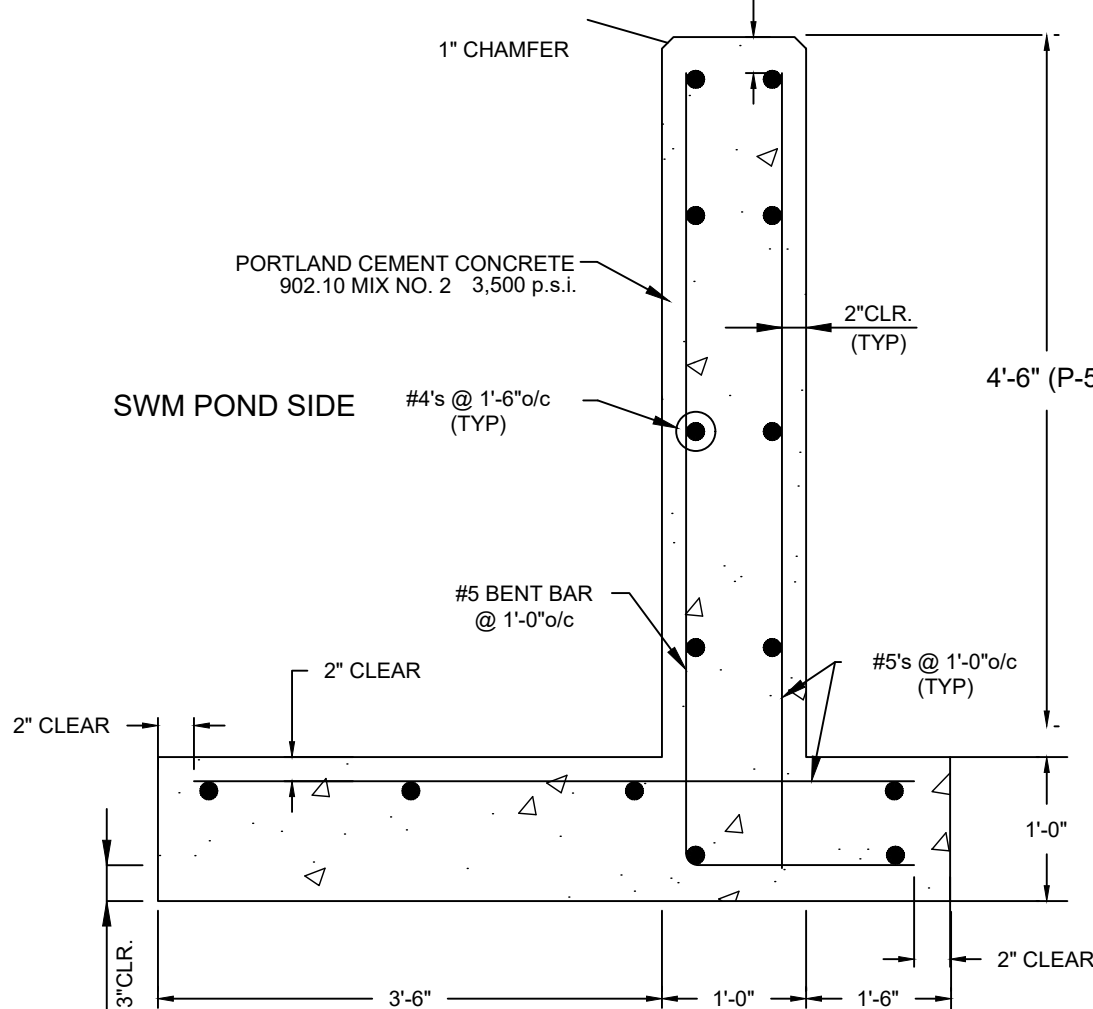
1
C-711
CLAY CORE/CUTOFF KEY TRENCH
NOT TO SCALE



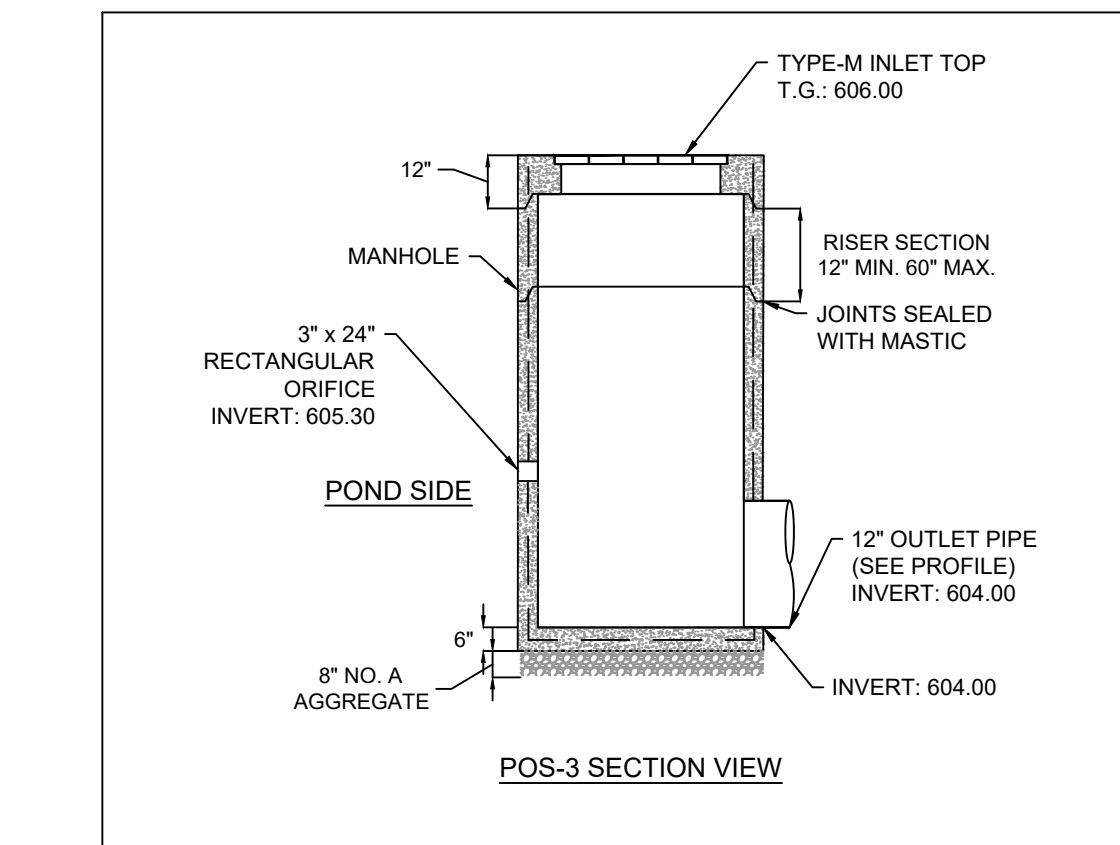
W-1: WEIR WALL DETAIL
SCALE: NTS



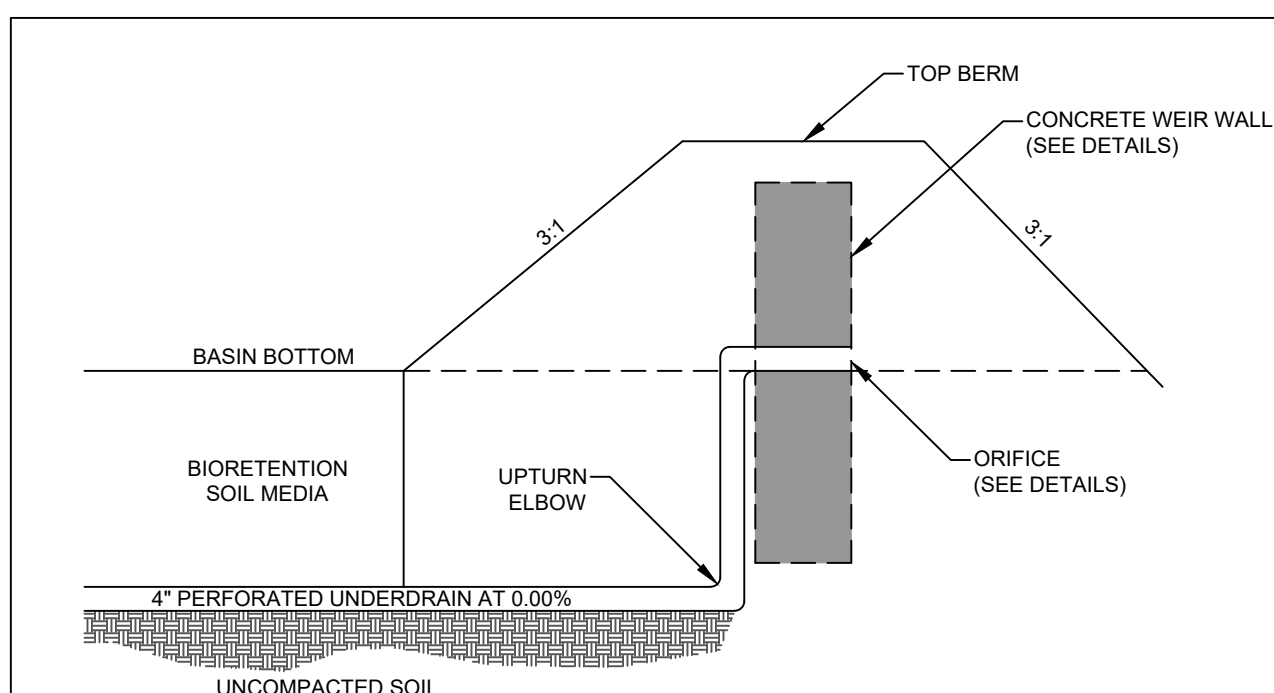
W-2: WEIR WALL DETAIL
SCALE: NTS



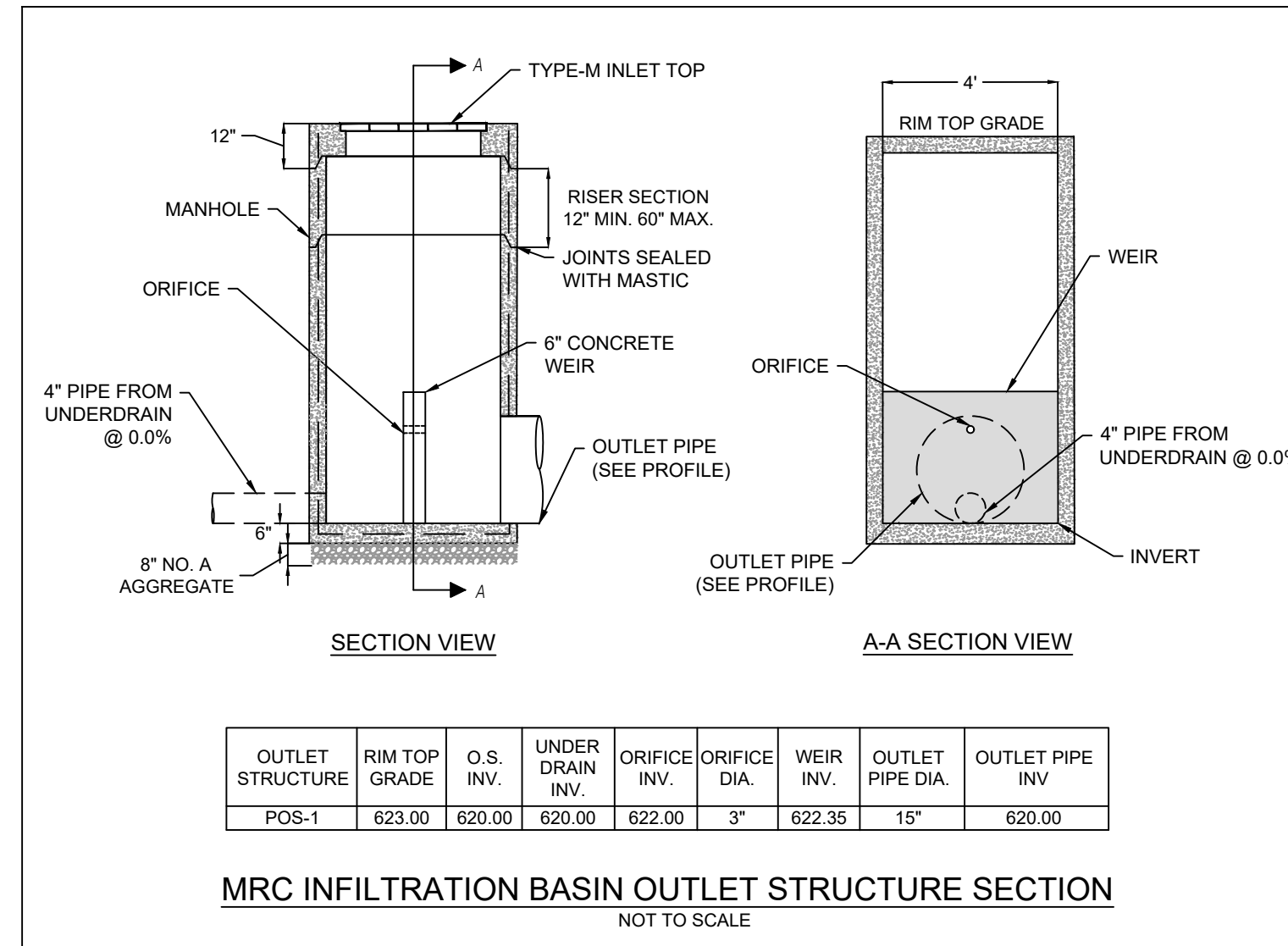
W-3: WEIR WALL DETAIL
SCALE: NTS



POS-3 SECTION VIEW

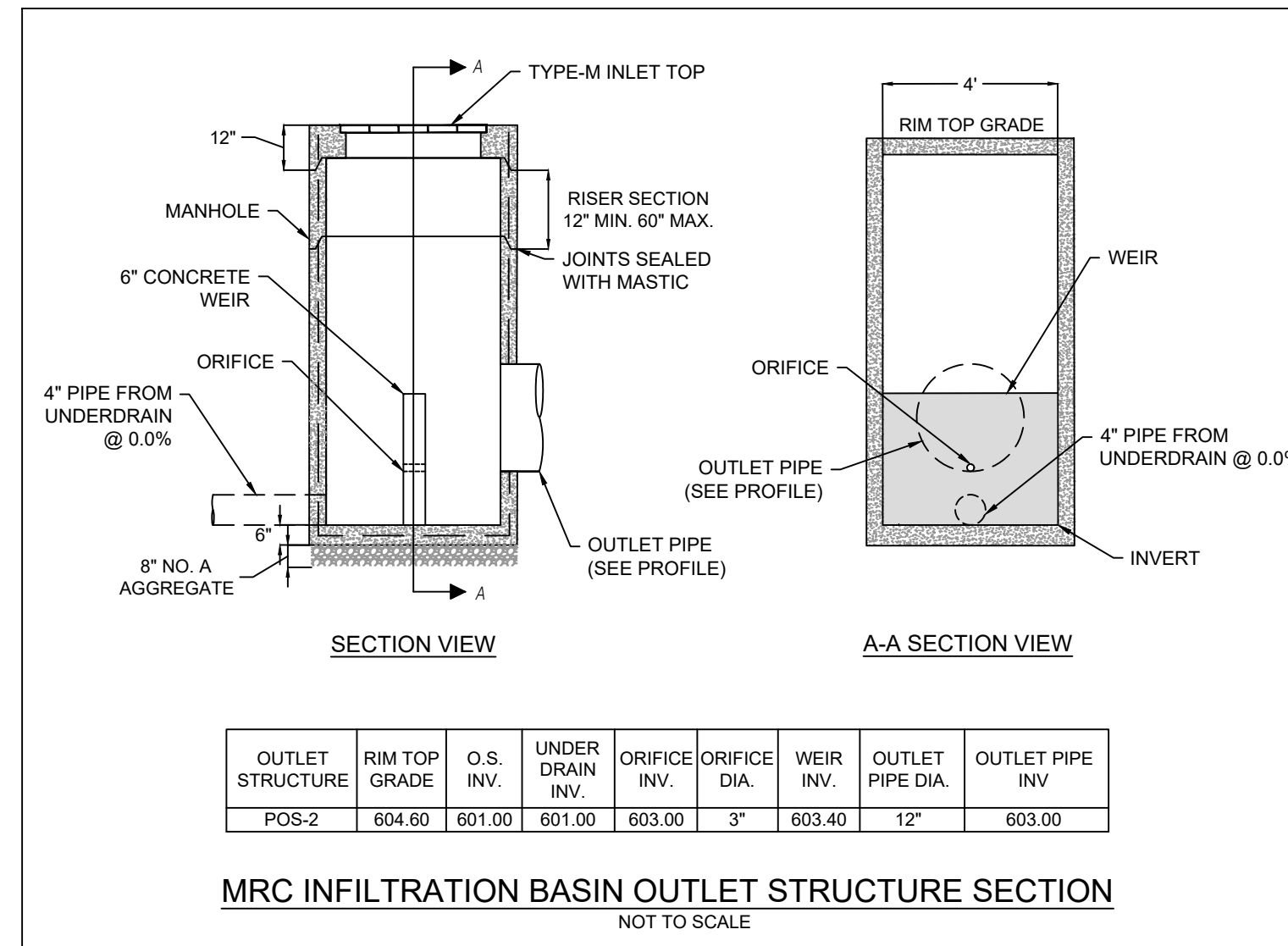


MRC BIORETENTION POND OUTLET SECTION
NOT TO SCALE



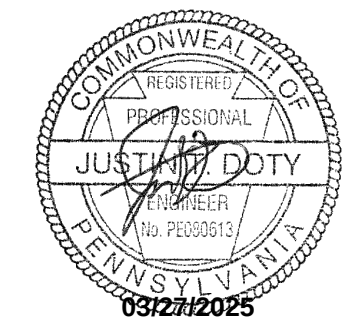
OUTLET STRUCTURE	RIM TOP GRADE	O.S. INV.	UNDER DRAIN INV.	ORIFICE INV.	ORIFICE DIA.	WEIR INV.	OUTLET PIPE DIA.	OUTLET PIPE INV.
POS-1	623.00	620.00	620.00	622.00	3"	622.35	15"	620.00

MRC INFILTRATION BASIN OUTLET STRUCTURE SECTION
NOT TO SCALE



OUTLET STRUCTURE	RIM TOP GRADE	O.S. INV.	UNDER DRAIN INV.	ORIFICE INV.	ORIFICE DIA.	WEIR INV.	OUTLET PIPE DIA.	OUTLET PIPE INV.
POS-2	604.60	601.00	601.00	603.00	3"	603.40	12"	603.00

MRC INFILTRATION BASIN OUTLET STRUCTURE SECTION
NOT TO SCALE



Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional under the laws of the State of Pennsylvania. License # PE000013
Expiration Date: 03-27-2025

Frederick Seibert & Associates, Inc.
Civil Engineers • Surveyors • Landscape Architects • Land Planners
1100 EAST MAIN STREET
SUITE 200
WEST CHESTER, PA 19380
PH: 610.336.4100
FAX: 610.336.4101
WWW.FSA-INC.COM

DATE	DESCRIPTION
01/06/24	Reviewed per Township Engineer Comments
12/02/24	Revised per DEP/PCSD Tech Comments
03/07/25	Revised per Finalized Review Comments
03/26/25	Revised per 2nd Elevated Review Comments

AAMPA HOLDINGS - RITNER HWY

SITUATED APPROXIMATELY 1 MILE FROM SOUTHWEST OF THE INTERSECTION OF RITNER HIGHWAY (US-11) AND CENTERVILLE ROAD (PA-220)

WEST PENNSBORO TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA

AAMPA HOLDINGS, LLC
1514 WEST COMMERCE AVENUE, SUITE 203, CHARLISLE, PA 17013
(717) 336-4100

PROJECT NO.	2022-0251
DWN BY	CMH
DATE	11-15-2023
PROJECT MANAGER	JTD
EMAIL	JDoty@fsa-inc.com
PROPERTY INFORMATION	46-10-0620-006A
SCALE	NTS
SHEET TITLE	PCSM DETAILS

PCSM
DETAILS

C-711
SHEET 62 OF 63

