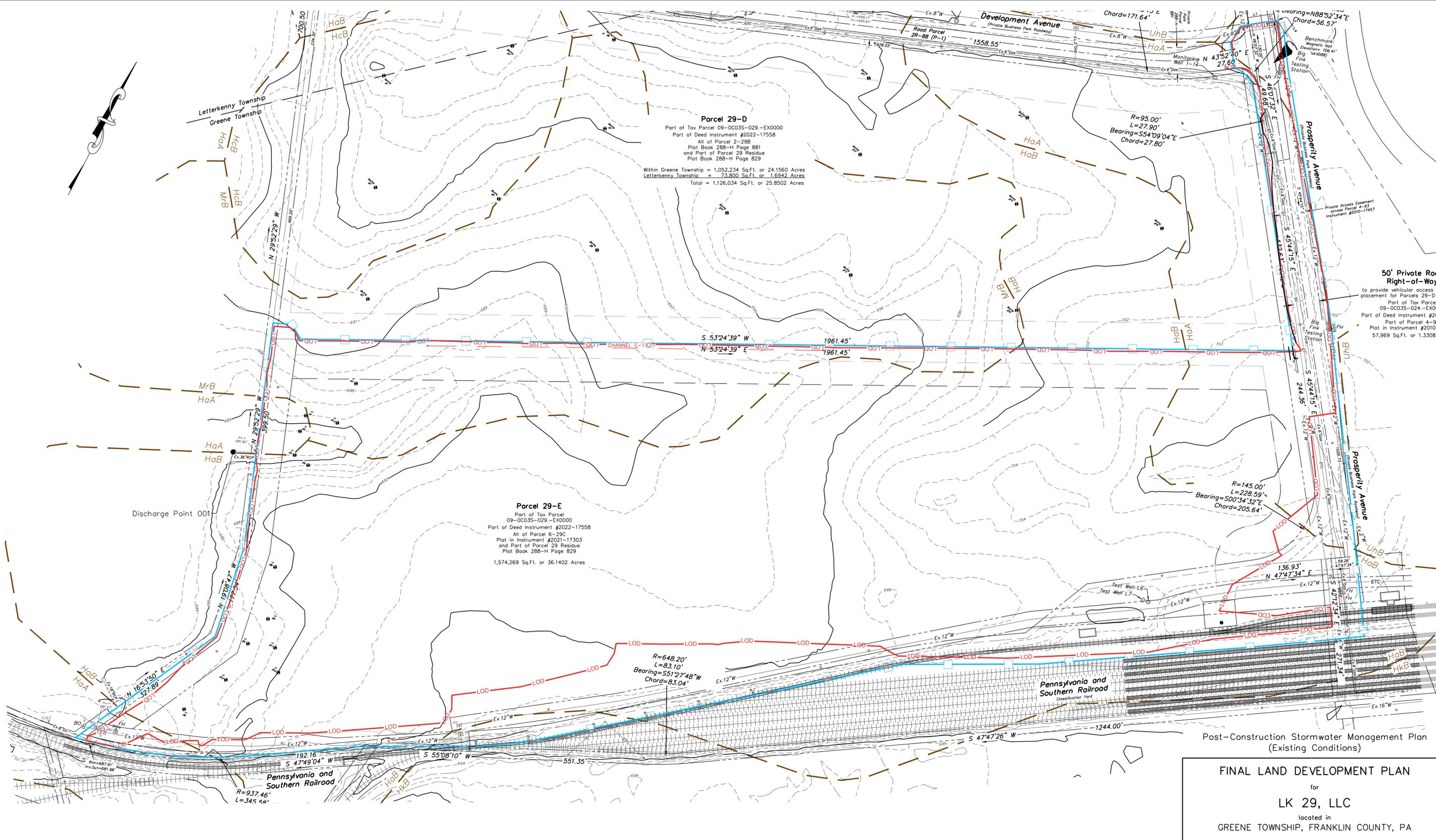


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Post-Construction Stormwater Management Plan (Existing Conditions)

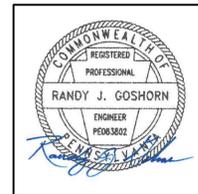
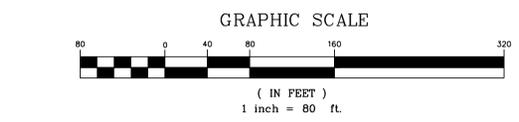
FINAL LAND DEVELOPMENT PLAN
 for
LK 29, LLC
 located in
 GREENE TOWNSHIP, FRANKLIN COUNTY, PA

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN LEGEND

	NPDES PERMIT BOUNDARY
	LIMITS OF DISTURBED AREA
	SOIL TYPE BOUNDARY
	PERC TEST LOCATION

NPDES Permit Boundary Area = 34.23 Acres

Limits of Disturbed Area = 29.92 Acres



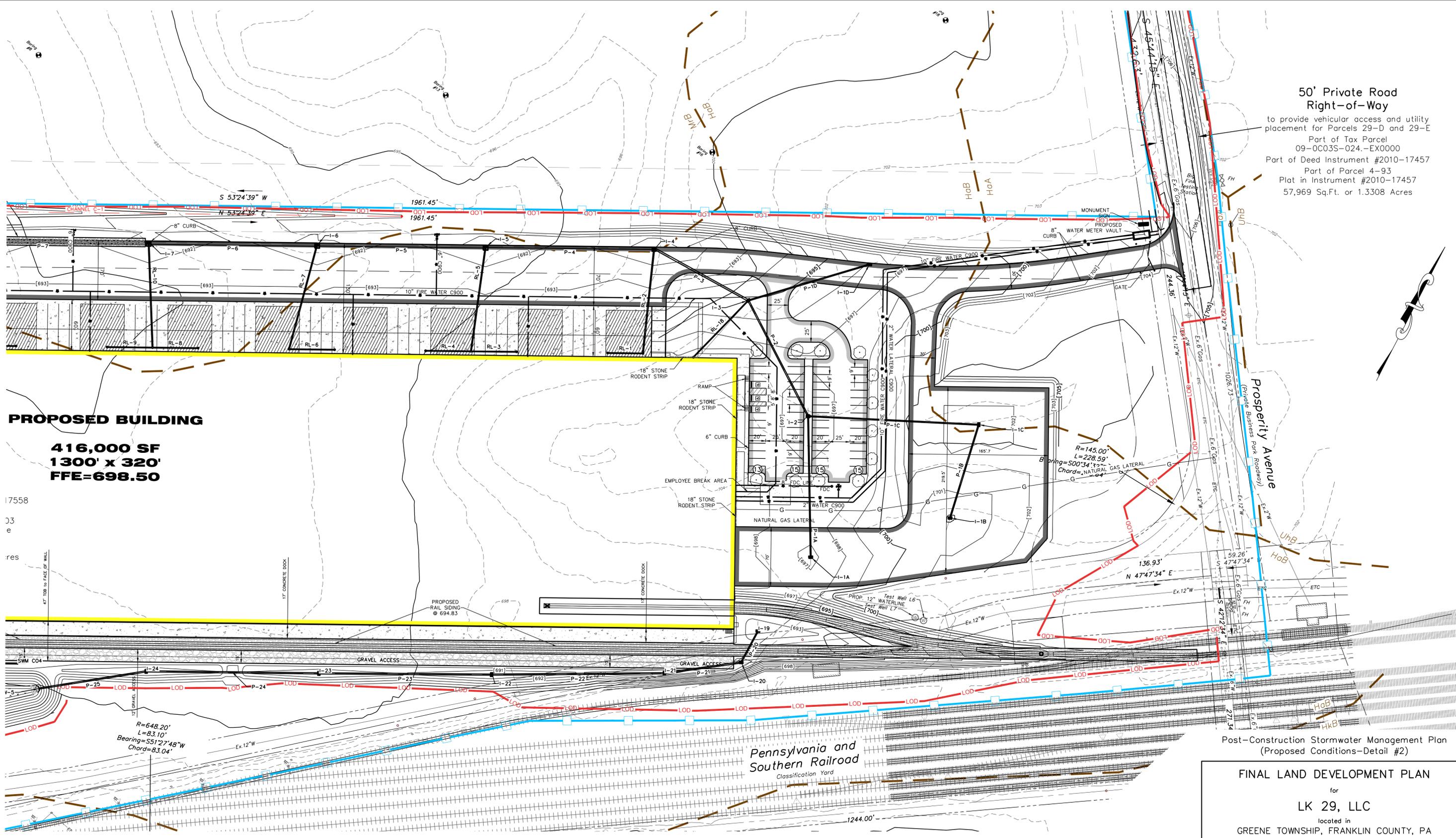
DENNIS E. BLACK ENGINEERING, INCORPORATED
 ENGINEERING-SURVEYING-PLANNING
 2400 PHILADELPHIA AVENUE
 CHAMBERSBURG, PA 17201
 (717)263-8794 (888)238-0661

DWN_R/JG	CLIENT No.	ORDER No.	SHEET
CHK_R/JG	DATE 02/07/24	AutoCAD DRAWING REF. NUMBER	PC2 OF PC7
APP.	SCALE 1" = 80'		DRAWING No. 23-64

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50' Private Road Right-of-Way
 to provide vehicular access and utility placement for Parcels 29-D and 29-E
 Part of Tax Parcel 09-0C03S-024-EX0000
 Part of Deed Instrument #2010-17457
 Part of Parcel 4-93
 Plat in Instrument #2010-17457
 57,969 Sq.Ft. or 1.3308 Acres

PROPOSED BUILDING
416,000 SF
1300' x 320'
FFE=698.50



Post-Construction Stormwater Management Plan
 (Proposed Conditions-Detail #2)

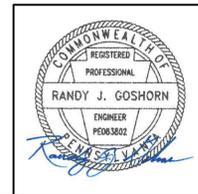
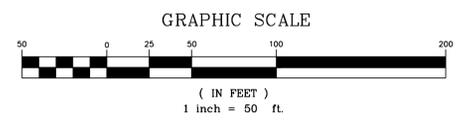
FINAL LAND DEVELOPMENT PLAN
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POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN LEGEND

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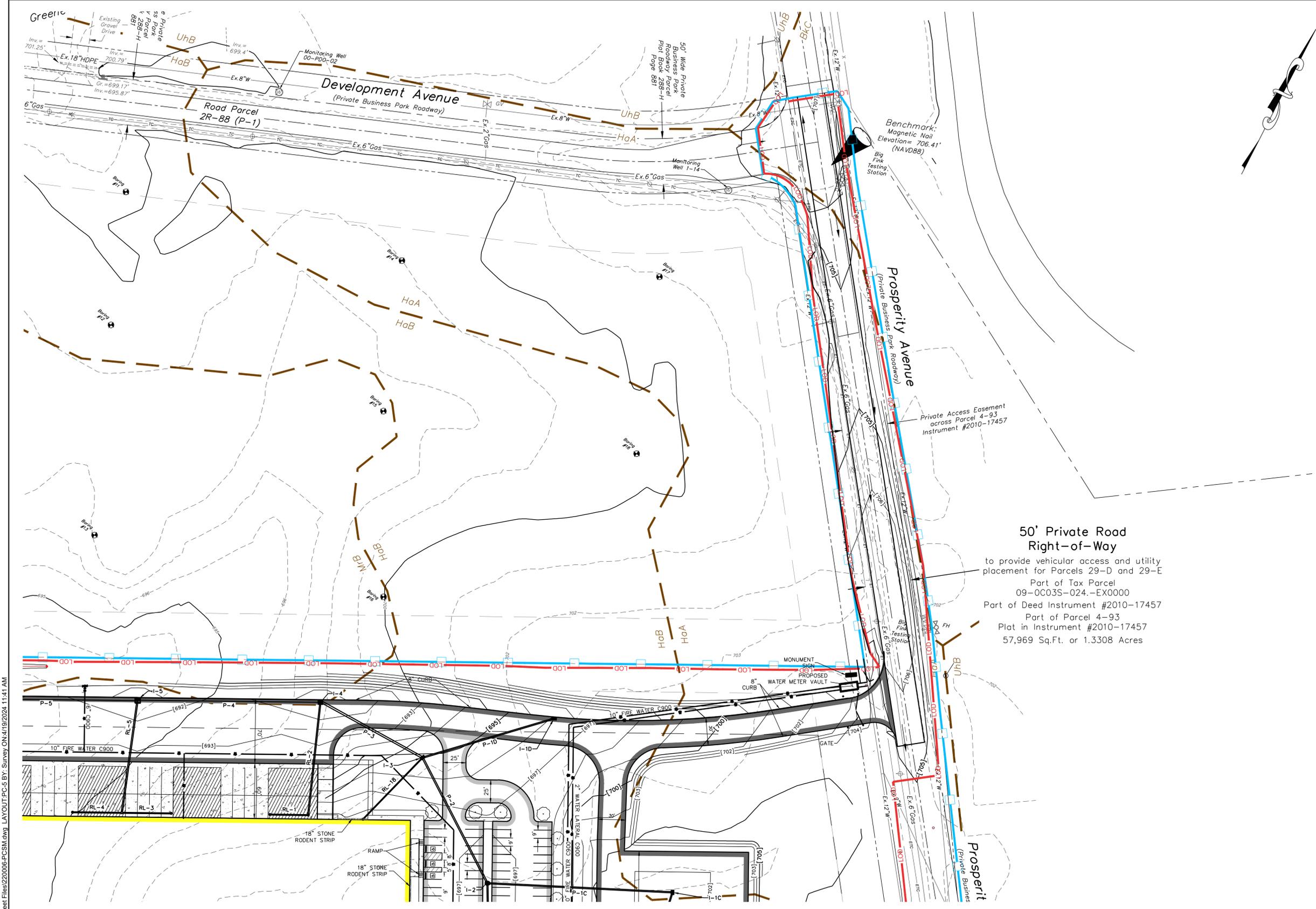


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DWN_RJG	CLIENT No.	ORDER No.	SHEET
CHK_RJG	DATE 02/07/24	AutoCAD DRAWING REF. NUMBER	PC4 OF PC7
APP.	SCALE 1" = 50'		DRAWING No. 23-64

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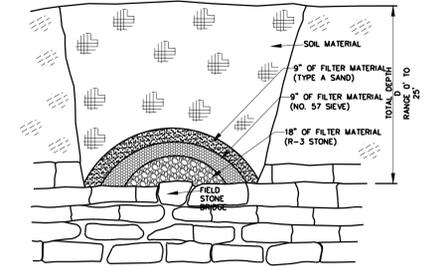


50' Private Road Right-of-Way
 to provide vehicular access and utility placement for Parcels 29-D and 29-E
 Part of Tax Parcel 09-0C03S-024.-EX0000
 Part of Deed Instrument #2010-17457
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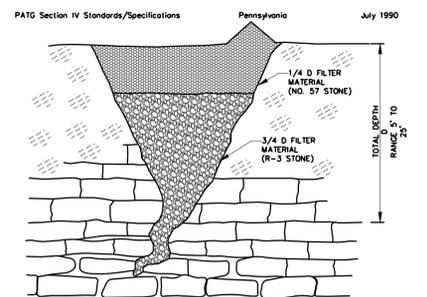
Contractor Advisory for Construction in Areas Characterized by Karst Topography
 This site is characterized by karst topography and may contain subsurface solution channels, decomposed limestone bedrock or subsurface conditions conducive to the formation of sinkholes.
 Should any evidence of solutioning or sinkhole formation be encountered during excavation, the contractor shall contact Dennis E. Black Engineering, Inc. prior to proceeding with construction activities.

**Specification (Interim)
 370. SINKHOLE AND SINKHOLE AREA TREATMENT**

- INVERTED FILTER 1**
 Procedure for installing an inverted filter to treat sinkholes with less than 5 acres drainage area.
1. Remove and properly dispose of materials dumped in and around the sinkhole.
 2. Excavate loose material from the sinkhole and try to expose the solution void(s) in the bottom. Enlarge the sinkhole, as necessary, to allow for installation of the filter materials (Figure 1).
 3. Select a field stone(s) that is 1.5 times larger than the solution void(s). Place the stone(s) into the void(s) forming a secure bridge.
 4. Place a layer of filter material over the "bridge" at a minimum thickness of 18 inches. About 30 percent of the material should be larger than the opening between the bridge and the void(s). (A well placed "bridge" should not have large openings around it.) In most cases, this material could be R-3 stone.
 5. Place a layer of smaller size filter material over the previous layer at a minimum of 9 inches. The size should be 1/4 to 1/2 the size of the previous layer; in most cases this material could be No. 57 stone.
 6. Place a layer of sand size filter material over the previous layer at a minimum thickness of 3 inches. The sand has to be compatible in size with the previous layer to prevent piping; in most cases this material could be Type "A" sand.
 7. (A non-woven filter cloth with a burst strength between 100 to 200 psi can be substituted for the stone and sand filter materials discussed in 5 and 6.)
 8. Backfill over the last filter layer (or filter cloth) with soil material to the surface. Overfill by about 5 percent to allow for settlement. The material should be mineral soil with at least 12 percent fines. The reuse of any soil material excavated from the sinkholes should be placed on the surface.
 9. Stone used for the bridge and the filters should have a rock strength at least equal to moderately hard (i.e. resistant to abrasion or cutting by a knife blade but can be easily dented or broken by light blows with a hammer). Slate or similar soft and non-durable rock is not acceptable.



- INVERTED FILTER 2**
 NOT TO SCALE
 Procedure for installing an inverted filter to treat sinkholes with drainage areas between 5 and 15 acres.
1. Remove and properly dispose of materials dumped in and around the sinkhole.
 2. Excavate loose material from the sinkhole and try to expose the solution void(s) in the bottom. Enlarge the sinkhole, as necessary, to allow for installation of the filter materials (Figure 2).
 3. Place a layer of filter material into the sinkhole allowing the stone to fill the void(s) below the bottom of the excavated sinkhole. The size should be 1/4 to 1/2 the size of the void(s). In most cases this material could be R-3 stone.
 4. Place a layer of the same size filter material at a thickness of about 3/4 D (D=total depth) above the sinkhole bottom.
 5. Place a layer of smaller size filter material over the previous layer at a thickness of about 1/4 D. Bring this layer to the surface. The size should be 1/4 to 1/2 the size of the previous layer; in most cases this material could be No. 57 stone.



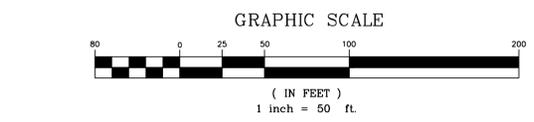
PATG Section IV Standards/Specifications Pennsylvania July 1990

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POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN LEGEND

	NPDES PERMIT BOUNDARY
	LIMITS OF DISTURBED AREA
	SOIL TYPE BOUNDARY
	PERC TEST LOCATION

NPDES Permit Boundary Area = 34.23 Acres
 Limits of Disturbed Area = 29.92 Acres



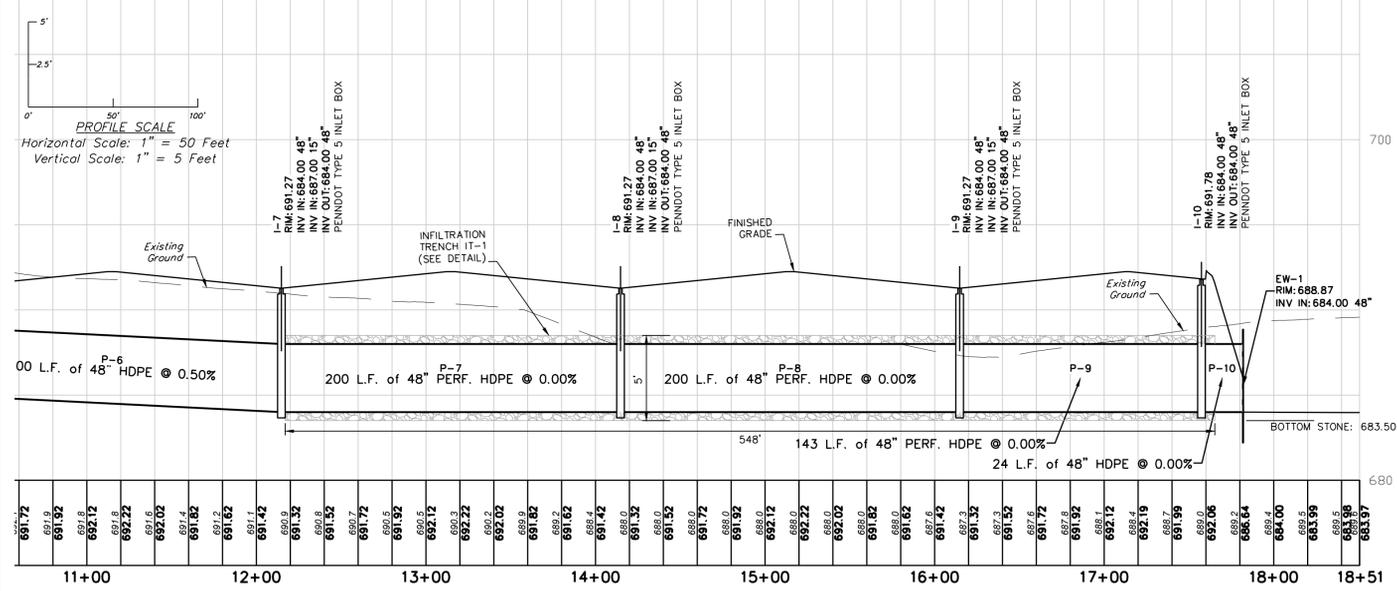
Post-Construction Stormwater Management Plan
 (Proposed Conditions-Detail #3)

FINAL LAND DEVELOPMENT PLAN
 for
LK 29, LLC
 located in
 GREENE TOWNSHIP, FRANKLIN COUNTY, PA

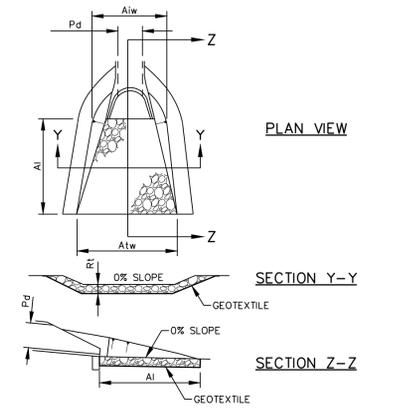
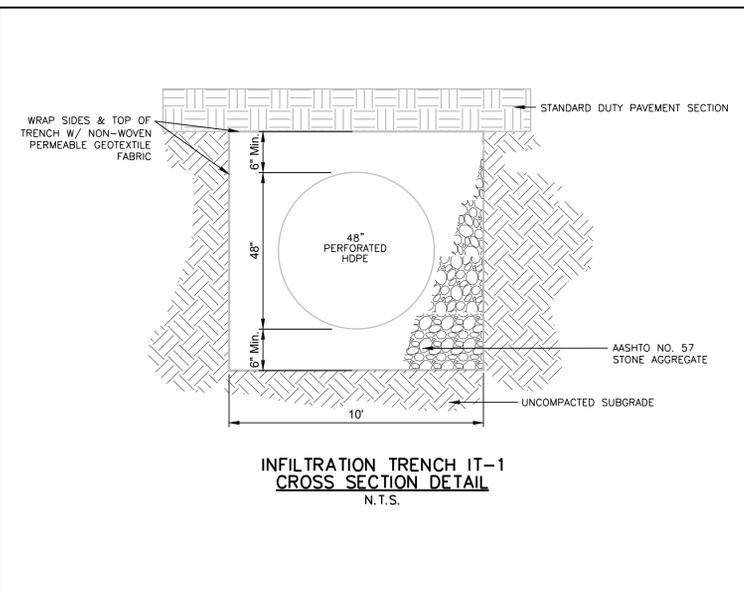
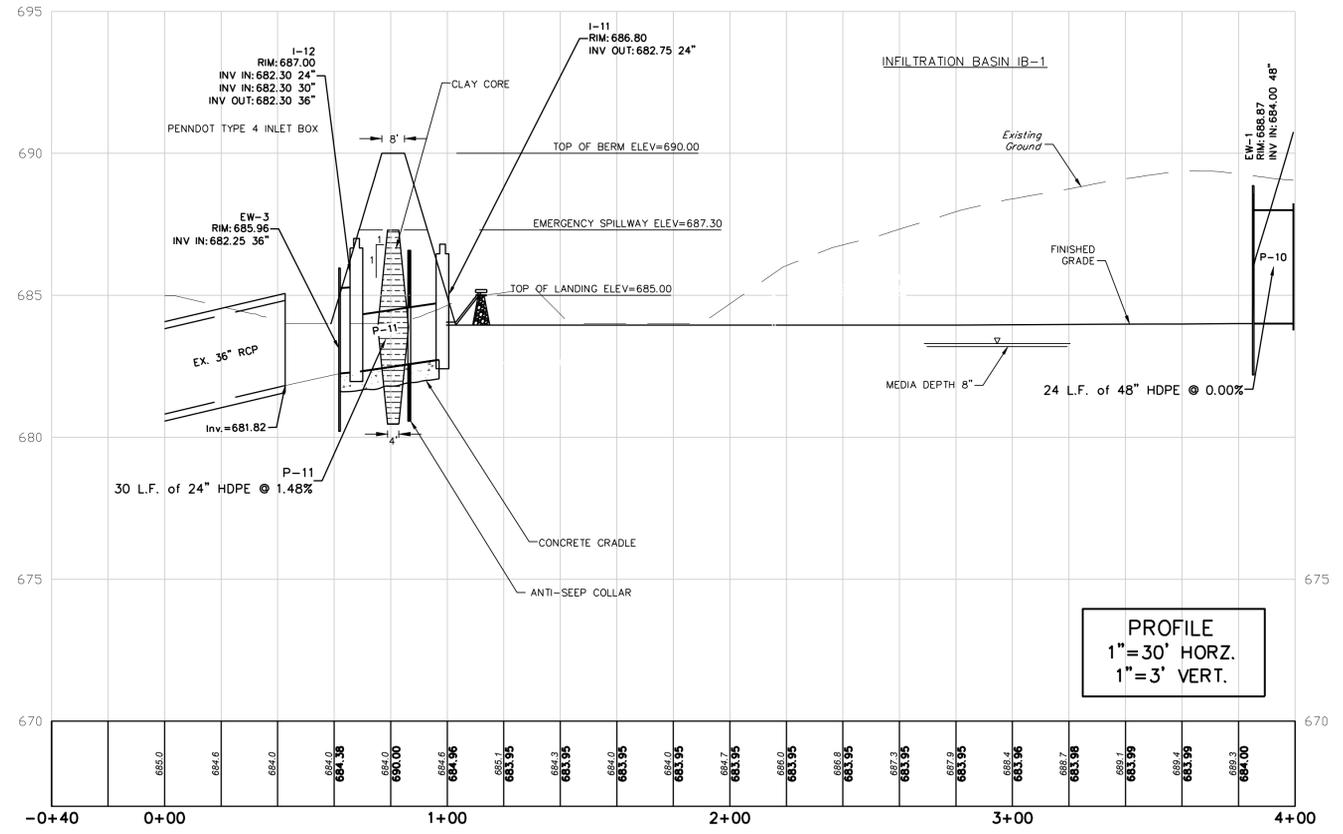


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2400 PHILADELPHIA AVENUE CHAMBERSBURG, PA 17201 (717)263-8794 (888)238-0661			
DWN_R/JG	CLIENT No.	ORDER No. 220006	SHEET PC5 OF PC7
CHK_R/JG	DATE 02/07/24	AUTOCAD DRAWING REF. NUMBER	DRAWING No.
APP.	SCALE 1" = 50'		23-64
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INFILTRATION TRENCH IT-1 PROFILE



INFILTRATION BASIN IB-1 CROSS-SECTION A-A'

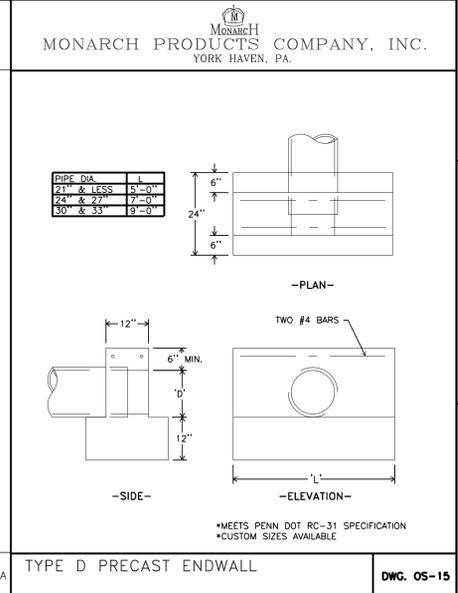
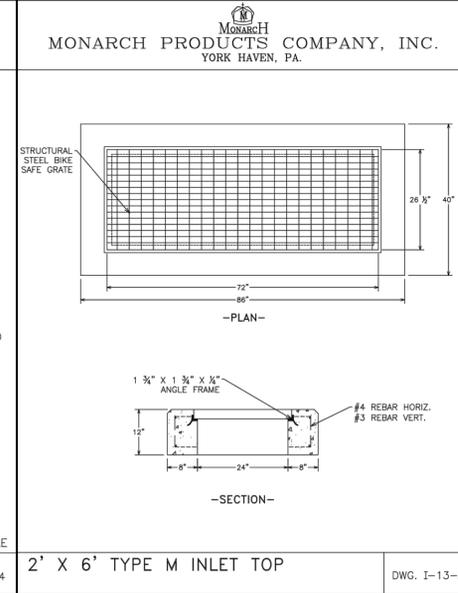
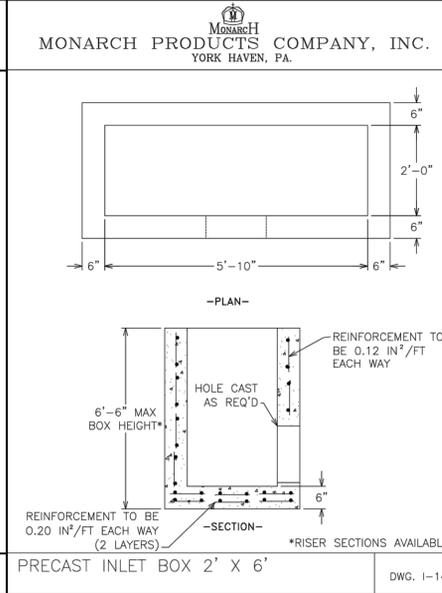
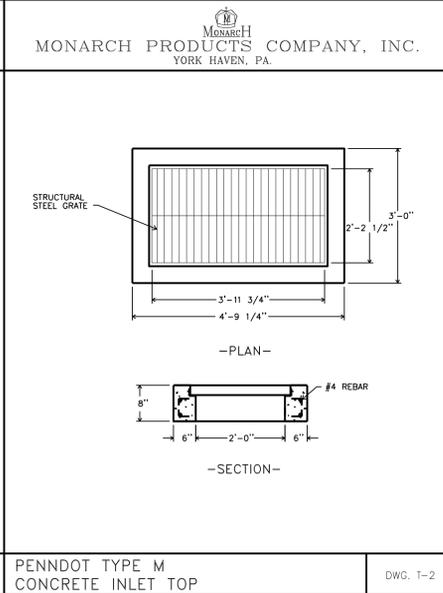
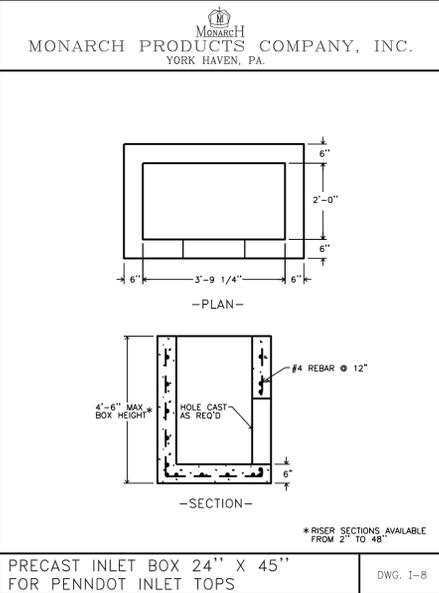
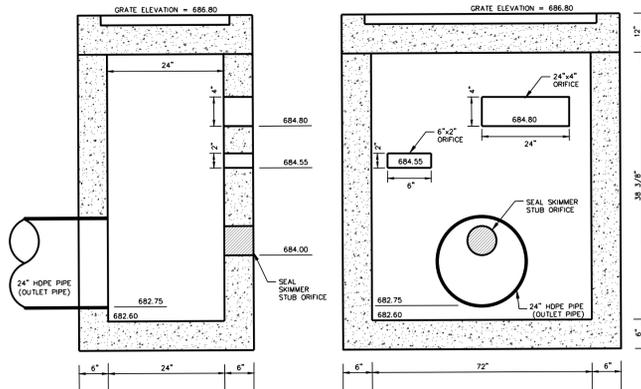


OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-2	THICK RT (IN)	LENGTH AL (FT)	APRON	
					INITIAL WIDTH Aw (FT)	TERMINAL WIDTH Aw (FT)
P-10 / EW-1	48	R-6	36"	26	12	38
RL-17 / EW-2	15	R-4	18"	8	3.75	11.75
P-12 / EW-3	36	R-5	27"	20	9	29
P-15 / EW-4	15	R-4	18"	8	3.75	11.75
P-25 / EW-5	18	R-4	18"	8	4.5	12.5

Notes:
 All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match receiving channels.
 All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

STANDARD CONSTRUCTION DETAIL #9-1
 RIPRAP APRON AT PIPE OUTLET
 WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE



Post-Construction Stormwater Management Plan Plan Details

FINAL LAND DEVELOPMENT PLAN
 for
LK 29, LLC
 located in
 GREENE TOWNSHIP, FRANKLIN COUNTY, PA

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 ENGINEERING-SURVEYING-PLANNING
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 CHAMBERSBURG, PA 17201
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DWN_R/JG CLIENT No. ORDER No. SHEET PC6 OF PC7
 220006
 CHK_R/JG DATE 02/07/24 AutoCAD DRAWING DRAWING No.
 APP. SCALE As Shown REF. NUMBER 23-64

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Infiltration Basin Construction Notes

Prior to construction of the proposed infiltration basin conduct a soil field test (see "Soil Field Test Procedure" note) to prevent uncontrolled compaction and smearing of the soils within the infiltration basin. If soil is not acceptable wet for soil to dry. Verify results of the test with a licensed professional.

A licensed professional or designee shall be present onsite and be responsible for construction inspection of the infiltration basin during construction.

Individual Sequence of Construction for Infiltration Basins

- Strip topsoil in the area of the basin construction.
- The area of the basin bottom should be overexcavated by at least 12" unthe bottom elevation of the sediment basin, to remove all fines, and backfilled with 12" of amended soils.
- Aggressively scarify/rip subsoil. Smooth scarified subsoil while preventing compaction prior to placement of topsoil.
- Install 6" underdrain and valve.
- Import and place 12" of amended topsoil mix within the basin and stabilize with infiltration basin seeding specification.
- Remove Faircloth Skimmer, rock filter berm, baffle, sediment removal stake.
- Cop Faircloth Skimmer stub in the outlet structure.
- Open permanent stormwater management orifices.
- Plant landscaping trees as specified on the plans.
- Prior to use as a permanent stormwater management facility, the infiltration basin shall be related to exceed the infiltration rate exceeds the design infiltration rate after conversion from temporary E&S conditions.

Operation & Maintenance Requirements for Infiltration Basins

- Catch basins and inlets should be inspected and cleaned at least 2 times per year and after heavy rainfall events.
- The vegetation along the surface of the infiltration basin should be maintained in good condition with minimum vegetation height of 6" and any bare spots revegetated as soon as possible. Mow as often as needed to maintain this vegetation height.
- Vehicles should not be parked or driven on an infiltration basin and care should be taken to avoid compaction by mowers.
- Inspect the basin after runoff events and confirm that the runoff drains within 72 hours.
- Open underdrain valve if the rain garden does not drain within 72 hours. Underdrain valve must remain closed when the rain garden is not actively being drained.
- Underdrain valve must be inspected at least 2 times per year for proper operation in order to prevent seizing.
- Inspect for accumulation of sediment, damage to outlet control structures, erosion control measures, signs of water contamination/spills, and slope stability in berms.
- Mow only as appropriate for vegetative cover species. Vegetation within the infiltration basin shall be mowed only with low weight-bearing equipment and all clippings shall be removed.
- Remove accumulated sediment as required, restore original cross section and infiltration rate, properly dispose of sediment.

Development of Land Underlain By Limestone (Karst Geology)

All or part of the lands shown on this plan are underlain by limestone bedrock in an area classified as karst geology. Karst features are characterized by underground solution channels which carry water through the bedrock. Such channels and voids are created as water dissolves the limestone over time.

Sinkholes develop naturally in karst areas when voids in the limestone bedrock undermine the surface soil layers. Sinkhole development cannot be accurately predicted. When land is developed, the volume of stormwater runoff is increased by construction of impervious surfaces such as buildings, streets, parking lots and sidewalks, state and local regulations require that this increased stormwater runoff be managed on the developer's property and returned to the groundwater if possible by infiltration.

The nature of development is such that the increased runoff is typically concentrated in certain areas of the property before it is infiltrated back into the ground. Concentrating more water into smaller areas can increase the possibility of a sinkhole developing. This increased risk cannot be accurately predicted, though through geotechnical investigations can help manage the increased risk by disclosing some of the underground conditions that make sinkhole development likely.

Dennis E. Black Engineering, Inc. recommends a thorough geotechnical investigation be conducted for any development property located in karst areas, however the scope of these investigations is decided by the owner and/or developer who assumes all risk for the development of sinkholes on their property.

Vegetated Swale Construction Sequence:

- Begin vegetated swale construction only when the upgradient temporary erosion and sediment control measures are in place. Vegetated swales should be constructed and stabilized early in the construction schedule, preferably before mass earthwork and paving increase the rate and volume of runoff. (Erosion and sediment control methods shall adhere to the Pennsylvania Department of Environmental Protection's Erosion and Sediment Pollution Control Program Manual, March, 2000 or latest edition).
- Rough grade the vegetated swale. Equipment shall avoid excessive compaction and/or land disturbance. Excavating equipment should operate from the side of the swale and never on the bottom. If excavation leads to substantial compaction of the subgrade (where an infiltration trench is not proposed), 18 inches shall be removed and replaced with a blend of topsoil and sand to promote infiltration and biological growth. At the very least, topsoil shall be thoroughly deep plowed into the subgrade in order to penetrate the compacted zone and promote aeration and the formation of macropores. Following this, the area should be disked prior to final grading of topsoil.
- Construct check dams, if required.
- Fine grade the vegetated swale. Accurate grading is crucial for swales. Even the smallest non-conformities may compromise flow conditions.
- Seed, vegetate and install protective lining as per approved plans and according to final planting list. Plant the swale at a time of the year when successful establishment without irrigation is most likely. However, temporary irrigation may be needed in periods of little rain or drought. Vegetation should be established as soon as possible to prevent erosion and scour.
- Once all tributary areas are sufficiently stabilized, remove temporary erosion and sediment controls. It is very important that the swale be stabilized before receiving upland stormwater flow.
- Follow maintenance guidelines, as discussed below.

Note: If a vegetated swale is used for runoff conveyance during construction, it should be reseeded and reseeded immediately after construction and stabilization has occurred. Any damaged areas should be fully restored to ensure future functionality of the swale.

Post-Construction Stormwater Management Plan (PCSM) Standard Notes:

Permit Termination

Upon permanent stabilization of the earth disturbance activity under § 102.22(c)(2) (relating to permanent stabilization), and installation of BMPs in accordance with an approved plan prepared and implemented in accordance with §§ 102.4 and 102.8 (relating to erosion and sediment control requirements; and PCSM requirements), the permittee or co-permittee shall submit a notice of termination to the Department or conservation district.

The notice of termination must include:

- (1) the facility name, address and location.
- (2) the permit name and address.
- (3) the operator number.
- (4) the reason for permit termination.
- (5) identification of the persons who have agreed to and will be responsible for long-term operation and maintenance of the PCSM BMPs in accordance with § 102.8(m) and proof of compliance with § 102.8(m)(2).

PCSM Requirements

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

Licensed professional oversight of critical stages. 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 underground treatment or storage BMPs, structurally engineered BMPs, or other BMPs as deemed appropriate by the Department or the conservation district.

Final certification. The permittee shall include with the notice of termination "Record Drawings" with a final certification statement from a licensed professional, which reads as follows: "I (name) do hereby certify pursuant to the penalties of 18 Pa.C.S.A. § 4904 to the best of my knowledge, information and belief, that the accompanying record drawings accurately reflect the as-built conditions, are true and correct, and are in conformity with Chapter 102 of the rules and regulations of the Department of Environmental Protection and that the project site was constructed in accordance with the approved PCSM Plan, all approved plan changes and accepted construction practices."

- (1) The permittee shall retain a copy of the record drawings as a part of the approved PCSM Plan.
- (2) The permittee shall provide a copy of the record drawings as a part of the approved PCSM Plan to the person identified in this section as being responsible for the long-term operation and maintenance of the PCSM BMPs.

PCSM Long Term Operations and Maintenance Requirements

Until the permittee or co-permittee has received written approval of a notice of termination, the permittee or co-permittee will remain responsible for compliance with the permit terms and conditions including long-term operation and maintenance of all PCSM BMPs on the project site and is responsible for violations occurring on the project site. The Department or conservation district will conduct a final inspection and approve or deny the notice of termination within 30 days.

The permittee or co-permittee shall be responsible for long-term operation and maintenance of PCSM BMPs unless a different person is identified in the notice of termination and has agreed to long-term operation and maintenance of PCSM BMPs.

For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the notice of termination under § 102.7(b)(5) (relating to permit termination).

The person responsible for performing long-term operation and maintenance may enter into an agreement with another person including a conservation district, nonprofit organization, municipality, authority, private corporation or other person, to transfer the responsibility for PCSM BMPs or to perform long-term operation and maintenance and provide notice thereof to the Department.

A permittee or co-permittee that fails to transfer 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.

PCSM Sequence of Construction

Construction Sequence:

- NOTE: 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 TO THOSE AREAS DESCRIBED IN EACH STAGE.
- At least 7 days before starting any earth disturbance activities, the owner and/or operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion & sedimentation control plan preparer, and a representative from the Franklin County Conservation District to an on-site pre-construction meeting.
 - At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call System incorporated at 1-800-242-1776 for the location of existing underground utilities.
 - Field-mark all limits of disturbance within the interior of the site. The maximum distance between LOD stakes shall be 100 feet. Specifically fence off and exclude construction equipment traffic from crossing the proposed infiltration basin bottom area with orange construction fence. Avoid compaction of the proposed infiltration basin and rain garden bottom areas before, during, and after construction.
 - Compost filter socks shall be installed on the down-slope side of all Soil Stockpile areas.
 - Excess topsoil removed during the excavation shall be stockpiled as shown on the plans.
 - Install the Rock Construction Entrance RCE-1 off of Scale House Road.
 - Install Compost Filter Silt Socks 1 through 11 as shown on the plans.
 - Clear and grub tree/bush areas within LOD. All trees and brush shall be properly disposed of in accordance with the requirements of the Pennsylvania Department of Environmental Protection.
 - Construct Sediment Basin SB-1. NOTE: These are critical stages and must have a licensed professional's oversight. During all work within the basin, use care to avoid over-compaction of the soils.

- Strip Topsoil in the area of the berm construction.
- Construct Embankment with impervious core as per the plans. The embankment material should be imported fill which is free of organic material, ash, cinders and demolition debris. Particle size distribution that is well graded. Plasticity index less than 10, liquid limit less than 30. Less than 15% by weight rock fragments larger than 3 inches, less than 30% by weight larger than 3/4 inch and less than 30% smaller than No. 200 sieve. C.Construct embankments, impervious core, and spillway. Stabilize the emergency spillway with Landiok TRM450 per the specifications on the plan.
- Place topsoil on berm and stabilize with permanent seeding and temporary erosion control blanket (Landiok S75 or equal).
- Install Outlet Structure 1-11, Pipes P-11 & P-12 and Endwall EW-3. Simultaneously install Pipes P-13 & P-14, Inlet I-13 and Headwall HW-1. F.Install Super Silt Fence baffle wall.
- Excavate soil material to full basin dimensions and place within area of the building pad.
- Set a sediment removal stake on the bottom of the basin clearly marked to indicate the sediment clean-out elevation.
- Install Faircloth Skimmer as shown on the plans.
- Seed and mulch any exposed soils immediately with permanent cover.
- Maintain the sediment basin as outlined in "Maintenance Procedures - Erosion & Sediment Control Notes".

- Construct Channel C-1. Import and place 6" topsoil prior to the installation of permanent cover and erosion control blankets as specified on the plans. NOTE: These are critical stages and must have a licensed professional's oversight.
- Strip and stockpile topsoil. Seed and mulch stockpiles with temporary cover. Topsoil shall not exceed 35 feet in height and side slopes shall be 2:1 or flatter. Remove excess topsoil from site.
- Begin mass grading of the project site. Fill shall be compacted in 9" lifts. Any slopes steeper than 3:1 shall be matted with North American Green S75 erosion control matting and seeded/mulched with temporary or permanent seeding immediately.
- Grade foundation pads for building.
- Begin construction of building.
- Grade roof spur and relocate waterline according to the railroad plans and LDP for the waterline relocation.

- Note: These are critical stages and must have a licensed professional's oversight. Construct infiltration trench IT-1; Install storm sewer pipes P-7 through P-10; inlets I-7 through I-10; endwall EW-1 with corresponding inlet and outlet protection. Rip/scarify subgrade of trench and backfill with clean stone aggregate in 8" lifts with light compaction between lifts as shown on the plans. Wrap sides and top of trench with permeable non-woven geotextile fabric.
- Install permanent storm sewer pipes, inlets, endwalls and cleanouts with corresponding inlet and outlet protection as shown on the plans.
- Construct Sanitary Sewer laterals as shown on the plans. Trench plugs shall be installed as shown on the plans. Stabilize disturbed areas immediately with permanent cover.
- Install water service lateral as shown on the plans. Stabilize disturbed areas immediately with permanent cover.
- Install gas service lateral as shown on the plans. Stabilize disturbed areas immediately with permanent cover.
- Install electric and communication utilities. During installation of utilities, the area excavated shall be limited to the area of work that can be installed, backfilled, and stabilized within one work day.
- Install roof leaders according to the plan.
- Once the site is to sub-grade, stabilize all future pavement/concrete areas with stone or stabilize with temporary seeding.
- Upon 70% uniform stabilization contact Franklin County Conservation District and Design Professional for authorization to proceed with conversion of the sediment basins to permanent stormwater conditions.
- Flush storm sewer piping and remove sediment from proposed channels prior to conversion of sediment basin to infiltration basin.
- Once the project site has reached 70% stabilization, convert sediment basin SB-1 to infiltration basin IB-1.
- Convert Sediment Basin SB-1 to infiltration basin IB-1. NOTE: These are critical stages and must have a licensed professional's oversight. During all work within the basin, use care to avoid over-compaction of the soils. Prior to commencing with basin construction ensure soil is dry enough using the soil test procedure indicated on this plan.

A.The area of the basin bottom should be overexcavated by at least 8" under the bottom elevation of the sediment basin, to remove all fines, and backfilled with 8" of amended soils. After cleanout of the sediment basin and before conversion to a PCSM Basin, the contractor will need to re-test infiltration rates.

- Aggressively scarify/rip subsoil. Smooth scarified subsoil while preventing compaction prior to placement of topsoil.
- Import & place 8" of amended topsoil mix within the basin and stabilize with infiltration basin seeding specification.
- Remove Faircloth Skimmer, Rock Filter Berm, Baffle, Sediment Removal Stake.
- Cop Faircloth Skimmer stub in the outlet structure.
- Open Permanent SWM Orifice.
- Plant landscaping trees as specified on the plans.
- Perform infiltration testing on the basin to ensure the basin's infiltration rate meets or exceeds the design infiltration rate.
- Scale House Road Reconstruction
- Install Compost Filter Silt Socks 12 through 16 as shown on the plans.
- Remove existing bituminous paving.
- Regrade existing subbase according to the plan. Remove any soft spots and ensure proper compaction.
- Proof roll.
- Pave Scale House Road.
- After the entire site has been stabilized, contact Franklin County Conservation District prior to proceeding with temporary erosion and sediment control rearing materials during removal of the controls must be stabilized immediately. An area shall be considered to have achieved final stabilization when it has a minimum of 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 or other movements.
- Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the Franklin County Conservation District for final inspection PRIOR to the removal of the BMP's.

Anticipated Construction Wastes and Disposal Methods:

- The anticipated construction wastes associated with this project are as follows:
- Surplus concrete and concrete washout wastewater.
 - Broken or cut remnants of various masonry products.
 - Bent or cut remnants of various metallic materials.
 - Scrap wood, paper, and cardboard packaging from construction materials.
 - Sanitary wastewater and solids from portable toilet facilities.

Hardened surplus concrete and broken/cut remnants of masonry products may be pulverized and used as non-structural fill material.

The owner/operator shall remove all scrap wood, paper, cardboard, and metallic building materials and wastes from the site and shall recycle or dispose in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1, et seq., 271.1, and 287.1 et seq. No scrap wood, paper, cardboard, or metallic building materials shall be burned, buried, dumped, or discharged at the site.

The owner/operator shall furnish, install, and maintain self-contained sanitary portable toilet facility(ies) on the construction site during the construction period. The owner/operator will provide continuous maintenance and cleaning of the facility(ies) to insure sanitary conditions. Disposal of waste from the portable toilet facility(ies) shall be at a site approved by the Pennsylvania Department of Environmental Protection.

Soil Field Test Procedure:

- Steps are as follows:
- Squeeze a handful of soil in one hand.
 - Open your hand.
 - Shake the sample once lightly in your hand or tap the soil lightly with your finger.
 - If the sample of soil crumbles or breaks up immediately or when bounced or tapped, soil moisture is acceptable to proceed with construction of the infiltration basin or rain garden.

Maintenance Responsibility

It shall be the responsibility of the best owner's association to maintain the Post-Construction Stormwater Management Best Management Practices (BMPs) which are designated as a part of this project, including all storm water conveyance structures, the storm water retention/detention facilities and the storm water treatment facilities, during and after construction.

Operation & Maintenance Requirements For Rip-Rap Aprons:

- All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match any receiving channels.
- All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

Operation & Maintenance Requirements for Storm Sewer Inlets:

- Inlets shall be kept free of any debris that will prevent the proper functioning of the inlet.
- Inlets shall be routinely inspected and inspected after every major storm event to check for debris that aggregate should be repaired back to original specifications or replaced immediately.
- Inlets shall be routinely cleaned.

Soil Amendment Specifications:

Treating Compaction by Soil Restoration

- Soil restoration should not be used on slopes greater than 30%. In these areas, deep-rooted vegetation can be used to increase stability.
- Soil restoration should not take place within the drip line of a tree to avoid damaging the root system.
- On-site soils with an organic content of at least 5% can be properly stockpiled (to maintain organic content) and reused.
- Procedure: rototill, or rip the sub-grade, remove rocks.

Treating Compaction by Ripping / Subsoiling / Tilling / Scarification

- Subsoiling is only effective when performed on dry soils.
- Ripping, subsoiling, or scarification of the subsoil should be performed where subsoil has become compacted by equipment operation, dried out and crusted, or where necessary to obliterate erosion rills.
- Ripping (subsoiling) should be performed using a solid-shank ripper and to a depth of eight (8) inches.
- Should be performed before topsoil is placed and after any excavation is completed.
- Subsoiling should not be performed within the drip line of any existing trees, where trenching/drainage lines are installed, where compaction is by design.
- Subsoiling should not be performed with common tillage tools such as a disk or chisel plow because they are too shallow and can compact the soil just beneath the tillage depth.

Other Methodologies

- Irrigation Management - low rates of water should be applied, as over-irrigation wastes water and may lead to environmental pollution from lawn chemicals, nutrients, and sediment.
- Limited mowing - higher grass corresponds to greater evapotranspiration.

Construction Sequence

- All construction should be completed and stabilized before beginning soil restoration.

Maintenance Issues

- The soil restoration process may need to be repeated over time, due to compaction by use and/or setting. (For example, playfields or park areas will be compacted by foot traffic.)

Permanent Seeding

- ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED SHALL BE COVERED WITH PERMANENT TURF LAWN SEEDING MIXTURES AND COVERED WITH VEGETATED FILTER STRIP, BIO-RETENTION POND FLOOR SEEDING, OR A MULCHED PLANTING BED (SHREDED HARDWOOD TREE BARK MULCH) TO MINIMIZE EROSION, UNLESS OTHERWISE DIRECTED BY THE OWNER.
- HAY OR STRAW MULCHING SHALL BE USED TO PROTECT PERMANENT SEEDING AND HELP IN THE PREVENTION OF ACCELERATED RUN-OFF. CLEAN HAY OR STRAW MULCHING SHALL BE REQUIRED ON ALL DISTURBED AREAS AND APPLIED AT A RATE OF 3 TONS PER ACRE (EQUIVALENT TO 0.75" TO 1" DEEP). AN EMULSIFIED ASPHALT TACK BINDER/ANCHORING MATERIAL SHALL BE APPLIED TO THE HAY OR STRAW MULCHING AT A RATE OF 150 GALLONS/ACRES. CLEAN HAY OR STRAW MULCHING SHALL NOT BE FINELY CHOPPED OR BROKEN DURING THE APPLICATION.

THE FOLLOWING MIXTURES ARE TO BE USED:

PERMANENT TURF LAWN SPECIES	% PURE LIVE SEED	APPLICATION RATE	SEEDING DATES
WINTER RYE	56 LBS/ACRE	56 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 1
KY BLUEGRASS	25 LBS/ACRE	25 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 1
REDTOP	100	3 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 1

VEGETATED CHANNELS SPECIES	% PURE LIVE SEED	APPLICATION RATE	SEEDING DATES
FALL FESCUE	70	40 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 15
PERENNIAL RYEGRASS 20	40 LBS/ACRE	40 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 15
KY BLUEGRASS	10	40 LBS/ACRE	MAR 15 TO JUN 1 OR AUG 1 TO OCT 15

- IN THE ABSENCE OF SOIL TEST RESULTS, 10-10-20 FERTILIZER AT A RATE OF 1.089 LBS/ACRE. SHALL BE APPLIED WITH THE PERMANENT SEEDING.
- IN THE ABSENCE OF SOIL TEST RESULTS, AGRICULTURAL-GRADE LIME AT A RATE OF 5.2 TONS/ACRE, SHALL BE APPLIED WITH THE PERMANENT SEEDING.

Recycling/Disposal of Wastes

- All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1, et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
- The contractor will be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved and fully implemented erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.
- Clean Fill is defined as: uncontaminated, non-water soluble, non-decomposable, inert soil material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth or materials used in construction. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use).
- Any placement of clean fill that has been affected by a spill or release of a regulated substance must use Form FP-001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill.

- Environmental due diligence must be performed to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of a regulated substance. If the fill may have been affected by a spill or release of a regulated substance, the fill must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy "Management of Clean Fill."
- Concrete wash water shall be handled in the manner described on the plan drawing and test soil it be allowed to enter any surface waters or groundwater systems.

Subsurface Infiltration Trench Construction Notes

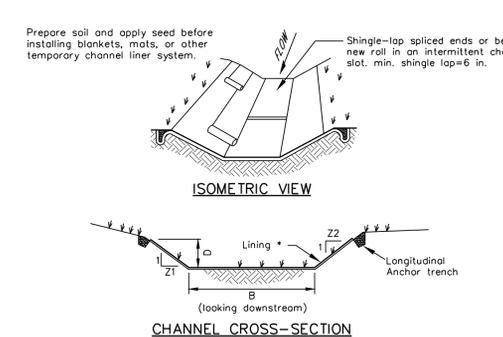
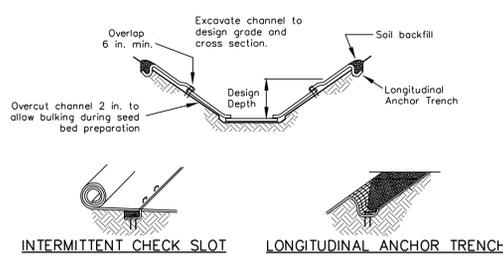
A licensed professional or designee shall be present onsite and be responsible for construction inspection of the infiltration trench during construction.

Individual Construction Sequence for Subsurface Infiltration Trench

- Due to the nature of construction sites, subsurface infiltration should be installed toward the end of construction period, if possible.
- Install and maintain adequate Erosion and Sediment Control Measures (as per the Pennsylvania Erosion and Sedimentation Control Program Manual) during construction.
- The existing subgrade under the bed areas should NOT be compacted or subject to excessive construction equipment traffic prior to geotextile and stone bed placement.
- Where erosion of subgrade has caused accumulation of fine materials and/or surface ponding, this material should be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake (or equivalent) and light tractor. All fine grading should be done by hand. All bed bottoms should be at level grade.
- Earthen berms (if used) between infiltration trenches should be left in place during excavation. These berms do not require compaction if proven stable during construction.
- Install upstream and downstream control structures, cleanouts, perforated piping, and all other necessary stormwater structures.
- Geotextile and trench aggregate should be placed immediately after approval of subgrade preparation and installation of structures. Geotextile should be placed in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile should overlap a minimum of 16 inches. It should also be secured at least 4 feet outside of trench in order to prevent any runoff or sediment from entering the storage trench. This edge strip should remain in place until all bore soils contiguous to beds are stabilized and vegetated. As the site is fully stabilized, excess geotextile along trench edges can be cut back to the edge of the trench.
- Clean-washed, uniformly graded aggregate should be placed in the trench in maximum 8-inch lifts. Each layer should be lightly compacted, with construction equipment kept off the bed bottom as much as possible.
- Approved soil media should be placed over infiltration trench in maximum 6-inch lifts.
- Stabilize the area above the infiltration trench with the paving specifications as shown on the accompanying land development plan.
- Do not remove inlet protection or other Erosion and Sediment Control measures until site is fully stabilized.

Operation & Maintenance Requirements for Subsurface Infiltration Trench

- All catch basins and inlets should be inspected and cleaned at least 2 times per year and after significant rainfall events (precipitation exceeding 0.25 inches in depth).
- The manhole pipes should be inspected for sedimentation at least 2 times per year.
- 11" outlet pipe P-10shall be inspected for sedimentation and clogging at least 2 times per year and after significant rainfall events (precipitation exceeding 0.25 inches in depth).
- Installation of inlet filters should be considered if regular sedimentation of the infiltration trench is observed.



CHANNEL CROSS-SECTION (looking downstream)

* See manufacturer's lining installation detail for staple patterns, vegetative stabilization for soil amendments, seed mixtures, and mulching information.

CHANNEL NO.	ELEVATIONS	LENGTH	BOTTOM WIDTH (FT)	DEPTH (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	BED SLOPE	LINING *
C-1	687.50-685.70	178	2.0	1.5	11	3.0	3.0	1.0%	NAGREEN S75

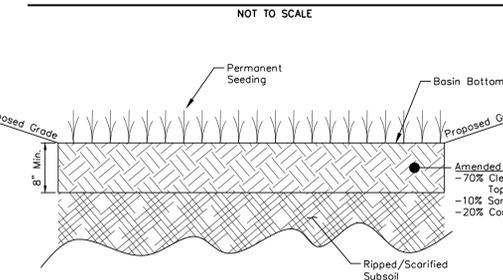
Notes: Anchor trenches shall be installed at beginning and end of channel in the same manner as longitudinal anchor trenches.

Channel dimensions shall be constantly maintained. Channel shall be cleaned whenever total channel depth is reduced by 25% at any location.

Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery.

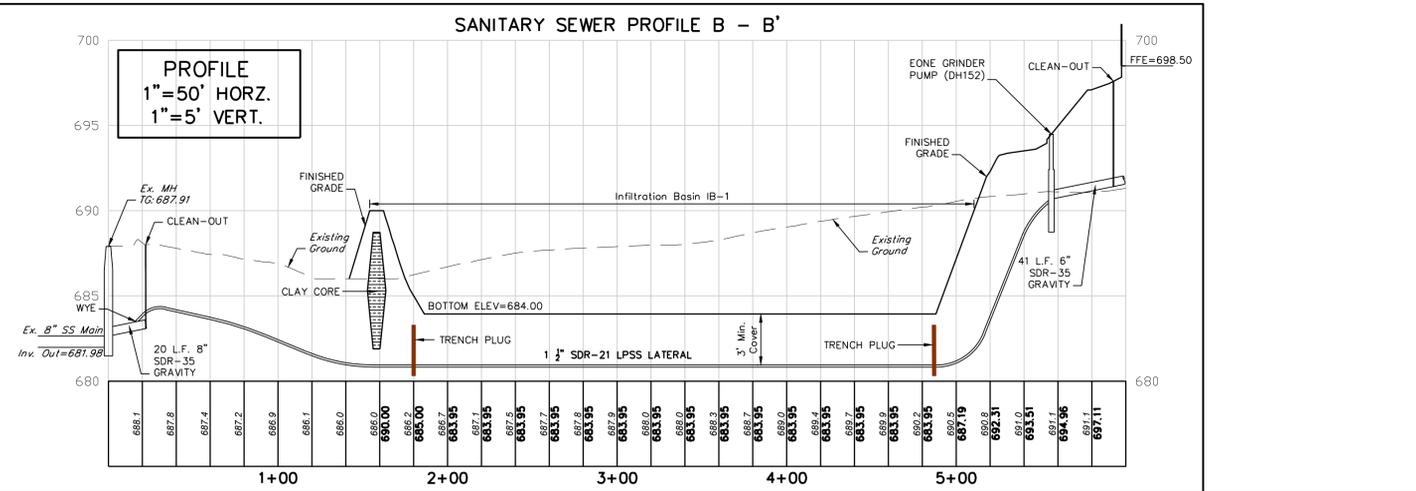
No more than one third of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.

STANDARD CONSTRUCTION DETAIL #6-1 VEGETATED CHANNEL



CROSS-SECTION BASIN BOTTOM Not to Scale

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Post-Construction Stormwater Management Plan Plan Notes

FINAL LAND DEVELOPMENT PLAN for **LK 29, LLC** located in **GREENE TOWNSHIP, FRANKLIN COUNTY, PA**

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DWN_R/JG	CLIENT No.	ORDER No.	SHEET
CHK_R/JG	DATE 02/07/24	22006	PC7 OF PC7
APP.	SCALE N.T.S.	AUTOCAD DRAWING REF. NUMBER	DRAWING No.
			23-64

THE ORIGINAL DRAWING AND THE INFORMATION SHOWN THEREON ARE