

3020 Columbia Avenue, Lancaster, PA 17603

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November 10, 2023

Mr. Justin Evans, AICP Township Manager Mount Joy Township 8853 Elizabethtown Road Elizabethtown, PA 17022 Engineers

Environmental Consultants

Surveyors

Landscape Architects

Safety Consultants

RE: J. Leon Rutt

Plan Review No. 2

RETTEW Project No. 119162000

Dear Mr. Evans:

On behalf of our Client, we are hereby submitting the revised plans, and supporting documentation for the above referenced project. The plans have been revised per the Lancaster Civil Engineering Company's comments dated October 19, 2023. Our item-by-item response to each comment appears in **bold**.

Zoning Ordinance

- 1. At a Zoning Hearing Board meeting on April 5, 2023, the Board granted the following:
 - a. Special Exception per Section 135-343.G to reduce the number of required offstreet parking spaces to 61 total parking spaces.
 - Response: This is denoted on the cover sheet of the project.
 - b. Variance from Section 135-383.B(7) to extend the expiration date of any special exception approvals granted for the application.
 - Response: This is denoted on the cover sheet of the project.
- 2. The Zoning Data table shall reference all areas included in the setback requirements (e.g. off-street parking, outdoor storage areas, loading areas, etc.) (135-135.E(1), (2), & (3)). The setbacks shall be shown on the plans.
 - Response: The zoning data table on the coversheet was updated to include off-street parking, outdoor storage areas, loading areas. Sheet 2 has been updated to show the parking, storage, and loading setbacks.
- 3. The landscape screen shall be arranged so as to provide visual blockage between grade and a height of six feet (135-299.C(2)). The proposed Northern Starburst Rhododendron shrubs do not meet this requirement.
 - Response: The plant material has been replaced with an appropriate selection.

Subdivision and Land Development Ordinance

1. An applicant may not submit multiple applications for approval of a plan for the same property or any portion thereof (119-23.B). This plan has been submitted concurrently with a preliminary land development, subdivision, and lot add-on plan for the adjoining "KGH Development" property (the J. Leon Rutt property remains a subject tract in the "KGH Development" plan).

Response: The reference to Leon Rutt being a party to the project on the KGH Plan has been removed from the Cover Sheet.

2. A preliminary plan is required (119-25). The applicant has requested a modification of this requirement.

<u>Modification response</u>: The applicant proposes to process this as a preliminary/final plan which includes both preliminary and final plan requirements. This project is not phased and construction of public improvements is not scheduled to begin prior to plan recordation, therefore I have no objection to this modification.

Response: This waiver was granted by the PC at the October meeting.

3. The plans shall be signed and sealed by a registered engineer, surveyor or landscape architect (119-31.A(5)).

Response: The plans shall be signed and sealed for final process.

4. The plan shall identify all prior plans, including all notes or restrictions affecting the current development, with a verification signed by the design professional that such list is complete and correct (119-31.B(14) & 119-51.C). The Prior Approvals and Agreements table on the Cover Sheet shall include a reference to the 1980 subdivision plan recorded in Subdivision Plan Book #: J-123, Pg. 43. The book number of the land development plan dated 1996 in the Prior Approvals and Agreements table on the Cover Sheet shall be corrected.

Response: The prior approvals and agreements are denoted on the Cover Sheet.

5. The density shall be provided on the plans (119-31.D(3)).

Response: The lot density is shown under site data on the cover sheet.

6. The plans should clarify whether each corner is already in place (FD) or to be set (119-31.D(14). The existing lot markers and monuments shall be labeled or included in the legend.

Response: Sheet 3 shows all property corners that were found or to be set.

7. A traffic impact study is required since the development is a nonresidential development with a building in excess of 1,000 square feet of usable space (119-32.C(2)). The applicant has requested a waiver of this requirement.

<u>Waiver response</u>: The proposed storage building will only house material and serve as a replacement for the current off-site storage, which the applicant indicates will result in a reduction of two or three trips per day to the subject tract. No additional employees will be added as a result of this proposed storage building. Based on these considerations, I have no objections to a waiver of this requirement with the condition the developer makes a contribution in lieu of a traffic study as per Section 119-32.C(6).

Response: This waiver was granted by the PC at the October meeting.

8. All certificates shall be executed prior to final plan approval (119-35.E). **Response: This is noted.**



 Legal descriptions for easements to be dedicated to the Township, including but not limited to, drainage easements and snow stockpile easements, shall be provided (119-35.E(4)(a)).

Response: The legals will be provided upon acceptance of the easement locations by the Township Engineer.

10. A Stormwater Management Agreement and Declaration of Easement in a form acceptable to the Township Solicitor shall be executed and recorded (119-35.E(4)(c), 119-56.E & 113-62).

Response: The Solicitor prepared agreement will be signed prior to recording.

11. A land development agreement in a form acceptable to the Township Solicitor shall be executed (119-35.E(4)(f)).

Response: The Solicitor prepared agreement will be signed prior to recording.

12. Financial security shall be provided prior to final plan approval (119-41 & 113-60.B). The Probable Construction Cost Opinion shall include costs for the endwall with trash rack, downspout connections, trash screen, tree protection fence, milling, shrubs, and ADA parking space/signs. The subtotals for Stormwater Management and Miscellaneous categories shall be corrected.

Response: The cost opinion has been updated and is enclosed.

13. Curbing and sidewalk shall be provided along Jonlyn Drive (119-52.J(3)(a) & 119-53.B(1) / 119-53.C). The applicant has requested a waiver of this requirement.

<u>Waiver response</u>: There are currently no curb or sidewalks provided for the existing properties along Jonlyn Drive, and the existing and proposed development are not expected to generate pedestrian traffic. Based on these considerations, I would have no objection to a waiver of these requirements with the condition that a deferral agreement be executed in a form acceptable to the Township Solicitor.

Response: This waiver was granted by the PC at the October meeting.

14. The parking lot aisle and proposed parking spaces shall be dimensioned (119-53.A(1)). Response: The parking lot aisle and proposed parking space is dimensioned on Sheet 4.

15. The dimensions and slope requirements for the ADA accessible parking spaces shall be shown on the plans (119-53.A(2)). Construction details shall be provided for the proposed ADA parking spaces (please note that ADA signs shall be provided).

Response: The ADA parking is shown on Sheet 5 with spot grades showing ADA compliance. Sheet 10 contains the ADA detail with signage.

16. The radii for the horizontal curves within the parking areas shall be dimensioned (119-53.A(4)).

Response: The radius on the horizontal curve is shown on sheet 4.

17. The paving construction details shall be consistent with the various paving types proposed on Sheets 3 and 4 (119-53.A(7)).



Response: A detail is supplied for each of the paving types, refer to Sheet 9. Mill and Overlay, Overlay, and Full Depth. This matches the labels on Sheet 3.

18. Concrete curbing shall be provided along the edge of any landscaped portions of a parking facility (119-53.C(1)). The applicant has requested a waiver of this requirement.

Waiver response: There is no existing curbing within the existing parking facility. In

addition, curbing is not necessary to convey stormwater runoff to the intended inlets, nor is it required to protect pedestrians. Based on these considerations, I have no objections to a waiver of this requirement.

Response: This waiver was granted by the PC at the October meeting.

19. The deed shall contain the requirement that nothing shall be placed, planted, set or put within an easement that would adversely affect the function of the easement or conflict with the easement agreement (119-56.B). The applicant has requested a waiver of this requirement.

<u>Waiver response</u>: There are no changes to the site which would require a new deed to be recorded. General Note 6 on the Cover Sheet of the plan to be recorded is proposed in lieu of a new, recorded deed. Based on these considerations, I have no objections to a waiver of this requirement.

Response: This waiver was granted by the PC at the October meeting.

20. The various species for the deciduous trees, evergreen trees, and shrubs shown in the "North Section of Lot" on Sheet 6 shall be labeled (119-59.A).

Response: The plant labels have been added to Sheet 6.

21. The total quantities of shade trees, evergreen trees, and shrubs shown in the plant schedules are inconsistent with the total number of shade trees, evergreen trees, and shrubs shown on the plans (119-59.A).

Response: The plant schedule has been updated to reflect the quantities shown on the plans, refer to Sheet 6.

22. Provide a landscape plan note for the Evergreen Tree Planting detail indicating that the top of the main order root shall be planted no lower than one or two inches into the soil (119-59.B(1)).

Response: This note was added to the evergreen tree planting detail on Sheet 9.

- 23. Provide a landscape plan note for the Evergreen Tree Planting detail indicating that the proposed staking and wiring shall be removed within one year of planting (119-59.B(2)).

 Response: This note was added to the evergreen tree planting detail on Sheet 9.
- 24. Any action taken on waiver requests, dates, and any conditions of approval shall be added to the cover sheet (119-91.C).

Response: Acknowledged, to be added prior to adding signatures and seals.

Stormwater Management Ordinance

25. The following erosion and sediment control items shall be addressed (113-31.E & 113-43.K):



- a. Construction Sequence Step No. 3 shall be revised to reference verification by the municipality.
 - Response: Construction Sequence Step No. 3 has been revised to reference verification by Mount Joy Township, refer to Sheet 12.
- b. A rock construction entrance shall be provided.
 - Response: Two rock construction entrances have been added to the E&S Plans, refer to Sheet 12.
- c. The design chart (Figure 4.2) shall be provided for the proposed compost filter sock.
 - Response: The Design Chart (Figure 4.2) has been provided in Appendix G of the PCSM Report.
- d. Erosion control shall be provided for the area of disturbance associated with the installation of the roof leaders to the existing Type M Inlet and the pipe from OCS-1 to the riprap within the stormwater basin.
 - Response: Filter sock has been provided for the area of the roof leader pipe going to the existing inlet and the pipe from the existing basin to the proposed basin.
- e. A portion of the proposed Filter Sock #7 conflicts with the proposed roof leader.
 Response: Filter Sock has been adjusted to not conflict with the proposed roof leader, refer to sheet 12.
- f. The inlet cap mentioned in Site Improvement Steps 8 and 12 shall be shown on the plans.
 - Response: The plans have been revised to show that the inlets do not need capped. This has been taken out of Steps 8 and 12 in the Site Improvement section, refer to sheet 12.
- g. The inlet protection type shall be confirmed. The hatch shown on Sheet 11 of the plans appears to be stone inlet protection; however a filter bag inlet protection is shown in the Standard Construction Detail #4-16.
 - Response: The plans have been revised to show an inlet filter bag being used for inlet protection, refer to sheet 12.
- h. The proposed paving and inlet filters shall be included in the construction sequence.
 - Response: The proposed paving and inlet filters have been included in the construction sequence, refer to Note 8 on sheet 12.
- i. The limits of disturbance shall include the removal of the existing outlet pipe and any anticipated disturbance by construction equipment for access to and from construction of the proposed Stormwater Basin and conveyance pipes.
 - Response: The LOD has been updated, refer to sheet 12.



Page 6 of 11 Mount Joy Township November 10, 2023 RETTEW Project No. 119162000

26. Infiltration test results demonstrating the depth of any limiting zones and the stabilized infiltration rate shall be included in the PCSM Report (113-31.L).

Response: See page 189, Appendix G of the PCSM Report for the depths of the limiting zones and the infiltration rates.

27. It is unclear if the modified existing basin is to be used as an infiltration facility and for volume control. If this is the case, it shall meet the requirements in Section 113-31.L and 113-32.

Response: The existing basin is proposed to be maintained in its pre-development condition and will not be used for volume control.

28. A minimum depth of 24 inches shall be provided between the bottom of the facility and the limiting zone (113-31.L(1)).

Response: A waiver modification has been requested for this section to over excavate 2 ft into the rock and to place amended soils. Please see the revised waiver request letter.

29. The tree protection zone shown on Sheet 2 shall be extended between the existing trees to remain the limits of disturbance (113-31.N.(4)).

Response: The tree protection was lengthened as noted.

30. To the maximum extent practicable, areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity (113-31.0). The plan shall show the provisions for protecting the Stormwater Basin during construction.

Response: Orange construction fence has been added to the plans to protect the infiltration portion of the stormwater basin, refer to sheet 12.

31. The proposed drainage easement shall encompass the entire existing stormwater inlet and pipe at the eastern side of the existing building (113-31.R).

Response: The easement has been adjusted.

32. Calculations shall be provided for the "2-Year Volume Provided" value shown in Worksheet 4 (113-32.A(1)).

Response: See the Pond Report for the proposed basin in Appendix D of the PCSM Report. A calculation has been provided to show how the 2-Year Volume Provided has been calculated, refer to page 75.

33. The loading ratio calculations for the Stormwater Basin shall be based upon the overall area and impervious area draining to both the modified existing basin and the proposed Stormwater Basin (113-32.A(2)(c)).

Response: The loading ratio calculations have been provided for the proposed stormwater basin. The existing basin is proposed to be maintained in its predevelopment condition and will not be used for volume control, refer to page 155.

34. Stormwater runoff from a development site to an adjacent property shall flow directly into a natural drainageway, watercourse, or into an existing storm sewer system, or onto adjacent properties in a manner similar to the runoff characteristics of the



predevelopment flow (113-34.B). The engineer shall demonstrate that the stormwater discharge from the Stormwater Basin complies with this requirement.

Response: In both the Pre-Development and Post Development conditions, stormwater runoff from the site is conveyed via the existing channel to the adjoining property prior to entering the waters of the commonwealth. See Appendix D of the PCSM Report for the Pre and Post comparison of the existing channel. The 100-Year Total Channel runoff is reduced in post development condition.

- 35. The conveyance calculations show that hydraulic grade lines (HGLs) for Manhole 2 is above the ground/rim elevation. This indicates that the pipes do not have adequate capacity to convey the required design storms (113-34.G).
 - Response: The storm conveyance has been revised. Please see the updated storm sewer calculations in the PCSM Report and the revised profiles on the plans, refer to sheet 8.
- 36. Conveyance facilities that direct runoff to the Stormwater Basin shall be designed for the 100-year storm (113-34.G(3)). The discharge shown in the conveyance calculations is inconsistent with the one-hundred discharge from the modified existing basin (Hyd. No. 9).
 - Response: The storm conveyance calculations have been revised to utilize the 100-year storm event to prove that the flow can reach the proposed BMPs without surcharging the system. Please see the updated storm sewer calculations in the PCSM Report.
- 37. Minimum floor elevations for all structures that would be affected by a basin where ponding may occur shall be two feet above the one-hundred-year water surface elevation (113-34.F). The first-floor elevation of the existing building shall be provided.
 - Response: The Finish Floor Elevation has been provided on Sheet 5.
- 38. Drainage area maps shall be provided showing the point of interest, drainage area boundaries for rate control, volume control and conveyance facilities and time of concentration flow paths (113-35.B).
 - Response: Drainage area maps have been provided for Pre-Development, Post Development, and an Inlet/Channel as well.
- 39. The C and D "Soil Groups" in the Drainage Areas & Weighted CNs worksheet and the C and D "Soil Types" Worksheets 4 are inconsistent with the hydrologic soil groups shown in the custom soil resource reports (i.e. there are no C or D soil types shown in the soil resource reports) (113-35.B).
 - Response: The Drainage Areas & Weighted CNs worksheets and the Worksheet 4 have been adjusted to reflect that the site only has B soil types on it.
- 40. The routings of the modified existing basin and proposed Stormwater Basin shall be interconnected, since the maximum elevation shown in the routings of the proposed Stormwater Basin exceeds the invert elevation of the outlet pipe of the modified existing basin (i.e. the water elevation in the Stormwater Basin will affect the outflow from the modified existing basin) (113-35.B).
 - Response: The proposed basin bottom has been lowered and modified to eliminate the tailwater effect on the existing basin.



Page 8 of 11 Mount Joy Township November 10, 2023 RETTEW Project No. 119162000

- 41. There are two TR55 Tc worksheets for Hydrograph No. 2 (113-35.H(2)).

 Response: The extra TR55 Tc worksheet for Hydrograph No. 2 has been corrected to show the TR55 Tc worksheet for Hydrograph No. 6.
- 42. The description for the TR55 Tc Worksheet for Hydrograph No. 1 shall be provided (113-35.H.(2)). It appears that this Tc is associated with the Pre-POI 001 UNC hydrograph.
 Response: A description for the TR55 Tc Worksheet for Hydrograph No. 1 has been provided to say, "PRE-POI 001 UNC."
- 43. The Stormwater Basin shall comply with the following requirements for a facility with a depth of two to eight feet (113-37.A):
 - A dewatering feature, pretreatment elements and antivortex design are required for the Stormwater Basin.
 Response: Inlet filter bags are being used for the inlets upstream of the Stormwater Basin and an antivortex is being used for the outlet structure in the
 - Stormwater Basin.

 A Type D-W endwall or riser box outlet structure shall be provided.
 - A Type D-W endwall or riser box outlet structure shall be provided.
 Response: A Type M outlet structure has been utilized in the Stormwater Basin and has been added to the plans.
 - An emergency spillway shall be provided.
 Response: The top of grate of the outlet structure in the Stormwater Basin will be utilized as an emergency spillway. See Appendix F of the PCSM report for the emergency spillway calculations.
 - d. Anti-seep collars are required.
 Response: An Anti-seep collar has been provided. Please see the plans for the location and details, refer to sheet 11.
- 44. The design depth of water for the Stormwater Basin is 3' deep. The PA BMP Manual states that a total depth of water should generally not be greater than two feet for infiltration facilities (113-32 & 113-37.A).
 - Response: See the Pond Report for the Proposed Basin in Appendix D of the PCSM Report. The maximum design depth of water below the lowest orifice is 2.'
- 45. A note shall be added to the plan to specify that the embankment fill material shall be free of roots, stumps, wood, rubbish, stones greater than six inches, frozen or other objectionable materials (113-37.A.(3)(c)).
 - Response: Note 29 was added to the Cover Sheet.
- 46. A note shall be added to the plan to specify that embankments shall be compacted by sheepsfoot or pad roller. The loose lift thickness shall be nine inches or less, depending on roller size, and the maximum particle size is six inches or less 2/3 of the lift thickness. Five passes of the compaction equipment over the entire surface of each lift is required. Embankment compaction to visible nonmovement is also required (113-37.A.(3)(d)).



53.

Response: Note 30 was added to the Cover Sheet.

- 47. A construction detail for the outlet structures shall be provided (113-37.A(5)).

 Response: Construction Details have been added for the proposed basin. Please see the Detail Sheets, refer to sheet 11.
- Design calculations shall be provided for the roof leaders (113-37.C).
 Response: Roof Leader calculations have been provided. Please see the PCSM Report.
- 49. The engineer shall confirm whether roof leaders are proposed for the proposed building. If so, design calculations shall be provided and the proposed roof leaders shall be shown on the plan with slope and cover requirements (113-37.C(3)(b)).
 Response: Roof Leaders are proposed and have been provided on the plans along with the associated calculations, refer to sheet 8.
- One foot of pipe cover shall be provided to the surface in non-vehicular areas outside the right of way (119-37.C(1)(a)[3]).Response: The grade was revised to obtain 1 foot of cover, refer to sheet 8.
- 51. The height of the manhole shown in the Storm Manhole construction detail does not vary (113-37.C(1)(c)).

Response: The detail was revised, refer to sheet 11.

- Manholes shall be made of concrete (113-37.C(1)(c)[1]). The Storm Manhole detail shall specify this requirement.Response: The detail was revised to depict the concrete, refer to sheet 11.
 - Backfill requirements shall be provided for pipes installed in vegetated areas (113-37.C(3)(a)). The backfill requirements for vegetated areas shall specify that the backfill be

Response: The detail was revised to include vegetated areas, refer to sheet 11.

54. The trench detail shall specify the required Class 1 backfill material (113-37.C(3)(a)). Response: The detail was revised to specify class 1 backfill, refer to sheet 11.

suitable on-site material that is free of objectionable and detritus material.

55. A protective barrier device shall be provided for the 18" pipe terminating at the stormwater basin (113-37.C(9)(a)).

Response: A trash screen is called out on sheets 5 and 11.

- 56. The landowner shall execute the final documents prior to final plan approval (113-41.B). **Response: Acknowledged.**
- 57. Dimensions (i.e. width and length) shall be provided for the stormwater basin (113-43.J(5)).

Response: Dimensions were added on Sheet 3.



58. There are inconsistencies between the Culvert / Orifice Structures and Weir Structures information shown on the Pond Reports and between the information shown on the plans (113-43.J(5)). Weir Structure [B] (i.e. emergency spillway) shown on Pond Report No. 3 shall be labeled and dimensioned on the plans.

Response: The proposed basin has been revised and the associated details have been provided/revised to coordinate with the calculations.

59. The ground/rim elevation for Manhole MH-2 in the conveyance calculations (485.50) is inconsistent with the elevation shown in the OCS-1 To Basin vertical profile (490.45) (113-43.J.(5)).

Response: The storm conveyance calculations has been revised and the associated profiles have been revised to coordinate with the calculations.

60. Construction details shall be provided for the proposed wall in the Stormwater Basin (113-43.J(5)). Design calculations shall be provided that the proposed wall can safely contain all storms in areas of fill.

Response: We are proposing a clay lining for the wall to contain the runoff volume from all required storm events, and to ensure water does not seep through the wall. The owner is coordinating the wall design and will submit that detail under separate cover.

61. The proposed cleanout shown in the Typical In-Line Clean-Out Detail shall be designed to withstand the anticipated traffic in areas of vehicular loading (113-43.J(5)).

Response: The detail was revised, refer to sheet 11.

62. A construction detail and specifications shall be provided for the proposed grouting of the existing discharge pipe from the existing basin (113-43.J(5)).

Response: The existing basin is proposed to be maintained in its pre-development condition; this comment no longer applies.

63. The expected project schedule shown in General Notes 21 and 26 on the cover sheet shall be updated (113-44.E).

Response: The project schedule was updated, refer to notes 21 and 26 on the cover sheet.

Traffic

1. The proposed development is located within the Transportation Service Area established for the Mount Joy Township Traffic Impact Fee Ordinance. The applicant indicates that the proposed storage building will result in a reduction of 2-3 trips per day, since the proposed storage building will reduce the number of deliveries needed for materials. In addition, the applicant indicates that no additional employees will be added as a result of the proposed storage building. Therefore, this development is a de minimus application and is exempt from the impact fee (125-10.A(4)).

Response: No response required.



Page 11 of 11 Mount Joy Township November 10, 2023 RETTEW Project No. 119162000

If you have any further questions, please feel free to call me at 717-516-7482 or contact me via email at dbrinser@rettew.com.

Sincerely,

D. Eric Brinser, RLA

Team Lead, Land Development

Enclosures





3020 Columbia Avenue, Lancaster, PA 17603 ● Phone: (800) 738-8395

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November 10, 2023

Elizabethtown, PA 17022

Mr. Justin Evans, AICP, Township Manager Mount Joy Township 8853 Elizabethtown Road **Engineers**

Environmental Consultants

Surveyors

Landscape Architects

Safety Consultants

RE: Preliminary/Final Land Development Plan

For Leon Rutt

Waiver, Deferrals and Modifications RETTEW Project No. 119162000

Dear Mr. Evans:

Please find herein an update ed listing of waivers, deferrals and modifications for the above project which are requested from the Mount Joy Township Subdivision and Land Development Ordinance:

- 1. Section 119-25 Preliminary Review Process
 - a. Relief requested: Waiver to allow the project to be reviewed as a combined Preliminary/Final Plan.
 - b. Justification: The project is for one storage building which will not be occupied or require sewer or water services, does not required any public improvements, and the building will not have an effect on traffic to the site. The plan has been designed to meet both the preliminary and final plan requirements. We do not believe there is any benefit to reviewing the plan as both Preliminary and Final and request a waiver of this requirement.

Approved by PC on October 23, 2023.

- 2. Section 119-32.C- Traffic Impact Study
 - a. Relief requested: Traffic Impact Study
 - b. Justification: The proposed storage building will house product only. This material would be included in normal deliveries to the site, so no additional traffic is generated from new products being delivered. Having the products stored on-site reduces the transportation of the material from existing off-site storage to the site, which is occurring now. Since this would result in a reduction in traffic to the site, we request a waiver of providing the Traffic Impact Study.

Approved by PC on October 23, 2023.

- 3. Section 119-53.C(1)— Curbing along edge of parking facility
 - a. Relief requested: Curbing within the interior of the site.
 - b. Justification: There is no existing curbing within the site. The proposed grading and runoff patterns do not require curbing to convey stormwater to the intended inlets, therefore we request a waiver of providing internal curbing.

Approved by PC on October 23, 2023.

Waiver Modification:

- 4. Section 119-56.B Updated deed for easement language
 - a. Relief: A note on the Cover Sheet of the Land Development Plan (to be recorded) with the required note, "Nothing shall be placed, planted, set or put within an easement that would adversely affect the function of the easement or conflict with the easement agreement.", as an acceptable alternative to re-drafting the deed.
 - b. Justification: There are no other changes to the site that would require a new deed to be drafted. We request that the note on the plan to be recorded is adequate to document this requirement in lieu of drafting a new deed simply to add this note.

Approved by PC on October 23, 2023.

Please find herein a deferral which we are requesting from the Mount Joy Township Subdivision and Land Development Ordinance:

- 1. Section 119-52.J.3.a Improvements (curb and sidewalk) to Jonlyn Drive.
 - a. Relief requested: Deferral to not install curbing or sidewalk along the property frontage of Jonlyn Drive at this time.
 - b. Justification: The adjoining properties are not developed with sidewalk or curbing, and this commercial area does not contain business that require or encourage walkable access. Jonlyn Drive has been in place in its current state for many years, there are no issues with runoff or erosion along the road edges, therefore we do not believe curb or sidewalk is warranted at this time. The deferral of the improvements is requested until a time when Mounty Joy Township Board of Supervisors directs the installation to occur by means of written notification letter until a time when the Mount Joy Township Board of Supervisors direct the installation to occur by means of written notification letter.

Approved by PC on October 23, 2023.

From the Mount Joy Township Stormwater Management Ordinance.

- 1. Section 113.31.L(1) Minimum depth of 24 inches between the bottom of the BMP and the limiting zone. (New)
 - a. Relief requested: Modification to allow the basin to be over excavated into the existing sandstone 2 ft. below the proposed basin. Amended soils will be placed between the bottom of basin elevation and the sandstone for water quality.
 - b. Justification: In order to avoid modifications to the existing basin berm and outlet structure, we proposed to tie into the outlet pipe and into the new basin. To do that the bottom of the basin needs to be lowered, and therefore into the required 24-inch area above the limiting zone. The proposal to over excavate into the sandstone and placement of 24 inches of amended soils is common practice and consistent with the DEP stormwater management manual.



Page 3 of 3 Mount Joy Township November 10, 2023 RETTEW Project No. 119162000

If you have any further questions, please contact our office at 1-800-738-8395 or email at dbrinser@rettew.com.

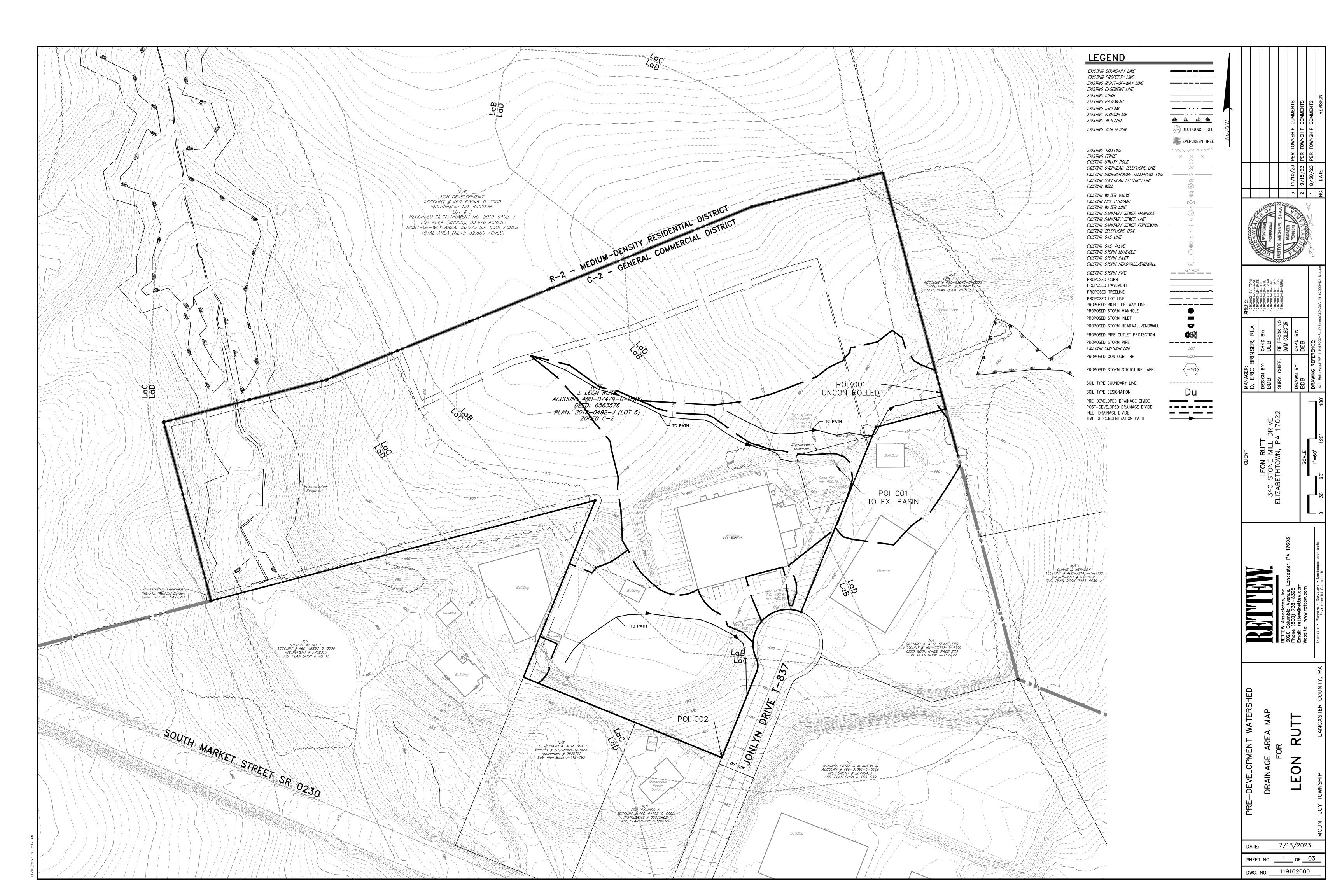
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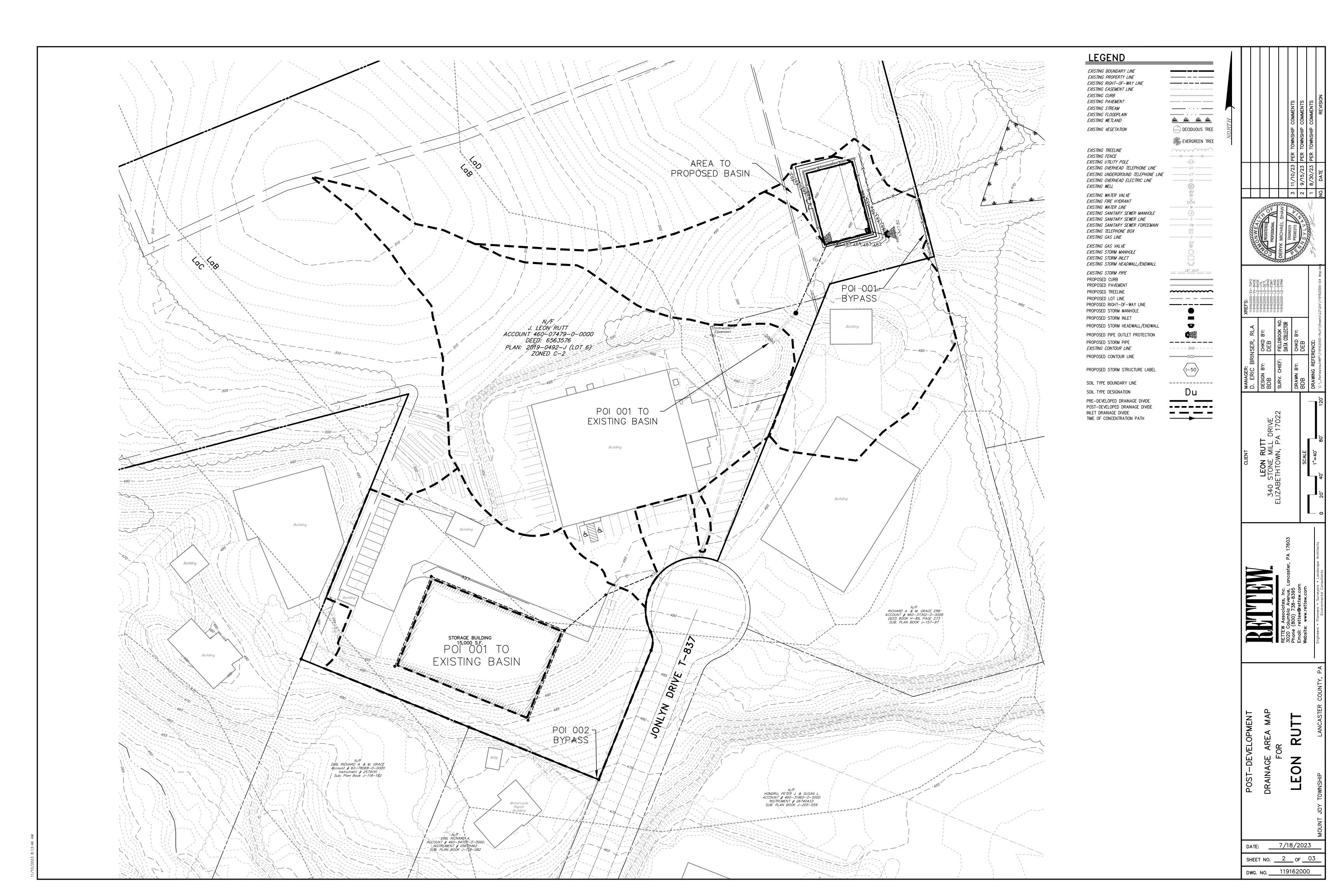
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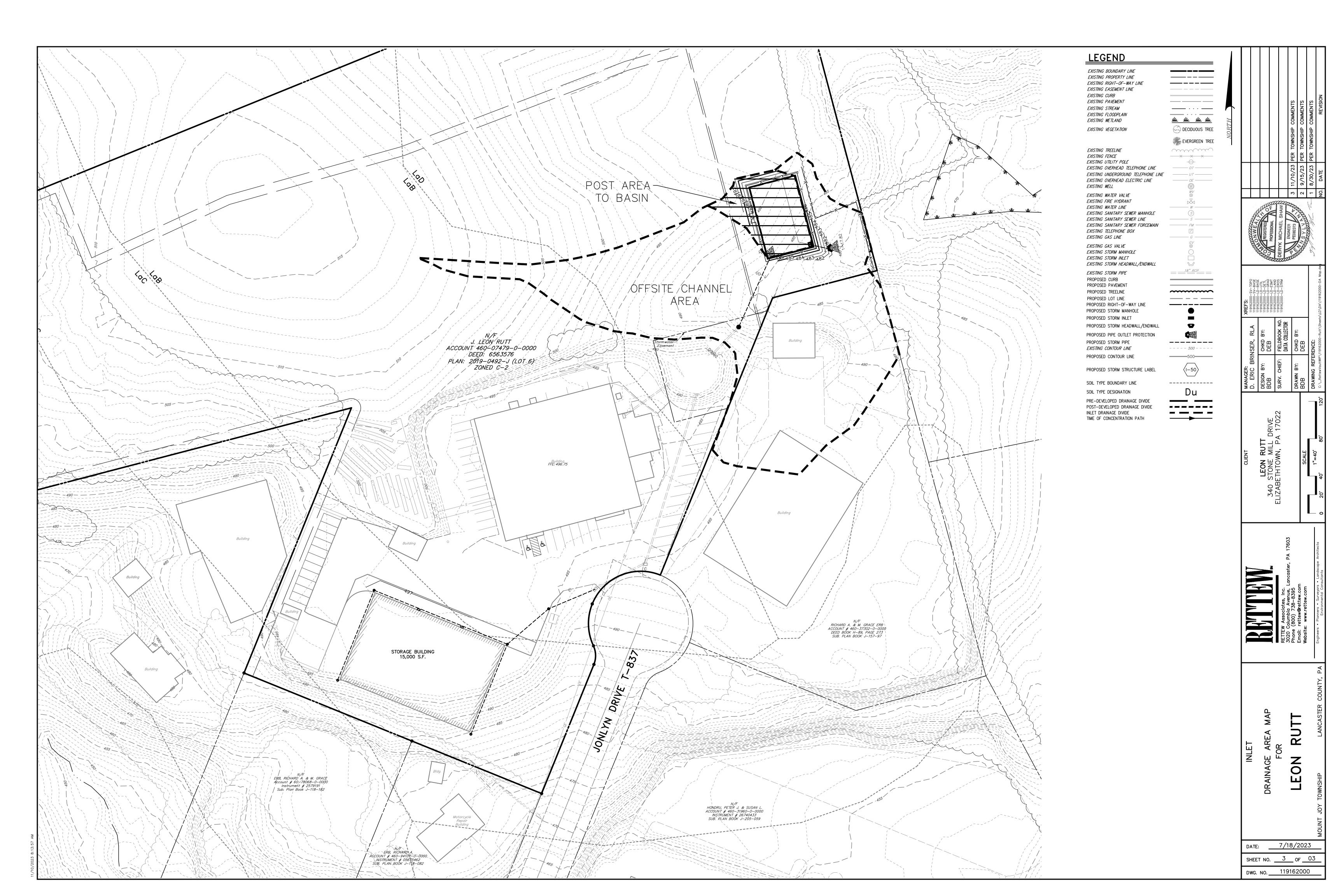
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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN

FOR

LEON RUTT MOUNT JOY TOWNSHIP, LANCASTER COUNTY, PA

GENERAL NOTES

- 1. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A STORAGE BUILDING AS AN ACCESSORY USE OF THE EXISTING VEHICLE REPAIR SHOP. THE EXISTING USE FOR THE VEHICLE REPAIR SHOP, WAS APPROVED BY SPECIAL EXCEPTION ON MARCH 6, 1996.
- 2. BENCHMARK CONTROL POINT GPS STATION. ELEVATION: 501.75, NAD83 DATUM.
- SURVEY BASE MAPPING AND TOPOGRAPHIC INFORMATION PREPARED BY BURCH ASSOCIATES.
 SITE IS SERVED BY A WELL (WATER) AND AND ON-LOT SEWER. THE PROPOSED STORAGE BUILDING DOES
 NOT REQUIRE WATER OR SEWER. NO SANITARY SEWER OR WATER MAY BE EXTENDED TO THE STORAGE
- BUILDING UNLESS PROPER APPROVALS ARE GRANTED BY THE TOWNSHIP, AUTHORITIES AND DEP.

 5. ALL PROPOSED UTILITY LINES SHALL BE LOCATED UNDERGROUND AND WITHIN PUBLIC STREETS, ALLEYS, OR
- OTHER PUBLIC RIGHTS—OF—WAY. ANY REQUIRED UTILITY STRUCTURES, BUILDINGS, PUMP STATIONS, OR OTHER SIMILAR DEVICES SHALL BE SCREENED FROM ADJOINING PROPERTIES AND ROADS.

 6. NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN THE AREA OF AN EASEMENT THAT WOULD ADVERSELY AFFECT THE FUNCTION OF THE EASEMENT OR CONFLICT WITH THE EASEMENT AGREEMENT.

 7. A WETLANDS INVESTIGATION WAS PERFORMED BY RETTEW ASSOCIATES. THE WETLANDS FOUND IN THE
- PROPOSED AREA OF WORK IS A PREVIOUSLY DISTURBED AND DEVELOPED AREA WITH NO WETLANDS.

 3. THERE ARE NO FEMA FLOODPLAINS MAPPED ON THE SITE.

 3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO THE START OF CONSTRUCTION.

NORTHWESTERN PORTION OF THE PROPERTY ARE NOT AFFECTED BY THE PROPOSED IMPROVEMENTS. THE

- 10. ACCESS TO ALL STORMWATER MANAGEMENT FACILITIES, SHALL BE PROVIDED TO REPRESENTATIVES OF MOUNT JOY TOWNSHIP.
- 11. MOUNT JOY TOWNSHIP IS NOT RESPONSIBLE FOR CONSTRUCTION OR MAINTENANCE OF ANY AREA NOT DEDICATED FOR PUBLIC USE.
 12. EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. IT SHALL
- BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND ALLOW FOR THEIR LOCATION.

 13. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE DONE DUE TO HIS NEGLIGENCE SHALL BE REPAIRED
- IMMEDIATELY AND COMPLETELY AT HIS EXPENSE.

 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS RELATIVE TO THE CONSTRUCTION PROPOSED ON THIS BLAND.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL, TRENCH BARRICADING AND COVERING. AND SHEETING AND SHORING.
- 16. STORMWATER MANAGEMENT FACILITIES (DETENTION FACILITIES, STORM DRAINAGE PIPES) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MOUNT JOY TOWNSHIP SUBDIVISION AND
- LAND DEVELOPMENT ORDINANCE.
 17. 72 HOURS PRIOR TO DIGGING, CONTRACTOR SHALL CALL PENNSYLVANIA ONE—CALL SYSTEM AT
- 18. ALL STORMSEWER PIPES, MANHOLES, INLETS, SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT FORM 408 SPECIFICATIONS, AS AMENDED, AND SHALL CONFORM TO THE REQUIREMENTS OF THE PENNDOT, BUREAU OF DESIGN, STANDARDS OF ROADWAY CONSTRUCTION (RC), PUBLICATION NO. 72, IN EFFECT AT THE TIME THE DESIGN IS SUBMITTED.
- THE TIME THE DESIGN IS SUBMITTED.

 19. AREAS PROPOSED FOR INFILTRATION BMP'S SHALL BE PROTECTED FROM SEDIMENTATION AND COMPACTION DURING THE CONSTRUCTION PHASE TO MAINTAIN MAXIMUM INFILTRATION CAPACITY. STAGING OF EARTHMOVING ACTIVITIES AND SELECTION OF CONSTRUCTION EQUIPMENT SHALL INCORPORATE THESE REQUIREMENTS. FUTURE EROSION AND SEDIMENTATION CONTROL PLANS SHALL INCORPORATE THE
- PROVISIONS FOR PROTECTING INFILTRATION BMP'S DURING CONSTRUCTION.

 20. ALL UTILITY EASEMENTS SHALL BE MAINTAINED AS SHOWN ON THE PLANS AND NO BUILDINGS SHALL BE PLACED WITHIN THE BOUNDARIES OF AN EASEMENT.
- 21. EARTHWORK TO BEGIN MARCH 2024; FINAL COMPLETION EXPECTED APRIL 2024.
 22. THE ADJOINING PROPERTY TO THE NORTH (KGH) IS PROPOSING THE PLACEMENT OF STORMWATER MANAGEMENT FACILITIES AND EASEMENTS ON THIS PROPERTY, ALONG THE NORTHERN BORDER. THIS IS
- DEPICTED ON THE PRELIMINARY LAND DEVELOPMENT, SUBDIVISION, AND LOT AD-ON PLAN FOR RAFFENSPERGER, RETTEW PROJECT NUMBER 019792000.

 23. THE REQUIRED 10 FT LANDSCAPE STRIP SHALL BE ADJUSTED AND LOCATED ALONG THE PERIMETER OF
- THE STORMWATER MANAGEMENT FACILITIES PROPOSED WITH THE ADJOINING KGH DEVELOPMENT.

 24. ALL MISSING PROPERTY CORNERS SHALL BE SET AT THE COMPLETION OF CONSTRUCTION.

 25. NO EXCAVATION, THE PLACING OF FILL OR STRUCTURES AND ANY ALTERATIONS THAT MAY ADVERSELY AFFECT THE FLOW OF STORMWATER WITHIN ANY PORTION OF THE PROPOSED STORMWATER EASEMENT
- SHALL BE CONDUCTED.

 26. CONSTRUCTION SCHEDULE: THE WORK WILL BE COMPETED BETWEEN MARCH AND APRIL OF 2024.

 27. UPON COMPLETION OF THE PLAN IMPROVEMENTS AND PRIOR TO THE RELEASE OF FINANCIAL SECURITY,
- THE APPLICANT SHALL SUBMIT AN AS-BUILT PLAN TO THE TOWNSHIP.
 28. UPON APPROVAL OF THE ASBUILT PLAN THE APPLICANT SHALL SUBMIT THE STORMWATER MANAGEMENT
- SITE PLAN FOR RECORDATION IN THE OFFICE OF THE RECORDER OF DEEDS.

 29. EMBANKMENT FILL MATERIAL SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6 INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS.

 30. EMBANKMENTS SHALL BE COMPACTED BY SHEEPSFOOT OR PAD ROLLER. THE LOOSE LIFT THICKNESS SHALL BE NONE INCHES OR LESS, DEPENDING ON ROLLER SIZE, AND THE MAXIMUM PARTICLE SIZE IS SIX
- INCHES OR LESS % OF THE LIFT THICKNESS. FIVE PASSES OF THE COMPACTION EQUIPMENT OVER THE ENTIRE SURFACE OF EACH LIFT IS REQUIRED. EMBANKMENT COMPACTION TO VISIBLE NONMOVEMENT IS ALSO REQUIRED.

 CERTIFICATIONS

CERTIFICATION OF SURVEY ACCURACY

CERTIFICATION OF PLAN ACCURACY

STORMWATER MANAGEMENT PLAN CERTIFICATION

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE STORMWATER MANAGEMENT FACILITIES SHOWN AND DESCRIBED HERON ARE DESIGNED IN CONFORMANCE WITH CHAPTER 119, SUBDIVISION AND LAND DEVELOPMENT, AND CHAPTER 113, STORMWATER MANAGEMENT,

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN, AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA COUNTY OF LANCASTER

ON THIS, THE ____ DAY OF ______, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, ______, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, _____, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, _____, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, _____, 20___, BEFORE ME, THE UNDERSIGNED ACCORDING TO LAW, DEPOSES AND SAYS THAT THEY ARE THE <u>OWNER</u> OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE PLAN THEREOF WAS MADE AT THEIR DIRECTION, THAT THEY ACKNOWLEDGE THE SAME TO BE THE ACT AND PLAN, THAT THEY DESIRE THE SAME TO BE RECORDED AND THAT ALL STREETS AND OTHER PROPERTY IDENTIFIED AS PROPOSED PUBLIC PROPERTY (EXCEPTING THOSE AREAS LABELED 'NOT FOR DEDICATION') ARE HEREBY DEDICATED TO THE PUBLIC USE.

CERTIFICATIONS

CHAIRMAN OR DESIGNEE VICE CHAIRMAN OR DESIGNEE

PLANNING COMMISSION - FINAL PLAN APPROVAL CERTIFICATE

CHAIRMAN OR DESIGNEE VICE CHAIRMAN OR DESIGNEE

LANCASTER COUNTY PLANNING DEPARTMENT'S REVIEW CERTIFICATE

THIS PLAN, BEARING LCPC FILE NO. 92-5-4, WAS REVIEWED BY STAFF OF THE LANCASTER COUNTY PLANNING DEPARTMENT ON JUNE 30, 2023, AS REQUIRED BY THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE, ACT 247, OF 1968, AS AMENDED. THIS CERTIFICATE DOES NOT REPRESENT NOR GUARANTEE THAT THIS PLAN COMPLIES WITH THE VARIOUS ORDINANCES, RULES, REGULATIONS, OR LAWS OF THE LOCAL MUNICIPALITY, THE COMMONWEALTH, OR THE FEDERAL GOVERNMENT.

* SIGNATURE OF THE CHAIRPERSON OR THEIR DESIGNEE

CARBONATE GEOLOGY CERTIFICAT

I, _____, CERTIFY THAT THE PROPOSED STORMWATER/BMP FACILITY (CIRCLE ONE) IS/IS NOT UNDERLAIN BY CARBONATE GEOLOGY.

STORMWATER OWNERS CERTIFICATE

THE OWNER ACKNOWLEDGES THAT ALL STORMWATER FACILITIES SHALL BE PERMANENT FIXTURES THAT CANNOT BE ALTERED UNLESS A REVISED PLAN IS APPROVED BY THE TOWNSHIP.

PRIOR APPROVALS AND AGREEMENTS:

- 1. FINAL PLAN FOR JOHN H. BURKHART DATED 1980, PB J-123, PG 43 2. SPECIAL EXCEPTION GRANTED, MARCH 6, 1996.
- 5. LAND DEVELOPMENT PLAN DATED 1996, PB J-194, PG 3. - STORMWATER MANAGEMENT AGREEMENT, 1996, RECORD BOOK 5058.
- 5. PRELIMINARY/FINAL MINOR SUBDIVISION PLAN FOR DANIEL RAFFENSPERGER, 2019, INSTRUMENT #2019-0492J.

D. ERIC BRINSER, RLA RETTEW ASSOCIATES, INC.

SITE DATA

TOTAL AREA

EXISTING USE

PROPOSED USE

PROPOSED WATER SUPPLY

SANITARY SEWER SERVICE

UNIT OF OCCUPANCY

LOT DENSITY

1 UNIT / ACRE

13.213 AC.

VEHICLE REPAIR SHOP*

VEHICLE REPAIR SHOP

WELL **

ON-LOT **

1 UNIT (EXISTING)—NO CHANGE

1 UNIT / ACRE

*THE EXISTING USE, VEHICLE REPAIR SHOP, WAS APPROVED BY SPECIAL EXCEPTION ON

** THE EXISTING USE WAS PREVIOUSLY APPROVED WITH A WELL AND ON LOT SEPTIC. NO CHANGE TO THE SEWER OR WATER SERVICE IS PROPOSED.

SOURCE OF TITLE

OWNER
ADDRESS
ACCOUNT #
DEED #
PLAN:
PARCEL

J. LEON RUTT
300 JONLYN RD.
460-07479-0-0000
6563576
2019-0492-J (LOT 6)

ZONING DATA C2-GENERAL COMMERCIAL

	REQUIRED	PROVIDED
MINIMUM LOT AREA	0.50 AC.	13.213 AC.
MINIMUM LOT WIDTH	125 FT.	304 FT.
MINIMUM LOT DEPTH	100 FT.	318 FT.
FRONT SETBACK	35 FT.	> 35 FT.
SIDE SETBACK	15 FT.	15 FT.
REAR SETBACK	25 FT.	> 25 FT. **
PARKING SETBACK	15 FT.	1' (EX) 15 FT (PROPOSED)
MAXIMUM BUILDING COVERAGE	50%	7% (39,445 S.F.)
MAXIMUM BUILDING HEIGHT	40 FT.	< 40 FT.
MAXIMUM IMPERVIOUS COVERAGE	65%	16% (96,048 S.F.)
OFF-STREET PARKING*	50 (EX)	50 EX. SPACES, NONE PROPOSED
OUTDOOR STORAGE	15'	> 15'
LOADING AREAS	15'	> 15'

*THE EXISTING 50 PARKING SPACES WERE APPROVED BY SPECIAL EXCEPTION ON MARCH 6, 1996, FOR THE MAIN BUILDING EXPANSION. THE PROPOSED STORAGE BUILDING DOES NOT REQUIRE ADDITIONAL PARKING.

** EXISTING BUILDING NONCONFORMANCE AT 11.63'. SOUTH WEST CORNER OF PROPERTY.

ZONING RELIEF

SECTION 135-343.G PARKING REQUIREMENT REDUCTION
ACTION: GRANTED 04/05/2023 61 PARKING SPACES ARE REQUIRED (FOR THE PRINCIPAL BUILDING EXPANSION).*

135-383 B.7. TIME EXTENSION
ACTION: GRANTED 04/05/2023

WAIVERS / MODIFICATONS / DEFERRALS

MOUNT JOY SALDO:

SALDO SECTION 119-25
ACTION:

SALDO SECTION 119-32.C
ACTION:

WAIVER OF TRAFFIC IMPACT STUDY

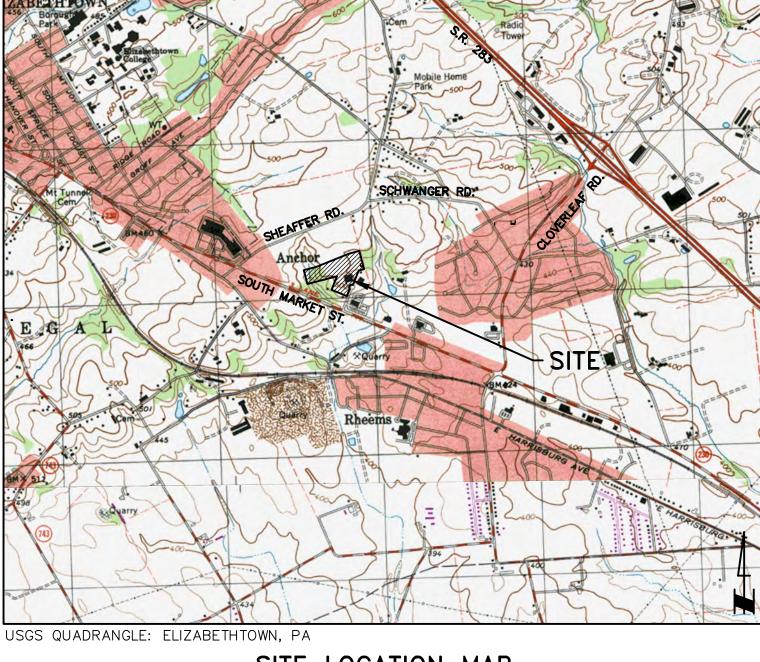
SALDO SECTION 119-52.J(3)a DEFERRAL OF SIDEWALK AND CURB ALONG JONLYN DRIVE

SALDO SECTION 119-53.C(1) WAIVER FROM PROVIDING CURBNG ALONG EDGE OF PARKING FACILITY

SALDO SECTION 119—56.B MODIFICATION FOR THE REQUIRED UPDATED DEED ACTION:

MOUNT JOY SWMO:

SWMO SECTION 113.31.L(1) MODIFICATION OF PROVIDING A MINIMUM DEPTH OF 24" BETWEEN THE BOTTOM OF THE STORMWATER FACILITY AND THE LIMITING ZONE. ACTION:



SITE LOCATION MAP

SCALE: 1"=2000'

PA ONE CALL UNDERGROUND UTILITY PROTECTION ACT

PURSUANT TO THE PROVISIONS OF ACT NO. 287 OF 1974, AS AMENDED BY ACT 187 OF 1996, ACT 181 OF 2006, ACT 160 OF 2016 AND ACT 50 OF 2018 OF THE PENNSYLVANIA STATE LEGISLATURE, RETTEW ASSOCIATES, INC. HAS PERFORMED THE FOLLOWING IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS:

- 1. PURSUANT TO SECTION 4, CLAUSE (2) OF SAID ACT, RETTEW ASSOCIATES, INC. REQUESTED FROM EACH FACILITY OWNER DESIGNATED ON SUCH LIST PROVIDED BY THE ONE CALL SYSTEM NOTIFICATION, THE INFORMATION PRESCRIBED BY SECTION 2, CLAUSE (4) OF SAID ACT, NOT LESS THAN TEN (10) NOR MORE THAN NINETY (90) BUSINESS DAYS BEFORE FINAL DESIGN IS TO BE COMPLETED.
- 2. PURSUANT TO SECTION 4, CLAUSE (5) OF SAID ACT, RETTEW ASSOCIATES, INC. HAS MET THEIR OBLIGATIONS OF CLAUSE (2) BY CALLING THE PENNSYLVANIA ONE CALL SYSTEM SERVING THE LOCATION WHERE THE WORK IS TO BE PERFORMED, AND SHOWING THE ASSOCIATED SERIAL NUMBER(S) ON THIS (THESE DRAWNINGS)
- THIS/THESE DRAWING(S).

 3. PURSUANT TO SECTION 4, CLAUSE (3) OF SAID ACT, RETTEW ASSOCIATES, INC. HAS SHOWN UPON THIS/THESE DRAWING(S) THE POSITION AND TYPE OF EACH FACILITY, AS DERIVED PURSUANT TO THE REQUEST MADE AS REQUIRED BY CLAUSE (2).
- 4. PURSUANT TO SECTION 4, CLAUSE (5) OF SAID ACT, RETTEW ASSOCIATES, INC. HAS SHOWN UPON THIS/THESE DRAWING(S) THE TOLL—FREE NUMBER FOR THE ONE CALL SYSTEM AND THE SERIAL NUMBER(S) FOR THE ASSOCIATED ONE CALL SYSTEM NOTIFICATION(S),

ADDITIONALLY, RETTEW ASSOCIATES, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID REQUEST, AND AS REFLECTED ON THIS/THESE DRAWING(S), IS CORRECT OR ACCURATE. INFORMATION REFLECTED ON THIS/THESE DRAWING(S) IS SHOWN AS REQUIRED BY SAID ACT NO. 160 OF 2016, AND AS PROVIDED BY THE FACILITY OWNER PURSUANT TO SECTION 2, CLAUSE (4) OF SAID ACT.

DATE: 5/12/2023

ONE CALL SYSTEM SERIAL NUMBER: 20231320271

PA 1 SYSTEM, INC. 1-800-242-1776

PENNSYLVANIA LAW REQUIRES
(3) WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND (10) WORKING
DAYS IN DESIGN STAGE - STOP CALL

<u>UTILITIES</u>

CHARLOTTE, NC 28203

CONTACT: DREW LANE

WINDSTREAM
1450 CENTER POINT ROAD
HIAWATHA, IA 52233
CONTACT: LOCATE DESK PERSONEL
EMAIL: LOCATE.DESK@WINDSTREAM.COM
PHONE: 800-289-1901

EMAIL: ANDREW.T.LANE@BRIGHTSPEED.COM PHONE: 980-376-1856 USIC LOCATING SERVICES 9045 NORTH RIVER ROAD SUITE 300 INDIANAPOLIS, IN 46240 CONTACT: JEFFREY TRUMBOWER

1120 SOUTH TRYON STREET SUITE 700

EMAIL: JEFFTRUMBOWER@USICCLLC.CP, PHONE: 317-810-8254

ELIZABETHTOWN AREA WATER AUTHORITY 211 WEST HUMMELSTOWN STREET ELIZABETHTOWN, PA 17022 CONTACT: DEL BECKER PHONE: 71-367-7448

METROPOLITAN EDISON CO / FIRST ENERGY 21 SOUTH MAIN STREET AKRON, OH 44308 CONTACT: TICKET SCREENING PERSONNEL EMAIL: TICKET_SCREENING@FIRSTENERGYCORP.COM PHONE: 330-384-3824

UGI UTILITIES, INC
1301 AIP DRIVE
MIDDLETOWN, PA 170587-5987
CONTACT: STEPHEN BATEMAN
EMAIL: SBATEMAN@UGI.COM
PHONE: 610-807-3174

MOUNT JOY TOWNSHIP LANCASTER COUNTY
8853 ELIZABETHTOWN ROAD

ELIZABETHTOWN, PA 17022

EMAIL: KEN@MTJOYTWP.ORG

CONTACT: KEN EBERSOLE

PHONE: 717-673-2054

PPL ELECTRIC UTILITIES CORPORATION 437 BLUE CHURCH ROAD PAXINOS, PA 17860 CONTACT: DOUG HAUPT EMAIL: DLHAUPT@PPLWEB.COM PHONE: 570-490-5684

ERGY

LIST OF DRAWINGS

* SHEETS TO BE RECORDED

PLAN SHEET NO. TITLE

*1 OF 12. . . . COVER SHEET

2 OF 12. . . . EXISTING CONDITIONS/DEMOLITION PLAN

3 OF 12. . . . OVERALL SITE PLAN

*4 OF 12. . . . LAYOUT PLAN

5 OF 12. . . . GRADING & UTILITY PLAN

6 OF 12. . . . LANDSCAPE PLAN

*7 OF 12. . . . EASEMENT PLAN

8 OF 12. . . . EASEMENT PLAN

8 OF 12. . . . PLAN & PROFILES

9 OF 12. . . . SITE DETAILS

10 OF 12. . . . SITE DETAILS

11 OF 12. . . . SITE DETAILS

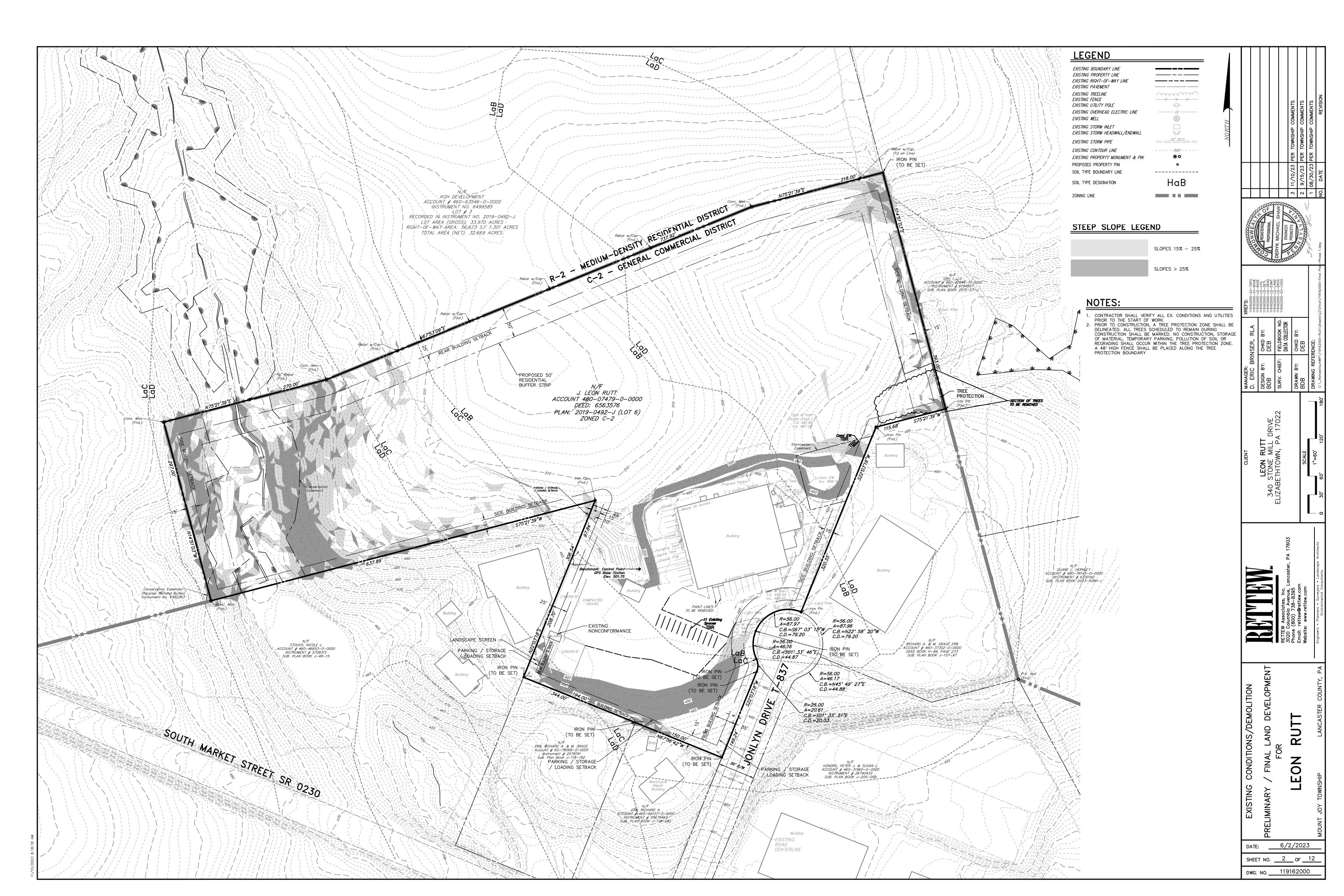
12 OF 12. EROSION AND SEDIMENTATION CONTROL PLAN

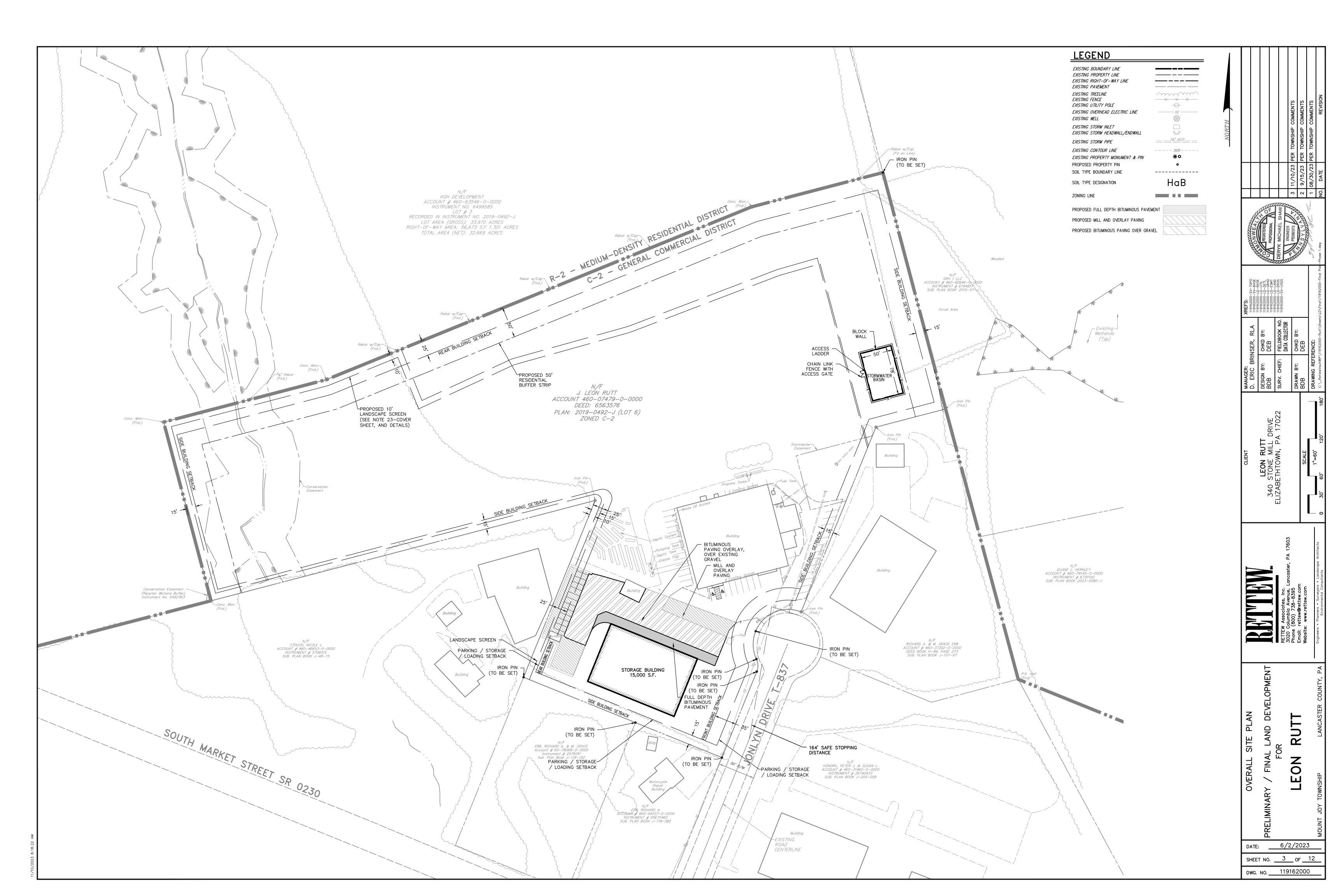
DATE: $\frac{6/2}{2023}$ SHEET NO. $\frac{1}{19162000}$ DWG. NO. $\frac{1}{19162000}$

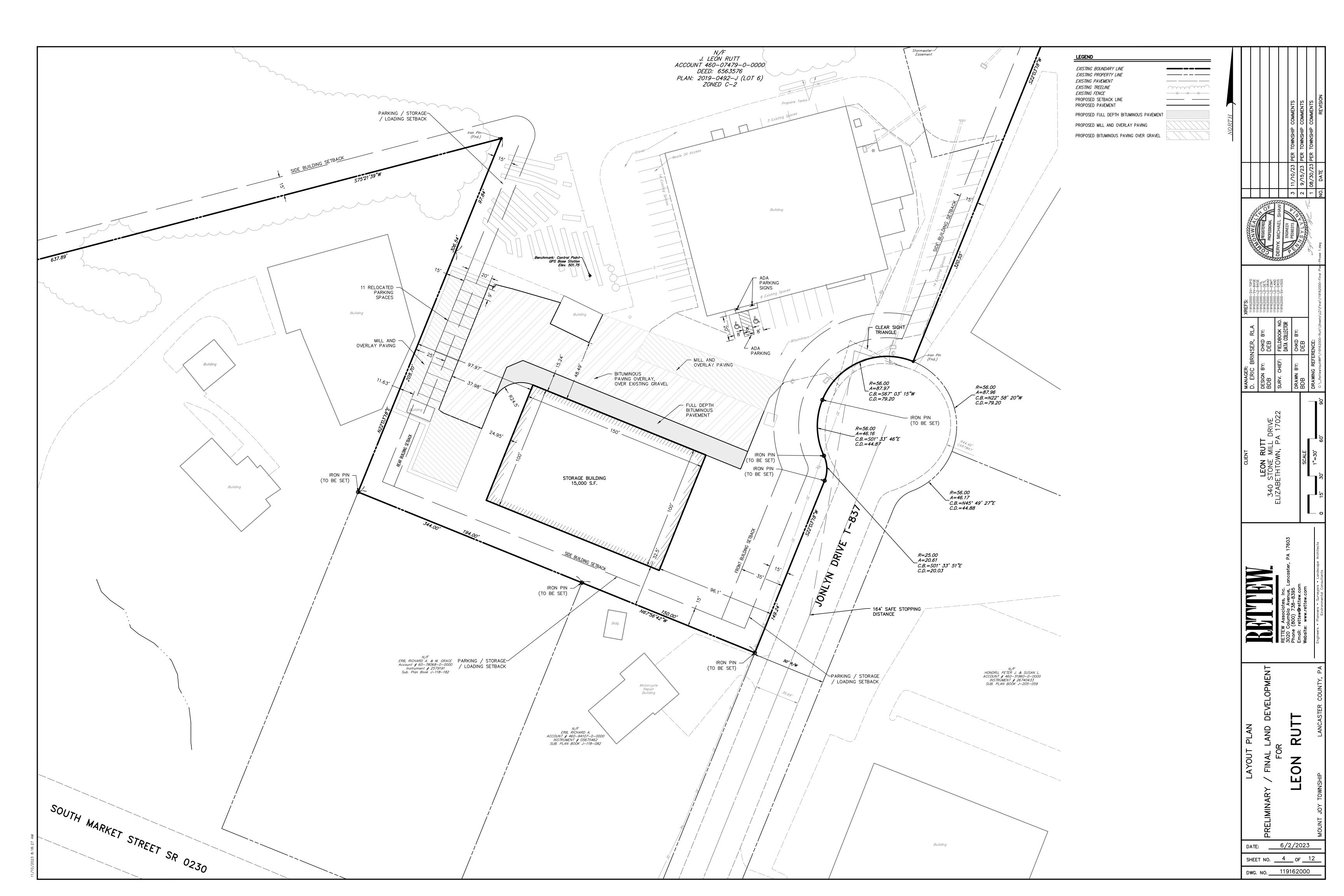
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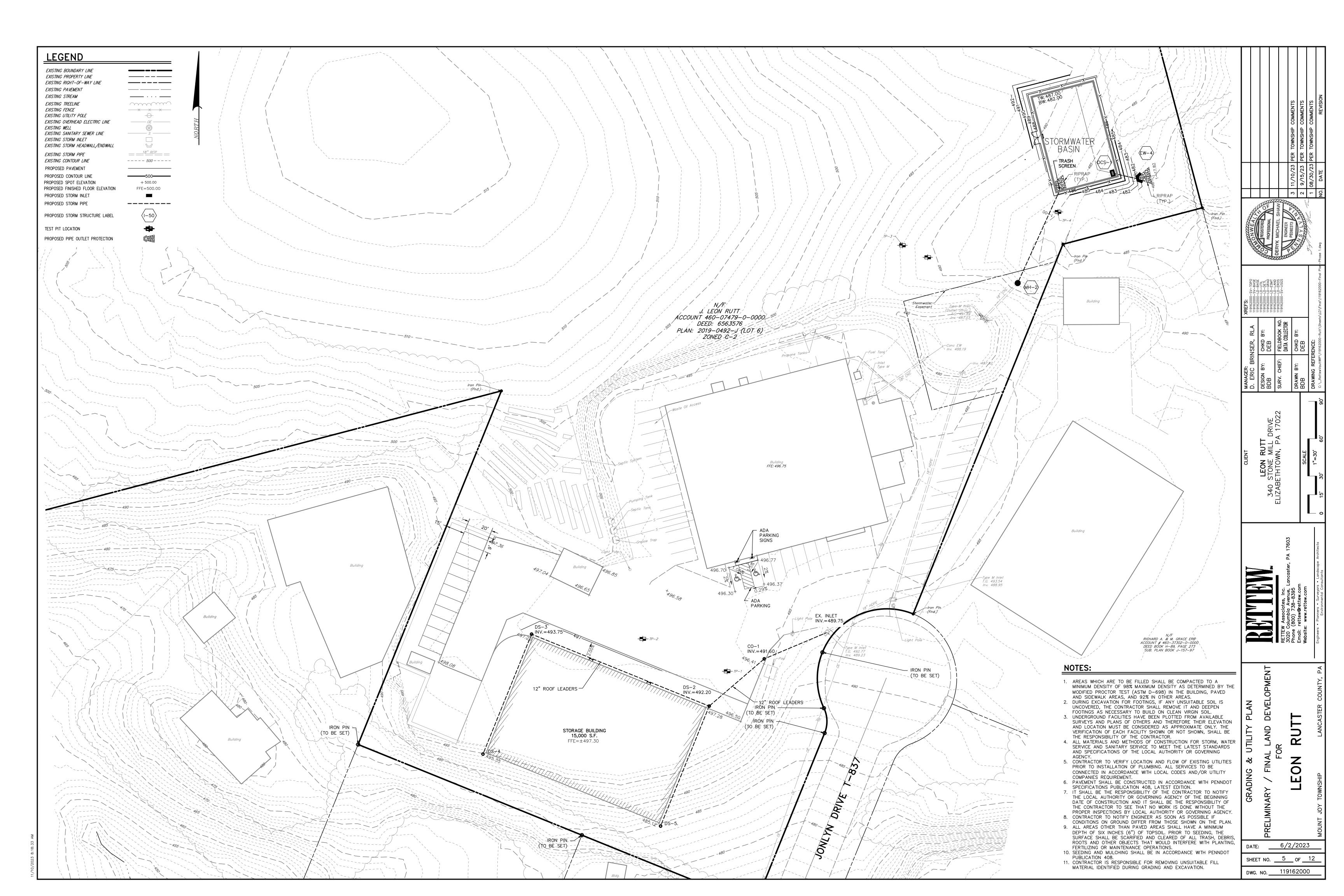
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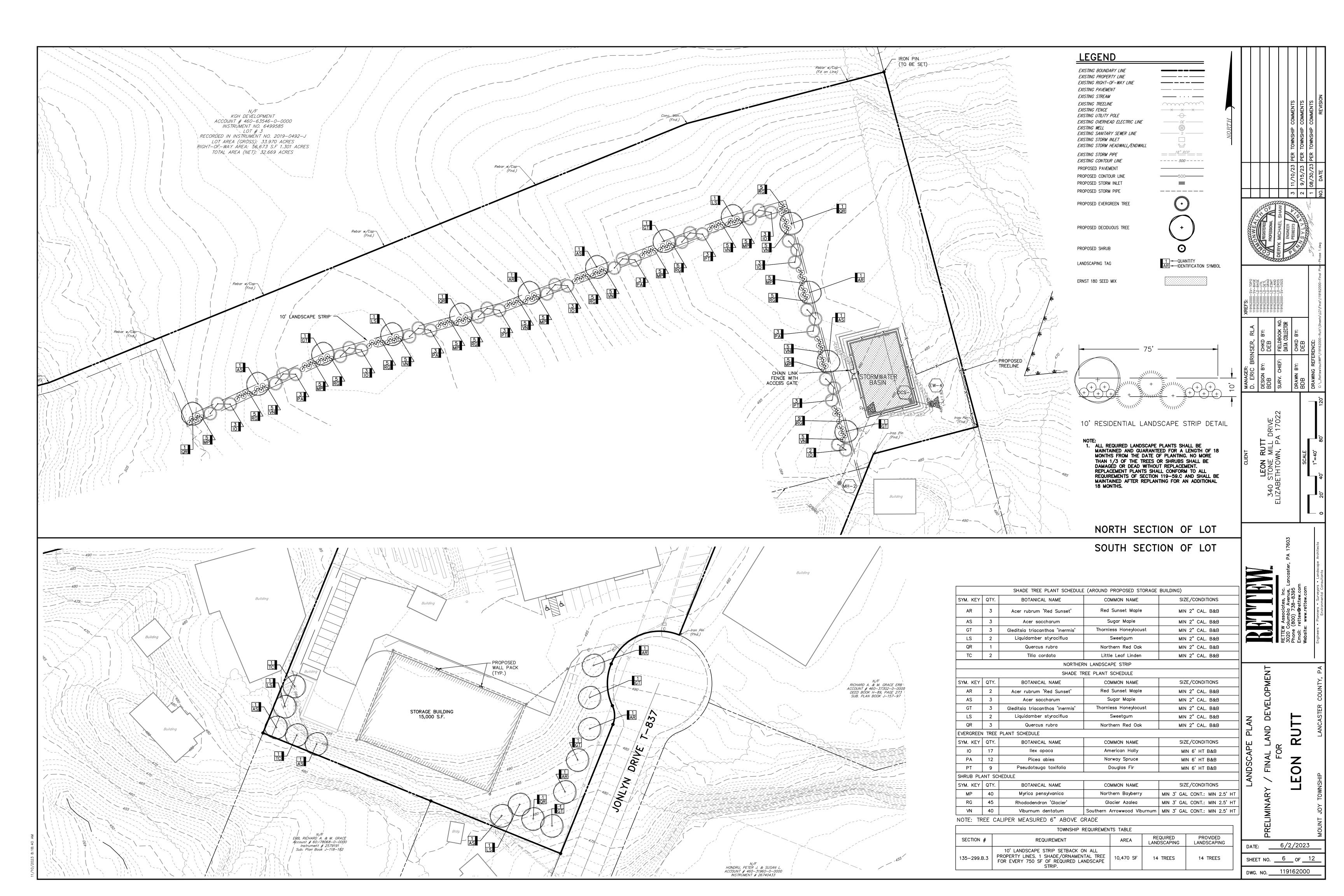
MY COMMISSION EXPIRES _____

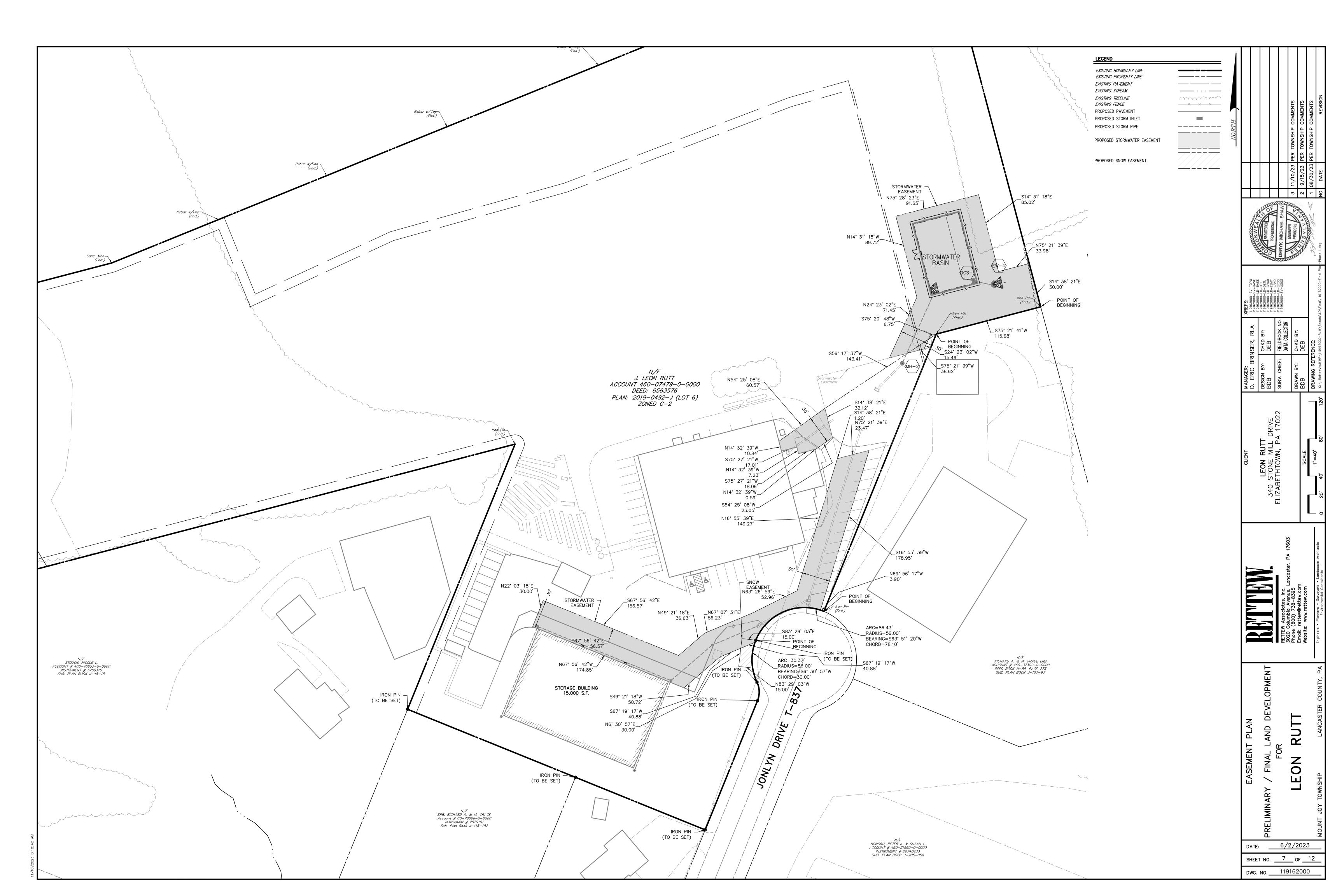


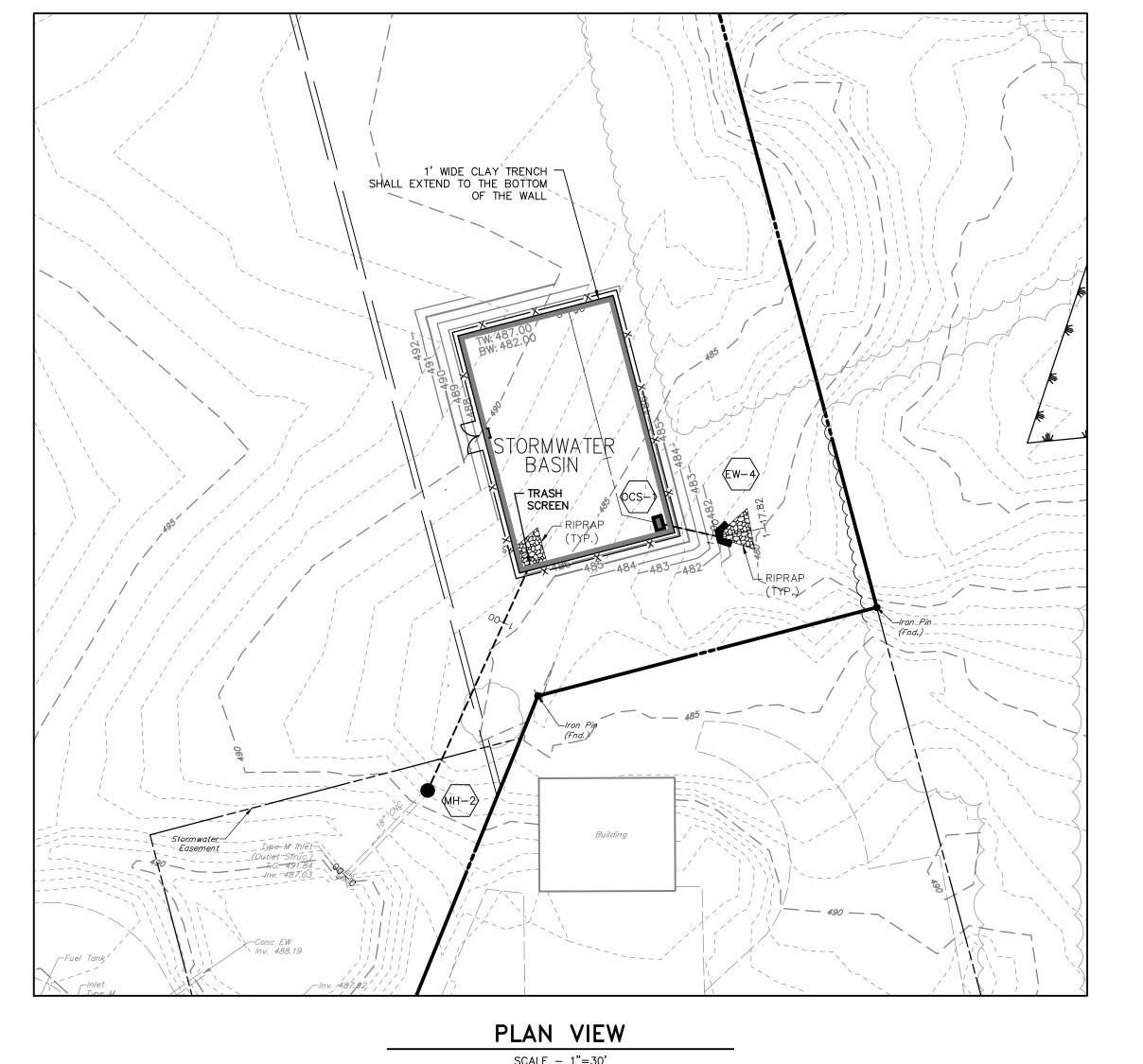




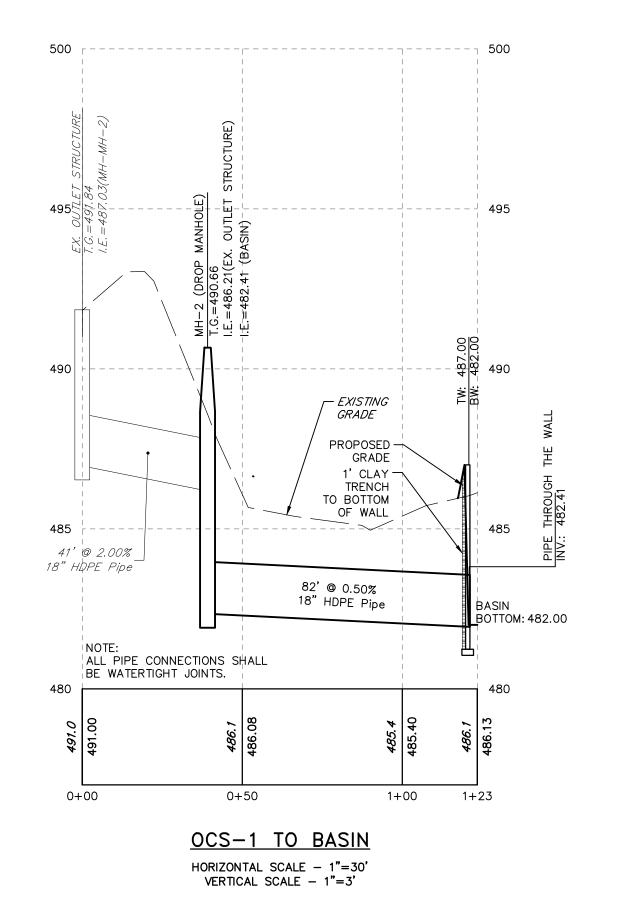


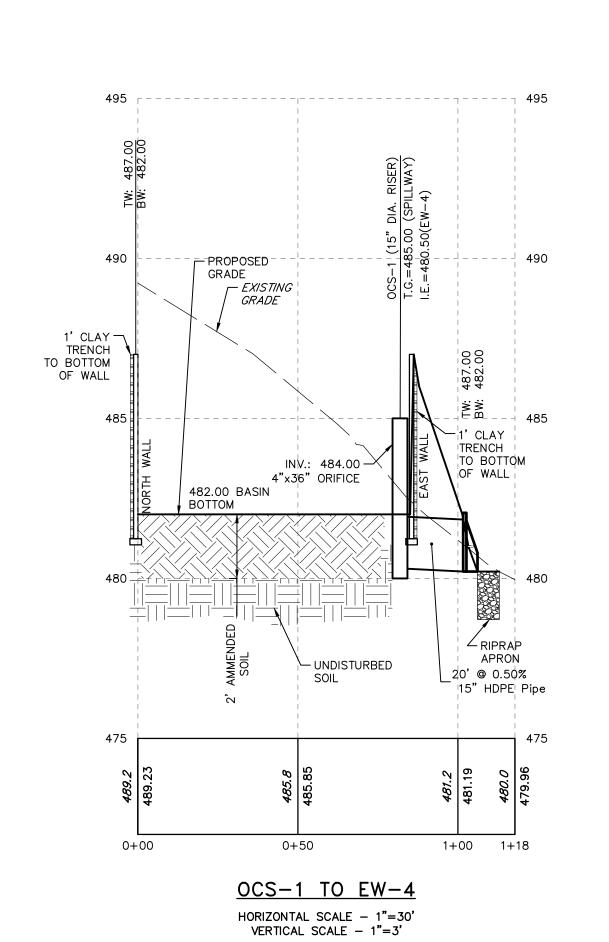




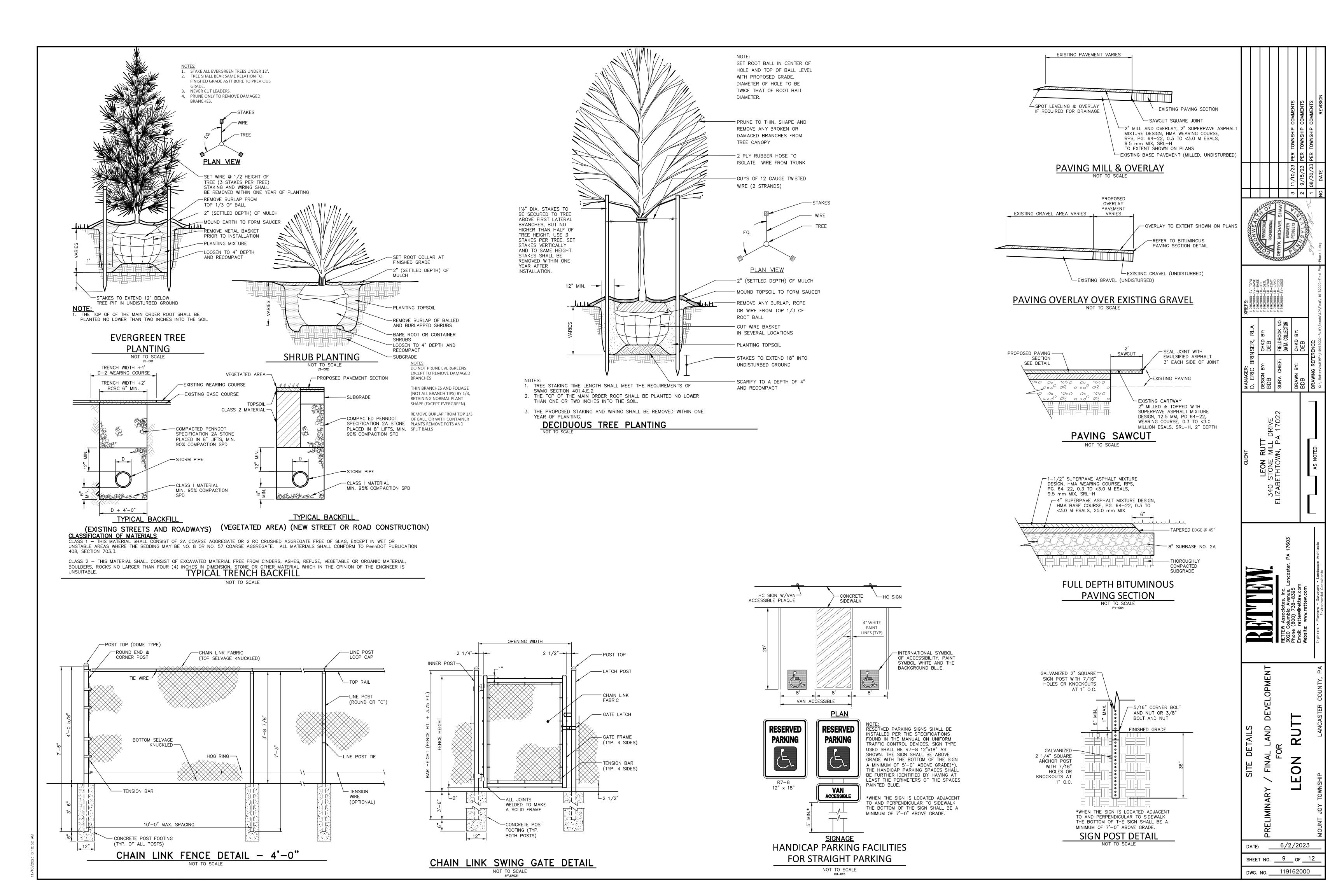


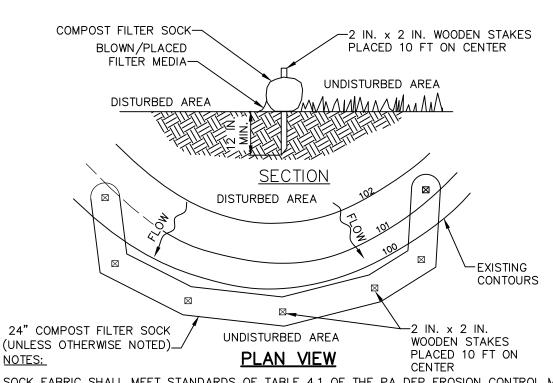
SCALE - 1"=30'





FINAL LAND DEVELOPMENT FOR EON 6/2/2023 SHEET NO. 8 OF 12 DWG. NO. 119162000





SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

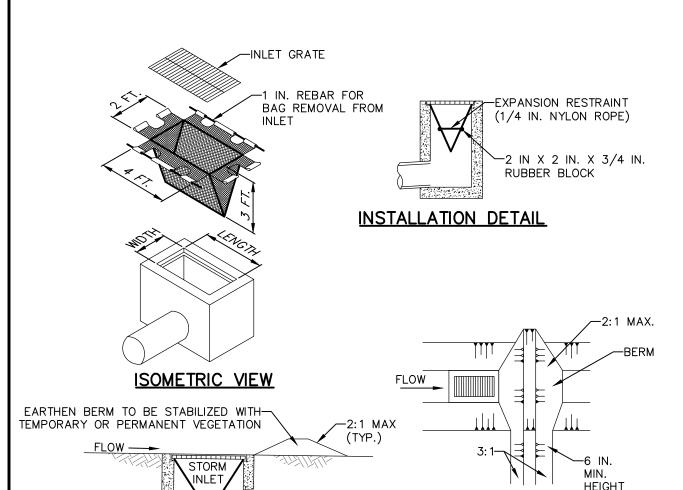
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

	COMPOST FILTER SOCK TABLE				
SOCK NO.	DIA. IN.	LOCATION	SLOPE %	SLOPE LENGTH ABOVE BARRIER (FT)	
FS#1	12 IN.	SEE PLAN	3	120	
FS#2	12 IN.	SEE PLAN	5	124	
FS#3	12 IN.	SEE PLAN	6	134	
FS#4	12 IN.	SEE PLAN	7	140	
FS#5	12 IN.	SEE PLAN	9	150	
FS#6	12 IN.	SEE PLAN	6	99	
FS#7	12 IN.	SEE PLAN	2	58	
FS#8	12 IN.	SEE PLAN	17	69	
FS#9	12 IN.	SEE PLAN	10	93	
FS#10	12 IN.	SEE PLAN	9	71	
FS#11	12 IN.	SEE PLAN	10	40	
FS#12	12 IN.	SEE PLAN	10	32	
FS#13	12 IN.	SEE PLAN	23	19	
FS#14	12 IN.	SEE PLAN	11	12	
FS#15	12 IN.	SEE PLAN	10	9	

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK



MAXIMUM DRAINAGE AREA = 1/2 ACRE.

<u>SECTION VIEW</u>

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN

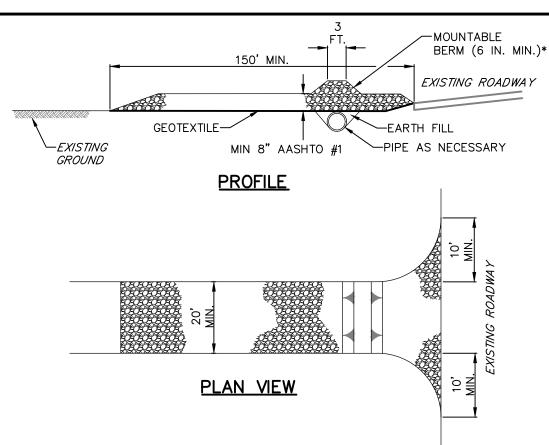
PLAN VIEW

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16 FILTER BAG INLET PROTECTION - TYPE M INLET



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

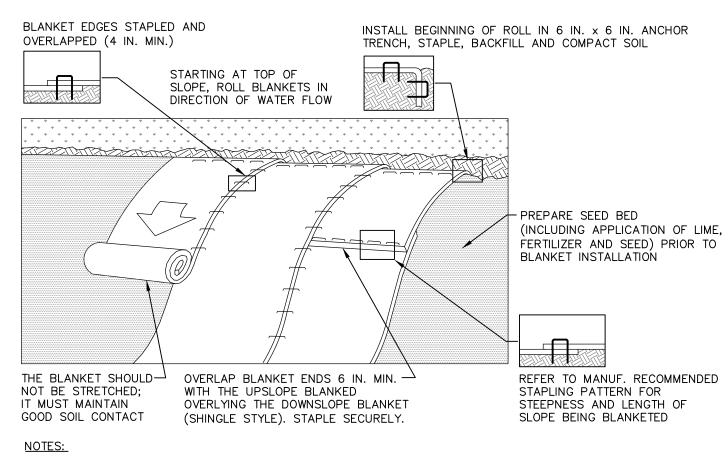
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE



SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

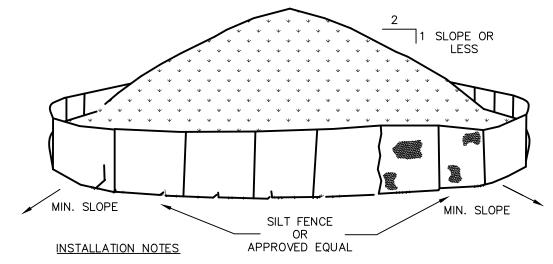
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA.

DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1 EROSION CONTROL BLANKET INSTALLATION

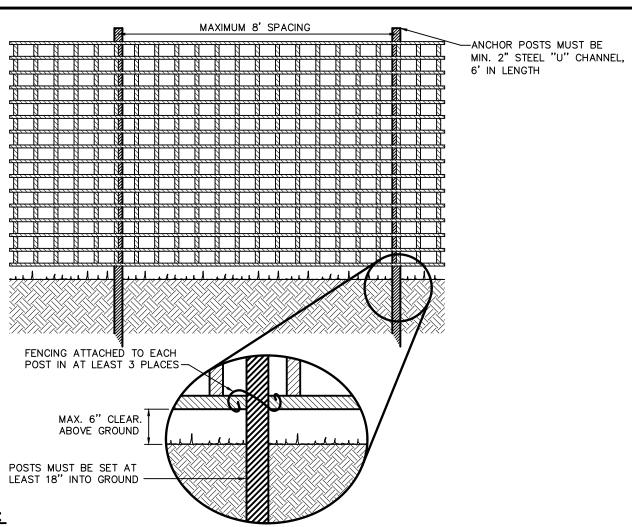


1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.

2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.

- 3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH FILTER SOCK THEN STABILIZED WITH VEGETATION OR COVERED WHEN INACTIVE MORE THAN 14 DAYS.
- 4. SEE SPECIFICATIONS FOR INSTALLATION OF FILTER SOCK.
- 5. ALL ACTIVE STOCKPILES SHALL BE ACCESSED FROM THE UPHILL SIDE.
- 6. MAXIMUM HEIGHT SHALL NOT EXCEED OF 35 FEET.

SOIL STOCKPILE



1. PROTECTION BARRIER SHALL BE 4' HIGH, CONSTRUCTED OF DURABLE AND HIGHLY VISIBLE MATERIAL (PLASTIC ORANGE CONSTRUCTION FENCE AND SNOW-FENCE MAY BE USED). PROTECTION BARRIERS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE WORK AT THE SITE.

. ADDITIONAL WARNING SIGNS SHOULD ALSO BE PLACED ON THE FENCING AND IN APPROPRIATE AREAS NEAR THE WORK ZONE. CONSTRUCTION FENCE DETAIL

NOT TO SCALE

CONSTRUCTION MONITORING NOTES:

- 1. A QUALIFIED PROFESSIONAL GEOLOGIST AND/OR GEOTECHNICAL ENGINEER MUST EXAMINE SUBGRADE AT THE BOTTOMS OF THE EXCAVATIONS FOR ALL STORMWATER INFILTRATION AND/OR DETENTION/RETENTION STRUCTURES FOR THE PRESENCE OF KARST FEATURES THAT COULD POSE A HAZARD FOR SINKHOLE DEVELOPMENT AND GROUND WATER CONTAMINATION, DEVELOP REMEDIATION PROCEDURES FOR ALL KARST HAZARDS, AND DIRECT THE KARST HAZARD REMEDIATION WORK.
- 2. A QUALIFIED PROFESSIONAL GEOLOGIST AND/OR GEOTECHNICAL ENGINEER MUST SUPERVISE THE INSTALLATION OF ALL INFILTRATION FACILITIES.
- 3. THE ENGINEERED AND AMENDED SOIL LAYERS SHALL BE TESTED BY A COMPETENT PROFESSIONAL UPON INSTALLATION TO VERIFY THAT THE MINIMUM DESIGN INFILTRATION RATE HAS BEEN ACHIEVED.
- 4. TESTS SHALL BE CONDUCTED PRIOR TO PLACEMENT OF ANY ADDITIONAL COVER OR SEED AND MULCH. 5. RAPID RATES (>10.0 INCHES PER HOUR) IN THE ENGINEERED SOIL ARE ACCEPTABLE BECAUSE THE UNDERLYING
- PERMEABLE GEOTEXTILE FABRIC WILL LIMIT THE EXFILTRATION OF WATER OUT OF THE ENGINEERED AND AMENDED SOIL LAYERS WITHIN THE ACCEPTABLE RANGE OF RATES (< 10.0 INCHES PER HOUR).
- 6. RATES LESS THAN THE DESIGN RATE SHALL BE REPORTED TO THE DESIGN ENGINEER TO DETERMINE MITIGATION
- 7. A MINIMUM OF TWO DOUBLE RING INFILTRATION TESTS SHALL BE CONDUCTED PER BMP. ADDITIONAL TESTS MAY BE NECESSARY IN LARGER BMPS. THE TOWNSHIP SHALL BE NOTIFIED OF THE INFILTRATION RESULTS.

INFILTRATION TESTING DURING CONSTRUCTION NOTES:

INFILTRATION TESTING IS TO BE PERFORMED DURING CONSTRUCTION OF ALL BMPs BY A QUALIFIED SOILS SCIENTIST OR GEOSCIENTIST, LICENSED IN THE STATE OF PENNSYLVANIA, PRIOR TO PLACEMENT OF AMENDED SOILS OR ENGINEERED SOIL, A MINIMUM OF TWO DOUBLE-RING INFILTRATION TESTS SHALL BE PERFORMED IN THE SUBGRADE FOR EACH OF TH INFILTRATION BMPS. INFILTRATION TESTING DURING CONSTRUCTION IS LIMITED TO THE AMENDED SOILS. THE NEXT STAGE OF BMP CONSTRUCTION MAY BE PERFORMED ONLY UPON ACHIEVING ACCEPTABLE INFILTRATION RESULTS. IF NECESSARY REMEDIAL ACTION SHALL BE PERFORMED TO ACHIEVE ACCEPTABLE INFILTRATION RESULTS. RESULTS OF ALL TESTING SHALL BE REPORTED IN WRITING TO THE DESIGN ENGINEER AND TOWNSHIP PRIOR TO FULL CONSTRUCTION OF THE BMP.

INFILTRATION TEST SHALL BE PERFORMED AT 4 TO 6 TEST PER ACRE. AND AT A MINIMUM OF 2 TEST PER BMP.

THE BOTTOM OF THE BASIN SHALL BE PROBED TO VERIFY ADEQUATE SEPARATION TO THE NEAREST LIMITING LAYER BY HAND PROBING WITH A METAL ROD IN A GRID-LIKE PATTERN.

GEOTECHNICAL RECOMMENDATIONS

- ACCORDING TO THE PENNSYLVANIA STORMWATER BMP MANUAL (2006) SOILS UNDERLYING INFILTRATION BMPS SHOULD HAVE INFILTRATION RATES BETWEEN 0.1 AND 10 INCHES PER HOUR. THE DESIGN INFILTRATION RATES FOR A RESPECTIVE BMPS SHOULD NOT EXCEED THE GEOMETRIC MEAN OF INFILTRATION FOR TEST PITS LOCATED IN THE VICINITY. IN ADDITION, A MINIMUM FACTOR OF SAFETY OF 2.0 SHOULD BE APPLIED TO THOSE VALUES PRIOR TO CONDUCTING DEWATERING CALCULATIONS.
- 2. BASED ON OUR SOIL INVESTIGATION AND THE PROPOSED BOTTOM ELEVATIONS OF THE BMPS, WE ANTICIPATE THAT LIMITING ZONES (UNSUITABLE FILL, REDOXIMORPHIC FEATURES, SAPROLITE, AND BEDROCK) WILL BE ENCOUNTERED DURING CONSTRUCTION OF THE BMPS. IN ADDITION, THE MODERATE TO SEVERE RISK OF KARST ACTIVITY WARRANTS THAT THE PROPOSED BMPS BE DESIGNED WITH MITIGATING CHARACTERISTICS. AS SUCH AND IF NEEDED, TO MITIGATI THE PRESENCE OF LIMITING ZONES AND REDUCE THE RISK OF AGGRAVATING KARST CONDITIONS, THE PROPOSED DESIGN OF THE BMPS REQUIRES THAT EXISTING SUBGRADE MATERIALS BE UNDERCUT BY TWO FEET AND REPLACED WITH AMENDED SOIL OR ENGINEERED SOIL AS DETAILED IN ITEMS #3 AND #4.
- 3. IF NEEDED, THE TWO FEET OF SOIL MATERIAL DIRECTLY UNDER THE GRAVEL BEDS SHALL CONSIST OF CEMENT CONCRETE SAND TYPE "A" OR ASTM C-33 CONCRETE SAND. THE SAND SHOULD NOT BE AMENDED WITH COMPOST AS IN THE AMENDED SOIL SPECIFICATION. THE PROPOSED GEOTEXTILE FILTER FABRIC THAT WILL BE PLACED IN AREAS UNDERLYING THIS STORMWATER SYSTEM AND ENGINEERED SOILS SHOULD PREVENT EXCESSIVE MIGRATION OF SOIL PARTICLES. WHILE AT THE SAME TIME ALLOWING LIQUID TO FLOW FREELY THROUGH THE FILTER LAYER. THE TENCATE MIRAFI 600X GEOTEXTILE FILTER FABRIC, OR APPROVED EQUIVALENT, SHOULD BE USED. THE ENGINEERED SOIL LAYER SHOULD BE CONSTRUCTED IN MAXIMUM EIGHT-INCH THICK LOOSE LIFTS. ENGINEERED SOILS SHOULD BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY (PER ASTM D-698) AND PLUS/MINUS TWO PERCENT OF THE OPTIMUM MOISTURE CONTENT. PLACEMENT OF THE ENGINEERED SOIL LAYER SHOULD BE MONITORED AND TESTED CONTINUOUSLY BY A QUALIFIED TECHNICIAN, ACTING UNDER THE GUIDANCE OF A
- VERIFIED BY IN-PLACE DENSITY TESTING. 4. TO MITIGATE THE POTENTIAL LIMITING ZONES IN THE VICINITY OF PROPOSED INFILTRATION BMPS, THE ENCOUNTERED LIMITATIONS MAY NEED TO BE REMOVED AND REPLACED WITH SOIL AMENDMENTS TO ENHANCE WATER QUALITY. SOIL AMENDMENTS SHALL CONSIST OF SUITABLE TOPSOIL FROM ON-SITE (IF AVAILABLE) AND 20 PERCENT TO 30 PERCENT COMPOST AMENDMENT OR MANUFACTURED SILT LOAM, LOAM, OR SANDY LOAM SOIL CONTAINING 20 PERCENT TO 30 PERCENT COMPOST. THE MINERAL COMPONENT OF THE AMENDED SOIL SHOULD NOT CONTAIN GREATER THAN 20 PERCENT CLAY AND SHOULD HAVE A MINIMUM OF 40 PERCENT AND A MAXIMUM OF 70 PERCENT

PROFESSIONAL ENGINEER, REGISTERED IN THE COMMONWEALTH OF PENNSYLVANIA. COMPACTION SHOULD BE

- SAND. THE COMPOST PORTION OF THE AMENDED SOIL SHOULD NOT CONTAIN WOODY DEBRIS NOR RESEMBLE MULCH. 5. THE COMPOST COMPONENT OF THE AMENDED SOIL SHOULD CONSIST OF THE FOLLOWING: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER PRODUCED BY COMPOSTING FEEDSTOCK, AND AS FOLLOWS:
 - FEEDSTOCK: LIMITED TO LEAVES • REACTION: PH OF 5.5 TO 8
 - SOLUBLE-SALT CONCENTRATION: LESS THAN 4 DS/M
 - MOISTURE CONTENT: 35 TO 55 PERCENT BY WEIGHT • ORGANIC-MATTER CONTENT: 30 TO 40 PERCENT OF DRY WEIGHT
- PARTICLE SIZE: MINIMUM OF 98 PERCENT PASSING THROUGH A 3/4-INCH SIEVE.
- AMENDED SOILS SHOULD BE PLACED IN LOOSE LIFTS AND LIGHTLY TAMPED INTO PLACE. CARE SHOULD BE TAKEN NOT TO COMPACT THE MATERIAL, WHICH CAN SIGNIFICANTLY REDUCE PERMEABILITY AND NEGATIVELY AFFECT THE
- 7. INFILTRATION TESTING IN BOTH THE AMENDED SOILS AND UNDERLYING NATIVE SOILS IS TO BE PERFORMED DURING CONSTRUCTION OF ALL BMPS BY A QUALIFIED SOILS SCIENTIST OR GEOSCIENTIST. THE FINAL GRADING OF THE BMPS SHOULD NOT BE COMPLETED UNTIL ACCEPTABLE INFILTRATION RESULTS ARE ACHIEVED. IF NECESSARY, REMEDIAL ACTION MUST BE PERFORMED TO ACHIEVE ACCEPTABLE INFILTRATION RESULTS.
- 8. SOIL MOISTURE CONDITIONS ARE TO BE AT OR BELOW FIELD CAPACITY DURING CONSTRUCTION.
- 9. DUE TO THE MODERATE TO SEVERE RISK OF AGGRAVATING SITE CONDITIONS RESULTING IN THE FORMATION OF SINKHOLES AND/OR CLOSED DEPRESSIONS, A PROFESSIONAL GEOLOGIST OR A COMPETENT PROFESSIONAL WORKING UNDER THE SUPERVISION OF A PROFESSIONAL GEOLOGIST, SHOULD BE BROUGHT TO THE SITE TO INVESTIGATE THE POTENTIAL FOR KARST HAZARDS ONCE THE BMPS HAVE BEEN EXCAVATED TO FINAL GRADE, AND IF NECESSARY, EMPLOY A REMEDIATION STRATEGY.
- 10. INFILTRATION BMPS SHOULD BE SITED SO THAT ANY RISK TO GROUNDWATER QUALITY IS MINIMIZED; AT LEAST 50 FEET FROM INDIVIDUAL WATER SUPPLY WELLS AND 100 FEET FROM COMMUNITY OR MUNICIPAL WATER SUPPLY WELLS. 11. INFILTRATION BMPS SHOULD BE SITED SO THAT THEY PRESENT NO THREAT TO SUBSURFACE STRUCTURES.
- 12. THE FOLLOWING LOADING RATIO GUIDELINES ARE RECOMMENDED: • MAXIMUM TOTAL LOADING RATIO OF 8:1 RELATING TOTAL DRAINAGE AREA TO INFILTRATION AREA.
- . MAXIMUM IMPERVIOUS LOADING RATIO OF 5:1 RELATING IMPERVIOUS DRAINAGE AREA TO INFILTRATION AREA. • MAXIMUM IMPERVIOUS LOADING RATIO OF 3:1 RELATING IMPERVIOUS DRAINAGE AREA TO INFILTRATION AREA FOR KARST AREAS. 13. WE UNDERSTAND THAT THE DESIGN FOR THE PROPOSED BMPS EXCEED THE RECOMMENDED MAXIMUM IMPERVIOUS
- LOADING RATIO AND MAXIMUM TOTAL RATIO, AS STATED ABOVE. IT SHOULD BE NOTED THAT THE DESIGNER CONDUCTED DEWATERING CALCULATIONS USING CONSERVATIVE INFILTRATION VALUES WITH FACTORS OF SAFETY APPLIED. THIS DESIGN CHARACTERISTIC WILL BETTER DISTRIBUTE THE INFILTRATION OF STORMWATER ACROSS THE BOTTOM OF EACH BMP, WHICH IS ALSO EXPECTED TO HELP MITIGATE SOME OF THE RISK ASSOCIATED WITH INFILTRATING INTO CARBONATE GEOLOGY. BASED ON THE RESULTS OF OUR SOIL INVESTIGATIONS AND INFILTRATION TEST RESULTS, AS WELL AS OUR UNDERSTANDING OF THE PROPOSED SITE DESIGN, THE HIGHER LOADING RATIOS SHOULD BE ACCEPTABLE PROVIDED THAT THE RECOMMENDATIONS PROVIDED HEREIN ARE FOLLOWED.
- 14. A LEVEL INFILTRATION AREA (1% OR LESS SLOPE) IS PREFERRED. SEVERE SLOPES (>20%) AND TOES OF SLOPES SHOULD BE AVOIDED WHERE POSSIBLE. 15. DRAWDOWN TIME MUST BE CONSIDERED. IN GENERAL, INFILTRATION BMPS SHOULD BE DESIGNED SO THAT THEY COMPLETELY EMPTY WITHIN APPROPRIATE TIMEFRAMES.
- 16. THE PROJECT ENGINEER WILL BE ON-SITE DURING CONSTRUCTION TO DETERMINE THE EXTENT OF THE UNSUITABLE MATERIALS REQUIRING REMOVAL AND REPLACEMENT. ALL HISTORIC FILL MATERIALS ENCOUNTERED DURING CONSTRUCTION MUST BE HANDLED IN ACCORDANCE WITH PADEP REQUIREMENTS. WHERE FILL MATERIALS ARE ENCOUNTERED AT THE BOTTOM OF EXCAVATIONS FOR BMPS, WHICH WOULD BE BELOW THE REQUIRED TWO-FOOT UNDERCUT, UNSUITABLE MATERIALS SHOULD BE REMOVED AND REPLACED WITH CONCRETE SAND.

ROCK SUBGRADE CONDITION

- AFTER BEDROCK HAS BEEN REMOVED TO TWO FEET BELOW THE PROPOSED BOTTOM OF THE INFILTRATION BED BMP, THE RESULTING SUBGRADE SHALL BE VISUALLY INSPECTED TO LOCATE ANY UNSUITABLE OR UNSTABLE AREAS PRIOR TO ENGINEERED SOIL PLACEMENT. IF A ROCK/SOIL TRANSITION IS ENCOUNTERED, THE SEQUENCE FOR THIS AREA SHALL BE COMPLETED FIRST
- 2. PRIOR TO THE PLACEMENT OF THE GEOTEXTILE FILTER FABRIC, A LEVELING LAYER OF AASHTO NO. 57 COARSE AGGREGATE SHALL BE PLACED IN ORDER TO PREVENT FRAGMENTED ROCK FROM DAMAGING THE FABRIC.
- 3. PLACE THE SPECIFIED GEOTEXTILE FILTER FABRIC OVER THE BEDROCK/STONE SURFACE, WRAPPING THE FABRIC UP THE SIDES OF THE OVEREXCAVATION.
- 4. PLACE 24 INCHES OF ENGINEERED SOILS CONSISTING OF CEMENT CONCRETE SAND TYPE "A" OR ASTM C-33 CONCRETE SAND ON THE STABLE, NEARLY LEVEL SUBGRADE FOLLOWING THE SUBGRADE EVALUATION AND
- PREPARATION PREVIOUSLY DESCRIBED. 5. THE ENGINEERED SOILS SHALL BE CONSTRUCTED IN MAXIMUM EIGHT-INCH THICK LOOSE LIFTS. COMPACTION EQUIPMENT SHALL CONSIST OF SMOOTH-DRUM ROLLERS. AT THE END OF EACH DAY, THE LIFTS SHALL BE SEALED WITH A SMOOTH DRUM ROLLER TO REDUCE THE POTENTIAL FOR SATURATION WHEN EXPOSED TO PRECIPITATION. ENGINEERED SOILS SHALL BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY (PER ASTM D-698) AND PLUS/MINUS TWO PERCENT OF THE OPTIMUM MOISTURE CONTENT. PLACEMENT OF THE ENGINEERED SOIL LAYER SHALL BE MONITORED AND TESTED CONTINUOUSLY BY A QUALIFIED TECHNICIAN. ACTING UNDER THE GUIDANCE OF A PROFESSIONAL ENGINEER, REGISTERED IN THE COMMONWEALTH OF PENNSYLVANIA. COMPACTION SHALL BE VERIFIED
- 6. FOLLOWING PLACEMENT OF THE ENGINEERED SOIL LAYER AND A LAYER OF GEOTEXTILE FILTER FABRIC, PLACE No. 3 COARSE AGGREGATE AT THICKNESSES IDENTIFIED ON PLANS, THEN ONE-INCH OF AASHTO NO. 57 STONE. THE COMPACTION OF THE No. 3 AND NO. 57 STONE SHALL BE DETERMINED BASED ON NON-MOVEMENT OF THE MATERIAL UNDER COMPACTION EQUIPMENT SPECIFIED ABOVE.

ENGINEERED SOIL SPECIFICATION

BY IN-PLACE DENSITY TESTING.

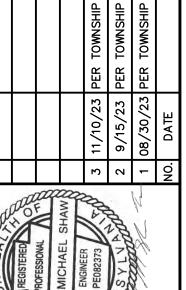
IN AREAS DESIGNATED AS NEEDING SOIL UNDER THE PROPOSED INFILTRATION BEDS, THE TWO FEET OF SOIL MATERIAL DIRECTLY UNDER THE GRAVEL BEDS SHALL CONSIST OF CEMENT CONCRETE SAND TYPE "A" OR ASTM C-33 CONCRETE SAND. THE SAND SHALL NOT BE AMENDED WITH COMPOST. THE PROPOSED GEOTEXTILE FILTER FABRIC THAT WILL BE PLACED IN AREAS UNDERLYING THE INFILTRATION BEDS SHALL PREVENT EXCESSIVE MIGRATION OF SOIL PARTICLES, WHILE AT THE SAME TIME ALLOWING LIQUID TO FLOW FREELY THROUGH THE FILTER LAYER. THE PROPOSED GEOTEXTILE FILTER FABRIC SHALL BE TENCATE MIRAFI 600X.

OPERATION AND MAINTENANCE NOTES

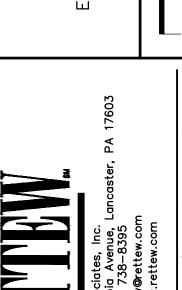
3. REMOVED SEDIMENT SHOULD BE DISPOSED OF PROPERLY.

INFILTRATION BEDS MAINTENANCE IS NECESSARY TO ENSURE PROPER FUNCTIONALITY OF THE INFILTRATION BED AND SHOULD TAKE PLACE ON A QUARTERLY BASIS. A BED MAINTENANCE PLAN SHOULD BE DEVELOPED WHICH INCLUDES THE FOLLOWING

- 1. ALL INFILTRATION BED STRUCTURES EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHOULD BE INSPECTED FOR CLOGGING, EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1 INCH.
- 2. STRUCTURES INCLUDE A STORM MANHOLE AND 18" DIAMETER PIPE DISCHARGING TO 15" DIAMETER PIPE TO ACT AS OUTFALL CONTROL STRUCTURES.
- 4. A FAILURE OF THE BMP WOULD INCLUDE NOT DEWATERING WITHIN 72 HOURS FROM THE END OF THE STORM EVENT. A PROFESSIONAL SHALL BE ENGAGED TO EVALUATE ANY DEFICIENCIES IN THE BED AND ITS FUNCTION, AND PROPOSE ANY CORRECTIONS NECESSARY.

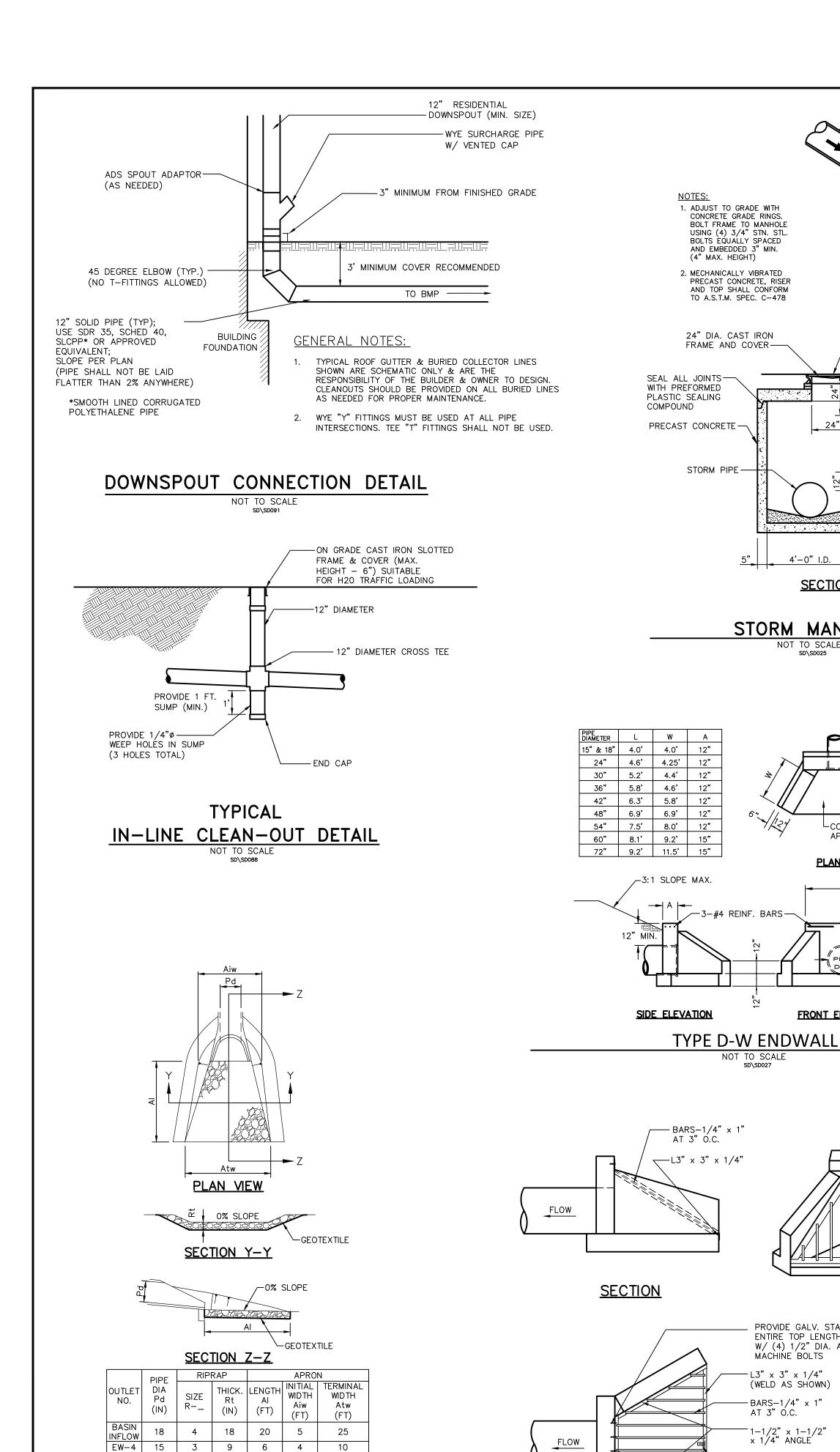


nal Plan-Phase 1.d/							
119162000—SV—TOPO 119162000—SV—BASE	\LD\Final\119162000—F						
ERIC BRINSER, RLA	CHKD BY: DEB	FIELDBOOK NO. DATA COLLECTOR	CHKD BY: DEB	WING REFERENCE: RettewVoultWIP\119162000-Rutt\Sheets\LD\Final\119162000-Final Plan-Phase 1.d			
FRIC BRIN	IGN BY: 3	V. CHIEF:	.wn BY: 3	WING REFERENCE: RettewVaultWIP\119162001			



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6/2/2023 SHEET NO. 10 OF 12 DWG. NO. 119162000



ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN.
TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER

EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL

STANDARD CONSTRUCTION DETAIL #9-1

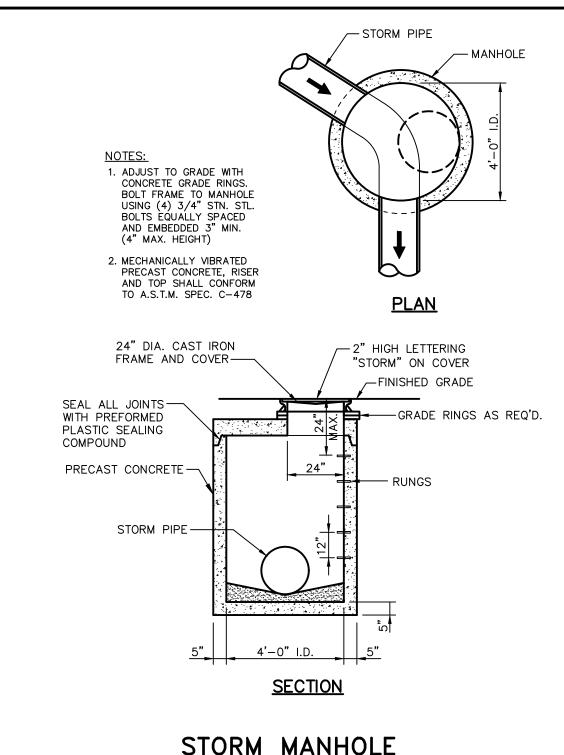
RIPRAP APRON AT PIPE OUTLET

WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE

RECEIVING CHANNELS.

BE REPLACED IMMEDIATELY.



-concrete

APRON

PLAN VIEW

FRONT ELEVATION

ISOMETRIC

TRASH RACK TO BE MADE OF STAINLESS STEEL

PROVIDE GALV. STAINLESS STEEL HINGE ACROSS

W/ (4) 1/2" DIA. A-307 2" STAINLESS STEEL

ENTIRE TOP LENGTH: ATTACH

MÁCHINE BOLTS

HASP WITH (2) 3/8" DIA. S.S.

<u>PLAN</u>

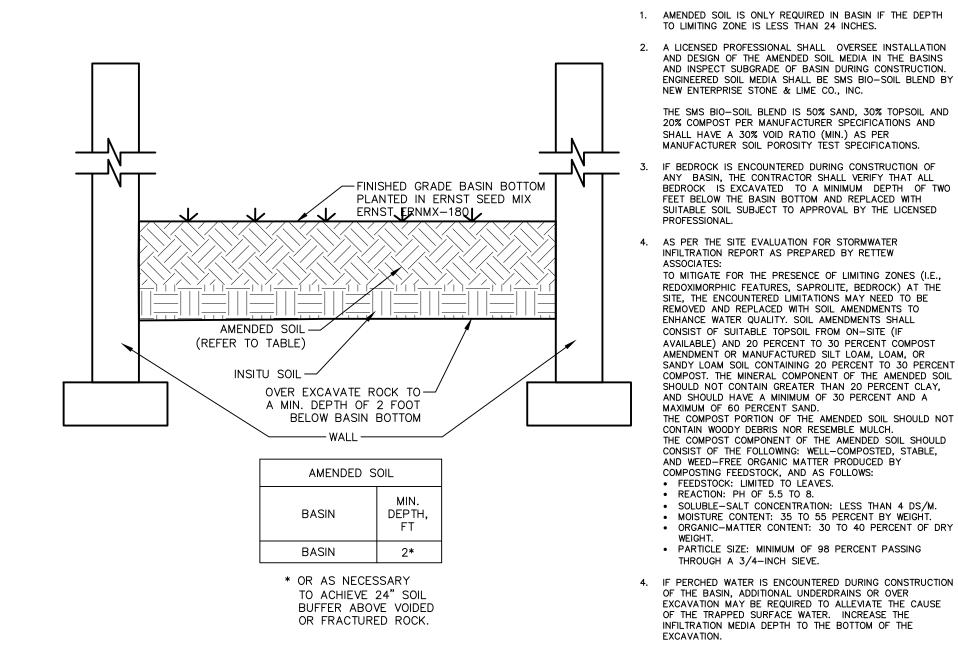
HEADWALL/ENDWALL TRASH RACK

NOT TO SCALE SD\SD041

MACHINE BOLTS

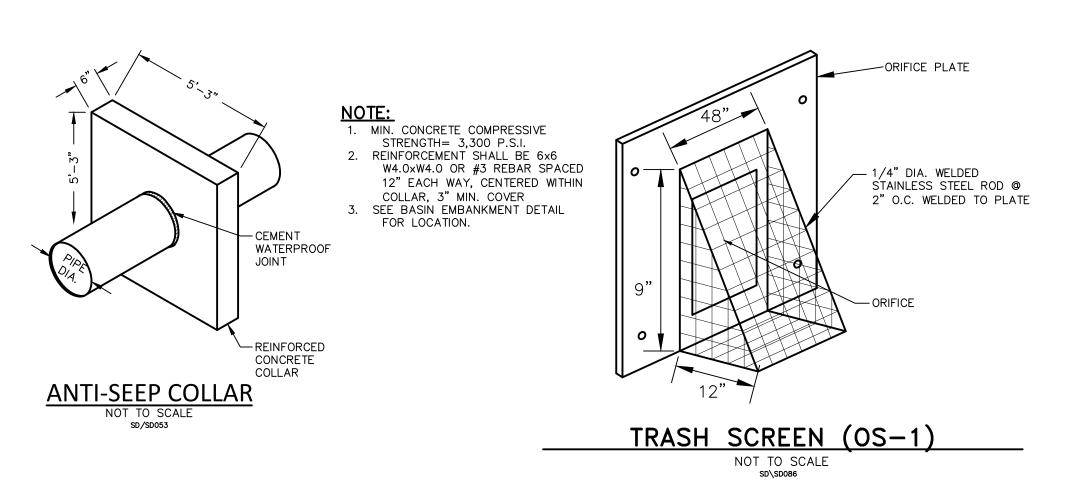
WELD BARS TO HINGE

AND ANGLE AS SHOWN

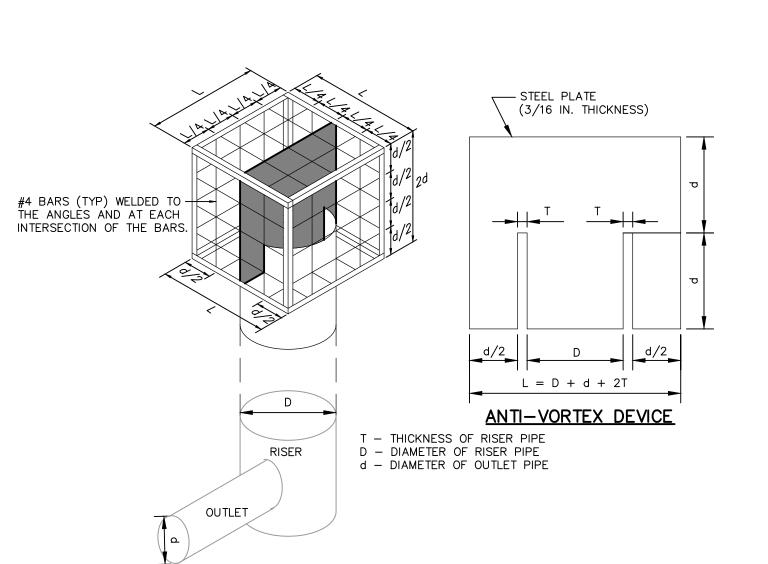


TYPICAL BASIN BOTTOM AMENDED SOIL MEDIA DETAIL

NOTES:



(NOT TO SCALE)



STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE

INFILTRATION BED SEED MIX

ERNST MIX: RAIN GARDEN MIX (ERNMX-180)

MIX COMPOSITION: 34.5% SCHIZACHYRIUM SCOPARIUM, FORT INDIANTOWN GAP-PA ECOTYPE (LITTLE BLUESTEM, FORT INDIANTOWN GAP-PA ECOTYPE)

20.0% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE (VIRGINIA WILDRYE, MADISON-NY ECOTYPE) 7.5% ECHINACEA PURPUREA (PURPLE CONEFLOWER) 5.6% CHASMANTHIUM LATIFOLIUM, WV ECOTYPE (RIVER OATS, WV ECOTYPE) 5.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)

3.0% CHAMAECRISTA FASCICULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE) 3.0% COREOPSIS LANCEOLATA (LANCELEAF COREOPSIS) 3.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)

3.0% RUDBECKIA HIRTA (BLACKEYED SUSAN) 2.0% HELIOPSIS HELIANTHOIDES. PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE) 2.0% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA) 2.0% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE)

1.7% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE) 1.0% CAREX SCOPARIA, PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE) 1.0% SENNA HEBECARPA, VA & WV ECOTYPE (WILD SENNA, VA & WV ECOTYPE) 0.9% PENSTEMON DIGITALIS, PA ECOTYPE (TALL WHITE BEARDTONGUE, PA ECOTYPE) 0.8% ZIZIA AUREA, PA ECOTYPE (GOLDEN ALEXANDERS, PA ECOTYPE)

0.7% PYCNANTHEMUM TENUIFOLIUM (NARROWLEAF MOUNTAINMINT) 0.5% BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE (BLUE FALSE INDIGO, SOUTHERN WV ECOTYPE)

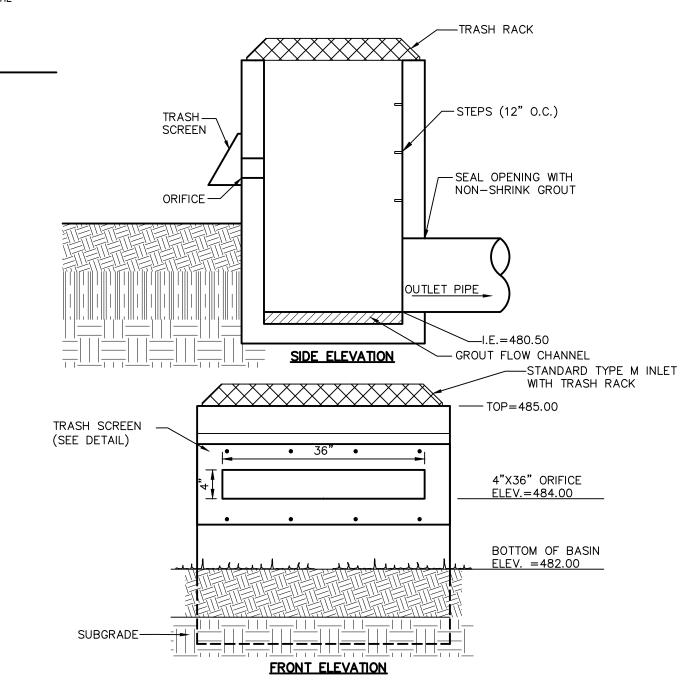
0.4% ASTER LATERIFLORUS (CALICO ASTER) 0.4% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE)

0.3% ASTER NOVAE-ANGLIAE, PA ECOTYPE (NEW ENGLAND ASTER, PA ECOTYPE) 0.3% ASTER PRENANTHOIDES, PA ECOTYPE (ZIGZAG ASTER, PA ECOTYPE) 0.3% JUNCUS TENUIS, PA ECOTYPE (PATH RUSH, PA ECOTYPE)

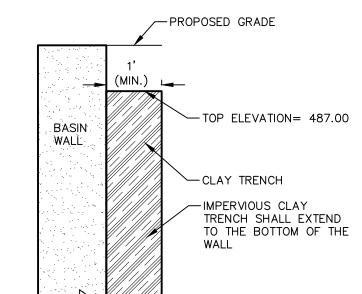
0.2% EUPATORIUM PERFOLIATUM, PA ECOTYPE (BONESET, PA ECOTYPE) 0.2% HELENIUM AUTUMNALE, NORTHERN VA ECOTYPE (COMMON SNEEZEWEED, NORTHERN VA

0.2% JUNCUS EFFUSUS (SOFT RUSH) 0.2% OENOTHERA FRUTICOSA VAR. FRUTICOSA (SUNDROPS) 0.2% SOLIDAGO NEMORALIS, PA ECOTYPE (GRAY GOLDENROD, PA ECOTYPE) 0.1% SOLIDAGO RUGOSA, PA ECOTYPE (WRINKLELEAF GOLDENROD, PA ECOTYPE)

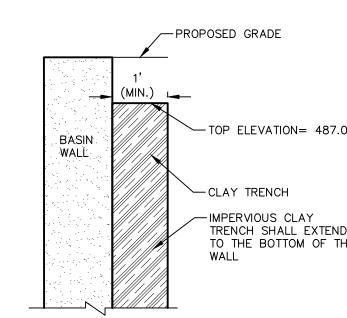
SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP. FOR SITES THAT DRAIN WITHIN 24 HOURS OF A RAIN EVENT USE ONE OF THE FOLLOWING COVER CROPS: OATS (1 JAN TO 31 JUL; 30 LBS/ACRE), JAPANESE MILLET (1 MAY TO 31 AUG; 10 LBS/ACRE), OR GRAIN RYE (AUG TO 31 DEC; 30 LBS/ACRE)



OUTLET STRUCTURE OS-1 (STORMWATER BASIN)



BASIN WALL CLAY BARRIER



NOTES:

1. CLAY TRENCH SHALL BE CONSTRUCTED TO 95% STD. PROCTOR DENSITY WITH CL OR

DE LAND DETAILS 0 6/2/2023

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SHEET NO. ____11__ OF ___12_ DWG. NO. 119162000

