

March 24, 2025

Kim Kaufman  
Township Manager  
Mount Joy Township  
8853 Elizabethtown Road  
Elizabethtown, PA 17022

Via email: kkaufman@mtjoytp.org



**LANCASTER CIVIL**  
★ ★ engineering company ★ ★  
p.o. box 8972, lancaster, pa 17604-8972  
[www.lancastercivil.com](http://www.lancastercivil.com)

Re: 1376 Campus Road  
Final Subdivision and Land Development Plan – Phase 3  
Township Permit No. 25-05-FLDP  
LCEC Project No: 25-100

Dear Mr. Kaufman,

We have received a final subdivision and land development plan submission from RGS Associates Inc. for the above-referenced project. The submission consisted of the following documents:

- Submission cover letter dated February 24, 2025
- Final Subdivision and Land Development Plan (Phase 3) dated February 24, 2025
- Stormwater Management Report for NPDES Module 1 and 2 dated February 24, 2025
- Drainage Areas Maps dated February 24, 2025
- Opinion of Probable Cost (Phase 2 Shared/) dated February 24, 2025
- Opinion of Probable Cost (Phase 3 Single Family) dated February 24, 2025
- Campus Road Lighting Calculations dated August 8, 2024

Based upon my review of the submitted information, I offer the following comments for the Township to consider:

**Subdivision and Land Development Ordinance**

1. The plans shall be signed and sealed by a registered engineer, surveyor or landscape architect (119-31.A(5)).
2. Bearings and distances shall be provided for all lot lines and curves associated with Lots 2 and 5 (119-35.D(2)).
3. All certificates shall be executed prior to final plan approval (119-35.E & 113-41.B).
4. Legal descriptions for easements to be dedicated to the Township, including but not limited to drainage easements, shall be provided (119-35.E(4)(a)).
5. Legal descriptions for the right-of-way proposed for dedication to Mount Joy Township shall be provided (119-35.E(4)(b)).
6. 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).



7. A land development agreement in a form acceptable to the Township Solicitor shall be executed (119-35.E(4)(f)).
8. The construction cost estimate shall include costs for the sediment basin skimmers, permanent spillway matting, amended soils, double Type C inlet boxes (standard and Type 4), final placement of topsoil, seeding & mulching, and recreation improvements (119-41 & 113-60). The quantities for the storm pipe and inlet boxes should be confirmed. For example, the 15" SLCPP quantity shown is 354 linear feet, but we tally 1,306 linear feet on the plans. The number of curb ramps should be increased to nine (9) (see comment 15 below). All costs for BMP-003 (e.g. outlet structure, outlet pipe, anti-seep collars, concrete cradle, etc.) shall be included.
9. Deeds to lots which contain clear sight triangles shall provide that no structure, landscaping or grading shall be erected, installed or performed within the area of the clear sight triangle which would obscure the vision of motorists (119-52.L).
10. All street signs and stop signs shall be labeled (119-52.G(6) & (7)).
11. The area within the future right-of-way shall be included in the deeds of the abutting lots with an easement in favor of the Township and the landowners of the land in which the future right-of-way will extend to permit the use of the future right-of-way for public street purposes should the adjoining lands be developed (119-52.N(1)).
12. The difference between the cross slope of the roadway and the upward grade of the driveway approach shall not exceed 8.0%. With a road cross slope of 2.0%, the driveway slopes shall not exceed 6.0% for the first ten feet (119-52.S(2)(a); 67-4.A & PA Code 441.8(i)(5)(ii)).
13. A note shall be added to the plans stating that the sidewalks shall be constructed in accordance with Appendix 16, PennDOT Publication 408 Specifications, and PennDOT Publication 72 Standards for Roadway construction, and in accordance with any regulations adopted by the state or federal government concerning handicapped accessibility (119-53.B(4)(a)).
14. A note shall be added to the plans stating that the curbs shall be constructed in accordance with Appendix 16, PennDOT Publication 408 Specifications, and PennDOT Publication 72 Standards for Roadway construction, and in accordance with any regulations adopted by the state or federal government concerning handicapped accessibility (119-53.C(2)(a)).
15. Curb ramps shall be provided at the curb ramps on the western side of the crosswalks crossing Brooklyn Drive at the S. Conifer Drive intersection (119-53.B(7)).
16. 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).
17. Recreational areas and facilities shall be provided (119-61). The minimum lot area which shall be dedicated is 2.538 acres (47 dwelling units x 0.054 acre per dwelling unit). The applicant has indicated the intent to provide a fee in lieu of dedicating park and open space. This fee (less the approved reduction for Phase 3) shall be computed and paid prior to approval of the final plan. The "1376 Campus Road – Landscape Amenity Construction Documents – Pocket Park" plan shall be provided. An agreement shall be executed specifying the developer's obligations and documenting that the proposed recreational areas are open to the general public. The developer shall solicit feedback



from the Park and Recreation Board and the Board of Supervisors on the proposed recreation areas (119-61.C(2)).

### **Stormwater Management Ordinance**

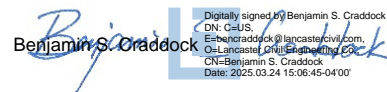
18. The landscape plan shall include information for the proposed plugs within BMP-001 and BMP-003 (113-31.N and 113-37-A.(4)(d)).
19. The collar spacing shown in the detail for the anti-seep collars for BMP-001 (5 feet) is inconsistent with the spacing in the PCSM Report (14 feet) (113-37.A(1)(b)[2]).
20. Swale 20 shall be added to the Vegetated Channel detail (113-37.C(1)(d)).
21. A label for Swale 20 shall be provided on the plans (113-37.C(5)).
22. Construction details and profiles shall be provided for BMP-003 (113-43.J(5)).
23. The sum of the individual depths of the #57 stone, pea gravel, and diameter of the pipe shown in the Underdrain Section Detail and Cleanout With Pea Gravel Window construction details is inconsistent with the depth of amended soils (21") (113-43.J(5)).

### **Traffic**

24. The proposed development is located within the Transportation Service Area established for the Mount Joy Township Traffic Impact Fee Ordinance. The developer is constructing the Campus Road roundabout in lieu of paying the Impact Fees in accordance with the terms and conditions set forth in the Agreement for Construction of Roundabout.

If you should have any questions or need additional information, please do not hesitate to contact me at [bencraddock@lancastercivil.com](mailto:bencraddock@lancastercivil.com) or via telephone at 717-799-8599.

Sincerely,

  
Benjamin S. Craddock

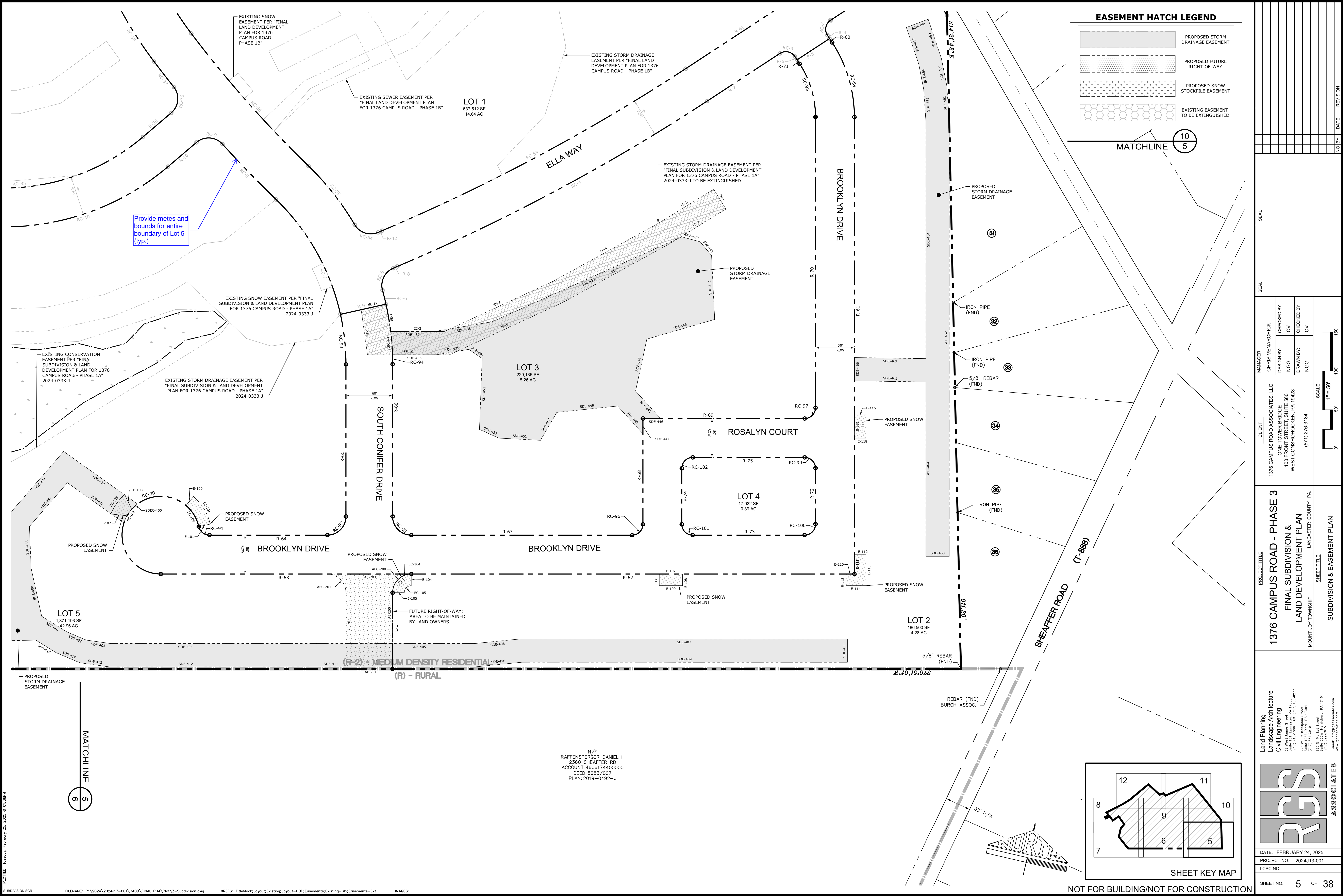
Digitally signed by Benjamin S. Craddock  
DN: cn=Benjamin S. Craddock,  
o=Lancaster Civil Engineering Co.,  
ou=Lancaster Civil Engineering Co.,  
c=PA  
Date: 2025.03.24 15:06:45-04'00'

Benjamin S. Craddock, PE, President

**LANCASTER CIVIL**

cc: Jackie Wilbern, Township Zoning Officer (via email)  
Justin Evans, Assistant Zoning Officer (via email)  
Patricia Bailey, Township Secretary (via email)  
Josele Cleary, Esquire, Township Solicitor (via email)  
Renee Addleman, Planner, LCPC (via email)  
Christopher Lincoln, PE Traffic Planning & Design (via email)  
Del Becker, PE, EAWA (via email)  
Steve Rettew, ERSA (via email)  
Abraham King, RETTEW (via email)  
Chris Venarchik, RLA, RGS Associates Inc. (via email)  
Nick Grandi, RLA, RGS Associates Inc. (via email)  
Andy Miller, PE, Catalyst Commercial Development, LLC (via email)



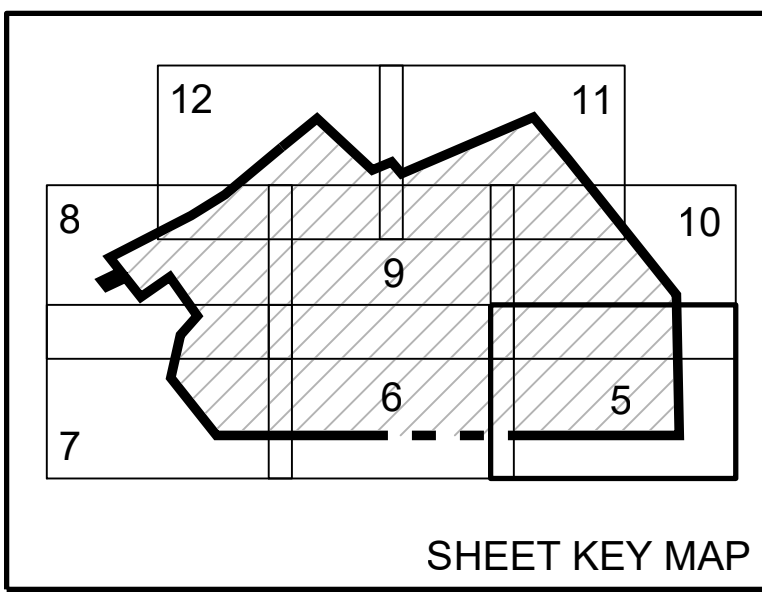


**EASEMENT HATCH LEGEND**

- PROPOSED STORM DRAINAGE EASEMENT
- PROPOSED FUTURE RIGHT-OF-WAY
- PROPOSED SNOW STOCKPILE EASEMENT
- EXISTING EASEMENT TO BE EXTINGUISHED

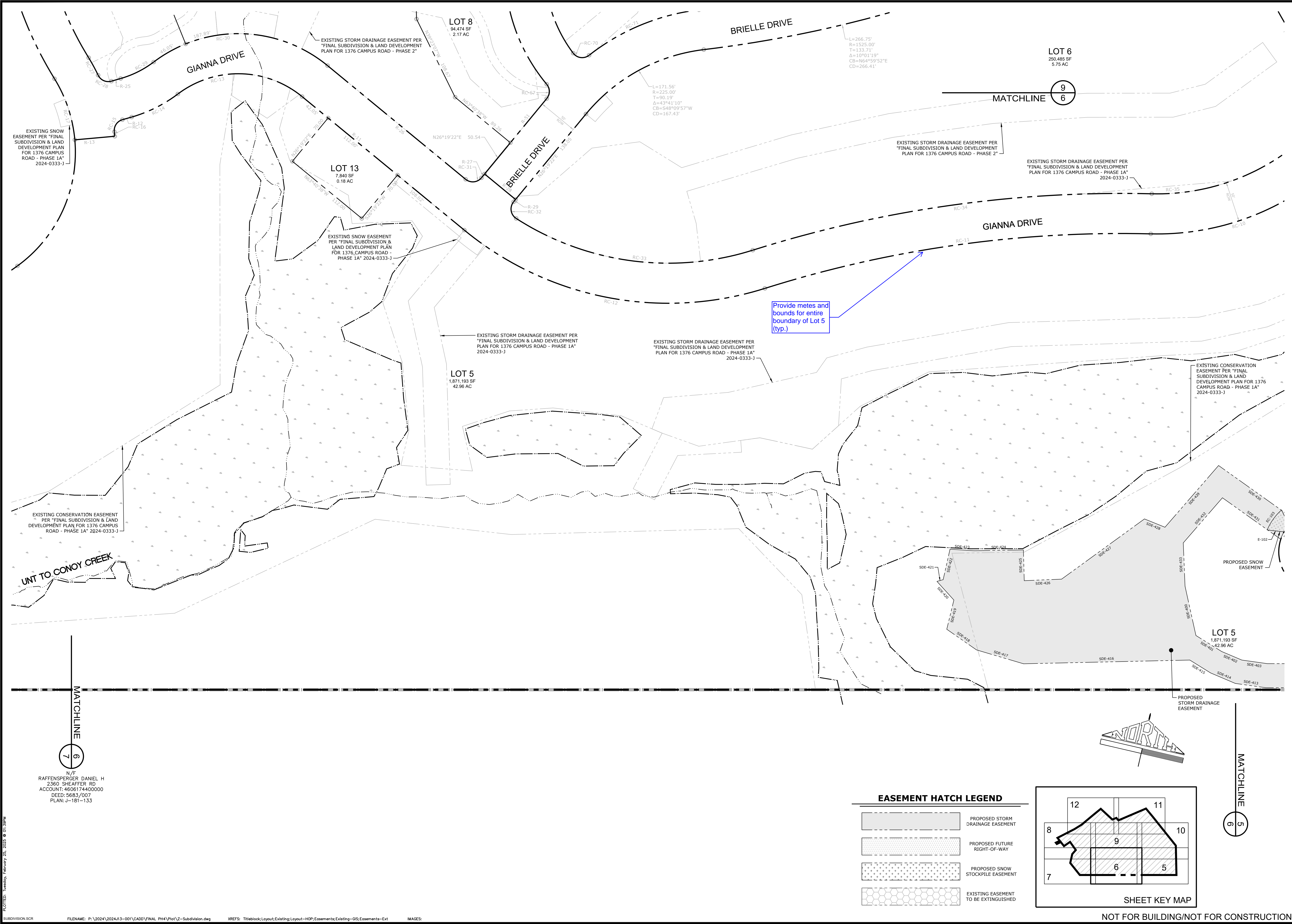
MATCHLINE 10 5

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PROJECT TITLE: 1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION & LAND DEVELOPMENT PLAN		SHEET TITLE: SUBDIVISION & EASEMENT PLAN	
LAND PLANNING Landscape Architecture Civil Engineering 53 West Jones Street - 11003 (717) 715-1388 FAX: (717) 335-8977		DATE: FEBRUARY 24, 2025 PROJECT NO.: 2024/13-001 LOPC NO.: SHEET NO.: 5 OF 38	



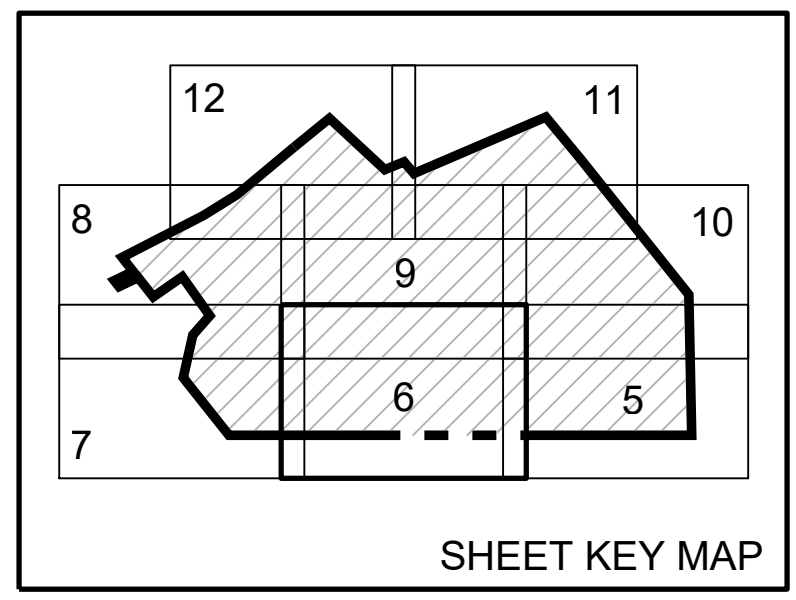
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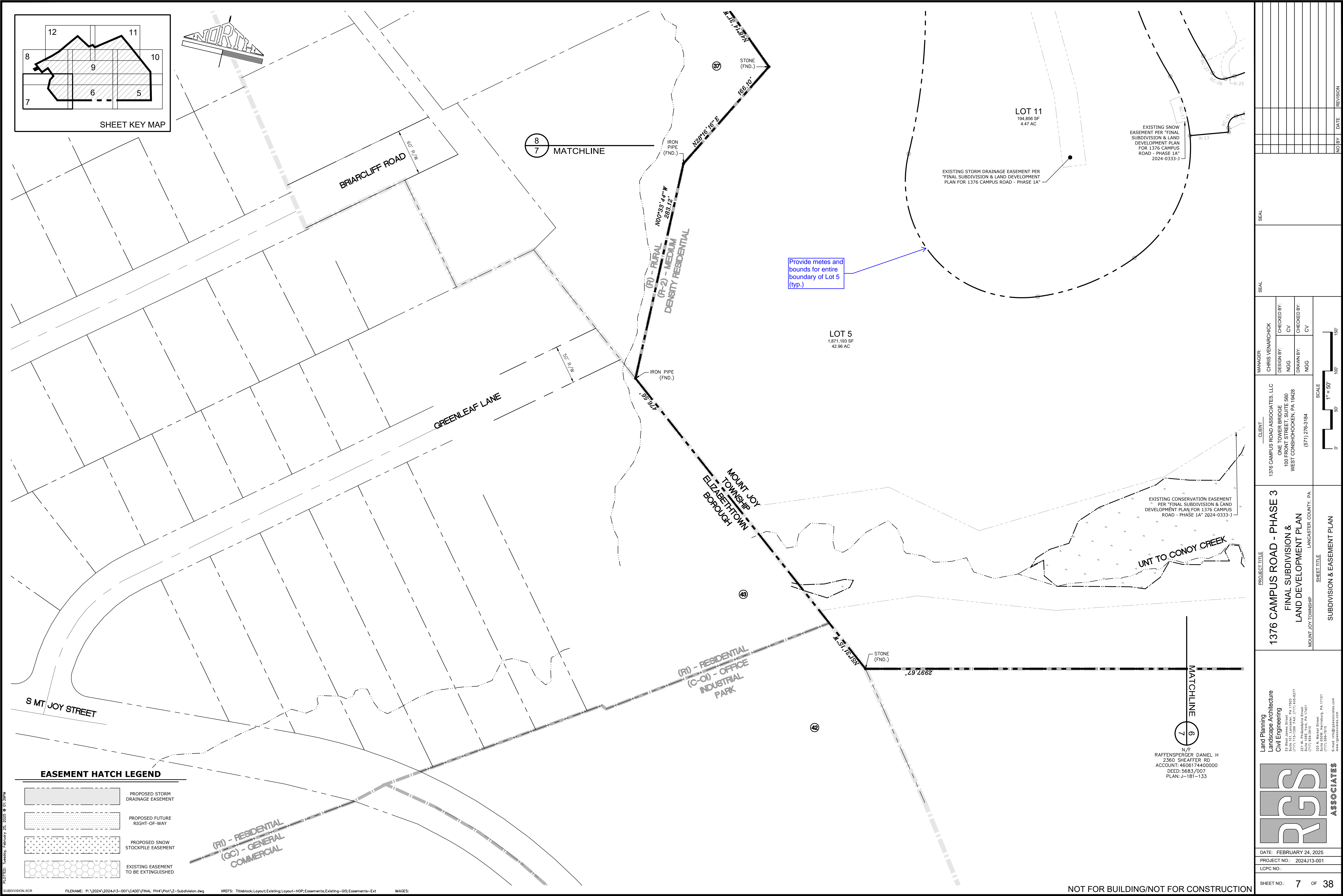
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EASEMENT HATCH LEGEND	
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	PROPOSED FUTURE RIGHT-OF-WAY
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MANAGER: CHRIS VEMARCHICK		DESIGN BY: NGG		CHECKED BY: CV	
CLIENT: 1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET, SUITE 560 WEST CONSHOHOCKEN, PA 19428 (571) 276-3184		DRAWN BY: NGG		CHECKED BY: CV	
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LAND PLANNING Landscape Architecture Civil Engineering 53 West Jones Street - 11003 (717) 715-1388 FAX (717) 335-8977 221 W. Philadelphia Street (717) 854-3315 328 N. Market Street (717) 892-1515 E-mail: info@grassrootsllc.com www.grassrootsllc.com		DATE: FEBRUARY 24, 2025 PROJECT NO.: 2024-113-001 LOPC NO.:		SHEET NO.: 6 OF 38	





PLOTTED: Tuesday, February 25, 2025 @ 01:38PM  
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EASEMENT HATCH LEGEND

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- PROPOSED FUTURE RIGHT-OF-WAY
- PROPOSED SNOW STOCKPILE EASEMENT
- EXISTING EASEMENT TO BE EXTINGUISHED

(R) - RESIDENTIAL  
(GC) - GENERAL COMMERCIAL

N/F  
RAFFENSPERGER, DANIEL H  
2360 SHEPHERD RD  
ACCOUNT: 4606174400000  
DEED: 5683/007  
PLAN: J-181-133

MANAGER: CHRIS VEMARCHICK  
DESIGN BY: NGS  
DRAWN BY: NGS  
CHECKED BY: CV  
CHECKED BY: CV

CLIENT  
1376 CAMPUS ROAD ASSOCIATES, LLC  
ONE TOWER BRIDGE  
100 FRONT STREET, SUITE 560  
WEST CONSHOHOCKEN, PA 19428  
(571) 276-3184

PROJECT TITLE  
1376 CAMPUS ROAD - PHASE 3  
FINAL SUBDIVISION &  
LAND DEVELOPMENT PLAN  
MOUNT JOY TOWNSHIP  
LANCASTER COUNTY, PA

SCALE  
1" = 50'  
0' 50' 100' 150'

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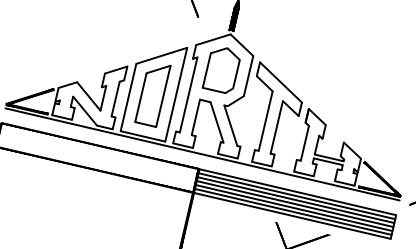
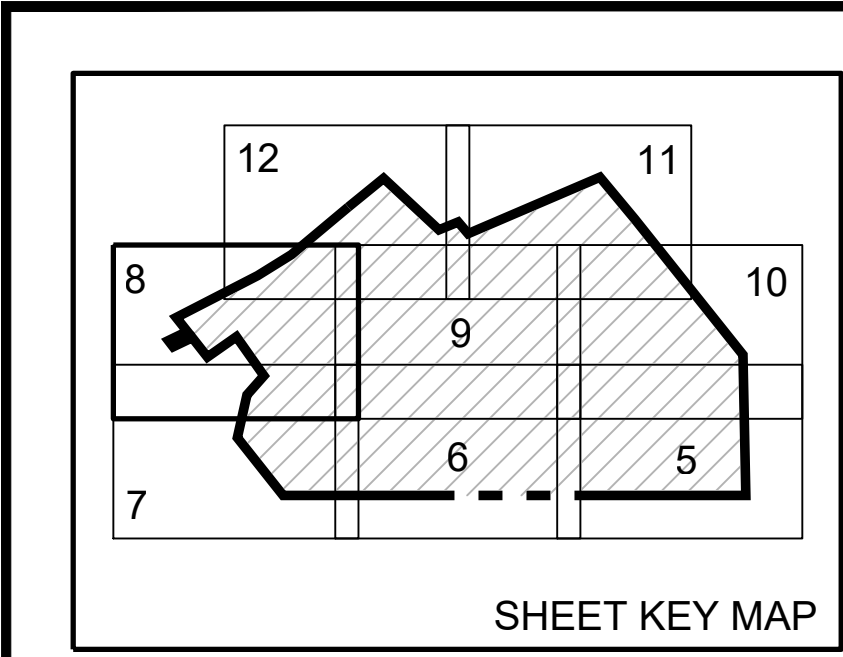
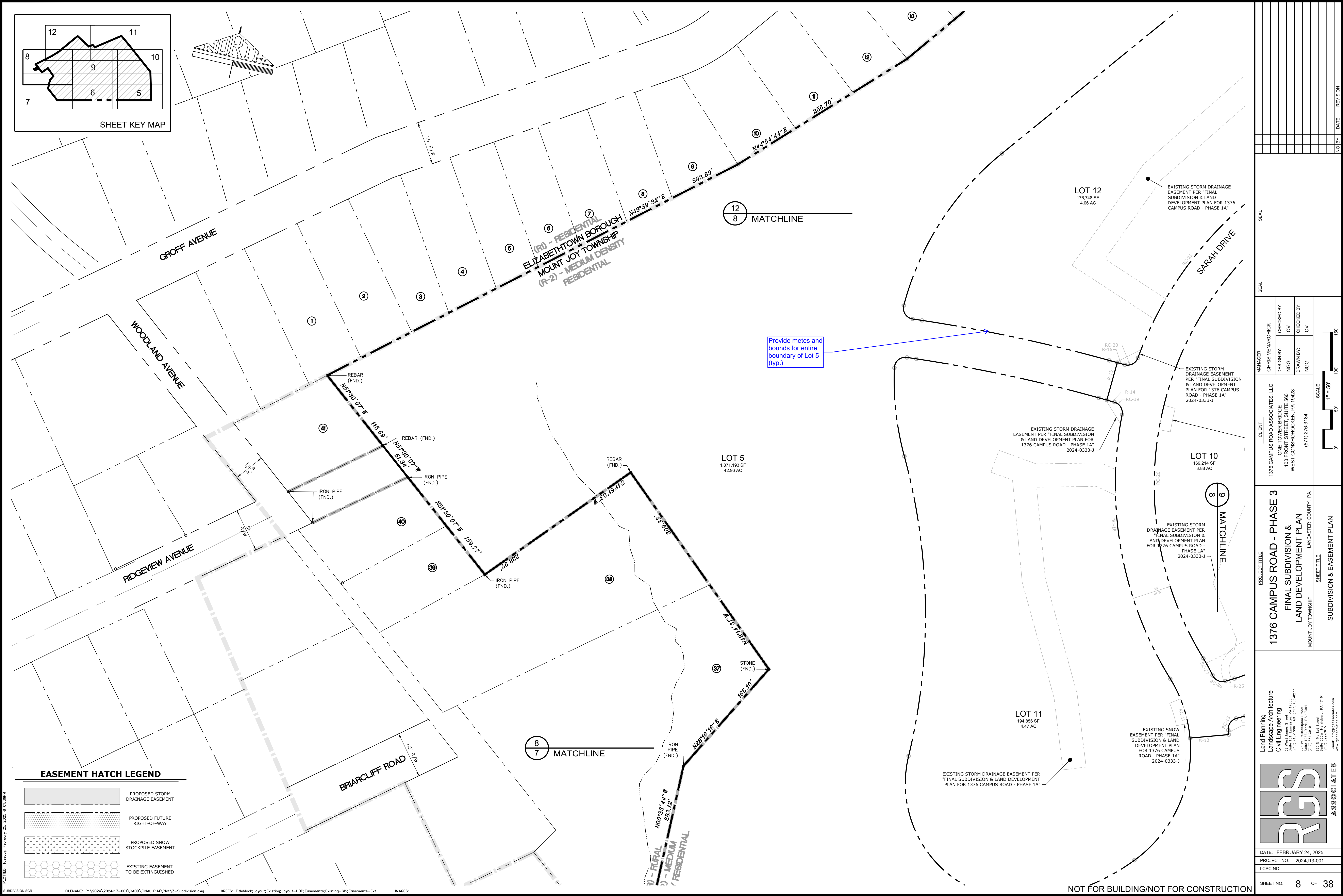
NO BY DATE REVISION

Land Planning  
Landscape Architecture  
Civil Engineering  
53 West Java Street  
P.O. Box 11003  
(717) 715-1388 FAX (717) 335-8977  
221 W. Philadelphia Street  
(717) 854-2010  
328 N. Market Street  
(717) 892-7515  
E-mail: info@rsgsassociates.com  
www.rsgsassociates.com

ASSOCIATES

DATE: FEBRUARY 24, 2025  
PROJECT NO.: 2024/13-001  
LOPC NO.:  
SHEET NO.: 7 OF 38



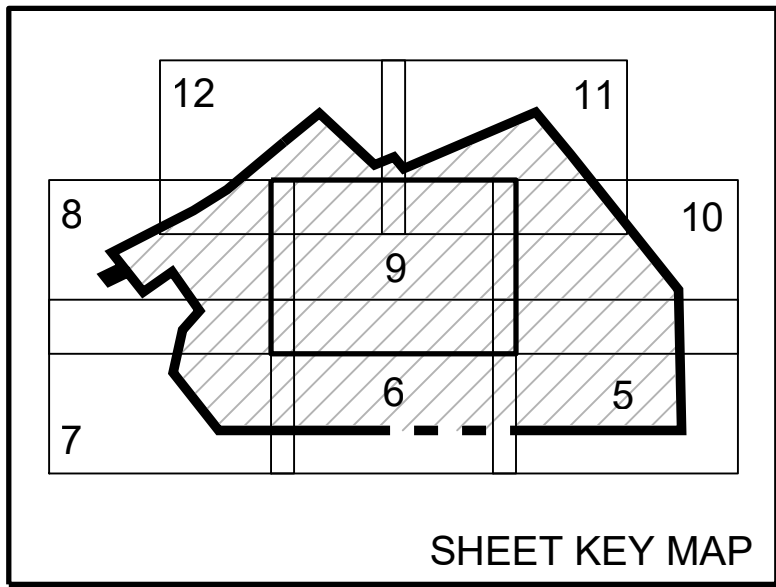
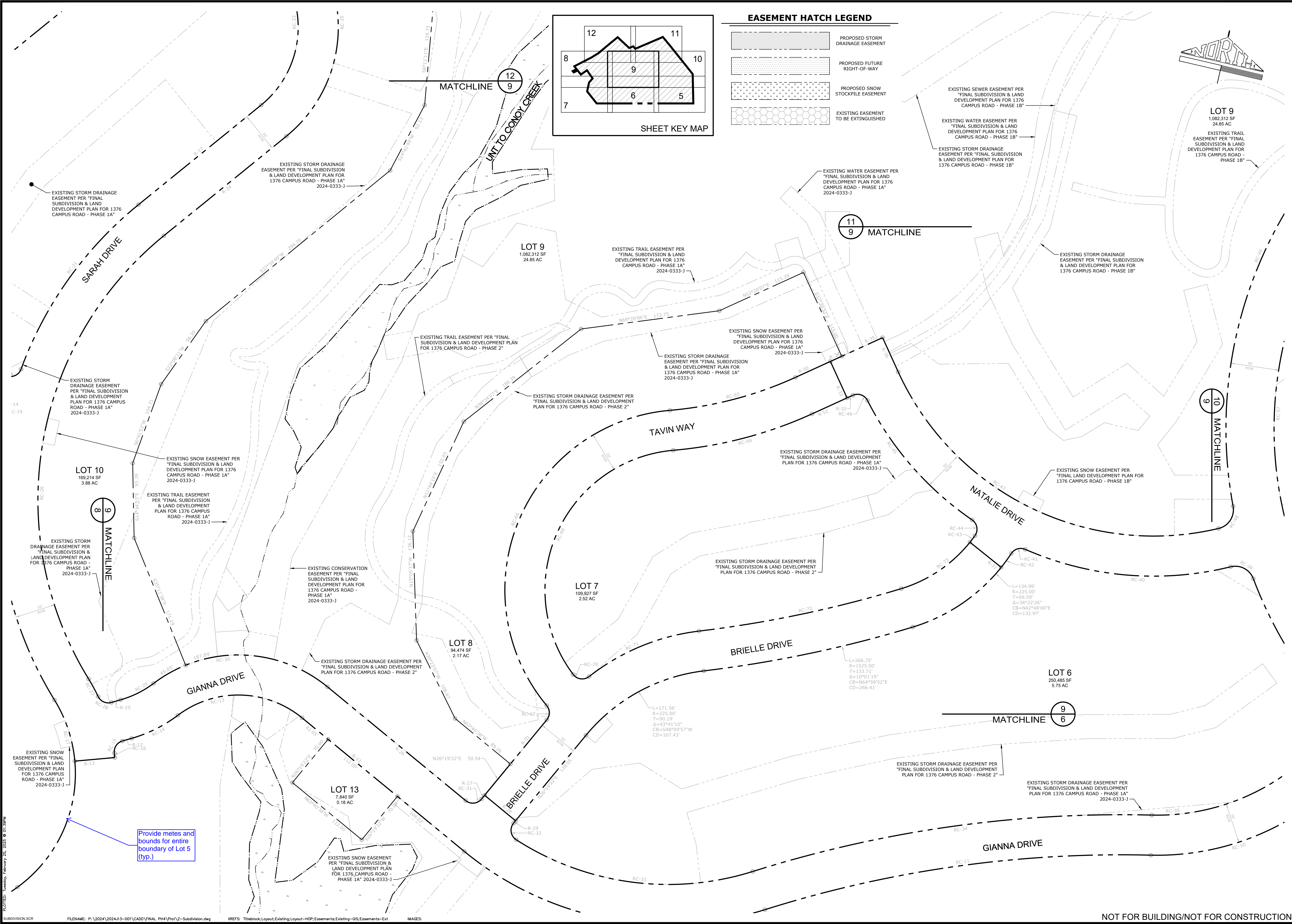


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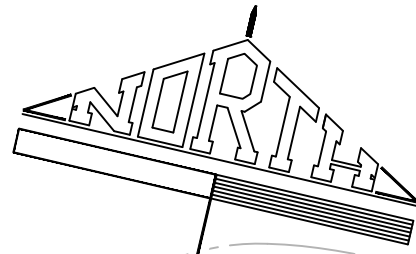
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DRAWN BY: NGG		CHECKED BY: CV		SCALE: 1" = 50'	
1376 CAMPUS ROAD ASSOCIATES, LLC		ONE TOWER BRIDGE		100 FRONT STREET, SUITE 560	
WEST CONSHOHOCKEN, PA 19428		(571) 276-3184		SUBDIVISION & EASEMENT PLAN	
PROJECT TITLE: 1376 CAMPUS ROAD - PHASE 3		SHEET TITLE: SUBDIVISION & EASEMENT PLAN		NO. BY DATE REVISION	
FINAL SUBDIVISION & LAND DEVELOPMENT PLAN		MOUNT JOY TOWNSHIP LANCASTER COUNTY, PA		8 OF 38	
Land Planning Landscape Architecture Civil Engineering		93 West Java Street, Suite 1100		DATE: FEBRUARY 24, 2025	
221 W. Philadelphia Street		(717) 715-1388 FAX (717) 335-8977		PROJECT NO.: 2024\13-001	
328 N. Market Street		(717) 864-2010		LOPC NO.:	
E-mail: info@rassassociates.com		(717) 864-2010		SHEET NO.:	
www.rassassociates.com		(717) 864-2010		NOT FOR BUILDING/NOT FOR CONSTRUCTION	





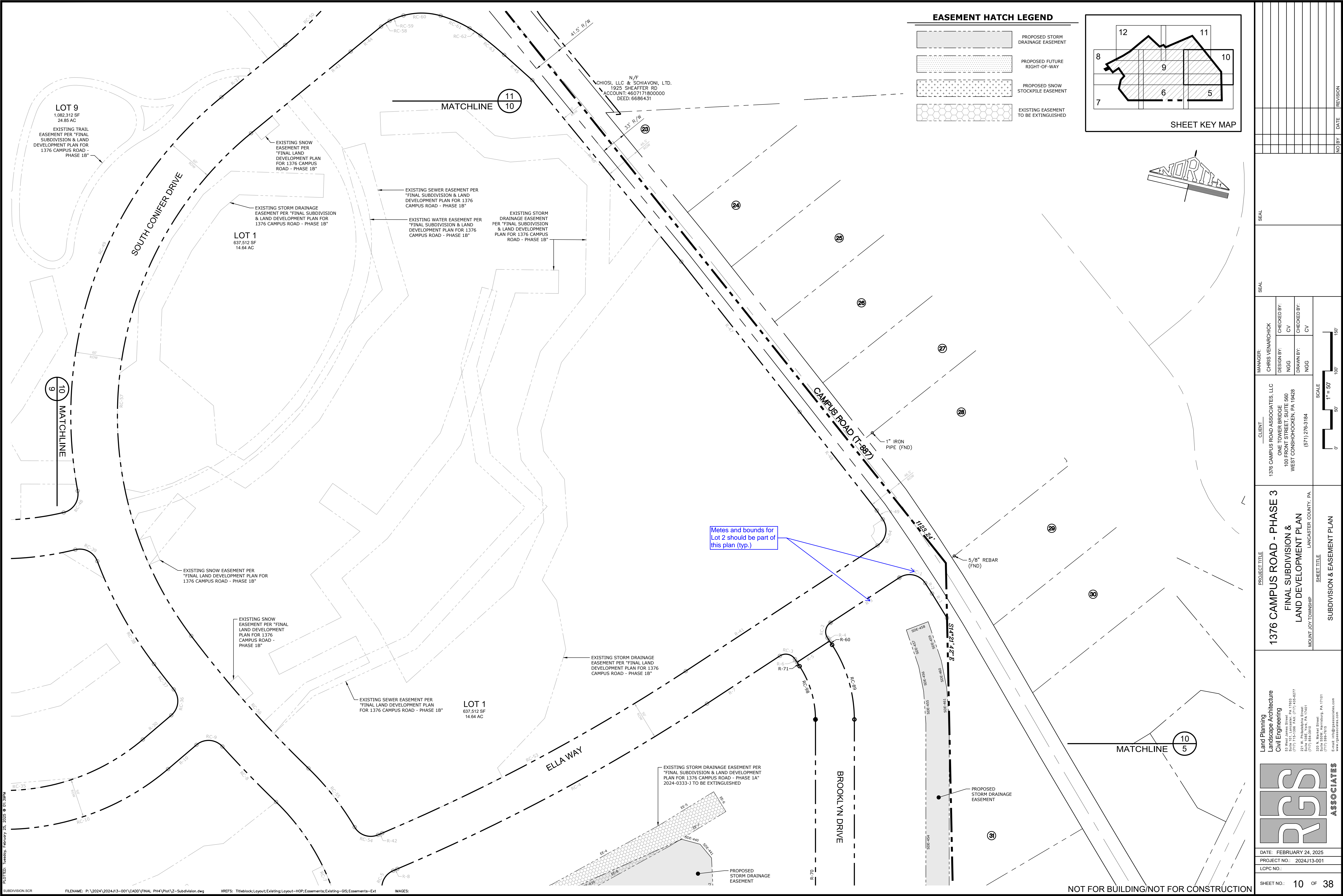
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	PROPOSED SNOW STOCKPILE EASEMENT
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1376 CAMPUS ROAD - PHASE 3		SUBDIVISION & EASEMENT PLAN	
CLIENT		MANAGER	
1376 CAMPUS ROAD ASSOCIATES, LLC		CHRIS VEMARCHICK	
ONE TOWER BRIDGE		DESIGN BY:	
100 FRONT STREET SUITE 500		NGG	
WEST CONSHOHOCKEN, PA 19428		DRAWN BY:	
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LANDSCAPE ARCHITECTURE		NO BY	
Civil Engineering		DATE	
53 West Jones Street • 11003		REVISION	
(717) 715-1338 FAX (717) 715-6977			
221 W. Philadelphia Street			
PHILADELPHIA, PA 19101			
328 N. Market Street			
PHILADELPHIA, PA 19101			
E-mail: info@rsgsassociates.com			
www.rsgsassociates.com			
DATE: FEBRUARY 24, 2025		SHEET NO. 9 OF 38	
PROJECT NO.: 2024/13-001			
LOPC NO.:			

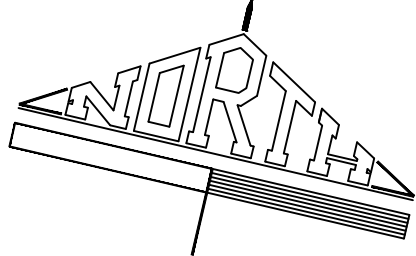
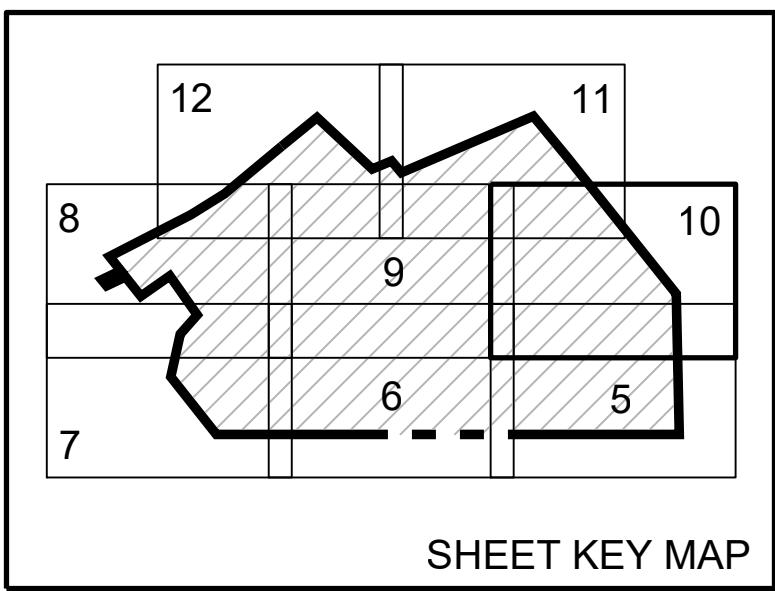
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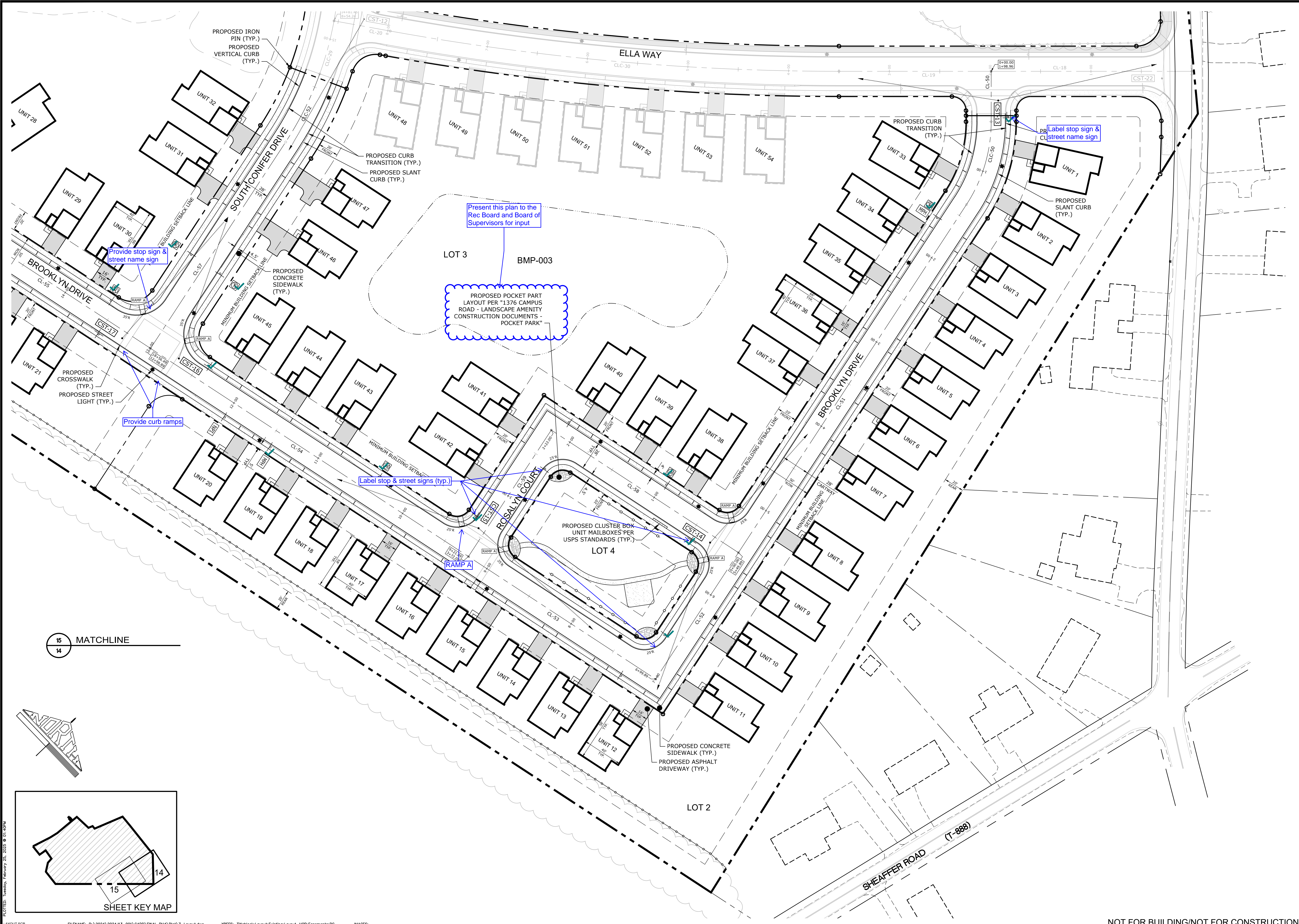
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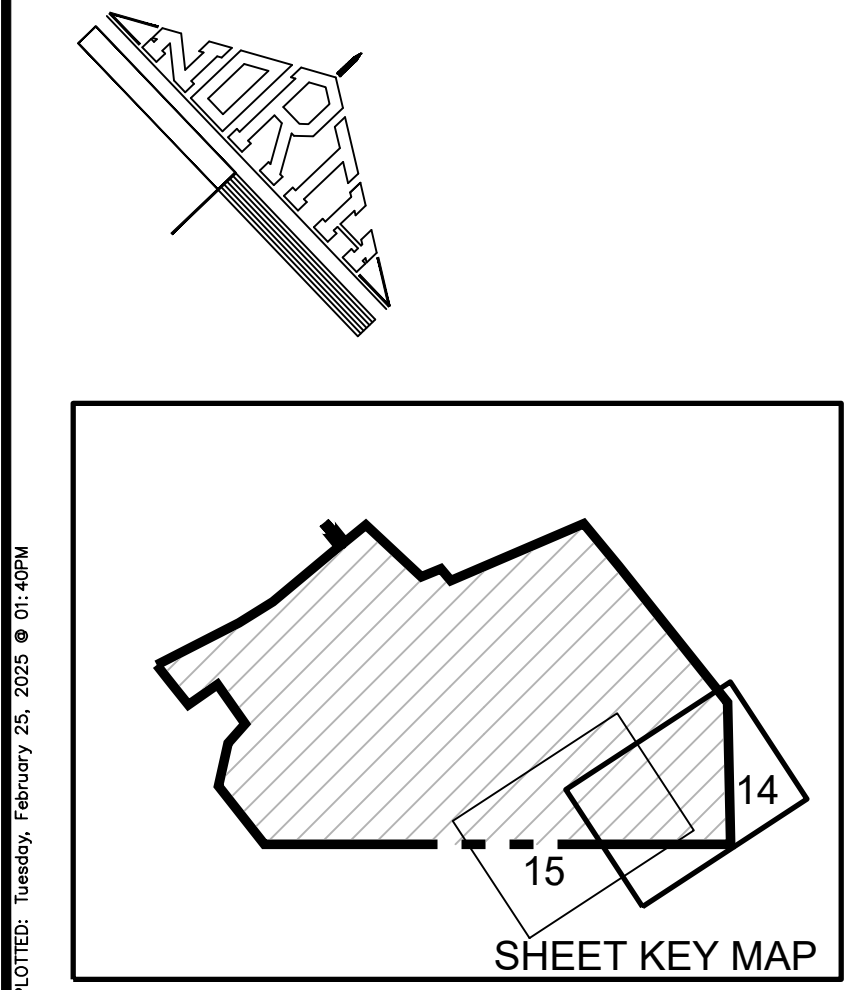


MANAGER: CHRIS VEMARCHICK		DESIGN BY: NGG		CHECKED BY: CV	
CLIENT: 1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET, SUITE 560 WEST CONSHOHOCKEN, PA 19428 (571) 276-3184		DRAWN BY: NGG		CHECKED BY: CV	
PROJECT TITLE: 1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION & LAND DEVELOPMENT PLAN		SHEET TITLE: SUBDIVISION & EASEMENT PLAN		SCALE: 1" = 50' 0' 50' 100' 150'	
Land Planning Landscape Architecture Civil Engineering 53 West Java Street (771) 715-1338 FAX: (771) 335-8977 221 W. Philadelphia Street (771) 854-2015 328 N. Market Street (771) 882-7515 E-mail: info@grassassociates.com www.grassassociates.com		ASSOCIATES		DATE: FEBRUARY 24, 2025 PROJECT NO.: 2024-13-001 LOPC NO.: SHEET NO.: 10 OF 38	



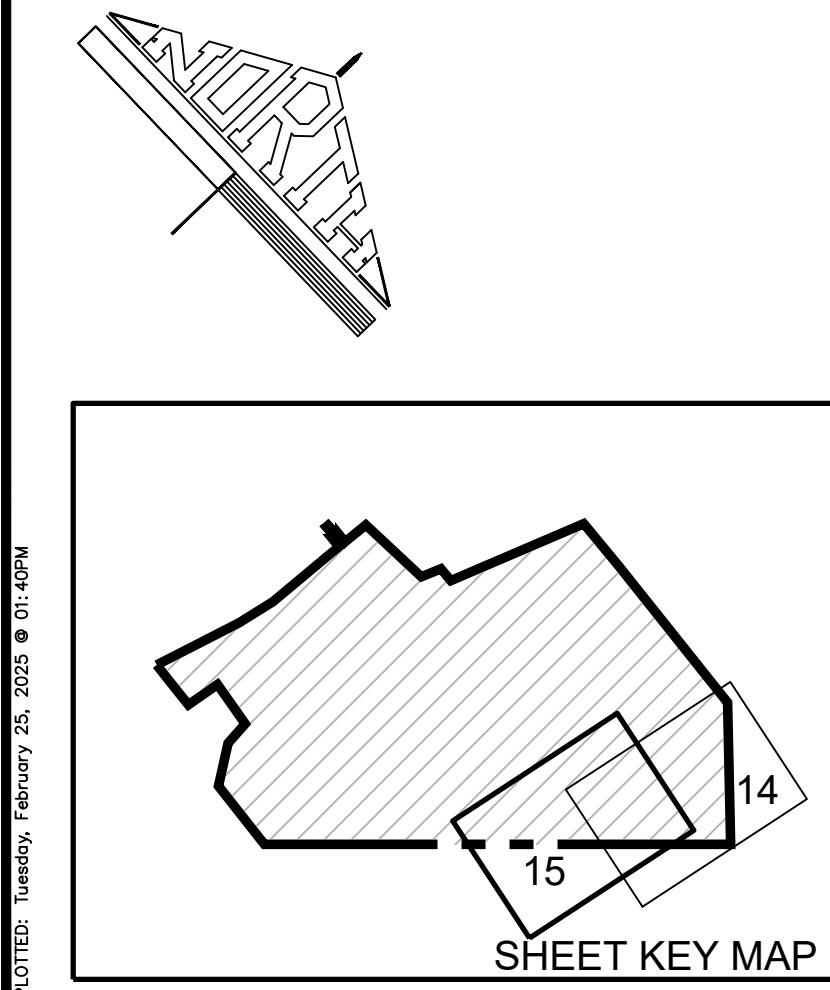
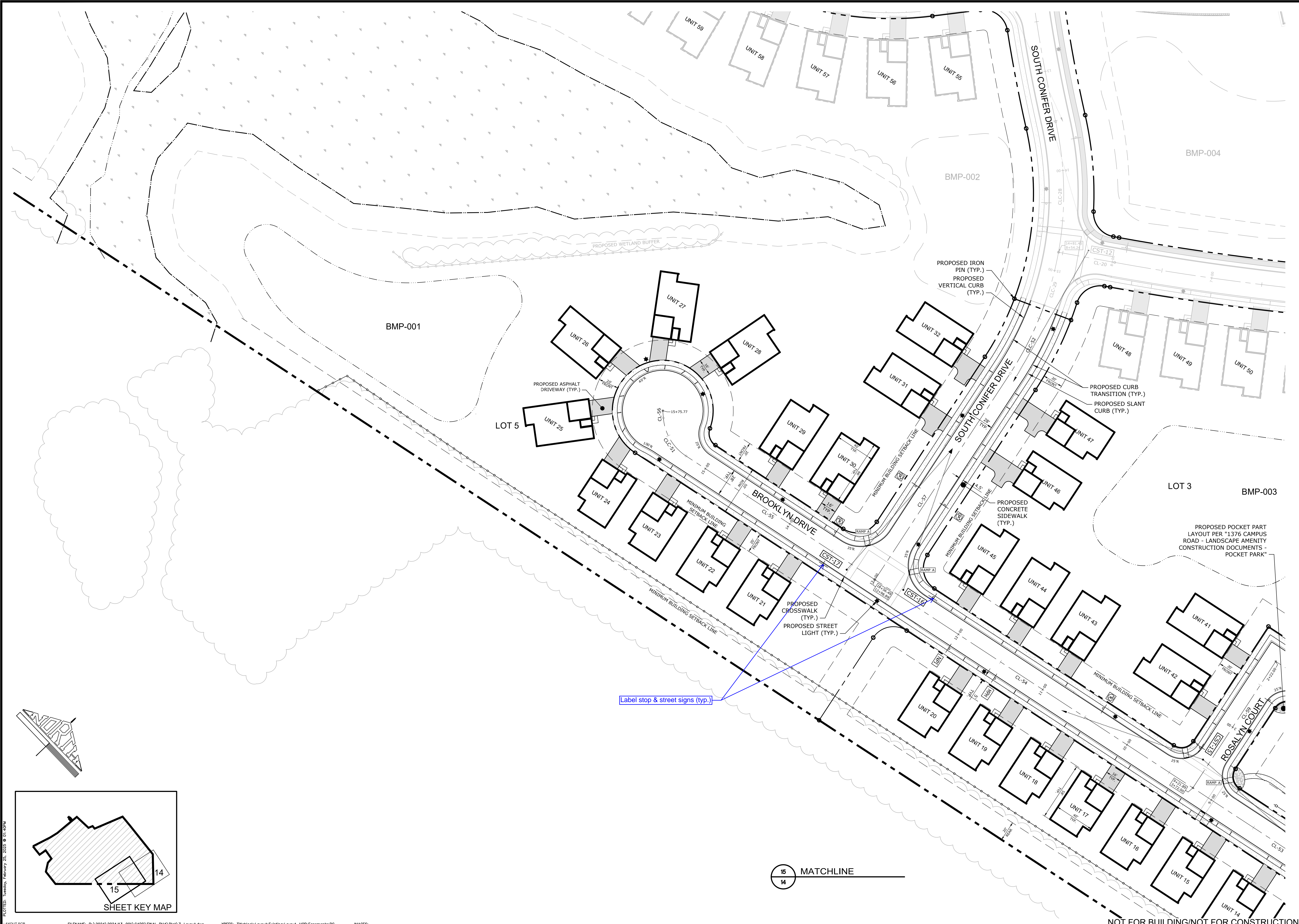


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14



PROJECT TITLE <b>1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION &amp; LAND DEVELOPMENT PLAN</b>		SHEET TITLE <b>LAYOUT PLAN</b>	
CLIENT <b>1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET SUITE 550 WEST CONSHOHOCKEN, PA 19380 (571) 276-3184</b>		MANAGER <b>CHRIS VEMARCHICK</b> DESIGN BY <b>NGG</b> DRAWN BY <b>NGG</b> CHECKED BY <b>CV</b>	
LAND PLANNING <b>Land Planning Landscape Architecture Civil Engineering</b> 53 West Java Street (717) 715-1338 FAX (717) 335-6377 221 W. Philadelphia Street (717) 854-2015 328 N. Market Street (717) 850-7515 www.landscapeassociates.com		DATE: FEBRUARY 24, 2025 PROJECT NO.: 2024/13-001 LOPC NO.: SHEET NO.: 14 OF 38	





15 MATCHLINE  
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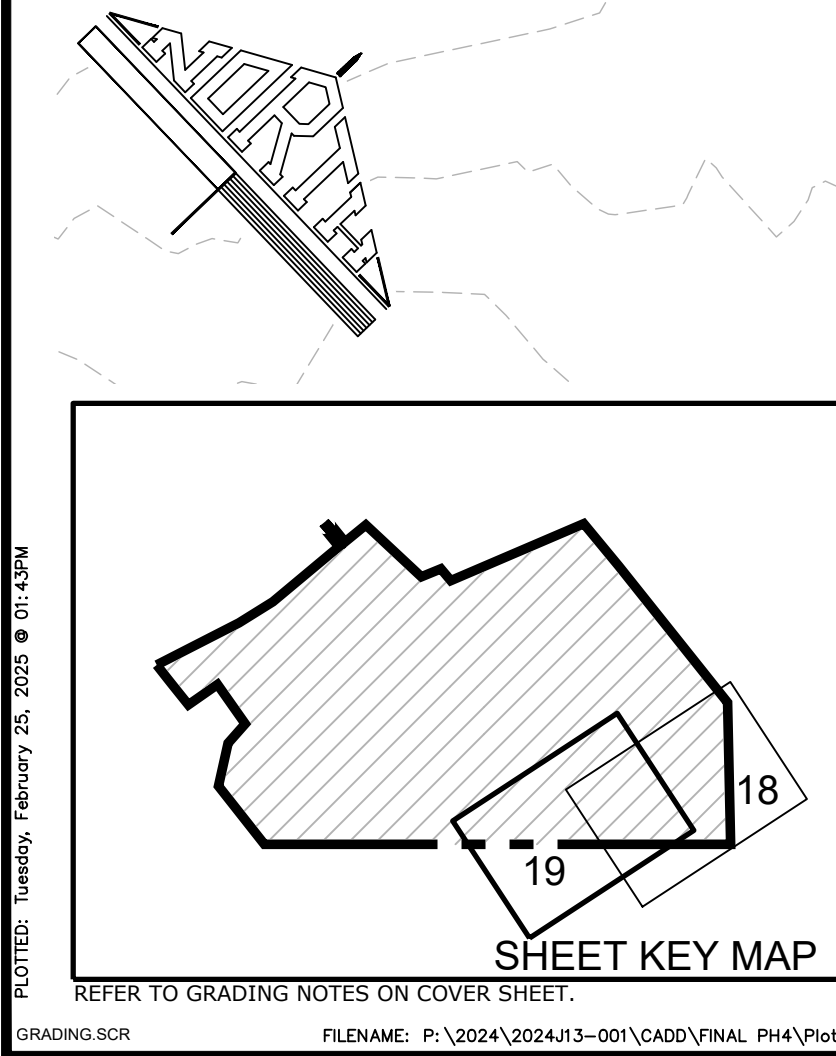
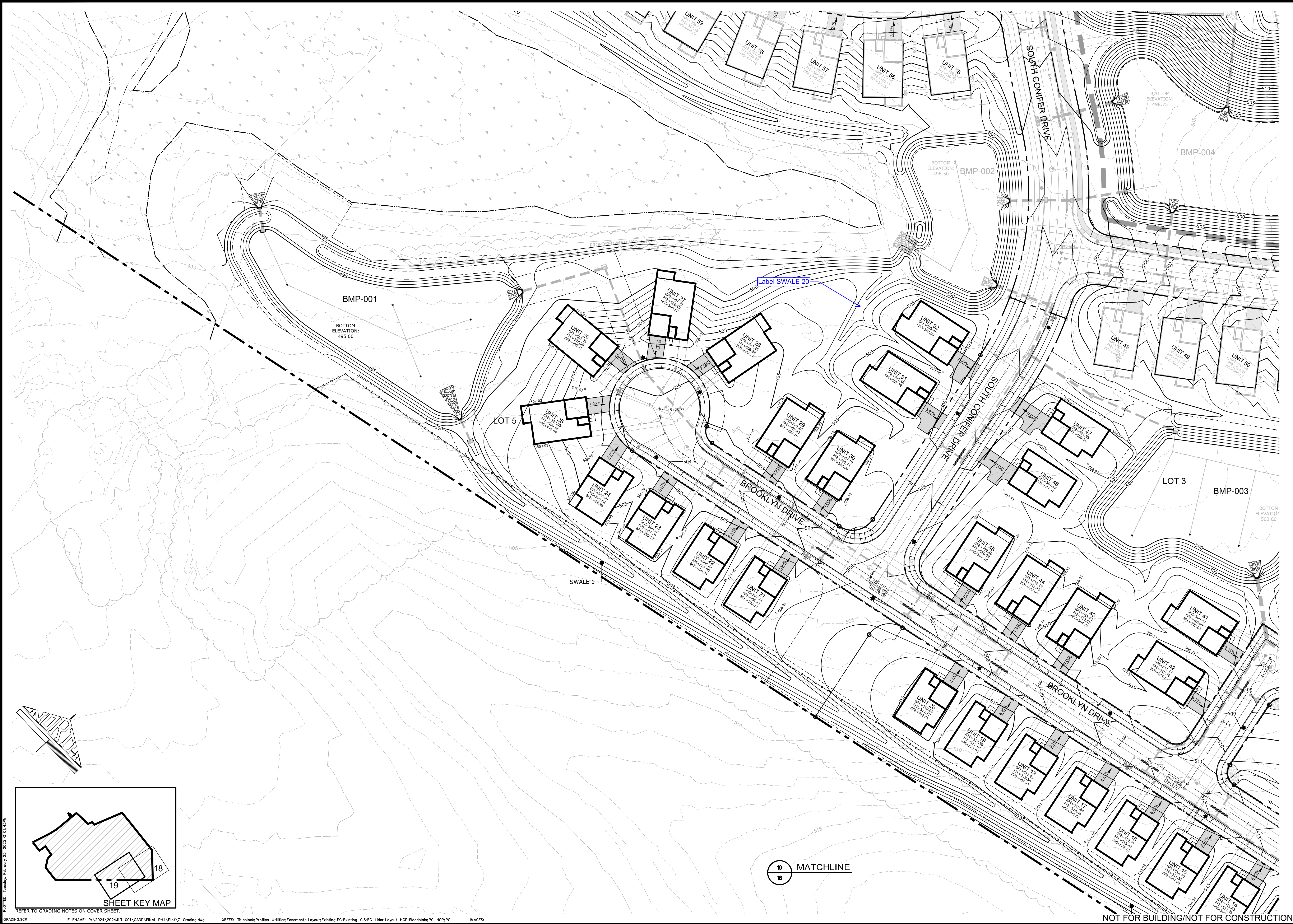
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CLIENT 1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET SUITE 560 WEST CONSHOHOCKEN, PA 19428 (571) 276-3184												SCALE 1"= 40' 0' 40' 120'	
PROJECT TITLE <b>1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION &amp; LAND DEVELOPMENT PLAN</b>												SHEET TITLE <b>LAYOUT PLAN</b>	
LAND PLANNING Landscape Architecture Civil Engineering 53 West Java Street (717) 715-1338 FAX (717) 335-6377 221 W. Philadelphia Street (717) 854-2015 328 N. Market Street (717) 892-7515 E-mail: info@grassassociates.com www.grassassociates.com												DATE: FEBRUARY 24, 2025 PROJECT NO.: 2024/13-001 LOPC NO.: SHEET NO.: 15 OF 38	





<b>MANAGER:</b> CHRIS VEMARCHICK		<b>CHECKED BY:</b> CV	
<b>DESIGN BY:</b> NGG		<b>CHECKED BY:</b> CV	
<b>DRAWN BY:</b> NGG		<b>CHECKED BY:</b> CV	
<b>CLIENT:</b> 1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET SUITE 560 WEST CONSHOCKEN, PA 19428 (571) 276-3184		<b>SCALE:</b> 1"= 40' 0' 40' 120'	
<b>PROJECT TITLE:</b> 1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION & LAND DEVELOPMENT PLAN		<b>SHEET TITLE:</b> GRADING PLAN	
<b>LAND PLANNING</b> Landscape Architecture Civil Engineering 53 West Java Street • 11103 (717) 715-3388 FAX (717) 335-6977 221 W. Philadelphia Street (717) 864-2015 328 N. Market Street (717) 869-1515 www.landscapeassociates.com		<b>DATE:</b> FEBRUARY 24, 2025 <b>PROJECT NO.:</b> 2024J13-001 <b>LOPC NO.:</b>	
<b>SHEET NO.:</b> 18		<b>OF</b> 38	





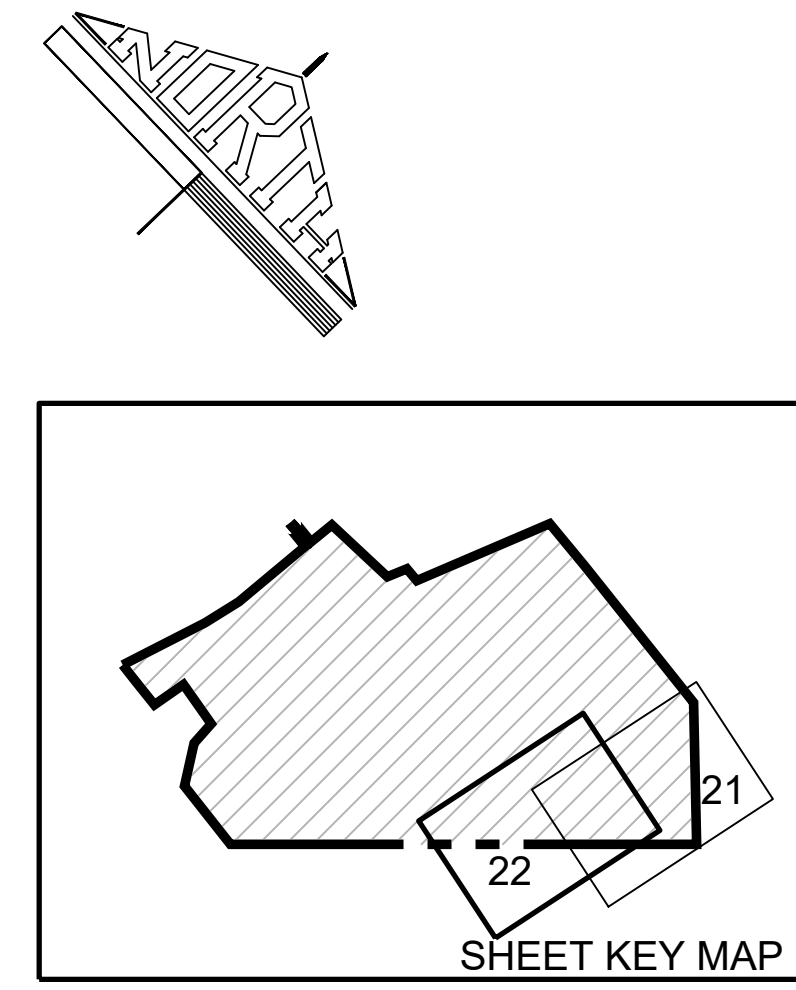
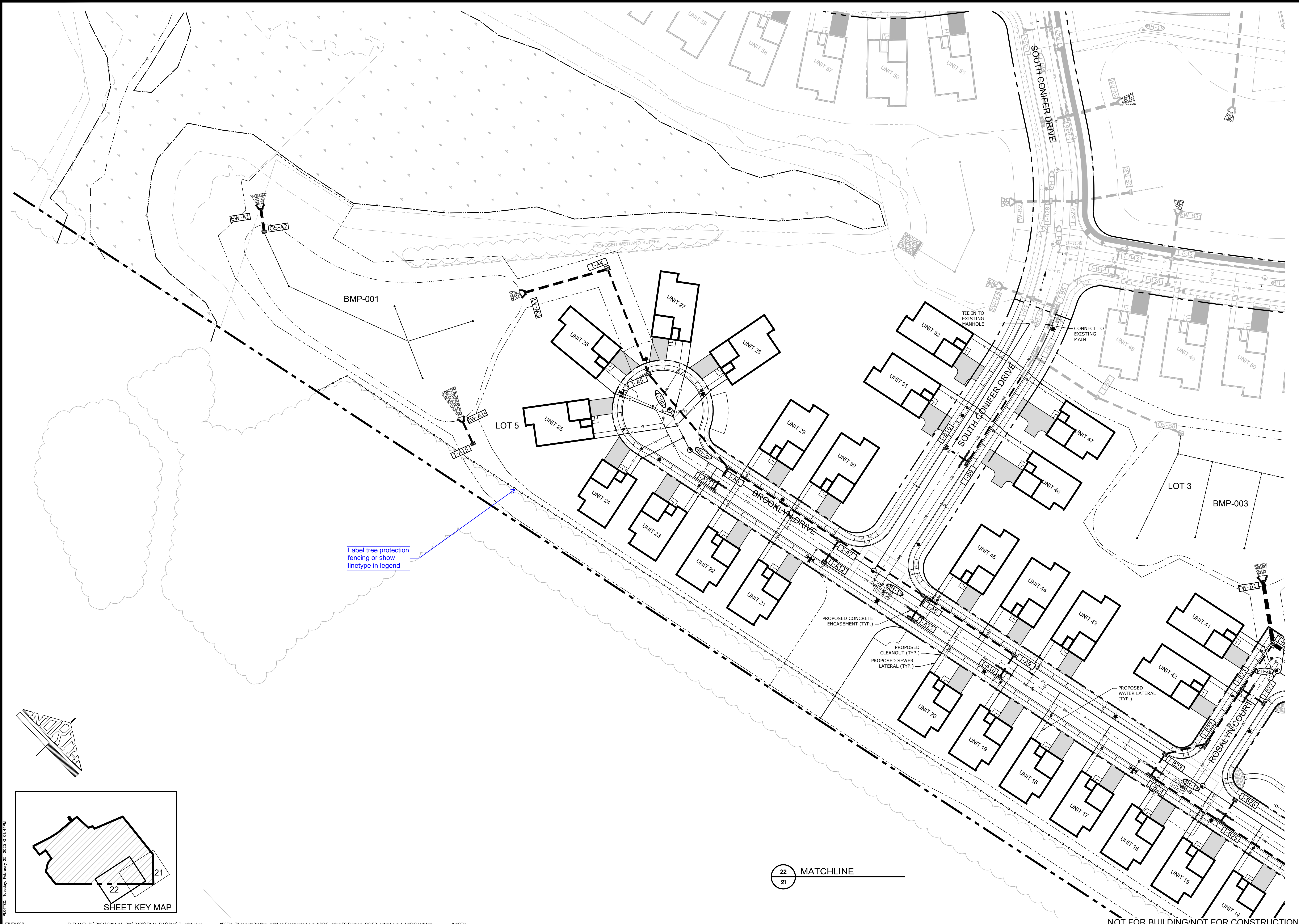
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FINAL SUBDIVISION & LAND DEVELOPMENT PLAN		ONE TOWER BRIDGE 100 FRONT STREET SUITE 560 WEST CONSHOHOCKEN, PA 19428		DESIGN BY:		CHECKED BY:							
MOUNT JOY TOWNSHIP		(571) 276-3184		DRAWN BY:		CHECKED BY:							
SHEET TITLE		SCALE											
GRADING PLAN		1" = 40'											
Land Planning Landscape Architecture Civil Engineering		53 West Java Street P.O. Box 11003 West Conshohocken, PA 19428		(771) 715-1338 FAX (771) 715-4377		221 W. Philadelphia Street P.O. Box 11001 West Conshohocken, PA 19428		(771) 715-1338 FAX (771) 715-4377		328 N. Market Street P.O. Box 11001 West Conshohocken, PA 19428		(771) 715-1338 FAX (771) 715-4377	
RS ASSOCIATES		www.rsassociates.com											
DATE: FEBRUARY 24, 2025		PROJECT NO.: 2024/13-001		LOPC NO.:									
SHEET NO.: 19		OF 38											

PLOTTED: Tuesday, February 26, 2025 @ 01:12PM

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PLOTTED: Tuesday, February 20, 2025 @ 01:40PM

UTILITY.SDR FILENAME: P:\2024\2024-01-001\CADD\FINAL PH4\Plot\Z-Utility.dwg XREFS: Titleblock;Profiles-Utilities;Easements;Layout;PG;Existing;EQ;Existing-QIS;EQ-Lider;Layout-HOP;Floodplain IMAGES:

NOT FOR BUILDING/NOT FOR CONSTRUCTION

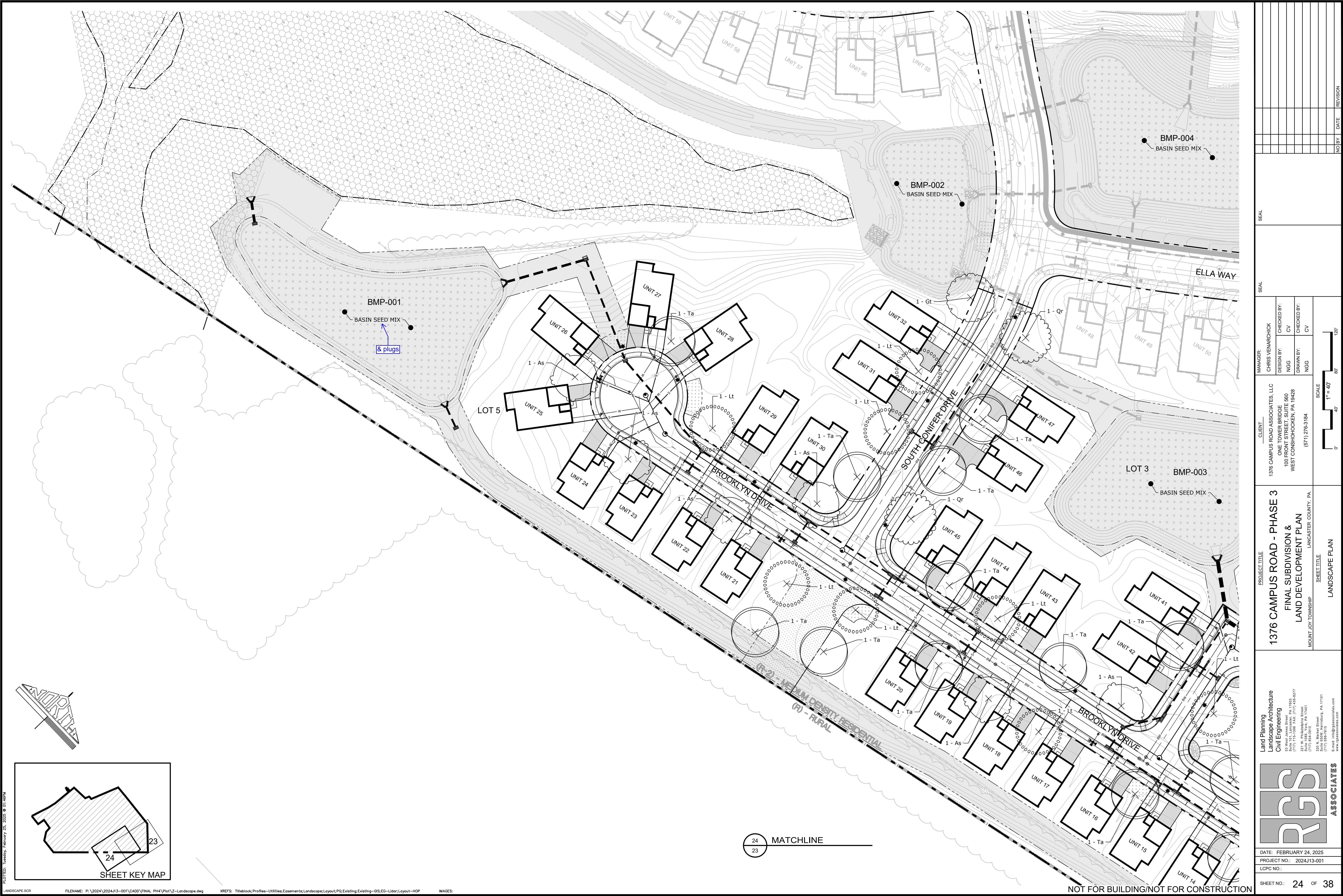
MANAGER: CHRIS VEIMARCHICK		DESIGN BY: NGG		DRAWN BY: NGG		CHECKED BY: CV		CHECKED BY: CV		NO BY		DATE		REVISION	
SEAL		SEAL		SEAL		SEAL		SEAL		SEAL		SEAL		SEAL	
PROJECT TITLE <b>1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION &amp; LAND DEVELOPMENT PLAN</b>															
CLIENT 1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET, SUITE 500 WEST CONSHOHOCKEN, PA 19428 (571) 276-3184															
SHEET TITLE UTILITY PLAN															
SCALE 1" = 40' 0' 40' 120'															
Land Planning Landscape Architecture Civil Engineering 53 West Java Street (717) 715-1398 FAX (717) 335-6977 221 W. Philadelphia Street (717) 864-2015 328 N. Market Street (717) 380-7515 E-mail: info@grassroots.com www.grassroots.com															
DATE: FEBRUARY 24, 2025															
PROJECT NO.: 2024-113-001															
LOPC NO.:															
SHEET NO.: 22 OF 38															





PROJECT TITLE <b>1376 CAMPUS ROAD - PHASE 3 FINAL SUBDIVISION &amp; LAND DEVELOPMENT PLAN</b>		CLIENT <b>1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET SUITE 560 WEST CONSHOHOCKEN, PA 19428 (571) 276-3184</b>		MANAGER <b>CHRIS VEMARCHICK</b>		DESIGN BY <b>CV</b>		CHECKED BY <b>CV</b>		DRAWN BY <b>NGG</b>		SCALE <b>1" = 40'</b>		NO BY <b>DATE</b>		REVISION	
LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN		LANDSCAPE PLAN	
DATE: FEBRUARY 24, 2025		PROJECT NO.: 2024/13-001		LOPC NO.:		SHEET NO.: 23		OF 38		NOT FOR BUILDING/NOT FOR CONSTRUCTION							





PLOTTED: Tuesday, February 20, 2024 @ 01:46PM

LANDSCAPE SCR FILENAME: P:\2024\2024\13-001\CA00\FINAL PH4\Plot\Z-Landscape.dwg XREFS: Titleblock-Profiles-Utilities-Easements;Landscape;Layout;PQ;Existing;Existing-QS;EQ-Lidar;Layout-HOP IMAGES:

MANAGER: CHRIS VEMARCHICK  
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CLIENT  
1376 CAMPUS ROAD ASSOCIATES, LLC  
ONE TOWER BRIDGE  
100 FRONT STREET SUITE 500  
WEST CONSHOHOCKEN, PA 19428  
(571) 276-3184

PROJECT TITLE  
1376 CAMPUS ROAD - PHASE 3  
FINAL SUBDIVISION &  
LAND DEVELOPMENT PLAN

LANDSCAPE PLAN

LAND Planning  
Landscape Architecture  
Civil Engineering  
53 West Java Street  
(717) 715-1398 FAX (717) 335-6277  
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DATE: FEBRUARY 24, 2025  
PROJECT NO.: 2024/13-001  
LOPC NO.:  
SHEET NO.: 24 OF 38

NO BY DATE REVISION



LANDSCAPE CONTRACTOR NOTES:

- A. GENERAL PLANTING NOTES:  
1. CONTRACTOR SHALL CONTACT PA ONE CALL (8-1-1), AND SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE PROJECT AREA PRIOR TO INSTALLATION OF PLANT MATERIALS.  
2. THE LANDSCAPE CONTRACTOR SHALL LOCATE AND VERIFY ALL UNDERGROUND UTILITIES PRIOR TO ANY PLANTING, AND SHALL FIELD-ADJUST THE LOCATIONS OF TREES AND SHRUBS, IF NECESSARY, TO AVOID ANY CONFLICT WITH THESE UTILITIES. **CONTACT THE LANDSCAPE ARCHITECT FOR APPROVAL OF ANY PROPOSED DESIGN CHANGES.**  
3. THIS PLAN IS FOR PLANTING INFORMATION ONLY. REFER TO GRADING, UTILITY, SITE LAYOUT AND SEDIMENT EROSION CONTROL PLANS FOR ALL RELATED INFORMATION.  
4. ALL PLANTS AND SHRUBS SHALL BE AS SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE DETAILS AND COMMENTS NOTED ON THESE DRAWINGS. ALL NON-HERBACEOUS PLANTS ARE BED OUTLINES SHALL BE STAKED AND OUTLINED IN THE FIELD BY THE **CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT** OR OWNER'S REPRESENTATIVE PRIOR TO PLANTING.  
7. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS, AND SHALL REPORT ANY IDENTIFIED DISCREPANCIES TO THE LANDSCAPE ARCHITECT. IF SITE WORK HAS BEEN MODIFIED AND DIFFERS FROM INFORMATION SHOWN ON THE APPROVED PLANS, AND POTENTIAL CHANGES TO THE PLANTING DESIGN ARE NECESSARY, THE CONTRACTOR **MUST CONTACT THE LANDSCAPE ARCHITECT FOR INSTRUCTIONS.**  
8. PROCEED WITH WORK ONLY WHEN PRESENT AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING WITHOUT EXCESSIVE SOIL COMPACTION AND/OR UNNECESSARY PLANT DAMAGE.  
9. PLANT TREES, SHRUBS, AND OTHER PLANT MATERIALS AFTER FINISHED GRADES ARE ESTABLISHED, AND BEFORE PLANTING ANY TURF AREAS UNLESS OTHERWISE INDICATED.  
10. THE CONTRACTOR SHALL VISUALLY INSPECT ALL PLANTING AREAS BEFORE ANY TOPSOIL IS PLACED OR PLANTING BEGINS TO ENSURE ADEQUATE DRAINAGE EXISTS. IF ANY AREAS TO BE PLANTED SHOW EVIDENCE OF POOR DRAINAGE, THE CONTRACTOR **SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY FOR CORRECTIVE ACTION.**  
11. REMOVE ANY EXCESS SOIL FROM PLANT ROOT FLARES, IF PRESENT.  
12. LANDSCAPE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN WORKING IN AREAS OF EXISTING VEGETATION THAT IS TO REMAIN AND TO BE PROTECTED. IF SUCH VEGETATION IS INJURED OR DESTROYED DURING CONSTRUCTION, IT SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR WITH PLANTS OF A SIZE AND SPECIES **AS DETERMINED BY THE LANDSCAPE ARCHITECT**, AND SUCH REPLACEMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.  
13. PLANT QUANTITIES NOTED ON THE PLANT LIST SHOULD MATCH THE PLANT SYMBOLS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL PLANT MATERIAL BASED UPON GRAPHIC SYMBOL QUANTITIES AND **SHALL CONTACT THE LANDSCAPE ARCHITECT** IF A DIFFERENCE IS FOUND BETWEEN THE QUANTITIES NOTED IN THE PLANT LIST AND THE DRAWING SYMBOLS.  
14. ALL AREAS DISTURBED BY PLANTING OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE, AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.

B. PLANT STANDARDS

1. ALL TREES SHALL HAVE BEEN NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE FINAL PLANTING SITE.  
2. ALL PLANTS SHALL HAVE A NORMAL GROWTH HABIT AND SHALL BE SOUND, HEALTHY, AND VIGOROUS. THEY SHALL BE FREE FROM DISEASE.  
3. REQUIREMENTS FOR PLANT MEASUREMENTS, BRANCHING, GRADING, QUALITY, AND BALLING AND BURLAPPING SHALL FOLLOW THE CODE OF STANDARDS AS RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, CURRENT EDITION, AS AMENDED. DO NOT PRUNE TO ATTAIN REQUIRED SIZES.  
4. IF FORMAL PLANTING ARRANGEMENTS OR A CONSISTENT ORDER OF PLANTS IS INDICATED ON THE DRAWINGS, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD.  
5. ALL STREET TREES AND SCREENING PLANT MATERIALS SHALL BE INSTALLED DURING THE FIRST PLANTING SEASON FOLLOWING COMPLETION OF OTHER SITE WORK. THE CONTRACTOR SHALL MAINTAIN ALL PLANTINGS PRIOR TO THE BEGINNING OF THE GUARANTEE PERIOD BY WATERING, FERTILIZING, DISEASE CONTROL, PRUNING, AND WEEDING TO KEEP THE COMPLETED WORK AND/OR UNCOMPLETED WORK IN A CLEAN AND NEAT CONDITION AT ALL TIMES.

C. PLANT GUARANTEE

1. ALL MATERIAL SHALL BE GUARANTEED BY INSTALLER FOR THE DURATION OF 12 MONTHS FOLLOWING THE DATE OF PLANTING, NO MORE THAN 1/3 OF THE TREE OR SHRUB SHALL BE DAMAGED OR DECENT. REPLACEMENT PLANTS SHALL BE MAINTAINED AFTER REPLANTING FOR AN ADDITIONAL 18 MONTHS.  
2. THE CONTRACTOR SHALL GUARANTEE THAT PLANTS SHALL BE IN VIGOROUS AND THRIVING CONDITION AT THE END OF THE GUARANTEE PERIOD. SHOULD ANY PLANTS APPEAR TO BE IN POOR HEALTH OR LACK NORMAL GROWTH HABIT, AS DETERMINED BY THE LANDSCAPE ARCHITECT, THEY SHALL BE REMOVED AT ONCE AND REPLACED.  
3. DURING THE TIME BETWEEN THE INSTALLATION OF PLANTS AND THE BEGINNING OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE SUPERINTENDENCE OF THE PLANTINGS. SHOULD ANY PLANT BE STOLEN OR OTHERWISE REMOVED, ANY SUCH PLANT SHALL BE REPLACED BY THE CONTRACTOR. THE GUARANTEE PERIOD WILL BEGIN WHEN ALL PLANTS ARE INSTALLED AS SHOWN AND SPECIFIED IN THESE PLANS.

D. SOIL PREPARATION

1. NOTES IN THIS SECTION APPLY TO ALL PLANTING AREAS OTHER THAN LANDSCAPED PCSM BMPs. SOIL PREPARATION REQUIREMENTS FOR PCSM BMPs CAN BE FOUND ON SHEET 41.  
2. PRIOR TO PLANTING, THE LANDSCAPE CONTRACTOR SHALL OBTAIN, AND FORWARD TO THE LANDSCAPE ARCHITECT, SOIL AGRONOMY TESTING REPORTS FROM AN APPROVED SOILS LABORATORY SUCH AS PENNSYLVANIA STATE UNIVERSITY'S AGRICULTURAL ANALYTICAL SERVICES LABORATORY. TESTS SHALL BE COMPLETED FOR EACH EXISTING SOIL TYPE AND FOR EACH BATCH OF IMPORTED TOPSOIL. TESTS TO INCLUDE SOIL FERTILITY, PARTICLE SIZE, SAND SIEVE ANALYSIS, ORGANIC MATTER AND SOLUBLE SALTS. CONTRACTOR TO REQUEST SOIL AMENDMENT RECOMMENDATIONS FOR EACH CATEGORY OF TURF AND/OR LANDSCAPE PLANT TO BE INSTALLED IN THE SUBJECT SOIL.  
3. ALL SOIL AMENDMENTS SHALL BE INSTALLED PER THE SOIL AGRONOMY REPORT, AND SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR.  
4. PERENNIAL, ANNUAL AND BULB PLANTING AREAS SHALL HAVE AMENDED SOILS AS FOLLOWS FOR EACH 100 S.F. AREA:  
6 CU. FT. OF CLEAN COMPOST  
5-6 LBS. MILORGANITE OR EQUAL  
2-3 LBS. OF 0-20-20 FERTILIZER  
5. AGRIFORM 20-10-5 PLANTING TABLETS OR EQUIVALENT SHALL BE USED FOR ALL TREE AND SHRUB PLANTINGS PER THE MANUFACTURERS' SPECIFICATIONS. TABLETS ARE NOT A REPLACEMENT FOR AMENDMENTS REQUIRED BY THE SOIL AGRONOMY TEST RESULTS.  
6. APPLY AMENDMENTS ON-SITE, AND MIX SOIL TO FULLY ADDRESS ALL EXISTING SOIL DEFICIENCIES. DO NOT APPLY AMENDMENTS NOR TILL IF EXISTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.  
7. LANDSCAPE PLANTING AREAS SHALL BE FREE OF ANY DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE RUBBLE, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE TAR, ROOFING COMPOUND, ACID, AND STONES LARGER THAN 3" IN ANY DIRECTION.  
8. TOPSOIL SHALL BE PLACED AT A MINIMUM DEPTH OF 6".  
9. IN ALL PLANTING AREAS, IF INSUFFICIENT TOPSOIL IS PRESENT PRIOR TO PLANTING, THE SITE CONTRACTOR SHALL PROVIDE AND PLACE THE REQUIRED TOPSOIL AT THE LANDSCAPE CONTRACTOR'S REQUEST. THE TOPSOIL SHALL BE ROUGH GRADED BY THE SITE CONTRACTOR AND FINISH GRADED BY THE LANDSCAPE CONTRACTOR.  
10. CONTRACTOR SHALL KILL OFF ANY EXISTING TURF AND UNWANTED VEGETATION WITHIN PROPOSED BED LIMITS. COMPLETE REMOVAL OF TURF BY MEANS OF A SOD CUTTER OR SCUFFING IS AN ACCEPTABLE ALTERNATIVE METHOD TO HERBICIDE APPLICATION. IF HERBICIDE IS NOT USED, THE CONTRACTOR SHALL COMPLETELY REMOVE ALL EXISTING PLANT ROOTS.

E. MULCH:

1. THE CONTRACTOR MAY APPLY A PRE-EMERGENT HERBICIDE PER THE MANUFACTURERS SPECIFICATIONS TO THE ENTIRE PLANTING BED FOR CONTROL OF WEED GERMINATION.  
2. A LAYER OF NATURAL, NON-COLORED ORGANIC MULCH SHALL BE APPLIED ACROSS THE ENTIRE PLANTING BED AREA UNLESS OTHERWISE INDICATED ON THE PLAN. MULCH DEPTH SHALL NOT BE GREATER THAN 3" NOR LESS THAN 2".  
3. MULCH SHALL BE ORGANIC, DOUBLE-CUT, NATURAL, UN-DYED AND FREE FROM DELETERIOUS MATERIALS.  
4. MULCH SHALL NOT COVER THE CROWNS OF ANY HERBACEOUS PLANTS, NOR THE ROOT FLARES OF ANY WOODY PLANTS.

F. SEED/SOD ESTABLISHMENT NOTES:

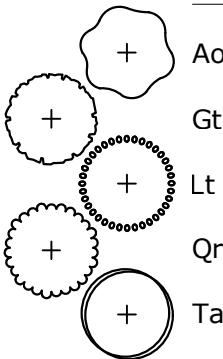
1. GRASS SEED SHALL BE FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH AOSA'S RULING FOR TESTING SEEDS' FOR PURITY AND GERMINATION TOLERANCES.  
2. TURFGRASS SOD SHALL COMPLY WITH 'SPECIFICATIONS FOR TURFGRASS SOD MATERIALS' IN TPI GUIDELINE SPECIFICATIONS TO TURFGRASS SODDING. TURFGRASS SOD SHALL BE A VIABLE SOD OF UNIFORM DENSITY, COLOR, AND TEXTURE. IT SHALL BE STRONGLY ROOTED AND CAPABLE OF VIGOROUS GROWTH AND DEVELOPMENT.  
3. RECOMMENDED TIME OF TURFGRASS SEEDING IS SEPTEMBER 1ST TO OCTOBER 15TH, WHERE SPRING SEEDINGS ARE NECESSARY, SEED NO LATER THAN APRIL 1ST FOR BEST RESULTS.  
4. SOW RECOMMENDED SEED MIXTURE ADAPTED TO USE IN CLIMATIC CONDITIONS OF THE SPECIFIC SITE AREA.  
5. PRIOR TO SEEDING AND/OR SODDING, REMOVE ANY EXISTING VEGETATION FROM PROPOSED LAWN AREAS.  
6. EXCESS DEAD VEGETATION SHOULD BE TURNED UNDER, IF THE SITE IS NOT TOO WET FOR TILLING WITHOUT EXCESSIVE SOIL COMPACTION.  
7. IF TOPSOIL HAS BEEN DEPLETED OR REMOVED IN THE AREA TO BE SEEDDED OR SODDED, PROVIDE SOIL AMENDMENTS PER THE SOIL AGRONOMY REPORT.  
8. DIVIDE TOTAL SEED QUANTITY INTO TWO EQUAL LOTS, SOWING ONE LOT IN ONE DIRECTION, AND THE SECOND LOT AT RIGHT ANGLES TO THE FIRST WITH A MECHANICAL SEEDER OR SPREADER.  
9. EXTRA CARE SHALL BE TAKEN TO ELIMINATE DEPRESSIONS OR AIR POCKETS BY ROLLING OR TAMPING LAWN BASE BEFORE INSTALLATION. ALL SOD MUST BE DELIVERED AND INSTALLED WITHIN 36 HOURS OF BEING CUT. SOD SHALL BE LAID SMOOTHLY, EDGE TO EDGE WITH STAGGERED JOINTS. IMMEDIATELY AFTER INSTALLATION, THE SOD SHALL BE WATERED TO A DEPTH OF 4" INTO THE SOIL.  
10. MULCHING WITH STRAW, HYDROMULCH, OR FIBER MATS IS RECOMMENDED TO PROTECT SEED FROM DRYING OUT OR WASHING AWAY. HEAVY MULCHES SHOULD BE REMOVED FROM THE AREA WITHIN A FEW DAYS AFTER SEED GERMINATION.

11. BOUNDARIES OF NEWLY SEEDED AREAS SHALL BE WELL DEFINED WITH SIGNS OR OTHER MARKERS TO DETER INTRUSION UNTIL LAWN AREAS ARE FULLY ESTABLISHED.  
12. CONTRACTOR IS RESPONSIBLE FOR TURF MAINTENANCE UNTIL SATISFACTORY TURF IS ESTABLISHED, AS DETERMINED BY THE LANDSCAPE ARCHITECT. MAINTENANCE TO INCLUDE WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE MATERIALS AND INSTALLATION THE SAME AS THOSE USED IN THE ORIGINAL INSTALLATION.  
a. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER PROCESSES. REPLACE MATERIALS AND TURF DAMAGED OR LOST IN AREAS OF SUBSIDENCE.  
b. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW MULCH AND ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.  
c. APPLY TREATMENTS AS REQUIRED TO KEEP TURF AND SOIL FREE OF PESTS AND PATHOGENS OR DISEASE. USE INTEGRATED PEST MANAGEMENT PRACTICES WHENEVER POSSIBLE TO MINIMIZE THE USE OF PESTICIDES AND REDUCE HAZARDS.  
13. WATERING: INSTALL AND MAINTAIN TEMPORARY PIPING, HOSES, AND TURF-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND TO KEEP TURF UNIFORMLY MOIST TO A DEPTH OF 4 INCHES.  
a. SCHEDULE WATERING TO PREVENT WILTING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM TO AVOID WALKING OVER MUDDY OR NEWLY PLANTED AREAS.  
b. WATER TURF WITH FINE SPRAY AT A MINIMUM RATE OF 1 INCH PER WEEK UNLESS RAINFALL PRECIPITATION IS ADEQUATE.  
14. MOW TURF AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN ONE-THIRD OF GRASS HEIGHT. REMOVE NO MORE THAN ONE-THIRD OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET.  
15. TURF POSTFERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY. USE FERTILIZER THAT PROVIDES ACTUAL NITROGEN OF AT LEAST 1 LB/1000 SQ. FT. TO TURF AREA.  
16. SATISFACTORY TURF - TURF INSTALLATIONS SHALL MEET THE FOLLOWING CRITERIA AS DETERMINED BY LANDSCAPE ARCHITECT/ENGINEER: AT END OF MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90 PERCENT OVER ANY 10 SQ. FT. AND BARE SPOTS NOT EXCEEDING 5 BY 5 INCHES.  
17. CONTRACTOR TO USE SPECIFIED MATERIALS TO REESTABLISH TURF THAT DOES NOT COMPLY WITH REQUIREMENTS, AND CONTINUE MAINTENANCE UNTIL TURF IS SATISFACTORY.

G. PLUG INSTALLATION NOTES:

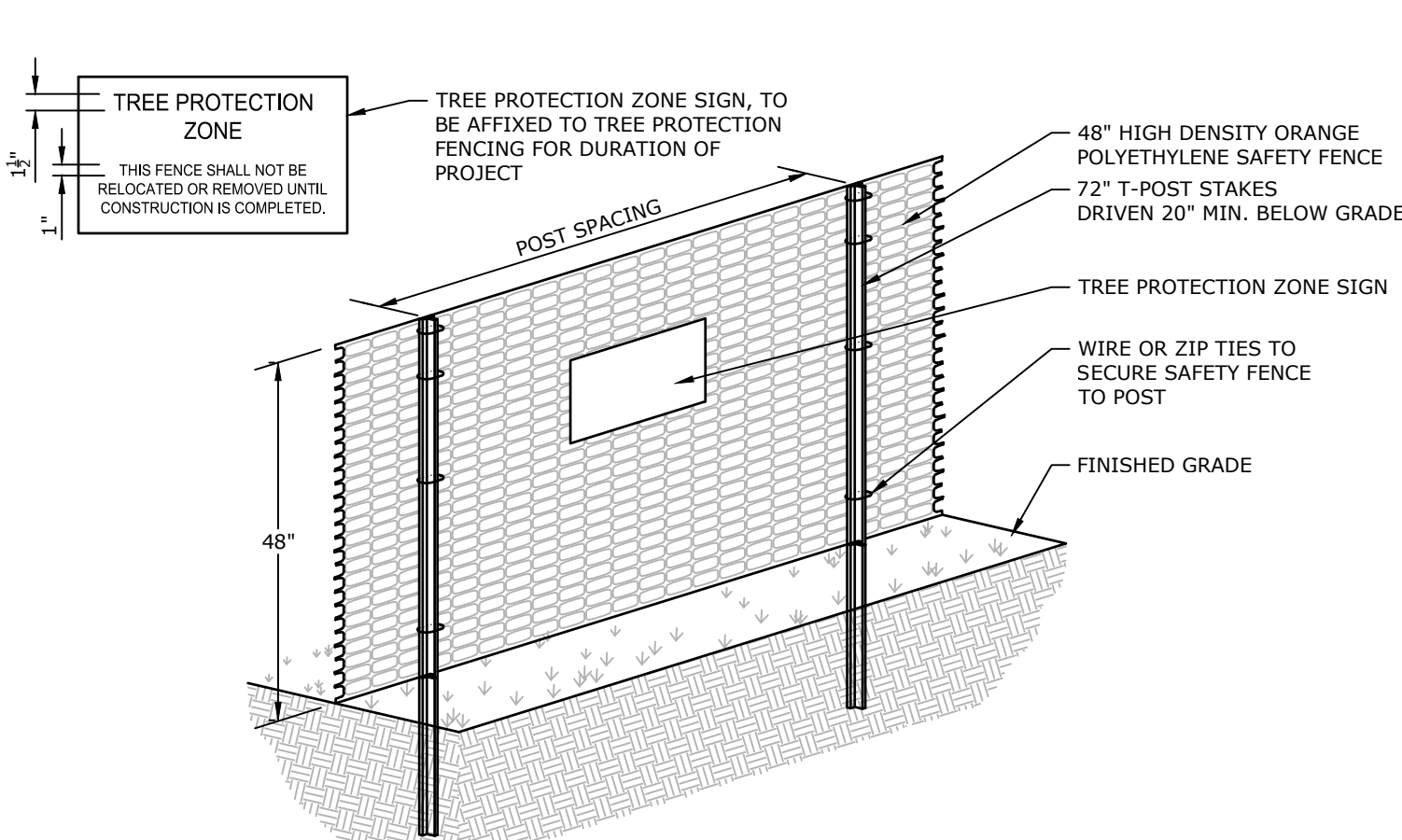
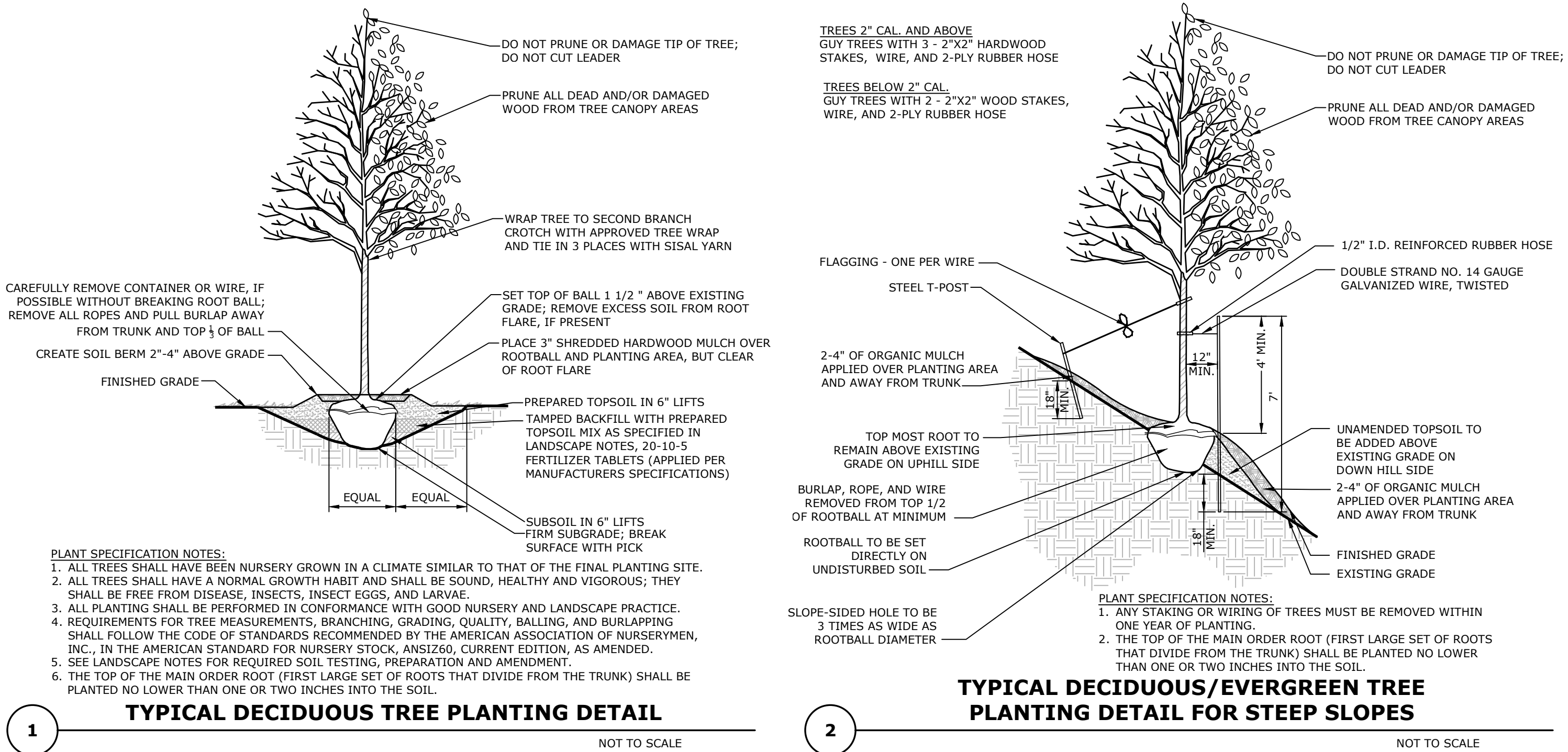
1. PRIOR TO FINAL SEEDING/PLANTING OF THE STORMWATER MANAGEMENT FACILITIES, THE CONTRACTOR SHALL PROVIDE POST-CONSTRUCTION INFILTRATION TESTING IN THE BIO-RETENTION FACILITIES TO DETERMINE ACTUAL DEWATERING RATES. RESULTS TO BE PROVIDED TO PROJECT'S LANDSCAPE ARCHITECT AND/OR CIVIL ENGINEER WHO WILL THEN RECOMMEND ANY REQUIRED ADJUSTMENTS TO PROPOSED PLANTINGS. FINAL PLANT SPECIES SELECTIONS MAY BE MODIFIED AS NECESSARY BASED UPON ACTUAL FIELD-CONDITION INFILTRATION RATES.  
2. PLUGS SHALL ONLY BE INSTALLED WHEN THEY ARE IN ACTIVE GROWTH. PROPER INSTALLATION PERIODS VARY BY SPECIES. CONSULT PLANT SUPPLIER FOR GUIDANCE ON PLANTING PERIODS AND TIMING. INSTALLATION OUTSIDE OPTIMAL PLANTING PERIODS COULD RESULT IN PLANT LOSS.  
3. PROCEED WITH WORK ONLY WHEN PRESENT AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING WITHOUT EXCESSIVE SOIL COMPACTION AND/OR UNNECESSARY PLANT DAMAGE. AVOID PLANTING IN EXCESSIVELY MOIST CONDITIONS UNLESS PLANTING IN HYDRIC SOILS.  
4. CONTRACTOR TO LAYOUT AND INSTALL PLUGS AS SOON AS POSSIBLE FOLLOWING PLANT DELIVERY TO SITE.  
5. IF PLANTING MUST BE DELAYED DUE TO WEATHER OR CONSTRUCTION DELAYS, MOVE PLUGS TO A PROTECTED AND SHADED AREA. IRRIGATE AS NEEDED.  
6. THOROUGHLY WATER PLUG TRAYS PRIOR TO PLUG REMOVAL AND PLANTING.  
7. PLUG SPECIES ARE TO BE DISTRIBUTED ACROSS THE FACILITY AT THE SPECIFIED SPACING, AND SHALL BE COMBINED WITH OTHER SPECIES (IF SO NOTED) IN A RANDOM FASHION.  
8. FOR PLANTING AREAS TO BE MULCHED, APPLY MULCH PRIOR TO INSTALLATION OF THE PLUGS.  
9. WHERE APPLICABLE, SECURE EROSION CONTROL MATTING PRIOR TO PLANTING. PLANT PLUGS DIRECTLY THROUGH THE EROSION CONTROL MATTING.  
10. CONTRACTOR SHALL ONLY REMOVE PLUGS FROM TRAYS BY PUSHING PLANTS UP THROUGH THE BOTTOM OF THE LINER. DO NOT PULL THE PLANTS BY THEIR FOLIAGE.  
11. CONTRACTOR SHALL NOT TEASE THE PLUG ROOT SYSTEMS APART AS IS CUSTOMARY WITH OTHER CONTAINERIZED PLANTS WITH DENSE ROOT SYSTEMS.  
12. PLUGS SHALL BE PLANTED SO THAT THE TOP OF THE PLUG SOIL MEDIA IS FLUSH WITH THE FINISHED GRADE. LIGHTLY TAMP SURROUNDING SOIL TO INCREASE SOIL-ROOT CONTACT AND TO MINIMIZE FROST HEAVING POTENTIAL.  
13. PLUGS SHALL BE WATERED IMMEDIATELY FOLLOWING PLANTING TO REDUCE AIR POCKETS AND TO MAXIMIZE CONTACT BETWEEN THE PLUG ROOTS AND PREPARED SOIL.  
14. MONITOR NEW PLANTINGS FOR SIGNS OF DISEASES, PESTS AND WATER STRESS.  
15. KEEP NEW PLANTINGS FREE OF UNDESIRABLE AND INVASIVE SPECIES.  
16. CONTRACTOR SHALL REMOVE ALL CUT VEGETATION TO ENSURE STORMWATER MANAGEMENT CONTROL STRUCTURES ARE KEPT CLEAR AND FREE OF DEBRIS.

TREES - DECIDUOUS



PLANT SCHEDULE					
QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
15	Acer saccharum	Red Maple 'October Glory'	2" - 2.5" Cal.	B&B	
1	Gleditsia triacanthos f. inermis	Thornless Honey Locust	2" - 2.5" Cal.	B&B	
12	Liriodendron tulipifera	Tulip Poplar	2" - 2.5" Cal.	B&B	
2	Quercus rubra	Red Oak	2" - 2.5" Cal.	B&B	
21	Tilia americana	American Linden	2" - 2.5" Cal.	B&B	

Provide plug planting information for BMP-001 and BMP-003



1. ALL TREES NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS SHOWN ON PLANS.  
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH ORANGE POLYETHYLENE CONSTRUCTION FENCE. REMOVED ORANGE CONSTRUCTION FENCE OUTSIDE THE TREE PROTECTION ZONE (TPZ) NOTED ON THE PLANS, SEE SHEET 3. ORANGE CONSTRUCTION FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS.  
3. ALL TREES NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS SHOWN ON THE PLAN.  
4. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION. ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED BY THE **LANDSCAPE ARCHITECT**.  
5. POST SPACING TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

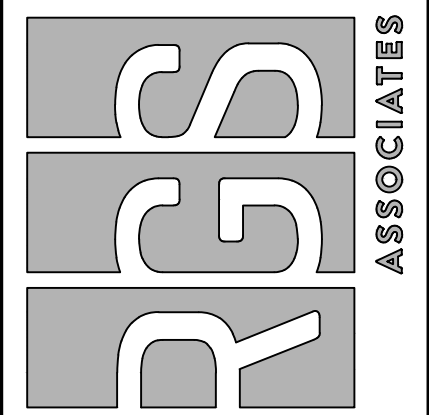
TREE PROTECTION ZONE (TPZ) FENCE DETAIL

NOT TO SCALE

NOT FOR BUILDING/NOT FOR CONSTRUCTION

MANAGER:	CLIENT:	PROJECT TITLE:	SHEET TITLE:
CHRIS VEMARCHICK	1376 CAMPUS ROAD ASSOCIATES, LLC	1376 CAMPUS ROAD - PHASE 3	LANDSCAPE NOTES & DETAILS
DESIGN BY:	ONE TOWER BRIDGE	FINAL SUBDIVISION & LAND DEVELOPMENT PLAN	
CV	100 FRONT STREET SUITE 550		
NGS	WEST CONSHOHOCKEN, PA 19428		
DRAWN BY:	(571) 276-3184		
NGS			
CHECKED BY:			
CV			
SCALE:	N.T.S.		
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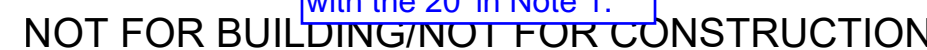
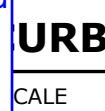
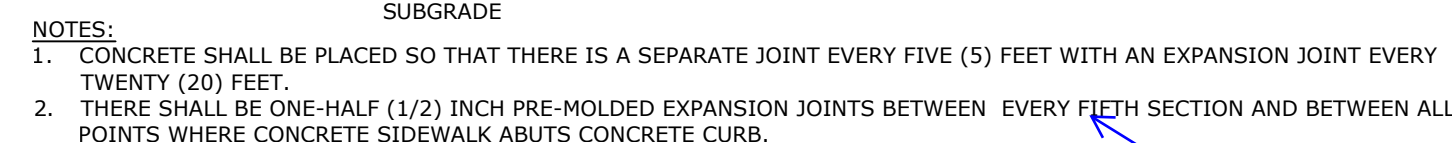
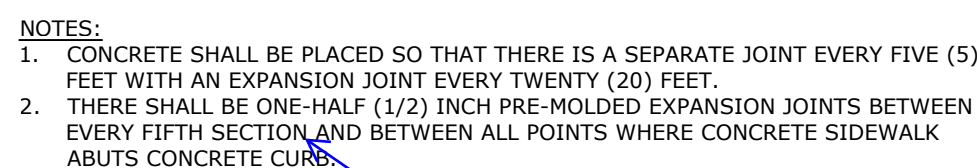
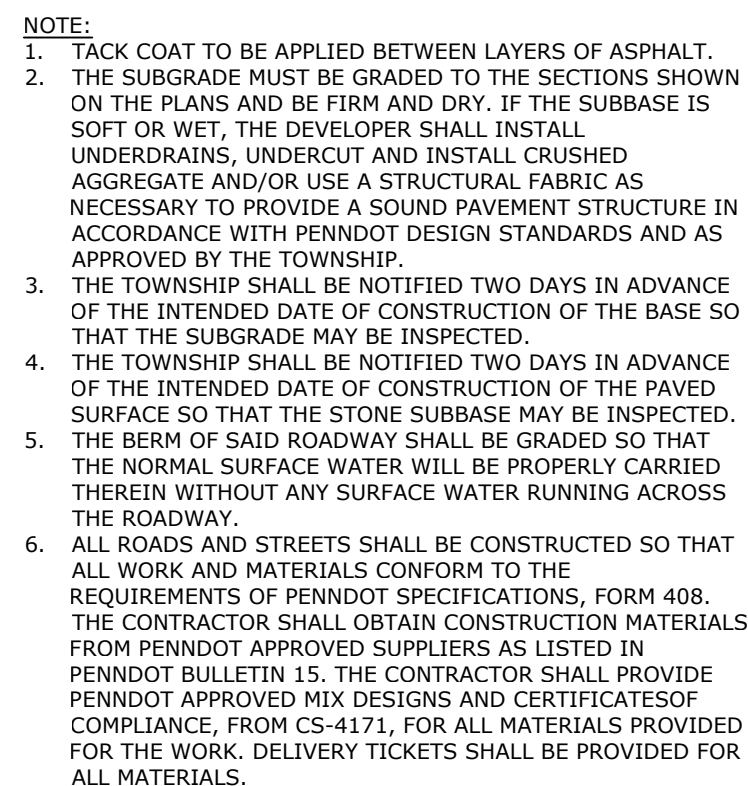
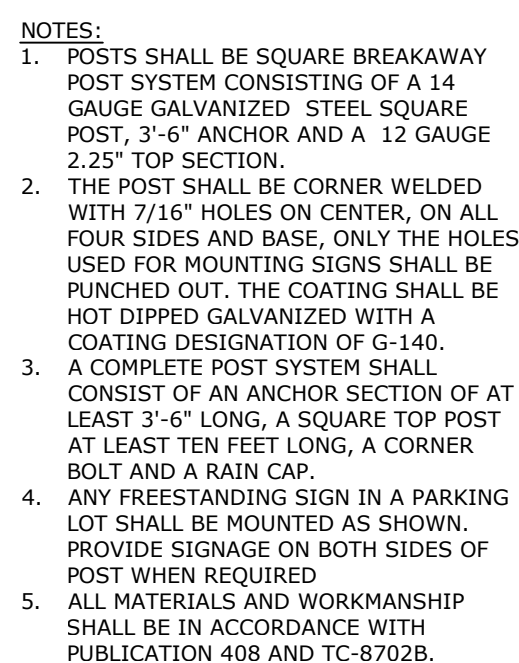
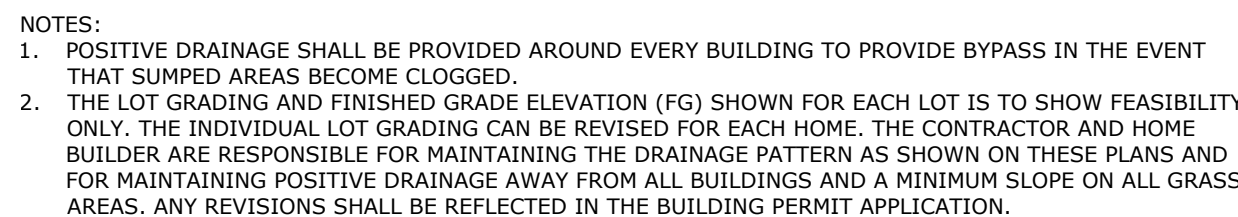
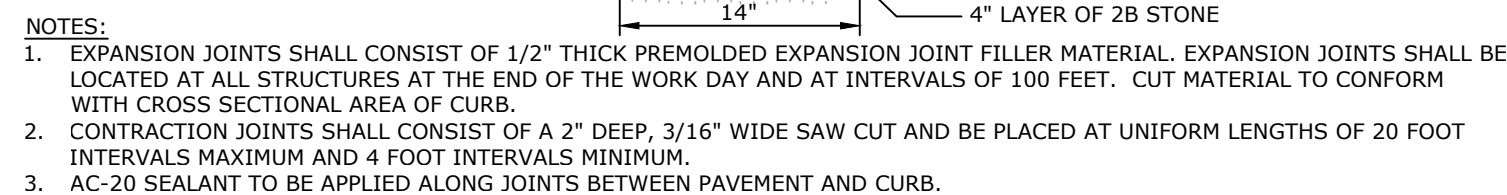
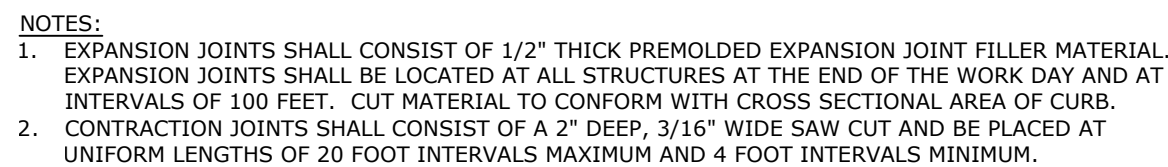
Land Planning Landscape Architecture Civil Engineering	DATE: FEBRUARY 24, 2025
53 West Jones Street P.O. Box 11103 (717) 715-1388 FAX (717) 354-8977	PROJECT NO.: 2024/13-001
221 W. Philadelphia Street (717) 354-8415	LOPC NO.:
328 N. Market Street (717) 354-8415	SHEET NO.: 25 OF 38
E-mail: info@grassassociates.com www.grassassociates.com	



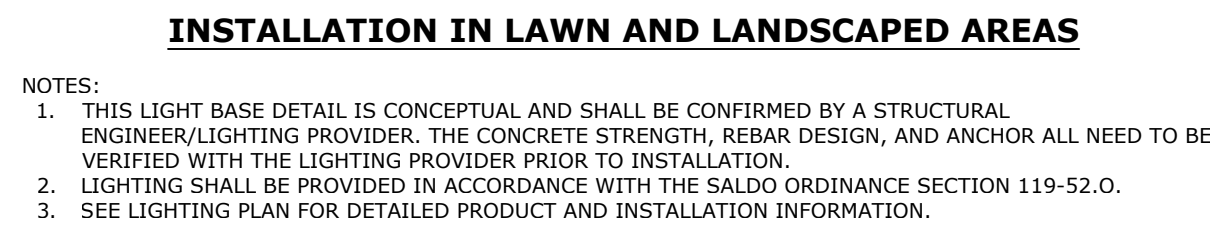




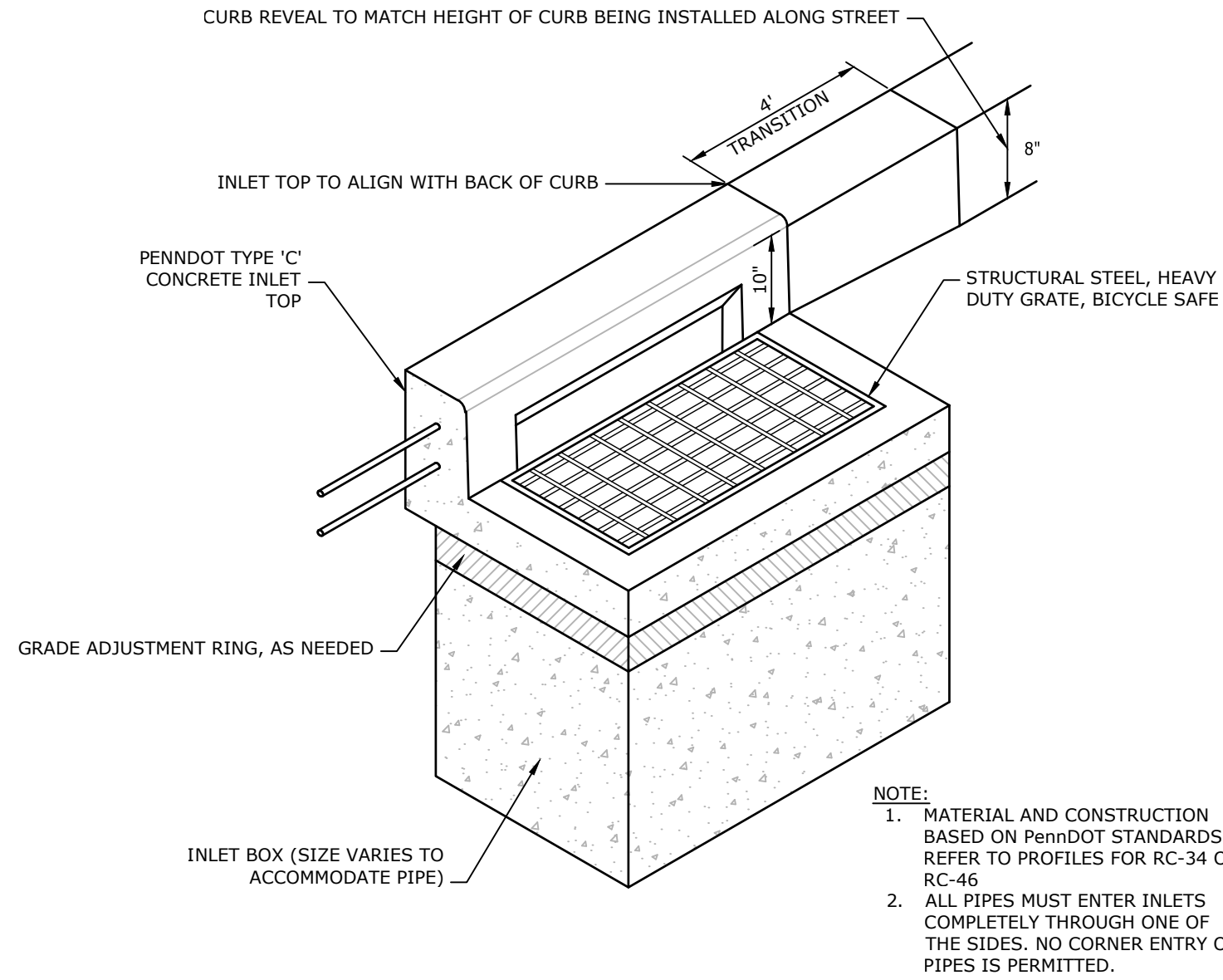


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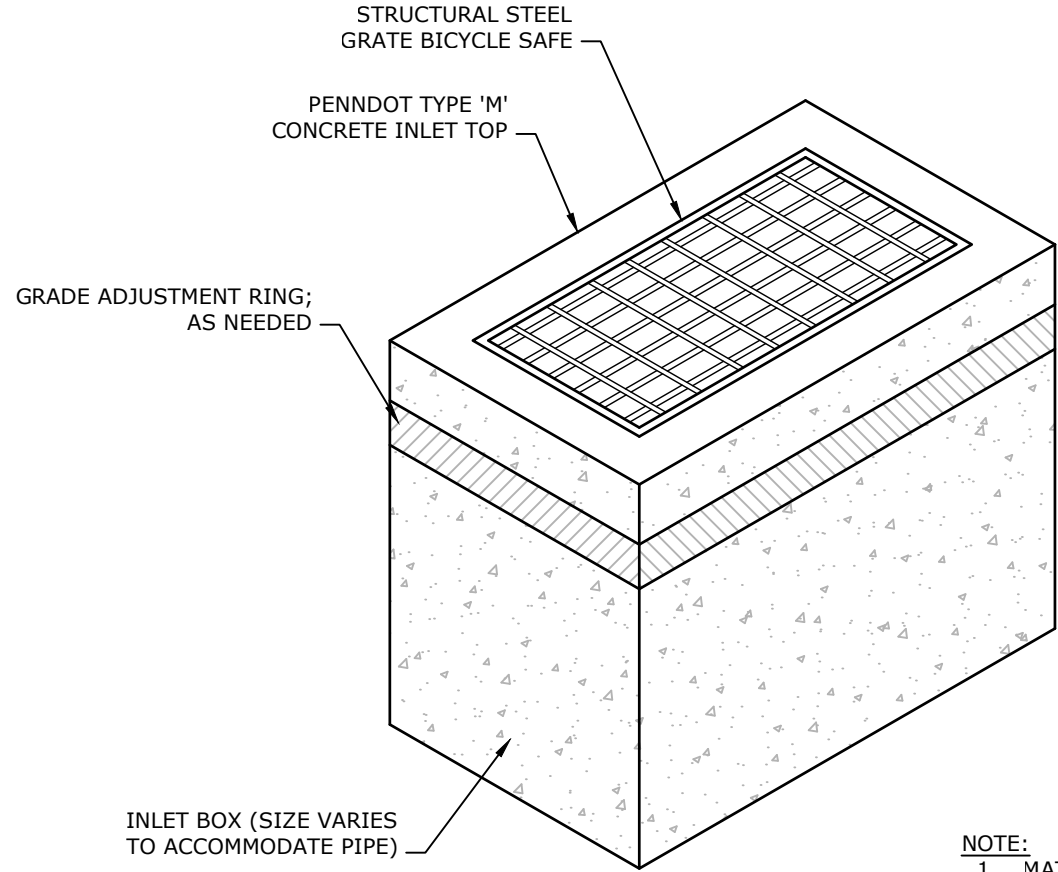
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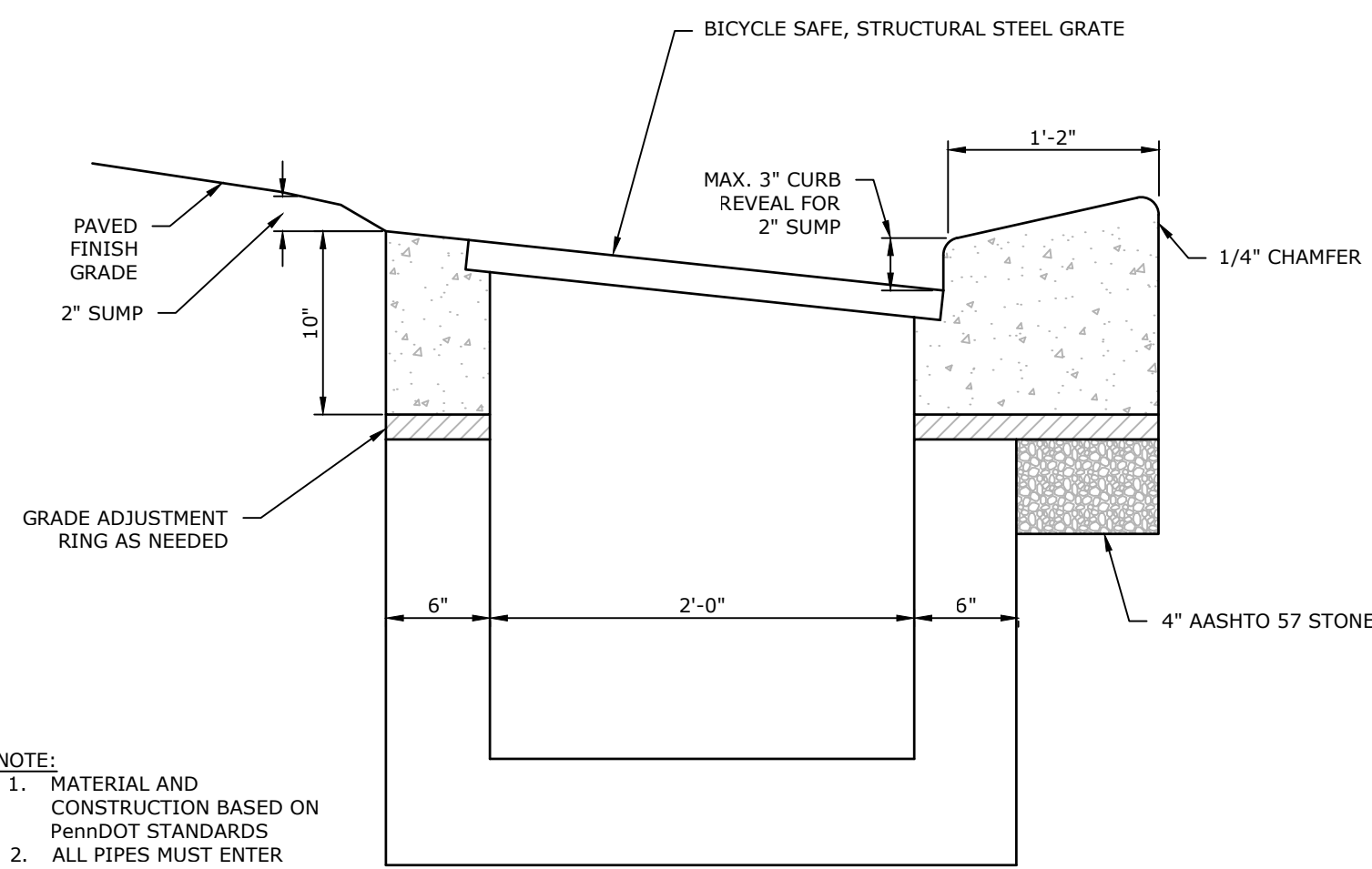
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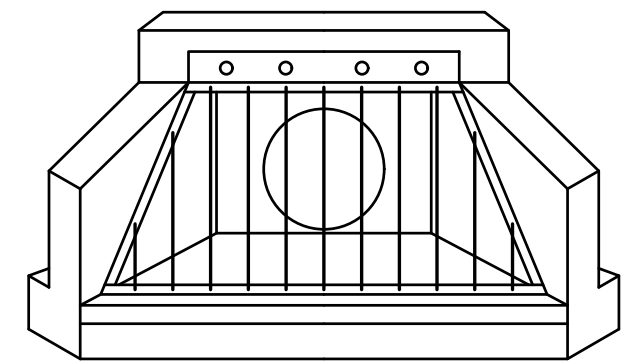
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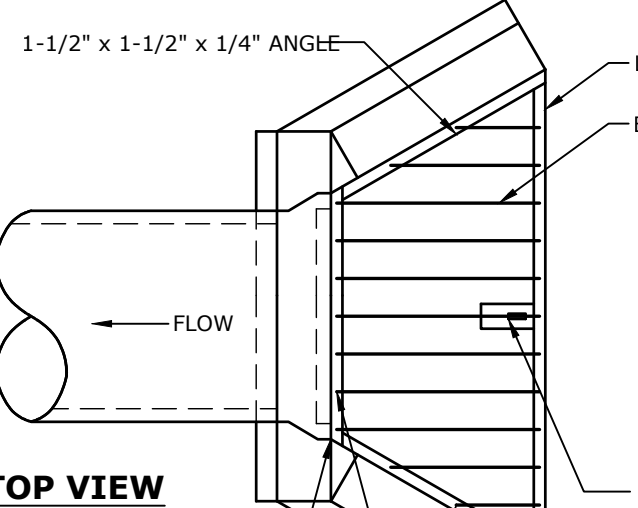


CONCRETE INLET TOP SLANT CURB

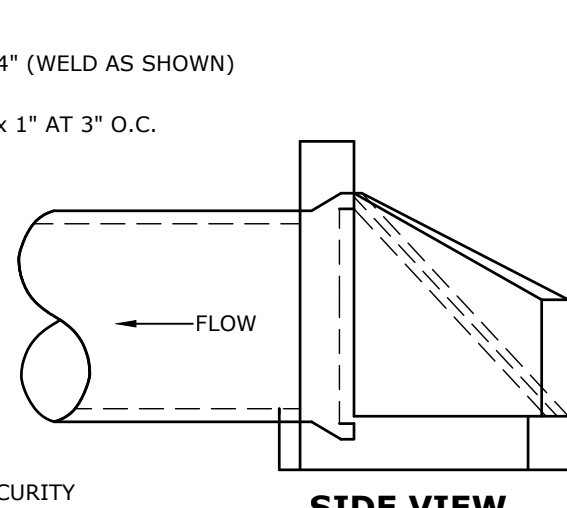
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ISOMETRIC



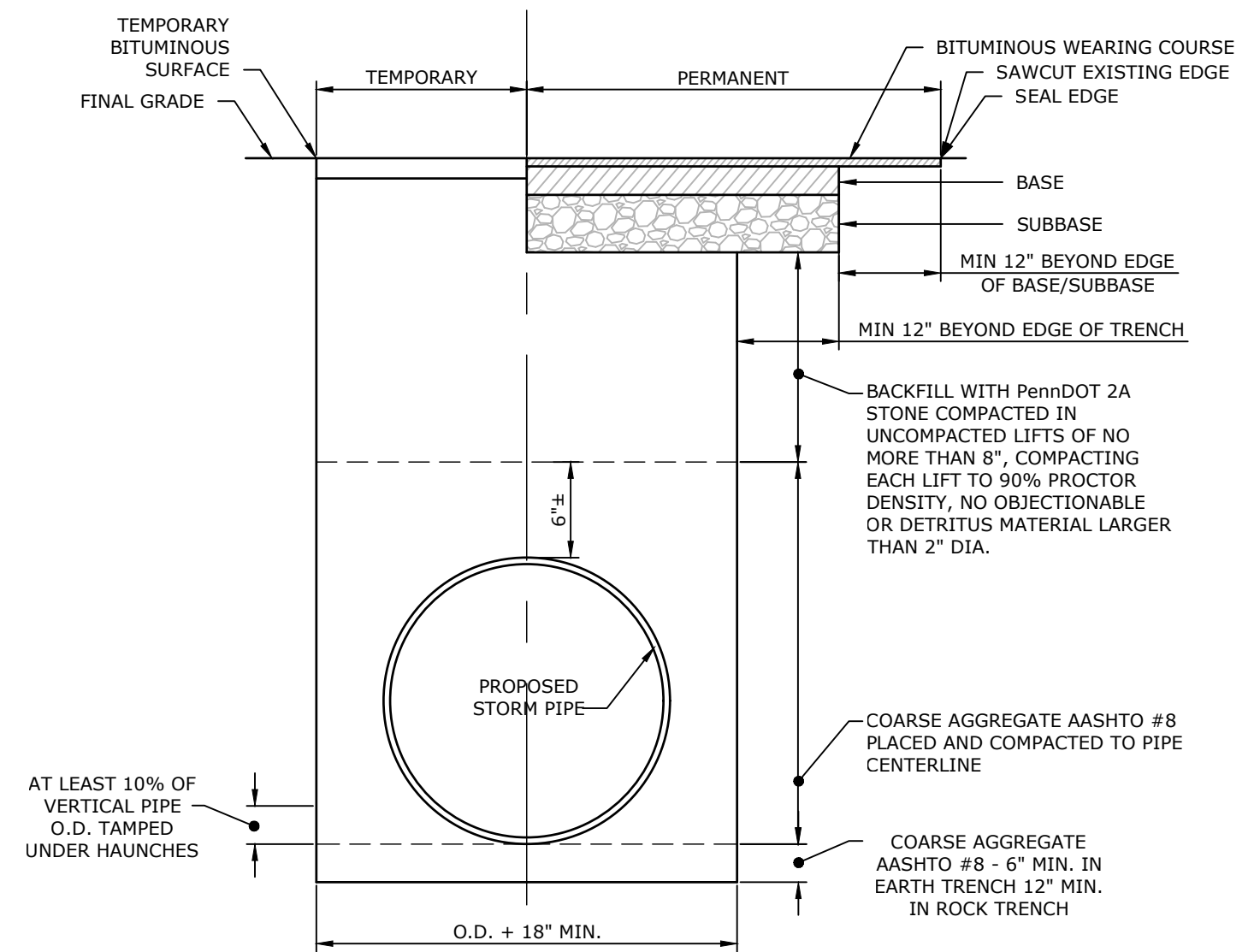
TOP VIEW



SIDE VIEW

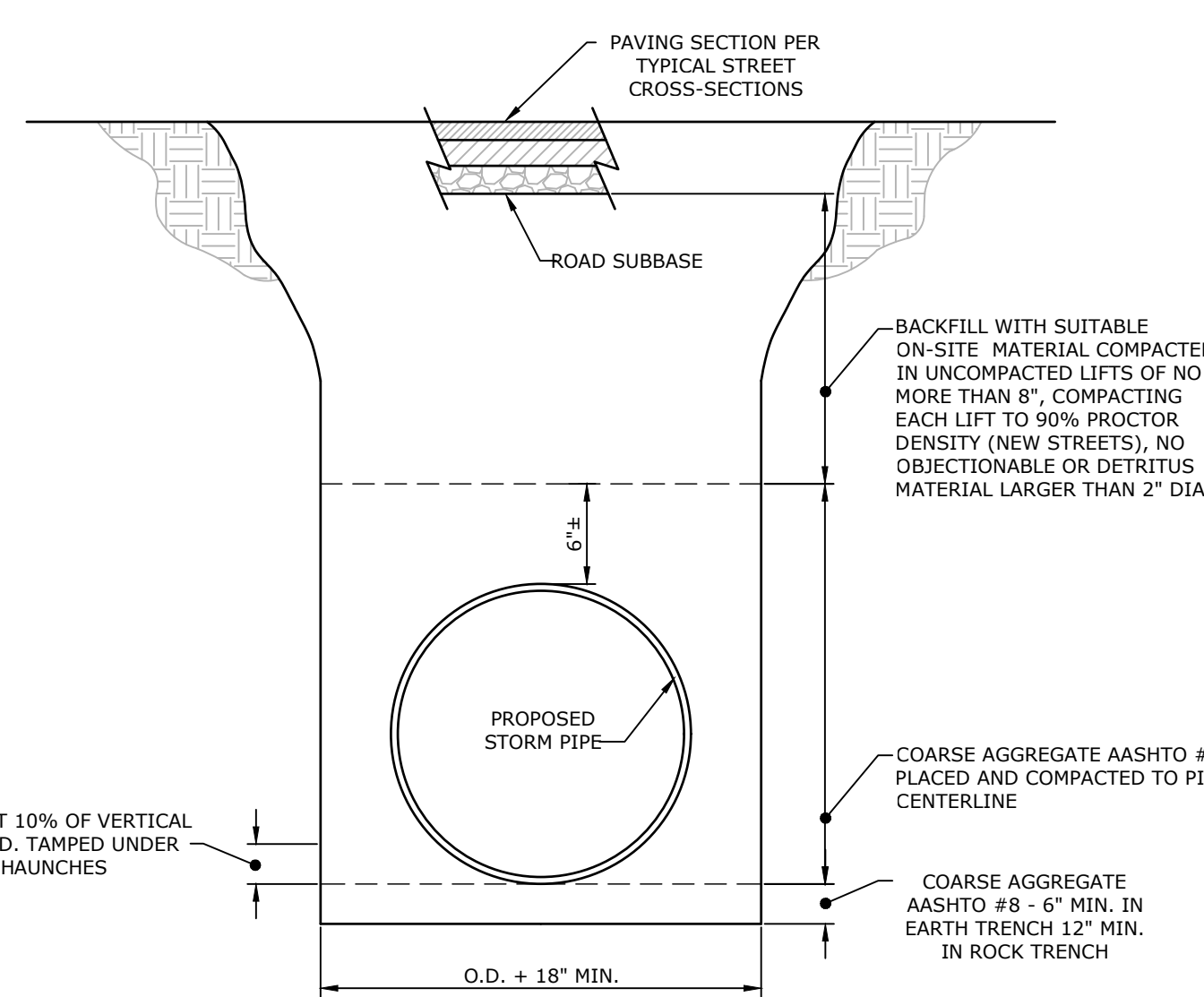
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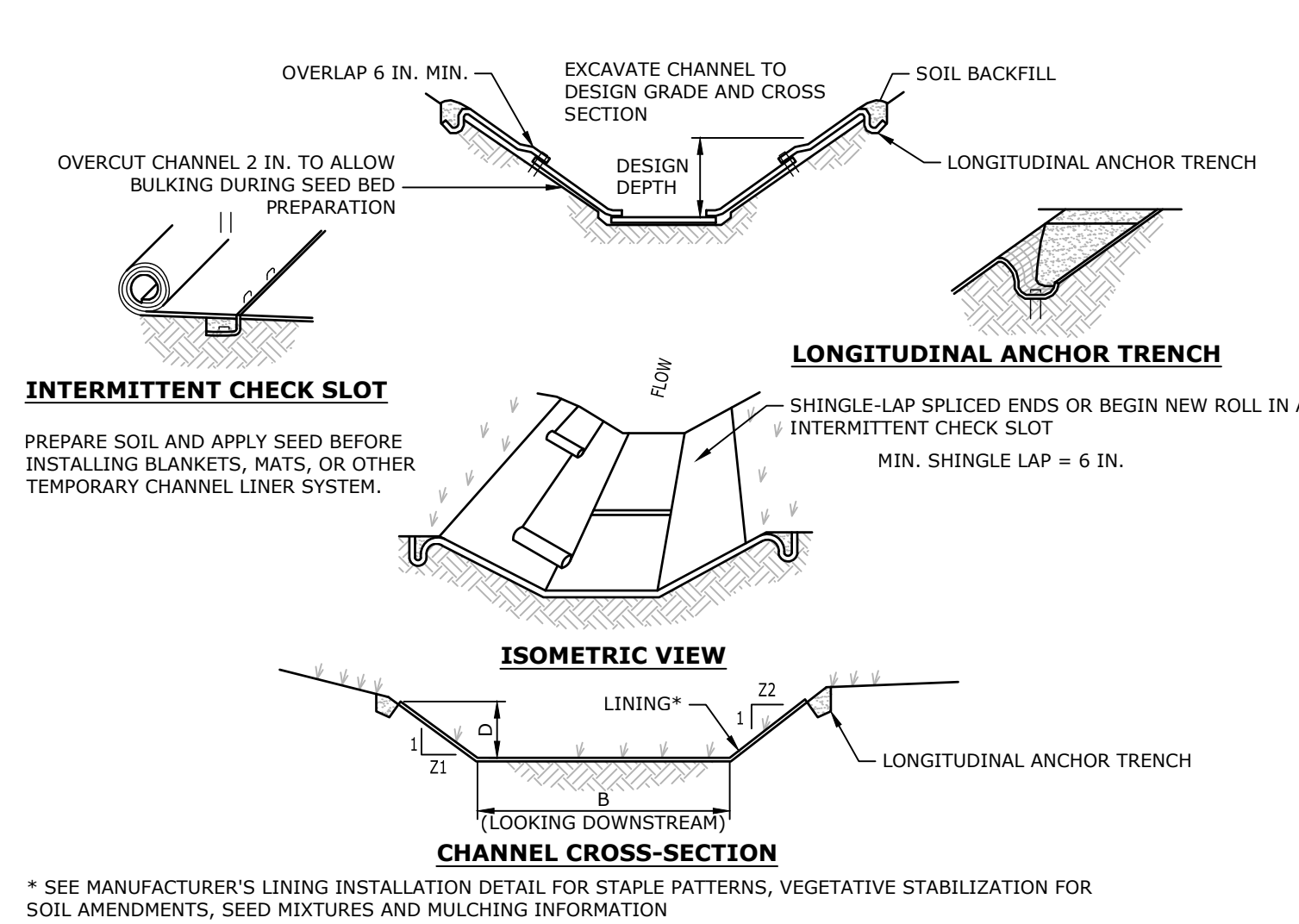
STORM SEWER PIPE BEDDING AND TRENCH BACKFILL DETAIL IN EXISTING PAVEMENT

5 NOT TO SCALE



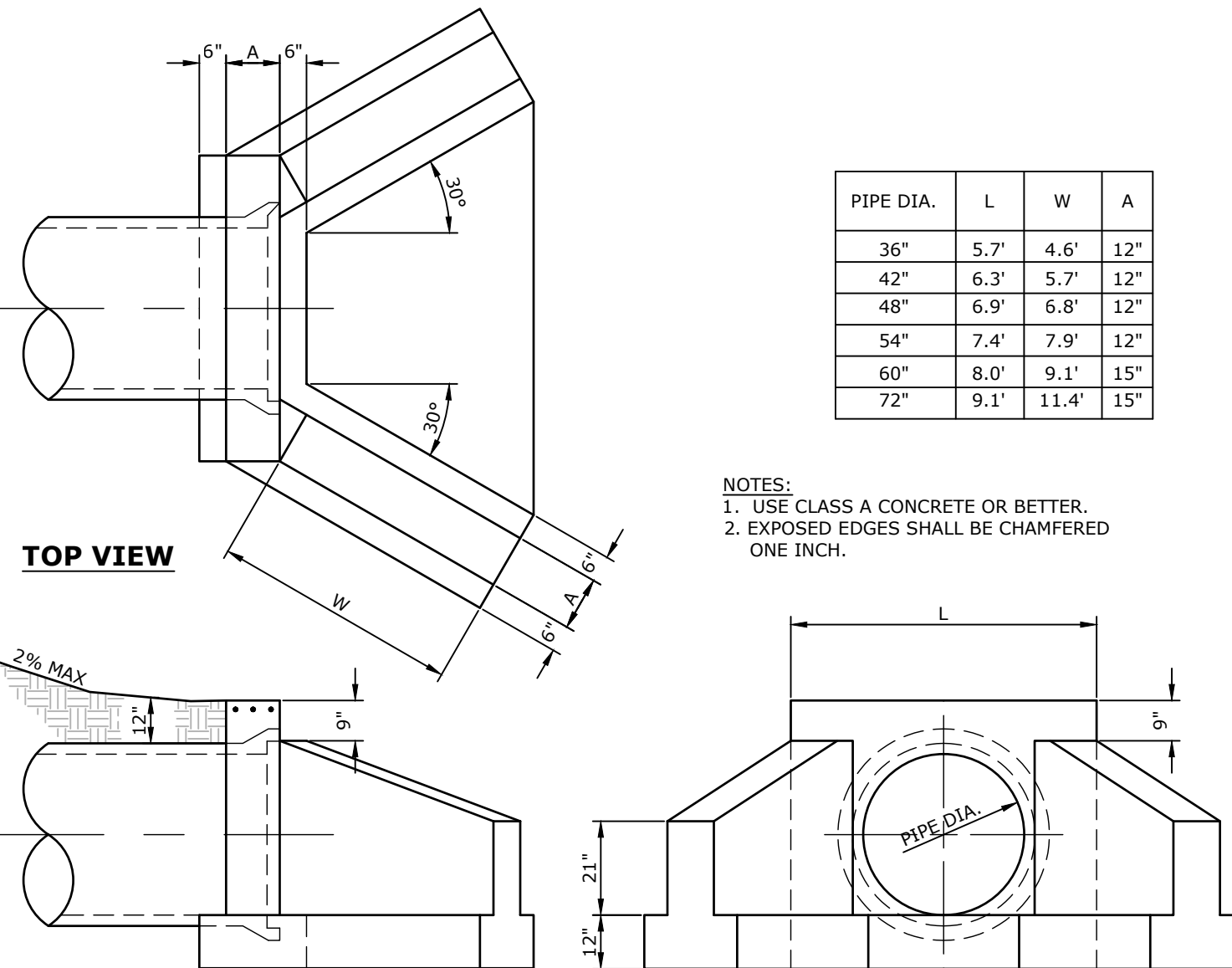
STORM SEWER PIPE BEDDING AND TRENCH BACKFILL DETAIL

6 NOT TO SCALE



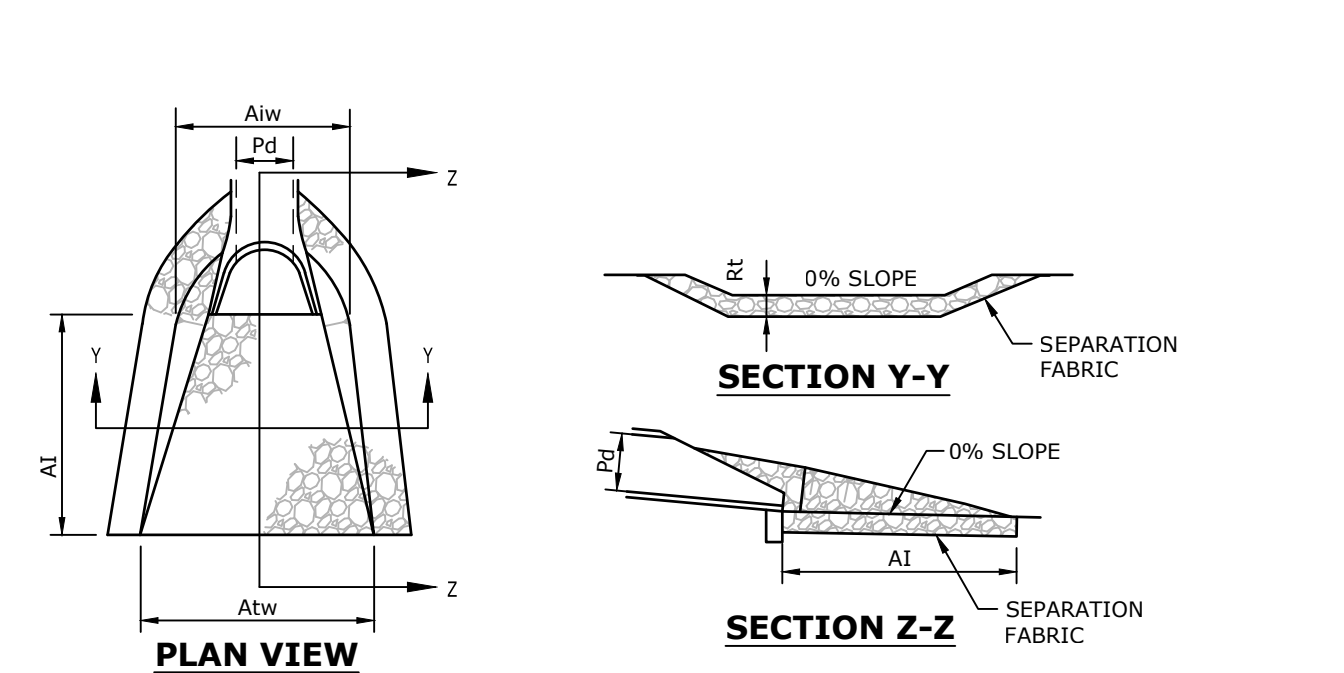
STANDARD CONSTRUCTION DETAIL #6-1 VEGETATED CHANNEL

7 NOT TO SCALE



TYPE D-W ENDWALL DETAIL

8 NOT TO SCALE



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

9 NOT TO SCALE

- 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.

Add Swale 20

BMP NO.	OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
			SIZE R	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
1	A1	24	3	9	10	6	16
1	A3	24	3	9	10	6	10
1	A14	15	3	9	30	3.75	15.75
3	B11	30	4	18	12	7.5	12.3

PLOTTED: Tuesday, February 26, 2025 @ 01:52PM

FILENAME: P:\2024\2024\J3-001\CADD\FINAL PH4\Plot\Z-Detail.dwg XREFS: Details;Titleblock;Bash-Outlet-Structure IMAGES:

NOT FOR BUILDING/NOT FOR CONSTRUCTION

MANAGER: CHRIS VEMARCHICK  
DESIGN BY: OLH  
DRAWN BY: OLH  
CHECKED BY: CV  
SCALE: N.T.S.

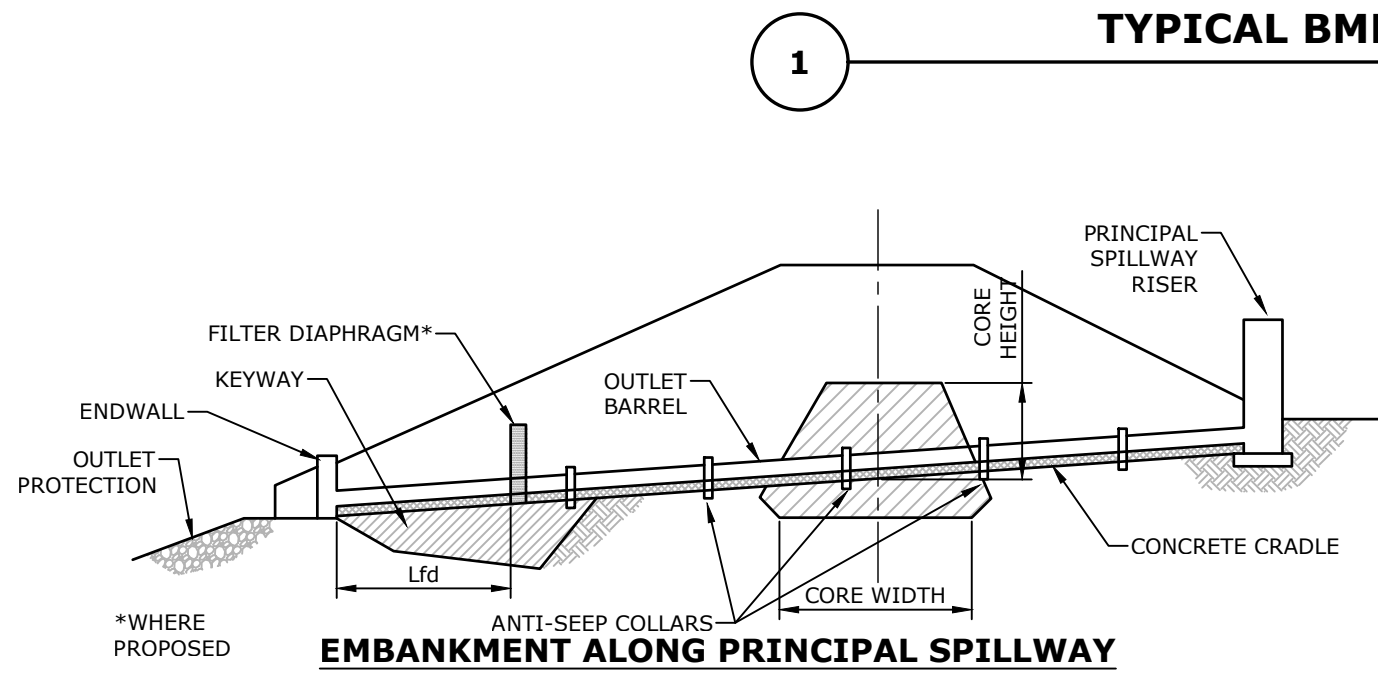
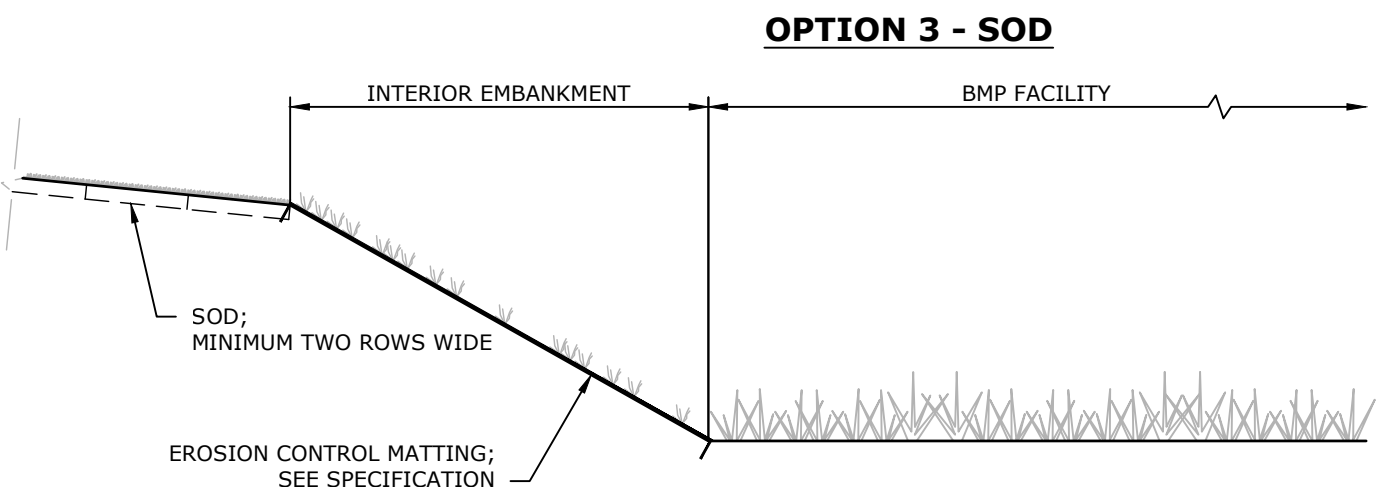
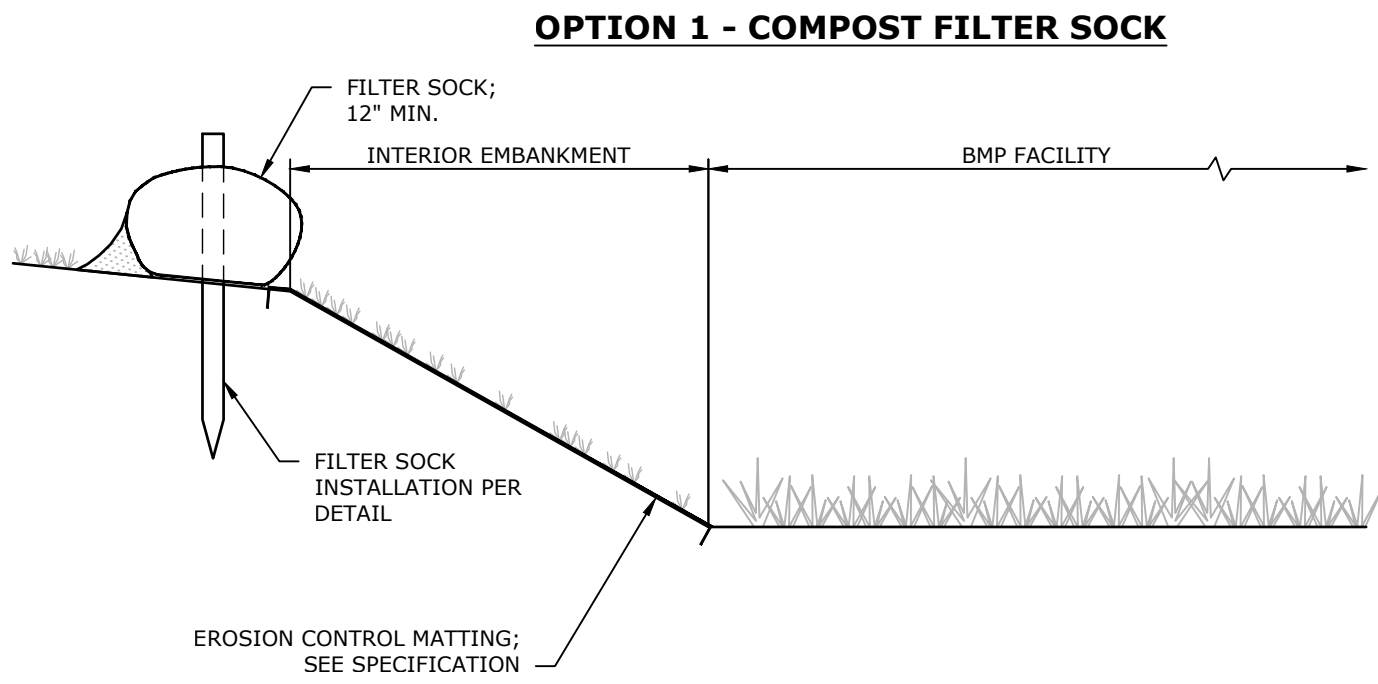
PROJECT TITLE: 1376 CAMPUS ROAD - PHASE 3  
FINAL SUBDIVISION & LAND DEVELOPMENT PLAN  
SHEET TITLE: MOUNT JOY TOWNSHIP LANCASTER COUNTY, PA  
STORMWATER DETAILS

Land Planning  
Landscape Architecture  
Civil Engineering  
93 West Java Street • 17103  
(717) 715-1338 FAX (717) 335-6977  
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**RSGA ASSOCIATES**

DATE: FEBRUARY 24, 2025  
PROJECT NO.: 2024\13-001  
LOPC NO.:  
SHEET NO.: 34 OF 38





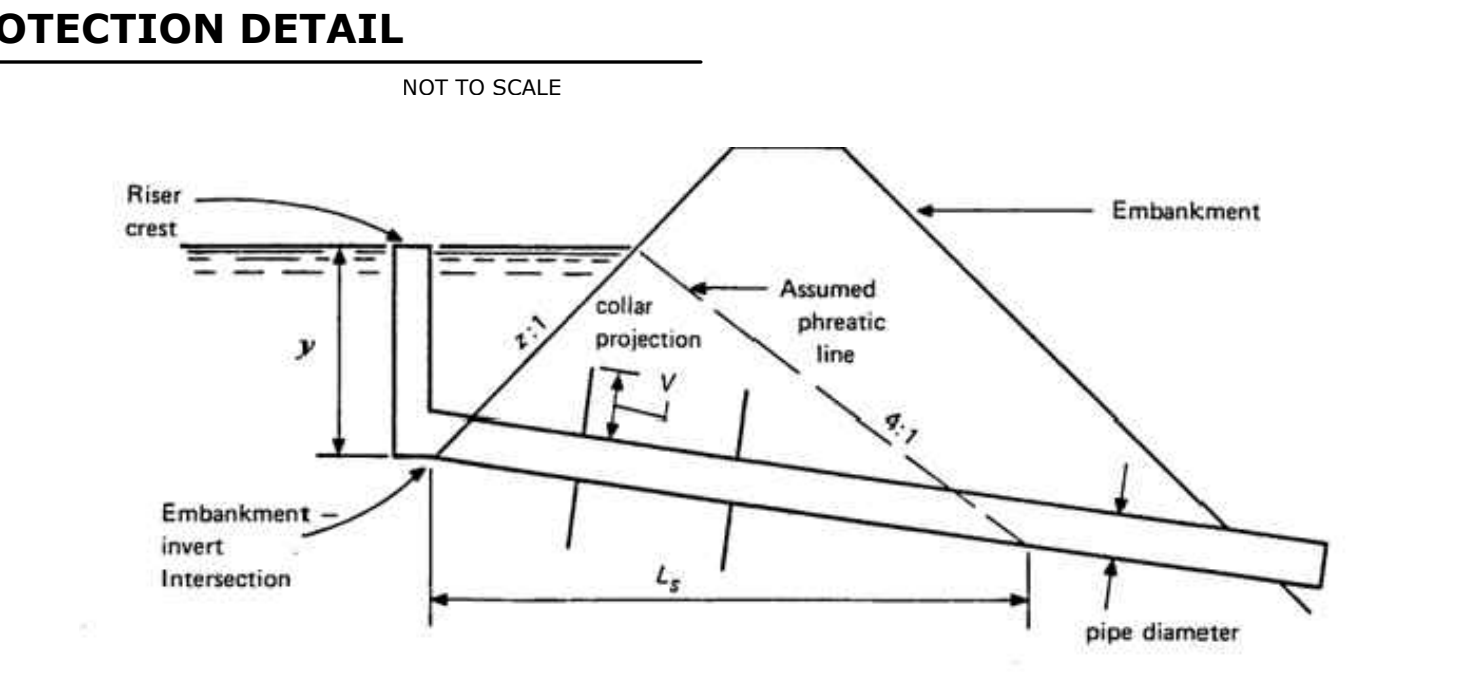
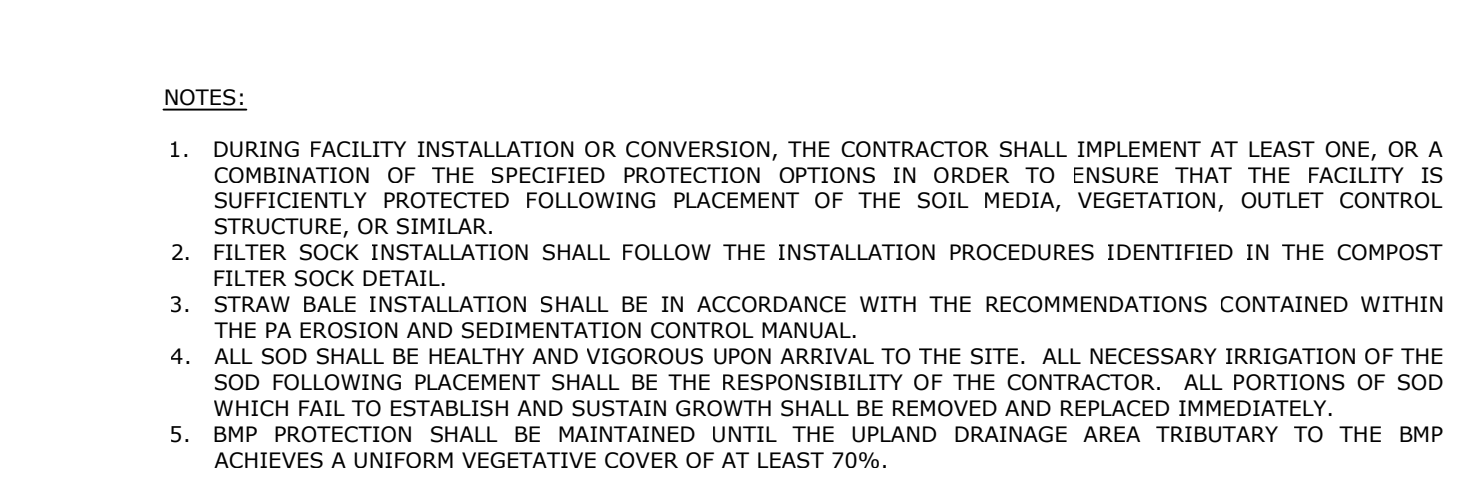
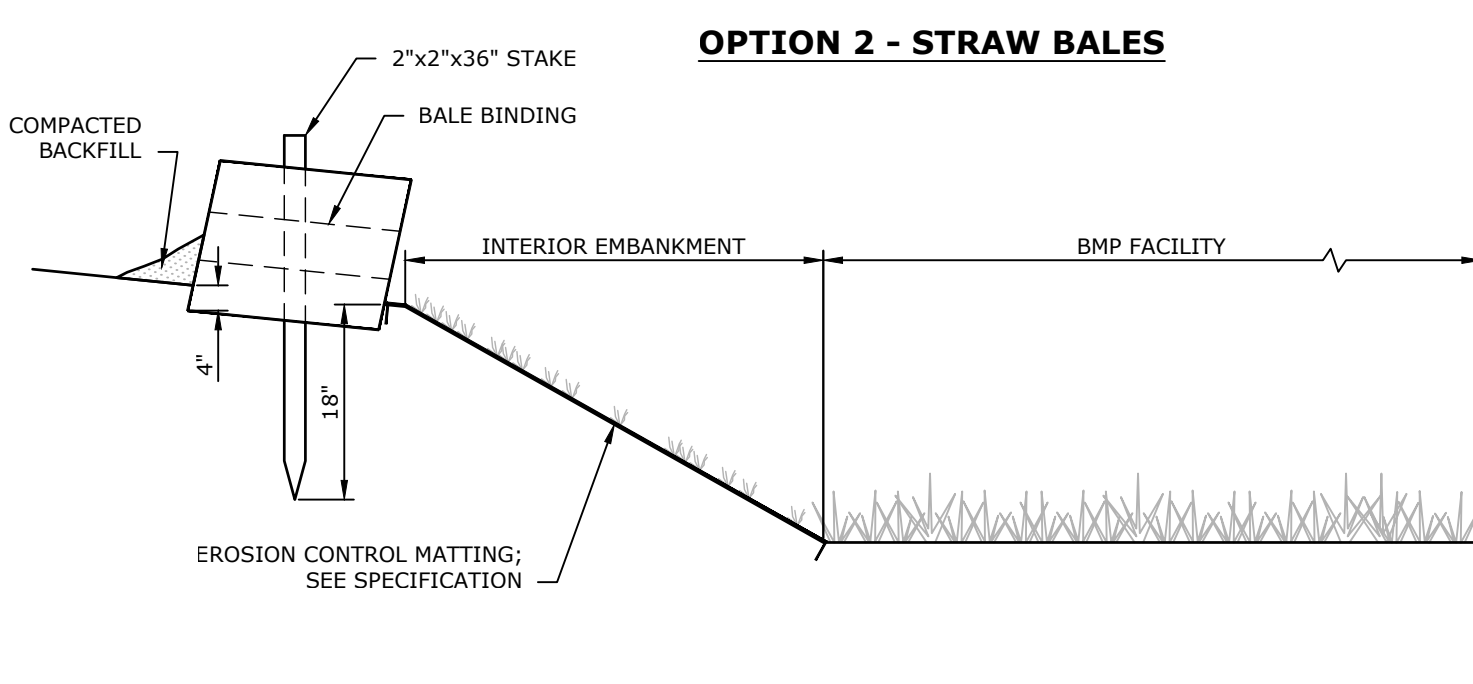
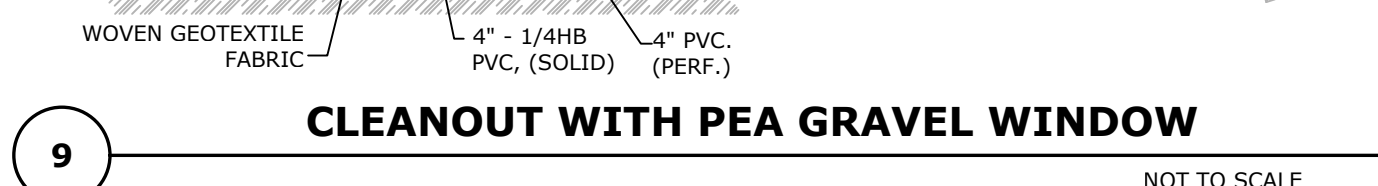
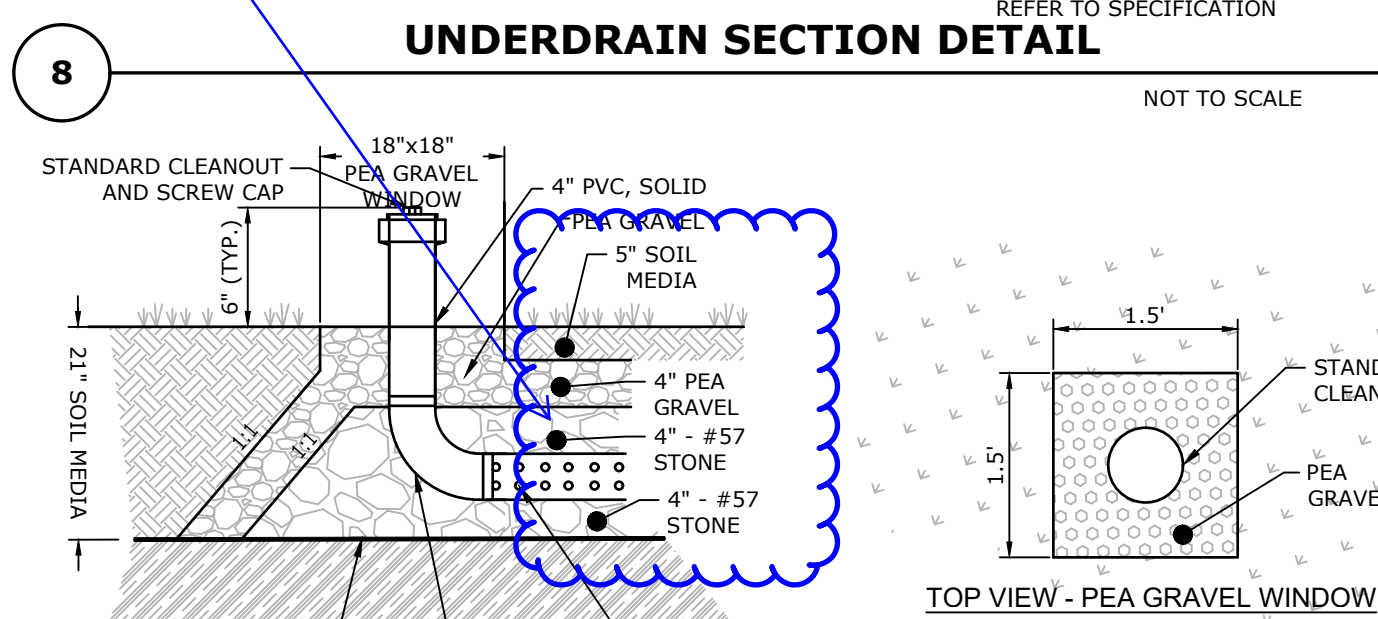
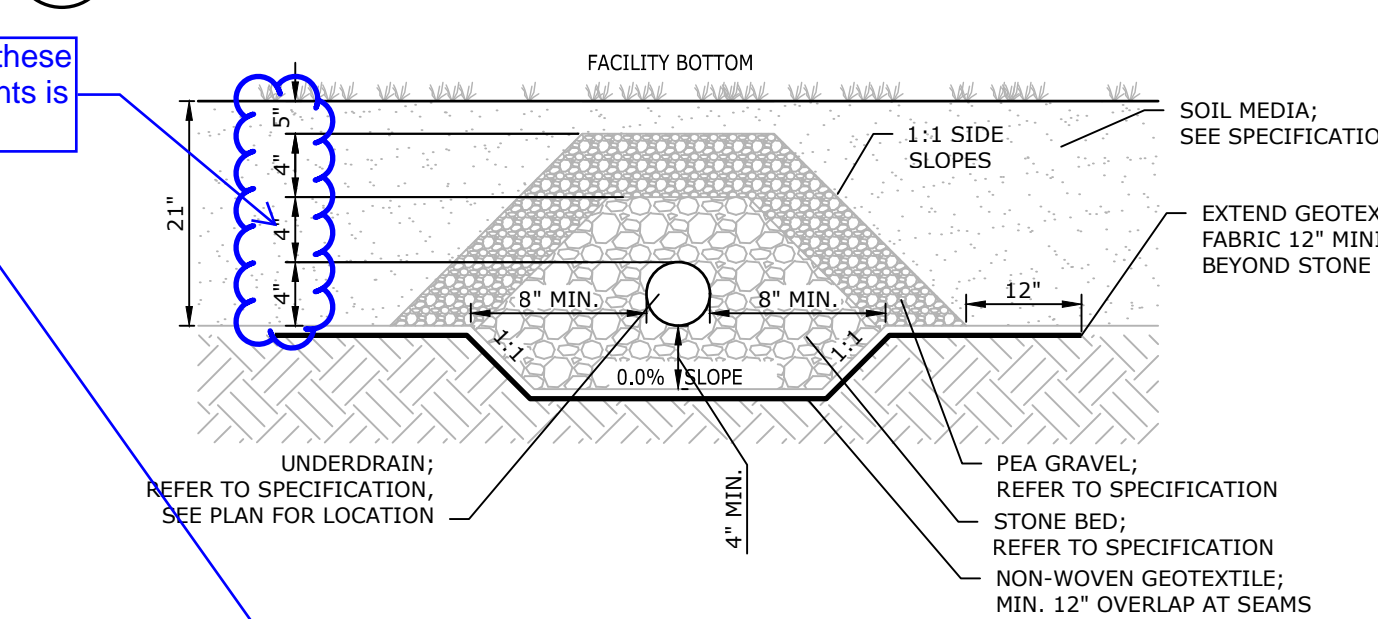
**EMBANKMENT ALONG PRINCIPAL SPILLWAY**

DIAMETER (IN.)	SIDE (IN.)	TOTAL BOTTOM (IN.)	BELOW PIPE (IN.)
12	8.00	32.00	8.00
15	8.00	35.56	8.00
18	8.00	39.04	8.00
21	8.00	42.52	8.00
24	8.00	46.00	8.00
27	8.25	49.98	8.00
30	8.50	53.96	8.00
33	8.75	57.94	8.25
36	9.00	61.92	9.00
42	9.50	69.88	10.50
48	10.00	77.84	12.00
54	10.50	85.80	13.50
60	11.00	93.76	15.00

**CROSS-SECTION AT OUTLET BARREL**

NOTES:

- A concrete cradle may be used in conjunction with anti-seep collars and/or filter diaphragm.
- ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
- FILTER DIAPHRAGM LOCATION (L<sub>FD</sub>) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

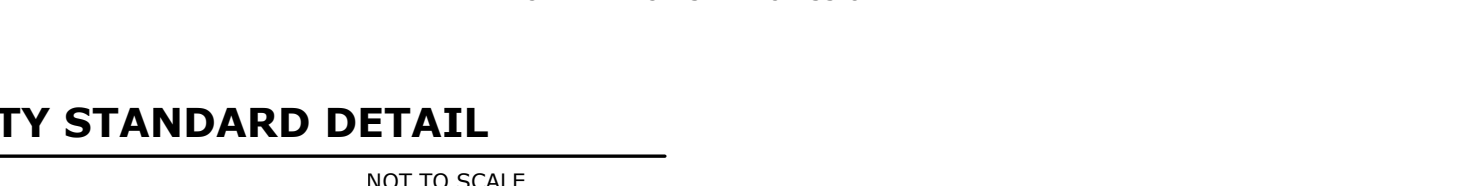
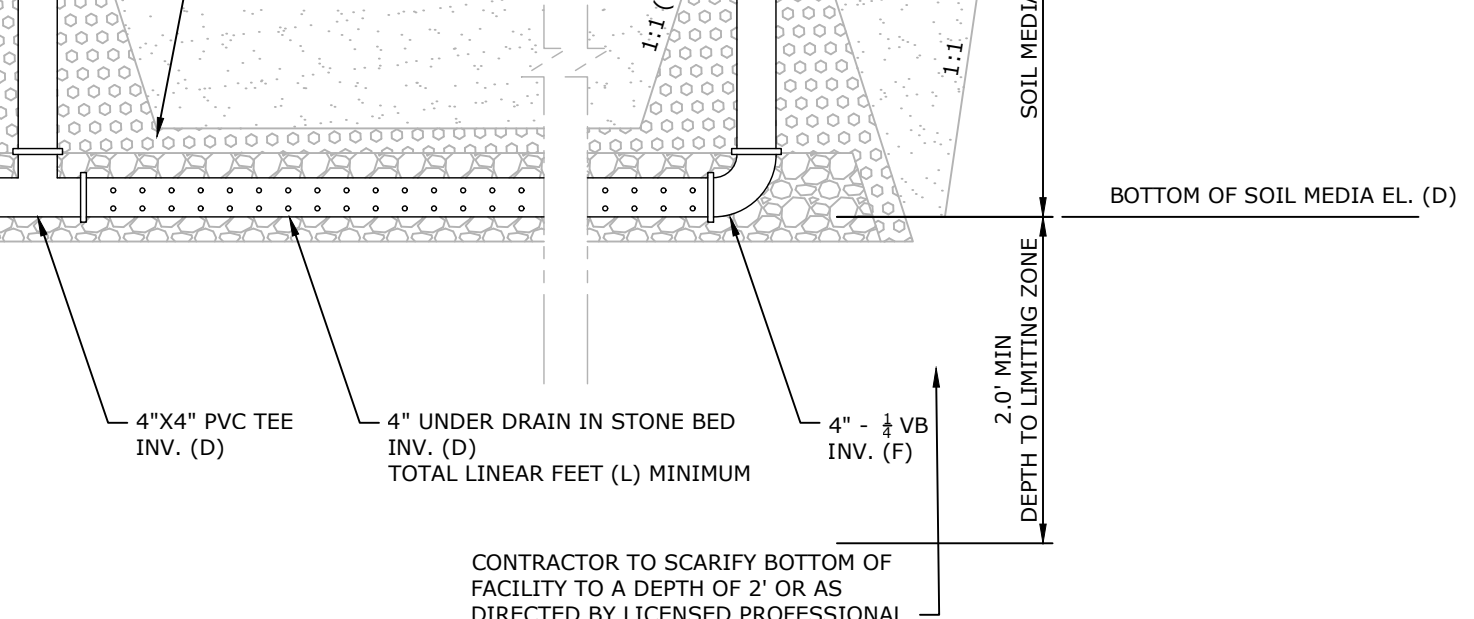
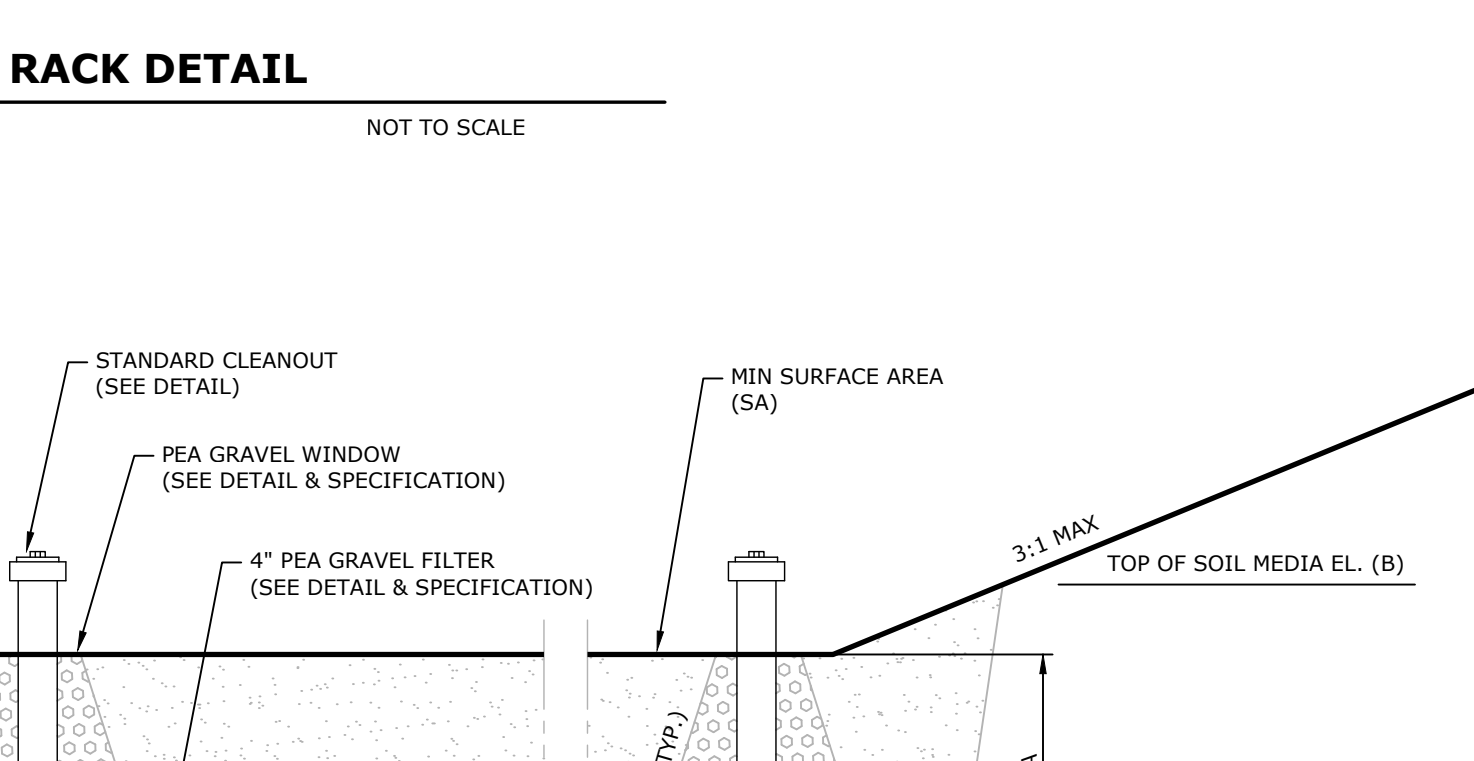
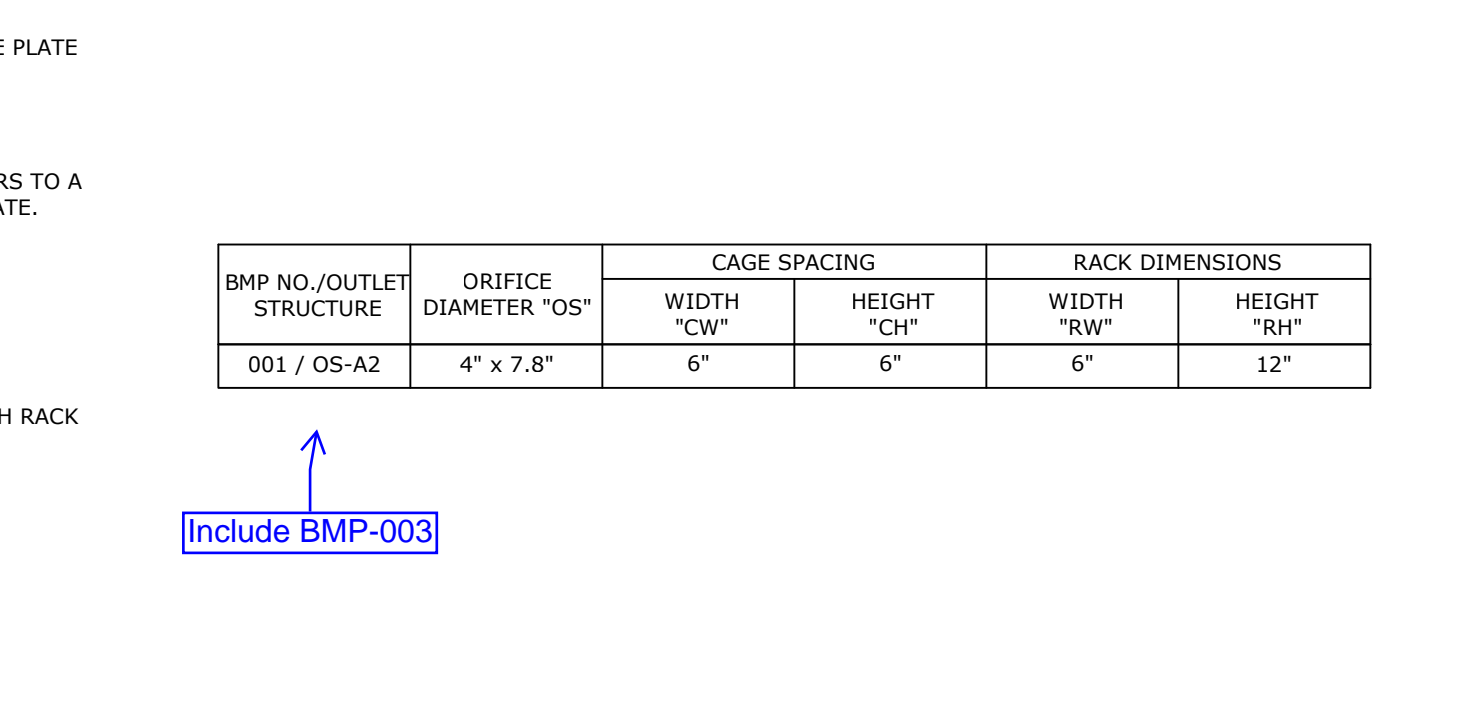
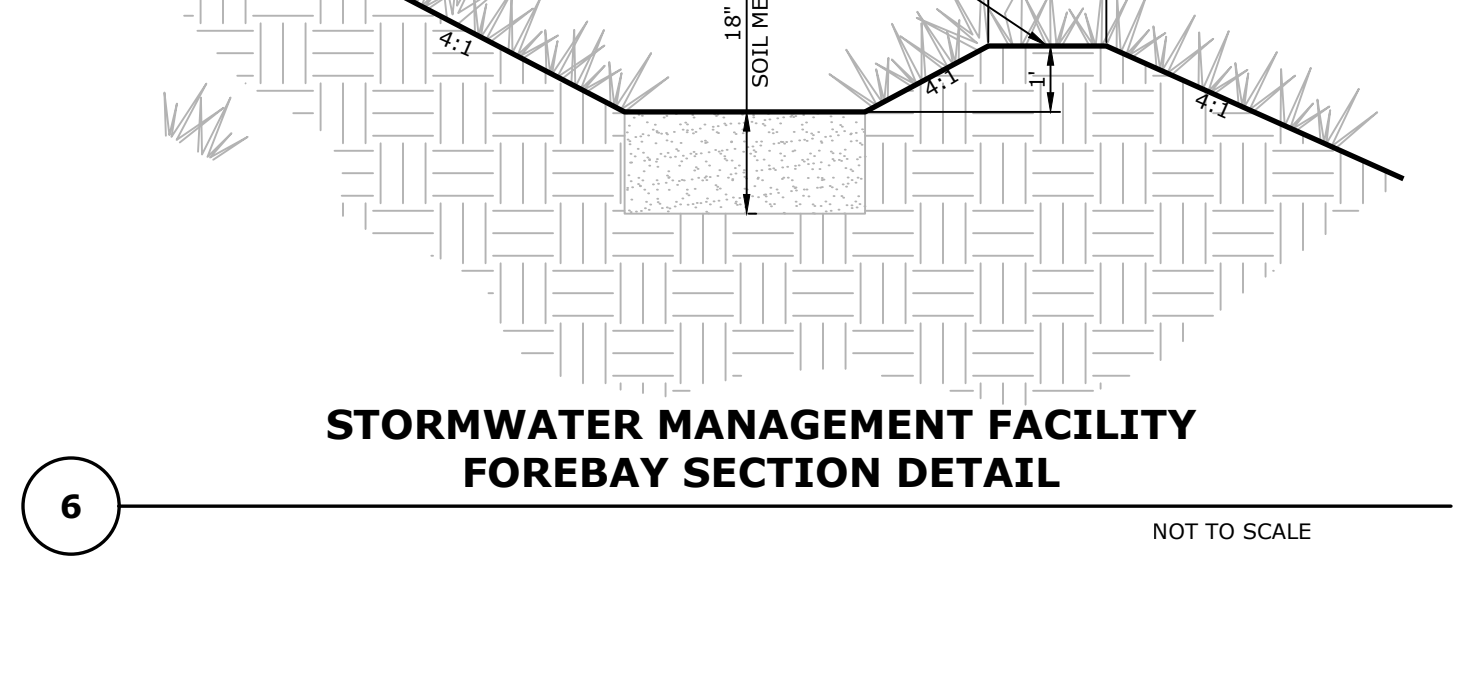
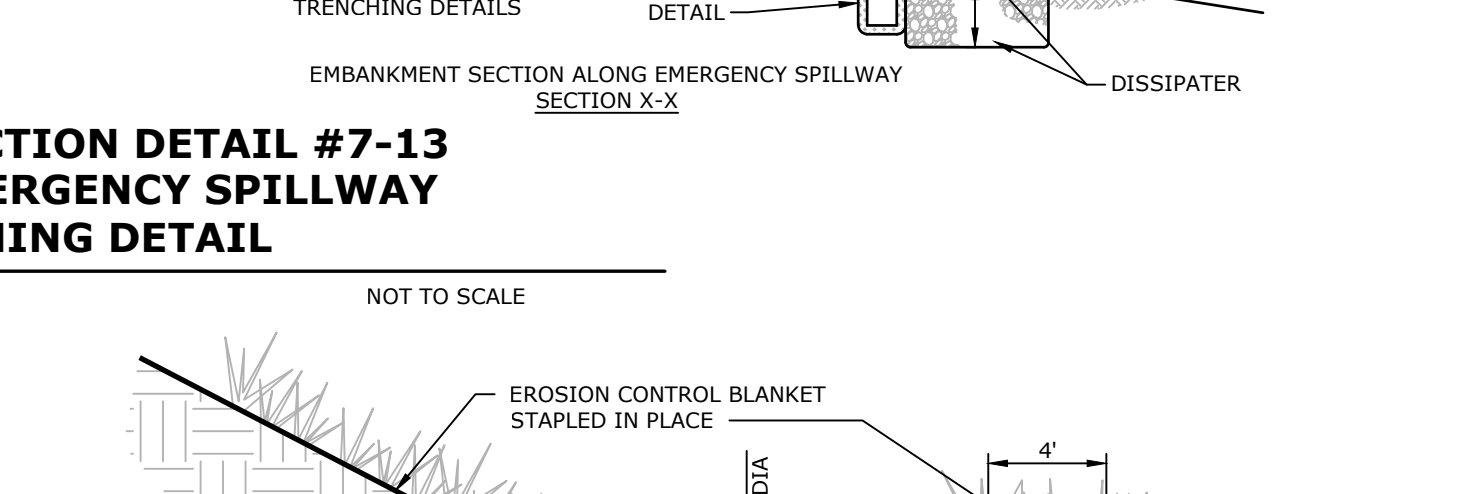
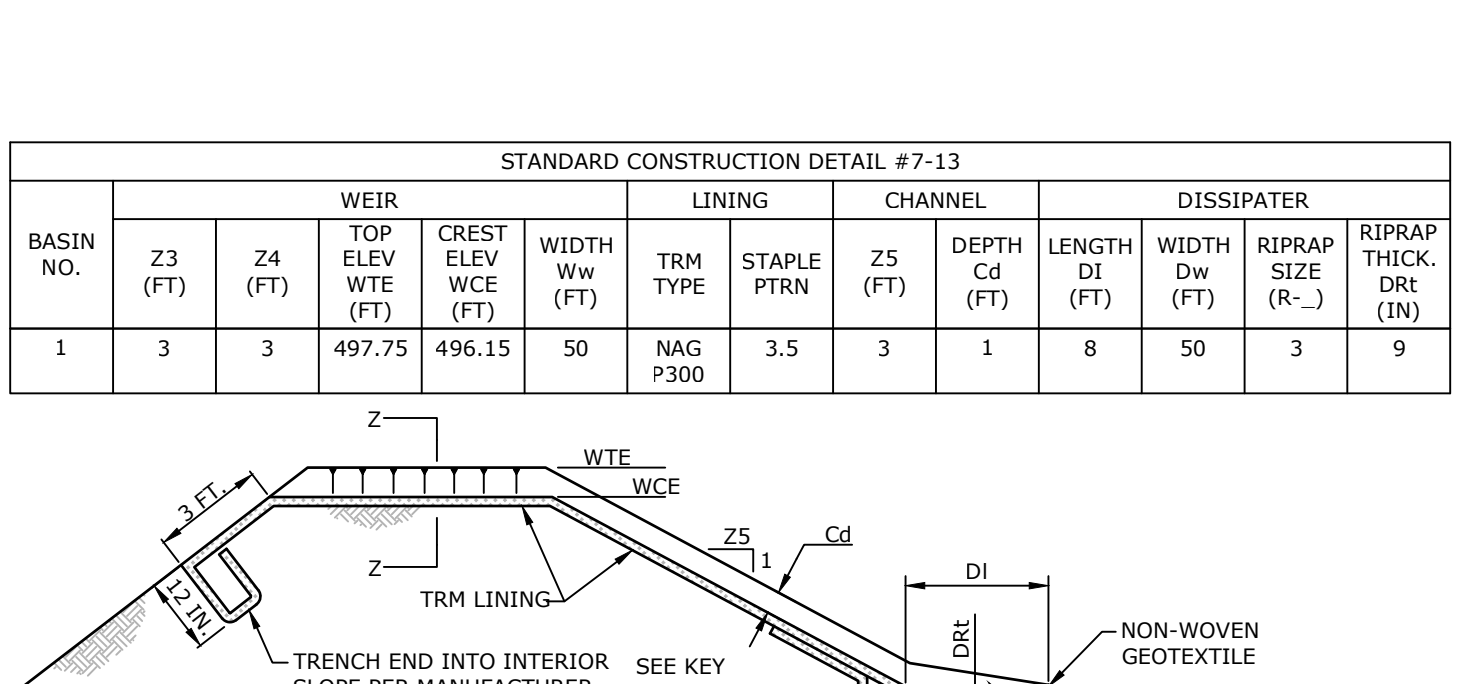
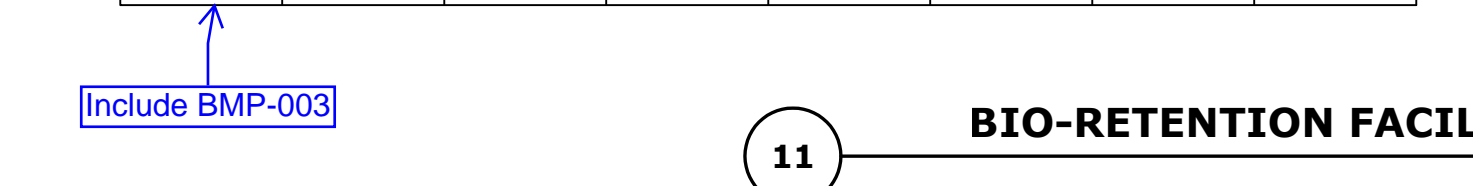
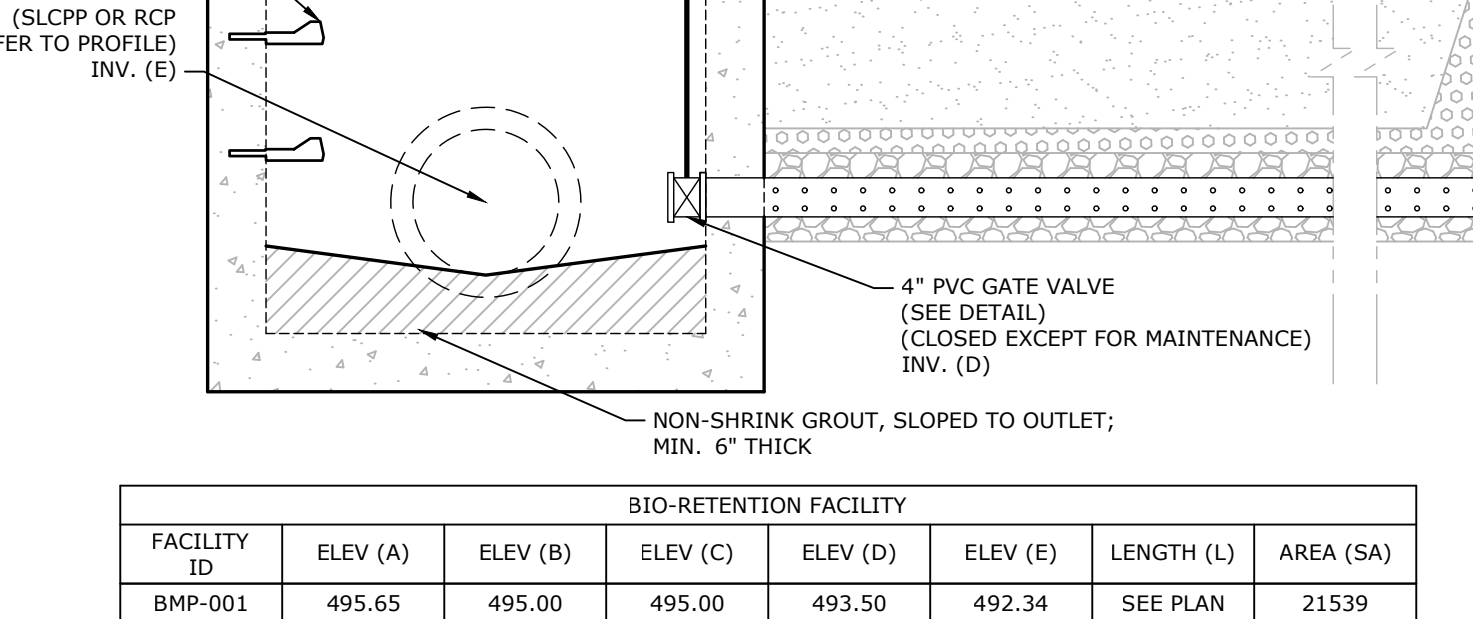
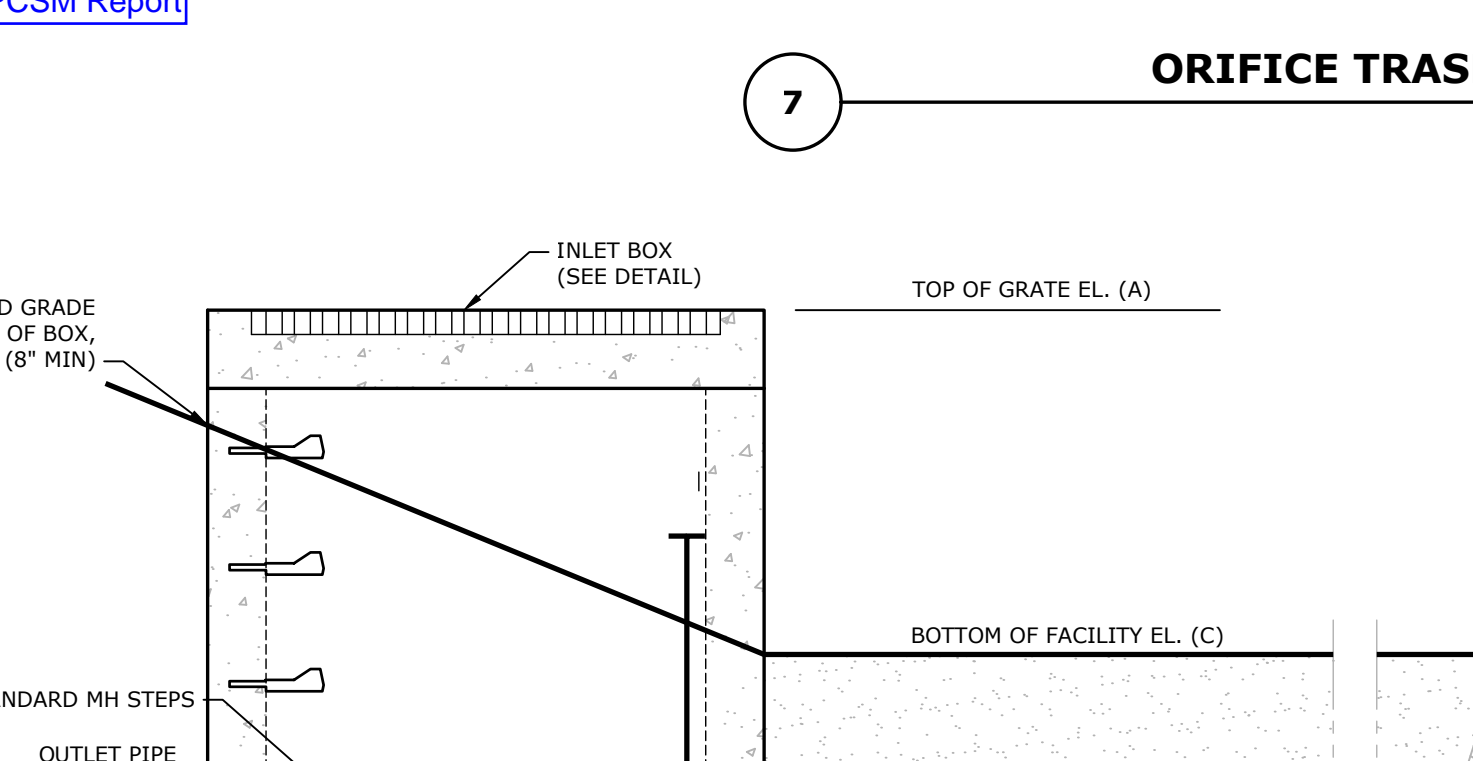
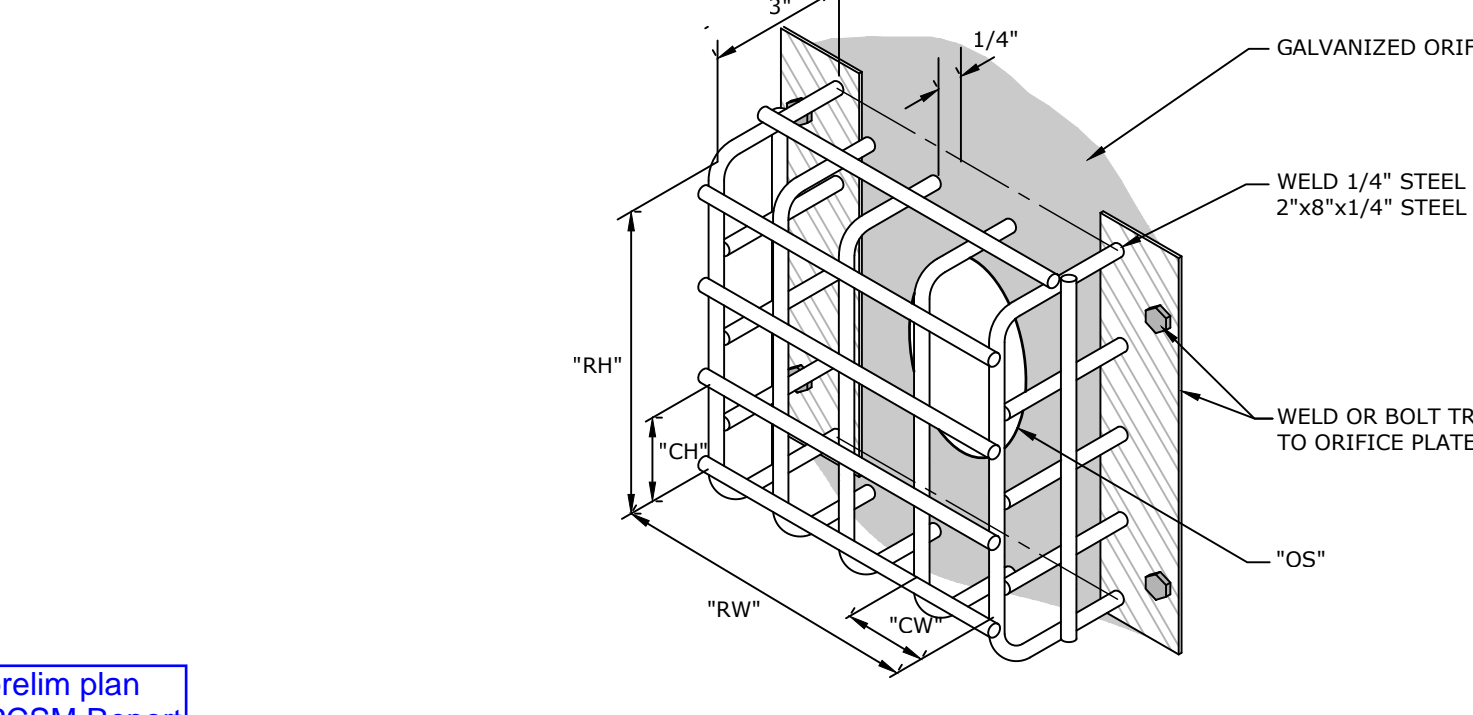
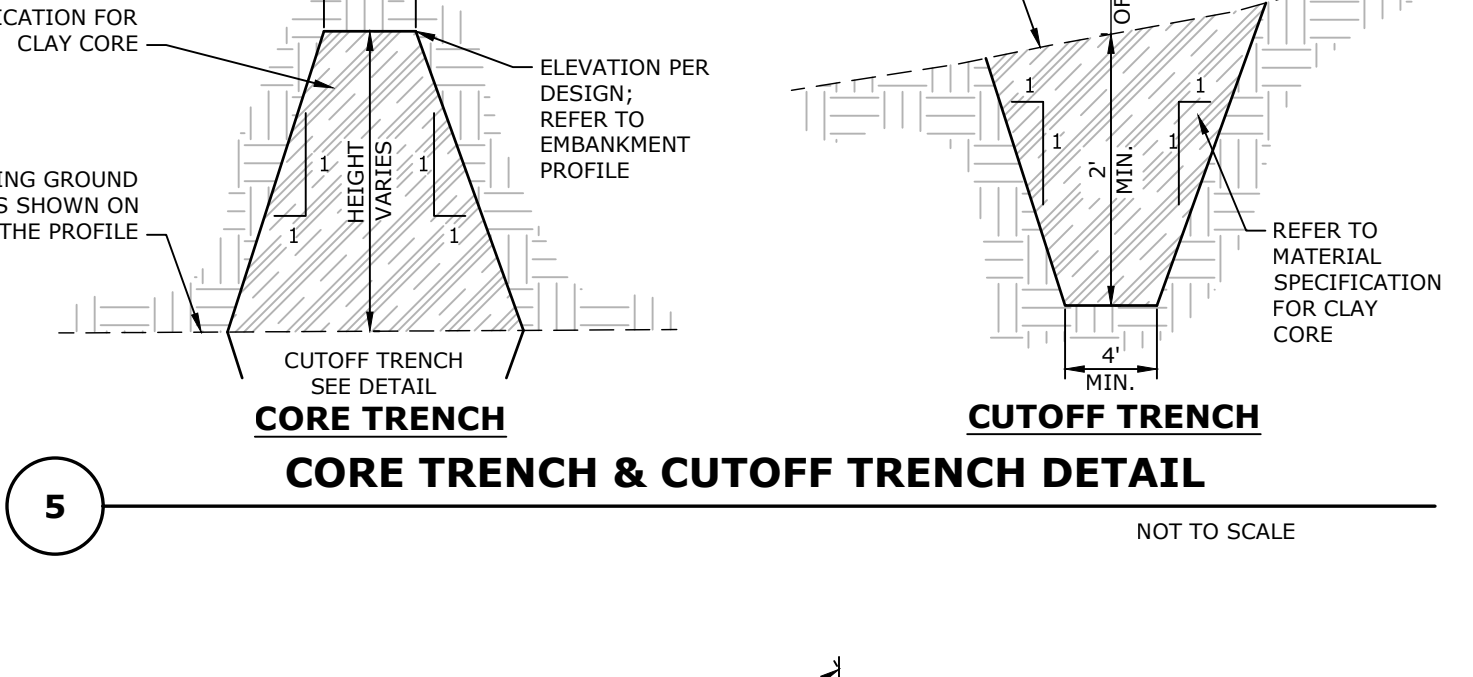
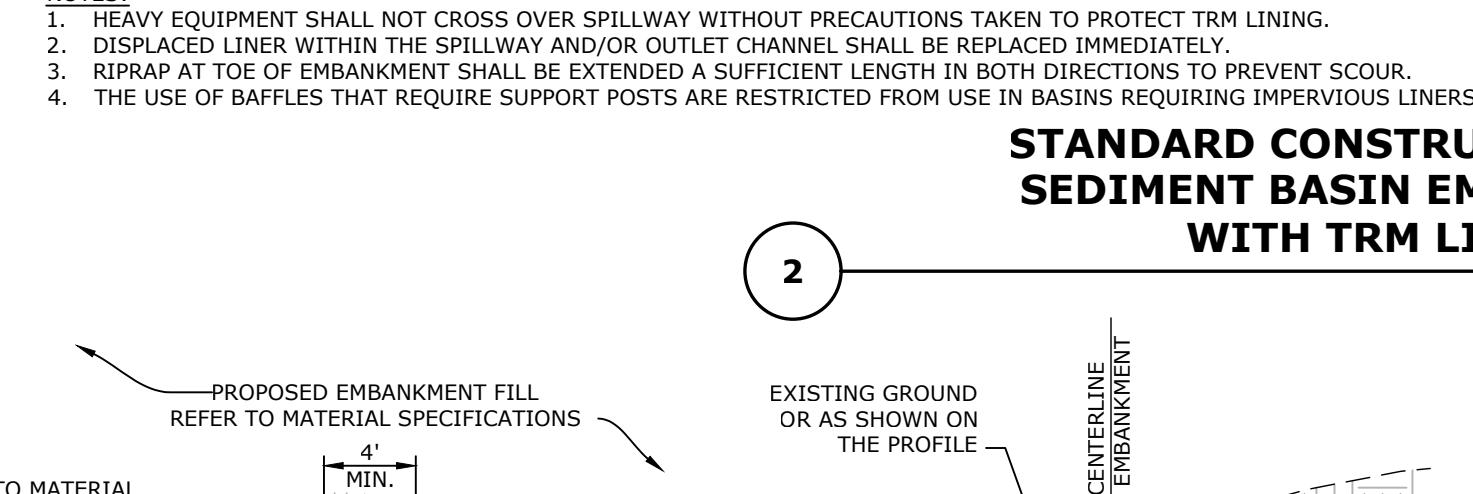
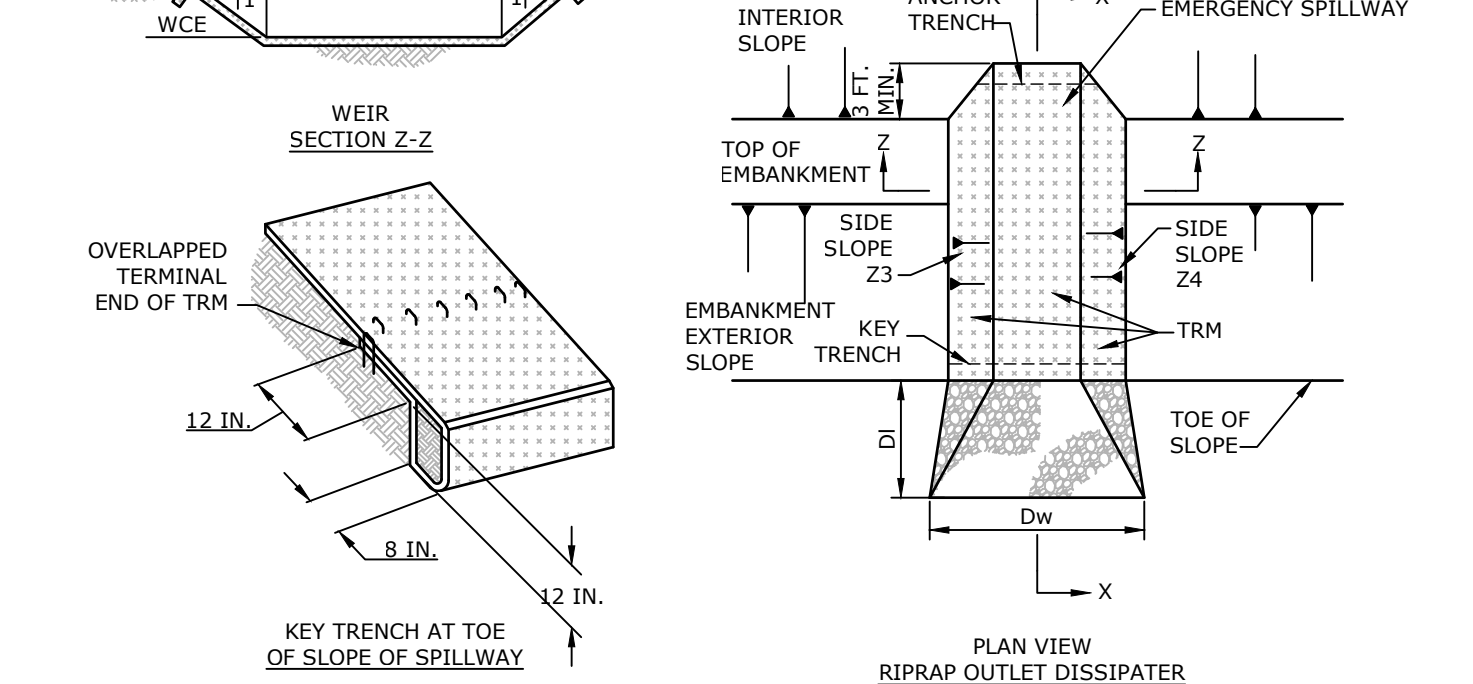
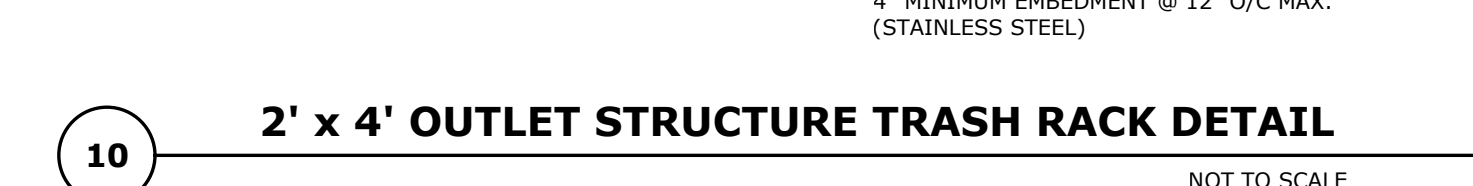
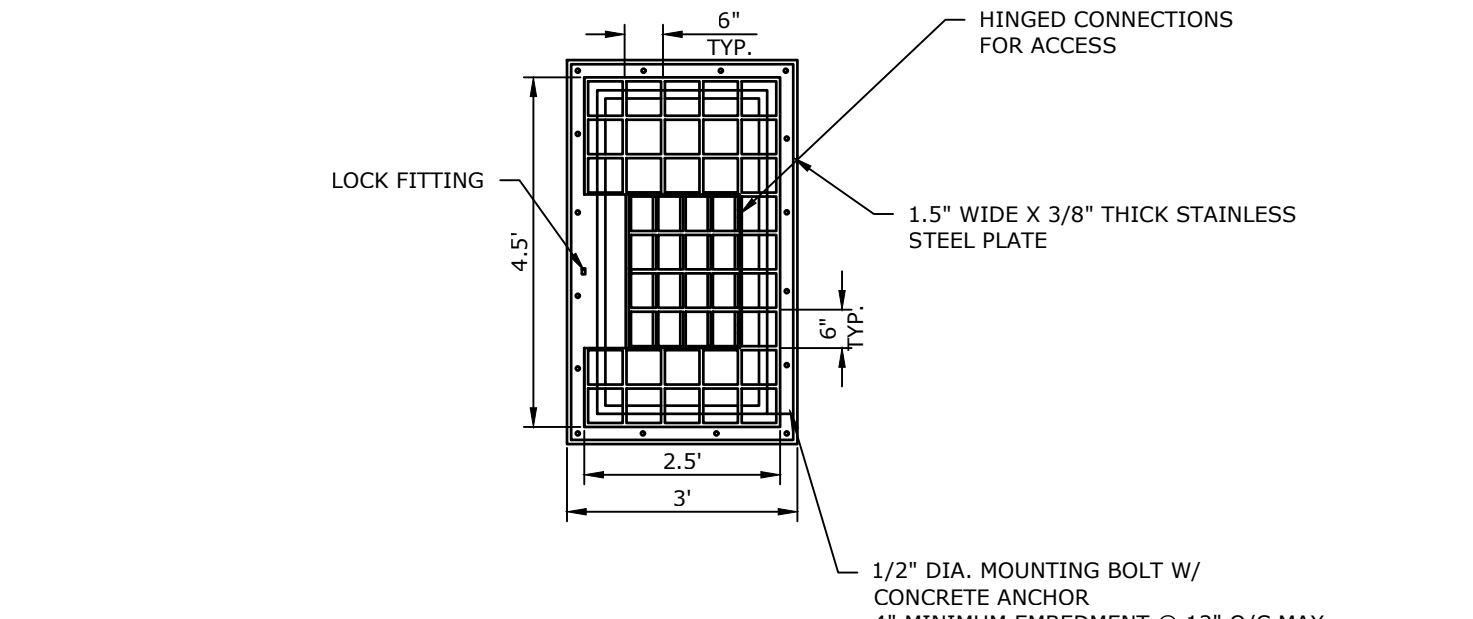
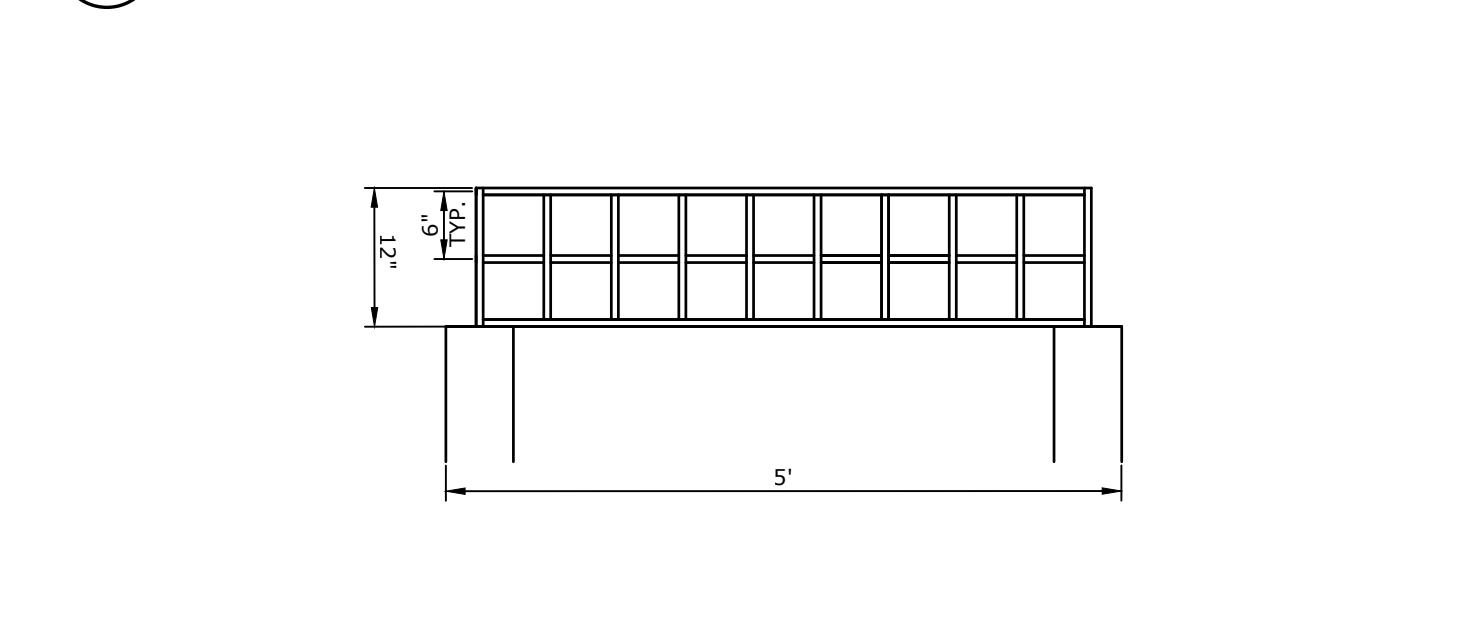


**REINFORCED CONCRETE ANTI-SEEP COLLAR**

BASIN NO.	TEMP OR PERM	Y (FT)	Z	L <sub>s</sub> (FT)	L <sub>f</sub> (FT)	V (IN)	BARREL DIA (IN)	COLLAR SIZE (IN)	NO. COLLARS	COLLAR SPACING (FT)	DISTANCE TO 1ST COLLAR (FT)
1	P	3.31	3	23.64285	27.18928	12	24	48	2	5	5

NOTES:

- MIN. CONCRETE COMPRESSIVE STRENGTH = 3,000 PSI
- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT
- COLLARS SHOULD NOT BE LOCATED CLOSER THAN 2 FEET TO A PIPE JOINT
- SEE BASIN EMBANKMENT DETAIL FOR LOCATION





PLOTID: Landscaping, February 24, 2025 • 01:33PM

STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

- A. SITE PREPARATION
- AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORK SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED.
  - CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.
  - AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  - TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.
  - ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE EMBANKMENT AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE.
  - WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.
- B. EARTH FILL - MATERIAL
- THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS.
  - THE FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUTOFF TRENCH SHALL BE IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS INCLUDED ON THIS PLAN. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.
  - MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.
- C. EARTH FILL - PLACEMENT
- AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL.
  - FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL.
  - THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.
  - THE PRINCIPAL SPILLWAY (I.E. OUTLET STRUCTURE AND DISCHARGE PIPE) MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.
- D. COMPACTION
- THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A SHEEPSFOOT OR VIBRATORY ROLLER.
  - THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED.
  - THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT SO WET THAT WATER CAN BE SQUEEZED OUT.
  - THE MAXIMUM PARTICLE SIZE IS SIX INCHES OR LESS THAN ¾ OF THE LIFT THICKNESS. FIVE PASSES OF HTE COMPACTION EQUIPMENT OVER THE ENTIRE SURFACE OF EACH LIFT IS REQUIRED. EMBANKMENT COMPACTION TO VISIBLE NONMOVEMENT IS ALSO REQUIRED.
  - WHEN REQUIRED BY THE RECEIVING AGENCY, THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/-2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).
  - COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.
  - THE CORE SHALL BE CONSTRUCTED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.
  - THE TRENCH SHALL BE DEWATERED DURING BACKFILLING AND COMPACTION OPERATIONS.
- E. CUT OFF TRENCH
- THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS.
  - THE BOTTOM AND SIDES OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET.
  - THE DEPTH SHALL BE AT LEAST TWO FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS.
  - THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER.
  - THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.
- F. EMBANKMENT CORE
- THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS.
  - THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET.
  - THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS.
  - THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER.
  - THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF EMBANKMENT.
- G. STRUCTURE BACKFILL WITH FLOWABLE FILL
- BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL.
  - THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE.
  - AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE.
  - UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.
  - THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM.
  - MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE.
  - FLOWABLE FILL ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS.
  - AVERAGE SLUMP OF FLOWABLE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL.
  - ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE.
  - THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE.
  - BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.
- H. PIPE CONDUITS
- ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.
- I. REINFORCED CONCRETE PIPE - MATERIALS
- REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C443.
- J. REINFORCED CONCRETE PIPE - BEDDING
- REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES.
  - WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD.
  - GRAVEL BEDDING IS NOT PERMITTED.
- K. REINFORCED CONCRETE PIPE - LAYING PIPE
- BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM.
  - JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL.
  - AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED.
  - CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.
  - THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.
- L. REINFORCED CONCRETE PIPE - BACKFILLING
- SHALL CONFORM TO "STRUCTURE BACKFILL".
- M. CONCRETE STRUCTURES
- CONCRETE SHALL MEET THE REQUIREMENTS OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, SECTIONS 605, 606 AND 714; AND AS MODIFIED HEREON.
  - REINFORCEMENT SHALL MEET THE MINIMUM REQUIREMENTS OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, SECTION 709.
- N. ROCK RIPRAP
- ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408.

STABILIZATION SPECIFICATIONS

- UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN DRAWINGS IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. TOPSOIL STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SIDE SLOPES MUST BE 2:1 OR FLATTER.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDED PREPARATION, COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO SEEDING.
- DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES 3:1 OR STEEPER. ALL AREAS OF CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF A SURFACE WATER.
- STRAW AND HAY MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL. THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. (NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED). A WOOD CELLULOSE FIBER MAY BE SPREAD OVER THE STRAW MULCH AT A RATE OF 1,500 LB./ACRE.
- TRACKING SLOPES IS REQUIRED BY RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. (NOTE: IF A BULLDOZER IS USED, THE BLADE SHALL BE UP.) CARE SHOULD BE EXERCISED ON SOILS HAVING A HIGH CLAY CONTENT TO AVOID OVER-COMPACTION.

TEMPORARY SEEDING SPECIFICATIONS

- IN ORDER TO ESTABLISH A QUICK GRASS COVER OVER DISTURBED AREAS, A TEMPORARY SEED MIXTURE SHALL BE USED AS FOLLOWS:

% PURE LIVE SEED: 83%  
SPECIES: PENNDOT FORMULA E  
APPLICATION RATE: 48 LB./ACRE  
FERTILIZER TYPE: 5-5-5  
FERTILIZER RATE: 1,000 LB./ACRE  
LIMING RATE: 1 T./ACRE  
MULCH TYPE: STRAW  
MULCHING RATE: 3 T./ACRE
- STABILIZATION EFFORTS DURING THE NON-GERMINATING PERIOD, OCT. 15 TO MARCH 15, SHOULD BE MULCHED WITH CLEAN STRAW. (EQUIVALENT TO 0.75" TO 1" DEEP). CLEAN STRAW MULCH SHOULD NOT BE FINELY CHOPPED OR BROKEN DURING APPLICATION.
- STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR.
- MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- ALL AREAS SHALL BE TEMPORARILY STABILIZED UPON CESSATION OF WORK FOR 4 DAYS OR MORE, OR AS SOON AS ANY DISTURBED AREA REACHES ITS FINAL GRADE.

PERMANENT SEEDING SPECIFICATIONS

- ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED SHALL BE COVERED WITH GRASS OR A LEGUME IN ORDER TO MINIMIZE EROSION, UNLESS OTHERWISE DIRECTED BY THE OWNER AS FOLLOWS:

TOPSOIL PLACEMENT DEPTH: 6 IN.  
SPECIES: PENNDOT FORMULA B  
% PURE LIVE SEED: 83%  
APPLICATION RATE: 203 LB./ACRE  
FERTILIZER TYPE: 38-0-0  
FERTILIZER RATE: 242 LB./ACRE  
LIMING RATE: 2 T./ACRE  
MULCH TYPE: STRAW  
MULCHING RATE: 3 T./ACRE  
ANCHOR MATERIAL: WOOD FIBER  
ANCHOR METHOD: HYDRAULICALLY  
RATE OF ANCHOR MATERIAL APPL.: 774 LB./ACRE  
SEEDING SEASON DATE: MARCH 15 - JUNE 1/AUGUST 1 TO OCTOBER 15
- ALL DISTURBED AREAS WITH STEEP SLOPES SHALL BE COVERED WITH GRASS OR A LEGUME IN ORDER TO MINIMIZE EROSION, UNLESS OTHERWISE DIRECTED BY THE OWNER AS FOLLOWS:

TOPSOIL PLACEMENT DEPTH: 6 IN.  
SPECIES: PENNDOT FORMULA D  
% PURE LIVE SEED: 82%  
APPLICATION RATE: 242 LB./ACRE  
FERTILIZER TYPE: 38-0-0  
FERTILIZER RATE: 242 LB./ACRE  
LIMING RATE: 2 T./ACRE  
MULCH TYPE: STRAW  
MULCHING RATE: 3 T./ACRE  
ANCHOR MATERIAL: WOOD FIBER  
ANCHOR METHOD: HYDRAULICALLY  
RATE OF ANCHOR MATERIAL APPL.: 774 LB./ACRE  
SEEDING SEASON DATE: MARCH 15 - JUNE 1/AUGUST 1 - OCTOBER 15
- MULCHING SHALL BE USED TO PROTECT SEEDING AND HELP IN PREVENTING RUNOFF.

A. CLEAN STRAW MULCH SHALL BE REQUIRED IN ALL DISTURBED AREAS (EQUIVALENT TO 0.75" TO 1" DEEP). CLEAN STRAW MULCH SHOULD NOT BE FINELY CHOPPED OR BROKEN DURING APPLICATION.

B. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR.

C. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH.

D. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

E. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

F. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED.
- FOR FURTHER INFORMATION ON SEED MIXES, SEE THE E & S WORKSHEETS IN THE CHAPTER 102 REGULATIONS.
- WELL IN ADVANCE OF THE NEED TO PERMANENTLY SEED ANY DISTURBED AREA, THE CONTRACTOR SHALL OBTAIN AND FORWARD A SOIL AGRONOMY TESTING REPORT FROM AN APPROVED SOILS LABORATORY SUCH AS PENNSYLVANIA STATE UNIVERSITY'S AGRICULTURAL ANALYTICAL SERVICES LABORATORY. THE REPORT SHALL DETERMINE THE ACTUAL LINE AND FERTILIZER RATES FOR THE ON-SITE TOPSOIL. THE CONTRACTOR SHALL FORWARD THE FINAL REPORT TO THE LANDSCAPE ARCHITECT OR CLIENT'S REPRESENTATIVE UPON RECEIPT.
- ALL SOIL AMENDMENTS SHALL BE INSTALLED PER THE SOIL AGRONOMY REPORT, AND SHALL BE PROVIDED BY THE CONTRACTOR.
- APPLY AMENDMENTS ON-SITE, AND MIX SOIL TO FULLY ADDRESS ALL EXISTING SOIL DEFICIENCIES. DO NOT APPLY AMENDMENTS NOR TILL IF EXISTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.

RAIN GARDEN / BIO-RETENTION PA DEP BMP 6.4.5	<ul style="list-style-type: none"><li>AT ALL TIMES DURING CONSTRUCTION THE FACILITY SHALL BE PROTECTED FROM COMPACTION (WITHIN TWO FEET OF THE SUBGRADE OF THE FACILITY).</li><li>THE FACILITY MAY NOT RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO FACILITY HAS RECEIVED FINAL STABILIZATION.</li><li>UPLAND TRIBUTARY CONVEYANCE FACILITIES SHALL BE FLUSHED AND SEDIMENT REMOVED.</li><li>CONTRACTOR SHALL PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE FACILITY.</li><li>CONTRACTOR SHALL USE LOW-PRESSURE EQUIPMENT AND UTILIZE NON-INFILTRATION AREAS FOR EQUIPMENT STAGING TO PERFORM EXCAVATION AND INSTALLATION.</li><li>SEDIMENT LADEN OVERBURDEN AND DEPOSITION SHALL BE REMOVED FROM THE FACILITY TO PROVIDE A FREE DRAINING SUBGRADE.</li><li>CONTRACTOR TO TEST PIT FACILITY PRIOR TO INSTALLATION TO DETERMINE DEPTH TO LIMITING ZONE (BED ROCK OR WATER TABLE).</li><li>THE CONTRACTOR SHALL PROVIDE A MIN. OF 2 FEET OF SEPARATION BETWEEN THE BOTTOM OF THE FACILITY AND THE LIMITING ZONE IN ACCORDANCE WITH APPENDIX C OF THE PA DEP BMP MANUAL.</li><li>IF A MINIMUM OF 2 FT CANNOT BE PROVIDED TO BED ROCK THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL 2' SOIL MANTLE BETWEEN THE FACILITY AND THE BED ROCK IN ACCORDANCE WITH THE RECOMMENDATION AND UNDER THE DIRECTION OF THE PROJECT GEO-TECHNICAL ENGINEER.</li><li>PLACEMENT OF THE SOIL MEDIA SHALL BE DONE IN TWO (2) LIFTS TO THE DEPTH SHOWN ON THE DETAIL. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.</li><li>ON-SITE TOPSOIL FOR THE USE WITHIN THE AMENDED SOILS OF THE BMP FACILITY SHALL NOT BE PERMITTED UNLESS THE TOPSOIL IS TESTED AND CERTIFIED FOR USE WITHIN A BMP FACILITY (CLAY CONTENT, PERMEABILITY, ETC.).</li><li>PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.</li><li>EROSION CONTROL BLANKET OR HYDROSEED SHALL BE APPLIED TO THE BOTTOM OF THE FACILITY TO PROMOTE EARLY STABILIZATION AND ESTABLISHMENT.</li><li>PLANT VEGETATION ACCORDING WITH THE APPROVED LANDSCAPE PLAN AND DETAILS.</li></ul>
BMP-001 BMP-002 BMP-003	
VEGETATED SWALE PA DEP BMP 6.4.8 SWALE 1 SWALE 2 SWALE 3A SWALE 3B SWALE 3C SWALE 3D	<ol style="list-style-type: none"><li>THE FACILITY MAY NOT RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE FACILITY HAS RECEIVED FINAL STABILIZATION.</li><li>PLANT VEGETATION ACCORDING WITH THE APPROVED LANDSCAPE PLAN AND DETAILS.</li></ol>

Swale 20

TABLE A Seeding Requirements					
Formula and Species	% By Weight	Minimum %		Max % Weed Seed	Seeding Rate lb/1000 yd <sup>2</sup>
		Purity	Germination		
<b>Formula B Mix</b> <ul style="list-style-type: none"><li>Perennial Ryegrass mixture (Lolium perenne). A combination of improved certified varieties with No one variety exceeding 50% of the total Ryegrass component.</li><li>Creeping Red Fescue or Chewings Fescue (Festuca rubra or ssp commutata) (Improved and Certified)</li><li>Kentucky Bluegrass mixture (Poa pratensis). A combination of improved certified varieties with no one variety exceeding 50% of the total Bluegrass component.</li></ul>	20	97	90	0.10	<b>44.0 Total</b> 8.5
<b>Formula C Conservation Mix</b> <ul style="list-style-type: none"><li>Crownvetch (Coronilla varia)</li><li>Annual Ryegrass (Lolium multiflorum)</li></ul>	45 55	99 95	70* 90	0.10 0.10	<b>12.0 Total</b> 5.5 6.5
<b>Formula D Conservation Mix</b> <ul style="list-style-type: none"><li>Tall Fescue (Festuca arundinacea var. Kentucky 31)</li><li>Creeping Red Fescue or Chewings Fescue (Festuca rubra or ssp commutata) (Improved and Certified)</li><li>Annual Ryegrass (Lolium multiflorum)</li></ul>	60 30 10	96 97 95	85 85 90	0.10 0.10 0.10	<b>50.0 Total</b> 30.0 15.0 5.0
<b>Formula E</b> <ul style="list-style-type: none"><li>Annual Ryegrass (Lolium multiflorum)</li></ul>	100	95	90	0.10	<b>10.0 Total</b> 10.0
<b>Formula I Mix</b> <ul style="list-style-type: none"><li>Hard Fescue mixture (Festuca longtalia). A combination of improved certified varieties with no one variety exceeding 50% of the total Hard Fescue component.</li><li>Creeping Red Fescue (Festuca rubra) (Improved and Certified)</li><li>Annual Ryegrass (Lolium multiflorum)</li></ul>	55 35 10	97 97 95	85 85 90	0.10 0.10 0.10	<b>48.0 Total</b> 26.4 16.8 4.8

BMP TYPE	CONSTRUCTION NOTES	CRITICAL STAGES OF PROFESSIONAL OVERSIGHT	OPERATION AND MAINTENANCE
CONVEYANCE FACILITIES (NOT A PCSM BMP)	<ol style="list-style-type: none"><li>ALL STORM DRAIN AND CONVEYANCE SWALES SHALL BE INSTALLED AT THE LOCATION AND IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS INCLUDED ON THIS PLAN, UNLESS OTHERWISE REQUIRED BY THE MUNICIPALITY.</li></ol>	<ol style="list-style-type: none"><li>VERIFICATION OF INLET STRUCTURE LOCATION, SIZE, DEPTH, AND CONNECTING PIPE INVERTS OR CHANNEL GEOMETRY</li></ol>	<p><b>GENERAL REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>THE FACILITY SHALL ALSO BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES (BUT NOT LIMITED TO THE PA DEP AND THE TOWNSHIP) IN THE EVENT OF A SPILL AND CLEANUP OPERATION.</li><li>CLEAN OUT AND DISPOSE OF ACCUMULATED OIL, GREASE, AND SEDIMENTS. REMOVE ACCUMULATED TRASH AND DEBRIS. THE CLEAN OUT AND DISPOSAL TECHNIQUES SHOULD BE ENVIRONMENTALLY ACCEPTABLE AND IN ACCORDANCE WITH LOCAL REGULATIONS. SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND SWM FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL DISPOSE OF REMOVED SEDIMENT AND DEBRIS IN ACCORDANCE WITH THE RECYCLING AND DISPOSAL NOTES.</li></ul> <p><b>REGULAR MAINTENANCE</b> (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):</p> <ul style="list-style-type: none"><li>REMOVE ACCUMULATED SEDIMENT, TRASH, AND DEBRIS FROM THE FACILITY.</li><li>CLEAN OUT AND DISPOSE OF ACCUMULATED OIL, GREASE, AND SEDIMENTS. REMOVE ACCUMULATED TRASH AND DEBRIS. THE CLEAN OUT AND DISPOSAL TECHNIQUES SHOULD BE ENVIRONMENTALLY ACCEPTABLE AND IN ACCORDANCE WITH LOCAL REGULATIONS. SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND SWM FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL DISPOSE OF REMOVED SEDIMENT AND DEBRIS IN ACCORDANCE WITH THE RECYCLING AND DISPOSAL NOTES.</li></ul> <p><b>DOCUMENTATION REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEMENT.</li><li>PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.</li></ul>
OUTLET PROTECTION (NOT A PCSM BMP)	<ol style="list-style-type: none"><li>RIP-RAP APRONS/PLUNGE POOLS SHALL BE INSTALLED AT THE LOCATION AND IN ACCORDANCE WITH THE DETAILS INCLUDED ON THIS PLAN.</li></ol>	<ol style="list-style-type: none"><li>VISUAL INSPECTION OF THE RIP-RAP APRONS/PLUNGE POOLS TO ENSURE INSTALLATION IS IN GENERAL CONFORMANCE WITH THE PLAN.</li></ol>	<p><b>GENERAL REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>THE FACILITY SHALL ALSO BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES (BUT NOT LIMITED TO THE PA DEP AND THE TOWNSHIP) IN THE EVENT OF A SPILL AND CLEANUP OPERATION.</li><li>CLEAN OUT AND DISPOSE OF ACCUMULATED OIL, GREASE, AND SEDIMENTS. REMOVE ACCUMULATED TRASH AND DEBRIS. THE CLEAN OUT AND DISPOSAL TECHNIQUES SHOULD BE ENVIRONMENTALLY ACCEPTABLE AND IN ACCORDANCE WITH LOCAL REGULATIONS. SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND SWM FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL DISPOSE OF REMOVED SEDIMENT AND DEBRIS IN ACCORDANCE WITH THE RECYCLING AND DISPOSAL NOTES.</li></ul> <p><b>REGULAR MAINTENANCE</b> (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):</p> <ul style="list-style-type: none"><li>REMOVE ACCUMULATED SEDIMENT, TRASH, AND DEBRIS FROM THE FACILITY.</li><li>CLEAN OUT AND DISPOSE OF ACCUMULATED OIL, GREASE, AND SEDIMENTS. REMOVE ACCUMULATED TRASH AND DEBRIS. THE CLEAN OUT AND DISPOSAL TECHNIQUES SHOULD BE ENVIRONMENTALLY ACCEPTABLE AND IN ACCORDANCE WITH LOCAL REGULATIONS. SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND SWM FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL DISPOSE OF REMOVED SEDIMENT AND DEBRIS IN ACCORDANCE WITH THE RECYCLING AND DISPOSAL NOTES.</li></ul> <p><b>DOCUMENTATION REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEMENT.</li><li>PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.</li></ul>
RAIN GARDEN / BIO-RETENTION PA DEP BMP 6.4.5	<ul style="list-style-type: none"><li>AT ALL TIMES DURING CONSTRUCTION THE FACILITY SHALL BE PROTECTED FROM COMPACTION (WITHIN TWO FEET OF THE SUBGRADE OF THE FACILITY).</li><li>THE FACILITY MAY NOT RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO FACILITY HAS RECEIVED FINAL STABILIZATION.</li><li>UPLAND TRIBUTARY CONVEYANCE FACILITIES SHALL BE FLUSHED AND SEDIMENT REMOVED.</li><li>CONTRACTOR SHALL PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE FACILITY.</li><li>CONTRACTOR SHALL USE LOW-PRESSURE EQUIPMENT AND UTILIZE NON-INFILTRATION AREAS FOR EQUIPMENT STAGING TO PERFORM EXCAVATION AND INSTALLATION.</li><li>SEDIMENT LADEN OVERBURDEN AND DEPOSITION SHALL BE REMOVED FROM THE FACILITY TO PROVIDE A FREE DRAINING SUBGRADE.</li><li>CONTRACTOR TO TEST PIT FACILITY PRIOR TO INSTALLATION TO DETERMINE DEPTH TO LIMITING ZONE (BED ROCK OR WATER TABLE).</li><li>THE CONTRACTOR SHALL PROVIDE A MIN. OF 2 FEET OF SEPARATION BETWEEN THE BOTTOM OF THE FACILITY AND THE LIMITING ZONE IN ACCORDANCE WITH APPENDIX C OF THE PA DEP BMP MANUAL.</li><li>IF A MINIMUM OF 2 FT CANNOT BE PROVIDED TO BED ROCK THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL 2' SOIL MANTLE BETWEEN THE FACILITY AND THE BED ROCK IN ACCORDANCE WITH THE RECOMMENDATION AND UNDER THE DIRECTION OF THE PROJECT GEO-TECHNICAL ENGINEER.</li><li>PLACEMENT OF THE SOIL MEDIA SHALL BE DONE IN TWO (2) LIFTS TO THE DEPTH SHOWN ON THE DETAIL. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.</li><li>ON-SITE TOPSOIL FOR THE USE WITHIN THE AMENDED SOILS OF THE BMP FACILITY SHALL NOT BE PERMITTED UNLESS THE TOPSOIL IS TESTED AND CERTIFIED FOR USE WITHIN A BMP FACILITY (CLAY CONTENT, PERMEABILITY, ETC.).</li><li>PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.</li><li>EROSION CONTROL BLANKET OR HYDROSEED SHALL BE APPLIED TO THE BOTTOM OF THE FACILITY TO PROMOTE EARLY STABILIZATION AND ESTABLISHMENT.</li><li>PLANT VEGETATION ACCORDING WITH THE APPROVED LANDSCAPE PLAN AND DETAILS.</li></ul>	<ol style="list-style-type: none"><li>REVIEW MATERIAL COMPONENTS OF THE FACILITY (SEE MATERIAL SPECIFICATIONS):<div><div>A. SOIL MEDIA (MATERIAL RECEIPT AND TESTING RESULTS OR PRE-CERTIFIED MEDIA RECEIPT)</div><div>B. SEPARATION FABRIC</div><div>C. GEOTEXTILE</div><div>D. OUTFALL BARREL PIPE</div><div>E. ANTI-SEEP COLLAR</div><div>F. CORE MATERIAL</div></div></li><li>FULL-TIME OBSERVATION OF THE EXCAVATION OF THE BASINS BY A GEOTECHNICAL ENGINEER IS RECOMMENDED.</li><li>CUTOFF TRENCH AND CLAY CORE.</li><li>INSTALLATION OF OUTFALL BARREL, CONCRETE CRADLE, AND ANTI-SEEP COLLAR.</li><li>FIELD MEASURE EXCAVATED BOTTOM FOR GENERAL CONFORMANCE WITH THE REQUIRED SURFACE AREA OF BED.</li><li>PROBE THE BOTTOM OF FACILITY WITH A SOIL PROBE TO VERIFY DEPTH TO LIMITING ZONE.</li><li>REVIEW OF FACILITY BOTTOM TO CONFIRM A FREE-DRAINING (UN-COMPACTED), SEDIMENT FREE SUBGRADE.</li><li>PERFORM INFILTRATION TESTING AT PROPOSED FACILITY BOTTOM ELEVATION TO CONFIRM DESIGN INFILTRATION RATES. THE TOWNSHIP SHALL BE NOTIFIED WHEN THE BASIN TESTS ARE TO BE CONDUCTED DURING CONSTRUCTION AND PROVIDED WITH THE TEST RESULTS ALONG WITH NOTICE OF APPROVAL BY THE DESIGN PROFESSIONAL THAT THE TEST RESULTS ARE CONSISTENT WITH THE APPROVED BASIN DESIGN. NO FINANCIAL SECURITY FOR THE INFILTRATION BASIN SHALL BE RELEASED UNTIL AS-BUILT TESTING HAS BEEN COMPLETED AND INFILTRATION RATES FOUND TO BE ACCEPTABLE.</li><li>PLACEMENT OF SOIL MEDIA TO DEPTH SPECIFIED ON PLAN.</li><li>VISUAL INSPECTION OF RISER STRUCTURE, TRASH RACK, EMERGENCY SPILLWAY, AND REMAINING APPURTENANCES.</li></ol>	<p><b>GENERAL REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>A SPECIALIZED LANDSCAPER AND CONTINUED MONITORING AND MAINTENANCE ARE REQUIRED UNTIL PLANTINGS ARE FULLY ESTABLISHED.</li><li>THE AREAS OF VEGETATION WHICH FAIL TO SUSTAIN YEARLY GROWTH ARE TO BE REPLANTED OR RESEEDED ON A YEARLY BASIS OR UNTIL CONSISTENT GERMINATION CAN BE SUSTAINED. SHRUBS, FORBS OR GRASSES WHICH ARE DEAD ARE TO BE REPLANTED OR RESEEDED.</li><li>VEGETATION ON THE EMBANKMENT AND SIDESLOPES SHALL BE MOWED ANYTIME THE VEGETATION IS GREATER THAN 6" IN HEIGHT OR AS REQUIRED BY THE MUNICIPALITY</li><li>MATERIALS THAT ARE REMOVED MUST BE DISPOSED IN ACCORDANCE WITH APPLICABLE REGULATIONS.</li><li>CARE SHALL BE TAKEN NOT TO DAMAGE THE REMAINING STRUCTURES/PIPPING WITHIN THE FACILITY, DURING THE MAINTENANCE OPERATIONS.</li></ul> <p><b>REGULAR MAINTENANCE:</b> (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):</p> <ul style="list-style-type: none"><li>REMOVE ACCUMULATED SEDIMENT, TRASH, AND DEBRIS FROM THE FACILITY</li><li>MOW OR TRIM FACILITY BOTTOM VEGETATION TO A HEIGHT OF 6 INCHES TWICE A YEAR; REMOVE CLIPPINGS AND INVASIVE PLANTS</li><li>IF 72 HOURS AFTER A RAINFALL EVENT, PONDING WATER IS FOUND WITHIN THE PRINCIPAL SPILLWAY OR ON THE SURFACE ABOVE THE FACILITY, THE FACILITY IS NOT OPERATING PROPERLY.</li><li>IF THE FACILITY IS NOT DRAINING PROPERLY, UTILIZE THE UNDERDRAIN SYSTEM (IF APPLICABLE) OR PUMP FOR DEWATERING.</li><li>REMOVE AND REPLACE AREAS OF SOIL MEDIA WHICH APPEAR TO HAVE SEDIMENT ACCUMULATION, CLOGGED, OR HOLDING WATER.</li><li>INSPECT THE FACILITY FOR RILLS ON THE EMERGENCY SPILLWAY, INTERIOR, AND EXTERIOR EMBANKMENT SLOPES.</li><li>REPAIR RILL AREAS WITH CLEAN FILL AND TOPSOIL WITH LIGHT TAMPING; RESEED DISTURBED AREAS.</li><li>INSPECTION PRINCIPAL SPILLWAY OUTLET STRUCTURE, OUTFALL BARREL, VELOCITY DISSIPATER, AND REMAINING APPURTENANCES.</li><li>CONTACT PROJECT ENGINEER FOR REPAIR SOLUTIONS IF THESE COMPONENTS ARE DAMAGED.</li></ul> <p><b>DOCUMENTATION REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEMENT.</li><li>PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.</li></ul>
VEGETATED SWALE PA DEP BMP 6.4.8	<ol style="list-style-type: none"><li>THE FACILITY MAY NOT RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE FACILITY HAS RECEIVED FINAL STABILIZATION.</li><li>PLANT VEGETATION ACCORDING WITH THE APPROVED LANDSCAPE PLAN AND DETAILS.</li></ol>	<ol style="list-style-type: none"><li>OBSERVATION OF INSTALLED LINER MATTING.</li><li>FIELD MEASUREMENT OF BOTTOM WIDTH.</li><li>CONFIRMATION OF VEGETATIVE STABILIZATION</li><li>REVIEW AND CONFIRMATION OF CONSTRUCTION RECORDS FOR MATERIAL SELECTION AND SPECIFICATIONS.</li></ol>	<p><b>GENERAL REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>MOWING SHALL BE COMPLETED DURING PERIODS WHEN RUTTING WILL BE MINIMIZED.</li><li>ALL SEDIMENT, DEBRIS, AND/OR OTHER MATERIAL ACCUMULATED WITHIN THE POST CONSTRUCTION BMPS SHALL BE REMOVED FROM THE FACILITY OR THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.</li><li>THE AREAS OF VEGETATION WHICH FAIL TO SUSTAIN YEARLY GROWTH ARE TO BE REPLANTED OR RESEEDED ON A YEARLY BASIS OR UNTIL CONSISTENT GERMINATION CAN BE SUSTAINED.</li><li>SWALES SEEDED WITH GRASS SHALL BE MOWED ANYTIME THE GRASS IS OVER SIX (6) INCHES TALL OR AS REQUIRED BY THE MUNICIPALITY.</li></ul> <p><b>REGULAR MAINTENANCE:</b> (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):</p> <ul style="list-style-type: none"><li>INSPECT FOR EROSION PROBLEMS, VEGETATION DAMAGE, SEDIMENT AND DEBRIS ACCUMULATION, AND LITTER.</li><li>ERODED AREAS SHALL BE MULCHED AND SEEDED IMMEDIATELY.</li><li>IF 72 HOURS AFTER A RAINFALL EVENT, PONDING WATER IS FOUND WITHIN THE FACILITY, THE FACILITY IS NOT OPERATING PROPERLY.</li><li>REMOVE ACCUMULATED TRASH, DEBRIS, AND SEDIMENT FROM THE CHANNEL.</li></ul> <p><b>DOCUMENTATION REQUIREMENTS:</b></p> <ul style="list-style-type: none"><li>PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEMENT.</li><li>PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.</li></ul>

OPERATION & MAINTENANCE NOTES

NOT TO SCALE

NOT FOR BUILDING/NOT FOR CONSTRUCTION

MANAGER: CHRIS VEMARCHICK  
DESIGN BY: OLH  
DRAWN BY: OLH  
CHECKED BY: CV  
SCALE: N.T.S.  
PROJECT TITLE: 1376 CAMPUS ROAD - PHASE 3  
FINAL SUBDIVISION & LAND DEVELOPMENT PLAN  
SHEET TITLE: OPERATION AND MAINTENANCE NOTES

DATE: FEBRUARY 24, 2025  
PROJECT NO.: 2024\J13-001  
LPOC NO.:  
SHEET NO.: 37 OF 38

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ASSOCIATES





**CENTER FOR**



SEGMENT	LENGTH	DIRECTION	STREET NAME
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SEGMENT	RADIUS	LENGTH	TANGENT	CHORD DIRECTION	CHORD LENGTH	DELTA - Δ	STREET NAME
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OF COUNSEL  
WILLIAM C. CROSSWELL  
RANDALL K. MILLER

March 19, 2025

**VIA EMAIL**

Kimberly Kaufman, Township Manager  
Mount Joy Township  
8853 Elizabethtown Road  
Elizabethtown, PA 17022

Re: Final Subdivision & Land Development Plan for 1376 Campus Road – Phase 3  
Our File No. 10221-1

Dear Kim:

We have been provided with a copy of the Final Subdivision & Land Development Plan for 1376 Campus Road – Phase 3 (the “Phase 3 Plan”). The Phase 3 Plan relates to a development now known as Klein Mills and proposes the development of single family detached dwellings, storm water management facilities, and recreational facilities on portions of Lots 3 and 5 created by the Final Subdivision & Land Development Plan for 1376 Campus Road – Phase 1A (the “Phase 1A Plan”) recorded at Document No. 2024-0333-J. The Phase 3 Plan also subdivides Lots 2 and 4 from Lot 5 created by the Phase 1A Plan. This letter will set forth our comments on the Phase 3 Plan.

The Phase 3 Plan includes the entirety of Brooklyn Drive, a street extending southward from Ella Way, making a 90 degree turn, heading westward and terminating in a cul-de-sac turnaround. It also includes an extension of South Conifer Drive extending from Ella Way southward to Brooklyn Drive. The Phase 3 Plan at Sheet 5 includes an area identified as “future right-of-way; area to be maintained by land owners” which extends from Brooklyn Drive to the property line. This area is not designated on other sheets of the Phase 3 Plan. For example, Sheet 15 has South Conifer Drive to its intersection with Brooklyn Drive and no indication of the potential future extension through Lot 5 onto the lands of Daniel Raffensperger. This area should be consistently shown. There should also be notes on the Phase 3 Plan indicating that the developer of the lands of Daniel Raffensperger will have the right to enter upon the area and construct the extension of South Conifer Drive.

The cover sheet of the Phase 3 Plan should be updated to include all recorded plans. For example, the Phase 2 Plan has been recorded, but there is a blank for the recording reference. The Phase 3 Plan should also be updated to correctly indicate the Lancaster County Tax Account



Number for the area being developed, which is now Tax Account No. 460-56627-0-0000. The address is no longer 1376 Campus Road.

The information concerning adjoining property owners should be updated. Meridian Heights Partners, LLC, purchased the land identified as 1925 Sheaffer Road in 2023 by a deed recorded at Document No. 6765985. Sheet 3 indicates that this land is owned by Chiosi, LLC and Schiavoni, Ltd., by a deed recorded at Document No. 6686431. I have not reviewed the other adjoining landowners to determine whether they are correct, but this should be done.

Lot 4 to be created by the Phase 3 Plan is identified as a “pocket park.” Sheet 2 indicates that 1376 Campus Road Associates LLC (“Developer”) will receive a credit of \$50,000 toward the required fee in lieu of dedication of park and recreation land. The Township should confirm that this credit is accurate.

Sheet 2 of the Phase 3 Plan includes a heading Specific Rights of Mount Joy Township. Notes 1 and 2 under this heading relate to “Lot 1 and Lot 9 created by this Plan”. Lot 1 and Lot 9 were created by the Phase 1A Plan, and the apartment dwelling units proposed for Lot 1 and Lot 9 were authorized by the Final Land Development Plan for 1376 Campus Road Phase 1B (the “Phase 1B Plan”) recorded at Document No. 2025-0555-J. These notes should be updated to include a specific identification of the Plan 1A Plan which created those lots and the Phase 1B Plan which authorized development of the apartment buildings.

The Phase 3 Plan will require a Storm Water Management Agreement and Declaration of Easement. The operations and maintenance requirements on Sheet 38 of the Phase 3 Plan must be included as an exhibit. There will have to be a joinder or joinders by mortgagee by the entities holding mortgages against the land shown on the Phase 3 Plan at the time the Phase 3 Plan is approved. There must also be a joinder by Klein Mills Homeowners Association, Inc. (the “Association”).

Sheet 5 of the Phase 3 Plan shows numerous snow easements. There will have to be an Agreement Providing for Grant of Road Maintenance Easement to convey these easements to the Township if the Township accepts dedication of the applicable streets. The Township should confirm that the number and location of these easements are acceptable.

There is a trail shown through Lot 4 which is to be developed with a pocket park. I assume that Lot 4 will eventually be conveyed to the Association. If the public will have the right to use the trail within the pocket park, there should be an Agreement Providing for Grant of Non-Motorized Trail Easement.

Sheets 14 and 15 of the Phase 3 Plan show an improvement along the tree line at the rear of units 12 through 24 and BMP-001. There is no legend for this item. Is it a permanent or temporary construction fence? If it is a permanent fence, it is located within swales 1 and 2.

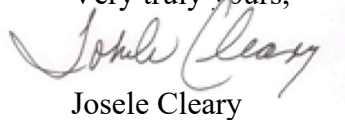


Kimberly Kaufman, Township Manager  
March 19, 2025  
Page 3

The Declaration for Klein Mills has been recorded at Document No. 20246810580. Exhibit F to the Declaration proposes the conveyance of South Conifer Drive from Campus Road to Natalie Drive. There must be an amendment to the Declaration to address the portion of South Conifer Drive from Natalie Drive to Brooklyn Drive and also the eventual extension of South Conifer Drive from Brooklyn Drive onto the lands of Daniel Raffensperger. WE should be provided with that amendment for review.

If you have any questions concerning these comments, please contact me.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Josele Cleary", is written over a light pink rectangular background.

Josele Cleary

JC:sle  
MUNI\10221-1(711)\250318\71

cc: Justin S. Evans, AICP, Assistant Zoning Officer (via email)  
Patricia J. Bailey, Township Secretary (via email)  
Benjamin S. Craddock, P.E. (via email)  
Chris Venarchick, RLA (via email)