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

Via email: kkaufman@mtjoytwp.org

Re: 1376 Campus Road

Final Subdivision and Land Development Plan - Phase 4

Township Permit No. 25-06-FLDP

LCEC Project No: 25-100



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 (received March 11, 2025):

- Submission cover letter dated March 7, 2025
- Final Subdivision and Land Development Plan (Phase 4) dated March 7, 2025
- Stormwater Management Report for NPDES Module 1 and 2 dated March 7, 2025
- Drainage Areas Maps dated February 24, 2025
- Opinion of Probable Cost (Phase 4) dated March 7, 2025
- Opinion of Probable Cost (Phase 4 Shared) dated March 7, 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. The name of the owner shall be updated to reference "Klein Mills Development, LLC" (119-31.B(3)).
- 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 permanent spillway matting, swale matting, amended soils, final placement of topsoil, and seeding & mulching (119-41 & 113-60). The quantities for the storm pipe should be confirmed. For example, the combined 15" SLCPP quantity shown is 1,200 linear feet, but we tally a total of 1,384.9 linear feet on the plans. The quantity for the anti-seep collars should be revised to 2. The quantity for the underdrain with stone should be revised to 536 linear feet.
- 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. 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)).
- 12. 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)).
- 13. 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).
- 14. Drainage easements shall be provided around the entire proposed stormwater BMPs along the Sara Drive curves to allow for their maintenance, repair, and reconstruction (119-56.E).
- 15. Recreational areas and facilities shall be provided (119-61). The minimum lot area which shall be dedicated is 3.510 acres (65 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 4) shall be computed and paid prior to approval of the final plan (119-61.C(2)).

### **Stormwater Management Ordinance**

- 16. The landscape plan shall include information for the proposed plugs within BMP-012 (113-31.N and 113-37-A.(4)(d)).
- 17. Swale 21 shall be added to the Vegetated Channel detail (113-37.C(1)(d)).
- 18. A label for Swale 21 shall be provided on the plans (113-37.C(5)).
- 19. Swale 13 and Swale 14A shall be evaluated for stability based upon an "n" value equal to 0.03 (113-37.C.(5)(c)[1][a]).
- 20. 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)). The 21" soil media depth shown in this detail is also inconsistent with the 18" amended soil depths shown elsewhere.

April 16, 2025 Page 2 of 3

### **Traffic**

21. 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 <a href="mailto:bencraddock@lancastercivil.com">bencraddock@lancastercivil.com</a> or via telephone at 717-799-8599.

Sincerely,

Benjamin S. Gradook Digitally signed by Benjamin S. Gradook Discontinuous of the Control of the

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)

Austin Calaman, EAWA (via email)

Michele Powl, 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)

April 16, 2025 Page 3 of 3

# FINAL SUBDIVISION & LAND DEVELOPMENT PLAN

# 1376 CAMPUS ROAD - PHASE 4

128.50 AC. (GROSS)

127.53 AC. (NET)

40.28 AC. (LOT 5)

4.47 AC. (LOT 11)

4.06 AC. (LOT 12)

AGRICULTURAL

RESIDENTIAL

209 UNITS

489 UNITS

13 LOTS

70 UNITS

11 (280 UNITS)

11 (280 UNITS)

280 UNITS

27 UNITS

47 UNITS

65 UNITS

1 LOT (LOT 5)

65

2 LOTS (LOTS 7 & 8)

3 LOTS (LOT 2, 4, & 5)

2.37 DWELLING UNITS PER ACRE

7.10 DWELLING UNITS PER ACRE

7.08 DWELLING UNITS PER ACRE

10 LOTS (LOTS 1, 3, 5, 6, 7, 9, 10, 11, 12, & 13)

**PUBLIC** 

### LANCASTER COUNTY PLANNING DEPARTMENT REVIEW CERTIFICATE

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

SIGNATURE OF THE CHAIRMAN AND VICE CHAIRMAN OR THEIR DESIGNEES.

### PLANNING COMMISSION FINAL PLAN APPROVAL CERTIFICATE

20 , THE MOUNT JOY TOWNSHIP PLANNING COMMISSION APPROVED THIS PROJECT, INCLUDING THE COMPLETE SET OF PLANS AND INFORMATION WHICH ARE FILED WITH THE COMMISSION IN MOUNT JOY TOWNSHIP PLANNING COMMISSION FILE NO. BASED UPON ITS CONFORMITY WITH THE STANDARDS OF CHAPTER 119, SUBDIVISION AND LAND

SIGNATURES OF THE CHAIRMAN AND VICE CHAIRMAN OR THEIR DESIGNEES

### CERTIFICATE OF OWNERSHIP, ACKNOWLEDGMENT OF PLAN, AND OFFER OF DEDICATION

1376 CAMPUS ROAD ASSOCIATES, LLC, A PENNSYLVANIA LIMITED LIABILITY COMPAN COMMONWEALTH OF PENNSYLVANIA COUNTY OF LANCASTER

ON THIS, THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20 \_\_\_\_, BEFORE ME, THE UNDERSIGNED OFFICERS, PERSONALLY APPEARED

BEING A MEMBER OF 1376 CAMPUS ROAD ASSOCIATES, LLC, WHO, BEING DULY SWORN OR AFFIRMED ACCORDING TO LAW, DEPOSES THE PLAN, THAT HE IS AUTHORIZED TO EXECUTE SAID ON BEHALF OF THE LIMITED LIABILITY COMPANY THAT THE LIMITED LIABILITY COMPANY DESIRES THE SAME TO BE RECORDED AND ON BEHALF OF THE LIMITED LIABILITY COMPANY FURTHER ACKNOWLEDGES THAT ALL STREETS AND OTHER PROPERTY IDENTIFIED AS PROPOSED PUBLIC PROPERTY (EXPECTING THOSE AREAS LABELED NOT FOR DEDICATION) ARE HEREBY DEDICATED

**CERTIFICATE OF ACCURACY - SURVEY** 

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE SURVEY SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY CHAPTER 119, SUBDIVISION AND LAND DEVELOPMENT.

# **CERTIFICATE OF ACCURACY - PLAN**

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY CHAPTER 119, SUBDIVISION AND LAND DEVELOPMENT.

# **ELIZABETHTOWN REGIONAL SEWER AUTHORITY CERTIFICATE**

THE ELIZABETHTOWN REGIONAL SEWER AUTHORITY HEREBY CERTIFIES THAT: (A) THIS PLAN HAS BEEN APPROVED FOR, OR RESERVED CAPACITY FOR: <u>65</u>

- EQUIVALENT DWELLING UNITS; (B) THE AUTHORITY ENGINEER HAS APPROVED THE PROPOSED DESIGN AND
- (C) A SEWER EXTENSION / DEVELOPMENT AGREEMENT HAS BEEN EXECUTED: AND
- (D) SUFFICIENT FINANCIAL SECURITY HAS BEEN PROVIDED TO THE AUTHORITY TO FULLY COVER THE COSTS FOR CAPACITY AND INSTALLATION OF THE PLANNED IMPROVEMENTS.

ALTERNATE AUTHORIZED OFFICIAL'S SIGNATURE

# **ELIZABETHTOWN AREA WATER AUTHORITY CERTIFICATE**

THE ELIZABETHTOWN AREA WATER AUTHORITY HEREBY CERTIFIES THAT: (A) THIS PLAN HAS BEEN APPROVED FOR, OR RESERVED CAPACITY FOR: 65

- EQUIVALENT DWELLING UNITS; (B) THE AUTHORITY ENGINEER HAS APPROVED THE PROPOSED DESIGN AND
- CONSTRUCTION: (C) A WATER EXTENSION / DEVELOPMENT AGREEMENT HAS BEEN EXECUTED; AND
- (D) SUFFICIENT FINANCIAL SECURITY HAS BEEN PROVIDED TO THE AUTHORITY TO FULLY COVER THE COSTS FOR CAPACITY AND INSTALLATION OF THE PLANNED IMPROVEMENTS.

BOARD CHAIRMAN'S SIGNATURE

ALTERNATE AUTHORIZED OFFICIAL'S SIGNATURE

# **CERTIFICATION OF CARBONATE GEOLOGY**

, CERTIFY THAT THE PROPOSED STORM WATER MANAGEMENT BASIN(S) IS NOT UNDERLAIN BY CARBONATE GEOLOGY.

GEOLOGIST'S SIGNATURE

# SITE / ZONING DATA

TOTAL SITE ACREAGE (ALL PHASES) PHASE 4 SITE ACREAGE

EXISTING LAND USE: PROPOSED LAND USE

PROPOSED UNITS:

WATER: FULL-BUTLD: PROPOSED SINGLE-FAMILY DETACHED: PROPOSED APARTMENT HOUSES:

PROPOSED LOTS: PROPOSED SINGLE-FAMILY DETACHED:

PROPOSED APARTMENT HOUSES: PROPOSED UNITS: PROPOSED LOTS:

PHASE 1B: PROPOSED SINGLE-FAMILY DETACHED: PROPOSED APARTMENT HOUSES: PROPOSED UNITS: PROPOSED LOTS

PROPOSED SINGLE-FAMILY DETACHED: PROPOSED APARTMENT HOUSES: PROPOSED UNITS: PROPOSED LOTS:

PROPOSED SINGLE-FAMILY DETACHED: PROPOSED APARTMENT HOUSES: PROPOSED UNITS: PROPOSED LOTS:

PROPOSED SINGLE-FAMILY DETACHED: PROPOSED APARTMENT HOUSES: PROPOSED UNITS: PROPOSED LOTS:

ACCESSORY BUILDINGS:

FULL-BUILD SINGLE-FAMILY DENSITY: PHASE 1A, 2, 3 & 4 SINGLE-FAMILY DENSITY: 2.37 DWELLING UNITS PER ACRE LOT 1 APARTMENT DENSITY: LOT 9 APARTMENT DENSITY

R-2 MEDIUM-DENSITY RESIDENTIAL DISTRICT\*\*\*

SINGLE-FAMILY DETACHED 8,500 SF MIN. > 8,500 SF SINGLE-FAMILY DETACHED: 70 FT. MIN. > 70 FT. LOT DEPTH: SINGLE-FAMILY DETACHED 100 FT. MIN. 20 FT. SINGLE-FAMILY DETACHED 20 FT. MIN. ACCESSORY BUILDINGS: 35 FT. MIN. 35 FT RFAR YARD: SINGLE-FAMILY DETACHED: 20 FT. MIN. ACCESSORY BUILDINGS: 6 FT. MIN. SIDE YARD: SINGLE-FAMILY DETACHED 8 FT. MIN. ACCESSORY BUILDINGS: 6 FT. MIN. \*35 FT. MAX. < 35 FT. **BUILDING HEIGHT:** 

**BUILDING COVERAGE:** IMPERVIOUS COVERAGE: <35%\*\* 35% MAX. 0.4% PARKING:

20 FT. MAX.

TWO PARKING SPACES FOR EACH DWELLING UNIT WITH THREE BEDROOMS OR FEWER.

< 20 FT

SINGLE FAMILY: 65 LINITS PARKING REOUIRED: 130 SPACES PARKING PROPOSED: 130 SPACES (2 SPACES IN EACH DRIVEWAY)

- \* AN ADDITIONAL SIDE YARD SETBACK OF ONE FOOT SHALL BE PROVIDED FOR EVERY TWO-FOOT, OR FRACTION THEREOF, INCREASE IN HEIGHT ABOVE 35 FEET, BUILDINGS DEVOTED TO AGRICULTURAL USE SHALL BE EXEMPT FROM HEIGHT REGULATIONS.
- COVERAGE/STORMWATER CALCULATIONS FOR LOTS 11 AND 12 ASSUME THE MAXIMUM 30% BUILDING COVERAGE AND 35% IMPERVIOUS COVERAGE. COVERAGE/STORMWATER CALCULATIONS FOR LOT 5 ASSUMES 4,100 SF PER UNIT.
- THE SUBJECT TRACT WAS REZONED FROM RURAL DISTRICT (R) TO MEDIUM DENSITY RESIDENTIAL DISTRICT (R-2) ON OCTOBER 19TH 2020 PER ORDINANCE NO. 324-2020

# MOUNT JOY TOWNSHIP SWM SITE PLAN APPROVAL CERTIFICATE

AT A MEETING ON\_\_\_\_\_\_, 20 , THE MOUNT JOY TOWNSHIP PLANNING COMMISSION APPROVED THIS PROJECT, AND ALL CONDITIONS HAVE BEEN MET. THIS APPROVAL INCLUDES THE COMPLETE SET OF PLANS AND INFORMATION WHICH ARE FILED WITH THE TOWNSHIP IN MOUNT JOY TOWNSHIP PLANNING COMMISSION FIL , BASED UPON ITS CONFORMITY WITH THE STANDARDS OF CHAPTER 113, STORMWATER MANAGEMENT.

\* SIGNATURES OF THE CHAIRMAN AND VICE CHAIRMAN OR THEIR DESIGNEES

# **OWNER STORMWATER MANAGEMENT ACKNOWLEDGMENT**

THE STORMWATER MANAGEMENT FACILITIES ARE PERMANENT FIXTURES THAT CANNOT BE ALTERED OR REMOVED UNLESS A REVISED PLAN IS APPROVED BY THE

MEMBER SIGNATURE

STORMWATER MANAGEMENT PLAN CERTIFICATION

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

PROFESSIONAL'S SIGNATURE

## PRIOR PLANS OF RECORD AND STORMWATER **MANAGEMENT AGREEMENTS**

STORMWATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC ; DOCUMENT #:

AGREEMENT FOR GRANT OF PUBLIC ACCESS AND TRAIL EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC \_\_\_; DOCUMENT #: \_\_

PREPARED BY RGS ASSOCIATES, INC. ; DOCUMENT #: STORMWATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT

FINAL LAND DEVELOPMENT PLAN FOR 1376 CAMPUS ROAD - PHASE 3

PREPARED BY MCNEES WALLACE AND NURICK LLC \_\_\_; DOCUMENT #: \_ AGREEMENT FOR GRANT OF PUBLIC ACCESS AND TRAIL EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC

FINAL LAND DEVELOPMENT PLAN FOR 1376 CAMPUS ROAD - PHASE 2 PREPARED BY RGS ASSOCIATES, INC. DATED 10/24/24; REVISED \_ \_; DOCUMENT #:

; DOCUMENT #:

AGREEMENT FOR GRANT OF PUBLIC ACCESS AND TRAIL FASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC DATED 1/24/25; DOCUMENT #: 20250002955

STORMWATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC DATED 1/24/25: DOCUMENT #: 20250002954

FINAL LAND DEVELOPMENT PLAN FOR 1376 CAMPUS ROAD - PHASE 1B PREPARED BY RGS ASSOCIATES, INC. DATED 8/9/24; REVISED 12/17/24; DOCUMENT #: 2025-0555-J STORMWATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC

AGREEMENT FOR GRANT OF PUBLIC ACCESS AND TRAIL EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC DATED JULY 15, 2024; DOCUMENT #: 20246797245

DATED JULY 15, 2024; DOCUMENT #: 20246797244

AGREEMENT PROVIDING FOR GRANT OF CONSERVATION EASEMENT PREPARED BY MCNEES WALLACE AND NURICK LLC DATED JULY 15, 2024; DOCUMENT #: 20246797246

FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN FOR 1376 CAMPUS ROAD - PHASE 1A PREPARED BY RGS ASSOCIATES, INC. DATED 12/2/22; REVISED 5/7/24; DOCUMENT #: 2024-0333-J PRELIM/FINAL LAND DEVELOPMENT PLAN FOR 1376 CAMPUS ROAD - ROADWAY EXTENSION

PREPARED BY RGS ASSOCIATES, INC. DATED 5/20/22; REVISED 3/26/24; DOCUMENT #: 2024-0310-3 FINAL MINOR SUBDIVISION PLAN FOR 1376 CAMPUS ROAD PREPARED BY RGS ASSOCIATES DATED 12/2/23; REVISED 3/20/24; DOCUMENT #: 2024-0178-J

FINAL PLAN OF LOTS FOR RAYMOND H. AND ELIZABETH MYER PREPARED BY CLIFFORD L. ROMIG DATED 11/6/80; DOCUMENT #: J-122-97

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE ABOVE REFERENCED PLANS ARE THE ONLY PRIOR RECORDED PLANS FOR THE SUBJECT TRACT AND THAT NO NOTES AND/OR RESTRICTIONS ON SUCH AFFECT THE CURRENT DEVELOPMENT. I AM ALSO NOT AWARE OF ANY

ORDINANCE WERE REQUESTED:

1. SECTION 119-25.L(4)(C) - PHASING

2. SECTION 119-31.A(1) - PLAN SCALE

SECTION 119-54-D(3) - LOT WIDTH

8. SECTION 119-57.D - LOT LINE MARKERS

9. SECTION 119-25.L(4)(C) - PHASING

ACTION: APPROVED DATE: 6/27/2022

ACTION: APPROVED DATE: 9/26/2022

ACTION: APPROVED DATE: 10/24/2022

ACTION: DEFERRED TO BOS DATE: 10/24/2022

12. SECTION 119-23.B - MULTIPLE APPLICATIONS

12. SECTION 119-25.L(4)(C) - PHASING

13. SECTION 119-54.D(3) - LOT WIDTH

WERE REQUESTED:

ACTION: APPROVED DATE: 12/28/2022

ACTION: APPROVED DATE: 12/28/2022

ACTION: APPROVED DATE: 12/28/2022

ACTION: DENIED DATE: 1/23/2023

ACTION: APPROVED DATE: 1/23/2023

ACTION: APPROVED DATE: 6/27/2022

ACTION: APPROVED DATE: 6/27/2022

ACTION: APPROVED DATE: 9/26/2022

ACTION: APPROVED DATE: 9/26/2022

ACTION: APPROVED DATE: 9/26/2022

6. 113-37.C(4)(D)[2] - CURBED STREET INLET TOPS ACTION: APPROVED DATE: 9/26/2022

16. SECTION 113-32.A(1)(C) - LOADING RATIOS

17. SECTION 113-42.D - PLAN SCALE

4. 113-31.L(2)(a) - INFILTRATION

3. SECTION 113.31.L(1) - LIMITING ZONE

5. 113-34.F - MINIMUM FLOOR ELEVATIONS

14. SECTION: 119-61.H - FEE-IN-LIEU OF DEDICATION (FEE AT BUILDING PERMIT)

15. SECTION: 119.62.D - PEDESTRIAN EASEMENT LEGAL DESCRIPTIONS

7. SECTION 119-56.E - STORMWATER EASEMENT WIDTH

6. SECTION 119-56.D - UTILITY EASEMENT WIDTH

4. SECTION 119-53.B(10) - GRASS PLANTING STRIP

**MODIFICATIONS** 

THE FOLLOWING WAIVERS OF THE MOUNT JOY TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT

10. SECTION 119-61 - MANDATORY RECREATION DEDICATION (CREDIT FOR PROPOSED AMENITIES)

11. SECTION 119-61 - MANDATORY RECREATION DEDICATION (CREDIT FOR PROPOSED AMENITIES)

ACTION: APPROVED DATE: 12/19/2022

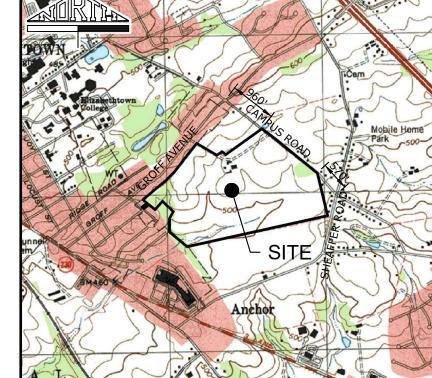
CONDITIONS: REDUCTION IN THE AMOUNT OF \$157,500.00 CONTINGENT ON THE HOA

DOCUMENTS STATING THE TRAILS ARE OPEN TO THE GENERAL PUBLIC AND THE TOWNSHIP

SOLICITOR'S REVIEW OF SAID DOCUMENTS

THE FOLLOWING WAIVERS OF THE MOUNT JOY TOWNSHIP STORMWATER MANAGEMENT ORDINANCE

SECTION 119-53.B(1) - SIDEWALK ALONG BOTH SIDES OF AN ACCESS DRIVE



SCALE: 1" = 2000'

**LOCATION MAP** 

# Update entit name (typ.)

WETLANDS DELINEATION PROVIDED BY VORTEX ENVIRONMENTAL, INC. 2819-I WILLOW STREET PIKE NORTH WILLOW STREET, PA 17584 (717)509-3934

WETLANDS INFORMATION

# **GEOLOGIC INFORMATION**

DATE: 05-21-21

GEOLOGY STUDY PROVIDED BY: ECS MID-ATLANTIC LLC 56 GRUMBACHER ROAD, SUITE D YORK, PA 17406 (717) 767-4788 DATE: 11-04-21 JOB NO.: 18:5291

# TRAFFIC INFORMATION

TRAFFIC STUDY PROVIDED BY: TRANSPORTATION RESOURCE GROUP, INC. 204 NORTH GEORGE STREET, SUITE 260 YORK, PA 17401 (717) 846-4660 DATE: JUNE 2021 LAST REVISED: DECEMBER 3, 2021 PROJECT NO.: 228.024.18

OWNER OF RECORD

1376 CAMPUS ROAD ASSOCIATES, LLC ONE TOWER BRIDGE 100 FRONT STREET, SUITE 560 WEST CONSHOHOCKEN, PA 19428

# **SOURCE OF TITLE**

LANCASTER COUNTY, PA PARCEL ID: 4607260800000 DEED REF: 6776199 1376 CAMPUS ROAD, ELIZABETHTOWN, PA 17022

DISTRICT 460

# LANCASTER COUNTY CODE

SURVEY INFORMATION

BOUNDARY AND TOPOGRAPHY PROVIDED BY: RETTEW ASSOCIATES, INC. 3020 COLUMBIA AVENUE LANCASTER, PA 17603 DATE: 01-13-21 DWG NO.: 111902012

26 LANDSCAPE PLAN 27 LANDSCAPE PLAN 28 LANDSCAPE PLAN 29 LANDSCAPE NOTES & DETAILS 30 ROAD PROFILES 31 ROAD PROFILES 32 ROAD PROFILES

33 STORMWATER PROFILES 34 SITE DETAILS 35 SITE DETAILS 36 SEWER DETAILS 37 SEWER & WATER DETAILS

39 STORMWATER DETAILS 40 MATERIAL SPECIFICATIONS 41 OPERATION AND MAINTENANCE NOTES 42 BMP-012 PROFILES

\* ALL SHEETS TO BE RECORDED

38 STORMWATER DETAILS

# **EROSION AND SEDIMENT CONTROL PLAN RGS ASSOCIATES**

DRAWING INDEX

SUBDIVISION & EASEMENT PLAN SUBDIVISION & EASEMENT PLAN SUBDIVISION & FASEMENT PLAN

SUBDIVISION & EASEMENT PLAN SUBDIVISION & EASEMENT PLAN 10 SUBDIVISION & EASEMENT PLAN 11 SUBDIVISION & EASEMENT PLAN 12 SUBDIVISION & EASEMENT PLAN 13 SUBDIVISION & EASEMENT DATA

17 CENTERLINE & SIGHT DISTANCE DATA

18 OVERALL GRADING PLAN

22 OVERALL UTILITY PLAN

**EXISTING CONDITIONS & DEMOLITION PLAN** OVERALL SITE, PHASING, & DENSITY PLAN

COVER SHEET GENERAL NOTES

14 LAYOUT PLAN 15 LAYOUT PLAN

16 LAYOUT PLAN

19 GRADING PLAN

20 GRADING PLAN

21 GRADING PLAN

23 UTILITY PLAN

24 UTILITY PLAN

25 UTILITY PLAN

12/13/2021 LAST REVISED: 3/23/2023

# **POST CONSTRUCTION STORMWATER**

**MANAGEMENT PLAN RGS ASSOCIATES** 

LAST REVISED: 7/5/2023

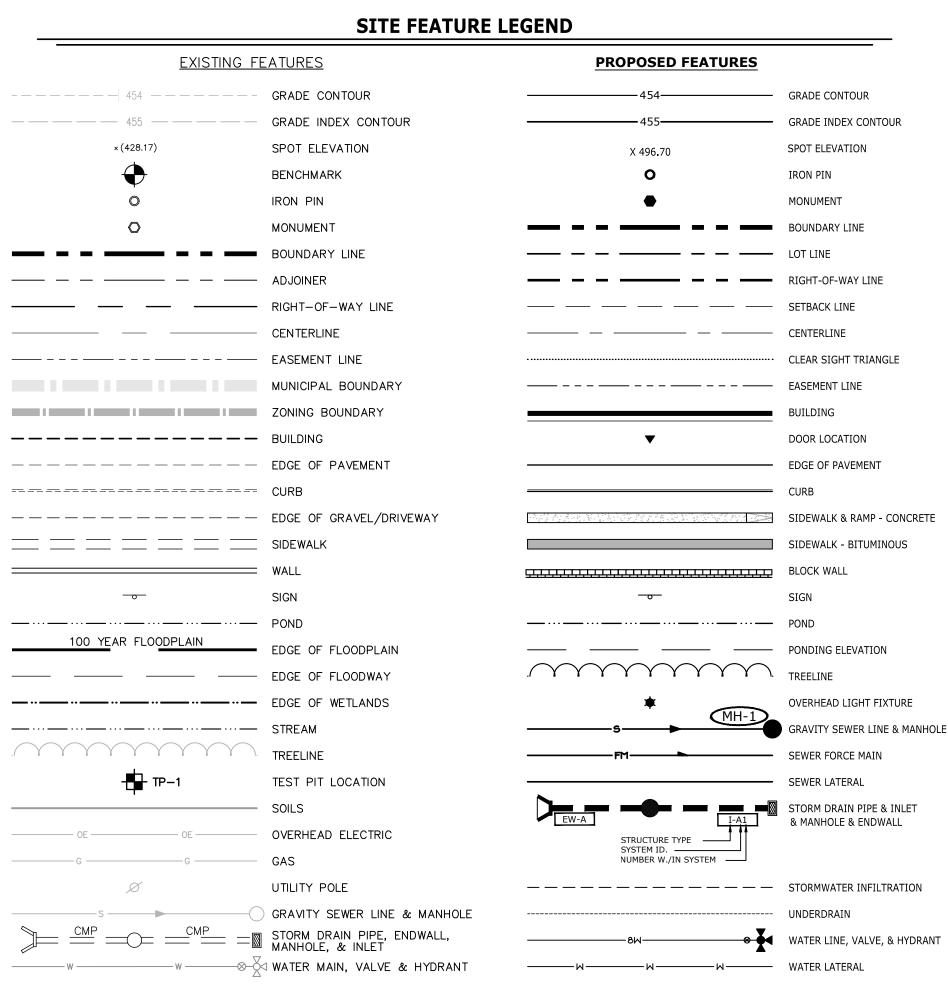
# LIGHTING PLAN INDEPENDENCE LIGHTING

LAST REVISED: 8/8/2024

### **VARIANCES** THE FOLLOWING VARIANCES OF THE MOUNT JOY TOWNSHIP ZONING ORDINANCE WERE REQUESTED

1. SECTION 135-105(B) - MINIMUM LOT AREA ACTION: GRANTED DATE: 10/04/2023

2. SECTION 135-105(C) - MINIMUM LOT WIDTH ACTION: GRANTED DATE: 10/04/2023



O

3

DATE: MARCH 7 2025 PROJECT NO.: 2024J13-001

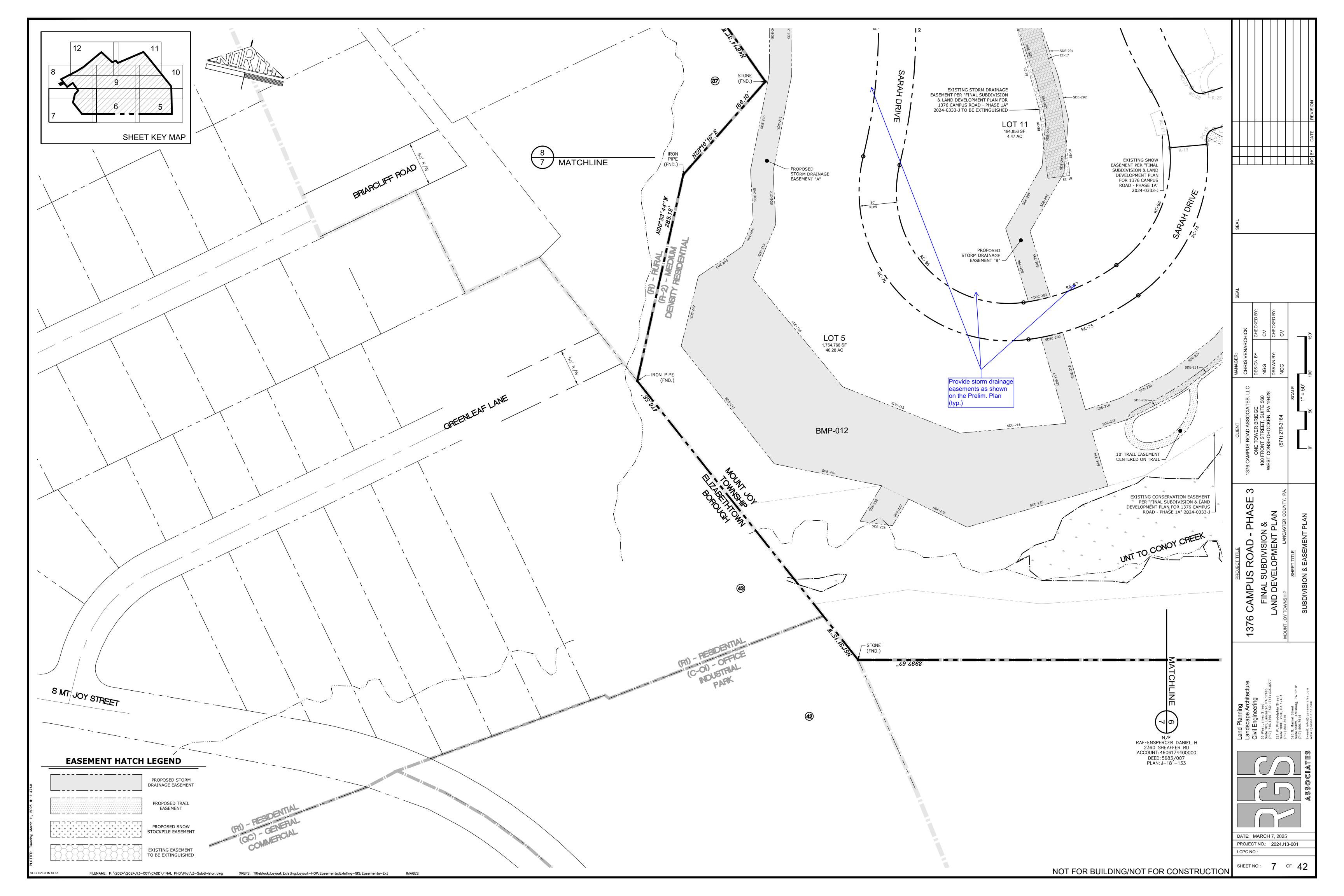
1 of 42

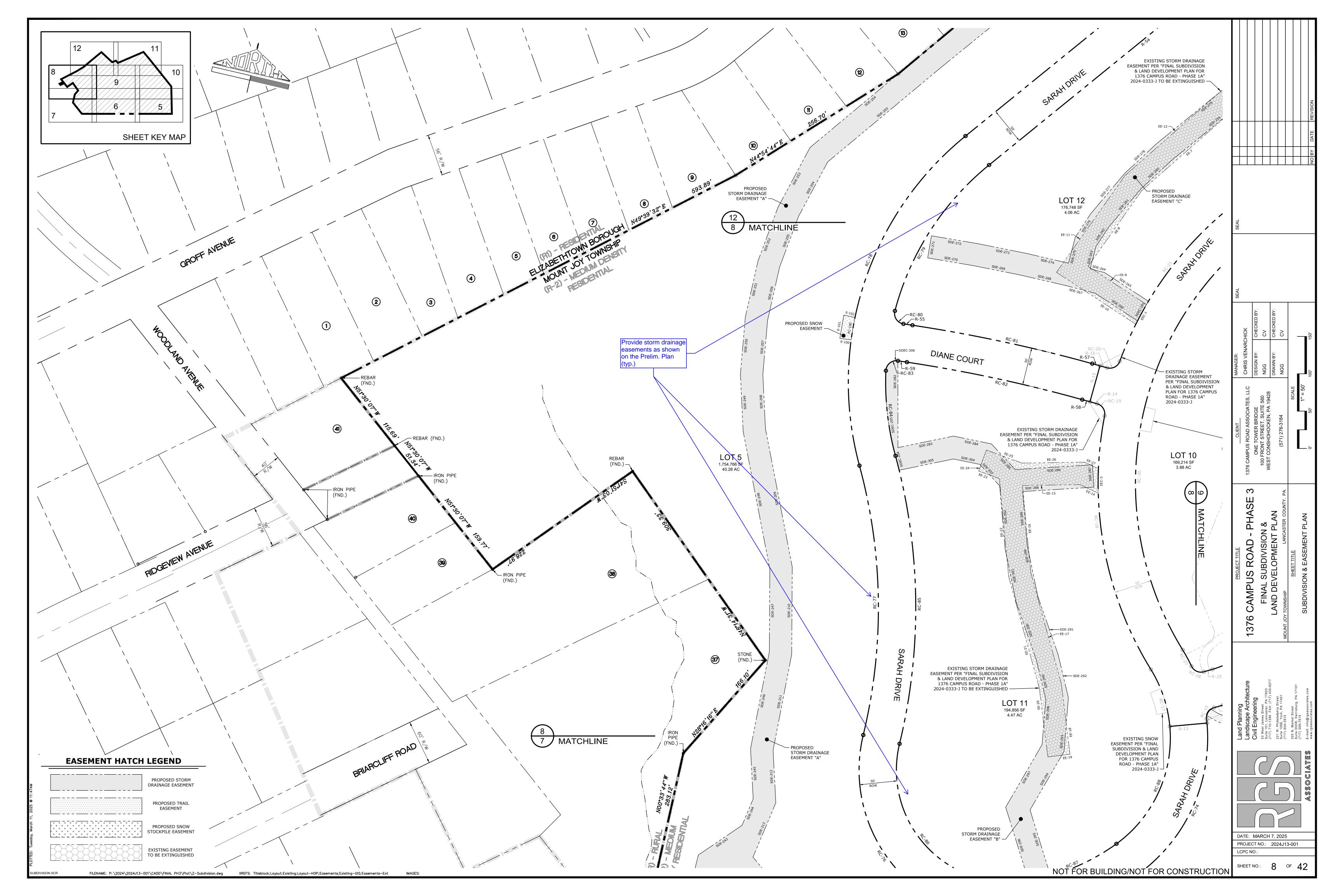
LCPC NO.:

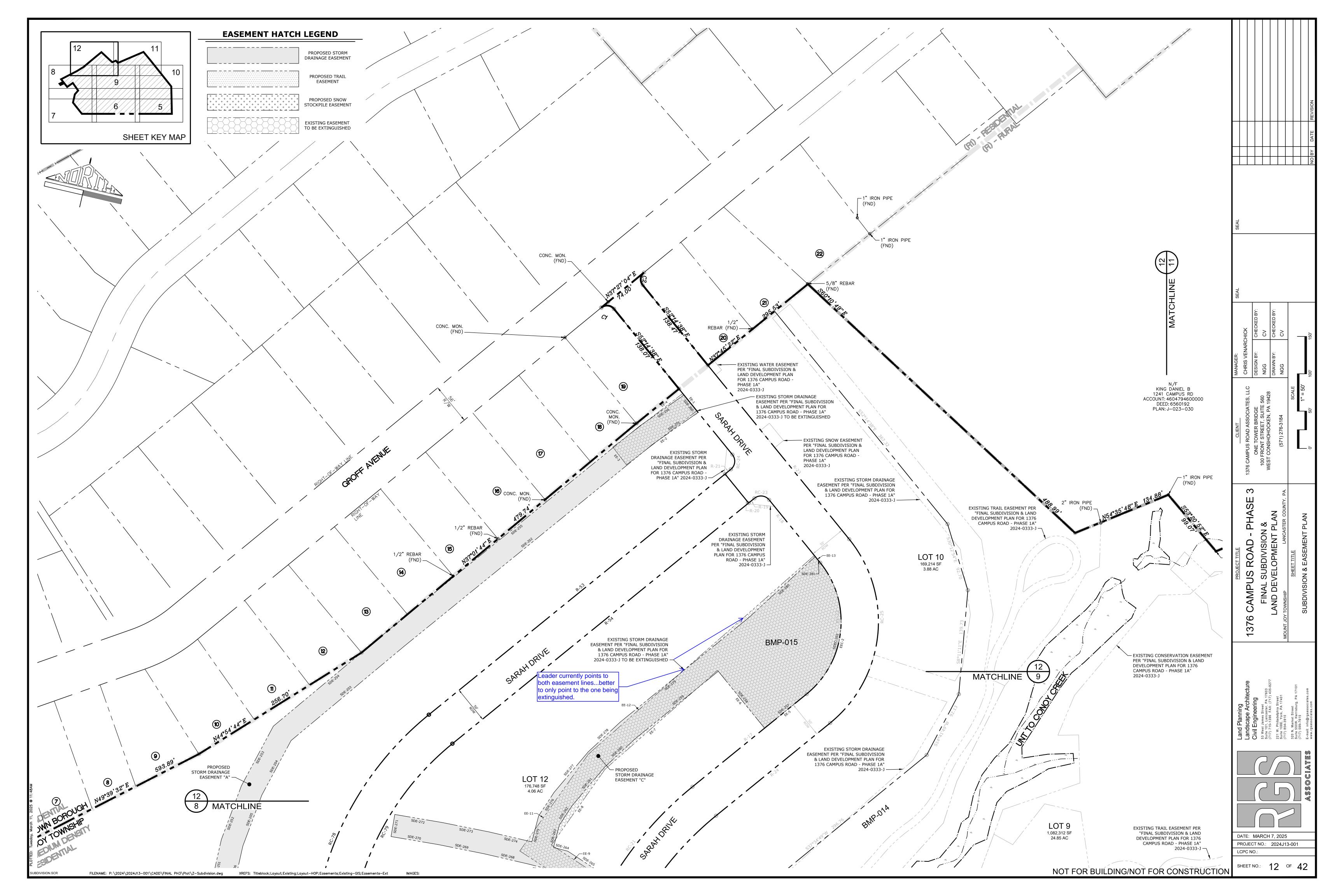
NOT FOR BUILDING/NOT FOR CONSTRUCTION

CONSTRUCTION PHASE LINE

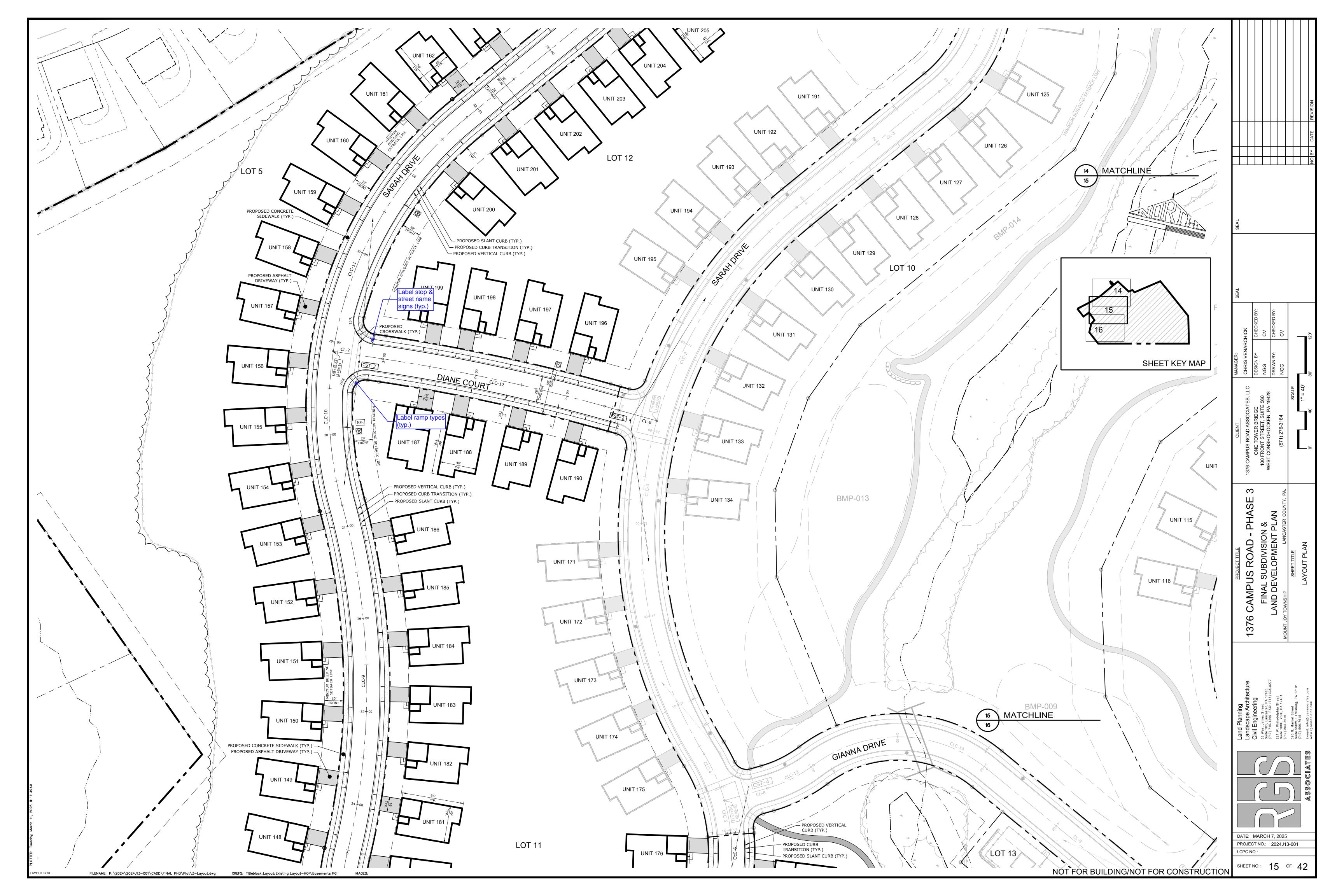
FILENAME: P:\2024\2024J13-001\CADD\FINAL PH3\Plot\Z-Cover.dwg XREFS: Cover: Titleblock IMAGES:

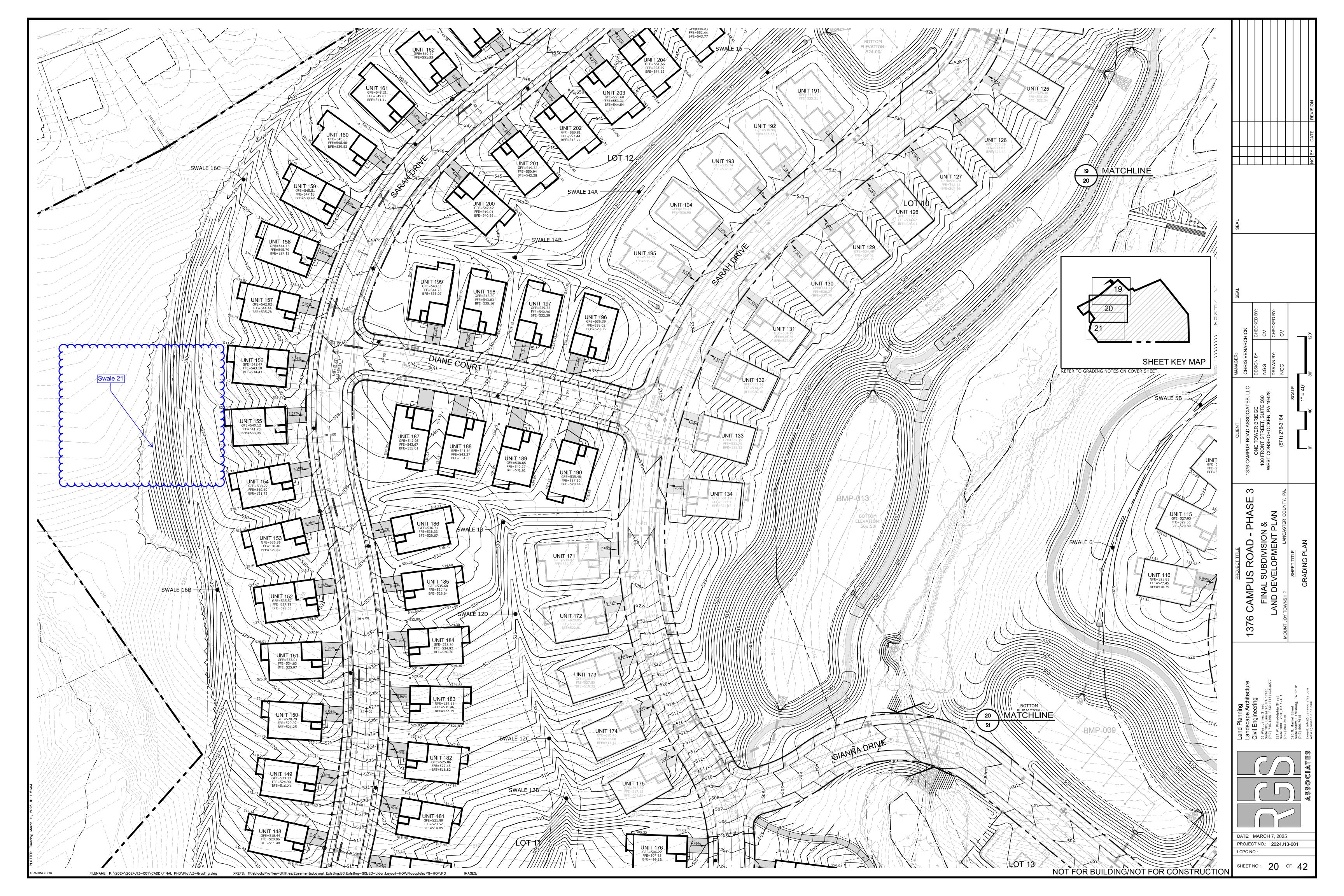












### LANDSCAPE CONTRACTOR NOTES:

- CONTRACTOR SHALL CONTACT PA ONE CALL (8-1-1), AND SHALL VERIFY THE LOCATION OF
- 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.
- THIS PLAN IS FOR PLANTING INFORMATION ONLY. REFER TO GRADING, UTILITY, SITE
- LAYOUT AND SEDIMENT EROSION CONTROL PLANS FOR ALL RELATED INFORMATION. ALL PLANTS AND SHRUBS SHALL BE AS SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE DETAILS AND COMMENTS NOTED ON THESE DRAWINGS.
- PLANT MATERIALS INSTALLED WITHOUT PRIOR APPROVAL ARE SUBJECT TO REPLACEMENT BY THE CONTRACTOR AT HIS/HER EXPENSE IF DETERMINED TO BE UNSATISFACTORY. REJECTED PLANT MATERIALS SHALL BE REMOVED IMMEDIATELY FROM THE PROJECT SITE. PROPOSED LOCATIONS OF ALL NON-HERBACEOUS PLANT MATERIALS AND PLANTING 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
- THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL GRADES, DIMENSIONS, AND EXISTING CONDITIONS, AND SHALL REPORT ANY IDENTIFIED DISCREPANCIES TO THE LANDSCAPE 13. WATERING: INSTALL AND MAINTAIN TEMPORARY PIPING, HOSES, AND TURF-WATERING 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 SHALL CONTACT THE LANDSCAPE ARCHITECT FOR
- INSTRUCTIONS. PROCEED WITH WORK ONLY WHEN PRESENT AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING WITHOUT EXCESSIVE SOIL COMPACTION AND/OR UNNECESSARY PLANT
- ). 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 16.
- 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** <sup>17</sup>
- 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 G. **REPRESENTATIVE**

ARCHITECT IF A DIFFERENCE IS FOUND BETWEEN THE QUANTITIES NOTED IN THE PLANT

- ALL TREES SHALL HAVE BEEN NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE FINAL PLANTING SITE.
- ALL PLANTS SHALL HAVE A NORMAL GROWTH HABIT AND SHALL BE SOUND, HEALTHY, AND VIGOROUS. THEY SHALL BE FREE FROM DISEASE. 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
- REOUIRED SIZES 4. IF FORMAL PLANTING ARRANGEMENTS OR A CONSISTENT ORDER OF PLANTS IS INDICATED ON THE DRAWINGS, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD. 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 4. GUARANTEE PERIOD BY WATERING, FERTILIZING, DISEASE CONTROL, PRUNING, AND WEEDING TO KEEP THE COMPLETED WORK AND/OR UNCOMPLETED WORK IN A CLEAN AND 5. NEAT CONDITION AT ALL TIMES.
- ALL MATERIAL SHALL BE GUARANTEED BY INSTALLER FOR THE DURATION OF 12 MONTHS DAMAGED OR DEAD WITHOUT REPLACEMENT. REPLACEMENT PLANTS SHALL BE MAINTAINED AFTER REPLAINTING FOR AN ADDITIONAL 18 MONTHS.
- 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.
- DURING THE TIME BETWEEN THE INSTALLATION OF PLANTS AND THE BEGINNING OF THE  $^{11}$ GUARANTEE PERIOD, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE SUPERINTENDENCE OF THE PLANTINGS. SHOULD ANY PLANT BE STOLEN OR OTHERWISE 12. PLUGS SHALL BE PLANTED SO THAT THE TOP OF THE PLUG SOIL MEDIA IS FLUSH WITH THE 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.
- BMPS. SOIL PREPARATION REOUIREMENTS FOR PCSM BMPS CAN BE FOUND ON SHEET 41. 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 SEIVE ANALYSIS, ORGANIC MATTER AND SOLUBLE SALTS. CONTRACTOR TO REQUEST SOIL AMENDMENT RECOMMENDATIONS FOR EACH CATEGORY OF TURF AND/OR
- 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 FACH 100 S F ARFA
  - 6 CU. FT. OF CLEAN COMPOST 5-6 LBS. MILORGANITE OR EQUAL

LANDSCAPE PLANT TO BE INSTALLED IN THE SUBJECT SOIL

- 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 MANUFACTURER'S SPECIFICATIONS. TABLETS ARE NOT A REPLACEMENT FOR AMENDMENTS REQUIRED BY THE SOIL AGRONOMY TEST RESULTS. 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. 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.
- 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.
- 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.

- THE CONTRACTOR MAY APPLY A PRE-EMERGENT HERBICIDE PER THE MANUFACTURERS SPECIFICATIONS TO THE ENTIRE PLANTING BED FOR CONTROL OF WEED GERMINATION. 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". MULCH SHALL BE ORGANIC, DOUBLE-CUT, NATURAL, UN-DYED AND FREE FROM
- MULCH SHALL NOT COVER THE CROWNS OF ANY HERBACEOUS PLANTS, NOR THE ROOT FLARES OF ANY WOODY PLANTS.
- <u>SEED/SOD ESTABLISHMENT NOTES</u>: GRASS SEED SHALL BE FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH AOSA'S "RULING FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCES. 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. RECOMMENDED TIME OF TURFGRASS SEEDING IS SEPTEMBER 1ST TO OCTOBER 15TH. WHERE SPRING SEEDINGS ARE NECESSARY, SEED NO LATER THAN APRIL 1ST FOR BEST
- 4. SOW RECOMMENDED SEED MIXTURE ADAPTED TO USE IN CLIMATIC CONDITIONS OF THE SPECIFIC SITE AREA.
- PRIOR TO SEEDING AND/OR SODDING, REMOVE ANY EXISTING VEGETATION FROM PROPOSED LAWN AREAS. EXCESS DEAD VEGETATION SHOULD BE TURNED UNDER, IF THE SITE IS NOT TOO WET FOR
- TILLING WITHOUT EXCESSIVE SOIL COMPACTION. IF TOPSOIL HAS BEEN DEPLETED OR REMOVED IN THE AREA TO BE SEEDED OR SODDED, PROVIDE SOIL AMENDMENTS PER THE SOIL AGRONOMY REPORT. DIVIDE TOTAL SEED QUANTITY INTO TWO FOUAL LOTS SOWING ONE LOT IN ONE
- DIRECTION, AND THE SECOND LOT AT RIGHT ANGLES TO THE FIRST WITH A MECHANICAL SEEDER OR SPREADER. 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.
- 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
- ALL UNDERGROUND UTILITIES WITHIN THE PROJECT AREA PRIOR TO INSTALLATION OF 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 TURE, 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
  - 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
  - b. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE
  - OPERATIONS, ADD NEW MULCH AND ANCHOR AS REQUIRED TO PREVENT 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.
  - 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
  - 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 TURE AREA
  - . 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.
  - CONTRACTOR TO USE SPECIFIED MATERIALS TO REESTABLISH TURF THAT DOES NOT COMPLY WITH REQUIREMENTS, AND CONTINUE MAINTENANCE UNTIL TURF IS SATISFACTORY.

### PLUG INSTALLATION NOTES

MUDDY OR NEWLY PLANTED AREAS.

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.

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.

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.

CONTRACTOR TO LAYOUT AND INSTALL PLUGS AS SOON AS POSSIBLE FOLLOWING PLANT DELIVERY TO SITE. IF PLANTING MUST BE DELAYED DUE TO WEATHER OR CONSTRUCTION DELAYS, MOVE PLUGS

TO A PROTECTED AND SHADED AREA. IRRIGATE AS NEEDED. 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. FOLLOWING THE DATE OF PLANTING. NO MORE THAN 1/3 OF THE TREE OR SHRUB SHALL BE 8. FOR PLANTING AREAS TO BE MULCHED, APPLY MULCH PRIOR TO INSTALLATION OF THE
  - 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. CONTRACTOR SHALL NOT 'TEASE' THE PLUG ROOT SYSTEMS APART AS IS CUSTOMARY WITH OTHER CONTAINERIZED PLANTS WITH DENSE ROOT SYSTEMS
  - 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 SOI
- 14. MONITOR NEW PLANTINGS FOR SIGNS OF DISEASES, PESTS AND WATER STRESS. NOTES IN THIS SECTION APPLY TO ALL PLANTING AREAS OTHER THAN LANDSCAPED PCSM 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.

# PLANT SCHEDULE

DO NOT CUT LEADER

FLARE, IF PRESENT

OF ROOT FLARE

EQUAL

1. ALL TREES SHALL HAVE BEEN NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE FINAL PLANTING SITE.

SHALL FOLLOW THE CODE OF STANDARDS RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

TYPICAL DECIDUOUS TREE PLANTING DETAIL

2. ALL TREES SHALL HAVE A NORMAL GROWTH HABIT AND SHALL BE SOUND, HEALTHY AND VIGOROUS; THEY

3. ALL PLANTING SHALL BE PERFORMED IN CONFORMANCE WITH GOOD NURSERY AND LANDSCAPE PRACTICE.

4. REQUIREMENTS FOR TREE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING, AND BURLAPPING

INC. IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSIZ60, CURRENT EDITION, AS AMENDED.

6. THE TOP OF THE MAIN ORDER ROOT (FIRST LARGE SET OF ROOTS THAT DIVIDE FROM THE TRUNK) SHALL BE

SEE LANDSCAPE NOTES FOR REQUIRED SOIL TESTING, PREPARATION AND AMENDMENT.

SHALL BE FREE FROM DISEASE, INSECTS, INSECT EGGS, AND LARVAE.

PLANTED NO LOWER THAN ONE OR TWO INCHES INTO THE SOIL.

EQUAL

WOOD FROM TREE CANOPY AREAS

-WRAP TREE TO SECOND BRANCH

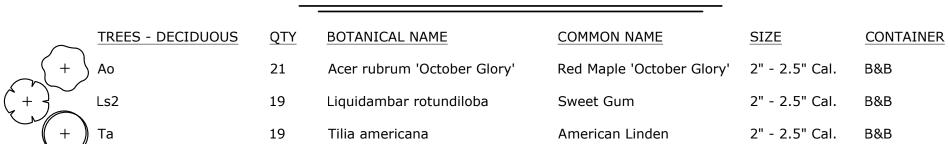
PREPARED TOPSOIL IN 6" LIFTS

TOPSOIL MIX AS SPECIFIED IN

LANDSCAPE NOTES, 20-10-5

FIRM SUBGRADE; BREAK

SURFACE WITH PICK



CAREFULLY REMOVE CONTAINER OR WIRE, IF

POSSIBLE WITHOUT BREAKING ROOT BALL;

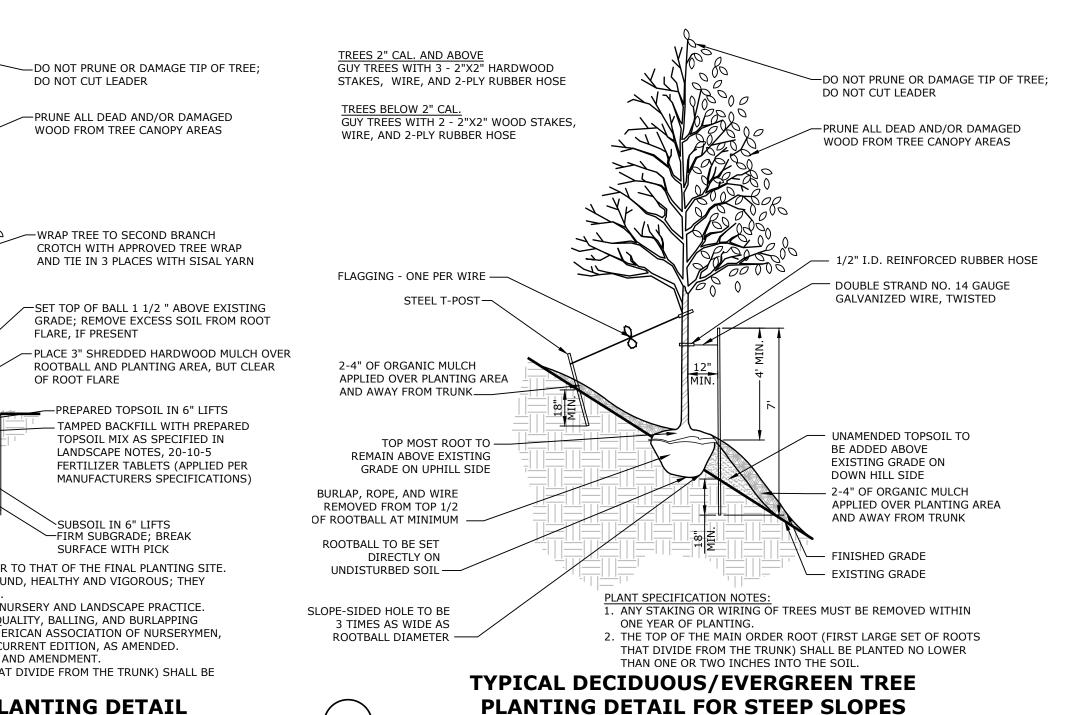
REMOVE ALL ROPES AND PULL BURLAP AWAY

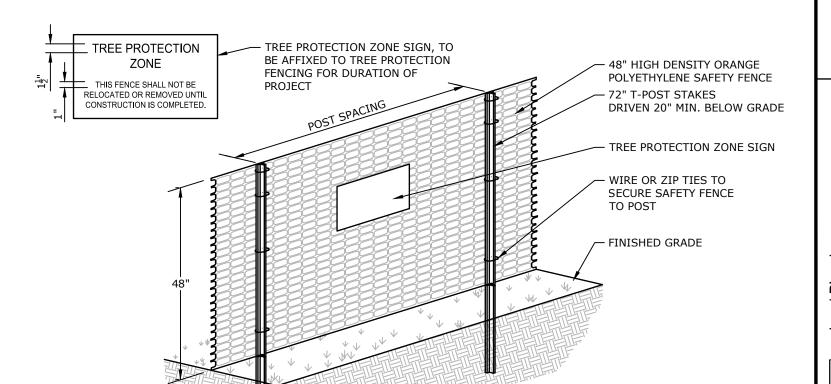
CREATE SOIL BERM 2"-4" ABOVE GRADE -

FINISHED GRADE-

FROM TRUNK AND TOP 1/3 OF BALL —

# Provide plug planting information





- 1. ALL TREES NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS SHOWN ON PLANS. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH ORANGE POLYETHYLENE SAFETY/CONSTRUCTION FENCE. INSTALL 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

SHEET NO.: 29 OF 42 NOT FOR BUILDING/NOT FOR CONSTRUCTION

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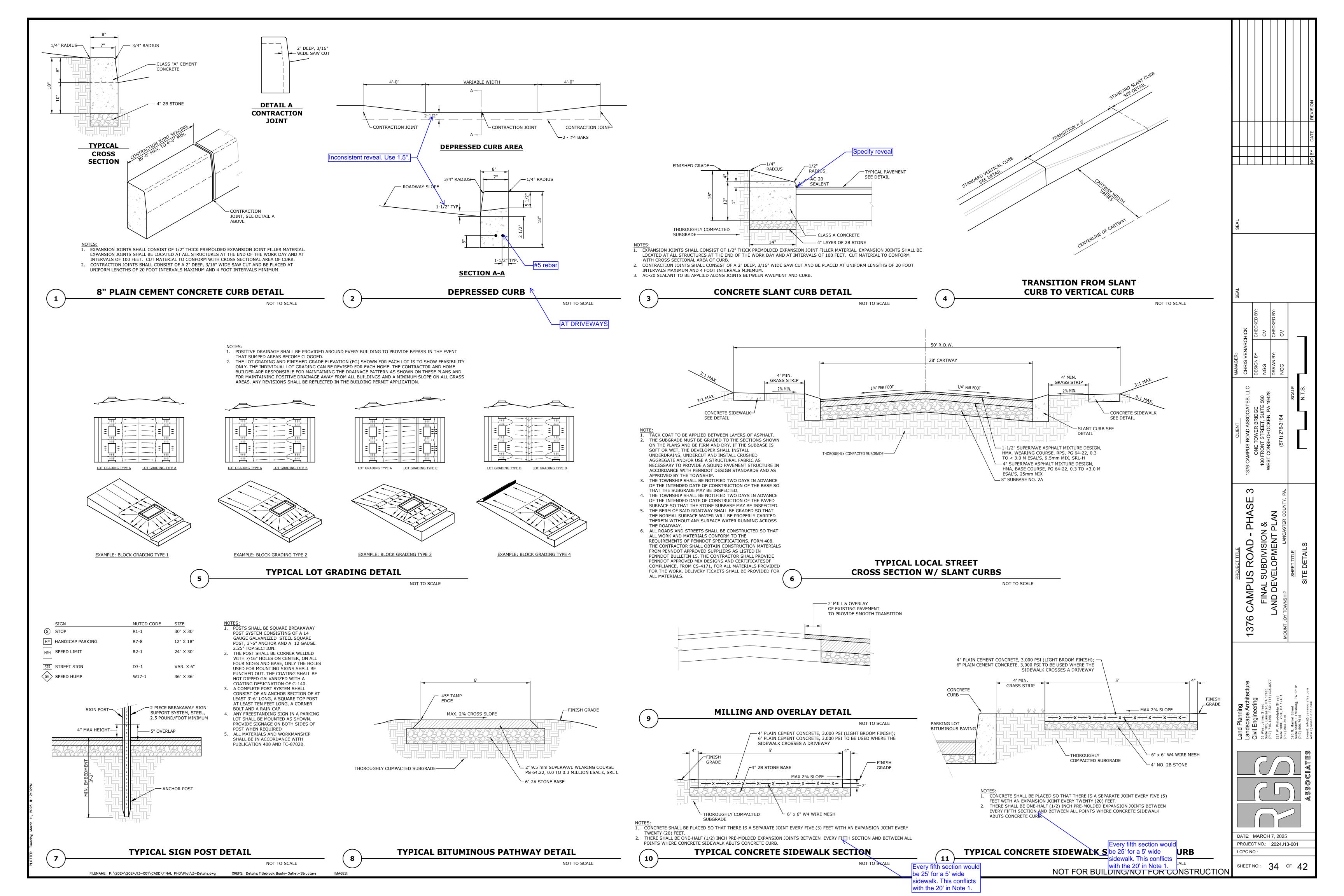
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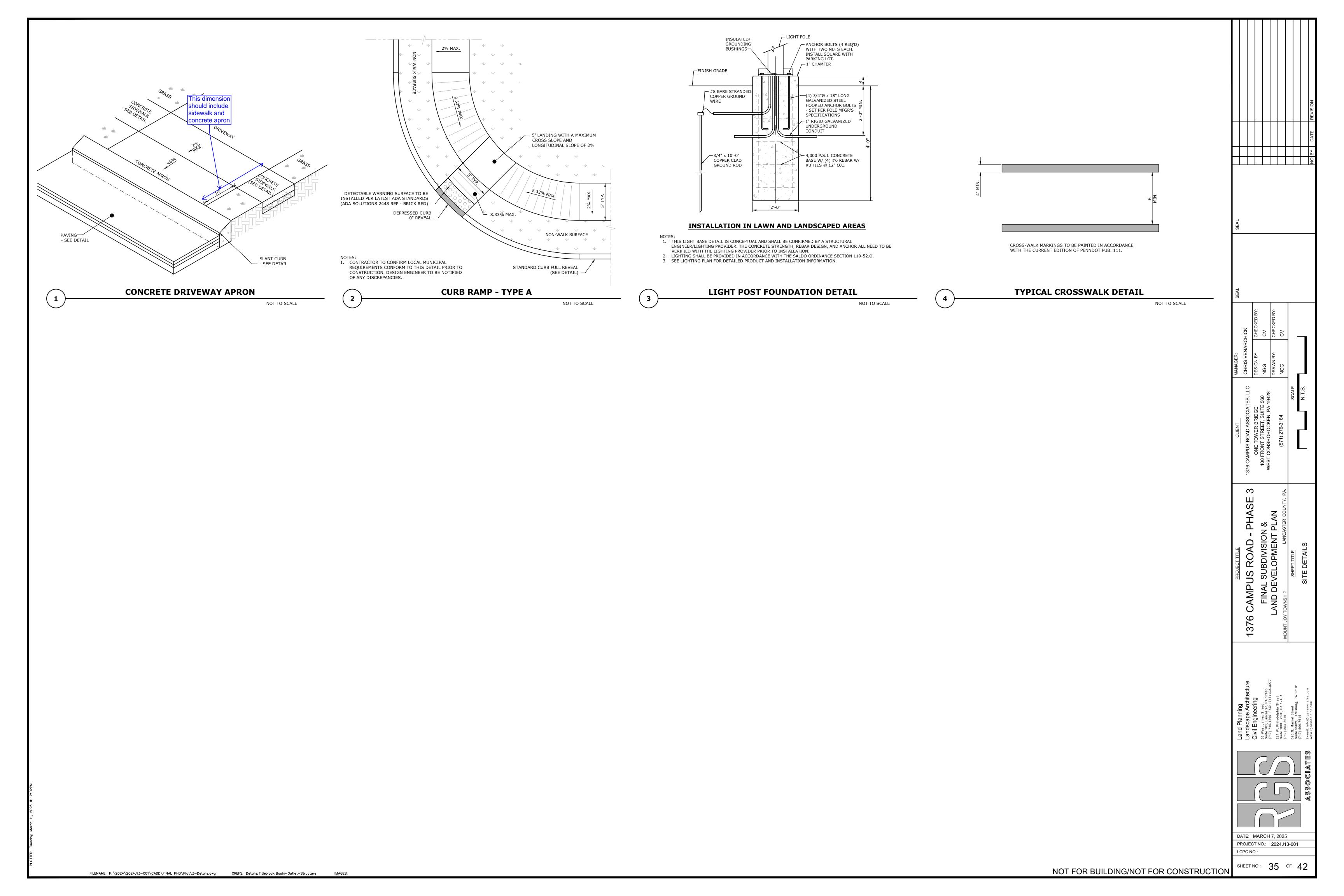
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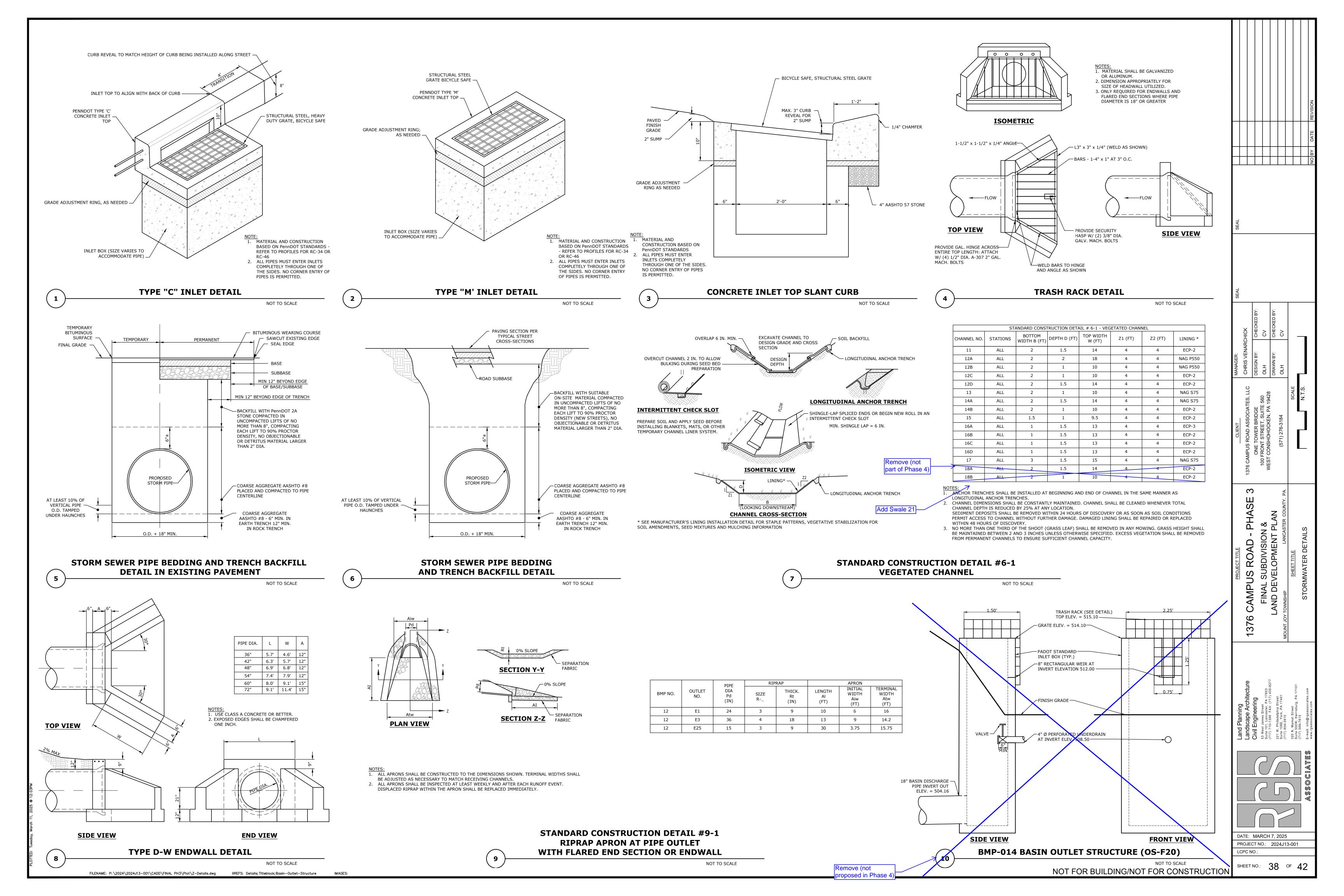
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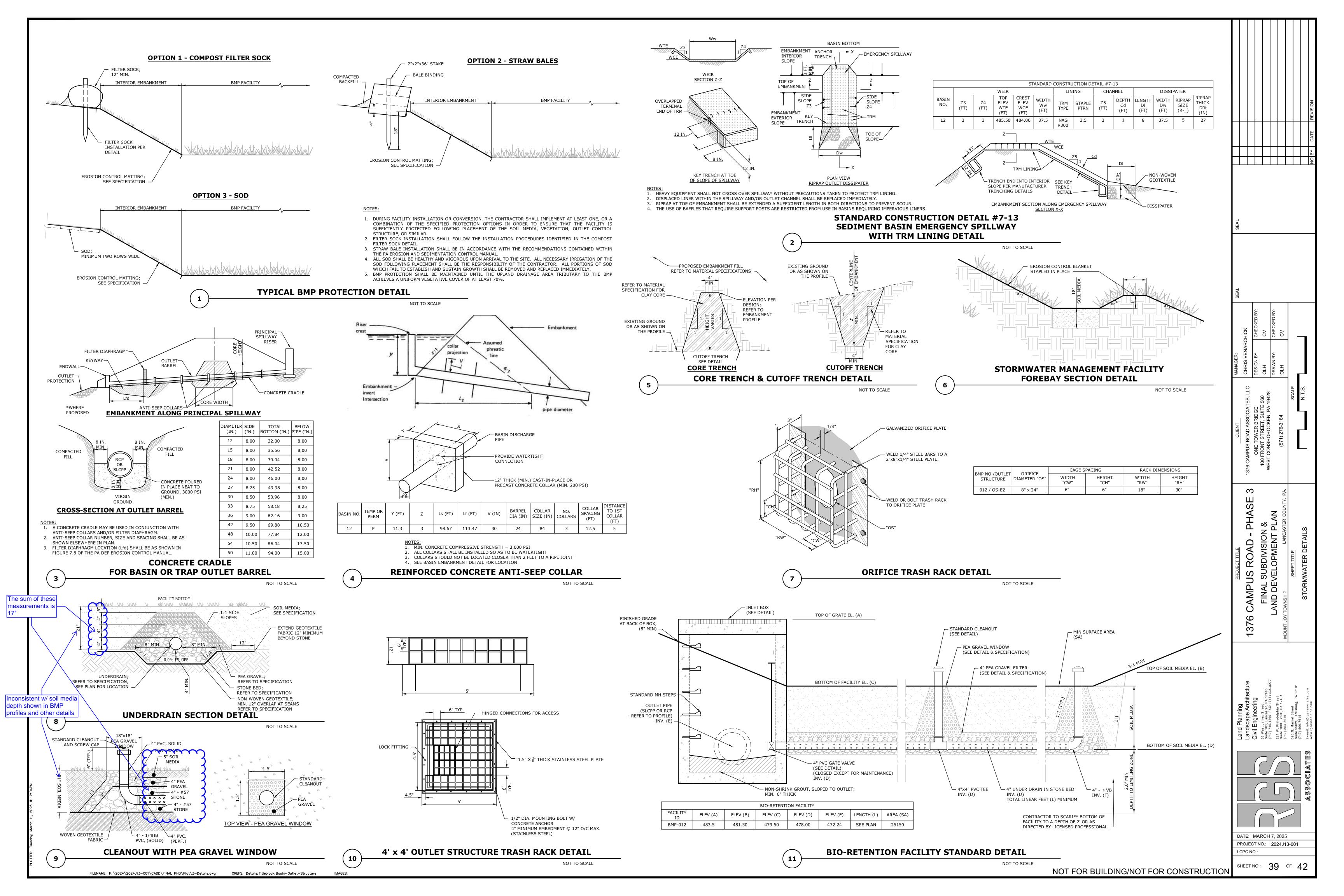
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# STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

- 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 DESIGNATED 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.
- 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
- 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.

### FARTH 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. 4. THE PRINCIPAL SPILLWAY (I.E. OUTLET STRUCTURE AND DISCHARGE PIPE) MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.
- COMPACTION
  THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE

OBJECTIONABLE MATERIALS

- 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 SHEEPSEOOT 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 BE SO WET THAT WATER CAN BE SQUEEZED OUT. 4. THE MAXIMUM PARTICLE SIZE IS SIX INCHES OR LESS THAN 1/4 OF THE LIFT THICKNESS. FIVE
- PASSES OF HTE OCMPACTION EOUIPMENT OVER THE ENTIRE SURFACE OF EACH LIFT IS REQUIRED. EMBANKMENT COMPACTION TO VISIBLE NONMOVEMENT IS ALSO REQUIRED. WHEN REQUIRED BY THE REVIEWING 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.
- 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.
- 2. THE BOTTOM WIDTH 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. 5. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.
- THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE
- 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 4. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER.
- 5. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EOUIPMENT, ROLLERS, OR HAND FAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF EMBANKMENT.
- 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. 3. 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 . 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 THE 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. 11. 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.
- ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

# I. <u>REINFORCED CONCRETE PIPE - MATERIALS</u> REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND

SHALL EQUAL OR EXCEED ASTM C443.

- 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.
- BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM.
- JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF
- . AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED.
- 4. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE
- 5. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.
- SHALL CONFORM TO "STRUCTURE BACKFILL".
- 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.
- 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
- 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.
- 4. 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 SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO
- SEEDING. 6. 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
- 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.
- 8. 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.
- 9. 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

### **TEMPORARY SEEDING SPECIFICATIONS**

PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS

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

> SPECIES: PENNDOT FORMULA E % PURE LIVE SEED: 86% APPLICATION RATE: 48 LB./ACRE FERTILIZER TYPE: 5-5-5 FERTILIZE 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.
- 4. 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

1. 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 FERTILIZE 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 2. 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 FERTILIZE 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

3. MULCHING SHALL BE USED TO PROTECT SEEDING AND HELP IN PREVENTING RUNOFF.

- SEEDING SEASON DATE: MARCH 15 JUNE 1/AUGUST 1 OCTOBER 15
- 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. 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. 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.
- 4. 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 LIME 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.
- 6. 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

Swale 21

FROZEN, MUDDY, OR EXCESSIVELY WET.

# Seeding Requirements

Formula and Species		% By Weight	Mi	Minimum %		Seeding Rate lb/1000 yd <sup>2</sup>
	V VA 34 107 004 304		Purity	Germination	Seed	16/1000 yd*
Perennial Ryegrass mixture (Lolium perenne). A combination of improved certified varieties with No one variety exceeding 50% of the total Ryegrass		20	97	90	0.10	<b>44.0 Total</b> 8.5
•	component.  Creeping Red Fescue or Chewings Fescue (Festuca rubra or ssp commutate) (Improved and Certified)	30	97	85	0.10	12.5
	Kentucky Bluegrass mixture (Poa pratensis). A combination of improved certified varieties with no one variety exceeding 50% of the total Bluegrass component.	45	97	80	0.15	21.0
•	Annual Ryegrass (Lolium multiflorum)	5	95	90	0.10	2.0
Formula C Conservation Mix						12.0 Total
•	Crownvetch (Coronilla varia)	45	99	70*	0.10	5.5
•	Annual Ryegrass (Lolium multiflorum)	55	95	90	0.10	6.5
Fo	rmula D Conservation Mix	9.000	936500	9997	Percentage	50.0 Total
•	Tall Fescue (Festuca arundinacea var.	60	96	85	0.10	30.0
•	Kentucky 31) Creeping Red Fescue or Chewings Fescue (Festuca rubra or ssp commutate) (Improved and Certified)	30	97	85	0.10	15.0
245	Annual Ryegrass (Lolium multiflorum)	10	95	90	0.10	5.0
Formula E		10	10	20	0.10	10.0 Total
	Annual Ryegrass (Lolium multiflorum)	100	95	90	0.10	10.0
Fo	rmula L Mix	100	24		0110	48.0 Total
•	Hard Fescue mixture (Festuca longifolia). A combination of improved certified varieties with no one variety exceeding 50% of the total Hard Fescue component	55	97	85	0.10	26.4
•	Creeping Red Fescue (Festuca rubra) (Improved and Certified)	35	97	85	0.10	16.8
•	Annual Ryegrass (Lolium multiflorum)	10	95	90	0.10	4.8

BMP TYPE	CONSTRUCTION NOTES	CRITICAL STAGES OF PROFESSIONAL OVERSIGHT	OPERATION AND MAINTENANCE
NVEYANCE : CILITIES OT A PCSM BMP)	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.	VERIFICATION OF INLET STRUCTURE LOCATION, SIZE, DEPTH, AND CONNECTING PIPE INVERTS OR CHANNEL GEOMETRY	<ul> <li>GENERAL REQUIREMENTS:</li> <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 SY 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>
			REGULAR MAINTENANCE  (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):  • REMOVE ACCUMULATED SEDIMENT, TRASH, AND DEBRIS FROM THE FACILITY.  • 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 S 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.
			DOCUMENTATION REQUIREMENTS:  PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEME  PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.
TLET PROTECTION :	<ol> <li>RIP-RAP APRONS/PLUNGE POOLS SHALL BE INSTALLED AT THE LOCATION AND IN ACCORDANCE WITH THE DETAILS INCLUDED ON THIS PLAN.</li> </ol>	1. VISUAL INSPECTION OF THE RIP-RAP APRONS/PLUNGE POOLS TO ENSURE INSTALLATION IS IN GENERAL CONFORMANCE WITH THE PLAN.	<ul> <li>GENERAL REQUIREMENTS:</li> <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 SYFACILITY 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>
			REGULAR MAINTENANCE  (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):  • REMOVE ACCUMULATED SEDIMENT, TRASH, AND DEBRIS FROM THE FACILITY.  • 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 SEDIMENT BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL DISPOSE OF REMOVED SEDIMENT AND DEBRIS IN ACCORDANCE WITH THE RECYCLING AND DISPOSAL NOTES.
			<ul> <li>DOCUMENTATION REQUIREMENTS:</li> <li>PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEM</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>
	<ul> <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> </ul>	1. REVIEW MATERIAL COMPONENTS OF THE FACILITY (SEE MATERIAL SPECIFICATIONS):  A. SOIL MEDIA (MATERIAL RECEIPT AND TESTING RESULTS OR PRE-CERTIFIED MEDIA RECEIPT)  B. SEPARATION FABRIC C. GEOTEXTILE D. OUTFALL BARREL PIPE E. ANTI-SEEP COLLAR F. CORE MATERIAL  2. FULL-TIME OBSERVATION OF THE EXCAVATION OF THE BASINS BY A GEOTECHNICAL ENGINEER IS RECOMMENDED.  3. CUTOFF TRENCH AND CLAY CORE.	<ul> <li>GENERAL REQUIREMENTS:</li> <li>A SPECIALIZED LANDSCAPER AND CONTINUED MONITORING AND MAINTENANCE ARE REQUIRED UNTIL PLANTINGS OF 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 REPLACED DURING GERMINATION PERIODS.</li> <li>VEGETATION ON THE EMBANKMENT AND SIDESLOPES SHALL BE MOWED ANYTIME THE VEGETATION IS GREATER THE 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/PIPING WITHIN THE FACILITY, DURING THE MAINTENANCE OPERATIONS.</li> </ul>
	<ul> <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</li> </ul>	<ol> <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</li> </ol>	<ul> <li>REGULAR MAINTENANCE: (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR): <ul> <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> </ul> </li> </ul>
	SHOWN ON THE DETAIL. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.  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.) PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.	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.	<ul> <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>
	<ul> <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>	9. PLACEMENT OF SOIL MEDIA TO DEPTH SPECIFIED ON PLAN. 10. VISUAL INSPECTION OF RISER STRUCTURE, TRASH RACK, EMERGENCY SPILLWAY, AND REMAINING APPURTENANCES.	DOCUMENTATION REQUIREMENTS:  • PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEM  • PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP  CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.
ETATED SWALE DEP BMP 6.4.8  ALE 11 ALE 12A ALE 12B ALE 12C ALE 12D ALE 13 ALE 14A	<ol> <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>	OBSERVATION OF INSTALLED LINER MATTING.     FIELD MEASUREMENT OF BOTTOM WIDTH.     CONFIRMATION OF VEGETATIVE STABILIZATION     REVIEW AND CONFIRMATION OF CONSTRUCTION RECORDS FOR MATERIAL SELECTION AND SPECIFICATIONS.	<ul> <li>GENERAL REQUIREMENTS:         <ul> <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 REMOVED FROM THE FACILITY OR THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH ALL APPLICAB REGULATIONS.</li> </ul> </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 REQUII BY THE MUNICIPALITY.</li> </ul>
ALE 14A ALE 14B ALE 15 ALE 16A ALE 16B ALE 16C ALE 16D ALE 17			REGULAR MAINTENANCE:  (AFTER EACH MEASURABLE RAINFALL EVENT 1.0 INCH OR GREATER OR A MINIMUM OF TWICE PER YEAR):  • INSPECT FOR EROSION PROBLEMS, VEGETATION DAMAGE, SEDIMENT AND DEBRIS ACCUMULATION, AND LITTER. ERODED AREAS SHALL BE MULCHED AND SEEDED IMMEDIATELY.  • IF 72 HOURS AFTER A RAINFALL EVENT, PONDING WATER IS FOUND WITHIN THE THE FACILITY, THE FACILITY IS N OPERATING PROPERLY.  • REMOVE ACCUMULATED TRASH, DEBRIS, AND SEDIMENT FROM THE CHANNEL.

**OPERATION & MAINTENANCE NOTES** 

CHAPTER 102 REGULATIONS AND THE CONDITIONS OF THE NPDES PERMIT.

PREPARE ANNUAL INSPECTION REPORTS AS REQUIRED BY THE MUNICIPAL ORDINANCE AND STORMWATER AGREEMENT. PREPARE AND MAINTAIN INSPECTION, REPAIR, AND REPLACEMENT LOGS/REPORTS IN ACCORDANCE WITH PA DEP

SHEET NO.: 41 OF 42

DATE: MARCH 7, 2025 PROJECT NO.: 2024J13-001

LCPC NO.:

JBDIVISION LOPMENT

FINAL SUB AND DEVELO

ROAD

AMPUS

S

3

## **Channel Computations**

Municipal Design Data

PROJECT NAME:		1376 Campus Road	
LOCATION:		Lancaster County, PA	A
PREPARED BY:	JSM	DATE:	1/23/2025 10:46
CHECKED BY:	LFB	_ DATE:	1/23/2025 10:46

Analyze using n = 0.03 (Swale 13)

CHANNEL OR CHA	ANNEL SECTION				13	
Temporary or Perman	ent	0		[\		
Design Storm 100 Year		1.85	CFS	Municpal based	Municpal based	
Acres		0.0	00	upon Velocity	upon Capacity	
Multiplier (1.6,2.25, or 2.75)	)1			1 \		
Q <sub>r</sub> (Required Capacity) CFS		1.8	35	1.85	1.85	
Q (Calculated at Flow Depth	d) CFS			2.12	2.12	
Protective Lining <sup>2</sup>		Gras	s - C	NAG S75	NAG S75	Temp. Liner
n (Manning's Coefficient) <sup>2</sup>				0.055	0.055	
V <sub>a</sub> (Allowable Velocity) FPS				4.0	4.0	Grass Only
V (Calculated at Flow Depth	d) FPS			1.73	1.73	
t <sub>a</sub> (Max Allowable Shear Stre	ess) Lb/FT <sup>2</sup>			1.00	1.00	Grass Only
t <sub>d</sub> (Calc'd Shear Stress at Flo	w Depth d) Lb/FT <sup>3</sup>			0.77	0.77	
Channel Bottom Width (FT)		2		2	2	
Channel Side Slope (H:V)		4:1	4:1			
D (Total Depth) FT				1.0	1.0	
Channel Top Width @ D (FT)				10.00	10.00	
d (Calculated Flow Depth) FT				0.33	0.33	
Channel Top Width @ Flow Depth d (FT)				4.60	4.60	
Bottom Width : Flow Depth Ratio (12:1 Max)				6.2:1	6.2:1	
d <sub>50</sub> Stone Size (IN)				N/A	N/A	
A (Cross-Sectional Area in SF	F)			1.07	1.07	
R (Hydraulic Radus)				0.229	0.229	
S (Bed Slope) <sup>3</sup> FT/FT		0.0	38	0.038	0.038	
S <sub>c</sub> (Critical Slope) FT/FT				0.102	0.102	
.7S <sub>c</sub>				0.071	0.071	
1.3Sc				0.133	0.133	
Stable Flow? (Y/N)				Υ	Υ	
Freeboard Based on Unstable Flow (FT)			N/A	N/A		
Freeboard Based on Stable Flow (FT)				0.08	0.08	
Minimum Required Freeboa	ard <sup>4</sup> (FT)			0.50	0.50	
Design Method for Protective Lining <sup>5</sup>				S	S	

Stability Check				
	OK <max< th=""><th>OK <max< th=""><th></th></max<></th></max<>	OK <max< th=""><th></th></max<>		

# **Channel Computations**

Municipal Design Data

PROJECT NAME:		1376 Campus Road	
LOCATION:		Lancaster County, PA	4
PREPARED BY:	JSM	DATE:	1/21/2025 9:29
CHECKED BY:	LFB	DATE:	1/21/2025 9:29

Analyze using n = 0.03

CHANNEL OR CHANNEL	N) \	1	1 1	1
		14	4A	T
Temporary or Permanent	0			
Design Storm 100 Year	2.77 CFS	Municpal based	Municpal based	
Acres	0.00	upon Velocity	upon Capacity	
Multiplier (1.6,2.25, or 2.75) <sup>1</sup>	\			
Q <sub>r</sub> (Required Capacity) CFS	2.77	2.77	2.77	
Q (Calculated at Flow Depth d) CFS		2.83	2.82	
Protective Lining <sup>2</sup>	Grass - C	NAG S75	NAG S75	Temp. Liner
n (Manning's Coefficient) <sup>2</sup>		0.055	0.050	
V <sub>a</sub> (Allowable Velocity) FPS		4.0	4.0	Grass Only
V (Calculated at Flow Depth d) FPS		1.29	1.38	
t <sub>a</sub> (Max Allowable Shear Stress) Lb/FT <sup>2</sup>		1.00	1.00	Grass Only
t <sub>d</sub> (Calc'd Shear Stress at Flow Depth d) Lb/FT <sup>3</sup>		0.33	0.31	
Channel Bottom Width (FT)	2	2	2	
Channel Side Slope (H:V)	4:1 4:1			
D (Total Depth) FT		1.5	1.0	
Channel Top Width @ D (FT)		14.00	10.00	
d (Calculated Flow Depth) FT		0.53	0.50	
Channel Top Width @ Flow Depth d (FT)		6.20	6.00	
Bottom Width : Flow Depth Ratio (12:1 Max)		3.8:1	4.0:1	
d <sub>50</sub> Stone Size (IN)		N/A	N/A	
A (Cross-Sectional Area in SF)		2.15	2.00	
R (Hydraulic Radus)		0.340	0.327	
S (Bed Slope) <sup>3</sup> FT/FT	0.010	0.010	0.010	
S <sub>c</sub> (Critical Slope) FT/FT		0.097	0.081	
.7S <sub>c</sub>		0.068	0.057	
1.3Sc		0.127	0.105	
Stable Flow? (Y/N)		Υ	Υ	
Freeboard Based on Unstable Flow (FT)		N/A	N/A	
Freeboard Based on Stable Flow (FT)		0.13	0.13	
Minimum Required Freeboard <sup>4</sup> (FT)		0.50	0.50	
Design Method for Protective Lining <sup>5</sup>		S	S	

Stability Chec	k

### LAW OFFICES

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659 E WILLOW STREET ELIZABETHTOWN, PA 17022 717-361-8524

April 17, 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 4

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 4 (the "Phase 4 Plan"). The Phase 4 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 5, 11 and 12 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. This letter will set forth our comments on the Phase 4 Plan.

I received an email from Andrew Miller of Catalyst Commercial Development on April 1 which stated in part:

We are doing a tax sale from our current entity "1376 Campus Road Associate, LLC" to a new entity "Klein Mills Development, LLC", effective 4/1/2025.

Mr. Miller further requested, "For plans (landowner name, title blocks), applications, please reference this new entity name."

As of today, the land included on the Phase 4 Plan is still owned of record by 1376 Campus Road Associates LLC. According to the Corporation Bureau website 1376 Campus Road Associates LLC and Klein Mills Development LLC are separate and distinct legal entities. Unless and until there is a deed recorded from 1376 Campus Road Associates LLC to Klein Mills Development LLC, 1376 Campus Road Associates LLC remains the record owner and must execute all documents required for the pending plans. If necessary, 1376 Campus Road Associates LLC can be identified as the record owner and Klein Mills Development LLC can be identified as the developer.

Kimberly Kaufman, Township Manager April 17, 2025 Page 2

Although the heading of the cover sheet indicates that the Phase 4 Plan is for Phase 4, the title block at the sides of all of the 42 sheets indicates that it is a phase 3 plan. There must be a resubmission having a uniform identification of Phase 4 on every sheet of the Phase 4 Plan.

The cover sheet of the Phase 4 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 4 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.

Sheet 2 of the Phase 4 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 4 Plan will require a Storm Water Management Agreement and Declaration of Easement. The operations and maintenance requirements on Sheet 41 of the Phase 4 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 4 Plan at the time the Phase 4 Plan is approved. There must also be a joinder by Klein Mills Homeowners Association, Inc. (the "Association").

The Phase 4 Plan proposes an extension of the trail system. Sheet 6 of the Phase 4 Plan shows a trail extending southward from the intersection of Sarah Drive and Gianna Drive. There must be an Agreement Providing for Grant of Nonmotorized Trail Easement for the Phase 4 Plan. The Association and all mortgage holders will have to execute joinders.

Sheet 8 of the Phase 4 Plan shows a snow easement for Diane Court on Lot 5. There will have to be an Agreement Providing for Grant of Road Maintenance Easement to convey this easement to the Township if the Township accepts dedication of the applicable streets with joinders by the mortgage holders. The Township should confirm that the location of this easement is acceptable.

Kimberly Kaufman, Township Manager April 17, 2025 Page 3

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

Very truly yours,

Josele Cleary

JC:sle MUNI\10221-1(711)\250321\2\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)