

APPENDIX D
SIMPLIFIED APPROACH

SIMPLIFIED APPROACH

For Minor Regulated Activities in Mount Pleasant Township, Adams County, Pennsylvania

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Introduction:

This Simplified Approach has been created as a tool to help property owners manage stormwater on their property and streamline the process of designing on-site stormwater management facilities for new, relatively minor residential and accessory structure projects. Through the use of this manual, residents have the ability to determine the appropriate facilities for their property, project, and budget. This design method is not intended to be used with large-scale subdivision / land development projects or activities that include infrastructure such as roadways.

The Stormwater Best Management Practices (Stormwater BMPs) listed in this manual should be used as a guide and not a comprehensive list of options. Residents should contact Mount Pleasant Township or the Adams County Conservation District to discuss alternative solutions for site specific applications.

I. Simplified Approach Directions

Step 1:

- 1a Fill out Worksheet 1 (Section II) and create a Minor Stormwater Management Plan (hereinafter referred to as a “Plan”) as required under List A of the Minor Stormwater Plan Requirements (Section IV). (The Adams County Office of Planning and Development can create a map that is to scale for items 1-6 of List A, for a small fee.) Proposed impervious areas shall be drawn on the plan by hand by the applicant.
- 1b Fill out columns 1-3 on the “Record of Impervious” (Section III) (hereinafter referred to as the “Record”) Impervious area is defined under section 306.R of the Mount Pleasant Township Stormwater Management Ordinance. (The impervious area number/letter on the Record (column 1) shall correspond to the impervious area number/letter shown on the Plan as dictated under plan requirements.)
- 1c If the total cumulative impervious surface area added since the adoption date of this ordinance is **less than or equal to 1,000 ft²**, the project may be eligible for an exemption from additional stormwater management requirements of the Simplified Approach and the Mount Pleasant Township SWM Ordinance. In this case, file Worksheet 1, the Record, and the Plan with Mount Pleasant Township. If the total cumulative impervious surface area added since the adoption date of this ordinance is **greater than 1,000 ft² and less than or equal to 5,000 ft²** continue to Step 2.

Step 2:

- 2a Complete the Additional Requirements for “complete” Minor Stormwater Management Plan (Section IV) (“complete” Plan). Determine if any of the proposed impervious areas are Disconnected Impervious Areas (hereinafter referred to as DIAs) (Section VI). The DIA flow paths and contributory areas must be shown on the Plan.
- 2b Fill out column 4 of the Record. If all proposed impervious areas meet the requirements for DIA, the project may be eligible for exemption from additional stormwater management requirements of the Simplified Approach and the Mount Pleasant Township Ordinance. Complete and Sign the O&M agreement (Section VIII) and file with Mount Pleasant Township along with Worksheet 1, the Record and “complete” Plan. If the proposed or Record impervious surface area is **greater than 1,000 ft² and less than or equal to 5,000 ft², and cannot be completely disconnected**, continue to Step 3.

Step 3:

- 3a If the proposed impervious surface cannot be completely disconnected, calculate the volume of stormwater runoff required to be captured by Stormwater BMPs. Multiply the contributory square footage of impervious draining to the BMP by 0.25 (Column 2 x 0.25 = Column 5).
- 3b Using the “Chart for Determining BMP sizing” based on Volume Required (Section VII) and standard details (Section IX), choose the BMP and size required for each contributory impervious area. The standard details are not a comprehensive list of stormwater BMP’s available. Additional information and variation is located in the *Guide to Choosing Stormwater BMPs* in Appendix C of the Adams County Act 167 Stormwater Management Plan). It is the applicant’s responsibility to select a facility and determine the appropriate size.
- 3c Complete and sign the O&M agreement and file with Mount Pleasant Township along with the Worksheet 1, the Record and “complete” Plan.

II. Worksheet 1 (Application and Permit)

Property Owner's Name: _____ Phone Number: _____

Address of Property: _____

Address of Owner: _____

Contact Phone Number (if different than the Owner): _____

Contact Email: _____

Parcel ID #: _____

Total Existing Impervious on the Property: _____

Total Impervious on the Lot after Project: _____

New Impervious Area Associated with this Project: _____

Stormwater Management Submission Type:

_____ Minor Stormwater Site Plan – List A (proposed impervious < 1,000 s.f.)

_____ Minor Stormwater Site Plan- “Complete” (1000 s.f. < proposed impervious > 5000 s.f.)

Are there any known existing drainage problems or the potential for the proposed project to create drainage problems? (if yes please explain) _____

Declaration and Acknowledgement:

- I (we) declare that I am the property owner, or representative of the owner, and that the information provided is accurate to the best of my knowledge. I (we) agree to assume full responsibility for the implementation. I (we) understand that stormwater may not adversely affect adjacent properties or be directed onto another property without written permission. I (we) declare that the proposed project will not adversely affect any, septic systems, or drinking water wells on this or any other property.
- I (we) understand that false information may result in a stop work order or revocation of permits. Municipal representatives are granted reasonable access to the property for review and/ or inspection of this project. I (we) acknowledge that the steps, assumptions, and guidelines provided in this submission, including but not limited to the Minor Stormwater Site Plan, the Mount Pleasant Township Stormwater Worksheet 1, Record of Proposed Impervious and the Stormwater Management / BMP Facilities and Maintenance Agreement (if applicable) will be adhered to.

Applicant Acknowledgement of Submission:

Signature: _____ Date: _____

- Development activities shall begin only after Mount Pleasant Township approves the Minor Stormwater Site Plan.

Permit approved by Mount Pleasant Township

Township Official Signature: _____ Date: _____

Title: _____

III. Record of Impervious

| Record of Impervious | | | | | | | |
|-----------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------|
| List A | | | | "Complete" Minor Stormwater Management Plan | | | |
| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 | Column 7 | Column 8 |
| Number/Letter (impervious area corresponding to Minor Stormwater Management Plan) | Area of Impervious (ft ²) | Description (Roof, Patio, Pavement, Driveway, Gravel, etc.) | Does the Impervious Area Meet the Requirements to be Disconnected? (yes/no) | Contributory Area Storage Requirement; Storage (ft ³) = Column 2 x .25 | BMP used to Control Required Volume (ft ³) | BMP Size Requirement from Chart for Determining BMPs Sizing Based on Volume Required | Notes (minimum date) |
| Proposed Impervious Since Adoption Date Of This Ordinance | | | | | | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| Existing Impervious Before Adoption Date Of This Ordinance | | | | | | | |
| A | | | | | | | |
| B | | | | | | | |
| C | | | | | | | |
| D | | | | | | | |
| E | | | | | | | |
| F | | | | | | | |
| G | | | | | | | |
| H | | | | | | | |
| I | | | | | | | |
| J | | | | | | | |

IV. Minor Stormwater Management Plan Requirements

All projects require the submission of a Minor Stormwater Site Plan with the items required under List A, Worksheet 1, and the “Record of Proposed Impervious (since adoption date of this Ordinance)”. If the proposed project requires stormwater management BMPs, the applicant may prepare and submit to Mount Pleasant Township a “complete” Minor Stormwater Site Plan as defined under additional requirement below, Worksheet 1, the “Record of Proposed Impervious (since adoption date of this Ordinance)”, Owner’s Acknowledgement and Stormwater Mangement/BMP Facilities Maintenance Agreement.

The Adams County Office of Planning and Development can provide assistance to applicants to obtain property maps with the below required items. Two copies shall be submitted to the Municipality. A Minor Stormwater Site Plan must show the following:

List A:

1. Property Boundary
2. North Arrow and Scale (graphic) of 1”=50’ or less.
3. Aerial Photo (if the land use has changed from the photo then draw in the approximate land uses (grass, woods, etc.).
4. Building Setbacks (Labeled)
5. 5’ Contours or smaller where appropriate for the scale of the plan (Labeled)
6. Soils (Labeled)
7. Location of all existing and proposed impervious (home, accessory structures, driveways, etc.).
The proposed impervious areas draining to a discharge point shall be numbered (1, 2,) and the location of discharge from the existing and proposed impervious shall be shown, marked with an “x” or appropriate other symbol. The proposed impervious area reference number shown on the Minor Stormwater Management Plan shall correspond to the number on the Record sheet. The proposed impervious area on the plan shall be dimensioned.

Additional Requirements for “complete” Minor Stormwater Mangement Plan:

1. Slope/flow direction arrows on and 50 feet beyond the property (If the property is of substantial size and the proposed impervious is within the lot interior the slope/flow direction arrows shall be shown for minimum of 100 ft beyond the site Regulated Activity area.)
2. Distance from proposed downspouts along flow path to property lines, drainage ways (natural or manmade), wooded areas, offsite structures on and 50 feet beyond the property line (If applying for the DIA credit, label the DIA flow path and length on the plan.)
3. Natural features such as drainage ways, streams, wetlands, on and 50 feet beyond the property line
4. Any other pertinent information that may be significant to the project site (steep slopes, etc.)
5. Wells and on-site septic systems
6. Size and location of stormwater BMP’s with dimensions and details (as required)
7. Soil hydrologic soil group (listed under the soil)
8. Any existing and proposed structures first floor elevations
9. Grading spot elevations and or contours defining the proposed flow characteristics
10. Approximate distance from house and elevation of proposed stormwater BMPs and overflow paths for storms greater than 2 year events

V. Simplified Approach Review and Approval Process

- A. The property owner shall complete Worksheet 1, the Record of Proposed Impervious, and the Minor Stormwater Management Plan in accordance with the Simplified Approach instructions for each element. The property owner shall submit this material, along with the applicable fee, to Mount Pleasant Township. The application shall not be considered to be complete unless it includes all of the information required.
- B. Upon receipt of a complete application, the official designated by Mount Pleasant Township to administer the Simplified Approach process shall review the application against the requirements applicable to Simplified Approach submissions. The designated official shall approve the application if the application conforms to applicable requirements. The designated official shall deny the application if the application does not conform to applicable requirements. Any denial shall be in writing and shall state the reasons for such denial.
- C. The designated official shall approve or deny the complete application within fifteen (15) working days of the date of filing.
- D. The property owner may, in response to denied Simplified Approach submission, resubmit the application with revisions necessary to address the reasons for denial. Any such revised application shall be reviewed in accordance with Parts B and C above.
- E. Upon approval of a complete application, the designated official shall require the property owner to complete the Owner's Acknowledgement form. Upon receipt of the signed form, the designated official shall acknowledge such receipt. Once the Owner's Acknowledgement form is signed and its receipt acknowledged, the property owner is authorized to initiate construction of the approved project.

VI. How to Determine a Disconnected Impervious Area (DIA)

When impervious surface areas like rooftops and paved areas are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the impervious surface areas may qualify to be treated as Disconnected Impervious Area (DIAs).

Disconnected Impervious Area: Impervious is considered to be disconnected if it meets the requirements listed below:

- The contributing impervious drainage area is less than 500 SF.
- The overland flow path from runoff discharge point has a slope of five percent (5%) or less.
- Soils along the overland flow path are not classified as hydrologic group “D”
- The overland flow path is maintained as at least 90% uniformly vegetated condition.
- The receiving pervious area shall not include another person’s property unless written permission has been obtained from the affected property owner.
- The length of flow path must be 75’ in length for lots over 10,000 SF and 35’ for lots under 10,000 SF for disconnection.
- The distance between discharge points and flow paths must be and remain a minimum of 8’ apart for entire 75’.

Section VI. Chart for Determining BMP Sizing (Revised 10/27/2015)

| BMP | | | | | | | |
|---------------------------------------|------------------------------|------------------------|-------------------------|----------------------|-----------------------------|---------------------------------|---------------------------------|
| | Rain Garden/ BioRetention | Infiltration Trench | Infiltration Bed | Infiltration Berm | Rain Barrel (55 Gal Typ) | PA Native Deciduous Tree* | PA Native Evergreen Tree* |
| Variable Determining Size | | | | | | | |
| Volume Required (ft ³) | Area (ft ²) | Length (ft) | Area (ft ²) | Length (ft) | Quantity (ea) | Quantity (ea) | Quantity (ea) |
| 50 | 36 | 31 | 83 | 11 | 7 | 8 | 5 |
| 100 | 84 | 63 | 167 | 22 | 14 | 17 | 10 |
| 150 | 132 | 94 | 250 | 33 | 20 | 25 | 15 |
| 200 | 178 | 125 | 333 | 44 | 27 | 33 | 20 |
| 250 | 228 | 156 | 417 | 56 | 34 | 42 | 25 |
| 300 | 278 | 188 | 500 | 67 | 41 | 50 | 30 |
| 350 | 326 | 219 | 583 | 78 | 48 | 58 | 35 |
| 400 | 377 | 250 | 667 | 89 | 54 | 67 | 40 |
| 450 | 427 | 281 | 750 | 100 | 61 | 75 | 45 |
| 500 | 477 | 313 | 833 | 111 | 68 | 83 | 50 |
| 550 | 529 | 344 | 917 | 122 | 75 | 92 | 55 |
| 600 | 581 | 375 | 1000 | 133 | 82 | 100 | 60 |
| 650 | 630 | 406 | 1083 | 144 | 88 | N/A | N/A |
| 700 | 679 | 437 | 1167 | 156 | 95 | N/A | N/A |
| 750 | 729 | 469 | 1250 | 167 | 102 | N/A | N/A |
| 800 | 781 | 500 | 1333 | 178 | 109 | N/A | N/A |
| 850 | 827 | 531 | 1417 | 189 | 116 | N/A | N/A |
| 900 | 880 | 562 | 1500 | 200 | 122 | N/A | N/A |
| 950 | 933 | 594 | 1583 | 211 | 129 | N/A | N/A |
| 1000 | 983 | 625 | 1667 | 222 | 136 | N/A | N/A |
| 1050 | 983 | 656 | 1750 | 233 | 143 | N/A | N/A |
| 1100 | 1086 | 687 | 1833 | 244 | 150 | N/A | N/A |
| 1150 | 1136 | 719 | 1917 | 256 | 156 | N/A | N/A |
| 1200 | 1187 | 750 | 2000 | 267 | 163 | N/A | N/A |
| 1250 | 1239 | 781 | 2083 | 278 | 170 | N/A | N/A |
| 1300 | 1289 | 812 | 2167 | 289 | 177 | N/A | N/A |
| 1350 | 1340 | 844 | 2250 | 300 | 184 | N/A | N/A |
| 1400 | 1391 | 875 | 2333 | 311 | 190 | N/A | N/A |
| 1450 | 1444 | 906 | 2417 | 322 | 197 | N/A | N/A |
| 1500 | 1494 | 937 | 2500 | 333 | 204 | N/A | N/A |
| 1550 | 1544 | 969 | 2583 | 344 | 211 | N/A | N/A |
| 1600 | 1596 | 1000 | 2667 | 356 | 218 | N/A | N/A |
| 1650 | 1648 | 1031 | 2750 | 367 | 224 | N/A | N/A |
| 1700 | 1702 | 1062 | 2833 | 378 | 231 | N/A | N/A |
| 1750 | 1751 | 1094 | 2917 | 389 | 238 | N/A | N/A |
| 1800 | 1802 | 1125 | 3000 | 400 | 245 | N/A | N/A |
| 1850 | 1853 | 1156 | 3083 | 411 | 252 | N/A | N/A |
| 1900 | 1905 | 1187 | 3167 | 422 | 258 | N/A | N/A |
| 1950 | 1958 | 1218 | 3250 | 433 | 265 | N/A | N/A |
| 2000 | 2007 | 1250 | 3333 | 444 | 272 | N/A | N/A |
| 2050 | 2061 | 1281 | 3417 | 456 | 279 | N/A | N/A |
| 2100 | 2111 | 1312 | 3500 | 467 | 286 | N/A | N/A |
| 2150 | 2162 | 1343 | 3583 | 478 | 292 | N/A | N/A |
| 2200 | 2214 | 1375 | 3667 | 489 | 299 | N/A | N/A |
| 2250 | 2264 | 1406 | 3750 | 500 | 306 | N/A | N/A |
| 2300 | 2318 | 1437 | 3833 | 511 | 313 | N/A | N/A |
| 2350 | 2369 | 1468 | 3917 | 522 | 320 | N/A | N/A |
| 2400 | 2421 | 1500 | 4000 | 533 | 326 | N/A | N/A |
| 2450 | 2470 | 1531 | 4083 | 544 | 333 | N/A | N/A |
| 2500 | 2525 | 1562 | 4167 | 556 | 340 | N/A | N/A |

*No more than 25% of total volume can be mitigated by use of trees

VIII. Stormwater Management/ BMP Facilities Operation and Maintenance Agreement

THIS AGREEMENT, made and entered into this ____ day of _____, 20____, by and between _____ hereinafter called the “Landowner,” and Mount Pleasant Township, Adams County, Pennsylvania, hereinafter called the Mount Pleasant Township.

WHEREAS, the Landowner is the owner of certain real property described as (Adams County Tax Map / Parcel Identification Number) _____ as recorded by deed in the land records of Adams County, Pennsylvania, Book _____ Page _____, hereinafter called the “Property”;

WHEREAS, the Landowner is proceeding to build on and develop the property; and

WHEREAS, the Minor Stormwater Site Plan, which is expressly made a part hereof, as approved or to be approved by Mount Pleasant Township, provides for detention of stormwater within the confines of the property through the use of Stormwater Best Management Practices (Stormwater BMPs); and

WHEREAS, Mount Pleasant Township and the Landowner, its successors and assigns, agree that the health, safety, and welfare of the residents of Mount Pleasant Township, require that on-site Stormwater BMPs be constructed and maintained on the Property; and

WHEREAS, Mount Pleasant Township requires that on-site Stormwater BMPs as shown on the Plan be constructed and adequately maintained by the Landowner, its successors and assigns. Any additional requirements imposed by Mount Pleasant Township are considered part of the Plan.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner in accordance with the specifications identified within the Plan shall construct the onsite Stormwater BMPs.
2. The applicant assumes full responsibility for the construction, operation, and maintenance of the proposed stormwater management facilities.
3. The Landowner, its successors and assigns, shall adequately maintain the Stormwater BMPs. This includes all pipes and channels built to convey stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions.
4. The Landowner, its successors and assigns, shall inspect the Stormwater BMPs after all rainfall events exceeding one inch of precipitation in a 24-hour period.
5. The Landowner, its successors and assigns, hereby grant permission to Mount Pleasant Township, its authorized agents and employees, to enter upon the Property without prior notification at reasonable times and upon presentation of proper identification to inspect the Stormwater BMPs whenever Mount Pleasant Township deems necessary.

6. The Landowner acknowledges that the proposed Stormwater BMPs will be a permanent fixture of the property that cannot be altered or removed without approval by Mount Pleasant Township.

7. In the event the Landowner, its successors and assigns, fails to maintain the Stormwater BMPs as shown on the Plan and in good working condition, Mount Pleasant Township may enter upon the Property and take whatever action is deemed necessary to maintain said Stormwater BMPs and to charge the costs of such repairs to the Landowner, its successors and assigns. This provision shall not be construed to allow Mount Pleasant Township to erect any structure of permanent nature on the land of the Landowner unless such structures were part of the approved Plan. It is expressly understood and agreed that Mount Pleasant Township is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on Mount Pleasant Township.

8. In the event that Mount Pleasant Township, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse Mount Pleasant Township within thirty (30) days of receipt of invoice for all expenses incurred. Mount Pleasant Township has the right to file a municipal lien for unpaid costs and expenses that have not been reimbursed thirty (30) days after receipt of invoice.

9. The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater BMPs by the Landowner. This Agreement shall not be deemed to create any additional liability of any party for damage alleged to result from or be caused by nonpoint source pollution runoff. This Agreement imposes no liability of any kind whatsoever on Mount Pleasant Township and the Landowner agrees to hold Mount Pleasant Township harmless from any liability in the event the Stormwater BMPs fail to operate properly. In the event that a claim is asserted against Mount Pleasant Township, its designated representatives or employees, Mount Pleasant Township shall promptly notify the Landowner and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against Mount Pleasant Township shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment.

10. This Agreement shall be binding to the Landowner, its administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

Landowner:

Signature: _____ Date: _____

Printed Name: _____

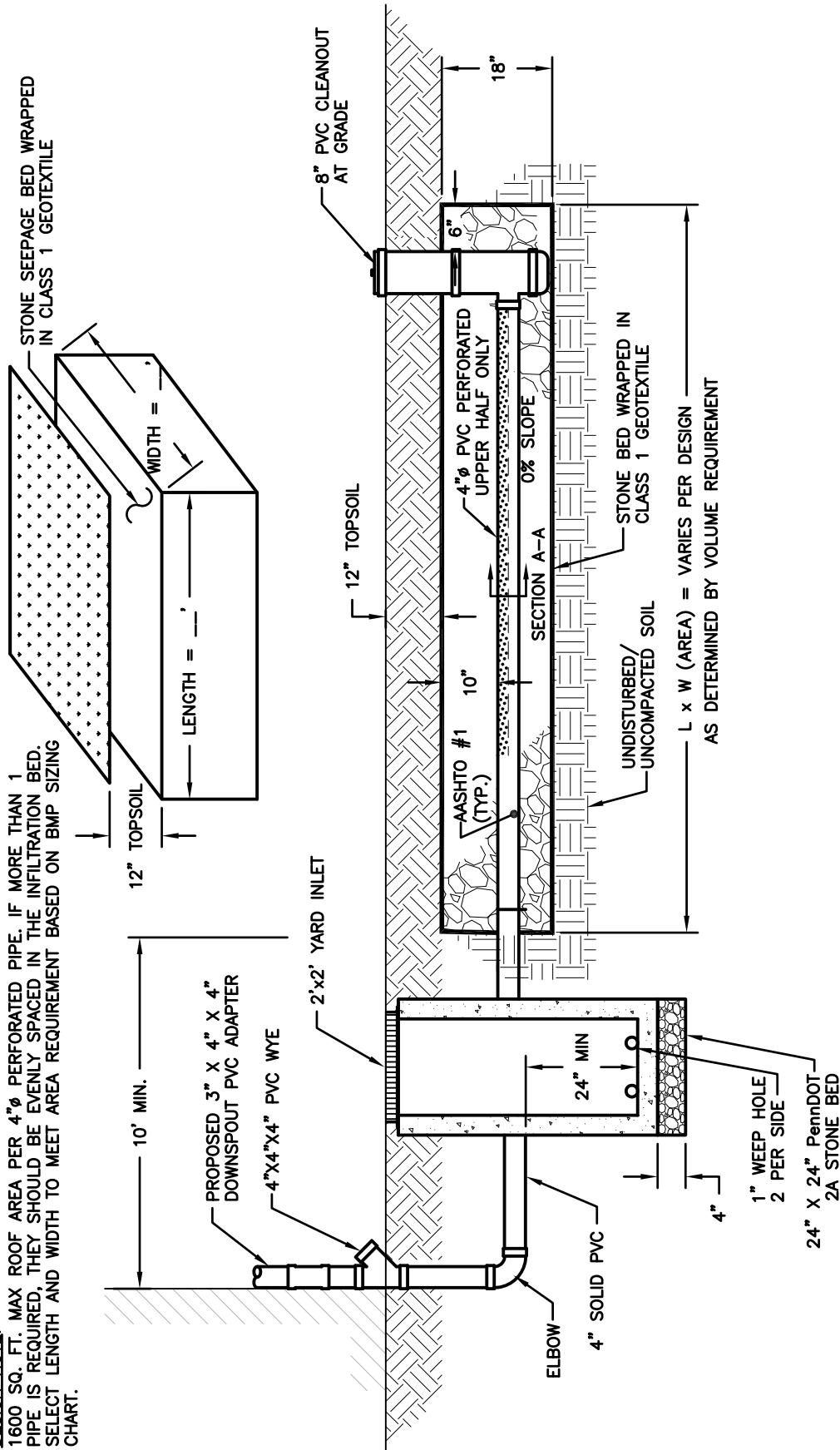
Mount Pleasant Township:

Signature: _____ Date: _____

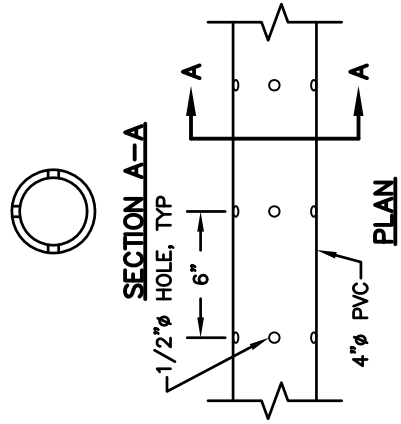
Printed Name: _____ Title: _____

IX. Standard Details

DESIGN NOTE:
 1600 SQ. FT. MAX ROOF AREA PER 4" PERFORATED PIPE. IF MORE THAN 1 PIPE IS REQUIRED, THEY SHOULD BE EVENLY SPACED IN THE INFILTRATION BED. SELECT LENGTH AND WIDTH TO MEET AREA REQUIREMENT BASED ON BMP SIZING CHART.



- NOTES:**
1. INFILTRATION PITS TO BE INSTALLED IN UNDISTURBED SOIL.
 2. SUBGRADE BELOW THE INFILTRATION PIT SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, THE SOIL SHALL BE SCARIFIED PRIOR TO CONSTRUCTING THE BED.
 3. SEDIMENT ACCUMULATION SHALL BE MONITORED SEASONALLY.
 4. WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 18" IN THE YARD BASIN, IT SHALL BE REMOVED.



TYPICAL INFILTRATION BED DETAIL
 N.T.S.

DRAWING PREPARED BY C. S. DAVIDSON, INC.

SIMPLIFIED APPROACH DETAILS.dwg

DATE: JULY 2012

SIMPLIFIED APPROACH STANDARD DETAIL
INFILTRATION BED

ADAMS COUNTY, PENNSYLVANIA

DESIGN NOTE:
HOME OWNER TO CHOOSE LENGTH OF THE BERM REQUIRED BASED ON THE VOLUME REQUIRED PER THE BMP SIZING CHART. BERMS SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF BERM IS INSTALLED AT A UNIFORM ELEVATION.

CONTRACTOR'S OPTION: THE CONTRACTOR MAY CHOOSE TO STRIP THE SOD OFF OF THE FOOTPRINT AREA OF THE INFILTRATION BERM FOR REUSE AS STABILIZATION OF 3:1 EMBANKMENTS. IF EXISTING SOD IS NOT USED, THE DEVELOPER SHALL STABILIZE THE EMBANKMENTS WITH TEMPORARY MATTING, SEEDING AND MULCHING PER ADAMS COUNTY CONSERVATION DISTRICT REQUIREMENTS.

SOD OR PROVIDE TOPSOIL AND SEEDING STABILIZED WITH TEMPORARY NA GREEN S75 MATTING THROUGHOUT ENTIRE BERM.

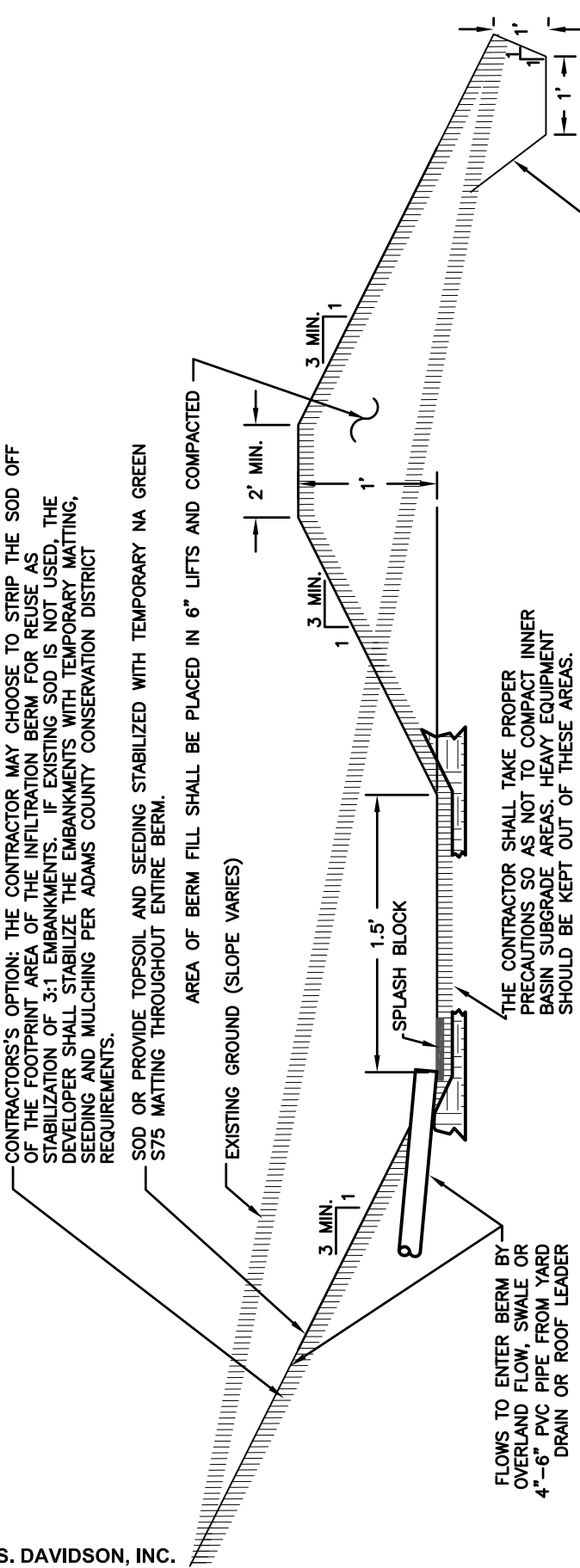
AREA OF BERM FILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED

EXISTING GROUND (SLOPE VARIES)

FLOWS TO ENTER BERM BY OVERLAND FLOW, SWALE OR 4"-6" PVC PIPE FROM YARD DRAIN OR ROOF LEADER

THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO COMPACT INNER BASIN SUBGRADE AREAS. HEAVY EQUIPMENT SHOULD BE KEPT OUT OF THESE AREAS.

PROVIDE 1' X 1' TRENCH KEY AT BERM TOE



INFILTRATION BERM DETAIL

(N.T.S.)

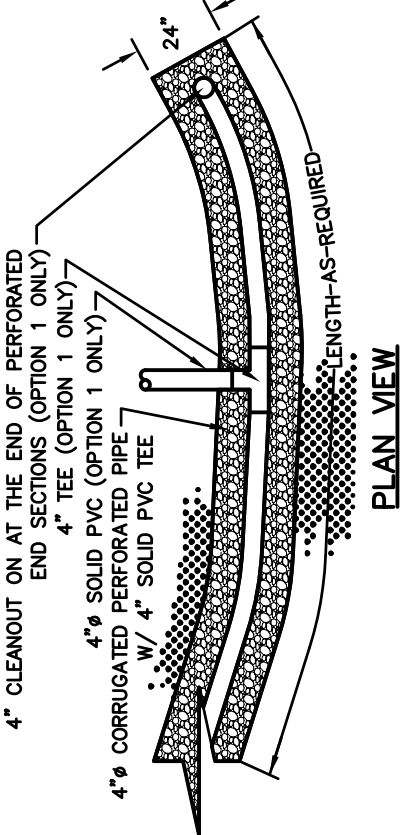
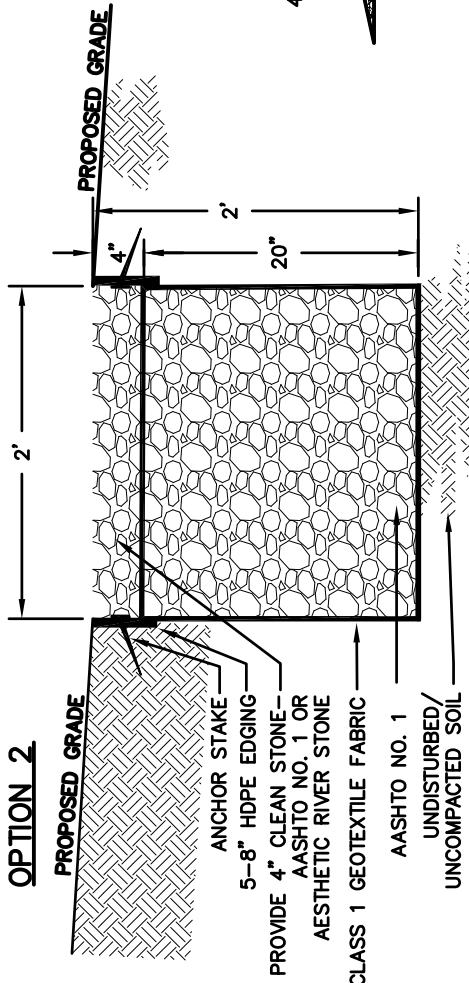
NOTES:

1. REMOVE TOPSOIL IN AREA OF INSTALLATION OF BERM AND STOCKPILE ABOVE. PERFORM EXCAVATION OF SUBGRADE. OVER EXCAVATING BERM BY 6" AND REPLACE WITH STOCKPILED SOIL.
2. SOIL IN THE INFILTRATION BERM BOTTOM SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, THE SOIL SHALL BE SCARIFIED PRIOR TO SEEDING.
3. SEDIMENT ACCUMULATION SHALL BE MONITORED SEASONALLY.
4. WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 3" IN THE BERM, IT SHALL BE REMOVED.
5. BERM SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER.
6. BERMS SHALL BE KEPT FREE FROM NOXIOUS WEEDS AND INVASIVE SPECIES
7. BERMS SHOULD BE MOWED ANNUALLY OR BIANNUALLY

SIMPLIFIED APPROACH STANDARD DETAIL

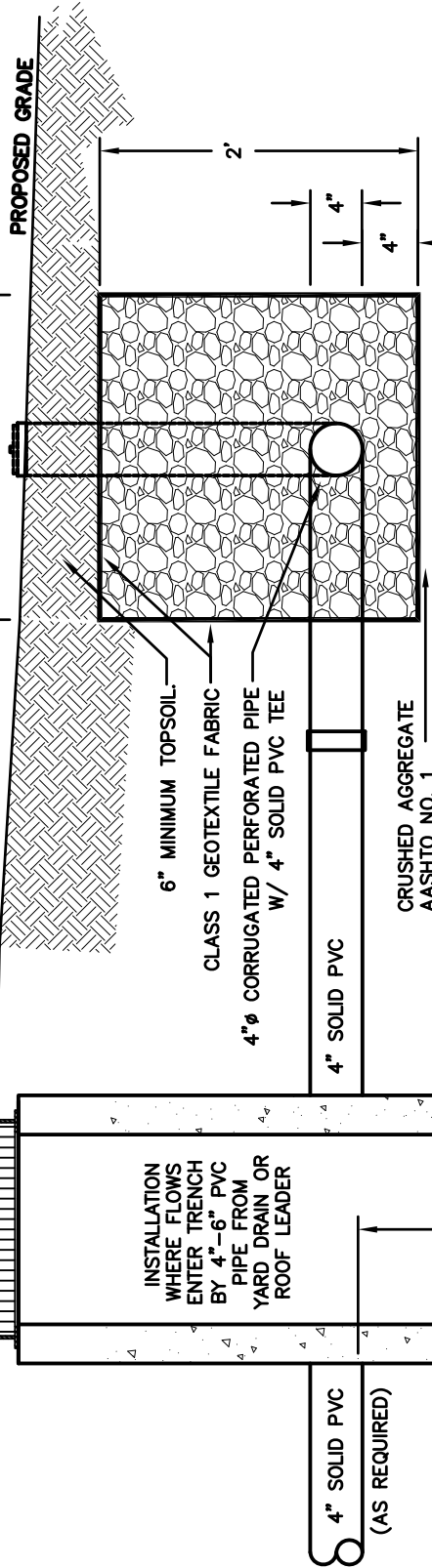
INFILTRATION BERM

DESIGN NOTE:
 CHOOSE TRENCH LENGTH TO MEET REQUIREMENT PER THE BMP SIZING CHART. TRENCHES SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF TRENCH IS INSTALLED AT A UNIFORM ELEVATION.



PLAN VIEW

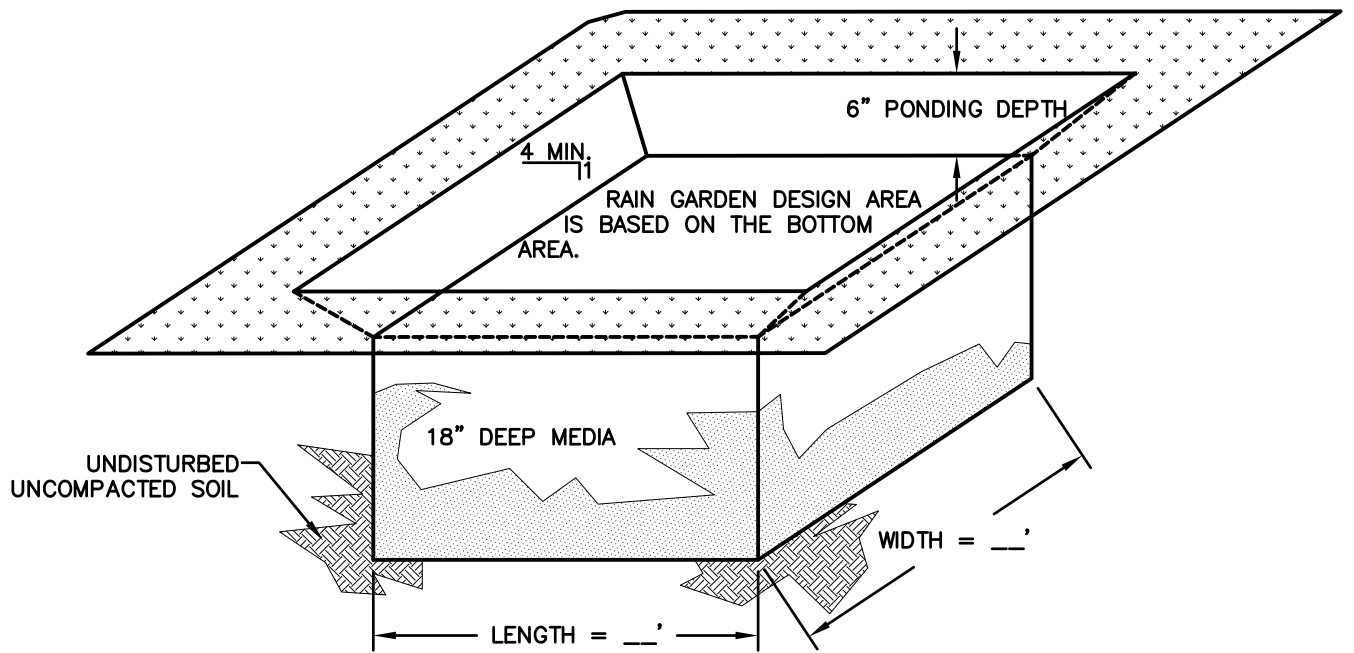
OPTION 1



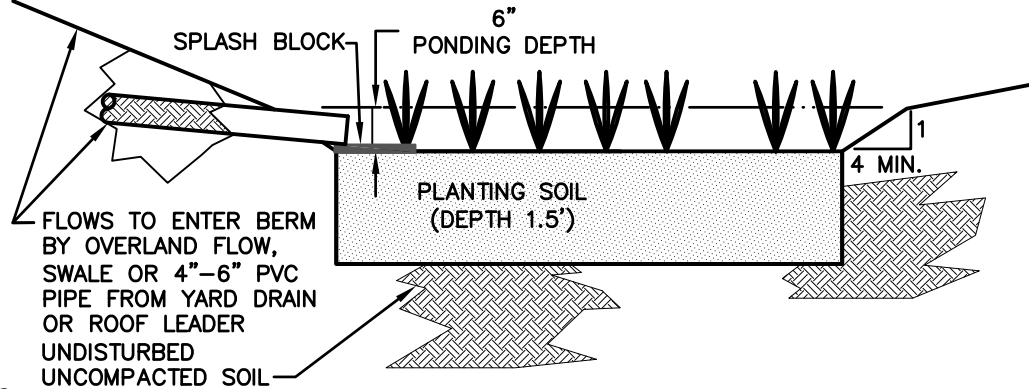
- NOTES:**
1. INFILTRATION TRENCHES TO BE INSTALLED IN UNDISTURBED SOIL. CONTINUOUS TRENCHES SHALL BE INSTALLED PARALLEL TO THE CONTOUR SUCH THAT THE TRENCH IS AT A UNIFORM ELEVATION THROUGHOUT.
 2. SUBGRADE BELOW THE INFILTRATION TRENCH SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, THE SOIL SHALL BE SCARIFIED PRIOR TO CONSTRUCTING THE BED.
 3. SEDIMENT ACCUMULATION SHALL BE MONITORED SEASONALLY.
 4. PENDING THE INSTALLATION TYPE WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 18" IN THE YARD BASIN, OR AS THE TOP 4" OF RIVER STONE OR AASHTO STONE ARE CHOKED WITH DEBRIS AND SEDIMENT, IT SHALL BE REMOVED.

INFILTRATION TRENCH
 N.T.S.

SIMPLIFIED APPROACH STANDARD DETAIL
INFILTRATION TRENCH



DESIGN NOTE:
 CHOOSE LENGTH AND WIDTH TO MEET AREA REQUIREMENT PER THE BMP SIZING CHART. BERMS SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF BERM IS INSTALLED AT A UNIFORM ELEVATION.



NOTES:

1. PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX. RATIO FOR RAIN GARDEN SOIL MIX SHOULD CONTAIN AN APPROXIMATE RATIO OF 50% SAND, 30% COMPOST AND 20% NATIVE SOILS
2. THE SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER.
3. BRUSH OR SEEDS FROM NOXIOUS WEEDS SHALL NOT BE PRESENT IN THE SOILS.
4. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 9" LIFTS THAT ARE LOOSELY COMPACTED.
5. BIO-RETENTION AREA MUST BE PROTECTED FROM EROSION/SEDIMENTATION DURING CONSTRUCTION.
6. WET PLANTINGS IN RAIN GARDEN SHOULD BE NATIVE TO PA. DIRECTION FOR PLANTING SCHEDULE AND DENSITY BASED ON SITE CONDITIONS (SUN/SHADE/APPEAL) CAN BE OBTAINED FROM THE ADAMS COUNTY CONSERVATION DISTRICT
7. SUBGRADE IN THE RAIN GARDEN BOTTOM SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, IT SHALL BE SCARIFIED PRIOR TO SOIL PLACEMENT
8. IN BOROUGH'S WHERE INFILTRATION MAY BE IMPOSSIBLE DUE TO SOIL CONDITIONS OR BASEMENTS, IT IS RECOMMENDED THAT A 60 MIL HDPE POND LINER BE INSTALLED ALONG WITH 30" OF PLANTING SOIL MEDIA.

RAIN GARDEN

N.T.S.

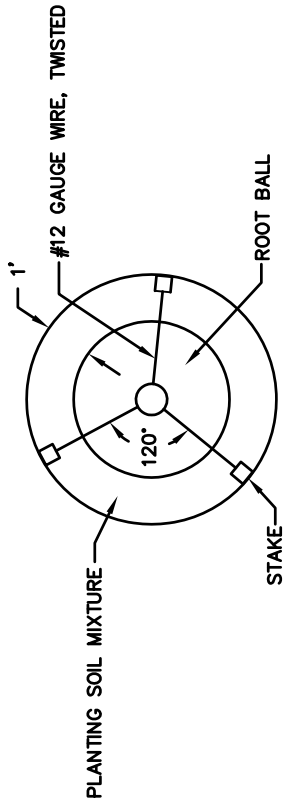
SIMPLIFIED APPROACH STANDARD DETAIL

RAIN GARDEN

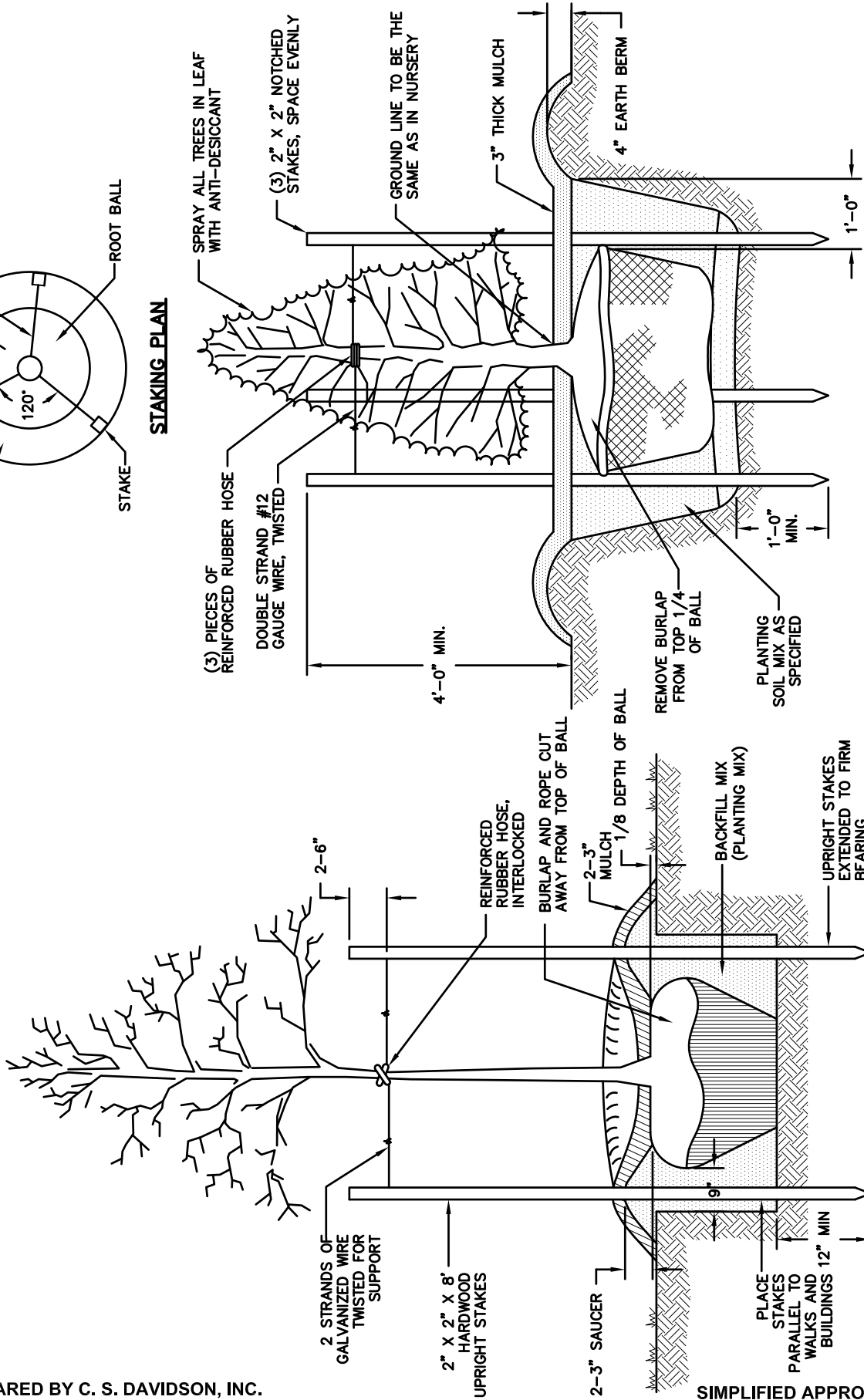
DESIGN NOTE:

TREES MUST BE PA NATIVE SPECIES, A MINIMUM OF 1" CALIPER. DEAD TREES SHALL BE REPLACED BY PROPERTY OWNER WITHIN A MINIMUM OF 12 MONTHS. NO MORE THAN 25% OF VOLUME REQUIREMENT CAN BE TAKEN FOR TREE PLANTING.

DRAWING PREPARED BY C. S. DAVIDSON, INC.



STAKING PLAN



NOTE:
1. FLOOD SAUCER WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

NOTES:
1. SPRAY ALL TREES IN LEAF WITH ANTI-DESSICANT PRIOR TO PLANTING.
2. FLOOD SAUCER WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

EVERGREEN TREE PLANTING DETAIL
N.T.S.

DECIDUOUS TREE PLANTING DETAIL
N.T.S.

SIMPLIFIED APPROACH DETAILS.dwg

DATE: JULY 2012

SIMPLIFIED APPROACH STANDARD DETAIL
TREE PLANTING