

**INTENT OF PLAN**  
 The intent of this plan is to obtain Final Subdivision Plat approval for "AUTUMN CHASE PHASE IV". AUTUMN CHASE is a Planned Residential Development (PRD). The Tentative Planned Residential Development Plan for Autumn Chase was approved by the Upper Allen Township Board of Commissioners as per a written decision dated May 8, 2012. The Master Plan on plan sheet 2 provides a reference to the overall community. Autumn Chase Phase IV consists of 28 single family attached dwelling units (townhouses). The project shall be implemented in accordance with the Decision Approving Application of Hertzler Road Associates, L.P. for Tentative Approval of Autumn Chase Planned Residential Development dated May 8, 2012. Certain waivers and modifications were granted as part of the Tentative Plan approval. A Developer Agreement, between Hertzler Road Associates, L.P. and Upper Allen Township, dated April 26, 2012, provides for certain Hertzler Road improvements and recreation improvements to satisfy the recreation requirements for Autumn Chase. Hertzler Road shall be improved with the project in accordance with the approved Developers Agreement. See additional notes below and on the Master Development Plan, sheet 2.

**SITE DATA**

- Applicant and Equitable Owner: Hertzler Road Associates, L.P. 4400 Deer Path Road, Suite 201 Harrisburg, PA 17110 717-234-4000
- The subject tract consists of two (2) parcels of Land; both tracts are owned by Hertzler Road Associates, L.P. (entire project) Total Gross Area of both Parcels: 6,209,731 sf or 142.65 ac Total Net Area of both Parcels: 6,134,676 sf or 140.83 ac Tax Parcel No. 42-11-0272-001 Instrument #201124513 Total Gross Area: 5,378,304.8 Sq Ft = 123.47 Ac Total Net Area: 5,303,249.9 Sq Ft = 121.75 Ac Hertzler Road Legal R/W: 75,054.8 Sq Ft = 1.72 Ac Tax Parcel No. 42-11-0274-028 Instrument #201124513
- Total Gross/Net Area 831,426 sf or 19.087 acres Subject Tract is located in the R-1 (Low Density Residential District) and R1 (Rural Living) R-1 (Low Density Residential): 5,565,535 sf or 127.77 ac R1 (Rural Living): 644,196 sf or 14.79 ac
- Total number of existing dwellings: 78 lots previous Phases I & 3, 56 dwelling units in Phase II (32 townhouses & 24 duplexes) and 35 single family detached dwelling lots located in Phase IV; not all units are built although are approved for construction.
- Total number of proposed dwellings: 295 Total all Phases Phase IV: 28 single family detached dwelling units (townhouses) Entire Project including Phases: 295 units with the following uses (See Master Plan sheet for Phasing Plan);
  - 161 Single-family dwelling lots (78 North and 83 south of Hertzler Road);
  - 60 Duplex Units;
  - 74 Townhouse Units (7-6plexes and 8-4plexes);
- Original Land Use: Agriculture use (currently vacant residential)
- Proposed Use: Residential "Planned Residential Development"
- Proposed Density: 1.2 units per acre
- Proposed Length of New Streets: Phase IV: 656' or 0.124 miles
- Proposed Length of Hertzler Road Widening: 3,493' total including off site (There are no Hertzler Road improvements associated with this Phase)
- Minimum Lot Size Proposed in Phase IV: NA - no lots proposed
- Total Area of Open Space Lots 1 through 9 (see sheet 2): Existing Phases I, 2, 3 & 5: 1,225,796 sf or 28.140 acres Phase IV: None (no lots proposed with Phase IV) Entire Project: 2,851,323 sf or 65.457 ac
- 

**ZONING REQUIREMENTS**  
 Below zoning criteria as approved with the Autumn Chase PRD

**Building Setbacks**  
 50' setback from tract perimeter apply's to all of the residential uses

**Single Family Detached Lots:**  
 Front = 25'  
 Side = 5'  
 Rear = 15'

**Townhouse & Duplex Units (setback from parent tract)**  
 Front = 25'  
 Side = 10'  
 Rear = 15'

\*See below for interior yards

**\*Interior Yard Separations (Rear to rear, side to rear, etc. - Sec. 24A-155)**  
 Rear to rear = 40'  
 Side to rear = 35'  
 Side to side = 25'

**Townhouse & Duplex**  
 Minimum Building setback from sidewalks = 20'  
 Minimum Front setback from internal street R/W = 20'

**Townhouse & Duplex**  
 Minimum Building setback from off street parking = 20'  
 Maximum Building Height = 35'  
 Townhouse/Duplex Maximum Building Coverage = 35%  
 Townhouse/Duplex Maximum Impervious Coverage = 55%

**Single Family Detached Max Building Coverage = 30%**  
**Single Family Detached Max Impervious Coverage = 40%**

**GENERAL NOTES**

- The applicant shall comply with all Township regulations in effect at the time of the filing of this plan. All proposed improvements shall conform to Upper Allen Township construction standards. All work shall be in accordance with PennDOT Publication 408, Specifications and Publication 72, Roadway Construction Standards, unless otherwise noted. Work zone traffic control shall be in accordance with PennDOT Publication 213.
- Autumn Chase Phase IV consists of 28 Single-family attached units (townhouses).
- The recreation improvements for Autumn Chase shall be improved in accordance with the Developer Agreement, dated April 26, 2012, between Hertzler Road Associates, L.P. and Upper Allen Township.
- A Homeowners Association is proposed with the development. The Home Owners Association Documents shall be reviewed by the Township in conjunction with this plan. The applicant shall be responsible for maintenance and upkeep of the following:
  - All Open Space Areas except for open space areas accepted by the township for recreation land dedication (See notes on Open Space below);
  - All on-site stormwater management facilities located outside of a public right-of-way;
  - All sidewalk located within Open Space areas and sidewalk within the public right-of-way that abuts open space areas. Individual property owners of single family detached dwelling lots are responsible for removal of the sidewalk abutting their respective lot (there are no single-family detached dwelling lots proposed in Phase II although note provided for consistency);
  - Boulevard Landscape Islands;
  - The landscape and boulevard islands shall be maintained by the developer until such responsibility is transferred to the homeowners association established with the development. Upper Allen Township shall not be held responsible for damage to plantings within the islands for any reason, and the municipality may remove or trim the vegetation if necessary for public safety.
- The boundary information is based on a field survey performed by CDG, Inc. in April 2005 and August 2008 and verified by A to Z Land Consulting Services, LLC, in May & June 2022. The horizontal datum is NAD 83. The bearing is based on state plane coordinates, Pennsylvania south zone. Site benchmark: Northeast corner of concrete headwall on the southerly side of Hertzler Road, approximately 300' east of railroad crossing. Elev.=445.75 (NAVD 88) Topographic information shown is based on photogrammetry mapping performed by air survey, flown April 6, 2005. The vertical datum is NAVD 1988.
- All streets proposed with this project shall be constructed to township standards and shall be offered for dedication to the township upon completion of improvements. All proposed streets are classified as minor streets and shall be 34' wide curbed cartways (slant curb) with an associated 50' right-of-way except for the boulevard entrances which will be 20' cartways with a 10' landscaped boulevard island with an associated 66' right-of-way. Hertzler Road shall be improved along the subject tract's entire length of road frontage and certain off site areas as detailed in the Developer Agreement. The portions of Hertzler Road outside of the approximately 1,125 linear feet associated with Phase I (east to Klinedinst Road and west approximately 650' to the western property line of 521 Hertzler Road) will be widened to approximately 24 feet (see Hertzler Road Design Plan) and improved via a cement based full depth reclamation to include 12" of cement treated base at 8% cement, 2.5" base paving course and 1.5" wearing course as outlined in the Kleinfelder Geotechnical Engineering Report dated May 27, 2021. There are no Hertzler Road improvements nor any boulevards associated with this Phase Plan, complete note carried over for consistency with previous plans.
- There is an unnamed stream tributary to the Yellow Breeches Creek (YBC) that parallels Hertzler Road through the site. There is a 0.25 acre wetland pocket located along the south side of Hertzler Road towards the eastern side of the site (no wetland impacts proposed). There are no significant rock outcrops or contaminated soils known to exist on the site. There are two (2) sink holes-depressions located along the southern property line on the south side of Hertzler Road; the sinkholes are proposed to be repaired with the applicable future phase. A Water Obstruction and Encroachment Permit was obtained for the stream impacts associated with Hertzler Road improvements (Permit No. E21-468, issued on April 28, 2020).
- Within clear sight triangles on this plan, no structure or growing material shall exceed a height of 3' above the grade of the street, and no branch of a tree, or obstruction, shall be lower than 9' feet above the grade of the street, with the exception of traffic signs, public utility poles, and similar-type structures.
- Nothing shall be planted, placed, or set within any easement that would affect the function of the easement or conflict with the easement agreement.
- The applicant is responsible for paying for the installation of all street and traffic control signs required for this project as deemed necessary by Upper Allen Township. All traffic control signs and devices are to be installed prior to any certificate of occupancy being issued. Street signs shall conform to PennDOT Publication 236M, dated April 1997, as amended. In addition, a separate permit is required for development of signs, and all signs shall conform to all applicable requirements within Ordinance 245, All of the Codified Ordinances of Upper Allen Township or such applicable ordinances that are in effect at the time of the application for the sign.
- The proposed water lines shown on this plan are for conceptual purposes only. Veolia Water (public supplier), per their standard procedures, shall provide the project's water design for the project after approval of the Final Plans.
- A Geologic Evaluation and Infiltration Testing Report was prepared for the project by CMX, 910 Century Drive, Mechanicsburg, PA 17055; 717-458-0800. The site is partially underlain by limestone geology. Due to the geology, the site has an increased potential for sinkhole development. Because all sinkhole are unique and repair methods for each type may require a specific method for repair, it is recommended that the site contractor consult with a Geo-Technical Engineer prior to start of construction of each phase. The Geo-Technical Engineer should evaluate the site's features for vertical and horizontal extension and relation to the proposed improvements and then measures to the contractor for repair of each sinkhole. In addition, builders are recommended to consult with a Geo-Technical engineer for guidance pertaining to building construction in sinkhole prone areas.
- All new utilities shall be placed under ground.
- There is a FEMA delineated floodplain located on the property. The floodplain is located along the eastern property line where Hertzler Road and the existing unnamed stream pass under the railroad bridge. The floodplain is depicted per scan overlay of Flood Insurance Rate Map (Community-Panel Number 42041C0287E, Zone A, dated March 16, 2009). The current study is a Zone A non-detailed study area with no base flood elevation information.
- Street lighting is proposed throughout the development as shown on these plans. Street lights are proposed at all street intersections and at other locations depicted on the plan. In addition to the street lights, each single family detached dwelling lot shall install an outside electric dusk till dawn yard light. Each individual home owner shall be responsible for maintenance of their own yard light although the Home Owners Association shall be responsible for maintenance of the street lights; developer is responsible for street light maintenance until the HOA is formed.
- All proposed property corners and existing unmarked property corners shall be marked with iron pins or concrete monuments prior to dedication of the streets. Concrete monuments will be set as shown, all other property corners to be marked with iron pins. All proposed marker materials and installation methods shall be in accordance with Township standards.
- An NPDES Permit was obtained from the Cumberland County Soil Conservation District authorizing earth disturbance activities associated with the project (Permit No. PAC210094A-1, expiration date 12-7-2024). The contractor shall implement erosion and sedimentation pollution control measures in accordance with PA State Code Chapter 102 requirements and associated NPDES Permit Conditions. Contractor must obtain a copy of the approved Erosion Control Plan and be a co-permittee on the NPDES permit for construction. The NPDES permit conditions and the approved permittee shall be responsible for implementation and maintenance of erosion control measures in accordance with the approved Erosion Control Plan.
- All lot grading shall maintain positive drainage away from the dwelling. Lot owners are required to maintain lot grading and surface drainage patterns and characteristics consistent with the approved grading plan.
- Manhole covers for stormwater manholes shall be cast with the word "Storm" for identification purposes.
- Any construction or work within the public street right-of-way related to storm drainage facilities requires inspection by Upper Allen Township. Provide a minimum of 48 hours notice to the Township before starting work.
- Contractor shall schedule a pre-construction meeting with the Township Engineer at least 48 hours prior to starting site construction activities.
- In compliance with Act 287 of 1974 as amended by Act 199 of 2004, all underground utilities shown on this plan are a compilation of actual field locations and data furnished from information supplied by others. The developer, surveyor and engineer assume no responsibility for the location of any underground utilities as depicted on this drawing. Any request for additional underground utility information should be directed to that respected utility company. See One Call Number for Serial Numbers.
- All known existing easements and rights-of-way have been shown on the plan and all utilities have been notified per PA One Call requirements.
- All lots shall be subject to restrictions and covenants as defined in the "Protective Covenants, Reservations and Easements". All property owners shall be provided with a copy of the covenants documents.
- All single-family detached dwellings will have a two-vehicle garage and a driveway with additional space to equal at least three off-street parking spaces. Maximum driveway width at the street right-of-way line is 10' for a single car garage and 24' width for a 2 car garage. All driveways shall not connect with a public street within 50 feet of the right-of-way lines of any intersecting streets nor within five feet of a fire hydrant, in accordance with Section 220-17.A(3) of the Codified Ordinances of Upper Allen Township; (there are no single-family detached dwellings lots proposed in this Phase although note provided for consistency with previous plan approvals).
- As-built Mylar plans and electronic data files shall be provided to the Township. All drawings must be signed and sealed by a professional engineer or land surveyor attesting to the correctness of the facility information shown, in accordance with Section 220-13.C(2) of the Codified Ordinances of Upper Allen Township.
- The Home Owners Association shall maintain the grass area around the Greenway Trail and associated easement areas.
- Should a phased final plan propose fewer trees and/or shrubs than Ordinance requirements, the additional trees required to meet Ordinance requirements should be planted in the open space areas and/or adjacent to or along the Greenway Trail as directed by the Township.

# FINAL PLAT FOR AUTUMN CHASE PRD PHASE IV LOCATED IN

## UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PA.

**PHASE I RECORDING INFORMATION**  
 The Final Plat for Autumn Chase PRD Phase I was recorded on October 21, 2021 in Instrument #202135830.

**PHASE II RECORDING INFORMATION**  
 The Final Plat for Autumn Chase PRD Phase II was recorded on \_\_\_\_\_ in instrument #2021\_\_\_\_\_

**PHASE III RECORDING INFORMATION**  
 The Final Plat for Autumn Chase PRD Phase III was recorded on September 22, 2022 in Instrument #202226446.

**PHASE V RECORDING INFORMATION**  
 The Final Plat for Autumn Chase PRD Phase V was recorded on \_\_\_\_\_ in instrument #2021\_\_\_\_\_

SHEET NO.	TITLE
1 of 16	COVER SHEET
2 of 16	MASTER DEVELOPMENT PLAN
3 of 16	EXISTING FEATURES PLAN
4-5 of 16	FINAL SUBDIVISION PLAN
6 of 16	GRADING-UTILITY-PROFILES PLAN
7-8 of 16	POST CONSTRUCTION STORMWATER MANAGEMENT PLANS
9 of 16	LANDSCAPE PLAN
10 of 16	LIGHTING PLAN
11-13 of 16	CONSTRUCTION DETAILS
14-16 of 16	EROSION CONTROL PLANS

**APPLICANT & OWNER**  
**HERTZLER ROAD ASSOCIATES, L.P.**  
**4400 DEER PATH ROAD, SUITE 201**  
**HARRISBURG, PA 17110**  
**(717) 234-4000**

**SANITARY SEWER CONSTRUCTION NOTES**

- All sanitary sewer construction materials and methods shall conform to the latest standards of Upper Allen Township, Cumberland County, Pennsylvania and shall be subject to the approval by the township's engineer. See Standard construction and material specifications for sanitary sewer system extensions, latest edition. Construction of all sanitary sewers shall conform to standards adopted by Upper Allen Township. Contractor shall obtain specifications and construction details directly from the Authority.
- All sanitary sewers constructed in public streets shall be subject to backfill compaction testing at the discretion of the Township representative and at the expense of the developer.
- All proposed sanitary sewer mains shall be offered for dedication to Upper Allen Township. Upon completion of the sanitary sewer extension and before release of installation financial security and before acceptance of maintenance financial security, developer must prepare a separate sanitary sewer deed of dedication and easement agreement for the sanitary sewer extension for Township review, followed by recording of same by the developer.
- Upon acceptance of any sanitary sewer mains, laterals, manholes and other appurtenances by the Township located in public streets not yet dedicated to the Township, developer grants to Township a temporary sanitary sewer easement thirty (30) feet in width measured from the centerline of the sanitary sewer main for the purpose of emergency or other repairs to the sanitary sewer system, until such time that the street and all utilities included therein are dedicated to the Township.
- On streets having grades 2% or greater, sanitary sewer manhole frames and covers shall be adjusted using tapered rubber riser rings per standard details.
- A 30' wide right-of-way shall be provided around all proposed sewers that are not located within a public right-of-way.
- Contractor shall test pit all existing utility crossings prior to installing any sanitary sewer pipe to verify existing horizontal and vertical elevations to assure no conflict with new sewer.
- When sewers are installed through Township's right-of-way, including planter islands, no house, structure, trees, shrubs, gardens, or obstruction on or over, or that will interfere with vehicular access for the construction, maintenance or operation of any sewer, shall be installed within limits of the easement, and no changes in grade or contour over the sewer shall be permitted in accordance with the Township's standard deed of dedication.
- Contractor shall field verify existing manhole elevations prior to construction.
- All sanitary sewer pipe installed shall be inspected by a Upper Allen Township representative to be backfilled and covered.
- A ten (10) foot minimum horizontal separation or an 18" vertical separation must be maintained wherever possible between water lines and sewer lines.
- Sanitary sewer redesign may be required upon completion and approval of Veolia Water Company's water system design for the area.

**GENERAL CONSTRUCTION NOTES**

- The intent of this plan is to obtain subdivision / land development approval for the planned site development. Construction procedures have not been specified by Mellott Engineering, Inc. beyond what is required by the township and the standard methods as outlined in Pennsylvania Department of Transportation (PennDOT) Publication 408 for earth moving and installation of PennDOT structures.
- No environmental studies, subsurface investigations or testing of soils were performed in the preparation of these plans beyond the Geologic Evaluation and Infiltration Testing Report prepared for the project by CMX, Mechanicsburg, Pa. The owner and contractor shall consult a geotechnical engineer prior to construction to determine appropriate soil bearing capacity, fill placement procedures, compaction and building foundation requirements.
- The project drawings are generally diagrammatic in indicating the presence of existing underground and characteristical in existing utilities has been compiled from available information including utility company and municipal record maps and field survey and is not guaranteed correct or complete. Utilities are shown to alert the contractor to their presence and the contractor is solely responsible for determining actual locations and elevations of all utilities, including services. When the utilities are to be left in place, the contractor shall provide adequate means of support and protection during the excavation and backfilling operations.
- Should any uncharted or incorrectly charted, existing piping or other utility be uncovered during excavation, consult the engineer immediately for directions before proceeding further with the work in this area.
- Do not interrupt existing utilities servicing facilities occupied and used by the owner or others during occupied hours except when such interruptions have been authorized in writing by the owner, Township and applicable utility company. Interruptions shall only occur after acceptable temporary service has been provided.
- The contractor shall restore any structure or areas disturbed during construction to their original condition or better if they are not indicated on the plans.
- The contractor shall verify all site conditions in the field and contact the site engineer if there are any questions or conflicts regarding the construction documents and/or field conditions.
- The contractor is responsible for ensuring all construction methods and procedures meet all regulatory requirements and developer requirements. The contractor is responsible for obtaining all necessary permits required by governmental agencies prior to construction. The contractor shall obtain all necessary permits from the municipality required to perform the work.
- The fire hydrants shown on this plan have been reviewed by the township Fire Marshal. Veolia Water will provide a water main design after the plan is approved by the township. All hydrants must be within 600 feet of structures and have the Storz adapter, in accordance with Section 220-22 of the of the Codified Ordinances of Upper Allen Township.

**BEFORE YOU DIG ANYWHERE**

STOP! Call 1-800-242-1776 for more info.

PA Law requires 3 working days before you excavate.

PA One Call System, Inc. One Call Serial # \_\_\_\_\_

PENNSYLVANIA ACT 199 (2004) AS AMENDED REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE SURFACE ANYWHERE IN THE COMMONWEALTH.

COMPANY: PENNSYLVANIA AMERICAN WATER ADDRESS: 802 WESLEY DRIVE, MECHANICSBURG, PA, 17055 CONTACT: JERRY BOWMAN

COMPANY: FRONTIER COMMUNICATIONS CTS LLC ADDRESS: 100 CTE DR DALLAS, PA 15612 CONTACT: DAVID MORRIS

COMPANY: ELANTIC NETWORKS INC ADDRESS: 1450 E PARKWAY RD RICHMOND, VA 23228 CONTACT: CONI DUFF EMAIL: cduff@bevel.com

COMPANY: VEOLIA WATER ADDRESS: 317 NORTH MARKET STREET MECHANICSBURG, PA, 17055 CONTACT: KIM GENETTI EMAIL: Kim.Genetti@veolia-na.com

COMPANY: FIRSTENERGY CORP ADDRESS: 76 S MAIN ST AARON, OH, 443081890 CONTACT: OFFICE PERSONNEL

COMPANY: XO COMMUNICATIONS INC ADDRESS: C/O DE-TECH INC 120 N PEARL ST COVINGTON, LA 70427 CONTACT: ROBERT FREED E-MAIL: jessica.muireville@sprint.com

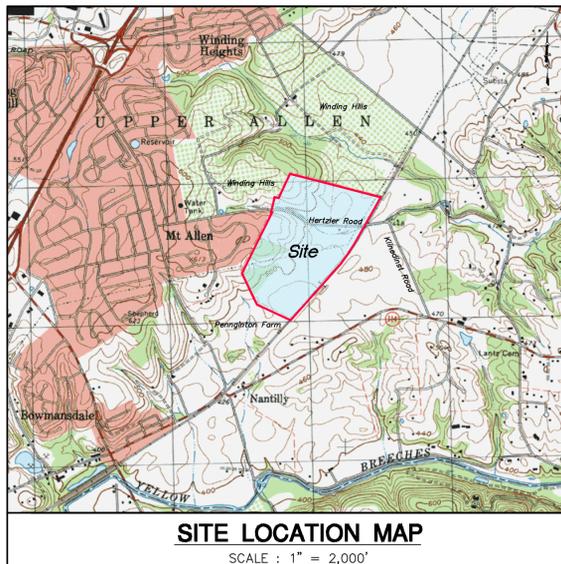
COMPANY: PPL ELECTRIC UTILITIES CORPORATION ADDRESS: 1801 BROOKWOOD ST HARRISBURG, PA, 171062222 CONTACT: JENNETTE ANDERSON EMAIL: jander@ppl.com

COMPANY: COMCAST CABLE COMMUNICATIONS INC ADDRESS: 4601 SMITH ST HARRISBURG, PA, 17109 CONTACT: CONSTRUCTION COORDINATOR

COMPANY: UPPER ALLEN TOWNSHIP OF ADDRESS: 100 BETTSBURG PIKE MECHANICSBURG, PA, 17050 CONTACT: KODI B. HOCHENBERRY EMAIL: khochenberry@utap.org

COMPANY: UGI UTILITIES INC ADDRESS: 1500 FAYTON ST HARRISBURG, PA, 17104 CONTACT: TOM WITT EMAIL: twitt@ugi.com

COMPANY: SPRINT COMMUNICATIONS CO LP ADDRESS: 8050 SPRINT PARKWAY MS. K03PH0012 OVERLAND PARK, KS, 66209100 CONTACT: JESSICA REVELLE EMAIL: jessica.muireville@sprint.com



Tax Parcels associated with this plan

Tax Parcel No. 42-11-0272-001
Tax Parcel No. 42-11-0274-028

The below waivers and deferrals as listed were granted with the February 15, 2012 tentative approval of the Autumn Chase PRD.

Section	Waiver Requirement	Date of Waiver Approval
225-15.9(5)	Curb-sacs to not exceed 800 feet and not serve more than 20 dwelling units.	February 15, 2012
Section	Modification Requirement	Date of Modification Approval
220-16.8	Allowed the residential block to have a length of 1,652 feet instead of the required maximum length of 1,000 feet.	February 15, 2012
220-15.B(1)(a) & 220-15.F(2)	To and the requirements of Section 220-15.F(2) and allow the applicant to provide widening along Hertzler Road to 24 feet with a full width 1 1/2 inch depth overlay pavement along the property frontage with the condition that the applicant also widen to 24 feet and provide full width 1 1/2 inch depth overlay pavement Hertzler Road from the development west to the property line of the Winding Hill PRD. A note shall be added on the plan stating that in the opinion of the Township Engineer, should field conditions indicate insufficient structural integrity in areas of existing pavement to receive overlay. Those areas shall receive full depth reconstruction (Section 220-15.G(1)).	February 15, 2012
220-16.A(3)	Permit slant curbing within development instead of vertical curbing.	February 15, 2012
220-16.B(4)	Sidewalks to be installed along one side of proposed streets (Road #1 Brittany Circle and Lot 05-9) only instead of both sides of the street.	February 15, 2012
220-16.B(3)	Provide a six foot wide walking trail on the south side of Hertzler Road in lieu of sidewalks. The trail shall be shown on the final plan extending from the western property boundary line with the existing Alleandale PRD to the Township Greenway property to the east.	February 15, 2012
220-16.A(2)	To permit Hertzler Road improvements in lieu of curbs, to include widening and overlay of off-site portions of the road west approximately 600 feet toward the improvements completed by the Winding Hills PRD and east approximately 400 feet toward the intersection of Hertzler Road and Klinedinst Rd. Improvements along the property frontage shall consist of widening of the cartway to twenty-four (24) feet approximately 1 1/2 inch wearing course overlay. A note shall be added on the plan stating that in the opinion of the Township Engineer, should field conditions indicate insufficient structural integrity in areas of existing pavement to receive overlay, those areas shall receive full depth reconstruction (Section 220-15.G(1)).	February 15, 2012

See below additional waivers requested with this Final Plan.

WAIVER SECTION	WAIVER REQUIREMENT	DATE OF WAIVER REQUEST	DATE OF WAIVER APPROVAL
220-9.C(2)(a)	Provide one foot contour interval	May 1, 2023	-
220-10.B(2)(b)	Provide street cross sections at 50' intervals	May 1, 2023	-

**MELLOTT ENGINEERING, INC.**  
 CIVIL ENGINEERING LAND PLANNING & DESIGN WATER RESOURCES  
 7500 DEVONSHIRE HEIGHTS ROAD - HUMMELSTOWN, PA 17036  
 mellotteng@comcast.net  
 (717)-566-6533

APPROVED BY THE BOARD OF COMMISSIONERS OF UPPER ALLEN TOWNSHIP, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

ATTEST: \_\_\_\_\_ SECRETARY \_\_\_\_\_ CHAIRMAN

APPROVED BY THE PLANNING COMMISSION OF UPPER ALLEN TOWNSHIP, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

ATTEST: \_\_\_\_\_ SECRETARY \_\_\_\_\_ CHAIRMAN

REVIEWED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, BY \_\_\_\_\_ MY COMMISSION EXPIRES \_\_\_\_\_ CUMBERLAND COUNTY PLANNING DEPARTMENT.

ATTEST: \_\_\_\_\_ DIRECTOR OF PLANNING

REVIEWED BY THE UPPER ALLEN TOWNSHIP ENGINEER  
 REVIEWED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

ENGINEER \_\_\_\_\_

I, Timothy L. Mellott, P.E., hereby certify that I am a Pennsylvania registered professional engineer and that all elements of the plan are in conformity with the Township Code and applicable state regulations, as required by Section 220-15.N(3) of the Codified Ordinances of Upper Allen Township.

I, Timothy L. Mellott, P.E., hereby certify the portions of this site are underlain by limestone bedrock based on geological maps, and upon a carbonate assessment report prepared by Pierre O. MacQoy, Geologist with CMX.

I, Rory Chapman, hereby certify that I am a registered Land Surveyor in compliance with the laws of the Commonwealth of Pennsylvania; that this plan correctly represents a survey originally completed by CDEG on April 2005 and reconfirmed by A to Z Land Surveyors in May 2022; that all monuments shown thereon actually exist; and that their location, size, type and material are accurately shown.

I, Timothy L. Mellott, P.E., on this date have reviewed and hereby certify that the SWM site plan meets all design standards and criteria of the Upper Allen Township Stormwater Management Ordinance.

**TIMOTHY L. MELLOTT**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 046627-E  
 State of Pennsylvania

Timothy L. Mellott, P.E.  
 Mellott Engineering, Inc.  
 7500 Devonshire Heights Road  
 Hummelstown, PA 17036  
 PH: 717-566-6533  
 FAX: 717-427-2700

SURVEYOR  
 Rory Chapman, P.L.S.

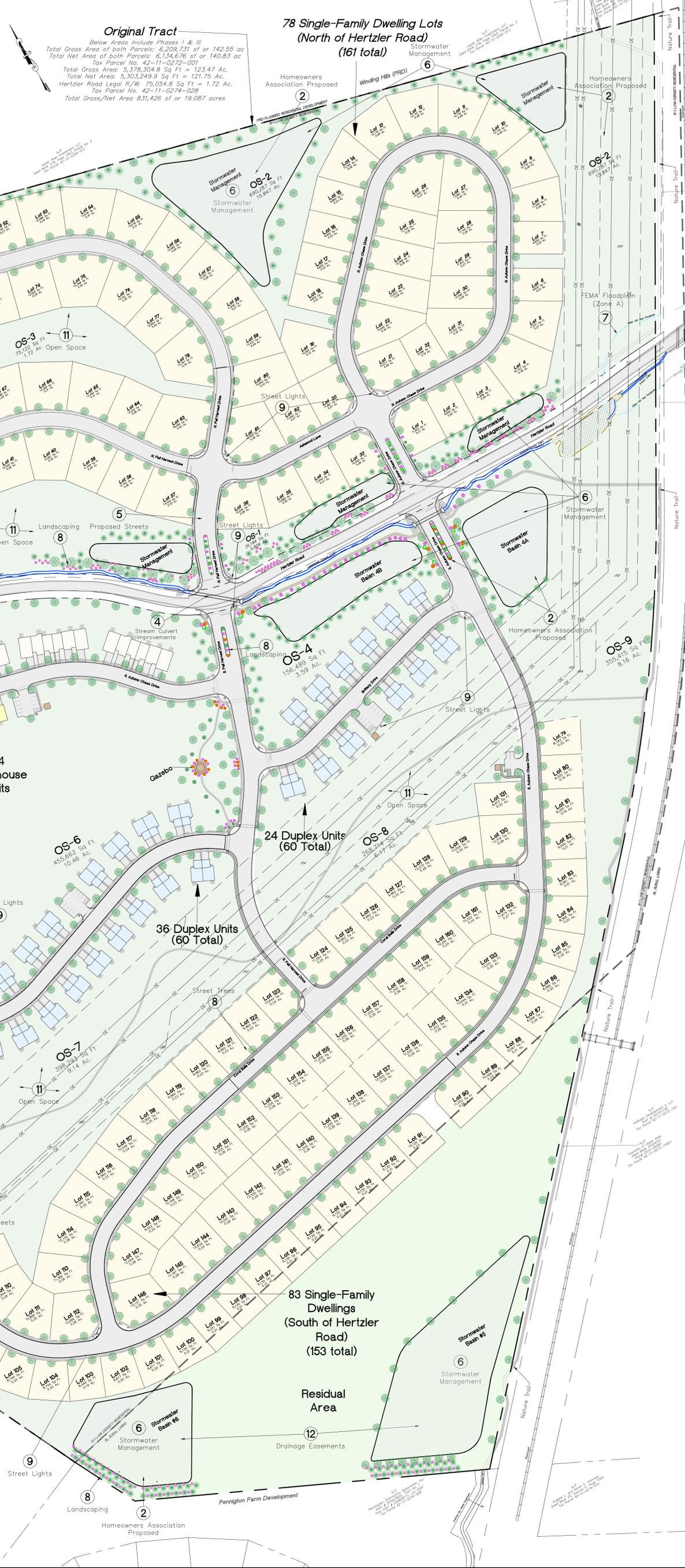
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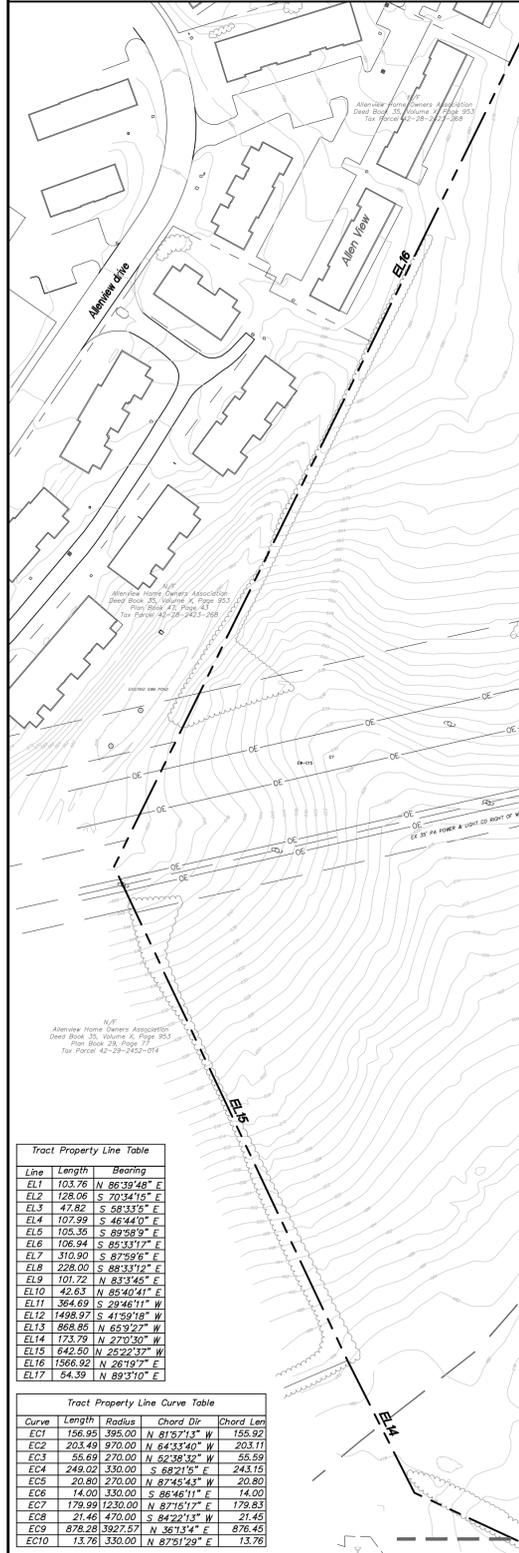
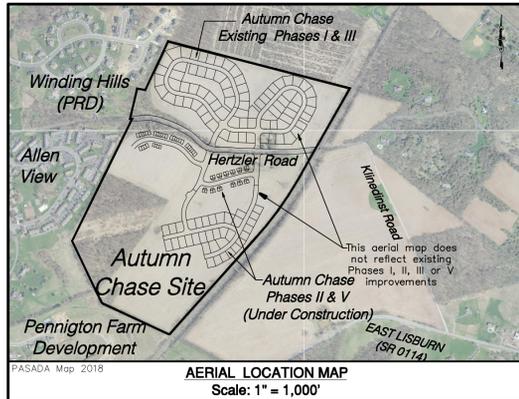
**MELLOTT ENGINEERING, INC.**  
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DATE:	May 1, 2023
SHEET	1 of 16

**INTENT OF PLAN**  
 The intent of this plan sheet is to provide a Master Development Plan for the overall Autumn Chase PRD. The Autumn Chase PRD was approved by the Upper Allen Township Board of Commissioners as per Written decision dated - May 8, 2012. The project shall be implemented in accordance with the Developer Agreement, dated April 26, 2012, between Hertzler Road Associates, L.P. and Upper Allen Township. See the below notes and plan references for general project information; see other plan sheets for detailed information pertaining to Phase IV.

- PLAN NOTES**  
 (See circled # on plan for note association)
- Autumn Chase is an approved Planned Residential Development consisting of a total of 295 residential units with the following uses (See Phasing Plan):
    - 161 Single-family dwelling lots (78 North and 83 south of Hertzler Road);
    - 60 Duplex Units;
    - 74 Townhouse Units;
    - Open Space Lots (>30% of gross tract)
  - A Homeowners Association is proposed with the development. The Home Owners Association Documents shall be reviewed by the Township in conjunction with this plan. The association shall be responsible for maintenance and upkeep of the following:
    - All Open Space Areas;
    - All on-site stormwater management facilities located outside of a public right-of-way including but not limited to: stormwater detention basins, water quality basins, infiltration facilities, piping, riprap aprons, swales, etc.;
    - All sidewalk located within Open Space areas and sidewalk within the public right-of-way that abuts open space areas;
    - Boulevard Landscape Islands (landscape and boulevard islands shall be maintained by the developer until such responsibility is transferred to the homeowners association established with the development. Upper Allen Township shall not be held responsible for damage to plantings within the islands for any reason, and the municipality may remove or trim the vegetation if necessary for public safety);
  - Hertzler Road shall be improved along the subject tract's entire length of road frontage and off site in accordance with the Developers Agreement.
  - DEP Permitting has been obtained for the stream impacts associated with the proposed Hertzler Road improvements. All work to be in accordance with the permit conditions.
  - All streets proposed with this project shall be constructed to township standards and shall be offered for dedication to the township upon completion of improvements. All proposed streets are classified as minor streets and shall be 34' wide curbed cartways (slant curb) with an associated 50' right-of-way except for the boulevard entrances which will be 20' cartways with a 10' landscaped boulevard island with an associated 66' right-of-way. All Landscape Boulevard Islands shall be maintained by the homeowners association.
  - Stormwater Best Management Practices were incorporated into the site design to manage stormwater runoff discharge rates, enhance water quality and promote groundwater recharge to the extent practical; see Post Construction Stormwater Management Plan.
  - There is a FEMA delineated floodplain located on the property. The floodplain is located along the eastern property line where Hertzler Road and the existing unnamed stream pass under the railroad bridge. The floodplain is depicted per scan overlay of Flood Insurance Rate Map (Community-Panel Number 42041C0287E, Zone A, dated March 16, 2009). The current study is in Zone A - detailed study area with no base flood elevation information.
  - Landscaping is proposed throughout the development to enhance the community and to provide other desired functions, such as:
    - Tree buffer proposed along Hertzler Road frontage to provide for a visual vegetative buffer between Hertzler Road and units proposed in the development (trees under the PPL right-of-way to be in accordance with PPL requirements);
    - Tree plantings proposed along the existing stream (parallels Hertzler Road) to provide a vegetated riparian buffer along the stream;
    - Tree plantings and landscaping proposed around some of the wind energy facilities (plantings provide shade to cool runoff);
    - Tree plantings and landscaping other than street trees shall be selected in accordance with Upper Allen Township Ordinance Section 220-26.B(2).
    - Boulevard islands shall be landscaped to provide for shading and overall aesthetic enhancement to the community;
    - Street trees shall be planted along both sides of all proposed streets at a rate of two (2) trees per every 100'; all proposed street trees shall be selected and installed in accordance with Upper Allen Township Ordinance Section 220-26.D(7)
    - Should a phased final plan propose fewer trees and/or shrubs than Ordinance requirements, the additional trees required to meet Ordinance requirements should be planted in the open space areas and/or adjacent to or along the Greenway Trail as directed by the Township.
  - Street lighting is proposed throughout the development as shown on this plan. Street lights are proposed at all street intersections and at other locations depicted on the plan. In addition to the street lights, each single family detached dwelling lot shall install an outside electric dusk to dawn yard light. Each individual home owner shall be responsible for maintenance of their own yard light although the Home Owners Association shall be responsible for maintenance of the street lights; developer is responsible for street light maintenance until the HOA is formed.
  - A six foot wide off-street trail shall be constructed along the frontage of Hertzler Road as shown on this plan. Timing of the trail installation shall be installed in accordance with the Developer Agreement, dated April 26, 2012, between Hertzler Road Associates, L.P. and Upper Allen Township.
  - Open Space is provided throughout the development (>30% of gross tract area). Total area of Open Space Lots 1-9 is 65,457 acres.
  - In accordance with the Developer Agreement, the Residual Area is not a part of and shall not be subject to the terms of the Autumn Chase PRD. A stormwater easement is hereby established over the residual area, in a location, size and designation to be established with each applicable Phase, for the purposes of conveying and managing stormwater flows from the Autumn Chase PRD to the Southern Basins. The easements shall in no way restrict future use of the Residual Area.





**Tract Property Line Table**

Line	Length	Bearing
EL1	103.76	N 86°39'48" E
EL2	128.06	S 70°34'15" E
EL3	43.82	S 58°33'15" E
EL4	107.99	S 46°44'0" E
EL5	105.30	S 89°58'9" E
EL6	106.94	S 85°33'17" E
EL7	310.90	S 82°59'21" E
EL8	228.00	S 88°33'12" E
EL9	101.72	N 83°34'5" E
EL10	42.63	N 85°40'41" E
EL11	394.69	S 28°46'11" W
EL12	1498.97	S 41°59'18" W
EL13	868.85	N 65°9'27" W
EL14	173.79	N 27°30" W
EL15	842.20	N 24°22'37" W
EL16	1566.92	N 26°19'7" E
EL17	54.39	N 89°3'10" E

**Tract Property Line Curve Table**

Curve	Length	Radius	Chord Dis	Chord Len
EC1	156.95	395.00	N 81°9'23" W	155.92
EC2	203.49	970.00	N 64°33'40" W	203.11
EC3	55.69	270.00	N 52°38'32" W	55.59
EC4	249.02	350.00	S 68°21'5" E	243.15
EC5	20.80	270.00	N 87°45'43" W	20.80
EC6	14.00	350.00	S 86°46'11" E	14.00
EC7	179.99	1230.00	N 87°16'17" E	179.83
EC8	21.46	470.00	S 84°22'13" W	21.45
EC9	878.28	3927.57	N 36°19'24" E	876.45
EC10	13.76	350.00	N 87°51'22" E	13.76

- EXISTING FEATURES PLAN NOTES**
- Overall original subject tract consisted of two (2) parcels of Land; both tracts are owned by Hertzler Road Associates, LP  
 Total Gross Area of both Parcels: 6,209,731 sf or 142.55 ac  
 Total Net Area of both Parcels: 6,134,676 sf or 140.83 ac  
 Phase I & III Residual Tract Area: 4,010,285 sf or 92.063 Ac (south side of Hertzler Road)  
 Residual Tract Area after Phases II & V: 2,961,711 Sq Ft or 67.99 Ac.  
 Tax Parcel No. 42-11-0272-001
  - Subject Tract is located in the R-1 (Low Density Residential District) and RL (Rural Living) R-1 (Low Density Residential): 5,565,535 sf or 127.77 ac  
 RL (Rural Living): 644,196 sf or 14.79 ac
  - There is an unnamed stream tributary to the Yellow Breeches Creek (CWF) that parallels Hertzler Road through the site. There is a 0.25 acre wetland pocket located along the south side of Hertzler Road towards the eastern side of the site (no wetland impacts proposed). There are no significant rock outcrops or contaminated soils known to exist on the site. There are two (2) sink holes located along the southern property line on the south side of Hertzler Road; the sinkholes are proposed to be repaired with the applicable future phase of construction.
  - There is a FEMA delineated floodplain located on the property. The floodplain is located along the eastern property line where Hertzler Road and the existing unnamed stream pass under the railroad bridge. The floodplain is depicted per scan overlay of Flood Insurance Rate Map (Community-Panel Number 42041C0287E, Zone A, dated March 16, 2009). The current study is a Zone A non-detailed study area with no base flood elevation information.
  - This plan depicts street right of way, Open Space Lots OS-4 & 8 and site infrastructure as shown on the previously approved Phases II & V Final Plans; site construction is ongoing.

DATE: \_\_\_\_\_

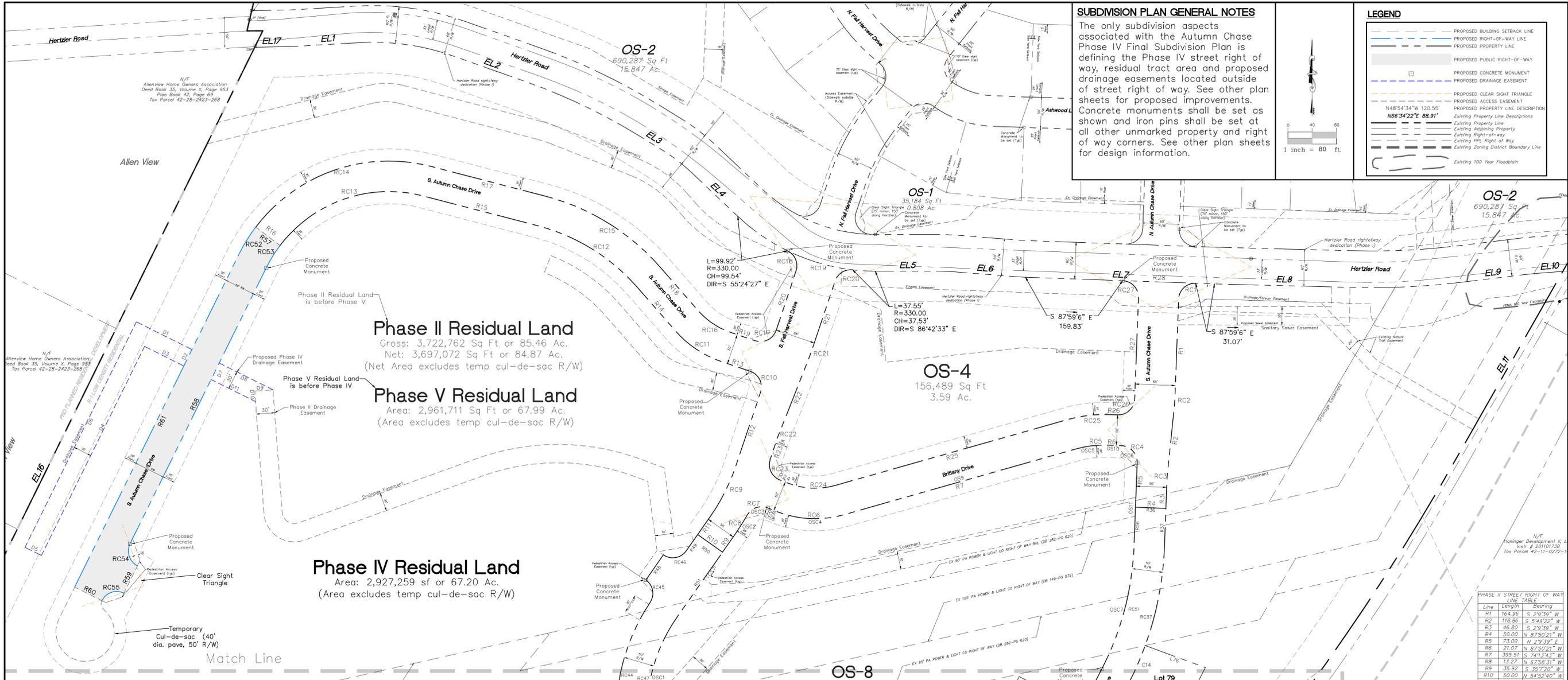
REVISIONS: \_\_\_\_\_

1 2 3 4 5 6 7 8 9

**MELLOTT ENGINEERING, INC.**  
 Civil Engineering - Land Planning & Development - Water Resources  
 7500 Devonshire Heights Road, Myerstown, PA 17036  
 melotteng@comcast.net  
 717-566-6533

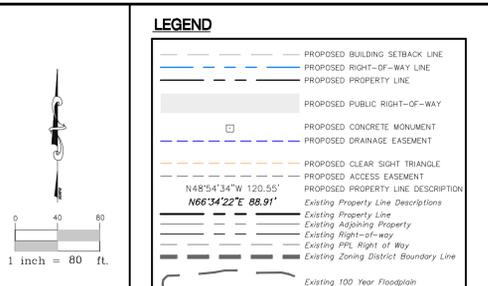
**EXISTING RESOURCES AND SITE ANALYSIS PLAN**  
 FOR  
**AUTUMN CHASE PRD - PHASE IV**  
 Land Developer: Hertzler Road Associates, L.P.  
 UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

Project No. 202313  
 Date May 1, 2023  
 Sheet No. 3 of 16



**SUBDIVISION PLAN GENERAL NOTES**

The only subdivision aspects associated with the Autumn Chase Phase IV Final Subdivision Plan is defining the Phase IV street right of way, residual tract area and proposed drainage easements located outside of street right of way. See other plan sheets for proposed improvements. Concrete monuments shall be set as shown and iron pins shall be set at all other unmarked property and right of way corners. See other plan sheets for design information.



**Phase II Residual Land**  
 Gross: 3,722,762 Sq Ft or 85.46 Ac.  
 Net: 3,697,072 Sq Ft or 84.87 Ac.  
 (Net Area excludes temp cul-de-sac R/W)

**Phase V Residual Land**  
 Area: 2,961,711 Sq Ft or 67.99 Ac.  
 (Area excludes temp cul-de-sac R/W)

**Phase IV Residual Land**  
 Area: 2,927,259 sf or 67.20 Ac.  
 (Area excludes temp cul-de-sac R/W)

**SUBDIVISION DESCRIPTIONS NOTES**

The only subdivision aspects associated with the Autumn Chase Phase IV Final Subdivision Plan is defining the Phase IV street right of way, residual tract area and proposed drainage easements located outside of street right of way. The other labels and descriptions provided on this plan are associated with previous Phases 2 & 5.

**PHASE IV STREET RIGHT OF WAY LINE TABLE**

Line	Length	Bearing
R57	50.00	S 52°37'3" E
R58	503.69	S 26°21'38" W
R59	50.00	S 26°21'38" W
R60	50.00	N 63°38'22" W
R61	607.69	N 26°21'38" E

**PHASE IV STREET RIGHT OF WAY CURVE TABLE**

Curve	Length	Radius	Chord Dir	Chord Len
RC52	52.90	275.00	S 31°52'17" W	52.82
RC53	43.28	225.00	S 31°52'17" W	43.22
RC54	42.41	27.00	S 18°38'22" E	38.18
RC55	42.41	27.00	S 71°21'38" W	38.18

**PHASE IV DRAINAGE EASEMENTS LINE TABLE**

Line	Length	Bearing
D1	102.00	S 63°38'22" E
D2	30.00	S 63°38'22" E
D3	72.00	N 63°38'22" W
D4	382.00	S 26°21'38" W
D5	30.00	S 63°38'22" E
D6	412.00	N 26°21'38" E
D7	30.00	N 26°21'38" E
D8	98.54	S 63°38'22" E
D9	30.00	S 63°38'22" E
D10	17.07	S 4°20'51" E
D11	81.46	N 63°38'22" W

**PHASE V DRAINAGE EASEMENTS LINE TABLE**

Line	Length	Bearing
D12	285.00	N 59°14'29" E
D13	125.00	S 84°40'51" E
D14	140.00	S 51°43'4" E
D15	283.59	S 30°10'3" W
D16	163.44	N 63°38'22" W
D17	203.90	N 26°46'3" W

**PHASE V PROPERTY CURVE TABLE**

Curve	Length	Radius	Chord Dir	Chord Len
C1	105.10	175.00	N 85°27'44" W	103.53
C2	43.67	27.00	N 67°14'48" W	39.06
C3	114.53	475.00	N 36°58'48" E	114.25
C4	17.28	175.00	N 65°29'40" W	17.28
C5	136.99	475.00	N 67°47'25" E	136.51
C6	122.27	475.00	N 67°47'25" E	121.93
C7	18.02	475.00	N 26°14'45" E	18.02
C8	83.48	225.00	N 76°36'17" W	83.00
C9	42.41	27.00	N 22°55'21" E	38.18
C10	14.57	225.00	N 62°27'14" W	14.57
C11	42.41	27.00	N 32°19'57" E	38.18
C12	42.41	27.00	S 67°40'1" E	38.18
C13	59.30	225.00	N 23°44'17" E	59.15
C14	67.14	525.00	N 28°54'28" E	67.09
C15	27.59	525.00	N 28°54'28" E	27.59
C16	79.23	525.00	N 34°44'9" E	79.15
C17	79.23	525.00	N 34°44'9" E	79.15
C18	79.23	525.00	N 34°44'9" E	79.15
C19	79.23	525.00	N 60°40'30" E	79.15
C20	79.23	525.00	N 69°19'17" E	79.15
C21	33.79	525.00	N 79°29'15" E	33.79

**PHASE V PROPERTY CURVE TABLE**

Line	Length	Bearing
L1	135.00	S 12°40'3" E
L2	83.00	S 77°19'57" W
L3	135.00	N 12°40'3" W
L4	83.00	N 77°19'57" E
L5	135.00	S 12°40'3" E
L6	83.00	N 77°19'57" W
L7	83.00	N 77°19'57" E
L8	135.00	N 12°40'3" W
L9	83.00	N 77°19'57" W
L10	83.00	N 77°19'57" E
L11	135.00	S 12°40'3" E
L12	83.00	S 77°19'57" W
L13	83.00	N 77°19'57" E
L14	135.00	S 12°40'3" E
L15	83.00	N 77°19'57" W
L16	83.00	N 77°19'57" E
L17	135.00	S 12°40'3" E
L18	83.00	N 77°19'57" W
L19	83.00	N 77°19'57" E
L20	127.98	S 12°40'3" E
L21	73.34	S 71°50'24" W
L22	10.00	S 77°19'57" W
L23	83.00	N 77°19'57" E
L24	120.00	S 12°40'3" E
L25	83.38	S 71°50'24" W
L26	83.00	N 77°19'57" W
L27	119.98	S 77°19'57" E
L28	48.32	S 88°17'63" W
L29	15.40	N 77°19'57" E
L30	73.50	N 46°48" W
L31	57.95	N 77°19'57" E
L32	127.95	N 59°35'22" W
L33	73.34	N 71°50'24" E
L34	134.66	N 12°40'3" W

**PHASE V PROPERTY CURVE TABLE**

Line	Length	Bearing
L35	83.38	N 71°50'24" E
L36	64.99	S 77°19'57" W
L37	135.00	N 12°40'3" W
L38	83.00	N 77°19'57" E
L39	120.72	S 23°41'26" W
L40	132.34	N 22°59" E
L41	130.18	S 71°54'27" E
L42	83.00	S 77°19'57" W
L43	58.44	N 62°35'55" W
L44	107.81	S 62°35'55" E
L45	83.00	S 77°19'57" W
L46	80.32	S 22°16'5" W
L47	115.00	S 62°35'55" E
L48	93.00	S 12°40'3" E
L49	83.00	S 77°19'57" W
L50	120.00	N 12°40'3" W
L51	90.00	N 77°19'57" E
L52	120.00	S 12°40'3" E
L53	86.00	S 77°19'57" W
L54	93.00	N 12°40'3" W
L55	93.00	N 77°19'57" E
L56	120.00	S 12°40'3" E
L57	83.00	S 77°19'57" W
L58	83.00	S 77°19'57" E
L59	120.00	S 12°40'3" E
L60	83.00	S 77°19'57" W
L61	83.00	S 77°19'57" E
L62	120.00	S 12°40'3" E
L63	83.00	N 77°19'57" W
L64	83.00	N 77°19'57" E
L65	111.32	N 62°31'7" E
L66	117.11	N 77°19'57" E
L67	120.00	S 12°40'3" E
L68	83.00	N 77°19'57" W

**PHASE V PROPERTY CURVE TABLE**

Line	Length	Bearing
L69	120.00	N 12°40'3" W
L70	83.00	N 77°19'57" E
L71	83.00	S 77°19'57" W
L72	83.00	N 77°19'57" E
L73	93.29	S 27°24'5" W
L74	100.00	N 62°35'55" W
L75	129.3	N 27°24'5" E
L76	108.15	S 69°51'12" E
L77	83.00	S 27°24'5" W
L78	100.00	N 62°35'55" W
L79	83.00	N 27°24'5" E
L80	83.00	S 27°24'5" W
L81	100.00	N 62°35'55" W
L82	83.00	N 27°24'5" E
L83	90.00	S 27°24'5" W
L84	100.00	N 62°35'55" W
L85	90.00	N 27°24'5" E
L86	93.53	S 27°55'48" W
L87	100.00	N 59°35'15" E
L88	60.70	N 27°24'5" E
L89	94.23	S 34°44'8" W
L90	100.00	N 50°56'28" W
L91	94.23	S 43°22'55" W
L92	100.00	S 27°24'5" W
L93	94.23	S 52°14'8" W
L94	100.00	N 33°38'54" W
L95	94.23	S 69°40'30" W
L96	100.00	N 20°59'6" W
L97	95.75	S 62°33'9" W
L98	111.32	N 62°31'7" E
L99	94.23	S 77°19'57" W
L100	110.00	N 12°40'3" W
L101	54.04	N 77°19'57" E

**PHASE V PROPERTY CURVE TABLE**

Curve	Length	Radius	Chord Dir	Chord Len
C1	105.10	175.00	N 85°27'44" W	103.53
C2	43.67	27.00	N 67°14'48" W	39.06
C3	114.53	475.00	N 36°58'48" E	114.25
C4	17.28	175.00	N 65°29'40" W	17.28
C5	136.99	475.00	N 67°47'25" E	136.51
C6	122.27	475.00	N 67°47'25" E	121.93
C7	18.02	475.00	N 26°14'45" E	18.02
C8	83.48	225.00	N 76°36'17" W	83.00
C9	42.41	27.00	N 22°55'21" E	38.18
C10	14.57	225.00	N 62°27'14" W	14.57
C11	42.41	27.00	N 32°19'57" E	38.18
C12	42.41	27.00	S 67°40'1" E	38.18
C13	59.30	225.00	N 23°44'17" E	59.15
C14	67.14	525.00	N 28°54'28" E	67.09
C15	27.59	525.00	N 28°54'28" E	27.59
C16	79.23	525.00	N 34°44'9" E	79.15
C17	79.23	525.00	N 34°44'9" E	79.15
C18	79.23	525.00	N 34°44'9" E	79.15
C19	79.23	525.00	N 60°40'30" E	79.15
C20	79.23	525.00	N 69°19'17" E	79.15
C21	33.79	525.00	N 79°29'15" E	33.79

**PHASE V STREET RIGHT OF WAY CURVE TABLE**

Curve	Length	Radius	Chord Dir	Chord Len
RC1	42.34	27.00	S 47°51'7" W	38.14
RC2	6.90	108.00	N 35°31' E	6.90
RC3	5.88	92.00	S 33°59'31" W	5.88
RC4	42.41	27.00	N 42°52'21" W	38.18
RC5	54.77	175.00	S 83°11'41" W	54.55
RC6	115.44	175.00	S 86°52'24" E	113.36
RC7	38.91	27.00	S 70°44'27" W	35.63
RC8	37.08	375.00	N 52°24'24" E	37.06
RC9	93.73	325.00	N 26°51'35" E	93.41
RC10	42.41	27.00	N 26°24'9" W	38.18
RC11	92.01	175.00	S 56°20'26" E	90.95
RC12	183.81	325.00	N 58°22'24" W	181.03
RC13	263.70	225.00	S 70°57'26" W	248.86
RC14	322.30	275.00	N 50°57'26" W	304.16
RC15	223.77	375.00	N 58°22'24" W	220.46
RC16	65.72	125.00	S 86°52'24" E	64.93
RC17	42.41	27.00	N 63°35'51" E	38.18
RC18	38.96	27.00	N 22°44'31" W	35.67
RC19	111.55	330.00	S 74°49'55" E	110.02
RC20	36.31	27.00	N 52°24'24" W	33.93
RC21	5.75	108.00	N 20°7'26" E	5.75
RC22	4.87	92.00	S 20°7'59" W	4.87
RC23	40.80	27.00	S 24°42'20" E	37.02
RC24	42.41	27.00	N 52°24'24" E	443.18
RC25	391.80	475.00	N 53°42'8" E	380.79
RC26	122.38	175.00	N 82°37'59" W	119.91
RC27	42.41	27.00	N 32°19'57" E	38.18
RC28	42.41	27.00	N 47°39'3" E	38.18
RC29	241.88	27.00	N 42°54'43" W	38.23
RC30	241.88	50.00	N 102°7'22" W	37.80
RC31	9.89	27.00	N 80°7'07" E	38.18
RC32	10.20	27.00	S 85°19'11" W	10.20
RC33	2.33	225.00	S 37°55'6" W	2.23
RC34	10.55	10.00	S 63°52'1" E	10.00
RC35	251.54	50.00	S 59°37'44" E	58.60
RC36	8.61	10.00	N 59°56'3" E	8.39

**PHASE V STREET RIGHT OF WAY CURVE TABLE**

Curve	Length	Radius	Chord Dir	Chord Len
RC37	231.28	525.00	N 14°46'52" E	229.41
RC38	457.52	525.00	N 52°22'1" E	443.18
RC39	391.80	475.00	N 53°42'8" E	380.79
RC40	42.41	27.00	N 16°14'17" W	39.06
RC41	43.67	27.00	N 67°14'48" W	39.06
RC42	42.41	27.00	N 32°19'	

**Phase IV Residual Land**  
 Area: 2,927,259 sf or 67.20 Ac.  
 (Area excludes temp cul-de-sac R/W)

**Phase V Residual Land**  
 Area: 2,961,711 Sq Ft or 67.99 Ac.  
 (Area excludes temp cul-de-sac R/W)

**Phase II Residual Land**  
 Gross: 3,722,762 Sq Ft or 85.46 Ac.  
 Net: 3,697,072 Sq Ft or 84.87 Ac.  
 (Net Area excludes temp cul-de-sac R/W)

**OS-8**  
 268,714 Sq Ft  
 6.17 Ac.

N/F  
 Alienview Home Owners Association  
 Deed Book 35, Volume X, Page 953  
 Plan Book 47, Page 4  
 Tax Parcel 42-28-2433-268

N/F  
 Alienview Home Owners Association  
 Deed Book 35, Volume X, Page 953  
 Plan Book 29, Page 77  
 Tax Parcel 42-29-2452-014

**PHASE V STORMWATER DRAINAGE**

Line	Length	Bearing
D1	100.15	N 66°58'25" W
D2	30.09	N 72°24'51" E
D3	130.54	S 66°58'25" E
D4	168.37	S 27°55'48" W
D5	140.27	S 43°22'55" W
D6	170.57	S 41°59'25" W
D7	40.03	S 32°44'14" W
D8	1028.25	S 41°59'18" W
D9	296.36	N 65°9'27" W
D10	334.02	N 45°19'21" E
D11	380.10	N 77°19'57" E
D12	105.56	N 50°28'15" E
D13	127.82	N 41°59'38" E
D14	145.11	N 72°40'31" W
D15	105.46	S 84°21'50" W
D16	22.81	S 84°21'50" W
D17	136.81	N 12°38'31" W
D18	30.64	N 33°27' E
D19	127.93	N 12°40'31" W
D20	410.43	S 77°19'57" W
D21	30.01	N 71°19'32" W
D22	409.57	N 77°19'57" W
D23	120.00	N 12°40'31" W
D24	30.00	N 77°19'57" W
D25	120.00	S 12°40'31" E
D26	160.28	N 77°19'57" W
D27	156.00	N 71°50'24" E
D28	30.00	S 18°36" E
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D52	30.19	S 37°20" W
D53	7.02	S 88°48'52" W
D54	26.32	N 54°52'40" W
D55	30.00	N 37°20" E
D56	49.57	N 74°12" E
D57	11.71	S 78°56'18" E
D58	21.49	S 74°12" E
D59	29.17	N 73°56'45" E
D60	14.99	S 16°23'15" E
D61	19.99	S 35°27'20" W
D62	50.00	S 52°24" W
D63	12.78	N 54°52'40" W
D64	50.00	N 37°20" E

**PHASE IV DRAINAGE EASEMENTS LINE TABLE**

Line	Length	Bearing
D1	102.00	S 63°38'22" E
D2	30.00	S 26°21'38" W
D3	72.00	S 63°38'22" W
D4	382.00	S 26°21'38" W
D5	30.00	N 83°38'22" W
D6	412.00	N 26°21'38" E
D7	30.00	N 26°21'38" E
D8	98.54	S 63°38'22" E
D9	30.00	S 88°39'19" W
D10	17.07	S 47°05'1" E
D11	81.46	N 63°38'22" W
D12	285.00	N 59°14'29" E
D13	125.00	S 84°40'16" E
D14	140.00	S 61°34'34" E
D15	283.59	S 30°31'0" W
D16	163.44	N 69°27" W
D17	203.90	N 26°46'3" W

**PHASE V STORMWATER DRAINAGE EASEMENT CURVE TABLE**

Curve	Length	Radius	Chord	Chord Len
DC1	30.01	275.00	S 23°59' W	30.00
DC2	30.01	325.00	S 30°45'21" W	30.00
DC3	42.41	27.00	N 80°72'0" E	38.18

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DC3	42.41	27.00	N 80°72'0" E	38.18

**PHASE V STORMWATER DRAINAGE**

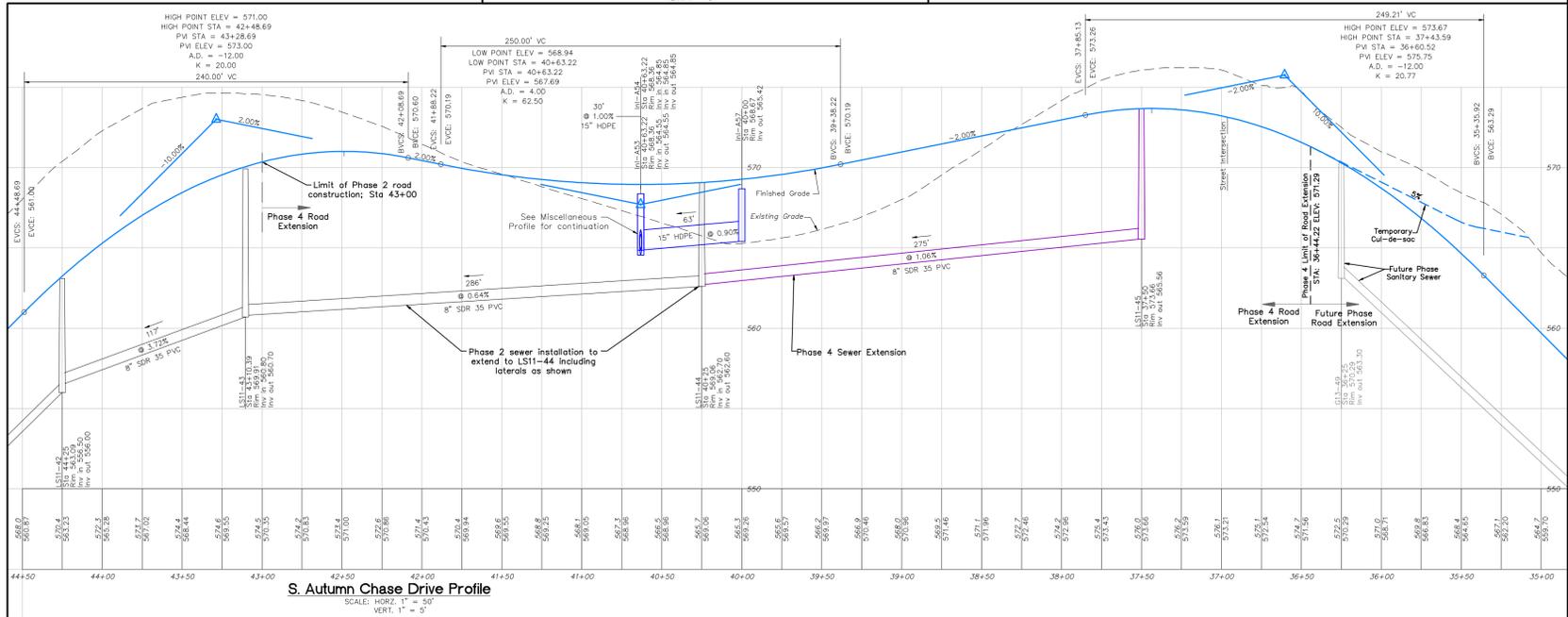
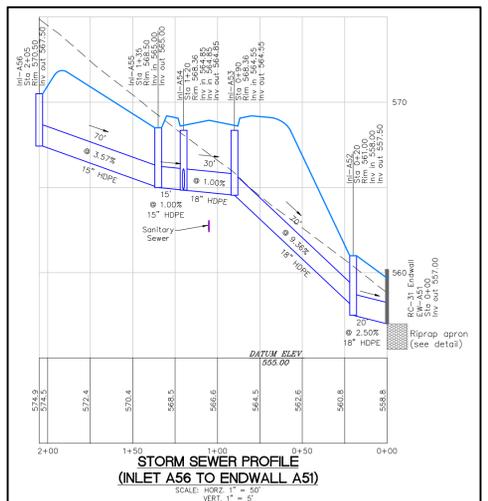
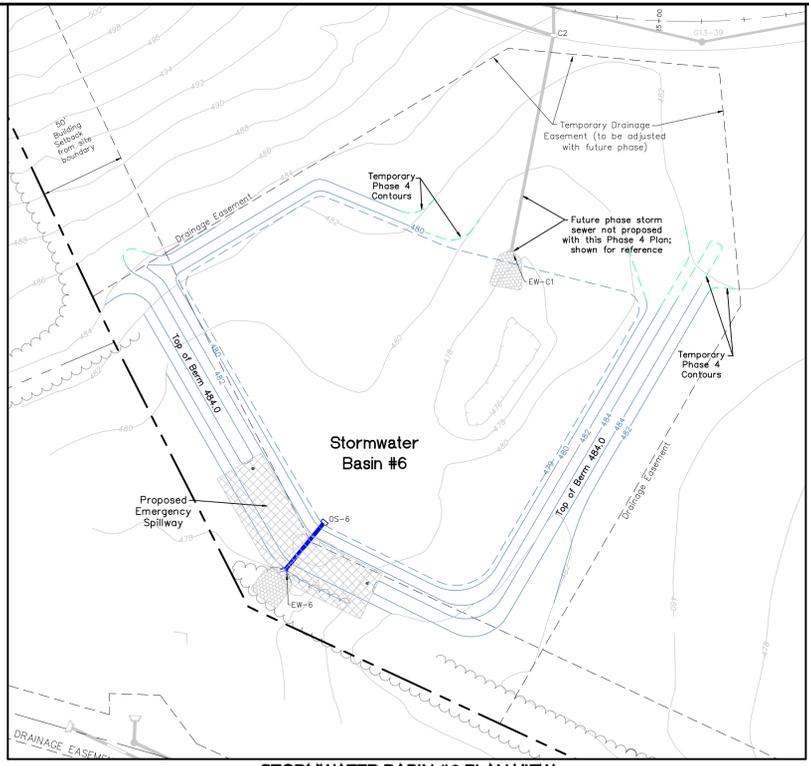
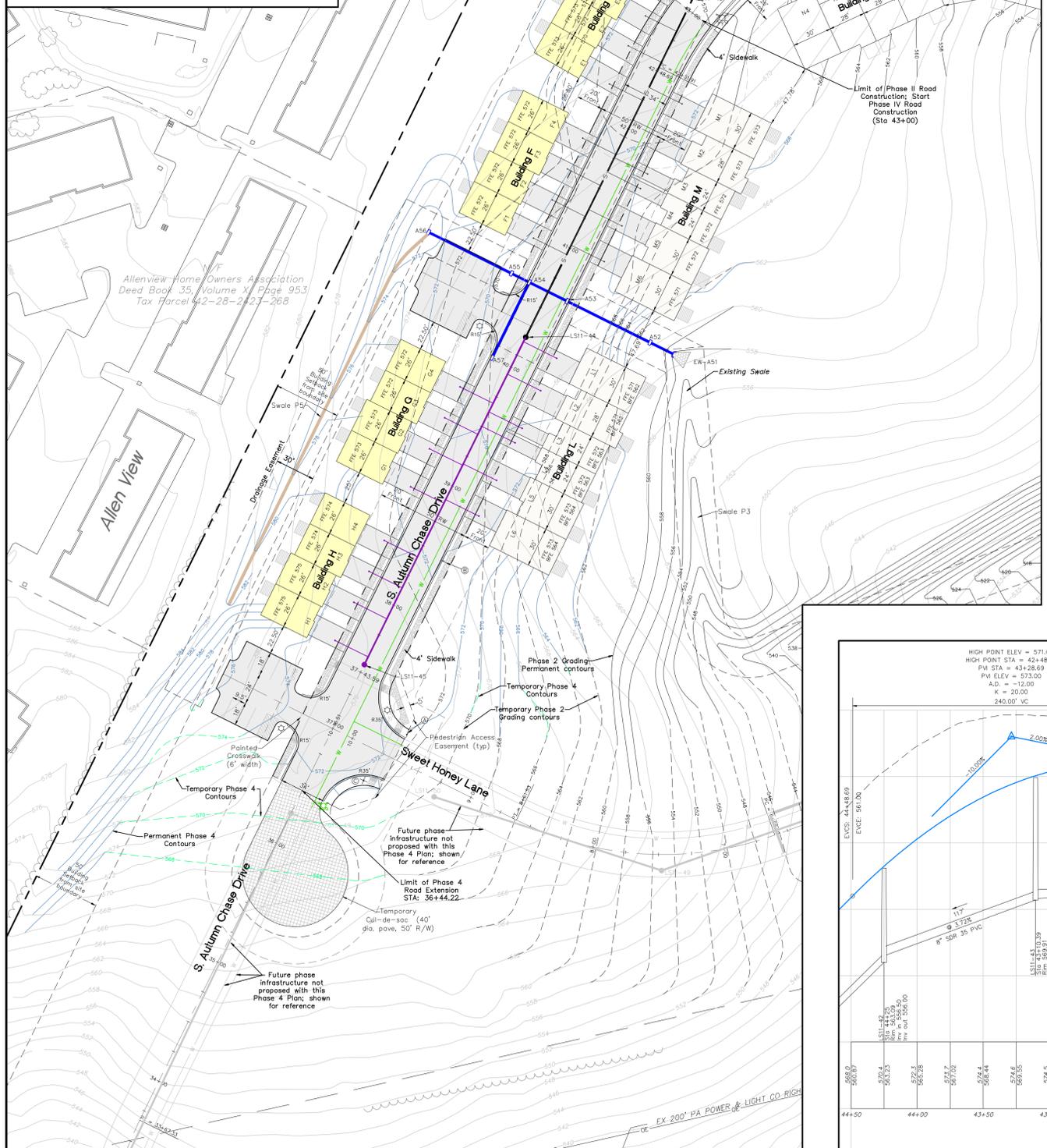
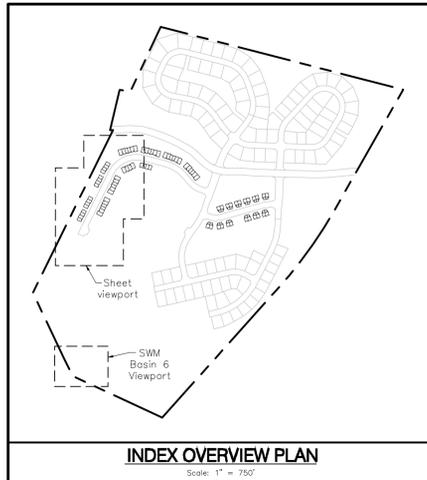
Line	Length	Bearing
D1	100.15	N 66°58'25" W
D2	30.09	N 72°24'51" E
D3	130.54	S 66°58'25" E
D4	168.37	S 27°55'48" W
D5	140.27	S 43°22'55" W
D6	170.57	S 41°59'25" W
D7	40.03	S 32°44'14" W
D8	1028.25	S 41°59'18" W
D9	296.36	N 65°9'27" W
D10	334.02	N 45°19'21" E
D11	380.10	N 77°19'57" E
D12	105.56	N 50°28'15" E
D13	127.82	N 41°59'38" E
D14	145.11	N 72°40'31" W
D15	105.46	S 84°21'50" W
D16	22.81	S 84°21'50" W
D17	136.81	N 12°38'31" W
D18	30.64	N 33°27' E
D19	127.93	N 12°40'31" W
D20	410.43	S 77°19'57" W
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D55	30.00	N 37°20" E
D56	49.57	N 7

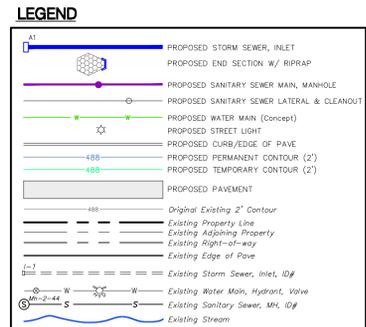


- GENERAL NOTES**
- Gravity public sanitary sewer service shall be provided to all proposed units. Sanitary Sewer Main installation associated with Phase IV construction consists of a sewer extension from existing manhole LS-44 (installed with Phase II) to manhole LS-45. All sewer construction to be in accordance with Township standards. See Cover sheet and Construction Detail sheets for additional Sanitary Sewer Notes and details.
  - Public water service shall be provided to the project via water main extension from the water main stub installed with Phase II construction. Veolia shall provide final water system design after conditional approval of this plan. All water system improvements shall be installed in accordance with Veolia requirements.
  - Electric and telecommunication utilities shall be provided and installed as per applicable local utility provider.
  - Stormwater Basin #6 shall be constructed with Phase IV construction (located along tracts southern property line). Basin #6 shall be initially constructed as a Sediment Basin; see Erosion Control Plan sheets. See Post Construction Stormwater Management Plans for stormwater management BMP detailing.
  - See Erosion Control Plans for temporary BMPs to be implemented during construction.
  - All streets proposed with this project shall be constructed to township standards and shall be offered for dedication to the township upon completion of improvements. All proposed streets are classified as minor streets and shall be 34' wide curbed cutways (slant curb) with an associated 50' right-of-way. Four foot wide concrete sidewalk shall be installed as shown.
  - All stormwater inlets located in the street shall be PennDOT Type "C" inlets with 8' hoods and all inlets in grass areas shall be Type "M" inlet; see curb to inlet transition detail for transition from slant curb to Type C inlet.
  - Curb ramps shall be installed where sidewalk meets with a street/curbline. Curb Ramps shall be installed in accordance with current Commonwealth of Pennsylvania Department of Transportation Standards for Roadway Construction Publication 72M requirements. The curb ramps shall be installed in accordance with RC-67M Alternative Type 4A Curb Ramp (Perpendicular) dated February 19, 2021. Painted Crosswalks shall be installed at each ramp/road crossing in accordance with Publication 111 TC-8600 requirements (6' crosswalk width centered on crossing, 6" white lines). Stop sign and stop bar shall be installed 4' away from the crosswalks where applicable.

**SIGN LEGEND**

NO.	DOT NO.	LEGEND	QTY.
A	R1-2	YIELD	1
B	R2-1	SPEED LIMIT 25	1
C	No Ref.	STREET NAME	2 1 Post

- Note:
- Signs shall be installed at locations shown on the plan unless alternative locations are approved by the township.
  - Stop sign and street name sign installation can be deferred until future phase construction of Sweet Honey Lane; shown for reference.



DATE: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

**MELLOTT ENGINEERING, INC.**  
Civil Engineering, Land Planning & Development + Water Resources  
7500 Devonshire Heights Road, Harrisburg, PA 17036  
mellottengr@aol.com  
717-566-6533

**FOR**  
**AUTUMN CHASE PRD - PHASE IV**  
Land Developer: Hertzler Road Associates, L.P.  
UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

**GRADING AND UTILITY PLAN**

Project No. 202313  
Date May 1, 2023

Sheet No. 6 of 21

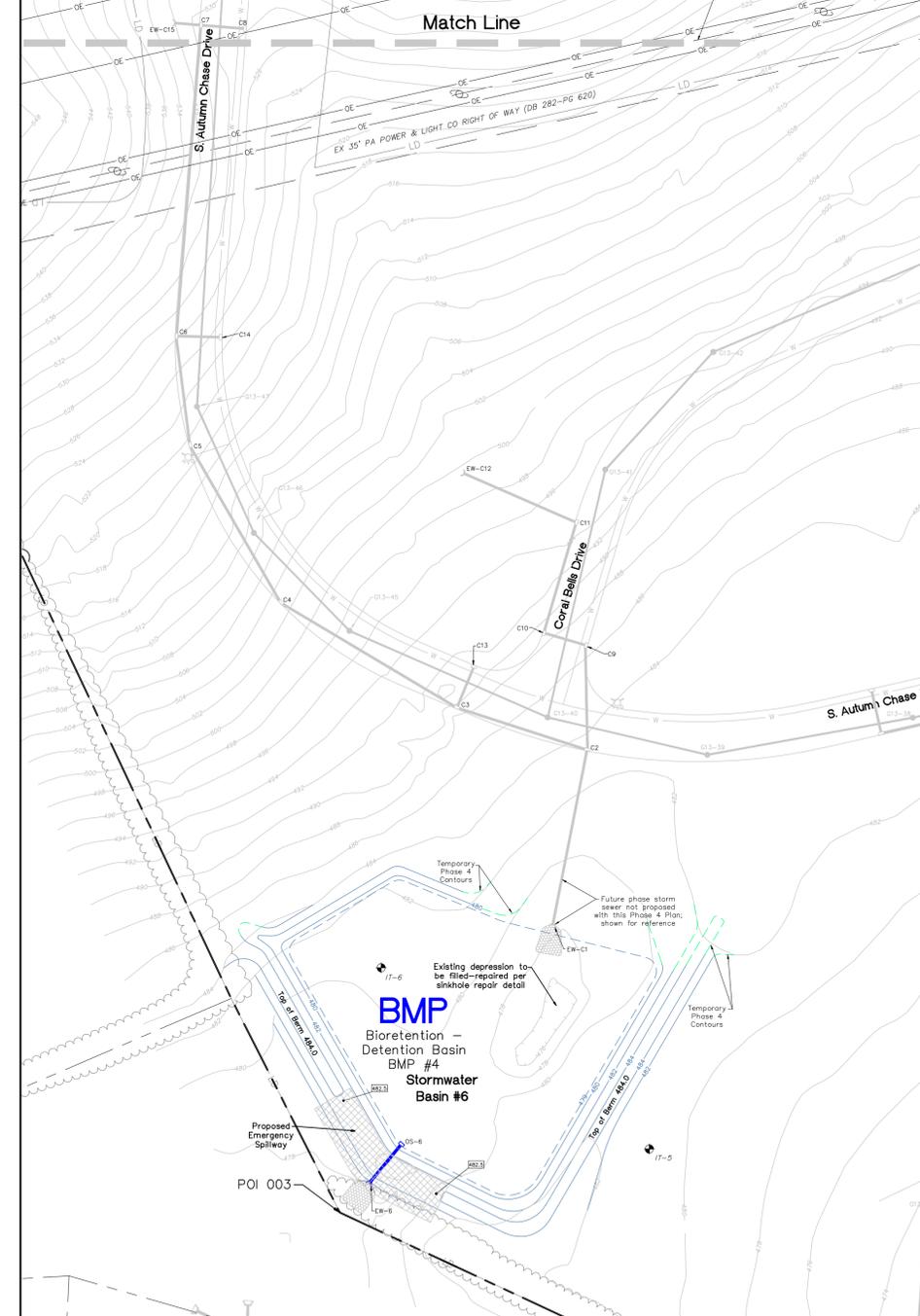
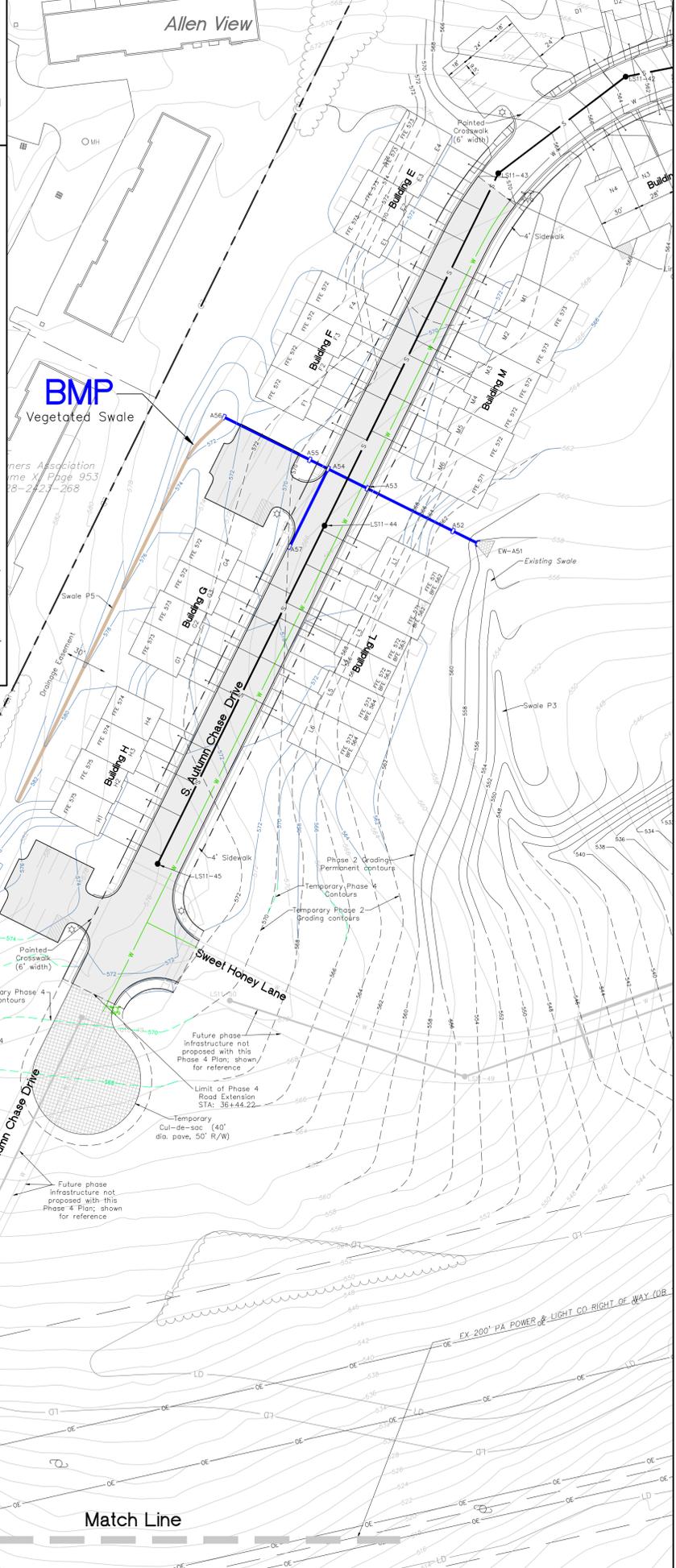
**PCSM PLAN INTENT NOTE**

The intent of the PCSM Plan sheets are to detail the Post Construction Stormwater Management facilities and Ownership and Maintenance Requirements. For consistency the notes and details shown on the PCSM Plans include BMPs associated with all Phases as approved with the CCCD NPDES Permit review process. The BMPs associated with Phase IV construction consist of Stormwater Basin #6, Swale P5, storm sewer and riprap aprons for Basin 6 outfall and storm sewer discharge endwall A51; see specific references in plan view and on the detail sheet.

**STORMWATER BEST MANAGEMENT PRACTICES SUMMARY**

The Post Construction Stormwater Management Plan provides for collection and treatment of project runoff. The main structural stormwater BMPs associated with the project consist of Bioretention-Detention Basins, vegetated swales and storm sewers. See below list of proposed Stormwater BMPs along with general descriptions.

1. Bioretention-Detention Basins - The Basins shall provide several key functions including but not limited to the following:
  - a. Stormwater Runoff Rate control shall be provided by using Basin storage and associated outlet structures to attenuate the post development stormwater discharge rates to below pre-development rates for the 2-100 year storm events, including required rate reduction for southern watersheds.
  - b. Stormwater Runoff volume control shall be provided through infiltration in Basins. All basins shall be constructed with flat bottoms with shallow sump and planted with retentive basin seed mixture which shall improve water quality, increase infiltration and promote evapotranspiration. Soil amendments shall also be used in the basin bottom preparation to enhance vegetation and associated root structure.
  - c. The basin design provides for extended detention via use of small low flow orifices. The extended attenuation of the basin discharge provides for stream bank protection, promotes infiltration and provides for longer periods of filtering and plant uptake within the basins.
2. Vegetated Swales and sheet flow are proposed for collection and conveyance to the extent practical. Storm sewer system collection and conveyance is proposed where needed; riprap apron protection shall be provided at all pipe discharges.
3. Soil restoration & amendments: Soil restoration and amendments of the Stormwater Basin bottoms shall be provided. The basin bottom preparation consists of over excavating the basin bottom to 12" below finished grade, scarification/till the subgrade bottom (minimum 10" depth desired). Place 12" of the amended soils mixture over the prepared (tiled) basin bottom followed by stabilization with intended basin seed mixture and mulch. The scarification/tilling of the subsols shall enhance permeability of the subsols and to provide increased interface between the subsols and the amended soils mixture and the amended soils mixture shall promote infiltration through enhance vegetation growth.
4. Street trees and landscaping are proposed with the project. The landscaping/trees shall provide the following benefits: nutrient uptake, evapotranspiration and thermal protection by shading of street pavement/sidewalk areas. Trees are also proposed around the stormwater basins. In addition, the retentive basin seeding shall also provide thermal protection of the basin runoff discharge through shading and additional uptake.
5. Rooftop Disconnect: All roof runoff shall be discharged overland prior to being conveyed to the basins; some roof area shall sheet flow directly to a basin although the majority of the runoff will be collected and conveyed to a respective basin via pipe and/or swale flow.
6. Drainage way(s) and natural features preservation. The stream paralleling Hertzler Road shall be preserved in a drainage easement. The existing wetland pocket on the south side of Hertzler Road shall also be preserved in an easement; no wetland impacts proposed.



**GENERAL PCSM NOTES**

1. An NPDES Permit related to construction activities is associated with this project (existing NPDES Permit No. PAC210094A-1, expires December 7, 2024.) All work to be performed in accordance with permit conditions.
2. The entire project site is located within the Yellow Breeches Creek watershed (CWF).
3. Wetlands shown on this plan are per field delineation performed by Vortex Environmental, Inc.. No wetland impacts are proposed with this project and the wetlands shall be preserved in an easement. (Note provided for completeness although only wetlands are located in previous Phase II located along Hertzler Road).
4. BMPs, trees, debris and any other materials not proposed to permanently remain on-site are to be recycled or disposed of in accordance with Department of Environmental Protection regulations. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. No building material, wastes or unused building materials shall be buried, dumped, or discharged at the site.

**UTILITY GENERAL NOTES**

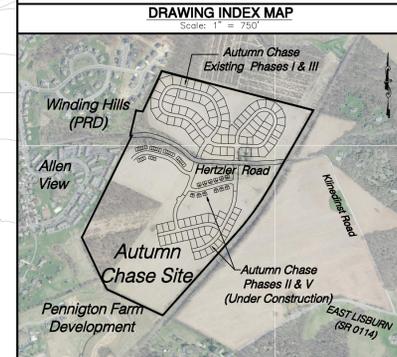
1. Public water service shall be provided to the project via a water main extensions from the water main stubs installed with Phase II construction.
2. Public sanitary sewer service shall be provided to the project via gravity sewer extension from existing manhole LS11-44 installed with Autumn Chase Phase II. All sewer construction to be in accordance with Township standards.
3. Electric and telecommunication utilities shall serve the project. These utility designs shall be performed by the applicable utility company after conditional plan approval.

**SOIL PROBE/PERCOLATION TEST**

A Geologic Evaluation and Infiltration Testing Report was prepared by OMX which detailed soils, geology and infiltration/soil testing information. The underlying geology is shale with some limestone (majority of site is in shale although eastern portion of site along Hertzler Road is in Limestone Geology). Soil probes and percolation tests were conducted at each of the stormwater basin locations. All of soil test locations yielded suitable probes and infiltration rates. If any sinkholes are encountered during construction contractor and/or owner should immediately consult with a Geotechnical Engineer for guidance on proper sinkhole(s) repair. See above referenced report for probe descriptions and infiltration test rates.

**CRITICAL STAGES OF PLAN IMPLEMENTATION**

This plan identifies the Post Construction Stormwater Management BMPs for the project. In accordance with NPDES permitting requirements, critical stages of implementation of the plan shall have a licensed professional or designee on site. The critical stages of construction associated with this project would be verification of the outfall pipe installations with antiseep collars, proper soil restoration preparation of the Bioretention-Detention Basin bottoms followed by placement of soil amendment mixture and intended retentive basin seed mixture. All other BMPs can be inspected after construction to verify consistency with the intended design.



**PROFESSIONAL ENGINEER**  
 TIMOTHY L. MELLOTT  
 ENGINEER No. 066207-E  
 PENNSYLVANIA

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 Timothy L. Mellott, P.E.  
 7500 Devonshire Heights Rd  
 Hummelstown, PA 17036  
 PH: 717-566-6533  
 FAX: 717-427-2700

**PCSM #1**

**POST CONSTRUCTION STORMWATER MANAGEMENT PLAN**

FOR  
**AUTUMN CHASE PRD - PHASE IV**  
 Land Developer: Hertzler Road Associates, L.P.  
 UPPER ALLEN TOWNSHIP  
 CUMBERLAND COUNTY  
 PENNSYLVANIA

**MELLOTT ENGINEERING, INC.**  
 Civil Engineering - Land Planning & Development - Water Resources  
 7500 Devonshire Heights Rd Hummelstown, PA 17036  
 melotteng@comcast.net  
 717-566-6533

DATE: \_\_\_\_\_

REVISIONS

1	2	3	4	5	6	7	8	9
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Project No. 202313  
 Date May 1, 2023  
 Sheet No. **7 of 16**

**OPERATION AND MAINTENANCE NOTES**

**BMPs Inspection and Maintenance Requirements**  
 The property owner on which the stormwater facilities are located shall be responsible for operation and maintenance of the on-lot SWM BMP facilities consistent with the Operation and Maintenance Plan for the project and in accordance with the Operation & Maintenance Agreement Stormwater Management Best Management Practices\*. The Home Owners Association shall be responsible for the Operation and Maintenance of all stormwater facilities located outside of a public right of way excluding individual on lot infiltration beds and/or rain gardens which shall be owned and maintained by the respective property owner (only roof area not draining to a Basin requires an infiltration bed and/or rain garden, see plan for applicable lots).

**Description of Operation and Maintenance Requirements**  
 The following inspection and maintenance activities shall be performed on a regular basis, bi-monthly during mowing months, monthly on non mowing months and within 48 hours after a major storm event: (> 1 inch rainfall depth). In addition to the following see the Township Inspection Reporting requirements following the below list:

- Bioretention-Detention Basins**
- Basin outlet structures shall be routinely inspected to verify the orifices and/or grate top are not clogged. Remove any accumulated debris from the outlet structure.
  - Emergency Spillways shall be routinely inspected for erosion. Bare soil shall be stabilized with topsoil, seeding and permanent liner as detailed.
  - All trash and debris should be regularly removed from basins and upslope areas.
  - Reseed bare areas; install appropriate erosion control measures when native soil is exposed.
  - Mow or trim vegetation to the vegetation lengths as required by Township. Stormwater Management Basin bottoms are planted with a wetland-type basin seed mix to aid in filtering and treatment of stormwater runoff. The basin bottoms may be trimmed for aesthetics and to remove debris and inspect for damage; however, the bottom areas shall not be mowed.
  - Basins shall be inspected at time of mowing for invasive weeds, large shrubs and trees (no mowing of basin bottom, see above note). Remove such undesirable invasive vegetation as necessary.
  - Basin Embankment and surrounding areas shall be free of burrowing animals in order to protect the structural integrity of the stormwater facility.
  - All piping inlet and outlet structures shall be free of holes, cracks, seepage, or leakage of other details.
  - Inspection of Basin Dewatering Times: All basins are to fully dewater within 72 hours of the completion of a rain event. If standing water remains in a basin after maximum allowable 72 hours dewatering time the Home Owners Association shall contact the site engineer for an inspection. The following remediation measures should be implemented if it is believed the upper topsoil/amendment mixture (12" layer) is the limiting factor: chisel plow the top surface layer to maximum depth practical, smooth out surface followed by stabilization with intended retentive basin seed mixture. The following remediation measures should be implemented if it is believed the subsoils (soil horizon below topsoil/amendments layer) is the limiting factor: remove and stockpile top soil/amendment layer (12" layer), chisel plow the subsoils to maximum depth practical, place the topsoil/amendment mixture over the remediated subsoils, smooth out surface followed by stabilization with intended retentive basin seed mixture.

- Vegetated Swales**
- Swales shall be inspected for erosion. Any erosion shall be immediately stabilized with topsoil, seeding and liner accordingly.
  - All trash and debris should be regularly removed from swales and upslope areas.
  - Mow and trim vegetation to ensure safety, aesthetics, proper swale operation, or to suppress weeds and invasive vegetation; mow only when swale is dry to avoid rutting.

- Storm Sewer System & Riprap Aprons** (Located outside of public right of ways)
- All inlets and the surrounding areas shall be free of all obstructions, spent liquids such as oils, fuels, petroleum products, antifreeze, sediment, grease, trash and debris.
  - All riprap aprons shall be inspected and reestablished if needed.

**PROPERTY OWNERSHIP O&M & TOWNSHIP RIGHT OF ENTRY NOTE**  
 The property owner on which the stormwater facilities are located shall be responsible for operation and maintenance of the on-lot facilities consistent with the Operation and Maintenance Plan associated with the project. In the event that the responsible person or entity fails to do so, the owner hereby grants to Upper Allen Township the right but not the duty to enter upon the premises to repair or restore said facilities, to charge and assess the costs thereof to the owner, and to enforce said charges and assessments by lien upon the property. In addition, the deed for the applicable lots shall contain a covenant binding the grantee and all successors' title and interest designating the responsibility for operation and maintenance of the on-lot facilities.

The Owner shall agree that no action will be taken to block or impede the passage of water through said stormwater management facilities and will place no structure, building, or fence, nor plant any trees or shrubs which would impede the use of said facilities for its intended purposes, without prior approval from the Township.

**Current Property Owner/Responsible Party**  
 The current owner (Hertzler Road Associates, L.P.), or any succeeding owner or any succeeding owner(s), has a legal duty to maintain the stormwater and drainage facilities as detailed above and in accordance with the associated Stormwater O&M Agreement.

- PERMANENT SEEDING**
- A. All disturbed soil not to be covered with impervious surfaces, riprap or landscaping mulch shall be permanently seeded to provide protection against the impact of precipitation, running water and wind.
- B. Mulching shall be used to protect seeding and help in preventing runoff. Clean straw mulch shall be required in all disturbed areas and applied at a rate of 3 tons/acre (equivalent to 0.75" to 1" deep). Clean straw mulch should not be finely chopped nor broken during application.

- Maintenance procedure:**
- Maintain a minimum 70% soil surface coverage with grass and/or mulch.
  - If a washout, slope failure or similar disturbance occurs, correct drainage problem if necessary, then reapply soil to the proper grade, reapply soil amendments, seed and mulch.

**Permanent seeding schedule is as follows:**  
 For gentle lawn areas:  
 Species: 40% Kentucky Bluegrass  
 40% Pennlaw Creeping Red Fescue  
 20% Norlea Perennial Ryegrass

**For Swales, steep slopes and wet areas:** 100% Tall Fescue, varieties such as K-31, A17A, or other recently released dwarf variety  
 % Pure live seed: 98%  
 Application rate: 6 lbs./1000 sq. ft.  
 Fertilizer type: general purpose granular, 10-20-20  
 Fertilizer application rate: 1000 lbs per acre  
 Liming rate: Four (4) tons per acre of agricultural grade lime  
 Strawable mulch rate: three (3) tons per acre  
 Seeding dates: Between 4/1 and 10/15

**BMP SEQUENCE OF CONSTRUCTION**

The below sequence notes are relative to Stormwater Management BMPs; see Erosion Control Plans for complete sequence of construction notes. The vegetated swales shall be installed during construction although the four stormwater basins shall not be converted to their respective permanent conditions until upslope areas are completed stabilized; see below sequence.

- Stormwater Basin 4B shall be installed as a clean water basin with initial construction through the amended soils in the basin bottom shall not be installed until upslope areas are fully stabilized (basin 4B temporary bottom shall be at the proposed finished grade elevation although do not over excavate the basin bottom until future installation of amended soils mixture; see end of sequence notes). Basin 4B bottom shall be stabilized in accordance with permanent seeding specifications until future installation of amended soils (retentive basin seeding proposed with future amended soils installation).
- The erosion control measures may not be removed until the entire upslope drainage area has a permanent stabilization. This occurs with 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. All paved areas must be paved or have a compacted stone base in place. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the County Conservation District for an inspection prior to the removal of the erosion control BMP's.
- After the Conservation District representative has inspected the site and agrees the site is stabilized the BMP's can be removed as follows:

- a. Critical Stage of Construction (Basin 4B amended soils): After all upslope contributing areas are permanently stabilized and after receiving authorization from a CCCD representative Stormwater Basin 4B amended soils installation can be performed (prior to conversion of Sed Basin 4A). Install 18" compost sock around outlet structure to provide for filtering during final stabilization process. Soil restoration and amendments of the Stormwater Basin bottom shall be provided at time of conversion. The basin bottom preparation consists of over excavating the basin bottoms to 12" below finished grade, scarification/till the subgrade bottom (10" depth desired), smooth out bottom with light weight track equipment and place 12" of the amended soils mixture across basin bottom followed by stabilization with intended basin seed mixture and mulch.

- b. Critical Stage of Construction (Sed Basins 4A, 5 & 6 conversions): After all upslope contributing areas are permanently stabilized and after receiving authorization from a CCCD representative Sediment Basins 4A, 5 and 6 can be converted to the permanent stormwater basin configurations. Install 18" compost sock around outlet structures to provide for filtering during final stabilization process. Remove temporary riser attachment and convert outlet structure to permanent condition. Soil restoration and amendments of the Stormwater Basin bottom shall be provided at time of conversion. The basin bottom preparation consists of over excavating the basin bottoms to 12" below finished grade, scarification/till the subgrade bottom (10" depth desired), smooth out bottom with light weight track equipment and place 12" of the amended soils mixture across basin bottom followed by stabilization with intended basin seed mixture and mulch.

- c. BMP's, trees, debris and any other materials not proposed to permanently remain on-site are to be recycled or disposed of in accordance with Department of Environmental Protection regulations. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. No building material or wastes or unused soil to be removed from the site and recycled or disposed at the site.

**STORM INLET DETAILS**

**ANTI-SEEP COLLAR DETAIL**

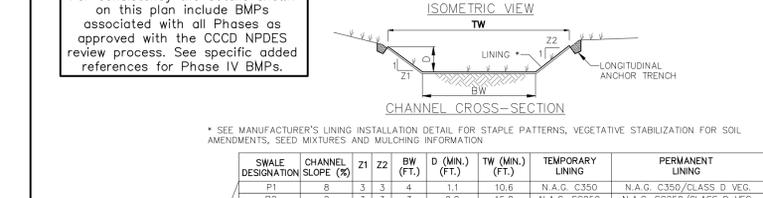
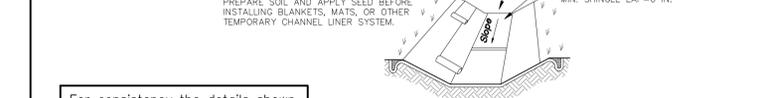
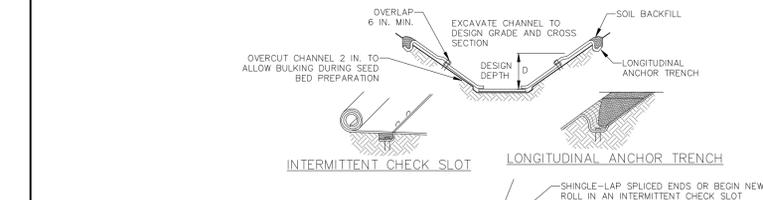
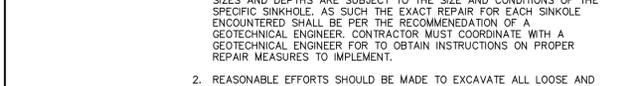
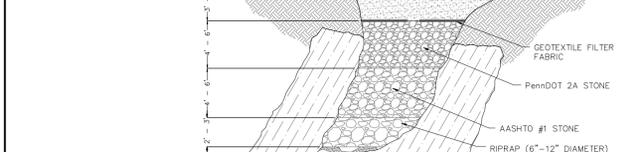
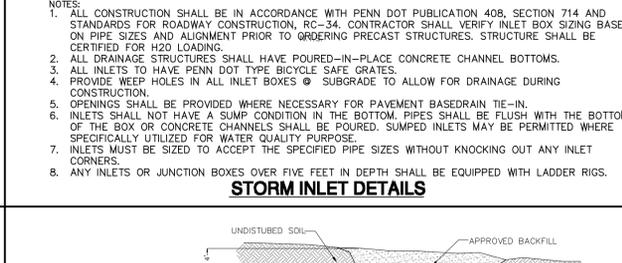
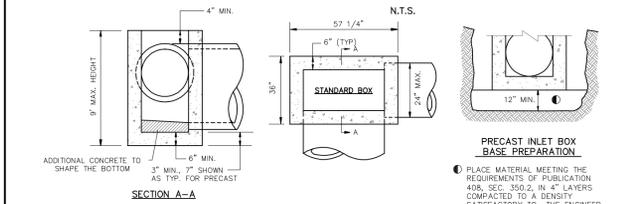
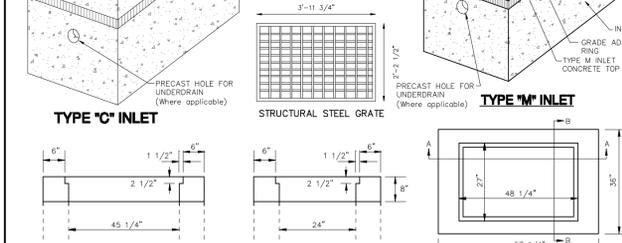
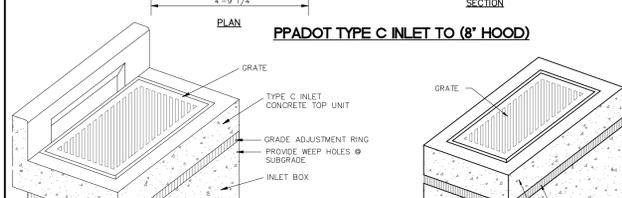
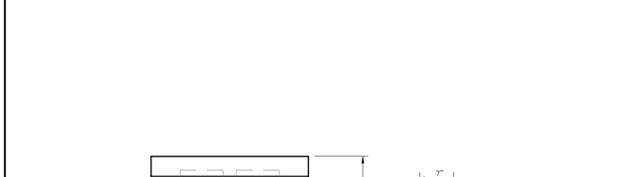
**EMERGENCY SPILLWAY DETAIL**

**BASIN SECTION AT OUTLET**

**STORMWATER BASIN OUTLET STRUCTURE DETAIL**

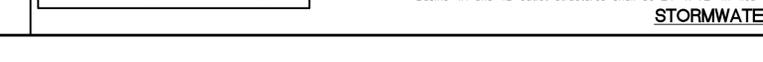
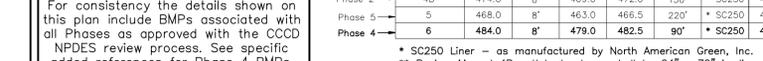
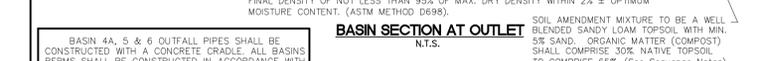
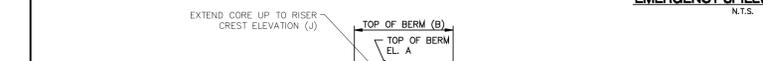
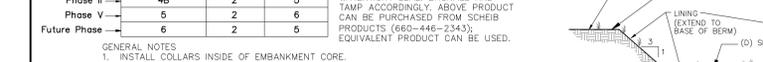
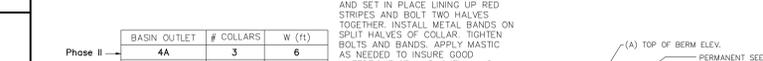
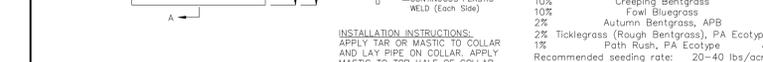
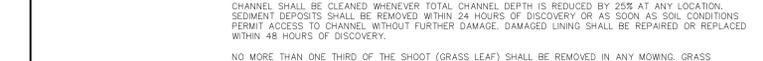
**STORM SEWER DETAIL FOR TRENCHES IN GRASSED AREAS OR NEW PAVEMENT**

**PPADOT TYPE C INLET TO (8' HOOD)**

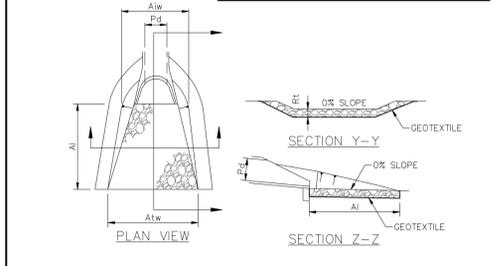


SWALE DESIGNATION	CHANNEL SLOPE (%)	Z1	Z2	BW (FT.)	D (MIN.) (FT.)	TW (MIN.) (FT.)	TEMPORARY LINING	PERMANENT LINING
P1	8	3	3	4	1.1	10.6	N.A.G. C350	N.A.G. C350/CLASS D VEG.
P2	2	3	3	3	2.0	15.0	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P2a	20	3	3	10	1.1	16.6	N.A.G. P300	N.A.G. P300/CLASS C VEG.
P3	10	3	3	4	1.2	11.2	N.A.G. P350	N.A.G. P350/CLASS D VEG.
P4	10	3	3	2	1.5	11	N.A.G. C350	N.A.G. C350/CLASS D VEG.
*E. Hertzler	4	3	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
**T1	4	3	3	4	1.2	11.2	N.A.G. P300	N.A.G. P300/CLASS D VEG.
P6	1.5	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P7a	1.5	3	3	4	2.5	19	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P7b	1.5	3	3	4	2.5	19	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P8	1-4	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P10	2.5	3	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P11	10	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P5	3.3	3	3	2	1.1	8.6	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P9	1.2	3	3	2	1.0	8	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P12	1.5	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P13	1.2	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P14	1.4	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P15	11	3	3	2	1	8	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P16	1.2	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P17	2	3	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.

**NOTES:**  
 ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED.  
 CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOON AS CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.  
 NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.  
 \* Hertzler Road swale exist although data provided for reconstruction if needed in future.  
 \*\* Temporary swale T1 shall receive swale P3 runoff until future phase construction.  
 N.A.G. SC250 is a permanent vegetative lined; North American Green Product



For consistency the details shown on this plan include BMPs associated with all Phases as approved with the CCCD NPDES review process. The Phase IV riprap aprons included A51 and 6.

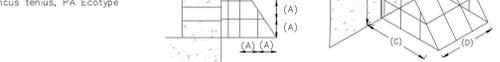
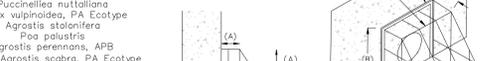


Outlet No.	Pipe Dia. (in)	Tail Water Condition (Max/Min)	Man. "n" For Pipe	Pipe Slope (%)	*Q (cfs)	**V (fps)	Riprap Size	Rt (in)	Al (ft)	Alw (ft)	Atw (ft)	
A1	30	Min	0.012	2.50	41.5	9.2	R-5	27	23	7.5	30.5	
A10	24	Min	0.012	2.00	32.4	11.2	R-5	27	16	6	22	
**A22	42	Min	0.012	1.00	57	11.2	R-5	27	22	10.5	32.5	
A25	18	Min	0.012	1.00	7.3	8.0	R-4	18	8	4.5	12.5	
A32	18	Min	0.012	0.83	6.2	6.1	R-4	18	8	4.5	12.5	
A34	36	Min	0.012	1.00	39.5	8.4	R-5	27	20	9	29	
A51	18	Min	0.012	2.50	12.9	8.4	R-4	18	12	4.5	16.5	
**A66	24	Min	0.012	1.43	10.0	8.4	R-4	18	12	6	18	
**A71	36	Min	0.012	1.00	47	10.9	R-5	27	20	9	29	
B1	30	Min	0.012	1.00	37	10.3	R-5	27	16	7.5	23.5	
B1	24	Min	0.012	3.67	25.4	8.4	R-5	27	16	6	22	
B8	36	Min	0.012	0.90	58.3	9.5	R-5	27	21	6	30	
B39	15	Min	0.012	2.56	4.6	6.9	R-4	18	8	3.75	11.75	
C1	24	Min	0.012	3.08	33.7	10.4	R-4	18	27	20	6	26

\* 100 Year storm event  
 \*\* The anticipated velocity (V) should not exceed the maximum permissible shown in Table 6.6 for the proposed riprap protection. Adjust for less than full pipe flow. Use Manning's equation to calculate velocity for pipe slopes > 0.05 ft/ft.  
 \*\*\*A27 apron includes flow from A29 as well discharge to same construction as conventionally designed apron.  
 \*\*\*\* F1 & J1 aprons exist. Original design reflected above; now received reduced basin discharges.  
 Designs for future phase "B & C" systems shall be provided with future phase submission.  
 \*\*\*\*\* B - Basin 6 discharge was conservatively assumed to be 10 cfs while actual is less.  
 All pipe end treatments shall be Concrete End Wall (RC-31M)

**NOTES:**  
 ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.  
 ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

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

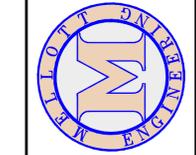


DATE: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_

1 2 3 4 5 6 7 8 9

**MELLOTT ENGINEERING, INC.**  
 Civil Engineering, Land Planning & Development - Water Resources  
 7500 Devonshire Heights, Harrisburg, PA 17056  
 mel@meleng.com mel@meleng.com  
 717-566-6533

**POST CONSTRUCTION STORMWATER MANAGEMENT CONSTRUCTION DETAILS FOR AUTUMN CHASE PRD - PHASE IV**  
 Land Developer: Hertzler Road Associates, L.P.  
 PENNSYLVANIA CUMBERLAND COUNTY UPPER ALLEN TOWNSHIP



**PCSM #2**  
 CONSTRUCTION DETAILS FOR AUTUMN CHASE PRD - PHASE IV  
 Land Developer: Hertzler Road Associates, L.P.  
 PENNSYLVANIA CUMBERLAND COUNTY UPPER ALLEN TOWNSHIP

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 Land Developer: Hertzler Road Associates, L.P.  
 PENNSYLVANIA CUMBERLAND COUNTY UPPER ALLEN TOWNSHIP

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 Land Developer: Hertzler Road Associates, L.P.  
 PENNSYLVANIA CUMBERLAND COUNTY UPPER ALLEN TOWNSHIP

Project No. 202313  
 Date: May 1, 2023  
 Sheet No. 8 of 16





**STREET LIGHT GENERAL NOTES**

1. Street lighting is proposed with Phase IV as shown on this plan. The proposed street lighting is not intended to over light areas but to alert vehicular traffic of intersections.
2. Street lights shall be standard PPL fixtures and poles as conceptually shown on this plan.

**OUTDOOR LIGHTING**

**TRADITIONAL**

**LUMINAIRE:** Traditional, black

**LAMP SIZE:** 5,800 lumen (70 watt) or 9,500 lumen (100 watt)

**LAMP TYPE:** High-pressure sodium

**POLE:** Black fiberglass, round, 14 feet above ground, directly embedded 3 feet in the ground

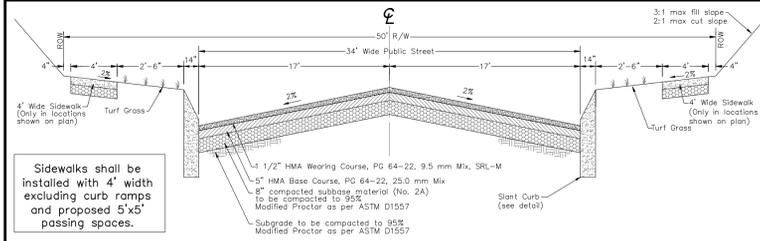
**ALTERNATE POLE:** 14 foot round black steel or spun aluminum, or 11 or 13 foot black boulevard

**ELECTRIC SUPPLY:** Underground

**RATE:** Low-mount underground, high-pressure sodium (SHS)

Want to know more about the PPL Electric Utilities Outdoor Lighting Program? Call your PPL Electric Utilities representative or PPL Electric Utilities Customer Service Answer Line at 800-342-5775 (DIALPPL) during business hours 8 a.m. to 5 p.m.

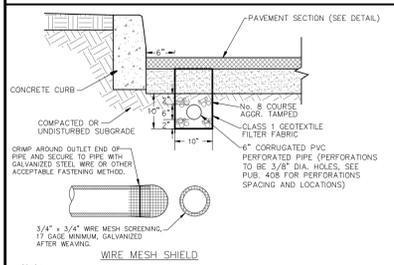
**TRADITIONAL**



**PUBLIC MINOR STREET CROSS SECTION**  
N.T.S.

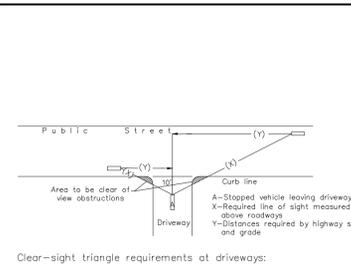
- NOTES:**
- The above cross sections apply to all proposed streets (see plan view for boulevard entrance locations).
  - All construction methods and materials shall be in conformance with Township and Penn DOT Specifications for Roadway Construction, Pub. 408 (including RC-, TC-, & TS- Standard Drawings).
  - No road construction activity shall be permitted in the Township of Upper Allen until and unless the contractor shall notify the Township at least one week in advance of commencing work. The contractor shall at all times during the progress of work have a competent superintendent or foreman on the job site. Inspection of road work shall be done by the Township or its designee.
  - Roadway subgrade shall be free of sod, vegetative matter, boulders, spongy soil or other unsuitable material. Where poor subsurface drainage conditions exist, adequate drainage facilities shall be installed.
  - The subgrade shall not be prepared during freezing weather or when frozen or when it is unstable due to excessive moisture.
  - All utility lines, under drains, sewer lines, including laterals and service lines, being placed in the roadway shall be installed prior to the commencement of road construction at the following minimum depths:
  - Gravity sewer lines: six feet.
  - Force main sewer: four feet below finish grade.
  - Waterlines: four feet.
  - Gas lines: 2 1/2 feet.
  - Telephone, electrical and television cable: two feet; not to be located within paved cartway.
  - Sewer and water lines shall have a minimum separation distance of 10 feet.
  - PA DEP and private utility regulations and procedures will prevail where applicable.
  - All backfill for utilities under existing roadways shall be 2A stone compacted to within 3% of the optimum material moisture content and placed in not greater than eight-inch lifts. The Township may require flowable fill or other alternate backfill material where conditions may warrant such measures.
  - All backfill for utilities under new roadways shall be suitable backfill material with no stones over four inches and no organic material, compacted to within 3% of the optimum material moisture content and placed in not greater than eight-inch lifts.

- Preparation of road subgrade.
  - The subgrade shall be compacted and fine graded to not more than 0.2 foot below the grade as shown on the plan.
  - All soft, plastic (as determined by proof roll) or rock areas in the subgrade shall be undercut to a depth of at least 12 inches or more if deemed necessary by the Township Engineer and shall be refilled with approved materials and/or underdrained and/or reinforced with geotextile, as determined by the Township Engineer.
  - The subgrade shall conform to the same crown as the paved surface.
  - Prior to the placement of subbase or base course, the subgrade shall be proof-rolled with a fully loaded tandem axle dump truck. The proof rolling shall be observed by the Township Engineer. An acceptable proof roll shall be non-movement of the subgrade.
- Preparation of road base.
  - The base course material shall consist of compacted PennDOT No. 2A subbase meeting the specifications of Pennsylvania Department of Transportation Publication 408, as amended, and shall be laid in the manner prescribed therein to the following thickness: 8" eight inches.
  - Pipe underdrain shall be provided in wet areas, in areas of roadway sag conditions, or any other areas as required by the Township Engineer.
- Preparation of road surface. Roads shall be constructed from multiple courses of pavement materials, including a base course and a wearing course of hot-mixed, hot-laid asphaltic concrete. An additional binder course may be required on collector roads and industrial or commercial areas.
  - The base course shall consist of a minimum of five inches of compacted HMA Superpave base, P664-22, 37.5 mm mix, meeting the specifications of the Pennsylvania Department of Transportation Publication 408, as amended, and shall be laid in the manner prescribed therein. The base course shall be repaired if defects occurred prior to placement of wearing course. Where cracking or any other type of failure has occurred in the base course, the contractor shall completely remove the base course, stabilize the subgrade if necessary and construct new base course. Where the deficiency involves depressions or raveling in the surface of the base course, the repair may be made by skin patching with a suitable bituminous material.
  - The wearing course shall consist of a minimum of 1 1/2 inches of compacted HMA Superpave wearing course, P664-22, 9.5 mm mix, meeting the requirements of the Pennsylvania Department of Transportation Publication 408, as amended, and shall be laid in the manner prescribed therein. Where a wearing course is placed on an existing street, a minimum one-half-inch scratch course of compacted HMA Superpave wearing course, P664-22, 9.5 mm mix, shall be placed prior to the wearing course. The Township Engineer may require that the existing pavement be milled prior to placement of the scratch course.
  - The wearing course shall only be placed after sufficient time has passed to ensure that no further settling will take place. The wearing course shall only be placed after an inspection has determined no sags, low spots or depressions exist which could adversely affect the integrity of the wearing course. Any defects found shall be repaired prior to the placement of the wearing course. In the event of any deficiency in the wearing course such as raveling, depressions, cracking etc., such deficiencies shall be repaired by removing the wearing course and replacing with new material. Subject to said inspection, the wearing course shall be placed no later than the time when 90% of the lots have been issued a certificate of occupancy by the Township. A tack coat meeting the requirements of the Pennsylvania Department of Transportation Publication 408, as amended, shall be placed prior to paving the wearing course.
  - Where required, the binder course shall consist of a minimum of 2.5 inches of HMA Superpave binder course, P664-22, 19.0 mm mix, meeting the requirements of the Pennsylvania Department of Transportation Publication 408, as amended, and shall be laid in the manner prescribed therein.



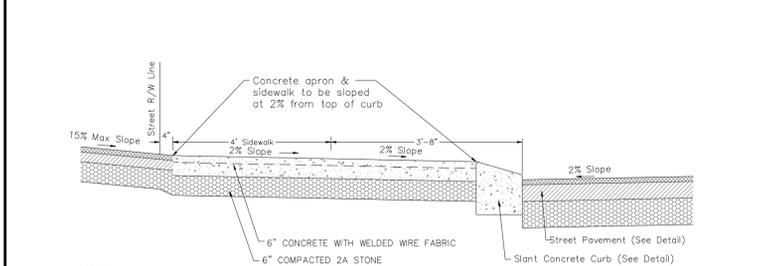
- NOTES:**
- Install underdrains where shown on the plan, where field conditions warrant, 50 feet in either direction of an inlet located in a sag vertical curve and as directed in the field by the Township.
  - The road subgrade and stone subbase are to be established prior to the placement of the underdrain.

**PAVEMENT UNDERDRAIN DETAIL**  
N.T.S.



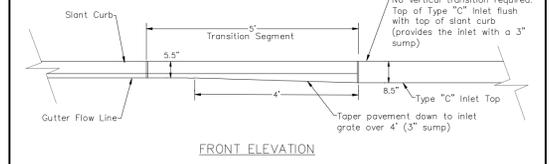
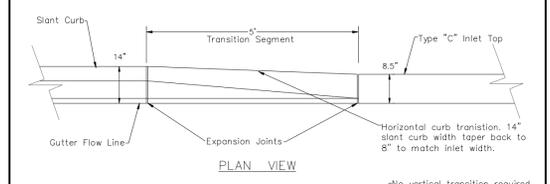
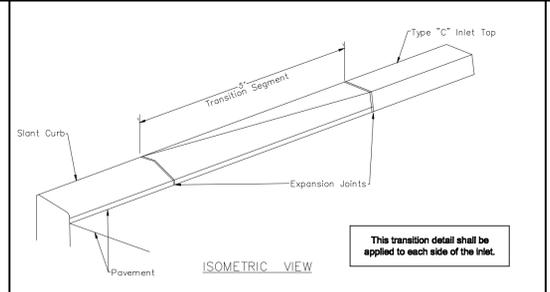
- Clear-sight triangle requirements at driveways:
- No building or obstruction shall be permitted in this area that would obscure the vision of a motorist.
  - Grading and / or plantings (existing through mature growth) less than three (3) feet above the street grade are permitted in the clear-sight triangle.

**DRIVEWAY CLEAR SIGHT TRIANGLE DETAIL**  
N.T.S.



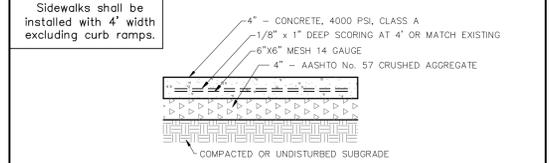
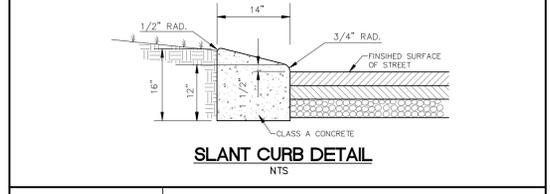
- NOTES:**
- Driveways shall be constructed in accordance with Township Subdivision and Land Development Ordinance Section 220-17, Zoning Ordinance Section 245-259.B, and Sections 02500 & 02525 of Construction and Materials Specifications manual requirements.
  - Sidewalks to be constructed in accordance with PA DOT Pub. 408. All concrete sidewalks shall have a minimum thickness of 4", except at driveways, where the sidewalks shall have a minimum thickness of 6" and shall be reinforced with W#6 (4" x 42.9 x W2.9) x W2.9 (6 ga.) wire mesh placed 2" from top of surface.
  - Driveways shall be constructed with a concrete apron from the depressed curb to the proposed sidewalk. Driveway shall be bituminous pavement or concrete from the sidewalk to the unit/dwelling.

**DRIVEWAY APRON DETAIL**  
N.T.S.



Slant curb shall be installed for all proposed streets. Standard Type "C" Stormwater Inlets with an 8" hood (See Detail) shall be installed for all curbside street drainage collection. Use the above detail for the necessary curb transition to stormwater inlet boxes. The top of the curb and inlet hood shall be flush and will not require a vertical transition (provides a 3" sump at inlet, see pavement slope transition above for pavement transition to sumped inlet).

**VERTICAL TO SLANT CURB TRANSITION DETAIL**  
N.T.S.

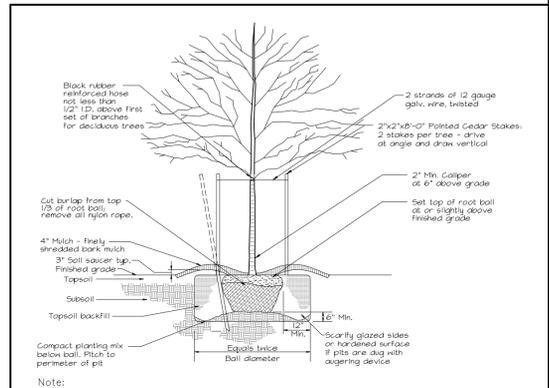


- NOTES:**
- Sidewalks to be constructed in accordance with PA DOT Pub. 408.
  - Slabs to be poured in separate 30' lengths and shall be completely separated by 1" expansion joints.
  - Surface to be provided with broom finish.

**CONCRETE SIDEWALK DETAIL**  
N.T.S.

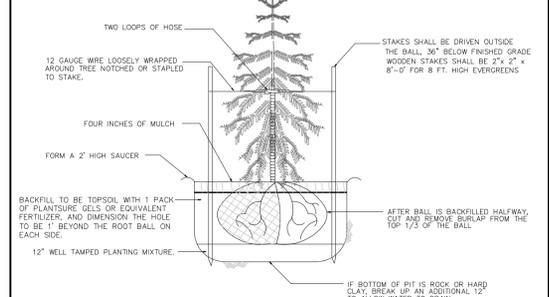
Curb ramps shall be installed where sidewalk meets with a street/curbline. Curb Ramps shall be installed in accordance with current Commonwealth of Pennsylvania Department of Transportation Standards for Roadway Construction Publication 72M requirements. The curb ramps shall be installed in accordance with RC-67M Alternative Type 4A Curb Ramp (Perpendicular) dated February 19, 2021. Painted Crosswalks shall be installed at each ramp/road crossing in accordance with Publication 111 TC-8600 requirements (6' crosswalk width centered on crossing, 6" white lines). Stop sign and stop bar shall be installed 4' away from the crosswalks where applicable.

**CURB RAMP-CROSSWALK REQUIREMENTS**



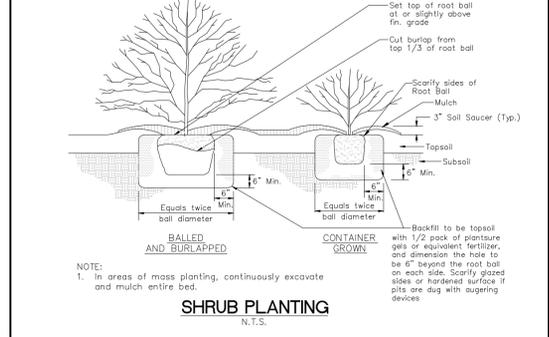
- NOTES:**
- Street trees must be planted at an average of (2) trees every 100' and shall be placed a minimum of 40' apart along the street right-of-way and shall be located so as to maximize the growth potential of the plant material, minimize the potential for root interference with public infrastructure, and enhance the quality of the development. Street trees will be one of the species identified in Section 220-26.D(7) of the Upper Allen Township Subdivision and Land Development Ordinance. (See plan for general layout).

**DECIDUOUS STREET TREE PLANTING DETAIL**  
N.T.S.



- NOTES:**
- PLANT SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT DID IN ITS PREVIOUS LOCATION.
  - THE TREE WRAP AT THE TOP AND BOTTOM AND AT 18" INTERVALS ALONG THE TRUNK.

**PLANTING AND STAKING METHODS FOR EVERGREEN TREES**  
NO SCALE



- NOTES:**
- In areas of mass planting, continuously excavate and mulch entire bed.

**SHRUB PLANTING**  
N.T.S.

DATE	_____
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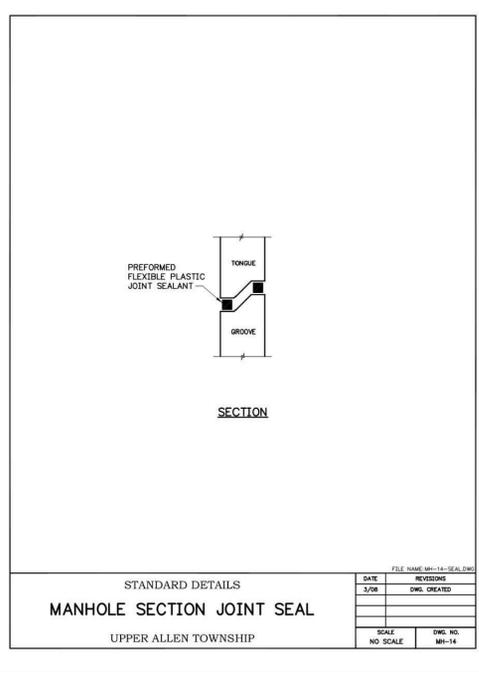
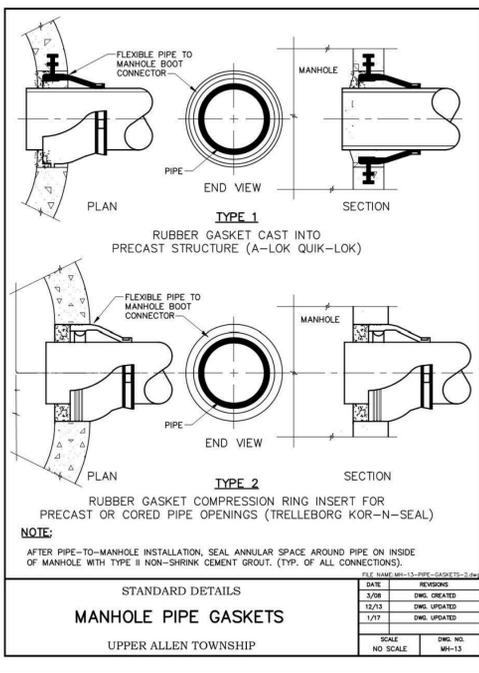
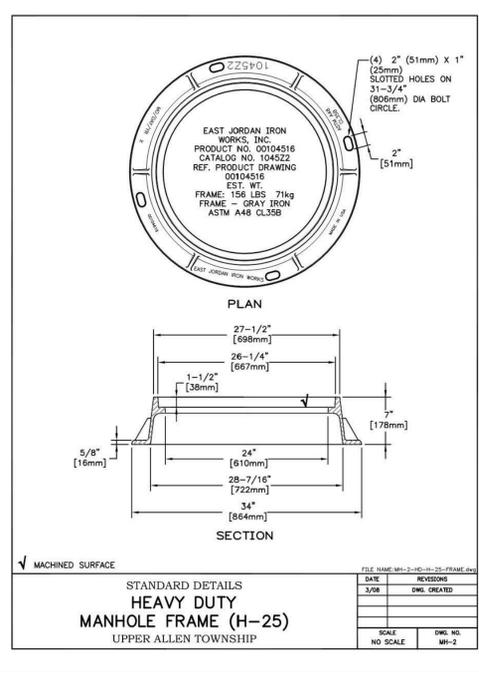
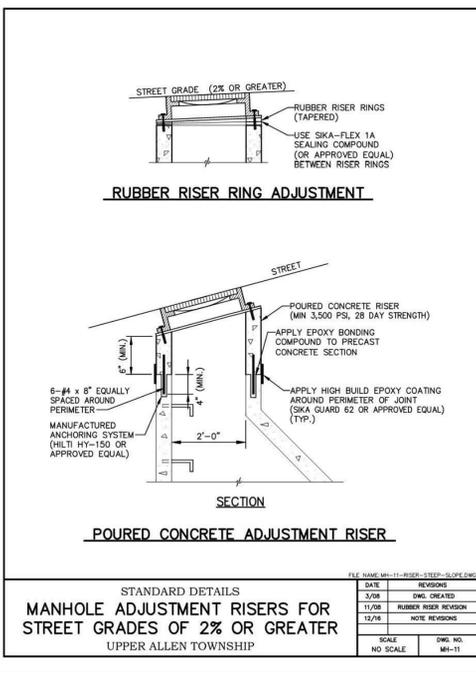
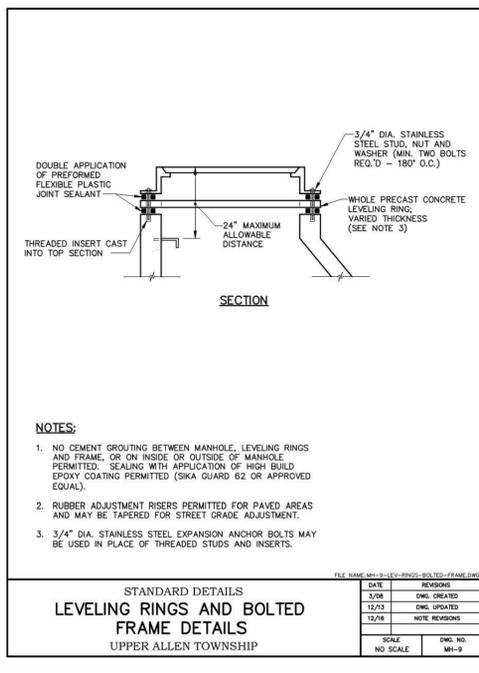
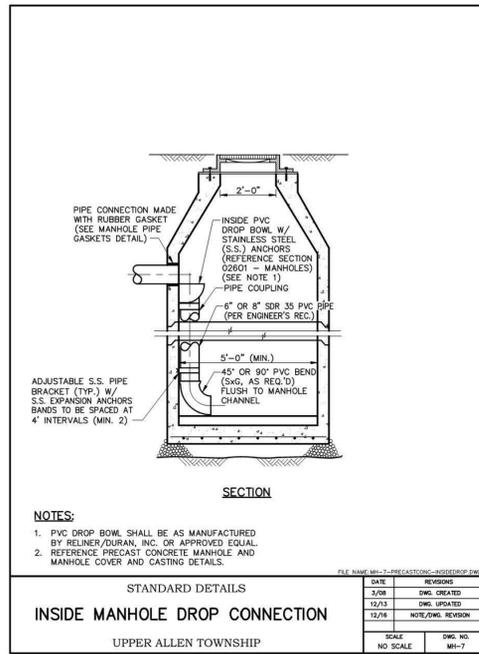
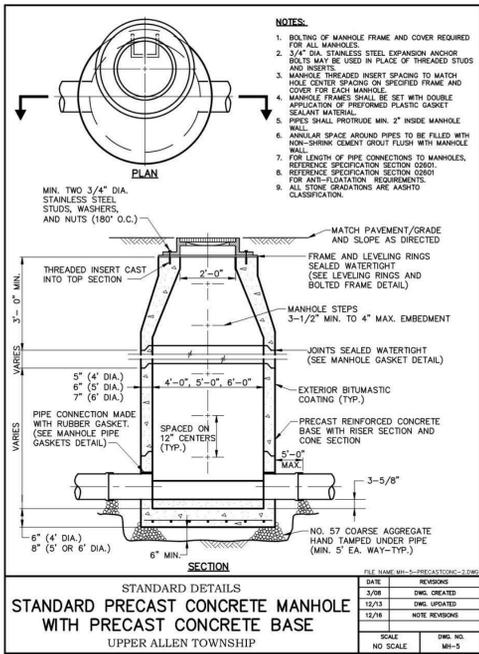
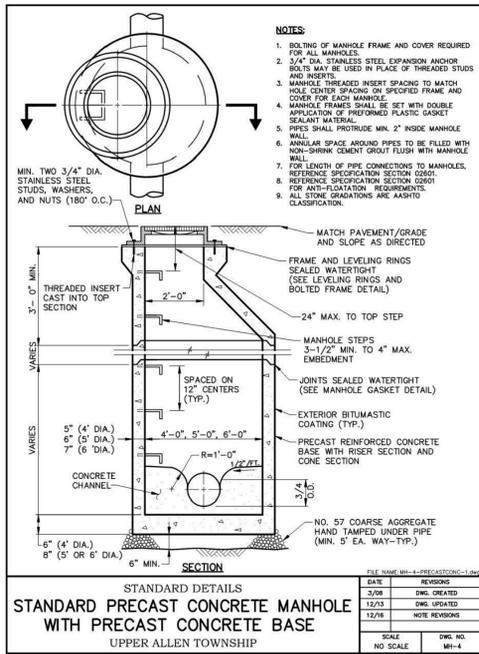
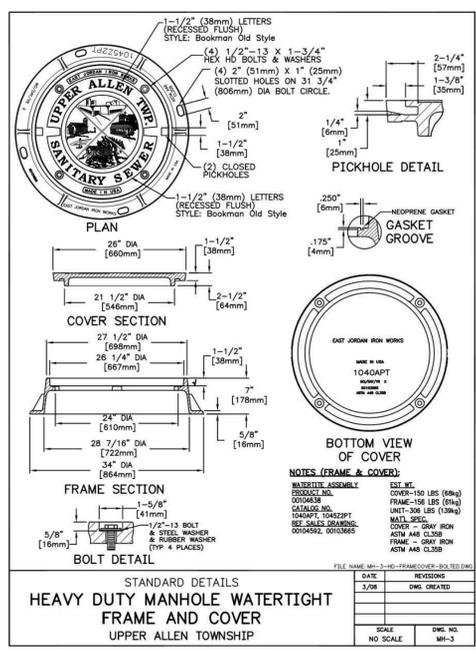
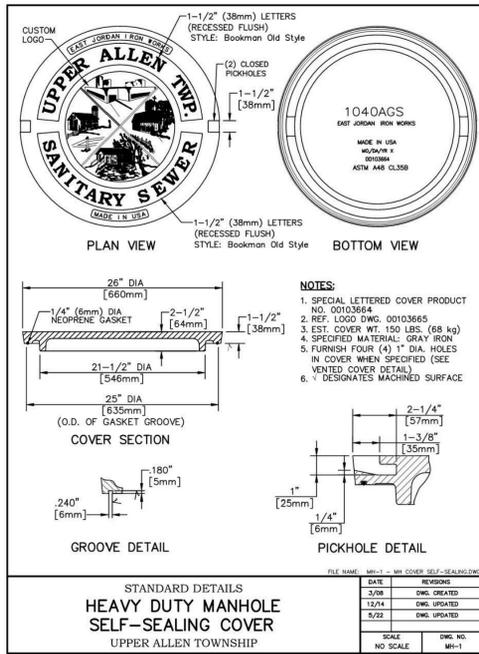
**MELLOTT ENGINEERING, INC.**  
Civil Engineering - Land Planning & Development - Water Resources  
7500 Devonshire Heights Road - Harrisburg, PA 17036  
mellottengr@comcast.net  
717-666-6533



**CONSTRUCTION DETAILS**  
FOR  
**AUTUMN CHASE PRD - PHASE IV**  
Land Developer: Hertzler Road Associates, L.P.  
UPPER ALLEN TOWNSHIP  
CUMBERLAND COUNTY  
PENNSYLVANIA

Project No. 202313  
Date May 1, 2023

Sheet No.  
**11 of 16**



DATE: \_\_\_\_\_

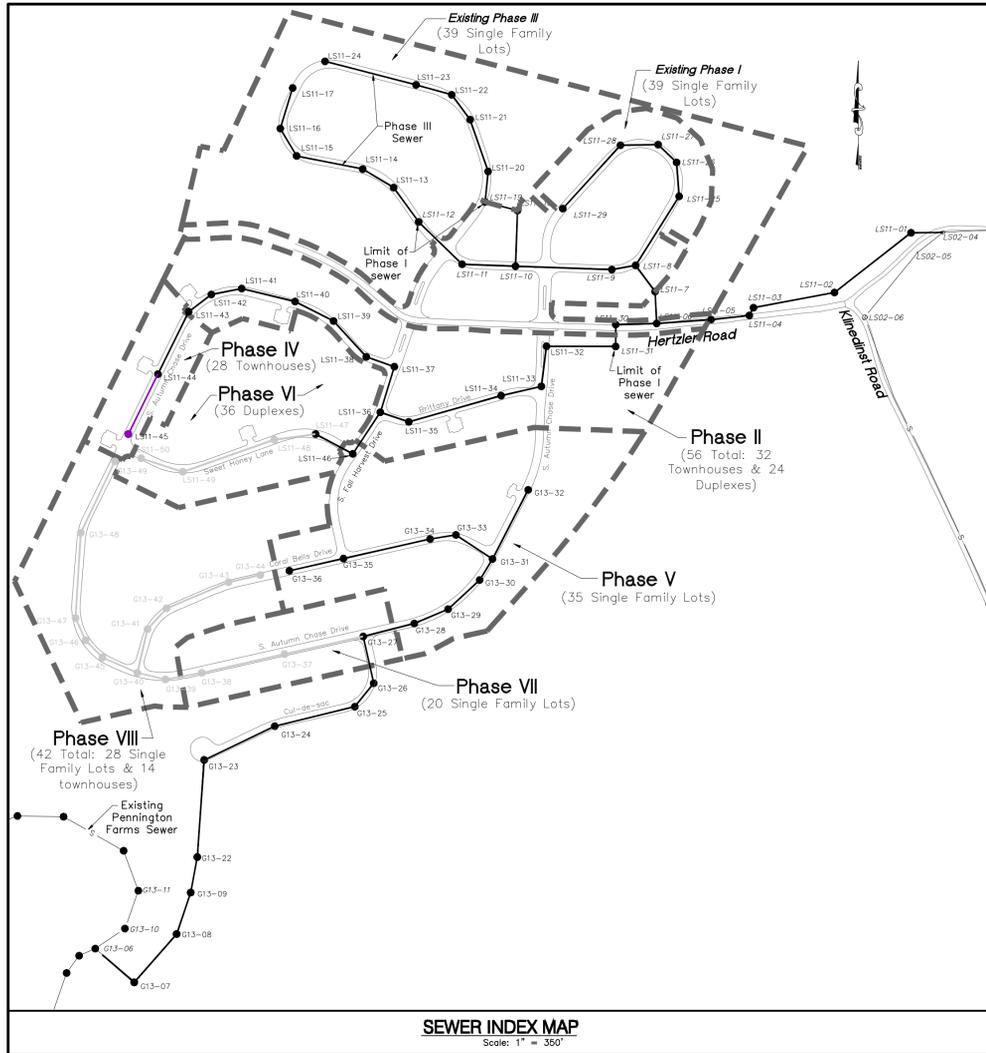
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**MELLOTT ENGINEERING, INC.**  
 Civil Engineering - Land Planning & Development - Water Resources  
 7500 Devonshire Field Road - Upper Allen Township, PA 17036  
 mellotheing@comcast.net  
 717-566-6533

**FOR**  
**SANITARY SEWER CONSTRUCTION DETAILS**  
**AUTUMN CHASE PRD - PHASE IV**  
 Land Developer: Hertzler Road Associates, L.P.  
 UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

Project No. 202313  
 Date May 1, 2023  
 Sheet No. 12 of 16



**Autumn Chase Phase II Manhole Table**

Manhole ID	Northing	Eastng
LS11-31	309671.2855	2189747.0931
LS11-32	309672.1566	2189461.7567
LS11-33	309507.3258	2189440.5263
LS11-34	309469.1898	2189274.4912
LS11-35	309361.5789	2188893.4687
LS11-36	309401.1110	2188775.9746
LS11-37	309588.0820	2188834.0092
LS11-38	309628.6622	2188717.9413
LS11-39	309775.9343	2188652.9085
LS11-40	309854.9186	2188424.1479
LS11-41	309909.2713	2188203.9921
LS11-42	309884.9739	2188078.3796
LS11-43	309814.5205	2187985.2336
LS11-44	309557.8283	2187858.0314
LS11-46	309230.0665	218662.1482

**Autumn Chase Phase V Manhole Table**

Manhole ID	Northing	Eastng
G13-36	308749.6263	2188400.7721
G13-35	308799.7735	2188623.8814
G13-34	308860.1063	2188981.2891
G13-33	308896.8157	2189087.8225
G13-32	309082.0942	2189386.2417
G13-31	308797.9883	2189238.9873
G13-30	308711.7473	2189185.8254
G13-29	308591.6346	2189055.7253
G13-28	308532.9666	2188916.0513
G13-27	308479.8482	2188705.3339
G13-26	308287.1949	2188748.6356
G13-25	308191.0370	2188670.8234
G13-24	308110.8401	2188340.4090
G13-23	307971.9258	2188048.6647
G13-22	307572.9141	2188020.6650
G13-09	307427.3692	2187993.3000
G13-08	307256.9160	2187935.4579
G13-07	307058.2598	2187860.0706
G13-06	307196.6874	2187599.4439

**Autumn Chase Phase IV Manhole Table**

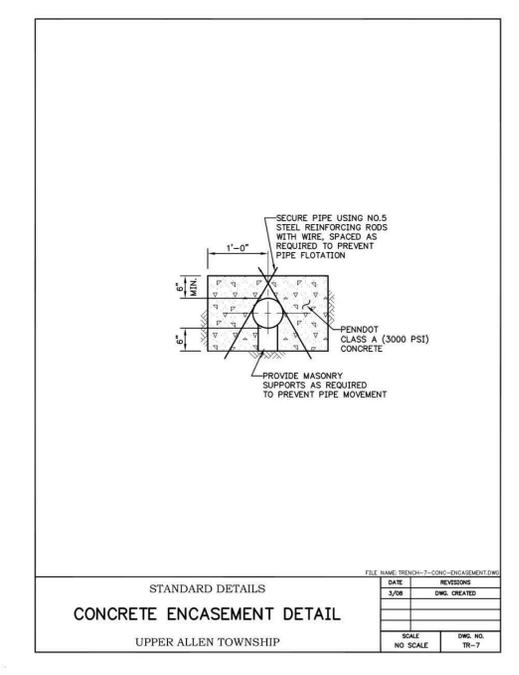
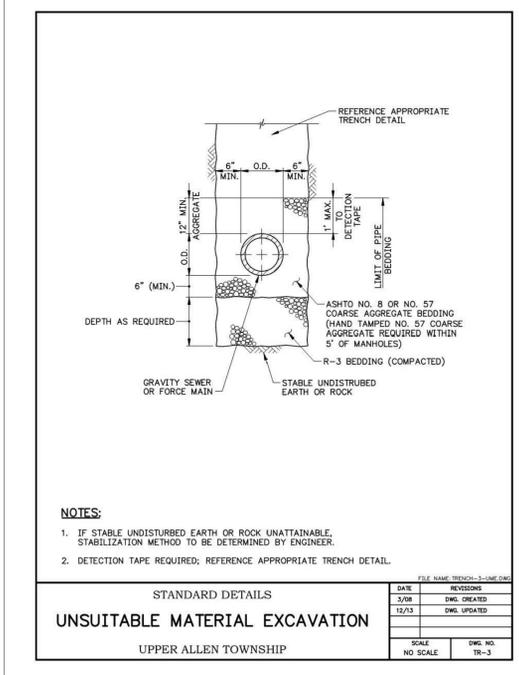
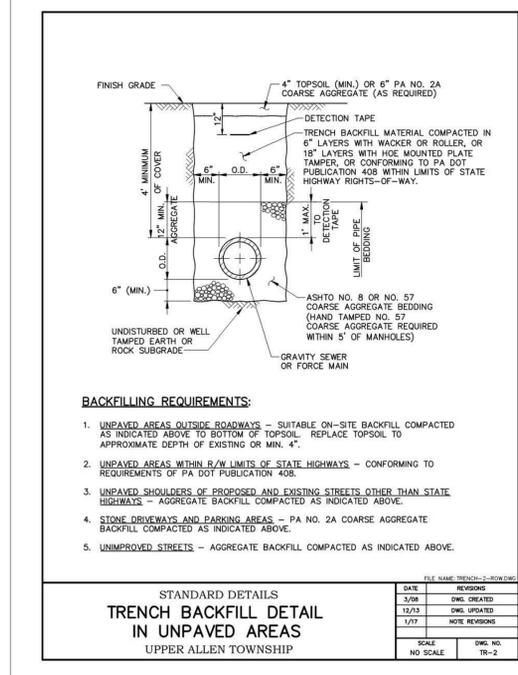
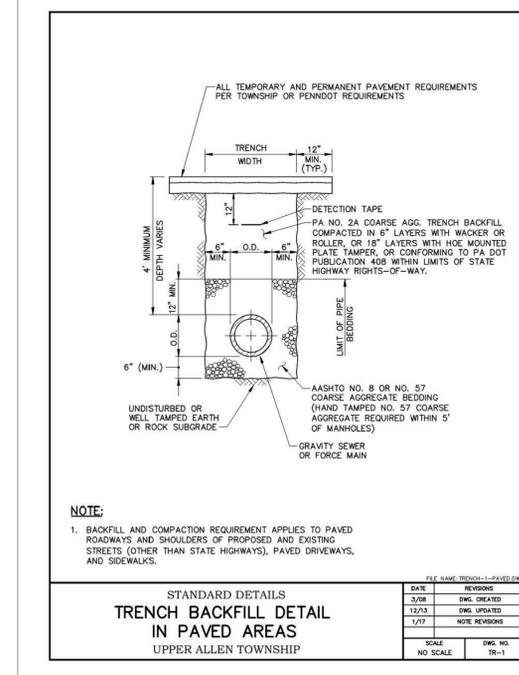
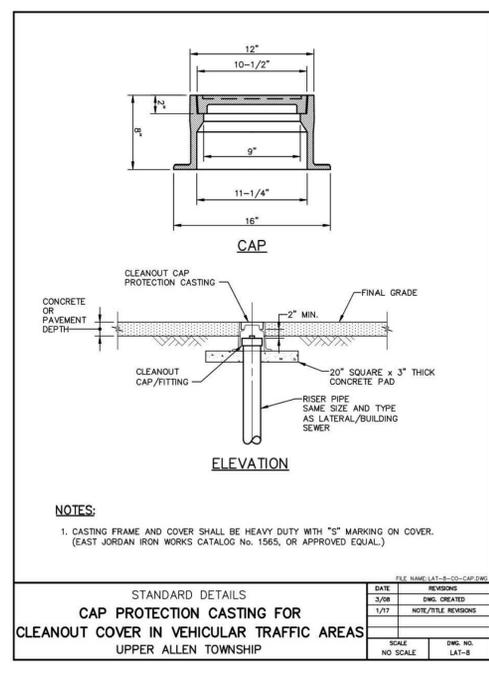
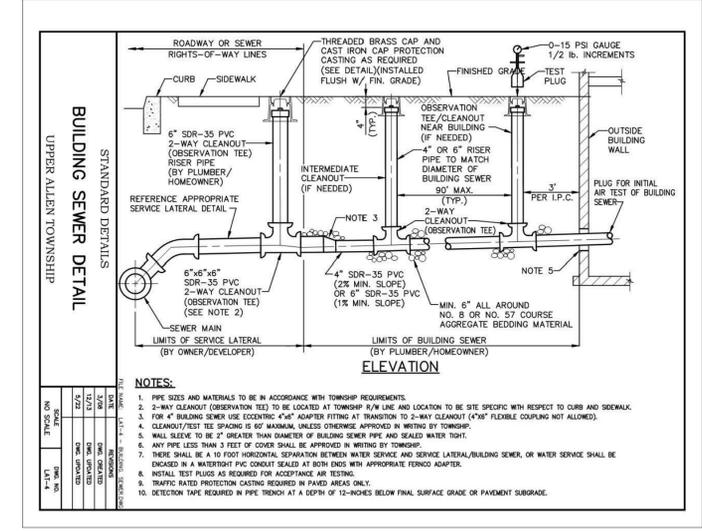
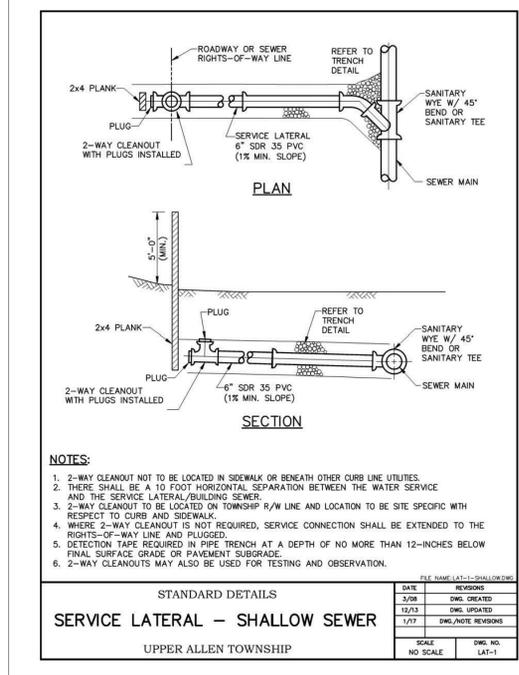
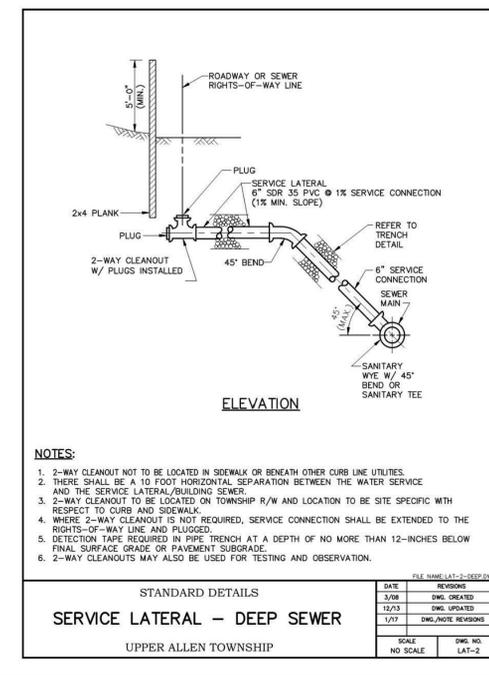
Manhole ID	Northing	Eastng
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LS11-45	309311.4232	2187735.9269

**Autumn Chase Phase I Manhole Table**

Manhole ID	Northing	Eastng
LS11-31	309671.2855	2189747.0931
LS11-30	309761.2851	2189747.3679
LS11-29	310237.9865	2189528.8256
LS11-28	310498.4435	2189767.0394
LS11-27	310500.9512	2189922.4286
LS11-26	310427.7006	2189998.7128
LS11-25	310288.0259	2190009.0481
LS11-19	310265.1728	2189208.2267
LS11-18	310229.9955	2189342.0434
LS11-12	310183.4472	2189333.9678
LS11-11	310009.1364	2189113.5309
LS11-10	310001.3764	2189333.9994
LS11-09	309987.3969	2189731.3178
LS11-08	310004.6310	218929.5479
LS11-07	309897.1731	2189909.8983
LS11-06	309766.1648	2189916.1379
LS11-05	309781.4463	2190140.6930
LS11-04	309798.8039	2190298.7632
LS11-03	309830.7293	2190315.9047
LS11-02	309893.2210	2190650.1124
LS11-01	310138.5917	2190966.0131
LS02-04	310139.8939	2191097.8051

**Autumn Chase Phase III Manhole Table**

Manhole ID	Northing	Eastng
LS11-24	310843.2791	2188547.6443
LS11-23	310746.3736	2188923.5014
LS11-22	310705.7149	2189070.3850
LS11-21	310603.7094	2189146.3821
LS11-20	310390.5693	2189220.6744
LS11-17	310733.8898	2188414.1357
LS11-16	310566.9996	2188363.2161
LS11-15	310454.4677	2188430.5288
LS11-14	310400.5381	2188703.2339
LS11-13	310324.4619	2188830.6998



DATE: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

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**MELLOTT ENGINEERING, INC.**  
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**MELLOTT ENGINEERING, INC.**  
FOR  
**AUTUMN CHASE PRD - PHASE IV**  
Land Developer: Hertzler Road Associates, L.P.  
UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

Project No. 202313  
Date May 1, 2023

Sheet No. **13 of 16**

**EROSION CONTROL PLAN OVERVIEW NOTE**

The erosion control plans approved with the NPDES Permit for this project addressed construction for all work south of Hertzler Road (all remaining phases). The CCDD approved Erosion Control Plan consisted of eight plan sheets; the contractor must have a copy of this Phase IV Plan set and the eight approved Erosion Control Plan set on site at all times during construction. This Phase IV Plan set is consistent with the approved CCDD approved Erosion Control Plan set excluding removal of sheets that are not pertinent to this Phase IV Plan. To maintain consistency with the CCDD approved plans, the below "Erosion Control Plan Intent Note" is as approved with the overall E&S Plan set although please note there is only one Sediment Basin (Basin 6) proposed with this Phase IV plan.

**EROSION CONTROL PLAN INTENT NOTE**

Autumn Chase is a partially constructed residential community consisting of a total of 317 proposed residential dwellings. This Plan shall address erosion control measures to be implemented with the Autumn Chase Project for all construction south of Hertzler Road (previous plan approvals were previously granted for Hertzler Road improvements and Phases I & 3 located on the north side of Hertzler Road, 78 dwelling lots). The construction on the south side of Hertzler Road consists of 239 dwelling units and associated infrastructure. Subdivision Plans shall be processed with the Township in several separate Phases although this erosion control plan set shall address all phases of construction with a single overall erosion control plan. While this erosion control plan shall address all earth disturbance proposed on the south side of Hertzler Road, the sequencing and associated construction shall be proposed in stages as detailed on these plans. The first stage (Stage 1) of construction shall address the initial earthwork and improvements associated with Autumn Chase Phase II, the second stage (Stage 2) shall address earthwork and improvements associated with Autumn Chase Phase V and the third stage (Stage 3) shall address all remaining phases. There are no DEP permits required for the proposed work detailed on these plans although a Water Obstruction and Encroachment Permit was obtained for the stream impacts associated with Hertzler Road improvements (Permit No. E21-468, issued on April 28, 2020.); see previously approved Erosion Control Plans for Phase I.

The E&S control BMPs associated with this plan consists of three sediment basins, one existing sediment trap, rock construction entrances, water bars, vegetated swales, riprap aprons, silt barriers and stabilization requirements. See below general description of each proposed E&S BMP.

**Stabilized Rock Construction Entrances:**

Rock construction entrances shall be installed at specific locations where construction equipment shall transition from stabilized areas to the disturbance areas, see plan and sequencing for installation timing and locations. All ingress & egress to the site shall be through a defined RCE.

**Sediment Basins:**

There are three Sediment Basins proposed with this plan; The basins shall provide treatment of sediment laden runoff prior to discharge.

**Sediment Trap:**

There is one existing temporary sediment trap previously installed with Phase I construction although the trap will be removed early in the construction sequence (referenced in this note for completeness).

**Water Bars:**

Water bars are proposed to direct sediment laden runoff to a proposed treatment BMP.

**Vegetated Swales:**

Vegetated swales are proposed for collection and conveyance of runoff.

**Riprap Aprons:**

Riprap aprons are proposed at all pipe discharges. Riprap aprons provide energy dissipation and returns runoff flow to a sheet flow condition.

**Silt Barriers:**

Silt barriers shall be installed down slope of all earth disturbances that do not drain to a sediment basin or trap. Silt barriers shall be compost filter socks. Silt barriers shall filter sediment laden runoff.

**Stabilization:**

All previous disturbed areas shall be permanently stabilized with vegetated cover in accordance with the stabilization measures specified on the plan. All proposed slope 3 to 1 and graded shall be matted with NAG S75 matting or equivalent.

**GENERAL EROSION CONTROL NOTES**

- The existing NPDES Permit for the project is PAC210094A-1. There is no other DEP permitting required for the proposed construction associated with this plan although Water obstruction and encroachment permitting was obtained for the Hertzler Road improvements (Hertzler Road improvements plan was previously approved with Phases I & 3 approvals, Water Obstruction Permit No. E21-468, issued on April 28, 2020.).
- The entire project site is located within the Yellow Breeches Creek watershed (CWF).
- Wetlands shown on this plan are per field delineation performed by Vortex Environmental, Inc.. No wetland impacts are proposed with this project.
- BMPs, trees, debris and any other materials not proposed to permanently remain on-site are to be recycled or disposed of in accordance with Department of Environmental Protection regulations. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. No building material or wastes or unused building materials shall be buried, dumped, or discharged at the site.
- Autumn Chase NPDES permittee and the Autumn Chase site contractor shall both become a copermitttee to the Pennington NPDES permit prior to performing the offsite sanitary sewer extension within the Pennington community.

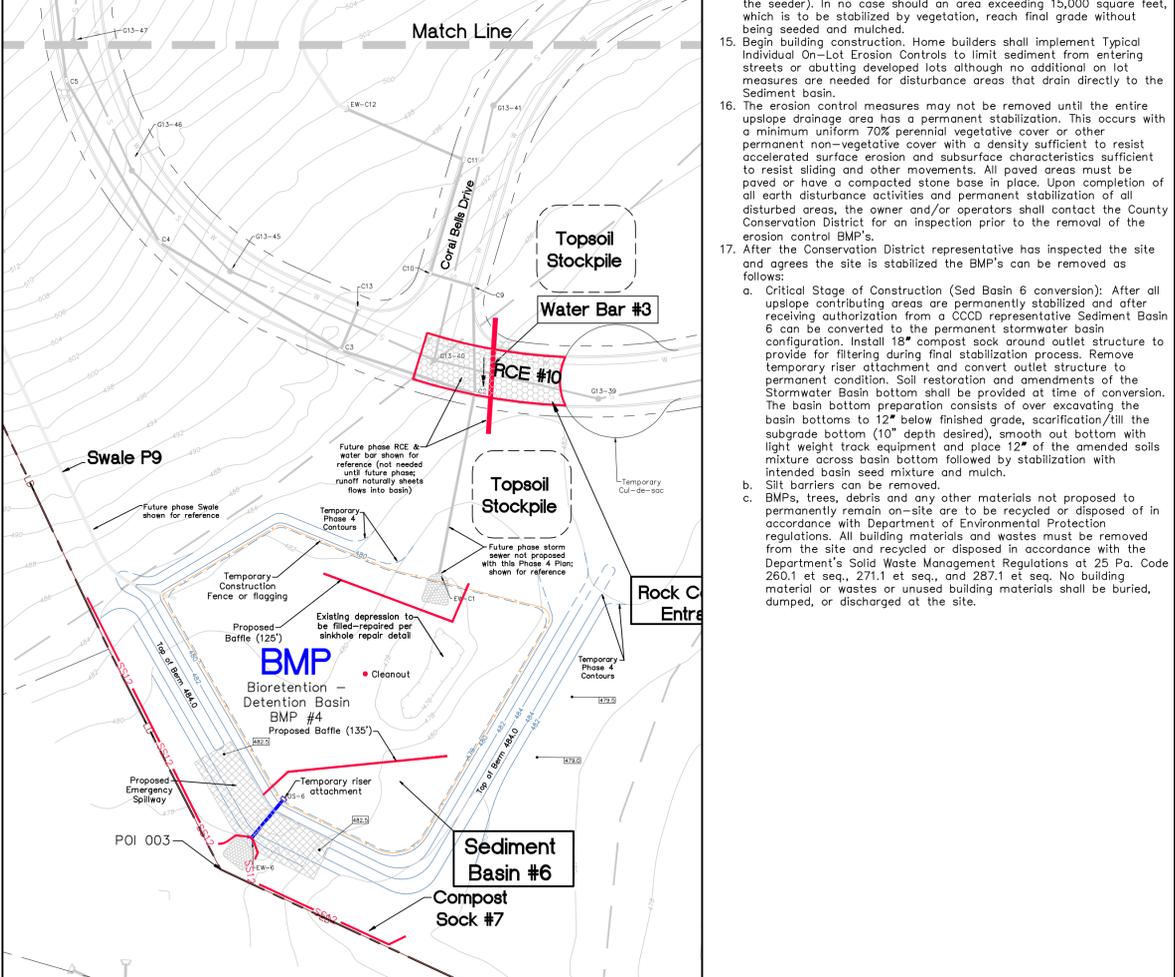
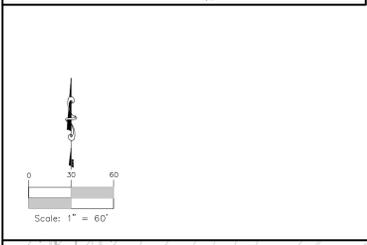
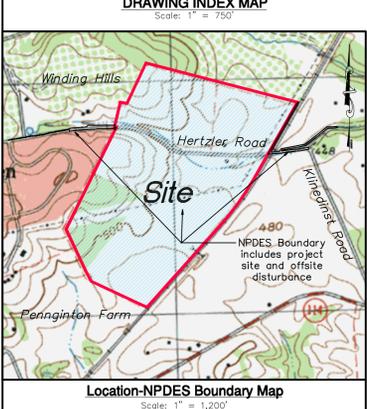
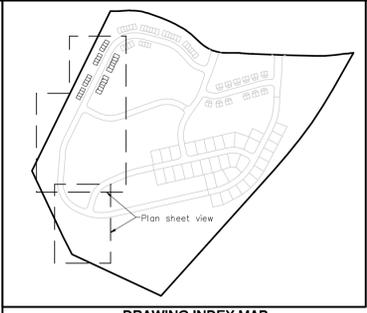
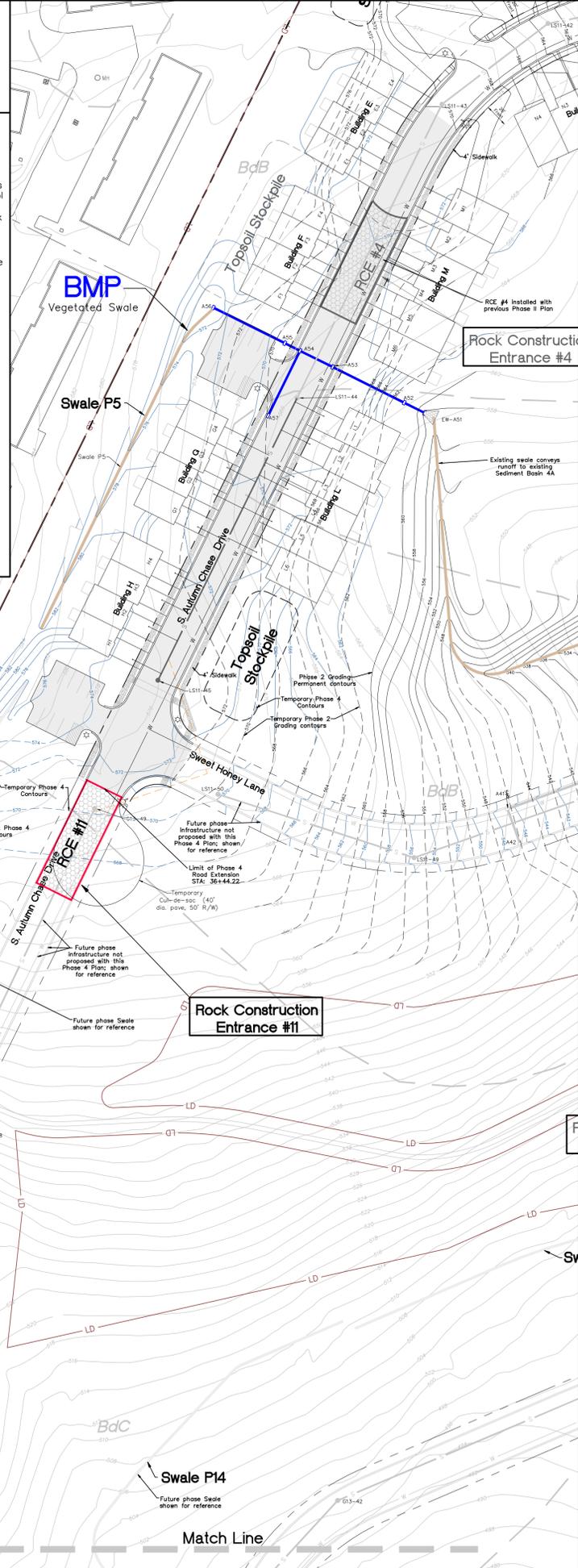
**LEGEND**

SS18	18" COMPOST FILTER SOCK
SS12	12" COMPOST FILTER SOCK
LD	PROPOSED LIMIT OF DISTURBANCE
RCE #1	ROCK CONSTRUCTION ENTRANCE
SI	PROPOSED STORM SEWER, INLET
EA	PROPOSED END SECTION / ENDWALL W/ RIPRAP
SM	PROPOSED SANITARY SEWER, MANHOLE
W	PROPOSED WATER LINE
PE	PROPOSED EDGE OF PAVE/CURB LINE
PS	PROPOSED STREET & PARKING PAVEMENT
PR	PROPOSED RIGHT-OF-WAY LINE
PL	PROPOSED PROPERTY LINE
PEL	PROPOSED SPOT ELEVATION
SL	PROPOSED SWALE LINING
450	PROPOSED 2' CONTOUR
455	PROPOSED 2' TEMPORARY CONTOUR
330	Existing 2' Contour
---	Existing Property Line
---	Existing Adjacent Property
---	Existing Right-of-way
---	Existing Edge of Pave
---	Existing Storm Sewer, Inlet, Off
B/C	SOIL TYPE AND BOUNDARY

Before You Dig Anywhere

in PENNSYLVANIA  
 STOP! Call 1-800-243-1376  
 24 hours a day, 7 days a week  
 PA Law requires 3 working days before you excavate.  
 PA One Call System, Inc.  
 One Call Serial # \_\_\_\_\_

PENNSYLVANIA ACT 199 (2004) AS AMENDED REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.



**SEQUENCE OF CONSTRUCTION (Phase IV General Note)**

As indicated in the overview note the notes and details shown on this plan include all BMPs as approved with the NPDES Permit. Sediment Basin 6 shall be constructed with this Phase IV construction; nearly all of Phase IV disturbance drains to existing Sediment Basin 4, constructed with Phase I although a small portion of Phase IV shall drain southward to proposed Sediment Basin 6. Other Phase IV BMPs include compost filter sock, riprap aprons (EW-A51 and Basin 6 outfall) and permanent Swale P5.

**SEQUENCE OF CONSTRUCTION (Stage 3)**

The following Sequence of Construction includes references to the proposed temporary erosion control measures and permanent stormwater BMPs; see the PSM Plan sheets for the permanent BMPs.

Stage 3 construction consists of all remaining phases and associated infrastructure improvements (roads and utilities) and grading as shown. Stage 3 bulk grading shall occur in a single operation although road and utility infrastructure shall be installed in Phases.

- Initial access to Stage 3 construction shall be through existing RCEs #4, 6, 7 & 8 installed with Stage 2 construction. RCEs 9, 10 and 11 shall be installed later in this Stage 3 sequence.
- Field mark limits of disturbance.
- Install construction fencing and/or flagging around basin bottom to prevent undesired compaction.
- Install Compost filter sock as shown (below proposed basin 6 berm).
- Critical Stage of Construction (Basin 6). The existing depression-sinkhole shall be repaired as directed by a Geotechnical Engineer. There is a concept Sinkhole Repair Detail on the Detail sheet although the site contractor shall coordinate directly with a Geotechnical Engineer in the field for specific guidance regarding the repair. After the depression has been repaired, install Sediment Basin 6 including permanent outlet structure, temporary riser attachment, outfall pipe, riprap apron, baffles and cleanout stake (See Details). The outfall pipe shall be installed with a concrete cradle. To minimize soil compaction of the subsoils below the basin bottom, basin excavation shall be performed from the sides of the basin to the extent possible once grading is within 2' of proposed finished grade. Any grading that cannot be performed from the sides of the basin(s) shall be performed with wide track equipment (no rubber tire equipment to be used in basin bottom areas due to concentrated loads that occur under the tires). See end of sequence notes for basin conversion and soil restoration/amendment notes.
- Install Swale P9; immediately stabilize swales (see detail). Swale P9 provide for collection and conveyance to Sediment Basin 6. The installation of the compost sock, sediment Basin 6 and swale P9 provides for full perimeter controls for Stage 3 construction.
- After the above described perimeter erosion control measures are installed strip and stockpile topsoil as needed for areas to be regraded; stockpiles shall not exceed a maximum height of 35 feet and shall be no steeper than 2:1. Stockpiles to be stabilized accordingly.
- Perform bulk grading which includes all remaining site grading. Grading shall be such as to maintain sediment laden runoff to the intended receiving sediment control BMP(s).
- Install water bar #3 to direct runoff towards Basin 6.
- Begin utilities installation.
- Immediately install remaining swales after the receiving storm sewers are installed; immediately stabilize swales (see detail).
- Install conduit street crossings for electric and telecommunications. Install street curbing after utilities installation. Install stone subbase on streets as soon as possible to shield soil from erosion. Install out of street electric and telecommunication utilities.
- Install rock construction entrances #9, 10 and 11 off the limits of the temporary cul-de-sacs as shown as soon curb and road subbase is installed (temporary cul-de-sacs are provided at the limit of each phase of road infrastructure installation).
- Replace topsoil and permanently seed and mulch all non-paved areas where grading is complete. As disturbed areas within a project approach final grade, preparations should be made for seeding and mulching to begin (i.e. anticipate the completion date and schedule the seeder). In no case should an area exceeding 15,000 square feet, which is to be stabilized by vegetation, reach final grade without being seeded and mulched.
- Begin building construction. Home builders shall implement Typical Individual On-Lot Erosion Controls to limit sediment from entering streets or abutting developed lots although no additional on lot measures are needed for disturbance areas that drain directly to the Sediment basin.
- The erosion control measures may not be removed until the entire upslope drainage area has a permanent stabilization. This occurs with 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. All paved areas must be paved or have a compacted stone base in place. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the County Conservation District for an inspection prior to the removal of the erosion control BMP's.
- After the Conservation District representative has inspected the site and agrees the site is stabilized the BMP's can be removed as follows:
  - Critical Stage of Construction (Sed Basin 6 conversion): After all upslope contributing areas are permanently stabilized and after reauthorization from a CCDD representative Sediment Basin 6 can be converted to the permanent stormwater basin configuration. Install 18" compost sock around outlet structure to provide for filtering during final stabilization process. Remove temporary riser attachment and convert outlet structure to permanent condition. Soil restoration and amendments of the Stormwater Basin bottom shall be provided at time of conversion. The basin bottom preparation consists of over excavating the basin bottoms to 12" below finished grade, scarification/till the subgrade bottom (10" depth desired), smooth out bottom with light weight track equipment and place 12" of the amended soils mixture across basin bottom followed by stabilization with intended basin seed mixture and mulch.
  - Silt barriers can be removed.
  - BMPs, trees, debris and any other materials not proposed to permanently remain on-site are to be recycled or disposed of in accordance with Department of Environmental Protection regulations. All building materials and wastes must be removed from the site and recycled or disposed in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. No building material or wastes or unused building materials shall be buried, dumped, or discharged at the site.

DATE: \_\_\_\_\_

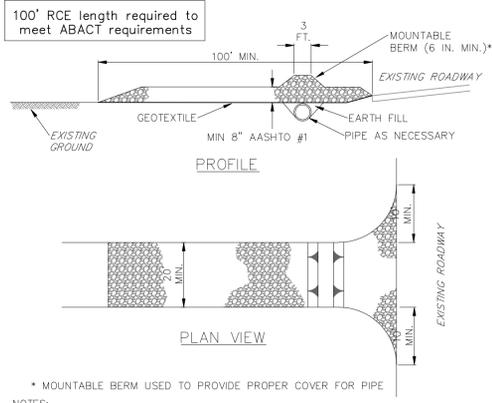
REVISIONS: \_\_\_\_\_

1 2 3 4 5 6 7 8 9 10

MELLOTT ENGINEERING, INC.  
 Civil Engineering, Land Planning & Development - Water Resources  
 7500 Devonshire Heights Road, Harrisburg, PA 17036  
 mellothead@meinc.com mellothead@meinc.com  
 717-566-6533

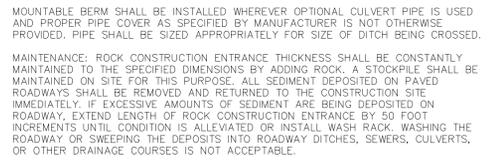
FOR  
**EROSION AND SEDIMENTATION CONTROL PLAN**  
**AUTUMN CHASE PRD - PHASE IV**  
 Land Developer: Hertzler Road Associates, L.P.  
 UPPER ALLEN TOWNSHIP CUMBERLAND COUNTY PENNSYLVANIA

Project No. 202313  
 Date May 1, 2023  
 Sheet No. ESI  
**14 of 16**

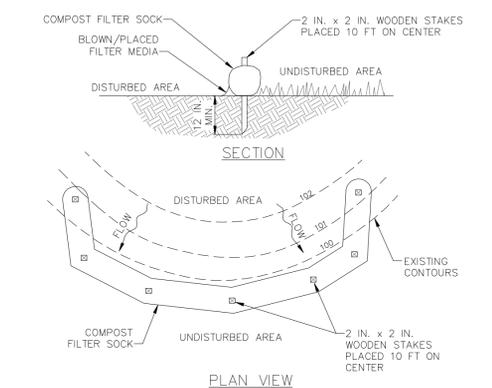


**STANDARD CONSTRUCTION DETAIL #3-1  
ROCK CONSTRUCTION ENTRANCE**

NOT TO SCALE



**PUMPED WATER FILTER BAG WITH COMPOST FILTER SOCK**



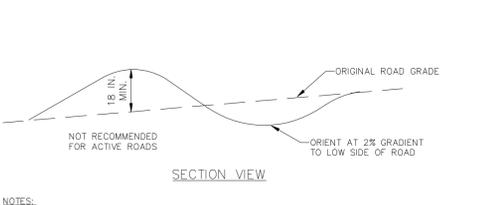
**CONCRETE WASHOUT DETAIL**

NOT TO SCALE



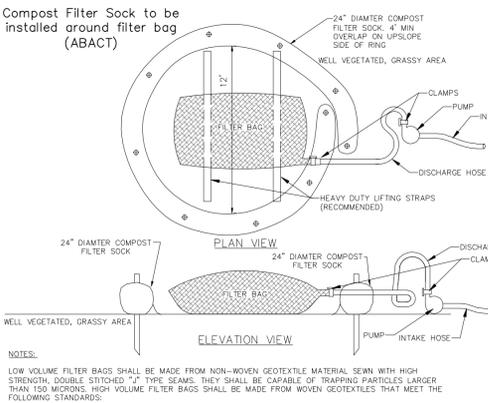
**STANDARD CONSTRUCTION DETAIL #4-1  
COMPOST FILTER SOCK**

NOT TO SCALE



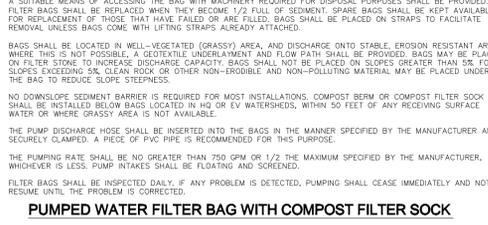
**STANDARD CONSTRUCTION DETAIL #3-5  
WATERBAR**

NOT TO SCALE



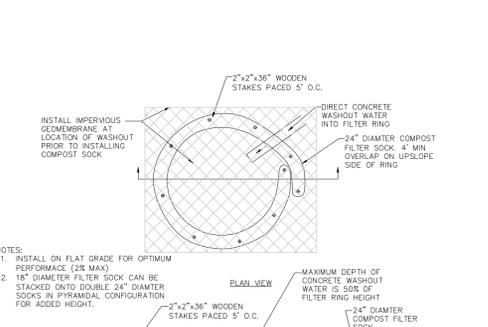
**STANDARD CONSTRUCTION DETAIL #10-1  
TYPICAL ON-LOT BMPs FOR LOT ABOVE ROADWAY**

NOT TO SCALE



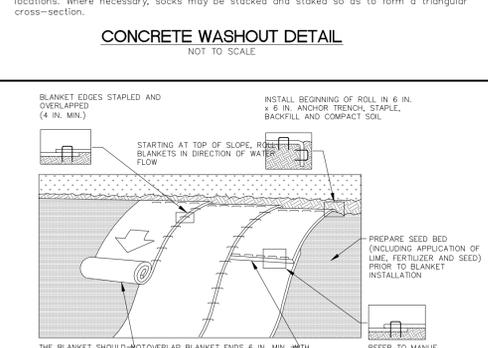
**STANDARD CONSTRUCTION DETAIL #10-2  
TYPICAL ON-LOT BMPs FOR LOT BELOW ROADWAY**

NOT TO SCALE



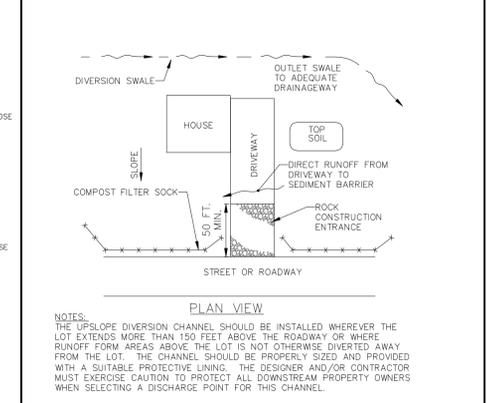
**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

NOT TO SCALE



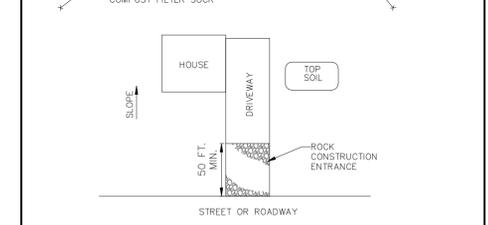
**STANDARD CONSTRUCTION DETAIL #11-1  
EROSION CONTROL BLANKET INSTALLATION**

NOT TO SCALE



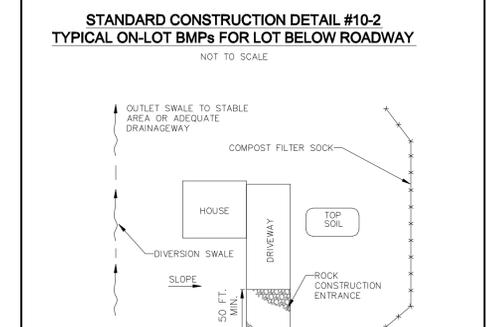
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TYPICAL ON-LOT BMPs FOR LOT ABOVE ROADWAY**

NOT TO SCALE



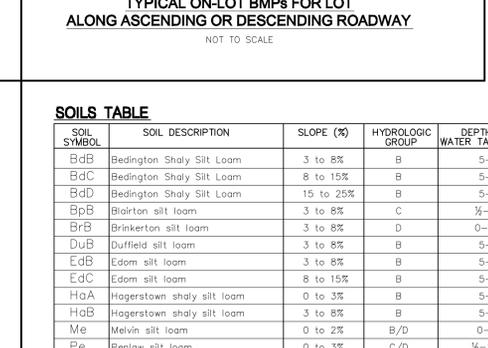
**STANDARD CONSTRUCTION DETAIL #10-2  
TYPICAL ON-LOT BMPs FOR LOT BELOW ROADWAY**

NOT TO SCALE



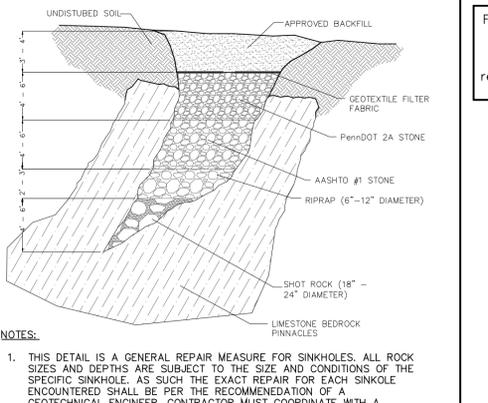
**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

NOT TO SCALE



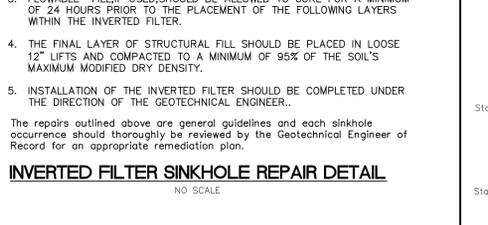
**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

NOT TO SCALE



**INVERTED FILTER SINKHOLE REPAIR DETAIL**

NO SCALE



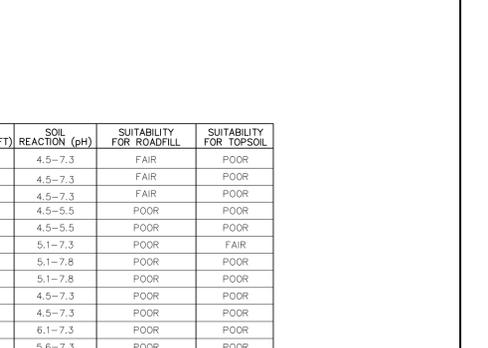
**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

NOT TO SCALE



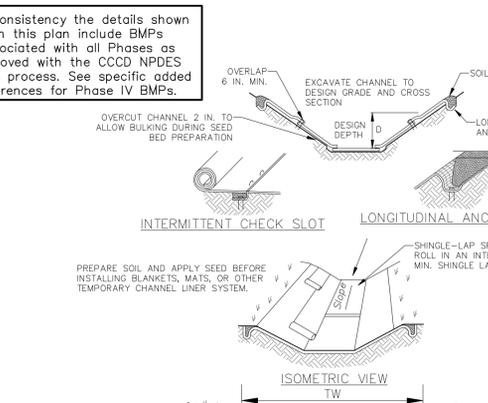
**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

NOT TO SCALE

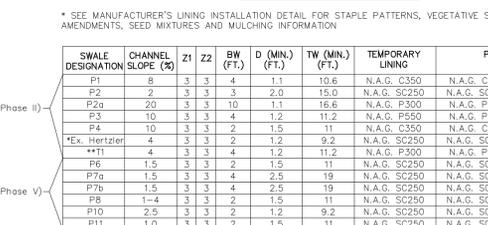


**STANDARD CONSTRUCTION DETAIL #10-3  
TYPICAL ON-LOT BMPs FOR LOT  
ALONG ASCENDING OR DESCENDING ROADWAY**

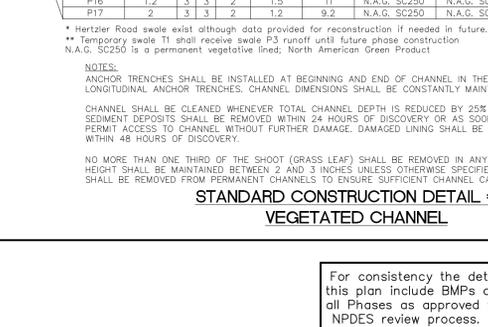
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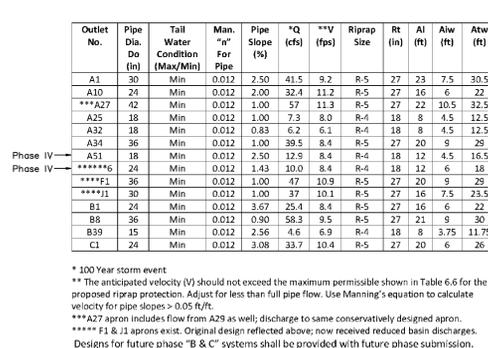
**STANDARD CONSTRUCTION DETAIL #6-1  
VEGETATED CHANNEL**



**STANDARD CONSTRUCTION DETAIL #6-1  
VEGETATED CHANNEL**



**STANDARD CONSTRUCTION DETAIL #6-1  
VEGETATED CHANNEL**



**STANDARD CONSTRUCTION DETAIL #6-1  
VEGETATED CHANNEL**

SOIL SYMBOL	SOIL DESCRIPTION	SLOPE (%)	HYDROLOGIC GROUP	DEPTH TO WATER (FT)	SOIL REACTION (pH)	SUITABILITY FOR ROADFILL	SUITABILITY FOR TOPSOIL
BdB	Bedington Shaly Silt Loam	3 to 8%	B	5+	4.5-7.3	FAIR	POOR
BdC	Bedington Shaly Silt Loam	8 to 15%	B	5+	4.5-7.3	FAIR	POOR
BdD	Bedington Shaly Silt Loam	15 to 25%	B	5+	4.5-7.3	FAIR	POOR
BbB	Bairton silt loam	3 to 8%	C	½-3	4.5-5.5	POOR	POOR
BrB	Brinkerton silt loam	3 to 8%	D	0-½	4.5-5.5	POOR	POOR
DuB	Duffield silt loam	3 to 8%	B	5+	5.1-7.3	POOR	FAIR
EdB	Edom silt loam	3 to 8%	B	5+	5.1-7.8	POOR	POOR
EdC	Edom silt loam	8 to 15%	B	5+	5.1-7.8	POOR	POOR
HoA	Hogerstown shaly silt loam	0 to 3%	B	5+	4.5-7.3	POOR	POOR
HoB	Hogerstown shaly silt loam	3 to 8%	B	5+	4.5-7.3	POOR	POOR
Me	Melvin silt loam	0 to 2%	B/D	0-1	6.1-7.3	POOR	POOR
Pe	Penlaw silt loam	0 to 3%	C/D	½-1½	5.6-7.3	POOR	POOR

In general, the soils present should not pose any significant limitation to the type of development proposed. Reference the following recommendation pertaining to possible issues that may be encountered during construction.

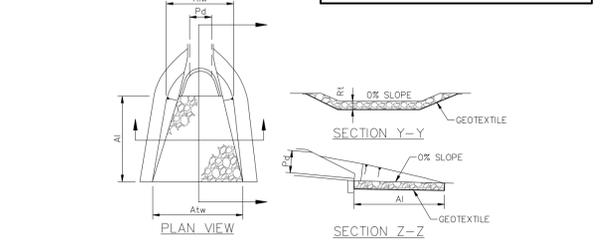
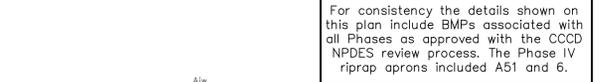
- If unrippable rock is encountered during proposed grading, blasting or drilling may be required. Removed rock can be crushed if necessary and used for fill.
- If water table is encountered during excavation, dirty water shall be pumped out into a filter bag or sediment removal pond.
- The NRCS Soil Survey indicates some of the soils have a poor rating for use as road fill. The contractor should use only what soils are suitable.
- For road fill and shell place and compact fill in accordance with standard practice. All road fill must meet Penn DOT Pub. 408 standards.
- Trap/Basin Core material shall be unified class CH or CL soil compacted to 98% of max dry density. Homogeneous embankment material to be compacted in 8" layers to a minimum final density of not less than 98% of max. Dry density within 2% of optimum moisture content. (ASTM Method D1557)
- If sinkhole is encountered during construction contractor and/or owner should immediately consult with a Geotechnical Engineer for guidance on proper sinkhole repair.

SWALE DESIGNATION	SLOPE (%)	Z1	Z2	BW (FT.)	D (MIN.) (FT.)	TW (MIN.) (FT.)	TEMPORARY LINING	PERMANENT LINING
P1	8	3	3	4	1.1	10.6	N.A.G. C350	N.A.G. C350/CLASS D VEG.
P2	2	3	3	3	2.0	15.0	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P2a	20	3	3	10	11.2	16.6	N.A.G. P300	N.A.G. P300/CLASS D VEG.
P3	10	3	3	4	1.2	11.2	N.A.G. P350	N.A.G. P350/CLASS D VEG.
P4	10	3	3	2	1.5	11	N.A.G. C350	N.A.G. C350/CLASS D VEG.
*Ex. Hertzler	4	3	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
**T1	4	3	3	4	1.2	11.2	N.A.G. P300	N.A.G. P300/CLASS D VEG.
P6	1.5	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P7a	1.5	3	3	4	2.5	19	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P7b	1.5	3	3	4	2.5	19	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P8	1-4	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P10	2.5	3	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
P11	1.0	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
Stage 3 (Phase IV)	<b>P6</b>	<b>3.3</b>	<b>3</b>	<b>2</b>	<b>1.1</b>	<b>8.6</b>	<b>N.A.G. SC250</b>	<b>N.A.G. SC250/CLASS D VEG.</b>
	P9	1.2	3	2	1.0	8	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P12	1.5	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P13	1.2	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P14	1.4	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P15	1.1	3	2	1	8	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P16	1.2	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
	P17	2	3	2	1.2	9.2	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.

\* Hertzler Road swale exist although data provided for reconstruction if needed in future.  
 \*\* Temporary swale T1 shall receive swale P3 runoff until future phase construction  
 N.A.G. SC250 is a permanent vegetative lined, North American Green Product

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED.  
 CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.  
 NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MORNING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

**STANDARD CONSTRUCTION DETAIL #6-1  
VEGETATED CHANNEL**

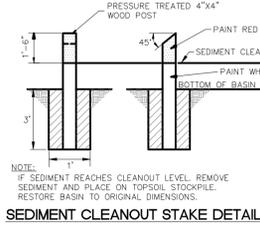


Outlet No.	Pipe Dia. Do (in)	Tail Water (Max/Min)	Man. "n" For Pipe	Pipe Slope (%)	*Q (cfs)	**V (fps)	Riprap Size	Rt (in)	Al (ft)	Aw (ft)	Atw (ft)	
A1	30	Min	0.012	2.50	41.5	9.2	R-5	27	23	7.5	30.5	
A10	24	Min	0.012	2.00	32.4	11.2	R-5	27	16	6	22	
***A27	42	Min	0.012	1.00	57	11.3	R-5	27	22	10.5	32.5	
A25	18	Min	0.012	1.00	7.3	8.0	R-4	18	8	4.5	12.5	
A32	18	Min	0.012	0.83	6.2	6.1	R-4	18	8	4.5	12.5	
A34	18	Min	0.012	1.00	39.5	8.4	R-5	27	20	9	25	
Phase IV	A51	18	Min	0.012	2.50	12.9	R-4	R-4	18	12	4.5	16.5
Phase IV	*****6	24	Min	0.012	1.43	10.0	R-4	R-4	18	12	6	18
	*****F1	36	Min	0.012	1.00	47	10.9	R-5	27	20	9	29
	*****J1	30	Min	0.012	1.00	37	10.1	R-5	27	16	7.5	23.5
	B1	24	Min	0.012	3.67	25.4	R-4	R-5	27	16	6	22
	B8	36	Min	0.012	0.90	58.3	R-5	R-5	27	21	9	30
	B39	15	Min	0.012	2.56	4.6	R-4	R-4	18	8	3.75	11.75
	C1	24	Min	0.012	3.08	33.7	R-5	R-5	27	20	6	26

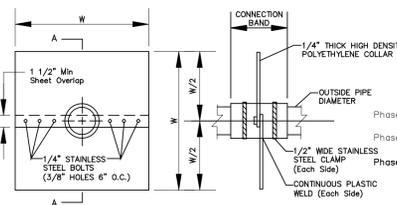
\* 100 Year storm event  
 \*\* The anticipated velocity (V) should not exceed the maximum permissible shown in Table 6.6 for the proposed riprap protection. Adjust for less than full pipe flow. Use Manning's equation to calculate velocity for pipe slopes > 0.05 ft/ft.  
 \*\*\*A27 apron includes flow from A29 as well; discharge to same conservatively designed apron.  
 \*\*\*\*F1 & J1 aprons exist. Original design reflected above; now received reduced basin discharges. Designs for future phase "B & C" systems shall be provided with future phase submission.  
 \*\*\*\*\*6 - Basin 6 discharge was conservatively assumed to be 10 cfs while actual is less.  
 All pipe end treatments shall be Concrete End Wall (RC-31M)

NOTES:  
 ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.  
 ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.  
 FOR ROAD FILL AND SHELL PLACE AND COMPACT FILL IN ACCORDANCE WITH STANDARD PRACTICE. ALL ROAD FILL MUST MEET PENN DOT PUB. 408 STANDARDS.  
 TRAP/BASIN CORE MATERIAL SHALL BE UNIFIED CLASS CH OR CL SOIL COMPACTED TO 98% OF MAX DRY DENSITY. HOMOGENEOUS EMBANKMENT MATERIAL TO BE COMPACTED IN 8" LAYERS TO A MINIMUM FINAL DENSITY OF NOT LESS THAN 98% OF MAX. DRY DENSITY WITHIN 2% OF OPTIMUM MOISTURE CONTENT. (ASTM METHOD D1557)  
 IF SINKHOLE IS ENCOUNTERED DURING CONSTRUCTION CONTRACTOR AND/OR OWNER SHOULD IMMEDIATELY CONSULT WITH A GEOTECHNICAL ENGINEER FOR GUIDANCE ON PROPER SINKHOLE REPAIR.

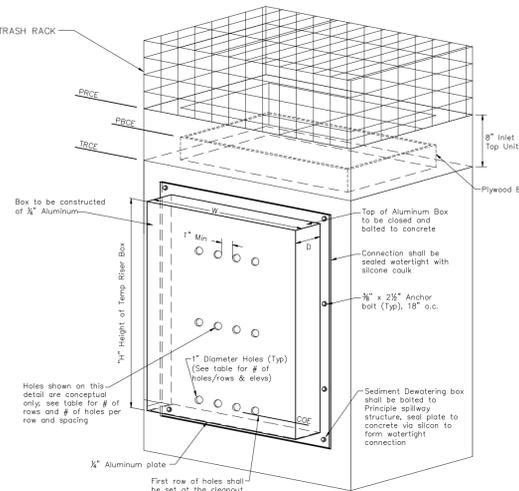
**STANDARD CONSTRUCTION DETAIL #9-1  
RIPRAP APRON AT PIPE OUTLET  
WITH FLARED END SECTION OR ENDWALL**



**SEDIMENT CLEANOUT STAKE DETAIL**



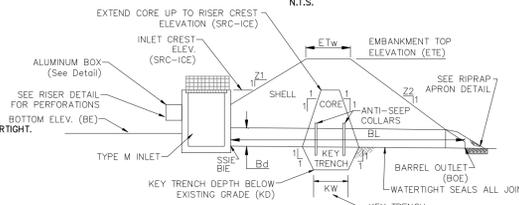
**ANTI-SEEP COLLAR DETAIL**



BASIN NO.	TEMP COE (FT)	PERM CREST ELEV (FT)	PLYWOOD BOX CREST ELEV (FT)	TEMP FABRICATED RISER HEIGHT H (FT)	WIDTH W (FT)	DEPTH D (FT)	NO. HOLES PER ROW	NO. OF ROWS	VERTICAL SPACING OF ROWS (FT)		
Phase 2	4A	459.1	462.5	463.5	465.2	*5	1.5	0.5	10	5	1.2
Phase 3	5	464.0	NA	466.0	NA	**2.5	1.5	0.5	14	3	0.7
Phase 4	6	480.0	NA	482.0	NA	**2.5	1.5	0.5	4	4	0.5

\* Basin 4A temp riser attachment shall be installed from elevation 457.5 (bottom) to top of outlet structure without the 12" top slab (TRCE elev). The first two rows of holes shall be installed in the fabricated riser attachment and the final two rows shall be installed in the plywood extension. The riser attachment is installed to 457.5 as to be below the basin's low flow orifice (allows for basin to dewater through the holes as intended). # of holes per row of thumb method.  
 \*\* Basins 5 & 6 fabricated risers shall accommodate dewatering holes extending from the cleanout elevation to top of box (fabricated box height to be such to allow for holes at cleanout level).

**SEDIMENT BASIN TEMPORARY RISER BOX**



**STANDARD CONSTRUCTION DETAIL #7-13  
SEDIMENT BASIN EMERGENT SPILLWAY WITH TRM LINING**

**ALL SEDIMENT BASIN OUTFALL PIPES SHALL BE CONSTRUCTED WITH A CONCRETE CRADLE. ALL BASINS BERMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAIL #7-6 INCLUDING ANTI-SEEP COLLARS INSTALLED IN BERM CORE. NO CRADLE NEEDED FOR PORTIONS OF OUTFALL PIPES PREVIOUSLY INSTALLED WITH TRAIL INSTALLATION.**

BASIN/ TRAP NO.	Z1 (FT)	Z2 (FT)	HEIGHT H (FT)	WIDTH W (FT)	DEPTH D (FT)	ELEV. SRC (FT)	PERF. ELEV. CDE (FT)	STORM INVERT ELEV. (FT)	INLET ELEV. ICF (FT)	EMBANK. TOP ELEV. ETE (FT)	BOTTOM ELEV. BE (FT)
Phase 2	4A	3	3	*	*	459.1	459.9	465.2	467.0	457.5	457.5
Phase 3	5	3	3	*	*	464.0	468.0	466.0	468.0	463.0	463.0
Phase 4	6	3	3	*	*	480.0	478.5	482.0	484.0	479.0	479.0

BASIN/ TRAP NO.	EMBANKMENT TOP ELEV. ETE (FT)	KEY TRENCH DEPTH (FT)	CLEANOUT ELEV. CDE (FT)	BOTTOM ELEV. BE (FT)	DIA. (IN)	INLET ELEV. ICF (FT)	LENGTH (FT)	OUTLET ELEV. BOE (FT)			
Phase 2	4A	467.0	8	2	4	459.1	457.5	455.8	80	455.0	
Phase 3	5	468.0	8	2	4	464.0	463.0	460.8	60	460.2	
Phase 4	6	484.0	8	2	4	480.0	20	478.5	HOPE	35	478.0

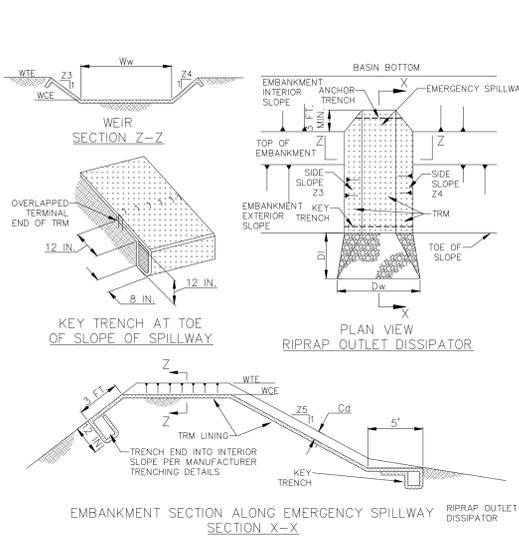
AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDING OR MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

ACCESS SHALL BE PROVIDED FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

**STANDARD CONSTRUCTION DETAIL #7-6 & #8-7  
TYPE M INLET SEDIMENT BASIN-TRAP & SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS**

BASIN NO.	BAFFLE DR. NO.	LENGTH (FT)	HEIGHT (FT)	CREST ELEV. (FT)	BOTTOM ELEV. (FT)
Phase 2	4A	140	7.7	465.2	457.5
Phase 3	5	140	7.7	466.0	463.0
Phase 4	6	125	3	482.0	479.0

**STANDARD CONSTRUCTION DETAIL #7-14  
BAFFLE**



**EMBANKMENT SECTION ALONG EMERGENT SPILLWAY**

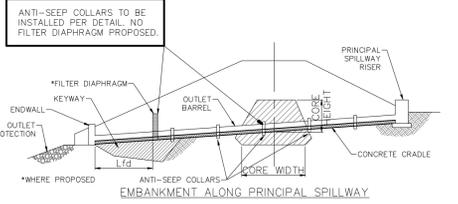
BASIN NO.	Z3 (FT)	Z4 (FT)	WEIR CREST ELEV. WCE (FT)	WIDTH W (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH D (FT)	LENGTH L (FT)	RIPRAP SIZE (R-)	RIPRAP THICK. (IN)
Phase 2	4A	3	467.0	466.0	360	**NA	Per Man	3	0.5	NA	NA
Phase 3	5	3	468.0	466.5	220	**SC250	Per Man	3	0.5	NA	NA
Phase 4	6	3	484.0	482.5	90	**SC250	Per Man	3	0.5	NA	NA

\*\*SC250 = permanent SC250 liner as Manufactured by North American Green  
 \*\* Emergency spillway not used in design; all flow through principal structure.

HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR. THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

**STANDARD CONSTRUCTION DETAIL #7-13  
SEDIMENT BASIN EMERGENT SPILLWAY WITH TRM LINING**

**ALL SEDIMENT BASIN OUTFALL PIPES SHALL BE CONSTRUCTED WITH A CONCRETE CRADLE. ALL BASINS BERMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAIL #7-6 INCLUDING ANTI-SEEP COLLARS INSTALLED IN BERM CORE. NO CRADLE NEEDED FOR PORTIONS OF OUTFALL PIPES PREVIOUSLY INSTALLED WITH TRAIL INSTALLATION.**



**EMBANKMENT ALONG PRINCIPAL SPILLWAY**



**CROSS-SECTION AT OUTLET BARREL**

**STANDARD CONSTRUCTION DETAIL #7-17  
CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL**

**CRITICAL STAGES OF PLAN IMPLEMENTATION**  
 This plan identifies the Post Construction Stormwater Management BMPs for the project. In accordance with NPDES permitting requirements, critical stages of implementation of the plan shall have a licensed professional or designer on site. The critical stages of construction associated with this project would be construction of the Bioretention-Detention Basin embankments and outlet structures, soil restoration of basin bottoms and verification of appropriate basin seeding. All other BMPs can be inspected after construction to verify consistency with the intended design.

**UTILITY GENERAL NOTES**  
 1. Public water service shall be provided to the project via water main extensions from the water main stubs installed with Phase I construction (stubs are located at the S. Fall Harvest and S. Autumn Chase Drive intersections with Hertzler Road.  
 2. Public sanitary sewer service shall be provided to the project via gravity sewer extensions. The northern portion of the site shall be served via extension from existing manhole L511-31 previously installed with Autumn Chase Phase I and southern portion of the site (future phases) shall be served via an extension from the sewer system located within the Pennington Farms Community. All sewer construction to be in accordance with Township standards.  
 3. Electric and telecommunication utilities shall serve the project. These utility designs shall be performed by the applicable utility company after conditional plan approval.

**PERMANENT SEEDING**  
 A. All disturbed soil not to be covered with impervious surfaces, riprap or landscaping mulch shall be permanently seeded to provide protection against the impact of precipitation, running water and wind.  
 B. Mulching shall be used to protect seeding and help in preventing runoff. Clean straw mulch shall be required in all disturbed areas and applied at a rate of 3 tons/acre (equivalent to 0.75" to 1" deep). Clean straw mulch should not be finely chopped nor broken during application.  
 Maintenance procedure:  
 1) Maintain a minimum 70% soil surface coverage with grass and/or mulch.  
 2) If a washout, slope failure or similar disturbance occurs, correct drainage problem if necessary, then reapply soil to the proper grade, reapply soil amendments, seed and mulch.

Permanent seeding schedule is as follows:  
 For gentle low grades:  
 Species: 40% Kentucky Bluegrass  
 40% Pennlawn Creeping Red Fescue  
 20% Noxious Perennial Ryegrass  
 For Swales, steep slopes and wet areas: 100% Tall Fescue, varieties such as K-31, Altra, or other recently released dwarf variety %  
 Pure live seed: 98%  
 Application rate: 6 lbs./1000 sq. ft.  
 Fertilizer Type: general purpose granular, 10-20-20  
 Fertilizer application rate: 1000 lbs per acre  
 Liming rate: Four (4) tons per acre of agricultural grade lime  
 Straw/mulch rate: three (3) tons per acre  
 Seeding dates: Between 4/1 and 10/15

**TEMPORARY SEEDING**  
 The contractor shall temporarily stabilize any rough graded area, topsoil stockpile or unused excavated fill material. The grass will provide interim protection against the impact of precipitation, running water and wind.  
 Temporary seeding schedule is as follows:  
 Species: annual ryegrass  
 % Live Seed: 98%  
 Application rate: 1 lbs./1000 sq. ft.  
 Fertilizer Type: general purpose granular, 5-5-5  
 Fertilizer application rate: 1000 lbs per acre  
 Liming rate: one (1) ton per acre of agricultural grade lime  
 Straw/mulch rate: three (3) tons per acre  
 Seeding dates: no seeding between 1/1 and 3/15

**STABILIZATION NOTES**  
 1. 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.  
 2. Immediately after earth disturbance activities cease or temporary cessation preparations should be made for seeding and mulching to begin (i.e. anticipate the completion date and schedule the seeder). In no case should an area exceeding 15,000 square feet, which is to be stabilized by vegetation, reach final grade without being seeded and mulched. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will not 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 intended permanent vegetative stabilization specifications.  
 3. An erosion control blanket will be installed on all disturbed slopes 3:1 or steeper, all areas of concentrated flows, all disturbance with 50' of Waters of the Commonwealth and all other areas specifically identified on the plans. N.A.G. 575 biodegradable matting shall be used for all general slope matting unless otherwise noted on the plans.  
 4. Soil restoration and amendments of the basin bottoms shall be provided at time of conversion to permanent stormwater basins. The basin bottom preparation consists of over excavating the basin bottoms to 12" below finished grade, scarification/till the subgrade bottom (10" depth desired), smooth out bottom with light weight track equipment and place 12" of the amended soils mixture across basin bottom followed by stabilization with intended basin seed mixture and mulch. The scarification/tilling of the subgrade is intended to enhance permeability of the subsoils and the amended soils will also promote infiltration and enhance vegetation growth.  
 5. Replace all topsoil where construction is complete (4" to 8" depth). Prior to seeding, prepare surface by removal of rocks and unsuitable matter by hand raking or the use of a rock hauler with light weight equipment. Stabilize with intended seed, straw and mulch per intended seeding specifications (See plan for types, grass, meadow, wetland mix and vegetated filter strip). Matting is required for all slopes 3:1 and steeper, see plan for locations).  
 6. 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. Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1000 sq. may be used to tack mulch.  
 B. Synthetic Binders (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 or animal life.  
 C. Wood mulch can be used over straw at a rate of 210 lb. per 1000 sq.  
 D. Lightweight plastic, fiber, or paper nets may be stapled over the mulch to manufacturer's recommendations.  
 7. Tracking steep slopes (>25% or 4:1) may be utilized by running tracked machinery up and down the slope, leaving track marks parallel to the contour. (Note: If a bulldozer is used, the blade shall be up.) Care should be exercised on soils having a clay content to avoid over-compaction. See notes above for permanent stabilization.

**STANDARD EROSION & SEDIMENT CONTROL PLAN NOTES**  
 1. A copy of the stamped approved drawings signed and dated by the Cumberland County Conservation District must be available at the project site at all times.  
 2. At least 7 days prior to starting any earth disturbance activities (including clearing and grubbing), the owner and/or operator shall invite all contractors, the landscaper, appropriate municipal officials, the E&S Plan preparer, the post construction stormwater management plan preparer, and a representative from the Cumberland County Conservation District to an on-site preconstruction meeting.  
 3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.  
 4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the Cumberland County Conservation District or by DEP prior to implementation.  
 5. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S Plan approved by the Construction Sequence for that stage has been initiated and is functioning as described in this document.  
 6. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.  
 7. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2H:1V or flatter.  
 8. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate BMPs to minimize the potential for accelerated erosion and sediment pollution and notify the Cumberland County Conservation District and/or the regional office of DEP.  
 9. All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code Chapter 260, §§260.1 et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.  
 10. All off-site waste and borrow areas must have an E&S Plan approved by the Cumberland County Conservation District or DEP fully implemented prior to being activated.  
 11. The contractor responsible for ensuring that any material brought on site is Clean Fill.  
 12. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance and qualifying as Clean Fill due to analytical testing. Clean Fill is defined as uncontaminated, non-water-soluble, non-decomposable, inert, solid materials, such as rock, stone, dredge, sand, gravel, crushed stone, brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use. Any placement of clean fill that has been affected by a spill or release of a regulated substance must use form FP-001 to certify the material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill. Environmental due diligence must be performed to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, traction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of a regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy Management of Clean Fill.  
 13. All dumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.  
 14. Until the site is stabilized, all E&S BMPs must be maintained properly. Maintenance must include inspections of all E&S BMPs after each rain event. At a wastewater or other waste water treatment facility, all preventative and remedial operations, such as, repair, replacement, re-grading, re-seeding, re-mulching and re-netting must be performed immediately. If E&S BMPs fail to perform as specified, or modifications to those installed will be required.  
 15. A written report showing details that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.  
 16. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.  
 17. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.  
 18. Areas within an outlet structure shall be maintained to a minimum depth of 4 inches depth of topsoil. All outlet structures shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outlets shall have a minimum of 2 inches of topsoil.  
 19. Fill pits shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.  
 20. Fill materials shall be free of frozen particles, brush, rocks, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.  
 21. Frozen materials or soft, muddy, or highly compressible materials shall not be incorporated into fills.  
 22. Fill shall not be placed on saturated or frozen surfaces.  
 23. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.  
 24. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated.  
 25. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.  
 26. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.  
 27. E&S BMPs must remain functional as such until they are permanently stabilized or until they are replaced by another BMP approved by the Cumberland County Conservation District or DEP.  
 28. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the Cumberland County Conservation District for an inspection prior to removal/conversion of the E&S BMPs.  
 29. After final site stabilization has been achieved, temporary E&S BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs must be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions should be done only during the germinating season.  
 30. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the Cumberland County Conservation District to schedule a final inspection.  
 31. Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.  
 32. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Pennsylvania Department of Environmental Protection as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to \$10,000 per day in civil penalties, up to \$10,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation.  
 33. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter any surface waters or groundwater systems.  
 34. All channels shall be kept free of obstructions including but not limited to fill, rocks, leaves, woody debris, accumulated sediment, excess vegetation, and construction materials/wastes.  
 35. Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work area in the manner described in this plan until such restoration is complete.  
 36. Sediment basins and/or traps shall be kept free of all construction waste, wash water, and other debris having potential to clog the basin/trap outlet structures and/or pollute the surface waters.  
 37. Any damage that occurs in whole or in part as a result of basin or trap discharge shall be immediately repaired by the permittee in a permanent manner satisfactory to the municipality, Cumberland County Conservation District and the owner of the damaged property.  
 38. Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.  
 39. Fill material for embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 6" layered lifts at 95% modified proctor per ASTM D1557.