INTENT OF PLAN

The intent of this plan is to obtain Final Subdivision & Land Development Plan 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.
- Harrisburg, PA 17110 717-234-4000
- The subject tract consists of two (2) parcels of Land; both tracts are owned by: Hertzler Road Associates, LP (entire project) 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 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 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
- 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 V; 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 Phasina Plan): • 161 Single-family dwelling lots (78 North and 83 south of
- 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
- 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

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

Single Family Detached Lots: Front = 25' Side = 5

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

> Rear = 15*see below for interior yards

*Interior Yard Separations (Rear to rear, side to rear, etc. - Sec. 245-155) 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%

FINAL SUBDIVISION & LAND DEVELOPMENT PLAN FOR

AUTUMN CHASE PRD PHASE IV

LOCATED IN

UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PA.

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

PHASE II RECORDING INFORMAITON

The Final Plat for Autumn Chase PRD Phase II was recorded on July 27, 2023 in Instrument #202314020

PHASE III RECORDING INFORMAITON The Final Plat for Autumn Chase PRD Phase III was recorded

on September 22, 2022 in Instrument #202226446. PHASE V RECORDING INFORMAITON

The Final Plat for Autumn Chase PRD Phase V was ecorded on ______ in Instrument #202___

	DRAWING INDEX
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

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

220-18.B

220-16.A(3)

Tax Parcel associated with this plan

Tax Parcel No. 42-11-0272-001

The below waivers and deferrals as listed were granted with the

Cul-de-sacs to not exceed 800 feet and not serve

Modification Requirement

Allowed the residential block to have a length of 1.65:

feet instead of the required maximum length of 1,500

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 ½ inch depth overlay pavement Hertzler Road

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

Permit slant curbing within development instead of

vertical curbing.
Sidewalks to be installed along one side of proposed

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 Allendale PRD

To permit Hertzler Road improvements in lieu of curbs,

to include widening and overlay of off-site portions of

the road west approximately 650 feet toward the

improvements completed by the Winding Hills PRD and

east approximately 400 feet toward the intersection of

Hertzler Road/ and Klinedinst Road. Improvements

along the property frontage shall consist of widening of

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

the cartway to twenty-four (24) feet and installing a 1 :

to the Township Greenway property to the east.

reconstruction (Section 220-15.G(1)).

instead of both sides of the street.

from the development west to the property line of the February 15, 2012

streets ("Road J"/ Brittany Circle and Lot OS-7 only) February 15, 2012

Date of Waiver

Approval

Modification

Approval

February 15, 2012

February 15, 2012 tentative approval of the Autumn Chase PRD.

more than 20 dwelling units.

GENERAL NOTES

Hertzler Road):

- 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 requirements for Autumn Chase are being satisfied 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 association shall be responsible for maintenance and upkeep of the following:
- a. All Open Space Areas except for open space areas accepted by the township for recreation land dedication (See notes on Open Space below); b. All on-site stormwater management facilities located outside of a public right-of-way; c. 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 sidewalk maintenance and snow 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 CEDG, Inc. in April 2005 & 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. Sit benchmark: Northeasterly corner of concrete headwall on the southerly side of Hertzler Road, approximately 300' east of railroad crossin Elev.=445.75 (NAVD 88) Topographic information shown is based on photogrammetry mapping performed by air survey, flown April 6, 2005. The
- All streets proposed with this project shall be constructed to township standards and shall be offered for dedication to the township upon completion 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 1 (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 5% 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 (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—depressions located along the southern property line or 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 as shown 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
- 0. 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 signs, and all signs shall conform to all applicable requirements within Chapter 245, Article XXIII 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. 12. 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 extents and relation of features to the proposed improvements and then provide repair 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.
- 3. All new utilities shall be placed under ground. 4. 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
- 5. 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 til 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. 6. 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. 7. 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 prior to start of construction. The NPDES permittee and all co-permittee shall be responsible for implementation and maintenance of erosion control measures in accordance with the approved Erosion Control Plan. 18. 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 aradina plan.
- 19. Manhole covers for stormwater manholes shall be cast with the word "Storm" for identification purposes. 20. 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.
- 1. Contractor shall schedule a pre—construction meeting with the Township Engineer at least 48 hours prior to starting site construction activities. 22. 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 table for Serial Numbers.
- 23. All known existing easements and rights—of—ways have been shown on the plan and all utilities have been notified per PA One Call requirements. 24. 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.
- 25. 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 dwelling lots proposed
- in this Phase although note provided for consistency with previous plan approvals). 26. 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 o land surveyor attesting to the correctness of the facility information shown, in accordance with Section 220-13.C(2) of the Codified Ordinances of
- 27. The Home Owners Association shall maintain the grass area around the Greenway Trail and associated easement areas. 28. 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.

SANITARY SEWER CONSTRUCTION NOTES

- . All sanitary sewer construction materials and methods shall conform to the latest standards of Upper Ållen 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
- 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
- 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 the 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.
- O. All sanitary sewer pipe installed shall be inspected by a Upper Allen Township representative prior to backfilling. 1. A ten (10') foot minimum horizontal separation or an 18" vertical separation must be
- maintained wherever possible between water lines and sewer lines. 2. 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. Mellott Engineering, Inc. recommends the owner and contractor 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 utilities. Information on existing utilities has been compiled from available information including utility company and municipal record maps and field survey and is not quaranteed 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
- 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.

condition or better if they are not indicated to be altered on the plans.

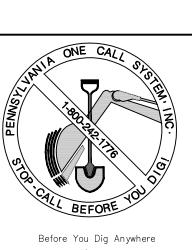
obtain all necessary permits from the municipality required to perform the work.

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

The contractor shall restore any structure or areas disturbed during construction to their original

The fire hydrants shown on this plan have been reviewed by the township Fire Marshall. 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



STOP! Call 1-800-242-1776 Toll Free PA One Call System, Inc.

NNSYLVANIA ACT 199 (2004) AS AMENDER SIGNERS, OR ANY PERSON PREPARING T TURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

COMPANY: VERIZON PENNSYLVANIA INC KODI B. HOCKENBERRY ADDRESS: 201 STANWIX ST 4TH FLOOR PITTSBURGH, PA. 15222 CONTACT: EMAIL: khockenberry@uatwp.org COMPANY: UGLUTHITIES INC ADDRESS OFFICE PERSONNEL 1500 PAXTON ST HARRISBURG, PA 17104 CONTACT: TOM WITT EMAIL: COMPANY: BUCKEYE PARTNERS ADDRESS: PO BOX 368 EMMAUS, PA. 180490368 CONTACT: DONALD SAMALA twitt@ugi.com COMPANY: Veolia WATER ADDRESS: ADDRESS: 6550 SPRINT PARKWAY S: KSOPHRO312 OVERLAND PARK, K 317 NORTH MARKET STREE MECHANICSBURG, PA. 17055 CONTACT: KIM GENETTI 662516109 CONTACT: JESSICA REVELL EMAIL: jessica.m.revelle@sprint.com EMAIL: Kim.Genetti@veolia-na.com COMPANY: FIRSTENERGY COR ADDRESS: 76 S MAIN ST AKRON, OH. 443081890 CONTACT: OFFICE

COMPANY: FRONTIER COMMUNICATIONS jlanderson@pplweb.com

CORPORATION ADDRESS: 1801 BROOKWOOD ST HARRISBURG, PA.

71042222 CONTACT: JEANETTE

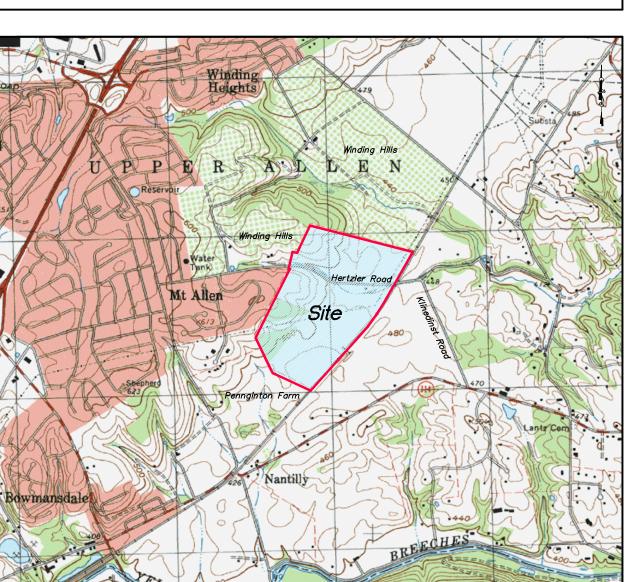
COMMUNICATIONS INC ADDRESS: 4601

CONTACT: CONSTRUCTION COORDINATOR

COMPANY: XO COMMUNICATIONS INC ADDRESS: C/O DE-TECH INC 120 N PEARL ST CRESTLINE, OH. 44827 CONTACT: ROBERT FREED E EMAIL: jessica.m.revelle@sprint.com

COMPANY: ELANTIC NETWORKS INC

ADDRESS: 1450 E PARHAM RD RICHMOND, VA. 23228 CONTACT: CONI



SITE LOCATION MAP SCALE : 1" = 2,000'

REVIEWED THIS _____ DAY OF__

REVIEWED THIS

DIRECTOR OF PLANNING

Ordinances of Upper Allen Township.

Stormwater Management Ordinance."

'I, Timothy L. Mellott, P.E., on this date $_$

REVIEWED BY THE UPPER ALLEN TOWNSHIP ENGINEER

DAY OF

Timothy L. Mellott, P.E., hereby certify that I am a Pennsylvania

registered professional engineer and that all elements of the plan

Timothy L. Mellott, P.E., hereby certify the portions of this site

are underlain by limestone bedrock based on geological maps, and

have reviewed and hereby certify that the SWM site plan meets all

design standards and criteria of the Upper Allen Township

REVISION

Addressing Review Comments

6

upon a carbonate assesment report prepared by Pierre O. MaCoy,

are inconformity with the Township Code and applicable state

regulations, as required by Section 220-15.N(3) of the Codified

ATTEST:

MELLOTT ENGINEERING, INC.

CIVIL ENGINEERING LAND PLANNING & DESIGN WATER RESOURCES 7500 DEVONSHIRE HEIGHTS ROAD • HUMMELSTOWN, PA 17036 mellotteng@comcast.net

(717)-566-6533

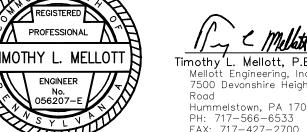


APPROVED BY THE BOARD OF COMMISSIONERS OF UPPER ALLEN COMMONWEALTH OF PENNSYLVANIA TOWNSHIP, THIS_____DAY OF _______. 20__. ON THIS THE _____DAY OF _____ , THE UNDERSIGNED OFFICER, PERSONALLY APPEARED WHO ACKNOWLEDGED HIMSELF TO BE THE PRESIDENT OR VICE PRESIDENT OF HERTZLER ROAD ASSOCIATED. L.P. A CORPORATION. AND THAT HE AS SUCH PRESIDENT OR VICE PRESIDENT, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSE THEREIN APPROVED BY THE PLANNING COMMISSION OF UPPER ALLEN TOWNSHIP, CONTAINED BY SIGNING THE NAME OF THE CORPORATION BY HIMSELF AS PRESIDENT OR VICE PRESIDENT. IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL CUMBERLAND COUNTY PLANNING DEPARTMENT

> IT IS HEREBY CERTIFIED THAT THE UNDERSIGNED HAS LEGAL OR EQUITABLE TITLE TO THE LAND SHOWN AND THAT ALL ROADS, STREETS OR RIGHT-OF-WAY (OR FASEMENTS) SHOWN HEREON, IF NOT PREVIOUSLY DEDICATED, ARE HEREBY OFFERED FOR PUBLIC USE.

OWNER STORMWATER MANAGEMENT FACILITIES ACKOWLEDGEMENT I Francis McNaughton, hereby acknowledge that the Stormwater Management Facilities and BMP's are to be permanent fixtures that can be altered or removed only after approval of a revised plan by the applicable municipality.

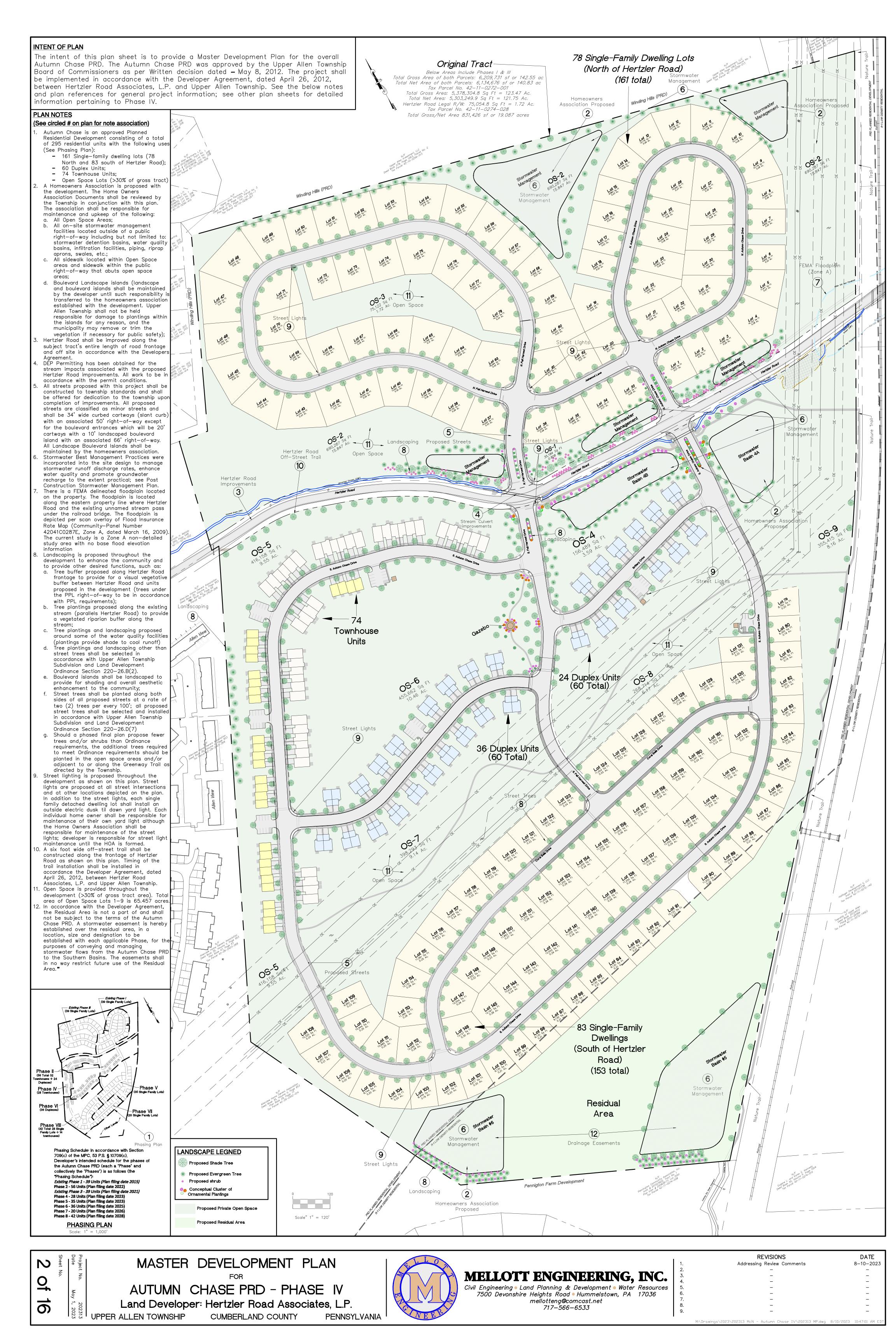
I, Rory Chapman, hereby certify that I am a registered Land Surveyor in compliance with the laws of the Commonwealth of Pennsylvania; that this plan correctly represents a survey originally completed by CDEG on April 2005 and reconfirmed by A to Z Land Surveyors in May 2022; that all monuments shown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

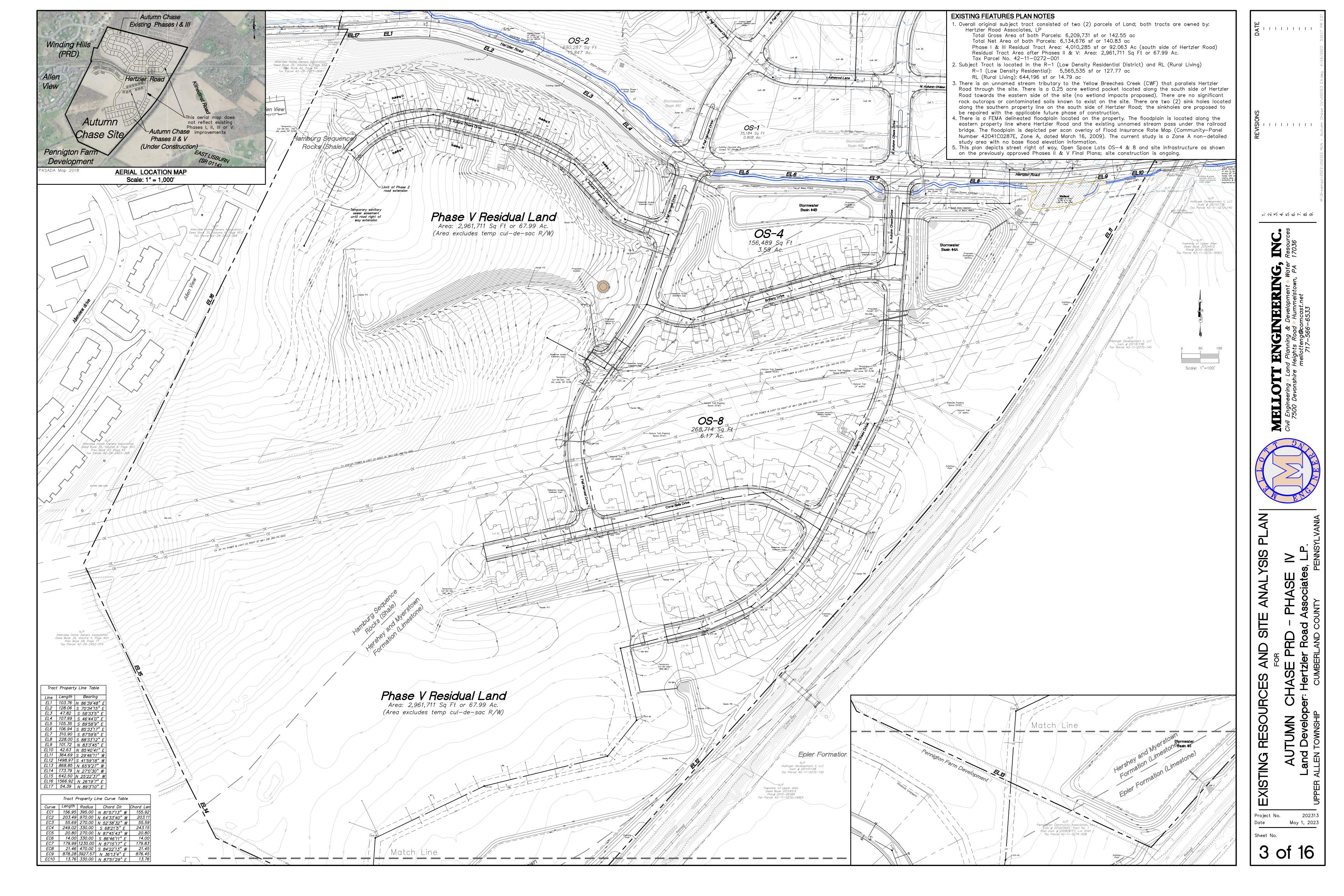


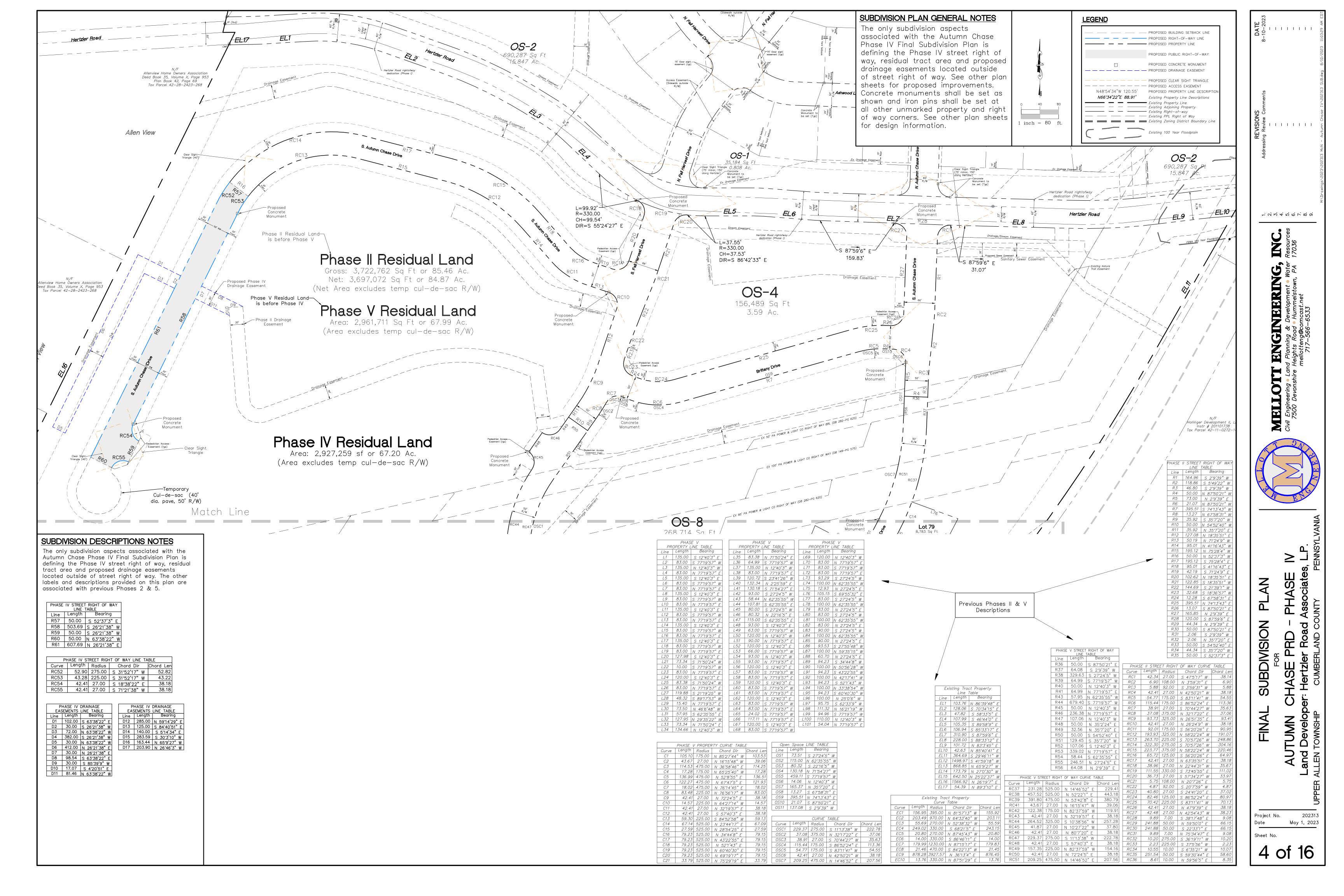
'imothy L. Mellott. P.E. Mellott Engineering, Inc 7500 Devonshire Heights Hummelstown, PA 17036 PH: 717-566-6533 FAX: 717-427-2700

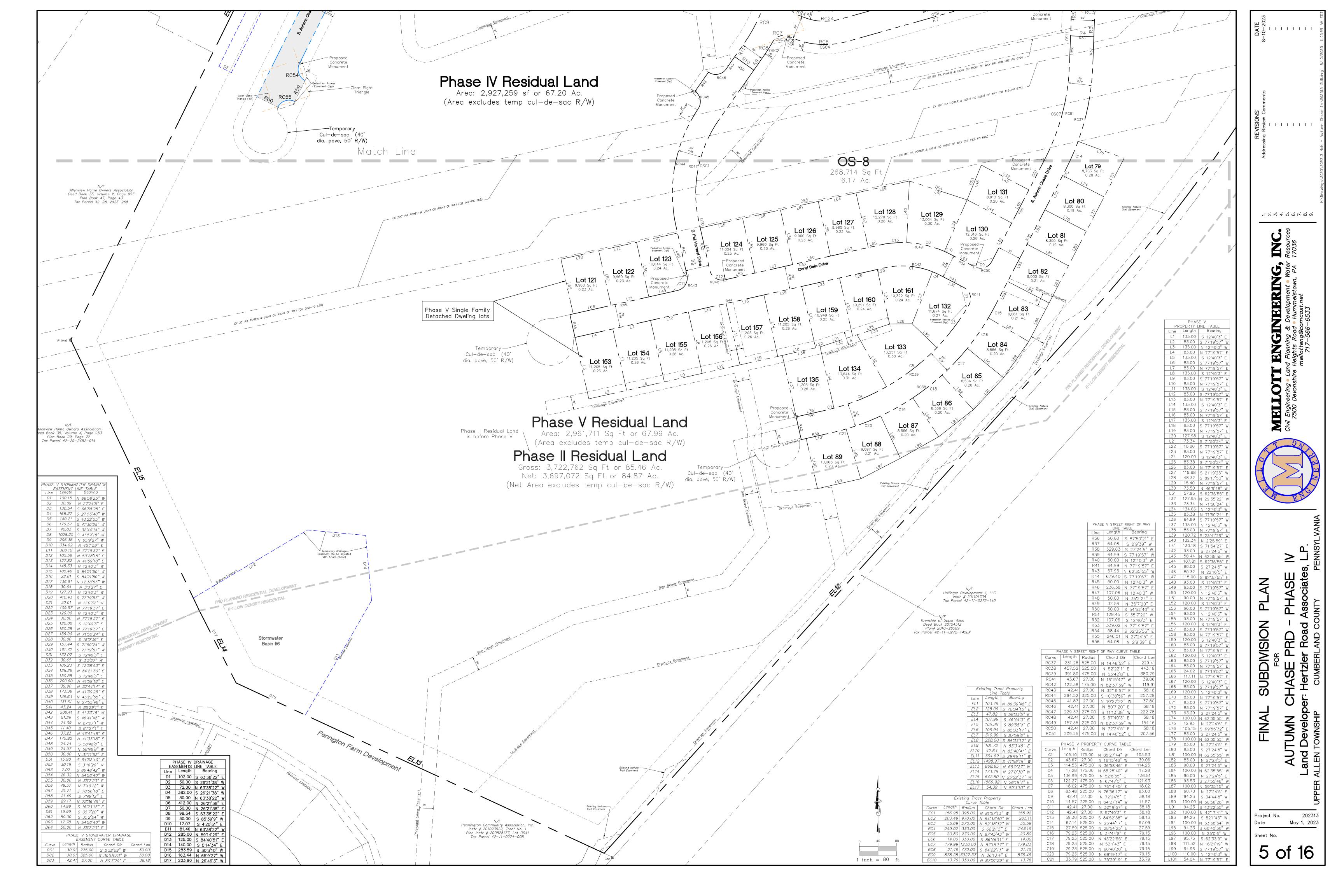
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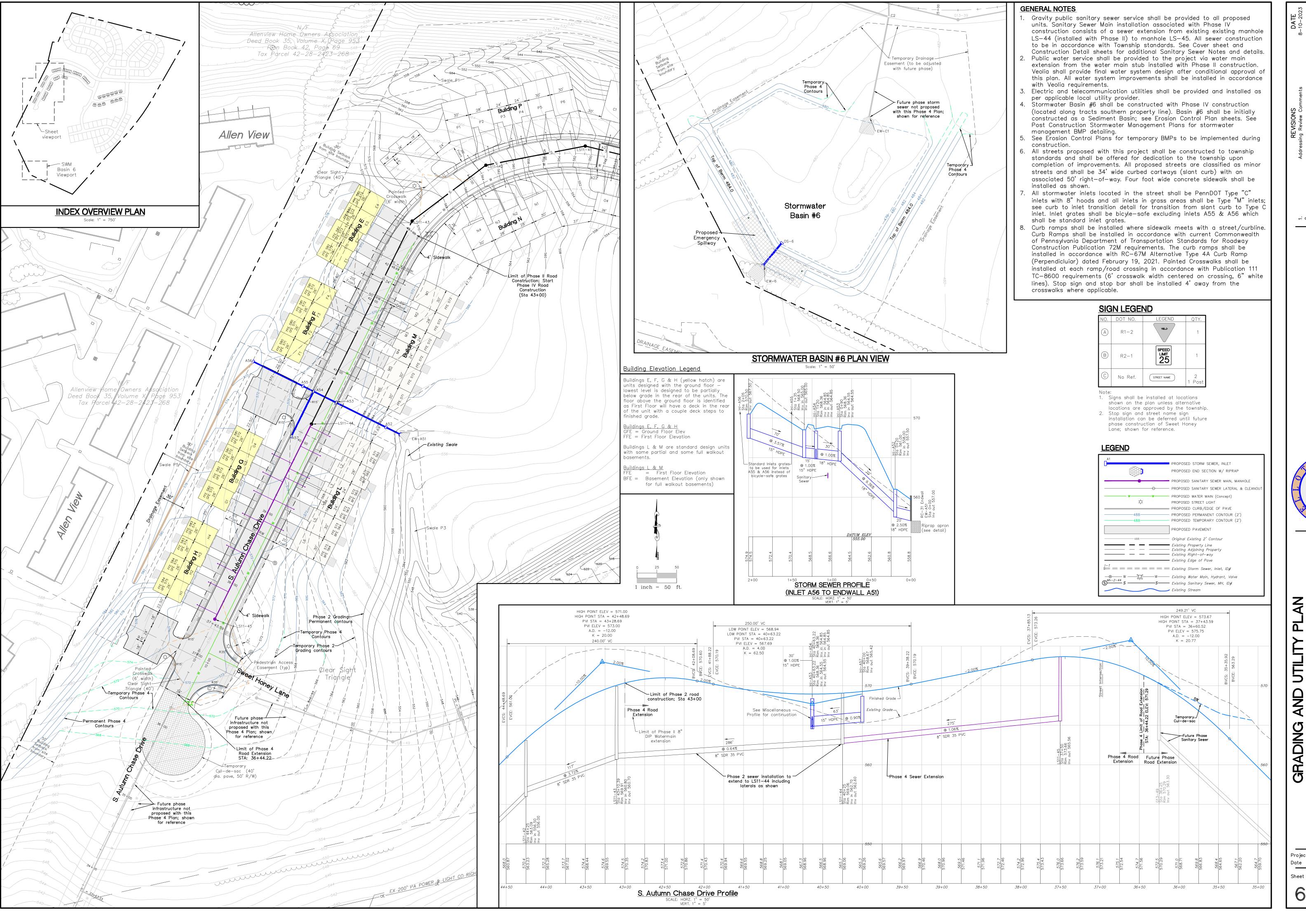
DRAWING ID 202313cov **MELLOTT ENGINEERING, INC.** | DATE: May 1, 2023 Copyright © 2023 1 of 16











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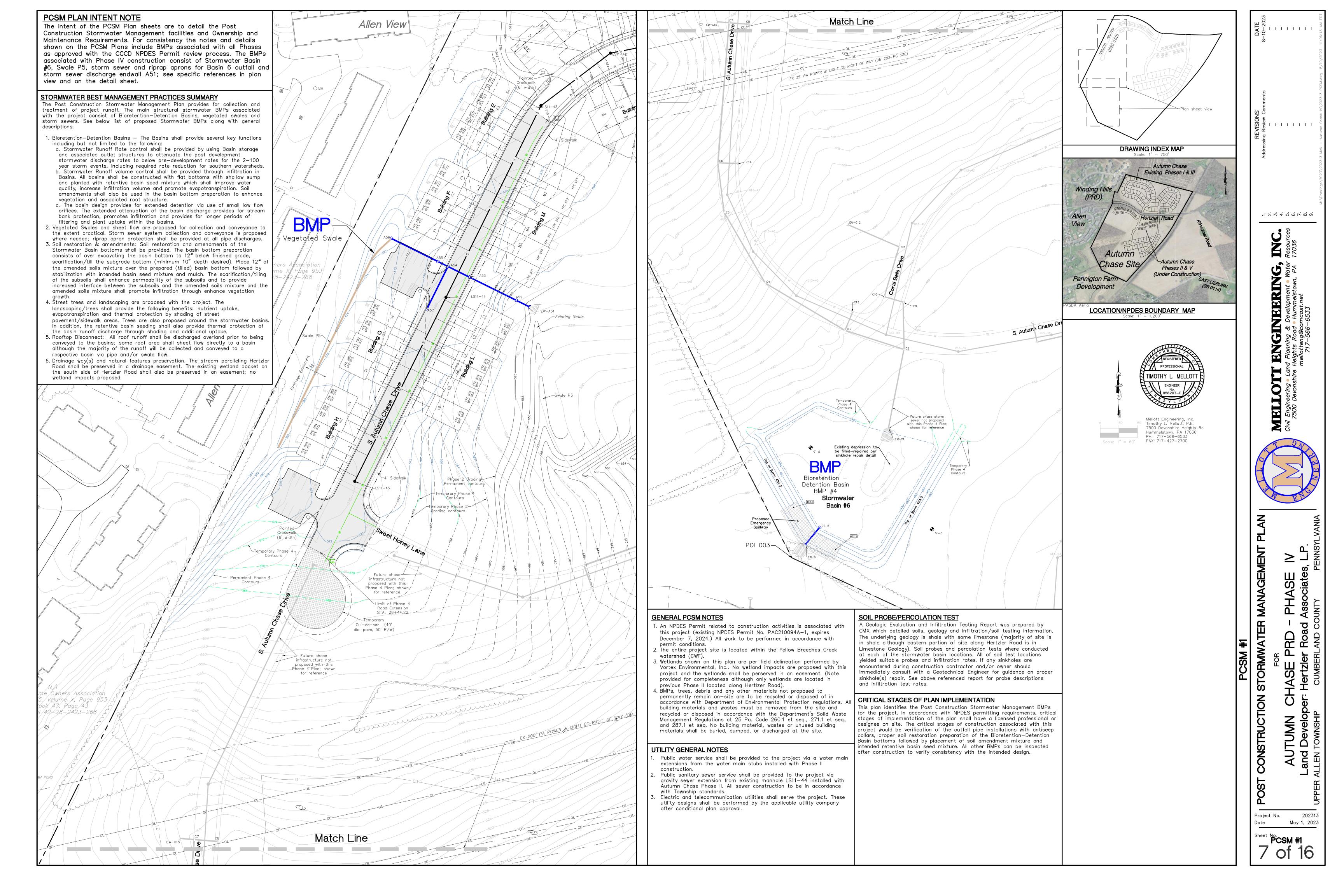
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INC.
Resources

MELLOTT Civil Engineering • Land 7500 Devonshire H

May 1, 2023

Sheet No.



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 th 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).

<u>Description of Operation and Maintenance Requirements</u>

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:

<u>Bioretention—Detention Basins</u>

1. 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. 2.Emergency Spillways shall be routinely inspected for erosion.

Bare soil shall be stabilized with topsoil, seeding and permanent liner as detailed. 3. All trash and debris should be regularly removed from basins

and upslope areas. 4. Reseed bare areas; install appropriate erosion control measures when native soil is exposed.

5.Mow or trim vegetation to maintain 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.

6. 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. 7. Basin Embankment and surrounding areas shall be free of burrowing animals in order to protect the structural integrity of the stormwater facility.

8. All piping inlet and outlet structures shall be free of holes, cracks, seepage, leakage or other defects.

9.Inspect 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 Associated 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.

<u>/egetated Swales</u>

1. Swales shall be inspected for erosion. Any erosion shall be immediately stabilized with topsoil, seeding and liner accordingly.

2. All trash and debris should be regularly removed from swales and upslope areas. 3. 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.

<u> Storm Sewer System & Riprap Aprons</u> (Located outside of public right of ways)

1. 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. 2. 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. 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: <u>For gentle lawn areas</u> Species: 40% Kentucky Bluegrass

40% Pennlawn Creeping Red Fescue

20% Norlea 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.

Seeding dates: Between 4/1 and 10/15

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 Strawbale mulch rate: three (3) tons per acre

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.

1. Stormwater Basin 4B shall be installed as a clean

water basin with initial construction although 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). 2. 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.

3. 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 bottom 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 ground 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

c.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.

PROPOSED PAVEMENT

2" MIN.

SIZE AND MATERIAL

SEE PAVING CROSS-

Pipe Dia. + 1' Min.

1. USE THIS DETAIL FOR TRENCH RESTORATION OUTSIDE OF EXISTING PAVED

2. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO PENN DOT PUBLICATION 408, MOST RECENT AMENDMENT.

*3. BACKFILL MAY COMPACTED IN 8" LIFTS IF VIBRATORY EQUIPMENT IS USED.

STORM SEWER DETAIL FOR TRENCHES IN

GRASSED AREAS OR NEW PAVEMENT

LAWN RESTORATION PER PUB. 408 SECTION -

12" TOPSOIL

(MINUMUM)

UITABLE TRENCH BACKFILL:

MATERIAL COMPACTED TO

PROCTOR (*4" LIFTS MAX.)

STONE BACKFILL COMPACTE

O MIN. 95% STANDARD

PROCTOR (*4" LIFTS MAX.)

MIN. 97% STANDARD

basin seed mixture and mulch.

3'-11 3/4" <u>SECTION</u> PPADOT TYPE C INLET TO (8" HOOD) CONCRETE TOP UNIT - GRADE ADJUSTMENT RING PROVIDE WEEP HOLES @ SUBGRADE - INLET BOX GRADE ADJUSTMEN -PRECAST HOLE FOR (Where applicable) TYPE "M" INLET (Where applicable) STRUCTURAL STEEL GRATE TYPE "C" INLET 1 1/2" **~~** SECTION A-A SECTION B-B PPADOT TYPE M INLET N.T.S.

BASE PREPARATION ADDITIONAL CONCRETE TO ☐ 6" MIN. SHAPE THE BOTTOM 3" MIN., 7" SHOWN —
AS TYP. FOR PRECAST PLACE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 408, SEC. 350.2, IN 4" LAYERS COMPACTED TO A DENSITY SECTION A-A ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENN DOT PUBLICATION 408, SECTION 714 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES. STRUCTURE SHALL BE ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.

STANDARD BOX

└► A

12" MIN. [

PRECAST INLET BOX

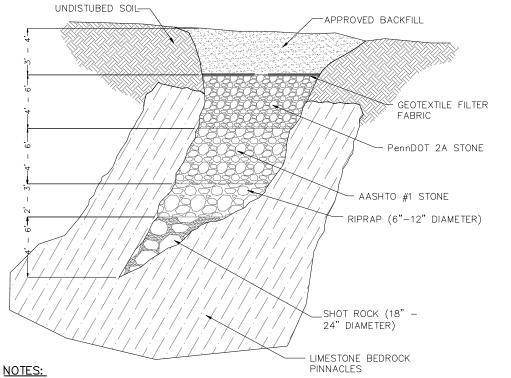
4. PROVIDE WEEP HOLES IN ALL INLET BOXES @ SUBGRADE TO ALLOW FOR DRAINAGE DURING 5. OPENINGS SHALL BE PROVIDED WHERE NECESSARY FOR PAVEMENT BASEDRAIN TIE-IN.

ALL INLETS TO HAVE PENN DOT TYPE BICYCLE SAFE GRATES.

6. INLETS SHALL NOT HAVE A SUMP CONDITION IN THE BOTTOM. PIPES SHALL BE FLUSH WITH THE BOTTOM OF THE BOX OR CONCRETE CHANNELS SHALL BE POURED. SUMPED INLETS MAY BE PERMITTED WHERE SPECIFICALLY UTILIZED FOR WATER QUALITY PURPOSE.

7. INLETS MUST BE SIZED TO ACCEPT THE SPECIFIED PIPE SIZES WITHOUT KNOCKING OUT ANY INLET 8. ANY INLETS OR JUNCTION BOXES OVER FIVE FEET IN DEPTH SHALL BE EQUIPPED WITH LADDER RIGS.

STORM INLET DETAILS



1. THIS DETAIL IS A GENERAL REPAIR MEASURE FOR SINKHOLES, ALL ROCK SIZES AND DEPTHS ARE SUBJECT TO THE SIZE AND CONDITIONS OF THE SPECIFIC SINKHOLE, AS SUCH THE EXACT REPAIR FOR EACH SINKOLE ENCOUNTERED SHALL BE PER THE RECOMMENDATION OF A GEOTECHNICAL ENGINEER, CONTRACTOR MUST COORDINATE WITH A GEOTECHNICAL ENGINEER FOR TO OBTAIN INSTRUCTIONS ON PROPER REPAIR MEASURES TO IMPLEMENT.

2. REASONABLE EFFORTS SHOULD BE MADE TO EXCAVATE ALL LOOSE AND UNSTABLE SOILS FROM THE BASE OF THE SINKHOLE (I.E. THROAT)

3. FLOWABLE FILL, IF USED, SHOULD BE ALLOWED TO CURE FOR A MINIMUM OF 24 HOURS PRIOR TO THE PLACEMENT OF THE FOLLOWING LAYERS WITHIN THE INVERTED FILTER.

4. THE FINAL LAYER OF STRUCTURAL FILL SHOULD BE PLACED IN LOOSE 12" LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE SOIL'S MAXIMUM MODIFIED DRY DENSITY.

5. INSTALLATION OF THE INVERTED FILTER SHOULD BE COMPLETED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.. The repairs outlined above are general guidelines and each sinkhole

occurrence should thoroughly be reviewed by the Geotechnical Engineer of

BERMS SHALL BE CONSTRUCTED IN ACCORDANCE WIT

STANDARD CONSTRUCTION DETAIL #7-6 INCLUDING

ANTI-SEEP COLLARS INSTALLED IN BERM CORE. NO

CRADLE NEEDED FOR PORTIONS OF OUTFALL PIPES

For consistency the details shown on

this plan include BMPs associated with

NPDES review process. See specific

added references for Phase 4 BMPs.

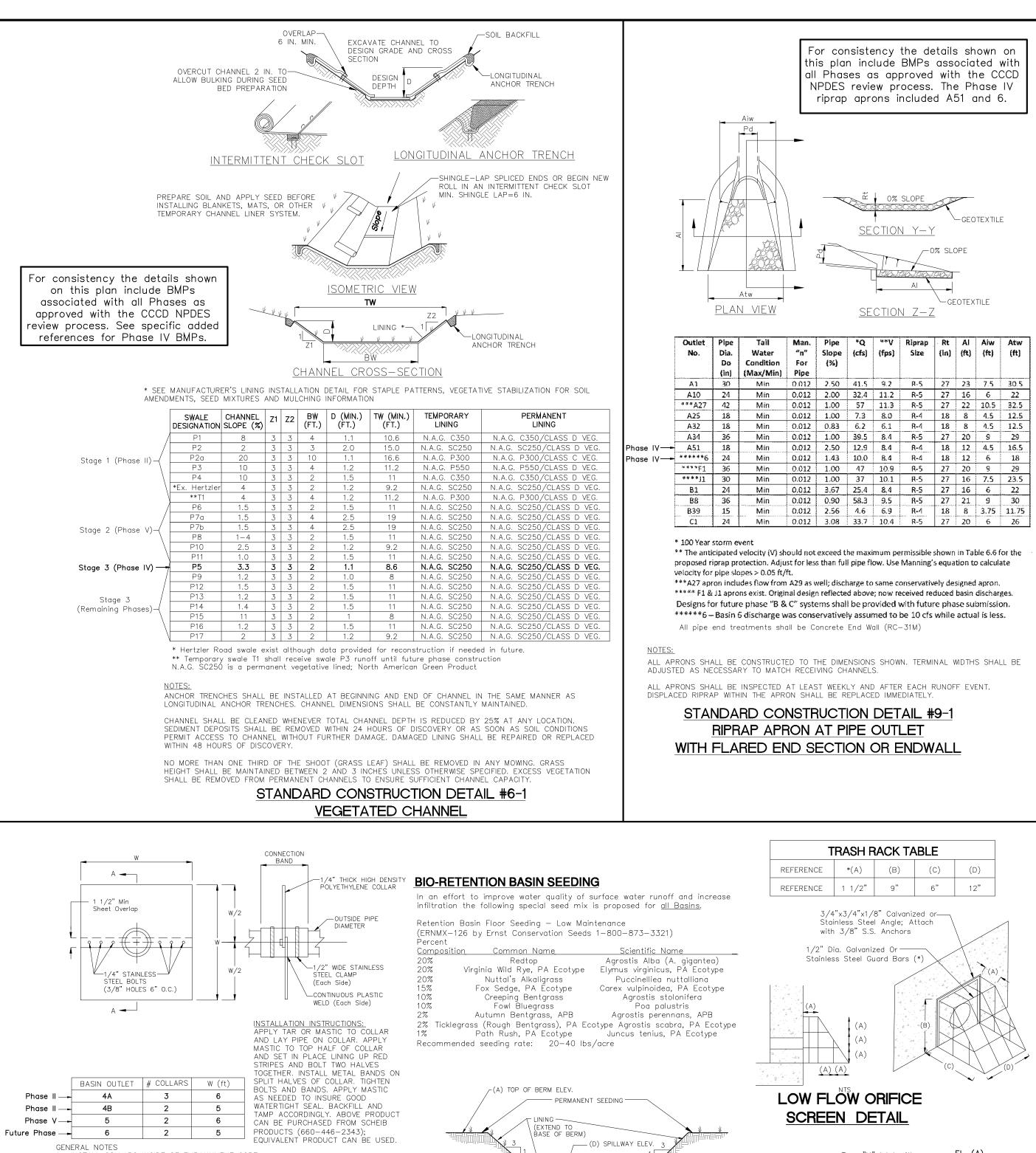
all Phases as approved with the CCCD

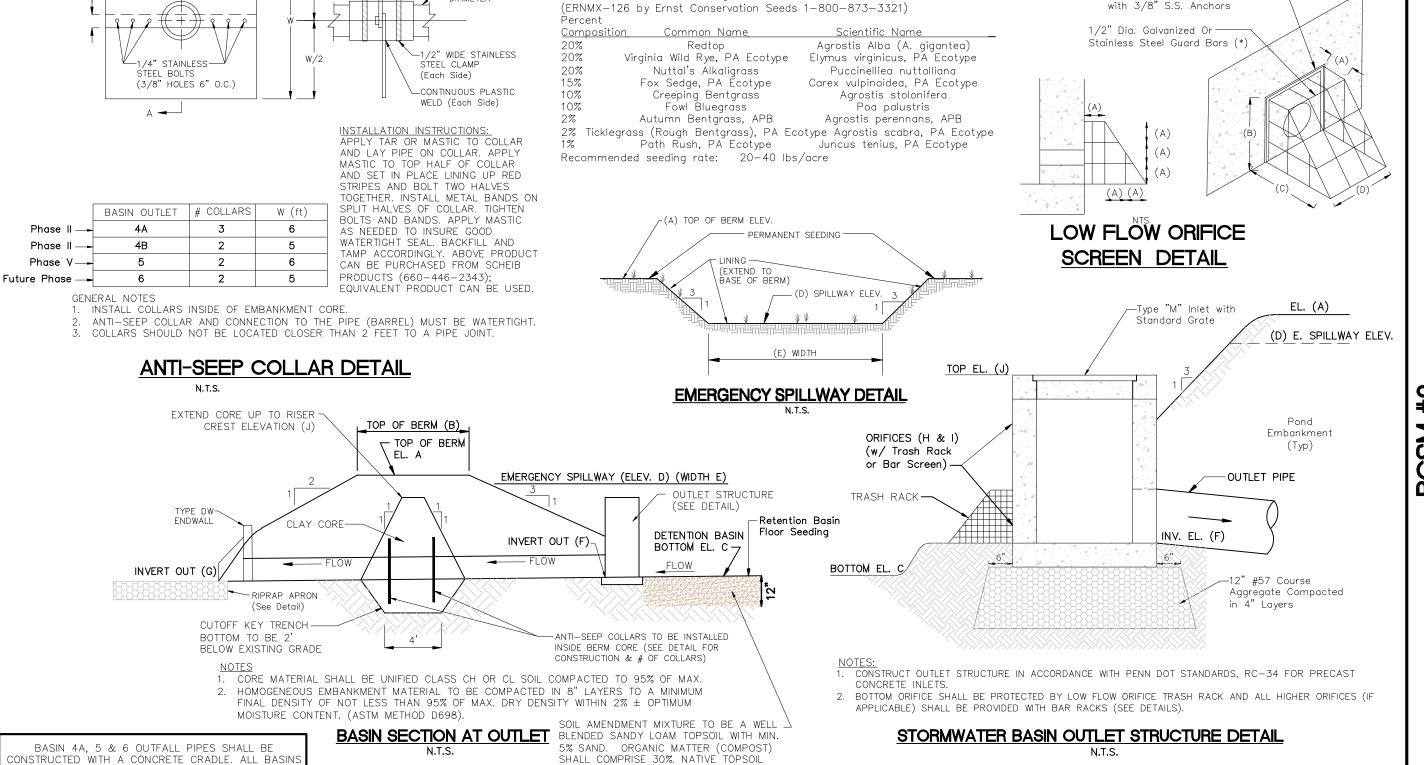
Phase 4—— 6

PREVIOUSLY INSTALLED WITH TRAIL INSTALLATION.

INVERTED FILTER SINKHOLE REPAIR DETAIL NO SCALE

Record for an appropriate remediation plan.





TO COMPRISE 65%. (See Sequence Notes)

** Basins 4A and 4B outlet structures shall be 24" x 72" in-lieu-of standard 24"x48".

D E LINING F

474.0 8' 469.0 472.6 130' * SC250 467.5 50'-24" HDPE @ 2,00% 466.5

8' | 457.5 | 464.5 | 175' |* SC250 | 455.8 | 80'-36" HDPE @ 1.00% | 455.0 |

484.0 | 8' | 479.0 | 482.5 | 90' | * SC250 | 478.5 | 35'-24" HDPE @ 1.43% | 478.0 | 3" Dia. | 479.3

STORMWATER BASIN DETAIL

PIPE

| 468.0 | 8' | 463.0 | 466.5 | 220' |* SC250 | 460.8 | 60'-30" HDPE @ 1.00% | 460.2 | 3" Dia. | 463.3 | 24"Wx12"H | 464.0

TOP OF BERM | BOTTOM | EMERGENCY SPILLWAY

* SC250 Liner — as manufactured by North American Green, Inc.

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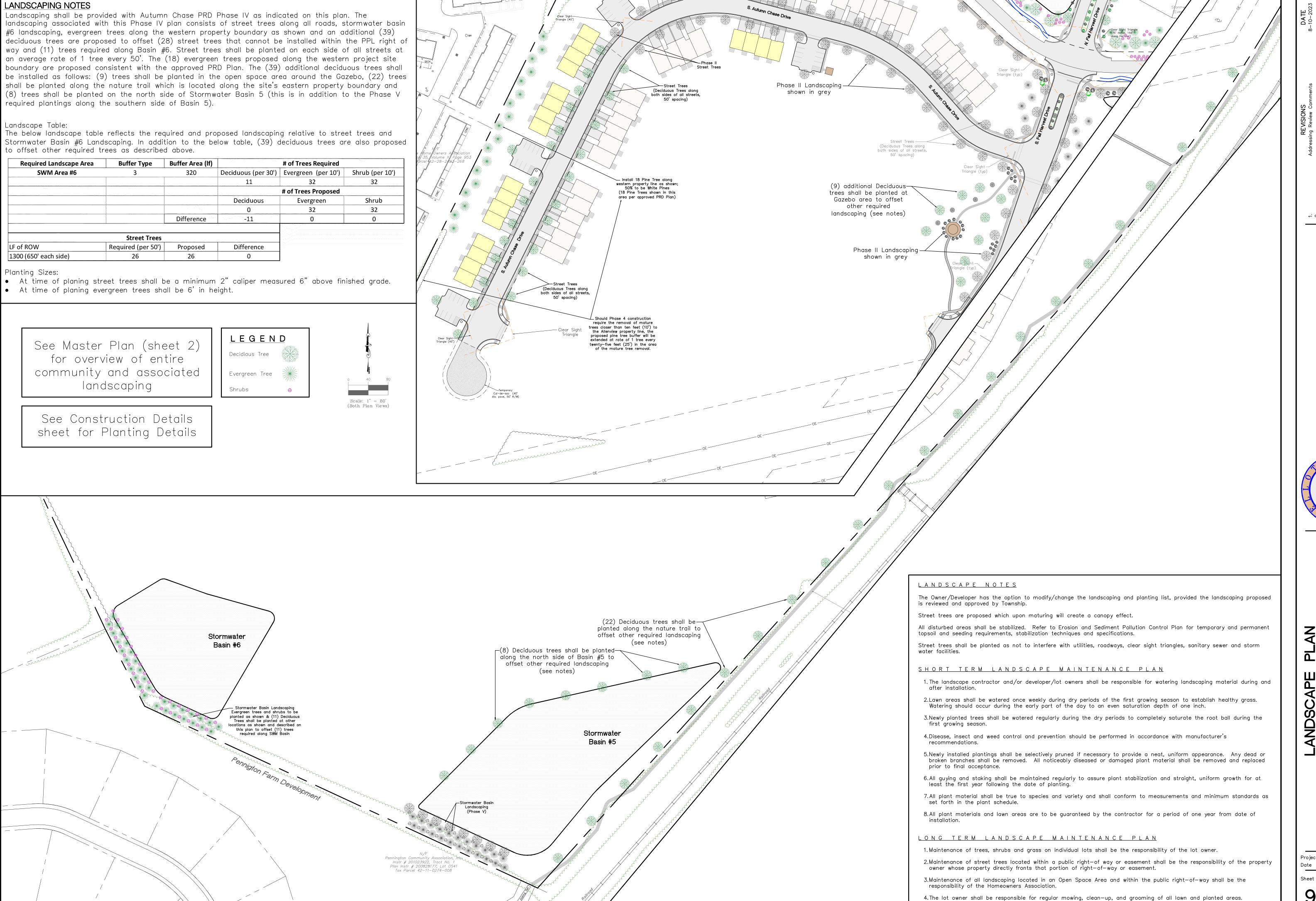
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ORIFICE(s)

G SIZE (H) ELEV. (H) SIZE (I) ELEV. (I) GRATE (J)

OUTLET STRUCTURE

466.0



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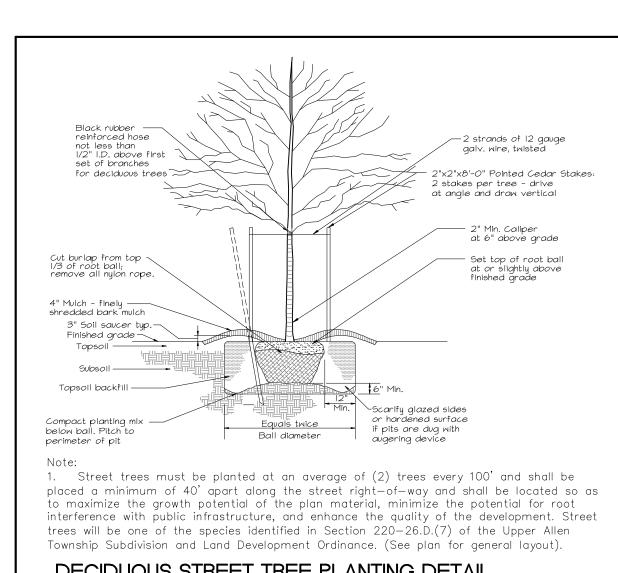
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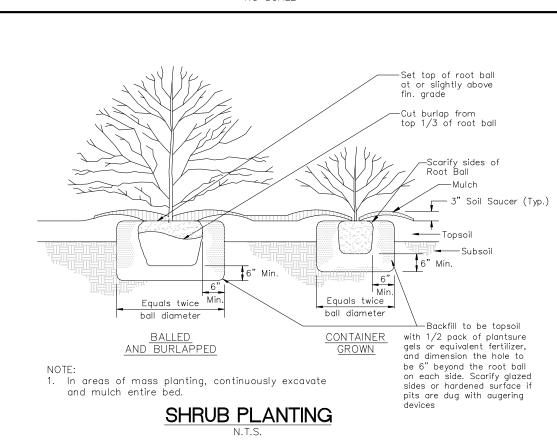


+ 7 K 4 G 9 F 8 6

May 1, 2023



DECIDUOUS STREET TREE PLANTING DETAIL - DO NOT CUT LEADER. TWO LOOPS OF HOSE ----_STAKES SHALL BE DRIVEN OUTSIDE THE BALL, 36" BELOW FINISHED GRADE WOODEN STAKES SHALL BE 2"x 2" x 8'-0' FOR 8 FT. HIGH EVERGREENS 12 GAUGE WIRE LOOSELY WRAPPED -AROUND TREE NOTCHED OR STAPLED TO STAKE. FOUR INCHES OF MULCH FORM A 2' HIGH SAUCER -BACKFILL TO BE TOPSOIL WITH 1 PACK-OF PLANTSURE GELS OR EQUIVALENT FERTILIZER, AND DIMENSION THE HOLE - AFTER BALL IS BACKFILLED HALFWAY, CUT AND REMOVE BURLAP FROM THE TOP 1/3 OF THE BALL TO BE 1' BEYOND THE ROOT BALL ON 12" WELL TAMPED PLANTING MIXTURE. -1. PLANT SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT DID IN ITS PREVIOUS LOCATION. 2. TIE TREE WRAP AT THE TOP AND BOTTOM AND AT 18" INTERVALS ALONG THE TRUNK PLANTING AND STAKING METHODS FOR EVERGREEN TREES



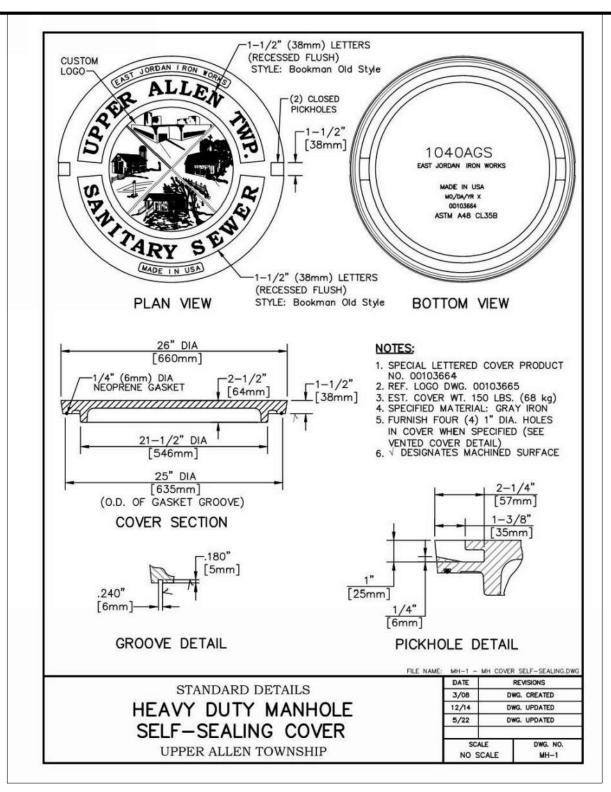
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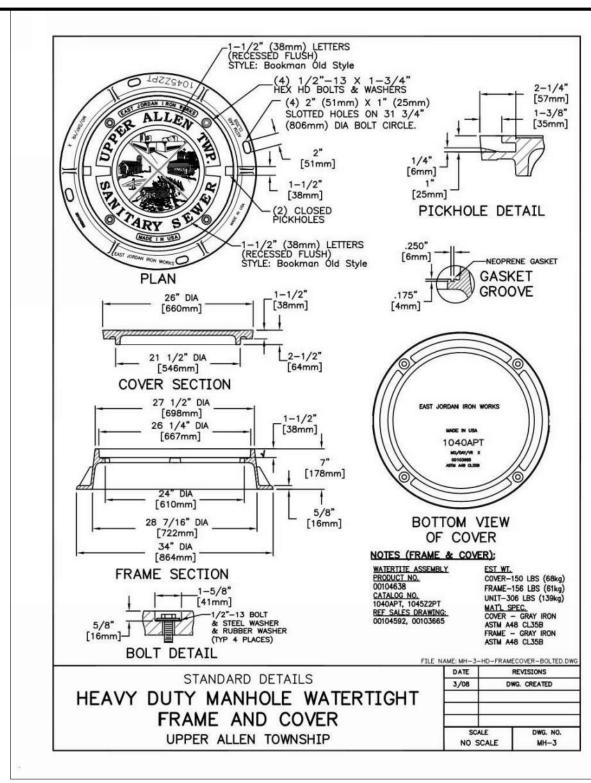
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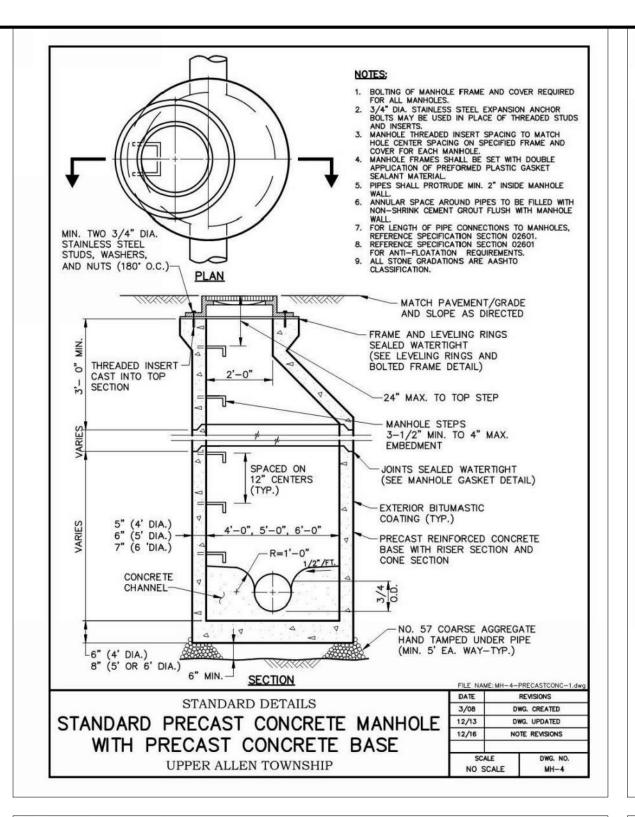
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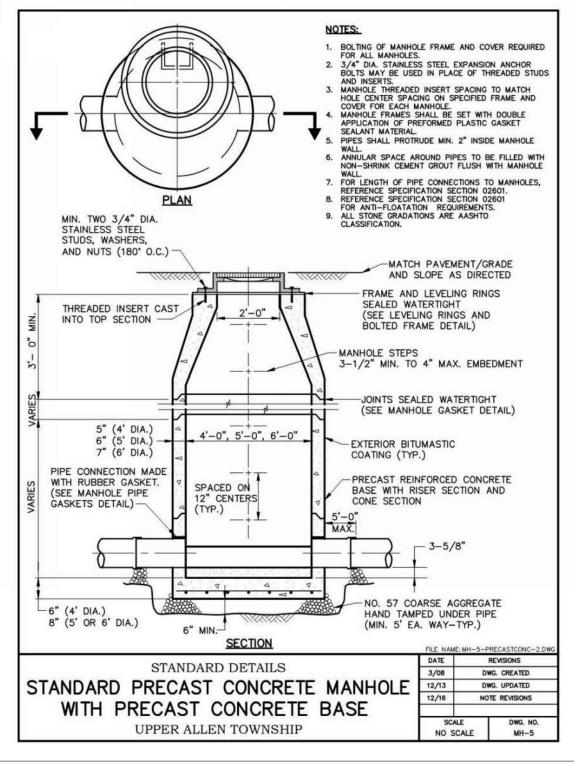
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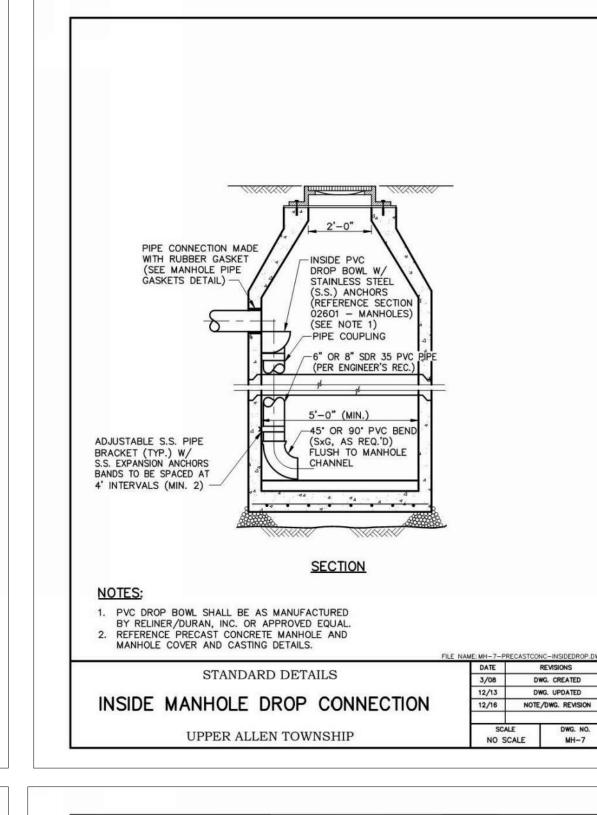
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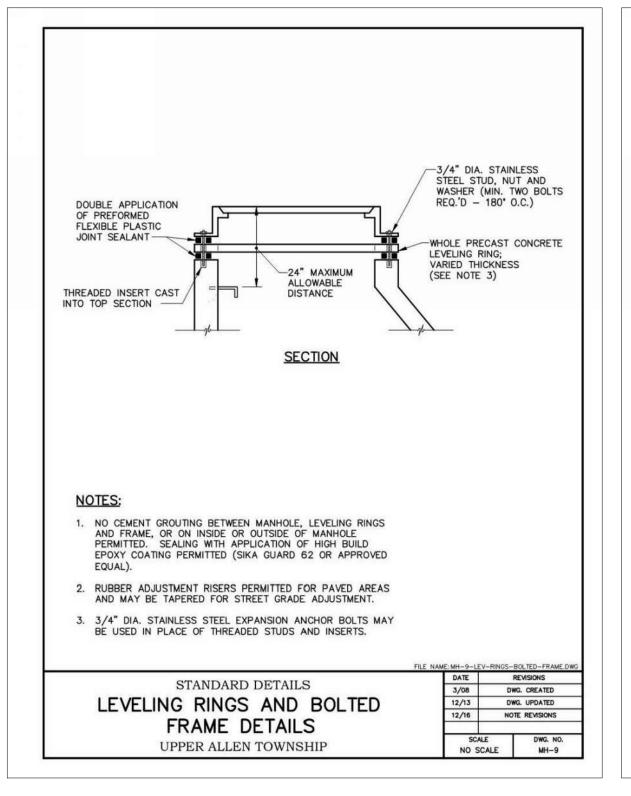


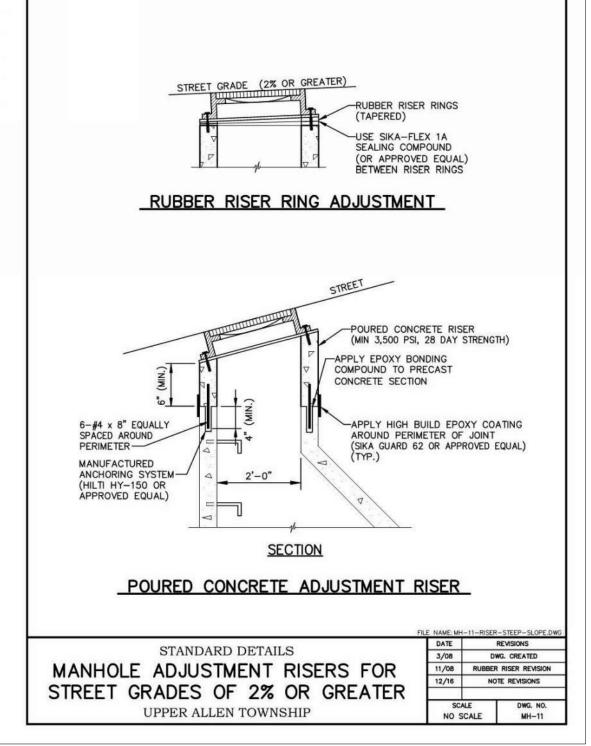


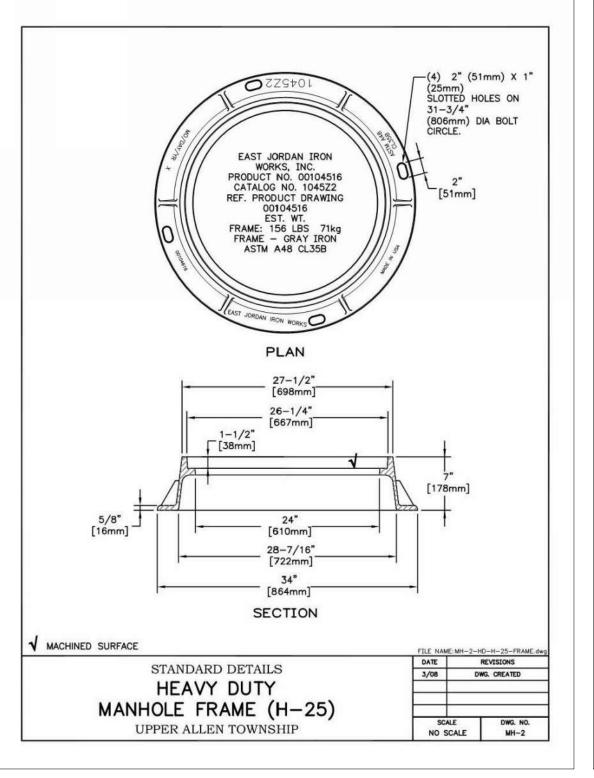


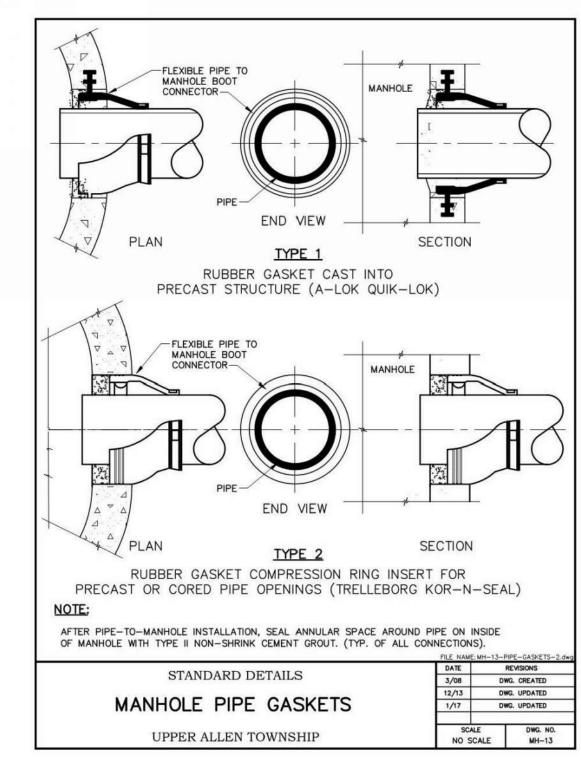


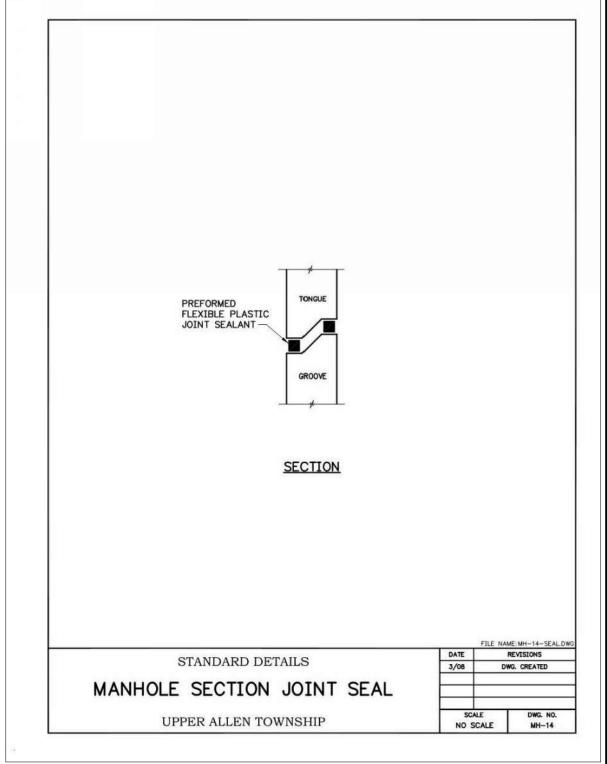


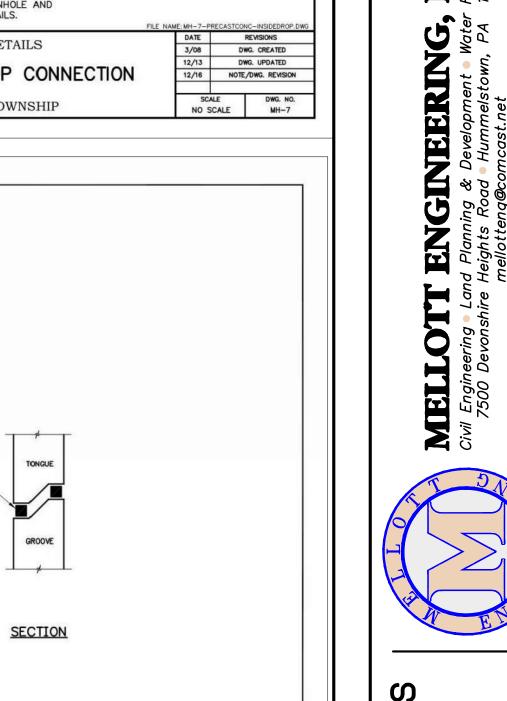














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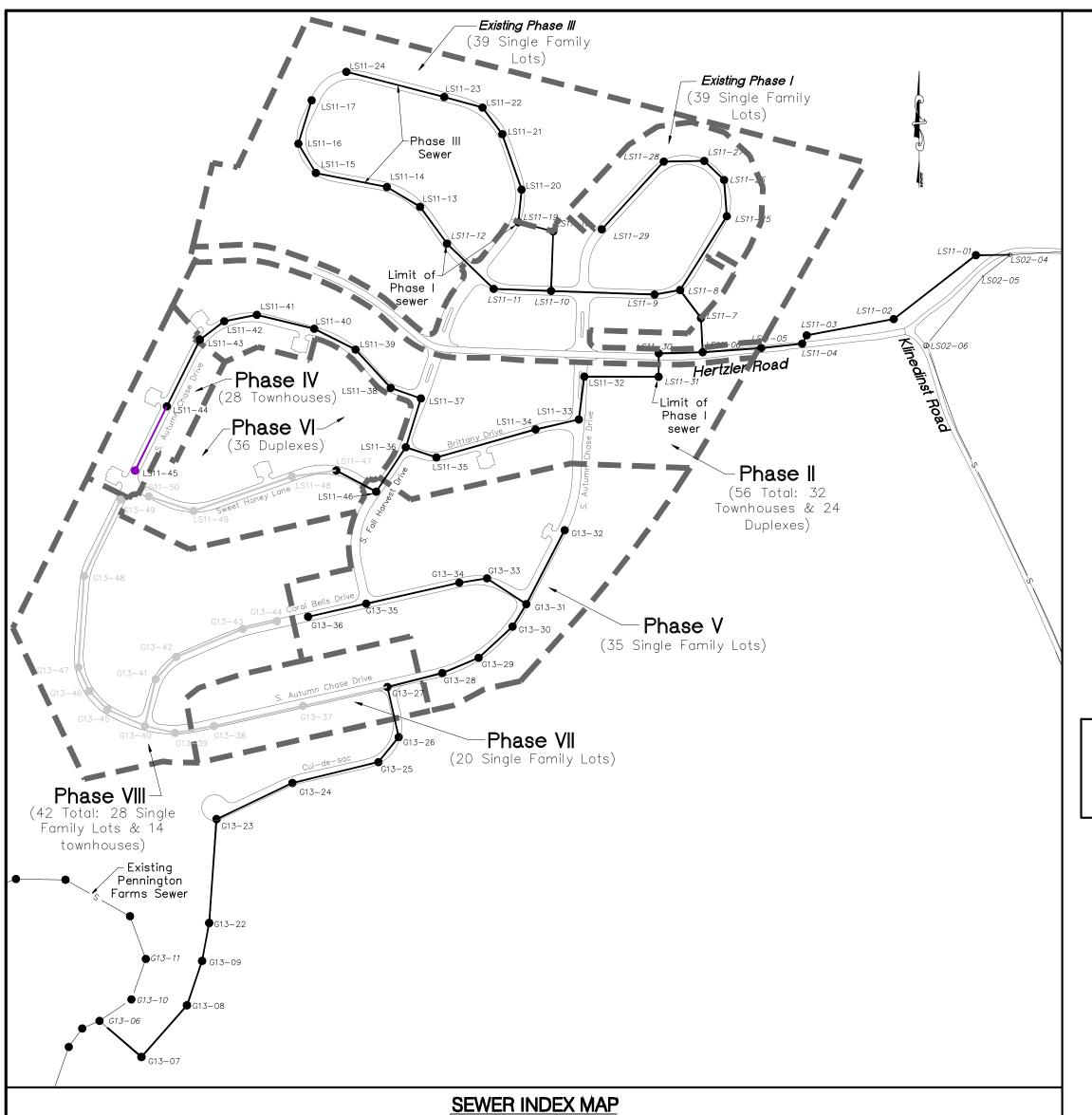
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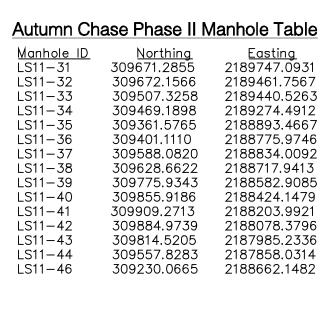
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Project No. 202313 May 1, 2023 Date

12 of 16





utumn Cha	ase Phase V M	anhole Table
Manhole ID	<u>Northing</u>	<u>Easting</u>
G13-36	30 8749.62 63	218 8400.7 721
G13-35	308799.7735	2188623.8814
G13-34	308880.1063	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
913-29	308591.63 4 6	2189055.7253
913-28	308532.9666	2188916.0513
913-27	308479.8482	2188705.3339
913-26	308287.1949	2188748.6356

308110.8401

G13-25

G13-24

G13-23

G13-22 G13-09

G13-08

G13-07

308191.0370 2188670.6234

307971.9258 2188048.6647

307572.9141 2188020.5650

307427.3692 2187993.3000

307256.9160 2187935,4579

307058.2598 2187760.0706

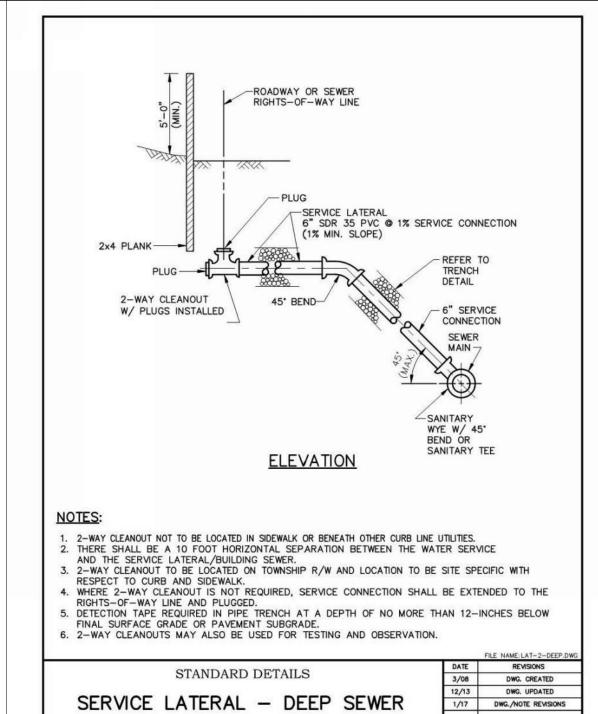
307196.6874 2187599.4439

2188340.4090

Autumn Cha	ase Phase IV N	Manhole Table
Manhole ID	<u>Northing</u>	<u>Easting</u>
LS11-44	309557.8283	2187858.0314
LS11-45	309311.4232	2187735.9269

Autumn Cha	ase Phase I N	lanhole Table
<u>Manhole ID</u>	<u>Northing</u>	<u>Easting</u>
LS11-31	309671.2855	218 <u>9747.0</u> 931
LS11-30	<i>309761.2851</i>	2189747.3679
LS11-29	<i>310237.9865</i>	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	2188933.9678
LS11-11	310009.1336	2189113.5309
LS11-10	310001.3764	2189333.9994
LS11-09	309987.3969	2189731.3118
LS11-08	310004.6310	2189829.5479
LS11-07	<i>309897.1731</i>	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

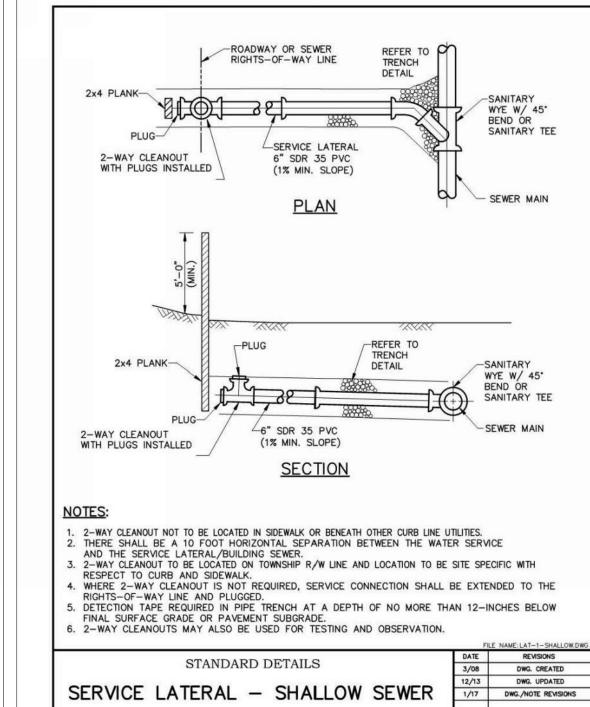
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Autumn Cha	se Phase III	Manhole Table
<u>Manhole ID</u>	Northing	Easting
LS11-24	310843.2791	2188547.6443
LS11-23	310746.3736	2188923.5014
LS11-22	310705.7149	2189070.3850
LS11-21	310603.7094	2189146.3821
LS11-20	310390.5693	2189220.6744
LS11-17	310733.3898	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



UPPER ALLEN TOWNSHIP

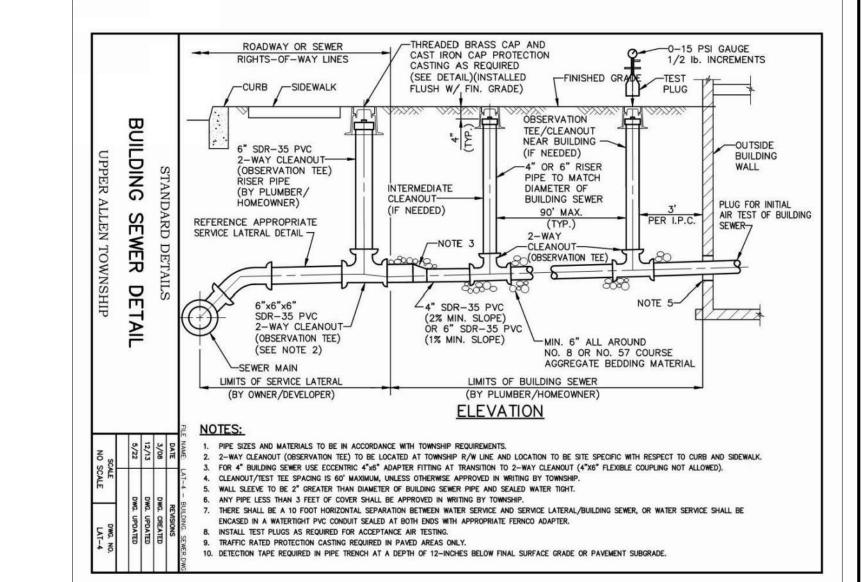
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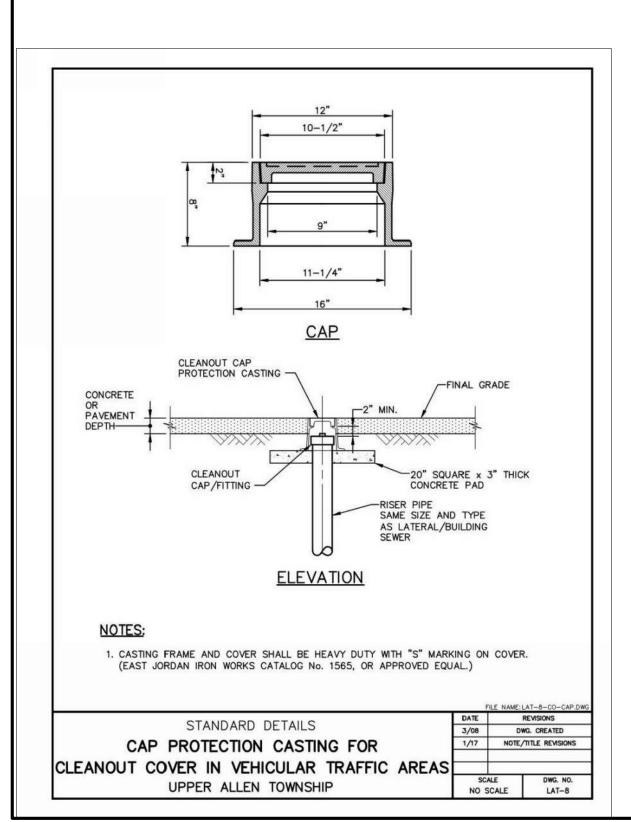
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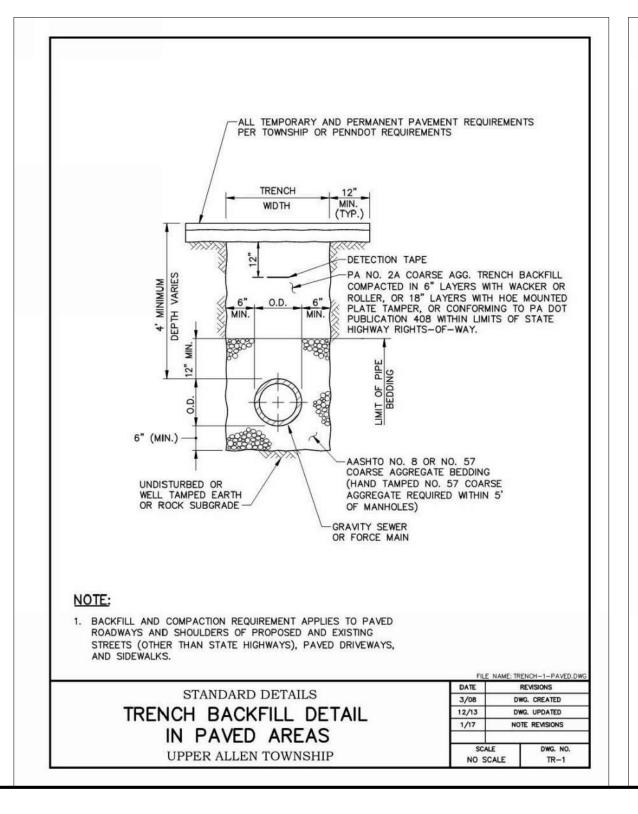


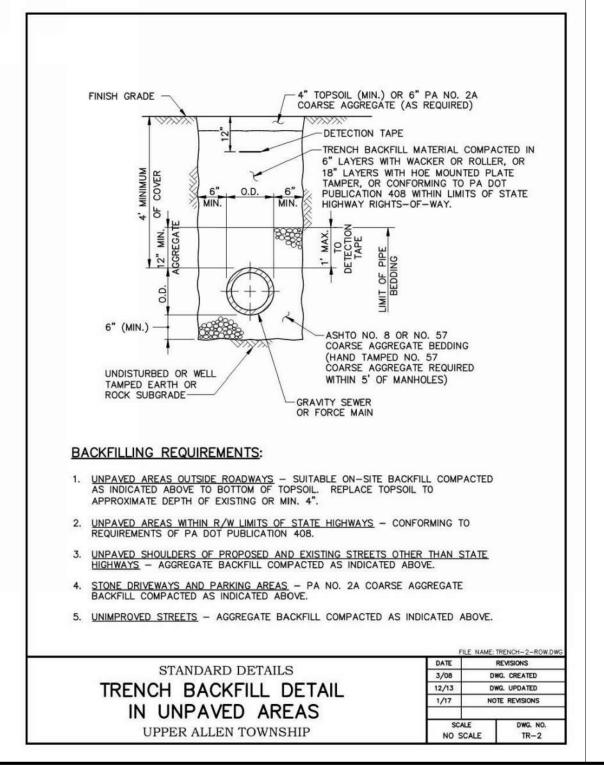
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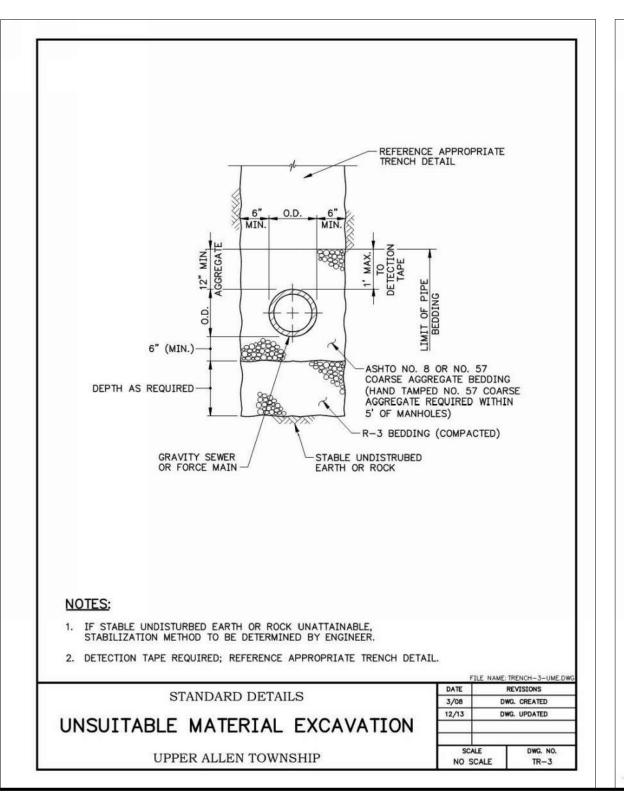
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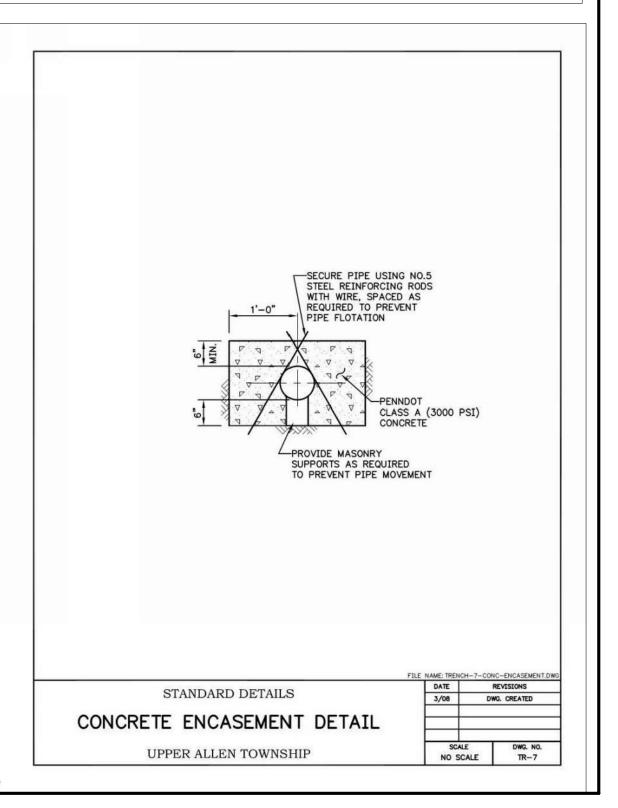


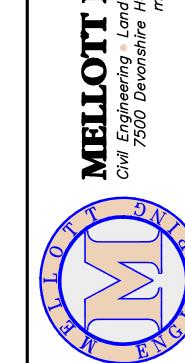








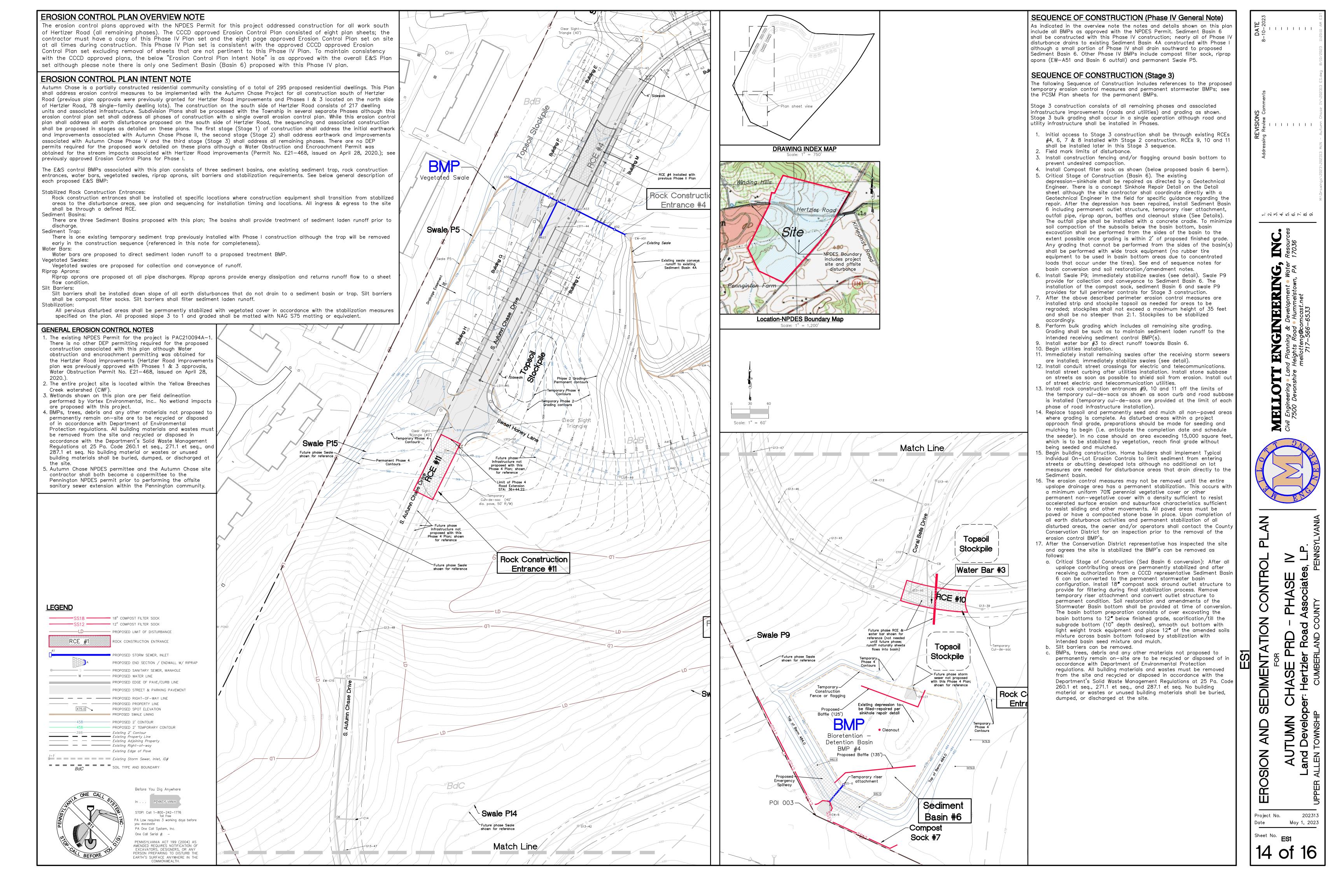


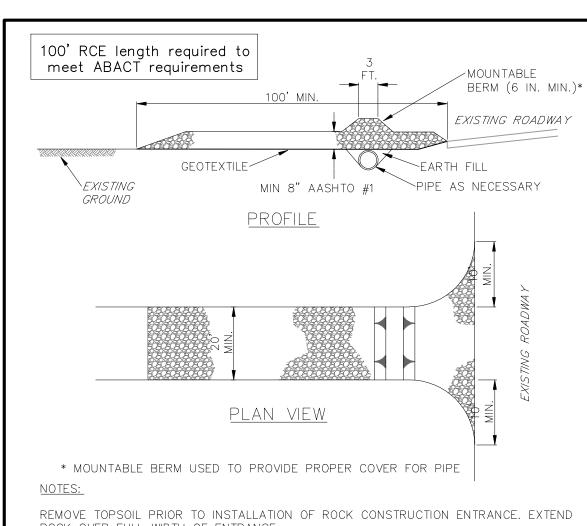


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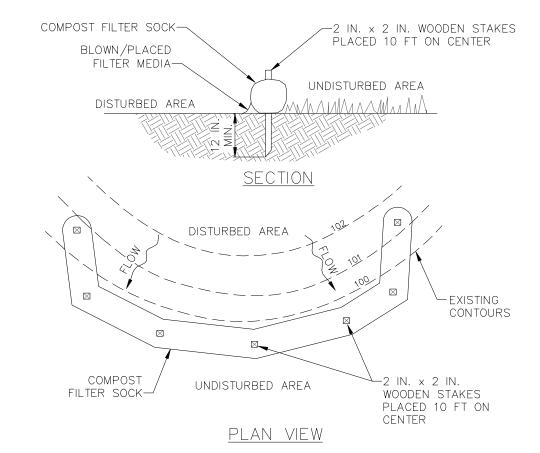
ROCK OVER FULL WIDTH OF ENTRANCE. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP

PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



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

GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL

SECTION VIEW

SEE PA DEP EROSION CONTROL MANUAL TABLE 3.1 FOR WATERBAR SPACING.

WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF

MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS

WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER

STANDARD CONSTRUCTION DETAIL #3-5

WATERBAR

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE

SUPPLEMENT.

NOTES:

NOT RECOMMENDED

WATERBARS SHALL DISCHARGE TO A STABLE AREA.

PERMANENT STABILIZATION HAS BEEN ACHIEVED.

ACHIEVED PERMANENT STABILIZATION.

FOR ACTIVE ROADS

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

NOT TO SCALE

ORIGINAL ROAD GRADE

ORIENT AT 2% GRADIENT

TO LOW SIDE OF ROAD

Compost Filter Sock to be installed around filter bag OVERLAP ON UPSLOPE (ABACT) WELL VEGETATED, GRASSY AREA HEAVY DUTY LIFTING STRAPS (RECOMMENDED) 24" DIAMTER COMPOST FILTER SOCK -DISCHARGE HOSE WELL VEGETATED, GRASSY AREA ÍNTAKE HOSE-**ELEVATION VIEW** LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGE THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE

UV RESISTANCE	ASTM D-4355	70%
MULLEN BURST	ASTM D-3786	350 PSI
PUNCTURE	ASTM D-4833	110 LB
GRAB TENSILE	ASTM D-4632	205 LB
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
PROPERTY	TEST METHOD	MINIMUM STANDARD

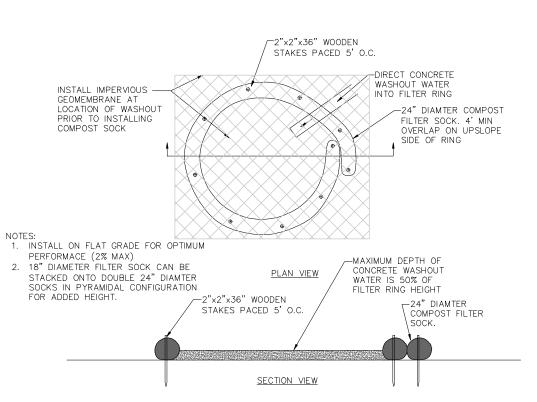
A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA. AND DISCHARGE ONTO STABLE FROSION RESISTANT AREAS WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER,

WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT

PUMPED WATER FILTER BAG WITH COMPOST FILTER SOCK

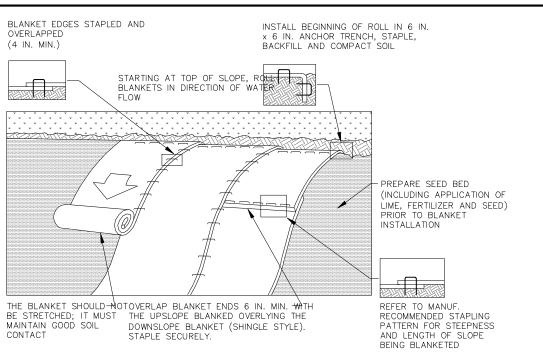


A suitable concrete washout facility must be provided for the cleaning of chutes, mixers, and hoppers of the delivery vehicles unless such a facility will be used at the source of the concrete. Under no circumstances may wash water from these vehicles be allowed to enter any surface waters. Make sure that proper signage is provided to drivers so that they are aware of the presence of washout facilities.

Washout facilities should not be placed within 50 feet of storm drains, open ditches or surface waters. They should be in a convenient location for the trucks, preferably near the place where the concrete is being poured, but far enough from other vehicular traffic to minimize the potential for accidental damage or spills. Wherever possible, they should be located on slopes not exceeding a 2% grade.

Wherever compost sock washouts are used, a suitable impervious geomembrane should be placed at the location of the washout. Compost socks should be staked in the manner recommended by the manufacturer around perimeter of the geomembrane so as to form a ring with the ends of the sock located at the upslope corner (See Detail). Care should be taken to ensure continuous contact of the sock with the geomembrane at all locations. Where necessary, socks may be stacked and staked so as to form a triangular

CONCRETE WASHOUT DETAIL

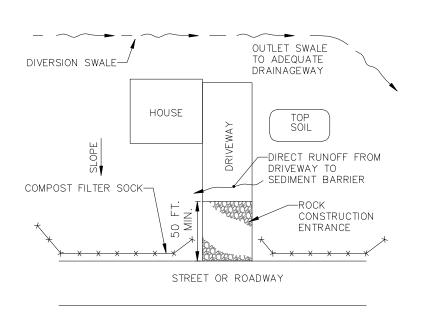


cross-section.

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR
 TO INSTALLING THE BLANKET.
 PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKEI.

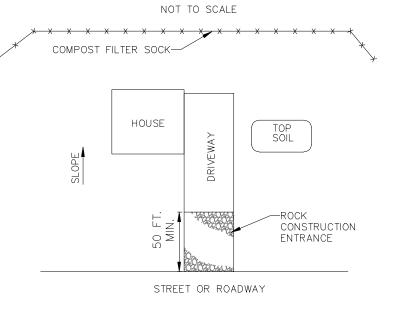
 THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL
 VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA.
 DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

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



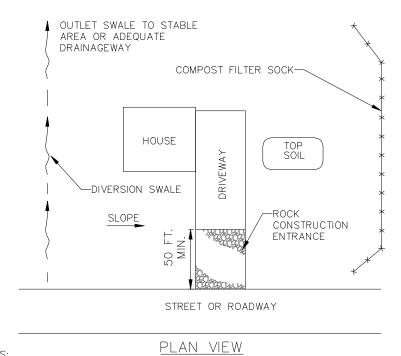
<u>Plan view</u> UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER THE OT EXTENDS MORE THAN 150 FEET ABOVE THE ROADWAY OR WHERE RUNOFF FORM AREAS ABOVE THE LOT IS NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

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



<u>Plan view</u> THE AREA DOWNSLOPE OF THE COMPOST SOCK BARRIER MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

STANDARD CONSTRUCTION DETAIL #10-2 TYPICAL ON-LOT BMPs FOR LOT BELOW ROADWAY NOT TO SCALE



THE AREA DOWNSLOPE OF THE COMPOST SOCK BARRIER MAY NOT BE UNDER

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER RUNOFF FROM AREAS ABOVE THE LOT ARE NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

IN AREAS WHERE SLOPE IS AT AN OBLIQUE ANGLE TO THE ROADWAY, BMPS SHALL BE ADJUSTED ACCORDINGLY. DIVERSION CHANNEL MAY OUTLET TO ROADSIDE DITCH OR STORM SEWER SYSTEM, BUT NOT ONTO STREET OR ROADWAY.

STANDARD CONSTRUCTION DETAIL #10-3 TYPICAL ON-LOT BMPs FOR LOT ALONG ASCENDING OR DESCENDING ROADWAY NOT TO SCALE

DOUG TABLE

soils are suitable

optimum moisture content. (ASTM Method D1557).

DEVELOPMENT OR OTHERWISE DISTURBED.

SOILS	<u> IABLE</u>						
SOIL SYMBOL	SOIL DESCRIPTION	SLOPE (%)	HYDROLOGIC GROUP	DEPTH TO WATER TABLE (FT)	SOIL REACTION (pH)	SUITABILITY FOR ROADFILL	SUITABILITY FOR TOPSOIL
BdB	Bedington Shaly Silt Loam	3 to 8%	В	5+	4.5-7.3	FAIR	POOR
BdC	Bedington Shaly Silt Loam	8 to 15%	В	5+	4.5-7.3	FAIR	POOR
BdD	Bedington Shaly Silt Loam	15 to 25%	В	5+	4.5-7.3	FAIR	POOR
ВрВ	Blairton silt loam	3 to 8%	С	1/2-3	4.5-5.5	POOR	POOR
BrB	Brinkerton silt loam	3 to 8%	D	0-1/2	4.5-5.5	POOR	POOR
DuB	Duffield silt loam	3 to 8%	В	5+	5.1-7.3	POOR	FAIR
EdB	Edom silt loam	3 to 8%	В	5+	5.1-7.8	POOR	POOR
EdC	Edom silt loam	8 to 15%	В	5+	5.1-7.8	POOR	POOR
НаА	Hagerstown shaly silt loam	0 to 3%	В	5+	4.5-7.3	POOR	POOR
НаВ	Hagerstown shaly silt loam	3 to 8%	В	5+	4.5-7.3	POOR	POOR
Ме	Melvin silt loam	0 to 2%	B/D	0-1	6.1-7.3	POOR	POOR
Ре	Penlaw silt loam	0 to 3%	C/D	1/2-11/2	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

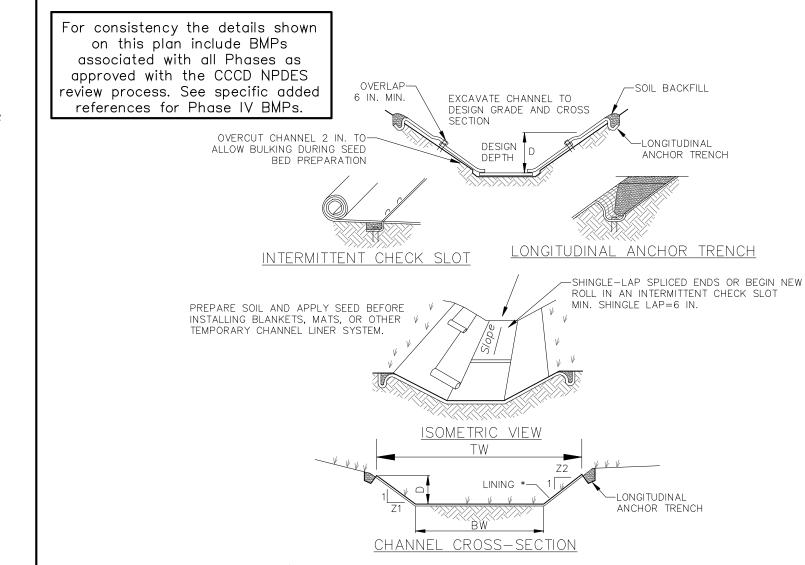
for road fill and shall place and compact fill in accordance with standard practice. All road fill must meet Penn DOT Pub. 408

- 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
- If sinkhole is encountered during construction contractor and/or owner should immediately consult with a Geotechnical Engineer for guidance on proper sinkhole repair.

UNDISTUBED SOIL-APPROVED BACKFILL GEOTEXTILE FILTER PennDOT 2A STONE AASHTO #1 STONE RIPRAP (6"-12" DIAMETER) SHOT ROCK (18" -24" DIAMETER) LIMESTONE BEDROCK NOTES:

- 1. THIS DETAIL IS A GENERAL REPAIR MEASURE FOR SINKHOLES. ALL ROCK SIZES AND DEPTHS ARE SUBJECT TO THE SIZE AND CONDITIONS OF THE SPECIFIC SINKHOLE. AS SUCH THE EXACT REPAIR FOR EACH SINKOLE ENCOUNTERED SHALL BE PER THE RECOMMENDATION OF A GEOTECHNICAL ENGINEER. CONTRACTOR MUST COORDINATE WITH A GEOTECHNICAL ENGINEER TO OBTAIN INSTRUCTIONS ON PROPER REPAIR MEASURES TO IMPLEMENT.
- 2. REASONABLE EFFORTS SHOULD BE MADE TO EXCAVATE ALL LOOSE AND UNSTABLE SOILS FROM THE BASE OF THE SINKHOLE (I.E. THROAT)
- 3. FLOWABLE FILL.IF USED, SHOULD BE ALLOWED TO CURE FOR A MINIMUM OF 24 HOURS PRIOR TO THE PLACEMENT OF THE FOLLOWING LAYERS WITHIN THE INVERTED FILTER.
- 4. THE FINAL LAYER OF STRUCTURAL FILL SHOULD BE PLACED IN LOOSE 12" LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE SOIL'S MAXIMUM MODIFIED DRY DENSITY.
- 5. INSTALLATION OF THE INVERTED FILTER SHOULD BE COMPLETED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.. The repairs outlined above are general guidelines and each sinkhole occurrence should thoroughly be reviewed by the Geotechnical Engineer of Record for an appropriate remediation plan.

INVERTED FILTER SINKHOLE REPAIR DETAIL NO SCALE



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

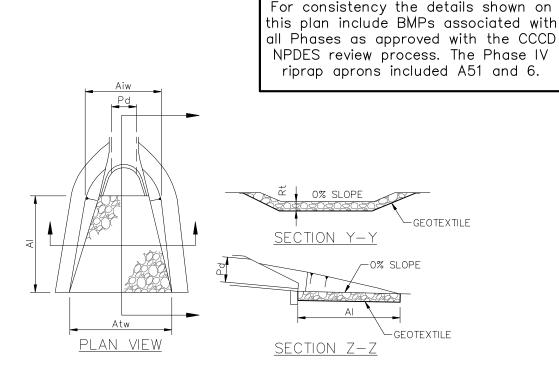
	SWALE DESIGNATION	CHANNEL SLOPE (%)	Z1	Z2	BW (FT.)	D (MIN.) (FT.)	TW (MIN.) (FT.)	TEMPORARY LINING	PERMANENT LINING
/	P1	8	3	3	4	1.1	10.6	N.A.G. C350	N.A.G. C350/CLASS D VEG.
	P2	2	3	3	3	2.0	15.0	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
Stage 1 (Phase II)	P2a	20	3	3	10	1.1	16.6	N.A.G. P300	N.A.G. P300/CLASS C VEG.
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	P3	10	3	3	4	1.2	11.2	N.A.G. P550	N.A.G. P550/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.
Stage 2 (Phase V)√	P7b	1.5	3	3	4	2.5	19	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
orage 2 (Finals 1)	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) — 🔫	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.
Stage 3	P13	1.2	3	3	2	1.5	11	N.A.G. SC250	N.A.G. SC250/CLASS D VEG.
(Remaining Phases)—	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.
	* Hertzler Ro	ad swale e	xist	alth	ough do	ata provideo	d for recons	struction if neede	d in future.

** Temporary swale T1 shall receive swale P3 runoff until future phase construction N.A.G. SC25Ó 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 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.

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



	Outlet No.	Pipe Dia. Do (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	8-5	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	68.0	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
hase IV 	A51	18	Min	0.012	2.50	12.9	8.4	R-4	18	12	4.5	16.5
hase IV 	******6	24	Min	0.012	1.43	10.0	8.4	R-4	18	12	6	18
	****F1	36	Min	0.012	1.00	47	10.9	R-5	27	20	9	29
	****]1	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	8.4	R-5	27	16	6	22
	B8	36	Min	0.012	0.90	58.3	9.5	R-5	27	21	9	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	₹-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 & i1 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)

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

MELLOTT

Engir 7500

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AND

⊃roject No May 1, 2023

Date

Sheet No.

BASIN BOTTOM - EMERGENCY SPILLWAY ANCHOR— INTERIOR TRENCH SLOPE SECTION Z-Z TOP OF **EMBANKMEN** OVERLAPPED-EMBANKMĖNT KEY— EXTERIOR TRENCH **TFRMINAL** END OF TRM KEY TRENCH AT TOE OF SLOPE OF SPILLWAY

RIPRAP OUTLET DISSIPATOR Y Y Y Y Y WTE -TRENCH END INTO INTERIOR SLOPE PER MANUFACTURER TRENCHING DETAILS

EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY RIPRAP OUTLET DISSIPATOR SECTION X-X

		WEIR					LIN:	CHANNEL		DISSIPATOR				
	BASIN N□.	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R)	RIPRA THICK DRt (IN)
e 2 -	4A	3	3	467.0	466.0	360	**NA	Per Man	3	0.5	NA	NA	NA	NA
e 5 	5	3	3	468.0	466.5	220	*SC250	Per Man	3	0.5	NA	NA	NA	NA
e 4 	6	3	3	484.0	482.5	90	*SC250	Per Man	3	0.5	NA	NA	NA	NA
	*SC250 = permanent SC250 liner as Manufactures by North American Green												iner wit	h 📑

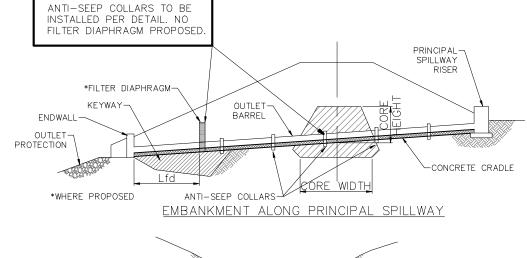
HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

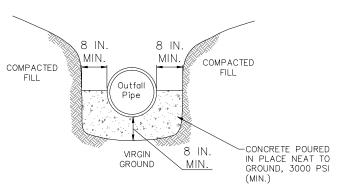
RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR. THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS

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

NOT TO SCALE

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.





CROSS-SECTION AT OUTLET BARREL

A CONCRETE CRADLE SHALL BE USED IN CONJUNCTION WITH ANTI—SEEP COLLARS.
ANTI—SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN. * NO FILTER DIAPHRAGM IS PROPOSED.

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. n 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 construction of the Bioretention—Detention Basin embankments and outlet structures, soil restoration of basin pottoms and verification of appropriate basin seeding. All other BMPs can be inspected after construction to verify consistency with the intended design.

UTILITY GENERAL NOTES

- 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.
- 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 LS11-31 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.
- 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:

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

Permanent seeding schedule is as follows: <u>For gentle lawn areas</u> Species: 40% Kentucky Bluegrass 40% Pennlawn Creeping Red Fescue 20% Norlea Perennial Ryegrass

Strawbale mulch rate: three (3) tons per acre

Seeding dates: Between 4/1 and 10/15

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

TEMPORARY SEEDING

vegetation

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 rye grass % 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 Strawbale mulch rate: three (3) tons per acre Seeding dates: no seeding between 1/1 and 3/15

STABILIZATION NOTES

erosion and subsurface characteristics sufficient to resist sliding and other movements. 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 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. 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

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

- areas specifically identified on the plans. N.A.G. S75 biodegradable matting shall be used for all general slope matting unless otherwise noted on the plans. 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/tiling of the subsoils is intended to enhance
 - permeability of the subsoils and the amended soils will also promote infiltration and enhance 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 hound with light weight equipment. Stabilize with intended seed, straw and mulch per intended seeding specifications (See plan for type: grass, meadow, wetland mix and vegetated filter strip). Matting is required for all slopes 3:1 and steeper, see plan for locations).
 - 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 sy
 - 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 and animal species.
 - Wood mulch can be used over straw at a rate of 210 lb. per 1000 sy. D. Lightweight plastic, fiber, or paper nets may be stapled over the mulch to
 - Tracking steep slopes (>25% or 4:1) may be utilized by running tracked machinery up and down the slope, leaving tread marks parallel to the contour. (Note: If a bulldozer is used, the blade shall be up.). Care should be exercised on soils having a clay content to avoid over-compaction. See notes above for permanent stabilization.

STANDARD EROSION & SEDIMENT CONTROL PLAN NOTES

manufacturer's recommendations.

- 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. 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 landowner, 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. 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 . 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 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 BMPs specified by the Construction Sequence for that stage or phase has been installed and are
- functioning as described in this document. 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. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2H:1V or flatter.
- 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 erosion and sediment pollution and notify the Cumberland County Conservation District and/or the regional office of DEP. 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
- O. 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. e contractor is responsible for ensurina that any material brouaht on site is Clean
- 2. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as Clean Fill due to analytical testing. Clean Fill is defined as: Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (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 origin of the fill 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 is defined as: Investigative 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, transaction 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."
- 3. All pumping 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 runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, reseeding, re-mulching and re-netting must be performed immediately. If E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required. 5. A written report showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they
- 6. 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 . All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
- 18. Areas which are to be topsoiled shall be scarified to a minimum depth of 4 inches prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil. 9. All fills 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

were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of

requirements or codes 20. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.

2. Fill shall not be placed on saturated or frozen surfaces.

- 3. 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.
- 5. 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 all areas tributary to them 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
- 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
- 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 materia/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 cloa the basin/trap outlet structures and/or pollute the surface waters. 7. 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 8" layered lifts at 95% modified

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Date