PRELIMINARY SUBDIVISION & LAND DEVELOPMENT PLAN

ARCONA NEIGHBORHOOD 7

PLAN INDEX – SUBDIVISION & LAND DEVELOPMENT PLAN

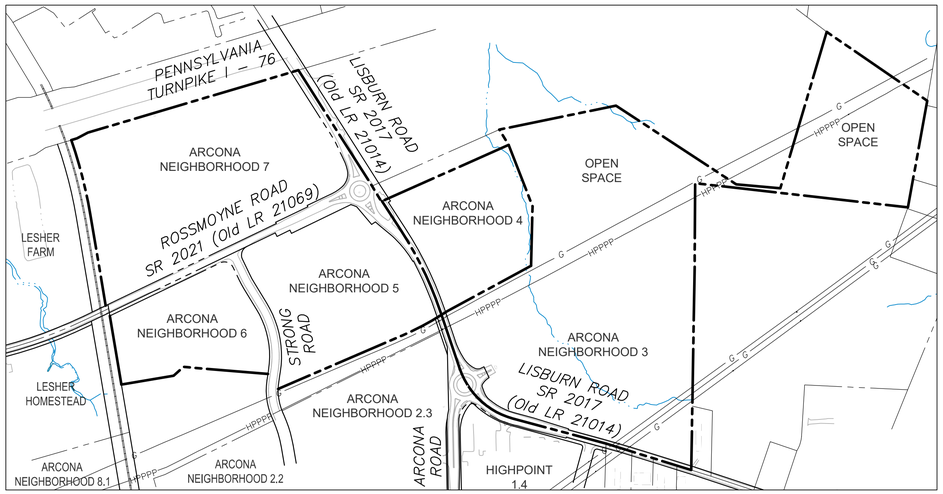
NO.	SEC.	R.	TITLE
01	CV-1	X	COVER SHEET
02	CV-2	X	COVER SHEET - NOTES
03	EX-1		EXISTING CONDITIONS PLAN - OVERALL
04	EX-2		EXISTING CONDITIONS PLAN - NEIGHBORHOOD 7
05	LY-1	X	ARCONA TND OVERVIEW
06	LY-2	X	LAYOUT PLAN - OVERALL
07	LY-3	X	LAYOUT PLAN - NEIGHBORHOOD 7
08	PL-1	X	PARCEL LABEL PLAN - NEIGHBORHOOD 7
09	EA-1	X	EASEMENT PLAN - OVERALL
10	EA-2	X	EASEMENT PLAN - NEIGHBORHOOD 7 - SANITARY SEWER & PEDESTRIAN
11	EA-3	X	EASEMENT PLAN - NEIGHBORHOOD 7 - WATER
12	EA-4	X	EASEMENT PLAN - NEIGHBORHOOD 7 - STORM DRAINAGE
13	TM-1		TURNING MOVEMENT PLAN - NEIGHBORHOOD 7
14	TM-2		FUEL TRUCK CIRCULATION AND STACKING PLAN
15	CD-1		CONSTRUCTION DETAILS
16	UT-1		UTILITY PLAN - NEIGHBORHOOD 7
17	UT-2		UTILITY DETAILS
18	PF-1		PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM
19	PF-2		PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM
20	PF-3		PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM
21	PF-4		PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET SANITARY SEWER
22	LA-1		LANDSCAPING PLAN - NEIGHBORHOOD 7
23	LA-2		LANDSCAPING DETAILS
24	LA-3		PEDESTRIAN ACCESS PLAN

X SHEET TO BE RECORDED

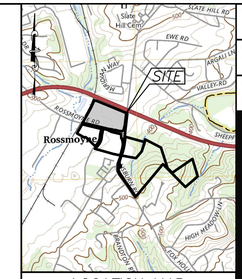
PLAN INDEX – PCSM AND E&S PLAN

NO.	SEC.	R.	TITLE
01	SM-1	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN COVER
02	SM-2	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - OVERALL
03	SM-3	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 3.1
04	SM-4	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 3.1 & 4
05	SM-5	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 5
06	SM-6	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 6
07	SM-7	X	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 7
08	SM-8	X	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
09	SM-9	X	POST CONSTRUCTION STORMWATER MANAGEMENT - TRENCH PLANS & DETAILS
10	SM-10	X	POST CONSTRUCTION STORMWATER MANAGEMENT - TRENCH PLANS & DETAILS
11	SM-11	X	POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS
12	SM-12	X	POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS
13	SM-13	X	POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS
14	SM-14	X	POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS
15	SM-15	X	POST CONSTRUCTION STORMWATER MANAGEMENT - SWALE PLAN & PROFILES
16	SM-16	X	POST CONSTRUCTION STORMWATER MANAGEMENT NOTES
17	RD-1		ROOF DRAIN CONNECTION PLAN - NEIGHBORHOOD 3.1
18	RD-2		ROOF DRAIN CONNECTION PLAN - NEIGHBORHOOD 4
19	RD-3		ROOF DRAIN CONNECTION PLAN - NEIGHBORHOOD 5
20	ES-1	X	EROSION & SEDIMENT CONTROL PLAN COVER
21	ES-2	X	EROSION & SEDIMENT CONTROL PLAN - OVERALL
22	ES-3	X	EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 3.1
23	ES-4	X	EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 4
24	ES-5	X	EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 5
25	ES-6	X	EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 6
26	ES-7	X	EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 7
27	ES-8	X	EROSION & SEDIMENT CONTROL PLAN - DETAILS
28	ES-9	X	EROSION & SEDIMENT CONTROL PLAN - DETAILS
29	ES-10	X	EROSION & SEDIMENT CONTROL - BASIN DETAILS
30	ES-11	X	EROSION & SEDIMENT CONTROL - BASIN DETAILS
31	ES-12	X	EROSION & SEDIMENT CONTROL - NOTES
32	ES-13	X	EROSION & SEDIMENT CONTROL - BASIN DETAILS
33	ES-14	X	EROSION POTENTIAL ANALYSIS

X SHEET TO BE RECORDED



SCALE: 1" = 300'



LOCATION MAP
SCALE: 1" = 2000'

EQUITABLE OWNER / DEVELOPER (ARCONA NEIGHBORHOOD 7):

Charter Homes Development Company
322 North Arch Street
Lancaster, PA 17603

OWNER (ARCONA NEIGHBORHOOD 7)

Ruth D. Lesher (1/2 interest) and
Strong & Detweiler Partnership (1/2 interest)
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13-10-0256-228
Deed Book and Page: 201729508 (Ruth D. Lesher)
Dead Book and Page: 247-1884 (Strong & Detwiler)

Note:

Arcona Neighborhood 7 area as shown on PL# 201807345 except where right-of-way was transferred to PennDOT around the Lisburn-Rossmoyne Roundabout, as recorded in Instrument #201903119.

SITE ACREAGE:

ARCONA NEIGHBORHOOD 7 – GROSS AREA 14.36 Ac.

SITE DATA:

Highway Occupancy Permit is to be prepared by others and submitted to PENNDOT for approval.

ZONING:

R-2 Single-Family Residential District (TND Overlay)

PROPOSED USE:

60,000 S.F. – Neighborhood Shopping Center

PROPOSED WATER SERVICE:

PUBLIC

PROPOSED SEWER SERVICE:

PUBLIC

NOTES:

1. PA ONE CALL, REQUESTED WAIVERS AND NOTES ARE LOCATED ON CV-2.
2. LEGENDS ARE LOCATED ON EX-1 & LY-2.
3. SOILS TABLE IS LOCATED ON EX-1.
4. THE OWNER(S) WILL PROVIDE A NOTARIZED CERTIFICATE OF OWNERSHIP SIGNATURE PRIOR TO FINAL PLAN RECORDATION.

OUTSIDE AGENCY PERMITS

In conjunction with this project the following outside agency permits/reviews are anticipated and required:

1. Erosion Control Plan – Issued by the Cumberland County County Conservation District (CCCD) for sedimentation control during construction.
2. Individual NPDES – Issued by CCCD/PADEP in conjunction with construction activities with one (1) or more acres of earth disturbance.
3. Sewage Planning – Approval by Lower Allen Township Authority regarding sanitary sewer service. Approval of a Sewer Planning Exemption by PADEP.
4. Water Supply – Detailed design / approval provided by Pennsylvania American Water Company.
5. Highway Occupancy Permit – Issued by PennDOT for driveway access to state highways.

Approval of this plan is contingent upon the above-listed approvals. Any revisions to these plans as a result of outside agency approvals shall be reflected on the Final Plan prior to recordation.

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF CUMBERLAND

On this, the _____day of _____, 20 , before me, the undersigned person, personally appeared _____, being _____ of the Strong & Detweiler Partnership, a Pennsylvania company, who being duly sworn according to the law, deposes and says that the partnership is the Owner of the property shown on this plan, that they are authorized to execute said plan on behalf of the partnership, that the plan is the act and deed of the partnership, that the partnership desires the same to be recorded and on behalf of the partnership.

_____

_____

My Commission Expires _____, 20____

It is hereby certified that the undersigned are the owner(s) of the property shown in this plat and that all streets, easements and right-of-way or part thereof, if not previously dedicated are hereby tendered for dedication to the public use. That the stormwater management facilities and BMP's to be permanent fixtures can be altered or removed only after approval of a revised plan by Lower Allen Township.

Owner: _____

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA,
COUNTY OF CUMBERLAND

On this, the _____ day of _____, 20____, before me, the undersigned, personally appeared Ruth D. Lesher, who being duly sworn according to the law, deposes and says that she is the Owner of the property shown on this plan, that she is authorized to execute said plan, that the plan is the act and deed of the individual, and that the individual desires the same to be recorded.

_____

_____

My Commission Expires _____, 20____

It is hereby certified that the undersigned are the owner(s) of the property shown in this plat and that all streets, easements and right-of-way or part thereof, if not previously dedicated are hereby tendered for dedication to the public use. The stormwater management facilities and BMP's to be permanent fixtures can be altered or removed only after approval of a revised plan by Lower Allen Township.

Owner: _____

MUNICIPAL CERTIFICATION

On this date _____, a municipal official has reviewed and hereby certifies that the SWM site plan meets all design standards and criteria of the Municipal Ordinance No. 2022-02.

_____
MUNICIPAL OFFICIAL

BMP CERTIFICATION

I acknowledge the stormwater management facilities and BMPs to be permanent fixtures that can be altered or removed only after approval of a revised plan by the municipality.

_____
LANDOWNER

CERTIFICATE FOR REVIEW BY THE TOWNSHIP PLANNING COMMISSION

Reviewed by the Township Planning Commission, Lower Allen Township, Cumberland County County, PA

Reviewed this _____ day of _____, 20____.

_____ Chairman

_____ Secretary

CERTIFICATE OF ACCURACY (BOUNDARY & TOPO SURVEY)

I hereby certify that, to the best of my knowledge, the Boundary and Topographic survey shown and described hereon is true and correct to the accuracy required by the Subdivision and Land Development Ordinance of Lower Allen Township.

For Howell Surveying

_____, 20____ _____

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING LAND SURVEYOR No. SU4094-E

CERTIFICATE OF ACCURACY (LOT SURVEY)

I hereby certify that, to the best of **my knowledge, the** Lot survey shown and described hereon is true and **correct to the accuracy required** by the Subdivision and Land Development **Ordinance of Lower Allen** Township.

For Towne Square Engineering

4/29, 2026 G. Mitchell King

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING LAND SURVEYOR No. SU4094-E

CERTIFICATE OF ACCURACY (PLAN)

I hereby certify that, to the best of my knowledge, the plan shown and described hereon is true and correct to the accuracy required by the Subdivision and Land Development Ordinance of Lower Allen Township.

For Towne Square Engineering

4/29, 2026 G. Mitchell King

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING ENGINEER No. PE045382

STORMWATER MANAGEMENT DATA CERTIFICATION

I, G. Mitchell King, P.E., P.L.S., on this date 4/29/26 have reviewed and hereby certify that the drainage plan meets all design standards and criteria of the Lower Allen Township Act 167 Stormwater Management Ordinance.

For Towne Square Engineering

G. Mitchell King

CUMBERLAND COUNTY COUNTY PLANNING DEPARTMENT

REVIEWED THIS _____ DAY OF _____, 20____
BY THE CUMBERLAND COUNTY COUNTY PLANNING DEPARTMENT.

_____
DIRECTOR OF PLANNING

CERTIFICATE FOR APPROVAL BY THE BOARD OF COMMISSIONERS

Approved by the Board of Commissioners, Lower Allen Township, Cumberland County County, PA

Approved this ____ day of _____, 20____.

Conditions of Approval Completed this _____ day of _____, 20____.

_____ President

_____ Secretary

Sheet Number: 01 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

COVER SHEET

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=300'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 150 300 600 900

Spell:

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com
Civil Engineers & Land Planners

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\01 CV-01.DWG
4/29/2026 8:38 PM

Section Number: CV-1

PRELIMINARY

SURVEY NOTES:

1. Boundary, topography and physical improvements shown are from field survey by Howell Surveying performed on 11/06/2025.
2. This survey was performed without the benefit of a current title report, which would disclose any right, reservations, easements, etc. of record.
3. Contours plotted from field run topographic survey by Howell Surveying and supplemented with LIDAR drone flight conducted by Howell Surveying.

   Datum: NAVD 88 (computed using Geoid18) & NAD 83 (2011) (Epoch:2010.0000) (as determined by GPS observation)

   Site Bench: Top of sanitary manhole located along centerline of Rossmoyne Road, being approximately 60 feet northwest from center line of Norfolk–Southern Railroad crossing.

   Elevation: 429.44'

   Contour Interval: 2 foot

4. Underground utilities shown were plotted from observable evidence at the time of survey and information from plans supplied by utility companies. No guarantee is made that underground utilities are accurately or completely shown hereon.
5. All features shown are existing unless otherwise noted.
6. Zoning information obtained from the Lower Allen Township Zoning Ordinance of 2009, as amended through 1/27/2025. Project engineer is responsible for checking latest township ordinances for any & all updates or township revisions.
7. Gross lot area is calculated to the title line. Net lot area will exclude existing street and railroad right–of–ways and include any internal, easements or right–of–ways.
8. The marker designation (set) indicates that the described marker will be set as part of this survey. The designation (fnd) indicates that the marker was found during the field survey. Open circle with no designation indicates no marker found or set as part of this survey.
9. The Site bearing orientation is referenced from Grid North based on the Pennsylvania State Plane Coordinate System (South Zone) which was derived from GPS measurements. The site Horizontal Adjustment is CORS 96.
10. The soils and soils data shown on this plan are taken from the NRCS Web Soil Survey, run done on September 15, 2025.
11. Monuments must be set (1) at the intersection of lines forming angles in the boundaries of the subdivision, (2) at such intermediate points as may be required by Municipal Engineer. Markers shall be set (1) at all corners except those monumented, (2) at the intersections of all street right–of–way lines, and (3) by the time the property is offered for sale.
12. Underground utilities have been shown according to information provided by others and must be field verified prior to construction, excavation or blasting. The actual locations of these utilities have not been field verified and the locations are approximate. Towne Square Engineering does not make any representation, warranty, assurance or guarantee that the underground utility location information provided by others and reflected on these drawings is correct and accurate. Towne Square Engineering assumes no responsibility for any damage incurred as a result of underground utilities omitted or inaccurately shown.
13. A FEMA designated floodplain is not present on the Arcona Neighborhood 7 propertie per FEMA Map 42041C0279F & 42041C0283F, both dated 9/7/2023.
14. The 100–year (1%–chance) flood plain shown on the plans is taken from an approximate flood plain study prepared by Towne Square Engineering and documented in Appendix I of the PCSM Report for Arcona, Phases 3, 4, 5, 6 & 7, dated December 12, 2025, revised February 12, 2026. The floodway is the same as the flood plain for these small creeks.

WETLANDS NOTES:

1. The Wetland Delineation on the Arcona Neighborhood 3, 4, 5, 6 & 7 and updated letter was prepared by Vortex Environmental, Inc. dated December 5, 2025. Field location of wetland flags was performed by Howell Surveying.
2. No earth disturbance, fill or other encroachment shall be permitted within the wetlands, Waters of the U.S. or Waters of the Commonwealth shown on these plans without prior approval of the proper Federal, State and Local Authorities.

GENERAL DESIGN NOTES:

1. The intent of this plan is to subdivide portions of Arcona Neighborhood Lot 7 and provide a land development plan for proposed improvements. Please also refer to the "Preliminary / Final Subdivision and Land Development Plan, Arcona Neighborhoods 3, 4, 5 & 6.This plan is a preliminary subdivision and land development plan for existing Arcona Neighborhood Lot 7.
2. This plan does not propose, and shall not be considered to be, a final subdivision and land development plan for Arcona Neighborhood Lot 7. Arcona Neighborhood Lot 7 is intended to be developed for nonresidential uses and a final plan(s) shall be required to be submitted and approved for each such building that is proposed on this lot. Each such plan shall include, among other requirements specified in the Subdivision and Land Development Ordinance, (1) lighting plans that depict the type, number, height and location of each exterior lighting fixture and demonstrate compliance with the lighting standards under applicable Township ordinances, (2) parking lot configurations depicting the required minimum number of parking spaces for the proposed uses as specified in the Zoning Ordinance, and (3) the anticipated hours of operation for each such use. To the extent that any building depicted on any such final plan for Arcona Neighborhood Lot 7 deviates from the building depicted on this preliminary plan, then the Developer shall be required to submit a revised preliminary plan for Arcona Neighborhood Lot 7 as part of the submission of a final plan for such lot.
3. Any revisions made to these plans after the date of plan preparation or latest revision date shall not be the responsibility of TOWNE SQUARE ENGINEERING.
4. The footprints and configurations of buildings, driveways, and their locations within lots, as depicted on these plans, are illustrative only and intended to demonstrate material compliance with Lower Allen Township ordinance requirements. The actual footprint, configuration and location of each building or driveway that is to be constructed shall be depicted in building permit plans that are submitted with the building permit application for each such building. All such buildings and driveways shall comply with all applicable Lower Allen Township ordinance requirements.
5. It is the responsibility of the Developer to obtain any and all permits or approvals required for the construction of the improvements shown on this plan. All construction shall be in conformance with the Lower Allen Township specifications in effect at the time of construction.
6. It is the Contractor's responsibility to be aware of applicable standards and specifications as well as the required methods of construction. All deviations from the plans must be approved prior to construction.
7. Any blasting will require obtaining a State Permit and prior notification to the Township.
8. No building construction shall occur until the building permits are issued in accordance with Lower Allen Township.
9. No permit will be issued for any additional installation or construction of impervious coverage unless Lower Allen Township has approved a Drainage Plan in accordance with the Lower Allen Township Stormwater Management Ordinance.
10. No one shall scale from these plans for construction purposes.
11. Connection to public sewer and public water is required for all new units.
12. The Township is not responsible for construction or maintenance of any facility not dedicated for public use. Sanitary sewer facilities are proposed to be dedicated to Lower Allen Township Authority. Potable water facilities are proposed to be dedicated to PA American Water Company.
13. It will be the Contractor's responsibility to ensure that the grading plan is implemented correctly, and that proper drainage is provided during construction.
14. Lower Allen Township shall be notified in the event sinkholes are encountered during construction. The services of a registered geologist shall be obtained to assist in recommending construction techniques and permanent facilities necessary to avoid further sinkhole creation and with regard to the repair of any existing sinkholes.
15. Representatives of the Township may enter, at reasonable times, upon any property, within the Township, to investigate or ascertain the condition of the subject property in regard to any aspect regulated by the Lower Allen Township Subdivision / Land Development and / or Stormwater Management Ordinance.
16. Contractor shall schedule a pre–construction site meeting with the Township Engineer at least 48 hours prior to starting site construction activities.
17. Site disturbance is permitted to start only if and when sufficient time is available to stabilize disturbed areas in accordance with PADEP requirements and with the approved plan.
18. A Neighborhood Association (NA) will own and maintain all open space areas.
19. Recreation requirements are to be satisfied in accordance with the recreation proposal in the Overall Master Plan accepted by the Board of Commissioners on December 14, 2015. Under SALDO Section 192–60 E & F and Lower Allen Township fee schedule, Charter Homes is proposing to provide a recreation fee per dwelling unit in lieu of recreation land in the amount of (i) $1,000 when the cumulative density for the Arcona TND, is less than or equal to six dwelling units per acre, (ii) $1,250 when such cumulative density is greater than six but less than or equal to seven dwelling units per acre, (iii) $1,500 when such cumulative density is greater than seven units per acre. This recreation fee per dwelling unit shall be paid when individual building permits are issued for the community.
20. Highpoint, Arcona Phase 2.1, 2.2, 2.3, Arcona Neighborhood 8.1, 8.2, 8.3, 9, 3, 4, 5, 6, & 7 propose a total of **1095 (1082)** dwelling units on **214.6** acres, which equates to a density of **5.04** dwelling units per acre. Pursuant to Sections 220–126.A and B of the Zoning Ordinance and Section 192–68.E of the SALDO, this density is permitted because (i) cumulatively for such phases, **54.7** acres of common open space is proposed to be provided, which exceeds 150% of the amount of common open space that is required under Section 220–131 of the Zoning Ordinance, and (ii) recreation fees are to be paid based upon approved cumulative density as provided in General Design Note 19 above.
21. ADA compliant ramps shall be constructed at all locations where sidewalk and trails intersect vehicular traffic.
22. All signage shall meet the requirements of Lower Allen Township Zoning Ordinance Article (§220–132.2).
23. Per Zoning Section 220–127.B, there are no multi–family, live–work nor accessory dwelling units located in Neighborhood 7.
24. Applicant and Owner acknowledge that certain site improvements depicted on this plan, including but not limited to accessible parking spaces, accessible route to the building and freestanding signs, that require approval under regulations contained in the PA uniform construction code and/or Lower Allen Township zoning code must be installed in accordance with separate permit approvals granted under those regulations
25. Per Zoning § 220–247.A, No sign shall be placed, erected, altered, enlarged or relocated until a permit for doing so has been issued by the Zoning Officer. A construction permit shall also be required unless the sign proposal satisfies exemption criteria listed in Chapter 70, Building Construction and Safety Standards. Signs listed in § 220–251 herein are exempt from zoning permit requirements, provided that the use of such signs is in accordance with other provisions of this article. Applications shall be submitted on forms provided by the Township, shall indicate consent of the owner of the premises upon which the sign is to be located and shall be accompanied by supporting information that is sufficient to determine compliance with this article and any other relevant ordinances. Examples of supporting data that may be required include a scale drawing with relevant dimensions noted to illustrate the proposed height, area, size and sign copy; a plot plan of the property on which the sign will be located to illustrate the position of proposed signs relative to buildings, structures, lot lines and rights–of–way; illumination method and materials; and support systems, structural loads, stresses and anchoring details. Compliance with performance criteria may require certification by a registered design professional.

GENERAL UTILITY NOTES:

1. All easements shall be kept free of structures, fill and other encroachments that may adversely affect the function of the easement. The Owner shall not construct, plant, or maintain any structures, fences, trees, shrubbery, etc. within the sanitary sewer, stormwater or utility rights–of–way/easements, to ensure a free and clear access to all facilities.
2. Electric, telephone, cable television, gas and all other utilities shall be installed underground and a minimum of five feet from sewer main center line, Developer responsible for enforcement and relocates.
3. As–built plans will be required prior to dedication of public improvements including completed stormwater facilities.
4. All proposed utility companies shall review the Final Plans prior to construction.
5. Metallic tape shall be placed 6" above the top of all installed utilities.
6. Electric transformers, communication boxes, gas meters, and water meters shall be kept a minimum of five feet from sewer main center line, Developer responsible for enforcement and relocates.

UTILITY NOTES – SANITARY SEWER:

1. Public sanitary sewer service to be provided by the Lower Allen Township Authority.
2. The sanitary sewer components of Arcona Neighborhood 7 Subdivision and Land Development Plan must be approved by the Lower Allen Township Authority.
3. Developer offers for dedication to the Lower Allen Township Authority all sanitary sewer collection and/or interceptor lines constructed by the Developer with appurtenances and a perpetual easement for the maintenance, repair, replacement or enlargement thereof, together with the right of ingress, egress and regress thereof as shown on this plan.
4. Sanitary sewer laterals shall not be placed in driveway areas, except where no alternative exists as determined by the Developer.
5. All sanitary sewer construction and materials shall be accordance with the latest edition of the Lower Allen Township Authority rules and regulations.
6. Manhole frame and cover shall be Lower Allen Township Authority Standard.
7. All manhole frames must be bolted to the manhole by four (4) ⅜" stainless steel bolts spaced evenly around the frame, and imbedded at least 3" into the manhole. Manholes and sanitary sewer lines must be at least five (5') feet from the face of curb.
8. Sanitary sewer pipe shall be manufactured to meet ASTM specifications D–3034–SDR35.
9. Sanitary sewer pipe shall have a minimum of 5'–0" cover.
10. Maximum spacing between clean–outs is 50 feet. Cleanouts shall be located 5' from building exterior.
11. Existing sewer main flow and service shall be maintained during all phases of construction. The contractor shall provide a work plan prior to starting sewer construction that shows how flow will be maintained.
12. Maintenance of sanitary sewer laterals off sanitary sewer mains within Arcona Neighborhoods will be the responsibility of the Owner(s) of Development Site lots.
13. Subgrade must be completed prior to sanitary sewer construction.
14. The site shall be graded to the proposed new subgrade elevation prior to starting sewer line construction.
15. The Property Owner is responsible for final surface restoration in non–public paved roads after Authority sewer main external repair and backfill to sub–grade.
16. Trees shall not be planted within sewer easements.
17. Retaining walls shall not be placed within sewer easements without prior Authority approval.
18. Manholes in non–paved areas shall have watertight frame and covers.
19. All non–residential units shall have separate water meters.
20. Manholes having a depth greater than 12.5 feet shall have an inside diameter of 6 feet.
21. Inside drop connections at manholes are not permitted without Authority prior approval.
22. Abandoned sewer pipe and manholes shall be completely removed.
23. Changes in the approved plan sewer components require a revised plan submission and approval prior to construction.
24. Sewer lateral connections to the sewer main are not allowed until all sewer main testing is complete, a sewer permit has been issued, and the lateral is inspected by the Authority from sewer main to building outside frame.
25. Sanitary sewer lateral traps between the sewer main and outside building wall are not permitted.
26. Authority inspector to be present when utilities crossing the sewer main are constructed.

UTILITY NOTES – WATER SERVICE:

1. Public water service to be provided by Pennsylvania American Water Company.
2. All water line construction shall be in accordance with Pennsylvania American Water Company design drawings.
3. Hydrant and fire flow requirements of Section 192–61.B to be met prior to occupancy.
4. Final location of hydrants must be approved by the Lower Allen Department of Public Safety.

UTILITY NOTES – STORM DRAINAGE:

1. Ownership and maintenance of all stormwater conveyance and management facilities shall be the responsibility of the Neighborhood Association. Maintenance shall include, but not be limited to normal maintenance as well as repair of structural damage or deterioration of any kind, including that caused by sinkholes, erosions or other events. The responsible parties shall maintain the storm sewers, swales, and all other stormwater facilities in design condition and free of fill or other obstructions. Maintenance shall include, but not be limited to normal maintenance as well as repair of structural damage or deterioration of any kind, including that caused by sinkholes, erosions or other events.
2. All stormwater facilities not within the street right–of–way shall be provided with an easement as shown on the plans.
3. All storm drainage pipe shall be smooth interior unless otherwise noted.
4. All storm sewer materials and installation shall be per the Lower Allen Township specifications as amended.
5. A revision which involves a change in stormwater management control methods or techniques, or which involves the relocation or redesign of control measures, or which is necessary because soil or other conditions are not as stated on the approved plan, shall require a resubmission by the applicant in accordance with the plan requirements as set forth in the Stormwater Management Ordinance.
6. Nothing shall be placed, planted, set, or put within the area of an easement that would adversely affect the function of the easement.
7. Lower Allen Township shall have the right to:
   a. Access the site to inspect stormwater facilities at any reasonable time.
   b. Require that the land owner take corrective measures and assign the land owner reasonable time periods for any necessary action.
   c. Authorize Maintenance to be done and lien all cost of all work against the properties or the private entity responsible for maintenance.
8. If the Township determines, at any time, that any permanent stormwater management facility has been eliminated, altered, or improperly maintained, the landowner of the lot shall be advised of corrective measures required and given a reasonable period of time within which to take such corrective action. If such corrective action is not taken by the owner, the Township may cause the work to be done and shall take the appropriate action to a file a municipal claim pursuant to the PA Municipal claims and tax liens Act.
9. The Developer shall be responsible for completing a "Record Survey" of all stormwater management facilities included with the approved stormwater management plan.
10. Lot owner is required to maintain lot grading and surface drainage patterns and characteristics in accordance with the approved plan.
11. Lot owner shall be responsible for the implementation and maintenance of soil erosion control measures.
12. Manhole covers for storm manholes shall be cast with the word "Storm" for identification purposes.
13. Construction of all work within the public street right–of–way and work related to storm drainage facilities requires inspection by the Township. Provide a minimum 48–hour notice to the Township before starting work.
14. Individual lot grading plans shall be required prior to the issuance of a building permit for the respective lot.

GENERAL STREET NOTES:

1. All work shall be in accordance with PennDOT Publication 408, Specifications and Publication 72, Roadway Construction Standards, unless otherwise noted.
2. Work Zone Traffic Control shall be in accordance with PennDOT Publication 213 and approved HOP plan for improvements.
3. A Right–of–Way Permit is required before starting any work within the public street right–of–way.
4. The Developer shall be responsible for the installation and maintenance of all traffic control signs and pavement markings. All pavement markings shall be hot thermoplastic.
5. Traffic control signs and pavements markings shall be installed in accordance with all PennDOT standards and regulations in effect at the time of street dedication.
6. Pedestrian crossings shall be clearly delineated.
7. All handicapped accessible ramps shall be designed and constructed in accordance with the applicable standard requirements by PADOT.
8. ADA compliant accessible curb ramps shall be provided at all sidewalk/trail and street intersections where required.
9. No buildings, wall, fence, landscaping, or plantings shall be erected, altered, or maintained, and no hedge, tree, or growth shall be planted or maintained, which, in each case, exceeds 30 inches within the clear sight distance at intersections. Any tree limbs extending into the clear sight distance must be limbed to a height greater than 8 feet.
10. NOTICE – A PennDOT highway occupancy permit for access to Rossmoyne Road and Lisburn Road is required pursuant to Section 420 of the Act of June 1, 1945 (P.L. 1242, No. 428), known as the "State Highway Law," before driveway access to a state highway is permitted. Access to the state highway shall be only as authorized by a PennDOT highway occupancy permit. No building permits, zoning permits or certificates of occupancy shall be issued until such time as a PennDOT highway occupancy permit has been secured and filed with the Township. The Township shall not be held liable for damages to persons or property arising out of issuance or denial of a highway occupancy permit by the Pennsylvania Department of Transportation, pursuant to Section 508 of the Pennsylvania Municipalities Planning Code. The Township's approval of this plan in no way implies that such permit can be acquired. HOP approval will be provided to the township upon our receipt.
11. Exact locations and dimensions of proposed driveway, and re–location of existing poles, signs, etc., along Rossmoyne Road and Lisburn Road will be shown on the HOP Plan prepared by others.
12. There are only access drives in Arcona Neighborhood 7. All Strong Road and Rossmoyne Road roundabout access / right–of–way areas are "Public" and shall be shown on the HOP Plan prepared by others and approved by PennDOT.

SLOPE REINFORCEMENT AND RETAINING WALL NOTES:

1. Slope reinforcement and retaining walls shall be designed by a Professional Engineer experienced in geotechnical and retaining wall design. Specific calculations and design details will be provided to Township prior to construction.
2. A licensed geotechnical engineer qualified in soils and with experience in segmental retaining walls shall oversee and certify the construction of all retaining walls.
3. A licensed geotechnical engineer qualified in soils and with experience in slope reinforcement shall oversee and certify the construction of all slope reinforcement.
4. A geotechnical engineer shall have all soils tested and approved for use in the construction of the retaining wall prior to their construction.
5. Copies of all geotechnical reports, site observations and soil testing performed in relation to slope and retaining wall design and construction shall be provided to Lower Allen Township as they become available.
6. All soils shall be compacted to 95% of the maximum dry density as specified by the modified proctor method (ASTM–d1557) or as otherwise directed by the site geotechnical engineer.
7. Upon completion of each retaining wall, the geotechnical engineer shall submit to Lower Allen Township a geotechnical report documenting all parameters actually used in the field, provide comparison to the design values and document the acceptability of the as–built conditions.
8. All stabilized slopes and retaining walls shown on plan shall be maintained by the NA.

WAIVERS:

LIST OF REQUESTED WAIVERS & MODIFICATIONS

At a meeting held on _____, the Lower Allen Township Board of Commissioners approved the following waivers and modifications of the Lower Allen Township Subdivision and Land Development Ordinance:

1. Modification of Section 192–57–B.(2)(h)[2] and 192–57–C.(13)(c)[1] require only the right of way width and cartway width that is required by PennDOT for Rossmoyne Road & Lisburn Road.
2. Waiver of Section 192–57.C.8 requiring installation of curbs along Rossmoyne Road & Lisburn Road.
3. Waiver of Section 192–57.C.9 requiring installation of sidewalk along Rossmoyne Road & Lisburn Road.
4. Waiver from Section 192–58.E.10 requiring planting islands to collect stormwater runoff from adjacent paved areas.

Before You Dig Anywhere

In... PENNSYLVANIA

Know what's below. Call before you dig.

STOP! CALL 811 (or 1–800–242–1776 outside of PA)
TOLL FREE

PA Act 287 (amended by Act 121 (2008)) requires notification to ONE CALL SYSTEM 3 working days for construction phase and 10 working days for design phase before you excavate.

PA ONE CALL SYSTEM, INC.

DESIGN PHASE SERIAL # 20240612619 (LOWER ALLEN TOWNSHIP)
(CALL MADE BY : Howell Surveying)

Howell Surveying does not guarantee the accuracy of the locations for existing subsurface utility lines, structures, etc. shown on the plans, nor does Howell Surveying guarantee that all subsurface utility lines, structures, etc. are shown. Contractor shall verify the location and elevations of all subsurface utility lines, structures, etc. before the start of work, by calling the Pennsylvania One Call System at 1–800–242–1776.

Utilities Listing – Lower Allen Township

COMPANY:PENNSYLVANIA AMERICAN WATER
ADDRESS: 852 WESLEY DR
MECHANICSBURG, PA. 17055
CONTACT: JEFF DREW
EMAIL: JEFF.DREW@AMWATER.COM
PHONE: 717–550–1516

COMPANY:VERIZON PENNSYLVANIA LLC
ADDRESS: 40 S MERCER ST
NEW CASTLE, PA. 16101
CONTACT: TRICIA JACOBS
EMAIL: TRICIA.L.JACOBS@VERIZON.COM
PHONE: 724–656–5224

COMPANY:BUCKEYE PARTNERS
ADDRESS: THE BUCKEYE BUILDING
6161 HAMILTON BLVD
ALLENTOWN, PA. 18106
CONTACT: BRIAN BARR
EMAIL: bbarr@buckeye.com
PHONE: 610–904–4185

COMPANY:LOWER ALLEN TOWNSHIP AUTHORITY
ADDRESS: 120 LIMEKILN RD
NEW CUMBERLAND, PA. 17070
CONTACT: BRIAN KAUFFMAN
EMAIL: BKAUFFMAN@LATWP.ORG
PHONE: 717–774–0610

COMPANY:LOWER ALLEN TOWNSHIP
ADDRESS: 2233 GETTYSBURG RD
CAMP HILL, PA. 17011
CONTACT: BRYCE THOMPSON
EMAIL: BTHOMPSON@LATWP.ORG
PHONE: 717–975–7575 EXT. 1115

COMPANY:LUMEN FORMERLY LEVEL 3
ADDRESS: 1025 ELDORADO BLVD
BROOMFIELD, CO. 80021
CONTACT: LUMEN OPERATOR PERSONNEL
EMAIL: RELOCATIONS@LUMEN.COM
PHONE: 877–366–8344 EXT. 3

COMPANY:VEOLIA WATER PENNSYLVANIA INC
ADDRESS: 6310 ALLENTOWN BOULEVARD
HARRISBURG, PA. 17112
CONTACT: CHRISTOPHER BRIDE
EMAIL: CHRISTOPHER.BRIDE@VEOLIA.COM
PHONE: 717–901–6317

COMPANY:PENNSYLVANIA ELECTRIC CO
ADDRESS: 21 S MAIN STREET
AKRON, OH. 44308
CONTACT: MELLYSA ADAMS
EMAIL: madams@firstenergycorp.com
PHONE: 330–604–4073

COMPANY:PPL ELECTRIC UTILITIES CORPORATION
ADDRESS: 437 BLUE CHURCH RD
PAXINOS, PA. 17860
CONTACT: DOUG HAUPT
EMAIL: dhaupt@pplweb.com
PHONE: 570–490–5684

COMPANY:COMCAST
ADDRESS: 4601 SMITH STREET
HARRISBURG, PA. 17109
CONTACT: MICHAEL SWEIGARD
EMAIL: mike_sweigard@cable.comcast.com
PHONE: 717–298–6450

COMPANY:ENERGY TRANSFER
ADDRESS: 1300 MAIN ST
HOUSTON, TX. 77002
CONTACT: SAUL SHAW
EMAIL: saul.shaw@energytransfer.com
PHONE: 713–989–7342

COMPANY:UPPER ALLEN TOWNSHIP
ADDRESS: 400 CREEKSIDE DR
MECHANICSBURG, PA. 17055
CONTACT: KODI HOCKENBERRY
EMAIL: KHOCKENBERRY@LATWP.ORG
PHONE: 717–697–9548

COMPANY:UGI ENERGY SERVICES
ADDRESS: 835 KNITTING MILLS WAY
WYOMISSING, PA. 19610
CONTACT: JASON DOERSOM
EMAIL: jdoersom@ugies.com
PHONE: 610–944–2672

COMPANY:UGI UTILITIES INC
ADDRESS: 1301 AIP DR
MIDDLETOWN, PA. 17057–5987
CONTACT: GEOFFREY FERGUSON
EMAIL: GFERGUSON@UGI.COM
PHONE: 610–807–3118

ZONING INFORMATION - ARCONA Neighborhood 7				
LOCATION: Off Rossmoyne Road and Lisburn Road, Lower Allen Township, Cumberland County, PA				
ZONE: R-2, Single-Family Rural Residential District, Traditional Neighborhood Development Overlay				
PROPOSED USE: Nonresidential Development Criteria for 60,000 S.F. Neighborhood Shopping Center				
#	**ITEM**	**REQUIRED**	**PROPOSED**	**VARIANCE**
1	MAXIMUM BUILDING HEIGHT	40 ft.	≤ 40 ft.	NO
2	MAXIMUM BUILDING HEIGHT (Buildings that contain multifamily dwellings and/or live-work units)	50 ft.	≤ 50 ft.	NO
	LARGE SINGLE-USE COMMERCIAL LOTS			
3	MINIMUM LOT AREA	20,000 s.f.	-	NO
4	MAXIMUM LOT AREA	150,000 s.f.	-	NO
5	MINIMUM LOT WIDTH AT ROW LINE	80 ft.	-	NO
6	MAXIMUM LOT WIDITH AT ROW LINE	300 ft.	-	NO
	STANDARD SINGLE-USE COMMERCIAL LOTS			
7	MINIMUM LOT AREA	7,200 s.f.	-	NO
8	MAXIMUM LOT AREA	75,000 s.f.	-	NO
9	MINIMUM LOT WIDTH AT ROW LINE	40 ft.	-	NO
10	MAXIMUM LOT WIDITH AT ROW LINE	150 ft.	-	NO
	SINGLE-USE COMMERCIAL LOTS -designed and constructed as an integral part of a continuous commercial frontage			
11	MINIMUM LOT AREA	2,000 s.f.	-	NO
12	MAXIMUM LOT AREA	10,000 s.f.	-	NO
13	MINIMUM LOT WIDTH AT ROW LINE	20 ft.	-	NO
14	MAXIMUM LOT WIDITH AT ROW LINE	150 ft.	-	NO
	MULTIPLE-USE LOTS			
15	MINIMUM LOT AREA	NONE	-	NO
16	MAXIMUM LOT AREA	NONE	-	NO
17	MINIMUM LOT WIDTH AT ROW LINE	NONE	-	NO
18	MAXIMUM LOT WIDITH AT ROW LINE	NONE	-	NO
	MAXIMUM AREA WITHIN THE CORE			
19	MAXIMUM AREA WITHIN THE CORE NEIGHBORHOOD ESTABLISHED AS LARGE SINGLE-USE COMMERCIAL LOTS	≤ 30% OF THE CORE NEIGHBORHOOD	0%	NO
	YARDS			
20	MINIMUM FRONT YARD DEPTH - Provided (a) Required parking in rear or side only (b) Primary access is at the front property line & (c) Front access is part of a coordinated pedestrian access system	0 ft.	5 ft.	NO
21	MINIMUM SETBACK - FRONT - Principal building space	5 ft.	5 ft.	NO
22	MAXIMUM SETBACK - FRONT - No parking in front	15 ft.	≤ 15 ft.	NO
23	MAXIMUM SETBACK - FRONT - Parking in front yard	90 ft.	≤ 90 ft.	NO
24	MINIMUM SETBACK - REAR - Principal building	35 ft.	35 ft.	NO
25	MINIMUM SETBACK - REAR - Principal building containing mix of residential and nonresidential uses	5 ft.	5 ft.	NO
26	MINIMUM SETBACK - SIDE - Constructed as an interior part of a continuous commercial frontage	0 ft.	0 ft.	NO
27	MINIMUM SETBACK - SIDE - End units	10 ft.	10 ft.	NO
28	MINIMUM SETBACK - SIDE - TOTAL	20 ft.	20 ft.	NO
29	PERIMETER BUFFER FROM BOUNDARY OF TND TO RESIDENTIAL USES - When use is any other than single family residential	60 ft.	60 ft.	NO
	SIZE LIMITATIONS ON NONRESIDENTIAL USES			
30	BUILDINGS ON LARGE SINGLE-USE COMMERCIAL LOTS	15,000 sf. Gross floor area per floor	N/A	NO
	MULTIPLE-USE BUILDINGS OTHER THAN VILLAGE COURT YARDS			
31	(a) SINGLE OCCUPANT OR BUSINESS MAXIMUM GROSS FLOOR AREA PER FLOOR	15,000 sf. (Gross)	≤ 15,000 sf.	NO
32	(b) PERCENTAGE OF NONRESIDENTIAL USES THAT EXCEED 4,000 SF. GROSS AREA PER FLOOR	50%	≤ 50%	NO

Sheet Number: 02 of 24
Project Number: 15–100–35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

COVER SHEET – NOTES

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: AS NOTED

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

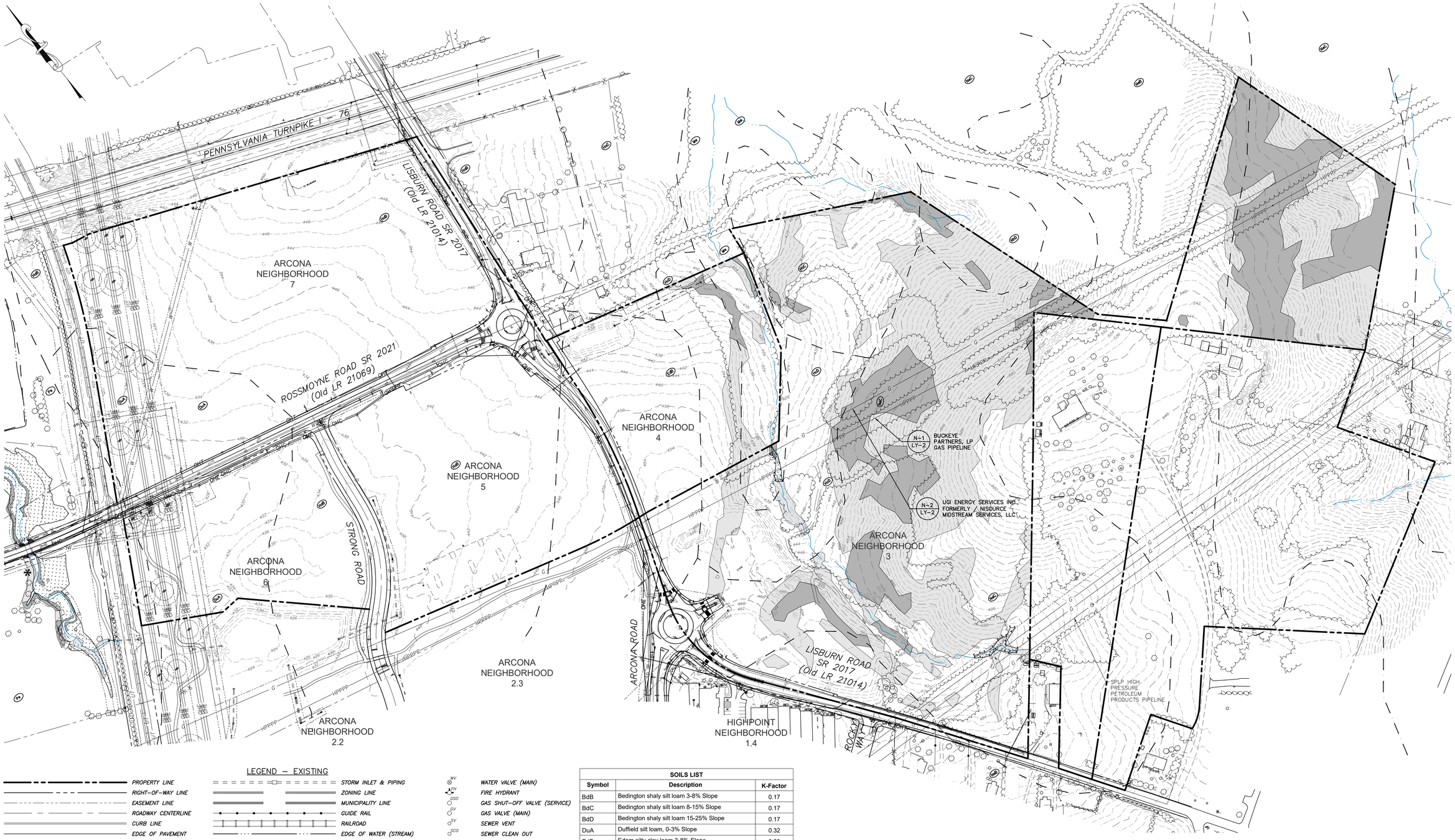
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\02 CV-02.DWG
4/29/2026 3:38 PM

Section Number: CV–2

PRELIMINARY



LEGEND – EXISTING

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- ROADWAY CENTERLINE
- CURB LINE
- EDGE OF PAVEMENT
- EDGE OF STONE
- MIN. BLDG SETBACK LINE
- SANITARY SEWER LINE
- SANITARY FORCE MAIN
- WATER LINE
- GAS LINE
- OVERHEAD UTILITIES
- OVERHEAD CABLE
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND TELEPHONE
- FENCE
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- SPOT ELEVATION
- STORM INLET & PIPING
- ZONING LINE
- MUNICIPALITY LINE
- GUIDE RAIL
- RAILROAD
- EDGE OF WATER (STREAM)
- FLOODWAY
- FLOODPLAIN
- SOILS LINE
- TREELINE
- DECIDUOUS TREE
- CONIFEROUS TREE
- PROPERTY CORNER MARKER FOUND
- PROPERTY CORNER
- UTILITY POLE
- LIGHT POLE
- LIGHT
- WELL
- WATER SHUT-OFF VALVE (SERVICE)
- WATER VALVE (MAIN)
- FIRE HYDRANT
- GAS SHUT-OFF VALVE (SERVICE)
- GAS VALVE (MAIN)
- SEWER VENT
- SEWER CLEAN OUT
- ELECTRIC MANHOLE
- STORM MANHOLE
- SANITARY MANHOLE
- TELEPHONE MANHOLE
- SIGN
- MAIL BOX
- DEEP PROBE
- PERCOLATION TEST HOLE
- WETLANDS
- SLOPES – 15%–24.9%
- SLOPES – 25%+

SOILS LIST

Symbol	Description	K-Factor
BdB	Bedington shaly silt loam 3-8% Slope	0.17
BdC	Bedington shaly silt loam 8-15% Slope	0.17
BdD	Bedington shaly silt loam 15-25% Slope	0.17
DuA	Duffield silt loam, 0-3% Slope	0.32
EdB	Edom silty clay loam 3-8% Slope	0.20
HaB	Hagerstown silt loam 3-8% Slope	0.37
HaC	Hagerstown silt loam 8-15% Slope	0.37
HcD	Hagerstown silt loam, rocky, 8-15% Slope	0.37
Me *	Melvin silt loam	0.43
NeB	Neshaminy gravelly silt loam, 3-8% Slope	0.24
NeC	Neshaminy gravelly silt loam, 8-15% Slope	0.24
NhD	Neshaminy very stony silt loam, 8-25% Slope	0.24
Pe *	Penlaw silt loam	0.37
W	Water	n/a

* HYDRIC SOILS ARE PRESENT ON ARCONA PHASE 7. DEPTH TO GROUNDWATER EXCEEDS 3'.

WARNING:

GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF ARCONA NEIGHBORHOOD 3, 4, & 5 AND ARE NOTED IN THIS PLAN SET. PLEASE CONFIRM LOCATION OF GAS LINE AND OTHER UNDERGROUND UTILITIES ON ARCONA PRIOR TO CONSTRUCTION ACTIVITIES AND EXERCISE EXTREME CAUTION WHEN EXCAVATING THE ARCONA SITE.

Sheet Number: 03 of 24
Project Number: 15–100–35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EXISTING CONDITIONS PLAN – OVERALL

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: 1"=120'

0 60 120 240 360

Seal:

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: EX–1

PRELIMINARY

4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\03 EX-01.DWG

Sheet Number:
04 of 24

Project Number:
15-100-35

Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EXISTING CONDITIONS PLAN - NEIGHBORHOOD 7

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 25 50 100 150

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number:
EX-2

PRELIMINARY

4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\04 EX-02.DWG

ARCONA NEIGHBORHOOD 3.1 - PARKING SUMMARY						
PHASE	LOT / UNIT	UNIT TYPE	DESCRIPTION	# UNITS / S.F.	REQUIRED	PROPOSED
3.1	Townhouses - Alley Load	RESIDENTIAL (SINGLE-FAMILY ATTACHED)	2.0 PER UNIT	18 (Dwelling Units)	36	36 (Garages)
3.1	Single Detached - Street Load	RESIDENTIAL (SINGLE-FAMILY DETACHED)	2.0 PER UNIT	3 (Dwelling Units)	6	6 (Garages)
3.1	Single Detached - Alley Load	RESIDENTIAL (SINGLE-FAMILY DETACHED)	2.0 PER UNIT	7 (Dwelling Units)	14	14 (Garages)
3.9.1	Mixed-Use	COMMERCIAL / RETAIL	1 PER 200 S.F.	5,000 S.F.	25	25 (Spaces)
3.9.1	Mixed-Use	RESIDENTIAL (SINGLE-FAMILY ATTACHED)	2.0 PER UNIT	7 (Dwelling Units)	14	4 (Spaces)
3.9.2	Flex	COMMERCIAL / RETAIL	1 PER 200 S.F.	1,225 S.F.	7	7 (Spaces)
3.9.2	Off-Street Parking	N/A	N/A	N/A	N/A	5 (Spaces)
N/A	On-Street Parking	N/A	N/A	N/A	N/A	33 (Spaces)
				Total Parking Spaces	**102**	**130**

ARCONA NEIGHBORHOOD 4 - PARKING SUMMARY						
PHASE	LOT / UNIT	UNIT TYPE	DESCRIPTION	# UNITS	REQUIRED	PROPOSED
4.1	Townhouses - Alley Load	RESIDENTIAL (SINGLE-FAMILY ATTACHED)	2.0 PER UNIT	19 (Dwelling Units)	38	38 (Garages)
4.1	Single Detached - Street Load	RESIDENTIAL (SINGLE-FAMILY DETACHED)	2.0 PER UNIT	15 (Dwelling Units)	30	30 (Garages)
N/A	On-Street Parking	N/A	N/A	N/A	N/A	6 (Spaces)
				Total	**34 (Dwelling Units)**	**68**	**74**

ARCONA NEIGHBORHOOD 5 - PROPOSED PARKING SUMMARY						
PHASE	LOT / UNIT	UNIT TYPE	DESCRIPTION	# UNITS / S.F.	REQUIRED	PROPOSED
5.9.1	Commercial / Retail	COMMERCIAL / RETAIL	1 PER 200 S.F.	7,400 S.F.	37	72 (Spaces)
5.1	Townhouses - Alley Load	RESIDENTIAL (SINGLE-FAMILY ATTACHED)	2.0 PER UNIT	51 (Dwelling Units)	102	102 (Garages)
5.1	Single Detached - Street Load	RESIDENTIAL (SINGLE-FAMILY DETACHED)	2.0 PER UNIT	9 (Dwelling Units)	18	18 (Garages)
5.1	Single Detached - Alley Load	RESIDENTIAL (SINGLE-FAMILY DETACHED)	2.0 PER UNIT	10 (Dwelling Units)	20	20 (Garages)
N/A	On-Street Parking	N/A	N/A	N/A	N/A	39 (Spaces)
				Total	**70 (Dwelling Units)**	**177**	**251**

ARCONA NEIGHBORHOOD 6 - PARKING SUMMARY						
PHASE	LOT / UNIT	UNIT TYPE	DESCRIPTION	# UNITS / S.F.	REQUIRED	PROPOSED
6.9.1	Office	OFFICE	1 PER 200 S.F.	18,000 S.F.	90	90 (Spaces)
6.9.2	Office	OFFICE	1 PER 200 S.F.	18,000 S.F.	90	90 (Spaces)
	Shared Parking Spaces	-	-	-	0	20 (Spaces)
				Total	**180**	**200**

ARCONA NEIGHBORHOOD 7* - PARKING SUMMARY						
UNIT	BUILDING	UNIT TYPE	DESCRIPTION *	S.F.	REQUIRED **	PROVIDED
Shopping Center (Neighborhood)	Buildings A, B, C, & E	Commercial / Retail	5 PER 1,000 S.F.	55,000 S.F.	274	297
Convenience Store	Building D	Convienence / Food / Fuel	(See Below)	5,000 S.F.	78	86
				Total Parking Spaces Required =	**352**	**383**

** 1 Per 250 S.F. for the 1st 1,000 S.F., plus 5 Per 1,000 S.F. for associated uses.

CONVENIENCE STORE / BUILDING D - PARKING BREAKDOWN			
Convenience Store	1 Space per every 150 S.F. of GFA	3,412 S.F.	23
Fast Food Restaurant	1 Space per Every 30 S.F. of GFA	1,588 S.F.	53
Fuel Sales	1 Space per 3 Gasoline Pumps	6 Pumps	2
		Total Parking Spaces Required =	**78**

TND Live-Work Units Calcs - (§ 220-127.B.(2))		
Total Units	**Live-Work Units**	**% SF Detached Units**
1095	26	**2.37%**

Depth to Width Percentage of Dwelling Units - Arcona Neighhborhoods 3.1, 4, 5, 6, & 7*		
# of Residential Lots	**# Wider than Deep**	**> 90% Deeper**
139	2	**1.4%**

TND - COMMON OPEN SPACE IN STEEP SLOPES OR WOODLANDS (§ 220-131.B)							
		Area of Common Open Space that constitutes a Steep Slope or Woodlands					
Neighborhood	**Description**	**Area of Steep Slopes (A)**	**Area of Woodlands (B)**	**Area of Overlap (C)**	**Total (A+B+C)**	**Area of Regrading**	**Percentage Regraded**
3.1	OS-40	116,883 s.f.	117,545 s.f.	363,172 s.f.	597,600 s.f.	68,875 s.f.	11.5%
4	OS-44	233 s.f.	24,605 s.f.	10,908 s.f.	35,746 s.f.	14,233 s.f.	39.8%
9	OS-36	16,758 s.f.	0 s.f.	0 s.f.	16,758 s.f.	16,758 s.f.	100.0%
9	OS-37	4,175 s.f.	0 s.f.	3,406 s.f.	7,580 s.f.	3,490 s.f.	46.0%
Total		138,049 s.f.	142,150 s.f.	377,486 s.f.	657,684 s.f.	103,355 s.f.	**15.7%**

Note: All other Common Open Spaces do not have steep slopes or woodlands from pre-development.

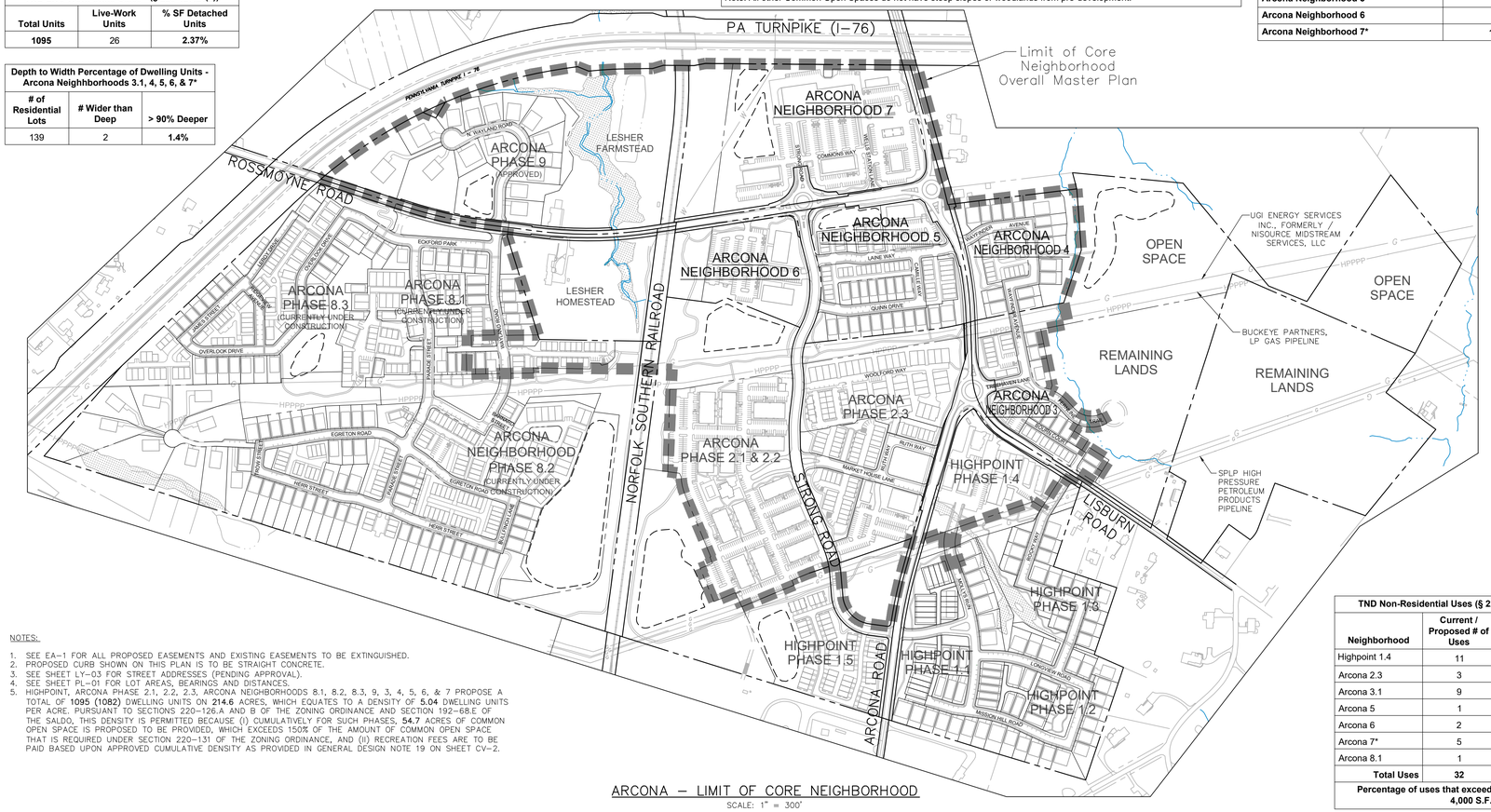
Description	Highpoint (rev.)	Strong Road	Arcona Ph. 2.1 & 2.2 (Rev.)	Arcona Ph. 2.3 (Rev.)	Arcona Ph. 8.1 (Rev.)	Arcona Ph. 8.2 (Rev.)	Arcona Ph. 8.3	Arcona Ph. 9	Arcona Ph. 3.1	Arcona Ph. 4	Arcona Ph. 5	Arcona Ph. 6	Arcona Ph. 7*	TND Totals to Date	
Walking Trails	7,385 L.F. +/-	0 L.F. +/-	2,865 L.F. +/-	2,295 L.F. +/-	1,930 L.F. +/-	1,087 L.F. +/-	1,157 L.F. +/-	0 L.F. +/-	5,248 L.F. +/-	564 L.F. +/-	1,603 L.F. +/-	804 L.F. +/-	0 L.F. +/-	24,938 L.F. +/-	
Site Acreage	40.1 Ac. +/-	2.6 Ac. +/-	17.0 Ac. +/-	13.3 Ac. +/-	29.7 Ac. +/-	30.9 Ac. +/-	13.6 Ac. +/-	10.6 Ac. +/-	21.9 Ac. +/-	6.1 Ac. +/-	8.4 Ac. +/-	5.3 Ac. +/-	15.0 Ac. +/-	214.6 Ac. +/-	
Common Open Space	11.9 Ac. +/-	0.0 Ac. +/-	3.7 Ac. +/-	1.7 Ac. +/-	7.4 Ac. +/-	2.8 Ac. +/-	2.6 Ac. +/-	1.2 Ac. +/-	16.5 Ac. +/-	1.7 Ac. +/-	1.3 Ac. +/-	1.2 Ac. +/-	2.8 Ac. +/-	54.7 Ac. +/-	**% Open Space of TND**
# Residential Units	183 (171) **	0	282	107	132 (131) **	144	93	15	35	34	70	0	0	1095 (1082) **	
Unit Density	4.27	0.00	16.61	8.03	4.41	4.66	6.82	1.42	1.60	5.56	8.32	0.00	0.00	5.04	
* Length of Street (Sub-Total)	6,823 L.F. +/-	2,158 L.F. +/-	0 L.F. +/-	3,614 L.F. +/-	6,388 L.F. +/-	6,308 L.F. +/-	4,100 L.F. +/-	785 L.F. +/-	1,502 L.F. +/-	1,293 L.F. +/-	2,104 L.F. +/-	0 L.F. +/-	0 L.F. +/-	35,075 L.F. +/-	
Length of Cul-de-sac (Sub-Total)	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	400 L.F. +/-	0 L.F. +/-	785 L.F. +/-	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	0 L.F. +/-	1,185 L.F. +/-	
Percentage of Total	0.00%	0.00%	0.00%	0.00%	0.00%	6.34%	0.00%	100.00%	0.00%	0.00%	0.00%	n/a	n/a	3.38%	**% Impervious of TND**
Impervious Area	16.10 Ac. +/-	1.68 Ac. +/-	8.85 Ac. +/-	7.84 Ac. +/-	9.94 Ac. +/-	12.78 Ac. +/-	7.07 Ac. +/-	2.98 Ac. +/-	2.96 Ac. +/-	2.59 Ac. +/-	5.17 Ac. +/-	2.49 Ac. +/-	7.32 Ac. +/-	87.8 Ac. +/-	40.9%
Impervious Percentage	40.17%	64.34%	52.12%	58.84%	33.43%	41.33%	51.87%	28.20%	13.52%	42.32%	61.48%	47.10%	48.76%	40.90%	

* Includes public and private streets & alleys.

** For purposes of calculating residential density, live-work units in a core neighborhood and any other dwelling unit located above a nonresidential use in a core neighborhood shall count as 0.5 dwelling unit. Zoning Sec. 220-126.C

OPEN SPACE / COMMON AREAS - Arcona Neighborhoods 3, 4, 5, 6, & 7*				Meets Common Open Space Req's.
Phase	**Description**	**Area (s.f.)**	**Area (Acres)**	
3	OS-40	706,188 s.f.	16.21 Ac.	Yes
3	OS-41	11,996 s.f.	0.28 Ac.	Yes
4	OS-42	16,920 s.f.	0.39 Ac.	Yes
4	OS-43	9,885 s.f.	0.23 Ac.	Yes
4	OS-44	40,070 s.f.	0.92 Ac.	Yes
4	OS-45	6,746 s.f.	0.15 Ac.	Yes
5	OS-46	9,372 s.f.	0.22 Ac.	Yes
5	OS-47	1,576 s.f.	0.04 Ac.	No
5	OS-48	8,780 s.f.	0.20 Ac.	Yes
5	OS-49	34,780 s.f.	0.80 Ac.	Yes
5	OS-52	1,124 s.f.	0.03 Ac.	No
6	OS-50	50,818 s.f.	1.17 Ac.	Yes
7*	OS-51	120,620 s.f.	2.77 Ac.	Yes
Total		**1,018,874 s.f.**	**23.41 Ac.**	

Development Site			Open Space							
Highpoint	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Highpoint Phase 1.1	17.39 Ac. +/-	40%	0.00 Ac. +/-	5.69 Ac. +/-	5.69 Ac. +/-	13%	0.00 Ac. +/-	0%	11.70 Ac. +/-	27%
Highpoint Phase 1.2	5.94 Ac. +/-	14%	0.00 Ac. +/-	0.71 Ac. +/-	0.71 Ac. +/-	2%	0.00 Ac. +/-	0%	5.23 Ac. +/-	12%
Highpoint Phase 1.3	4.94 Ac. +/-	11%	0.00 Ac. +/-	1.27 Ac. +/-	1.27 Ac. +/-	3%	0.00 Ac. +/-	0%	3.67 Ac. +/-	8%
Highpoint Phase 1.4	7.00 Ac. +/-	16%	0.00 Ac. +/-	1.05 Ac. +/-	1.05 Ac. +/-	2%	5.95 Ac. +/-	14%	0.00 Ac. +/-	0%
Highpoint Phase 1.5	8.06 Ac. +/-	19%	1.85 Ac. +/-	1.35 Ac. +/-	3.20 Ac. +/-	7%	0.00 Ac. +/-	0%	4.86 Ac. +/-	11%
Highpoint (rev.) sub-total =	43.33 Ac. +/-	100%	1.85 Ac. +/-	10.07 Ac. +/-	11.92 Ac. +/-	27.5%	5.95 Ac. +/-	13.7%	25.46 Ac. +/-	58.8%
Arcona Phase 2.1 & 2.2	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Arcona Phase 2.1	6.49 Ac. +/-	38%	0.00 Ac. +/-	0.00 Ac. +/-	0.00 Ac. +/-	0%	0.00 Ac. +/-	0%	6.49 Ac. +/-	38%
Arcona Phase 2.2	10.49 Ac. +/-	62%	0.00 Ac. +/-	3.66 Ac. +/-	3.66 Ac. +/-	22%	0.00 Ac. +/-	0%	6.83 Ac. +/-	40%
Arcona Phase 2.1 & 2.2 sub-total =	16.98 Ac. +/-	100%	0.00 Ac. +/-	3.66 Ac. +/-	3.66 Ac. +/-	21.6%	0.00 Ac. +/-	0.0%	13.32 Ac. +/-	78.4%
Arcona Phase 2.3	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Arcona Phase 2.3.1	10.49 Ac. +/-	79%	0.00 Ac. +/-	1.74 Ac. +/-	1.74 Ac. +/-	13%	8.75 Ac. +/-	66%	0.00 Ac. +/-	0%
Arcona Phase 2.3.2	2.22 Ac. +/-	17%	0.00 Ac. +/-	0.00 Ac. +/-	0.00 Ac. +/-	0%	2.22 Ac. +/-	17%	0.00 Ac. +/-	0%
Arcona Phase 2.3.3	0.62 Ac. +/-	5%	0.00 Ac. +/-	0.00 Ac. +/-	0.00 Ac. +/-	0%	0.62 Ac. +/-	5%	0.00 Ac. +/-	0%
Arcona Phase 2.3 (Rev.) sub-total =	13.33 Ac. +/-	100%	0.00 Ac. +/-	1.74 Ac. +/-	1.74 Ac. +/-	13.1%	11.59 Ac. +/-	86.9%	0.00 Ac. +/-	0.0%
Arcona Neighborhood 8	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Arcona Phase 8.1 (Rev.)	29.54 Ac. +/-	40%	0.00 Ac. +/-	7.41 Ac. +/-	7.41 Ac. +/-	10%	0.00 Ac. +/-	0%	22.13 Ac. +/-	30%
Arcona Phase 8.2 (Rev.)	30.91 Ac. +/-	42%	0.00 Ac. +/-	2.77 Ac. +/-	2.77 Ac. +/-	4%	0.00 Ac. +/-	0%	28.14 Ac. +/-	38%
Arcona Phase 8.3	13.63 Ac. +/-	18%	0.00 Ac. +/-	2.64 Ac. +/-	2.64 Ac. +/-	4%	0.00 Ac. +/-	0%	10.99 Ac. +/-	15%
Arcona Neighborhood 8 sub-total=	74.08 Ac. +/-	100%	0.00 Ac. +/-	12.82 Ac. +/-	12.82 Ac. +/-	17.3%	0.00 Ac. +/-	0.0%	61.26 Ac. +/-	82.7%
Arcona Neighborhood 9	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Arcona Neighborhood 9	10.58 Ac. +/-	100%	0.00 Ac. +/-	1.20 Ac. +/-	1.20 Ac. +/-	11%	0.00 Ac. +/-	0%	9.38 Ac. +/-	89%
Remaining Arcona Neighborhoods	**Development Site**	**% Total**	**Rec. Lands**	**Common OS**	**Total OS Area**	**% Total**	**Village**	**% Total**	**Residential**	**% Total**
Arcona Neighborhood 3.1	**21.90 Ac. +/-**	**100%**	**0.00 Ac. +/-**	**16.49 Ac. +/-**	**16.49 Ac. +/-**	**75%**	**0.00 Ac. +/-**	**0%**	**5.41 Ac. +/-**	**25%**
Arcona Neighborhood 4	**6.12 Ac. +/-**	**100%**	**0.00 Ac. +/-**	**1.69 Ac. +/-**	**1.69 Ac. +/-**	**28%**	**0.00 Ac. +/-**	**0%**	**4.43 Ac. +/-**	**72%**
Arcona Neighborhood 5	**8.41 Ac. +/-**	**100%**	**0.00 Ac. +/-**	**1.28 Ac. +/-**	**1.28 Ac. +/-**	**15%**	**0.00 Ac. +/-**	**0%**	**7.13 Ac. +/-**	**85%**
Arcona Neighborhood 6	**5.29 Ac. +/-**	**100%**	**0.00 Ac. +/-**	**1.17 Ac. +/-**	**1.17 Ac. +/-**	**22%**	**0.00 Ac. +/-**	**0%**	**0.00 Ac. +/-**	**0%**
Arcona Neighborhood 7*	**15.01 Ac. +/-**	**100%**	**0.00 Ac. +/-**	**2.77 Ac. +/-**	**2.77 Ac. +/-**	**18%**	**0.00 Ac. +/-**	**0%**	**0.00 Ac. +/-**	**0%**



ARCONA – LIMIT OF CORE NEIGHBORHOOD

SCALE: 1" = 300'

NOTES:

1. SEE EA–1 FOR ALL PROPOSED EASEMENTS AND EXISTING EASEMENTS TO BE EXTINGUISHED.
2. PROPOSED CURB SHOWN ON THIS PLAN IS TO BE STRAIGHT CONCRETE.
3. SEE SHEET LY–03 FOR STREET ADDRESSES (PENDING APPROVAL).
4. SEE SHEET PL–01 FOR LOT AREAS, BEARINGS AND DISTANCES.
5. HIGHPOINT, ARCONA PHASE 2.1, 2.2, 2.3, ARCONA NEIGHBORHOODS 8.1, 8.2, 8.3, 9, 3, 4, 5, 6, & 7 PROPOSE A TOTAL OF **1095 (1082)** DWELLING UNITS ON **214.6** ACRES, WHICH EQUATES TO A DENSITY OF **5.04** DWELLING UNITS PER ACRE. PURSUANT TO SECTIONS 220–126.A AND B OF THE ZONING ORDINANCE AND SECTION 192–68.E OF THE SALDO, THIS DENSITY IS PERMITTED BECAUSE (I) CUMULATIVELY FOR SUCH PHASES, **54.7** ACRES OF COMMON OPEN SPACE IS PROPOSED TO BE PROVIDED, WHICH EXCEEDS 150% OF THE AMOUNT OF COMMON OPEN SPACE THAT IS REQUIRED UNDER SECTION 220–131 OF THE ZONING ORDINANCE, AND (II) RECREATION FEES ARE TO BE PAID BASED UPON APPROVED CUMULATIVE DENSITY AS PROVIDED IN GENERAL DESIGN NOTE 19 ON SHEET CV–2.

TND Non-Residential Uses (§ 220-128.F.2.b)		
Neighborhood	**Current / Proposed # of Uses**	**# of Uses that Exceed 4,000 S.F.**
Highpoint 1.4	11	1
Arcona 2.3	3	1
Arcona 3.1	9	0
Arcona 5	1	1
Arcona 6	2	2
Arcona 7*	5	4
Arcona 8.1	1	0
Total Uses	**32**	**9**
Percentage of uses that exceed 4,000 S.F.		**28.1%**

Arcona Neighborhoods 3, 4, 5, 6, & 7 Unit Count						
Unit Type	**Phase 3.1**	**Phase 4**	**Phase 5**	**Phase 6**	**Phase 7***	**TOTAL**
	# of Units					
Single Family Detached	10	15	19	0	0	44
Single Family Attached	18	19	51	0	0	88
Mixed Use Residential	7	0	0	0	0	7
Total Residential Units =	**35**	**34**	**70**	**0**	**0**	**139**
Unit Type	**SQ. FT. of Commercial Space**					
Commercial / Flex Space	1,225 s.f.	0 s.f.	0 s.f.	0 s.f.	0 s.f.	1,225 s.f.
Commercial / Retail	5,000 s.f.	0 s.f.	7,400 s.f.	0 s.f.	0 s.f.	12,400 s.f.
Office	0 s.f.	0 s.f.	0 s.f.	36,000 s.f.	0 s.f.	36,000 s.f.
Shopping Center (Neighborhood)	0 s.f.	0 s.f.	0 s.f.	0 s.f.	60,000 s.f.	60,000 s.f.
Total Commercial Space =	**6,225 s.f.**	**0 s.f.**	**7,400 s.f.**	**36,000 s.f.**	**60,000 s.f.***	**109,625 s.f.**

TND SLOPE CALCULATIONS						
Phase	**15-24.9% SLOPES (MAX 30% Disturbance)**			**25%+ SLOPES (MAX 15% Disturbance)**		
	Total Area TND	**Disturbed Area**	**Est. % Disturbed**	**Total Area TND**	**Disturbed Area**	**Est. % Disturbed**
Highpoint (Rev.)	**19.14 Ac.**	0.00 Ac.	**0.0%**	**7.30 Ac.**	0.00 Ac.	**0.0%**
Arcona 2.1 & 2.2 (Rev.)		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona 2.3		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona Neighborhood 3		1.78 Ac.	**9.3%**		0.35 Ac.	**4.8%**
Arcona Neighborhood 4		0.34 Ac.	**1.8%**		0.15 Ac.	**2.0%**
Arcona Neighborhood 5		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona Neighborhood 6		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona Neighborhood 7*		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona 8.1		0.00 Ac.	**0.0%**		0.00 Ac.	**0.0%**
Arcona 8.2		0.69 Ac.	**3.6%**		0.09 Ac.	**1.2%**
Arcona 8.3		0.09 Ac.	**0.5%**		0.00 Ac.	**0.0%**
Arcona 9		2.10 Ac.	**11.0%**		0.07 Ac.	**1.0%**
Totals To Date		4.99 Ac.	**26.1%**		0.66 Ac.	**9.0%**
Total area of slopes is inclusive of the TND Site, including existing and future phases.						
Slopes are derived from pre-develoment topo and are based on natural slopes per Zoning Section 220-204.						

Sheet Number: 05 of 24

Project Number: 15–100–35

Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

ARCONA TND OVERVIEW

Drafting: D. TURNER | Checked by: K. POSTLETHWAIT | Scale: 1" = 300'

Project Manager: DAVID B. KEGERIZE, PE | Project Engineer: G. MITCHELL KING, PE, PLS | Project Surveyor: THOMAS K. PHILLIPS, PLS

0 150 300 600 900

Seal: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL ENGINEER – G. MITCHELL KING – No. PE081537 – 4/17/26

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\05 LY-01.DWG

4/29/2026 3:39 PM

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: LY–1

PRELIMINARY

LEGEND – PROPOSED

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- ROADWAY CENTERLINE
- CURB LINE
- EDGE OF PAVEMENT
- EDGE OF STONE
- MIN. BLDG SETBACK LINE
- SANITARY SEWER LINE (S)
- SANITARY FORCE MAIN
- WATER LINE (W)
- GAS LINE (G)
- OVERHEAD UTILITIES (OH)
- OVERHEAD ELECTRIC (OHE)
- UNDERGROUND ELECTRIC (UE)
- OVERHEAD TELEPHONE (OHT)
- UNDERGROUND TELEPHONE (UT)
- FENCE (X X X X)
- INDEX CONTOUR (560)
- INTERMEDIATE CONTOUR (558)
- SPOT ELEVATION (x 392.15)
- STORM INLET & PIPING
- GUIDE RAIL
- PROPOSED PATH
- TREELINE
- DECIDUOUS TREE
- CONIFEROUS TREE
- CONC. MONUMENT SET
- PIN
- ANGLE BREAK, PC/PT
- EASEMENT CORNER
- UTILITY POLE
- LIGHT POLE (LP)
- LIGHT
- WELL
- WATER SHUT-OFF VALVE (SERVICE) (WSO)
- WATER VALVE (MAIN) (WV)
- FIRE HYDRANT (FH)
- GAS SHUT-OFF VALVE (SERVICE) (GSO)
- GAS VALVE (MAIN) (GV)
- SEWER VENT (SV)
- SEWER CLEAN OUT (CO)
- ELECTRIC MANHOLE
- STORM MANHOLE
- SANITARY MANHOLE
- TELEPHONE MANHOLE
- SIGN

SIGHT DISTANCE ANALYSIS

NOTE:
THIS INFORMATION TAKE FROM A REPORT TITLED "CHARTER ARCONA – REMAINING BUILD-OUT TRANSPORTATION IMPACT STUDY" DATED 12/22/25, PREPARED BY TPD Inc.

Lisburn Road (SR 2017) & Rock Way/Proposed (Phase 3.1) Driveway						
Exiting Movement	To the left	40 mph	-4	538	338	**600+[2]**
Lisburn Road (SR 2017) & Arcona Road (SR 2015)/Proposed (Phase 3.1) Driveway						
Exiting Movement	To the left	25 mph	-1	250	151	**250[3]**
Lisburn Road (SR 2017) & Proposed (Phase 4) Right-In Right-Out Driveway (Opposite Phase 5)						
Exiting Movement	To the left	25 mph	-3	250	151	**300+**
Lisburn Road (SR 2017) & Proposed (Phase 5) Right-In Right-Out Driveway (Opposite Phase 4)						
Exiting Movement	To the left	25 mph	+1	250	145	**300+**
Lisburn Road (SR 2017) & Proposed (Phase 7) Right-In Right-Out Driveway						
Exiting Movement	To the left	25 mph	-3	250	151	**300+**
Rossmoyne Road (SR 2021) & Proposed (Phase 7) Right-In Right-Out Driveway						
Exiting Movement	To the left	25 mph	-2	250	150	**300+**
Rossmoyne Road (SR 2021) & Strong Road/Proposed (Phase 7) Full Movement Driveway						
Exiting Movements	To the left	25 mph	-2	250	150	**300+**
	To the right	40 mph	+2	460	304	**500+**
Entering Movements	Approaching same direction	40 mph	+2	--	304	**500+**
	Approaching opposite direction	25 mph	-2	190	150	**300+**
Rossmoyne Road (SR 2021) & Proposed (Phase 6) Right-In Right-Out Driveway						
Exiting Movement	To the left	40 mph	-1	538	314	**490**

DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Safe Stopping Sight Distance
EXIST = Existing (measured) Sight Distance

1 = Roadway Grade Approaching Driveway
2 = With The Removal Of Foliage
3 = Following Road Path Around Roundabout

PHASING SCHEDULE	
NEIGHBORHOOD	**ANTICIPATED CONSTRUCTION START DATE**
3.1	2026
4	2027
5	2028
6	2029
7	2030

THIS PLAN PRESENTS A PRELIMINARY SUBDIVISION & LAND DEVELOPMENT PLAN, ARCONA NEIGHBORHOOD 7.

SEE " PRELIMINARY / FINAL SUBDIVISION & LAND DEVELOPMENT PLAN, ARCONA NEIGHBORHOODS 3, 4, 5, & 6".

ARCONA / HIGHPOINT COMMON OPEN SPACE AREAS

Description	Area S.F.	Area Acres	Neighborhood	Core Neighborhood	Core Area
OS-3	80,529 S.F.	1.85 Ac.	Highpoint 1.5	Yes	1.85 Ac.
OS-4	194,384 S.F.	4.46 Ac.	Highpoint 1.1	No	-
OS-5	18,077 S.F.	0.41 Ac.	Highpoint 1.1	No	-
OS-7	20,233 S.F.	0.46 Ac.	Highpoint 1.1	No	-
OS-8	17,360 S.F.	0.40 Ac.	Highpoint 1.1	No	-
OS-8A	4,214 S.F.	0.10 Ac.	Highpoint 1.2	No	-
OS-8B	50,345 S.F.	1.16 Ac.	Highpoint 1.3	No	-
OS-8C	2,971 S.F.	0.07 Ac.	Highpoint 1.3	No	-
OS-9	7,832 S.F.	0.18 Ac.	Highpoint 1.4	No	-
OS-10	29,556 S.F.	0.68 Ac.	Highpoint 1.4	No	-
OS-11	8,390 S.F.	0.19 Ac.	Highpoint 1.4	No	-
OS-12	30,367 S.F.	0.70 Ac.	Highpoint 1.5	No	-
OS-15B	25,093 S.F.	0.58 Ac.	Highpoint 1.2	No	-
OS-17	15,708 S.F.	0.36 Ac.	Highpoint 1.5	No	-
OS-18	13,851 S.F.	0.32 Ac.	Highpoint 1.5	No	-
Sub-Total	**518,910 S.F.**	**11.92 Ac.**	**Open Space in Core**		**1.85 Ac.**

ARCONA COMMON OPEN SPACE AREAS

Description	Area S.F.	Area Acres	Neighborhood	Core Neighborhood	Core Area
OS-21	159,360 S.F.	3.66 Ac.	Arcona 2.2	Yes - Partial	2.78 Ac.
OS-22	23,977 S.F.	0.55 Ac.	Arcona 2.3	Yes	0.55 Ac.
OS-23	51,671 S.F.	1.19 Ac.	Arcona 2.3	Yes	1.19 Ac.
OS-24	9,632 S.F.	0.22 Ac.	Arcona 8.1	No	-
OS-25	25,920 S.F.	0.60 Ac.	Arcona 8.1	No	-
OS-26	195,731 S.F.	4.49 Ac.	Arcona 8.1	Yes - Partial	0.41 Ac.
OS-27	42,775 S.F.	0.98 Ac.	Arcona 8.1	No	-
OS-28	27,606 S.F.	0.63 Ac.	Arcona 8.1	No	-
Arcona Swim Club	21,292 S.F.	0.49 Ac.	Arcona 8.1	No	-
OS-29	10,979 S.F.	0.25 Ac.	Arcona 8.2	No	-
OS-30	7,280 S.F.	0.17 Ac.	Arcona 8.2	No	-
OS-31	19,099 S.F.	0.44 Ac.	Arcona 8.2	No	-
OS-33	83,251 S.F.	1.91 Ac.	Arcona 8.2	No	-
OS-34	28,232 S.F.	0.65 Ac.	Arcona 8.3	No	-
OS-35	86,658 S.F.	1.99 Ac.	Arcona 8.3	No	-
OS-36	37,478 S.F.	0.86 Ac.	Arcona 9	Yes	0.86 Ac.
OS-37	14,612 S.F.	0.34 Ac.	Arcona 9	Yes	0.34 Ac.
OS-40	706,188 S.F.	16.21 Ac.	Arcona 3	Yes - Partial	0.45 Ac.
OS-41	11,996 S.F.	0.28 Ac.	Arcona 3	Yes	0.28 Ac.
OS-42	16,920 S.F.	0.39 Ac.	Arcona 4	Yes	0.39 Ac.
OS-43	9,885 S.F.	0.23 Ac.	Arcona 4	Yes	0.23 Ac.
OS-44	40,070 S.F.	0.92 Ac.	Arcona 4	Yes	0.92 Ac.
OS-45	6,746 S.F.	0.15 Ac.	Arcona 4	Yes	0.15 Ac.
OS-46	9,372 S.F.	0.22 Ac.	Arcona 5	Yes	0.22 Ac.
OS-47	1,576 S.F.	0.04 Ac.	Arcona 5	Yes	0.04 Ac.
OS-48	7,931 S.F.	0.18 Ac.	Arcona 5	Yes	0.18 Ac.
OS-49	34,780 S.F.	0.80 Ac.	Arcona 5	Yes	0.80 Ac.
OS-50	50,818 S.F.	1.17 Ac.	Arcona 6	Yes	1.17 Ac.
OS-51	120,620 S.F.	2.77 Ac.	Arcona 7	Yes	2.77 Ac.
OS-52	1,124 S.F.	0.03 Ac.	Arcona 5	Yes	0.03 Ac.
Sub-Total	**1,863,577 S.F.**	**42.81 Ac.**	**Open Space in Core**		**13.76 Ac.**

PERCENTAGE OF OPEN SPACE AREAS IN CORE NEIGHBORHOOD

Description	Area S.F.	Area Acres	% In Core	Core Area
Total	**2,382,488 S.F.**	**54.73 Ac.**	**28.5%**	15.61 Ac.

Sheet Number: 06 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

LAYOUT PLAN – OVERALL

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=120'
0 60 120 240 360

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

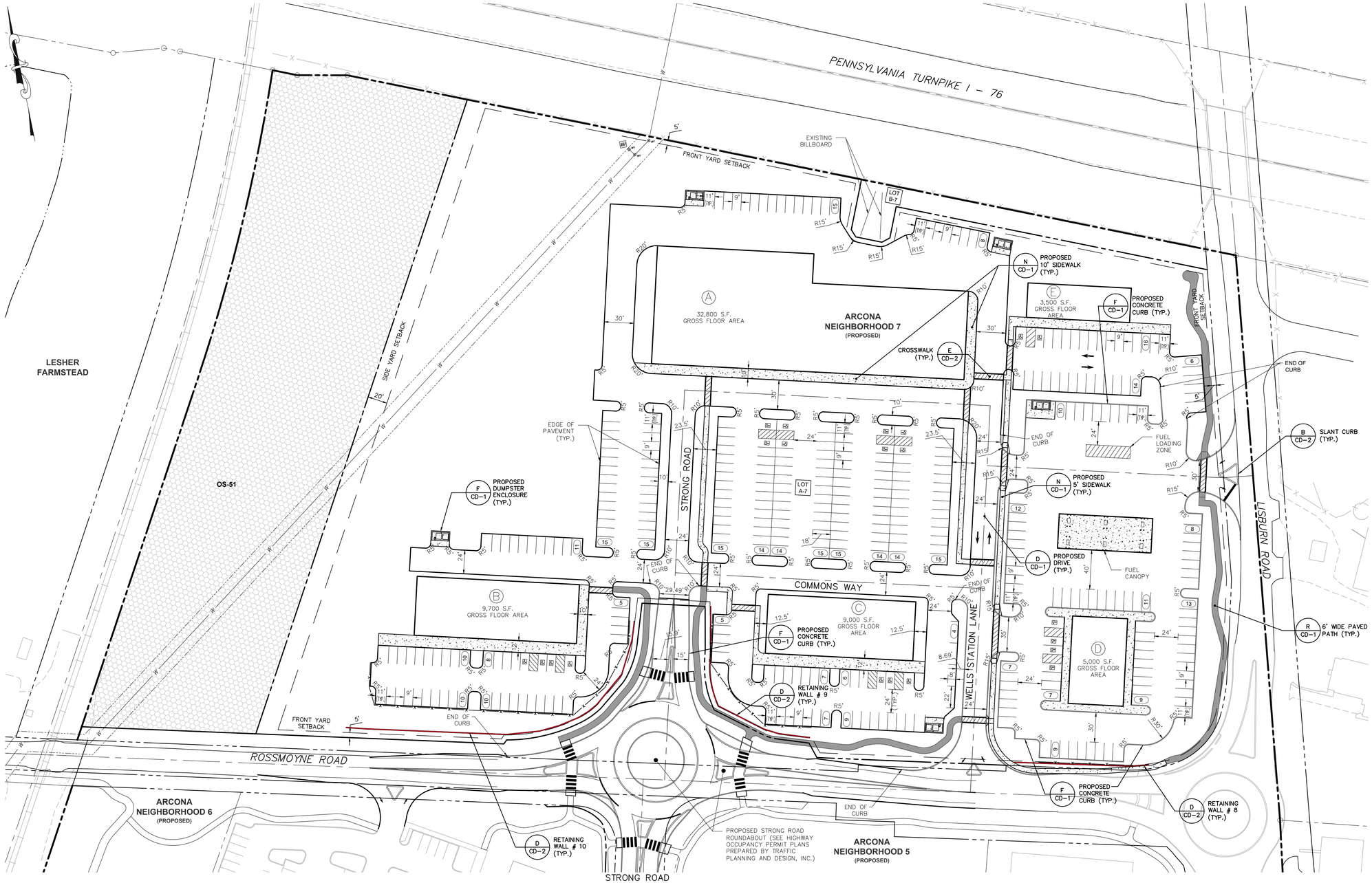
Seal: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – G. MITCHELL KING – No. 030564E – SURVEYOR – 4/13/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\06 LY-02.DWG
4/29/2026 3:40 PM

Section Number: LY-2
PRELIMINARY



LEGEND

OPEN SPACE

LOT DESIGNATIONS

901 — LOT OR DWELLING UNIT NUMBER

LOT A-1 — BLOCK LOT DESIGNATION

NOTES:

1. SEE EA–1 FOR ALL PROPOSED EASEMENTS AND EXISTING EASEMENTS TO BE EXTINGUISHED.
2. PROPOSED CURB SHOWN ON THIS PLAN IS TO BE BELGIAN BLOCK.
3. BUILDINGS WILL HAVE INDIVIDUAL REFUSE PICKUP.
4. SEE SHEET PL–1 FOR LOT AREAS, BEARINGS AND DISTANCES.
5. EACH PARKING SPACE ADJACENT TO A LANDSCAPE ISLAND AT THE END OF A PARKING ROW SHOULD INCLUDE AN ADDITIONAL TWO FEET TO ALLOW ACCESS TO THE VEHICLE.
6. PER ZONING SECTION (§ 220–128.F.2.a) NO SINGLE OCCUPANT OR BUSINESS SHALL EXCEED 10,000 SQUARE FEET IN GROSS FLOOR AREA PER FLOOR, ADDITIONAL DETAIL FOR BUILDING A WILL BE INCLUDED WITH FINAL PLAN.
7. PER ZONING SECTION (§ 220–187) THE NOISE REQUIREMENTS WILL BE INCLUDED WITH FINAL PLAN.
8. PER ZONING SECTION (§ 220–240) THE DRIVE–THROUGH STACKING REQUIREMENTS WILL BE INCLUDED WITH FINAL PLAN.
9. PER ZONING SECTION (§ 220–243) THE LOADING SPACE REQUIREMENTS WILL BE INCLUDED WITH FINAL PLAN.
10. ADDITIONAL PARKING BREAKDOWN PER BUILDING WILL BE PROVIDED WITH FINAL PLAN.
11. A SITE CIRCULATION PLAN IS SHOWN ON SHEET TM–2.

This plan is a preliminary subdivision and land development plan for existing Arcona Neighborhood Lot 7. This plan does not propose, and shall not be considered to be, a final subdivision and land development plan for Arcona Neighborhood Lot 7. Arcona Neighborhood Lot 7 is intended to be developed for nonresidential uses and a final plan(s) shall be required to be submitted and approved for each such building that is proposed on this lot. Each such plan shall include, among other requirements specified in the Subdivision and Land Development Ordinance, (i) lighting plans that depict the type, number, height and location of each exterior lighting fixture and demonstrate compliance with the lighting standards under applicable Township ordinances, (2) parking lot configurations depicting the required minimum number of parking spaces for the proposed uses as specified in the Zoning Ordinance, and (3) the anticipated hours of operation for each such use. To the extent that any building depicted on any such final plan for Arcona Neighborhood Lot 7 deviates from the building depicted on this preliminary plan, then the Developer shall be required to submit a revised preliminary plan for Arcona Neighborhood Lot 7 as part of the submission of a final plan for such lot.

ARCONA NEIGHBORHOOD 7* - PARKING SUMMARY

UNIT	BUILDING	UNIT TYPE	DESCRIPTION *	S.F.	REQUIRED **	PROVIDED
Shopping Center (Neighborhood)	Buildings A, B, C, & E	Commercial / Retail	5 PER 1,000 S.F.	55,000 S.F.	274	297
Convenience Store	Building D	Convienence / Food / Fuel	(See Below)	5,000 S.F.	78	86
				Total Parking Spaces Required =	**352**	**383**

** 1 Per 250 S.F. for the 1st 1,000 S.F., plus 5 Per 1,000 S.F. for associated uses.

CONVENIENCE STORE / BUILDING D - PARKING BREAKDOWN

Convenience Store	1 Space per every 150 S.F. of GFA	3,412 S.F.	23
Fast Food Restaurant	1 Space per Every 30 S.F. of GFA	1,588 S.F.	53
Fuel Sales	1 Space per 3 Gasoline Pumps	6 Pumps	2
		Total Parking Spaces Required =	**78**

ARCONA NEIGHBORHOOD 7 - Accesssible Space Parking Summary

			ADA ACCESSIBLE SPACES	
DESCRIPTION	BUILDING	TOTAL # SPACES	REQUIRED	PROPOSED
Parking Lot - A-7	A	169 (Spaces)	6	8
Parking Lot - A-7	B	54 (Spaces)	3	4
Parking Lot - A-7	C	38 (Spaces)	2	3
Parking Lot - A-7	D	86 (Spaces)	4	4
Parking Lot - A-7	E	36 (Spaces)	2	2
		383	**17**	**21**

LOT #	Approved Address	Phase No.
A-7	???? Strong Road Mechanicsburg PA 17055	7

Sheet Number: 07 of 24

Project Number: 15–100–35

Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

LAYOUT PLAN – NEIGHBORHOOD 7

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING LICENSE No. SU050648 SURVEYOR 4/1/26

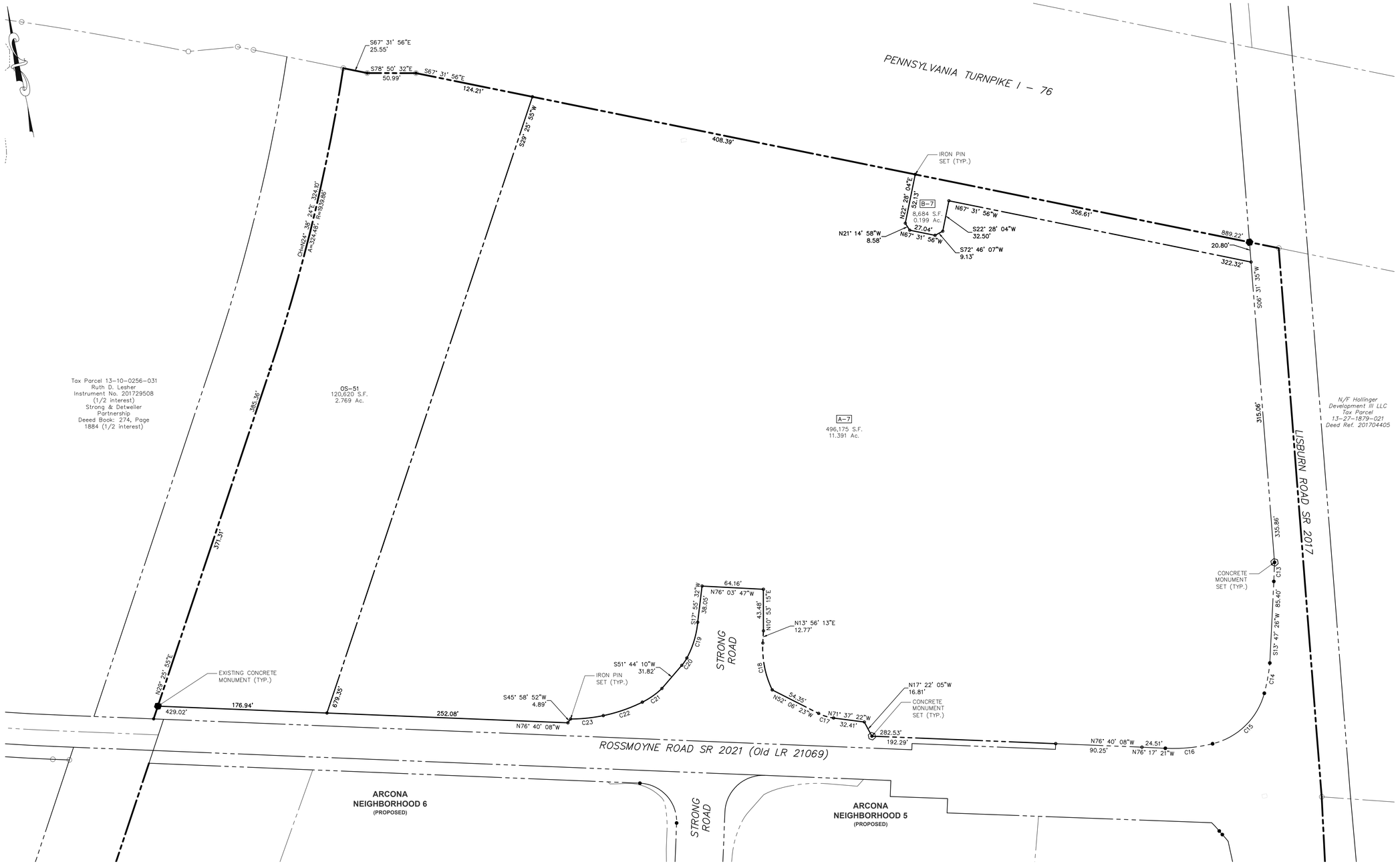
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: LY–3

PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\07 LY-03.DWG



RIGHT-OF-WAY CURVE TABLE			
CURVE	RADIUS	LENGTH	CHORD
C13	910.00'	19.93'	S 13°09'47" W 19.93'
C14	200.00'	32.21'	S 21°20'24" W 32.18'
C15	74.00'	79.38'	S 56°41'10" W 75.63'
C16	175.00'	49.76'	N 84°26'09" W 49.60'
C17	48.33'	16.46'	N 61°51'53" W 16.38'
C18	101.33'	50.54'	N 0°21'08" W 50.02'
C19	98.34'	39.36'	S 27°51'24" W 39.10'
C20	43.33'	9.38'	S 45°31'54" W 9.37'
C21	83.33'	25.05'	S 66°00'29" W 24.96'
C22	169.16'	43.33'	S 81°56'48" W 43.21'
C23	169.33'	34.44'	N 84°53'46" W 34.38'

Sheet Number:
08 of 24
Project Number:
15-100-35
Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PARCEL LABEL PLAN – NEIGHBORHOOD 7

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 50'
0 25 50 100 150

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal(s): COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR G. MITCHELL KING No. SU050982 SURVEYOR

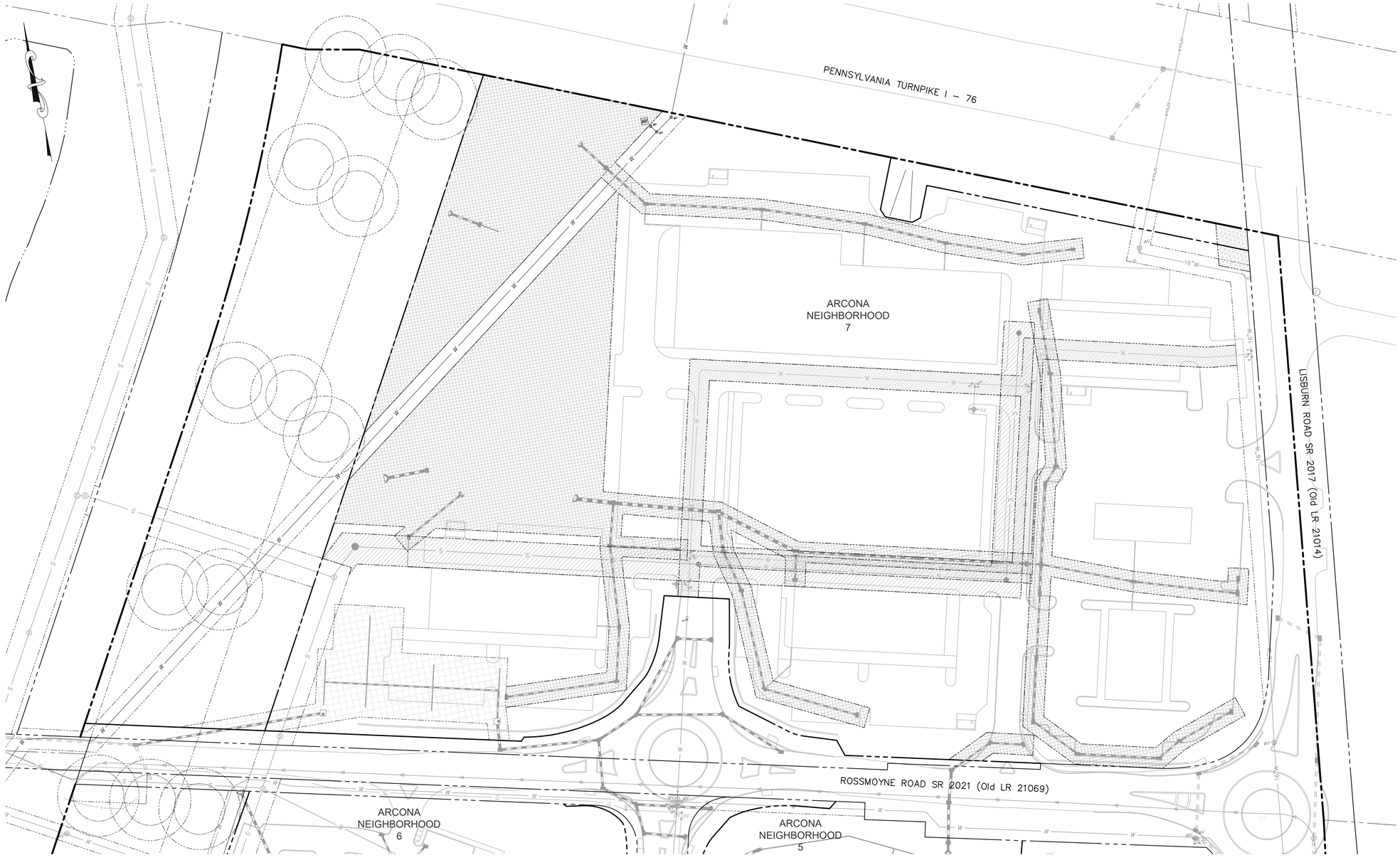
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

REVISIONS	DATE
ADDRESSED TWP. ENGR. & CCPD COMMENTS	4/17/26

Section Number:
PL-1

PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\08 PL-01.DWG



NOTES:

1. EXISTING UTILITY AND UNDERGROUND PIPELINE EASEMENTS ARE SHOWN ON THE EA SHEETS.
2. SEE EA-2 THRU EA-4 FOR EASEMENT DETAILS AND TABLES.

EASEMENT LEGEND

- EXISTING STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- PROPOSED STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- EXISTING SANITARY SEWER EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- PROPOSED WATERLINE EASEMENT
- EXISTING COMBINED UTILITY AND ACCESS EASEMENT
- PROPOSED COMBINED UTILITY AND ACCESS EASEMENT
- EXISTING SNOW EASEMENT
- PROPOSED SNOW EASEMENT
- PROPOSED CONSERVATION EASEMENT
- RIPARIAN BUFFER
- EXISTING EASEMENTS (OTHER)
- EASEMENTS TO BE EXTINGUISHED
- PROPOSED PEDESTRIAN EASEMENT

Sheet Number:
09 of 24

Project Number:
15-100-35

Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EASEMENT PLAN – OVERALL

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: 1"=60'

0 60 120 240 360

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR G. MITCHELL KING No. SU050916 SURVEYOR 4/17/26

313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

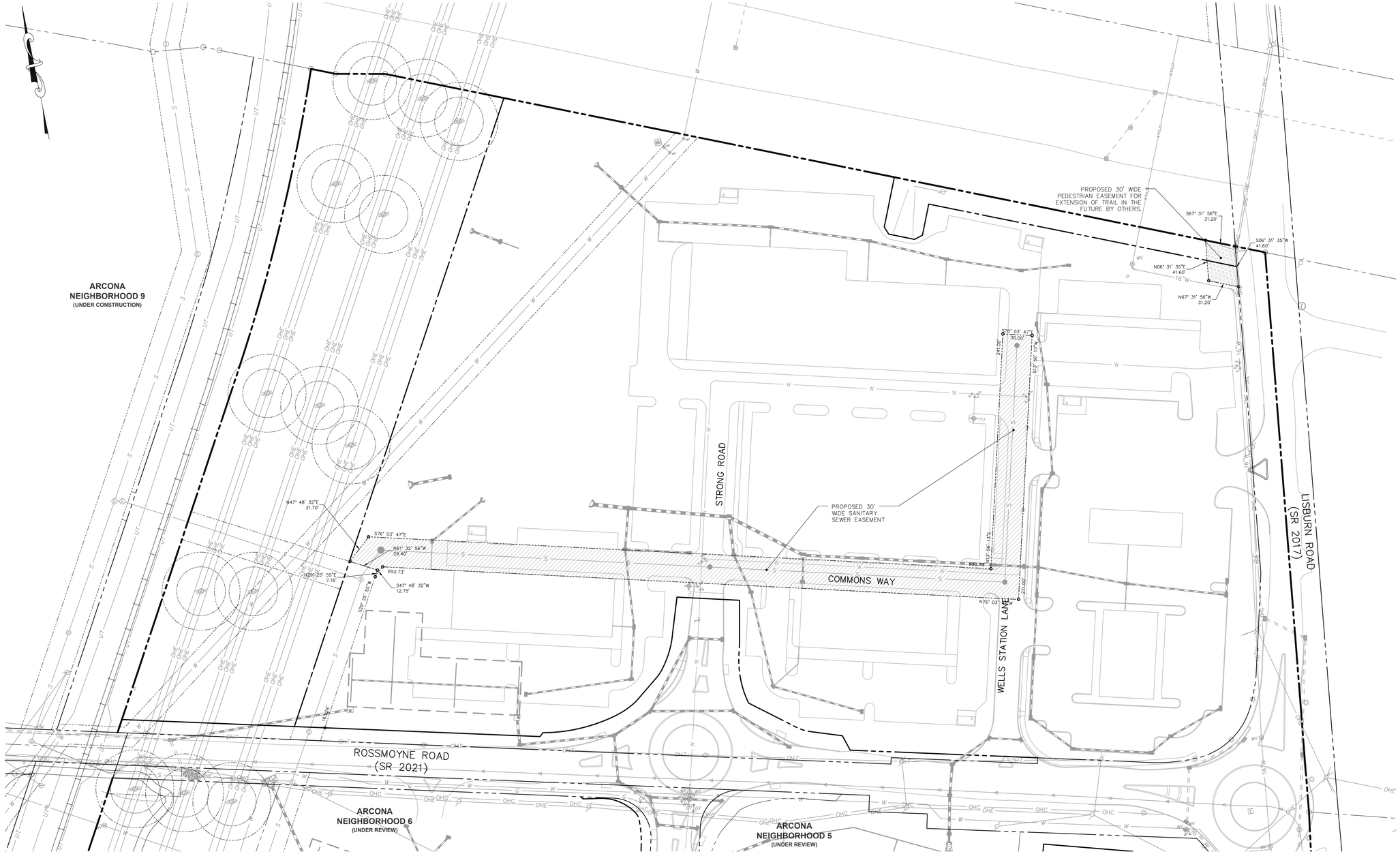
TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number:
EA-1

PRELIMINARY

4/29/2026 3:41 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\09 EA-01.DWG



EASEMENT LEGEND

- EXISTING STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- PROPOSED STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- EXISTING SANITARY SEWER EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- PROPOSED WATERLINE EASEMENT
- EXISTING COMBINED UTILITY AND ACCESS EASEMENT
- PROPOSED COMBINED UTILITY AND ACCESS EASEMENT
- EXISTING SNOW EASEMENT
- PROPOSED SNOW EASEMENT
- PROPOSED CONSERVATION EASEMENT
- RIPARIAN BUFFER
- EXISTING EASEMENTS (OTHER)
- EASEMENTS TO BE EXTINGUISHED
- PROPOSED PEDESTRIAN EASEMENT

NOTES:

1. EXISTING UTILITY AND UNDERGROUND PIPELINE EASEMENTS ARE SHOWN ON THE EA SHEETS.
2. SEE EA-1 FOR ALL PROPOSED EASEMENTS AND EXISTING EASEMENTS TO BE EXTINGUISHED.
3. SEE EA-2 THRU EA-4 FOR EASEMENT DETAILS AND TABLES.

Sheet Number: 10 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EASEMENT PLAN - NEIGHBORHOOD 7 - SANITARY SEWER & PEDESTRIAN

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING 4/17/26 — COMMONWEALTH OF PENNSYLVANIA LICENSED PROFESSIONAL LAND SURVEYOR No. SU050061 THOMAS K. PHILLIPS 4/17/26

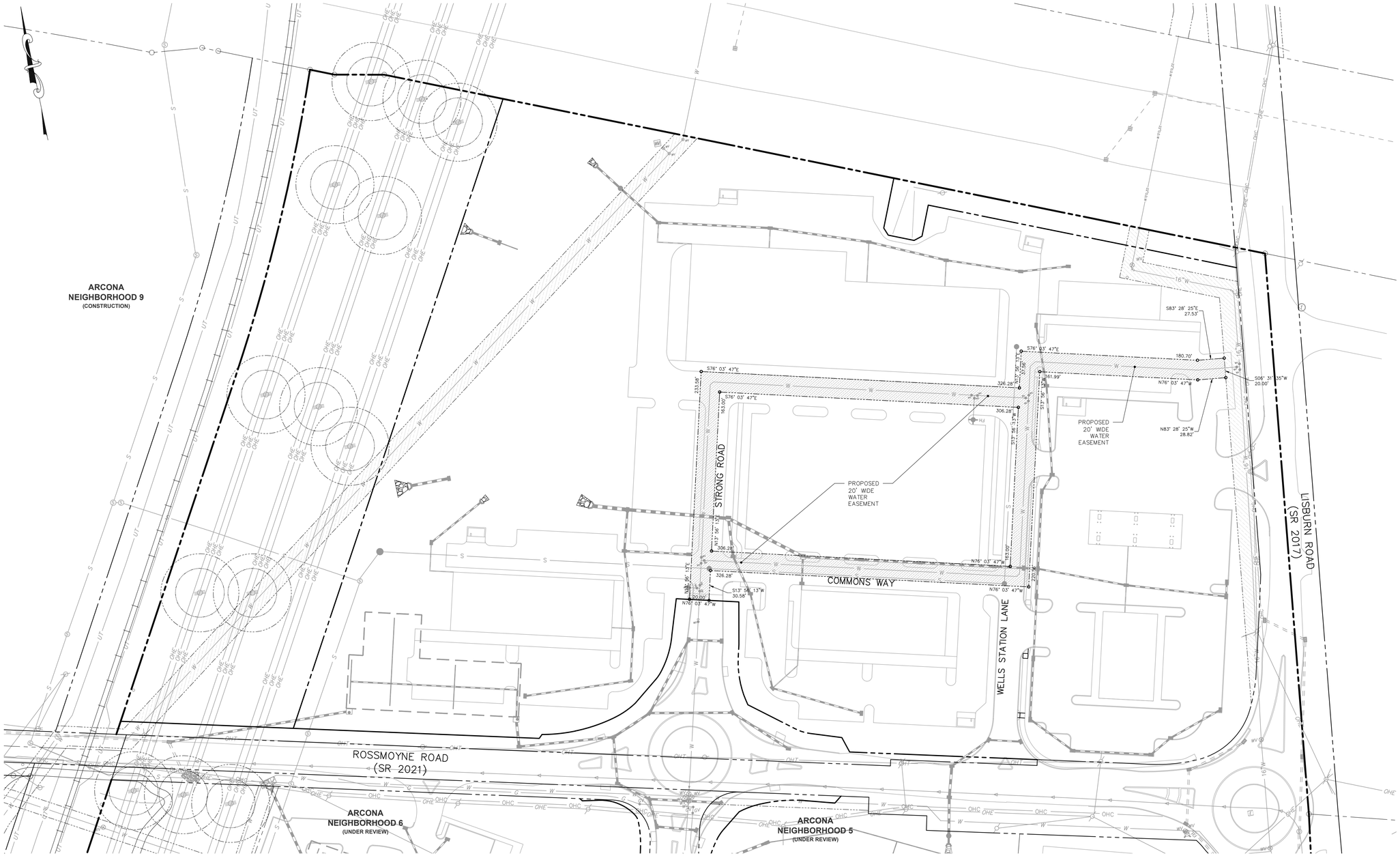
TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: EA-2

PRELIMINARY

4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\10 EA-02.DWG



EASEMENT LEGEND

- EXISTING STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- PROPOSED STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- EXISTING SANITARY SEWER EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- EXISTING WATERLINE EASEMENT
- PROPOSED WATERLINE EASEMENT
- EXISTING COMBINED UTILITY AND ACCESS EASEMENT
- PROPOSED COMBINED UTILITY AND ACCESS EASEMENT
- EXISTING SNOW EASEMENT
- PROPOSED SNOW EASEMENT
- PROPOSED CONSERVATION EASEMENT
- RIPARIAN BUFFER
- EXISTING EASEMENTS (OTHER)
- EASEMENTS TO BE EXTINGUISHED

NOTES:

1. EXISTING UTILITY AND UNDERGROUND PIPELINE EASEMENTS ARE SHOWN ON THE EA SHEETS.
2. SEE EA-1 FOR ALL PROPOSED EASEMENTS AND EXISTING EASEMENTS TO BE EXTINGUISHED.
3. SEE EA-2 THRU EA-4 FOR EASEMENT DETAILS AND TABLES.

Sheet Number: 11 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EASEMENT PLAN - NEIGHBORHOOD 7 - WATER

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING No. 30439 SURVEYOR

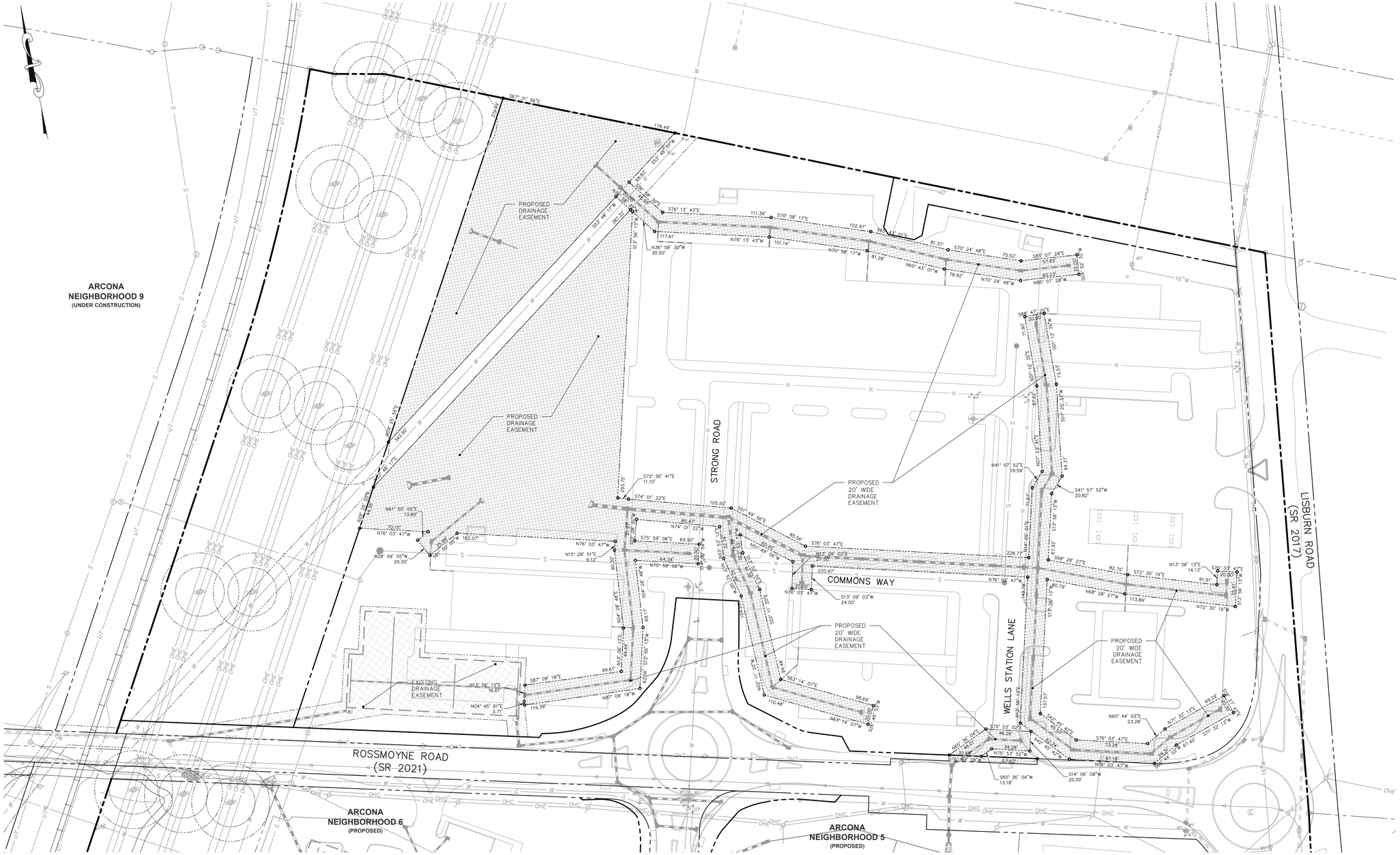
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: EA-3

PRELIMINARY

4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\11 EA-03.DWG



EASEMENT LEGEND

- EXISTING STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- PROPOSED STORMWATER MANAGEMENT / DRAINAGE EASEMENT
- EXISTING SANITARY SEWER EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- PROPOSED WATERLINE EASEMENT
- EXISTING COMBINED UTILITY AND ACCESS EASEMENT
- PROPOSED COMBINED UTILITY AND ACCESS EASEMENT
- EXISTING SNOW EASEMENT
- PROPOSED SNOW EASEMENT
- PROPOSED CONSERVATION EASEMENT
- RIPARIAN BUFFER
- EXISTING EASEMENTS (OTHER)
- EASEMENTS TO BE EXTINGUISHED

NOTES:

1. EXISTING UTILITY AND UNDERGROUND PIPELINE EASEMENTS ARE SHOWN ON THE EA SHEETS.
2. SEE EA-1 FOR ALL PROPOSED EASEMENTS AND EXISTING EASEMENTS TO BE EXTINGUISHED.
3. SEE EA-2 THRU EA-4 FOR EASEMENT DETAILS AND TABLES.

Sheet Number: 12 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EASEMENT PLAN - NEIGHBORHOOD 7 - STORM DRAINAGE

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: 1" = 50'

0 25 50 100 150

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING 4/17/26

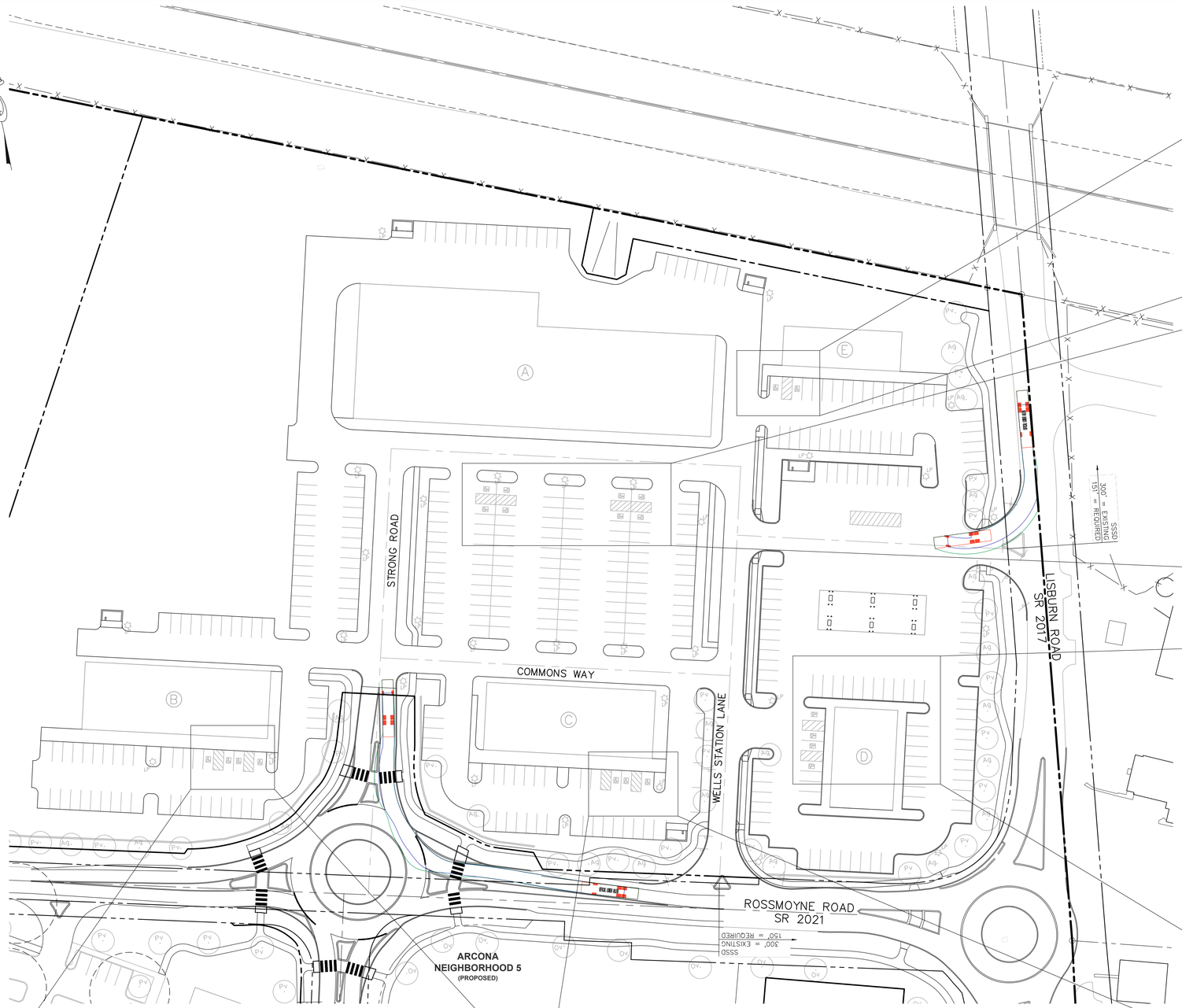
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com
Civil Engineers & Land Planners

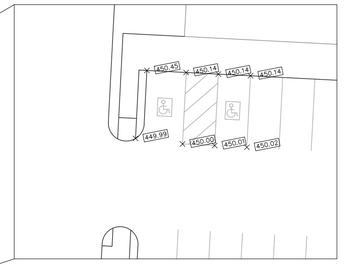
DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: EA-4

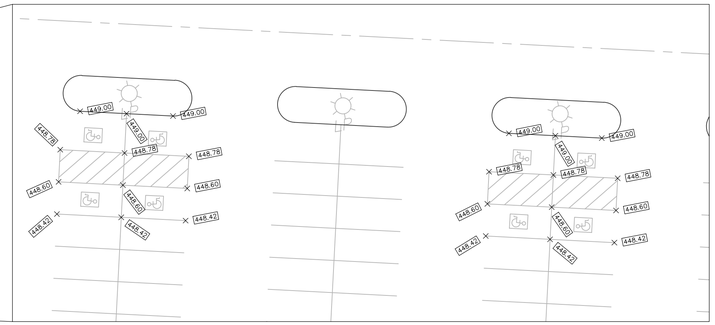
PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\V2 EA-04.DWG

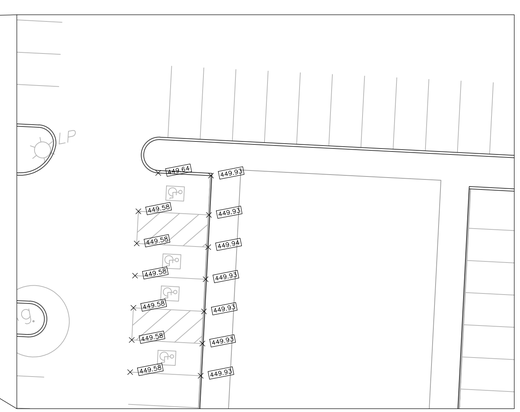




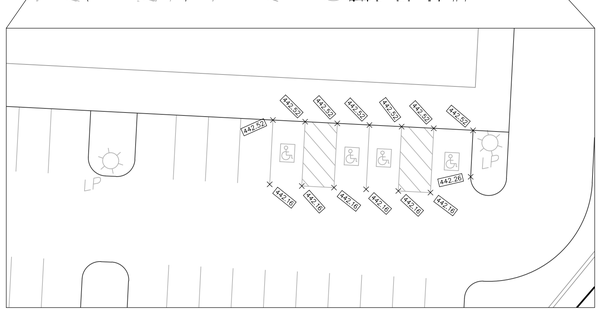
HANDICAPPED PARKING DETAIL – E
SCALE 1"=20'



HANDICAPPED PARKING DETAIL – A
SCALE 1"=20'



HANDICAPPED PARKING DETAIL – D
SCALE 1"=20'

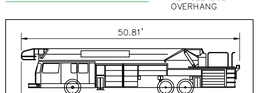


HANDICAPPED PARKING DETAIL – B
SCALE 1"=20'

HANDICAPPED PARKING DETAIL – C
SCALE 1"=20'

TURNING MOVEMENT LEGEND (COLOR)

= VEHICLE WHEELS PATH
= VEHICLE BODY
= VEHICLE BODY OVERHANG



OFFICIAL LOWER ALLEN FIRE TRUCK
(LONGEST LADDER)

Overall Length	50.840 ft
Overall Width	9.880 ft
Overall Body Height	10.947 ft
Min Body Ground Clearance	1.377 ft
Track Width	9.880 ft
Lock-to-lock time	6.00 s
Max Wheel Angle	40.00°

NOTE:

1. SEE SHEETS LA-1 FOR SIGN LEGEND AND SHEET LA-5 FOR ADDITIONAL SIGN DETAILS.
2. SEE SHEET CO-1 FOR STOP SIGN AND STREET SIGN DETAILS.

Sheet Number: 13 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

TURNING MOVEMENT PLAN – NEIGHBORHOOD 7

Drafting: D TURNER
Checked by: K. POSTLETHWAIT
Scale: 1"=50'
0 25 50 100 150

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE083163 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\L13 TM-01.DWG
4/29/2026 3:40 PM

Section Number: TM-1

PRELIMINARY

FUEL PUMP STACKING EXHIBIT

FUEL TRUCK CIRCULATION EXHIBIT

FUEL TRUCK

Overall Length	57.524ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.422ft
Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	17.90°

P – Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.115ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	23.800ft

Sheet Number:
14 of 24

Project Number:
15-100-35

Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

FUEL TRUCK CIRCULATION AND STACKING PLAN

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 083933

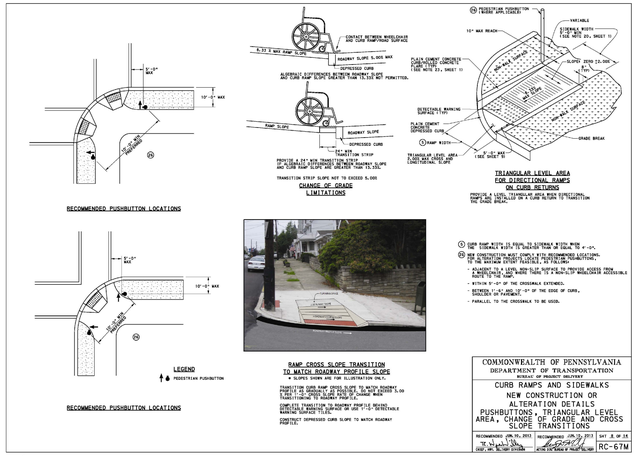
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com
Civil Engineers & Land Planners

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

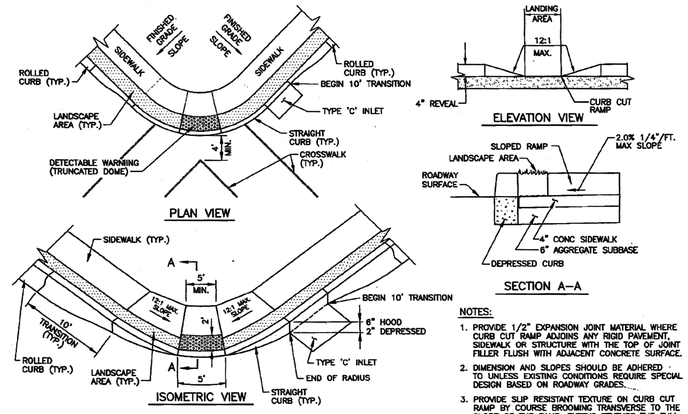
Section Number:
TM-2

PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\13 TM-01.DWG



A CD-1 **CURB RAMP DETAILS**
NOT TO SCALE



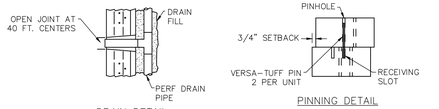
NOTES:

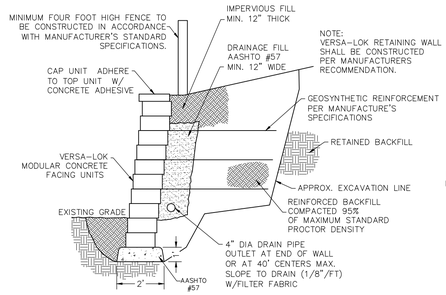
1. PROVIDE 1/2" EXPANSION JOINT MATERIAL WHERE CURB CUT RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
2. DIMENSION AND SLOPES SHOULD BE ADHERED TO UNLESS EXISTING CONDITIONS REQUIRE SPECIAL DESIGN BASED ON ROADWAY GRADES.
3. PROVIDE SLIP RESISTANT TEXTURE ON CURB CUT RAMP BY COURSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB CUT RAMP INCLUDING FLARED SIDE RAMPS.

* NOTES:

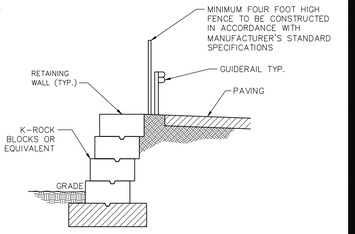
1. ARMORCLASS DETECTABLE WARNING PANELS AS MANUFACTURED BY ARMOR CAST PRODUCT COMPANY OR EQUAL.
2. THE CONTRACTOR IS RESPONSIBLE TO INSTALL CURB CUT RAMPS, SIDEWALK AND DRIVEWAY APRONS TO THE LATEST ADA OR PENNDOT STANDARDS AT THE TIME OF CONSTRUCTION.

B CD-1 **CURB RAMP DETAILS**
NOT TO SCALE





NOTE: SEE NOTES BELOW FOR FURTHER DESIGN INFORMATION.

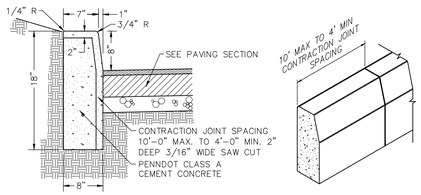


NOTE:
GUIDE RAIL REQUIRED WHEN NEXT TO VEHICULAR TRAFFIC.

RETAINING WALL NOTES:

1. Retaining walls shall be designed by a Professional Engineer experienced in retaining wall design and specific calculations and design details will be provided to the Township.
2. A licensed geotechnical engineer qualified in soils and with experience in retaining walls shall oversee and certify the construction of all retaining walls.
3. A geotechnical engineer shall have all soils tested and approved for use in the construction of the retaining walls prior to their construction.
4. Copies of all geotechnical reports, site observations and soil testing performed in relation to the retaining wall design and construction shall be provided to Lower Allen Township as they become available.
5. All soils shall be compacted to 95% of the maximum dry density as specified by the modifies proctor method (ASTM-D1557) or as otherwise directed by the site geotechnical engineer.
6. The bearing capacity for the base of each retaining wall shall be at least 3,000 PSF. The geotechnical engineer shall test and document the bearing capacity and employ such measures as deemed to achieve a bearing capacity of 3,000 PSF.
7. A minimum cohesion of 150 PSF shall be provided. A geotechnical engineer shall validate the cohesion values prior to any wall construction.
8. Upon completion of each retaining wall, the geotechnical engineer shall submit to Lower Allen Township a geotechnical report documenting all parameters actually used in the field, provide comparison to the design values and document the acceptability of the as-built conditions.
9. All proposed fences that are associated with a retaining wall will meet the barrier requirement of the Uniform Construction Code.

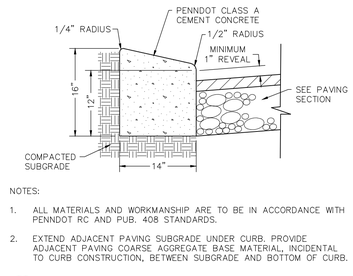
C CD-1 **RETAINING WALL DETAILS (TYPICAL)**
NOT TO SCALE



NOTES:

1. ALL MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH CURRENT PENNDOT RC AND PUB. 408 STANDARDS.
2. EXTEND ADJACENT PAVING SUBGRADE UNDER CURB. PROVIDE ADJACENT PAVING COARSE AGGREGATE BASE MATERIAL, INCIDENTAL TO CURB CONSTRUCTION, BETWEEN SUBGRADE AND BOTTOM OF CURB.

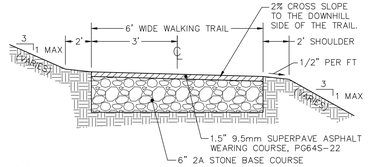
D CD-1 **STRAIGHT CURB DETAILS**
NOT TO SCALE



NOTES:

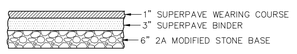
1. ALL MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH PENNDOT RC AND PUB. 408 STANDARDS.
2. EXTEND ADJACENT PAVING SUBGRADE UNDER CURB. PROVIDE ADJACENT PAVING COARSE AGGREGATE BASE MATERIAL, INCIDENTAL TO CURB CONSTRUCTION, BETWEEN SUBGRADE AND BOTTOM OF CURB.

L CD-1 **SLANT CURB DETAIL**
NOT TO SCALE

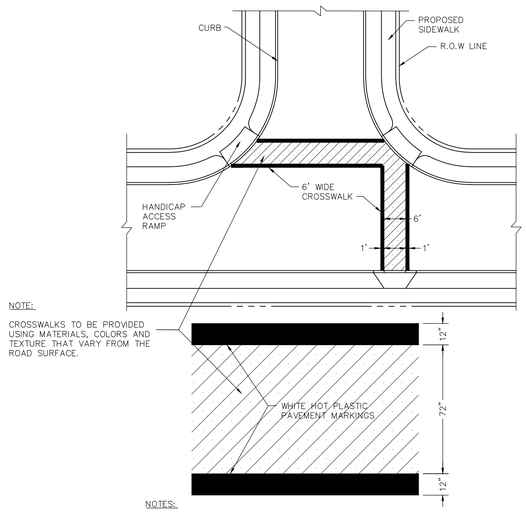


H CD-1 **TRAIL SECTION (6')**
NOT TO SCALE

* 6" 2A STONE BASE ONLY, AT THE DEVELOPERS OPTION.



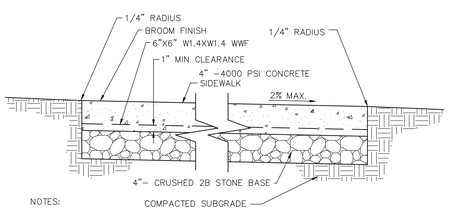
J CD-1 **TYPICAL PAVEMENT SECTION (PARKING LOTS)**
NOT TO SCALE



NOTES:

1. REFER TO SITE PLANS FOR LOCATIONS.
2. PROVIDE PEDESTRIAN CROSSWALK SIGNS AS PER PADOT SPECIFICATIONS.

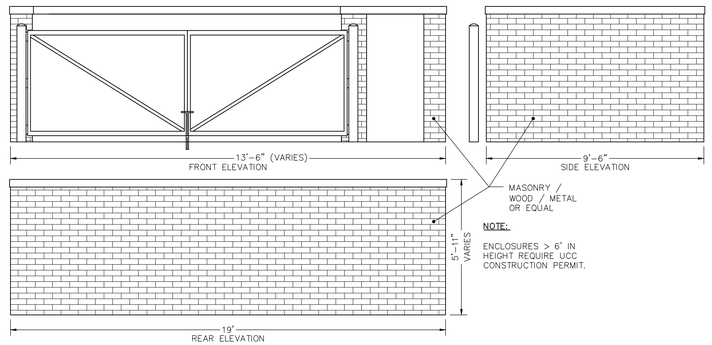
E CD-1 **TYPICAL CROSSWALK DETAIL**
NOT TO SCALE



NOTES:

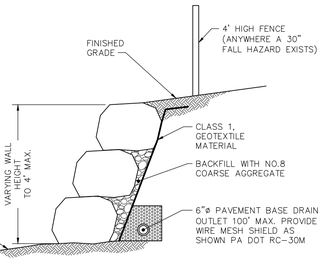
1. EXPANSION JOINTS LOCATED AT 20' O.C.
2. TOOLED JOINTS LOCATED AT 5' O.C.
3. SIDEWALK IS TO BE LIGHT BROOM FINISHED IN THE DIRECTION OF SIDEWALK WIDTH.

K CD-1 **CONCRETE SIDEWALK DETAIL**
NOT TO SCALE



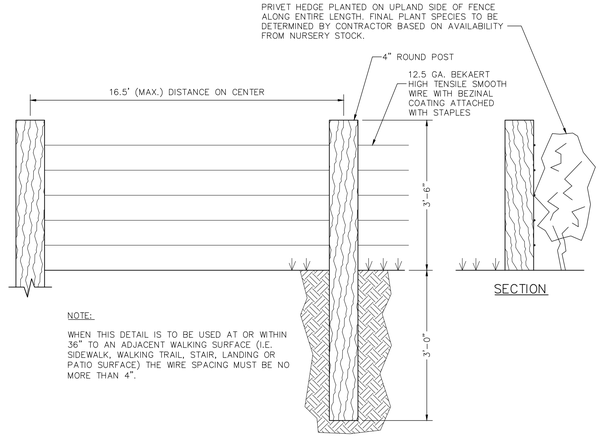
NOTE:
ENCLOSURES > 6' IN HEIGHT REQUIRE UCC CONSTRUCTION PERMIT.

F CD-1 **TRASH ENCLOSURE DETAIL (TYPICAL)**
NOT TO SCALE



NOTE:
FENCE SHALL BE INSTALLED ANYWHERE A FALL HAZARD EXISTS (PER BUILDING CODES – TO BE REVIEWED BY THE ZONING OFFICER).

M CD-1 **ROCK LANDSCAPE WALL SECTION**
NOT TO SCALE



NOTE:
WHEN THIS DETAIL IS TO BE USED AT OR WITHIN 36" TO AN ADJACENT WALKING SURFACE (I.E. SIDEWALK, WALKING TRAIL, STAIR, LANDING OR PATIO SURFACE) THE WIRE SPACING MUST BE NO MORE THAN 4".

N CD-1 **FENCE ALONG RETAINING WALL**
NOT TO SCALE

Sheet Number: 15 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7
Lower Allen Township · Cumberland County, PA
CHARTER Homes & Neighborhoods

CONSTRUCTION DETAILS

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: AS NOTED

Shell: COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER G. MITCHELL KING No. PE083613 4/29/26

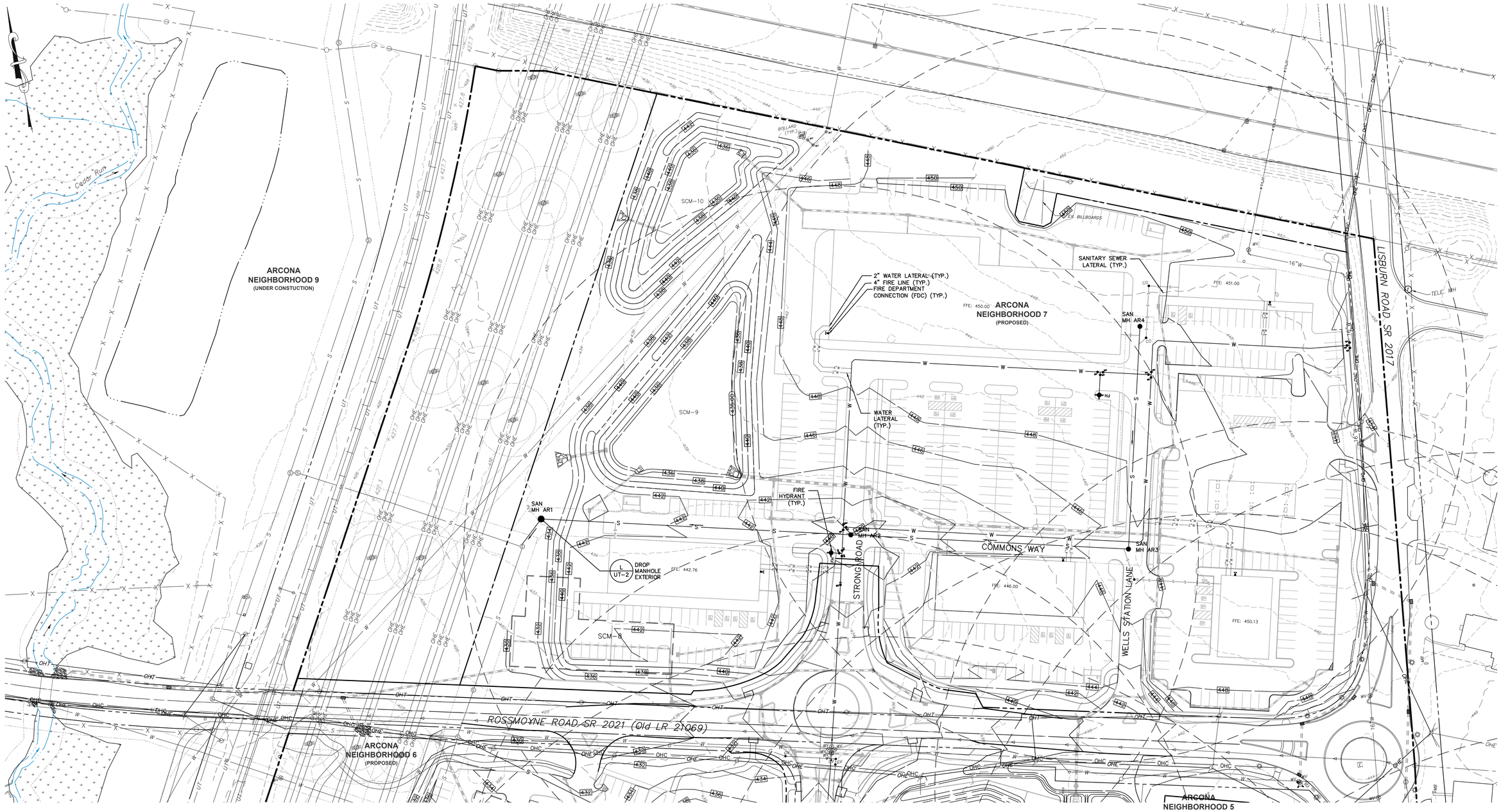
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners

REVISIONS	DATE
ADDRESSED TWP. ENGR. & CCPD COMMENTS	4/17/26

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\15 CD-01.DWG
4/29/2026 3:41 PM

Section Number: CD-1

PRELIMINARY



PAWC NOTES:

1. PRIOR TO COMMENCEMENT OF WATER MAIN INSTALLATION THE LOCAL PAWC MANAGER FOR THE PROJECT SHALL BE PROVIDED WITH A WORK PROGRESS/TIMING SCHEDULE IN ADVANCE OF ANY AND ALL WORK TO ALLOW FOR INSPECTOR SCHEDULING.
2. ALL SERVICES FROM MAIN TO METER PIT ARE 1" TYPE K COPPER. A 10-15' TAILPIECE SHALL BE INSTALLED OUT OF THE CURB STOP TO THE APPROXIMATE LOCATION OF THE METER PIT DURING INSTALLATION OF THE SERVICE LINE(S).
3. ALL CURB STOPS AND HYDRANTS SHALL BE PLACED IN THE GRASS WITHIN THE RIGHT-OF-WAY, STAKE RIGHT-OF-WAY AS REQUIRED.
4. THRUST BLOCKS ARE REQUIRED FOR ALL BLOW-OFFS, TEES, BENDS, AND HYDRANTS OR AS APPROVED BY PAWC INSPECTOR.
5. LOCKING RUBBERS ARE REQUIRED AT THE DIRECTION OF PAWC INSPECTOR.
6. ALL HYDRANTS SHALL BE MANUFACTURED WITH STORZ CONNECTION(S), FIELD INSTALLED STORZ CONNECTION(S) WILL NOT BE ACCEPTED.
7. ALL HYDRANTS SHALL BE MANUFACTURED WITH THE APPROPRIATE COLOR. YELLOW FOR ALL PUBLIC HYDRANTS AND RED FOR ALL PRIVATE HYDRANTS.
8. ALL HYDRANTS ARE TO OPEN LEFT.
9. ALL VALVES ARE TO OPEN LEFT.
10. INSTALLATION OF 11¼° BENDS ARE ONLY REQUIRED IF DEFLECTION OF THE PIPE CAN'T BE ACHIEVED, CONSULT PAWC INSPECTOR PRIOR TO A BEND BEING OMITTED.
11. INSTALLATION OF WATER MAIN SHALL BE INSTALLED PER THE APPROVED PAWC PLAN STARTING AT THE TAP OR TIE-IN POINT. DEVIATION FROM THIS SHALL BE COORDINATED DIRECTLY WITH FIELD OPS SUPERVISOR.
12. NO SERVICES SHALL BE INSTALLED UNTIL THE WATER HAS PASSED ALL REQUIRED TESTING.
13. ALL VALVE BOX TOPS SHALL BE SET TO THE STREET PAVEMENT BASE COURSE ELEVATION. PRIOR TO THE INSTALLATION OF THE PAVEMENT WEARING COURSE, VALVE BOX RISERS SHALL BE INSTALLED AT THE DIRECTION OF THE PAWC INSPECTOR. ALL VALVE BOX TOPS AND LIDS DAMAGED PRIOR TO THE INSTALLATION OF THE WEARING COURSE ARE THE RESPONSIBILITY OF THE DEVELOPER.

LATA NOTES:

1. ALL SANITARY SEWER LATERALS ARE 6" SDR 35.
2. SANITARY SEWER CLEANOUTS ARE NOT PERMITTED IN SIDEWALKS.
3. THE SITE SHALL BE GRADED TO THE PROPOSED NEW SUB-GRADE ELEVATION PRIOR TO STARTING SEWER LINE CONSTRUCTION.
4. THE PROPERTY OWNER IS RESPONSIBLE FOR FINAL SURFACE RESTORATION AFTER AUTHORITY FUTURE SEWER MAINTENANCE AND BACKFILL TO SUB-GRADE.
5. EXISTING SEWER MAIN FLOW AND SERVICE SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A WORK PLAN PRIOR TO STARTING SEWER CONSTRUCTION THAT SHOWS HOW FLOW WILL BE MAINTAINED.
6. ALL CLEANOUTS LOCATED IN OPEN SPACE AREAS SHALL HAVE HEAVY DUTY FRAME AND COVER. (SEE B\UT-2).
7. SANITARY SEWER MANHOLES IN GRASSED AREAS SHALL HAVE WATER TIGHT FRAME AND COVERS. (SEE F\UT-2).
8. MAINTENANCE AND REPAIR OF SANITARY SEWER LATERALS OFF SANITARY SEWER MAINS WITHIN ARCONA NEIGHBORHOOD 7 WILL BE THE RESPONSIBILITY OF THE INDIVIDUAL LOT OWNERS.
9. ALL FOOD ESTABLISHMENTS WILL REQUIRE AN EXTERNAL GREASE TRAP.

Sheet Number: 16 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

UTILITY PLAN - NEIGHBORHOOD 7

Drafting: D. TURNER
Checked by: K. POSTLETHWAIT
Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 25 50 100 150

Seal: COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088343 — 4/29/26

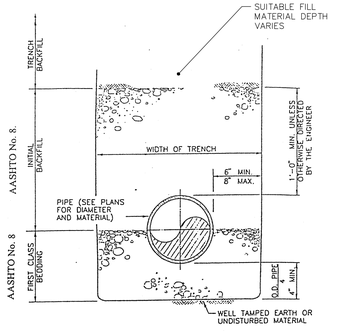
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: UT-1

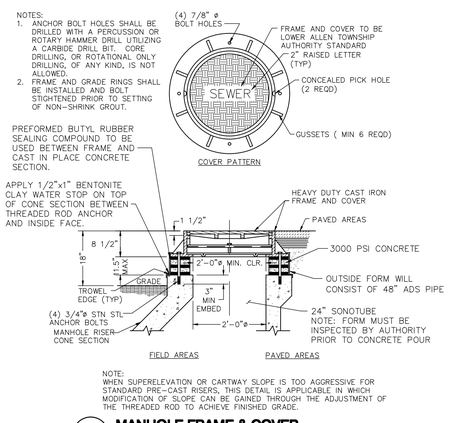
PRELIMINARY

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\16 UT-01.DWG
4/29/2026 3:39 PM



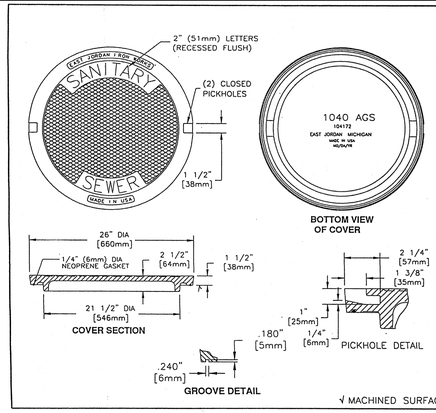
SECTIONAL ELEVATION

A UT-2 FIRST CLASS BEDDING AND INITIAL BACKFILL PIPE BEDDING
NOT TO SCALE



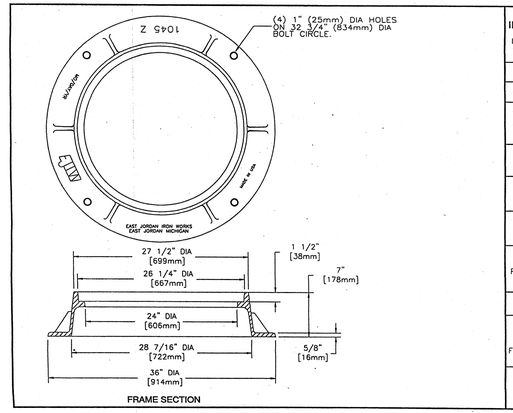
NOTE:
WHEN SUPERELEVATION OR CARTWAY SLOPE IS TOO AGGRESSIVE FOR STANDARD PRE-CAST RISERS, THIS DETAIL IS APPLICABLE IN WHICH MODIFICATION OF SLOPE CAN BE GAINED THROUGH THE ADJUSTMENT OF THE THREADED ROD TO ACHIEVE FINISHED GRADE.

M UT-2 MANHOLE FRAME & COVER
NOT TO SCALE



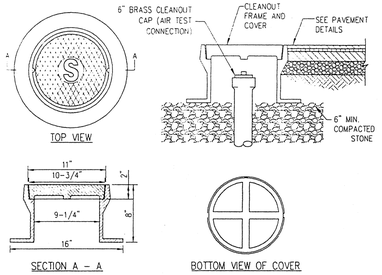
EAST JORDAN IRON WORKS, INC.
P.O. BOX 439 EAST JORDAN, MI. 49727 1-800-874-4100 FAX 231-536-4458
DRAWN DEW / DATE 11/14/00
APPROVED / DATE
SPECIAL LETTERED COVER
PRODUCT NO. **00104172**
CATALOG NO. **1040AGS**
REF. PRODUCT DRAWING 104172
EST. WT. COVER: 150 LBS 68kg
OPEN AREA N/A
MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35
LOAD RATING **HEAVY DUTY**

E UT-2 MANHOLE FRAME AND COVER
NOT TO SCALE



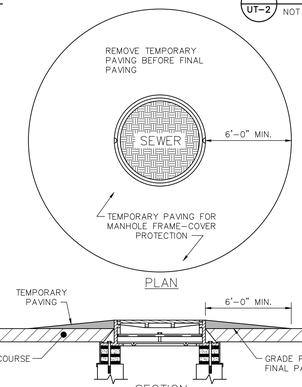
EAST JORDAN IRON WORKS, INC.
P.O. BOX 439 EAST JORDAN, MI. 49727 1-800-874-4100 FAX 231-536-4458
DRAWN DEW / DATE 08/25/99
APPROVED / DATE
MANHOLE FRAME
PRODUCT NO. 104510-DIPPED 104511-UNDIPPED
CATALOG NO. 1045Z
REF. PRODUCT DRAWING 104510
EST. WT. FRAME: 165 LBS 75kg
OPEN AREA N/A
MAT'L SPEC. FRAME – GRAY IRON ASTM A48 CL35
LOAD RATING **HEAVY DUTY**

G UT-2 MANHOLE FRAME
NOT TO SCALE

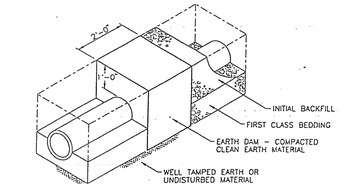


NOTES
1 ALL GRAY IRON SHALL CONFORM TO ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
2 ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±.
3 ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING USING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.
4 FRAME AND COVER SHALL BE H-20 HIGHWAY LOAD RATED FOR PARKING LOTS, ETC.

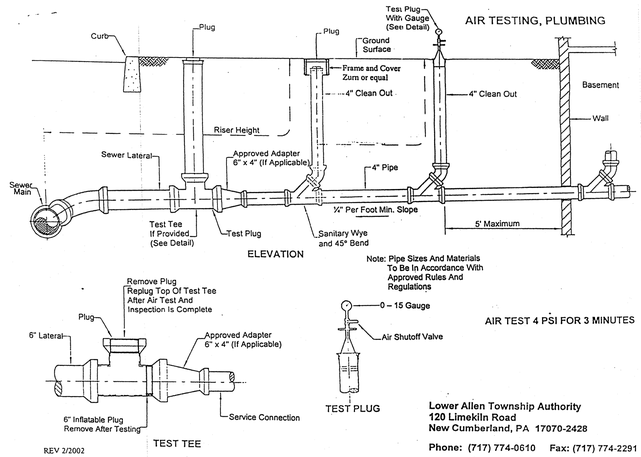
B UT-2 HEAVY DUTY CLEANOUT FRAME AND COVER
NOT TO SCALE



O UT-2 MANHOLE FRAME/COVER PROTECTION DETAIL PRIOR TO FINAL PAVING
NOT TO SCALE

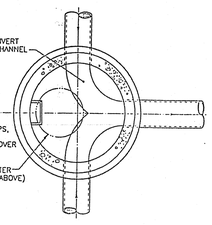


D UT-2 EARTH DAM
NOT TO SCALE



Lower Allen Township Authority
120 Limekiln Road
New Cumberland, PA 17070-2428
Phone: (717) 774-0610 Fax: (717) 774-2291

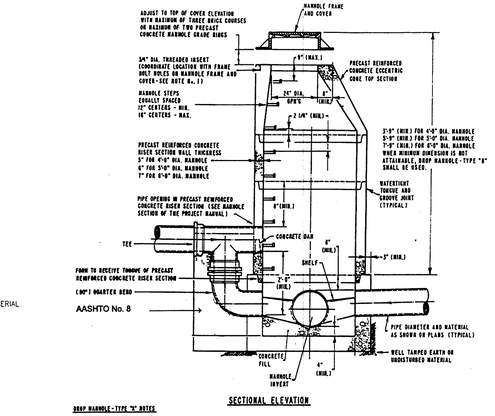
H UT-2 SANITARY SEWER LATERAL DETAILS
NOT TO SCALE



Manhole General Notes

1. Bolt manhole frame in place with four ¾" dia. bolts and flat washers
2. Slope the shelf toward the invert channel at the rate of 1" per foot minimum.
3. Depth of invert channel shall be not less than ¾ of the diameter of the pipe.
4. Finished grade shall be flush with top of cover unless otherwise noted.
5. All manhole joints sealed with preformed plastic sealing compound (Ram-Nek).
6. Precast reinforced concrete manhole to conform to ASTM C-478, cast-in-place gasket to meet ASTM C-923.
7. Plug lifting holes with rubber plug and nonshrink grout for water tight seal.
8. Minimum of 6" of First Class Bedding material under manhole base section.

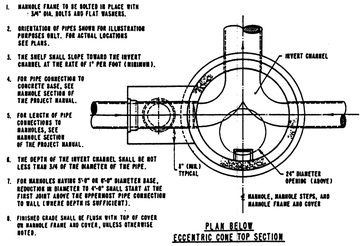
C UT-2 STANDARD MANHOLE - 4' & 6' DIAMETER
NOT TO SCALE



NOTE:
1. 6' DIAMETER MANHOLE TO BE USED WHEN FILL DEPTH IS GREATER THAN 12.5 FEET.

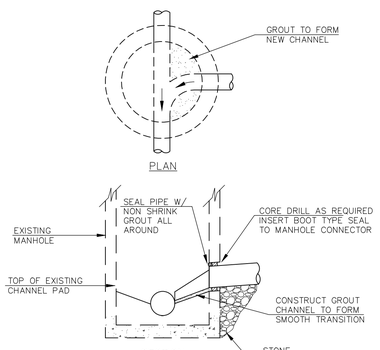
SECTIONAL ELEVATION

SECTIONAL ELEVATION

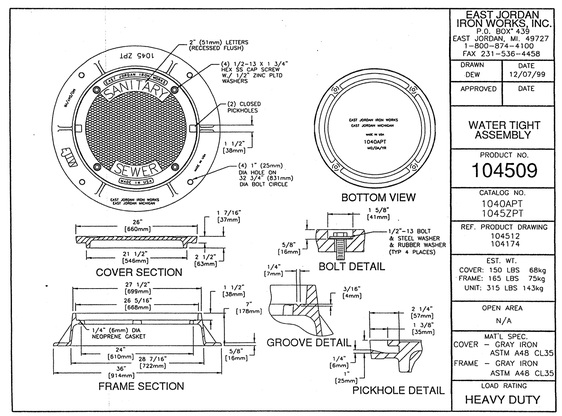


PLAN BELOW
ECCENTRIC CONE TOP SECTION

L UT-2 DROP MANHOLE DETAIL - EXTERIOR
NOT TO SCALE



J UT-2 CONNECTION TO EXISTING MANHOLE
NOT TO SCALE



EAST JORDAN IRON WORKS, INC.
P.O. BOX 439 EAST JORDAN, MI. 49727 1-800-874-4100 FAX 231-536-4458
DRAWN DEW / DATE 12/07/99
APPROVED / DATE
WATER TIGHT ASSEMBLY
PRODUCT NO. 104509
CATALOG NO. 1040APT 10452PT
REF. PRODUCT DRAWING 104512 104174
EST. WT. COVER: 150 LBS 68kg FRAME: 165 LBS 75kg UNIT: 315 LBS 143kg
OPEN AREA N/A
MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35 FRAME – GRAY IRON ASTM A48 CL35
LOAD RATING **HEAVY DUTY**

F UT-2 WATER TIGHT MANHOLE FRAME AND COVER
NOT TO SCALE

Sheet Number: 17 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

UTILITY DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: AS NOTED

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088183 4/17/26

REVISIONS	DATE
ADDRESSED TWP. ENGR. & CCPD COMMENTS	4/17/26

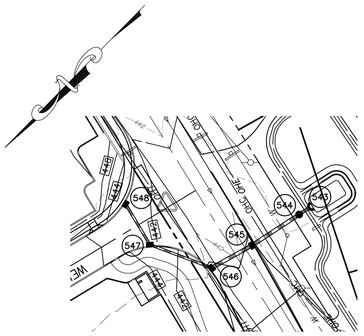
Section Number: UT-2
PRELIMINARY

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\17 UT-02.DWG

NOTES:

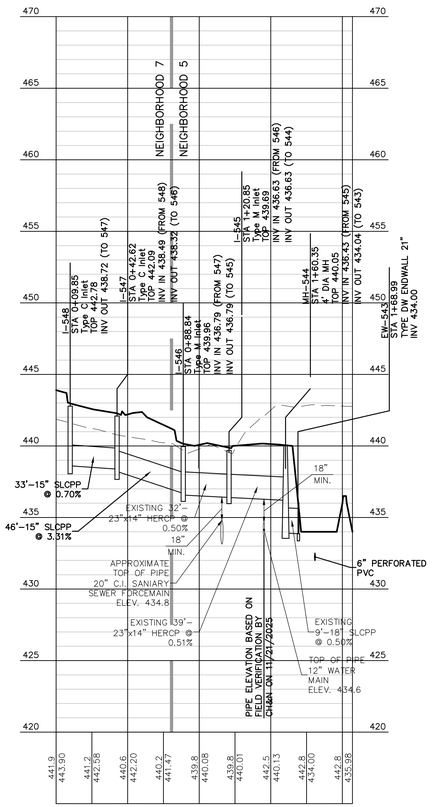
1. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
2. UNDERGROUND UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION, OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE, UNLESS NOTED BELOW. TOWNE SQUARE ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION INFORMATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS IS CORRECT AND ACCURATE. TOWNE SQUARE ENGINEERING ASSUMES NO RESPONSIBILITY FOR ANY DAMAGE INCURRED AS A RESULT OF UNDERGROUND UTILITIES OMITTED OR INACCURATELY SHOWN.



PLAN SCALE: 1" = 50'

NOTES:

1. STORMWATER STRUCTURES I-546 TO EW-543 ARE TO BE CONSTRUCTED AS PART OF NEIGHBORHOOD 3-6.
2. STORMWATER PIPES FROM I-546 TO EW-543 ARE TO BE CONSTRUCTED AS PART OF NEIGHBORHOOD 3-6.



PROFILE: I-548 TO EW-543

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

Sheet Number:
18 of 24
Project Number:
15-100-35
Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 25 50 100 150

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 059313 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

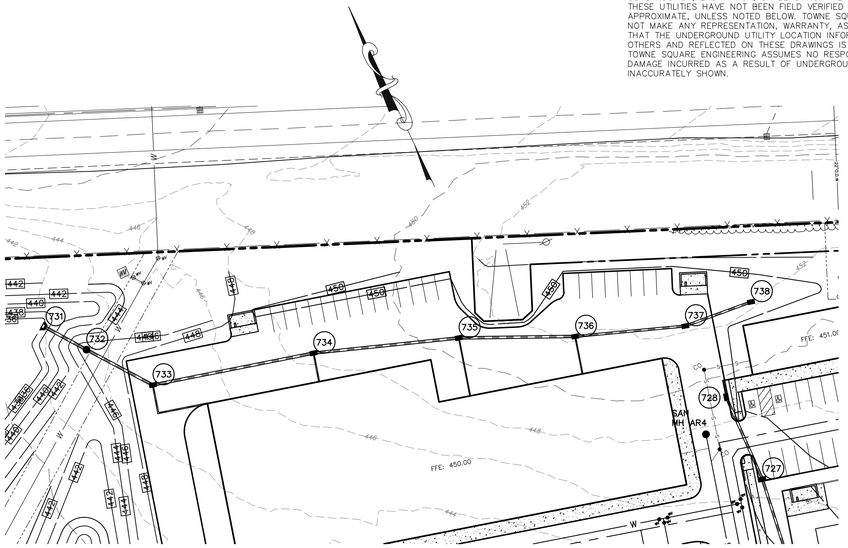
DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number:
PF-1
PRELIMINARY

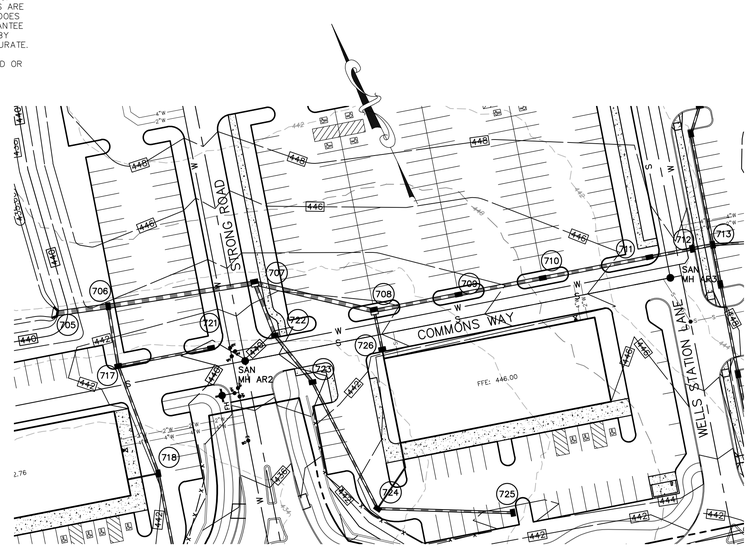
4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\15 PF-01.DWG

NOTES:

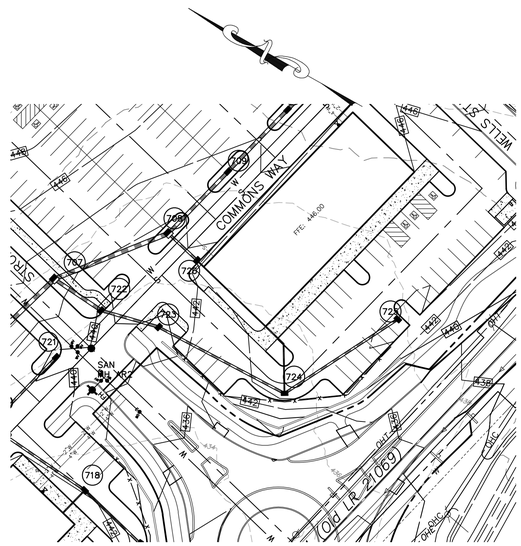
1. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
2. UNDERGROUND UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION, OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE, UNLESS NOTED BELOW. TOWNE SQUARE ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION INFORMATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS IS CORRECT AND ACCURATE. TOWNE SQUARE ENGINEERING ASSUMES NO RESPONSIBILITY FOR ANY DAMAGE INCURRED AS A RESULT OF UNDERGROUND UTILITIES OMITTED OR INACCURATELY SHOWN.



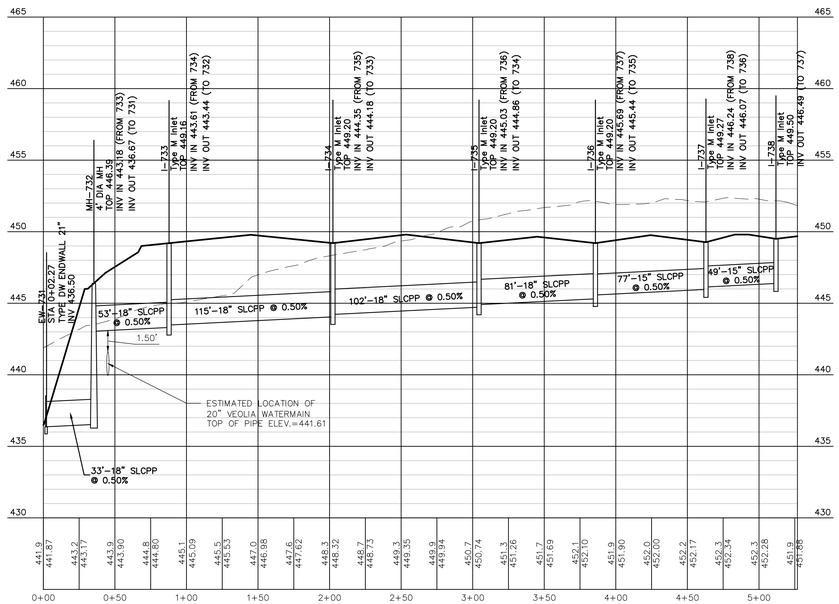
PLAN SCALE: 1" = 50'



PLAN SCALE: 1" = 50'

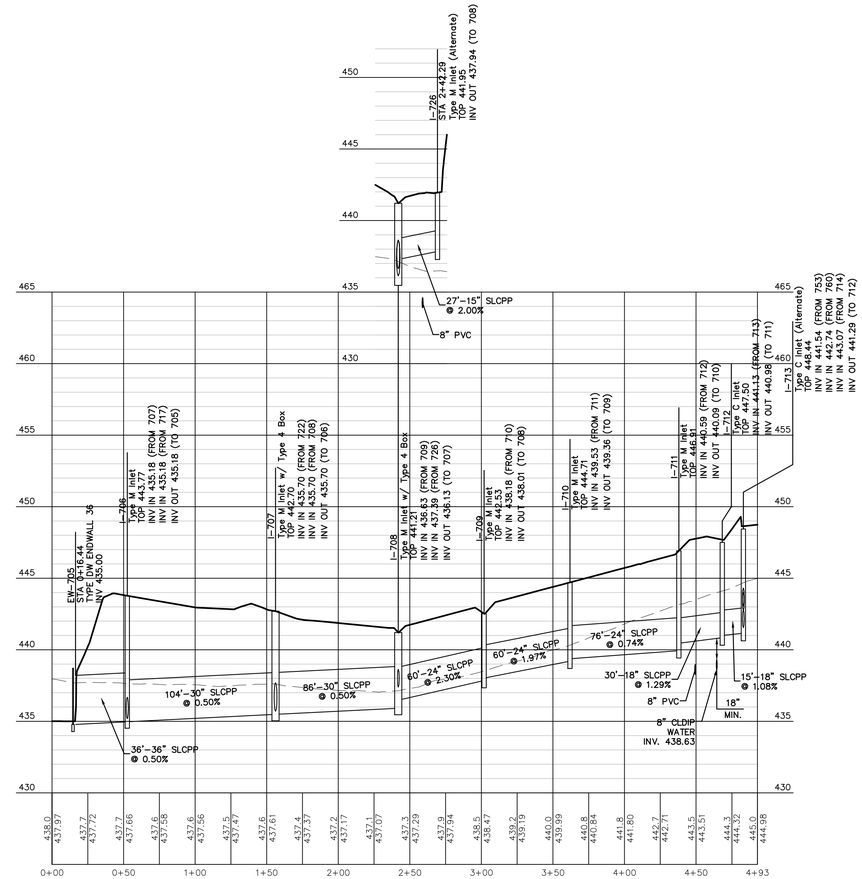


PLAN SCALE: 1" = 50'



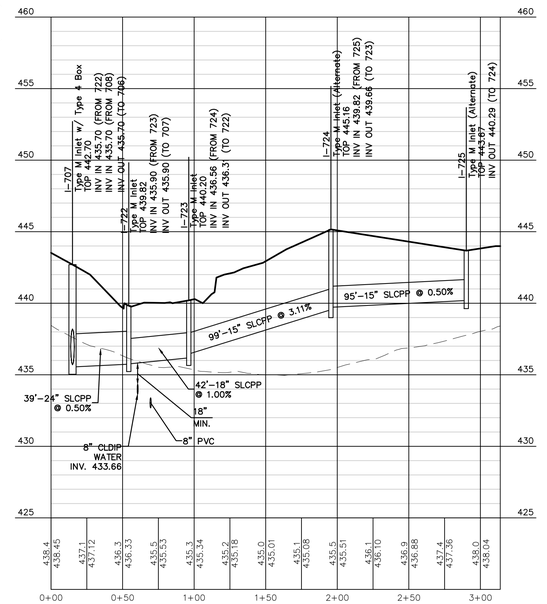
PROFILE: EW-731 TO I-738

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: EW-705 TO I-713

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: I-707 TO I-725

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

Sheet Number:
19 of 24

Project Number:
15-100-35

Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA LICENSED PROFESSIONAL ENGINEER G. MITCHELL KING No. 69319 4/6/26

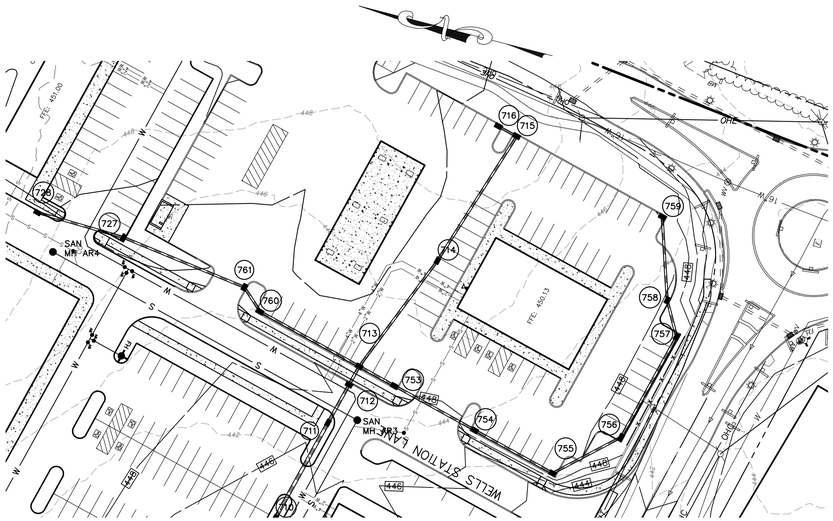
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

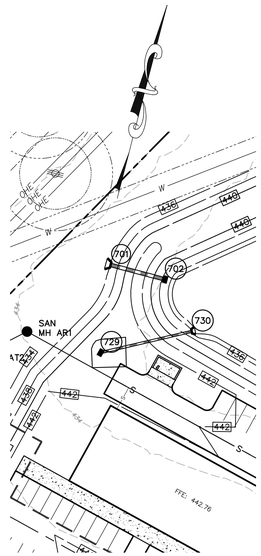
Section Number:
PF-2

PRELIMINARY

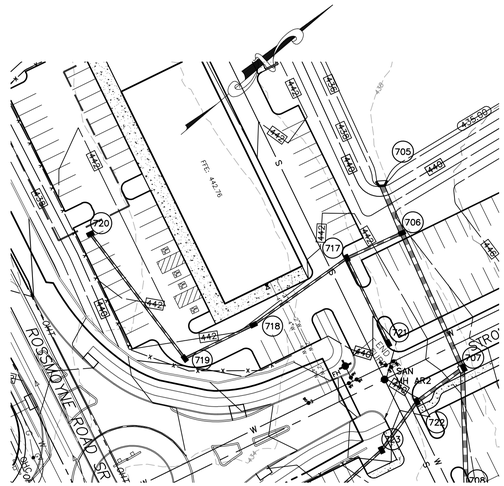
4/29/2026 3:41 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\19 PF-02.DWG



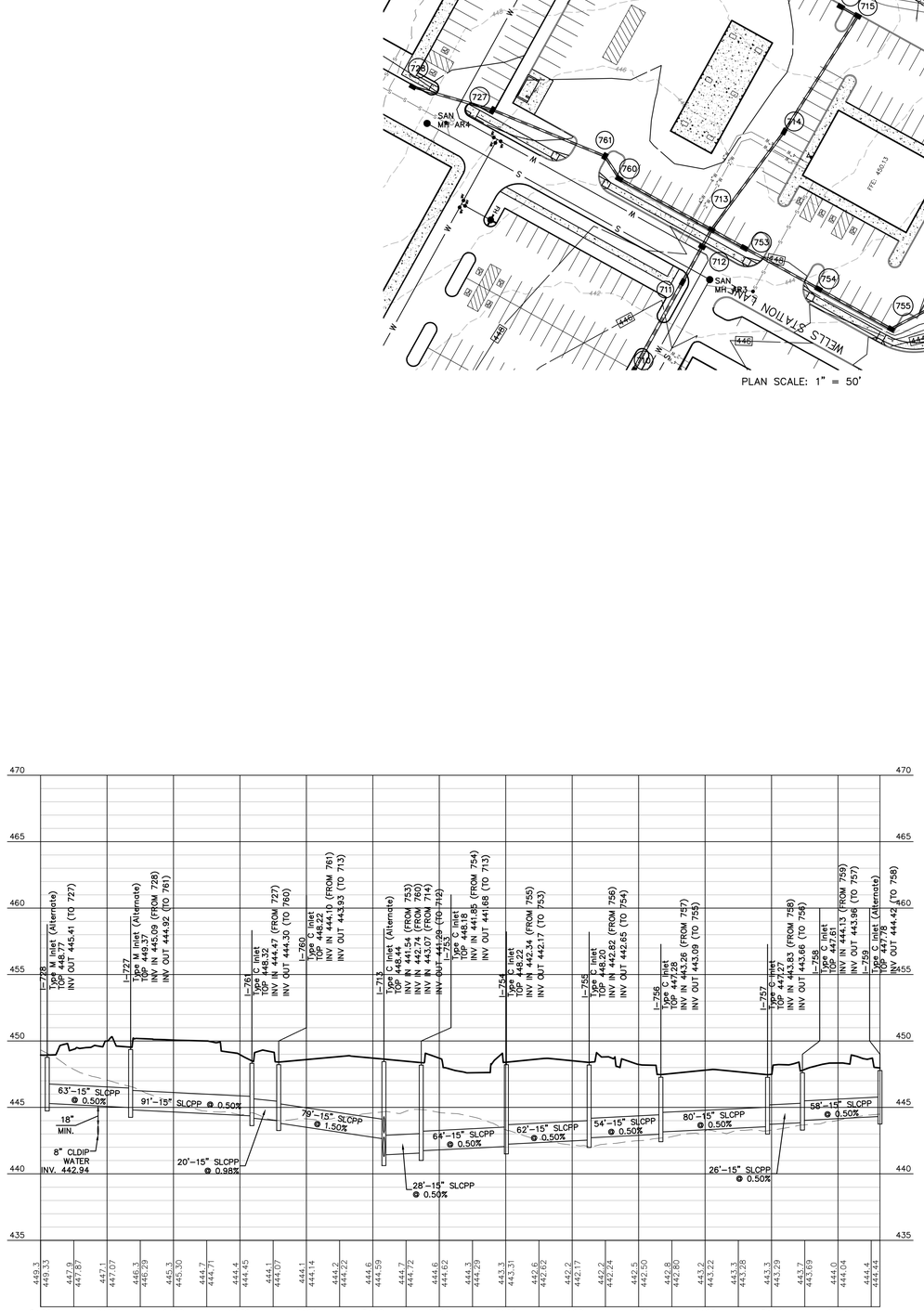
PLAN SCALE: 1" = 50'



PLAN SCALE: 1" = 50'

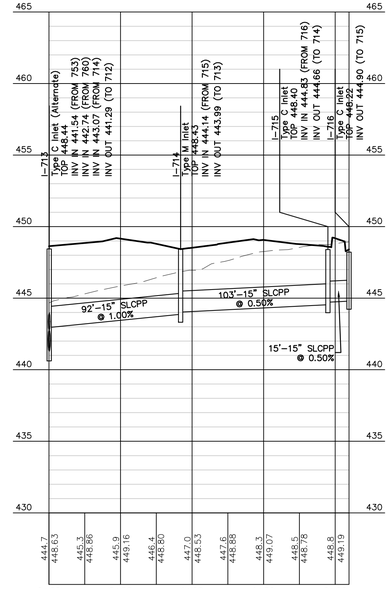


PLAN SCALE: 1" = 50'



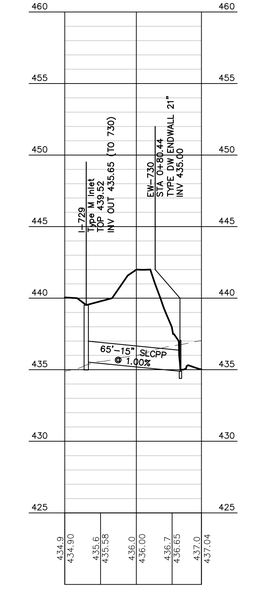
PROFILE: I-728 TO I-716

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



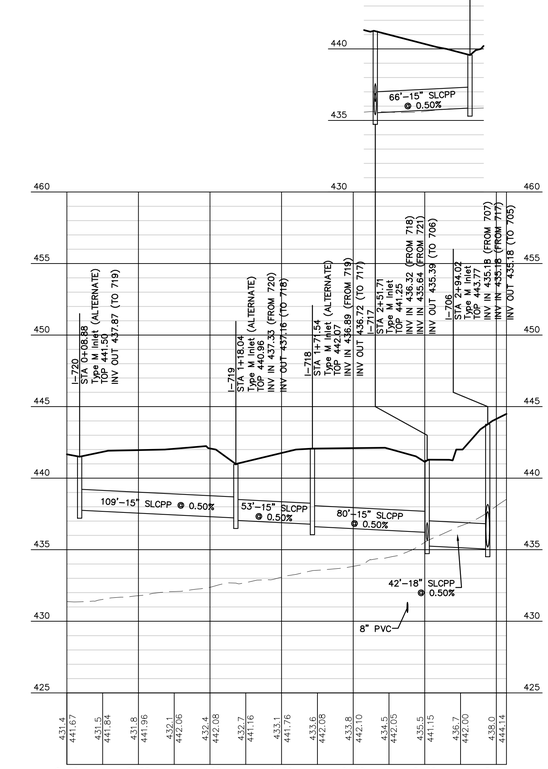
PROFILE: I-713 TO I-636

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: I-729 TO EW-730

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: I-720 TO I-706

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

Sheet Number:
20 of 24

Project Number:
15-100-35

Date:
MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET STORM

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 89393 4/6/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number:
PF-3
PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\20 PF-03.DWG

PLAN SCALE: 1" = 50'

PROFILE: SAN MH AT2 TO SAN MH AR4

SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

Sheet Number: 21 of 24

Project Number: 15-100-35

Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PLAN & PROFILES - NEIGHBORHOOD 7 OFFSTREET SANITARY SEWER

Drafting: D TURNER | Checked by: K POSTLETHWAIT | Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR G MITCHELL KING ENGINEER No. PE080357 SURVEYOR 4/17/26

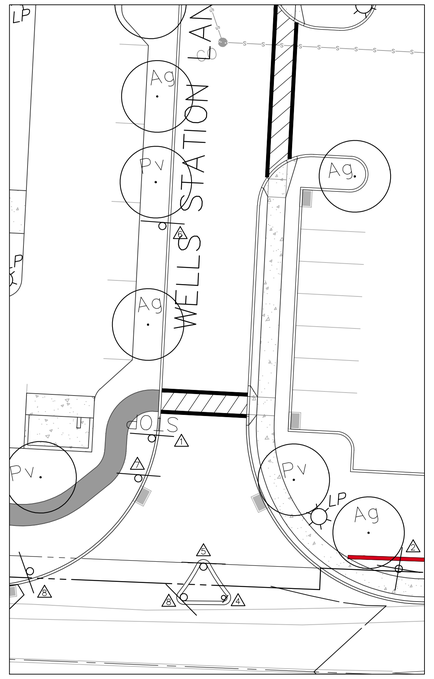
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

Section Number: PF-4

PRELIMINARY

4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\21 PF-04.DWG



A LA-1 RIGHT-IN / RIGHT-OUT SIGN LOCATION DETAIL (TYP.)
SCALE: 1" = 10'

OPEN SPACE LANDSCAPING

PROPOSED LANDSCAPE/LAWN

TREELINE TO BE REMOVED

SIGN LEGEND (Subject to PennDOT Approval)

#	SYMBOL	DESCRIPTION	MUTCD #	SHOWN ON SHEET
△	STOP	STOP SIGN	R1-1	G / LA-2
△		STREET NAME	-	F / LA-2
△		OBJECT MARKER	OM1-3	-
△		MEDIAN	R4-7	E / LA-2
△		ALL TRAFFIC MUST TURN RIGHT	R3-7-14	E / LA-2
△		NO LEFT TURN	R3-2	E / LA-2
△		DO NOT ENTER	R5-1	E / LA-2

STREET TREES - ARCONA PHASE 7

% of Total	Quantity	Abbrev.	Botanical Name	Common Name	Mature Size	Size-Comments
50.0%	22	Ag	Amelanchier x grandiflora	Autumn Brilliance Serviceberry	20' ht 15' w	2.5" cal. B&B (S.S.)
50.0%	22	Pv	Prunus virginiana 'Schubert'	Common Choke Cherry	25' ht 20' w	2.5" cal. B&B
100%	**44**	**Total**	Note: All trees shown are street trees.			

Street Length Summary Neighborhood 7

Description	LF	# of Trees Required *
Existing Street **	1,657 L.F.	34
Proposed Street	0 L.F.	0
Proposed Access Drive	210 L.F.	10
Total	1,867 L.F.	44
Number of trees required:		
* 1 tree per every 50' both sides on Proposed Length.		
** 1 tree per every 50' of Existing Length on the side of proposed development.		

Sheet Number: 22 of 24
Project Number: 15-100-35
Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

LANDSCAPING PLAN – NEIGHBORHOOD 7

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'

0 25 50 100 150

Seal:

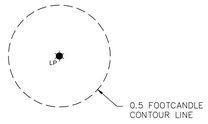
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

REVISIONS	DATE
ADDRESSED TWP. ENGR. & CCPD COMMENTS	4/17/26

Section Number: LA-1

PRELIMINARY

4/29/2026 3:40 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\22 LA-01.DWG



0.5 ISOFOOTCANDLE LINE OF HORIZONTAL ILLUMINANCE

NOT TO SCALE

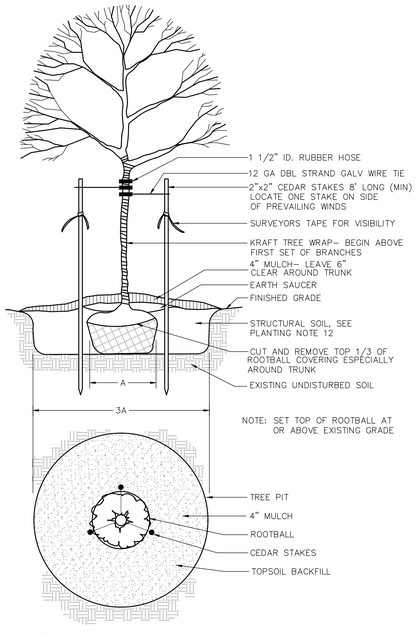
- LAMP SIZE: 5,800 LUMEN (70 WATT)
- POLE HEIGHT: 11'
- POLE COLOR: BLACK

A LA-2 **TYPICAL LIGHT - ACORN / PPL**

NOT TO SCALE

NOTE:

STREET LIGHT FIXTURES SHALL MEET LAMP AND WIRING STANDARDS ESTABLISHED BY PPL.



C LA-2 **DECIDUOUS TREE PLANTING DETAIL**

NOT TO SCALE

LANDSCAPE NOTES FOR ARCONA NEIGHBORHOODS 7:

1. The landscaping, screening, buffering, street trees, street lights, outdoor lighting, neighborhood entry monuments and other amenities depicted on this Landscaping Plan are intended to demonstrate material compliance with Lower Allen Zoning Ordinance §220-200, §220-201, §220-202 and Lower Allen Subdivision & Land Development Ordinance §192-58 and §192-63 C and to serve as a general guide. All locations shown are approximate and will be subject to adjustments and modifications by Applicant to fit actual site conditions, resolve additional conflicts (especially with utilities), and to improve design and aesthetics. Specific locations, species, and other specifics may be altered and/or substituted provided that the minimum requirements of applicable ordinances are still met. Any alteration and/or substitution to this Landscaping Plan that does not comply with the minimum requirements of applicable ordinances shall not be made unless all applicable waivers, modification or variances are obtained from the Board or Commissioners or Zoning Hearing Board, as applicable. Lower Allen Township reserves the right to inspect construction to verify compliance with Township ordinances and the intent of this Landscape Plan.
2. Applicant shall be required to meet the minimum total number of street trees required per this plan albeit in differing locations for necessary and permitted adjustments.
3. The precise locations and geometrical layout of walking trails ("trail") as depicted on this Landscaping Plan will be altered by Applicant to fit actual site conditions, resolve additional conflicts (especially with utilities), and to improve design and aesthetics. However, the point(s) of origin(s) and terminus(es) as well as the overall length of the trail(s) shall remain materially the same. The width and construction specification (material/surface, depth of pavement) of the trail(s) shall not be altered. The Applicant hereby grants an easement for public access over all trails shown on this plan. Each trail shall be a hard surface, and shall be not less than six (6) feet wide.
4. Street trees shall not be planted on sanitary sewer or water laterals.
5. All underground utilities shown are approximate.
6. Contractor to field verify locations of all underground utilities prior to the start of construction.
7. Trees which have died or have become diseased or pest-ridden within 18 months from the time of planting shall be replaced by the developer.

PLANTING NOTES:

1. All trees and shrubs shall be as specified, and shall be installed in accordance with the details and comments noted on the Drawings. No plant substitutions unless approved by the owner and/or the Township.
2. The contractor shall furnish, deliver and install all plant materials. All plant materials shall have a normal habit of growth and shall be free of disease, insects or insect eggs. Plants shall conform to the American Association of Nurserymen's American Standard for Nursery Stock (latest edition).
3. Inspection of Planting Beds – The contractor shall inspect all planting areas before any top-soiling or planting is begun to insure that adequate drainage exists. If any areas to be landscaped show evidence of poor drainage, the Contractor shall notify the Owner immediately for corrective action. Any plant material that dies due to poor or inadequate drainage shall be the responsibility of the Landscape Contractor.
4. The Contractor shall notify the owner and request an approval all plant materials. If requested by owner, stake plant locations prior to installation.
5. All plant material shall be guaranteed for eighteen (18) months from the date of completion of installation.
6. Any plant material that does not survive within initial planting shall be removed and replaced within thirty (30) days during the subsequent planting season.
7. The Contractor shall maintain all plantings prior to the beginning of the guarantee period by watering, fertilizing, disease control, pruning, weeding, etc. so as to keep the completed work and/or uncompleted work in a clean and neat condition at all times. An additional maintenance period duration should be agreed to by the owner, if requested.
8. Prepare soils according to specifications and details. Remove rocks and debris.
9. Finish grade and "firm" the soil to avoid excessive settling. Caution: Avoid over compaction, minimize activities over newly cultivated soils.
10. Mulch planting beds with properly composted mulch to a depth of no more than 2". Keep mulch back 2" from the base of the trunk.
11. Pre-emergent herbicide such as "Eptam" shall be applied to all planting beds according to manufacture's recommendation (prior to placement of mulch). A second application of pre-emergent herbicide shall also be included as part of this work.
12. Street trees shall be planted in a bed of structural soil. The structural soil shall be CU-Structural Soil as supplied by an AMEREQ – licensed company. A minimum of two cubic feet of structural soil per square foot of tree crown area shall be provided. (Use ÷ 620 c.f. of CU-Soil for Autumn Brilliance Service Berry, American Hop-hornbeam, and Choke Cherry).

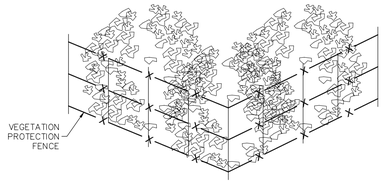
NOTES:

MATERIAL – Fence. Acceptable, undamaged, standard picket snow fence or other acceptable, highly visible, weather resistant, easily maintained fencing that provides a substantial barrier.

Posts. High carbon channel steel, 7'(feet) in length. Designed to drive satisfactorily into the ground and with at least 10 fence holding lugs of rivet type. Other posts may be accepted by the engineer.

CONSTRUCTION – Fence desirable wooded areas, individual trees, and shrubs designated for protection, before beginning other general project work. Where directed, fence other areas to be protected. Do not stockpile materials under, or within, protected vegetation areas. Prohibit construction traffic within protected areas. Place the fence at the drip line of trees or plants, but avoid causing root damage when driving posts. Replace damaged fence in kind within 24 hours of damage. Remove temporary protection, when directed.

A PROTECTION FENCE WILL BE SET UP AT THE DRIP LINE OF ANY WOODY VEGETATION THAT IS WITHIN 25' OF ANY IMPROVEMENTS AS SHOWN ON PLAN.

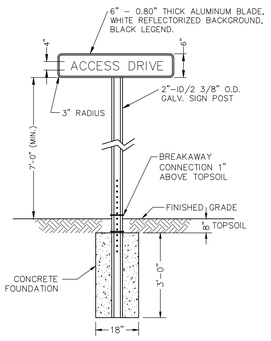


B LA-2 **TREE PROTECTION DETAIL**

NOT TO SCALE

SIGN NOTES:

- ALL SIGNS SHALL MEET PENNDOT PUBLICATION 408 STANDARDS.
- ALL SIGNS SHALL MEET THE REQUIREMENTS OF SECTION 220-132.2, 220-245, 220-252, AND 220-254 OF THE TOWNSHIP ZONING ORDINANCE.

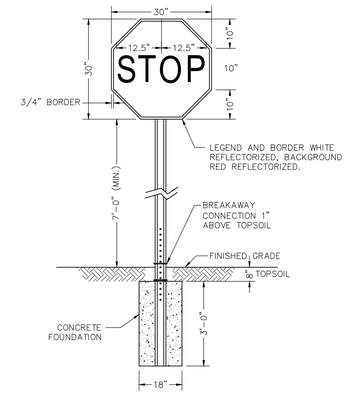


NOTE:

THIS IS A TYPICAL SIGN DETAIL FOR REFERENCE PURPOSES ONLY. THE FINAL SIGN DESIGN WILL BE COORDINATED TO BE DECORATIVE AND COMPLIMENTARY TO THE ARCHITECTURE OF THE DEVELOPMENT AND STILL MEET TOWNSHIP STANDARDS.

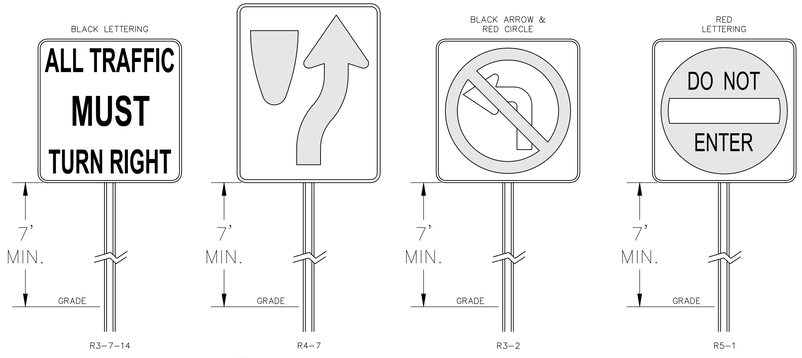
F LA-2 **TYPICAL STREET NAME SIGN DETAIL**

NOT TO SCALE



C LA-2 **TYPICAL STOP SIGN DETAIL**

NOT TO SCALE



E LA-2 **SITE INFORMATION SIGNS DETAILS**

NOT TO SCALE

Sheet Number: 23 of 24

Project Number: 15-100-35

Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

LANDSCAPING DETAILS

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Scale: 1" = 50'

0 25 50 100 150

Sheet:

313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners

REVISIONS	DATE
ADDRESSED TWP. ENGR. & CCPD COMMENTS	4/17/26

L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\23 LA-02.DWG

4/29/2026 3:40 PM

Section Number: LA-2

PRELIMINARY

PENNSYLVANIA TURNPIKE I – 76

LISBURN ROAD SR 2017

ROSSMOYNE ROAD SR 2021

STRONG ROAD

ARCONA ROAD

ARCONA NEIGHBORHOOD 7

ARCONA NEIGHBORHOOD 4

ARCONA NEIGHBORHOOD 5

ARCONA NEIGHBORHOOD 6

ARCONA NEIGHBORHOOD 2.2

ARCONA NEIGHBORHOOD 2.3

ARCONA NEIGHBORHOOD 3.1

HIGHPOINT 1.4

OS-40 OPEN SPACE

OPEN SPACE OS-40

REMAINING UNDEVELOPED LANDS

OS-51 OS-50 OS-48 EX. OS-23 OS-45 OS-43 OS-40 OS-46 OS-41

SPRUCE ROAD COMMONS WAY IVY HEAVEN ETERN IVY GREENSIDE LANE IVY GLEN LANE LAKE WAY CHARLES WAY IVY GLEN WAY CRAFTSMAN ROW LOCKHORNE LANE QUINN DRIVE WHITNEY AVENUE SCOTS LANE RIVER WAY WHITNEY AVENUE WHITNEY AVENUE RIDGEVIEW LANE TERRAINE TRAIL BOURN COURT ROCKY WAY

LEGEND

SIDEWALK

PAVED TRAIL

UNPAVED TRAIL

Sheet Number: 24 of 24

Project Number: 15–100–35

Date: MARCH 27, 2026

ARCONA NEIGHBORHOOD 7

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

PEDESTRIAN ACCESS PLAN

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1"=120'

0 60 120 240 360

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal:

TOWNE SQUARE ENGINEERING

313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538

Civil Engineers & Land Planners

info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESSED TWP. ENGR. & CCPD COMMENTS

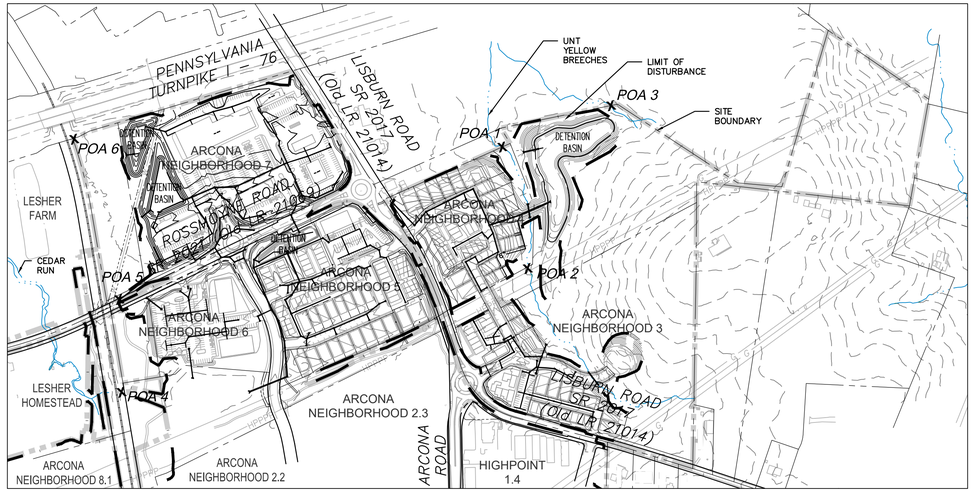
Section Number: LA–3

PRELIMINARY

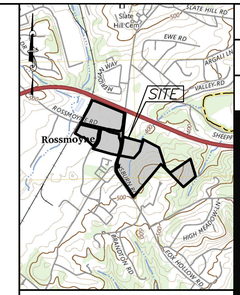
4/29/2026 3:39 PM L:\15-100-35\SHEETS\PRELIM NEIGHBORHOOD 7\24 LA-03.DWG

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

REMAINING ARCONA NEIGHBORHOODS 3, 4, 5, 6, & 7



SCALE: 1" = 300'



LOCATION MAP
SCALE: 1" = 2000'

This site is tributary to Cedar Run and UNT to Yellow Breeches Creek. Cedar Run is classified as Cold Water Fishery, Migratory Fish (CWF, MF). UNT to Yellow Breeches Creek is classified as Cold Water Fishery, Migratory Fish (CWF, MF)

The wetlands adjacent to Cedar Run are classified as Exceptional Value (EV).

Limit of Disturbance = 202.60 Ac.
(38.44 ac. added with this Major Amendment)

NPDES Boundary = 251.13 Ac.
(67.18 ac. added with this Major Amendment)

PLAN INDEX

NO.	SEC.	TITLE
01	SM–1	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN COVER
02	SM–2	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – OVERALL
03	SM–3	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 3.1
04	SM–4	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 3.1 & 4
05	SM–5	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 5
06	SM–6	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 6
07	SM–7	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 7
08	SM–8	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
09	SM–9	POST CONSTRUCTION STORMWATER MANAGEMENT – TRENCH PLANS & DETAILS
10	SM–10	POST CONSTRUCTION STORMWATER MANAGEMENT – TRENCH PLANS & DETAILS
11	SM–11	POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS
12	SM–12	POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS
13	SM–13	POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS
14	SM–14	POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS
15	SM–15	POST CONSTRUCTION STORMWATER MANAGEMENT – SWALE PLAN & PROFILES
16	SM–16	POST CONSTRUCTION STORMWATER MANAGEMENT NOTES
17	RD–1	ROOF DRAIN CONNECTION PLAN – NEIGHBORHOOD 3.1
18	RD–2	ROOF DRAIN CONNECTION PLAN – NEIGHBORHOOD 4
19	RD–3	ROOF DRAIN CONNECTION PLAN – NEIGHBORHOOD 5

Post–Construction Stormwater Control Measures (SCMs) Operation & Maintenance Procedures

Inspections detailed below shall employ a qualified a registered professional to conduct the inspections and prepare reports. The entity conducting the inspection shall be required to submit a report to the Municipality annually. Reports shall be submitted by February 1 for inspections completed the previous year. The report shall document the condition of the facilities and recommend needed repairs. Recommended repairs and other corrective actions shall be implemented by the **Neighborhood Association** within thirty days of the report date.

Bioretention Basins (SCM–1, SCM–9, SCM–10)

The **Neighborhood Association** shall own and maintain SCM–1, SCM–9, and SCM–10, all, Bioretention Basins.

The general objective of maintenance is to prevent clogging of the outlets and to prevent the growth of weeds and invasive vegetation. The basin berm and side should be maintained as upland meadow turf grass. The grass should be mowed regularly to maintain a grass height of 6–8 inches. Any seedlings or plantings should be removed from the basin side slopes and berm.

Sediment tends to accumulate over time. The collected sediment in the bottom of the basin must be removed every five to ten years. Clean accumulated silt, sand, mud, and debris. Remove from the site and dispose of in an appropriate approved facility. Seed and mulch the disturbed areas immediately.

During the first growing season, vegetation should be inspected every 2 to 3 weeks. During the first 2 years, the basin should be inspected at least 4 times per year and after major storms (greater than 2 inches in 24 hours). Inspections should assess the vegetation, erosion, flow channelization, bank stability, inlet/outlet conditions, and sediment/debris accumulation. Problems should be corrected as soon as possible. Vegetation may require support – watering, weeding, mulching, replanting, etc. – during the first 3 years. Undesirable species should be removed and desirable replacements planted if necessary.

The basin should be inspected at least semiannually and after major storms as well as rapid ice breakup. Vegetation should maintain at least an 85 percent cover of the emergent vegetation zone. Harvesting of vegetation may increase the nutrient removal of the facility; it should generally be done in the spring so that there is adequate regrowth before winter. Care should be taken to minimize disturbance, especially of bottom sediments, during harvesting. The potential disturbance from harvesting may outweigh its benefits unless the facility receives a particularly high nutrient load or from discharges to a nutrient sensitive waterbody.

The SCM has failed if water remains ponded in the basin more than 72 hours after the end of a storm. Contact the design engineer for repair solutions if this is observed.

MRC Bioretention Basin (SCM–4)

The **Neighborhood Association** shall own and maintain SCM–4, MRC Bioretention Basin.

The general objective of maintenance is to prevent clogging of the outlets and to prevent the growth of weeds and invasive vegetation. The basin berm and side should be maintained as upland meadow turf grass. The grass should be mowed regularly to maintain a grass height of 6–8 inches. Any seedlings or plantings should be removed from the basin side slopes and berm.

Sediment tends to accumulate over time. The collected sediment in the bottom of the basin must be removed every five to ten years. Clean accumulated silt, sand, mud, and debris. Remove from the site and dispose of in an appropriate approved facility. Seed and mulch the disturbed areas immediately.

During the first growing season, vegetation should be inspected every 2 to 3 weeks. During the first 2 years, the basin should be inspected at least 4 times per year and after major storms (greater than 2 inches in 24 hours). Inspections should assess the vegetation, erosion, flow channelization, bank stability, inlet/outlet conditions, and sediment/debris accumulation. Problems should be corrected as soon as possible. Vegetation may require support – watering, weeding, mulching, replanting, etc. – during the first 3 years. Undesirable species should be removed and desirable replacements planted if necessary.

The basin should be inspected at least semiannually and after major storms as well as rapid ice breakup. Vegetation should maintain at least an 85 percent cover of the emergent vegetation zone. Harvesting of vegetation may increase the nutrient removal of the facility; it should generally be done in the spring so that there is adequate regrowth before winter. Care should be taken to minimize disturbance, especially of bottom sediments, during harvesting. The potential disturbance from harvesting may outweigh its benefits unless the facility receives a particularly high nutrient load or from discharges to a nutrient sensitive waterbody.

Protect underdrain and MRC orifice from clogging. If underdrain is clogged with sediment or debris, remove capped orifice and use cleanout to flush underdrain. MRC orifice cap must be replaced after cleaning.

The SCM has failed if water remains ponded in the basin more than 72 hours after the end of a storm. Contact the design engineer for repair solutions if this is observed.

Infiltration Trenches (SCM–2, SCM–3, SCM–5, SCM–6, SCM–7, SCM–8)

The **Neighborhood Association** shall own and maintain SCM–2, SCM–3, SCM–5, SCM–6, SCM–7, SCM–8, all Infiltration Trenches.

Regular maintenance shall consist of the following:
1. Remove trash, debris, and oil/grease from pretreatment devices and outlet structures (see Snout O&M requirements)
2. Inspect cleanouts, inlets, and other access features for accumulated sediment.

The SCM has failed if water remains ponded in the trench more than 72 hours after the end of a storm. Contact the design engineer for repair solutions if this is observed.

Grass Swales

Grass swales shall be maintained with turf grass. The swales should be mowed regularly to maintain a grass height of 3 to 5 inches. Debris should be removed from the swales. If erosion occurs uphill of the swales, any sediment deposited in the swales should be removed. The eroded areas should be repaired and stabilized with seed and mulch. Apply seed & mulch to disturbed areas of the swales after sediment is removed. Grass swales shall be maintained by the **Neighborhood Association.**

Rip Rap Aprons

The outlet structures should be inspected quarterly and after each major storm. If the soil has eroded around or below the rip rap pad, the area should be repaired with top soil, seed and mulch. Aprons shall be maintained by the **Neighborhood Association.**

Inlet Pretreatment

Inlet Pretreatment shall be maintained by the **Neighborhood Association.**

Sumped inlets with Snouts shall be maintained in accordance with manufacturer recommendations, namely that inlet sumps shall be cleaned of detritus and other materials when the sump is half full. Dispose of all waste in accordance with applicable laws and regulations. Replace Snout in case of breakage.

Inlet filter bags shall be maintained in accordance with manufacturer recommendations, namely that the filter bags shall be cleaned of detritus and other materials when the sediment depth exceeds 12 inches or 50% of the bag's holding capacity, whichever is lesser, or if the bag shows signs of reduced flow capacity or bypass occurs during normal rain events. Dispose of all waste in accordance with applicable laws and regulations. Replace bag if signed of damage are observed.

EQUITABLE OWNER / DEVELOPER (ARCONA NEIGHBORHOOD 3, 4, 5, 6, & 7):

Charter Homes Development Company
322 North Arch Street
Lancaster, PA 17603

OWNER (ARCONA NEIGHBORHOOD 3)

Ruth D. Lesher
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–011
Deed Book and Page: 00184–00353

OWNER (ARCONA NEIGHBORHOOD 4)

Ruth D. Lesher
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–230
Deed Book and Page: 00184–00353

OWNER (ARCONA NEIGHBORHOOD 5)

Ruth D. Lesher (1/2 interest) and
Strong & Detweiler Partnership (1/2 interest)
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–229
Deed Book and Page: 201729508 (Ruth D. Lesher)
Deed Book and Page: 274–1884 (Strong & Detwiler)

OWNER (ARCONA NEIGHBORHOOD 6)

Arcona Commons Properties LP
322 North Arch Street
Lancaster, PA 17603

SOURCE OF TITLE:

Tax Map 13–10–0256–225
Deed Book and Page: 201920512

OWNER (ARCONA NEIGHBORHOOD 7)

Ruth D. Lesher (1/2 interest) and
Strong & Detweiler Partnership (1/2 interest)
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–228
Deed Book and Page: 201729508 (Ruth D. Lesher)
Deed Book and Page: 247–1884 (Strong & Detwiler)

Note:

Arcona Neighborhoods 3, 4 & 5 are all as shown on the Subdivision Plan recorded in PL# 201807345. Neighborhoods 6 & 7 are as shown on PL# 201807345 except where right–of–way was transferred to PennDOT around the Lisburn–Rossmoyne Roundabout, as recorded in Instrument #201903119.

SITE ACREAGE:

ARCONA NEIGHBORHOOD 3 –	GROSS AREA	32.29 Ac.
ARCONA NEIGHBORHOOD 4 –	GROSS AREA	6.12 Ac.
ARCONA NEIGHBORHOOD 5 –	GROSS AREA	8.82 Ac.
ARCONA NEIGHBORHOOD 6 –	GROSS AREA	5.29 Ac.
ARCONA NEIGHBORHOOD 7 –	GROSS AREA	16.50 Ac.
TOTAL	GROSS AREA	69.02 Ac.

SITE DATA:

Highway Occupancy Permit is to be prepared by others and submitted to PENNDOT for approval.

ZONING:

R–2 Single–Family Residential District (TND Overlay)

PROPOSED USE:

44	– Single–Family Detached Lots
88	– Single–Family Attached Units
7	– Mixed Use Residential
139	– Total Residential Units

109,625 S.F. – Commercial

PROPOSED WATER SERVICE:

PUBLIC

PROPOSED SEWER SERVICE:

PUBLIC

SOILS LIMITATIONS & RESOLUTIONS

Symbol	Name	Slope	Limitations	Resolution
DuA	Duffield silt loam	0–3%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation wall or mechanically support
			Piping	Clay liner, water–tight pipe joints
EdB	Edom silty clay loam	3–8%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
			Piping	Clay liner, water–tight pipe joints
HaB	Hagerstown silt loam	3–8%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
HaC	Hagerstown silt loam	8–15%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
HcD	Hagerstown silt loam, rocky	15–25%	Slope	Mechanically support excavation walls and cut slopes
			Dusty	Water dry disturbed areas
			High clay content	Minimize construction in this soil
			Unstable excavation walls	Slope excavation walls or mechanically support
Me	Melvin silt loam	0–2%	Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Flooding	Minimize excavations in lowlands
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
NeB	Neshaminy gravelly silt loam	3–8%	Dusty	Water dry disturbed areas
			Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Unstable excavation walls	Slope excavation walls or mechanically support
NeC	Neshaminy gravelly silt loam	8–15%	Slope	Mechanically support excavation walls and cut slopes
			Dusty	Water dry disturbed areas
			Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Unstable excavation walls	Slope excavation walls or mechanically support

NPDES NARRATIVE

Charter Homes proposes to develop the remainder of the Arcona TND, (Neighborhoods 3.1, 4, 5, 6, and 7) into residential and commercial uses. The land is currently a mix of agriculture, open space, and forest.
The development will be served by public sewer and water.

Remaining Arcona Neighborhoods is a part of the master plan for a traditional neighborhood development (TND) of the Arcona Site. Stormwater management for the development will be provided by onsite SCMs.

ESTIMATED SCHEDULE FOR PROJECT

Work Schedule:

- Start of Site Work: Q2 2026
- Site Work Complete: Q4 2026
- Home Construction: Q4 2026 – Q4 2029

RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES

1. The operator shall remove from the site, recycle, or dispose of all building materials and wastes 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., and any federal regulations. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.
2. Any sediment removed from the area of the PCSM BMP shall be placed in a location on–site and immediately stabilized to minimize the potential for accelerated erosion.
3. The contractor shall be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved and fully implemented erosion and sediment control plan that meets the conditions of Chapter 102 and/or other state or federal regulations.
4. 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.

DESIGN CONSIDERATIONS

The time and extent of earth disturbance will be limited.

- Earth disturbance, topsoil stripping, and compaction will be limited on portions of the site. These areas will be marked with orange construction fence as a visible reminder of the areas to be preserved.

The remaining Arcona Neighborhoods plan protects existing drainage features and vegetation.

- The existing drainageway/wetlands that run through the site will be fenced to prevent disturbance.

The plans minimize soil compaction by:

- Leaving steep slopes undisturbed.

The plans minimize generation of increased stormwater runoff by:

- Use streets with the minimum width permitted by Lower Allen Township.

THERMAL IMPACTS

Most of the Arcona Neighborhoods 3 and 4 area will drain into the bioretention basin SCM–1 via a stormwater conveyance system. The basin will contain the warmer first flush runoff from the site. The warmer first flush will either be evaporated, transpirated, or infiltrated through the soil media and vegetation. Other areas in the development will drain to either infiltration trenches or bioretention basin to be cooled underground or be evapotranspirated and infiltrated prior to reaches surface waters.

PCSM SCMs:

The following PCSM SCMs will maintain water flow rate, volume, and water quality for Arcona Remaining Neighborhoods:
- Rate, Volume, and Water Quality will be managed by SCM–1, SCM–9, and SCM–10, bioretention basins.
- Volume and Water Quality will be managed by SCM–4, a MRC bioretention basin.
- Rate, Volume, and Water Quality will be managed by SCM–2, SCM–3, SCM–5, SCM–6, SCM–7, and SCM–8, infiltration trenches.

PCSM NOTES:

1. Stormwater Management site plans approved by the municipality shall be onsite throughout the duration of the regulated activity.
2. No person shall modify, remove, fill, landscape, or alter any stormwater management BMPs, facilities, areas, structures, or easements that were installed/approved as a requirement of the Lower Allen Township ordinance without the written approval of the municipality.
3. Ownership and maintenance of all stormwater conveyance and management facilities shall be the responsibility of the Neighborhood Association. Maintenance shall include, but not be limited to normal maintenance as well as repair of structural damage or deterioration of any kind, including that caused by sinkholes, erosions or other events. The responsible parties shall maintain the storm sewers, swales, and all other stormwater facilities in design condition and free of fill or other obstructions. Maintenance shall include, but not be limited to normal maintenance as well as repair of structural damage or deterioration of any kind, including that caused by sinkholes, erosions or other events.
4. A qualified registered professional shall be engaged by the Neighborhood Association to inspect stormwater management facilities according to the frequency specified in the Operations & Maintenance Agreement and provide inspection reports to the Township.
5. The officials of Lower Allen Township shall have the right, but not the duty of access at any time to inspect and maintain the facilities at the property owner's expense, if the owner should fail to properly maintain the facilities.
6. All drainage structures (including inlets, storm manholes, endwalls, etc.) proposed for dedication or located within a street section shall be capable of handling an HS–25 loading. All storm sewer pipes, culverts, manholes, inlets, endwalls, and end sections shall be constructed in accordance with the specifications set forth in the Pennsylvania department of Transportation (PENNDOT) Publication 408, as amended, and shall conform to the requirements of the PENNDOT, Bureau of Design, Standards for Roadway Construction (RC), Publication No. 72.
7. All storm water piping must have watertight joints. All connections between piping and inlets, manholes, headwalls and endwalls must be watertight.
8. If any carbonate geology features, including but not limited to, sinkholes, closed depressions and/or bedrock pinnacles are encountered during construction activities, a Pennsylvania licensed Professional Geologist and/or geotechnical engineer as well as the Township must be notified.
9. A licensed professional engineer shall be present at the critical stages noted in the sequence of construction.
10. As–built plans for the stormwater control measures (SCMs) shall be provided within six months following completion of each phase. The as–built plans shall be signed and sealed by a PA registered professional engineer, verifying that that all permanent BMP has been constructed according to the approved plans and specifications.
11. A Notice of Termination (NOT) will be required to be submitted following approval of the final as–built plans. Prior to accepting the NOT, the Department and/or Conservation District staff will perform a final inspection to ensure site stabilization and verify adequate installation and function of the SCMs.
12. Sediment cleaned from bioretention basins shall be disposed of in approved off–site disposal areas or may be spread in on–site upland meadow areas and stabilized immediately with seed and mulch.
13. All manhole frames and covers are required to meet PennDOT standards.
14. All lots shall connect roof downspouts such that they convey all roof runoff to the storm sewer system or SCMs as indicated on the watershed map and PCSM plan.

Sheet Number: 01 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN COVER

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 300'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

NO.	DATE	REVISIONS
1	1/19/26	REVISED FOR CHAN CHANGES
2	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

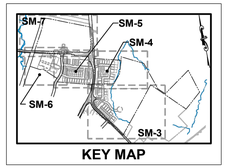
Seal: G. MITCHELL KING, ENGINEER, No. PE088183, COMMONWEALTH OF PENNSYLVANIA, PROFESSIONAL ENGINEER, 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283–4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM–1

L:\15–100–35\SHEETS\PRELIM–FINAL – SWM–ESY01 SM–01.DWG
4/29/2026 3:52 PM

PRELIMINARY / FINAL



KEY MAP

NOTE:

SEE LEGEND ON SHEET SM-3

Sheet Number: 02 of 33

Project Number: 15-100-35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – OVERALL

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Scale: 1" = 100'

0 50 100 200 300

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING 4/29/26

TOWNE SQUARE ENGINEERING

313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538

Civil Engineers & Land Planners

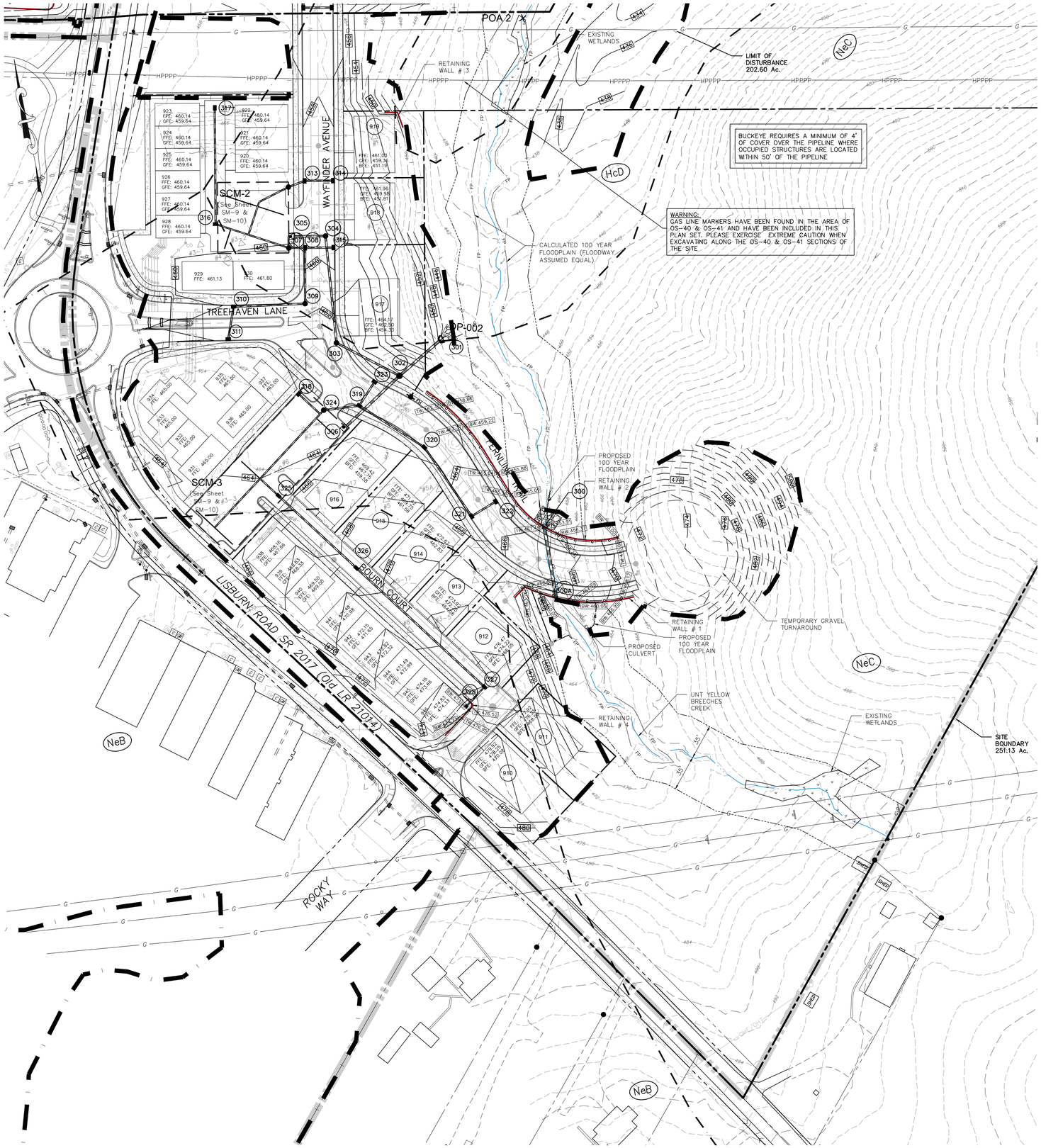
info@townesquareengineering.com

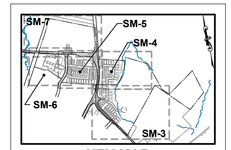
DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number: SM-2

4/29/2026 3:52 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\02 SM-02.DWG

PRELIMINARY / FINAL





KEY MAP

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	RIGHT-OF-WAY LINE	
	EASEMENT LINE	
	ROADWAY CENTERLINE	
	CURB LINE	
	EDGE OF PAVEMENT	
	EDGE OF STONE	
	MIN. BLDG SETBACK LINE	
S	SANITARY SEWER LINE	S
	SANITARY FORCE MAIN	
OHT	WATER LINE	W
G	GAS LINE	G
OH	OVERHEAD UTILITIES	OH
OHE	OVERHEAD ELECTRIC	OHE
UE	UNDERGROUND ELECTRIC	UE
OHT	OVERHEAD TELEPHONE	OHT
UT	UNDERGROUND TELEPHONE	UT
X X X	FENCE	X X X X
560	INDEX CONTOUR	560
558	INTERMEDIATE CONTOUR	558
X.391.25	SPOT ELEVATION	x 392.15
	STORM INLET & PIPING	
	GUIDE RAIL	
	TREELINE	
	RAILROAD	
	EDGE OF WATER (STREAM)	
	SOILS LINE	
	ZONING LINE	
	MmunicipALITY LINE	
△	SOIL TEST	
	DECIDUOUS TREE	Ag
	CONIFEROUS TREE	Pv
	PROPERTY CORNER MARKER FOUND	
	CONC. MONUMENT SET	
	PIN	
	ANGLE BREAK, PC/PT	
	EASEMENT CORNER	
LP	UTILITY POLE	LP
	LIGHT POLE	
	LIGHT	
WELL	WELL	WELL
WSO	WATER SHUT-OFF VALVE (SERVICE)	WSO
WV	WATER VALVE (MAIN)	WV
FH	FIRE HYDRANT	FH
GSO	GAS SHUT-OFF VALVE (SERVICE)	GSO
GV	GAS VALVE (MAIN)	GV
SV	SEWER VENT	SV
SCO	SEWER CLEAN OUT	CO
E	ELECTRIC MANHOLE	
D	STORM MANHOLE	
S	SANITARY MANHOLE	
T	TELEPHONE MANHOLE	
	SIGN	
MB	MAIL BOX	
	DEEP PROBE	
	PERCOLATION TEST HOLE	
P-B-4 P-B-5	WETLANDS	

PHASE 3.1 INFILTRATION TESTING INFORMATION

#1
Ex. Grade = 455.4
LZ Elev. 448.2
(bedrock)

#2
Ex. Grade = 461.2
LZ Elev. 461.2
(bedrock)

#3
Ex. Grade = 458.6
Measured Rate = 1.92 & 9.36 in/hr
Test Elev. 458.1
Probed to 449.5 (LZ not encountered)

#3-1
Ex. Grade = 460.0
LZ Elev. 454.0
(bedrock)

#3-2
Ex. Grade = 458.6
LZ Elev. 449.0
(compact fill)

#3-3
Ex. Grade = 465.8
Measured Rate = 0.48 & 0.0 in/hr
Test Elev. 458.0
Probed to 456.1 (LZ not encountered)

#3-4
Ex. Grade = 462.2
Measured Rate = 5.04 & 8.64 in/hr
Test Elev. 456.3
Probed to 454.4 (LZ not encountered)

#3-5
Ex. Grade = 466.8
LZ Elev. 459.0
(bedrock)

#3-6
Ex. Grade = 464.9
LZ Elev. 456.6
(bedrock)

#4
Ex. Grade = 460.2
Measured Rate = 1.92 & 5.76 in/hr
Test Elev. 459.8
LZ Elev. 452.3 (bedrock)

#5
Ex. Grade = 465.4
LZ Elev. 463.5
(bedrock)

#5A
Ex. Grade = 463.5
LZ Elev. 463.5
(bedrock)

#6
Ex. Grade = 464.1
Measured Rate = 0.0 & 0.48 in/hr
Test Elev. 463.5
Probed to 455.1 (LZ not encountered)

#7
Ex. Grade = 465.3
Measured Rate = 0.48 & 1.44 in/hr
Test Elev. 464.5
Probed to 460.8 (LZ not encountered)

#8
Ex. Grade = 466.6
LZ Elev. 463.9
(groundwater)

#3-17
Ex. Grade = 456.2
LZ Elev. 446.0
(bedrock)

#4-17
Ex. Grade = 463.8
LZ Elev. 455.0
(bedrock)

#5-17
Ex. Grade = 466.0
LZ Elev. 457.0
(bedrock)

Sheet Number: 03 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 3.1

Drafting: D TURNER
Checked by: K. POSTLETHWAIT
Scale: 1" = 50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — G. MITCHELL KING — No. PE039181 — 4/29/26

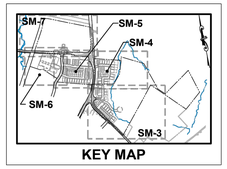
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

Section Number: SM-3

4/29/2026 3:57 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\03 SM-03.DWG

PRELIMINARY / FINAL



KEY MAP

PHASE 4 INFILTRATION TESTING INFORMATION

#1–17
Ex. Grade = 432.1
Measured Rate = 0.0 in/hr
Test Elev. 426.0
LZ Elev. 422.0 (bedrock)

#2–17
Ex. Grade = 433.7
Measured Rate = 3.6 in/hr
Test Elev. 427.0
LZ Elev. 425.0 (groundwater)

#4–1
Ex. Grade = 426.7
Measured Rate = 2.88 & 5.76 in/hr
Test Elev. 424.0
LZ Elev. 424 (bedrock)

#4–2
Ex. Grade = 436.7
LZ Elev. 430.5 (bedrock)

#4–3
Ex. Grade = 437.8
Measured Rate = 0.96 & 1.68 in/hr
Test Elev. 434.0
LZ Elev. 432.0 (bedrock)

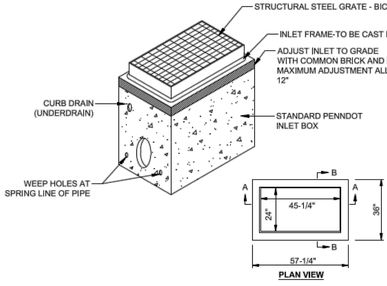
#4–4
Ex. Grade = 427.8
Measured Rate = 7.2 & 1.44 in/hr
Test Elev. 424.0
Probed to 421.8 (LZ not encountered)

#4–5
Ex. Grade = 428.2
Measured Rate = 0.96 & 0.24 in/hr
Test Elev. 424.0
Probed to 422.2 (LZ not encountered)

#4–6
Ex. Grade = 427.1
Measured Rate = 0.0 & 0.24 in/hr
Test Elev. 431.0
Probed to 422.1 (LZ not encountered)

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS–40 & OS–41 AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS–40 & OS–41 SECTIONS OF THE SITE

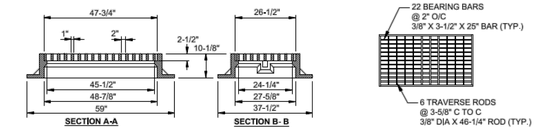
BUCKEYE REQUIRES A MINIMUM OF 4' OF COVER OVER THE PIPELINE WHERE OCCUPIED STRUCTURES ARE LOCATED WITHIN 50' OF THE PIPELINE



PLAN VIEW

NOTES:

1. WEEP HOLES ARE REQUIRED.
2. ALL INLETS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATIONS 408 AND 72 FOR PRECAST AND POURED IN PLACE INLETS.
3. CONCRETE INVERTS TO BE POURED TO MAKE INLETS SELF CLEANING. REFER TO PRECAST CONCRETE MANHOLE DETAIL FOR ADDITIONAL INFORMATION.
4. ALL GRATES SHALL BE BICYCLE SAFE.
5. ALL INLETS 5' OR DEEPER SHALL HAVE STEPS: #4, GRADE 60 DEFORMED REINFORCING BAR ENCASED IN A POLYPROPYLENE COPOLYMER PLASTIC WITH A TREAD WIDTH OF FOURTEEN (14"0 INCHES. STEPS SHALL BE MA INDUSTRIES NO. P52-PF (OR APPROVED EQUAL).
6. ALL MATERIALS SHALL BE PROVIDED BY PRODUCTS LISTED ON PENNDOT BULLETIN 15 (PUBLICATION 35).



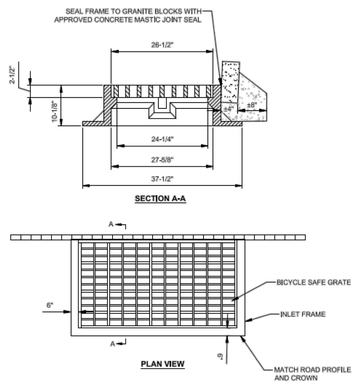
SECTION A-A | SECTION B- B

4-FLANGE GUTTER INLET FRAME (NEENAH R-3572-A)

STRUCTURAL STEEL GRATE - BICYCLE SAFE

NOTE:
1. EJ 5356 "TYPE M" WILL BE CONSIDERED AS EQUAL

B SM–4 TYPE M INLET (ALTERNATE)
NOT TO SCALE

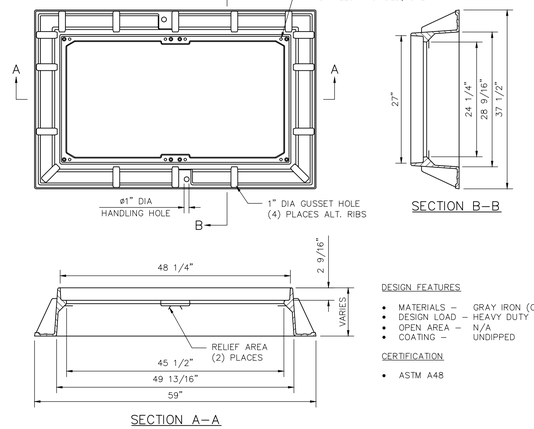


SECTION A-A

PLAN VIEW

NOTES:
1. TYPE C (ALTERNATE) TOP TO BE USED IN AREAS OF STREET & PARKING LOT WITH GRANITE CURB.
2. GRATE SHALL BE SUMPED 2 INCHES BELOW GUTTER LINE

C SM–4 TYPE C INLET (ALTERNATE)
NOT TO SCALE



SECTION B–B

SECTION A–A

DESIGN FEATURES

- MATERIALS – GRAY IRON (CL35B)
- DESIGN LOAD – HEAVY DUTY
- OPEN AREA – N/A
- COATING – UNDIPPED

CERTIFICATION

- ASTM A48

A SM–4 TYPE M FRAME - ALTERNATE
NOT TO SCALE EJ Co. 5357ZPT FRAME OR APPROVED EQUAL

PRELIMINARY / FINAL

Sheet Number: 04 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN – NEIGHBORHOOD 3.1 & 4

Drafting: D TURNER | Checked by: K POSTLETHWAIT | Scale: 1" = 50'
Project Manager: DAVID B. KEGERIZE PE | Project Engineer: G. MITCHELL KING PE, PLS | Project Surveyor: THOMAS K. PHILLIPS PLS

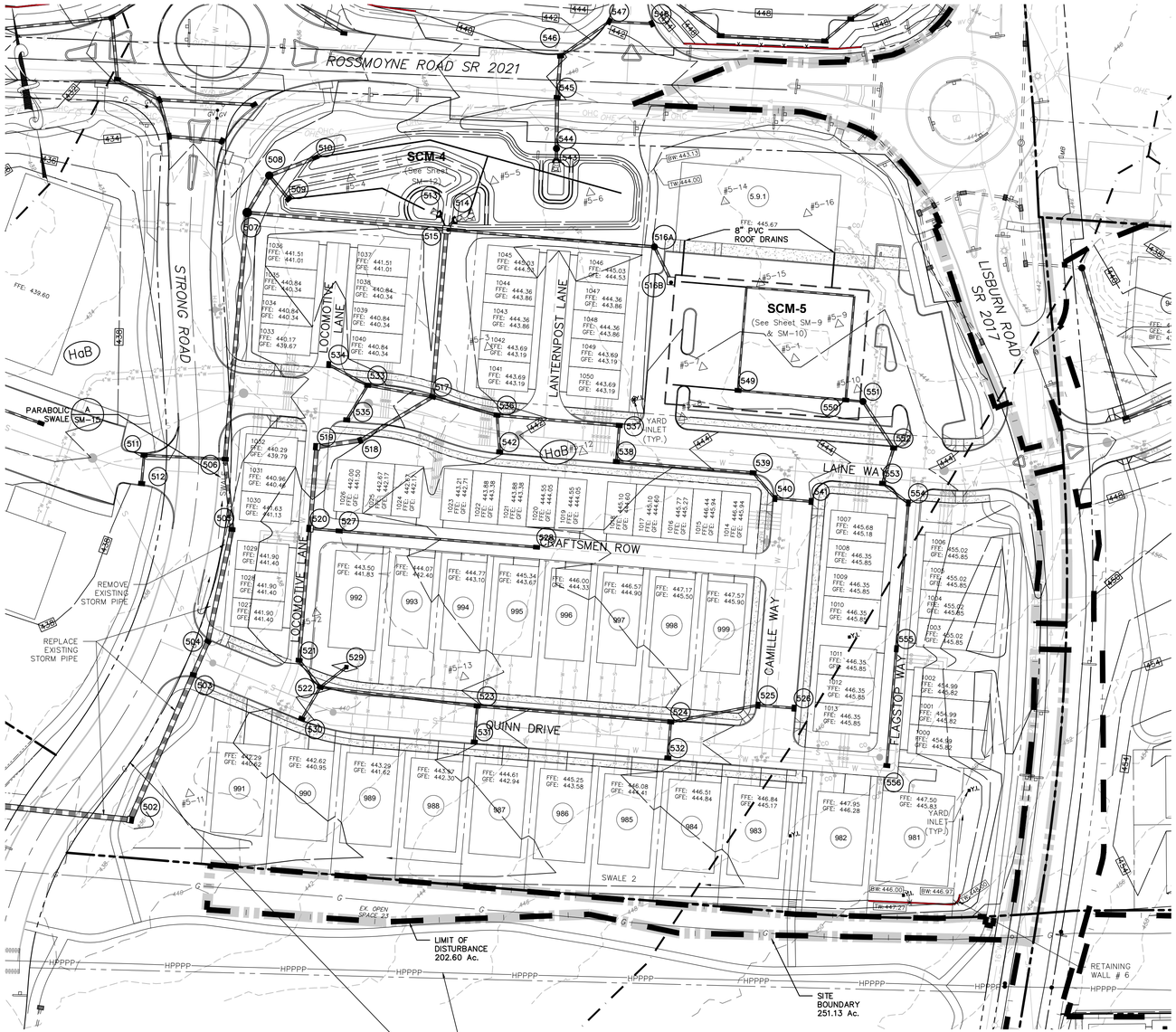
Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088162 4/29/26

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

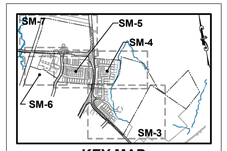
Section Number: SM–4

L:\15–100–35\SHEETS\PRELIM–FINAL – SWM–ES\04 SM–04.DWG
4/29/2026 3:55 PM



BUCKEYE REQUIRES A MINIMUM OF 4' OF COVER OVER THE PIPELINE WHERE OCCUPIED STRUCTURES ARE LOCATED WITHIN 50' OF THE PIPELINE

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-23 AND ALONG THE SHOULDER OF STRONG ROAD AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-23 AND ALONG THE SHOULDER OF STRONG ROAD SECTIONS OF THE SITE



KEY MAP

PHASE 5 INFILTRATION TESTING INFORMATION

#5-1
Ex. Grade = 444.4
Measured Rate = 1.68 & 0.96 in/hr
Test Elev. 442.6
LZ Elev. 440.5 (bedrock)

#5-2
Ex. Grade = 438.6
Measured Rate = 0.0 & 0.0 in/hr
Test Elev. 436.2
LZ Elev. 434.5 (bedrock)

#5-3
Ex. Grade = 440.7
Measured Rate = 0.24 & 0.24 in/hr
Test Elev. 435.8
Probed to 434.7 (LZ not encountered)

#5-4
Ex. Grade = 439.3
LZ Elev. 434.6 (bedrock)

#5-5
Ex. Grade = 440.9
LZ Elev. 437.9 (bedrock)

#5-6
Ex. Grade = 442.0
LZ Elev. 438.8 (bedrock)

#5-7
Ex. Grade = 443.4
Measured Rate = 3.12 & 0.24 in/hr
Test Elev. 439.0
Probed to 437.8 (LZ not encountered)

#5-8
Ex. Grade = 443.3
Measured Rate = 2.64 & 1.44 in/hr
Test Elev. 439.0
Probed to 438.1 (LZ not encountered)

#5-9
Ex. Grade = 444.1
LZ Elev. 438.9 (bedrock)

#5-10
Ex. Grade = 444.5
LZ Elev. 443.2 (bedrock)

#5-11
Ex. Grade = 439.3
Measured Rate = 0.0 & 0.24 in/hr
Test Elev. 434.5
LZ Elev. 432.5 (bedrock)

#5-12
Ex. Grade = 440.9
Measured Rate = 0.0 & 0.0 in/hr
Test Elev. 439.0
Probed to 437.4 (LZ not encountered)

#5-13
Ex. Grade = 441.2
Measured Rate = 0.24 & 0.96 in/hr
Test Elev. 440.5
LZ Elev. 439.0 (bedrock)

#5-14
Ex. Grade = 444.0
Measured Rate = 7.20 & 5.04 in/hr
Test Elev. 441.8
LZ Elev. 439.8 (bedrock)

#5-15
Ex. Grade = 444.0
Measured Rate = 1.44 & 10.80 in/hr
Test Elev. 441.8
LZ Elev. 440.0 (bedrock)

#5-16
Ex. Grade = 444.5
Measured Rate = 1.44 & 5.76 in/hr
Test Elev. 441.8
LZ Elev. 440.9 (bedrock)

Sheet Number: 05 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 5

Drafting: D. TURNER
Checked by: K. POSTLETHWAIT
Scale: 1" = 50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 083933

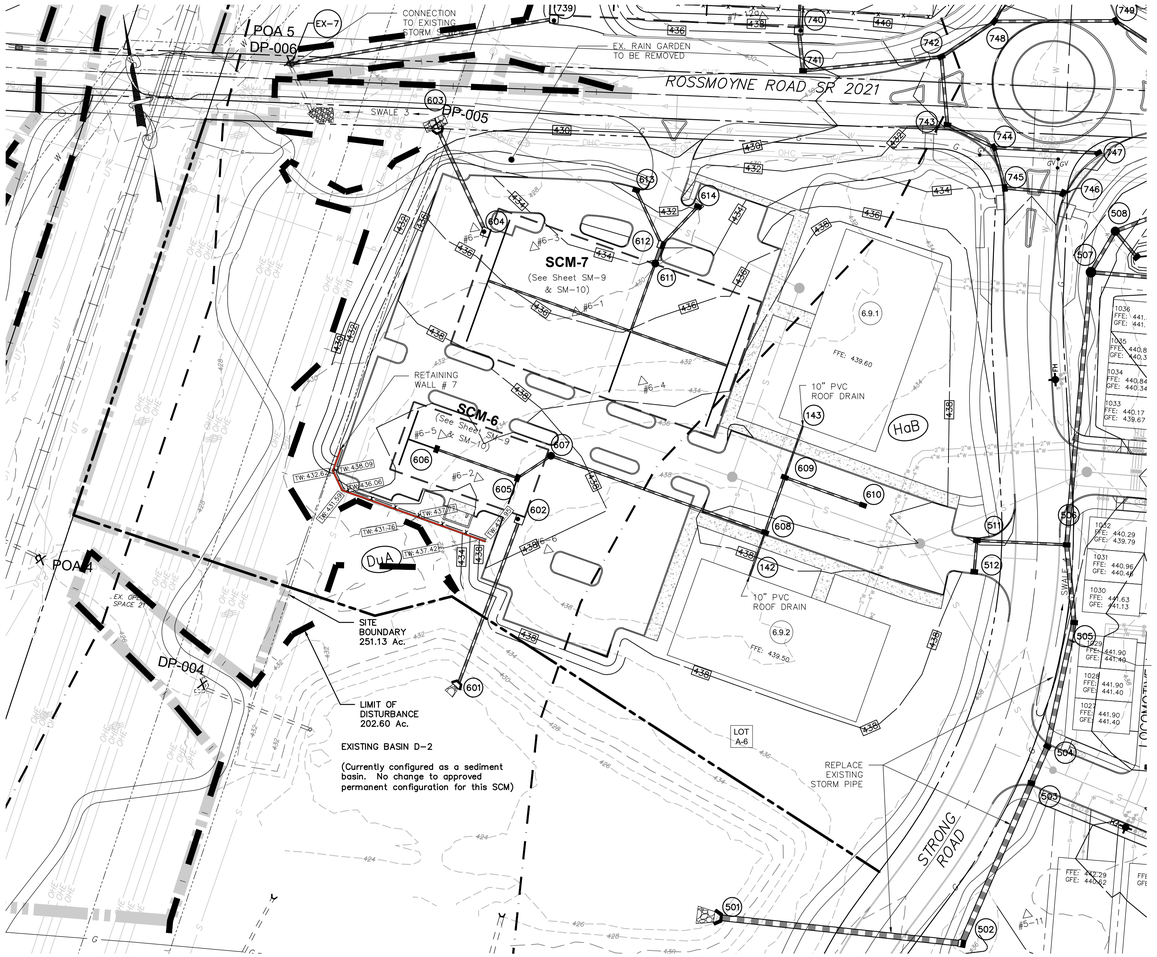
TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

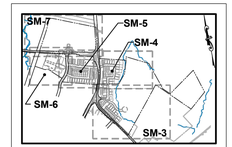
DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number: SM-5

PRELIMINARY / FINAL

4/29/2026 3:56 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\05 SM-05.DWG





KEY MAP

PHASE 6 INFILTRATION TESTING INFORMATION

#6-1
Ex. Grade = 430.0
Measured Rate = 0.24 & 3.36 in/hr
Test Elev. 428.6
Probed to 426.0 (LZ not encountered)

#6-2
Ex. Grade = 435.0
Measured Rate = 7.92 & 7.2 in/hr
Test Elev. 433.5
LZ Elev. 431.5 (bedrock)

#6-3
Ex. Grade = 429.5
Measured Rate = 0.0 & 0.0 in/hr
Test Elev. 427.0
Probed to 425.50 (LZ not encountered)

#6-4
Ex. Grade = 433.3
LZ Elev. 431.0 (bedrock)

#6-5
Ex. Grade = 433.3
Measured Rate = 0.0 & 0.0 in/hr
Test Elev. 427.0
LZ Elev. 425 (bedrock)

#6-6
Ex. Grade = 438.9
LZ Elev. 435.5 (bedrock)

#6-7
Ex. Grade = 429.3
Measured Rate = 1.2 & 0.96 in/hr
Test Elev. 428.0
Probed to 426.5 (LZ not encountered)

Sheet Number: 06 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 6

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING 4/29/26

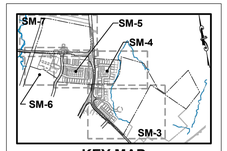
DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
-	-
-	-

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM-6

4/29/2026 3:55 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\06 SM-06.DWG

PRELIMINARY / FINAL



KEY MAP

PHASE 7 INFILTRATION TESTING INFORMATION

#7-1
Ex. Grade = 431.4
Measured Rate = 1.44 & 2.16 in/hr
Test Elev. 429.0
Probed to 427.4 (LZ not encountered)

#7-2
Ex. Grade = 438.6
Measured Rate = 0.96 & 0.72 in/hr
Test Elev. 437.4
LZ Elev. 435.5 (bedrock)

#7-3
Ex. Grade = 440.0
Measured Rate = 0.72 & 0.96 in/hr
Test Elev. 436.8
Probed to 436.0 (LZ not encountered)

#7-4
Ex. Grade = 440.0
Measured Rate = 21.6 & 3.6 in/hr
Test Elev. 437.9
Probed to 436.0 (LZ not encountered)

#7-5
Ex. Grade = 447.4
Measured Rate = 1.92 & 1.44 in/hr
Test Elev. 445.0
Probed to 443.4 (LZ not encountered)

#7-6
Ex. Grade = 443.9
Measured Rate = 0.96 & 0.48 in/hr
Test Elev. 441.7
LZ Elev. 439.5 (bedrock)

#7-7
Ex. Grade = 437.3
Measured Rate = 1.44 & 5.04 in/hr
Test Elev. 431.0
LZ Elev. 429.0 (bedrock)

#7-8
Ex. Grade = 438.3
Measured Rate = 0.72 & 0.24 in/hr
Test Elev. 431.0
LZ Elev. 429.0 (bedrock)

#7-9
Ex. Grade = 439.5
Measured Rate = 18.0 & 5.76 in/hr
Test Elev. 431.0
Probed to 429.5 (LZ not encountered)

#7-10
Ex. Grade = 438.4
Measured Rate = 1.2 & 7.2 in/hr
Test Elev. 433.0
LZ Elev. 431.0 (bedrock)

#7-11
Ex. Grade = 441.3
Measured Rate = 7.92 & 4.32 in/hr
Test Elev. 433.0
Probed to 431.3 (LZ not encountered)

#7-12B
Ex. Grade = 431.8
Measured Rate = 0.24 & 0.72 in/hr
Test Elev. 426.5
LZ Elev. 425.5 (bedrock)

#7-12A
Ex. Grade = 430.8
Measured Rate = 0.0 & 5.04 in/hr
Test Elev. 426.0
LZ Elev. 425.0 (bedrock)

Sheet Number: 07 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - NEIGHBORHOOD 7

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
0 25 50 100 150

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE084153

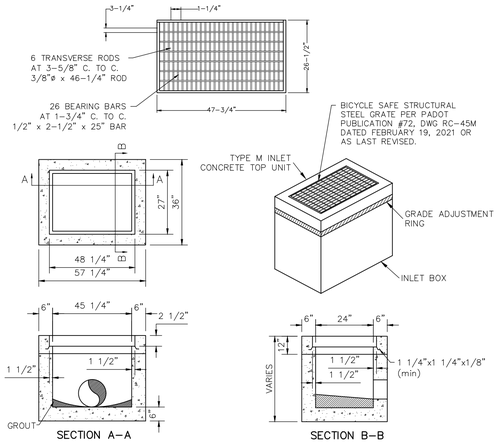
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

	DATE	REVISIONS
1	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
2	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
3	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
4	1/19/26	REVISED FOR CH&N CHANGES

Section Number: SM-7

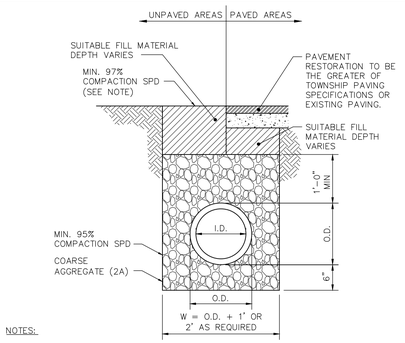
4/29/2026 3:56 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SMM-ES\07 SM-07.DWG

PRELIMINARY / FINAL



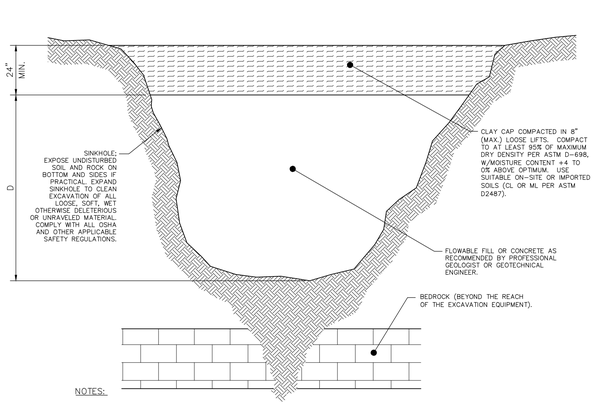
NOTES:
1. CERTIFY THAT STRUCTURAL STEEL BICYCLE SAFE GRATE MEETS OR EXCEEDS HS-25 LOADING REQUIREMENTS.
2. MINIMUM COVER OF 12" FROM SUBGRADE TO CROWN OF PIPE.
3. INLETS, PRECAST OR POURED IN PLACE, SHALL USE 4000 PSI COMPRESSIVE STRENGTH CONCRETE.
4. POURED IN PLACE CONCRETE INLET BASE SECTION SHALL BE SEPARATE FROM POUR FROM HOOD SECTION INLET POUR.
5. STEPS ARE REQUIRED IN ALL INLETS GREATER THAN 5' DEEP.

A SM-8 **2'x4' TYPE M INLET WITH BICYCLE SAFE GRATE**
NOT TO SCALE



NOTES:
1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH PADOT PUB. #RC-30M STANDARDS FOR SUBSURFACE DRAINS, PIPE PLACEMENT, EXCAVATION - BEDDING - BACKFILL.
2. PLACE 2A COARSE AGGREGATE MATERIAL, IN LIFTS 4" THICK, ADJACENT TO THE LOWER HAUNCHES TO A HEIGHT OF 12" ABOVE THE TOP OF THE PIPE. COMPACT TO 95% SPD. TEST BACKFILL MATERIAL AND CONTINUE EMBANKMENT IN ACCORDANCE WITH PUB. 408, SECTION 601.
3. COMPACT TOP 3'-0" OF SUBGRADE TO 100% IN ACCORDANCE WITH PUB 408, SECTION 206.3.
4. SUITABLE FILL MATERIAL = MATERIAL CONTAINING NO DEBRIS, ORGANIC MATTER, FROZEN MATERIAL OR LARGE STONES WITH A DIAMETER GREATER THAN ONE-HALF THE THICKNESS OF THE COMPACTED LAYERS BEING PLACED.
5. SPD = STANDARD PROCTOR DENSITY.

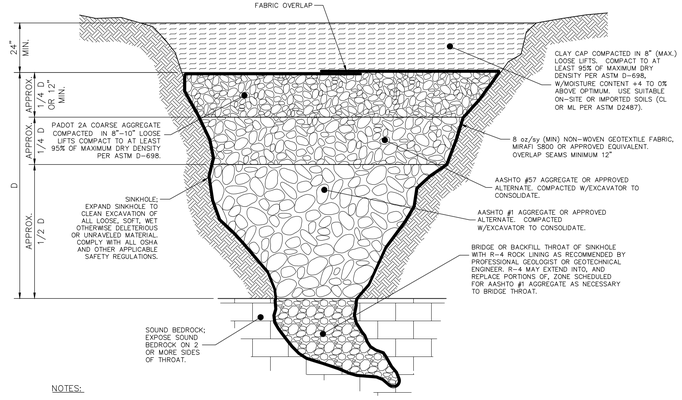
D SM-8 **STORM SEWER TRENCH DETAIL**
NOT TO SCALE



NOTES:

DO NOT USE INVERTED FILTER TREATMENT IF SOUND ROCK IS NOT EXPOSED AT THE BASE OF THE TREATMENT. Actual repair method should be refined and implemented by contractor based on actual sinkhole size, configuration and location. All sinkhole mitigation measures should be performed in accordance with the guidance of a representative of a PA-Licensed professional geologist or geotechnical engineer during implementation.

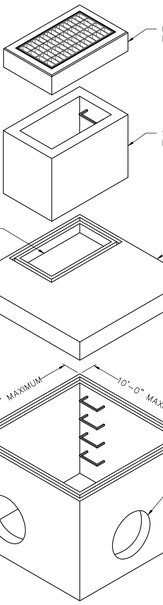
G SM-8 FLOWABLE FILL TREATMENT DETAIL - NO ROCK ENCOUNTERED
NOT TO SCALE



NOTES:

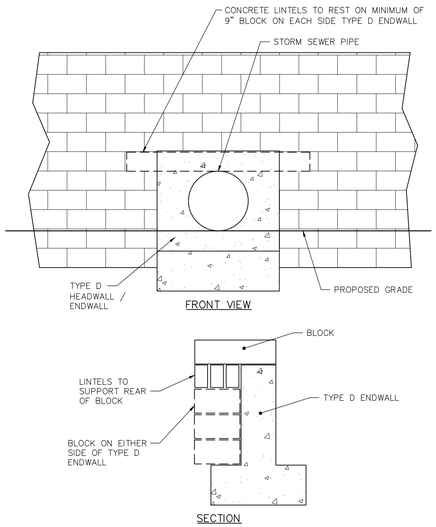
DO NOT USE INVERTED FILTER TREATMENT IF SOUND ROCK IS NOT ENCOUNTERED AT THE BASE OF THE TREATMENT. Actual repair method should be refined and implemented by contractor based on actual sinkhole size, configuration and location. All sinkhole mitigation measures should be performed in accordance with the guidance of a representative of a PA-Licensed professional geologist or geotechnical engineer during implementation. Throat should not be filled with cement if opening should be maintained to continue to convey water movement.

H SM-8 SINK HOLE TREATMENT DETAIL - ROCK ENCOUNTERED
NOT TO SCALE

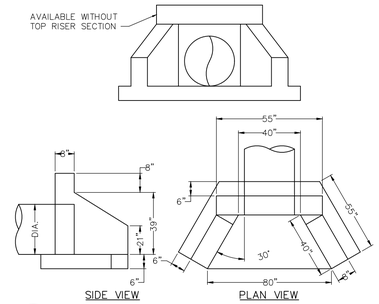


PENNDOT TYPE 4 THRU TYPE 10 INLET BOX (RC-45M & RC-46-M)

J SM-8 NOT TO SCALE

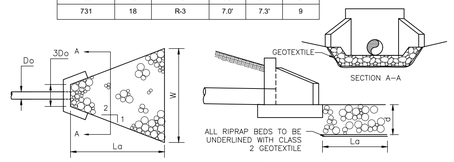


L SM-8 TYPE D ENDWALL - BLOCK WALL CONNECTION
NOT TO SCALE



O SM-8 D-W ENDWALL DETAIL - MAX. PIPE SIZE 36 IN.
NOT TO SCALE

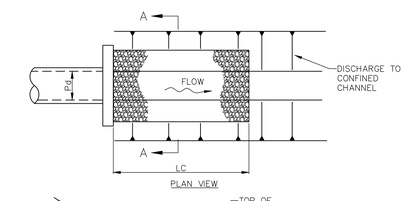
STRUCTURE	Do	RIPRAP SIZE	La	W	d
301	24	R-3	12.0'	18.0'	9
401	36	R-4	20.0'	29.0'	18
405	30	R-4	12.0'	12.3'	18
501	42	R-3	15.0'	16.5'	9
513	8	R-4	5.0'	4.0'	18
514	15	R-4	14.0'	9.4'	18
543	18	R-3	8.0'	7.7'	9
601	18	R-4	7.0'	7.3'	18
701	24	R-3	12.0'	18.0'	9
703	18	R-3	8.0'	12.5'	9
705	36	R-3	13.0'	14.2'	9
730	15	R-3	6.0'	6.2'	9
731	18	R-3	7.0'	7.3'	9



GRADATION OF RIPRAP				
	MAX.	AVG.	MIN.*	DEPTH
R-3	6"	3"	2"	9"
R-4	12"	6"	3"	18"
R-5	18"	9"	5"	27"
R-6	24"	12"	7"	36"

* PIECES SMALLER THAN THE MIN. SIZE SHALL NOT EXCEED 15% OF THE TONNAGE SHIPPED

N SM-8 **RIP-RAP APRON**
NOT TO SCALE



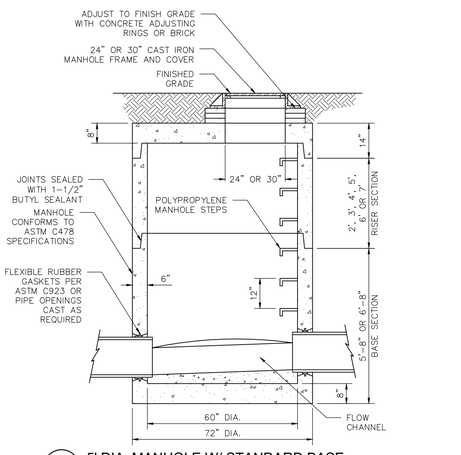
OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE (R-_)	RIPRAP THICK. Rt (IN)	APRON LENGTH LC (FT)	APRON INITIAL BOTTOM WIDTH (at Endwall)(FT)	APRON END WIDTH (FT)	APRON INITIAL TOP WIDTH (at Endwall)(FT)	APRON END TOP WIDTH (FT)	APRON SIDE SLOPES H:V
300	30	R-6	36	16.0'	7.5	7.5	22.16	22.16	6.32
403	30	R-6	36	20.0'	7.5	7.5	19.94	19.94	4.38
603	24	R-3	9	7.0'	7.0	7	16	16	4.86

NOTES:

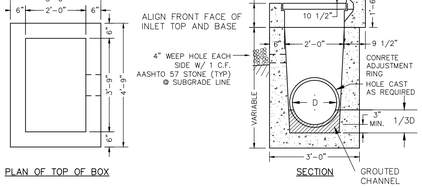
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

K SM-8 RIPRAP APRON AT PIPE OUTLET TO AN EXISTING CHANNEL - # 9-3
NOT TO SCALE

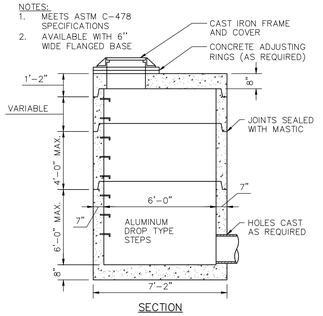


E SM-8 5' DIA. MANHOLE W/ STANDARD BASE
NOT TO SCALE

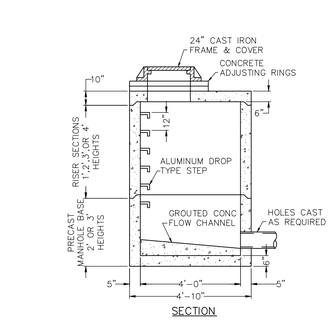


NOTES:
1. PLACE 3/4" PREMOLDED EXPANSION JOINT FILLER MATERIAL AT ABUTTING CURBS.
2. CERTIFY THAT STRUCTURAL STEEL BICYCLE SAFE GRATE MEETS OR EXCEEDS HS-25 LOADING REQUIREMENTS.
3. MINIMUM COVER OF 12" FROM SUBGRADE TO CROWN OF PIPE.
4. INLETS, PRECAST OR POURED IN PLACE, SHALL USE 4000 PSI COMPRESSIVE STRENGTH CONCRETE.
5. POURED IN PLACE CONCRETE INLET BASE SECTION SHALL BE SEPARATE FROM POUR FROM HOOD SECTION INLET POUR.
6. MATERIALS, EQUIPMENT AND METHODS SHALL CONFORM TO LOWER ALLEN TOWNSHIP STREET CONSTRUCTION SPECIFICATIONS AND PENNDOT FORM 408, AS REVISED.
7. MODIFIED TYPE C INLET TOP (15" MINIMUM HEIGHT FOR USE WITH ROLLED CURB.
8. STEPS ARE REQUIRED IN ALL INLETS GREATER THAN 5' DEEP.

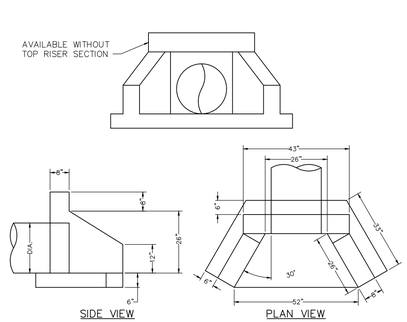
B SM-8 **TYPE C INLET WITH BICYCLE SAFE GRATE**
NOT TO SCALE



C SM-8 6 FOOT PRECAST MANHOLE
NOT TO SCALE



F SM-8 4 FOOT PRECAST MANHOLE
NOT TO SCALE



M SM-8 D-W ENDWALL DETAIL - MAX. PIPE SIZE 21 IN.
NOT TO SCALE

Sheet Number: 08 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

Drafting: D TURNER
Checked by: K. POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: AS NOTED

DATE	REVISIONS
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 083913 4/29/26

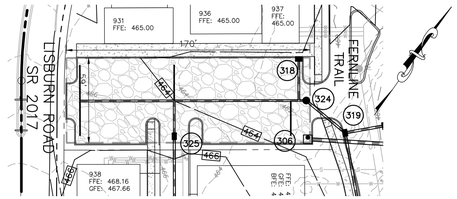
TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

L:\15-100-35\SHEETS\PRELIM-FINAL - SMA-ES\08 SM-08.DWG

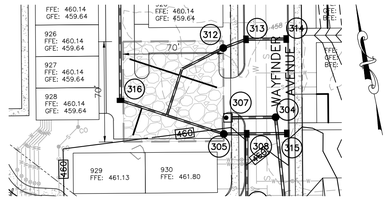
4/29/2026 3:56 PM

Section Number: SM-8

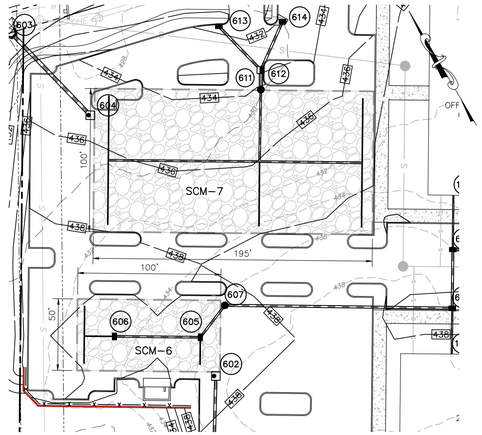
PRELIMINARY / FINAL



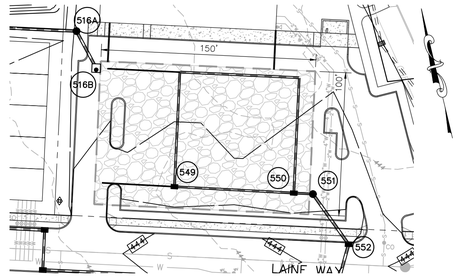
SCM-3
SCALE: 1" = 50'



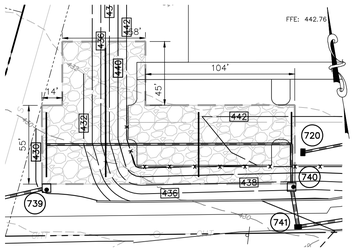
SCM-2
SCALE: 1" = 50'



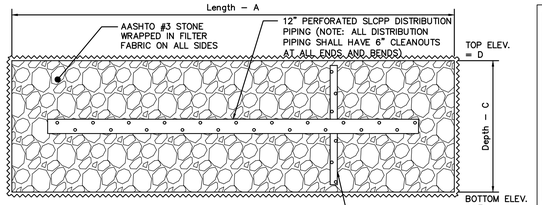
SCM-6 & SCM-7
SCALE: 1" = 50'



SCM-5
SCALE: 1" = 50'



SCM-8
SCALE: 1" = 50'



INFILTRATION TRENCHES

SCM	A - Length (ft)	B -Width (ft)	C -Depth (ft)	D - Top Elev.	E - Bottom Elev.
2	70'	70'	3.0'	457.00	454.00
3	170'	59'	4.0'	461.00	457.00
5	150'	100'	3.5'	442.50	439.00
6	100'	50'	3.0'	436.50	433.50
7	195'	100'	2.5'	431.00	428.50
8	SEE PLAN *		4.0'	429.50	425.00

* Irregular shape - Bottom area = 12,205 S.F.

A / SM-9 **INFILTRATION TRENCH - DETAIL**
AS NOTED

INFILTRATION TESTING REQUIREMENT

Two infiltration tests using a double ring infiltrometer shall be conducted at the elevation of the bottom of the stone once excavation has reached that elevation during construction. Both tests shall meet or exceed the design rate for that infiltration trench. If the testing does not meet the design rate, over excavate the bottom of the infiltration trench 24" and fill hole with amended soils. The design rates for each infiltration trench are:

SCM-2	– 1.66 in./hr.	SCM-6	– 3.00 in./hr.
SCM-3	– 1.18 in./hr.	SCM-7	– 0.50 in./hr.
SCM-5	– 0.65 in./hr.	SCM-8	– 0.50 in./hr.

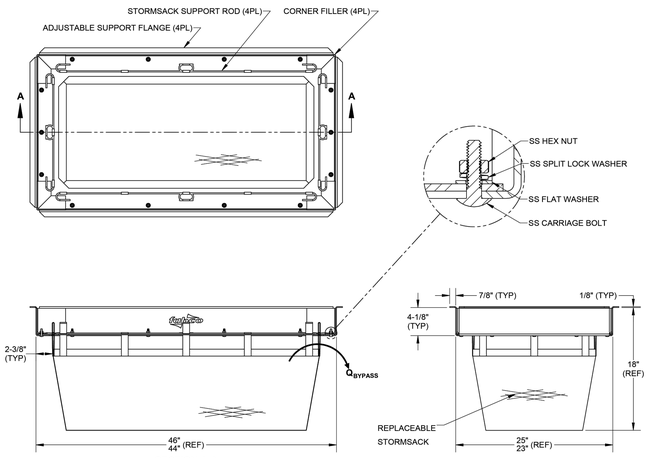
Note: The contractor shall probe the bottom of each Infiltration Trench in a Grid-like Manner to ensure adequate separation between the bottom of the bed and the nearest limiting layer (24" minimum). If 24" minimum separation not provided, over excavate 24" and backfill with suitable fill.

PRETREATMENT STRUCTURES

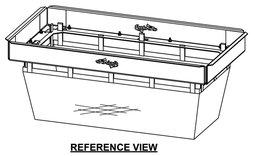
Trench #	Structure #	Type	Outlet Pipe	Snout Type	Basket	Inlet Top	Inv. Out	Bottom
SCM-2	307	4' Dia. Manhole	12" Dia.	18R	N/A	460.10	454.00	451.00
SCM-2	316	Type M Inlet	12" Dia.	18F	N/A	458.93	454.00	451.00
SCM-2	312	4' Dia. Manhole	12" Dia.	18R	N/A	459.21	454.00	451.00
SCM-3	318	Type M Inlet	N/A	N/A	Stormsack	463.45	457.00	457.00
SCM-3	324	4' Dia. Manhole	12" Dia.	18R	N/A	463.37	457.00	454.00
SCM-3	325	Type M Inlet	12" Dia.	18F	N/A	465.15	457.00	454.00
SCM-5	551	4' Dia. Manhole	12" Dia.	18R	N/A	443.50	439.00	434.60
SCM-5	549	Type M Inlet	N/A	N/A	Stormsack	443.19	439.00	439.00
SCM-5	550	Type M Inlet	N/A	N/A	Stormsack	443.19	439.00	439.00
SCM-6	607	4' Dia. Manhole	12" Dia.	18R	N/A	437.73	433.50	430.50
SCM-6	605	Type M Inlet	N/A	N/A	Stormsack	437.33	433.50	433.50
SCM-6	606	Type M Inlet	N/A	N/A	Stormsack	437.33	433.50	433.50
SCM-7	611	4' Dia. Manhole	12" Dia.	18R	N/A	434.14	428.50	425.50
SCM-8	741	Type M Inlet	24" Dia.	30F	N/A	429.36	425.64	420.64

NOTES:

1. TOTAL WEIGHT, EMPTY: 20 LBS (MAX)
2. MATERIALS:
   1. FRAME: ALUMINUM ALLOY, 5000 SERIES
   2. STORMSACK: GEOTEXTILE, 40 US SIEVE
   3. HARDWARE: STAINLESS STEEL
3. PERFORMANCE CHARACTERISTICS:
   1. DEBRIS CAPACITY: 4.0 CU. FT
   2. FILTERED FLOWRATE: 1,680 GPM (3.7 CFS)
   3. BYPASS FLOWRATE: 2,270 GPM (5.0 CFS)
4. CLEAR OPENING RANGE:
   1.MINIMUM SIZE: 23" X 44"
   2.MAXIMUM SIZE: 25" X 46"
5. TYPICAL INSTALLATION:
   CAREFULLY REMOVE THE STORM GRATE, MEASURE CATCH BASIN FRAME CLEAR OPENING AND ADJUST FLANGES TO REST ON GRATE SUPPORT LEDGE. INSTALL STORMSACK AND VERIFY EACH FLANGE IS SECURE AND THE UNIT IS SNUG WITH LITTLE MOVEMENT IN THE DRAIN. INSTALL CORNER FILLERS USING PROVIDED DOUBLE-SIDED TAPE. REINSTALL THE STORM GRATE DIRECTLY ON THE STORMSACK ADJUSTABLE SUPPORT FLANGES.
6. RECOMMENDED MINIMUM VAULT DEPTH 2" BELOW STORMSACK
7. REPLACEMENT STORMSACK P/N: BSM2445-1-120B

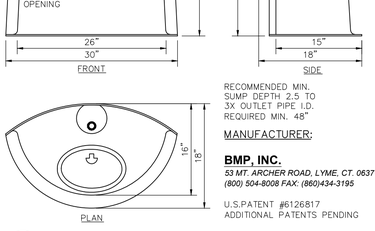


SECTION A-A



REFERENCE VIEW

D / SM-9 STORMSACK BMP, NOM. C.S. 24" x 45"
NOT TO SCALE

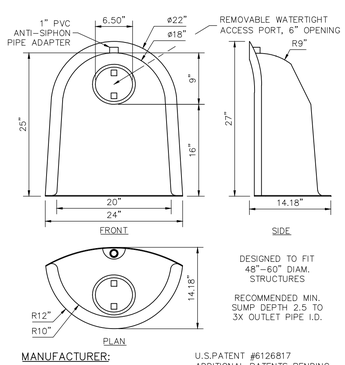


RECOMMENDED MIN. SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D. REQUIRED MIN. 48"

MANUFACTURER:
BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

U.S.PATENT #6126817
ADDITIONAL PATENTS PENDING

B / SM-9 24R SNOUT® OIL-WATER-DEBRIS SEPARATOR DETAIL
NOT TO SCALE



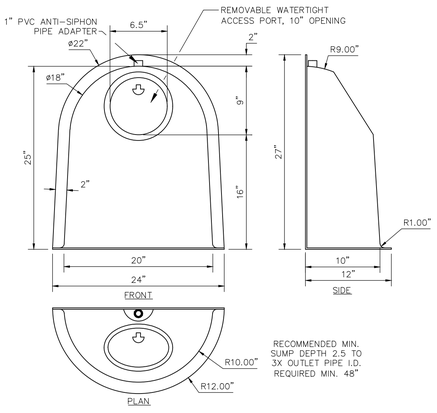
DESIGNED TO FIT 48"–60" DIAM. STRUCTURES

RECOMMENDED MIN. SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D.

MANUFACTURER:
BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

U.S.PATENT #6126817
ADDITIONAL PATENTS PENDING

C / SM-9 18R SNOUT® OIL-WATER-DEBRIS SEPARATOR DETAIL
NOT TO SCALE



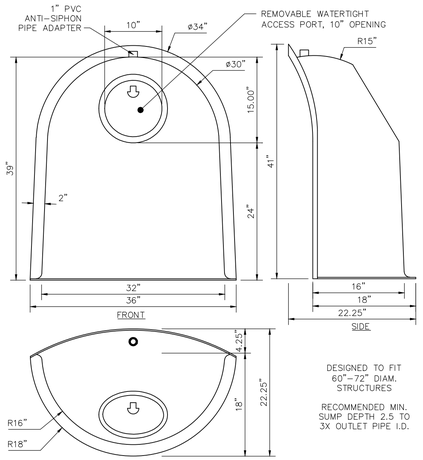
RECOMMENDED MIN. SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D. REQUIRED MIN. 48"

MANUFACTURER:
BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

U.S.PATENT #6126817
ADDITIONAL PATENTS PENDING

E / SM-9 18F SNOUT® OIL-WATER-DEBRIS SEPARATOR DETAIL
NOT TO SCALE

OR EQUIVALENT



DESIGNED TO FIT 60"–72" DIAM. STRUCTURES

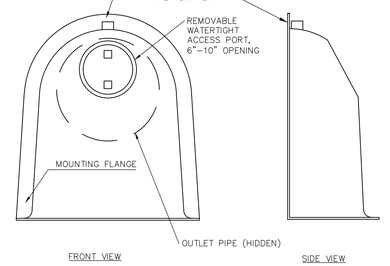
RECOMMENDED MIN. SUMP DEPTH 2.5 TO 3X OUTLET PIPE I.D.

MANUFACTURER:
BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

U.S.PATENT #6126817
ADDITIONAL PATENTS PENDING

F / SM-9 30R SNOUT® OIL-WATER-DEBRIS SEPARATOR DETAIL
NOT TO SCALE

CONFIGURATION DETAIL



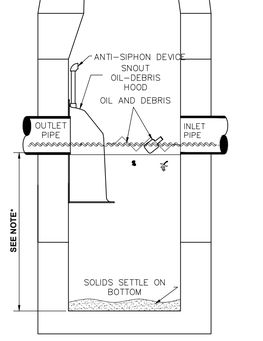
SNOUT OIL-WATER-DEBRIS SEPARATOR

NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
   BEST MANAGEMENT PRODUCTS, INC.
   9 MATHEWS DRIVE, UNIT A1–A2.
   EAST HADDAM, CT 06423
   TOLL FREE: (800) 504–8008 OR (888) 434–0277, FAX: (877) 434–3197
   WEB SITE: www.bmpinc.com
   OR PRE–APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI–SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI–SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. ALL STRUCTURE JOINTS SHALL BE WATERTIGHT.
9. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH ⅜" STAINLESS STEEL BOLTS AND OIL–RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.
    INSTALLATION KIT SHALL INCLUDE:
    A. INSTALLATION INSTRUCTIONS
    B. PVC ANTI–SIPHON VENT PIPE AND ADAPTER
    C. OIL–RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
    D. 3/8" STAINLESS STEEL BOLTS
    E. ANCHOR SHIELDS

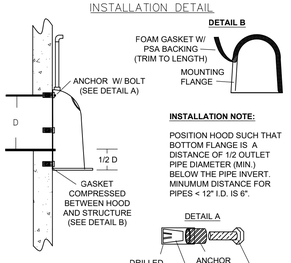
US Patent # 6126817, 7951294, 7857966, 8512556
Canada Patent # 2285146, 2690156, 2690156 others pending

TYPICAL INSTALLATION



*NOTE: SUMP DEPTH OF 36" MIN. FOR UP TO 12" ID PIPE. OUTLET. FOR PIPES 15" ID AND ABOVE SUMP DEPTH OF 2.5 TO 3 TIMES PIPE ID RECOMMENDED (E.G. 5' DEEP for 24" PIPE)

INSTALLATION DETAIL



HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

OIL– DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)

G / SM-9 SNOUT SPECIFICATION AND INSTALLATION DETAIL (TYPICAL)
NOT TO SCALE

Sheet Number: 09 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT – TRENCH PLANS & DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G MITCHELL KING No. PE088343 4/29/26

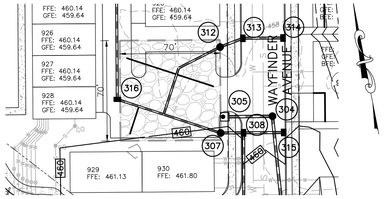
TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

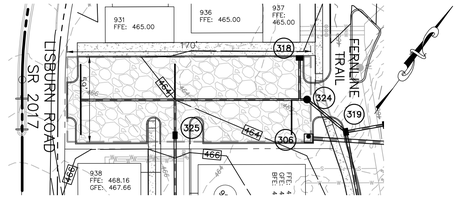
Section Number: SM-9

L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\09 SM-09.DWG
4/29/2026 3:57 PM

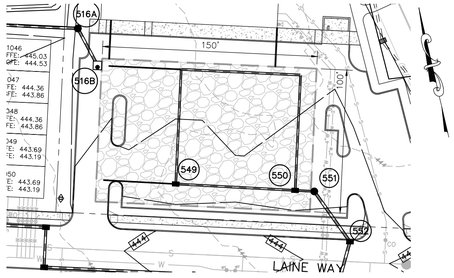
PRELIMINARY / FINAL



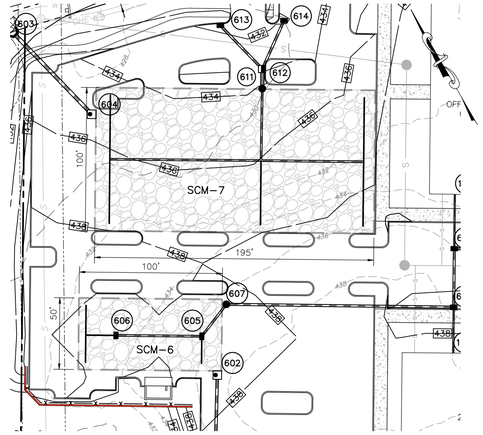
SCM-2
SCALE: 1" = 50'



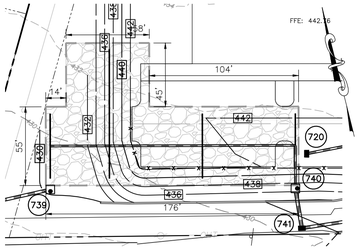
SCM-3
SCALE: 1" = 50'



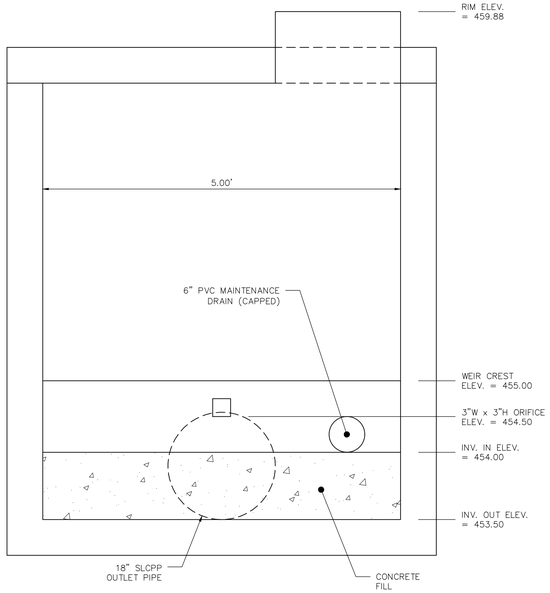
SCM-5
SCALE: 1" = 50'



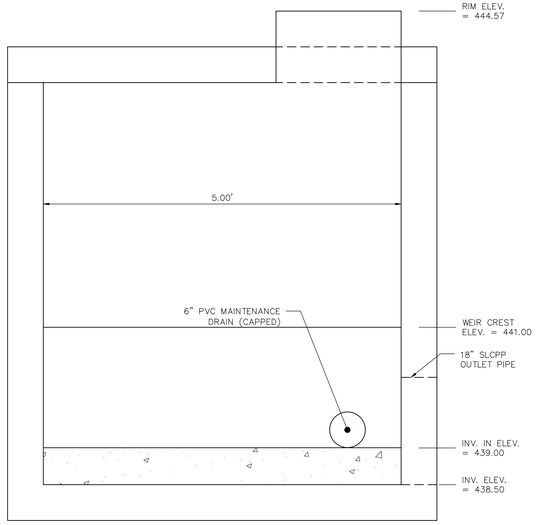
SCM-6 & SCM-7
SCALE: 1" = 50'



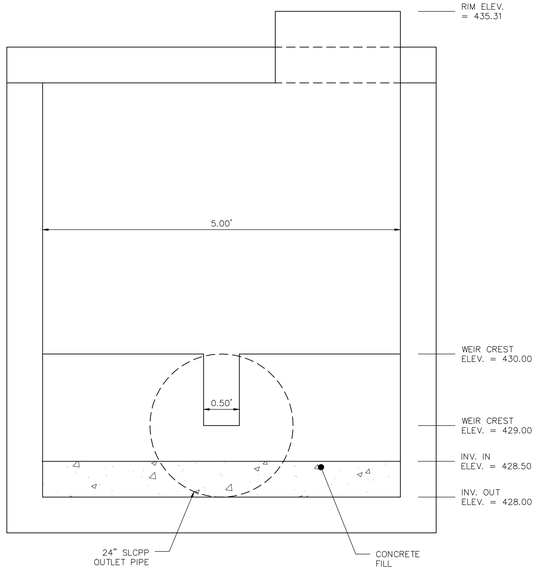
SCM-8
SCALE: 1" = 50'



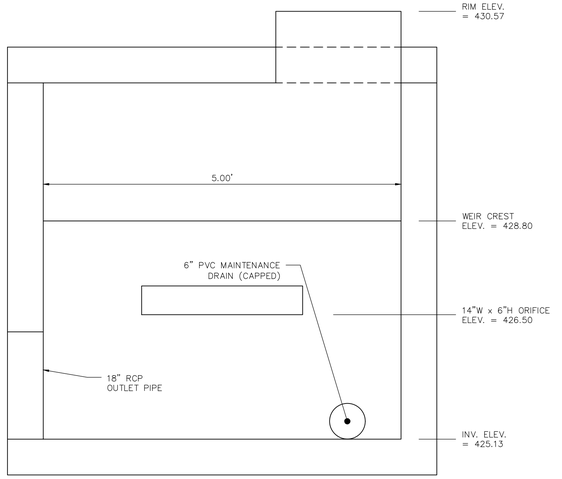
A SM-10 SCM-2 TRENCH OUTLET STRUCTURE - I-305
NOT TO SCALE



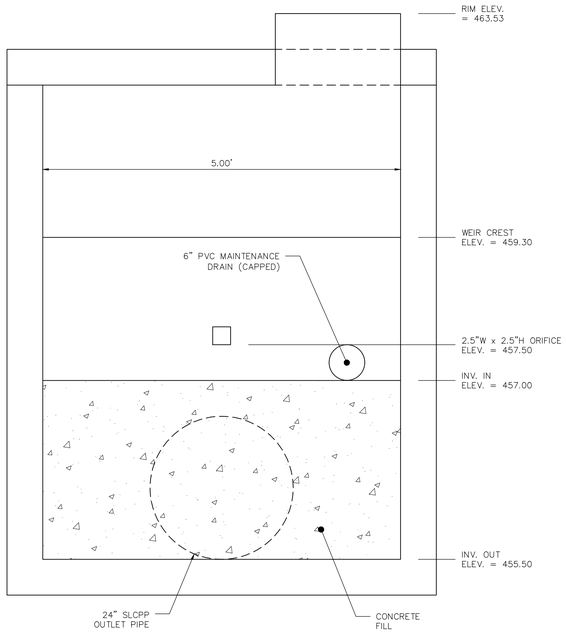
C SM-10 SCM-5 TRENCH OUTLET STRUCTURE - I-516B
NOT TO SCALE



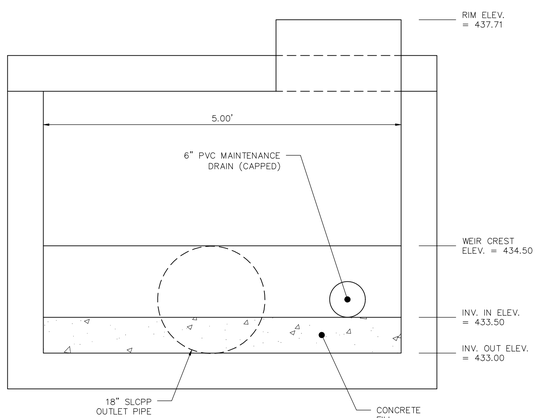
E SM-10 SCM-7 TRENCH OUTLET STRUCTURE - I-604
NOT TO SCALE



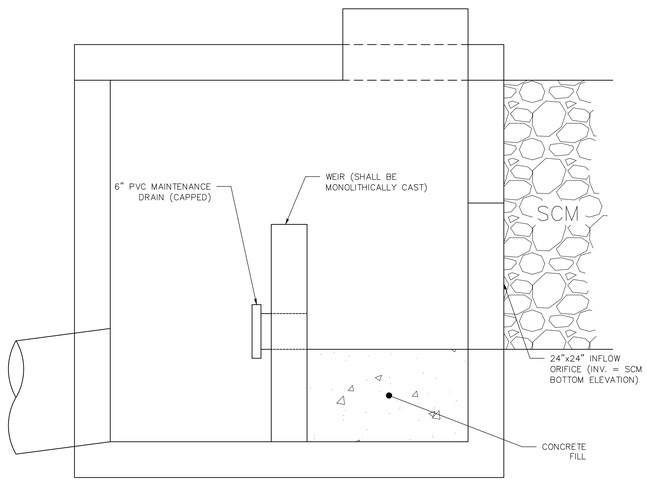
F SM-10 SCM-8 TRENCH OUTLET STRUCTURE - I-739
NOT TO SCALE



B SM-10 SCM-3 TRENCH OUTLET STRUCTURE - I-306
NOT TO SCALE



D SM-10 SCM-6 TRENCH OUTLET STRUCTURE - I-602
NOT TO SCALE



G SM-10 SCM TRENCH OUTLET STRUCTURE - TYPICAL SECTION
NOT TO SCALE

Sheet Number:
10 of 33
Project Number:
15-100-35
Date:
DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT - TRENCH PLANS & DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 25 50 100 150

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. 059313 4/29/26

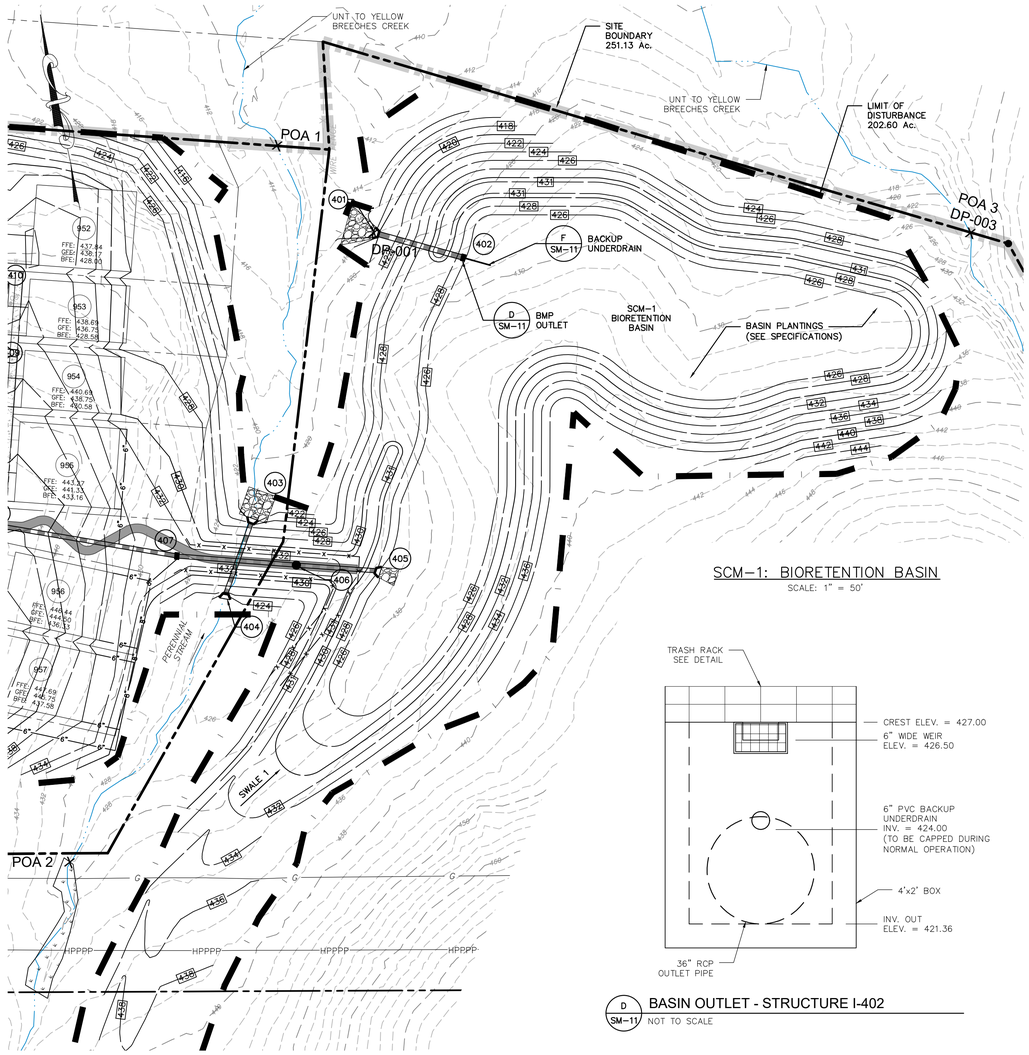
DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number:
SM-10

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

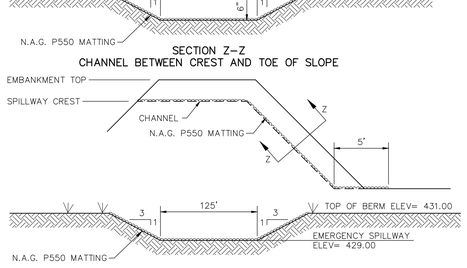
4/29/2026 3:53 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\10 SM-10.DWG

PRELIMINARY / FINAL



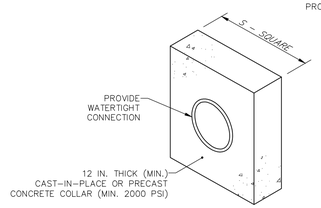
SCM-1: BIORETENTION BASIN

SCALE: 1" = 50'



A SM-11 EMERGENCY SPILLWAY CROSS-SECTION

NOT TO SCALE



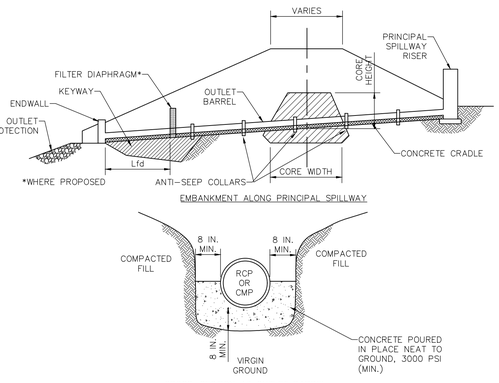
BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM-1	36"	7'-0"	2	8'	14'

NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

B SM-11 **CONCRETE ANTI-SEEP COLLAR #7-16**

NOT TO SCALE



NOTES:

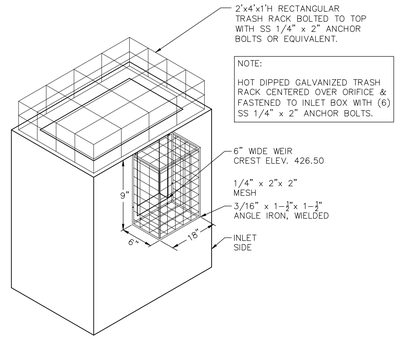
A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

C SM-11 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17

NOT TO SCALE

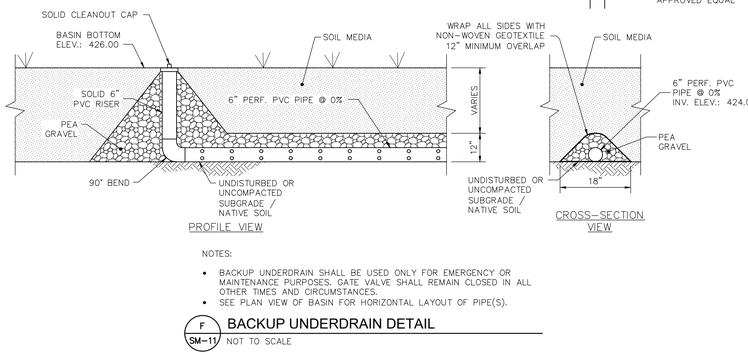
D SM-11 BASIN OUTLET - STRUCTURE I-402

NOT TO SCALE



E SM-11 BMP OUTLET - TRASH RACK

NOT TO SCALE

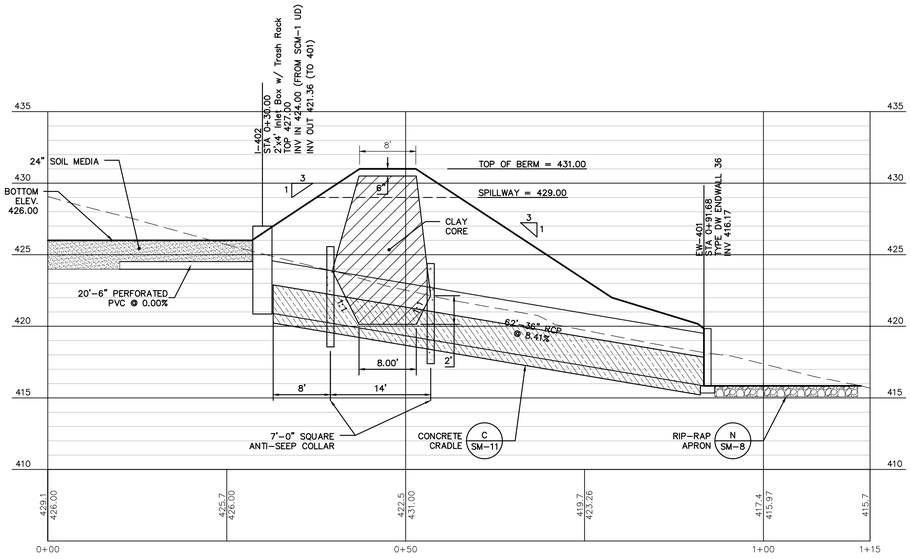


NOTES:

- BACKUP UNDERDRAIN SHALL BE USED ONLY FOR EMERGENCY OR MAINTENANCE PURPOSES. GATE VALVE SHALL REMAIN CLOSED IN ALL OTHER TIMES AND CIRCUMSTANCES.
- SEE PLAN VIEW OF BASIN FOR HORIZONTAL LAYOUT OF PIPE(S).

F SM-11 BACKUP UNDERDRAIN DETAIL

NOT TO SCALE



G SM-11 SCM-1 EMBANKMENT - CROSS SECTION

SCALE: HORIZONTAL - 1" = 10' / VERTICAL - 1" = 5'

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-40 AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-40 SECTIONS OF THE SITE

BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.

GENERAL NOTES:

- The subgrade shall be appropriately prepared for infiltration during final conversion of the facilities to permanent stormwater management facilities.
- The Municipal Engineer shall be notified when the subgrade is prepared.
- The facility shall be protected against sediment laden runoff at all times.
- Permanent and full establishment of the specified BMP plantings (or approved equal) is required. Measures to ensure the full and proper germination of the BMP plantings shall be implemented accordingly during the vegetative establishment of the basin bottom, including: watering, overseeding, reseeding, erosion prevention measures, seed washing prevention measures, stabilization measures, weed control, etc.
- A qualified professional shall inspect, certify, and provide documentation to the municipality that the final BMP vegetation meets the requirements of the approved planting plan, is fully established, and is free from invasive plants.
- A professional geologist shall oversee excavation of the basin to subgrade below the planting soil. Any karst pinnacles or other anomalies shall be remediated per the PG's direction. A minimum of 2 feet of subsoil shall underlay all parts of the subgrade below the planting soil in the basin. During final excavation, the contractor shall probe the subgrade in a grid-like manner to ensure a minimum of 24" of separation between the subgrade and any limiting zone.

BASIN SOIL MEDIA SPECIFICATION

Planting Soil shall be a loam capable of supporting a healthy vegetative cover. Soils shall be amended with composted organic material. A typical organic amended soil is combined with 20-30% organic material and 70-80% topsoil. The topsoil shall be free of clays and fines. The proposed Planting Soil mix shall be laboratory tested to provide between 2.0 inches/hour and no more than 6.0 inches/hour infiltration rate through the planting soil BEFORE installation in the basin. Results of this testing shall be provided to the professional engineer overseeing construction and to the Lower Allen Township Engineer. The engineering and testing of the planting soil mix is a critical stage of construction that will help prevent formation of sinkholes on this active karst area site.

BASIN PLANTINGS SPECIFICATION

After placement of soil media, a combination of plug plantings and seed mix shall be planted. Plugs shall be placed 2' to 3' on center throughout the basin bottom. Seed mix shall be sown throughout basin bottom. Plant during appropriate season and in accordance with manufacturer / supplier recommendations.

BIORETENTION SEEDING MIX FOR BOTTOM OF BASINS:

Rain Garden Mix
Description: ERNMX-180
Seeding Rate: 20 lbs per acre

Species List
Schizachyrium scoparium (Little Bluestem)
Elymus virginicus (Virginia Wildrye)
Carex vulpinoidea (Fox Sedge)
Echinacea purpurea (Purple Coneflower)
Panicum rigidulum (Redtop Panicgrass)
Chasmanthium latifolium (River Oats)
Coreopsis lanceolata (Lanceleaf Coreopsis)
Rudbeckia hirta (Blackeyed Susan)
Verbena hastata (Blue Vervain)
Panicum clandestinum (Deertongue)
Heliopsis helianthoides (Oxeye Sunflower)
Asclepias incarnata (Swamp Milkweed)
Penstemon digitalis (Tall White Beardtongue)
Carex scoparia (Blunt Broom Sedge)
Senna hebecarpa (Wild Senna)
Zizia aurea (Golden Alexanders)
Baptisia australis (Blue False Indigo)
Juncus effusus (Soft Rush)
Juncus tenuis (Path Rush)
Pycnanthemum tenuifolium (Narrowleaf Mountainmint)
Vernonia noveboracensis (New York Ironweed)
Aster novae-angliae (New England Aster)
Monarda fistulosa (Wild Bergamot)
Aster lateriflorus (Calico Aster)
Aster prenanthoides (Zigzag Aster)
Aster pilosus (Heath Aster)
Eupatorium perfoliatum (Boneset)
Mimulus ringens (Square Stemmed Monkeyflower)
Solidago juncea (Early Goldenrod)
Solidago nemoralis (Gray Goldenrod)

PLUG PLANTINGS (SPACED 2' TO 3' ON CENTER):

Acceptable Species List
Carex pensylvanica (Pennsylvania sedge)
Carex appalachia (Appalachian sedge)
Sorghastrum nutans (Indiangrass)
Aster novi-belgii (New York aster)
Aster novae-angliae (New England aster)
Andropogon gerardii (Big bluestem)
Chelone glabra (Turtlehead)
Tradescantia ohiensis (Ohio spiderwort)
Thalictrum rochebrunianum (Meadow rue)
Solidago rugosa 'Fireworks' (Rough goldenrod)

Other native species may be substituted with approval by the Owner and Engineer.

Sheet Number: 11 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: AS NOTED

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

	DATE	REVISIONS
1	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
1	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
1	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1	1/19/26	REVISED FOR CH&N CHANGES

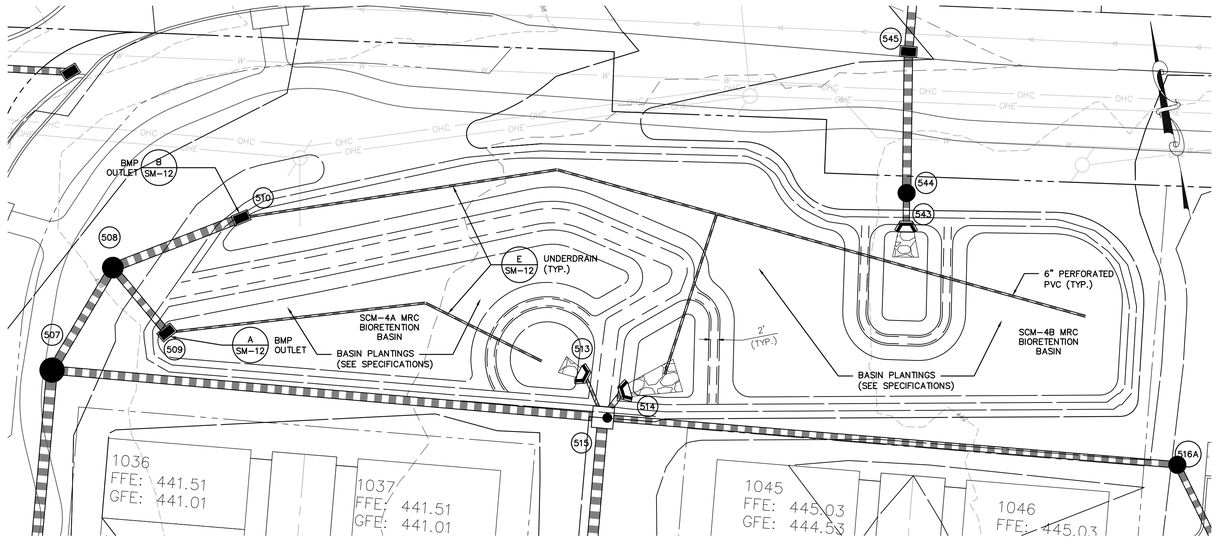
Seal: COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088163 REGISTERED 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM-11

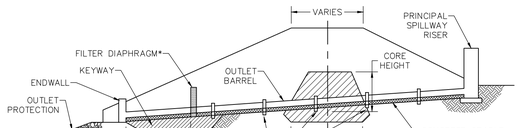
4/29/2026 3:54 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\V1 SM-11.DWG

PRELIMINARY / FINAL

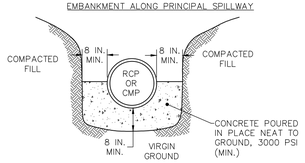


SCM-4A & 4B: MRC BIORETENTION BASIN

SCALE: 1" = 20'



EMBANKMENT ALONG PRINCIPAL SPILLWAY



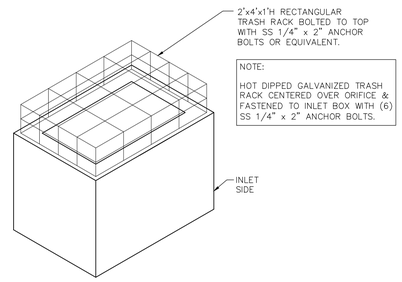
CROSS-SECTION AT OUTLET BARREL

NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

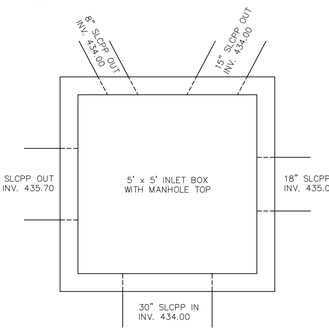
G SM-12 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17

NOT TO SCALE



H SM-12 BMP OUTLET - TRASH RACK

NOT TO SCALE



J SM-12 SCM-4 DIVERSION DETAIL - (MH-515)

NOT TO SCALE

BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.

GENERAL NOTES:

- The subgrade shall be appropriately prepared for infiltration during final conversion of the facilities to permanent stormwater management facilities.
- The Municipal Engineer shall be notified when the subgrade is prepared.
- The facility shall be protected against sediment laden runoff at all times.
- Permanent and full establishment of the specified BMP plantings (or approved equal) is required. Measures to ensure the full and proper germination of the BMP plantings shall be implemented accordingly during the vegetative establishment of the basin bottom, including: watering, overseeding, reseeding, erosion prevention measures, seed washing prevention measures, stabilization measures, weed control, etc.
- A qualified professional shall inspect, certify, and provide documentation to the municipality that the final BMP vegetation meets the requirements of the approved planting plan, is fully established, and is free from invasive plants.
- A professional geologist shall oversee excavation of the basin to subgrade below the planting soil. Any karst pinnacles or other anomalies shall be remediated per the PG's direction. There is no minimum separation required between bedrock or hardpan and the SCM's soil media.
- A minimum of one foot of separation is required between the bottom of the soil media and groundwater or the seasonally high-water table.

BASIN SOIL MEDIA SPECIFICATION

Planting Soil shall be a loam capable of supporting a healthy vegetative cover. Soils shall be amended with composted organic material. A typical organic amended soil is combined with 20–30% organic material and 70–80% topsoil. The topsoil shall be free of clays and fines. The proposed Planting Soil mix shall be laboratory tested to provide between 2.0 inches/hour and no more than 6.0 inches/hour infiltration rate through the planting soil BEFORE installation in the basin. Results of this testing shall be provided to the professional engineer overseeing construction and to the Lower Allen Township Engineer. The engineering and testing of the planting soil mix is a critical stage of construction that will help prevent formation of sinkholes on this active karst area site.

BASIN PLANTINGS SPECIFICATION

After placement of soil media, a combination of plug plantings and seed mix shall be planted. Plugs shall be placed 2' to 3' on center throughout the basin bottom. Seed mix shall be sown throughout basin bottom. Plant during appropriate season and in accordance with manufacturer / supplier recommendations.

BIORETENTION SEEDING MIX FOR BOTTOM OF BASINS:

Rain Garden Mix
Description: ERNMX-180
Seeding Rate: 20 lbs per acre

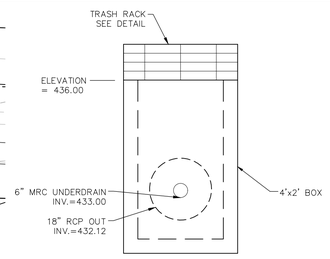
Species List
Schizachyrium scoparium (Little Bluestem)
Elymus virginicus (Virginia Wildrye)
Carex vulpinoidea (Fox Sedge)
Echinacea purpurea (Purple Coneflower)
Panicum rigidulum (Redtop Panicgrass)
Chasmanthium latifolium (River Oats)
Coreopsis lanceolata (Lanceleaf Coreopsis)
Rudbeckia hirta (Blackeyed Susan)
Verbena hastata (Blue Vervain)
Panicum clandestinum (Deertongue)
Heliopsis helianthoides (Oxeye Sunflower)
Asclepias incarnata (Swamp Milkweed)
Penstemon digitalis (Tall White Beardtongue)
Carex scoparia (Blunt Broom Sedge)
Senna hebecarpa (Wild Senna)
Zizia aurea (Golden Alexanders)
Baptisia australis (Blue False Indigo)
Juncus effusus (Soft Rush)
Juncus tenuis (Path Rush)
Pycnanthemum tenuifolium (Narrowleaf Mountainmint)

Species List (Cont.)
Vernonia noveboracensis (New York Ironweed)
Aster novae-angliae (New England Aster)
Monarda fistulosa (Wild Bergamot)
Aster lateriflorus (Calico Aster)
Aster prenanthoides (Zigzag Aster)
Aster pilosus (Heath Aster)
Eupatorium perfoliatum (Boneset)
Mimulus ringens (Square Stemmed Monkeyflower)
Solidago juncea (Early Goldenrod)
Solidago nemoralis (Gray Goldenrod)

PLUG PLANTINGS (SPACED 2' TO 3' ON CENTER):

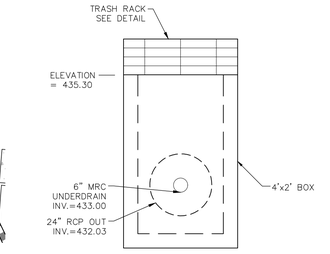
Acceptable Species List
Carex pensylvanica (Pennsylvania sedge)
Carex appalachia (Appalachian sedge)
Sorghastrum nutans (Indiangrass)
Aster novi-belgii (New York aster)
Aster novae-angliae (New England aster)
Andropogon gerardii (Big bluestem)
Chelone glabra (Turtlehead)
Tradescantia ohiensis (Ohio spiderwort)
Thalictrum rochebrunianum (Meadow rue)
Solidago rugosa 'Fireworks' (Rough goldenrod)

Other native species may be substituted with approval by the Owner and Engineer.



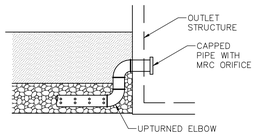
A SM-12 BASIN OUTLET - STRUCTURE SCM-4A

NOT TO SCALE



B SM-12 BASIN OUTLET - STRUCTURE SCM-4B

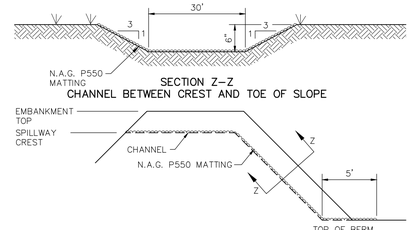
NOT TO SCALE



BASIN OR TRAP NO.	ORIFICE DIA. (IN)	INV. ELEV.
SCM-4A	1.125"	433.00
SCM-4B	1.125"	433.00

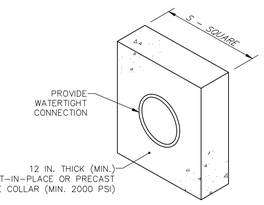
F SM-12 UNDERDRAIN OUTLET DETAIL

NOT TO SCALE



C SM-12 EMERGENCY SPILLWAY CROSS-SECTION

NOT TO SCALE

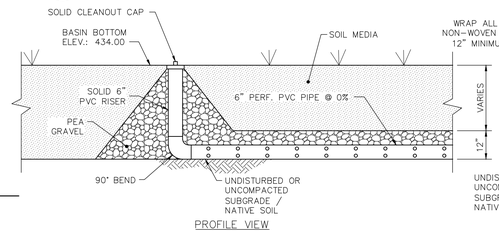


BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM-4A	18"	5'-6"	1	10'	N/A
SCM-4B	18"	5'-6"	1	14'	N/A

NOTES:
- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

D SM-12 CONCRETE ANTI-SEEP COLLAR #7-16

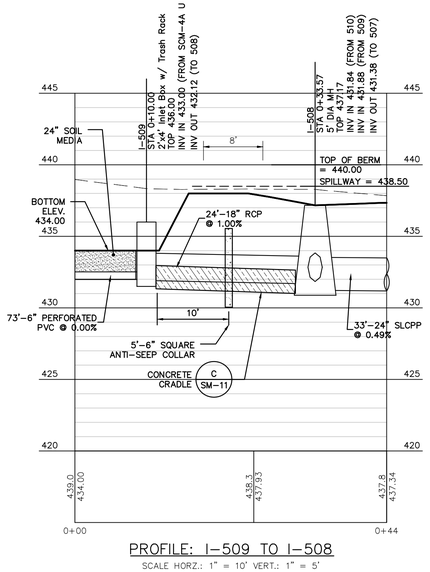
NOT TO SCALE



NOTES:
- SEE PLAN VIEW OF BASIN FOR HORIZONTAL LAYOUT OF PIPE(S).

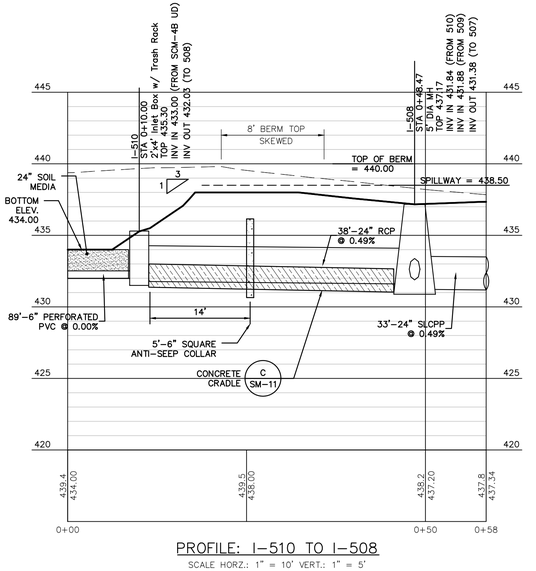
E SM-12 UNDERDRAIN DETAIL

NOT TO SCALE



PROFILE: I-509 TO I-508

SCALE HORZ.: 1" = 10' VERT.: 1" = 5'



PROFILE: I-510 TO I-508

SCALE HORZ.: 1" = 10' VERT.: 1" = 5'

K SM-12 SCM-4A & SCM-4B EMBANKMENT - CROSS SECTIONS

SCALE: HORIZONTAL – 1" = 10' / VERTICAL – 1" = 5'

Sheet Number: 12 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods
POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: AS NOTED
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088182 4/21/26

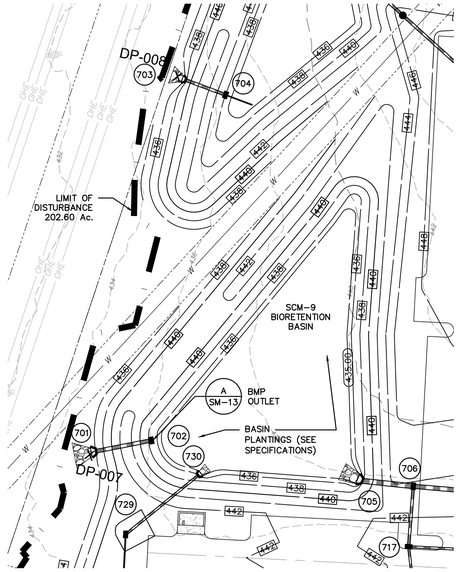
NO.	DATE	REVISIONS
1	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
2	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
3	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
4	1/19/26	REVISED FOR CH&N CHANGES

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM-12

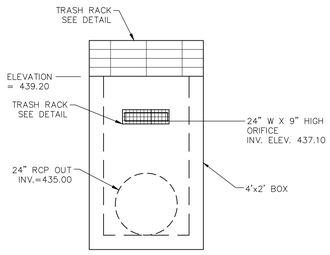
4/29/2026 3:54 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\12 SM-12.DWG

PRELIMINARY / FINAL



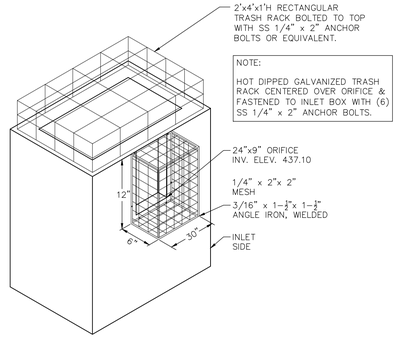
SCM-9: BIORETENTION BASIN

SCALE: 1" = 50'



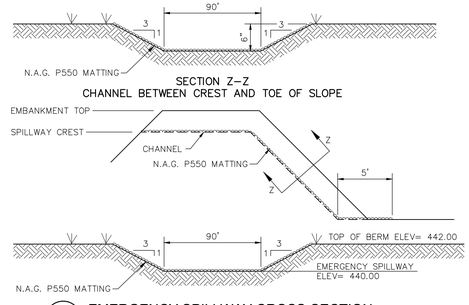
A SM-13 BASIN OUTLET - STRUCTURE

NOT TO SCALE



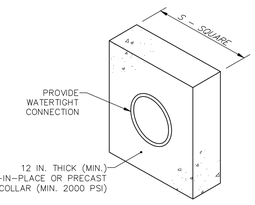
B SM-13 BMP OUTLET - TRASH RACK

NOT TO SCALE



C SM-13 EMERGENCY SPILLWAY CROSS-SECTION

NOT TO SCALE



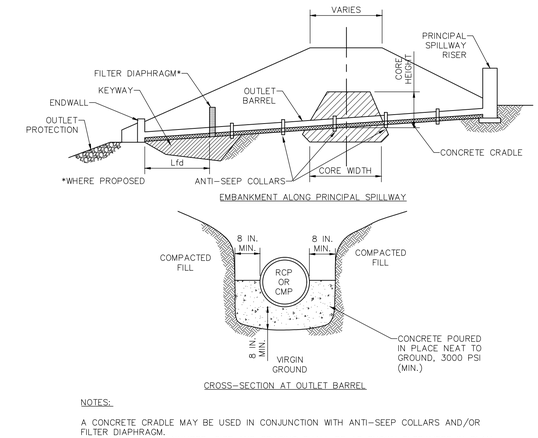
BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM-9	24"	6'-0"	1	11'	N/A

NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

D SM-13 CONCRETE ANTI-SEEP COLLAR #7-16

NOT TO SCALE



NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

E SM-13 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17

NOT TO SCALE

BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.

GENERAL NOTES:

- The subgrade shall be appropriately prepared for infiltration during final conversion of the facilities to permanent stormwater management facilities.
- The Municipal Engineer shall be notified when the subgrade is prepared.
- The facility shall be protected against sediment laden runoff at all times.
- Permanent and full establishment of the specified BMP plantings (or approved equal) is required. Measures to ensure the full and proper germination of the BMP plantings shall be implemented accordingly during the vegetative establishment of the basin bottom, including: watering, overseeding, reseeding, erosion prevention measures, seed washing prevention measures, stabilization measures, weed control, etc.
- A qualified professional shall inspect, certify, and provide documentation to the municipality that the final BMP vegetation meets the requirements of the approved planting plan, is fully established, and is free from invasive plants.
- A professional geologist shall oversee excavation of the basin to subgrade below the planting soil. Any karst pinnacles or other anomalies shall be remediated per the PG's direction. A minimum of 2 feet of subsoil shall underlay all parts of the subgrade below the planting soil in the basin. During final excavation, the contractor shall probe the subgrade in a grid-like manner to ensure a minimum of 24" of separation between the subgrade and any limiting zone.

BASIN SOIL MEDIA SPECIFICATION

Planting Soil shall be a loam capable of supporting a healthy vegetative cover. Soils shall be amended with composted organic material. A typical organic amended soil is combined with 20–30% organic material and 70–80% topsoil. The topsoil shall be free of clays and fines. The proposed Planting Soil mix shall be laboratory tested to provide between 2.0 inches/hour and no more than 6.0 inches/hour infiltration rate through the planting soil BEFORE installation in the basin. Results of this testing shall be provided to the professional engineer overseeing construction and to the Lower Allen Township Engineer. The engineering and testing of the planting soil mix is a critical stage of construction that will help prevent formation of sinkholes on this active karst area site.

BASIN PLANTINGS SPECIFICATION

After placement of soil media, a combination of plug plantings and seed mix shall be planted. Plugs shall be placed 2' to 3' on center throughout the basin bottom. Seed mix shall be sown throughout basin bottom. Plant during appropriate season and in accordance with manufacturer / supplier recommendations.

BIORETENTION SEEDING MIX FOR BOTTOM OF BASINS:

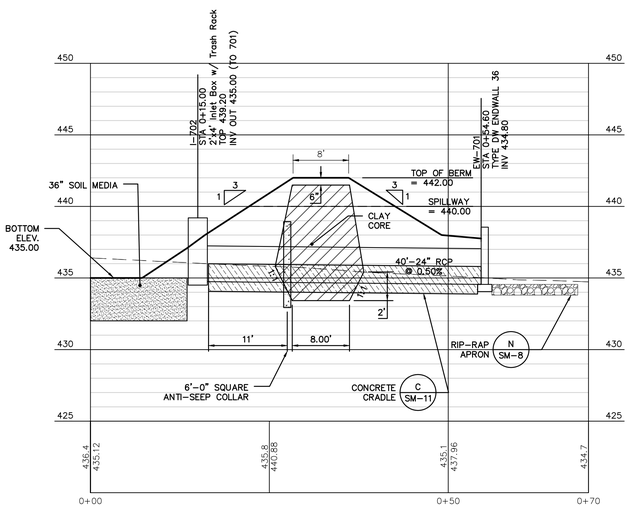
Rain Garden Mix
Description: ERNMX-180
Seeding Rate: 20 lbs per acre

Species List
Schizachyrium scoparium (Little Bluestem)
Elymus virginicus (Virginia Wildrye)
Carex vulpinoidea (Fox Sedge)
Echinacea purpurea (Purple Coneflower)
Panicum rigidulum (Redtop Panicgrass)
Chasmanthium latifolium (River Oats)
Coreopsis lanceolata (Lanceleaf Coreopsis)
Rudbeckia hirta (Blackeyed Susan)
Verbena hastata (Blue Vervain)
Panicum clandestinum (Deertongue)
Heliopsis helianthoides (Oxeye Sunflower)
Asclepias incarnata (Swamp Milkweed)
Penstemon digitalis (Tall White Beardtongue)
Carex scoparia (Blunt Broom Sedge)
Senna hebecarpa (Wild Senna)
Zizia aurea (Golden Alexanders)
Baptisia australis (Blue False Indigo)
Juncus effusus (Soft Rush)
Juncus tenuis (Path Rush)
Pycnanthemum tenuifolium (Narrowleaf Mountainmint)
Vernonia noveboracensis (New York Ironweed)
Aster novae-angliae (New England Aster)
Monarda fistulosa (Wild Bergamot)
Aster lateriflorus (Calico Aster)
Aster prenanthoides (Zigzag Aster)
Aster pilosus (Heath Aster)
Eupatorium perfoliatum (Boneset)
Mimulus ringens (Square Stemmed Monkeyflower)
Solidago juncea (Early Goldenrod)
Solidago nemoralis (Gray Goldenrod)

PLUG PLANTINGS (SPACED 2' TO 3' ON CENTER):

Acceptable Species List
Carex pensylvanica (Pennsylvania sedge)
Carex appalachia (Appalachian sedge)
Sorghastrum nutans (Indiangrass)
Aster novi-belgii (New York aster)
Aster novae-angliae (New England aster)
Andropogon gerardii (Big bluestem)
Chelone glabra (Turtlehead)
Tradescantia ohiensis (Ohio spiderwort)
Thalictrum rochebrunianum (Meadow rue)
Solidago rugosa 'Fireworks' (Rough goldenrod)

Other native species may be substituted with approval by the Owner and Engineer.



F SM-13 SCM-9 EMBANKMENT - CROSS SECTION

SCALE: HORIZONTAL – 1" = 10' / VERTICAL – 1" = 5'

Sheet Number: 13 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT – BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Seal: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL ENGINEER – G. MITCHELL KING – No. 85933 – 4/29/26

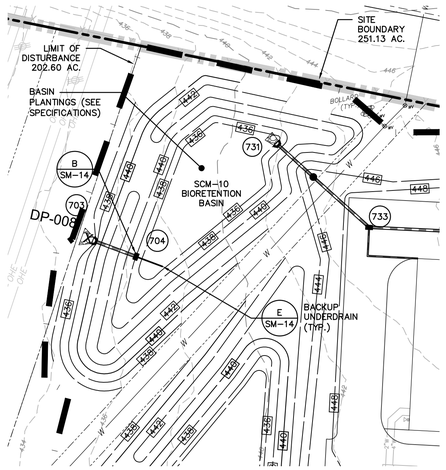
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM-13

L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\13 SM-13.DWG

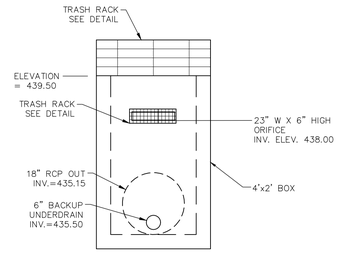
4/29/2026 3:55 PM

PRELIMINARY / FINAL



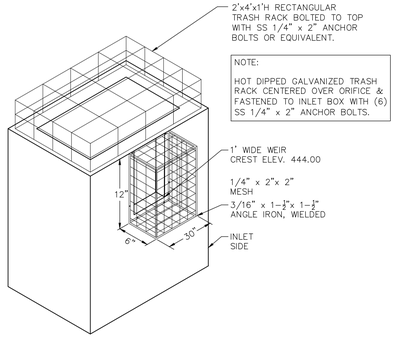
SCM-10: BIORETENTION BASIN

SCALE: 1" = 50'



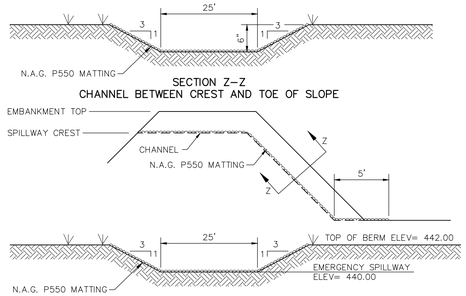
A SM-14 BASIN OUTLET - STRUCTURE

NOT TO SCALE



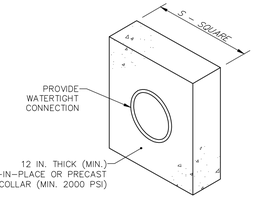
B SM-14 BMP OUTLET - TRASH RACK

NOT TO SCALE



C SM-14 EMERGENCY SPILLWAY CROSS-SECTION

NOT TO SCALE



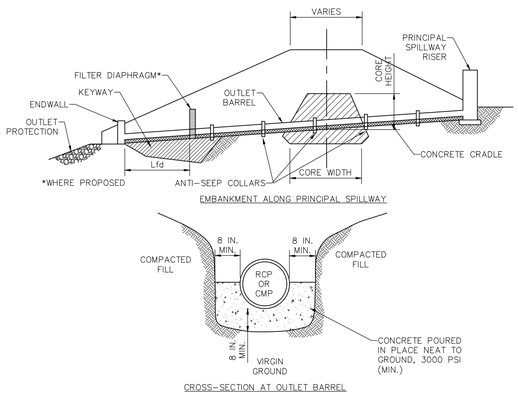
BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM-10	24"	6'-0"	1	13'	N/A

NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

D SM-14 **CONCRETE ANTI-SEEP COLLAR**

NOT TO SCALE

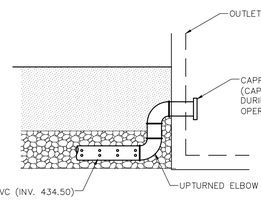


NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN. FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

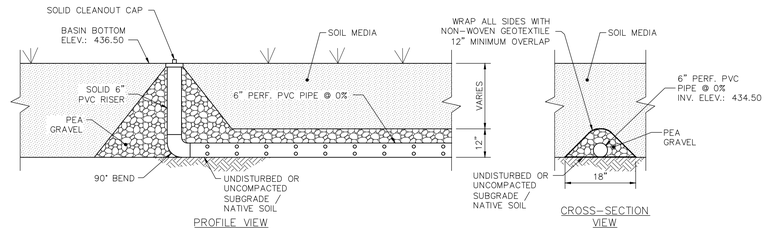
G SM-14 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17

NOT TO SCALE



E SM-14 BACKUP UNDERDRAIN OUTLET DETAIL

NOT TO SCALE

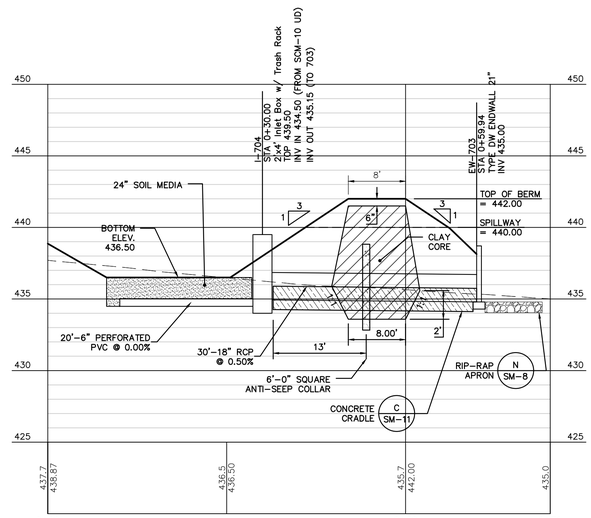


NOTES:

- BACKUP UNDERDRAIN SHALL BE USED ONLY FOR EMERGENCY OR MAINTENANCE PURPOSES. GATE VALVE SHALL REMAIN CLOSED IN ALL OTHER TIMES AND CIRCUMSTANCES.
- SEE PLAN VIEW OF BASIN FOR HORIZONTAL LAYOUT OF PIPE(S).

F SM-14 BACKUP UNDERDRAIN DETAIL

NOT TO SCALE



H SM-14 SCM-10 EMBANKMENT - CROSS SECTION

SCALE: HORIZONTAL – 1" = 10' / VERTICAL – 1" = 5'

BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.

GENERAL NOTES:

- The subgrade shall be appropriately prepared for infiltration during final conversion of the facilities to permanent stormwater management facilities.
- The Municipal Engineer shall be notified when the subgrade is prepared.
- The facility shall be protected against sediment laden runoff at all times.
- Permanent and full establishment of the specified BMP plantings (or approved equal) is required. Measures to ensure the full and proper germination of the BMP plantings shall be implemented accordingly during the vegetative establishment of the basin bottom, including: watering, overseeding, reseeding, erosion prevention measures, seed washing prevention measures, stabilization measures, weed control, etc.
- A qualified professional shall inspect, certify, and provide documentation to the municipality that the final BMP vegetation meets the requirements of the approved planting plan, is fully established, and is free from invasive plants.
- A professional geologist shall oversee excavation of the basin to subgrade below the planting soil. Any karst pinnacles or other anomalies shall be remediated per the PG's direction. A minimum of 2 feet of subsoil shall underlay all parts of the subgrade below the planting soil in the basin. During final excavation, the contractor shall probe the subgrade in a grid-like manner to ensure a minimum of 24" of separation between the subgrade and any limiting zone.

BASIN SOIL MEDIA SPECIFICATION

Planting Soil shall be a loam capable of supporting a healthy vegetative cover. Soils shall be amended with composted organic material. A typical organic amended soil is combined with 20–30% organic material and 70–80% topsoil. The topsoil shall be free of clays and fines. The proposed Planting Soil mix shall be laboratory tested to provide between 2.0 inches/hour and no more than 6.0 inches/hour infiltration rate through the planting soil BEFORE installation in the basin. Results of this testing shall be provided to the professional engineer overseeing construction and to the Lower Allen Township Engineer. The engineering and testing of the planting soil mix is a critical stage of construction that will help prevent formation of sinkholes on this active karst area site.

BASIN PLANTINGS SPECIFICATION

After placement of soil media, a combination of plug plantings and seed mix shall be planted. Plugs shall be placed 2' to 3' on center throughout the basin bottom. Seed mix shall be sown throughout basin bottom. Plant during appropriate season and in accordance with manufacturer / supplier recommendations.

BIORETENTION SEEDING MIX FOR BOTTOM OF BASINS:

Rain Garden Mix
Description: ERNMX-180
Seeding Rate: 20 lbs per acre

Species List
Schizachyrium scoparium (Little Bluestem)
Elymus virginicus (Virginia Wildrye)
Carex vulpinoidea (Fox Sedge)
Echinacea purpurea (Purple Coneflower)
Panicum rigidulum (Redtop Panicgrass)
Chasmanthium latifolium (River Oats)
Coreopsis lanceolata (Lanceleaf Coreopsis)
Rudbeckia hirta (Blackeyed Susan)
Verbena hastata (Blue Vervain)
Panicum clandestinum (Deertongue)
Heliopsis helianthoides (Oxeye Sunflower)
Asclepias incarnata (Swamp Milkweed)
Penstemon digitalis (Tall White Beardtongue)
Carex scoparia (Blunt Broom Sedge)
Senna hebecarpa (Wild Senna)
Zizia aurea (Golden Alexanders)
Baptisia australis (Blue False Indigo)
Juncus effusus (Soft Rush)
Juncus tenuis (Path Rush)
Pycnanthemum tenuifolium (Narrowleaf Mountainmint)
Vernonia noveboracensis (New York Ironweed)
Aster novae-angliae (New England Aster)
Monarda fistulosa (Wild Bergamot)
Aster lateriflorus (Calico Aster)
Aster prenanthoides (Zigzag Aster)
Aster pilosus (Heath Aster)
Eupatorium perfoliatum (Boneset)
Mimulus ringens (Square Stemmed Monkeyflower)
Solidago juncea (Early Goldenrod)
Solidago nemoralis (Gray Goldenrod)

PLUG PLANTINGS (SPACED 2' TO 3' ON CENTER):

Acceptable Species List
Carex pensylvanica (Pennsylvania sedge)
Carex appalachia (Appalachian sedge)
Sorghastrum nutans (Indiangrass)
Aster novi-belgii (New York aster)
Aster novae-angliae (New England aster)
Andropogon gerardii (Big bluestem)
Chelone glabra (Turtlehead)
Tradescantia ohiensis (Ohio spiderwort)
Thalictrum rochebrunianum (Meadow rue)
Solidago rugosa "Fireworks" (Rough goldenrod)

Other native species may be substituted with approval by the Owner and Engineer.

Sheet Number: 14 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT - BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: AS NOTED
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

DATE	REVISIONS
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

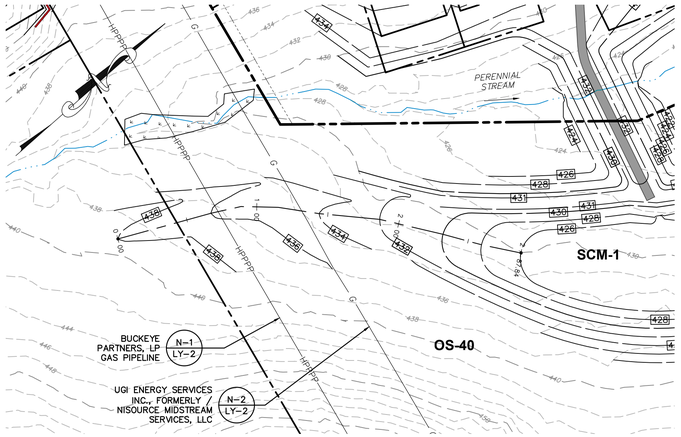
Seal: COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL ENGINEER – G. MITCHELL KING – No. 85393 – 4/17/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

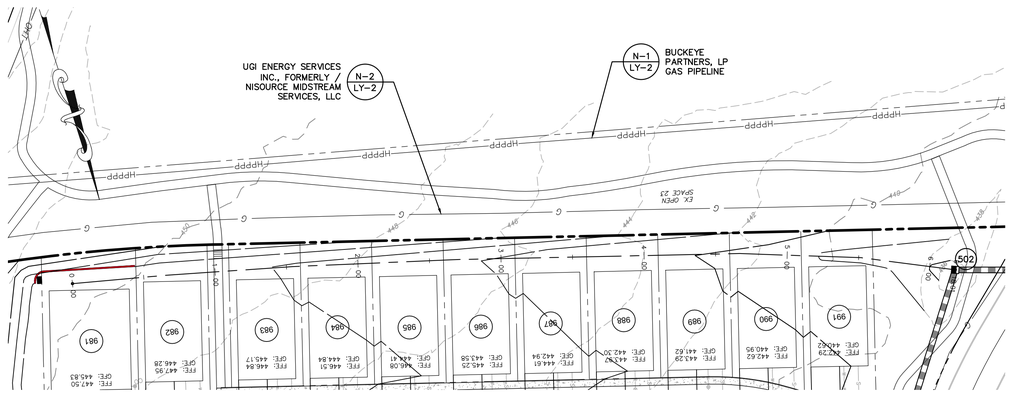
Section Number: SM-14

4/29/2026 3:56 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\14 SM-14.DWG

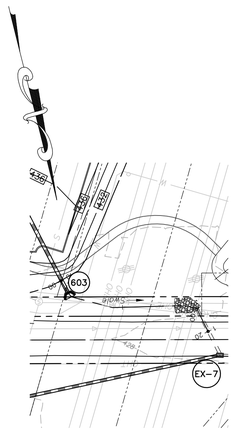
PRELIMINARY / FINAL



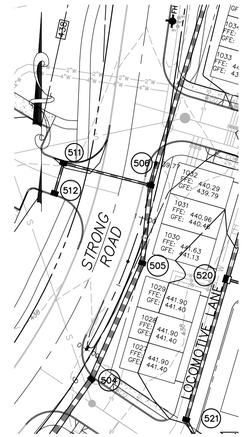
PLAN: SWALE # 1
SCALE: 1" = 50'



PLAN: SWALE # 2
SCALE: 1" = 50'



PLAN: SWALE # 3
SCALE: 1" = 50'



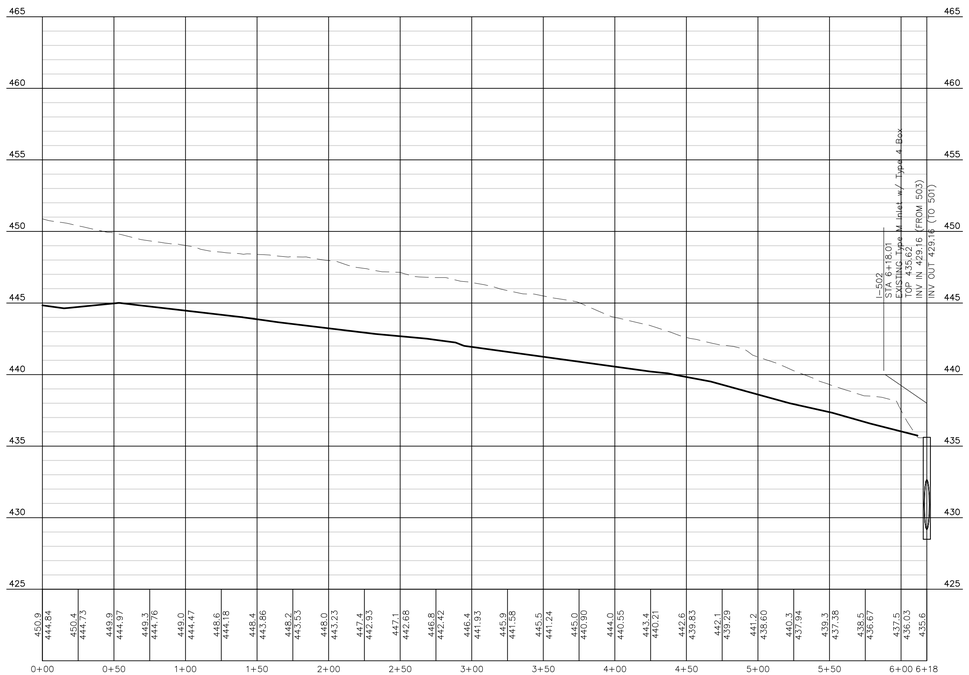
PLAN: SWALE # 4
SCALE: 1" = 50'

TOM MCCLEARY (717-906-6961), REPRESENTATIVE OF BUCKEYE PARTNERS, LP AND ANTHONY MILLER (570-331-8849), REPRESENTATIVE OF UGI ENERGY SERVICES, WERE PRESENT DURING FIELD VERIFICATION BY CH&N ON 11/21/2025.
PA ONE CALL #: 20240612619

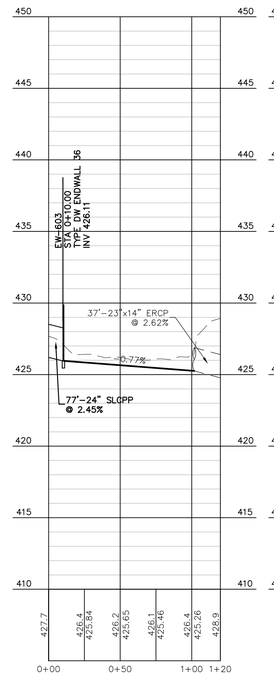
WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-23 AND ALONG THE SHOULDER OF STRONG ROAD AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-23 AND ALONG THE SHOULDER OF STRONG ROAD SECTIONS OF THE SITE

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-23 AND ALONG THE SHOULDER OF STRONG ROAD AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-23 AND ALONG THE SHOULDER OF STRONG ROAD SECTIONS OF THE SITE

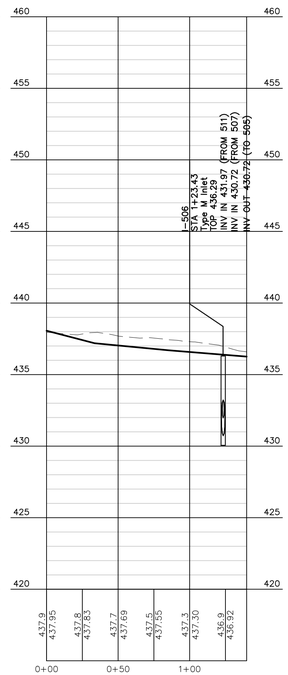
PROFILE: SWALE #1
SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: SWALE #2
SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

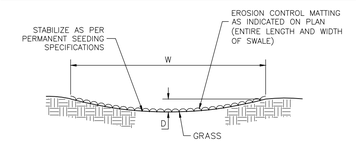


PROFILE: SWALE #3
SCALE HORZ.: 1" = 50' VERT.: 1" = 5'



PROFILE: SWALE #4
SCALE HORZ.: 1" = 50' VERT.: 1" = 5'

SWALE	W	D	MIN. SLOPE	MAX. SLOPE	EROSION CONTROL MATTING	PERMANENT STABILIZATION
1	25'	1.5'	4.4%	4.4%	NAG S150	GRASS
2	10'	1.5'	2.6%	2.6%	NAG S150	GRASS
3	16'	1.5'	1.1%	1.1%	NAG S150	GRASS
4	10'	1	1.3%	1.3%	NAG S150	GRASS



A / SM-15 PARABOLIC SWALE DETAILS
NOT TO SCALE

NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
2. UNDERGROUND UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION, OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE, UNLESS NOTED BELOW. TOWNE SQUARE ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION INFORMATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS IS CORRECT AND ACCURATE. TOWNE SQUARE ENGINEERING ASSUMES NO RESPONSIBILITY FOR ANY DAMAGE INCURRED AS A RESULT OF UNDERGROUND UTILITIES OMITTED OR INACCURATELY SHOWN.

Sheet Number: 15 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT - SWALE PLAN & PROFILES

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088562 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number: SM-15

PRELIMINARY / FINAL

4/29/2026 3:53 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\15 SM-15.DWG

GEOLOGIC EVALUATION:
See "Arcona Neighborhoods 3, 4, 5, 6, 7 Carbonate Geology Evaluation Report," prepared by ARM Group LLC, dated December 2025 for full analyses of site geology and recommendations.

SUMMARY

- The underlying structural bedrock geology is complex. According to the DCNR's Geologic Data Exploration Map (www.gis.dcnr.state.pa.us/geology), the limits of Neighborhoods 3, 4, 5, 6 and 7 are underlain by three bedrock formations including the Epler Formation (Oe) in the northwestern portion of the site. A northeast–southwest trending thrust fault contact with the Hershey and Myerstown Formations, undivided, is mapped near the northwestern boundary of the site along with regional northeast–southwest trending normal faulting (i.e., the Allendale Fault) within approximately 1,000 feet of the northwestern corner of the Site. The southeastern portion of the site is underlain by the Gettysburg Formation (Trg) and an igneous diabase intrusion (Jd). The contact between the Epler Formation and the Gettysburg Formation is interpreted as a broad scale steeply dipping normal fault that strikes northeast–southwest and dips toward the south–southeast.
- During the reconnaissance, the site was visually reviewed to note applicable existing conditions relevant to the identification of visible karst– related features (i.e., sinkholes, closed depressions, lineaments, fracture traces, caverns, intermittent lakes, ephemeral streams, and bedrock pinnacles). During the reconnaissance, evidence of karst features was not generally apparent with the exception of one existing closed depression observed at the ground surface; however, temporary site grading and stockpiling and woodland vegetation could have potentially obscured some features. Nevertheless, the potential presence of karst features in the northern and central portions of the site, underlain by the Epler Formation, is considered highly likely, as the Epler Formation is notorious regionally for developing karst hazards. Consequently, potential karst features are concluded more likely to occur within the northern and central portions of the site, generally within the footprint of the Great Valley Physiographic Section.
- As shown on Map 1, and according to the Sinkholes and Karst–Related Features of Cumberland County, Pennsylvania, (W.E. Kochanov, 1990), no sinkholes are mapped within approximately 2,000 feet of the site limits; however, multiple closed depressions are mapped within the Epler Formation and one closed depression was identified by ARM as part of the site reconnaissance activities. Mapped historical closed depressions can be difficult to visually discern from the vantage point of the ground surface. Three closed depressions were previously mapped within the Gettysburg Formation, south of the site; however, these features are not likely to be directly associated with karst conditions.

RECOMMENDATIONS

Sinkhole Prevention
An effective means of minimizing post–construction sinkhole activity is to include facilities such that stormwater is collected and transported away from critical areas (e.g., structures, roadways, and driveway areas) as quickly and completely as possible. Sinkholes can be discouraged by taking the following precautions.

- Choose the most watertight piping available for all water–bearing conduits. Storm and sanitary sewer lines should, at a minimum, incorporate gasketed joints. If gasketed concrete pipe is used, it is recommended that pipe joints also be externally wrapped to help minimize leakage through the often–ineffective gaskets.
- Construction scheduling should provide for closing of excavations such as for foundations and utilities as soon as possible after exposure.
- Plastic tarps, diversion swales, berms and other measures should be utilized as appropriate to minimize surface water exposure with trenches or excavations that are opened during rainy weather.
- To the greatest extent practicable, avoid running sewer lines beneath buildings or other critical facilities. Utilities and sewer lines that run parallel to building walls should be at least 10 feet away from the outboard edge of the foundation but preferably 20 feet or more away.
- Outlet roof drains directly into collection leaders or storm sewers.
- Interrupt granular pipe bedding layers at maximum intervals of 100 feet with trench plugs, earth dams, or similar measures to prevent water flow through the bedding. Trench plugs should be constructed with compacted clay or with synthetic materials designed for this purpose. Specification and use of a product such as AquaBlok® (a composite bentonite aggregate material that will form a trench plug when used as backfill), or equivalent, would be ideal for this purpose.
- Minimize the extent of landscaped areas immediately adjacent to buildings or other critical facilities in favor of impervious surfaces.
- Provide positive overland drainage away from buildings and other critical facilities.
- Carefully seal all pavement joints, including joints where paving meets curb lines, structure walls, catch basins, etc.
- Do not install utility lines or free draining material along foundation lines
- Excavate and repair any sinkholes disclosed during construction.
- Contractors should not let rainwater run through or accumulate in trenches and around new foundations or utilities. Pumps should be used to promptly remove any water that does accumulate. Temporary dikes and diversion channels should be installed to divert surface water away from low areas that are not intended to collect water. When practical, trenches that are not yet backfilled, should be temporarily covered with tarps to prevent the accumulation of surface water in low areas.
- Backfill around structures and new utilities and sewer laterals should be placed promptly and should not be permitted to remain open for an extended time.

Implementation of the above measures should significantly reduce the amount of sinkhole activity during construction and over the life of the proposed facilities.

Sinkhole Treatments
Sinkholes that are not promptly addressed with appropriate remedial measures can increase in size and extent and may lead to significant additional mitigation costs in the future. Existing sinkholes, and sinkholes that occur during construction or in the future, should be promptly addressed on a case–by–case basis under the guidance of a Professional Geologist or Engineer registered in the Commonwealth of Pennsylvania and experienced with sinkhole treatments. The attending professional may consider the use of the techniques previously presented in Section 5.0 of this report. ARM will remain available to provide professional guidance regarding sinkhole treatments upon request.

Rock Removal
Based on the test probe results, ARM's current understanding of the proposed site development and grading, and ARM's previous experience with the carbonate geology in the area, it is likely that isolated conflicts with bedrock pinnacles will be encountered in excavations. Because rock removal and earthwork disturbances can lead to increased sinkhole susceptibility, care should be taken to minimize rock disturbance to the extent practical where rock is encountered. Where rock removal is required, it should be conducted with mechanical means instead of blasting where practical, as blasting can increase sinkhole development risks and damage adjacent facilities. If blasting must be conducted, the work should be properly controlled and monitored to minimize over–blasting and the associated increased sinkhole development risks, and to prevent damage to adjacent facilities and features. If rock removal is performed below storm water management features, rock should be removed to a depth of at least two feet below the final design grades and stormwater management subgrades using mechanical rock removal methods (e.g., hydraulic ram or ripper). Broken and loose rock should be removed from the base of all excavations prior to backfilling. Where highly fractured or open–jointed rock is encountered in excavations, a geotextile filter fabric and/or graded stone filter should be placed, as appropriate and as directed by the attending professional, into the excavation prior to backfilling to prevent future soil loss into any such openings. ARM or other qualified Geotechnical Engineer should verify the exposed subgrade following rock removal activities and advise contractors concerning treatments as necessary prior to the placement of backfill.

Stormwater Management
Considerations and recommendations for the design and construction of stormwater management facilities at this site are as follows:

- Based on the presence of karst geology and the potential for sinkhole development at the site, stormwater management systems should be constructed using appropriate sinkhole mitigation and/or stabilization methods to minimize the potential for sinkhole development during the lifetime of the project. Sinkhole mitigation measures include such measures as: 1) limiting the head of water above the base of any stormwater management system and/or using a low permeability liner below stormwater management facilities; 2) limiting the stormwater loading ratio to the extent practical consistent with the recommendations of the PA BMP Manual; 3) distributing the proposed stormwater infiltration facilities strategically around the site to limit concentrated flows and to diminish potential property damage and/or injury risks due to inherent sinkhole development risks; and 4) properly reviewing, repairing and/or stabilizing observed subsurface voids or impending sinkhole conditions prior to stormwater management facility construction and as soon as possible following the identification of potential or active sinkholes in the future.
- Based on the observed site conditions, including risks of sinkhole development noted earlier, caution and appropriate vetting should be incorporated while designing and constructing stormwater facilities at the site. Shallow rain gardens, clay–lined systems where appropriate, and water–quality protections based on best management practices will generally help to minimize the elevated risks of sinkhole development. Appropriate system redundancy should be considered and implemented in the design of stormwater management facilities, and passive bypass(es) should be incorporated as and where appropriate to prevent surcharging within the system.
- Underground conveyance piping should be leak resistant. All joints should be adequately sealed or gasketed, and pipes should be properly bedded and placed to prevent leakage. Corrugated metal pipe is not recommended because of the difficulty in effectively sealing the joints. Other pipe materials such as High–Density Polyethylene (HDPE) and/or PVC pipe with water–tight connections are recommended where appropriate. Additionally, pipe bedding should be designed and constructed to minimize the potential for the accumulation of water and concentrated infiltration. Where utility and sanitary or storm sewer pipe backfill have the potential to convey significant amounts of water (e.g., along stone bedding around stormwater and sewer lines), trench plugs constructed with AquaBlok® composite bentonite aggregate (or equivalent such as well–compacted clay) should be placed at 100–foot intervals (maximum) across any open–graded pipe bedding to minimize the preferential flow and concentration of water along the bedding of such utilities. Additional applications of trench plugs around manholes and at other junctures, as appropriate, should be considered by the designer. The designer should strategically select locations of such trench plugs to segregate critical infrastructure at the site (e.g., lined subsurface stormwater detention facilities, etc.) from utility trenches, as appropriate.
- Stormwater management subgrades (as well as subgrades for building foundations, utilities, and pavements) should be evaluated, reviewed, and probed by an ARM or other Professional Geologist or Geotechnical Engineer experienced in identification and mitigation of common issues related to karst geology, historic fill placement and perched water conditions prior to the backfilling of, or construction above, any such subgrades.

General Recommendations
The Owner and project stakeholders should be informed that significant unscheduled excavations to address karst features may be necessary to facilitate proper surface and subsurface preparations in accordance with the recommendations of the attending Professional Geologist or Geotechnical Engineer.

- As applicable, the recommendations presented herein should be reflected in the specifications, drawings, plans, contracts and/or other documents issued for site construction.
- The designer should carefully review the prevailing Township and County codes and ordinances and State guidance (e.g., Pennsylvania Stormwater BMP Manual) to ensure that stormwater management facilities comply with the applicable provisions of such documents.
- Qualified geotechnical engineering observations and tests should be conducted on a full–time basis during all phases of the site preparation, utility and sewer line construction, foundation construction, pavement construction, and stormwater facility construction to ensure its proper execution. All structure foundation subgrades should be approved before pouring foundations, and each lift of fill and backfill should be observed and tested on a layer–by–layer basis to ensure the recommended degree of compaction is obtained and that the materials are placed within the proper moisture content range. Overexcavation and backfill of localized soft material zones should be recommended by Quality Control and Quality Assurance Representatives. ARM can provide personnel to perform quality control and quality assurance reviews and testing services upon request.

INFILTRATION TESTING REQUIREMENT

Two infiltration tests using a double–ring infiltrometer shall be conducted at the elevation of the bottom of the basin (below proposed soil media) once excavation has reached that elevation during construction. Both tests shall meet or exceed the design rate for the BMP. If the testing does not meet the design rate, over–excavate the bottom of the basin 24" and fill with amended soils. The minimum rate is:

SCM–1 – 0.25 in./hr.
SCM–9 – 0.965 in./hr.
SCM–10 – 2.242 in./hr.

SEQUENCE OF CONSTRUCTION FOR PROJECT

Pre–Construction Stabilization of the Site

All disturbed areas from agricultural activities must be stabilized completely in the previous growing season prior to the start of grading by seeding with small grain or permanent vegetative cover as specified on these plans.

The project is anticipated to be constructed in multiple phases. Separate E&S sequencing is provided for construction of each phase. The order of construction phases listed below will be determined by the developer or construction contractor. The Rossmoyne Road Roundabout is to be completed with along with the first phase of construction. Construction shall be conducted in a manner to minimize earth disturbance at any given time.

In accordance with the recommendations of the United States Fish and Wildlife Service, no tree removal shall be conducted from April 1 to November 15. All tree removal shall occur between November 16 and March 31.

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage initiated. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage. Upon temporary cessation of the earth disturbance activity for four days or longer, the project site shall immediately be stabilized with the appropriate temporary stabilization. As soon as slopes, channels, ditches, and other disturbed areas reach final grade, the area shall immediately be stabilized with the appropriate permanent stabilization.

Construction of Arcona Remaining Neighborhoods is to be sequenced in the following order:

Each step marked "CSoC:" is a critical stage of construction and requires oversight by a professional engineer.

GENERAL

1. As least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the landowner, all appropriate Municipal Officials, the Erosion and Sedimentation Control Plan preparer, and a representative of the Conservation District to an on–site meeting. The excavation contractor(s) shall execute a NPDES co–permittee/transferee agreement with PA DEP. The contractor shall ensure that all construction shall be done in accordance with the requirements of the NPDES permit.
2. The limit of disturbance must be field staked prior to any earth moving activities.
3. Upon completion of the project a completed Notice of Termination (N.O.T.) shall be submitted to the department and/or Conservation District staff so a final inspection can be performed to ensure stabilization and verify adequate installation and function of SCMs.
4. Construct modifications to existing Sediment Basin D2 in accordance with E&S Plan details. (See Phase Coordination)

PHASE 3.1

1. Install rock construction entrance #1 at the proposed site entrance at Lisburn Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install sanitary sewer and water extension to the phase limits.
4. Clear and grub the construction site to the extents necessary.
5. Construct storm sewer outfall from endwall 301 to manholes 305 and 306. Install riprap apron at endwall.
6. Excavate and construct SCM–2 and SCM–3. Conduct confirmation infiltration testing at the bottom of the SCMs in accordance with the requirements.
7. Install SCM distribution piping and other features.
8. **CSoC: Check SCM–2 and SCM–3 layouts, sizes, outlet structures, and other features for plan compliance.**
9. Install stone and complete construction of SCM–2 and SCM–3. Ensure no sediment laden runoff is directed to the SCMs.
10. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
11. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations.
12. Install remaining storm sewers within the Phase 3 project area. All inlets shall have temporary inlet protection.
13. Complete remaining site grading.
14. Install curbing along proposed streets.
15. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
16. Begin home construction after stone base on street is in place. See Project Staging for Individual Lots.
17. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
18. Pave with wearing course when construction of dwellings is completed.
19. Complete all site construction and provide permanent vegetative stabilization.
20. Contact the Cumberland County Conservation District for site inspection prior to removal of temporary inlet filters.
21. Remove temporary inlet filters and perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
22. Install permanent inlet filters and snouts in inlets as specified by the plans.

PHASE 4

1. Install rock construction entrance #2 at the proposed site entrance at Lisburn Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install sanitary sewer and water extension to the phase limits.
4. Clear and grub the construction site to the extents necessary to construct Sediment Basin 1 and its outfall piping.
5. Install storm sewer downstream of Sediment Basin 1. Install the riprap apron at the endwall.
6. Excavate and construct Sediment Basin 1 per the plan and details illustrated and specified herein. During the Sediment Basin condition, the basin should have a bottom elevation of 425.00. Stabilize with temporary seeding and erosion control matting. The Sediment Basin must be stabilized and functional prior to additional earth disturbance. No other earth disturbance is permitted on the site except that necessary to construct the Sediment Basin.
7. **CSoC: Upon installation of the temporary Sediment Basin outlet structure, skimmer, and floating turbidity barrier, an immediate inspection of the Sediment Basin berm, riser, and skimmer shall be conducted by a qualified site representative and the Cumberland County Conservation District shall be notified that the proper risers and skimmers were installed and sealed, per plan. Sediment Basin must be protected from unauthorized acts by third parties. Construct the riprap apron at the outfall as shown on the plan.**
8. Clear and grub the construction site to the extents necessary to construct Swale 1 and proposed stream crossing.
9. Construct Swale 1 and immediately seed with permanent stabilization and matting.
10. Construct stream crossing.
11. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the Sediment Basin.
12. Install storm sewers, sanitary sewer, water, and other utilities.
13. Upon construction of manhole 414 and connection to existing storm sewer from existing round–about, demolish existing bioretention basin.
14. Final grade all street subgrade and shoulder areas for the proposed streets.
15. Install curbing within phase area.
16. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
17. Begin construction of the homes after stone base on street is in place. See Project Staging for Individual Lots.
18. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
19. Pave with wearing course when construction of dwellings is completed.
20. Contact the Cumberland County Conservation District for site inspection prior to removal of any Sediment Basin.
21. **CSoC: Once all lots have been completely stabilized and the Conservation District has approved removal of the Sediment Basin, convert to the permanent PCSM SCM–1. Check the permanent basin for stability, size, grade, and proper outlet structure after conversion is completed. See Project Staging – Converting Sediment Basins to PCSM SCMs.**
22. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
23. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.

PHASE 5

1. Install rock construction entrance #3 at the proposed site entrance at Strong Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install temporary inlet filter bags on existing inlets adjacent to existing round–about.
4. Install sanitary sewer and water extension to the phase limits.
5. Remove existing storm sewer alongside Strong Road and install storm sewer from endwall 501 to inlets 509 and 510. Install riprap apron at endwall.
6. Clear and grub the construction site to the extents necessary to construct SCM–4 and its outfall piping.
7. Excavate and construct SCM–4 per the plan and details illustrated and specified herein. During the E&S condition, the basin should have a bottom elevation of 434.00, but should not have been overexcavated and backfilled with amended soils. Excavate a pit around the outlet structures (514 and 515) and allow runoff to flow freely through 6" orifices (later used for MRC underdrain connections). Stabilize with temporary seeding and erosion control matting.
8. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the existing Sediment Basin DB–2.
9. Install storm sewers, sanitary sewer, water, and other utilities. Install riprap aprons at endwalls. Install temporary inlet protection in inlets tributary to SCM–5.
10. Prior to SCM–5 construction, connect manhole 551 and manhole 516B directly with 18" pipe.
11. Final grade all street subgrade and shoulder areas for the proposed streets.
12. Install curbing within phase area.
13. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
14. Begin home construction of the homes after stone base on street is in place. See Project Staging for Individual Lots.
15. Construct Swale 2 and immediately seed with permanent stabilization and matting.
16. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
17. Pave with wearing course when construction of dwellings is completed.
18. Remove temporary pipe between manholes 551 and 516B.
19. Excavate and construct SCM–5. Conduct confirmation infiltration testing at the bottom of the SCM in accordance with the requirements.
20. Install SCM distribution piping and other features.
21. **CSoC: Check SCM–5 layout, size, outlet structure, and other features for plan compliance.**
22. Install stone and complete construction of SCM–5. Ensure no sediment laden runoff is directed to the SCM.
23. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
24. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
25. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized, including temporary inlet filters.
26. Install permanent inlet snouts in inlets as specified by the plans.
27. Once all tributary areas have been completely stabilized, complete construction of permanent PCSM SCM–4. Overexcavate to subgrade, conduct confirmation testing in accordance with requirements, install MRC underdrain, backfill with soil media, and install permanent plantings.
28. **CSoC: Check the permanent basin for stability, size, grade, and proper outlet structure after construction is completed. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.**

ROSSMOYNE ROAD ROUNDABOUT

1. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
2. Clear and grub the construction site to the extents necessary to construct SCM–8 and its outfall piping.
3. Install storm sewers from manhole 738 to existing inlet.
4. Excavate and construct SCM–8. Conduct confirmation infiltration testing at the bottom of the SCM in accordance with the requirements.
5. Install SCM distribution piping and other features.
6. **CSoC: Check SCM–8 layout, size, outlet structure, and other features for plan compliance.**
7. Install stone and complete construction of SCM–8. Ensure no sediment laden runoff is directed to the SCM. Provide cover of minimum 12" fill or stone above SCM top.
8. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
9. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations.
10. Install remaining storm sewers within the project area. Install temporary inlet protection in all inlets tributary to SCM–8.Install remaining utilities.
11. Final grade all street subgrade and shoulder areas for the proposed street.
12. Install curbing within phase area.
13. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
14. Pave with wearing course when construction is complete.
15. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
16. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized, including temporary inlet filters.
17. Install permanent inlet snouts in inlets as specified by the plans.

PHASE 6

1. Install rock construction entrance #4 at the proposed site entrance at Strong Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Clear and grub the construction site to the extents necessary to construct SCM–6 and SCM–7 and their outfall piping.
4. Demolish existing rain garden adjacent to Rossmoyne Road.
5. Construct Swale 3 and immediately seed with permanent stabilization and matting.
6. Install storm sewer from endwall 601 to manhole 602 and from endwall 603 to manhole 604. Install riprap aprons at endwalls.
7. Excavate and construct SCM–6 and SCM–7. Conduct confirmation infiltration testing at the bottom of the SCMs in accordance with the requirements.
8. Install SCM distribution piping and other features.
9. **CSoC: Check SCM–6 and SCM–7 layouts, sizes, outlet structures, and other features for plan compliance.**
10. Install stone and complete construction of SCM–6 and SCM–7. Ensure no sediment laden runoff is directed to the SCMs. Provide cover of minimum 12" fill or stone above SCM tops.
11. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
12. Install remaining storm sewers within the project area. Install temporary inlet protection in all inlets tributary to SCM–6 and SCM–7.
13. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the existing Sediment Basin DB–2, SCM–6, or SCM–7.
14. Install sanitary sewer, water, and other utilities.
15. Final grade all street subgrade and shoulder areas for the proposed streets.
16. Install curbing within phase area.
17. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
18. Begin construction of the buildings.
19. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
20. Pave with wearing course.
21. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
22. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
23. Remove temporary inlet protection. Install permanent inlet filters and snouts in inlets as specified by the plans.

PHASE 7

1. Install rock construction entrance #5 at the proposed site entrance at Rossmoyne Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. As other phases proceed, place fill as appropriate, ensuring all sediment–laden runoff is directed to perimeter controls.
4. Clear and grub the construction site to the extents necessary to construct Sediment Basin 2 and its outfall piping.
5. Install storm sewer downstream of Sediment Basin 2. Install the riprap apron at the endwall.
6. Excavate and construct Sediment Basin 2 per the plan and details illustrated and specified herein. During the Sediment Basin condition, the basin should have a bottom elevation of 437.00. Stabilize with temporary seeding and erosion control matting. The Sediment Basin must be stabilized and functional prior to additional earth disturbance. No other earth disturbance is permitted on the site except that necessary to construct the Sediment Basin.
7. **CSoC: Upon installation of the temporary Sediment Basin outlet structure, skimmer, and floating turbidity barrier, an immediate inspection of the Sediment Basin berm, riser, and skimmer shall be conducted by a qualified site representative and the Cumberland County Conservation District shall be notified that the proper risers and skimmers were installed and sealed, per plan. Sediment Basin must be protected from unauthorized acts by third parties. Construct the riprap apron at the outfall as shown on the plan.**
8. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to Sediment Basin 2 or perimeter controls.
9. Install sanitary sewer.
10. Install storm sewers tributary to Sediment Basin 2. Install riprap aprons at endwalls.
11. Install water and other utilities.
12. Install SCM–10 outfall and riprap apron.
13. Excavate and construct SCM–10. Immediately seed and stabilize slopes and install filter sock upslope. Seed bottom with temporary stabilization. No sediment–laden runoff shall enter the SCM.
14. Install storm sewers tributary to SCM–10. Install riprap apron at endwall. Install temporary inlet protection in inlets tributary to SCM–10.
15. Final grade all street subgrade and shoulder areas for the proposed streets.
16. Install curbing within phase area.
17. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
18. Begin construction of the buildings.
19. Pave with wearing course.
20. Contact the Cumberland County Conservation District for site inspection prior to removal of any Sediment Basin.
21. **CSoC: Once all tributary areas have been completely stabilized and the Conservation District has approved removal of the Sediment Basin, convert to the permanent PCSM SCM–9. Check the permanent basin for stability, size, grade, and proper outlet structure after conversion is completed. See Project Staging – Converting Sediment Basins to PCSM SCMs.**
22. Once all tributary areas have been completely stabilized, complete construction of permanent PCSM SCM–10. Overexcavate to subgrade, conduct confirmation testing in accordance with requirements, backfill with soil media, and install permanent plantings.
23. **CSoC: Check the permanent basin for stability, size, grade, and proper outlet structure after construction is completed. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.**
24. **Check site for erosion and repair any damaged areas.** All portions of the site shall be stabilized.
25. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
26. Remove temporary inlet protection.

Project Staging – Individual Lots

Each lot will be staged in the following order:

1. Install stabilized construction entrance.
2. Install compost filter sock as shown on plan.
3. Rough grade lot and stabilize immediately with temporary seeding.
4. Excavate for dwelling foundation. Place excess soil on designated soil stockpile location. Install compost filter sock below the stockpile.
5. Construct dwelling.
6. Connect utilities.
7. Install and connect roof drain leaders to inlet as specified by this PCSM plan.
8. Install sidewalk along frontage of lot.
9. Pave driveway.
10. Final grade lot and stabilize immediately with permanent stabilization.
11. Remove filter sock once all disturbed areas are stabilized.

Project Staging – Converting Sediment Basins to PCSM SCMs (SCM–1, SCM–9)

Once the Conservation District has approved removal of the Sediment Basins, convert to the PCSM SCM–1 and SCM–9 Bioretention Basins as follows:

1. Stabilize any other disturbed areas immediately with permanent seeding.
2. Remove the skimmer and landing berm. Dispose of properly or store for reuse. Remove any grout used to seal skimmers into inlets.
3. Remove cleanout stake from the basin bottom. Dispose of properly or store for reuse.
4. Remove any sediment from the basin outlet pipes.
5. Remove any temporary outlet structure modifications (orifice plates, riser extensions, etc.).
6. Excavate to basin subgrade and perform confirmation testing as required.
7. Install soil media in the basin bottom to the final grade. Immediately install plantings as specified in the plans.
8. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days after the SCM is completed.

Phase Coordination

Work on the various phases of Arcona need not be done sequentially as listed on the Sequence of Construction (SOC). Work on each phase may happen simultaneously, within the restrictions below.

- All modifications to the Sediment Basin D–2 must be done before earth disturbance in Phases 3.1, 5, 6, or 7. See SOC General Comment #4.
- Phase 3.1 may be done independent of any other phase of the project.
- Phase 4, SOC step 12 cannot be done until the sanitary sewer in Phases 6 & 5 is completed.
- Phase 5, SOC step 10 cannot be done until the sanitary sewer in Phase 6 is completed. In addition, the storm sewers between MH–512 and EW–506 must be completed as a part of Phase 5 SOC step 10.
- Phase 6 may be done independent of any other phase in the project.
- Phase 7 requires that SCM–4 be constructed before storm sewer from the secondary entrance (Wells Station Lane) to Phase 7 are completed.
- Work on the roundabout requires that SCM–8 be construction before storm sewers are completed.

Sheet Number: 16 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES

Drafting: D TURNER | Checked by: K POSTLETHWAIT | Scale: 1"=50' (0, 25, 50, 100, 150)
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

DATE	REVISIONS
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

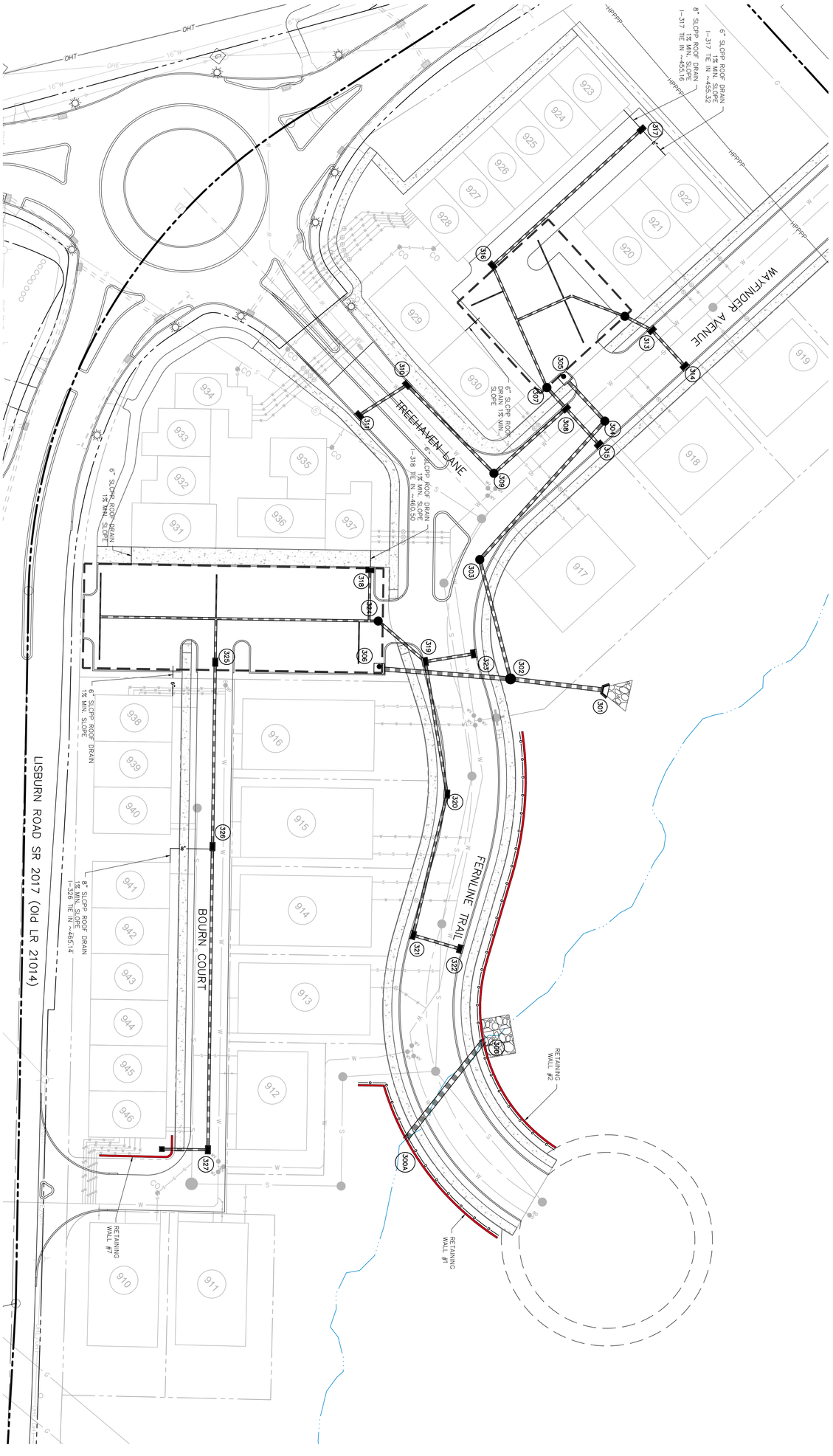
Seal: COMMONWEALTH OF PENNSYLVANIA – G. MITCHELL KING – ENGINEER – No. PE039183 – REGISTERED PROFESSIONAL – 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: SM–16

4/29/2026 3:56 PM L:\15–100–35\SHEETS\PRELIM–FINAL – SMM–ES\16 SM–16.DWG

PRELIMINARY / FINAL



PRELIMINARY / FINAL

Sheet number	DATE	REVISIONS
RD-1	–	–
	–	–
	–	–
	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
	1/19/26	REVISED FOR CH&N CHANGES

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

Seal: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — G. MITCHELL KING — No. PE061151 — 4/29/26

Project Manager: DAVID B. KEGERIZE PE	Drafting: D TURNER
Project Engineer: G. MITCHELL KING PE, PLS	Checked by: K POSTLETHWAIT
Project Surveyor: THOMAS K. PHILLIPS PLS	Scale: 1"=30'

0 15 30 60 90

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

ROOF DRAIN CONNECTION PLAN – NEIGHBORHOOD 3.1

Date: DECEMBER 17, 2025

Project number: 15-100-35

Sheet number: 17 of 33

LISBURN ROAD (SR2017)

WAYFINDER AVENUE

SCOTS LANE

WAYFINDER AVENUE

IRISH WAY

WAYFINDER AVENUE

8" SLCPP ROOF DRAIN
1% MIN. SLOPE

10" SLCPP ROOF DRAIN
1% MIN. SLOPE
I-418 TIE IN ~439.70

6" SLCPP ROOF DRAIN
1% MIN. SLOPE

6" SLCPP ROOF DRAIN
1% MIN. SLOPE
I-427 TIE IN ~439.18

8" SLCPP ROOF DRAIN
1% MIN. SLOPE
I-426 TIE IN ~438.72

6" SLCPP ROOF DRAIN
1% MIN. SLOPE
I-429 TIE IN ~442.35

6" SLCPP ROOF DRAIN
0.50% MIN. SLOPE
TIE IN WITH INSERTA
TEE OR EQUIV.

8" SLCPP ROOF DRAIN
0.50% MIN. SLOPE
I-407 TIE IN ~426.70

6" SLCPP ROOF DRAIN
0.50% MIN. SLOPE
I-420 TIE IN ~442.25

973 974 975 972 976 971 977 970 978 969 968 967 966 965 964 963 962 961 960 959 958 957 956 955 954 953 979 980

412 411 410 417 416 413 418 415 409 408 403 407 428 427 419 429 426 404 422 423 421 420 424 425

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Sheet Number: 18 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

ROOF DRAIN CONNECTION PLAN - NEIGHBORHOOD 4

Drafting: D TURNER
Checked by: K. POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: 1" = 20'

0 10 20 40 60

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE088163

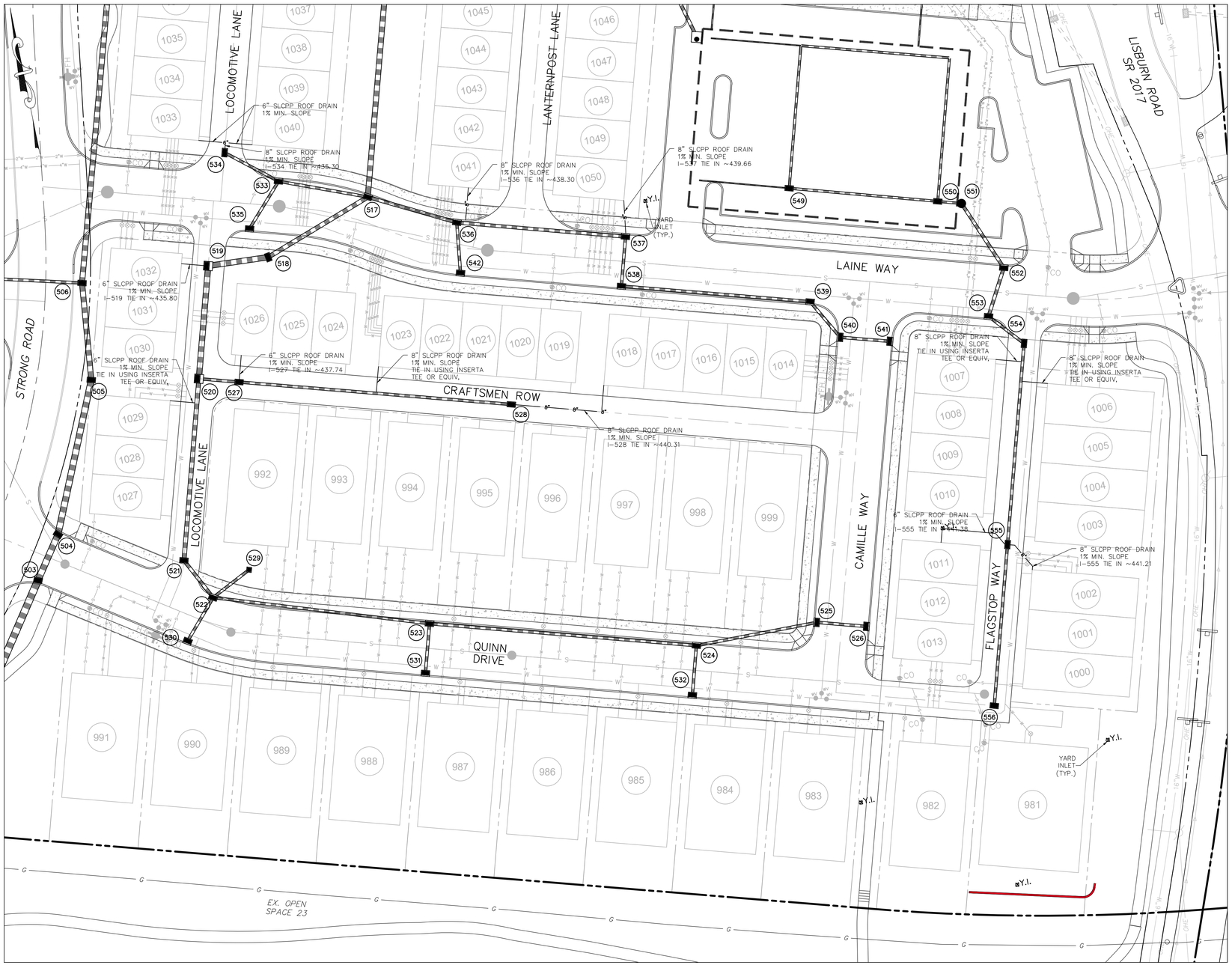
-	-	-	4/17/26 ADDRESS TWP. ENG. LTR. & COUNTY LTR.
-	-	-	3/27/26 UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
-	-	-	2/10/26 ADDRESS CCPD & TWP. ENG. COMMENTS
-	-	-	1/19/26 REVISED FOR CH&N CHANGES

DATE REVISIONS

Section Number: RD-2

4/29/2026 3:55 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\18 RD-02.DWG

PRELIMINARY / FINAL

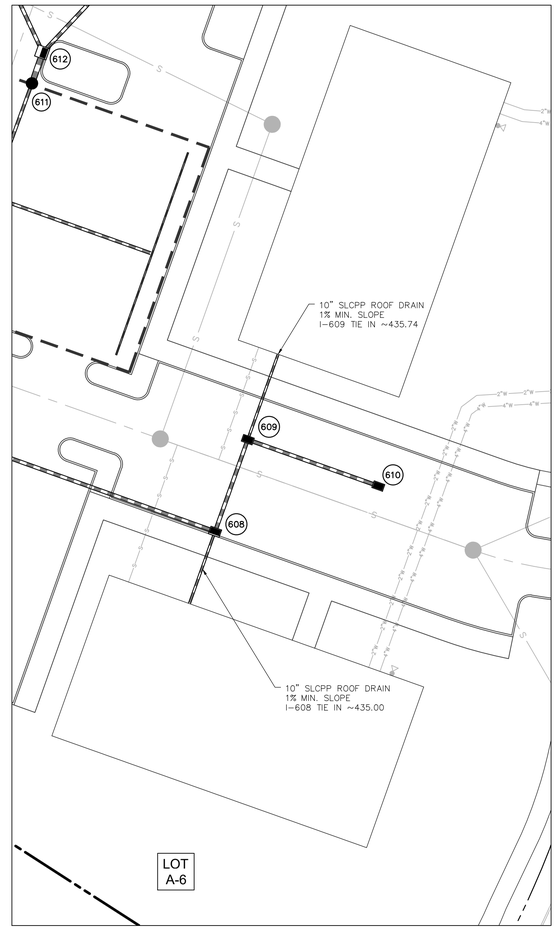


NEIGHBORHOOD 5 – ROOF DRAIN PLAN

ROOF DRAIN LEGEND

SW DOWNSPOUTS FROM UNIT TO BE CONNECTED TO ROOF DRAIN STUBS.

—SW— SLCPP ROOF DRAIN STUB @ 1% MIN



NEIGHBORHOOD 6 – ROOF DRAIN PLAN

Sheet Number: 19 of 33

Project Number: 15-100-35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

ROOF DRAIN CONNECTION PLAN – NEIGHBORHOOD 5 & 6

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1"=30'

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE039153

TOWNE SQUARE ENGINEERING

313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538

Civil Engineers & Land Planners

info@townesquareengineering.com

	DATE	REVISIONS
1	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
1	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
1	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1	1/19/26	REVISED FOR CH&N CHANGES

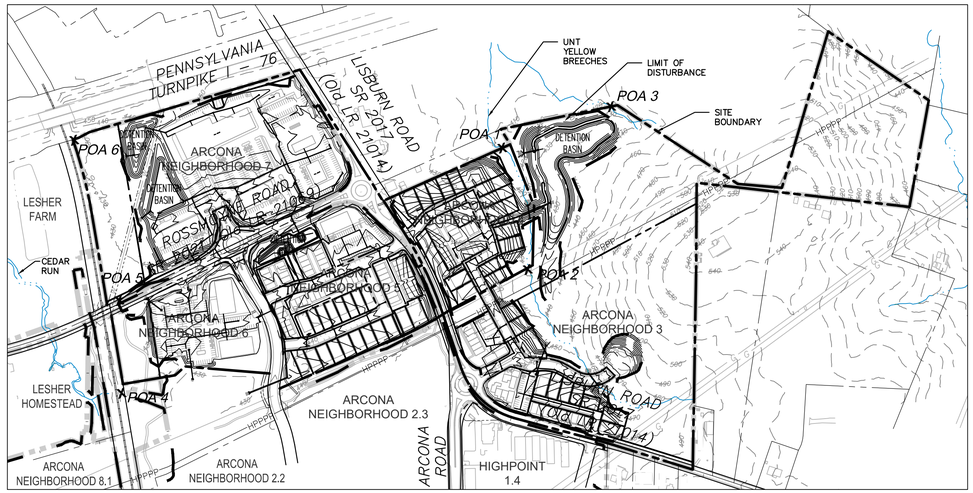
Section Number: RD-3

4/29/2026 3:53 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\19 RD-03.DWG

PRELIMINARY / FINAL

EROSION & SEDIMENT CONTROL PLANS

REMAINING ARCONA NEIGHBORHOODS 3, 4, 5, 6, & 7



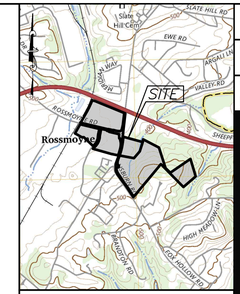
SCALE: 1" = 300'

This site is tributary to Cedar Run and UNT to Yellow Breeches Creek. Cedar Run is classified as Cold Water Fishery, Migratory Fish (CWF, MF). UNT to Yellow Breeches Creek is classified as Cold Water Fishery, Migratory Fish (CWF, MF)

The wetlands adjacent to Cedar Run are classified as Exceptional Value (EV).

Limit of Disturbance = 202.60 Ac.
(38.44 ac. added with this Major Amendment)

NPDES Boundary = 251.13 Ac.
(67.18 ac. added with this Major Amendment)



LOCATION MAP
SCALE: 1" = 2000'

PLAN INDEX

SECTION	NO.	TITLE
ES–1	20	EROSION & SEDIMENT CONTROL PLAN COVER
ES–2	21	EROSION & SEDIMENT CONTROL PLAN – OVERALL
ES–3	22	EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 3.1
ES–4	23	EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 4
ES–5	24	EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 5
ES–6	25	EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 6
ES–7	26	EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 7
ES–8	27	EROSION & SEDIMENT CONTROL PLAN – DETAILS
ES–9	28	EROSION & SEDIMENT CONTROL PLAN – DETAILS
ES–10	29	EROSION & SEDIMENT CONTROL – BASIN DETAILS
ES–11	30	EROSION & SEDIMENT CONTROL – BASIN DETAILS
ES–12	31	EROSION & SEDIMENT CONTROL – NOTES
ES–13	32	EROSION & SEDIMENT CONTROL – BASIN DETAILS
ES–14	33	EROSION POTENTIAL ANALYSIS

GEOLOGIC EVALUATION:
See "Arcona Neighborhoods 3, 4, 5, 6, 7 Carbonate Geology Evaluation Report," prepared by ARM Group LLC, dated December 2025 for full analyses of site geology and recommendations.

SUMMARY

- The underlying structural bedrock geology is complex. According to the DCNR□s Geologic Data Exploration Map (www.gis.dcnr.state.pa.us/geology), the limits of Neighborhoods 3, 4, 5, 6 and 7 are underlain by three bedrock formations including the Epler Formation (De) in the northwestern portion of the site. A northeast–southwest trending thrust fault contact with the Hershey and Myerstown Formations, undivided, is mapped near the northwestern boundary of the site along with regional northeast–southwest trending normal faulting (i.e., the Allendale Fault) within approximately 1,000 feet of the northwestern corner of the Site. The southeastern portion of the site is underlain by the Gettysburg Formation (Trg) and an igneous diabase intrusion (Jd). The contact between the Epler Formation and the Gettysburg Formation is interpreted as a broad scale steeply dipping normal fault that strikes northeast–southwest and dips toward the south–southeast.
- During the reconnaissance, the site was visually reviewed to note applicable existing conditions relevant to the identification of visible karst– related features (i.e., sinkholes, closed depressions, lineaments, fracture traces, caverns, intermittent lakes, ephemeral streams, and bedrock pinnacles). During the reconnaissance, evidence of karst features was not generally apparent with the exception of one existing closed depression observed at the ground surface; however, temporary site grading and stockpiling and woodland vegetation could have potentially obscured some features. Nevertheless, the potential presence of karst features in the northern and central portions of the site, underlain by the Epler Formation, is considered highly likely, as the Epler Formation is notorious regionally for developing karst hazards. Consequently, potential karst features are concluded more likely to occur within the northern and central portions of the site, generally within the footprint of the Great Valley Physiographic Section.
- As shown on Map 1, and according to the Sinkholes and Karst–Related Features of Cumberland County, Pennsylvania, (W.E. Kochanov, 1990), no sinkholes are mapped within approximately 2,000 feet of the site limits; however, multiple closed depressions are mapped within the Epler Formation and one closed depression was identified by ARM as part of the site reconnaissance activities. Mapped historical closed depressions can be difficult to visually discern from the vantage point of the ground surface. Three closed depressions were previously mapped within the Gettysburg Formation, south of the site; however, these features are not likely to be directly associated with karst conditions.

RECOMMENDATIONS

Sinkhole Prevention
An effective means of minimizing post–construction sinkhole activity is to include facilities such that stormwater is collected and transported away from critical areas (e.g., structures, roadways, and driveway areas) as quickly and completely as possible. Sinkholes can be discouraged by taking the following precautions.

- Choose the most watertight piping available for all water–bearing conduits. Storm and sanitary sewer lines should, at a minimum, incorporate gasketed joints. If gasketed concrete pipe is used, it is recommended that pipe joints also be externally wrapped to help minimize leakage through the often–ineffective gaskets.
- Construction scheduling should provide for closing of excavations such as for foundations and utilities as soon as possible after exposure.
- Plastic tarps, diversion swales, berms and other measures should be utilized as appropriate to minimize surface water exposure with trenches or excavations that are opened during rainy weather.
- To the greatest extent practicable, avoid running sewer lines beneath buildings or other critical facilities. Utilities and sewer lines that run parallel to building walls should be at least 10 feet away from the outboard edge of the foundation but preferably 20 feet or more away.
- Outlet roof drains directly into collection leaders or storm sewers.
- Interrupt granular pipe bedding layers at maximum intervals of 100 feet with trench plugs, earth dams, or similar measures to prevent water flow through the bedding. Trench plugs should be constructed with compacted clay or with synthetic materials designed for this purpose. Specification and use of a product such as AquaBlok® (a composite bentonite aggregate material that will form a trench plug when used as backfill), or equivalent, would be ideal for this purpose.
- Minimize the extent of landscaped areas immediately adjacent to buildings or other critical facilities in favor of impervious surfaces.
- Provide positive overland drainage away from buildings and other critical facilities.
- Carefully seal all pavement joints, including joints where paving meets curb lines, structure walls, catch basins, etc.
- Do not install utility lines or free draining material along foundation lines
- Excavate and repair any sinkholes disclosed during construction.
- Contractors should not let rainwater run through or accumulate in trenches and around new foundations or utilities. Pumps should be used to promptly remove any water that does accumulate. Temporary dikes and diversion channels should be installed to divert surface water away from low areas that are not intended to collect water. When practical, trenches that are not yet backfilled, should be temporarily covered with tarps to prevent the accumulation of surface water in low areas.
- Backfill around structures and over utilities and sewer laterals should be placed promptly and should not be permitted to remain open for an extended time.

Implementation of the above measures should significantly reduce the amount of sinkhole activity during construction and over the life of the proposed facilities.

Sinkhole Treatments
Sinkholes that are not promptly addressed with appropriate remedial measures can increase in size and extent and may lead to significant additional mitigation costs in the future. Existing sinkholes, and sinkholes that occur during construction or in the future, should be promptly addressed on a case–by–case basis under the guidance of a Professional Geologist or Engineer registered in the Commonwealth of Pennsylvania and experienced with sinkhole treatments. The attending professional may consider the use of the techniques previously presented in Section 5.0 of this report. ARM will remain available to provide professional guidance regarding sinkhole treatments upon request.

Rock Removal
Based on the test probe results, ARM's current understanding of the proposed site development and grading, and ARM's previous experience with the carbonate geology in the area, it is likely that isolated conflicts with bedrock pinnacles will be encountered in excavations. Because rock removal and earthwork disturbances can lead to increased sinkhole susceptibility, care should be
taken to minimize rock disturbance to the extent practical where rock is encountered. Where rock removal is required, it should be conducted with mechanical means instead of blasting where practical, as blasting can increase sinkhole development risks and damage adjacent facilities. If blasting must be conducted, the work should be properly controlled and monitored to minimize over–blasting and the associated increased sinkhole development risks, and to prevent damage to adjacent facilities and features. If rock removal is performed below storm water management features, rock should be removed to a depth of at least two feet below the final design grades and stormwater management subgrades using mechanical rock removal methods (e.g., hydraulic ram or ripper). Broken and loose rock should be removed from the base of all excavations prior to backfilling. Where highly fractured or open–jointed rock is encountered in excavations, a geotextile filter fabric and/or graded stone filter should be placed, as appropriate and as directed by the attending professional, into the excavation prior to backfilling to prevent future soil loss into any such openings. ARM or other qualified Geotechnical Engineer should verify the exposed subgrade following rock removal activities and advise contractors concerning treatments as necessary prior to the placement of backfill.

Stormwater Management
Considerations and recommendations for the design and construction of stormwater management facilities at this site are as follows:

- Based on the presence of karst geology and the potential for sinkhole development at the site, stormwater management systems should be constructed using appropriate sinkhole mitigation and/or stabilization methods to minimize the potential for sinkhole development during the lifetime of the project. Sinkhole mitigation measures include such measures as: 1) limiting the head of water above the base of any stormwater management system and/or using a low permeability liner below stormwater management facilities; 2) limiting the stormwater loading ratio to the extent practical consistent with the recommendations of the PA BMP Manual; 3) distributing the proposed stormwater infiltration facilities strategically around the site to limit concentrated flows and to diminish potential property damage and/or injury risks due to inherent sinkhole development risks; and 4) properly reviewing, repairing and/or stabilizing observed subsurface voids or impending sinkhole conditions prior to stormwater management facility construction and as soon as possible following the identification of potential or active sinkholes in the future.
- Based on the observed site conditions, including risks of sinkhole development noted earlier, caution and appropriate vetting should be incorporated while designing and constructing stormwater facilities at the site. Shallow rain gardens, clay–lined systems where appropriate, and water–quality protections based on best management practices will generally help to minimize the elevated risks of sinkhole development. Appropriate system redundancy should be considered and implemented in the design of stormwater management facilities, and passive bypass(es) should be incorporated as and where appropriate to prevent surcharging within the system.
- Underground conveyance piping should be leak resistant. All joints should be adequately sealed or gasketed, and pipes should be properly bedded and placed to prevent leakage. Corrugated metal pipe is not recommended because of the difficulty in effectively sealing the joints. Other pipe materials such as High–Density Polyethylene (HDPE) and/or PVC pipe with water–tight connections are recommended where appropriate. Additionally, pipe bedding should be designed and constructed to minimize the potential for the accumulation of water and concentrated infiltration. Where utility and sanitary or storm sewer pipe backfill have the potential to convey significant amounts of water (e.g., along stone bedding around stormwater and sewer lines), trench plugs constructed with AquaBlok® composite bentonite aggregate (or equivalent such as well–compacted clay) should be placed at 100–foot intervals (maximum) across any open–graded pipe bedding to minimize the preferential flow and concentration of water along the bedding of such utilities. Additional applications of trench plugs around manholes and at other junctures, as appropriate, should be considered by the designer. The designer should strategically select locations of such trench plugs to segregate critical infrastructure at the site (e.g., lined subsurface stormwater detention facilities, etc.) from utility trenches, as appropriate.
- Stormwater management subgrades (as well as subgrades for building foundations, utilities, and pavements) should be evaluated, reviewed, and probed by an ARM or other Professional Geologist or Geotechnical Engineer experienced in identification and mitigation of common issues related to karst geology, historic fill placement and perched water conditions prior to the backfilling of, or construction above, any such subgrades.

General Recommendations
The Owner and project stakeholders should be informed that significant unscheduled excavations to address karst features may be necessary to facilitate proper surface and subsurface preparations in accordance with the recommendations of the attending Professional Geologist or Geotechnical Engineer.

- As applicable, the recommendations presented herein should be reflected in the specifications, drawings, plans, contracts and/or other documents issued for site construction.
- The designer should carefully review the prevailing Township and County codes and ordinances and State guidance (e.g., Pennsylvania Stormwater BMP Manual) to ensure that stormwater management facilities comply with the applicable provisions of such documents.
- Qualified geotechnical engineering observations and tests should be conducted on a full–time basis during all phases of the site preparation, utility and sewer line construction, foundation construction, pavement construction, and stormwater facility construction to ensure its proper execution. All structure foundation subgrades should be approved before pouring foundations, and each lift of fill and backfill should be observed and tested on a layer–by–layer basis to ensure the recommended degree of compaction is obtained and that the materials are placed within the proper moisture content range. Overexcavation and backfill of localized soft material zones should be recommended by Quality Control and Quality Assurance Representatives. ARM can provide personnel to perform quality control and quality assurance reviews and testing services upon request.

EQUITABLE OWNER / DEVELOPER (ARCONA NEIGHBORHOOD 3, 4, 5, 6, & 7):

Charter Homes Development Company
322 North Arch Street
Lancaster, PA 17603

OWNER (ARCONA NEIGHBORHOOD 3)

Ruth D. Lesher
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–011
Deed Book and Page: 00184–00353

OWNER (ARCONA NEIGHBORHOOD 4)

Ruth D. Lesher
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–230
Deed Book and Page: 00184–00353

OWNER (ARCONA NEIGHBORHOOD 5)

Ruth D. Lesher (1/2 interest) and
Strong & Detweiler Partnership (1/2 interest)
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–229
Deed Book and Page: 201729508 (Ruth D. Lesher)
Deed Book and Page: 274–1884 (Strong & Detwiler)

OWNER (ARCONA NEIGHBORHOOD 6)

Arcona Commons Properties LP
322 North Arch Street
Lancaster, PA 17603

SOURCE OF TITLE:

Tax Map 13–10–0256–225
Deed Book and Page: 201920512

OWNER (ARCONA NEIGHBORHOOD 7)

Ruth D. Lesher (1/2 interest) and
Strong & Detweiler Partnership (1/2 interest)
1340 Rossmoyne Road
Mechanicsburg, PA 17055

SOURCE OF TITLE:

Tax Map 13–10–0256–228
Deed Book and Page: 201729508 (Ruth D. Lesher)
Deed Book and Page: 247–1884 (Strong & Detwiler)

Note:

Arcona Neighborhoods 3, 4 & 5 are all as shown on the Subdivision Plan recorded in PL# 201807345. Neighborhoods 6 & 7 area as shown on PL# 201807345 except where right–of–way was transferred to PennDOT around the Lisburn–Rossmoyne Roundabout, as recorded in Instrument #201903119.

SITE ACREAGE:

ARCONA NEIGHBORHOOD 3 –	GROSS AREA	32.29 Ac.
ARCONA NEIGHBORHOOD 4 –	GROSS AREA	6.12 Ac.
ARCONA NEIGHBORHOOD 5 –	GROSS AREA	8.82 Ac.
ARCONA NEIGHBORHOOD 6 –	GROSS AREA	5.29 Ac.
ARCONA NEIGHBORHOOD 7 –	GROSS AREA	16.50 Ac.
TOTAL	GROSS AREA	69.02 Ac.

SITE DATA:

Highway Occupancy Permit is to be prepared by others and submitted to PENNDOT for approval.

ZONING:

R–2 Single–Family Residential District (TND Overlay)

PROPOSED USE:

44	– Single–Family Detached Lots
88	– Single–Family Attached Units
7	– Mixed Use Residential
139	– Total Residential Units

109,625 S.F. – Commercial

PROPOSED WATER SERVICE:

PUBLIC

PROPOSED SEWER SERVICE:

PUBLIC

SOILS LIMITATIONS & RESOLUTIONS

Symbol	Name	Slope	Limitations	Resolution
DuA	Duffield silt loam	0-3%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation wall or mechanically support
			Piping	Clay liner, water-tight pipe joints
EdB	Edom silty clay loam	3-8%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
			Piping	Clay liner, water-tight pipe joints
HaB	Hagerstown silt loam	3-8%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
HaC	Hagerstown silt loam	8-15%	High clay content	Minimize construction in this soil
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
HcD	Hagerstown silt loam, rocky	15-25%	Slope	Mechanically support excavation walls and cut slopes
			Dusty	Water dry disturbed areas
			High clay content	Minimize construction in this soil
			Unstable excavation walls	Slope excavation walls or mechanically support
Me	Melvin silt loam	0-2%	Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Flooding	Minimize excavations in lowlands
			Dusty	Water dry disturbed areas
			Unstable excavation walls	Slope excavation walls or mechanically support
NeB	Neshaminy gravelly silt loam	3-8%	Dusty	Water dry disturbed areas
			Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Unstable excavation walls	Slope excavation walls or mechanically support
NeC	Neshaminy gravelly silt loam	8-15%	Slope	Mechanically support excavation walls and cut slopes
			Dusty	Water dry disturbed areas
			Depth to Saturated Zone	Minimize excavations in areas of high groundwater
			Unstable excavation walls	Slope excavation walls or mechanically support

NPDES NARRATIVE

Charter Homes proposes to develop the remainder of the Arcona TND, (Neighborhoods 3.1, 4, 5, 6, and 7) into residential and commercial uses. The land is currently a mix of agriculture, open space, and forest.
The development will be served by public sewer and water.

Remaining Arcona Neighborhoods is a part of the master plan for a traditional neighborhood development (TND) of the Arcona Site. Stormwater management for the development will be provided by onsite SCMs.

ESTIMATED SCHEDULE FOR PROJECT

Work Schedule:

- Start of Site Work: Q2 2026
- Site Work Complete: Q4 2026
- Home Construction: Q4 2026 – Q4 2029

RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES

1. The operator shall remove from the site, recycle, or dispose of all building materials and wastes 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., and any federal regulations. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.
2. Any sediment removed from the area of the PCSM BMP shall be placed in a location on–site and immediately stabilized to minimize the potential for accelerated erosion.
3. The contractor shall be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved and fully implemented erosion and sediment control plan that meets the conditions of Chapter 102 and/or other state or federal regulations.
4. 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.

DESIGN CONSIDERATIONS

The time and extent of earth disturbance will be limited.

- Earth disturbance, topsoil stripping, and compaction will be limited on portions of the site. These areas will be marked with orange construction fence as a visible reminder of the areas to be preserved.

The remaining Arcona Neighborhoods plan protects existing drainage features and vegetation.

- The existing drainageway/wetlands that run through the site will be fenced to prevent disturbance.

The plans minimize soil compaction by:

- Leaving steep slopes undisturbed.

The plans minimize generation of increased stormwater runoff by:

- Use streets with the minimum width permitted by Lower Allen Township.

THERMAL IMPACTS

Most of the Arcona Neighborhoods 3 and 4 area will drain into the bioretention basin SCM–1 via a stormwater conveyance system. The basin will contain the warmer first flush runoff from the site. The warmer first flush will either be evaporated, transpirated, or infiltrated through the soil media and vegetation. Other areas in the development will drain to either infiltration trenches or bioretention basin to be cooled underground or be evapotranspirated and infiltrated prior to reaches surface waters.

Sheet Number: 20 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods
EROSION & SEDIMENT CONTROL PLAN COVER

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 300'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G MITCHELL KING No. PE078532 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

NO.	DATE	REVISIONS
1	1/19/26	REVISED FOR CH&N CHANGES
2	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number: ES–1

L:\15–100–35\SHEETS\PRELIM–FINAL – SWM–ES\20 ES–01.DWG
4/29/2026 3:57 PM

PRELIMINARY / FINAL

PENNSYLVANIA TURNPIKE I – 76

LIMIT OF DISTURBANCE

POA 6

POA 5

POA 4

POA 1

POA 2

POA 3

PCSM SCM-10

PCSM SCM-9

PCSM SCM-8

PCSM SCM-7

PCSM SCM-6

PCSM SCM-4

PCSM SCM-5

PCSM SCM-2

PCSM SCM-3

SEDIMENT BASIN 2 (PCSM SCM-9)

SEDIMENT BASIN 1 (PCSM SCM-1)

SEDIMENT BASIN D-2

ARCONA NEIGHBORHOOD 7

ARCONA NEIGHBORHOOD 6

ARCONA NEIGHBORHOOD 5

ARCONA NEIGHBORHOOD 4

ARCONA NEIGHBORHOOD 2.3

ARCONA NEIGHBORHOOD 2.1

OPEN SPACE

REMAINING UNDEVELOPED LANDS

SITE BOUNDARY

CEDAR RUN

UNT TO YELLOW BREECHES CREEK

COMMONS WAY

ROSSMYRE ROAD SR 2021 (Old LR 21069)

STRONG ROAD

CRAFTSMEN ROW

QUINN DRIVE

LISBURN ROAD SR 4013 (Old LR 21013)

ARCONA ROAD

ROCKY WAY

HPPPP

KEY MAP

EROSION AND SEDIMENT CONTROL LEGEND

- FS-18 — PROPOSED COMPOST FILTER SOCK
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED CONTOUR (INTERVAL)
- 450 — TEMPORARY CONTOUR
- SOIL LIMIT LINE
- SEDIMENT BASIN DRAINAGE AREA BOUNDARY
- SWALE DRAINAGE AREA BOUNDARY
- NPDES BOUNDARY
- NAG S75 EROSION CONTROL MATTING
- NAG S150 EROSION CONTROL MATTING
- NAG P550 EROSION CONTROL MATTING
- STABILIZED CONSTRUCTION ENTRANCE
- SP — 18-SF — SOIL STOCKPILE
- RIPRAP APRON
- STONE INLET PROTECTION
- FILTER BAG INLET PROTECTION

Sheet Number:
21 of 33

Project Number:
15-100-35

Date:
DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN – OVERALL

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=100'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 50 100 200 300

Seal(s): COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
1/19/26	REVISED FOR CHAN CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number:
ES-2

4/29/2026 3:53 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ESV2\ ES-02.DWG

PRELIMINARY / FINAL

POA 2

EXISTING WETLANDS

HPPPP — LIMIT OF DISTURBANCE 202.60 Ac.

RETAINING WALL #3 (TYP.) — D CD-2

RETAINING WALL #2 (TYP.) — D CD-2

RETAINING WALL #1 (TYP.) — D CD-2

RETAINING WALL #4 (TYP.) — D CD-2

EROSION CONTROL BLANKET (TYP.) — F ES-8

STABILIZED CONSTRUCTION ENTRANCE (TYP.) — A ES-8

CONCRETE WASHOUT (TYP.) — C ES-8

BUCKEYE REQUIRES A MINIMUM OF 4" OF COVER OVER THE PIPELINE WHERE OCCUPIED STRUCTURES ARE LOCATED WITHIN 50' OF THE PIPELINE

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-40 & OS-41 AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-40 & OS-41 SECTIONS OF THE SITE.

MAX D.A. TO SWALE 1

MAX. D.A. TO SEDIMENT BASIN 1

PCSM SCM-2

PCSM SCM-3

TOPSOIL STOCKPILE

TREE SAVEN LANE

WAYFARER AVENUE

BOURN COURT

LISBURN ROAD SR 2017 (Old LR 21014)

ROCKY WAY

SITE BOUNDARY

R.C.E. #1

DP-002

18" CFS GP. A

PROPOSED CULVERT

UNT YELLOW BREECHES CREEK

CALCULATED 100-YEAR FLOODPLAIN (FLOODWAY ASSUMED EQUAL)

EXISTING WETLANDS

SITE BOUNDARY 251.13 Ac.

NeB — NeC — HcD

KEY MAP

ES-7 ES-5 ES-4 ES-6 ES-3

Sheet Number: 22 of 33

Project Number: 15-100-35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 3.1

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — G. MITCHELL KING — No. PE081937 — 4/17/26

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Section Number: ES-3

4/29/2026 3:57 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\22 ES-03.DWG

PRELIMINARY / FINAL

KEY MAP

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-40 & OS-41 AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-40 & OS-41 SECTIONS OF THE SITE

BUCKEYE REQUIRES A MINIMUM OF 4' OF COVER OVER THE PIPELINE WHERE OCCUPIED STRUCTURES ARE LOCATED WITHIN 50' OF THE PIPELINE

Sheet Number:
23 of 33

Project Number:
15-100-35

Date:
DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 4

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

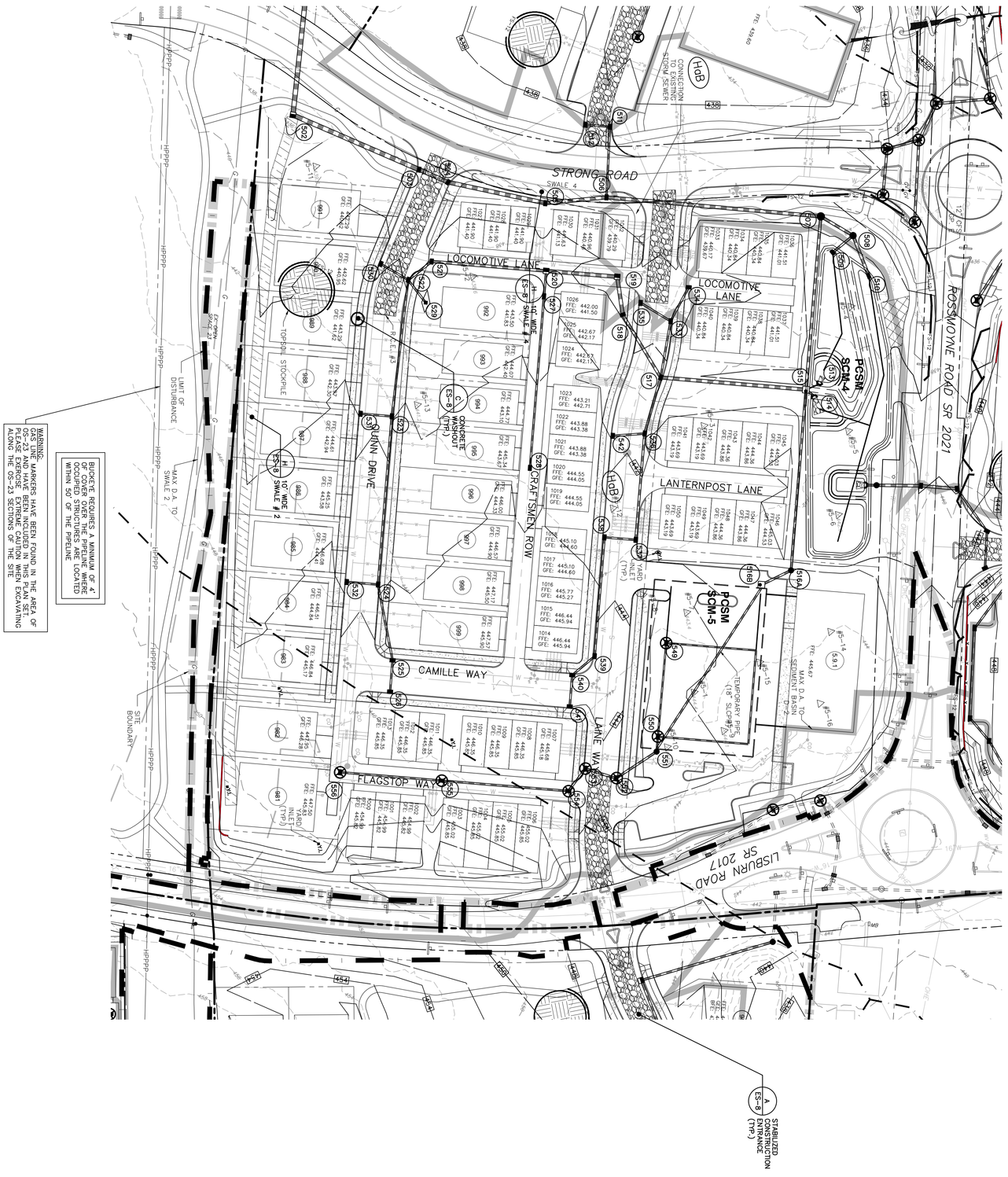
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

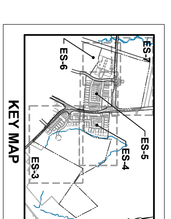
REVISIONS		
1/19/26	REVISED FOR CH&N CHANGES	–
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS	–
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7	–
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.	–

Section Number:
ES-4

4/29/2026 3:54 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\23 ES-04.DWG

PRELIMINARY / FINAL





PRELIMINARY / FINAL

Sheet Number: ES-5

–	–	
–	–	
–	–	
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.	
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7	
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS	
1/19/26	REVISED FOR CH&N CHANGES	
DATE	REVISIONS	

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE061151 4/29/26

Project Manager: DAVID B. KEGERIZE PE	Drafting: D TURNER
Project Engineer: G. MITCHELL KING PE, PLS	Checked by: K POSTLETHWAIT
Project Surveyor: THOMAS K. PHILLIPS PLS	Scale: 1"=50'

0 25 50 100 150

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 5

Date: DECEMBER 17, 2025

Project Number: 15-100-35

Sheet Number: 24 of 33

KEY MAP

Sheet Number: 25 of 33

Project Number: 15-100-35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN - NEIGHBORHOOD 6

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G MITCHELL KING No. PE088363 ENGINEER

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

–	–	–	–
–	–	–	–
–	–	–	–
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.		
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7		
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS		
1/19/26	REVISED FOR CH&N CHANGES		
DATE	REVISIONS		

Section Number: ES-6

4/29/2026 3:52 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\25 ES-06.DWG

PRELIMINARY / FINAL

KEY MAP

Sheet Number: 26 of 33

Project Number: 15–100–35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN – NEIGHBORHOOD 7

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1"=50'

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE084134 — 4/29/26

TOWNE SQUARE ENGINEERING

313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538

Civil Engineers & Land Planners

info@townesquareengineering.com

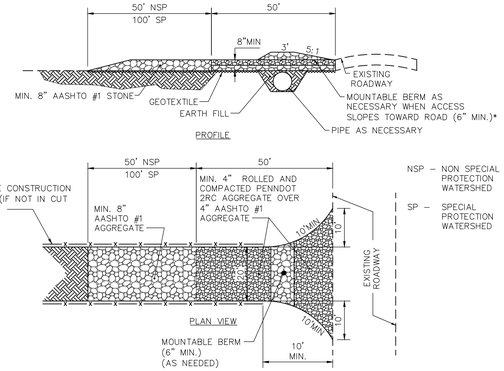
	DATE	REVISIONS
–	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
–	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
–	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
–	1/19/26	REVISED FOR CH&N CHANGES

Section Number: ES–7

L:\15–100–35\SHEETS\PRELIM–FINAL – SWM–ES\26 ES–07.DWG

4/29/2026 3:56 PM

PRELIMINARY / FINAL

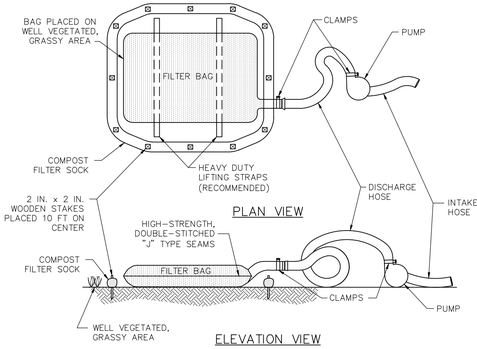


*MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

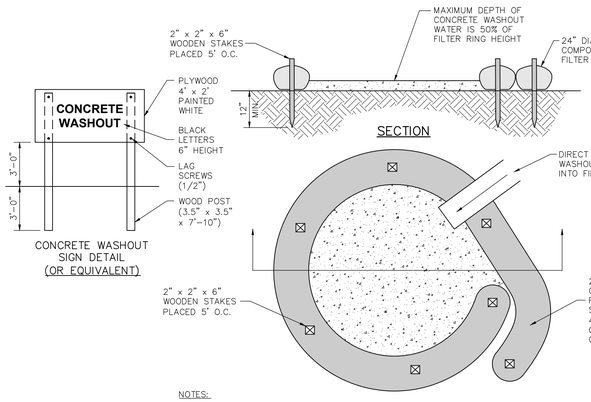
- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHENEVER OPTIONAL CULVERT *PIPE* 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 WILL 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 DITCHED, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

A ES–8 ROCK CONSTRUCTION ENTRANCE - # 3-1 (ABACT)
NOT TO SCALE



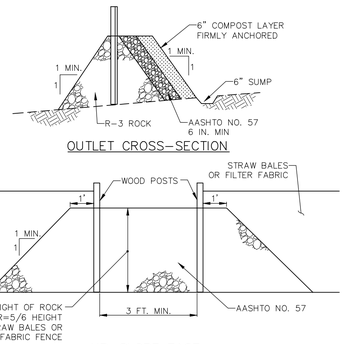
B ES–8 PUMPED WATER FILTER BAG # 3-16 SPECIAL PROTECTION WATERSHEDS
NOT TO SCALE



NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING SOCKS.

C ES–8 CONCRETE WASHOUT DETAIL
NOT TO SCALE



OUTLET CROSS–SECTION

UP–SLOPE FACE

NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

D ES–8 ROCK FILTER OUTLET DETAIL - # 4-6
NOT TO SCALE

NOTES:

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 LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

Property	Test Method	Minimum Standard
Avg. Wide Width Strength	ASTM D-4884	60 lb/in
Grab Tensile	ASTM D-4632	205 lb
Puncture	ASTM D-4833	110 lb
Mullen burst	ASTM D-3786	350 psi
UV Resistance	ASTM D-4355	70%
AOS % Retained	ASTM D-4751	80 sieve

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.

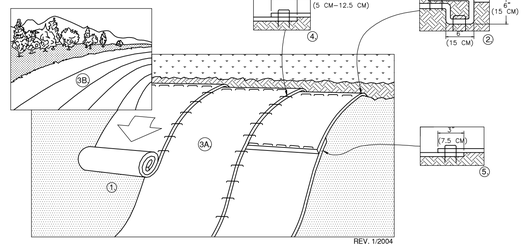
BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER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

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 RESUME UNTIL THE PROBLEM IS CORRECTED.

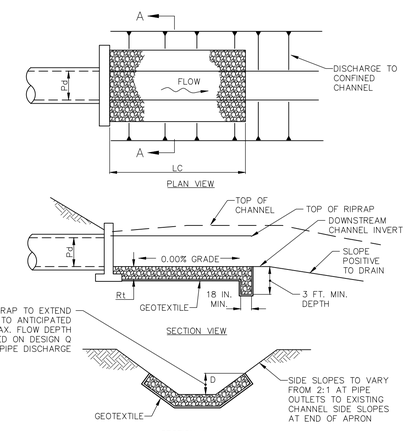


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

DETAIL PROVIDED BY:
NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1–800–772–2040, CANADA 1–800–448–2040
www.nagreen.com

F ES–8 NORTH AMERICAN GREEN SLOPE PROTECTION
NOT TO SCALE



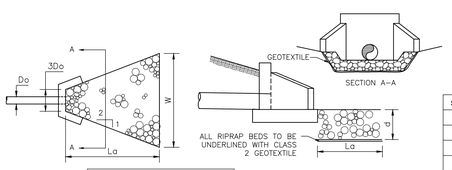
OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON					
		SIZE (R–_)	THICK. Rt (IN)	LENGTH LC (FT)	INITIAL BOTTOM WIDTH (at Endwall)(FT)	END WIDTH (FT)	INITIAL TOP WIDTH (at Endwall)(FT)	END TOP WIDTH (FT)	SIDE SLOPES H:V
300	30	R-6	36	16.0'	7.5	7.5	22.16	22.16	6.32
403	30	R-6	36	20.0'	7.5	7.5	19.94	19.94	4.38
603	24	R-3	9	7.0'	7.0	7	16	16	4.86

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

I ES–8 RIPRAP APRON AT PIPE OUTLET TO AN EXISTING CHANNEL - # 9-3
NOT TO SCALE



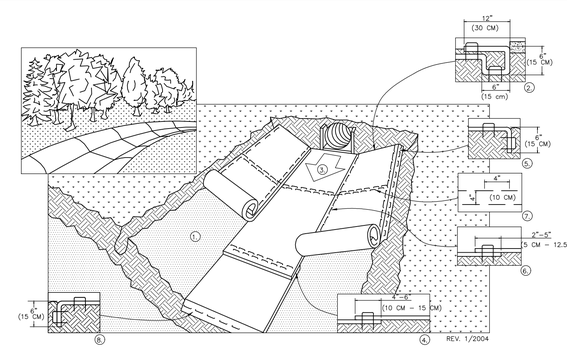
GRADATION OF RIPRAP			
	MAX.	AVG.	MIN.*
R-3	6"	3"	2"
R-4	12"	6"	3"
R-5	18"	9"	5"
R-6	24"	12"	7"

* PIECES SMALLER THAN THE MIN. SIZE SHALL NOT EXCEED 15% OF THE TONNAGE SHIPPED

NOTES:

- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.
- EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

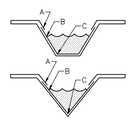
E ES–8 TYPICAL RIPRAP APRON WITH ENDWALL - # 9-1
NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4" – 6" (10 CM –15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (5 CM –12.5 CM) (DEPENDING ON BLANKET TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M – 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:

* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.



CRITICAL POINTS

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

DETAIL PROVIDED BY:
NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH,
EVANSVILLE, INDIANA 47725
USA 1–800–772–2040
CANADA 1–800–448–2040
www.nagreen.com

NOTE:

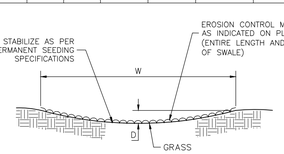
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

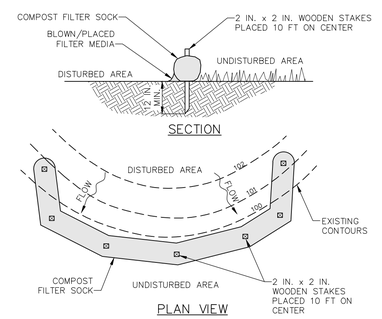
APPLIES TO S150 AND P300

G ES–8 NORTH AMERICAN GREEN CHANNEL PROTECTION
NOT TO SCALE

SWALE	W	D	MIN. SLOPE	MAX. SLOPE	EROSION CONTROL MATTING	PERMANENT STABILIZATION
1	25'	1.5'	4.4%	4.4%	NAG S150	GRASS
2	10'	1.5'	2.6%	2.6%	NAG S150	GRASS
3	16'	1.5'	1.1%	1.1%	NAG S150	GRASS
4	10'	1	1.3%	1.3%	NAG S150	GRASS



H ES–8 PARABOLIC SWALE DETAILS
NOT TO SCALE



NOTES:

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 EROSION 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 AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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 SUPPLEMENT.

J ES–8 COMPOST FILTER SOCK - # 4-1
NOT TO SCALE

Sheet Number:
27 of 33
Project Number:
15–100–35
Date:
DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN – DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS
Scale: AS NOTED

DATE	REVISIONS
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

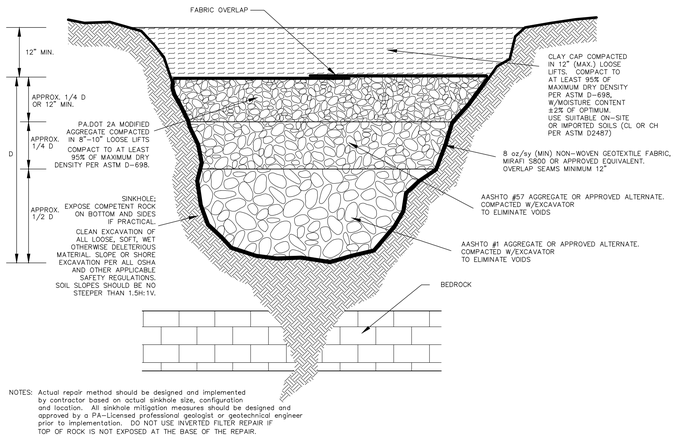
COMMONWEALTH OF PENNSYLVANIA — G. MITCHELL KING — ENGINEER — No. PE039193 — REGISTERED PROFESSIONAL — 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com
Civil Engineers & Land Planners

Section Number:
ES–8

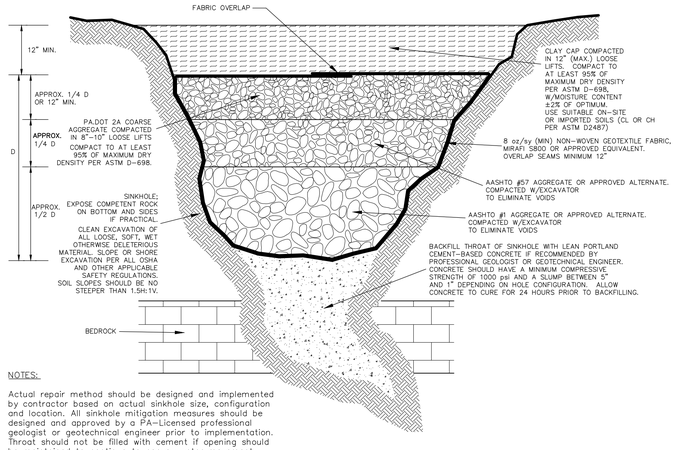
4/29/2026 3:56 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\27 ES-08.DWG

PRELIMINARY / FINAL



NOTES: Actual repair method should be designed and implemented by contractor based on actual sinkhole size, configuration and location. All sinkhole mitigation measures should be designed and approved by a PA-Licensed professional geologist or geotechnical engineer prior to implementation. DO NOT USE INVERTED FILTER REPAIR IF TOP OF ROCK IS NOT EXPOSED AT THE BASE OF THE REPAIR.

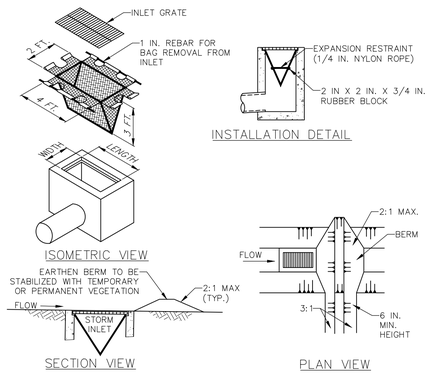
A ES-9 SINK HOLE REPAIR DETAIL - NO THROAT ENCOUNTERED
NOT TO SCALE



NOTES:

Actual repair method should be designed and implemented by contractor based on actual sinkhole size, configuration and location. All sinkhole mitigation measures should be designed and approved by a PA-Licensed professional geologist or geotechnical engineer prior to implementation. Throat should not be filled with cement if opening should be maintained to continue to convey water movement.

B ES-9 SINK HOLE REPAIR DETAIL - THROAT ENCOUNTERED
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

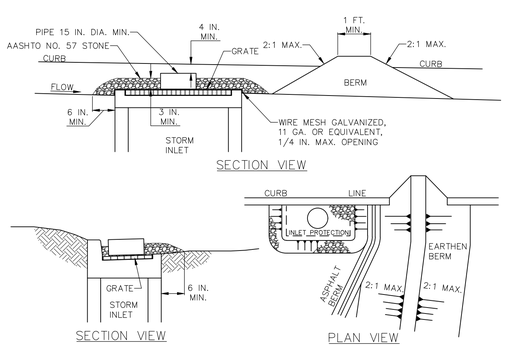
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

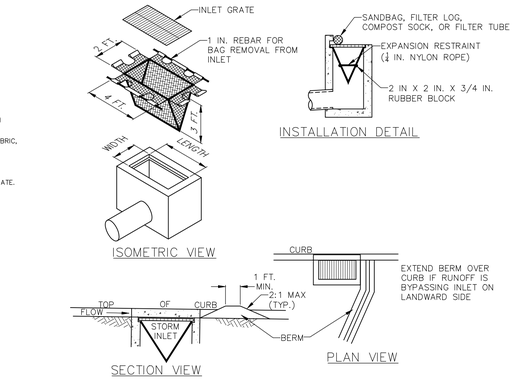
D ES-9 FILTER BAG INLET PROTECTION - TYPE M INLET #4-16
NOT TO SCALE



NOTES:

- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
- ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6 IN. MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
- STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.
- SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
- FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
- DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

E ES-9 STONE INLET PROTECTION AND BERM - TYPE C INLET - # 4-19
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

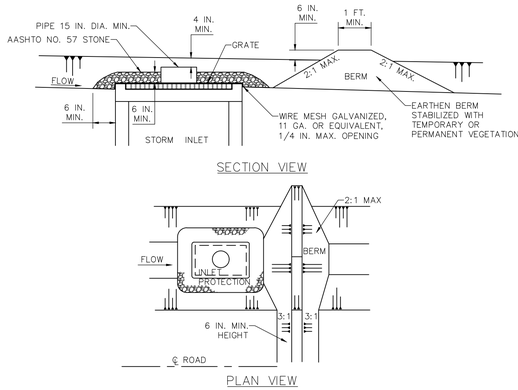
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

C ES-9 FILTER BAG INLET PROTECTION - TYPE C INLET #4-15
NOT TO SCALE



NOTES:

- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
- ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.
- STONE INLET PROTECTION AND BERM FOR A TYPE M INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN. OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA. TOP OF PIPE SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADWAY IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC. EARTHEN BERM SHALL BE ROLLED.
- SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
- FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
- DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

F ES-9 STONE INLET PROTECTION AND BERM - TYPE M INLET - # 4-20
NOT TO SCALE

Sheet Number: 28 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL PLAN - DETAILS

Drafting: D TURNER | Checked by: K POSTLETHWAIT | Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA — G. MITCHELL KING — ENGINEER — No. RES0019 — REGISTERED PROFESSIONAL — 4/27/26

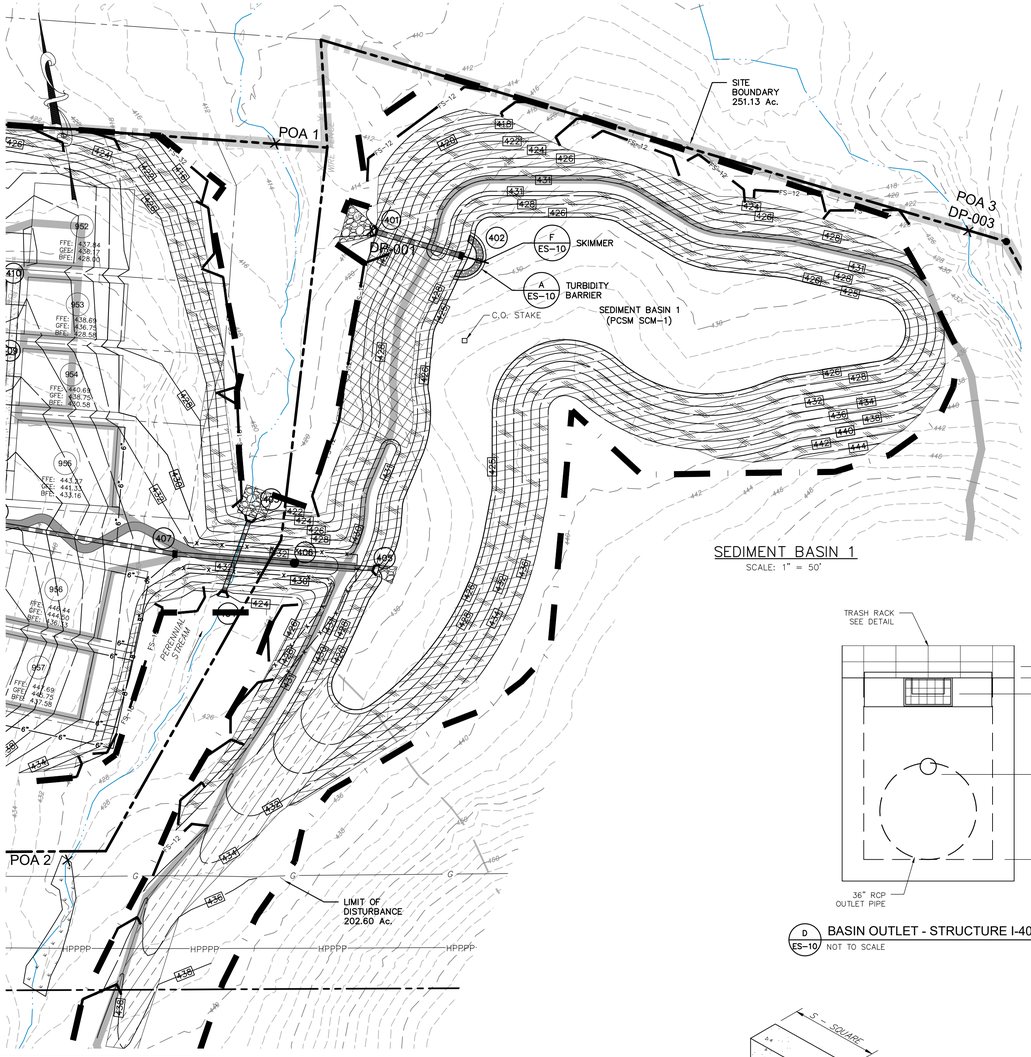
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241 Lancaster, PA 17603 Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

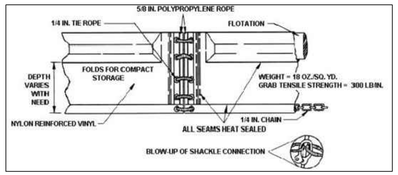
Section Number: ES-9

4/29/2026 3:54 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\28 ES-09.DWG

PRELIMINARY / FINAL



SEDIMENT BASIN 1
SCALE: 1" = 50'



SPECIFICATIONS (ST: 10/08)

Main body fabric is laminated vinyl/polyester having the following characteristics:

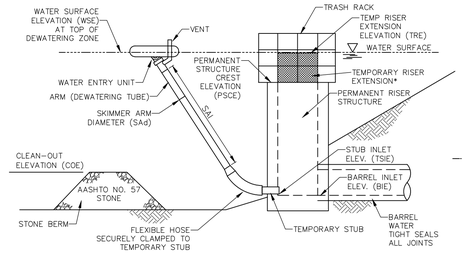
Construction – vinyl laminate on 9x9 1000x1300 denier polyester scrim
Weight – 18.5 oz. per sq. yd (434 gr./sq.m)
Adhesion – 24 x 20 lb./2"
Grab Tensile – 410 x 410 lb./in. (430 x 421 daN/5cm.)
Tear – 100 x 100 lb./in. (95 x 95 daN)
Hydrostatic – 600 psi (4167 kPa)
Cold resistance to crack: -40° F/C

Geotextile filter fabric inserted into skirt, approximately 20% of skirt area having the following characteristics:

Construction – woven polypropylene
Minimum average roll values:
Grab Tensile (ASTM D-4632) – 370/250 lb (1.64/1.11 kN)
Grab Elongation (ASTM D-4632) – 15%
Mullen Burst (ASTM D-3786) – 480 psi (3300 kPa)
Puncture (ASTM D-4833) – 135 lb (.60 kN)
Trapezoidal Tear (ASTM D4533) – 100/60 lb (.444/.265 kN)
AOS (ASTM D-4751) – 70 sieve (.212 mm)
Permittivity (ASTM D-4491) – .28/sec.
Flow Rate (ASTM D-4491) – 18 gal/min/sq. ft. (730 L/min/sq. m)

- All main body seams are heat sealed. All geotextile seams are sewn double needle type 301.
- 5/8 in. poly rope reinforced vertical edges.
- #5 brass grommets on vertical edge and every 10' across bottom on barriers over 10' deep
- 5/16 in. galvanized steel 7x19 load cable in top, 9800 lb. break strength (4455 kg.)
- 5/16 in. galvanized chain ballast in bottom
- Aluminum stress plates at cable and chain termination
- EPS flotation, (8 in. x 8 in. standard), 26.7 lb./ft. buoyancy in fresh water, 28.4 lb./ft in saltwater.

A ES-10 **FLOATING TURBIDITY BARRIER**
NOT TO SCALE (OR APPROVED EQUAL)



SECTION VIEW

NOTES:

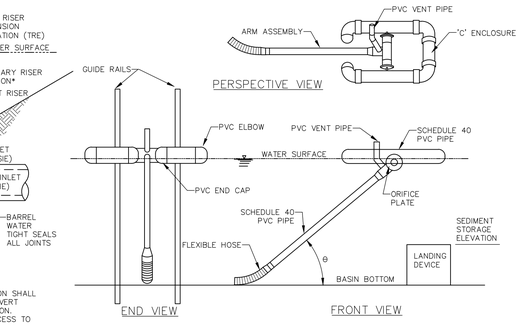
- ALL ORIFICES ON PERMANENT RISER BELOW TEMPORARY RISER EXTENSION SHALL HAVE WATER-TIGHT TEMPORARY SEALS PROVIDED. TEMPORARY STUB INVERT ELEVATION SHALL BE SET AT OR BELOW SEDIMENT CLEAN-OUT ELEVATION.
- A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.
- SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
- SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE STONE BERM. SEE STANDARD CONSTRUCTION DETAIL #7-3 FOR CONFIGURATION OF STONE BERM.

BASIN NO.	WATER SURFACE ELEV. WSE (FT)	SKIMMER							
		ORIFICE		ARM			FLEXIBLE HOSE		
		DIA. (IN)	HEAD (FT)	DIA. SAd (IN)	LENGTH SAL (FT)	MAT'L	DIA. (IN)	LENGTH (IN)	*
1	428.58	2.9	0.21	5	4	PVC	6	12	PVC

* SUPPLIED BY MANUFACTURER

TEMPORARY STUB			PERMANENT RISER			RISER EXTENSION			BARREL
INSIDE DIA (IN)	INVERT ELEV. TSIE (FT)	MAT'L	CREST ELEV PSCE (FT)	HORIZ OPENING LENGTH Ei (IN)	HORIZ OPENING WIDTH Ew (IN)	CREST ELEV TRE (FT)	HORIZ OPENING LENGTH (IN)	HORIZ OPENING WIDTH (IN)	INLET ELEV. BIE (FT)
6	424.00	PVC	427.00	48	24	427.70	48	24	421.36

B ES-10 **SKIMMER ATTACHED TO A PERMANENT RISER - # 7-2**
NOT TO SCALE

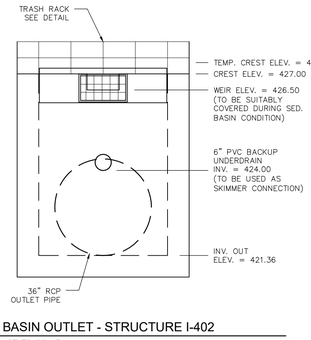


BASIN NO.	WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE DIA. (IN)	TOP OF LANDING DEVICE ELEVATION (FT)	FLEXIBLE HOSE LENGTH (IN)	FLEXIBLE HOSE ATTACHMENT ELEVATION (FT)
1	428.58	4	5	2.9	426.00	12	424.00

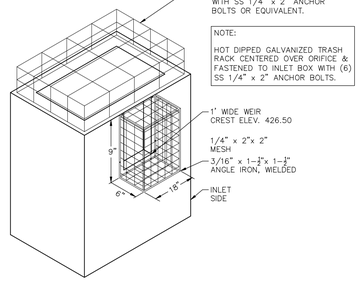
NOTES:

- ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER
- A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.
- SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
- SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE LANDING DEVICE.
- A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7-3).

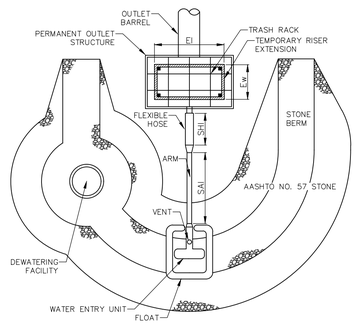
C ES-10 **SKIMMER - # 7-1**
NOT TO SCALE



D ES-10 **BASIN OUTLET - STRUCTURE I-402**
NOT TO SCALE

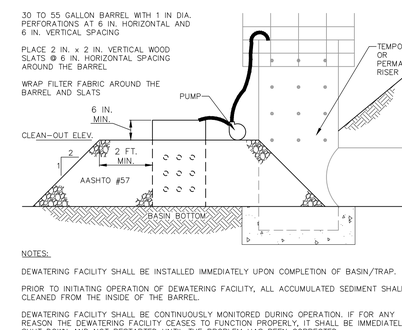


E ES-10 **BMP OUTLET - TRASH RACK**
NOT TO SCALE



PLAN VIEW

F ES-10 **SKIMMER WITH STONE LANDING BERM - # 7-3**
NOT TO SCALE



NOTES:

DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

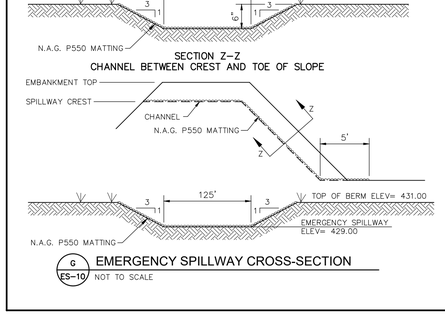
G ES-10 **SEDIMENT STORAGE DEWATERING FACILITY - # 7-18**
NOT TO SCALE

WARNING:
GAS LINE MARKERS HAVE BEEN FOUND IN THE AREA OF OS-40 AND HAVE BEEN INCLUDED IN THIS PLAN SET. PLEASE EXERCISE EXTREME CAUTION WHEN EXCAVATING ALONG THE OS-40 SECTIONS OF THE SITE

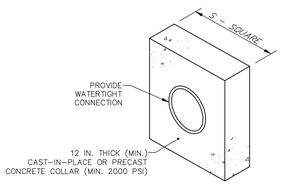
BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.



G ES-10 **EMERGENCY SPILLWAY CROSS-SECTION**
NOT TO SCALE

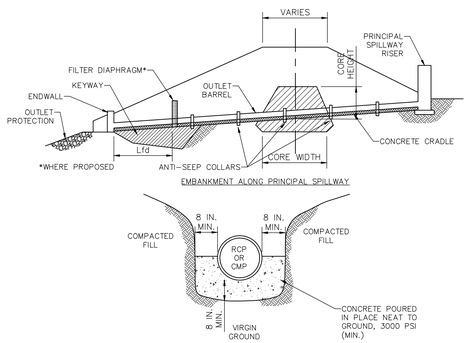


BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM-1	36"	7'-0"	2	8'	14'

NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

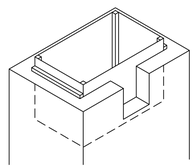
I ES-10 **CONCRETE ANTI-SEEP COLLAR #7-16**
NOT TO SCALE



NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Ltd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

K ES-10 **CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17**
NOT TO SCALE



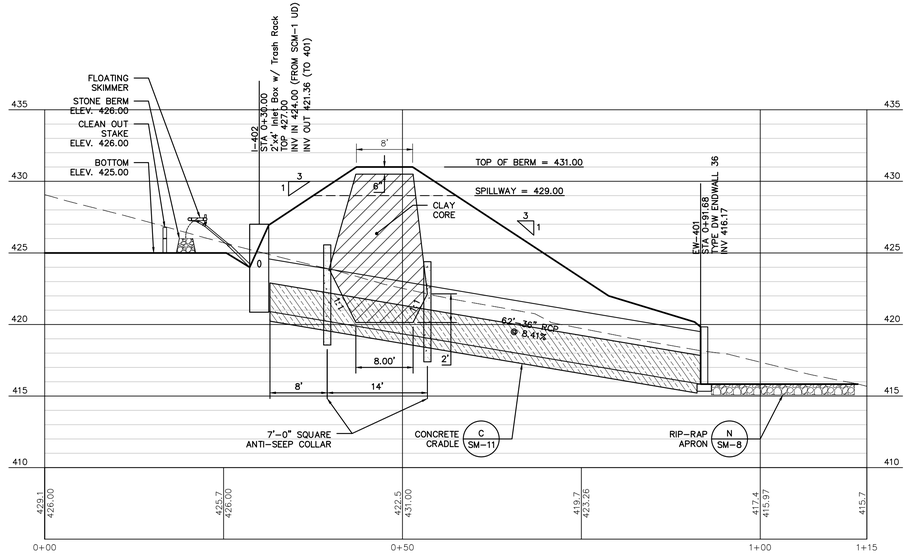
CREATE TEMPORARY RISER BOX WITH (2) 1/2" SQ. POSTS / HANDLES ON EITHER SIDE SO WHEN PLACING BOX IT DOES NOT SLIDE DOWN INTO INLET.

3/4" MARINE GRADE PLYWOOD WITH PRESSURE TREATED 1/2" SQUARE POSTS.

ATTACH TO INSIDE OF INLET WITH STAINLESS STEEL 1/4" x 2" ANCHOR BOLTS

(SEE E&S MANUAL STANDARD DETAIL #7-10)

J ES-10 **TEMPORARY RISER BOX DETAIL**
NOT TO SCALE



L ES-10 **SED BASIN 1 EMBANKMENT - CROSS SECTION**
SCALE: HORIZONTAL – 1" = 10' / VERTICAL – 1" = 5'

Sheet Number: 29 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS
Lower Allen Township - Cumberland County, PA
CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL – BASIN DETAILS

Drafting: D TURNER | Checked by: K POSTLETHWAIT | Scale: 1" = 50'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

REVISIONS		
DATE		
1/19/26	REVISED FOR CH&N CHANGES	
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS	
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7	
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.	

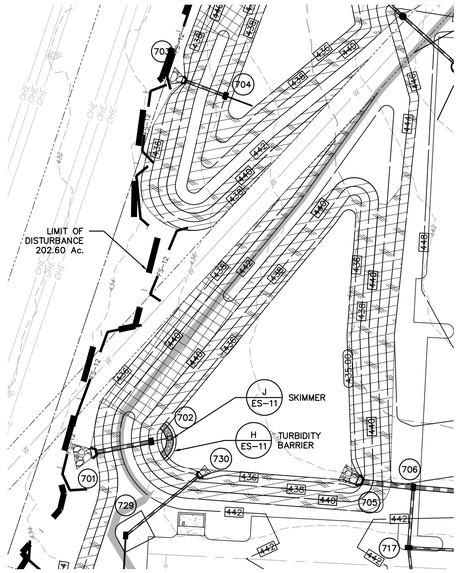
Section Number: ES-10

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Seal: COMMONWEALTH OF PENNSYLVANIA – PROFESSIONAL ENGINEER – G. MITCHELL KING – No. PE088183 – 4/29/26

4/29/2026 3:56 PM L:\15-100-35\SHEETS\PRELIM-FINAL – SWM-ES\29 ES-10.DWG

PRELIMINARY / FINAL



SEDIMENT BASIN 2

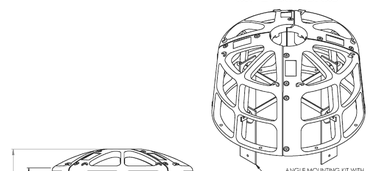
SCALE: 1" = 50'

BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

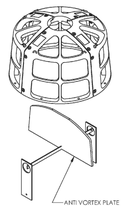
MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER. STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.

RSP-24 STANDARD



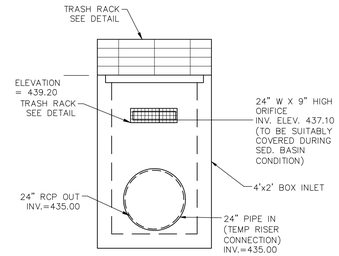
PART INFORMATION	
PART NO.	RSP-24
DIM. A	17-1/4"
DIM. B	14-1/4"
DIM. C	28"
DIM. D	25-1/4"
DIM E VARIES	4-1/4" X 7" MIN. 7-3/4" X 5-7/8" MAX.
MAX PIPE OD.	23"
MIN. PIPE ID.	12"
MOUNTING KIT ANGLE SIZE	1"X1"X3/16"
HDPE ANCHOR PLATE SIZE	1'2"X4"X1/4"

OPTIONAL ANTI VORTEX PLATE

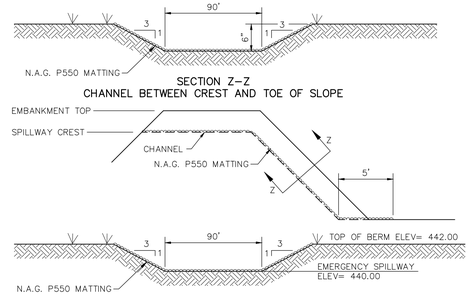


STORMRAX BY PLASTIC SOLUTIONS OR APPROVED EQUAL

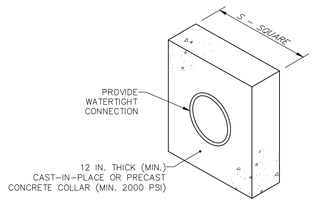
M ES-11 ROUND TRASH RACK / RSP-24
NOT TO SCALE



A ES-11 BASIN OUTLET - STRUCTURE
NOT TO SCALE



B ES-11 EMERGENCY SPILLWAY CROSS-SECTION
NOT TO SCALE

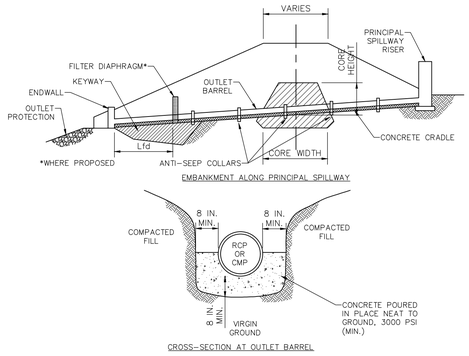


BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
SCM # 9	18"	6"	1	11'	N/A

NOTES:

- ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
- COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

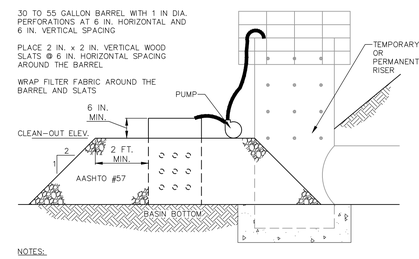
C ES-11 CONCRETE ANTI-SEEP COLLAR #7-16
NOT TO SCALE



NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI–SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI–SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Ld) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

D ES-11 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL #7-17
NOT TO SCALE



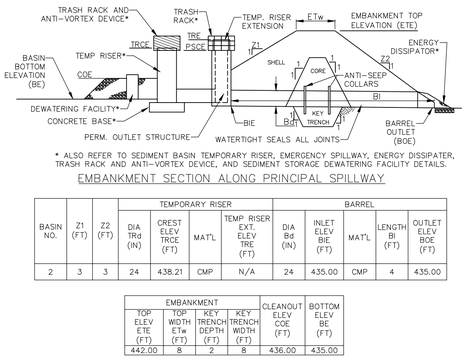
NOTES:

DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

F ES-11 SEDIMENT STORAGE DEWATERING FACILITY - # 7-18
NOT TO SCALE



* ALSO REFER TO SEDIMENT BASIN TEMPORARY RISER, EMERGENCY SPILLWAY, ENERGY DISSIPATER, TRASH RACK AND ANTI–VORTEX DEVICE, AND SEDIMENT STORAGE DEWATERING FACILITY DETAILS.

EMBANKMENT SECTION ALONG PRINCIPAL SPILLWAY

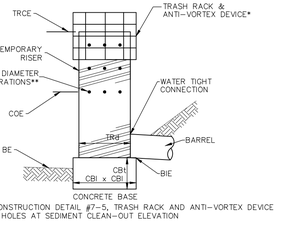
BASIN NO.	Z1 (FT)	Z2 (FT)	TEMPORARY RISER				BARREL			
			DIA Trd (IN)	CREST ELEV TRCE (FT)	MAT'L	TEMP RISER EXT. ELEV TRE (FT)	DIA Bd (IN)	INLET ELEV BIE (FT)	MAT'L	LENGTH BI (FT)	OUTLET ELEV BOE (FT)
2	3	3	24	438.21	CMP	N/A	24	435.00	CMP	4	435.00

EMBANKMENT				CLEANOUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
TOP ELEV ETE (FT)	TOP WIDTH ETw (FT)	KEY TRENCH DEPTH (FT)	KEY TRENCH WIDTH (FT)		
442.00	8	2	8	436.00	435.00

NOTES:

- SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.
- AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.
- ALL SEDIMENT BASINS SHALL BE INSPECTED ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.
- ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.
- A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.
- BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE CHECKED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE BASIN STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7–16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

E ES-11 SEDIMENT BASIN EMBANKMENT & SPILLWAY DETAIL - # 7-8
NOT TO SCALE



* SEE STANDARD CONSTRUCTION DETAIL #7–5, TRASH RACK AND ANTI–VORTEX DEVICE
** LOWEST ROW OF HOLES AT SEDIMENT CLEAN–OUT ELEVATION

BASIN NO.	TEMPORARY RISER			PERFORATIONS				CONCRETE BASE		BARREL
	DIA Trd (IN)	CREST ELEV TRCE (FT)	MAT'L	LOWEST ROW OF HOLES ELEV (FT)	NO. ROWS**	NO. HOLES PER ROW	VERT. SPACING OF ROWS (FT)	LENGTH AND WIDTH CBI (IN)	THICKNESS CBI (IN)	INLET ELEV BIE (FT)
2	24"	438.21	CMP	N/A	N/A	N/A	N/A	48"	12"	435.00

NOTES:

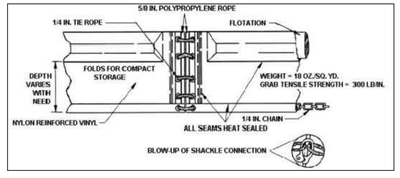
A MINIMUM OF 2–#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

G ES-11 TEMPORARY RISER - # 7-7
NOT TO SCALE



SPECIFICATIONS (ST: 10/08)

Main body fabric is laminated vinyl/polyester having the following characteristics:

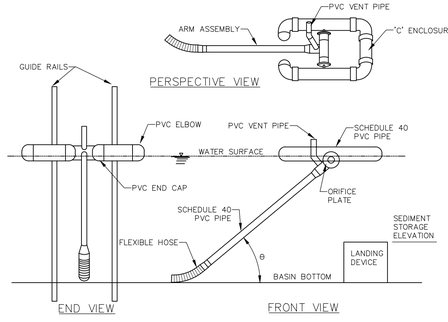
Construction – vinyl laminate on 9x9 1000x1300 denier polyester scrim
Weight – 18.5 oz. per sq. yd (434 gr./sq.m)
Adhesion – 24 x 20 lb./2"
Grab Tensile – 410 x 410 lb./in. (430 x 421 daN/5cm.)
Tear – 100 x 100 lb./in. (95 x 95 daN)
Hydrostatic – 600 psi (4167 kPa)
Cold resistance to crack: –40° F/C

Geotextile filter fabric inserted into skirt, approximately 20% of skirt area having the following characteristics:

Construction – woven polypropylene
Minimum average roll values:
Grab Tensile (ASTM D–4632) – 370/250 lb (1.64/1.11 kN)
Grab Elongation (ASTM D–4632) – 15%
Mullen Burst (ASTM D–3786) – 480 psi (3300 kPa)
Puncture (ASTM D–4833) – 135 lb (.60 kN)
Trapezoidal Tear (ASTM D4533) – 100/60 lb (.444/.265 kN)
AOS (ASTM D–4751) – 70 sieve (.212 mm)
Permittivity (ASTM D–4491) – .28/sec.
Flow Rate (ASTM D–4491) – 18 gal/min/sq. ft. (730 L/min/sq. m)

- All main body seams are heat sealed. All geotextile seams are sewn double needle type 301.
- 5/8 in. poly rope reinforced vertical edges.
- #5 brass grommets on vertical edge and every 10' across bottom on barriers over 10' deep
- 5/16 in. galvanized steel 7x19 load cable in top, 9800 lb. break strength (4455 kg.)
- 5/16 in. galvanized chain ballast in bottom
- Aluminum stress plates at cable and chain termination
- EPS flotation, (8 in. x 8 in. standard), 26.7 lb./ft. buoyancy in fresh water, 28.4 lb./ft in saltwater.

H ES-11 FLOATING TURBIDITY BARRIER
NOT TO SCALE (OR APPROVED EQUAL)

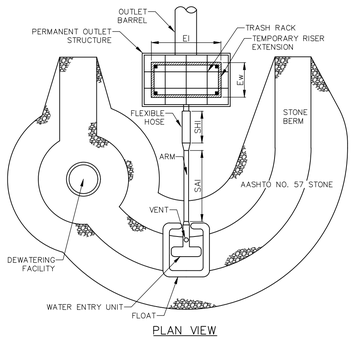


BASIN NO.	WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE DIA. (IN)	TOP OF LANDING DEVICE ELEVATION (FT)	FLEXIBLE HOSE LENGTH (IN)	FLEXIBLE HOSE ATTACHMENT ELEVATION (FT)
2	439.36	4.0	5	2.2	436.00	12	435.00

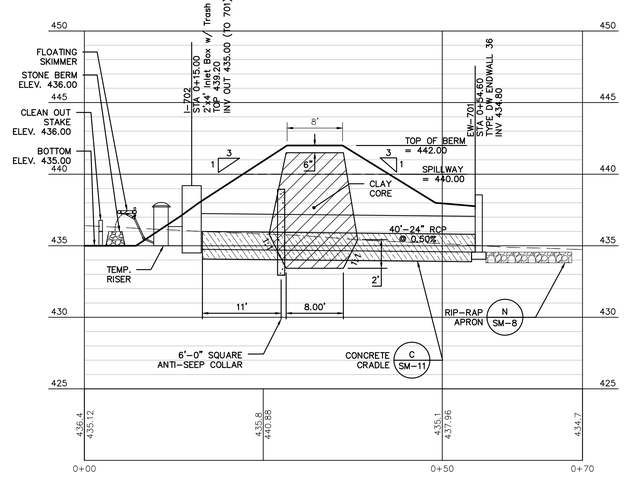
NOTES:

- ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER.
- A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.
- SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
- SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN–OUT STAKE OR THE TOP OF THE LANDING DEVICE.
- A SEMI–CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7–3).

J ES-11 SKIMMER - # 7-1
NOT TO SCALE



K ES-11 SKIMMER WITH STONE LANDING BERM - # 7-3
NOT TO SCALE



L ES-11 SCM-9 EMBANKMENT - CROSS SECTION
SCALE: HORIZONTAL – 1" = 10' / VERTICAL – 1" = 5'

Sheet Number: 30 of 33
Project Number: 15–100–35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL – BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1" = 50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

REVISIONS	DATE
ADDRESS TWP. ENG. LTR. & COUNTY LTR.	4/17/26
UPDATE PLAN TO REMOVE NEIGHBORHOOD 7	3/27/26
ADDRESS CCPD & TWP. ENG. COMMENTS	2/10/26
REVISED FOR CH&N CHANGES	1/19/26

Seal: COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER G. MITCHELL KING PE-PE088162 4/29/26

TOWNE SQUARE ENGINEERING
Civil Engineers & Land Planners
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
info@townesquareengineering.com

Section Number: ES–11

4/29/2026 3:53 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\30 ES-11.DWG

PRELIMINARY / FINAL

MAINTENANCE

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT ON UPON REQUEST.

ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED.

WHERE BMPS ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:
A. THE LOCATION AND SEVERITY OF THE BMPS FAILURE AND ANY POLLUTION EVENTS.
B. ALL STEPS TAKEN TO, REDUCE, ELIMINATE AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE.
C. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

COMPOST FILTER SOCK: THE COMPOST FILTER SOCK SHALL BE INSPECTED AFTER EACH STORM EVENT. ALL ACCUMULATED SEDIMENT MUST BE REMOVED AS REQUIRED TO KEEP THE FILTER SOCK FUNCTIONING. THE CONTRACTOR SHALL ENSURE THAT, IN NO CASE, DOES THE SEDIMENT ACCUMULATION EXCEED ONE HALF OF THE HEIGHT OF THE FILTER SOCK. ANY DAMAGED OR OVERTOPPED FILTER SOCK SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

SEDIMENT BASINS: SEDIMENT MUST BE REMOVED FROM THE BASINS WHEN THE CLEANOUT ELEVATION IS REACHED. SEDIMENT MUST BE DEWATERED USING A PUMP TO REMOVE EXCESS WATER WHEN NECESSARY. THE EXCESS WATER MUST BE PUMPED TO A SEDIMENT REMOVAL FACILITY FOR PUMPED WATER. THIS FACILITY MUST BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL SHOWN ON THE PLANS. REMOVED DEWATERED SEDIMENT SHALL BE REDISTRIBUTED ON THE CLOSEST SOIL STOCKPILE AND STABILIZED WITH TEMPORARY MEASURES AS INDICATED ON THE SEEDING SCHEDULE. THE CONTRACTOR SHALL ENSURE THAT MEASURES ARE TAKEN TO PROTECT THE SEDIMENT BASINS FROM UNAUTHORIZED ACTS OF THIRD PARTIES. THE SEDIMENT TRAP MUST REMAIN IN PROPER WORKING ORDER UNTIL ALL OF THE TRIBUTARY AREA TO THE BASIN HAS BEEN PERMANENTLY STABILIZED. PERMANENT STABILIZATION SHALL BE DETERMINED WHEN A UNIFORM VEGETATIVE COVER OF AT LEAST SEVENTY PERCENT (70%) HAS BEEN ESTABLISHED.

VEGETATED SWALES: THE CONTRACTOR SHALL INSPECT THE CHANNEL FOR EROSION AND ACCUMULATED DEBRIS. WHEN NECESSARY, THE CONTRACTOR SHALL REPLACE ERODED SOIL AND SEED AND MAT TO RESTORE TO DESIGN CONDITION, AS WELL AS REMOVE ACCUMULATED DEBRIS.

STABILIZED CONSTRUCTION ENTRANCES: THE CONTRACTOR SHALL MAINTAIN THE THICKNESS OF THE ROCK CONSTRUCTION ENTRANCE AS SPECIFIED ON THE PLANS BY ADDING ROCK. ANY SEDIMENT DEPOSITED ON THE ROADWAYS MUST BE REMOVED AND RETURNED TO THE SITE AT THE END OF EACH DAY. SEDIMENT REMOVAL MUST BE DONE BY SWEEPING AND VACUUMING. WASHING SEDIMENT OFF OF ROADWAYS WITH WATER SHALL NOT BE PERMITTED. STONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN PLACE UNTIL REMOVAL IS NECESSARY FOR FINAL GRADING OF THE DRIVEWAY SUBGRADE. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE TO MAINTAIN THE THICKNESS OF THE CONSTRUCTION ENTRANCE AS SHOWN ON THE PLANS. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

SOIL STOCKPILES: THE CONTRACTOR SHALL INSPECT THE SOIL STOCKPILES AFTER EVERY STORM EVENT. IF SILT FENCE BECOMES DAMAGED OR OVERTOPPED, REPAIR OR REPLACE IMMEDIATELY. IF STOCKPILES ARE LEFT IN PLACE FOR EXTENDED PERIODS, RE-APPLY TEMPORARY SEED AND MULCH AS NEEDED TO PREVENT EROSION. AFTER CONSTRUCTION IS COMPLETE, ANY REMAINING STOCKPILE MATERIAL SHALL BE GRADED ONTO THE SITE AND STABILIZED OR HAULED OFF SITE.

RIPRAP APRONS: THE CONTRACTOR SHALL INSPECT THE RIPRAP APRONS AFTER EACH STORM EVENT. WHEN NECESSARY, THE CONTRACTOR SHALL REPLACE STONE THAT HAS WASHED AWAY BY ADDING ADDITIONAL STONE TO THE RIPRAP APRON.

EROSION CONTROL BLANKET: THE CONTRACTOR SHALL INSPECT THE EROSION CONTROL BLANKET AFTER EVERY STORM EVENT. IF THE MATTING BECOMES DAMAGED OR SLIDES, MAKE REPAIRS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. IN ADDITION TO THE HATCHED AREAS INDICATED, CONTRACTOR SHALL INSTALL EROSION CONTROL MATTING ON ALL 3:1 SLOPES OR GREATER, PER NORTH AMERICAN GREEN S75, OR APPROVED EQUAL. IF DEEMED NECESSARY BY THE CONSERVATION DISTRICT, ADDITIONAL EROSION CONTROL MATTING MAY BE REQUIRED BEYOND WHAT IS INDICATED ON THESE PLANS.

INLET PROTECTION: SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.

TEMPORARY STABILIZATION AND PERMANENT STABILIZATION: HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

CLEAN FILL NOTE

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH CONTRACTOR.

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).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING 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. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE 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 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 FILL".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT.

TABLE 11.1		
Cubic Yards of Topsoil Required for Application to Various Depths		
Depth (in)	**Per 1,000 Square Feet**	**Per Acre**
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

SEEDING SPECIFICATIONS

SEED TYPE	DESCRIPTION, FORMULA, SPECIES	% BY WEIGHT	MINIMUM %		PURE LIVE SEED %	MAX % WEED/ SEED	SEEDING RATE: LBS/1000 S.F.	FERTILIZER RATE: LBS/1000 S.F.		LIME RATE: LBS/1000 S.F.	MULCH RATE:
			PURITY	GERMINATION				BASIC	STARTER		
TYPE 1	PennDOT formula B										
Lawn Areas	*Perenial Ryegrass mixture, +	20	98	90	88	0.15	0.44				
(per PennDOT specs)	*Creeping Red Fescue, +	30	98	85	83	0.15	0.67	15-10-10	40	89	3 Tons/ Acre
	*Kentucky Bluegrass mixture	50	98	80	78	0.20	1.20				
							TOTAL = 2.31				
TYPE 2	Crownvetch seeding mixture										
Sloped Areas	*Crownvetch, +	50	99	70	69	0.10	0.55				
greater than 3:1	*Annual Ryegrass, +	40	98	90	88	0.15	0.44	15-20		100	1-1/2" Straw
	*Alsike Clover	10	98	90	88	0.20	0.11				
							TOTAL = 1.10				
TYPE 3											
Temporary Seeding	Annual Ryegrass	100	98	90	88	0.15	1.1	15-20		125	3 Tons/ Acre
							TOTAL = 1.10				
TYPE 4											
Detention Basin & Sediment Forebay bottom seeding	Detention Basin & Sediment Forebay Seed Mix: Use ERNMX-127; Ernst Conservation Seed, 1-800-873-3321, www.ernstseed.com; Seed at 20 Bulk pounds per acre or 1/2 to 1 lb. per 1,000 s.f.							25-30		100	1-1/2" Straw

NPDES NOTES

1. THE NPDES BOUNDARY IS EQUAL TO THE OUTER PERIMETER BOUNDARY OF THE SITE, AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL, INCLUDING OFF-SITE FACILITIES SUCH AS UTILITIES AND ROADWAY IMPROVEMENTS.
2. THE EROSION AND SEDIMENT CONTROL PLANS REQUIRED UNDER THE NPDES GENERAL PERMIT ARE CONSIDERED REPORTS THAT SHALL BE AVAILABLE TO THE PUBLIC UNDER SECTION 607 OF THE CLEAN STREAMS LAW, AND 25 PA. CODE, CHAPTER 92 OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDANCE. THE OWNER OR OPERATOR OF A FACILITY WITH STORM WATER DISCHARGES COVERED BY THE NPDES GENERAL PERMIT SHALL MAKE PLANS AVAILABLE TO THE PUBLIC UPON REQUEST BY THE PUBLIC.
3. THE OWNER (PERMITTEE) AND CONTRACTOR/EXCAVATOR (CO-PERMITTEE) SHALL CONTACT THE COUNTY CONSERVATION DISTRICT AND TOWNSHIP AT LEAST FOURTEEN DAYS PRIOR TO START OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE PERMITTEE, CO-PERMITTEE AND OTHERS UNDERTAKING EARTH DISTURBANCE ACTIVITY ATTENDING THE PRE-CONSTRUCTION CONFERENCE.
4. THE OWNER (PERMITTEE) AND CONTRACTOR/EXCAVATOR (CO-PERMITTEE) SHALL FILE A NOTICE OF TERMINATION (N.O.T.) FOR THE NPDES PERMIT WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN REMOVED. THE OWNER IS ENCOURAGED TO INCLUDE THE GENERAL CONTRACTOR, EXCAVATOR AND OTHER SUBCONTRACTORS INVOLVED IN THE EARTH DISTURBANCE ACTIVITY AS CO-PERMITTEES FOR THE PROJECT.
5. THE N.O.T. WILL BE REQUIRED TO BE SUBMITTED FOLLOWING APPROVAL OF THE FINAL AS-BUILT PLANS. PRIOR TO ACCEPTING THE N.O.T., THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERIFY ADEQUATE INSTALLATION AND FUNCTION OF SCMs.

RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES 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. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

MONITORING & REPORTING REQUIREMENTS

1. THE OWNER (PERMITTEE) AND CONTRACTOR/EXCAVATOR (CO-PERMITTEE) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED BIWEEKLY, AND AFTER EACH PRECIPITATION EVENT BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATER OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE: (1) A SUMMARY OF THE SITE CONDITIONS, BMPS AND COMPLIANCE; (2) THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION.
2. WHERE BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR AT ANY TIME, THE PERMITTEE AND THE CO-PERMITTEE SHALL IMMEDIATELY CONTACT THE COUNTY CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NON- COMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION: (1) ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH WOULD THREATEN POLLUTION; (2) THE PERIOD OF NONCOMPLIANCE, INCLUDING THE EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE; (3) STEPS BEING TAKEN TO REDUCE, ELIMINATE AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND (4) THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

RECORD KEEPING

1. THE PERMITTEE AND CO-PERMITTEE SHALL RETAIN RECORDS OF ALL MONITORING INFORMATION INCLUDING COPIES OF MONITORING AND INSPECTION REPORTS REQUIRED BY THIS PERMIT, AND THE RECORDS OF DATA USED TO COMPLETE THE NOTICE OF INTENT FOR THIS PERMIT, FOR A PERIOD OF THREE YEARS FROM THE DATE OF THE TERMINATION OF COVERAGE UNDER THE NPDES PERMIT. MONITORING RESULTS SHALL BE SUBMITTED TO THE COUNTY CONSERVATION DISTRICT UPON REQUEST.

COMPLIANCE RESPONSIBILITIES

1. THE OWNER (PERMITTEE) AND CONTRACTOR/EXCAVATOR (CO-PERMITTEE) MUST COMPLY WITH ALL TERMS AND CONDITIONS OF THE NPDES PERMIT. ANY PERMIT NONCOMPLIANCE CONSTITUTES A VIOLATION OF THE PENNSYLVANIA CLEAN STREAM LAW AND FEDERAL CLEAN WATER ACT AND IS GROUNDS FOR ENFORCEMENT ACTION; FOR PERMIT TERMINATION, REVOCATION AND REISSUANCE, OR MODIFICATION; OR DENIAL OF A PERMIT OR PERMIT RENEWAL.
2. THE PERMITTEE AND CO-PERMITTEE MAY BE SUBJECT TO CRIMINAL AND/OR CIVIL PENALTIES FOR VIOLATIONS OF THE CONDITIONS OF THE NPDES PERMIT UNDER SECTION 602 AND 605 OF THE CLEAN STREAMS LAW, 35 P.S. SECTIONS 691.602 AND 691.605, AND UNDER THE CLEAN WATER ACT AS SPECIFIED IN 40 C. F. R. SECTIONS 122.41(A)(2) AND (3), WHICH ARE INCORPORATED BY REFERENCE.

PREPAREDNESS, PREVENTION AND CONTINGENCY PLANS

1. IF THE POTENTIAL EXISTS FOR CAUSING ACCIDENTAL POLLUTION OF AIR, LAND, OR WATER OR FOR CAUSING ENDANGERMENT OF PUBLIC HEALTH AND SAFETY THROUGH ACCIDENTAL RELEASE OF TOXIC, HAZARDOUS, OR OTHER POLLUTING MATERIALS, THE PERMITTEE OR CO-PERMITTEE MUST DEVELOP A PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN. THE PPC PLAN SHALL BE DEVELOPED ACCORDING TO DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. THE PPC PLAN SHALL IDENTIFY AREAS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WASTE MANAGEMENT AREAS, RAW MATERIALS STORAGE AREAS, TEMPORARY AND PERMANENT SPOILS STORAGE AREAS, MAINTENANCE AREAS, AND ANY OTHER AREAS WHICH MAY HAVE THE POTENTIAL TO CAUSE NONCOMPLIANCE WITH THE TERMS AND CONDITIONS OF THE NPDES PERMIT DUE TO STORAGE, HANDLING, OR DISPOSAL OF ANY TOXIC OR HAZARDOUS SUBSTANCES SUCH AS OIL, GASOLINE, PESTICIDES, HERBICIDES, SOLVENTS, ETC. BMPS SHALL BE DEVELOPED AND IMPLEMENTS FOR EACH IDENTIFIED AREA. THE PPC PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE AT THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S OR COUNTY CONSERVATION DISTRICT'S REQUEST

OFF-SITE DISCHARGE EROSION REPAIRS

DURING CONSTRUCTION THE DEVELOPER AND HIS CONTRACTOR SHALL INSPECT THE AREA DOWNSTREAM OF EACH BASIN OUTLET FOR STABILITY AND SIGNS OF EROSION AFTER ANY STORM EXCEEDING 3 INCHES IN RAINFALL. AFTER CONSTRUCTION IS COMPLETED THE OWNER SHALL CONDUCT THE INSPECTIONS.

CONTACT THE CONSERVATION DISTRICT AND THE DESIGN ENGINEER IF SIGNS OF EROSION ARE FOUND DOWNSTREAM OF THE BASIN OUTLETS. REPAIRS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER UNTIL THE OPEN SPACE LOTS ARE DEEDED TO THE OWNER. THE OWNER SHALL BE RESPONSIBLE FOR REPAIRS AFTER THAT.

ANY OFF-SITE REPAIRS MUST BE DONE AFTER APPROPRIATE PERMISSION HAS BEEN OBTAINED FROM THE OFF-SITE PROPERTY OWNER. ALL LOCAL, STATE AND FEDERAL REGULATIONS MUST BE COMPLIED WITH DURING REPAIRS TO DAMAGES.

AS-BUILT PLAN REQUIREMENTS

AS-BUILT PLANS OF THE SCMS SHALL BE PROVIDED WITHIN SIX MONTHS FOLLOWING THE COMPLETION OF EACH PHASE. THE AS-BUILT PLANS SHALL BE SIGNED AND SEALED BY A PA REGISTERED PROFESSIONAL ENGINEER.

SEQUENCE OF CONSTRUCTION FOR PROJECT

Pre-Construction Stabilization of the Site

All disturbed areas from agricultural activities must be stabilized completely in the previous growing season prior to the start of grading by seeding with small grain or permanent vegetative cover as specified on these plans.

The project is anticipated to be constructed in multiple phases. Separate E&S sequencing is provided for construction of each phase. The order of construction phases listed below will be determined by the developer as construction commences. The Rossmoyne Road Roundabout is to be completed with along with the first phase of construction. Construction shall be conducted in a manner to minimize earth disturbance at any given time.

In accordance with the recommendations of the United States Fish and Wildlife Service, no tree removal shall be conducted from April 1 to November 15. All tree removal shall occur between November 16 and March 31.

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage initiated. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage. Upon temporary cessation of the earth disturbance activity for four days or longer, the project site shall immediately be stabilized with the appropriate temporary stabilization. As soon as slopes, channels, ditches, and other disturbed areas reach final grade, the area shall immediately be stabilized with the appropriate permanent stabilization.

Construction of Arcona Remaining Neighborhoods is to be sequenced in the following order:

Each step marked "CSoC:" is a critical stage of construction and requires oversight by a professional engineer.

GENERAL

1. As least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the landowner, all appropriate Municipal Officials, the Erosion and Sedimentation Control Plan preparer, and a representative of the Conservation District to an on-site meeting. The excavation contractor(s) shall execute a NPDES co-permittee/transferee agreement with PA DEP. The contractor shall ensure that all construction shall be done in accordance with the requirements of the NPDES permit.
2. The limit of disturbance must be field staked prior to any earth moving activities.
3. Upon completion of the project a completed Notice of Termination (N.O.T.) shall be submitted to the department and/or Conservation District staff so a final inspection can be performed to ensure stabilization and verify adequate installation and function of SCMs.
4. Construct modifications to existing Sediment Basin D2 in accordance with E&S Plan details. (See Phase Coordination)

PHASE 3.1

1. Install rock construction entrance #1 at the proposed site entrance at Lisburn Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install sanitary sewer and water extension to the phase limits.
4. Clear and grub the construction site to the extents necessary.
5. Construct storm sewer outfall from endwall 301 to manholes 305 and 306. Install riprap apron at endwall.
8. Excavate and construct SCM-2 and SCM-3. Conduct confirmation infiltration testing at the bottom of the SCMs in accordance with the requirements.
9. Install SCM distribution piping and other features.
10. CSoC: Check SCM-2 and SCM-3 layouts, sizes, outlet structures, and other features for plan compliance.
11. Install stone and complete construction of SCM-2 and SCM-3. Ensure no sediment laden runoff is directed to the SCMs.
12. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
5. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations.
6. Install remaining storm sewers within the Phase 3 project area. All inlets shall have temporary inlet protection.
7. Complete remaining site grading.
8. Install curbing along proposed streets.
9. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
10. Begin home construction after stone base on street is in place. See Project Staging for Individual Lots.
11. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
12. Pave with wearing course when construction of dwellings is completed.
13. Complete all site construction and provide permanent vegetative stabilization.
14. Contact the Cumberland County Conservation District for site inspection prior to removal of temporary inlet filters.
15. Remove temporary inlet filters and perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
16. Install permanent inlet filters and snouts in inlets as specified by the plans.

PHASE 4

1. Install rock construction entrance #2 at the proposed site entrance at Lisburn Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install sanitary sewer and water extension to the phase limits.
4. Clear and grub the construction site to the extents necessary to construct Sediment Basin 1 and its outfall piping.
5. Install storm sewer downstream of Sediment Basin 1. Install the riprap apron at the endwall.
6. Excavate and construct Sediment Basin 1 per the plan and details illustrated and specified herein. During the Sediment Basin condition, the basin should have a bottom elevation of 425.00. Stabilize with temporary seeding and erosion control matting. The Sediment Basin must be stabilized and functional prior to additional earth disturbance. No other earth disturbance is permitted on the site except that necessary to construct the Sediment Basin.
7. CSoC: Upon installation of the temporary Sediment Basin outlet structure, skimmer, and floating turbidity barrier, an immediate inspection of the Sediment Basin berm, riser, and skimmer shall be conducted by a qualified site representative and the Cumberland County Conservation District shall be notified that the proper risers and skimmers were installed and sealed, per plan. Sediment Basin must be protected from unauthorized acts by third parties. Construct the riprap apron at the outfall as shown on the plan.
8. Clear and grub the construction site to the extents necessary to construct Swale 1 and proposed stream crossing.
9. Construct Swale 1 and immediately seed with permanent stabilization and matting.
10. Construct stream crossing.
11. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the Sediment Basin.
12. Install storm sewers, sanitary sewer, water, and other utilities.
13. Upon construction of manhole 414 and connection to existing storm sewer from existing round-about, demolish existing bioretention basin.
14. Final grade all street subgrade and shoulder areas for the proposed streets.
15. Install curbing within phase area.
16. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
17. Begin construction of the homes after stone base on street is in place. See Project Staging for Individual Lots.
18. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
19. Pave with wearing course when construction of dwellings is completed.
20. Contact the Cumberland County Conservation District for site inspection prior to removal of any Sediment Basin.
21. CSoC: Once all lots have been completely stabilized and the Conservation District has approved removal of the Sediment Basin, convert to the permanent PCSM SCM-1. Check the permanent basin for stability, size, grade, and proper outlet structure after conversion is completed. See Project Staging – Converting Sediment Basins to PCSM SCMs.
22. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
23. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.

PHASE 5

1. Install rock construction entrance #3 at the proposed site entrance at Strong Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Install temporary inlet filter bags on existing inlets adjacent to existing round-about.
4. Install sanitary sewer and water extension to the phase limits.
5. Remove existing storm sewer alongside Strong Road and install storm sewer from endwall 501 to inlets 509 and 510. Install riprap apron at endwall.
6. Clear and grub the construction site to the extents necessary to construct SCM-4 and its outfall piping.
7. Excavate and construct SCM-4 per the plan and details illustrated and specified herein. During the E&S condition, the basin should have a bottom elevation of 434.00, but should not have been overexcavated and backfilled with amended soils. Excavate a pit around the outlet structures (514 and 515) and allow runoff to flow freely through 6" orifices (later used for MRC underdrain connections). Stabilize with temporary seeding and erosion control matting.
8. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the existing Sediment Basin DB-2.
9. Install storm sewers, sanitary sewer, water, and other utilities. Install riprap aprons at endwalls. Install temporary inlet protection in inlets tributary to SCM-5.
10. Prior to SCM-5 construction, connect manhole 551 and manhole 516B directly with 18" pipe.
11. Final grade all street subgrade and shoulder areas for the proposed streets.
12. Install curbing within phase area.
13. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
14. Begin construction of the homes after stone base on street is in place. See Project Staging for Individual Lots.
15. Construct Swale 2 and immediately seed with permanent stabilization and matting.
16. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
17. Pave with wearing course when construction of dwellings is completed.
18. Remove temporary pipe between manholes 551 and 516B.
19. Excavate and construct SCM-5. Conduct confirmation infiltration testing at the bottom of the SCM in accordance with the requirements.
20. Install SCM distribution piping and other features.
21. CSoC: Check SCM-5 layout, size, outlet structure, and other features for plan compliance.
22. Install stone and complete construction of SCM-5. Ensure no sediment laden runoff is directed to the SCM.
23. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
24. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
25. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized, including temporary inlet filters.
26. Install permanent inlet snouts in inlets as specified by the plans.
27. Once all tributary areas have been completely stabilized, complete construction of permanent PCSM SCM-4. Overexcavate to subgrade, conduct confirmation testing in accordance with requirements, install MRC underdrain, backfill with soil media, and install permanent plantings.
28. CSoC: Check the permanent basin for stability, size, grade, and proper outlet structure after construction is completed. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.

ROSSMOYNE ROAD ROUNDABOUT

1. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
2. Clear and grub the construction site to the extents necessary to construct SCM-8 and its outfall piping.
3. Install storm sewers from manhole 738 to existing inlet.
4. Excavate and construct SCM-8. Conduct confirmation infiltration testing at the bottom of the SCM in accordance with the requirements.
5. Install SCM distribution piping and other features.
6. CSoC: Check SCM-8 layout, size, outlet structure, and other features for plan compliance.
7. Install stone and complete construction of SCM-8. Ensure no sediment laden runoff is directed to the SCM. Provide cover of minimum 12" fill or stone above SCM top.
8. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
4. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations.
5. Install remaining storm sewers within the project area. Install temporary inlet protection in all inlets tributary to SCM-8.Install remaining utilities.
6. Final grade all street subgrade and shoulder areas for the proposed street.
7. Install curbing within phase area.
8. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
9. Pave with wearing course when construction is complete.
10. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
11. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized, including temporary inlet filters.
12. Install permanent inlet snouts in inlets as specified by the plans.

PHASE 6

1. Install rock construction entrance #4 at the proposed site entrance at Strong Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. Clear and grub the construction site to the extents necessary to construct SCM-6 and SCM-7 and their outfall piping.
4. Demolish existing rain garden adjacent to Rossmoyne Road.
5. Construct Swale 3 and immediately seed with permanent stabilization and matting.
6. Install storm sewer from endwall 601 to manhole 602 and from endwall 603 to manhole 604. Install riprap aprons at endwalls.
7. Excavate and construct SCM-6 and SCM-7. Conduct confirmation infiltration testing at the bottom of the SCMs in accordance with the requirements.
8. Install SCM distribution piping and other features.
9. CSoC: Check SCM-6 and SCM-7 layouts, sizes, outlet structures, and other features for plan compliance.
10. Install stone and complete construction of SCM-6 and SCM-7. Ensure no sediment laden runoff is directed to the SCMs. Provide cover of minimum 12" fill or stone above SCM tops.
11. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
12. Install remaining storm sewers within the project area. Install temporary inlet protection in all inlets tributary to SCM-6 and SCM-7.
13. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to the existing Sediment Basin DB-2, SCM-6, or SCM-7.
14. Install sanitary sewer, water, and other utilities.
15. Final grade all street subgrade and shoulder areas for the proposed streets.
16. Install curbing within phase area.
17. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
18. Begin construction of the buildings.
19. Replace topsoil, seed and mulch to stabilize all disturbed areas as possible after each lot or block of homes are completed.
20. Pave with wearing course.
21. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
22. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
23. Remove temporary inlet protection. Install permanent inlet filters and snouts in inlets as specified by the plans.

PHASE 7

1. Install rock construction entrance #5 at the proposed site entrance at Rossmoyne Road. All construction equipment shall utilize the rock construction entrance for ingress and egress to the site. Maintain entrance over course of construction per detail to prevent tracking of soil/mud onto public roads.
2. Install compost filter sock as shown on the plan along the perimeter of the site. The contractor shall maintain the filter sock in working order throughout the course of construction, making inspections after each rainfall event and making any necessary repairs. In the event that any compost filter sock should fail in the course of construction or should a point of concentrated flow form, a rock filter outlet may be installed as a repair measure.
3. As other phases proceed, place fill as appropriate, ensuring all sediment-laden runoff is directed to perimeter controls.
4. Clear and grub the construction site to the extents necessary to construct Sediment Basin 2 and its outfall piping.
5. Install storm sewer downstream of Sediment Basin 2. Install the riprap apron at the endwall.
6. Excavate and construct Sediment Basin 2 per the plan and details illustrated and specified herein. During the Sediment Basin condition, the basin should have a bottom elevation of 437.00. Stabilize with temporary seeding and erosion control matting. The Sediment Basin must be stabilized and functional prior to additional earth disturbance. No other earth disturbance is permitted on the site except that necessary to construct the Sediment Basin.
7. CSoC: Upon installation of the temporary Sediment Basin outlet structure, skimmer, and floating turbidity barrier, an immediate inspection of the Sediment Basin berm, riser, and skimmer shall be conducted by a qualified site representative and the Cumberland County Conservation District shall be notified that the proper risers and skimmers were installed and sealed, per plan. Sediment Basin must be protected from unauthorized acts by third parties. Construct the riprap apron at the outfall as shown on the plan.
8. Clear and grub the remainder of the area to be disturbed on the site and strip topsoil and stockpile in designated area(s). Conduct bulk earth moving operations. All runoff shall be directed to Sediment Basin 2 or perimeter controls.
9. Install sanitary sewer.
10. Install storm sewers tributary to Sediment Basin 2. Install riprap aprons at endwalls.
11. Install water and other utilities.
12. Install SCM-10 outfall and riprap apron.
13. Excavate and construct SCM-10. Immediately seed and stabilize slopes and install filter sock upslope. Seed bottom with temporary stabilization. No sediment-laden runoff shall enter the SCM.
14. Install storm sewers tributary to SCM-10. Install riprap apron at endwall. Install temporary inlet protection in inlets tributary to SCM-10.
15. Final grade all street subgrade and shoulder areas for the proposed streets.
16. Install curbing within phase area.
17. Install stone subbase as soon as possible after completing curb. Pave with base and binder courses.
18. Begin construction of the buildings.
19. Pave with wearing course.
20. Contact the Cumberland County Conservation District for site inspection prior to removal of any Sediment Basin.
21. CSoC: Once all tributary areas have been completely stabilized and the Conservation District has approved removal of the Sediment Basin, convert to the permanent PCSM SCM-9. Check the permanent basin for stability, size, grade, and proper outlet structure after conversion is completed. See Project Staging – Converting Sediment Basins to PCSM SCMs.
22. Once all tributary areas have been completely stabilized, complete construction of permanent PCSM SCM-10. Overexcavate to subgrade, conduct confirmation testing in accordance with requirements, backfill with soil media, and install permanent plantings.
23. CSoC: Check the permanent basin for stability, size, grade, and proper outlet structure after construction is completed. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days of SCM construction completion.
24. Check site for erosion and repair any damaged areas. All portions of the site shall be stabilized.
25. Remove perimeter compost filter sock, spread compost mulch around any disturbed areas, and remove any other sediment controls once all disturbed areas are completely stabilized.
26. Remove temporary inlet protection.

Project Staging – Individual Lots

Each lot will be staged in the following order:

1. Install stabilized construction entrance.
2. Install compost filter sock as shown on plan.
3. Rough grade lot and stabilize immediately with temporary seeding.
4. Excavate for dwelling foundation. Place excess soil on designated soil stockpile location. Install compost filter sock below the stockpile.
5. Construct dwelling.
6. Connect utilities.
7. Install and connect roof drain leaders to inlet as specified by this PCSM plan.
8. Install sidewalk along frontage of lot.
9. Pave driveway.
10. Final grade lot and stabilize immediately with permanent stabilization.
11. Remove filter sock once all disturbed areas are stabilized.

Project Staging – Converting Sediment Basins to PCSM SCMs (SCM-1, SCM-9)

Once the Conservation District has approved removal of the Sediment Basins, convert to the PCSM SCM-1 and SCM-9 Bioretention Basins as follows:

1. Stabilize any other disturbed areas immediately with permanent seeding.
2. Remove the skimmer and landing berm. Dispose of properly or store for reuse. Remove any grout used to seal skimmers into inlets.
3. Remove cleanout stake from the basin bottom. Dispose of properly or store for reuse.
4. Remove any sediment from the basin outlet pipes.
5. Remove any temporary outlet structure modifications (orifice plates, riser extensions, etc.).
6. Excavate to basin subgrade and perform confirmation testing as required.
7. Install soil media in the basin bottom to the final grade. Immediately install plantings as specified in the plans.
8. Complete and submit SCM Construction Certification Form to the Conservation District within 30 days after the SCM is completed.

Phase Coordination

Work on the various phases of Arcona need not be done sequentially as listed on the Sequence of Construction (SOC). Work on each phase may happen simultaneously, within the restrictions below.

- All modifications to the Sediment Basin D-2 must be done before earth disturbance in Phases 3.1, 5, 6, or 7. See SOC General Comment #4.
- Phase 3.1 may be done independent of any other phase of the project.
- Phase 4, SOC step 12 cannot be done until the sanitary sewer in Phases 6 & 5 is completed.
- Phase 5, SOC step 10 cannot be done until the sanitary sewer in Phase 6 is completed. In addition, the storm sewers between MH-512 and EW-506 must be completed as a part of Phase 5 SOC step 10.
- Phase 6 may be done independent of any other phase in the project.
- Phase 7 requires that SCM-4 be constructed before storm sewer from the secondary entrance (Wells Station Lane) to Phase 7 are completed.
- Work on the roundabout requires that SCM-8 be construction before storm sewers are completed.

Sheet Number: 31 of 33

Project Number: 15-100-35

Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL – NOTES

Drafting: D TURNER

Checked by: K POSTLETHWAIT

Scale: 1"=50'

0 25 50 100 150

Project Manager: DAVID B. KEGERIZE PE

Project Engineer: G. MITCHELL KING PE, PLS

Project Surveyor: THOMAS K. PHILLIPS PLS

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL G. MITCHELL KING ENGINEER No. PE36833-E 4/29/26

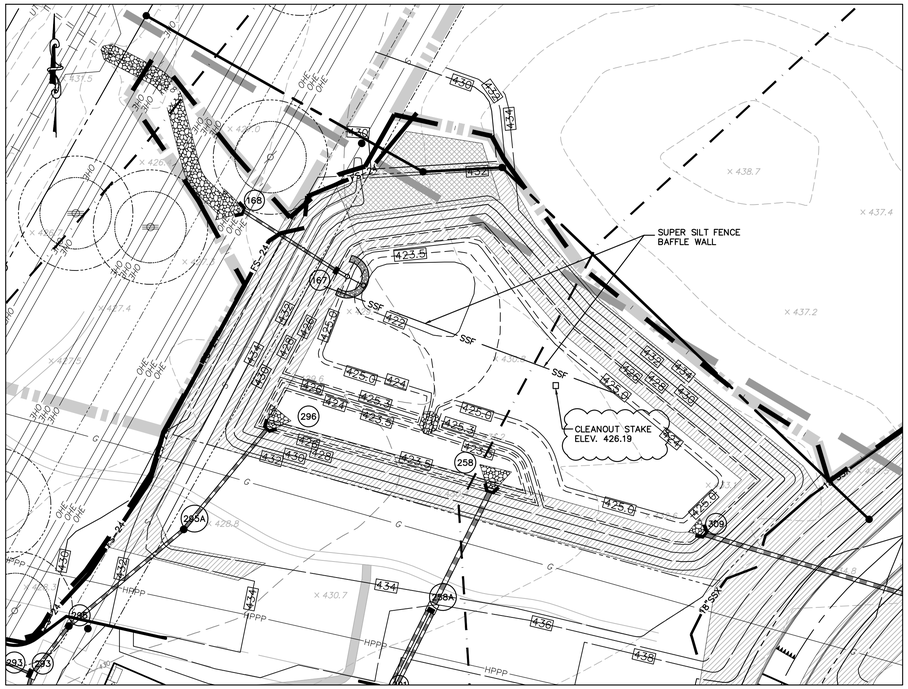
TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

DATE	REVISIONS
-	-
-	-
-	-
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
1/19/26	REVISED FOR CH&N CHANGES

Section Number: ES-12

4/29/2026 3:55 PM L:\15-100-35\SHEETS\PRELIM-FINAL – SWM-ES\31 ES-12.DWG

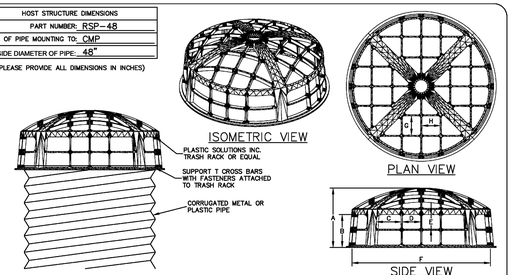
PRELIMINARY / FINAL



EROSION & SEDIMENT CONTROL BASIN PLAN

SCALE: 1" = 50'

HOST STRUCTURE DIMENSIONS
PART NUMBER: RSP-48
TYPE OF PIPE MOUNTING TO: CMP
INSIDE DIAMETER OF PIPE: 48"
(PLEASE PROVIDE ALL DIMENSIONS IN INCHES)



ROUND SERIES TRASH RACKS

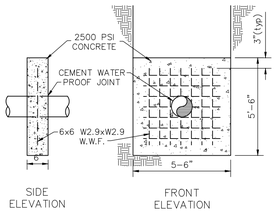
RISER	A	B	C	D	E	F	G	H
RSP-24 (12"ø-18"ø)	17 1/8"	13 1/8"	7 3/4"	6 1/4"	6 1/4"	27 1/2"	6 1/4"	7 1/2"
RSP-36 (21"ø-30"ø)	21 1/8"	13 1/2"	6 1/4"	6 1/4"	6 1/4"	40 1/2"	6 1/4"	7 1/2"
RSP-48 (33"ø-42"ø)	27 3/4"	17 3/4"	7"	8 1/2"	6 3/4"	54 1/4"	8 1/2"	9"
RSP-60 (48"ø-54"ø)	27 3/4"	17 3/4"	11 1/2"	8 1/2"	6 3/4"	67 1/2"	8 1/2"	9"

P.O. BOX 4366 WINCHESTER, VA 22604
238 McGHEE RD, WINCHESTER, VA 22603
PH: 877-877-0727
FAX: 540-722-2219
WWW.PLASTIC-SOLUTION.COM

CUSTOMER:
PROJECT:
DATE:
DRAWN BY:
APP'D BY:
DETAIL:

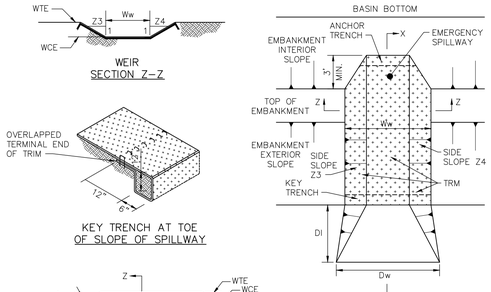
B / ES-13 ROUND TRASH RACK / RSP-48

NOT TO SCALE (IN PLACE DURING CONSTRUCTION ONLY)



C / ES-13 CONCRETE ANTI-SEEP COLLAR

NOT TO SCALE



BASIN NO.	WEIR Z3 (FT)	WEIR Z4 (FT)	WEIR TOP ELEV WTE (FT)	WEIR CREST ELEV WCE (FT)	WEIR WIDTH Ww (FT)	LINING TRM TYPE	LINING STAPLE PATTERN	CHANNEL Z5 (FT)	CHANNEL DEPTH Cd (IN)	DISSIPATER LENGTH DI (FT)	DISSIPATER WIDTH Dw (FT)	DISSIPATER RIPRAP SIZE (R=__)	DISSIPATER RIPRAP THICK, DRt (IN)
1	3	3	434.00	431.75*	50*	P550	E	3	3	15'	80'	–	–

*AS-BUILT CONDITION

NOTES:

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

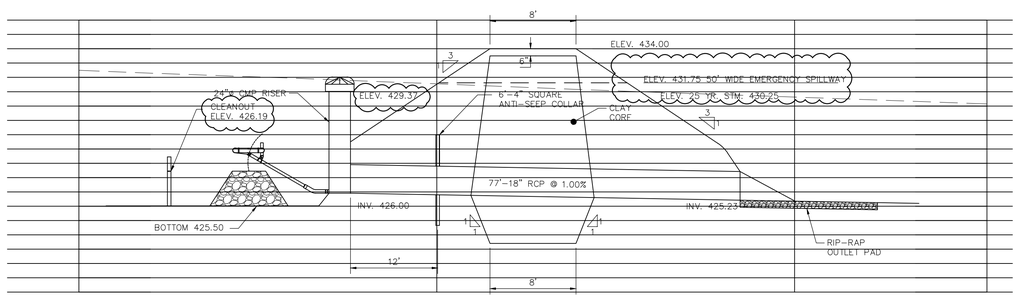
E / ES-13 SEDIMENT BASIN EMERGENCY SPILLWAY WITH FABRIC LINING

NOT TO SCALE

DETENTION BASIN EMBANKMENT SPECIFICATIONS

COMPACTION:
THE EMBANKMENT FILL & CLAY CORE SHALL BE PLACED IN 6 INCH HORIZONTAL LAYERS CONDITIONED TO OPTIMUM MOISTURE CONTENT, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST. THE CONTRACTOR SHALL MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIAL AS REQUIRED TO PROVIDE THIS REQUIRED DENSITY.

MATERIAL:
EARTH SUBSOIL – COHESIVE SOILS WITHOUT LARGE STONES OR ORGANIC MATTER.
CLAY CORE – SANDY CLAY OR SILTY CLAY LOAM
STRIP EXISTING TOPSOIL FROM FOOTPRINT OF EMBANKMENT.



A / ES-13 EROSION & SEDIMENT CONTROL BASIN CROSS SECTION A

NOT TO SCALE

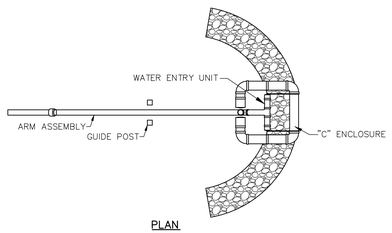
FAIRCLOTH SKIMMER MAINTENANCE

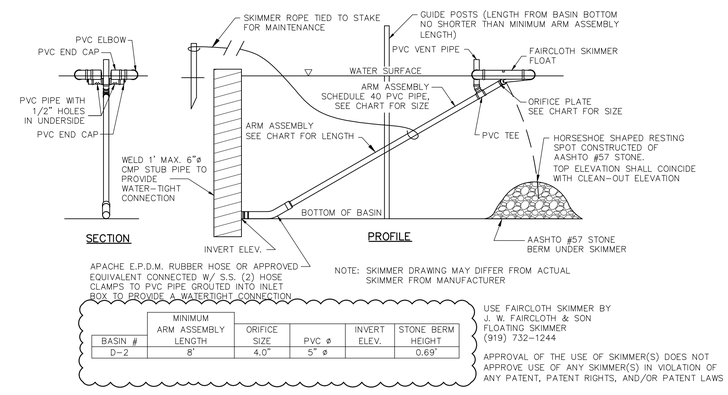
MAINTAIN THE HEIGHT OF THE HORSESHOE SHAPED STONE RING TO THE CLEAN OUT ELEVATION. PREVENT THE SKIMMER FROM GETTING STUCK IN THE MUD. USE ROPE TO PULL THE SKIMMER UP AND TO THE SIDE FOR CLEANING. IN WINTER OPERATIONS, BREAK SKIMMER LOOSE FROM ICE TO ALLOW IT TO FLOAT PROPERLY.

IF THE SKIMMER IS CLOGGED WITH TRASH, JERK THE ROPE A FEW TIMES. THIS WILL USUALLY CLEAR THE CLOG. IF IT DOES NOT, PULL THE SKIMMER TO THE SIDE OF THE BASIN FOR CLEANING.

IF THE ORIFICE PLATE OR THE PIPE BARREL BECOME CLOGGED, FOLLOW THESE PROCEDURES:

1. PULL SKIMMER TO SIDE OF BASIN.
2. REMOVE PIN AND OPEN DOOR FOR ACCESS TO THE ORIFICE.
3. REMOVE ORIFICE PLUG OR CAP.
4. RAISE INLET AS HIGH AS PRACTICABLE.
5. FILL BARREL WITH WATER (USE BUCKET AND FUNNEL OR A PUMP) TO REMOVE THE CLOG USING WATER AND PRESSURE.
6. AFTER OBSTRUCTION IS CLEARED, CONTINUE POURING WATER IN THE BARREL TO FLUSH OUT ACCUMULATED DEBRIS AND SEDIMENT TO PREVENT FUTURE CLOGGING.
7. A PLUMBERS SNAKE CAN BE USED BUT FLUSHING OUT THE SEDIMENT AND DEBRIS IS RECOMMENDED FIRST.





BASIN #	MINIMUM ARM ASSEMBLY LENGTH	ORIFICE SIZE	PVC ø	INVERT ELEV.	STONE BERM HEIGHT
D-2	8'	4.0"	5" ø		0.69'

USE FAIRCLOTH SKIMMER BY J. W. FAIRCLOTH & SON FLOATING SKIMMER (919) 732-1244

APPROVAL OF THE USE OF SKIMMER(S) DOES NOT APPROVE USE OF ANY SKIMMER(S) IN VIOLATION OF ANY PATENT, PATENT RIGHTS, AND/OR PATENT LAWS

D / ES-13 TEMPORARY FLOATING SKIMMER DETAIL

NOT TO SCALE (IN PLACE DURING CONSTRUCTION ONLY)

NOTE: REVISIONS TO PREVIOUSLY APPROVED SEDIMENT BASIN D-2 HAVE BEEN CLOUDED.

Sheet Number: 32 of 33
Project Number: 15-100-35
Date: DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION & SEDIMENT CONTROL – BASIN DETAILS

Drafting: D TURNER
Checked by: K POSTLETHWAITE
Scale: 1"=50'
Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

DATE	REVISIONS
1/19/26	REVISED FOR CH&N CHANGES
2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.

Section Number: ES-13

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

Seal: COMMONWEALTH OF PENNSYLVANIA G. MITCHELL KING ENGINEER No. PE088582 REGISTERED PROFESSIONAL 4/29/26

PRELIMINARY / FINAL

4/29/2026 3:52 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\32 ES-13.DWG

SOILS LIST		
Symbol	**Description**	**K-Factor**
BdB	Bedington shaly silt loam 3-8% Slope	0.17
BdC	Bedington shaly silt loam 8-15% Slope	0.17
BdD	Bedington shaly silt loam 15-25% Slope	0.17
DuA	Duffield silt loam, 0-3% Slope	0.32
EdB	Edom silty clay loam 3-8% Slope	0.20
HaB	Hagerstown silt loam 3-8% Slope	0.37
HaC	Hagerstown silt loam 8-15% Slope	0.37
HcD	Hagerstown silt loam, rocky, 8-15% Slope	0.37
Me *	Melvin silt loam	0.43
NeB	Neshaminy gravelly silt loam, 3-8% Slope	0.24
NeC	Neshaminy gravelly silt loam, 8-15% Slope	0.24
NhD	Neshaminy very stony silt loam, 8-25% Slope	0.24
Pe *	Penlaw silt loam	0.37
W	Water	n/a

N/F WEST SHORE-OWNER 1 LLC
Tax Parcel 13-10-0256-091
Ins. No. 2012-08888

N/F Lisburn Devco I LP
Tax Parcel
13-10-0256-090

N/F Lisburn Devco I LP
Tax Parcel
13-10-0256-087

Right-of-Way
Norfolk Southern Railroad

CRITICAL SECTION

PENNSYLVANIA TURNPIKE I - 76

POA 6
DP-008

Cedar Run

FLOWPATH (TYP.)

DP-007

Tax Parcel 13-10-0256-228
Ruth D. Lesher
Instrument No. 201729508 (1/2 interest)
Strong & Detweiler Partnership
Deed Book: 274, Page 1884 (1/2 interest)

Tax Parcel
13-10-0256-031
Ruth D.
Lesher
Instrument No.
201729508
(1/2 interest)
Strong &
Detweiler
Partnership
Deed Book
274, Page
1884 (1/2
interest)

POA 5
DP-006
DP-005

ROSSMOYNE ROAD SR 2021 (66' R.O.W.)

Arcona Commons Properties LP
Tax Parcel 13-10-0256-325
Instrument No. 201920512
As shown on Subdivision Plan
Recorded in Inst. No. 201807345

Emerson L. & Ruth D. Lesher
Tax Parcel
13-10-0256-009
Instrument No.
201905003
As shown on
Subdivision Plan Lot
8C
Recorded in Inst.
No. 201807345

POA 4
DP-004

Right-of-Way
Norfolk Southern Railroad

Tax Parcel 13-10-0256-229
Ruth D. Lesher
Instrument No. 201729508 (1/2 interest)
Strong & Detweiler Partnership
Deed Book: 274, Page 1884 (1/2 interest)
As shown on Subdivision Plan
Recorded in Inst. No. 201807345

UNT to Yellow Breeches Creek

POA 3
DP-003

SITE BOUNDARY
251.13 Ac.

POA 1
DP-001

CRITICAL SECTION

LIMIT OF DISTURBANCE
202.60 Ac.

Ruth D. Lesher
Tax Parcel
13-26-0256-230
Deed Ref. 184-353

Ruth D. Lesher
Tax Parcel
13-26-0256-011
Deed Ref. 184-353

POA 2
DP-002

CRITICAL SECTION

FLOW PATH NARRATIVE

Runoff from Discharge Points 001 and 002 (DP-001, DP-002) flows over land on the subject property to UNT to Yellow Breeches Creek.

Runoff from Discharge Point 003 (DP-003) flows over land on the subject property to UNT to Yellow Breeches Creek.

Runoff from Discharge Point 004 (DP-004) flows onto adjacent lands before reaching the streamside wetlands at Cedar Run. The runoff flows overland on the subject property, then into a storm sewer culvert beneath the railroad, then overland in adjacent lands of Emerson & Ruth Lesher. This discharge was previously permitted.

Runoff from Discharge Point 005 (DP-005) flows onto adjacent lands before reaching the streamside wetlands at Cedar Run. The runoff flows overland on the subject property through designed swale 3, then into a storm sewer culvert beneath Rossmoyne Road, then discharged directly into Cedar Run wetlands.

Runoff from Discharge Points 006 (DP-006) flows onto adjacent lands before reaching the streamside wetlands at Cedar Run. The runoff flows through storm sewers, then discharged directly into Cedar Run wetlands.

Runoff from Discharge Points 007 and 008 (DP-007, DP-008) flows onto adjacent lands before reaching the streamside wetlands at Cedar Run. The runoff flows overland on the subject property alongside the railroad, then beneath a highway overpass (Pennsylvania Turnpike, I-076), then overland on lands of Lisburn Devco 1 LP, then overland on lands of West Shore Owner 1 LLC, before entering a culvert beneath the railroad, then overland on lands of Lisburn Devco 1 LP before reaching the Cedar Run wetlands.

OFF-SITE DISCHARGE ANALYSIS NARRATIVE

1. The rate and volume of runoff to the discharge point matches pre-development rates and volumes for all storms. A common law easement provides the subject property the right to continue draining across neighboring properties since there is no change in rate or volume.
2. PCSM and E&S drawings and reports have been provided to demonstrate compliance with number 1 above.
3. This erosion potential analysis is included with the plan set since the discharge points do not directly discharge into the surface waters.
4. Discharge offsite from the discharge points mimics pre-development conditions (flow path and manner of flow).
5. No express easement documentation is necessary, since the discharge point meets the criteria to qualify for a common law easement.
6. This off-site discharge analysis provides the information to demonstrate compliance with the Pennsylvania Clean Streams Law and 25 Pa. Code §§ 102.4(c) & 102.8(f)(15).
7. This off-site discharge analysis shows that accelerated erosion will not occur on adjoining properties between the site and the surface waters.

Sheet Number:
33 of 33
Project Number:
15-100-35
Date:
DECEMBER 17, 2025

REMAINING ARCONA NEIGHBORHOODS

Lower Allen Township - Cumberland County, PA

CHARTER Homes & Neighborhoods

EROSION POTENTIAL ANALYSIS

Drafting: D TURNER
Checked by: K POSTLETHWAIT
Scale: 1"=100'

Project Manager: DAVID B. KEGERIZE PE
Project Engineer: G. MITCHELL KING PE, PLS
Project Surveyor: THOMAS K. PHILLIPS PLS

0 50 100 200 300

Seal: COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER G. MITCHELL KING No. PE039331 4/29/26

TOWNE SQUARE ENGINEERING
313 W. Liberty St., Suite 241
Lancaster, PA 17603
Phone: (717) 283-4538
Civil Engineers & Land Planners
info@townesquareengineering.com

REVISIONS		
1	4/17/26	ADDRESS TWP. ENG. LTR. & COUNTY LTR.
2	3/27/26	UPDATE PLAN TO REMOVE NEIGHBORHOOD 7
3	2/10/26	ADDRESS CCPD & TWP. ENG. COMMENTS
4	1/19/26	REVISED FOR CH&N CHANGES
	DATE	

Section Number:
ES-14

4/29/2026 3:52 PM L:\15-100-35\SHEETS\PRELIM-FINAL - SWM-ES\33 ES-14.DWG

PRELIMINARY / FINAL