FINAL PLAN
COUGHLIN'S LAW SOUTH HILLS

Situate In

Peters Township
Washington County, Pennsylvania

OWNER
JASBIR S. KANG & PRABHJOT KAUR KANG
1648 BLACKBURN HEIGHTS DRIVE
SEWICLEY, PA 15143
412-833-6055

APPLICANT
COUGHLIN'S LAW SOUTH HILLS
10 VIRGINIA AVENUE
PITTSBURGH, PA 15211
412-586-5673

CIVIL ENGINEER
J.R. GALES & ASSOCIATES, INC.
2704 BROWNSVILLE ROAD
PITTSBURGH, PENNSYLVANIA 15227
412-885-8885
FAX: 412-885-1320
e-mail: jrgales.engineers@comcast.net

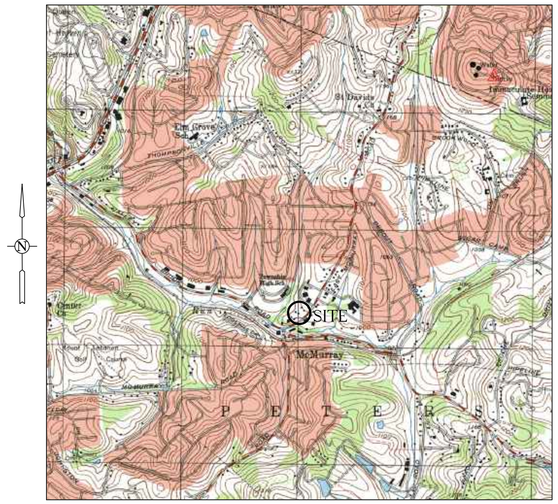
PROPERTY INFORMATION
LOT 101
DUCKWORTH-BEAHN SUBDIVISION
PBV 35 PG 56
TAX I.D.: 540-007-05-03-0010-00
65,580 SF OR 1.505 ACRES

PROPERTY IS ZONED TC - TOWN CENTER

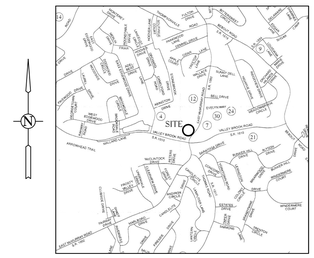
RESTAURANT IS A PERMITTED USE

	REQUIRED	PROVIDED
MINIMUM GROSS LOT (SF/LOT)	21,780 S.F.	65,580 S.F.
MAXIMUM NET DU/ACRE	NOT LIMITED	1 UNIT
MAXIMUM FLOOR AREA RATIO (FAR)	0.85	0.11
MIN. LOT FRONTAGE AT BUILDING LINE	25'	171.08'
MIN. FRONT SETBACK	25'	25'
MIN. SIDE SETBACK	0'	10'
MIN. REAR SETBACK	25'	260.30'
MAX. PRINCIPAL BUILDING SETBACK	30'	25'
MAX. BUILDING/STRUCTURE HEIGHT	34'/3 STORIES	22'/1 STORY

PARKING TABULATION		
RESTAURANT/BAR	REQUIRED MIN/MAX	PROVIDED
MINIMUM - 1 PARKING SPOT PER 220 GROSS SF	MINIMUM - 6,630 SF/220 = 30 PARKING SPACES MIN	
MAX = 150% OF MINIMUM	MAX = 150% X 29 = 45 PARKING SPACES MAX	30
OUTDOOR SEATING-RESTAURANT	ASSUME 115 SEATS	
MINIMUM - 1 PER 3 SEATS	MINIMUM: 115/3 = 38 PARKING SPACES MIN	
MAX = 150% OF MINIMUM	MAXIMUM: 150% OF 38 = 57	44
TOTAL	68 SPACES REQUIRED (MIN)	74



LOCATION MAP SCALE: 1" = 2000'
BRIDGEVILLE QUADRANGLE



STREET MAP SCALE: 1" = 500'

DRAWING SCHEDULE

Sheet No.	1	Title Sheet
Sheet No.	2	Existing Conditions & Demolition Plan
Sheet No.	3	Slope and Soils Map
Sheet No.	4	Site Plan
Sheet No.	5	Turning Template Plan
Sheet No.	6	Cross Sections & Sewer Profiles
Sheet No.	7	Landscape Plan
Sheet No.	8	Construction Details
Sheet No.	9	Construction Details
Sheet No.	10	Sanitary Sewer Details
Sheet No.	10A-E	Lighting Plan
Sheet No.	11	Erosion and Sediment Pollution Control Plan
Sheet No.	12	Erosion and Sediment Pollution Control Details 1
Sheet No.	13	Erosion and Sediment Pollution Control Details 2
Sheet No.	14	Preconstruction Stormwater Management Plan
Sheet No.	15	Postconstruction Stormwater Management Plan Details
Sheet No.	16	Postconstruction Stormwater Management Plan Details
Sheet No.	17	Postconstruction Stormwater Management Plan Details

GENERAL NOTES:

1. THE SITE IS NOT LOCATED IN THE FLOODPLAIN.
2. THERE ARE NO EXISTING GAS OR OIL WELLS LOCATED ON THE PROPERTY.
3. ACCESS TO A STATE HIGHWAY SHALL ONLY BE AUTHORIZED BY A HIGHWAY OCCUPANCY PERMIT ISSUED BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION UNDER SECTION 420 OF THE STATE HIGHWAY LAW (P.L. 1242, NO. 428 OF JUNE 1, 1945)
4. THERE SHALL BE NO STORAGE OF DISMANTLED VEHICLES OUTSIDE AN ENCLOSED BUILDING.
5. ALL REPAIR WORK SHALL BE PERFORMED WITHIN A COMPLETELY ENCLOSED BUILDING WHICH HAS ADEQUATE VENTILATION AND FIRE PROTECTION PROVISIONS.
6. ALL TOWED VEHICLES SHALL BE STORED ON THE PREMISES AND NO VEHICLE SHALL BE STORED OR DISMANTLED ON ANY PUBLIC STREET.
7. THE PREMISES SHALL BE KEPT CLEAN AND SHALL BE MAINTAINED SO AS TO NOT CONSTITUTE A NUISANCE OR A MENACE TO PUBLIC HEALTH AND SAFETY.
8. ALL DELIVERIES WILL BE BY BOX TRUCK.
9. UTILITY AVAILABILITY LETTERS WILL BE PROVIDED UPON RECEIPT.
10. WORK DONE WITHIN THE PENNDOT RIGHT OF WAY WILL REQUIRE PERMITTING. IF A HOP IS REQUIRED, IT MUST BE PROVIDED FOR FINAL APPROVAL.
11. PROVIDE THE APPROVED NPDES PERMIT FROM WASHINGTON COUNTY CONSERVATION DISTRICT.
12. PROVIDE APPROVAL FROM THE PETERS TOWNSHIP SANITARY AUTHORITY ALONG WITH THE APPROVED SEWAGE PLANNING MODULE.
13. COORDINATE WITH THE TOWNSHIP ON THE NEED FOR A TRAFFIC IMPACT STUDY.

811 Know what's below. Call before you dig.

SERIAL NO.
20162660855

NOTE: The utility locations shown on this plan are approx. locations only as per utility company information and information supplied by the PA One Call System.

*Before you dig anywhere in Pennsylvania STOP! Call PA. One-Call at 811 or 1-800-242-1776 Toll Free for actual field utility locations.

Pennsylvania Act 38 (1991) requires no less than 3 working days notice nor more than 10 working days notice from excavators who are about to dig, drill, blast, auger, bore, grade, trench, or demolish when in the construction phase. A designer is required to give no less than 10 working days nor more than 90 working days notice when engaged in the design phase. Both of these conditions involve the entire Commonwealth.

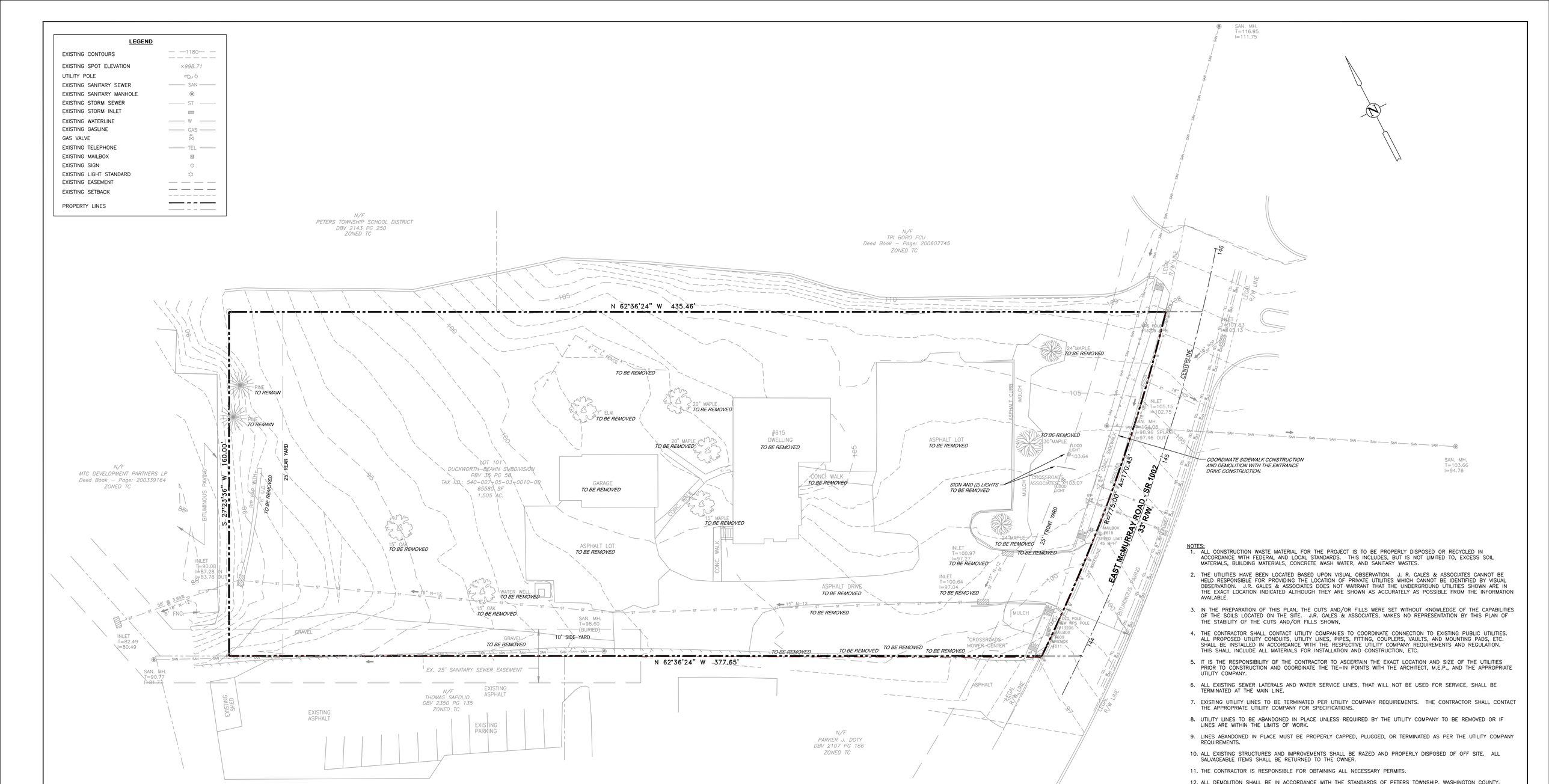
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JOHN ROBERT GALES ENGINEER PE-11386-E

J.R. GALES, P.E

9-24-25
DATE

LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	



DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

NOTES:

1. ALL CONSTRUCTION WASTE MATERIAL FOR THE PROJECT IS TO BE PROPERLY DISPOSED OR RECYCLED IN ACCORDANCE WITH FEDERAL AND LOCAL STANDARDS. THIS INCLUDES, BUT IS NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, AND SANITARY WASTES.
2. THE UTILITIES HAVE BEEN LOCATED BASED UPON VISUAL OBSERVATION. J. R. GALES & ASSOCIATES CANNOT BE HELD RESPONSIBLE FOR PROVIDING THE LOCATION OF PRIVATE UTILITIES WHICH CANNOT BE IDENTIFIED BY VISUAL OBSERVATION. J.R. GALES & ASSOCIATES DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.
3. IN THE PREPARATION OF THIS PLAN, THE CUTS AND/OR FILLS WERE SET WITHOUT KNOWLEDGE OF THE CAPABILITIES OF THE SOILS LOCATED ON THE SITE. J.R. GALES & ASSOCIATES, MAKES NO REPRESENTATION BY THIS PLAN OF THE STABILITY OF THE CUTS AND/OR FILLS SHOWN.
4. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES TO COORDINATE CONNECTION TO EXISTING PUBLIC UTILITIES. ALL PROPOSED UTILITY CONDUITS, UTILITY LINES, PIPES, FITTING, COUPLERS, VAULTS, AND MOUNTING PADS, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY REQUIREMENTS AND REGULATION. THIS SHALL INCLUDE ALL MATERIALS FOR INSTALLATION AND CONSTRUCTION, ETC.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THE EXACT LOCATION AND SIZE OF THE UTILITIES PRIOR TO CONSTRUCTION AND COORDINATE THE TIE–IN POINTS WITH THE ARCHITECT, M.E.P., AND THE APPROPRIATE UTILITY COMPANY.
6. ALL EXISTING SEWER LATERALS AND WATER SERVICE LINES, THAT WILL NOT BE USED FOR SERVICE, SHALL BE TERMINATED AT THE MAIN LINE.
7. EXISTING UTILITY LINES TO BE TERMINATED PER UTILITY COMPANY REQUIREMENTS. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANY FOR SPECIFICATIONS.
8. UTILITY LINES TO BE ABANDONED IN PLACE UNLESS REQUIRED BY THE UTILITY COMPANY TO BE REMOVED OR IF LINES ARE WITHIN THE LIMITS OF WORK.
9. LINES ABANDONED IN PLACE MUST BE PROPERLY CAPPED, PLUGGED, OR TERMINATED AS PER THE UTILITY COMPANY REQUIREMENTS.
10. ALL EXISTING STRUCTURES AND IMPROVEMENTS SHALL BE RAZED AND PROPERLY DISPOSED OF OFF SITE. ALL SALVAGEABLE ITEMS SHALL BE RETURNED TO THE OWNER.
11. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
12. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE STANDARDS OF PETERS TOWNSHIP, WASHINGTON COUNTY, COMMONWEALTH OF PENNSYLVANIA, THE UTILITY COMPANIES, AND THE GEOTECHNICAL REPORT.
13. IF APPLICABLE, REMOVE ALL EXISTING UTILITY LINES ASSOCIATED WITH THE BUILDINGS TO BE DEMOLISHED. THE CONTRACTOR SHALL COORDINATE WITH THE PROPER UTILITY COMPANIES.
14. SAWCUT PAVEMENT FULL DEPTH WHERE PAVEMENT IS TO BE REMOVED AND WHERE IT ABUTS PAVEMENT TO REMAIN. PAVEMENT REMOVAL INCLUDES SUBBASE MATERIALS.

EXISTING CONDITIONS & DEMOLITION PLAN

SITUATE IN

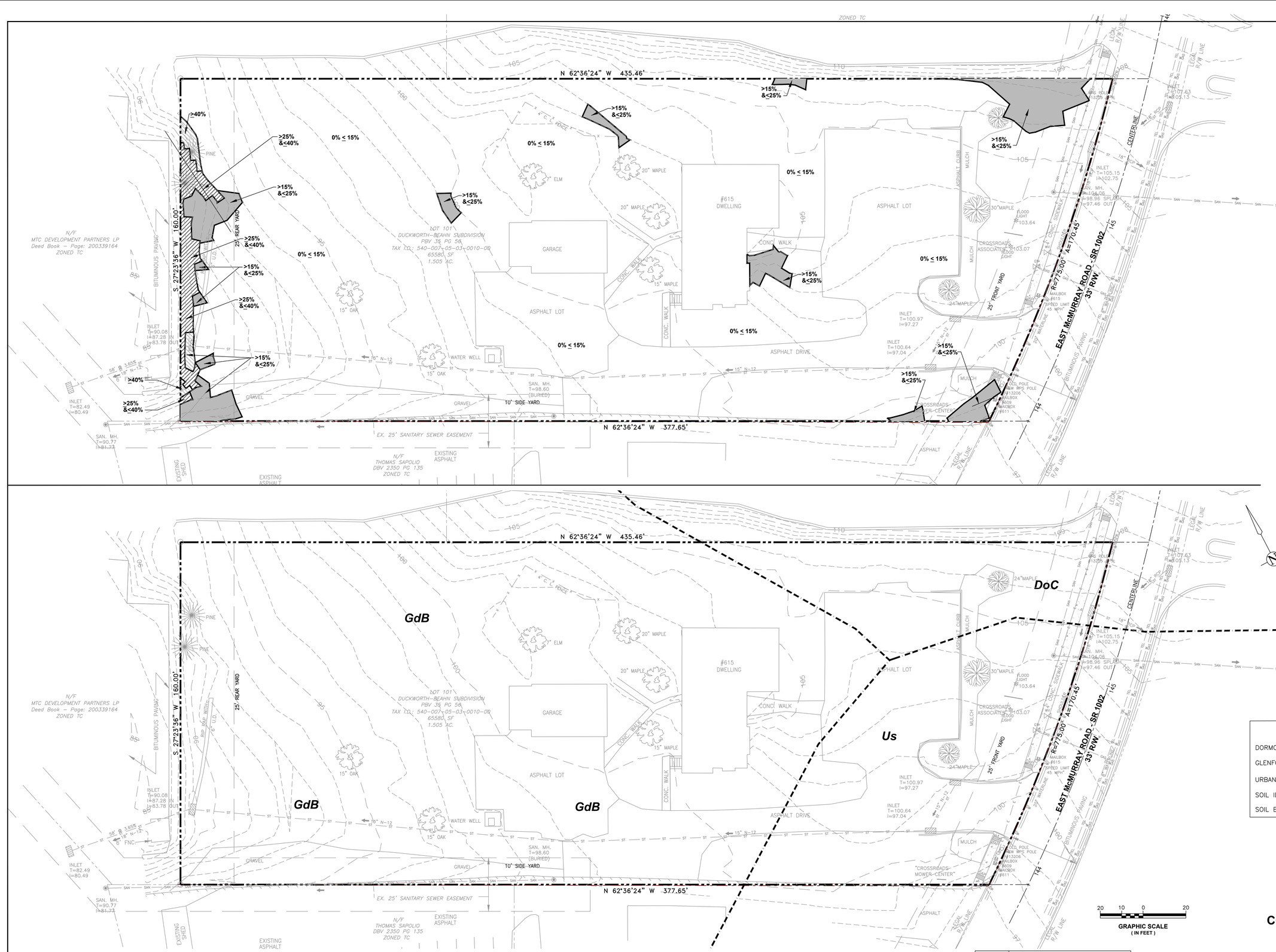
PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412–885–8885 Fax: 412–885–1320



SLOPE LEGEND

0% ≤ 15%	62,218	SF
>15% & ≤ 25%	2,380	SF
>25% & ≤ 40%	747	SF
≥ 40%	213	SF

SENSITIVE NATURAL RESOURCES

THERE ARE NO FLOODPLAINS ON THE SITE.
THERE ARE NO WETLANDS/HYDRIC SOILS ON THE SITE.
THERE ARE NO NATURAL DRAINAGE WAYS ON THE SITE.
THERE ARE NO LAKES/WATERBODIES ON THE SITE.

LEGEND

- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- UTILITY POLE
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- EXISTING WATERLINE
- EXISTING GASLINE
- GAS VALVE
- EXISTING TELEPHONE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING LIGHT STANDARD
- EXISTING EASEMENT
- EXISTING SETBACK
- PROPERTY LINES
- **PROPOSED CONTOURS**
- PROPOSED STORMWATER EASEMENT
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- PROPOSED ENDWALL
- PROPOSED MANHOLE
- PROPOSED SPOT ELEVATION
- PROPOSED STOP SIGN
- PROPOSED SANITARY SEWER

SOILS LEGEND

DORMONT SILT LOAM, 8 TO 15 PERCENT SLOPES	DoC
GLENFORD SILT LOAM, 3 TO 8 PERCENT SLOPES	GdB
URBAN LAND	Us
SOIL IDENTIFICATION SYMBOL	Us
SOIL BOUNDARY LINE	

GRAPHIC SCALE (IN FEET)
20 10 0 20

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SLOPE & SOILS MAP

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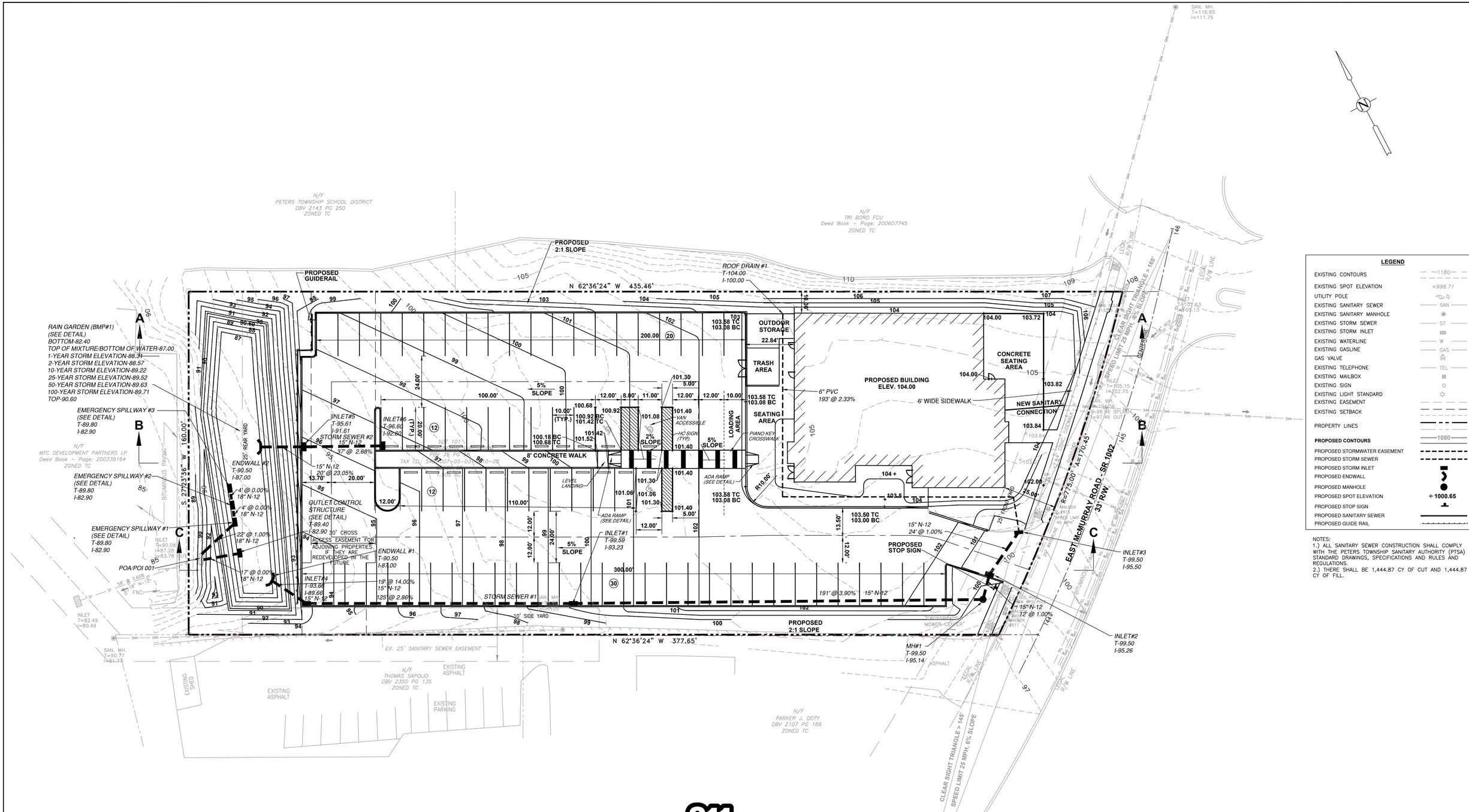

LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	
PROPOSED CONTOURS	1080
PROPOSED STORMWATER EASEMENT	
PROPOSED STORM SEWER	
PROPOSED STORM INLET	
PROPOSED ENDWALL	
PROPOSED MANHOLE	
PROPOSED SPOT ELEVATION	+ 1000.65
PROPOSED STOP SIGN	
PROPOSED SANITARY SEWER	
PROPOSED GUIDE RAIL	

NOTES:
1.) ALL SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH THE PETERS TOWNSHIP SANITARY AUTHORITY (PTSA) STANDARD DRAWINGS, SPECIFICATIONS AND RULES AND REGULATIONS.
2.) THERE SHALL BE 1,444.87 CY OF CUT AND 1,444.87 CY OF FILL.

Know what's **below.**
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20 10 0 20

GRAPHIC SCALE
(IN FEET)

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SITE PLAN

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

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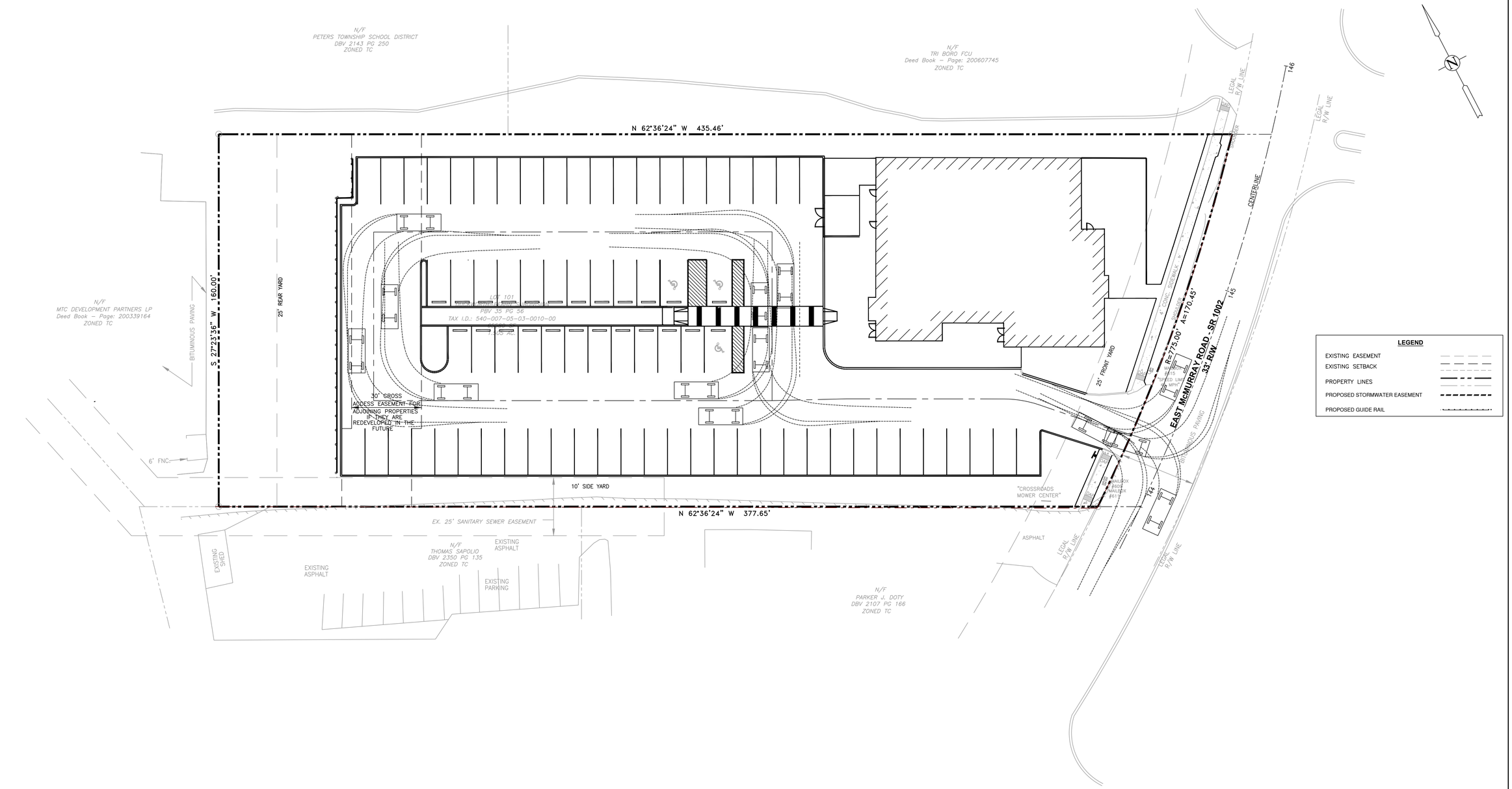

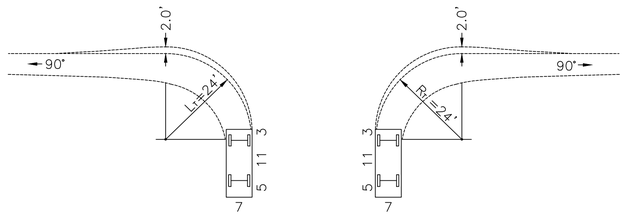

FOOD TRUCK TURNING TEMPLATE

20 10 0 20

GRAPHIC SCALE
(IN FEET)

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TURNING TEMPLATE PLAN

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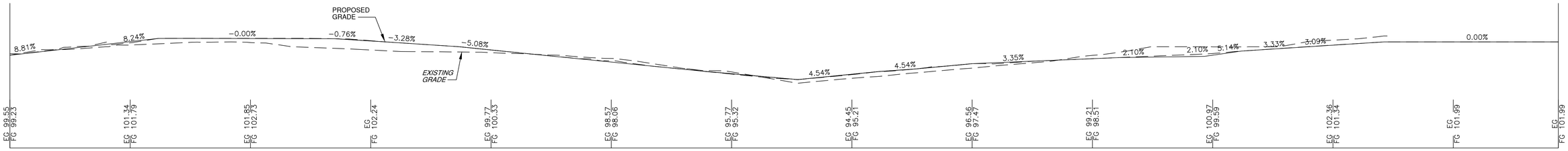
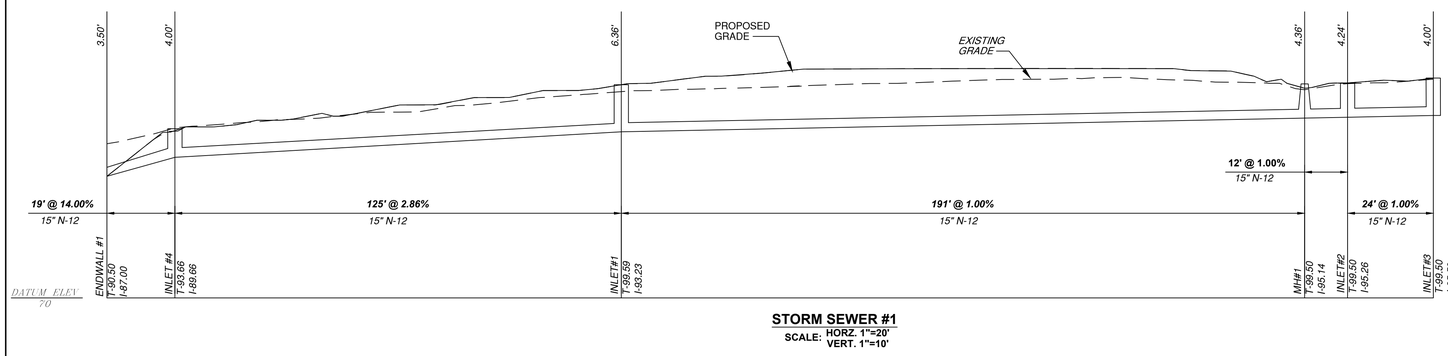
Phone: 412-885-8885 Fax: 412-885-1320

15-135098

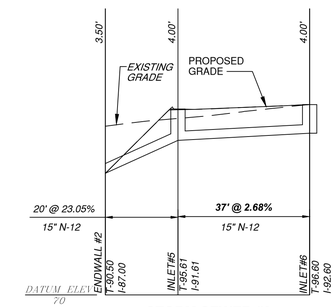
SL 15-135038 SITE



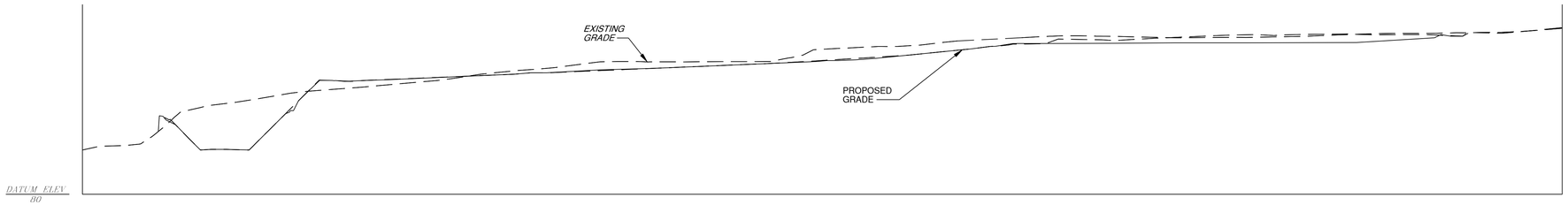
DRIVEWAY PROFILE
SCALE: HORZ. 1"=20'
VERT. 1"=10'



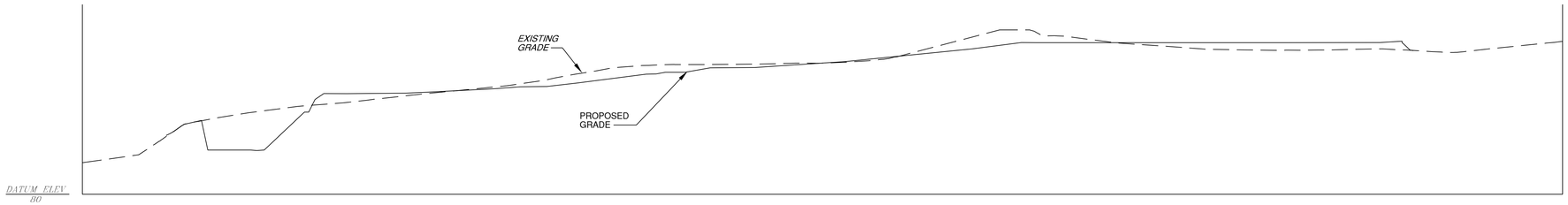
STORM SEWER #1
SCALE: HORZ. 1"=20'
VERT. 1"=10'



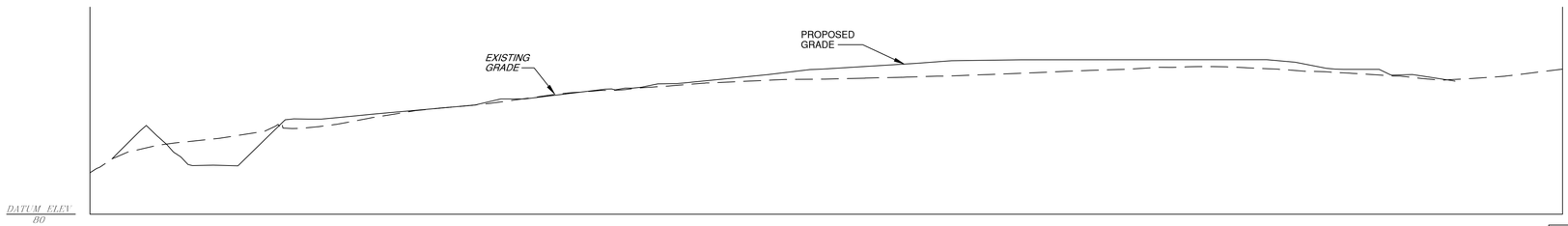
STORM SEWER #2
SCALE: HORZ. 1"=20'
VERT. 1"=10'



CROSS SECTION A-A
SCALE: HORZ. 1"=20'
VERT. 1"=10'



CROSS SECTION B-B
SCALE: HORZ. 1"=20'
VERT. 1"=10'



CROSS SECTION C-C
SCALE: HORZ. 1"=20'
VERT. 1"=10'

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CROSS SECTIONS & SEWER PROFILES

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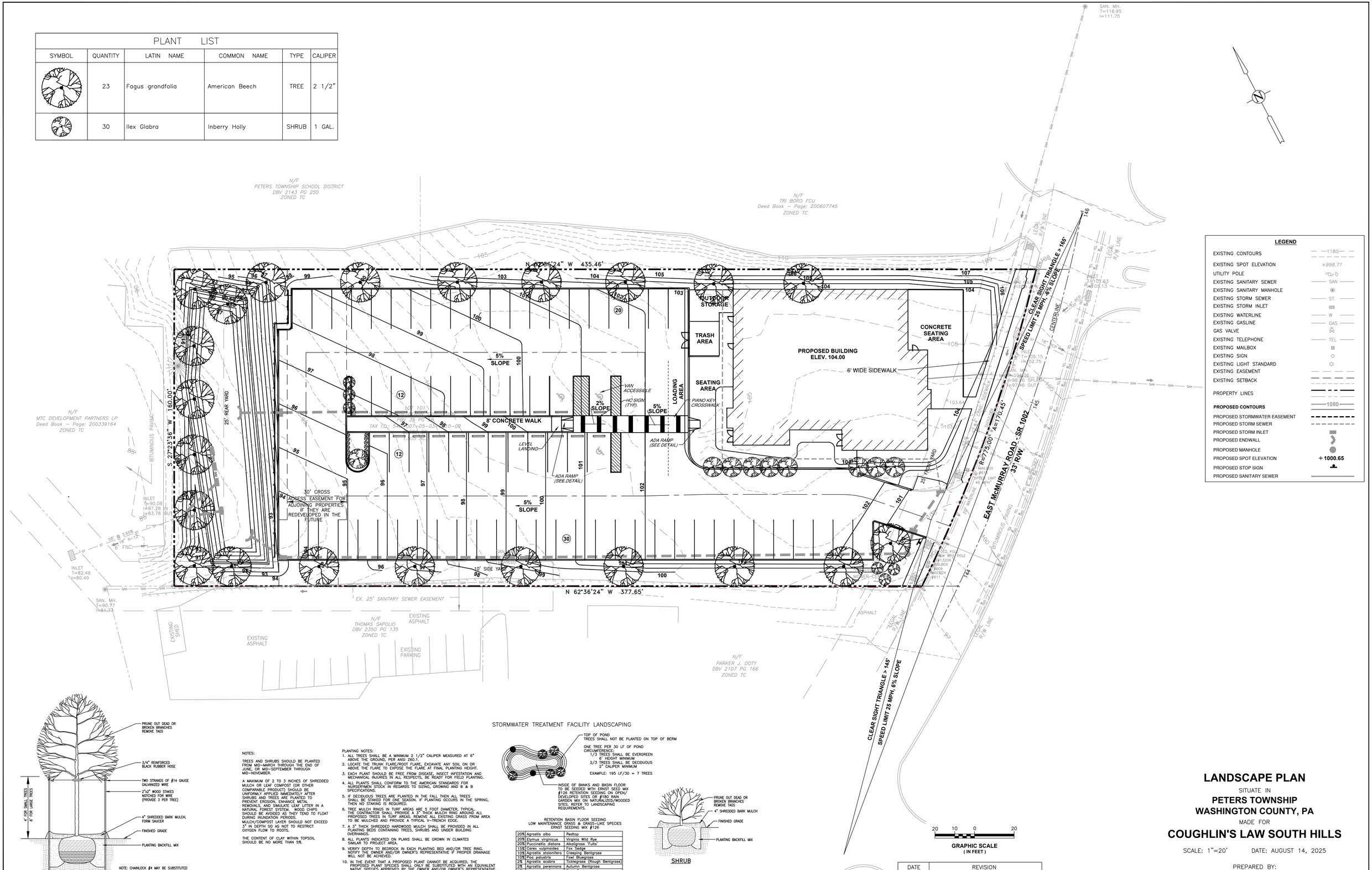
PLANT LIST

SYMBOL	QUANTITY	LATIN NAME	COMMON NAME	TYPE	CALIPER
	23	Fagus grandfolia	American Beech	TREE	2 1/2"
	30	Ilex Glabra	Inberry Holly	SHRUB	1 GAL.



LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	
PROPOSED CONTOURS	1080
PROPOSED STORMWATER EASEMENT	
PROPOSED STORM SEWER	
PROPOSED STORM INLET	
PROPOSED ENDWALL	
PROPOSED MANHOLE	
PROPOSED SPOT ELEVATION	+ 1000.65
PROPOSED STOP SIGN	
PROPOSED SANITARY SEWER	

SHADE TREE

PLANTING DETAILS ARE NOT TO SCALE

NOTES:

TREES AND SHRUBS SHOULD BE PLANTED FROM MID–MARCH THROUGH THE END OF JUNE, OR MID–SEPTEMBER THROUGH MID–NOVEMBER.

A MAXIMUM OF 2 TO 3 INCHES OF SHREDDED MULCH OR LEAF COMPOST (OR OTHER COMPARABLE PRODUCT) SHOULD BE UNIFORMLY APPLIED IMMEDIATELY AFTER SHRUBS AND TREES ARE PLANTED TO PREVENT EROSION, ENHANCE METAL REMOVALS, AND SIMULATE LEAF LITTER IN A NATURAL FOREST SYSTEM. WOOD CHIPS SHOULD BE AVOIDED AS THEY TEND TO FLOAT DURING INUNDATION PERIODS. MULCH/COMPOST LAYER SHOULD NOT EXCEED 3" IN DEPTH SO AS NOT TO RESTRICT OXYGEN FLOW TO ROOTS.

THE CONTENT OF CLAY WITHIN TOPSOIL SHOULD BE NO MORE THAN 5%.

PLANTING NOTES:

1. ALL TREES SHALL BE A MINIMUM 2 1/2" CALIPER MEASURED AT 6" ABOVE THE GROUND, PER ANSI Z60.1.
2. LOCATE THE TRUNK FLARE/ROOT FLARE, EXCAVATE ANY SOIL ON OR ABOVE THE FLARE TO EXPOSE THE FLARE AT FINAL PLANTING HEIGHT.
3. EACH PLANT SHOULD BE FREE FROM DISEASE, INSECT INFESTATION AND MECHANICAL INJURIES IN ALL RESPECTS, BE READY FOR FIELD PLANTING.
4. ALL PLANTS SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERYMEN STOCK IN REGARDS TO SIZING, GROWING AND B & B SPECIFICATIONS.
5. IF DECIDUOUS TREES ARE PLANTED IN THE FALL THEN ALL TREES SHALL BE STAKED FOR ONE SEASON. IF PLANTING OCCURS IN THE SPRING, THEN NO STAKING IS REQUIRED.
6. TREE MULCH RINGS IN TURF AREAS ARE 5 FOOT DIAMETER, TYPICAL. THE CONTRACTOR SHALL PROVIDE A 3" THICK MULCH RING AROUND ALL PROPOSED TREES IN TURF AREAS. REMOVE ALL EXISTING GRASS FROM AREA TO BE MULCHED AND PROVIDE A TYPICAL V–TRENCH EDGE.
7. A 3" THICK SHREDDED HARDWOOD MULCH SHALL BE PROVIDED IN ALL PLANTING BEDS CONTAINING TREES, SHRUBS AND UNDER BUILDING OVERHANGS.
8. ALL PLANTS INDICATED ON PLANS SHALL BE GROWN IN CLIMATES SIMILAR TO PROJECT AREA.
9. VERIFY DEPTH TO BEDROCK IN EACH PLANTING BED AND/OR TREE RING. NOTIFY THE OWNER AND/OR OWNER'S REPRESENTATIVE IF PROPER DRAINAGE WILL NOT BE ACHIEVED.
10. IN THE EVENT THAT A PROPOSED PLANT CANNOT BE ACQUIRED, THE PROPOSED PLANT SPECIES SHALL ONLY BE SUBSTITUTED WITH AN EQUIVALENT NATIVE SPECIES APPROVED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE.

STORMWATER TREATMENT FACILITY LANDSCAPING

RETENTION BASIN FLOOR SEEDING
LOW MAINTENANCE GRASS & GRASS–LIKE SPECIES
ERNST SEEDING MIX #126

20% Agrostis alba	Redtop
20% Elymus virginicus	Virginia Wld Rye
20% Puccinellia distans	Alkaligrass 'Fults'
15% Carex vulpinoidea	Fox Sedge
10% Agrostis stolonifera	Creeping Bentgrass
10% Poa palustris	Fowl Bluegrass
2% Agrostis scabra	Tickelgrass (Rough Bentgrass)
2% Agrostis perennans	Autumn Bentgrass
1% Juncus tenuis	Path Rush

SEEDING RATE: 20–40 BULK LBS PER ACRE OR
1/2 – 1 LBS PER 1,000 SQ. FT.

SHRUB

GRAPHIC SCALE
(IN FEET)
20 10 0 20

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

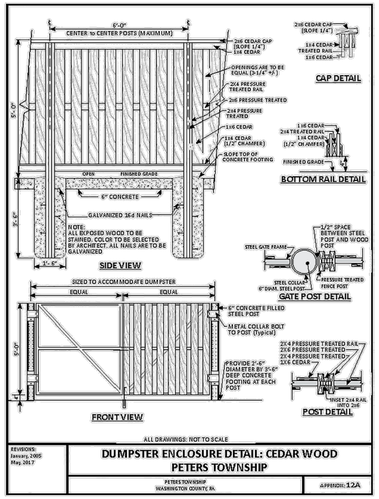
LANDSCAPE PLAN

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412–885–8885 Fax: 412–885–1320

§ 440-1216. Appendix 12A, Dumpster Enclosure: Cedar/Wood.



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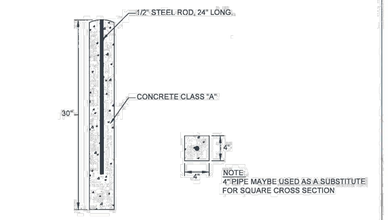

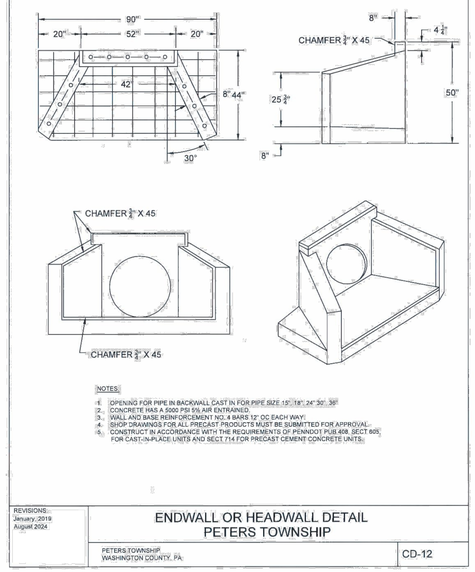

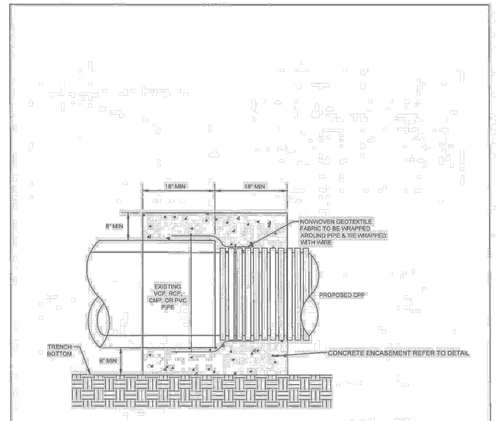

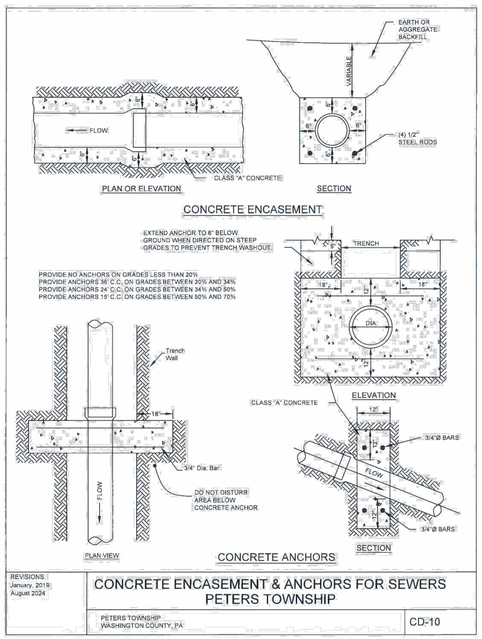

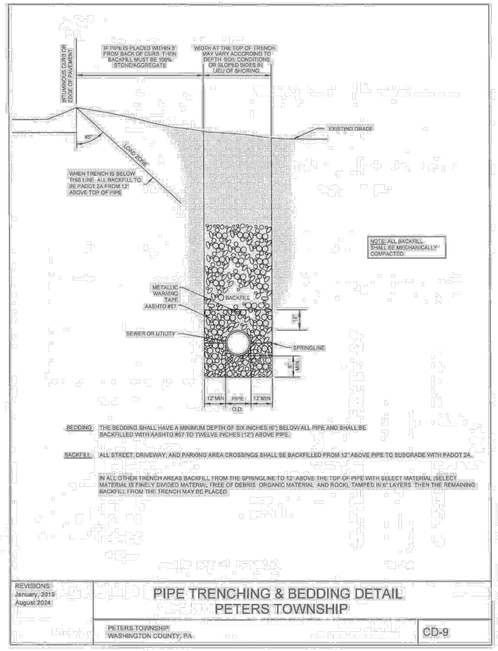

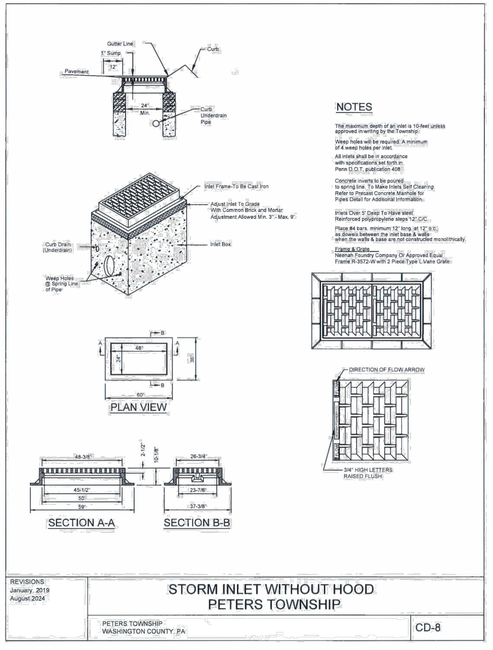

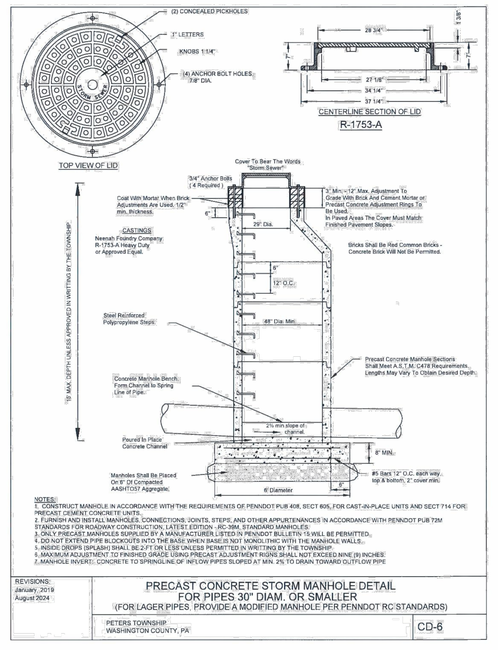

CONSTRUCTION DETAILS

SITUATE IN

PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

COUGHLIN'S LAW SOUTH HILLS

SCALE: AS SHOWN DATE: AUGUST 14, 2025

DATE	REVISION
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PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
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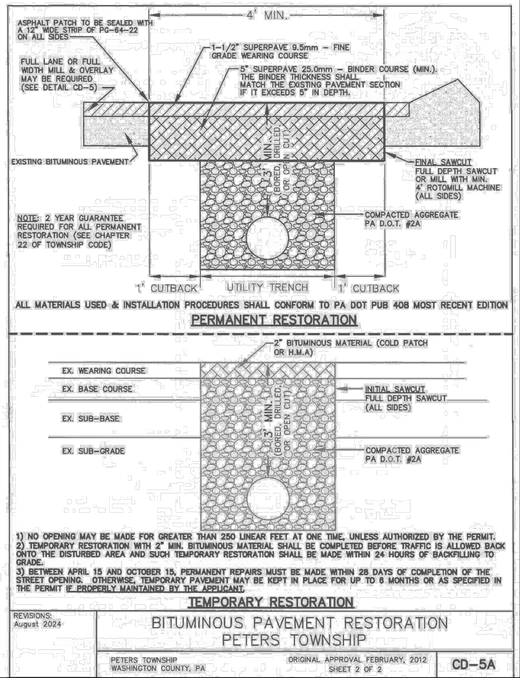
Phone: 412-885-8885 Fax: 412-885-1320

15-135098
SL 15-135038 SITE



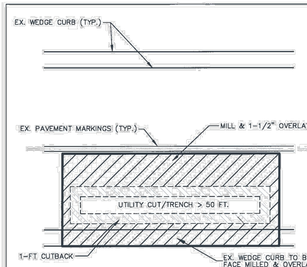
ALL MATERIALS USED & INSTALLATION PROCEDURES SHALL CONFORM TO PA DOT PUB 408 MOST RECENT EDITION

PERMANENT RESTORATION

1) NO OPENING MAY BE MADE FOR GREATER THAN 250 LINEAR FEET AT ONE TIME, UNLESS AUTHORIZED BY THE PERMIT.
2) TEMPORARY RESTORATION WITH 2" MIN. BITUMINOUS MATERIAL SHALL BE COMPLETED BEFORE TRAFFIC IS ALLOWED BACK ONTO THE DISTURBED AREA AND SUCH TEMPORARY RESTORATION SHALL BE MADE WITHIN 24 HOURS OF BACKFILLING TO GRADE.
3) BETWEEN APRIL 15 AND OCTOBER 15, PERMANENT REPAIRS MUST BE MADE WITHIN 28 DAYS OF COMPLETION OF THE STREET OPENING. OTHERWISE, TEMPORARY PAVEMENT MAY BE KEPT IN PLACE FOR UP TO 6 MONTHS OR AS SPECIFIED IN THE PERMIT IF PROPERLY MAINTAINED BY THE APPLICANT.

TEMPORARY RESTORATION

REVISIONS: August 2024	BITUMINOUS PAVEMENT RESTORATION PETERS TOWNSHIP	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	ORIGINAL APPROVAL FEBRUARY, 2012 SHEET 2 OF 2 — CD-5A



ALL MATERIALS USED & INSTALLATION PROCEDURES SHALL CONFORM TO PA DOT PUB 408 MOST RECENT EDITION

LONGITUDINAL OPENINGS

(TYPICALLY FOR MAIN LINE INSTALLATION OR SECTIONAL REPLACEMENT):

1. REGARDLESS OF PAVEMENT AGE, ONE-LANE (DISTURBED LANE) MILL & 1-1/2" OVERLAY REQUIRED IF TRENCH LENGTH EXCEEDS 50 L.F.

2. IF PAVEMENT IS LESS THAN FIVE (5) YEARS OLD, FULL-WIDTH MILL (INCLUDING CURBS, WHICH MAY BE FACE-MILLED) & 1-1/2" OVERLAY REQUIRED IF TRENCH LENGTH EXCEEDS 50 L.F.

3. ALL PAVEMENTS MARKINGS THAT ARE COVERED OR DESTROYED SHALL BE REPLACED IN THEIR FORMER LOCATION.

4. ALL GUTTERLINES MUST BE SEALED WITH A 12-INCH PASS OF PG 64-22.

TRANSVERSE OPENINGS

(TYPICALLY FOR SPOT REPAIRS OR SERVICE CONNECTIONS):

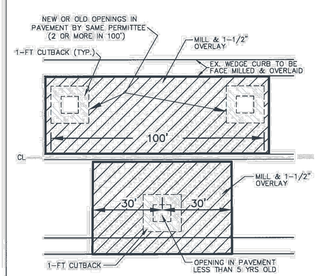
1. FOR PAVEMENTS HAVING A SURFACE THAT IS LESS THAN FIVE (5) YEARS OLD, EACH OPENING SHALL BE MILLED & OVERLAID (1-1/2" Min. depth) FOR A DISTANCE OF 30 FEET ON EACH SIDE OF THE EDGE OF THE OPENING IN THE SAME TRAFFIC LANE AS THE OPENINGS.

2. REGARDLESS OF PAVEMENT AGE, WHEN TWO OR MORE OPENINGS (NEW OR OLD, BY SAME PERMITTEE) HAVE BEEN MADE WITHIN 100 FEET IN THE SAME LANE, THE ENTIRE LANE SHALL BE MILLED AND OVERLAID (1-1/2" Min. depth) FOR THE LENGTH OF ROADWAY BETWEEN OPENINGS.

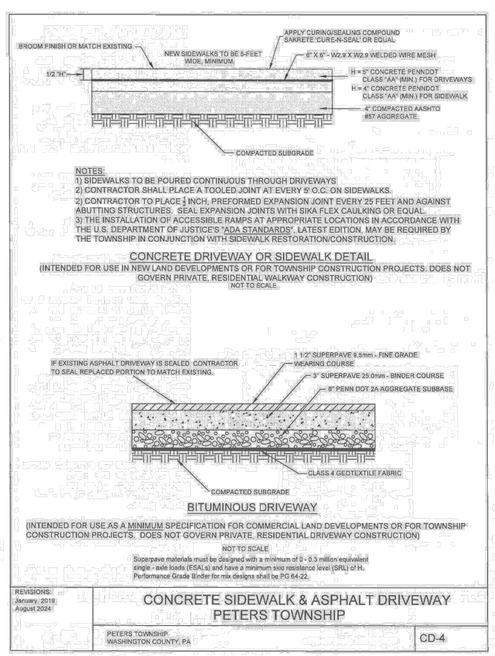
3. FOR OPENINGS OR PATCHES WITHIN TWO (2) FEET OF THE STREET CENTERLINE, THE 1-1/2" MILL & OVERLAY MUST EXTEND THE ENTIRE STREET WIDTH.

4. ALL PAVEMENTS MARKINGS THAT ARE COVERED OR DESTROYED SHALL BE REPLACED IN THEIR FORMER LOCATION.

5. ALL GUTTERLINES MUST BE SEALED WITH A 12-INCH PASS OF PG 64-22



REVISIONS: August 2024	BITUMINOUS PAVEMENT RESTORATION PETERS TOWNSHIP	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	ORIGINAL APPROVAL FEBRUARY, 2012 SHEET 1 OF 2 — CD-5



NOTES:
1) SIDEWALKS TO BE POURED CONTINUOUS THROUGH DRIVEWAYS.
2) CONTRACTOR SHALL PLACE A TOOLED JOINT AT EVERY 9' O.C. ON SIDEWALKS.
2) CONTRACTOR TO PLACE ½ INCH, PREFORMED EXPANSION JOINT EVERY 25 FEET AND AGAINST ABUTTING STRUCTURES. SEAL EXPANSION JOINTS WITH SIKA FLEX CAULKING OR EQUAL.
3) THE INSTALLATION OF ACCESSIBLE RAMPS AT APPROPRIATE LOCATIONS IN ACCORDANCE WITH THE U.S. DEPARTMENT OF JUSTICE'S "ADA STANDARDS", LATEST EDITION, MAY BE REQUIRED BY THE TOWNSHIP IN CONJUNCTION WITH SIDEWALK RESTORATION/CONSTRUCTION.

CONCRETE DRIVEWAY OR SIDEWALK DETAIL

(INTENDED FOR USE IN NEW LAND DEVELOPMENTS OR FOR TOWNSHIP CONSTRUCTION PROJECTS. DOES NOT GOVERN PRIVATE, RESIDENTIAL WALKWAY CONSTRUCTION)

NOT TO SCALE

BITUMINOUS DRIVEWAY

(INTENDED FOR USE AS A MINIMUM SPECIFICATION FOR COMMERCIAL LAND DEVELOPMENTS OR FOR TOWNSHIP CONSTRUCTION PROJECTS. DOES NOT GOVERN PRIVATE, RESIDENTIAL DRIVEWAY CONSTRUCTION)

NOT TO SCALE

Superpave materials must be designed with a minimum of 0 - 0.3 million equivalent single - axle loads (ESALs) and have a minimum skid resistance level (SRL) of H. Performance Grade Binder for mix designs shall be PG 64-22.

REVISIONS: January, 2019 August 2024	CONCRETE SIDEWALK & ASPHALT DRIVEWAY PETERS TOWNSHIP	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	CD-4

The components of the pavement structure shall be designed and constructed in accordance with PennDOT publication 408 Specifications (most recent addition).

Superpave materials must be designed with a minimum of 0 – 0.3 million equivalent single – axle loads (ESALs) and have a minimum skid resistance level (SRL) of H. Performance Grade Binder for mix designs shall be PG 64-22. The Township Engineer may require project-specific pavement designs with higher ESAL counts based on traffic studies or road classifications.

The developer shall place the final layer of 1-1/2" SUPERPAVE 9.5mm – Fine-Grade Wearing Course within 3 years of initial road construction or following construction of 80% of homes, whichever comes first after the initial paving of the cartway. Prior to the placement of the final wearing course any repairs required (base repairs, crack repairs...etc.) shall be completed by the Developer as required by the Township, any leveling course to correct uneven sections of pavement shall be installed by the Developer as required by the Township, and all manholes covers, inlet grates, and valve boxes shall be adjusted by the Developer and set flush with the final wearing course elevation.

Once the final wearing course is placed seal the gutter line with PG 64-22 asphalt cement by overlapping 3" on to the wedge curb and extending 9" onto the cartway, around all inlets, manholes, water and gas valve boxes etc. in accordance with PennDOT Publication 408 Specifications (most recent addition)

The contractor shall provide the following certifications daily during the paving operation:

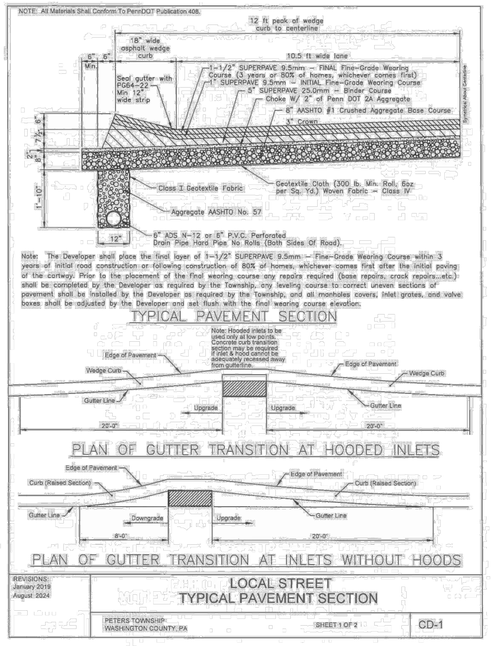
1. Bill of lading for the liquid asphalt.
2. Certified design mix formula from PennDOT. (2 weeks prior to paving)
3. Certifications of density testing.
4. PENN DOT Certification 417.1.

NOTE:
When paving roads in the township, the contractor may be required to reduce the loads of asphalt to reduce the stress on the existing township roads or post a bond for any repairs required because of damage due to hauling over the township roads. The contractor shall contact the township for any restrictions that may apply to the project.

The township representative will be required to perform the testing of the bituminous pavement as part of their inspection service to the township. The testing of the material will be in accordance with PennDOT Publication 408 and the township's standard details and ordinance requirements. The testing will be performed to verify the density of the bituminous pavement for proper compaction. The engineering inspection rates will be in accordance with the rate schedule posted with the township.

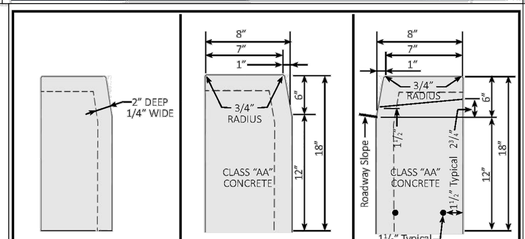
* All aggregate sizes shown are AASHTO numbers unless otherwise noted. All material must be PennDOT approved.
* **All utility crossings, including service lines, must be installed via open cut excavation prior to paving and backfilled and compacted with 100% stone.**
* Additional subgrade drains may be required by the township engineer where underground water is encountered.
* If the stone subbase is not installed by November 1, the bituminous pavement must be delayed until the next paving season.

REVISIONS: January, 2019 August 2024	LOCAL STREET TYPICAL PAVEMENT SECTION	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	SHEET 2 OF 2 — CD-1A

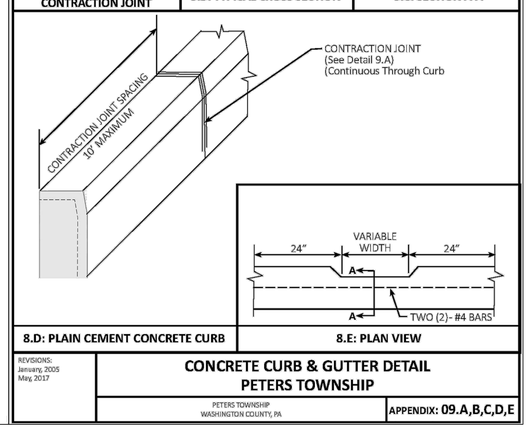


TYPICAL PAVEMENT SECTION

REVISIONS: January 2019 August 2024	LOCAL STREET TYPICAL PAVEMENT SECTION	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	SHEET 1 OF 2 — CD-1

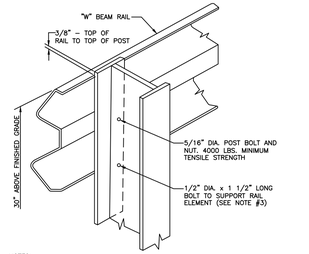


9.A: DETAIL "A" - CONTRACTION JOINT | 9.B: TYPICAL CROSS SECTION | 9.C: SECTION A-A



8.D: PLAIN CEMENT CONCRETE CURB | 8.E: PLAN VIEW

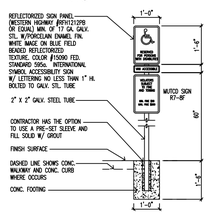
REVISIONS: January, 2005 May, 2017	CONCRETE CURB & GUTTER DETAIL PETERS TOWNSHIP	
	PETERS TOWNSHIP WASHINGTON COUNTY, PA	APPENDIX: 09.A,B,C,D,E



NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 520.
2. THE 3 3/8" x 2 1/4" COLD FORMED CHANNEL POST, 53 x 5.7 POST AND ALUMINUM ALLOY POST MAY BE BID AS ALTERNATIVES FOR TYPE 2 WEAK POST GUIDE SYSTEM; HOWEVER, MIXING OF DIFFERENT POSTS WILL NOT BE ACCEPTABLE WITHIN THE PROJECT.
3. DURING ERECTION, USE TEMPORARY SUPPORT BOLTS OR TEMPORARY DRIFT PINS TO SUPPORT THE RAIL ELEMENT UNTIL THE 5/16" POST BOLTS ARE PROPERLY TORQUED.
4. ATTACH W-BEAM RAIL ELEMENT TO EACH POST, SPLICE ONLY AT POSTS AND LAP IN THE DIRECTION OF TRAFFIC.

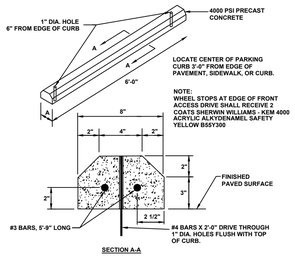
GUIDE RAIL DETAIL

NTS



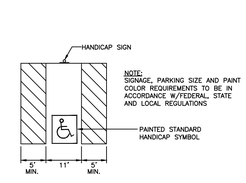
DISABLED PARKING SIGN

N.T.S.



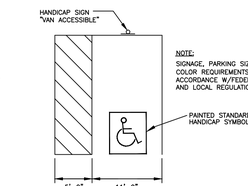
PRECAST CONCRETE WHEEL STOP

N.T.S.



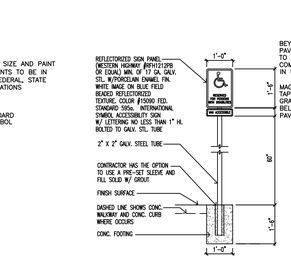
HANDICAP STALL VAN ACCESSIBLE

N.T.S.



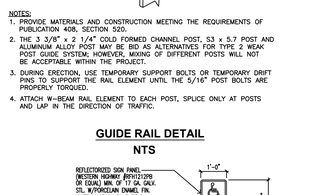
HANDICAP STALL

N.T.S.



DISABLED PARKING SIGN

N.T.S.

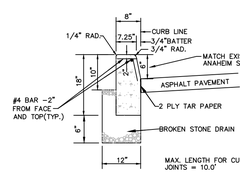


PIANO STYLE KEY CROSSWALK DETAIL

N.T.S.

HANDICAP RAMP

N.T.S.



6" CONCRETE CURB

N.T.S.

NOTES:
1. THE WIDTH OF THE CURB IS SHOWN AS 8", THE CONTRACTOR SHALL MATCH THE WIDTH OF THE EXISTING CURB ON ANAHEIM STREET AND BRYN MAWR ROAD.
2. THE HEIGHT OF THE CURB IS SHOWN AS 6", THE CONTRACTOR SHALL MATCH THE HEIGHT OF THE EXISTING CURB ON ANAHEIM STREET AND BRYN MAWR ROAD.

CONSTRUCTION DETAILS

SITUATE IN

PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

COUGHLIN'S LAW SOUTH HILLS

SCALE: AS SHOWN DATE: AUGUST 14, 2025

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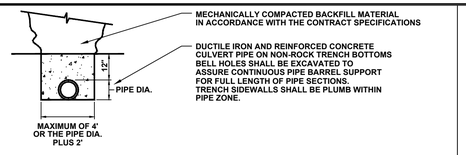
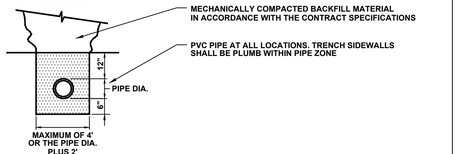
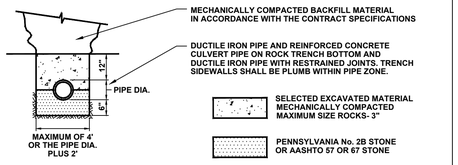
SL 15-135038 SITE 15-135098



DETAIL 001A



DETAIL 001 B

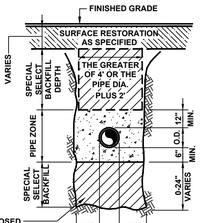


DETAIL 001 C

TRENCH PIPE ZONE DETAIL — **Standard Detail SD-001**

NOTE:
WHERE SPECIAL SELECT BACKFILL IS REQUIRED BETWEEN THE PIPE ZONE AND THE SURFACE MATERIAL, THE PIPE ZONE SHALL EXTEND 12" ABOVE THE PIPE REGARDLESS OF PIPE MATERIAL

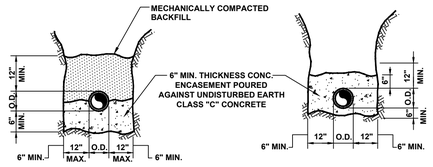
AT LOCATIONS WHERE SEWER CONSTRUCTION IS WITHIN THE LIMITS OF PETERS TOWNSHIPS ROADS AND STREETS RIGHT OF WAY, SPECIAL BACKFILL SHALL BE IN ACCORDANCE WITH PETERS TOWNSHIP'S ROAD SPECIFICATIONS FOR "SEWER CONSTRUCTION ROAD CROSSING/SHOULDER CROSSING WORK"



WHERE EXCAVATION EXPOSES THE BOTTOM OF PROPOSED TRENCHES WHERE VERY SOFT OR OTHER UNSTABLE PIPE FOUNDATION MATERIALS EXIST, THE CONTRACTOR WILL BE DIRECTED TO OVERCUT OR STABILIZE/OVERCUT.

SPECIAL BACKFILL

DETAIL 002 A



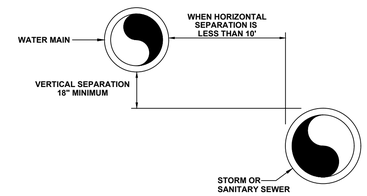
TYPICAL CONCRETE CRADLE

DETAIL 002 B

TYPICAL CONCRETE ENCASEMENT

DETAIL 002 C

TRENCH DETAILS — **Standard Detail SD-002**

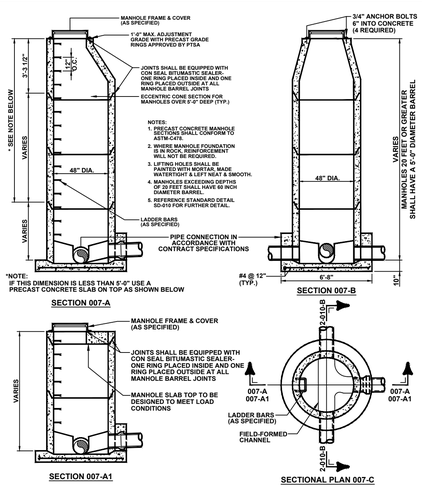


NOTES:

1. WHEN THE HORIZONTAL SEPARATION OF THE WATER MAIN AND SEWER LINE IS LESS THAN 10', THE VERTICAL SEPARATION BETWEEN THE TOP (CROWN) OF THE SEWER LINE AND THE BOTTOM (INVERT) OF THE WATER MAIN SHALL BE AT LEAST 18". SEWER LINE SHALL BE ENCASED IN CONCRETE WHERE SEWER/ WATER LINE CROSSINGS OCCUR AND WHERE CONDITIONS PREVENT AN 18" VERTICAL SEPARATION.

2. THERE SHALL BE AT LEAST A 10' HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER FORCE MAINS. FORCE MAINS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN.

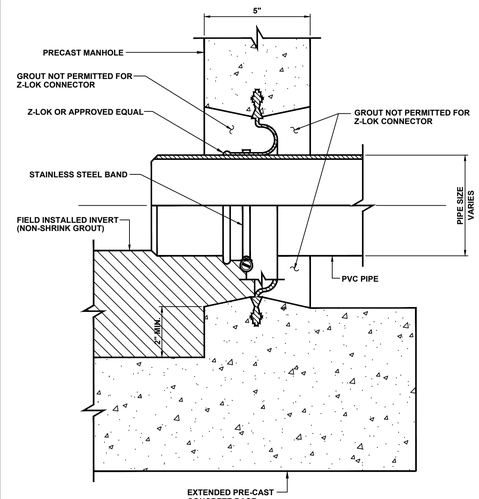
DESIRED DISTANCES BETWEEN WATER AND SEWER PIPES — **Standard Detail SD-003**



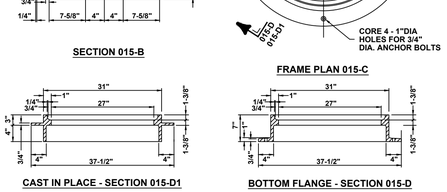
SECTION 007-A — **SECTION 007-B**

SECTION 007-A1 — **SECTIONAL PLAN 007-C**

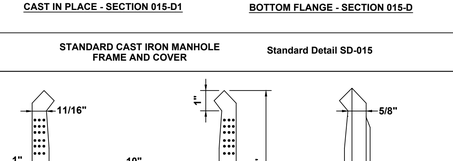
PRE-CAST CONCRETE MANHOLE FOR 8" TO 16" — **Standard Detail SD-007**



MANHOLE CONNECTION FOR PVC PIPE (PRECAST BASE) — **Standard Detail SD-012**



COVER PLAN 015-A



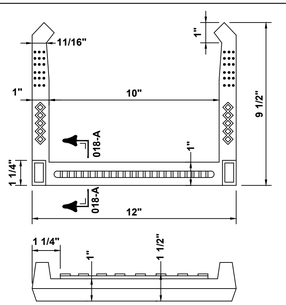
SECTION 015-B

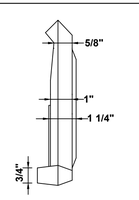
FRAME PLAN 015-C

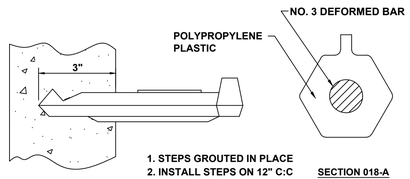
CAST IN PLACE - SECTION 015-D1

BOTTOM FLANGE - SECTION 015-D

STANDARD CAST IRON MANHOLE FRAME AND COVER — **Standard Detail SD-015**

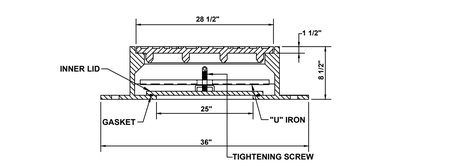




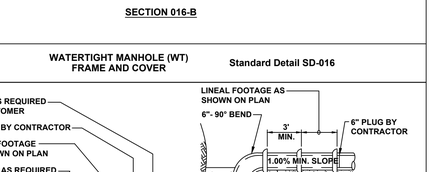


SECTION 018-A

POLYPROPYLENE PLASTIC MANHOLE STEP — **Standard Detail SD-018**

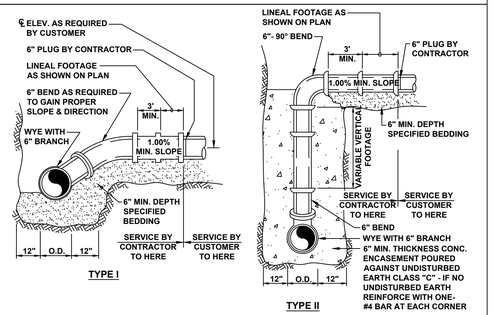


PLAN 016-A



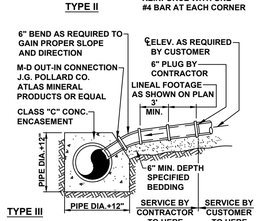
SECTION 016-B

WATERTIGHT MANHOLE (WT) FRAME AND COVER — **Standard Detail SD-016**



TYPE I

TYPE II



TYPE III

SERVICE CONNECTIONS — **Standard Detail SD-021**

GENERAL NOTES:

1. PROVIDE 0.2' DROP ACROSS MANHOLE UNLESS OTHERWISE SPECIFIED.
2. INSTALL PIPE STUBS AT MANHOLES FOR FUTURE EXTENSIONS A MINIMUM OF 4 FEET LONG. DO NOT GROUT AROUND EXTENSION STUB PIPE INSIDE OR OUTSIDE THE MANHOLE.
3. PROVIDE VENT HOLE IN CENTER OF LID OF END-OF-LINE MANHOLES.
4. ALL PVC PIPE SHALL BE ASTM D-3034 SDR 35 UNLESS OTHERWISE SPECIFIED.
5. FLAT TOP MANHOLES ARE NOT PERMITTED UNLESS OTHERWISE SPECIFIED.
6. EXISTING MANHOLES THAT DO NOT ADEQUATELY ACCOMMODATE THE PROPOSED SEWER EXTENSIONS SHALL BE REQUIRED TO BE CLEANLY CORE DRILLED AND A FLEXIBLE BOOT INSTALLED AS WELL AS ANY REQUIRED MODIFICATIONS OF THE INVERT OR FLOW CHANNEL TO ENSURE A SMOOTH TRANSITION AND TO THE AUTHORITY'S SATISFACTION.
7. MAXIMUM DISTANCE BETWEEN MANHOLES SHALL BE 400 FEET.
8. CONCRETE ANCHORS SHALL BE PROVIDED WHEN PIPE SLOPES EXCEED 20%. THE REQUIRED NUMBER AND SPACING OF THE ANCHORS SHALL BE COMMENSURATE WITH THE PREVAILING PADEP PUBLISHED REQUIREMENTS.
9. THIS DETAIL SHEET IDENTIFIES THE MOST COMMONLY USED DETAILS. HOWEVER, THE FULL SPECIFICATIONS AND OTHER STANDARD DETAILS CONTAINED IN APPENDIX "A" OF THE AUTHORITY'S MOST CURRENT RULES AND REGULATIONS APPLY.

PTSA Adoption Date: May 11, 2004
Resolution No: 01-05-04

PETERS TOWNSHIP SANITARY AUTHORITY CLAUSES:
IT IS SPECIFICALLY NOTED THAT THIS DEVELOPMENT IS SUBJECT TO THE PTSA TAP MANAGEMENT PLAN ADOPTED IN ACCORDANCE WITH PENNSYLVANIA CODE, TITLE 25, CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REQUIREMENTS. THE TAP MANAGEMENT PLAN HAS SPECIFIED TAP ALLOCATIONS AND TAP DISTRIBUTION GUIDELINES. YOU ARE ADVISED THAT THIS DOCUMENT DOES NOT GUARANTEE THAT THERE IS EXISTING CAPACITY AVAILABLE OR WARRANT THAT SEWER PERMITS AND SUBSEQUENT TAPS WILL BE AVAILABLE OR CAN BE ISSUED AT THE TIME OF APPLICATION.

NOTE:
ALL CONSTRUCTION AND INSPECTION IS TO BE IN ACCORDANCE WITH PETERS TOWNSHIP CONSTRUCTION DETAILS AND SPECIFICATIONS AND INSPECTION PROCEDURES.

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

SANITARY DETAILS

SITUATE IN

PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

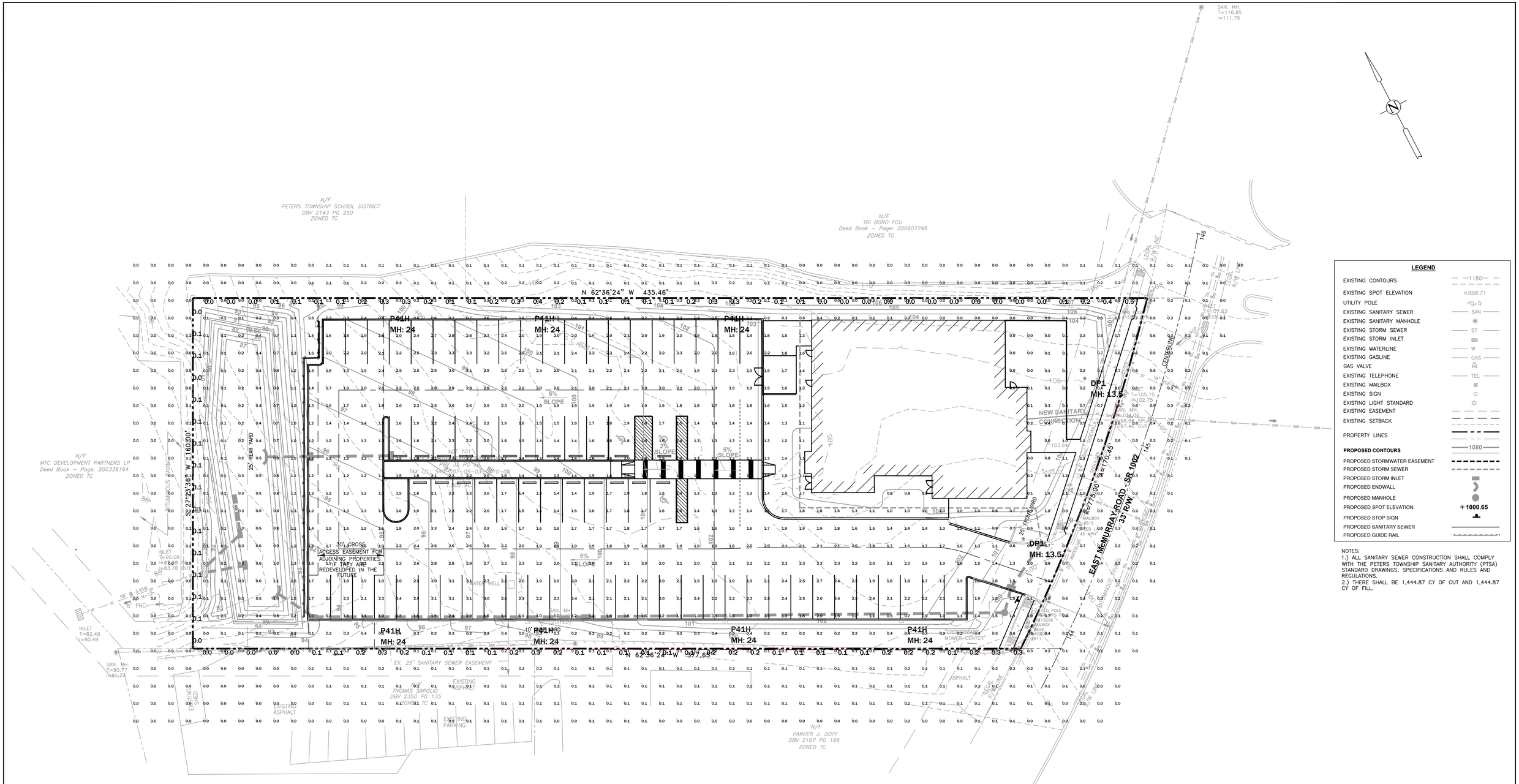
COUGHLIN'S LAW SOUTH HILLS

SCALE: AS SHOWN DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

15-135098

SL 15-135038 SITE



Luminaire Schedule									
Label	Qty	Symbol	Arrangement	Manufacturer	Description	LLF	Arrangement Watts	Notes	BUG Rating
DP1	2	●	Single	SUN VALLEY LIGHTING	LAC2-XX-PA2-II-32LED-350mA-30K-VOLTAGE-PT-XXX-CPA / 4700-XX / 1030T-XX	0.850	34	DECORATIVE HEAD - CUTOFF OPTIC. POLE IS 12' . HEIGHT SHOWN IS OPTIC TO GRADE	B2-U3-G3
P41H	7	–□	Single	U.S. ARCHITECTURAL	RZR-PLED-IV-FT-40LED-1225mA-30K-UNV-1-XX-RPA-HS / RNTS-225-11-1-90-XX-RBC	0.850	158.9	FIXTURE ON 22 FT POLE SHAFT WITH A 30 INCH BASE ABOVE GRADE	B1-U0-G3

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
OVERALL GRID AT GRADE	0.8	3.3	0.0	N.A.	N.A.
PROPERTY LINES	0.1	0.5	0.0	N.A.	N.A.
ENTRY DRIVE	1.2	1.8	0.7	1.8	2.6
PARKING SURFACE	1.9	3.3	0.7	2.7	4.7

NOTES:
1. All light levels are at grade
2. Lumen output is based on anticipated lumen output at half of the rated life of the LEDs.
3. Mounting height shown per location is from grade to fixture aperture
4. Light levels are calculated based on direct fixture contribution only. We are not responsible for reflected light
5. Results are based on information provided to L& M. Changes to location, fixture, wattage will affect final results

20 10 0 20

GRAPHIC SCALE
(IN FEET)

LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	M
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	
PROPOSED CONTOURS	1080
PROPOSED STORMWATER EASEMENT	
PROPOSED STORM SEWER	
PROPOSED STORM INLET	
PROPOSED ENDWALL	
PROPOSED MANHOLE	
PROPOSED SPOT ELEVATION	+ 1000.65
PROPOSED STOP SIGN	
PROPOSED SANITARY SEWER	
PROPOSED GUIDE RAIL	

NOTES:
1.) ALL SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH THE PETERS TOWNSHIP SANITARY AUTHORITY (PTSA) STANDARD DRAWINGS, SPECIFICATIONS AND RULES AND REGULATIONS.
2.) THERE SHALL BE 1,444.87 CY OF CUT AND 1,444.87 CY OF FILL.

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

LIGHTING PLAN

SITUATE IN

PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

SUN VALLEY LIGHTING

PROJECT NAME:

PROJECT TYPE:

TRADITIONAL STYLED BASE

4700 Series

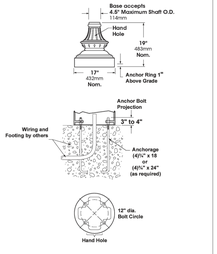
Base
One piece corrosion resistant, durable cast aluminum construction (a356 alum. alloy). Minimum .225 wall thickness. Base consists of a 17" dia. smooth tapered bottom section, a decorative tapered fluted section of evenly spaced wide raised vertical flutes and a decorative cast aluminum Collar. Base is furnished with a contoured, fluted flush Hand Hole and Cover. Hand Hole Cover supplied with tamper resistant hardware. Grounding Lug provided inside Base opposite Hand Hole.

Anchorage
A 3/4" cast aluminum anchor ring is welded 1" above bottom of base to accept (4) fully galvanized anchor bolts. Each bolt supplied with two nuts and two washers. Anchorage is fastened through hand hole.

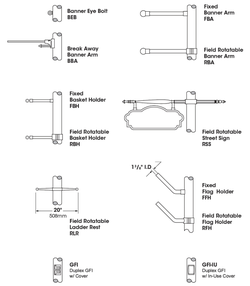
Finish
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

4700

ANCHORAGE DATA



OPTIONS



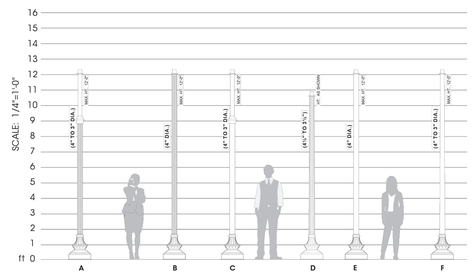
https://www.usaltg.com/downloads/pdf/Pole-Arm-Accessories.pdf

2024057

SUN VALLEY LIGHTING

4700 Series Base

SAMPLE ASSEMBLIES



Finish
Standard Textured (-T)
- ☐ Black RAL-9005-T
- ☐ White RAL-9003-T
- ☐ Grey RAL-7006-T
- ☐ Dark Bronze RAL-8019-T
- ☐ Green RAL-6005-T

Premium Finishes
- ☐ Patina Copper PC
- ☐ Rust
- ☐ Custom Specify RAL#_____
- ☐ Anodized AZ

See USALTG.com for additional colors

A. 47-6030-XX-PT27/OPTIONS/FINISH
B. 47-1060-XX-PT27/OPTIONS/FINISH
C. 47-4030-XX-PT27/OPTIONS/FINISH
D. 47-1030C-XX-PT27/OPTIONS/FINISH
E. 47-1040-XX-PT27/OPTIONS/FINISH
F. 47-1030T-XX-PT27/OPTIONS/FINISH

Note: XX represents height, example 10 foot and 6 inches will be written as 10'-6": 47-1040-10'-6"-PT27/OPTIONS/FINISH.

Sample Assemblies show a small offering of the Sun Valley Line of Poles & Shafts.
Please visit usaltg.com for the full product offering.

AREA & ROADWAY LIGHTING

LAC SERIES - LED

PROJECT NAME:

PROJECT TYPE:

SPECIFICATIONS

Luminaire
One piece high impact clear acrylic patterned diffusing globe provided with durable corrosion resistant cast aluminum fitter and cage. Standard fitter has 3" I.D. opening for 2.88" OD tenon. All hardware is stainless steel. Luminaire is UL® Listed for Wet Location.

LED POWER ARRAY™ 2
Three-dimensional array of individual LED Tubes fastened to retaining plates. Each LED Tube consists of circuit board populated with a multiple of LED's covered with a gasketed acrylic lens and mechanically fastened to an extruded aluminum heatsink. Tubes are sealed to a an IP65 Standard.

Area and Roadway Distributions: Acrylic Tube Lenses have individual molded-in refractive optics for each LED and provides concisely tailored beam patterns. LED Tubes are uniquely aimed horizontally and beam patterns combine to produce wide throw, highly efficient IES Distribution Types II, III, IV and V with minimal uplight. Used in conjunction with a clear patterned diffusing globe only.

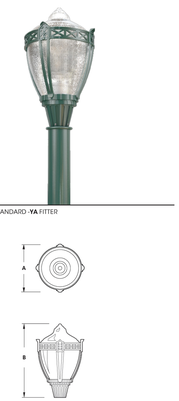
General Diffused Lighting: Acrylic Tube Lense provides duffusion of the raw LED distributions. Tubes are combined to produce uniform luminance of the outer globe. Used in conjunction with an opal patterned diffusing globe only.

LED Emitters
High Power White LED's are driven between 350mA and 700mA for a maximum output of 2 Watts nominal. LED's are available in standard Neutral White (4000K). Cool White (5000K), or Warm White (2700K & 3000K). All Standard LED's have a minimum of 70 CRI. Consult Factory for other LED options. Lumen Maintenance of L94 at 60,000 hours (TM-21 calculated at 6x Test Time).

LED Driver
Constant current electronic with a power factor of >0.90 and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50/60Hz. 0-10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with 20KV surge protector for field installation.

True Amber LED's TRA-True Amber LED's emit light in the amber spectral bandwidth centered on 585-590nm. True Amber has negible blue light and is suitable for wildlife.

Finish
Polyester powder coat incorporates four step iron phosphate process to pretreat metal surface for maximum adhesion. Top coat is baked at 400°F for maximum hardness and exterior durability.



LAC
SHOWN WITH STANDARD -YA FITTER

FIXTURE	A	B
LAC1*	18.0" 457mm	29.3" 744mm
LAC2*	15.5" 394mm	25.5" 648mm

*Height Varies With Fitter, See Page 5

UL Listed for Wet Location

2021312

LAC SERIES - LED

SPECIFICATIONS

FITTER OPTIONS

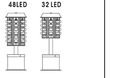
All Fitters Available with Mini-Button Photocells.
YO, YE, UA, & UB Available with Twist-Lock Photocells.

EPA & WEIGHT

LAC1
Max Weight = 37 lbs
Max EPA = 1.94
64 LED Max

LAC2
Max Weight = 34 lbs
Max EPA = 1.55
48 LED Max

POWER ARRAY™ 2 MODULES



ORDERING INFORMATION

Spec/Order Example: LAC1-YP/PA2-IV/60LED/525mA/30K/347/PT/0AL-7005-S/CPA/OF

LUMINAIRE-FITTER	OPTICS	# of LED's	DRIVE CURRENT	CCT	VOLTAGE	MOUNTING	FINISH	OPTIONS

Luminaire
- ☐ LAC1
- ☐ LAC1-YA
- ☐ LAC1-YB
- ☐ LAC1-YC
- ☐ LAC1-YD
- ☐ LAC1-YE
- ☐ LAC1-YF
- ☐ LAC1-YN
- ☐ LAC1-YO
- ☐ LAC1-YP
- ☐ LAC1-UA
- ☐ LAC1-UB
- ☐ LAC2
- ☐ LAC2-YA
- ☐ LAC2-YB
- ☐ LAC2-YC
- ☐ LAC2-YD
- ☐ LAC2-YE
- ☐ LAC2-YF
- ☐ LAC2-YN
- ☐ LAC2-YO
- ☐ LAC2-YP

Optics

Area & Roadway (EQUI-PATTERNED LENS)
- ☐ PA2 - II
- ☐ PA2 - III
- ☐ PA2 - IV
- ☐ PA2- V

General Diffuse (OPAL PATTERNED LENS)
- ☐ PA2- SYM

# of LED's
- ☐ LAC1
- ☐ 64LED
- ☐ 48LED
- ☐ 32LED
- ☐ LAC2
- ☐ 48LED
- ☐ 32LED

LED

Drive Current
- ☐ 350mA
- ☐ 525mA
- ☐ 700mA

Color Temp-CCT
- ☐ 27K (2700K)
- ☐ 30K (3000K)
- ☐ 40K (4000K)
- ☐ 50K (5000K)
- ☐ TRA True Amber*

Consult Factory for Other CCT & CRI Options

*TRA Available only in 350mA and 525mA Drive Currents

Consult Factory for Other Drive Currents

Voltage
- ☐ 120
- ☐ 208
- ☐ 240
- ☐ 277
- ☐ 347
- ☐ 480

Mounting

Arm Mount
- ☐ 1
- ☐ 2-180
- ☐ 2-90
- ☐ 3-90
- ☐ 3-120
- ☐ 4-90

Wall Mount
- ☐ WM

Post Top
- ☐ PT

Finish

Standard Textured Finish
- ☐ Black RAL-9005-T
- ☐ White RAL-9003-T
- ☐ Grey RAL-7006-T
- ☐ Dark Bronze RAL-8019-T
- ☐ Green RAL-6005-T

For Smooth Finish, Replace Suffix "T" with Suffix "S" (Example: RAL-9003-S)

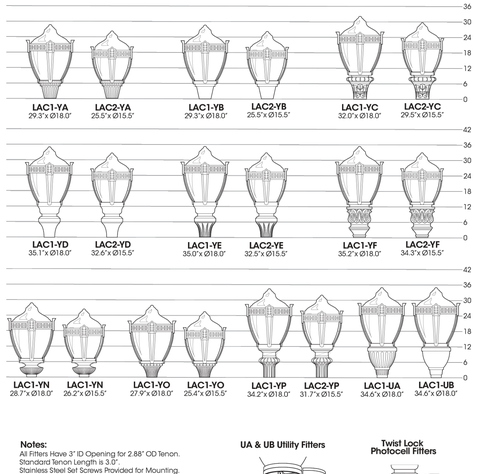
Consult Factory for Custom Colors

Options

Lens Options:
- ☐ Clear Patterned Acrylic (STANDARD GLOBE) CPA
- ☐ Opal Patterned Acrylic WA
- ☐ Brass Finish BF
- ☐ Ornamental Finial OF
- ☐ House Side Shield HS
- ☐ High-Low Dimming for Switch (BY OTHERS) Select 35/100 Or 50/100 (51-HLSW01) HLSW**
- ☐ Green ALL-6005-T
- ☐ Pole Mounted Bluetooth Photo/Motion Sensor. (Factory 50/100 Motion Photo 75 fc) MS-9311
- ☐ Mini-Button Photocell + Voltage PC-V
- ☐ Std. Twist Lock Photocell Receptacle TPR
- ☐ 7 Pin Twist Lock Photocell Receptacle TPR7
- ☐ SINGLE FUSE SF
- ☐ DOUBLE FUSE DF

LAC SERIES - LED

GLOBE AND FITTER CONFIGURATIONS



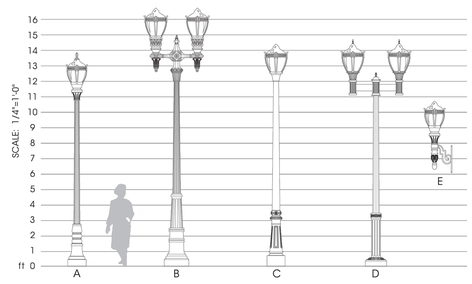
Notes:
All Fitters Have 3" ID Opening for 2.88" OD Tenon.
Standard Tenon Length is 3.0".
Stainless Steel Set Screws Provided for Mounting.
All Fitters Can Accept Mini-Button Photo Cells.
YO,YE, UA, & UB Fitters Can Accept Standard Twist Lock Photo Cells (See Detail).
UA & UB Fitters Have a Removable Electrical Tray.

UA & UB Utility Fitters

Twist Lock Photocell Fitters

LAC SERIES - LED

SAMPLE ASSEMBLIES



A. 40-1030C-10'-9"/PT/LAC2-YE-CA-PF/LED/ACCESSORIES/FINISH
B. 36-1050C-12'/XAP-2-180/LAC1-YF-WP/LED/ACCESSORIES/FINISH
C. 18M-10461-12'/PT/LAC1-YB-CA/LED/ACCESSORIES/FINISH
D. 23-1058C-11'/XAM-2-180/LAC1-YA-CA-BF/LED/ACCESSORIES/FINISH
E. WM-XAC/LAC2-YE-WP/LED/ACCESSORIES/FINISH

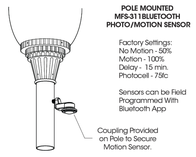
Sample Assemblies show a small offering of the Sun Valley Line of Poles, Bases, Shafts, Arms, & Luminaires.
Please visit usaltg.com for the full product offering.

LAC SERIES - LED

OPTIONS

Brass Finial

Ornamental Finial

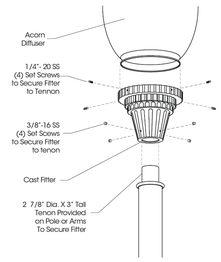


POLE MOUNTED MRS-3.11 BLUETOOTH PHOTO/MOTION SENSOR

Factory Settings:
No Motion - 50%
Motion - 100%
Delay - 15 min.
Photocell - 75fc

Sensors can be Field Programmed With Bluetooth App

INSTALLATION DETAIL



High Low Dimming For Switches (HLSW)
The HLSW is a Small Electronic Switch which Provides High Low Dimming Control Through the LED Driver's 0-10V Control. Switching is Done by Adding a Secondary AC Switched Hot Trigger Line to the HLSW in Addition to the Normal AC Power Line. When The Secondary Trigger Line is Powered, the Fixture will go to 100% Dimming. With no Power to the Trigger, the Fixture will operate at 50% or 25% Dimming. Switches for the Trigger Line can be a Normal AC Switch/Breaker or Timed Switch/Breaker.

Wireless and Other Fixture Controls
Contact Factory for Wireless and Other Fixture Controls and Recomendations. Most Controls Can be Integrated and Factory Installed.

ELECTRICAL DATA GUIDE - AMPERAGE CHARTS

# of LEDs	mA	System Watts	120V	208V	277V	347V	480V
32	350	34	0.28	0.16	0.12	0.10	0.07
32	525	52	0.43	0.25	0.19	0.15	0.11
32	700	69	0.58	0.33	0.25	0.20	0.14
48	350	51	0.43	0.25	0.18	0.15	0.11
48	525	78	0.65	0.38	0.28	0.22	0.16
48	700	104	0.87	0.50	0.38	0.30	0.22
64	350	68	0.57	0.33	0.25	0.20	0.14
64	525	103	0.86	0.50	0.37	0.30	0.21
64	700	138	1.15	0.66	0.50	0.40	0.29

Electrical Amperage Loads are for High Power White LED's in All Color Temperatures.

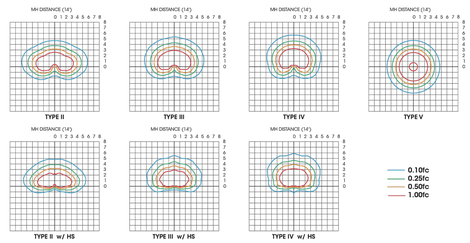
Wattages are System Watts or Total Input Watts and include all Electrical Components.

Use 0.80 Scale factor for TRA LED's.

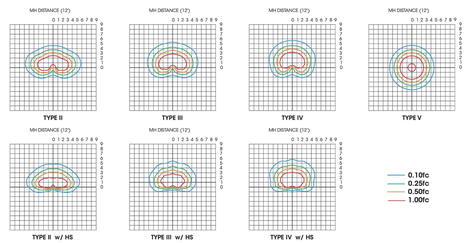
LAC SERIES - LED

PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

LAC1-PA2-CPA-48LED-700mA-4000K - 14' Pole Height



LAC1/LAC2-PA2-CPA-32LED-700mA-4000K - 12' Pole Height



LIGHTING PLAN

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

LAC SERIES - LED

PHOTOMETRIC DATA GUIDE - LUMEN TABLES (LAC1 & LAC2 8 TUBE PA2)

LAC-PA2-CPA																				
LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590mm)		
				Lumens	LPW	BUG Rating	Lumens	LPW	BUG Rating	Lumens	LPW	BUG Rating	Lumens	LPW	BUG Rating		Lumens	LPW	BUG Rating
32	350	34.0	II	4066	120	B2-U3-G3	4389	129	B3-U3-G3	4621	136	B3-U3-G3	4881	143	B3-U3-G3	27.0	1386	51	B1-U3-G2
			III	4043	119	B1-U3-G3	4364	128	B1-U3-G3	4595	135	B1-U3-G3	4854	142	B1-U3-G3		1379	51	B1-U3-G2
			IV	4036	119	B1-U3-G3	4357	128	B1-U3-G3	4587	135	B1-U3-G3	4816	142	B1-U3-G3		1376	51	B1-U3-G2
			V	4125	121	B1-U3-G3	4453	131	B1-U3-G3	4688	138	B1-U3-G3	4922	145	B1-U3-G3		1407	52	B1-U3-G2
			II-HS	3257	96	B1-U3-G3	3515	103	B1-U3-G3	3701	109	B1-U3-G3	3886	114	B1-U3-G3		1111	41	B0-U3-G2
			III-HS	3184	94	B1-U3-G3	3437	101	B1-U3-G3	3617	106	B1-U3-G3	3799	112	B1-U3-G3		1085	40	B0-U3-G2
			IV-HS	3745	110	B1-U3-G3	4043	119	B1-U3-G3	4256	125	B1-U3-G3	4469	131	B1-U3-G3		1277	47	B0-U3-G2
32	525	52.0	II	5610	108	B2-U3-G3	6056	116	B2-U3-G3	6375	123	B2-U3-G3	6693	129	B2-U3-G3	41.0	1760	43	B1-U3-G2
			III	5578	107	B2-U3-G3	6021	116	B2-U3-G3	6338	122	B2-U3-G3	6655	128	B2-U3-G3		1775	43	B1-U3-G2
			IV	5569	107	B2-U3-G3	6011	116	B2-U3-G3	6328	122	B2-U3-G3	6643	128	B2-U3-G3		1772	43	B1-U3-G2
			V	5692	109	B3-U3-G3	6145	118	B3-U3-G3	6468	124	B3-U3-G3	6792	131	B3-U3-G3		1811	44	B2-U3-G3
			II-HS	4493	86	B1-U3-G3	4850	93	B1-U3-G3	5105	98	B1-U3-G3	5360	103	B1-U3-G3		1429	35	B0-U3-G2
			III-HS	4392	84	B1-U3-G3	4741	91	B1-U3-G3	4991	96	B1-U3-G3	5240	101	B1-U3-G3		1398	34	B0-U3-G2
			IV-HS	5166	99	B1-U3-G3	5577	107	B1-U3-G3	5871	113	B1-U3-G3	6164	119	B1-U3-G3		1644	40	B0-U3-G2
32	700	69.0	II	7047	102	B2-U4-G4	7608	110	B2-U4-G4	8008	116	B3-U4-G4	8408	122	B3-U4-G4	N/A	N/A		
			III	7007	102	B2-U4-G4	7564	110	B2-U4-G4	7960	115	B3-U4-G4	8360	121	B3-U4-G4				
			IV	6996	101	B2-U4-G4	7552	109	B2-U4-G4	7950	115	B2-U4-G4	8347	121	B2-U4-G4				
			V	7152	104	B3-U4-G5	7720	112	B3-U4-G5	8127	118	B3-U4-G5	8533	124	B3-U4-G5				
			II-HS	5645	82	B1-U3-G3	6093	88	B1-U3-G4	6414	93	B1-U3-G4	6734	98	B1-U3-G4				
			III-HS	5519	80	B1-U3-G3	5957	86	B1-U3-G3	6271	91	B1-U3-G4	6584	95	B1-U3-G4				
			IV-HS	6490	94	B1-U3-G4	7006	102	B1-U3-G4	7376	107	B1-U3-G4	7746	112	B1-U3-G4				
48	350	51.0	II	6100	120	B2-U3-G3	6584	129	B2-U3-G3	6931	136	B3-U3-G3	7278	143	B3-U3-G3	40.0	2080	52	B1-U3-G2
			III	6065	119	B2-U3-G3	6547	128	B2-U3-G3	6892	135	B2-U3-G3	7236	142	B2-U3-G3		2068	52	B1-U3-G2
			IV	6055	119	B1-U3-G3	6536	128	B1-U3-G3	6881	135	B1-U3-G3	7224	142	B2-U3-G3		2065	52	B1-U3-G2
			V	6190	121	B3-U3-G3	6682	131	B3-U4-G3	7034	138	B3-U4-G3	7384	145	B3-U4-G3		2110	53	B2-U3-G3
			II-HS	4885	96	B1-U3-G3	5274	103	B1-U3-G3	5552	109	B1-U3-G3	5829	114	B1-U3-G3		1666	42	B0-U3-G2
			III-HS	4776	94	B1-U3-G3	5156	101	B1-U3-G3	5428	106	B1-U3-G3	5699	112	B1-U3-G3		1629	41	B0-U3-G2
			IV-HS	5617	110	B1-U3-G3	6064	119	B1-U3-G4	6383	125	B1-U3-G4	6703	131	B1-U3-G4		1916	48	B0-U3-G2
48	525	78.0	II	8414	108	B2-U4-G4	9083	116	B2-U4-G4	9562	123	B2-U4-G4	10039	129	B2-U4-G4	61.0	2677	44	B1-U3-G2
			III	8367	107	B2-U4-G4	9032	116	B2-U4-G4	9508	122	B2-U4-G4	9982	128	B2-U4-G4		2662	44	B1-U3-G2
			IV	8353	107	B2-U4-G4	9017	116	B2-U4-G4	9492	122	B2-U4-G4	9966	128	B2-U4-G4		2658	44	B1-U3-G2
			V	8539	109	B3-U4-G5	9216	118	B4-U4-G5	9702	124	B4-U4-G5	10188	131	B4-U4-G5		2717	45	B2-U3-G2
			II-HS	6739	86	B1-U3-G4	7275	93	B1-U4-G4	7658	98	B1-U4-G4	8041	103	B1-U4-G4		2144	35	B0-U3-G2
			III-HS	6589	84	B1-U3-G4	7113	91	B1-U4-G4	7487	96	B1-U4-G4	7861	101	B1-U4-G4		2095	34	B0-U3-G2
			IV-HS	7749	99	B1-U4-G4	8366	107	B1-U4-G4	8806	113	B1-U4-G4	9246	119	B1-U4-G5		2466	40	B0-U3-G2
48	700	104.0	II	10071	102	B2-U4-G5	11452	110	B3-U4-G5	12012	116	B3-U4-G5	12613	121	B3-U5-G5	N/A	N/A		
			III	10011	101	B2-U4-G5	11346	109	B3-U4-G5	11944	115	B3-U4-G5	12541	121	B3-U5-G5				
			IV	10003	101	B2-U4-G5	11328	109	B2-U4-G5	11924	115	B2-U4-G5	12520	120	B2-U5-G5				
			V	10229	103	B4-U4-G5	11578	111	B4-U4-G4	12188	117	B4-U4-G4	12797	123	B4-U4-G4				
			II-HS	8467	85	B1-U4-G4	9146	88	B1-U4-G5	9622	93	B1-U4-G5	10100	97	B1-U4-G5				
			III-HS	8278	80	B1-U4-G4	8936	86	B1-U4-G4	9406	90	B1-U4-G5	9876	95	B1-U4-G5				
			IV-HS	9739	93	B1-U4-G5	10512	101	B1-U4-G5	11063	106	B1-U4-G5	11616	112	B1-U4-G5				
64	350	66.0	II	8132	120	B3-U4-G4	8779	129	B3-U4-G4	9241	136	B3-U4-G4	9703	143	B3-U4-G4	53.0	2773	52	B1-U3-G2
			III	8086	119	B2-U4-G4	8729	128	B2-U4-G4	9189	135	B2-U4-G4	9648	142	B2-U4-G4		2757	52	B1-U3-G2
			IV	8073	119	B1-U4-G4	8715	128	B1-U4-G4	9174	135	B1-U4-G4	9632	142	B2-U4-G4		2753	52	B1-U3-G2
			V	8279	122	B4-U4-G5	8908	131	B4-U4-G5	9377	138	B4-U4-G5	9845	145	B4-U4-G5		2814	53	B2-U3-G2
			II-HS	6514	96	B1-U4-G4	7032	103	B1-U4-G4	7402	109	B1-U4-G4	7772	114	B1-U4-G4		2221	42	B1-U3-G2
			III-HS	6368	94	B1-U4-G4	6874	101	B1-U4-G4	7235	106	B1-U4-G4	7598	112	B1-U4-G4		2170	41	B0-U3-G2
			IV-HS	7490	110	B1-U4-G4	8085	119	B1-U4-G4	8511	125	B1-U4-G4	9937	131	B1-U4-G4		2554	48	B0-U3-G2
64	525	103.0	II	11219	109	B3-U4-G5	12111	118	B3-U4-G5	12748	124	B3-U4-G5	13386	130	B3-U5-G5	81.0	3270	44	B1-U3-G2
			III	11155	108	B3-U4-G5	12042	117	B3-U5-G5	12677	123	B3-U5-G5	13310	129	B3-U5-G5		3549	44	B1-U3-G2
			IV	11137	108	B2-U4-G5	12023	117	B2-U4-G5	12656	123	B2-U4-G5	13288	129	B2-U5-G5		3544	44	B1-U3-G2
			V	11384	111	B4-U4-G4	12290	119	B4-U4-G4	12937	126	B4-U4-G4	13583	132	B4-U5-G4		3623	45	B3-U3-G2
			II-HS	9086	88	B1-U4-G4	9700	94	B1-U4-G5	10201	99	B1-U4-G5	10723	104	B1-U4-G5		2892	35	B0-U3-G2
			III-HS	8765	85	B1-U4-G4	9483	92	B1-U4-G5	9983	97	B1-U4-G5	10482	102	B1-U4-G5		2795	35	B0-U3-G2
			IV-HS	10333	100	B1-U4-G5	11154	108	B1-U4-G5	11742	114	B1-U4-G5	12329	120	B1-U4-G5		3288	41	B0-U3-G2
64	700	138.0	II	14095	102	B3-U5-G5	15216	110	B3-U5-G5	16016	116	B3-U5-G5	16817	122	B3-U5-G5	N/A	N/A		
			III	14014	102	B3-U5-G5	15129	110	B3-U5-G5	15925	115	B3-U5-G5	16722	121	B3-U5-G5				
			IV	13991	101	B3-U5-G5	15104	109	B3-U5-G5	15899	115	B3-U5-G5	16694	121	B3-U5-G5				
			V	14301	104	B4-U5-G4	15438	112	B4-U5-G4	16251	118	B4-U5-G4	17065	124	B4-U5-G4				
			II-HS	11299	82	B2-U4-G5	12187	88	B2-U4-G5	12828	93	B2-U4-G5	13470	98	B2-U4-G5				
			III-HS	11027	80	B1-U4-G5	11914	86	B1-U4-G5	12542	91	B1-U4-G5	13169	95	B1-U4-G5				
			IV-HS	12981	94	B1-U4-G5	14013	102	B1-U5-G5	14751	107	B1-U5-G5	15488	112	B1-U5-G5				

IES File downloads for this product can be found at www.usalfg.com/downloads/asr.html

PHOTOMETRIC DATA GUIDE - LM-80 LUMEN MAINTENANCE

LED Life / Operating Hours	Lumen Depreciation	Lumen Depreciation Scale Factor
60,000 (10x Test Time Calculated)	L84	0.96x
100,000 (Theoretical Calculated)	L92	0.92x
150,000 (Theoretical Calculated)	L89	0.89x

Lumen Depreciation Calculations Done in Accordance With IESNA TM-21 & LM-80 (25°C Ambient)
TM-21 6x Test Time Dicatates that L96 x 60,000 Hours.

SUN VALLEY LIGHTING

U.S. ARCHITECTURAL LIGHTING

ROUND NON-TAPERED STEEL POLE

RNTS

PROJECT NAME:

PROJECT TYPE:

Shaft
Round, fabricated from high grade structural steel tube. Shaft conforms to ASTM-A-501-68 specifications. Meets or exceeds minimum yield strength of 46,000 P.S.I. Wall thickness 11 GA. (.120 wall) or 7 GA. (.180 wall) as specified. Shaft is furnished with ground lug located inside pole on wall opposite hand hole.

Drilling Side Mount
A removable pole cap is included. Pole will be drilled to match U.S. Architectural fixtures. For other Drilling required, please specify DP after specified drill pattern. (example: 2-180DP)

Pole Top Mount
Standard pole top mount - PT27, fabricated from 2.5" (2.875" O.D.) steel pipe - tenon options available for pole tops please see Mounting column. For other pole top configurations please consult factory.

Hand Hole Cover
Steel Poles 15 feet and above - Supplied with reinforced steel 2 5/8" x 4 5/8" access opening. Hand Hole provided with rectangular 3"x5" stamped heavy gauge aluminum material. Sealed door is secured by a formed aluminum bar and a stainless steel, tamper proof screw.

Poles under 15 feet - Rectangular 3"x5" stamped heavy gauge aluminum material, 2¼" x 4¼" access opening. Sealed door is secured by a formed aluminum bar and a stainless steel, tamper proof screw.

Base Plate
Fabricated from structural quality hot rolled steel. Meets or exceeds minimum yield strength of 36,000 P.S.I. Base telescopes and is circumferentially welded to pole shaft. Slotted bolt holes provide 1" flexibility on either side of bolt circle centerline.

Anchorage
(4) anchor bolts fabricated from hot rolled steel bar. Minimum yield strength of 50,000 P.S.I. Bolts have "L" bend on one end and are threaded on the other. Bolts are fully galvanized and are furnished with two nuts and two washers.

Base Cover
Fabricated from heavy gauge quality carbon steel. Two-piece cover conceals base.

Finish
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

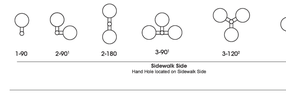
Pole Model	Pole Dia.	Pole Height
RNTS4	4"	10' - 24'
RNTS5	5"	16' - 25'
RNTS6	6"	18' - 30'

2023307

U.S. ARCHITECTURAL LIGHTING

Round Non-Tapered Steel Pole

DRILLING SIDE MOUNT

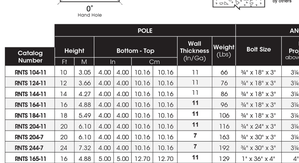


Notes
1- Poles smaller than 5" Dia. at top, or Non Linear Drilling requires PT27 and 1180 Adapter. (Adaptor is rotatable)
2- Poles smaller than 5" Dia. at top, or Non Linear Drilling requires PT27 and T3120 Adapter. (Adaptor is rotatable)

When drilling pattern from other manufacturer's fixture is required, add "DP" to drill specifications.
(Example: 2-180DP) **Drilling template must be provided.**

In the case of other manufacturer's drilling pattern, customer must provide drilling pattern.

BOLT CIRCLE



Catalog Number	POLE				ANCHOR BOLTS			ANCHOR PLATE		
	Height		Bottom - Top		Wall Thickness (in.)	Weight (LBS)	Bolt Size	Bolt Projection (in.)	Bolt Circle Dia Range*	Bolt Circle Dia (in.) (Default)	Template	Base Plate	Cover
	Ft	M	Inch	cm									
RNTS 104-11	10	3.05	4.00	10.16	11	66	¾" x 18" x 3"	3¼" - 3½"	8" - 11"	9"	US9	¾" x 10" x 10"	5" x 12" x 12"
RNTS 124-11	12	3.66	4.00	10.16	11	76	¾" x 18" x 3"	3¼" - 3½"	8" - 11"	9"	US9	¾" x 10" x 10"	5" x 12" x 12"
RNTS 144-11	14	4.27	4.00	10.16	11	86	¾" x 18" x 3"	3¼" - 3½"	8" - 11"	9"	US9	¾" x 10" x 10"	5" x 12" x 12"
RNTS 164-11	16	4.88	4.00	10.16	11	96	¾" x 18" x 3"	3¼" - 3½"	8" - 11"	9"	US9	¾" x 10" x 10"	5" x 12" x 12"
RNTS 184-11	18	5.49	4.00	10.16	11	106	¾" x 18" x 3"	3¼" - 3½"	8" - 11"	9"	US9	¾" x 10" x 10"	5" x 12" x 12"
RNTS 204-11	20	6.10	4.00	10.16	11	116	¾" x 24" x 3"	3¼" - 3½"	8" - 11"	10"	US10	¾" x 10" x 10"	5" x 12" x 12"
RNTS 204-7	20	6.10	4.00	10.16	10.16	7	163	¾" x 30" x 3"	3¼" - 3¾"	8" - 11"	11"	US11	¾" x 10" x 10"	5" x 12" x 12"
RNTS 244-7	24	7.32	4.00	10.16	10.16	7	192	¾" x 30" x 3"	3¼" - 3¾"	8" - 11"	11"	US11	¾" x 10" x 10"	5" x 12" x 12"
RNTS 165-11	16	4.88	5.00	12.70	12.70	11	129	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 185-11	18	5.49	5.00	12.70	12.70	11	142	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 185-7	18	5.49	5.00	12.70	12.70	7	196	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 205-11	20	6.10	5.00	12.70	12.70	11	154	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 205-7	20	6.10	5.00	12.70	12.70	7	215	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 255-11	25	7.62	5.00	12.70	12.70	11	186	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 255-7	25	7.62	5.00	12.70	12.70	7	261	1" x 36" x 4"	4" - 4½"	10½" - 12½"	12"	US12	1" x 11½" x 11½"	5" x 12" x 12"
RNTS 186-7	18	5.49	6.00	6.00	15.24	15.24	7	241	1" x 36" x 4"	4" - 4½"	11½" - 14½"	12"	US12	1" x 13½" x 13½"	5" x 14" x 14"
RNTS 206-7	20	6.10	6.00	6.00	15.24	15.24	7	263	1" x 36" x 4"	4" - 4½"	11½" - 14½"	12"	US12	1" x 13½" x 13½"	5" x 14" x 14"
RNTS 256-7	25	7.62	6.00	6.00	15.24	15.24	7	319	1" x 36" x 4"	4" - 4½"	11½" - 14½"	12"	US12	1" x 13½" x 13½"	5" x 14" x 14"
RNTS 286-7	28	8.54	6.00	6.00	15.24	15.24	7	353	1⅛" x 42" x 6"	4¼" - 4¾"	11½" - 14½"	13"	US13	1" x 13½" x 13½"	5" x 14" x 14"
RNTS 306-7	30	9.15	6.00	6.00	15.24	15.24	7	375	1⅛" x 42" x 6"	4¼" - 4¾"	11½" - 14½"	14"	US14	1" x 13½" x 13½"	5" x 14" x 14"

1 - Not using correct bolt size or "(BEC.) Recommended" Bolt Circle could result in Pole's failure.
2 - Bolt Projection is calculated for slopes with 3 degrees or less.
3 - For slopes greater than 3 degrees, please add Bolt Length Projection as necessary.

U.S. ARCHITECTURAL LIGHTING

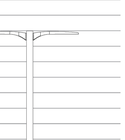
Round Non-Tapered Steel Pole

ORDERING INFORMATION

Spec/Order Example: RNTS205-7/1-90/RAL-6005-T

Pole Model Number				Mounting	Finish	Options
Pole Model Number		Pole Height	Wall Thickness	**Mounting**	**Finish**	**Options**
4" Pole Dia.	☐ **RNTS 104 - 11**	10'	11	Tenon Mount	Standard Smooth Finish	☐ Vibration Dampener (not Made Here Instal) **VIBDS-M2**
	☐ **RNTS 124 - 11**	12'	11	☐ 2⅞" X 3" Tenon **PT27** (Standard)	☐ Black **RAL-9005-S**	**Receptacle**
	☐ **RNTS 144 - 11**	14'	11	☐ 2¼" X 3" Tenon **PT23**	☐ White **RAL-9003-S**	☐ G.F.I. Receptacle w/ Cover **GFI**
	☐ **RNTS 164 - 11**	16'	11	☐ 2⅛" X 6" Tenon **PT276**	☐ Grey **RAL-7004-S**	☐ G.F.I. Receptacle w/ In-Use Cover **GFIIU** [Specify GFI location: Height and Direction] See Location Diagram below
	☐ **RNTS 184 - 11**	18'	11	☐ Other Tenon MT: _____	☐ Dark Bronze **RAL-8019-S**	☐ 3 Way Adapter **T3120**
	☐ **RNTS 204 - 11**	20'	11	Drill Mount	☐ Green **RAL-6005-S**	☐ 4 Way Adapter **T490**
	☐ **RNTS 204 - 7**	20'	7	☐ **1-90**	**Premium Finishes**	**Coupling**
	☐ **RNTS 244 - 7**	24'	7	☐ **2-180** DP	☐ Rust	☐ ½" Coupling **CPUN12** ☐ ¾" Coupling **CPUN34**
5" Pole Dia.	☐ **RNTS 165 - 11**	16'	11	☐ **2-90**	☐ Patina Copper **PC**	☐ 1¼" Coupling **CPUN114** ☐ 1½" Coupling **CPUN112**
	☐ **RNTS 185 - 11**	18'	11	☐ **3-90**	☐ Custom Specify SKU# _____	☐ 2" Coupling **CPUN2** [Specify Coupling location: Height and Direction] See Location Diagram below
	☐ **RNTS 185 - 7**	18'	7	☐ **4-90**	☐ Galvanized **GLV**	**Nipple**
	☐ **RNTS 205 - 11**	20'	11	☐ **3-120**	For Textured Finish replace suffix "S" with suffix "T" Example: RAL-9005-T	☐ ½" Nipple **NPLE12** ☐ ¾" Nipple **NPLE34**
	☐ **RNTS 205 - 7**	20'	7	3-120 requires PT27 and T3120 Adapter	See USALFG.COM for additional colors	☐ 1¼" Nipple **NPLE114** ☐ 1½" Nipple **NPLE112**
	☐ **RNTS 255 - 11**	25'	11	2-90, 3-90, 4-90 requires PT23 and T490 Adapter		☐ 2" Nipple **NPLE2** [Specify Coupling location: Height and Direction] See Location Diagram below
	☐ **RNTS 255 - 7**	25'	7	When Drilling Pattern from other manufacturer's fixture is required, add "DP" to drill specifications. (Example: 2-180DP) **Drilling template must be provided.**		**Location Diagram** Please use this diagram to indicate placement location
6" Pole Dia.	☐ **RNTS 186 - 7**	18'	7			
	☐ **RNTS 206 - 7**	20'	7			
	☐ **RNTS 256 - 7**	25'	7			
	☐ **RNTS 286 - 7**	28'	7			
	☐ **RNTS 306 - 7**	30'	7			

Other heights available
Please consult factory



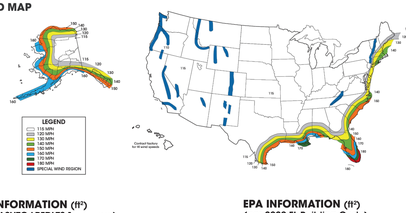
Refer to the Accessories Section for other options

OPTIONS

U.S. ARCHITECTURAL LIGHTING

Round Non-Tapered Steel Pole

WIND MAP



EPA INFORMATION (ft²)
(per AASHTO LRFDLTS-1 revised 2022)

Cat. No.	Weight Capacity lbs (Lbs.)	100 MPH	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
RNTS 104-11	300 - 292*	15.0	15.0	15.0	14.4	12.4	10.6	9.0	8.2	7.2	
RNTS 124-11	300 - 182*	15.0	15.0	15.0	13.6	11.2	9.6	7.8	6.8	6.2	5.2
RNTS 144-11	300 - 143.5*	15.0	13.5	12.1	10.9	9.1	7.5	6.3	5.1	4.7	4.1
RNTS 164-11	300 - 87.5*	13.1	10.3	9.1	8.1	6.7	5.1	4.1	3.5	3.3	2.5
RNTS 184-11	300 - 66.5*	10.9	8.3	7.3	6.7	4.9	3.7	2.9	2.7	2.3	1.9
RNTS 204-11	300 - 60*	9.0	7.0	5.8	5.0	3.6	2.6	1.8	1.4	1.3	1.2
RNTS 204-7	300 - 105*	15.0	14.0	12.1	9.4	7.8	6.4	4.8	4.2	3.6	3.0
RNTS 244-7	300 - 60*	10.2	8.0	6.3	5.0	3.9	3.0	2.2	1.8	1.5	0.9
RNTS 165-11	300 - 262.5*	15.0	15.0	15.0	15.0	15.0	13.3	10.7	9.1	7.5	
RNTS 185-11	300 - 182*	15.0	15.0	15.0	15.0	15.0	12.8	10.0	8.0	6.6	5.2
RNTS 185-7	300 - 217*	15.0	15.0	15.0	15.0	15.0	14.6	12.2	9.6	8.0	6.2
RNTS 205-11	300 - 129.5*	15.0	12.5	10.9	9.1	7.8	6.6	5.5	4.8	4.3	3.7
RNTS 205-7	300 - 156*	15.0	15.0	15.0	15.0	14.8	12.0	9.2	7.2	5.8	4.4
RNTS 255-11	300 - 60*	9.4	6.8	5.4	5.0	4.0	3.2	2.6	1.8	1.8	1.4
RNTS 255-7	300 - 126*	15.0	12.6	10.8	9.6	8.2	6.8	5.8	4.6	4.2	3.6
RNTS 186-7	300	15.0	15.0	15.0	15.0	15.0	15.0	15.0	13.5	12.1	10.5
RNTS 206-7	300	15.0	15.0	15.0	15.0	15.0	15.0	15.0	13.6	11.8	10.4
RNTS 256-7	300	15.0	15.0	15.0	15.0	15.0	15.0	14.2	12.0	10.2	8.8
RNTS 286-7	300 - 189*	15.0	15.0	15.0	15.0	13.8	11.4	9.6	8.4	7.2	6.2
RNTS 306-7	300 - 161*	15.0	15.0	15.0	13.2	12.0	9.8	8.2	7.2	5.8	5.0

*** Please use the following to obtain the proper weight capacity: The maximum fixture weight equals 60 lbs. or the product of 35 lbs. x the EPA value, whichever is greater, not to exceed 300 lbs. Example, EPA = 2.2 , weight = 35 lbs. x 2.2 EPA = 77 lbs.**

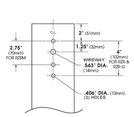
Notes
- Specifier is responsible for correct pole selection. For proper pole choice, the specifier must consider the total

U.S. ARCHITECTURAL LIGHTING

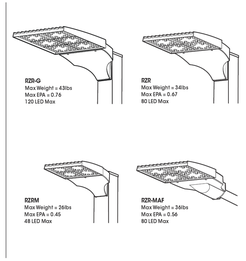
RAZAR SERIES - LED

SPECIFICATIONS

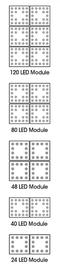
POLE DRILLING TEMPLATE



EPA & WEIGHT



PLED™ MODULES



ORDERING INFORMATION

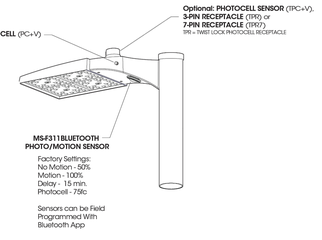
Spec/Order Example: RZR/PLED-IV/80LED-700mA/CW/UNV/8019-S

Luminaire	Optics	LED Mode			Voltage	Mounting	Finish	Options
Luminaire	**Optics**	**LED**			**Voltage**	**Mounting**	**Finish**	**Options**
	PLED™ Distribution Type	# of LEDs	Drive Current	Color Temp - CCT		Arm Mount	Standard Textured Finish	
☐ RZR-G	☐ PLED-II	RZR-G ☐ 120LED ☐ 80LED	☐ 1400mA[1] ☐ 1225mA[1] ☐ 1050mA ☐ 875mA ☐ 700mA	☐ 27K (2700K) ☐ 30K (3000K) ☐ 40K (4000K) ☐ 50K (5000K)	☐ UNV (120-277)	☐ 1	☐ Black **9005-T**	☐ Internal House Side Shield inc. LED Down (Example: HS-RZR2-W) **HS-PLED**
	☐ PLED-II-FR				☐ 347	☐ 2-180	☐ White **9003-T**	☐ External Glare Shield 4 Sided **EGS4**
	☐ PLED-II-MEL				☐ 480	☐ 2-90	☐ Grey **7004-T**	☐ External Glare Shield 3 Sided Rear Wedge **EGS3W**
☐ RZR	☐ PLED-III	RZR / RZR-MAF ☐ 80LED ☐ 40LED	☐ 525mA	☐ TRA True Amber		☐ 3-90	☐ Dark Bronze **8019-T**	☐ Round Pole Adapter **RPA**
☐ RZR-MAF	☐ PLED-III-W		☐ 350mA	Consult Factory for Other LED Color, CCT, & CRI Options		☐ 3-120	☐ Green **6005-T**	☐ Twist Lock Receptacle Only **TPR**
	☐ PLED-IV					☐ 4-90	Premium Finishes	☐ 7-Pin Twist Lock Receptacle Only **TP07**
	☐ PLED-IV-T	RZRM ☐ 48LED ☐ 24LED	NOTES: 1 - 1400mA & 1225mA drive currents not available in IDSA 2 - TRA available in 350mA & 525mA drive currents only				☐ Rust	☐ High-Low Dimming for Switch by Others/Sided Levels 50/100 or 25/100 (Example: HLSW) **HLSW**
	☐ PLED-V-SQ-N					Wall Mount	☐ Paking Copper **PC**	☐ Twist Lock Photocell + Voltage (Example: TPC4V) **TPC-V**
	☐ PLED-V-SQ-M					☐ WM	For smooth finish replace suffix "T" with suffix "S" (Example: 9005-S)	☐ Photo Cell + Voltage (Example: PC120V) **PC-V**
	☐ PLED-V-SQ-W		Consult Factory for Other Drive Currents			WM - Wall Mount provided with mounting bracket and cover	Consult factor for custom colors	☐ Single Fuse (120V, 277V) **SF**
								☐ Double Fuse (208V, 240V) **DF**
								☐ Blue-Tooth Programmable Photo/Motion Sensor (Factory - Motion 50/100, Photo 70fc) **MS-F311**

U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

OPTIONS



High Low Dimming For Switches (HLSW)
The HLSW is a Small Electronic Switch which Provides High Low Dimming Control Through the LED Driver's 0-10V Control. Switching is Done by Adding a Seconday AC Switched Hot Trigger Line to the HLSW in Addition to the Normal AC Power Line. When the Secondary Trigger Line is Powered, the Fixture will go to 100% Dimming. With no Power to the Trigger, the Fixture will operate at 50% or 25% Dimming. Switches for the Trigger Line can be a Normal AC Switch/Breaker or Timed Switch/Breaker.

Wireless and Other Fixture Controls
Contact Factory for Wireless and Other Fixture Controls and Recomendations. Most Controls Can be Integrated and Factory Installed.

EXTERNAL GLARE SHIELDS

EGS4 - 4 Sided Shield
Minimum Cutoff = 12°
Average Cutoff = 23°

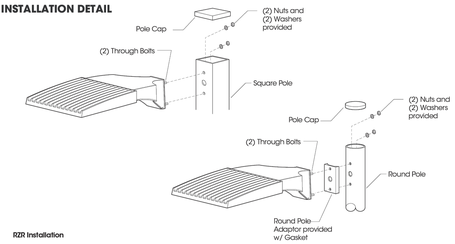
EGS3W - 3 Sided Shield
Minimum Rear Cutoff = 12°
Average Rear Cutoff = 23°
Minimum Side Cutoff = 4°
Average Side Cutoff = 16°

Glare Shields are rotatable on RZR and RZRM. Consult factory for custom applications.

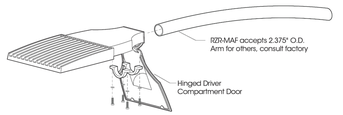
U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

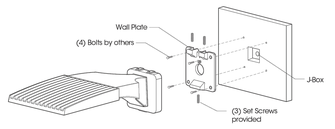
INSTALLATION DETAIL



RZR Installation



RZR-MAF Installation



RZR-WM Installation

U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

ELECTRICAL DATA GUIDE - AMPERAGE CHART

ELECTRICAL LOAD			CURRENT (Amps)				
# of LEDs	mA	System Watts	120V	208V	277V	347V	480V
24	350	26	0.21	0.12	0.09	0.07	0.05
24	525	39	0.32	0.19	0.14	0.11	0.08
24	700	52	0.43	0.25	0.19	0.15	0.11
24	875	67	0.55	0.32	0.24	0.19	0.14
24	1050	81	0.67	0.39	0.29	0.23	0.17
48	350	52	0.43	0.25	0.19	0.15	0.11
48	525	78	0.65	0.37	0.28	0.22	0.16
48	700	104	0.87	0.50	0.38	0.30	0.22
48	875	133	1.11	0.64	0.48	0.38	0.28
48	1050	162	1.35	0.78	0.58	0.47	0.34
40	350	43	0.36	0.21	0.15	0.12	0.09
40	525	65	0.54	0.31	0.23	0.19	0.14
40	700	87	0.72	0.42	0.31	0.25	0.18
40	875	111	0.92	0.53	0.40	0.32	0.23
40	1050	135	1.12	0.65	0.49	0.39	0.28
40	1225	159	1.32	0.76	0.57	0.46	0.33
40	1400	183	1.53	0.88	0.66	0.53	0.38
80	350	86	0.72	0.41	0.31	0.25	0.18
80	525	130	1.08	0.62	0.47	0.37	0.27
80	700	174	1.45	0.83	0.63	0.50	0.36
80	875	222	1.85	1.06	0.80	0.64	0.46
80	1050	270	2.25	1.30	0.97	0.78	0.56
80	1225	318	2.65	1.53	1.15	0.92	0.66
80	1400	366	3.05	1.76	1.32	1.06	0.76
120	350	129	1.07	0.62	0.46	0.37	0.27
120	525	195	1.62	0.94	0.70	0.56	0.41
120	700	260	2.17	1.25	0.94	0.75	0.54
120	875	332	2.77	1.60	1.20	0.96	0.69
120	1050	404	3.37	1.94	1.46	1.17	0.84
120	1225	477	3.97	2.29	1.72	1.37	0.99
120	1400	549	4.58	2.64	1.98	1.58	1.14

PHOTOMETRIC DATA GUIDE - LM-80 LUMEN MAINTENANCE

LED LUMEN MAINTENANCE (350mA to 1050mA)		
LED Life / Operating Hours	**Lumen Depreciation**	**Lumen Depreciation Scale Factor**
60,000	L96	0.96x
100,000 (6X LED Test Hrs)	L93	0.93x
150,000 (Theoretical)	L89	0.90x
200,000 (Theoretical)	L86	0.87x

TM-21 6x Test Time Dicatates that L93 > 100,000 Hours.

LED LUMEN MAINTENANCE (1225mA & 1400mA)		
LED Life / Operating Hours	**Lumen Depreciation**	**Lumen Depreciation Scale Factor**
60,000	L93	0.93x
100,000 (6X LED Test Hrs)	L89	0.89x
150,000 (Theoretical)	L84	0.84x
200,000 (Theoretical)	L80	0.80x

TM-21 6x Test Time Dicatates that L93 > 100,000 Hours.
Lumen Depreciation Calculations Done in Accordance With IESNA TM-21 & LM-80 (25°C Ambient)

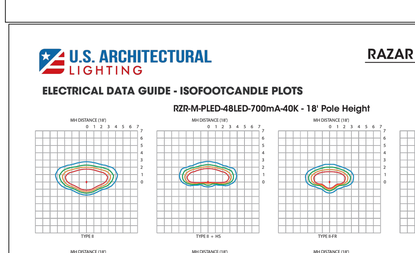
IES File downloads for this product can be found at www.usalttg.com/downloads/asr.html

U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

ELECTRICAL DATA GUIDE - ISOFOOTCANDLE PLOTS

RZR-M-PLED-48LED-700mA-40K - 18' Pole Height



IES File downloads for this product can be found at www.usalttg.com/downloads/asr.html

U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

PHOTOMETRIC DATA GUIDE - LUMEN TABLES

RZR-M-PLED

LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
24	350	25.7	II	3705	144	B1-U0-G1	3866	150	B1-U0-G1	4027	157	B1-U0-G1	4188	163	B1-U0-G1	20.0	1365	68	B1-U0-G1
			II-FR	3729	145	B1-U0-G1	3892	151	B1-U0-G1	4054	158	B1-U0-G1	4216	164	B1-U0-G1		1373	69	B1-U0-G1
			II-MEL	3728	144	B2-U0-G2	3866	150	B2-U0-G2	4027	157	B2-U0-G2	4188	163	B2-U0-G2		1365	68	B1-U0-G1
			III-M	3650	142	B2-U0-G2	3808	148	B2-U0-G2	3966	154	B2-U0-G2	4124	160	B2-U0-G2		1344	67	B1-U0-G1
			III-W	3650	142	B2-U0-G2	3808	148	B2-U0-G2	3966	154	B2-U0-G2	4124	160	B2-U0-G2		1399	68	B2-U0-G2
			IV	3741	146	B1-U0-G1	3903	152	B1-U0-G1	4066	158	B1-U0-G1	4229	165	B1-U0-G1		1377	69	B1-U0-G1
			IV-T	3408	133	B1-U0-G1	3556	138	B1-U0-G1	3704	144	B1-U0-G1	3853	150	B1-U0-G1		1264	63	B1-U0-G1
			V-SQ-N	3911	152	B2-U0-G2	4080	159	B2-U0-G2	4250	165	B2-U0-G2	4420	172	B2-U0-G2		1439	72	B2-U0-G2
			V-SQ-M	3834	149	B2-U0-G2	4000	156	B2-U0-G2	4167	162	B2-U0-G2	4334	169	B2-U0-G2		1410	71	B2-U0-G2
			V-SQ-W	3743	146	B2-U0-G1	3905	152	B3-U0-G1	4068	158	B3-U0-G1	4231	165	B3-U0-G2		1377	69	B3-U0-G2
			II-HS	3735	145	B1-U0-G1	3897	152	B2-U0-G1	4059	158	B2-U0-G1	4221	165	B2-U0-G2		997	50	B2-U0-G1
			II-FR-HS	2756	107	B1-U0-G0	2878	112	B1-U0-G0	2995	117	B1-U0-G0	3115	121	B1-U0-G0		1014	51	B1-U0-G0
			III-M-HS	2741	107	B2-U0-G1	2861	111	B2-U0-G1	2980	116	B2-U0-G1	3099	121	B2-U0-G1		1008	50	B2-U0-G1
			III-W-HS	2982	154	B1-U0-G1	2799	109	B1-U0-G1	2916	113	B1-U0-G1	3032	118	B2-U0-G1		997	49	B2-U0-G1
			IV-HS	2693	105	B2-U0-G1	2950	115	B2-U0-G1	3074	120	B2-U0-G1	3198	125	B2-U0-G1		1042	52	B2-U0-G1
			IV-T-HS	2675	104	B1-U0-G1	2792	109	B1-U0-G1	2909	113	B1-U0-G1	3026	118	B2-U0-G1		985	49	B2-U0-G1
24	525	38.9	II	5387	138	B1-U0-G1	5620	144	B1-U0-G1	5852	150	B1-U0-G1	6085	156	B1-U0-G1	31.0	1978	51	B1-U0-G1
			II-FR	5387	138	B1-U0-G1	5620	144	B1-U0-G1	5852	150	B1-U0-G1	6085	156	B1-U0-G1		1998	52	B1-U0-G1
			II-MEL	5352	138	B2-U0-G2	5580	144	B2-U0-G2	5817	150	B2-U0-G2	6050	156	B3-U0-G3		1587	51	B1-U0-G1
			III-M	5262	136	B2-U0-G2	5485	141	B2-U0-G2	5718	147	B2-U0-G2	5948	153	B3-U0-G3		1619	52	B1-U0-G1
			III-W	5096	130	B1-U0-G2	5276	136	B1-U0-G2	5496	141	B1-U0-G2	5716	147	B2-U0-G2		1500	48	B2-U0-G2
			IV	5454	139	B1-U0-G1	5639	145	B1-U0-G1	5814	151	B1-U0-G1	6159	157	B2-U0-G2		1602	52	B2-U0-G2
			IV-T	4924	127	B1-U0-G2	5138	132	B1-U0-G2	5352	138	B1-U0-G2	5566	143	B1-U0-G2		1460	47	B2-U0-G2
			V-SQ-N	5648	145	B2-U0-G2	5894	152	B2-U0-G2	6139	158	B2-U0-G2	6385	164	B2-U0-G2		1676	54	B2-U0-G2
			V-SQ-M	5539	142	B3-U0-G1	5780	149	B3-U0-G1	6021	155	B3-U0-G1	6262	161	B3-U0-G1		1663	53	B1-U0-G2
			V-SQ-W	5407	139	B3-U0-G2	5642	145	B3-U0-G2	5877	151	B3-U0-G2	6112	157	B3-U0-G2		1603	52	B2-U0-G2
			II-HS	3914	101	B0-U0-G1	4084	105	B0-U0-G1	4254	109	B0-U0-G1	4424	114	B0-U0-G1		1161	37	B0-U0-G1
			II-FR-HS	3914	101	B0-U0-G1	4084	105	B0-U0-G1	4254	109	B0-U0-G1	4424	114	B0-U0-G1		1161	37	B0-U0-G1
			III-M-HS	3900	102	B0-U0-G1	4070	106	B0-U0-G1	4236	110	B0-U0-G1	4406	115	B0-U0-G1		1174	38	B0-U0-G1
			III-W-HS	3876	100	B0-U0-G2	4045	104	B0-U0-G2	4213	108	B0-U0-G2	4382	113	B0-U0-G2		1150	37	B0-U0-G2
			IV-HS	4090	105	B0-U0-G1	4266	110	B0-U0-G1	4442	114	B0-U0-G1	4618	119	B0-U0-G1		1213	39	B0-U0-G1
			IV-T-HS	3866	99	B0-U0-G2	4034	104	B0-U0-G2	4202	108	B0-U0-G2	4370	112	B0-U0-G2		1146	37	B0-U0-G1
24	700	52.1	II	6733	129	B2-U0-G2	7025	135	B2-U0-G2	7318	140	B2-U0-G2	7611	146	B2-U0-G2	N/A	N/A		
			II-FR	6778	130	B2-U0-G1	7072	136	B2-U0-G1	7367	141	B2-U0-G1	7662	147	B2-U0-G1				
			II-MEL	6733	129	B3-U0-G3	7025	135	B3-U0-G3	7318	140	B3-U0-G3	7611	146	B3-U0-G3				
			III-M	6851	131	B2-U0-G2	7148	137	B2-U0-G2	7446	143	B2-U0-G2	7744	149	B2-U0-G2				
			III-W	6360	122	B1-U0-G2	6637	127	B1-U0-G2	6913	133	B1-U0-G2	7190	138	B1-U0-G2				
			IV	6799	131	B2-U0-G2	7095	136	B2-U0-G2	7391	142	B2-U0-G2	7686	148	B2-U0-G2				
			IV-T	6178	118	B1-U0-G2	6450	124	B1-U0-G2	6722	129	B1-U0-G2	6990	134	B1-U0-G2				
			V-SQ-N	7107	136	B2-U0-G1	7415	142	B2-U0-G1	7723	148	B2-U0-G1	8032	154	B2-U0-G1				
			V-SQ-M	6972	134	B3-U0-G2	7276	140	B3-U0-G2	7580	145	B3-U0-G2	7884	151	B3-U0-G2				
			V-SQ-W	6812	131	B3-U0-G2	7108	136	B3-U0-G2	7404	142	B3-U0-G2	7700	148	B3-U0-G2				
			II-HS	4924	95	B1-U0-G2	5138	99	B1-U0-G2	5352	103	B1-U0-G2	5566	107	B1-U0-G2				
			II-FR-HS	5029	96	B1-U0-G2	5247	100	B1-U0-G2	5464	104	B1-U0-G2	5682	109	B1-U0-G2				
			III-M-HS	4981	96	B0-U0-G2	5198	100	B0-U0-G2	5414	104	B0-U0-G2	5631	108	B0-U0-G2				
			III-W-HS	4873	94	B0-U0-G2	5087	98	B0-U0-G2	5299	102	B0-U0-G2	5511	106	B0-U0-G2				
			IV-HS	5146	99	B0-U0-G2	5369	103	B0-U0-G2	5593	107	B0-U0-G2	5817	112	B0-U0-G2				
			IV-T-HS	4865	93	B0-U0-G2	5078	97	B0-U0-G2	5286	101	B0-U0-G2	5497	106	B0-U0-G2				
24	875	66.5	II	8051	121	B2-U0-G2	8401	126	B2-U0-G2	8751	132	B2-U0-G2	9101	137	B2-U0-G2	N/A	N/A		
			II-FR	8105	122	B2-U0-G1	8457	127	B2-U0-G1	8810	133	B2-U0-G1	9163	138	B2-U0-G1				
			II-MEL	8051	121	B3-U0-G3	8401	126	B3-U0-G3	8751	132	B3-U0-G3	9101	137	B3-U0-G3				
			III-M	8195	123	B2-U0-G2	8554	128	B2-U0-G2	8913	134	B2-U0-G2	9272	139	B2-U0-G2				
			III-W	7606	114	B1-U0-G2	7939	119	B1-U0-G2	8267	124	B1-U0-G2	8598	129	B2-U0-G2				
			IV	8129	122	B2-U0-G2	8483	128	B2-U0-G2	8836	133	B2-U0-G2	9190	138	B2-U0-G2				
			IV-T	7383	111	B1-U0-G2	7707	116	B1-U0-G2	8030	121	B1-U0-G2	8352	126	B2-U0-G2				
			V-SQ-N	8498	128	B3-U0-G1	8867	133	B3-U0-G1	9236	139	B3-U0-G1	9605	144	B4-U0-G2				
			V-SQ-M	8333	125	B3-U0-G2	8695	131	B3-U0-G2	9057	136	B3-U0-G2	9419	142	B4-U0-G2				
			V-SQ-W	8134	122	B3-U0-G2	8487	128	B4-U0-G2	8841	133	B4-U0-G2	9195	138	B4-U0-G2				
			II-HS	5888	89	B1-U0-G2	6140	92	B1-U0-G2	6392	96	B1-U0-G2	6644	100	B1-U0-G2				
			II-FR-HS	5990	90	B1-U0-G1	6250	94	B1-U0-G1	6510	98	B1-U0-G1	6771	102	B1-U0-G1				
			III-M-HS	5937	90	B0-U0-G2	6192	93	B0-U0-G2	6447	97	B0-U0-G2	6702	101	B0-U0-G2				
			III-W-HS	5800	88	B0-U0-G2	6084	91	B0-U0-G2	6337	95	B0-U0-G2	6591	99	B0-U0-G2				
			IV-HS	6153	93	B0-U0-G2	6420	96	B0-U0-G2	6688	100	B0-U0-G2	6955	104	B0-U0-G2				
			IV-T-HS	5810	88	B0-U0-G2	6061	91	B0-U0-G2	6312	95	B0-U0-G2	6563	98	B0-U0-G2				
24	1050	80.9	II	9455	117	B2-U0-G2	9865	122	B2-U0-G2	10275	127	B2-U0-G2	10685	132	B2-U0-G2	N/A	N/A		
			II-FR	9512	114	B2-U0-G1	9926	119	B2-U0-G1	10339	124	B2-U0-G1	10753	129	B2-U0-G1				
			II-MEL	9180	113	B3-U0-G3	9558	118	B3-U0-G3	9956	123	B3-U0-G3	10354	128	B3-U0-G3				
			III-M	9320	115	B2-U0-G2	9725	120	B2-U0-G2	10131	125	B2-U0-G2	10536	130	B2-U0-G2				
			III-W	8653	107	B2-U0-G2	9029	112	B2-U0-G2	9405	116	B2-U0-G2	9782	121	B2-U0-G2				
			IV	9249	114	B2-U0-G2	9651	119	B2-U0-G2	10053	124	B2-U0-G2	10456	129	B2-U0-G2				
			IV-T	8406	104	B2-U0-G2	8769	109	B2-U0-G2	9158	113	B2-U0-G2	9525	118	B2-U0-G2				
			V-SQ-N	9668	120	B3-U0-G1	10088	125	B3-U0-G1	10508	130	B3-U0-G1	10929	135	B3-U0-G1				
			V-SQ-M	9480	117	B3-U0-G2	9892	122	B3-U0-G2	10305	127	B3-U0-G2	10717	132	B4-U0-G2				
			V-SQ-W	9254	114	B4-U0-G2	9656	119	B4-U0-G2	10059	124	B4-U0-G2	10461	129	B4-U0-G2				
			II-HS	6699	83	B1-U0-G2	6990	86	B1-U0-G2	7281	90	B1-U0-G2	7573	94	B1-U0-G2				
			II-FR-HS	6822	84	B1-U0-G1	7119	88	B1-U0-G1	7416	92	B1-U0-G1	7713	95	B1-U0-G1				
			III-M-HS	6777	84	B0-U0-G2	7070	87	B0-U0-G2	7363	91	B0-U0-G2	7656	95	B1-U0-G2				
			III-W-HS	6653	82	B0-U0-G2	6922	86	B0-U0-G2	7210	89	B0-U0-G2	7498	93	B0-U0-G2				
			IV-HS	7013	87	B0-U0-G2	7305	91	B0-U0-G2	7597	94	B0-U0-G2	7889	98	B1-U0-G2				
			IV-T-HS	6615	82	B0-U0-G2	6903	86	B1-U0-G2	7191	89	B1-U0-G2	7478	92	B1-U0-G2				

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U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

PHOTOMETRIC GUIDE - LUMEN TABLES

RZR-M-PLED

LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
48	350	51.6	II	7194	140	B2-U0-G2	7507	146	B2-U0-G2	7820	152	B2-U0-G2	8133	158	B2-U0-G2	41.0	2653	66	B1-U0-G1
			II-FR	7243	141	B2-U0-G1	7558	147	B2-U0-G1	7873	153	B2-U0-G1	8187	159	B2-U0-G1		2668	67	B1-U0-G1
			II-MEL	7194	140	B3-U0-G3	7507	146	B3-U0-G3	7820	152	B3-U0-G3	8133	158	B3-U0-G3		2713	66	B1-U0-G1
			III-M	7317	142	B2-U0-G2	7636	148	B2-U0-G2	7955	154	B2-U0-G2	8273	160	B2-U0-G2		2663	66	B1-U0-G1
			III-W	6797	132	B1-U0-G2	7092	138	B1-U0-G2	7388	144	B1-U0-G2	7683	149	B1-U0-G2		2969	62	B1-U0-G1
			IV	7265	141	B2-U0-G2	7581	147	B2-U0-G2	7896	153	B2-U0-G2	8212	159	B2-U0-G2		2740	67	B1-U0-G1
			IV-T	6618	128	B1-U0-G2	6905	134	B1-U0-G2	7192	139	B1-U0-G2	7480	145	B1-U0-G2		2490	61	B1-U0-G1
			V-SQ-N	7596	147	B2-U0-G1	7924	154	B3-U0-G1	8252	160	B3-U0-G1	8584	167	B3-U0-G1		2864	70	B1-U0-G2
			V-SQ-M	7446	145	B2-U0-G2	7773	151	B3-U0-G2	8100	157	B3-U0-G2	8427	163	B3-U0-G2		2804	68	B1-U0-G2
			V-SQ-W	7269	141	B3-U0-G2	7585	147	B3-U0-G2	7901	153	B3-U0-G2	8217	160	B3-U0-G2		2741	67	B2-U0-G1
			II-HS	5262	102	B0-U0-G1	5491	107	B0-U0-G1	5720	111	B0-U0-G1	5948	116	B0-U0-G1

U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

PHOTOMETRIC DATA GUIDE - LUMEN TABLES

RZR/RZR-MAF-PLED

LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TBA (590mm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
40	350	42.9	I	6900	161	B2-U0-G2	7182	168	B2-U0-G2	7065	165	B2-U0-G2	7348	171	B2-U0-G2	33.0	4610	107	B1-U0-G1
			II/FR	6644	155	B2-U0-G1	6828	159	B2-U0-G1	7113	166	B2-U0-G1	7397	172	B2-U0-G1		2325	70	B1-U0-G0
			II/ML	6855	160	B2-U0-G1	6783	158	B2-U0-G1	7065	165	B2-U0-G1	7348	171	B2-U0-G1		2309	70	B1-U0-G0
			III/M	6614	154	B2-U0-G1	6901	161	B2-U0-G2	7189	168	B2-U0-G2	7476	174	B2-U0-G2		2369	72	B1-U0-G1
			III/W	6614	154	B2-U0-G1	6901	161	B2-U0-G2	7189	168	B2-U0-G2	7476	174	B2-U0-G2		2369	72	B1-U0-G1
			IV	6964	155	B2-U0-G2	6849	160	B2-U0-G2	7135	166	B2-U0-G2	7420	173	B2-U0-G2		2332	71	B1-U0-G1
			V	6876	139	B2-U0-G2	6809	145	B1-U0-G2	6699	139	B1-U0-G2	6736	139	B1-U0-G2		2126	64	B1-U0-G1
			VS/AM	13868	140	B3-U0-G1	14090	142	B3-U0-G1	14885	173	B3-U0-G1	15481	180	B3-U0-G1		4845	73	B2-U0-G1
			VS/W	13868	140	B3-U0-G1	14090	142	B3-U0-G1	14885	173	B3-U0-G1	15481	180	B3-U0-G1		4845	73	B2-U0-G1
			VS/AW	13108	133	B4-U0-G3	13678	139	B4-U0-G3	14245	166	B4-U0-G3	14818	173	B4-U0-G3		4636	70	B2-U0-G2
			II/HS	7154	153	B2-U0-G2	7137	152	B2-U0-G2	7138	152	B2-U0-G2	7422	158	B2-U0-G2		2333	71	B1-U0-G1
			II/HS	4784	111	B1-U0-G2	4981	116	B1-U0-G2	5167	120	B1-U0-G2	5374	125	B1-U0-G2		1689	51	B0-U0-G1
			III/HS	4834	113	B1-U0-G2	5031	118	B1-U0-G2	5217	122	B1-U0-G2	5427	127	B1-U0-G2		1718	52	B0-U0-G1
			III/AHS	4810	112	B1-U0-G2	5019	117	B1-U0-G2	5228	122	B1-U0-G2	5437	127	B1-U0-G2		1708	52	B0-U0-G1
			IV/HS	4972	116	B1-U0-G2	4972	116	B1-U0-G2	5217	122	B1-U0-G2	5426	127	B1-U0-G2		1676	51	B0-U0-G1
			IV/HS	4968	116	B1-U0-G2	5184	121	B1-U0-G2	5400	126	B1-U0-G2	5616	131	B1-U0-G2		1784	54	B1-U0-G1
			IV/FT-HS	4855	113	B1-U0-G2	5064	118	B1-U0-G2	5257	123	B1-U0-G2	5468	128	B1-U0-G2		1697	52	B0-U0-G1
40	525	64.8	I	9360	144	B2-U0-G2	9746	150	B2-U0-G2	10152	157	B2-U0-G2	10559	163	B2-U0-G2	51.0	2715	53	B1-U0-G1
			II/FR	9010	139	B2-U0-G2	9818	151	B2-U0-G2	10221	158	B2-U0-G2	10630	164	B2-U0-G2		2733	54	B1-U0-G1
			II/ML	9341	144	B2-U0-G2	9747	150	B2-U0-G2	10153	157	B2-U0-G2	10559	163	B2-U0-G2		2715	53	B1-U0-G1
			III/M	9016	139	B2-U0-G2	9818	151	B2-U0-G2	10221	158	B2-U0-G2	10630	164	B2-U0-G2		2733	54	B1-U0-G1
			III/W	9016	139	B2-U0-G2	9818	151	B2-U0-G2	10221	158	B2-U0-G2	10630	164	B2-U0-G2		2733	54	B1-U0-G1
			IV	9613	146	B2-U0-G2	9613	146	B2-U0-G2	10023	152	B2-U0-G2	10433	158	B2-U0-G2		2702	53	B1-U0-G1
			V	9428	130	B2-U0-G2	9340	129	B2-U0-G2	9340	129	B2-U0-G2	9753	135	B2-U0-G2		2487	49	B1-U0-G1
			VS/AM	18938	152	B3-U0-G1	19287	159	B3-U0-G1	19716	165	B3-U0-G1	21148	172	B3-U0-G1		2866	56	B1-U0-G0
			VS/W	18938	152	B3-U0-G1	19287	159	B3-U0-G1	19716	165	B3-U0-G1	21148	172	B3-U0-G1		2866	56	B1-U0-G0
			VS/AW	18096	145	B4-U0-G3	18565	152	B4-U0-G3	19345	180	B4-U0-G3	20127	188	B4-U0-G3		2739	53	B1-U0-G0
			II/HS	9758	154	B2-U0-G2	9758	154	B2-U0-G2	9758	154	B2-U0-G2	10162	160	B2-U0-G2		2743	54	B1-U0-G1
			II/HS	6529	103	B1-U0-G2	6814	108	B1-U0-G2	7072	112	B1-U0-G2	7353	116	B1-U0-G2		1985	39	B1-U0-G1
			III/HS	6849	107	B1-U0-G1	7251	112	B1-U0-G1	7553	117	B1-U0-G1	7855	121	B1-U0-G1		2020	40	B0-U0-G0
			III/AHS	6876	107	B1-U0-G2	7272	113	B1-U0-G2	7572	118	B1-U0-G2	7872	122	B1-U0-G2		2029	40	B1-U0-G1
			IV/HS	6764	106	B1-U0-G2	7089	109	B1-U0-G2	7353	113	B1-U0-G2	7647	118	B1-U0-G2		1966	39	B0-U0-G1
			IV/HS	6764	106	B1-U0-G2	7089	109	B1-U0-G2	7353	113	B1-U0-G2	7647	118	B1-U0-G2		2075	41	B1-U0-G1
			IV/FT-HS	6946	108	B1-U0-G2	7340	113	B1-U0-G2	7639	118	B1-U0-G2	7938	122	B1-U0-G2		1960	38	B0-U0-G1
40	700	86.8	I	11863	137	B3-U0-G2	12430	143	B3-U0-G2	12998	149	B3-U0-G2	13566	156	B3-U0-G2	172.5	N/A	N/A	
			II/FR	11424	132	B3-U0-G2	12538	144	B3-U0-G2	13052	150	B3-U0-G2	13566	156	B3-U0-G2				
			II/ML	11834	136	B3-U0-G2	12338	142	B3-U0-G2	12852	148	B3-U0-G2	13366	154	B3-U0-G2				
			III/M	12530	139	B3-U0-G2	12553	145	B3-U0-G2	13079	151	B3-U0-G2	13599	157	B3-U0-G2				
			III/W	11192	129	B3-U0-G2	13306	134	B3-U0-G2	13142	140	B3-U0-G2	12627	145	B3-U0-G2				
			IV	11960	138	B3-U0-G2	12699	144	B3-U0-G2	12918	150	B3-U0-G2	13497	156	B3-U0-G2				
			V/FT	10876	125	B3-U0-G2	11349	131	B3-U0-G2	11822	136	B3-U0-G2	12295	142	B3-U0-G2				
			VS/AM	24219	144	B4-U0-G3	25022	150	B4-U0-G3	25825	154	B4-U0-G3	26628	159	B4-U0-G3				
			VS/AW	23247	141	B4-U0-G2	23749	147	B4-U0-G2	24251	150	B4-U0-G2	24753	155	B4-U0-G2				
			II/HS	12482	144	B3-U0-G2	12482	144	B3-U0-G2	12482	144	B3-U0-G2	12986	150	B3-U0-G2				
			II/HS	8349	97	B1-U0-G2	8714	101	B1-U0-G2	9046	105	B1-U0-G2	9406	109	B1-U0-G2				
			III/HS	8760	101	B1-U0-G1	9274	106	B1-U0-G1	9658	111	B1-U0-G1	10042	116	B1-U0-G1				
			III/AHS	8793	101	B1-U0-G2	9298	107	B1-U0-G2	9683	112	B1-U0-G2	10069	116	B1-U0-G2				
			IV/HS	8651	100	B1-U0-G2	9066	104	B1-U0-G2	9402	108	B1-U0-G2	9788	113	B1-U0-G2				
			IV/HS	8651	100	B1-U0-G2	9066	104	B1-U0-G2	9402	108	B1-U0-G2	9788	113	B1-U0-G2				
			IV/FT-HS	8880	102	B1-U0-G2	9384	108	B1-U0-G2	9768	112	B1-U0-G2	10152	117	B1-U0-G2				
40	875	110.8	I	14148	128	B3-U0-G2	14785	133	B3-U0-G2	15401	139	B3-U0-G2	16017	145	B3-U0-G2	221.5	N/A	N/A	
			II/FR	14264	129	B3-U0-G1	14994	134	B3-U0-G2	15504	140	B3-U0-G2	16125	146	B3-U0-G2				
			II/ML	14109	128	B3-U0-G2	14785	133	B4-U0-G4	15401	139	B4-U0-G4	16017	145	B4-U0-G4				
			III/M	14416	130	B3-U0-G2	15043	136	B3-U0-G2	15670	141	B3-U0-G2	16297	147	B3-U0-G2				
			III/W	13305	121	B3-U0-G2	13968	126	B3-U0-G2	14550	131	B3-U0-G2	15132	137	B3-U0-G2				
			IV	14309	129	B2-U0-G2	14931	135	B2-U0-G2	15553	140	B2-U0-G2	16175	146	B2-U0-G2				
			V/FT	13054	118	B2-U0-G2	13601	123	B2-U0-G2	14147	128	B2-U0-G2	14734	133	B2-U0-G2				
			VS/AM	14955	135	B3-U0-G1	15605	141	B3-U0-G1	16255	147	B3-U0-G1	16905	153	B3-U0-G1				
			VS/AW	14355	130	B4-U0-G3	14979	135	B4-U0-G3	15602	141	B4-U0-G3	16226	147	B4-U0-G3				
			II/HS	14514	129	B4-U0-G1	14957	133	B4-U0-G1	15399	140	B4-U0-G1	16153	146	B4-U0-G1				
			II/HS	10363	94	B1-U0-G2	10813	98	B1-U0-G2	11234	102	B1-U0-G2	11714	106	B1-U0-G2				
			III/HS	10541	95	B1-U0-G1	10999	99	B1-U0-G1	11458	103	B1-U0-G1	11956	108	B1-U0-G1				
			III/AHS	10484	95	B1-U0-G2	10940	99	B1-U0-G2	11396	103	B1-U0-G2	11852	107	B1-U0-G2				
			IV/HS	10262	93	B1-U0-G2	10708	97	B1-U0-G2	11154	101	B1-U0-G2	11600	105	B1-U0-G2				
			IV/HS	10828	98	B1-U0-G2	11299	102	B1-U0-G2	11770	106	B1-U0-G2	12241	110	B1-U0-G2				
			IV/FT-HS	10534	92	B1-U0-G2	10678	96	B1-U0-G2	11123	100	B1-U0-G2	11568	104	B1-U0-G2				
40	1050	134.8	I	16120	120	B3-U0-G3	16820	125	B3-U0-G3	17521	130	B3-U0-G3	18222	135	B3-U0-G3	269.5	N/A	N/A	
			II/FR	16236	120	B3-U0-G3	17054	126	B3-U0-G3	17829	131	B3-U0-G3	18345	136	B3-U0-G3				
			II/ML	16135	120	B4-U0-G4	16821	125	B4-U0-G4	17522	130	B4-U0-G4	18223	135	B4-U0-G4				
			III/M	16453	122	B4-U0-G4	17154	127	B4-U0-G4	17855	132	B4-U0-G4	18556	138	B4-U0-G4				
			III/W	15229	113	B4-U0-G4	15877	118	B4-U0-G4	16524	123	B4-U0-G4	17170	128	B4-U0-G4				
			IV	16369	121	B3-U0-G3	17064	126	B3-U0-G3	17759	132	B3-U0-G3	18454	137	B3-U0-G3				
			V/FT	14829	110	B3-U0-G3	15474	115	B3-U0-G3	16118	120	B3-U0-G3	16763	124	B3-U0-G3				
			VS/AM	17014	126	B4-U0-G2	17704	132	B4-U0-G2	18494	137	B4-U0-G2	19233	143	B4-U0-G2				
			VS/AW	16484	124	B4-U0-G3	17410	129	B4-U0-G3	18135	135	B4-U0-G3	18861	140	B4-U0-G3				
			II/HS	16285	121	B4-U0-G3	16993	126	B5-U0-G3	17701	131	B5-U0-G3	18409	137	B5-U0-G3				
			II/HS	11789	87	B1-U0-G2	12302	91	B1-U0-G2	12814	95	B1-U0-G2	13327	99	B1-U0-G2				
			III/HS	11995	89	B1-U0-G2	12514	93	B1-U0-G2	13035	97	B1-U0-G2	13557	101	B1-U0-G2				
			III/AHS	11926	88	B1-U0-G2	12447	92	B1-U0-G2	12966	96	B1-U0-G2	13486	100	B1-U0-G2				
			IV/HS	11674	87	B1-U0-G2	12182	90	B1-U0-G2	12690	94	B1-U0-G2	13197	98	B1-U0-G2				
			IV/HS	12316	91	B1-U0-G2	12805	95	B1-U0-G2	13291	99	B1-U0-G2	13777	103	B1-U0-G2				
			IV/FT-HS	11989	89	B1-U0-G2	12481	93	B1-U0-G2	12973	96	B1-U0-G2	13465	100	B1-U0-G2				

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U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

PHOTOMETRIC DATA GUIDE - LUMEN TABLES

RZR/RZR-MAF-PLED

LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TBA (590mm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
40	1225	154.9	I	15641	101	B3-U0-G3	16836	109	B3-U0-G3	18031	116	B3-U0-G3	19226	124	B3-U0-G3	317.9	N/A	N/A	
			II/FR	15642	101	B3-U0-G3	16837	109	B3-U0-G3	18032	116	B3-U0-G3	19227	124	B3-U0-G3				
			II/ML	15642	101	B4-U0-G4	16837	109	B4-U0-G4	18032	116	B4-U0-G4	19228	123	B4-U0-G4				
			III/M	15641	101	B4-U0-G4	16836	109	B4-U0-G4	18031	116	B4-U0-G4	19226	124	B4-U0-G4				
			III/W	15641	101	B4-U0-G4	16836	109	B4-U0-G4	18031	116	B4-U0-G4	19226	124	B4-U0-G4				
			IV	15641	101	B3-U0-G3	16836	109	B3-U0-G3	18031	116	B3-U0-G3	19226	124	B3-U0-G3				
			V	15633	101	B3-U0-G3	16827	109	B3-U0-G3	18022	116	B3-U0-G3	19216	124	B3-U0-G3				
			VS/AM	19078	123	B4-U0-G3	20529	132	B4-U0-G3	21980	142	B4-U0-G3	23431	151	B4-U0-G3				
			VS/W	19078	123	B4-U0-G3	20529	132	B4-U0-G3	21980	142	B4-U0-G3	23431	151	B4-U0-G3				
			VS/AW	18219	118	B4-U0-G3	19597	126	B4-U0-G3	20975	135	B4-U0-G3	22353	144	B4-U0-G3				
			II/HS	15641	101	B4-U0-G4	16836	109	B4-U0-G4	18031	116	B4-U0-G4	19226	124	B4-U0-G4				
			II/HS	10252	66	B2-U0-G2	11032	71	B2-U0-G2	11812	76	B2-U0-G2	12592	81	B2-U0-G2				
			III/HS	10794	70	B2-U0-G2	11614	75	B2-U0-G2	12434	80	B2-U0-G2	13254	85	B2-U0-G2				
			III/AHS	10794	70	B2-U0-G2	11614	75	B2-U0-G2	12434	80	B2-U0-G2	13254	85	B2-U0-G2				
			IV/HS	10794	70	B2-U0-G2	11614	75	B2-U0-G2	12434	80	B2-U0-G2	13254	85	B2-U0-G2				
			IV/HS	10794	70	B2-U0-G2	11614	75	B2-U0-G2	12434	80	B2-U0-G2	13254	85	B2-U0-G2				
			IV/FT-HS	10794	70	B2-U0-G2	11614	75	B2-U0-G2	12434	80	B2-U0-G2	13254	85	B2-U0-G2				
40	1400	183.1	I	19641	107	B3-U0-G3	21439	117	B3-U0-G3	23237	127	B3-U0-G3	25035	137	B3-U0-G3	366.2	N/A	N/A	
			II/FR	19218	78	B3-U0-G3	21439	117	B3-U0-G3	23237	127	B3-U0-G3	25035	137	B3-U0-G3				
			II/ML	14664	79	B1-U0-G2	15093	82	B1-U0-G3	15522	86	B1-U0-G3	14551	89	B1-U0-G3				
			III/M	14586	79	B1-U0-G2	15012	82	B1-U0-G3	15438	86	B1-U0-G3	14487	89	B1-U0-G3				
			III/W	14080	77	B1-U0-G2	14493	80	B1-U0-G3	15305	84	B1-U0-G3	14357	87	B1-U0-G3				
			IV	14858	81	B1-U0-G2	15304	83	B1-U0-G3	15750	86	B1-U0-G3	14773	89	B1-U0-G3				
			IV/FT-HS	14041	77	B1-U0-G2	14462	80	B1-U0-G3	15262	83	B1-U0-G3	15873	87	B1-U0-G3				

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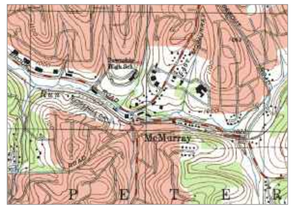
U.S. ARCHITECTURAL LIGHTING

RAZAR SERIES - LED

PHOTOMETRIC GUIDE - LUMEN TABLES

RZR/RZR-MAF-PLED

LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TBA (590mm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
80	350	85.8	I	12894	150	B3-U0-G2	13182	153	B3-U0-G2	13470	157	B3-U0-G2	13758	160	B3-U0-G2	343.7	4697	55	B1-U0-G1
			II/FR	12640	148	B3-U0-G1	13353	154	B3-U0-G1	13784	161	B3-U0-G1	14325	167	B3-U0-G1		4804	57	B1-U0-G1
			II/ML	12894	147	B3-U0-G1	13148	153	B3-U0-G1	13693	160	B3-U0-G1	14241	166	B3-U0-G1		4679	57	B1-U0-G1
			III/M	12817	149	B2-U0-G2	13375	156	B2-U0-G2	13932	162	B2-U0-G2	14489	169	B2-U0-G2		4953	58	B1-U0-G1
			III/W	12817	149	B2-U0-G2	13375	156	B2-U0-G2	13932	162	B2-U0-G2	14489	169	B2-U0-G2		4953	58	B1-U0-G1
			IV	13721	148	B2-U0-G2	13374	155	B2-U0-G2	13807	161	B2-U0-G2	14380	168	B2-U0-G2		4918	57	B1-U0-G1
			V/FT	11988	130	B2-U0-G2	12008	140	B2-U0-G2	12028	140	B2-U0-G2	12048	140	B2-U0-G2		4117	47	B1-U0-G1
			VS/AM	26962	139	B3-U0-G1	27477	142	B3-U0-G1	28135	146	B3-U0-G1	29134	151	B3-U0-G1	473.0	6723	70	B2-U0-G1
			VS/W	26962	139	B3-U0-G1	27477	142	B3-U0-G1	28135	146	B3-U0-G1	29134	151	B3-U0-G1		6723	70	B2-U0-G1
			VS/AW	25726	133	B4-U0-G3	26227	136	B4-U0-G3	26855	139	B4-U0-G3	27804	144	B4-U0-G3		6417	67	B2-U0-G2
			II/HS	13641	141	B2-U0-G2	13641	141	B2-U0-G2	13641	141	B2-U0-G2	14096	146	B2-U0-G2		4902	51	B1-U0-G1
			II/HS	9213	95	B1-U0-G2	9613	100	B1-U0-G2	10013	104	B1-U0-G2	10413	108	B1-U0-G2		3273	49	B0-U0-G1
			III/HS	9574	99	B1-U0-G1	10148	105	B1-U0-G1	10722	111	B1-U0-G1	11296	117	B1-U0-G1		3329	50	B0-U0-G1
			III/AHS	9521	99	B1-U0-G2	9726	101	B1-U0-G2	10131	105	B1-U0-G2	10536	109	B1-U0-G2		3311	49	B0-U0-G1
			IV/HS	9466	98	B1-U0-G2	9466	98	B1-U0-G2	10023	104	B1-U0-G2	10580	110	B1-U0-G2		3293	49	B0-U0-G1
			IV/HS	9627	112	B1-U0-G2	10046	117	B1-U0-G2	10466	122	B1-U0-G2	10882	127	B1-U0-G2		3420	51	B0-U0-G1
			IV/FT-HS	9090	106	B1-U0-G2	9489	110	B1-U0-G2	9889	115	B1-U0-G2	10289	120	B1-U0-G2		3295	49	B0-U0-G1
			I	18101	140	B3-U0-G2	18889	146	B3-U0-G2	19676	152	B3-U0-G2	20462	158	B3-U0-G2		5201	52	B1-U0-G1
			II/FR	18020	137	B3-U0-G2	19218	148	B3-U0-G2	19676	152	B3-U0-G2	20462	158	B3-U0-G2		5201	52	B1-U0-G1
			II/ML	18103	140	B4-U0-G4	18889	146	B4-U0-G4	19676	152	B4-U0-G4	20463	158	B4-U0-G4		5201	52	B1-U0-G1
			III/M	18101	140	B4-U0-G4	18889	146	B4-U0-G4	19676	152	B4-U0-G4	20462	158	B4-U0-G4		5201	52	B1-U0-G1
			III/W	17332	134	B4-U0-G4	17332	134	B4-U0-G4	17332	134	B4-U0-G4	17332	134	B4-U0-G4		4845	49	B1-U0-G1
			IV	18282	141	B3-U0-G3	19075	147	B3-U0-G3	19868	153	B3-U0-G3	20662	159	B3-U0-G3		5253	52	B1-U0-G1
			V	16633	128	B3-U0-G3	17355	134	B3-U0-G3	18077	139	B3-U0-G3	18799	145	B3-U0-G3		4740	47	B1-U0-G1
			VS/AM	36997	143	B4-U0-G3	38605	149	B4-U0-G3	40213	155	B4-U0-G3	41821	161	B4-U0-G3	707.0	9695	70	B2-U0-G1
			VS/W	36997	143	B4-U0-G3	38605	149	B4-U0-G3	40213	155	B4-U0-G3	41821	161	B4-U0-G3		9695	70	B2-U0-G1
			VS/AW	35276	136	B4-U0-G3	36827	142	B4-U0-G3	38378	148	B4-U0-G3	39929	154	B4-U0-G3		9252	67	B2-U0-G2
			II/HS	18103	140	B4-U0-G4	18889	146	B4-U0-G4	19676	152	B4-U0-G4	20463	158	B4-U0-G4		5201	52	B1-U0-G1
			II/HS	13108	101	B2-U0-G2	13688	106	B2-U0-G2	14268	110	B2-U0-G2	14848	115	B2-U0-G2		4663	49	B0-U0-G1
			III/HS	13629	105	B2-U0-G1	14447	112	B2-U0-G1	15265	118	B2-U0-G1	16083	124	B2-U0-G1		4737	50	B0-U0-G1
			III/AHS	13550	105	B2-U0-G2	13841	107	B2-U0-G2	14422	112	B2-U0-G2	14998	116	B2-U0-G2		4711	49	B0-U0-G1
			IV/HS	13470	104	B2-U0-G2	13470	104	B2-U0-G2	14268	110	B2-U0-G2	15066	116	B2-U0-G2		4686	49	B0-U0-G1
			IV/HS	13701	119	B2-U0-G2	14301	124	B2-U0-G2	14901	130	B2-U0-G2	15501	135	B2-U0-G2		4871	51	B0-U0-G1
			IV/FT-HS	12944	113	B2-U0-G2	13506	117	B2-U0-G2	14068	122	B2-U0-G2	14630	127	B2-U0-G2		4690	49	B0-U0-G1
80	525	129.7	I	19658	152	B3-U0-G2	20257	156	B3-U0-G2	20856	161	B3-U0-G2	21455	166	B3-U0-G2	514.5	7047	54	B1-U0-G1
			II/FR	19658	152	B3-U0-G2	20257	156	B3-U0-G2	20856	161	B3-U0-G2	21455	166	B3-U0-G2		7047	54	B1-U0-G1
			II/ML	19658	152	B4-U0-G4	20257	156	B4-U0-G4	20856	161	B4-U0-G4	21455	166	B4-U0-G4		7047	54	B1-U0-G1
			III/M	19658	152	B4-U0-G4	20257	156	B4-U0-G4	20856	161	B4-U0-G4	21455	166	B4-U0-G4		7047	54	B1-U0-G1
			III/W	19658	152	B4-U0-G4	20257	156	B4-U0-G4	20856	161	B4-U0-G4	21455	166	B4-U0-G4		7047	54	B1-U0-G1
			IV	19658	152	B3-U0-G3	20257	156	B3-U0-G3	20856	161	B3-U0-G3	21455	166	B3-U0-G3		7047	54	B1-U0-G1
			V	19650	152	B3-U0-G3	20247	156	B3-U0-G3	20844	161	B3-U0-G3	21441	166	B3-U0-G3		7043	54	B1-U0-G1
			VS/AM	37156	144	B4-U0-G3	38764	150	B4-U0-G3	40372	156	B4-U0-G3	41980	162	B4-U0-G3	707.0	9734	70	B2-U0-G1
			VS/W	37156	144	B4-U0-



LOCATION MAP 1" = 2000'
BRIDGEVILLE QUADRANGLE

PROPERTY INFORMATION
LOT 101
DUCKWORTH-BEAHN SUBDIVISION
PBV 35 PG 56
TAX I.D. 540-007-05-03-0010-00
63,580 SF OR 1.505 ACRES

ADDRESS
615 E. MCMURRAY ROAD
MCMURRAY, PA 15317

OWNER
JASBIR S. KANG & PRABHJOT KAUR KANG
1648 BLACKBURN HEIGHTS DRIVE
SEWICKLYE, PA 15143
412-833-6055

APPLICANT
COUGHLINS LAW SOUTH HILLS
10 VIRGINIA AVENUE
PITTSBURGH, PA 15211
412-586-3673

CIVIL ENGINEER
J.R. GALES & ASSOCIATES, INC.
2704 BROWNSVILLE ROAD
PITTSBURGH, PA 15227
412-885-8885
FAX: 412-885-1320
e-mail: jrgales.engineers@comcast.net

LEGEND

- EXISTING CONTOURS — 1180
- EXISTING SPOT ELEVATION ×998.71
- UTILITY POLE
- EXISTING SANITARY SEWER — SAN
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER — ST
- EXISTING STORM INLET
- EXISTING WATERLINE — W
- EXISTING GASLINE — GAS
- GAS VALVE
- EXISTING TELEPHONE — TEL
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING LIGHT STANDARD
- EXISTING EASEMENT
- EXISTING SETBACK
- PROPERTY LINES
- PROPOSED CONTOURS — 1080
- PROPOSED STORMWATER EASEMENT
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- PROPOSED ENDWALL
- PROPOSED MANHOLE
- PROPOSED SPOT ELEVATION + 1000.65
- PROPOSED STOP SIGN
- PROPOSED SANITARY SEWER

E&S LEGEND

- COMPOST FILTER SOCK
- LIMIT OF DISTURBANCE — LOD
- SOIL IDENTIFICATION SYMBOL — Us
- SOIL BOUNDARY LINE
- ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- INLET PROTECTION
- TOPSOIL STOCKPILE — TS
- COMPOST SOCK WASHOUT
- EROSION CONTROL BLANKET
- PUMPED WATER FILTER BAG
- RIPRAP APRON

811 Know what's below. Call before you dig.

SERIAL NO.
20162660855

NOTE: The utility locations shown on this plan are approx. locations only as per utility company information and information supplied by the PA One Call System.

*Before you dig anywhere in Pennsylvania STOP! Call PA. One-Call at 811 or 1-800-242-1776 Toll Free for actual field utility locations.

Pennsylvania Act 38 (1991) requires no less than 3 working days notice nor more than 10 working days notice from excavators who are about to dig, drill, blast, auger, bore, grade, trench, or demolish when in the construction phase. A designer is required to give no less than 10 working days nor more than 90 working days notice when engaged in the design phase. Both of these conditions involve the entire Commonwealth.

SOILS LEGEND

DORMONT SILT LOAM, 8 TO 15 PERCENT SLOPES	DoC
GLENFORD SILT LOAM, 3 TO 8 PERCENT SLOPES	GdB
URBAN LAND	Us

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JOHN ROBERT GALES — ENGINEER — PE-11336-E

John Robert Gales
J.R. GALES, P.E

9-24-25
DATE

NOTES:
1.) THE AREA IS LOCATED WITHIN A FEMA FLOODPLAIN X – AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
2.) THE SITE DRAINS TO STORM SEWERS WHICH DRAIN TO AN UNNAMED TRIBUTARY TO BRUSH RUN WHICH HAS A CHAPTER 93 DESIGNATION OF WARM WATER FISHES (WWF).
3.) FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON SITE, A WASHOUT FACILITY MUST BE PROVIDED FOR THE CLEANING OF CHUTES, MIXERS AND HOPPERS OF THE DELIVERY VEHICLES.
4.) ALL ROOF DRAINS MUST TIE INTO THE STORM SEWER TO THE RAIN GARDEN.
5.) THE LOT SIZE IS 1.505 ACRES.
6.) THE PROJECT SCHEDULE IS UPON APPROVAL TO SUMMER 2030.
7.) ALL CONSTRUCTION AND INSPECTION IS TO BE IN ACCORDANCE WITH PETERS TOWNSHIP CONSTRUCTION DETAILS AND SPECIFICATIONS AND INSPECTION PROCEDURES.
8.) NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER ANY EXISTING STORMWATER BMP, FACILITIES, AREAS, OR STRUCTURES UNLESS IT IS PART OF AN APPROVED MAINTENANCE PROGRAM, WITHOUT THE WRITTEN APPROVAL OF PETERS TOWNSHIP.
9.) NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING, OR VEGETATION INTO A STORMWATER BMP, FACILITIES, AREAS, STRUCTURES, OR WITHIN A DRAINAGE EASEMENT WHICH WOULD LIMIT OR ALTER THE FUNCTIONING OF THE BMP WITHOUT THE WRITTEN APPROVAL OF PETERS TOWNSHIP.
10.) THE OPERATION AND MAINTENANCE AGREEMENT (O&M) IS PART OF THE SITE PLAN.
11.) RECORD DRAWINGS WILL BE PROVIDED FOR ALL STORMWATER FACILITIES PRIOR TO OCCUPANCY, OR THE RELEASE OF SURETY BOND.
12.) THE NPDES BOUNDARY IS 1.79 ACRES.

GRAPHIC SCALE (IN FEET): 20 10 0 20

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

EROSION AND SEDIMENT POLLUTION CONTROL PLAN

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

APPENDIX C – STANDARD E&S PLAN NOTES

The following notes shall be placed on the E&S Plan drawings.

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.

2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S Plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site preconstruction meeting.

3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.

4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the approving authority prior to implementation.

5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.

6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.

7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.

8. Topsoil required for the establishment of vegetation shall be stockpiled a the location(s) shown on the plan map(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2H: 1V or flatter.

9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.

10. All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code Chapter 260, §§260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

11. All off-site waste and borrow areas must have an E&S Plan approved by the Local Conservation District or the Department fully implemented prior to being activated.

12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.

13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.

14. Vehicles and equipment must enter and exit from the rock construction entrance.

15. Until the site is stabilized, all erosion and sediment BMPs must be maintained properly. Maintenance must include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.

16. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

17. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.

18. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.

19. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches – 6 to 12 inches on compacted soils prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.

20. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.

21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.

22. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.

23. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.

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

25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.

26. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be stabilized according to the standards of this plan.

27. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.

28. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.

29. E&S BMPs must remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.

30. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the approving authority for an inspection prior to removal/conversion of the E&S BMPs.

31. After final site stabilization has been achieved, temporary E&S BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs must be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions should be done only during the germinating season.

32. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the approving authority to schedule a final inspection.

33. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.

102.4(b)(5)(x) – A maintenance program which provides for inspection of BMP's on a weekly basis and after each measurable rainfall event, including the repair of BMPs to ensure an efficient operation.

MAINTENANCE SCHEDULE

1.Sediment removed from the on-site BMPs shall be placed on the topsoil stockpile.

2.Inspections and maintenance shall be logged onto written DEP form 3800-FM-BCW0271D dated 4/25 and kept on site at all times.

3.All erosion and sedimentation control devices will be inspected weekly and after every runoff event. The contractor will be responsible for conducting the inspections and maintenance of the BMP's. Repairs and maintenance will be performed by the end of the work day to maintain the integrity of the measures and facilities. Specific maintenance programs are described below:

Rock Construction Entrance. The structure's thickness will be constantly maintained to the specified dimensions by adding rock. A stockpile of rock materials will be maintained on the site for this purpose. At the end of each construction day, sediment deposited on public roadways will be removed and returned to the construction site. Public roadways will not be washed with water.

Erosion Control Blankets. Blanketed areas should be inspected weekly and after each runoff event until perennial vegetation is established to a minimum 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days. All areas to be stabilized by ECB shall be inspected for rills or gullies, bare soil patches, or accumulation of sediment at the toe of slopes. Eroded areas shall be regraded, and ECB shall be re-installed, re-seeded and mulched as specified on the plans.

Seeding. Seed all disturbed within two (2) days after reaching final grade, using permanent seeding requirements. If these are not stabilized within the four (4) days, reseed promptly. If any area remains idle for a period of four (4) days, it must be temporarily stabilized.

Compost Filter Sock. Routine inspection shall be conducted within 24 hours of a runoff event. Compost filter sock shall be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If the filter sock has been damaged, it shall be repaired or replaced if beyond repair. Sediment must be removed when accumulations reach 1/2 of the effective height of the compost filter sock. Compost filter socks shall be maintained until the disturbed area above the device has been permanently stabilized and construction activity has ceased.

Compost Sock Washout. All concrete washout facilities should be inspected daily. Damaged or leaking washouts should be deactivated and repaired or replaced immediately. Accumulated materials should be removed when they reach 75% capacity. Plastic liners should be removed with each cleaning of the washout facility.

Inlet Filter Bag. Inlet filter bags should be inspected on a weekly basis and after each runoff event. Filter bags should be cleaned and/or replaced when the bag is half full or when flow capacity has been reduced so as to cause flooding or bypassing of the inlet. Accumulated sediment should be disposed of in the approved manner. Bags that will be reused should be rinsed at a location where the rinse water will enter a sediment trap or basin. Damaged filter bags should be replaced. Needed repairs should be initiated immediately. Reseed as required.

Pumped Water Filter Bag. A suitable means of access to the bags with machinery required for disposal purposes must be provided. Filter bags shall be replaced when they become half full within twenty-four hours. Spare bags shall be kept available for replacement of those that have failed or are filled. Pump intakes shall be floating and screened. Filter bags shall be inspected daily. If the problem is detected, pumping shall cease immediately and not resume until the problem is corrected.

Vegetation. All areas to be stabilized by vegetation shall be inspected for rills and gullies, bare soil patches or accumulation of sediment at the toe of slopes. Eroded areas shall be regraded, and substandard vegetated areas shall be re-seeded and mulched as specified in the plans.

Outlet Protection – Rip Rap Apron. The dimensions of the apron, as designed, shall be maintained at all times. Additional rock shall be placed to correct any deficiencies in length, width, or thickness. A stockpile of properly graded rock shall be maintained on site for this purpose.

Rain Garden Maintenance. The Owner of the proposed stormwater control facilities shall at all times operate and maintain the facilities in a safe and operable condition so as not to impair life, health, safety, or property and to function as designed.

The Owner of the facility shall be responsible for the evaluation of the safety and operational status of the facility and all appurtenant structures and the modification thereof in accordance with the requirement to ensure protection of life and property as specified above.

The Owner of the facility shall inspect the facilities and all appurtenant works according to the following schedule:

1.The facility and its appurtenant control and conveyance works shall be inspected at least once every three (3) months, and directly after every heavy storm event.
2.The Owner shall retain records of such inspections, including records of actions taken to correct conditions found during such inspections.
The periodic inspection of the proposed facility shall be completed in such a manner so as to detect any of the following conditions which may occur during the normal operation of the facility.
3.Catch basins and inlets (upgradient of rain garden) should be inspected and cleaned at least two times per year and after runoff events.
4.The vegetation along the surface of the rain garden should be maintained in good condition, and any bare spots revegetated as soon as possible. While vegetation is being established, pruning and weeding may be required.
5.Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
6.Vehicles should not be parked or driven on a rain garden, and care should be taken to avoid excessive compaction by mowers.
7.Inspect the rain garden after runoff events and make sure that runoff drains down within 72 hours. Mosquitos should not be a problem if the water drains in 72 hours. Mosquitoes require considerably longer standing periods with relatively stable water levels.
8.Also inspect for accumulation of sediment, damage to the outlet structures, erosion control measures, signs of water contamination, odor, and slope stability in the berms. Repairs should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
9.During periods of extended drought, rain garden areas may require watering.
10. Trees and shrubs should be inspected twice per year to evaluate health.
11. Mow only as appropriate for vegetative cover species.
12. Remove accumulated sediment from the rain garden as required. Restore original cross section and infiltration rate. Properly dispose of sediment.

Should any of the above-mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action taken shall be retained by the Owner of the facility.

Rain Garden Water Quality BMP Maintenance Requirements
1.Constructed soils will need to be replaced when they become exhausted or over-concentrated with contaminants. Plant health will be a major indicator for when it is time to replace soil. Mulch should be re-spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
2.Maintenance of the gravel envelope can be best avoided through careful construction.
3.Should any of the above-mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action shall be retained by the Owner of the facility.

Mulch should be re-spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.

If infiltration fails, contact the Engineer or a Geotechnical Engineer for testing and recommendations.

Roof Drain/Cleanout Maintenance. Roof drains/cleanouts will require periodic removal of sediment/leaves on top of and through the cleanout. For the first year of operation, inspection of the facility, especially the outlet pipe should be made after heavy storms and at least quarterly. These inspections should pay close attention to the collection of debris around, or obstructions to the outlet pipe. Depending on the findings of inspection during the first year, future inspections and cleanups can be tailored accordingly.

Revegetation Maintenance. Forest restoration areas planted with a proper cover crop can be expected to require annual mowing in order to control invasives. Application of a carefully selected herbicide (Roundup or similar glyphosate herbicide) around the protective tree shelters/tubes may be necessary, reinforced by selective years of growth and may be necessary for up to 5 years until tree growth and tree canopy begins to form, naturally inhibiting weed growth (once shading is adequate, growth if invasives and other weeds will be naturally prevented, and the woodland becomes self-maintaining). A review of the new woodland should be undertaken intermittently to determine if replacement trees should be provided (some modest rate of planting failure us usual).

Street Sweeping Maintenance Use proper equipment; dry vacuum filters demonstrate optimal results. Develop a proper program. Vary sweeping by street pollutant load. Restrict parking when sweeping to improve removal. Provide a seasonal variation for winter. Optimal times for street sweeping are early spring to early fall. All non-reusable debris that has been removed from the area shall be disposed of at a landfill.

Method of Disposal. When cleaning out erosion and sediment pollution control measures, place sediment on topsoil stockpile. Reseed topsoil stockpile immediately with temporary seeding requirements.

On-Lot Control. The individual on-lot controls consist of a rock construction entrance, erosion control blankets, seeding, compost filter sock, compost sock washout, inlet filter bag, pumped water filter bag, vegetation, rain garden, outlet protection – rip rap apron, roof drain/cleanout, revegetation, and street sweeping. The maintenance of all the above shall be followed as described above.

RAIN GARDEN CONSTRUCTION SEQUENCE

1. Install temporary sediment control BMPs as shown on the Erosion and Sedimentation Control Plan. This is a critical stage of construction and a licensed professional shall inspect the installation of the temporary sediment control.
2. Complete site grading. If applicable, construct curb cuts or other inflow entrances but provide protection so that sediment drainage is prohibited from entering the rain garden construction area. This is a critical stage of construction and a licensed professional shall inspect the grading.
3. Stabilize area draining to the rain garden facility. This is a critical stage of construction and a licensed professional shall inspect the stabilization of the area draining to the rain garden facility.
4. Construct the rain garden facility. This is a critical stage of construction and a licensed professional shall inspect the construction of the rain garden facility
5. Backfill the rain garden facility with gravel and amended soil mix as shown on plans. (care should be taken not to compact the soil mix, only hand tamping is acceptable). This is a critical stage of construction and a licensed professional shall inspect the backfilling of the rain garden facility.
6. Presook the planting soil prior to planting vegetation to aid in settlement. This is a critical stage of construction and a licensed professional shall inspect the presooking of the planting soil.
7. Complete final grading to achieve proposed design elevations, mulch or topsoil as specified. This is a critical stage of construction and a licensed professional shall inspect he installation of the final grading and mulch or topsoil.
8. Plant vegetation according to landscaping plan. This is a critical stage of construction and a licensed professional shall inspect vegetation planting.
9. Mulch and install erosion protection at flow entrances where specified. This is a critical stage of construction and a licensed professional shall inspect the installation of the mulch and erosion protection.

INSTRUCTIONS FOR STREETSWEEPING

Use proper equipment; dry vacuum fliers demonstrate optimal results. Develop a proper program. Vary sweeping by street pollutant load. Restrict parking when sweeping to improve removal. Provide a seasonal variation for winter. Optimal times for street sweeping are early spring to early fall. All non-reusable debris that has been removed from the area, shall be disposed of at a landfill.

102.4(b)(5)(xi) – Sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior, to, during and after earth disturbance activities:

A. Field mark the limits of disturbance for the rock construction entrance.

B. Clear and grub the area for necessary to install the rock construction entrance at the location shown on the plans.

C. Install the rock construction entrance at the location shown on the plans. Follow the details on the plans for the proper dimensions and rock size.

D. Field mark the remaining limits of disturbance. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized to avoid compaction.

E. Clear the areas needed for access and construction of the compost filter socks and temporary fence.

F. Install the compost filter socks and temporary fence

G. Clear and grub the areas for the temporary topsoil stockpile, the compost sock washout, and the pumped water filter bag. Remove topsoil and place on temporary stockpiles.

H. Install the concrete washout and the pumped water filter bag at the locations shown on the plans.

I. After the BMPs are installed and functioning properly, clear and grub the remainder of the site within the limits of disturbance.

J. Proceed with earthmoving (cut/fill) procedures. Install erosion control blanket on all slopes greater than 3:1 and on all fill slopes in regular ten (10) foot vertical increments as well as all disturbed areas within 50 feet of a surface water (100 feet for HQ and EV waters). Seed and mulch, in addition to seeding, according to seeding requirements. If these areas are not stabilized within four (4) days, reseed promptly.

K. The rain garden can be constructed beginning at the most downstream point (connection to the downstream storm sewer) and working upwards. All equipment including equipment to install facility should stay out of the bottom of the rain garden. If that is not possible, the contractor is to use small, tracked equipment. This is a critical stage of construction, and a licensed professional is required to inspect the rain garden installation.

1.Complete site grading. Provide protection to prevent drainage from entering the construction area.

2.Stabilize grading within the limit of disturbance except within the rain garden area.

3.Excavate rain garden to the proposed invert depth and scarify the existing soil surfaces. Do not compact in-situ soils.

4.Place the stone and geo-textile fabric. Backfill rain garden with amended soil (bio-soil mixture) as shown on plans and specifications. The contractor shall not allow heavy equipment to be more than 50% loose soil mixture in order to prevent compaction beginning with the scour protection, then the outfall pipe, watertight seals in joint/connections of structures, and anti-seep collars. Place clean-out ports. Overfilling is recommended to account for settlement. Light hand tamping is acceptable if necessary.

5.Presoak the planting soil prior to planting vegetation to aid in settlement.

6.Complete final grading to achieve proposed design elevations, leaving space for upper layer of compost, mulch or topsoil as specified on plans.

7.Plant vegetation according to planting plans.

8.Mulch and install erosion protection at surface flow entrances where necessary.

9.Upon completion of rain garden, immediate permanent stabilization surrounding all side slopes and outside perimeter of facility using erosion control blanket for all slopes 3:1 or steeper.

L. Begin installation of storm sewers. All installation must start at the downstream structure.

1.Storm Sewer Pipe Requirements

a. Any water pumped from work areas must be sent to a filter bag set on stabilized ground as per the construction detail.

b. Limit advance clearing and grubbing operations to a distance equal to two times the length of pipe installation that can be completed in one day.

c. Work areas and equipment for trenching, placement of pipe, plug construction and backfilling will be self-contained and separate from clearing and grubbing and site restoration and stabilization operations.

d. Limit daily trench excavation to the length of pipe placement, plug installation and back filling that can be completed the same day.

e. On the day following pipe placement and trench backfilling, the disturbed area will be graded to final contours and appropriate temporary erosion and sediment pollution control measures/facilities will be installed. Seeding mulching of all disturbed areas will be done at the end of each week.

f. Install inlet protection with the inlets and outlet protection with the endwalls. Seal inlets until the site is stabilized so that no sediment enters the storm sewers.

2.Exceptions – In certain cases trenches cannot be backfilled until the pipe is hydrostatically tested, or anchors and other permanent features are installed. In these cases, all of the requirements listed under Item 2 will remain in effect with the following exceptions.

a. Daily backfilling of the trench may be delayed for six days. All pressure testing and the complete backfilling of the open trench must be completed by the seventh working day.

b. If daily backfilling is delayed, the disturbed area will be graded to final contours, appropriate temporary erosion and sediment control measures/facilities will be installed, and the areas seeded and mulched within the next two calendar days.

M. Spoil from the trenching operation shall be placed on the upslope side of the trench. Daily, after the pipe is installed, the trench will be backfilled, compacted, and leveled.

N. Construct the site improvements as shown on the plan, including the construction of the parking area, building, sidewalk, and utilities.

O. Stabilize all disturbed areas by seeding or mulching, or by installing the subbase material in the roads.

P. Graded areas should be scarified or otherwise loosened to a depth of 3 to 5 inches to permit bonding of the topsoil to the surface areas and to provide a roughened surface to prevent topsoil from sliding down slope.

Topsoil should be uniformly distributed across the disturbed area to a depth of 4 to 8 inches minimum – 2 inches on fill outslopes. Spreading should be done in such a manner that sodding or seeding can proceed with a minimum of additional preparation or tillage. Irregularities in the surface resulting from topsoil placement should be corrected in order to prevent formation of depressions unless such depressions are part of the PCSM plan.

Topsoil should not be placed while the topsoil or subsoil is in frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Compacted soils should be scarified 6 to 12 inches along contour wherever possible prior to seeding. Topsoil application rates should follow table 11.1.

Q. Upon stabilization (uniform 70% perennial vegetative cover and roadways and parking areas have the subbase in place) temporary erosion and sediment pollution control measures may be removed. Any disturbance caused by the removal of the temporary controls must be seeded and mulched immediately. If these areas are not stabilized within four (4) days, reseed promptly. Use pumped water filter bags to remove any sediment laden water. This is a critical stage of construction, and a licensed professional is required to inspect the removal of the temporary controls, and the installation of the landscaping.

R. Submit a notice of termination (NOT).

The compost filter sock should be sized to the specifications as stated in the E&S Narrative and on the E&S Plan drawings. The site balances and no offsite areas will be needed for borrow or excess fill. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized. If the contractor encounters pyrite or acid bearing materials, they shall stop work immediately and contact an engineer. The site discharges to an impaired waterway and all BMPs must be installed in accordance with the ABACT details and notes.

Critical Stages
Critical stages include the installation of the rain garden, the removal of the temporary controls, the installation of the landscaping, and street sweeping.

APPENDIX A – SOIL USE LIMITATIONS

SOIL NAME	CUTBANKS CAVE	CONCRETE/STEEL CORROSION	DROUGHTY	EASILY ERODIBLE	FLOODING	SATURATED ZONE / DEPTH TO WATER TABLE	HYDRIC INCLUSIONS	LOW STRENGTH / LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST - HEAVE	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
DORMONT	X	C/S	X	X	X	X	X	X	X	X	X	X	X	X	X	
GLENFORD	X	C/S		X		X	X	X	X		X	X				
URBAN	X	C/S		X	X	X	X	X		X	X	X	X	X		

There are no geologic formations or soil conditions having potential to cause pollution to a surface water at the site. A geotechnical engineer is required to be onsite during any grading activities. If there are geological formations or soil conditions having potential to cause pollution to a surface water at the site site, stop work immediately and call a geotechnical engineer in order to get a remediation for the condition. Cuts and fills must be conducted under the direction of a geotechnical engineer.

Soil Resolutions

1. All construction work at the site will be performed within the soil types delineated on the plans.
2. The contractor shall undertake proper testing and/or composition procedures to prevent against unwanted settlement.
3. SOILS SUBJECT TO CUT BANKS AND CAVE: The contractor to utilize trench boxes for all utility piping installations.
4. SOILS CAUSING CORROSION TO CONCRETE AND STEEL: The contractor to use epoxy coated steel and rebar for all subsurface installations. For below grade concrete installations, the contractor shall, at a minimum, apply bituminous coating to all subsurface concrete or apply adhesive barrier (i.e., rubber membrane, etc.) as warranted by actual soil conditions.
5. HIGHLY ERODIBLE SOILS: These soil types shall be stabilized with seed or stone immediately after earthmoving activities cease. Turf reinforcement matting or erosion control blankets may need to be applied immediately upon direction of design engineer, PADEP, or county conservation district.
6. SOILS SUBJECT TO SEASONAL HIGH WATER TABLE: It is recommended to conduct site earthmoving operations in summer or fall; spring construction should be avoided when possible. Contractor may also install perforated underdrain to protect below-grade installations as may be recommended by design engineer, PADEP, or county conservation district.
7. HYDRIC SOILS: Existing wetlands have been delineated for the site. No work shall be performed within 100 feet of any wetland area.
8. LOW STRENGTH / LANDSLIDE PRONE: A diversion channel will be implemented to channel water away from the excavation area. Contractor shall note any unusual cracks or bulges at the soil surface. Contractor shall never remove soil from the toe or bottom of a slope or add soil to the top of a slope. Remove minimal amount of surface vegetation as necessary.
9. SLOW PERCOLATION: Should infiltration facilities be used at the site, infiltration tests shall be performed to determine proper percolating based on the results of the testing.
10. SOILS SUBJECT TO PIPING: The contractor shall install anti-seep collars or trench plugs as recommended by design engineer, PADEP, or county conservation district and seal all pipe joints watertight.
11. SOILS SUBJECT TO POOR TOPSOIL: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Soil test kits can be obtained from the county cooperative extension service. Test kits should be submitted to the Penn State University testing laboratory for determining soil deficiencies. The contractor shall condition the soil as recommended by testing laboratory prior to final seeding.
12. SOILS SUBJECT TO FROST ACTION: The contractor shall provide a coarse textured subgrade or base material and proper surface or subsurface drainage to reduce the frost-action potential and enhance soil strength in frost prone areas.
13. SHRINK – SWELL CONDITIONS: Should shrink swell conditions be encountered, the contractor shall contact the geotechnical engineer to determine if additional soil tests data is required for the footer designs or roadway bases.
14. POTENTIAL SINKHOLE: Should a potential sinkhole arise, the contractor shall contact the geotechnical engineer to direct the removal of all the sinkhole loose sinkhole material and the solution void(s) if possible. Excavate the hole beyond the sinkhole sides and install filter materials.
15. DROUGHTY CONDITIONS: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Special seed mixtures may be needed to achieve stabilization. The contractor shall use the seed mixture recommended by testing laboratory that is tolerant to these special conditions.
16. WETNESS: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Special seed mixtures may be needed to achieve stabilization. The contractor shall use the seed mixture recommended by testing laboratory that is tolerant to these special conditions. Soil texture can be modified by the addition of coarse sand, or clay, depending on the desired change.

THERMAL IMPACTS

102.4(b)(5)(xiii) – Potential thermal impacts to surface waters.
To avoid thermal impacts during construction temporary seeding is used. To avoid thermal impacts after construction infiltration is used that may carry runoff to a dispersal area allowing through the substrate to cool before discharging into a waterway.

As you can see the project will preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream and maximize the protection of drainage features and existing vegetation by keeping post-developed peak discharge rates and velocities at preconstruction discharge rates with the structural and nonstructural use of a rain garden and revegetation. Stabilization of the site will consist of either grass for the lawn areas to minimize impervious areas or impervious surfaces for the building, parking lot, sidewalks, and driveways. This project will minimize the land clearing and grading by field marking the limits of disturbance prior to the extent of all proposed grading and construction activities. No unnecessary grading, tree harvesting, or earth disturbance will be allowed. Street sweeping shall be performed on early spring to early fall.

Soil compaction will be minimized by only traveling over disturbed areas, not compacting non-paved areas, and minimizing compaction in the rain garden area. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized.

A prompt and effective seeding program as well as an aggressive paving schedule will be established to aid in erosion and sediment control site stabilization and minimize extent & duration of earth disturbance and maximize protection of existing drainage features and vegetation.

The channels carrying runoff to the rain garden, the rain garden, and revegetation will be used as a measure or controls that prevent or minimize generation of increased stormwater runoff.

The Erosion & Sediment Plan minimizes the extent and duration of earth disturbance by field marking the limits of disturbance prior to any construction or earth moving and has been placed only to the extent of all proposed grading and construction activities. No unnecessary grading or tree harvesting is to take place.

A rock construction entrance, compost filter socks, erosion control matting, inlet protection, compost sock washout, outlet protection, and pumped water filter bag, are BMPs used before and during construction. Upon stabilization with permanent seeding the BMP's will be removed. After final site stabilization has been achieved (uniform 70% perennial vegetative cover established), temporary erosion and sedimentation controls (BMP's) must be removed. Areas disturbed during the removal of the controls must be stabilized by the end of the workday. The total lot area on which the project is being constructed is 1.505 acres. The limits of disturbance for the project are 1.47 acres. The NPDES boundary is 1.79 acres

102.4(b)(5)(xiv) – Measures for the recycling of disposal of materials from the project site
The construction wastes for the project (and the means of disposal) are anticipated to be;

- Asphalt removed for the area of excavation is to be disposed of by a licensed contractor in a DEP authorized site or recycled.
- Soils removed from the area of excavation for the building is to be reused as backfill or disposed of in a WCC and DEP authorized BMP protected site.
- Rock removed from the area of excavation for the building is to be reused as backfill or disposed of in a WCC and DEP authorized BMP site.
- Miscellaneous waste materials of construction are to be disposed of in a landfill(s), anticipated materials include (but are not limited to):

1. Materials form demolishing existing wood frame and masonry structures. All material will be sorted to allow proper disposal.
2. Pallets, buckets and other material used to protect materials to the site.
3. Shrink wrap, packaging and other materials used to protect materials on site.
4. Waste masonry materials.
5. Waste roofing materials.
6. Waste insulation materials.
7. Waste wood, drywall, ceiling and other interior finish materials.
8. Scrap materials from electrical, mechanical and plumbing installation.

NOTES:

TREES AND SHRUBS SHOULD BE PLANTED FROM MID-MARCH THROUGH THE END OF JUNE, OR MID-SEPTEMBER THROUGH MID-NOVEMBER.

A MAXIMUM OF 2 TO 3 INCHES OF SHREDDED MULCH OR LEAF COMPOST (OR OTHER COMPARABLE PRODUCT) SHOULD BE UNIFORMLY APPLIED IMMEDIATELY AFTER SHRUBS AND TREES ARE PLANTED TO PREVENT EROSION, ENHANCE METAL REMOVALS, AND SIMULATE LEAF LITTER IN A NATURAL FOREST SYSTEM. WOOD CHIPS SHOULD BE AVOIDED AS THEY TEND TO FLOAT DURING INUNDATION PERIODS. MULCH/COMPOST LAYER SHOULD NOT EXCEED 3" IN DEPTH SO AS NOT TO RESTRICT OXYGEN FLOW TO ROOTS.

Clean Fill and Environmental Due Diligence

If this development site requires fill to be imported from an off-site location, not included in the NPDES Permit and/or shown on these plans, the responsibility for assuring that Clean Fill is brought to the site and Environmental Due Diligence of that material will reside with the CONTRACTOR responsible for earth moving operations.

Topsoil will be stripped from the site and stockpiled at locations indicated on the plan. Topsoil can be re-used to aid in the stabilization process onsite of grassed areas in and around the development. This will be especially important during the conversion of graded areas to lawn areas after construction has ceased and the land has reached final grade.

Clean Fill – Clean Fill is defined as uncontaminated, non-water soluble, non-decomposable, inert, solid material. This includes soil rock, stone, dredged material, used asphalt, and brick block, or concrete from construction or demolition activities that is separate from other waste and is recognizable as such. This DOES NOT include materials placed in or on the Waters of the Commonwealth unless otherwise authorized. (Note: Used asphalt does not include milled asphalt that has been processed for re-use).

Environmental Due Diligence – This is defined as the performance of investigative techniques for the imported fill material. This includes, but is not limited to visual property inspections, electronic database searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, and 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 subject to a spill or release of a regulated substance.

If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the PA DEP 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 PADEP Municipal or Residual Waste Regulations based on Title 25 of the Pennsylvania Code, Chapter 271 or 287, whichever is applicable

SPECIFICATIONS: The Department recommends the use of the Penn State publication "Erosion Control; & Conservation Plantings on Noncropland" as the standard to use for the selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. Specifications for these items may also be obtained from PennDOT's Publication #408, Section 804 or by contacting the applicable county conservation district. Upon selection of a reference, That reference must be used to provide all specifications for seeding, mulching, and soil amendments. The following Specification will be used for this project:

INTERIM SURFACE STABILIZATION

To replace temporary or permanent seeding requirements during non-growing seasons of the year.

MULCH: Hay or Straw – Place uniformly, in a continuous blanket, at a minimum rate of 1,200 pounds per 1,000 square yards.

MULCH BINDER: Cut-back Asphalt – Uniformly not less than 31 gallons per 1,000 square yards.

Materials, Construction and Maintenance shall be in accordance with the specifications contained in Section 805, Pennbol Publication 408.

TEMPORARY SEEDING REQUIREMENTS

All exposed areas of soil disturbed by rough grading (not to be fine-graded for periods from 30 days to one year) shall be seeded with the seed mix and at the rate noted below:

SPECIES:	Annual Ryegrass
% PURE LIVE SEED:	10%
APPLICATION RATE:	40 lbs/acre
FERTILIZER TYPE:	10-10-10
FERTILIZER APPL. RATE:	500 lbs/acre
LIMING RATE:	1 tons per acre
MULCH TYPE:	Hay or Straw
MULCHING RATE:	3 tons per acre

All seed shall be blue tag certified grade. Seedings made in fall or winter shall be mulched. Straw mulch shall be spread at the rate of 3 tons/acre or wood cellulose fiber mulch shall be applied at the rate of 3,000 lbs/acre.

PERMANENT SEEDING REQUIREMENTS

All exposed areas of soil disturbed by rough grading shall be seeded with the seed mix and at the rate noted below:

SPECIES:	Kentucky Bluegrass 25% Perennial Ryegrass 15%
% PURE LIVE SEED:	40%
APPLICATION RATE:	60 lbs/acre
FERTILIZER TYPE:	10-20-20
FERTILIZER APPL. RATE:	1000 lbs/acre
LIMING RATE:	6 tons per acre
MULCH TYPE:	Hay or Straw
MULCHING RATE:	3 tons per acre
ANCHOR MATERIAL:	Hydraulic Erosion Control Products
ANCHOR METHOD:	HydorCX Extreme Slope
RATE OF ANCHOR MATERIAL APPL.:	3,000 – 4,500 lbs/acre
SEEDING SEASON DATES:	March 15 to June 1, August 1 to October 15

All seed shall be blue tag certified grade. Straw mulch shall be spread at the rate of 3 tons/acre or wood cellulose fiber mulch shall be applied at the rate of 3,000 lbs/acre.

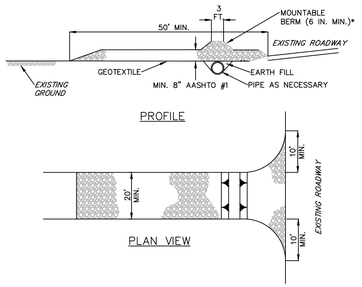
STEEP SLOPE SEEDING REQUIREMENTS

SLOPES OVER 33%

All exposed slopes shall be seeded with the seed mix and at the rate noted below:

SPECIES: Seed Mix 1 Plus 2
(No Tall Fescue)

		Seeding Rate – Pure Live Seed	
		Most Sites	Adverse Sites
% PURE LIVE SEED:	Spring oats (spring), or	64	96
	Annual ryegrass (spring or fall), or	10	15
	Winter wheat (fall),	or 90	120
	Winter rye (fall),	or 56	112
	Fine Fescue (fall),	or 35	40
	Kentucky bluegrass, plus	or 25	30
	Redtop, or	or 3	3
	Perennial ryegrass



NOTES:

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 WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

Table 4.1
Compost Sock Fabric Minimum Specifications

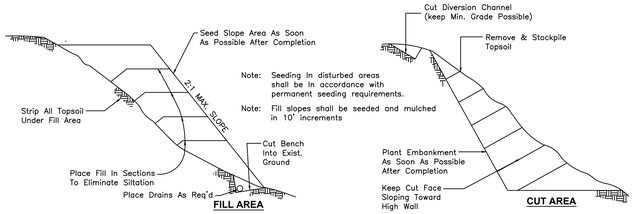
Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting	HDPE biaxial net; Continuously wound; Fusion-welded junctures; 3/4" x 3/4" Max. aperture size				
Outer Filtration Mesh	Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch); 3/16" Max. aperture size				
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					

Table 4.2
Compost Standards

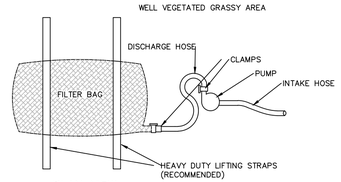
Organic Matter Content	25% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.5
Moisture Content	30% - 60%
Particle Size	30% - 50% pass through 3/8" sieve
Soluble Salt Combination	5.0 dS/m (mmhos/cm) Maximum

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN ROBERT GALES
ENGINEER
PE-11386-E

John Robert Gales — 9-24-25
J.R. GALES, P.E. — DATE



METHOD OF PLACING CUT AND FILL TO MINIMIZE SOIL EROSION
NTS



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.

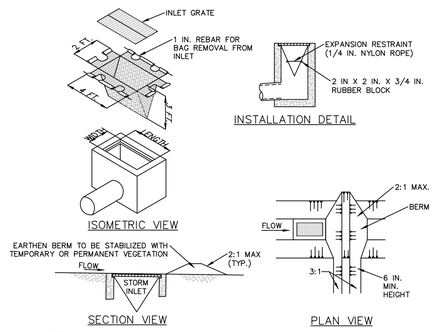
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

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.

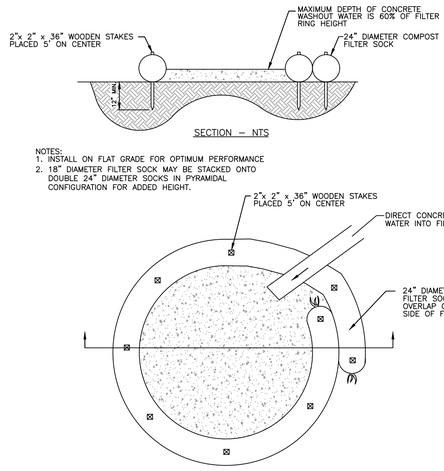
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED 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.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET

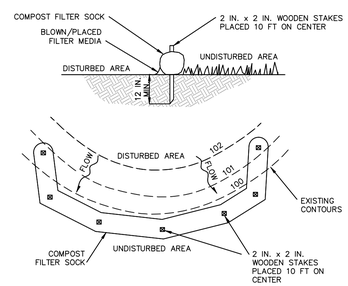
NOT TO SCALE

FIGURE 3.18
Typical Compost Sock Washout Installation



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.

NOTE:
A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.



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.

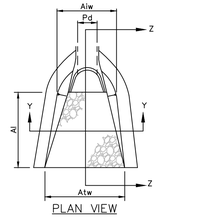
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

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.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
1 (ENDWALL #1)	15	3	9	POND BOTTOM	3.75	11.75
2 (ENDWALL #2)	15	3	9	POND BOTTOM	3.75	9.75

NOTES:

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

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

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

NOT TO SCALE

TOPSOIL APPLICATION

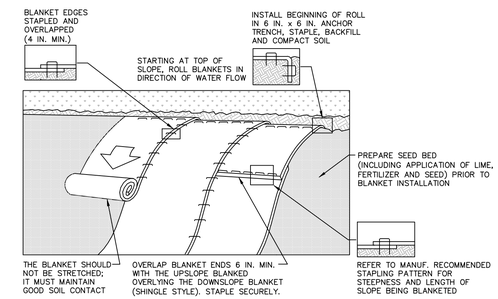
Graded areas should be scarified or otherwise loosened to a depth of 3 to 5 inches to permit bonding of the topsoil to the surface areas and to provide a roughened surface to prevent topsoil from sliding down slope.

Topsoil should be uniformly distributed across the disturbed area to a depth of 4 to 8 inches minimum – 2 inches on fill outslopes. Spreading should be done in such a manner that sodding or seeding can proceed with a minimum of additional preparation or tillage. Irregularities in the surface resulting from topsoil placement should be corrected in order to prevent formation of depressions unless such depressions are part of the PCSM plan.

Topsoil should not be placed while the topsoil or subsoil is in frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Compacted soils should be scarified 6 to 12 inches along contour wherever possible prior to seeding.

Table 11.1
Cubic Yards of Topsoil Required for Application to Various Depths

Depth (in)	Per 1,000 Square Feet	Per 1,000 Square Feet
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



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

EROSION & SEDIMENT CONTROL PLAN DETAILS

SITUATE IN

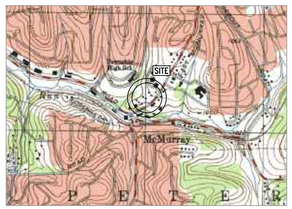
PETERS TOWNSHIP
WASHINGTON COUNTY, PA

MADE FOR

COUGHLIN'S LAW SOUTH HILLS

SCALE: AS SHOWN DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320



LOCATION MAP 1" = 2000'
BRIDGEVILLE QUADRANGLE

NOTES:
1.) THE AREA IS LOCATED WITHIN A FEMA FLOODPLAIN X – AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
2.) THE SITE DRAINS TO STORM SEWERS WHICH DRAIN TO AN UNNAMED TRIBUTARY TO BRUSH RUN WHICH HAS A CHAPTER 93 DESIGNATION OF WARM WATER FISHES (WWF).
3.) FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON SITE, A WASHOUT FACILITY MUST BE PROVIDED FOR THE CLEANING OF CHUTES, MIXERS AND HOPPERS OF THE DELIVERY VEHICLES.
4.) ALL ROOF DRAINS MUST TIE INTO THE STORM SEWER TO THE RAIN GARDEN.
5.) THE LOT SIZE IS 1.505 ACRES.
6.) THE PROJECT SCHEDULE IS UPON APPROVAL TO SUMMER 2030.
7.) ALL CONSTRUCTION AND INSPECTION IS TO BE IN ACCORDANCE WITH PETERS TOWNSHIP CONSTRUCTION DETAILS AND SPECIFICATIONS AND INSPECTION PROCEDURES.
8.) NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER ANY EXISTING STORMWATER BMP, FACILITIES, AREAS, OR STRUCTURES UNLESS IT IS PART OF AN APPROVED MAINTENANCE PROGRAM, WITHOUT THE WRITTEN APPROVAL OF PETERS TOWNSHIP.
9.) NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING, OR VEGETATION INTO A STORMWATER BMP, FACILITIES, AREAS, STRUCTURES, OR WITHIN A DRAINAGE EASEMENT WHICH WOULD LIMIT OR ALTER THE FUNCTIONING OF THE BMP WITHOUT THE WRITTEN APPROVAL OF PETERS TOWNSHIP.
10.) THE OPERATION AND MAINTENANCE AGREEMENT (O&M) IS PART OF THE SITE PLAN.
11.) RECORD DRAWINGS WILL BE PROVIDED FOR ALL STORMWATER FACILITIES PRIOR TO OCCUPANCY, OR THE RELEASE OF SURETY BOND.
12.) THE NPDES BOUNDARY IS 1.79 ACRES.
13.) AN INFILTRATION TEST SHALL BE PERFORMED AT THE BOTTOM ELEVATION OF THE PROPOSED BMP AT THE TIME OF CONSTRUCTION TO VERIFY THAT THE INFILTRATION RATE USED IS CORRECT AND THAT THE SYSTEM IS NOT WITHIN 2 FEET FROM THE SEASONAL-HIGH WATER TABLE.
14.) REVIEW AND ACCEPTANCE OF ALTERNATIVE DESIGN SHALL BE PROVIDED IF INFILTRATION RATES FOUND ARE LESS THAN THE DESIGN ASSUMPTIONS.
15.) ADDITIONAL CALCULATIONS WILL BE REQUIRED IF INFILTRATION RATES FOUND DURING CONSTRUCTION ARE LESS THAN THE DESIGN ASSUMPTIONS.
16.) THE STORMWATER BMPS CANNOT BE CLOSER THAN 25 FEET TO THE PROPOSED BUILDING AND THE LOWEST FLOOD ELEVATION MUST BE 2 FEET HIGHER THAN THE 100-YEAR WATER SURFACE ELEVATION.
17.) ALL CONSTRUCTION INSPECTION IS TO BE IN ACCORDANCE WITH PETERS TOWNSHIP CONSTRUCTION DETAILS AND SPECIFICATIONS AND INSPECTION PROCEDURES.
18.) A BUDGET OF $5,000 WILL BE USED TO COVER THE OPERATION AND MAINTENANCE OF THE STORMWATER FACILITIES. THE PROPOSED STORMWATER FACILITY WILL BE CONSTRUCTED, OWNED, AND MAINTAINED BY ANDREW ZAHALSKY IN ACCORDANCE WITH APPROVED FINAL CONSTRUCTION PLANS. ANDREW ZAHALSKY'S ADDRESS IS 1640 WATTERSON COURT, PITTSBURGH, PA 15241, AND HIS PHONE NUMBER IS 724-413-9813.

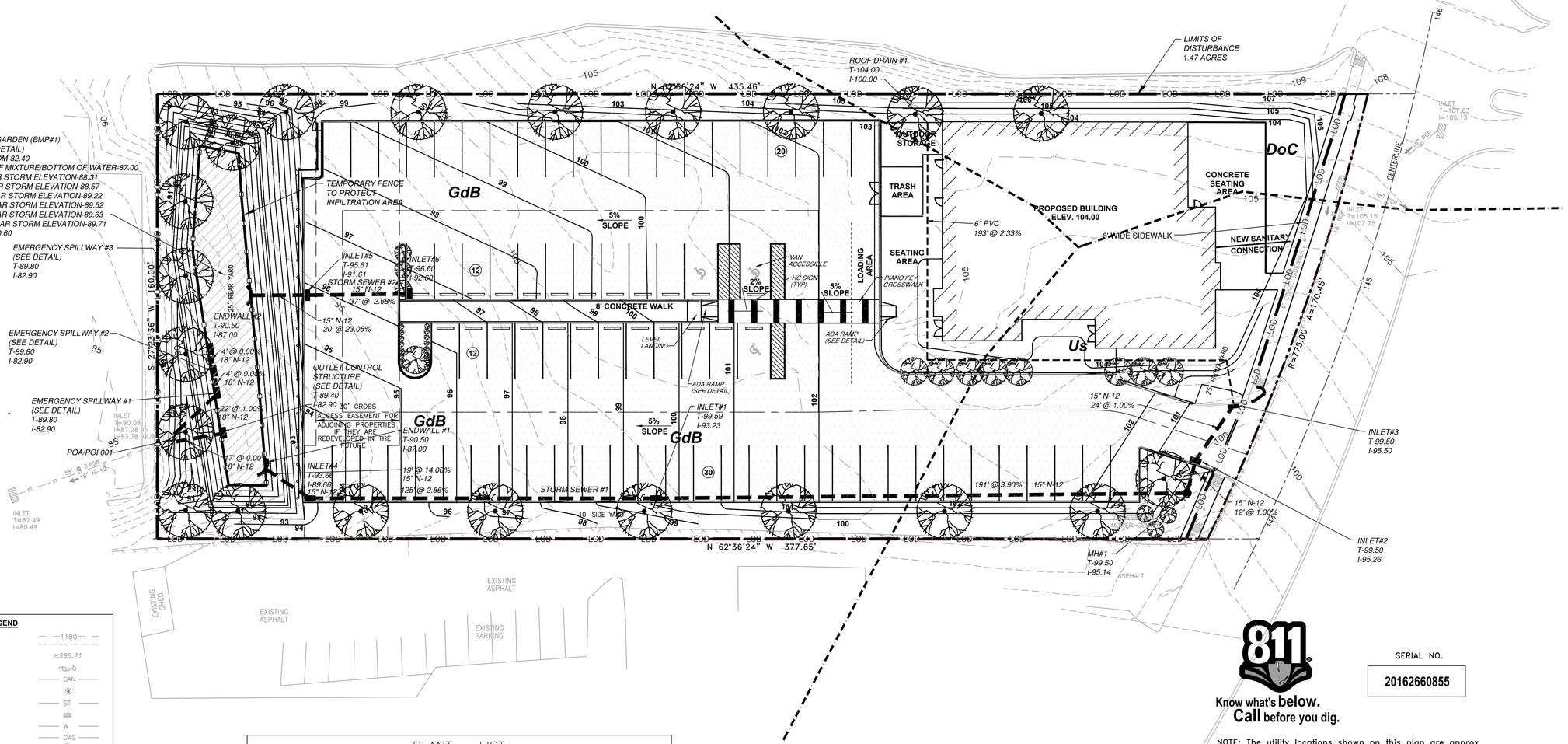
PROPERTY INFORMATION
LOT 101
DUCKWORTH-BEAHN SUBDIVISION
PBV 35 PG 56
TAX I.D.: 540-007-05-03-0010-00
65,580 SF OR 1.505 ACRES

ADDRESS
615 E. MCMURRAY ROAD
MCMURRAY, PA 15317

OWNER
JASBIR S. KANG & PRABHJOT KAUR KANG
1648 BLACKBURN HEIGHTS DRIVE
SEWICKLEY, PA 15143
412-833-6055

APPLICANT
COUGHLIN'S LAW SOUTH HILLS
10 VIRGINIA AVENUE
PITTSBURGH, PA 15211
412-586-5673

CIVIL ENGINEER
J.R. GALES & ASSOCIATES, INC.
2704 BROWNSVILLE ROAD
PITTSBURGH, PA 15227
412-885-8885
FAX: 412-885-1320
e-mail: jrgales.engineers@comcast.net



SOILS LEGEND

DORMONT SILT LOAM, 8 TO 15 PERCENT SLOPES	DoC
GLENFORD SILT LOAM, 3 TO 8 PERCENT SLOPES	GdB
URBAN LAND	Us

LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	
PROPOSED CONTOURS	1080
PROPOSED STORMWATER EASEMENT	
PROPOSED STORM SEWER	
PROPOSED STORM INLET	
PROPOSED ENDWALL	
PROPOSED MANHOLE	
PROPOSED SPOT ELEVATION	+ 1000.65
PROPOSED STOP SIGN	
PROPOSED SANITARY SEWER	
PROPOSED RAIN GARDEN	
PROPOSED STREET SWEEPING	

LEGEND

LIMIT OF DISTURBANCE	
SOIL IDENTIFICATION SYMBOL	Nw
SOIL BOUNDARY LINE	
RIPRAP APRON	

LEGEND

EXISTING CONTOURS	1180
EXISTING SPOT ELEVATION	×998.71
UTILITY POLE	
EXISTING SANITARY SEWER	SAN
EXISTING SANITARY MANHOLE	
EXISTING STORM SEWER	ST
EXISTING STORM INLET	
EXISTING WATERLINE	W
EXISTING GASLINE	GAS
GAS VALVE	
EXISTING TELEPHONE	TEL
EXISTING MAILBOX	
EXISTING SIGN	
EXISTING LIGHT STANDARD	
EXISTING EASEMENT	
EXISTING SETBACK	
PROPERTY LINES	
PROPOSED CONTOURS	1080
PROPOSED STORMWATER EASEMENT	
PROPOSED STORM SEWER	
PROPOSED STORM INLET	
PROPOSED ENDWALL	
PROPOSED MANHOLE	
PROPOSED SPOT ELEVATION	+ 1000.65
PROPOSED STOP SIGN	
PROPOSED SANITARY SEWER	
PROPOSED RAIN GARDEN	
PROPOSED STREETSWEEPING	

PLANT LIST

SYMBOL	QUANTITY	LATIN NAME	COMMON NAME	TYPE	CALIPER
	23	Fagus grandfolia	American Beech	TREE	2 1/2"
	30	Ilex Glabra	Inberry Holly	SHRUB	1 GAL.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN ROBERT GALES
ENGINEER
PE-11386-E

John Robert Gales
J.R. GALES, P.E.

9-24-25
DATE

30 15 0 30
GRAPHIC SCALE
(IN FEET)

20 10 0 20
GRAPHIC SCALE
(IN FEET)

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

SERIAL NO.
20162660855

811
Know what's **below.**
Call before you dig.

NOTE: The utility locations shown on this plan are approx. locations only as per utility company information and information supplied by the PA One Call System.

*Before you dig anywhere in Pennsylvania STOP! Call PA. One-Call at 811 or 1-800-242-1776 Toll Free for actual field utility locations.

Pennsylvania Act 38 (1991) requires no less than 3 working days notice nor more than 10 working days notice from excavators who are about to dig, drill, blast, auger, bore, grade, trench, or demolish when in the construction phase. A designer is required to give no less than 10 working days nor more than 90 working days notice when engaged in the design phase. Both of these conditions involve the entire Commonwealth.

POSTCONSTRUCTION STORMWATER MANAGEMENT PLAN

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

SCALE: 1"=20' DATE: AUGUST 14, 2025

PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

15-135098
SL 15-135038 SITE

102.4(b)(5)(x) – A maintenance program which provides for inspection of BMP's on a weekly basis and after each measurable rainfall event, including the repair of BMPs to ensure an efficient operation.

MAINTENANCE SCHEDULE

1.Sediment removed from the on–site BMPs shall be placed on the topsoil stockpile.

2.Inspections and maintenance shall be logged onto written DEP form 3800–FM–BCW0271D dated 4/25 and kept on site at all times.

3.All erosion and sedimentation control devices will be inspected weekly and after every runoff event. The contractor will be responsible for conducting the inspections and maintenance of the BMP's. Repairs and maintenance will be performed by the end of the work day to maintain the integrity of the measures and facilities. Specific maintenance programs are described below:

Rock Construction Entrance. The structure's thickness will be constantly maintained to the specified dimensions by adding rock. A stockpile of rock materials will be maintained on the site for this purpose. At the end of each construction day, sediment deposited on public roadways will be removed and returned to the construction site. Public roadways will not be washed with water.

Erosion Control Blankets. Blanketed areas should be inspected weekly and after each runoff event until perennial vegetation is established to a minimum 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days. All areas to be stabilized by ECB shall be inspected for rills or gullies, bare soil patches, or accumulation of sediment at the toe of slopes. Eroded areas shall be regraded, and ECB shall be re–installed, re–seeded and mulched as specified on the plans.

Seeding. Seed all disturbed within two (2) days after reaching final grade, using permanent seeding requirements. If these are not stabilized within the four (4) days, reseed promptly. If any area remains idle for a period of four (4) days, it must be temporarily stabilized.

Compost Filter Sock. Routine inspection shall be conducted within 24 hours of a runoff event. Compost filter sock shall be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow–through. If the filter sock has been damaged, it shall be repaired or replaced if beyond repair. Sediment must be removed when accumulations reach 1/2 of the effective height of the compost filter sock. Compost filter socks shall be maintained until the disturbed area above the device has been permanently stabilized and construction activity has ceased.

Compost Sock Washout. All concrete washout facilities should be inspected daily. Damaged or leaking washouts should be deactivated and repaired or replaced immediately. Accumulated materials should be removed when they reach 75% capacity. Plastic liners should be removed with each cleaning of the washout facility.

Inlet Filter Bag. Inlet filter bags should be inspected on a weekly basis and after each runoff event. Filter bags should be cleaned and/or replaced when the bag is half full or when flow capacity has been reduced so as to cause flooding or bypassing of the inlet. Accumulated sediment should be disposed of in the approved manner. Bags that will be reused shall be rinsed at the location where the rinse water will enter a sediment trap or basin. Damaged filter bags should be replaced. Needed repairs should be initiated immediately after the inspection.

Pumped Water Filter Bag. A suitable means of access to the bags with machinery required for disposal purposes must be provided. Filter bags shall be replaced when they become half full within twenty–four hours. Spare bags shall be kept available for replacement of those that have failed or are filled. Pump intakes shall be floating and screened. Filter bags shall be inspected daily. If the problem is detected, pumping shall cease immediately and not resume until the problem is corrected.

Vegetation. All areas to be stabilized by vegetation shall be inspected for rills and gullies, bare soil patches or accumulation of sediment at the toe of slopes. Eroded areas shall be regraded, and substandard vegetated areas shall be re–seeded and mulched as specified in the plans.

Outlet Protection – Rip Rap Apron. The dimensions of the apron, as designed, shall be maintained at all times. Additional rock shall be placed to correct any deficiencies in length, width, or thickness. A stockpile of properly graded rock shall be maintained on site for this purpose.

Rain Garden Maintenance. The Owner of the proposed stormwater control facilities shall at all times operate and maintain the facilities in a safe and operable condition so as not to impair life, health, safety, or property located above or below the facility.

The Owner of the facility shall be responsible for the evaluation of the safety and operational status of the facility and all appurtenant structures and the modification thereof in accordance with the requirement to ensure protection of life and property as specified above.

The Owner of the facility shall inspect the facilities and all appurtenant works according to the following schedule:

1.The facility and its appurtenant control and conveyance works shall be inspected at least once every three (3) months, and directly after every heavy storm event.
2.The Owner shall retain records of such inspections, including records of actions taken to correct conditions found during such inspections.

The periodic inspection of the proposed facility shall be completed in such a manner so as to detect any of the following conditions which may occur during the normal operation of the facility.

3.Catch basins and inlets (upgradient of rain garden) should be inspected and cleaned at least two times per year and after runoff events.
4.The vegetation along the surface of the rain garden should be maintained in good condition, and any bare spots revegetated as soon as possible. While vegetation is being established, and weeds controlled by mulch, in addition to seeding, according to seeding requirements. If these areas are not stabilized within four (4) days, reseed promptly.
5.Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
6.Vehicles should not be parked or driven on a rain garden, and care should be taken to avoid excessive compaction by mowers.
7.Inspect the rain garden after runoff events and make sure that runoff drains down within 72 hours. Mosquitos should not be a problem if the water drains in 72 hours. Mosquitoes require a considerably long breeding period with relatively static water levels.
8.Also inspect for accumulation of sediment, damage to the outlet structures, erosion control measures, signs of water contamination/spills, and slope stability in the berms. Rain gardens should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
9.During periods of extended drought, rain garden areas may require watering.
10. Trees and shrubs should be inspected twice per year to evaluate health.
11. Mow only as appropriate for vegetative cover species.
12. Remove accumulated sediment from the rain garden as required. Restore original cross section and infiltration rate. Properly dispose of sediment.

Should any of the above–mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action taken shall be retained by the Owner of the facility.

Rain Garden Water Quality BMP Maintenance Requirements

1.Constructed soils will need to be replaced when they become exhausted or over–concentrated with contaminants. Plant health will be a major indicator for when it is time to replace soil. Mulch should be re–spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
2.Maintenance of the gravel envelope can be best avoided through careful construction.
3.Should any of the above–mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action shall be retained by the Owner of the facility.

If infiltration fails, contact the Engineer or a Geotechnical Engineer for testing and recommendations.

Mulch should be re–spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.

If infiltration fails, contact the Engineer or a Geotechnical Engineer for testing and recommendations.

Roof Drain/Cleanout Maintenance. Roof drains/cleanouts will require periodic removal of sediment/leaves on top of and through the cleanout. For the first year of operation, inspection of the facility, especially the outlet pipe should be made after heavy storm and at least quarterly. These inspections should pay close attention to the collection of debris around, or obstructions to the outlet pipe. Depending on the findings of inspection during the first year, future inspections and cleanup can be tailored accordingly.

Revegetation Maintenance. Forest restoration areas planted with a proper cover crop can be expected to require annual mowing in order to control invasives. Application of a carefully selected herbicide (Roundup or similar glyphosate herbicide) around the protective tree shelters/tubes may be necessary, reinforced by selective years of growth and may be necessary for up to 5 years until tree growth and tree canopy begins to form, naturally inhibiting weed growth (once shading is adequate, growth if invasives and other weeds will be naturally prevented, and the woodland becomes self–maintaining). A review of the new woodland should be undertaken intermittently to determine if replacement trees should be provided (some modest rate of planting failure us usual).

Street Sweeping Maintenance Use proper equipment; dry vacuum filters demonstrate optimal results. Develop a proper program. Vary sweeping by street pollutant load. Restrict parking when sweeping to improve removal. Provide a seasonal variation for winter. Optimal times for street sweeping are early spring to early fall. All non–reusable debris that has been removed from the area shall be disposed of at a landfill.

Method of Disposal. When cleaning out erosion and sediment pollution control measures, place sediment on topsoil stockpile. Reseed topsoil stockpile immediately with temporary seeding requirements.

On–Lot Control. The individual on–lot controls consist of a rock construction entrance, erosion control blankets, seeding, compost filter sock, compost sock washout, inlet filter bag, pumped water filter bag, vegetation, rain garden, outlet protection – rip rap apron, roof drain/cleanout, revegetation, and street sweeping. The maintenance of all the above shall be followed as described above.

RAIN GARDEN CONSTRUCTION SEQUENCE

1. Install temporary sediment control BMPs as shown on the Erosion and Sedimentation Control Plan. This is a critical stage of construction and a licensed professional shall inspect the installation of the temporary sediment control.
2. Complete site grading. If applicable, construct curb cuts or other inflow entrances but provide protection so that sediment drainage is prohibited from entering the rain garden construction area. This is a critical stage of construction and a licensed professional shall inspect the grading.
3. Stabilize area draining to the rain garden facility. This is a critical stage of construction and a licensed professional shall inspect the stabilization of the area draining to the rain garden facility.
4. Construct the rain garden facility. This is a critical stage of construction and a licensed professional shall inspect the construction of the rain garden facility
5. Backfill the rain garden facility with gravel and amended soil mix as shown on plans. (care should be taken not to compact the soil mix, only hand tamping is acceptable). This is a critical stage of construction and a licensed professional shall inspect the backfilling of the rain garden facility.
6. Presoak the planting soil prior to planting vegetation to aid in settlement. This is a critical stage of construction and a licensed professional shall inspect the presoaking of the planting soil.
7. Complete final grading to achieve proposed design elevations, mulch or topsoil as specified. This is a critical stage of construction and a licensed professional shall inspect he installation of the final grading and mulch or topsoil.
8. Plant vegetation according to landscaping plan. This is a critical stage of construction and a licensed professional shall inspect the vegetation planting.
9. Mulch and install erosion protection at flow entrances where specified. This is a critical stage of construction and a licensed professional shall inspect the installation of the mulch and erosion protection.

INSTRUCTIONS FOR STREETSWEEPING

Use proper equipment; dry vacuum filers demonstrate optimal results. Develop a proper program. Vary sweeping by street pollutant load. Restrict parking when sweeping to improve removal. Provide a seasonal variation for winter. Optimal times for street sweeping are early spring to early fall. All non–reusable debris that has been removed from the area, shall be disposed of at a landfill.

MAINTENANCE PLAN

FOR

COUGHLIN'S LAW SOUTH HILLS

Operation, Maintenance, and Inspection Schedule

Rain Garden Maintenance

The Owner of the proposed stormwater control facilities shall at all times operate and maintain the facilities in a safe and operable condition so as not to impair life, health, safety, or property located above or below the facility.

The Owner of the facility shall be responsible for the evaluation of the safety and operational status of the facility and all appurtenant structures and the modification thereof in accordance with the requirement to ensure protection of life and property as specified above.

The Owner of the facility shall inspect the facilities and all appurtenant works according to the following schedule:

1. The facility and its appurtenant control and conveyance works shall be inspected at least once every three (3) months, and directly after every heavy storm event.
2. The Owner shall retain records of such inspections, including records of actions taken to correct conditions found during such inspections.

The periodic inspection of the proposed facility shall be completed in such a manner so as to detect any of the following conditions which may occur during the normal operation of the facility.

3. Catch basins and inlets (upgradient of rain garden) should be inspected and cleaned at least two times per year and after runoff events.
4. The vegetation along the surface of the rain garden should be maintained in good condition, and any bare spots revegetated as soon as possible. While vegetation is being established, and weeds controlled by mulch, in addition to seeding, according to seeding requirements. If these areas are not stabilized within four (4) days, reseed promptly.
5. Detritus may also need to be removed every year. Perennial plantings may be cut down at the end of the growing season.
6. Vehicles should not be parked or driven on a rain garden, and care should be taken to avoid excessive compaction by mowers.
7. Inspect the rain garden after runoff events and make sure that runoff drains down within 72 hours. Mosquitos should not be a problem if the water drains in 72 hours. Mosquitoes require a considerably long breeding period with relatively static water levels.
8. Also inspect for accumulation of sediment, damage to the outlet structures, erosion control measures, signs of water contamination/spills, and slope stability in the berms. Rain gardens should be inspected at least two times per year for sediment buildup, erosion, vegetative conditions, etc.
9. During periods of extended drought, rain garden areas may require watering.
10. Trees and shrubs should be inspected twice per year to evaluate health.
11. Mow only as appropriate for vegetative cover species.
12. Remove accumulated sediment from the rain garden as required. Restore original cross section and infiltration rate. Properly dispose of sediment.

Should any of the above–mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action taken shall be retained by the Owner of the facility.

Rain Garden Water Quality BMP Maintenance Requirements

1. Constructed soils will need to be replaced when they become exhausted or over–concentrated with contaminants. Plant health will be a major indicator for when it is time to replace soil. Mulch should be re–spread when erosion is evident and be replenished as needed. Once every 2 to 3 years the entire area may require mulch replacement.
2. Maintenance of the gravel envelope can be best avoided through careful construction.
3. Should any of the above–mentioned conditions exist at the time of such an inspection, immediate action should be taken to correct the same, and a full report of all action shall be retained by the Owner of the facility.

If infiltration fails, contact the Engineer or a Geotechnical Engineer for testing and recommendations.

The proposed rain garden facility will be constructed, owned, and maintained by Coughlin's Law South Hills in accordance with approved final construction plans. Coughlin's Law South Hills' address is 10 Virginia Avenue, Pittsburgh, PA 15211, and his phone number is 412–586–5673.

Revegetation Maintenance

Forest restoration areas planted with a proper cover crop can be expected to require annual mowing in order to control invasives. Application of a carefully selected herbicide (Roundup or similar glyphosate herbicide) around the protective tree shelters/tubes may be necessary, reinforced by selective years of growth and may be necessary for up to 5 years until tree growth and tree canopy begins to form, naturally inhibiting weed growth (once shading is adequate, growth if invasives and other weeds will be naturally prevented, and the woodland becomes self–maintaining). A review of the new woodland should be undertaken intermittently to determine if replacement trees should be provided (some modest rate of planting failure us usual).

The proposed revegetation will be constructed, owned, and maintained by Coughlin's Law South Hills in accordance with approved final construction plans. Coughlin's Law South Hills' address is 10 Virginia Avenue, Pittsburgh, PA 15211, and his phone number is 412–586–5673.

§ 371–41 Financial guarantee.

A. The applicant shall provide a financial guarantee to Peters Township for the timely installation and proper construction of all stormwater management controls as required by the approved SWM site plan and this chapter, equal to 110% of the full construction cost of the required controls in accordance with the Municipalities Planning Code.

B. At the completion of the project and as a prerequisite for the release of the financial guarantee, the applicant shall:

(1) Provide a certification from an engineer, architect, surveyor or other qualified person, verifying that all permanent facilities have been constructed according to the SWM site plan and report and approved revisions thereto.

(2) Provide a set of record drawings.

(3) Request a final inspection from Peters Township to certify compliance with this chapter, after receipt of the certification of completion and record drawings by Peters Township.

Street Sweeping Maintenance

Use proper equipment; dry vacuum filters demonstrate optimal results. Develop a proper program. Vary sweeping by street pollutant load. Restrict parking when sweeping to improve removal. Provide a seasonal variation for winter. Optimal times for street sweeping are early spring to early fall. All non–reusable debris that has been removed from the area shall be disposed of at a landfill.

The proposed street sweeping maintenance will be constructed, owned, and maintained by Coughlin's Law South Hills in accordance with approved final construction plans. Coughlin's Law South Hills' address is 10 Virginia Avenue, Pittsburgh, PA 15211, and his phone number is 412–586–5673.

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(2) Provide a set of record drawings.

(3) Request a final inspection from Peters Township to certify compliance with this chapter, after receipt of the certification of completion and record drawings by Peters Township.

§ 371–42 Maintenance responsibilities.

A. The SWM site plan and report for the project site shall describe the future operation and maintenance responsibilities. The operation and maintenance description shall outline required routine maintenance actions and schedules necessary to ensure proper operation of the stormwater control facilities.

B. The SWM site plan and report for the project site shall establish responsibilities for the continuing operating and maintenance of all proposed stormwater control facilities, consistent with the following principles:

(1) If a development consist of structures or lots that are to be separately owned and in which streets, sewers, and other public improvements are to be dedicated to Peters Township, stormwater control facilities/BMPs may also be dedicated to and maintained by Peters Township.

(2) If a development site is to be maintained in a single ownership or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities/BMPs shall be the responsibility of the owner or private management entity.

(3) Facilities, areas, or structures used as stormwater BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or easements that run with the land.

(4) Peters Township may take enforcement actions against an applicant for failure to satisfy any provision of this chapter.

C. Peters Township, upon recommendation of the Municipal Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM site plan and report. Peters Township may require a dedication of such facilities as part of the requirements for approval of the SWM site plan. Such a requirements is not an indication that Peters Township will accept the facilities. Peters Township reserves the right to accept or reject the ownership and operating responsibility for any portion of the stormwater management controls.

D. If Peters Township accepts ownership of stormwater BMPs, Peters Township may, at its discretion, require a fee from the applicant to Peters Township to offset the future cost of inspections, operations, and maintenance.

E. It shall be unlawful or remove any permanent stormwater BMP required by an approved SWM site plan, or to allow the property to remain in a condition which does not conform to an approved SWM site plan, unless Peters Township grants an exception in writing.

§ 371–42 Agreement for privately owned stormwater facilities.

A. Final approval of the SWM site plan and report shall be contingent upon the applicant signing and recording the stormwater maintenance agreement (Appendix A) covering all stormwater control facilities that are to be privately owned.

(1) Municipalities are exempt from the requirement to sign and record an agreement.

B. Other items may be included in the stormwater maintenance agreement where determined necessary to guarantee the satisfactory operation and maintenance of all BMP facilities. The agreement shall be subject to the review and approval of Peters Township and the Municipal Solicitor.

The owner is responsible for operation and maintenance of the stormwater BMPs. If the owner fails to adhere to the stormwater maintenance agreement, Peters Township may perform the services required and charge the owner appropriate fees. Nonpayment of fees may result in a lien against the property.

102.4(b)(5)(xi) – Sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior, to, during and after earth disturbance activities.

A. Field mark the limits of disturbance for the rock construction entrance.

B. Clear and grub the area for necessary to install the rock construction entrance at the location shown on the plans.

C. Install the rock construction entrance at the location shown on the plans. Follow the details on the plans for the proper dimensions and rock size.

D. Field mark the remaining limits of disturbance. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized to avoid compaction.

E. Clear the areas needed for access and construction of the compost filter socks and temporary fence.

F. Install the compost filter socks and temporary fence

G. Clear and grub the areas for the temporary topsoil stockpile, the compost sock washout, and the pumped water filter bag. Remove topsoil and place on temporary stockpiles.

H. Install the concrete washout and the pumped water filter bag at the locations shown on the plans.

I. After the BMPs are installed and functioning properly, clear and grub the remainder of the site within the limits of disturbance.

J. Proceed with earthmoving (cut/fill) procedures. Install erosion control blanket on all slopes greater than 3:1 and on all fill slopes in regular ten (10) foot vertical increments as well as all disturbed areas within 50 feet of a surface water (100 feet for HQ and EV waters). Seed and mulch, in addition to seeding, according to seeding requirements. If these areas are not stabilized within four (4) days, reseed promptly.

K. The rain garden can be constructed beginning at the most downstream point (connection to the downstream storm sewer) and working upwards. All equipment including equipment to install facility should stay out of the bottom of the rain garden. If that is not possible, the contractor is to use small, tracked equipment. This is a critical stage of construction, and a licensed professional is required to inspect the rain garden installation.

1.Complete site grading. Provide protection to prevent drainage from entering the construction area.

2.Stabilize grading within the limit of disturbance except within the rain garden area.

3.Excavate rain garden to the proposed invert depth and scarify the existing soil surfaces. Do not compact in–situ soils.

4.Place the stone and geo–textile fabric. Backfill rain garden with amended soil (bio–soil mixture) as shown on plans and specifications. The content of clay within the soil mixture shall not be more than 5%. Place outlet structure with inlet protection beginning with the scour protection, then the outfall pipe, watertight seals in joint/connections of structures, and anti–seep collars. Place clean–out ports. Overfilling is recommended to account for settlement. Light hand tamping is acceptable if necessary.

5.Presoak the planting soil prior to planting vegetation to aid in settlement.

6.Complete final grading to achieve proposed design elevations, leaving space for upper layer of compost, mulch or topsoil as specified on plans.

7.Plant vegetation according to planting plans.

8.Mulch and install erosion protection at surface flow entrances where necessary.

9.Upon completion of rain garden, immediate permanent stabilization surrounding all side slopes and outside perimeter of facility using erosion control blanket for all slopes 3:1 or steeper.

L. Begin installation of storm sewers. All installation must start at the downstream structure.

1.Storm Sewer Pipe Requirements

a. Any water pumped from work areas must be sent to a filter bag set on stabilized ground as per the construction detail.

b. Limit advance clearing and grubbing operations to a distance equal to two times the length of pipe installation that can be completed in one day.

c. Work crews and equipment for trenching, placement of pipe, plug construction and backfilling will be self–contained and separate from clearing and grubbing and site restoration and stabilization operations.

d. Limit daily trench excavation to the length of pipe placement, plug installation and back filling that can be completed the same day.

e. On the day following pipe placement and trench backfilling, the disturbed area will be graded to final contours and appropriate temporary erosion and sediment pollution control measures/facilities will be installed. Seeding mulching of all disturbed areas will be done at the end of each week.

f. Install inlet protection with the inlets and outlet protection with the endwalls. Seal inlets until the site is stabilized so that no water will enter storm sewers.

2.Exceptions – In certain cases trenches cannot be backfilled until the pipe is hydrostatically tested, or anchors and other permanent features are installed. In these cases, all of the requirements listed under item 2 will remain in effect with the following exceptions:

a. Daily backfilling of the trench may be delayed for six days. All pressure testing and the complete backfilling of the open trench must be completed by the seventh working day.

b. If daily backfilling is delayed, the disturbed area will be graded to final contours, appropriate temporary erosion and sediment control measures/facilities will be installed, and the areas seeded and mulched within the next two calendar days.

M. Spoil from the trenching operation shall be placed on the upslope side of the trench. Daily, after the pipe is installed, the trench will be backfilled, compacted, and leveled.

N. Construct the site improvements as shown on the plan, including the construction of the parking area, building, sidewalk, and utilities.

O. Stabilize all disturbed areas by seeding or mulching, or by installing the subbase material in the roads.

P. Graded areas should be scarified or otherwise loosened to a depth of 3 to 5 inches to permit bonding of the topsoil to the surface areas and to provide a roughened surface to prevent topsoil from sliding down slope.

Topsoil should be uniformly distributed across the disturbed area to a depth of 4 to 8 inches minimum – 2 inches on fill outslopes. Spreading should be done in such a manner that sodding or seeding can proceed with a minimum of additional preparation or tillage. Irregularities in the surface resulting from topsoil placement should be corrected in order to prevent formation of depressions unless such depressions are part of the PCSM plan.

Topsoil should not be placed while the topsoil or subsoil is in frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Compacted soils should be scarified 6 to 12 inches along contour wherever possible prior to seeding.

Cubic Yards of Topsoil Required for Application to Various Depths

Depth (in)	Per 1,000 Square Feet	Per 1,000 Square Feet
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

Q. Upon stabilization (uniform 70% perennial vegetative cover and roadways and parking areas have the subbase in place) temporary erosion and sediment pollution control measures may be removed. This is a critical stage of construction, and all temporary controls must be seeded and mulched immediately. If these areas are not stabilized within four (4) days, reseed promptly. Use pumped water filter bags to remove any sediment laden water. This is a critical stage of construction, and a licensed professional is required to inspect the removal of the temporary controls, and the installation of the landscaping.

R. Submit a notice of termination (NOT).

The compost filter sock should be sized to the specifications as stated in the E&S Narrative and on the E&S Plan drawings. The site balances and no offsite areas will be needed for borrow or excess fill. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized. If the contractor encounters pyrite or acid bearing materials, they shall stop work immediately and contact an engineer. The site discharges to an impaired waterway and all BMPs must be installed in accordance with the ABACT details and notes.

Critical Stages

Critical stages include the installation of the rain garden, the removal of the temporary controls, the installation of the landscaping, and street sweeping.

APPENDIX A – SOIL USE LIMITATIONS

SOIL NAME	CUTBANKS CAVE	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/ SEASONAL HIGH WATER TABLE	HYDRIC SOIL INCLUSIONS	LOW STRENGTH/ LANDSLIDE PRONE	PERCS SLOWLY	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK–SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
DORMONT	X	C/S	X	X		X	X	X	X	X	X	X	X		X
GLENFORD	X	C/S				X	X	X	X						
URBAN	X	C/S	X	X	X	X	X	X	X	X	X	X	X		X

There are no geologic formations or soil conditions having potential to cause pollution to a surface water at the site. A geotechnical engineer is required to be onsite during any grading activities. If there are geological formations or soil conditions having potential to cause pollution to a surface water on the site, stop work immediately and call a geotechnical engineer in order to get a remediation for the condition. Cuts and fills must be conducted under the direction of a geotechnical engineer.

Soil Resolutions

1. All construction work at the site will be performed within the soil types delineated on the plans.
2. The contractor shall undertake proper testing and/or compaction procedures to prevent against unwanted settlement.
3. SOILS SUBJECT TO CUT BANKS AND CAVE: The contractor to utilize trench boxes for all utility piping installations.
4. SOILS CAUSING CORROSION TO CONCRETE AND STEEL: The contractor to use epoxy coated steel and rebar for all subsurface installations. For below grade concrete installations, the contractor shall, at a minimum, apply bituminous coating to all subsurface concrete or apply adhesive barrier (i.e., rubber membrane, etc.) as warranted by actual soil conditions.
5. HIGHLY ERODIBLE SOILS: These soil types shall be stabilized with seed or stone immediately after earthmoving activities cease. Turf reinforcement matting or erosion control blankets may need to be applied immediately upon direction of design engineer, PADEP, or county conservation district.
6. SOILS SUBJECT TO SEASONAL HIGH WATER TABLE: It is recommended to conduct site earthmoving during summer or fall; spring construction should be avoided when possible. Contractor may also install perforated underdrain in grade extension areas. Test kits installations as may be recommended by design engineer, PADEP, or county conservation district.
7. HYDRIC SOILS: Existing wetlands have been delineated for the site. No work shall be performed within 100 feet of any wetland area.
8. LOW STRENGTH / LANDSLIDE PRONE: A diversion channel will be implemented to channel water away from the excavation area. Contractor shall note any unusual cracks or bulges at the soil surface. Contractor shall never remove soil from the toe or bottom of a slope or add soil to the top of a slope. Remove minimal amount of surface vegetation as possible.
9. SLOW PERCOLATION: Should infiltration facilities be used at the site, infiltration tests shall be performed to determine proper percolation rates. Soils will be amended accordingly based on the results of the testing.
10. SOILS SUBJECT TO PIPING: The contractor shall install anti–seep collars or trench plugs as recommended by design engineer, PADEP, or county conservation district and seal all pipe joints watertight.
11. SOILS SUBJECT TO POOR TOPSOIL: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Soil test kits can be obtained from the county cooperative extension service. Test kits should be submitted to the Penn State University testing laboratory for determining soil deficiencies. The contractor shall condition the soil as recommended by testing laboratory prior to final seeding.
12. SOILS SUBJECT TO FROST ACTION: The contractor shall provide a coarse textured subgrade or base material and proper surface or subsurface drainage to reduce the frost–action potential and enhance soil strength in frost prone areas.
13. SHRINK – SWELL CONDITIONS: Should shrink swell conditions be encountered, the contractor shall contact the geotechnical engineer to determine if additional soil test data is needed for the foster designs or roadway bases.
14. POTENTIAL SINKHOLE: Should a potential sinkhole arise, the contractor shall contact the geotechnical engineer to direct the removal of all the sinkhole loose subsoil material to expose the solution void(s) if possible. Excavate the hole beyond the sinkhole sides and install filter materials.
15. DROUGHTY CONDITIONS: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Special seed mixtures may be needed to achieve stabilization. The contractor shall use the seed mixture recommended by testing laboratory that is tolerant to these special conditions.
16. WETNESS: Contractor shall perform soil testing on all disturbed areas to ensure soil is properly amended to establish required vegetative cover. Special seed mixtures may be needed to achieve stabilization. The contractor shall use the seed mixture recommended by testing laboratory that is tolerant to these special conditions. Soil texture can be modified by the addition of coarse sand, or clay, depending on the desired change.

THERMAL IMPACTS

102.4(b)(5)(xiii) – Potential thermal impacts to surface waters.
To avoid thermal impacts during construction temporary seeding is used. To avoid thermal impacts after construction infiltration is used that is designed to cool water discharging through the substrate to cool before discharging into a stream.

As you can see the project will preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream and maximize the protection of drainage features and existing vegetation by keeping post–development peak discharge rates and velocities equal to pre–development discharge rates with the construction of a rain garden and revegetation. Stabilization of the site will consist of either grass for the lawn areas to minimize impervious areas or impervious cover with the building, sidewalks, parking lot, and driveway. This project will minimize the land disturbance and grading by field marking the limits of disturbance prior to the extent of all proposed grading and construction activities. No unnecessary grading, tree harvesting, or earth disturbance is to take place. Street sweeping shall be performed on roadway surfaces.

Soil compaction will be minimized by only traveling over disturbed areas, not compacting non–paved areas, and minimizing compaction in the rain garden area. Protection shall be provided for infiltration best management practices (BMPs) (rain garden) by fencing until drainage areas are completely stabilized.

A prompt and effective seeding program as well as an aggressive paving schedule will be established to aid in erosion and sediment control and site stabilization and minimize extent & duration of earth disturbance and maximize protection of existing drainage features and vegetation.

The channel flow of runoff to the rain garden, the rain garden, and revegetation will be used as a measure or controls that prevent or minimize generation of increased stormwater runoff.

The Erosion & Sediment Plan minimizes the extent and duration of earth disturbance by field marking the limits of disturbance prior to any construction or earth moving and has been placed only to the extent of all proposed grading and construction activities. No unnecessary grading, tree harvesting or earth disturbance is to take place.

A rock construction entrance, compost filter socks, erosion control matting, inlet protection, compost sock washout, outlet protection, and pumped water filter bag are BMPs used before and during construction. Upon stabilization with permanent seeding the BMP's will be removed. After final site stabilization has been achieved (uniform 70% perennial vegetative cover established) erosion and sedimentation controls (BMP's) must be removed. Areas disturbed during the removal of the controls must be stabilized by the end of the workday. The total lot on which the project is being constructed is 1.505 acres. The limits of disturbance for the project are 1.47 acres. The NPDES boundary is 1.79 acres

102.4(b)(5)(xiv) – Measures for the recycling of disposal of materials from the project site
The construction wastes for the project (and the means of disposal) are anticipated to be;

- Asphalt removed for the area of excavation is to be disposed of by a licensed contractor in a DEP authorized site or recycled.
- Soils removed from the area of excavation for the building is to be reused as backfill or disposed of in a WCC and DEP authorized BMP protected site.
- Rock removed from the area of excavation for the building is to be reused as backfill or disposed of in a WCC and DEP authorized BMP site.
- Miscellaneous waste materials of construction are to be disposed of in a landfill(s), anticipated materials include (but are not limited to):

1. Materials form demolishing existing wood frame and masonry structures. All material will be sorted to allow proper disposal.
2. Pallets, buckets and other material used to protect materials to the site.
3. Shrink wrap, packaging and other materials used to protect materials on site.
4. Waste masonry materials.
5. Waste roofing materials.
6. Waste insulation materials.
7. Waste wood, drywall, ceiling and other interior finish materials.
8. Scrap materials from electrical, mechanical and plumbing installation.

NOTES:

TREES AND SHRUBS SHOULD BE PLANTED FROM MID–MARCH THROUGH THE END OF JUNE, OR MID–SEPTEMBER THROUGH MID–NOVEMBER.

A MAXIMUM OF 2 TO 3 INCHES OF SHREDDED MULCH OR LEAF COMPOST (OR OTHER COMPARABLE PRODUCT) SHOULD BE UNIFORMLY APPLIED IMMEDIATELY AFTER SHRUBS AND TREES ARE PLANTED TO PREVENT EROSION, ENHANCE METAL REMOVALS, AND SIMULATE LEAF LITTER IN A NATURAL FOREST SYSTEM. WOOD CHIPS SHOULD BE AVOIDED AS THEY TEND TO FLOAT DURING INUNDATION PERIODS. MULCH/COMPOST LAYER SHOULD NOT EXCEED 3" IN DEPTH SO AS NOT TO RESTRICT OXYGEN FLOW TO ROOTS.

TOPSOIL APPLICATION

Graded areas should be scarified or otherwise loosened to a depth of 3 to 5 inches to permit bonding of the topsoil to the surface areas and to provide a roughened surface to prevent topsoil from sliding down slope.

Topsoil should be uniformly distributed across the disturbed area to a depth of 4 to 8 inches minimum – 2 inches on fill outslopes. Spreading should be done in such a manner that sodding or seeding can proceed with a minimum of additional preparation or tillage. Irregularities in the surface resulting from topsoil placement should be corrected in order to prevent formation of depressions unless such depressions are part of the PCSM plan.

Topsoil should not be placed while the topsoil or subsoil is in frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Compacted soils should be scarified 6 to 12 inches along contour wherever possible prior to seeding.

INTERIM SURFACE STABILIZATION

To replace temporary or permanent seeding requirements during non–growing seasons of the year.

MULCH: Hay or Straw – Place uniformly, in a continuous blanket, at a minimum rate of 1,200 pounds per 1,000 square yards.

MULCH BINDER: Cut–back Asphalt – Uniformly not less than 31 gallons per 1,000 square yards.

Materials, Construction and Maintenance shall be in accordance with the specifications contained in Section 805, Penndot Publication 408.

TEMPORARY SEEDING REQUIREMENTS

All exposed areas of soil disturbed by rough grading (not to be fine–graded for periods from 30 days to one year) shall be seeded with the seed mix and at the rate noted below:

SPECIES: Annual Ryegrass
% PURE LIVE SEED: 10%
APPLICATION RATE: 40 lbs/acre
FERTILIZER TYPE: 10–10–10
FERTILIZER APPL. RATE: 500 lbs/acre
LIMING RATE: 1 tons per acre
MULCH TYPE: Hay or Straw
MULCHING RATE: 3 tons per acre

All seed shall be blue tag certified grade. Seedings made in fall or winter shall be mulched. Straw mulch shall be spread at the rate of 3 tons/acre or wood cellulose fiber mulch shall be applied at the rate of 3,000 lbs/acre.

PERMANENT SEEDING REQUIREMENTS

All exposed areas of soil disturbed by rough grading shall be seeded with the seed mix and at the rate noted below:

SPECIES: Kentucky Bluegrass 25%
Perennial Ryegrass 15%
% PURE LIVE SEED: 80%
APPLICATION RATE: 60 lbs/acre
FERTILIZER TYPE: 10–20–20
FERTILIZER APPL. RATE: 1000 lbs/acre
LIMING RATE: 1 tons per acre
MULCH TYPE: Hay or Straw
MULCHING RATE: 3 tons per acre
ANCHOR METHOD: Hydraulic Erosion Control Products
ANCHOR MATERIAL: HydorCX Extreme Slope
RATE OF ANCHOR MATERIAL APPL.: 3,000 – 4,500 lbs/acre
SEEDING SEASON DATES: March 15 to June 1,
August 1 to October 15

All seed shall be blue tag certified grade. Straw mulch shall be spread at the rate of 3 tons/acre or wood cellulose fiber mulch shall be applied at the rate of 3,000 lbs/acre.

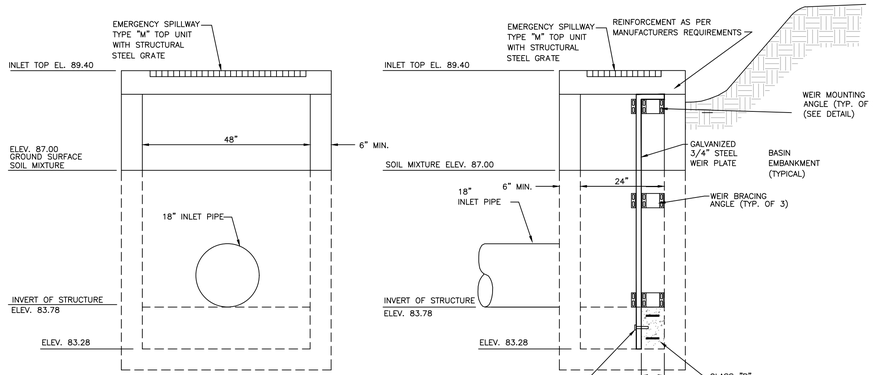
STEEP SLOPE SEEDING REQUIREMENTS

SLOPES OVER 33%

All exposed slopes shall be seeded with the seed mix and at the rate noted below:

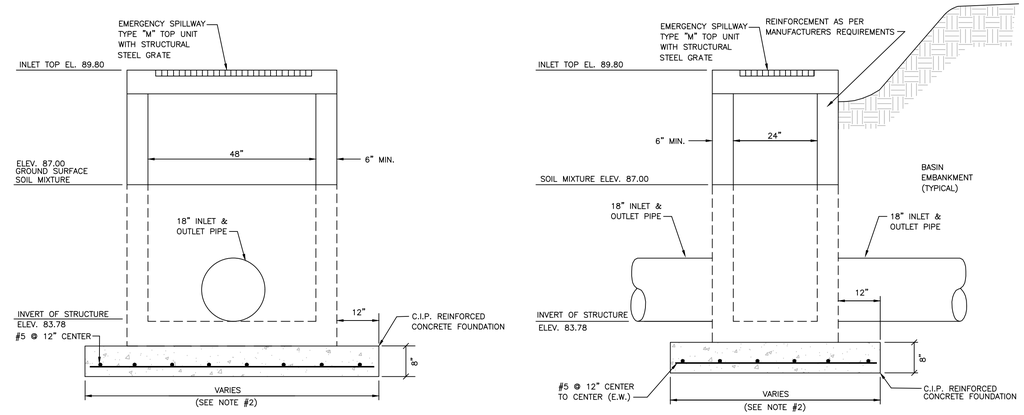
SPECIES: Seed Mix 1 Plus 2
(No Tall Fescue)

		Seeding Rate – Pure Live Seed	
		Most Sites	Adverse Sites
% PURE LI



NOTES:
1. THE CONCRETE AND INLET WILL NEED TO BE DRILLED FOR THE 3/4" AND 1/2" BOLTS.
2. THE OUTLET PIPE SHALL BE SEALED FROM LEAKAGE.

RAIN GARDEN OUTLET STRUCTURE DETAIL
N.T.S.



NOTES:
1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES TO A DEPTH OF 1/2 OF THE PIPE I.D. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE FLOW.
2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24" LARGER THAN THE OUTSIDE DIMENSION OF THE OUTLET STRUCTURE.
3. THE OUTLET PIPE SHALL BE SEALED FROM LEAKAGE.

EMERGENCY SPILLWAY #1 & #2 DETAIL
N.T.S.

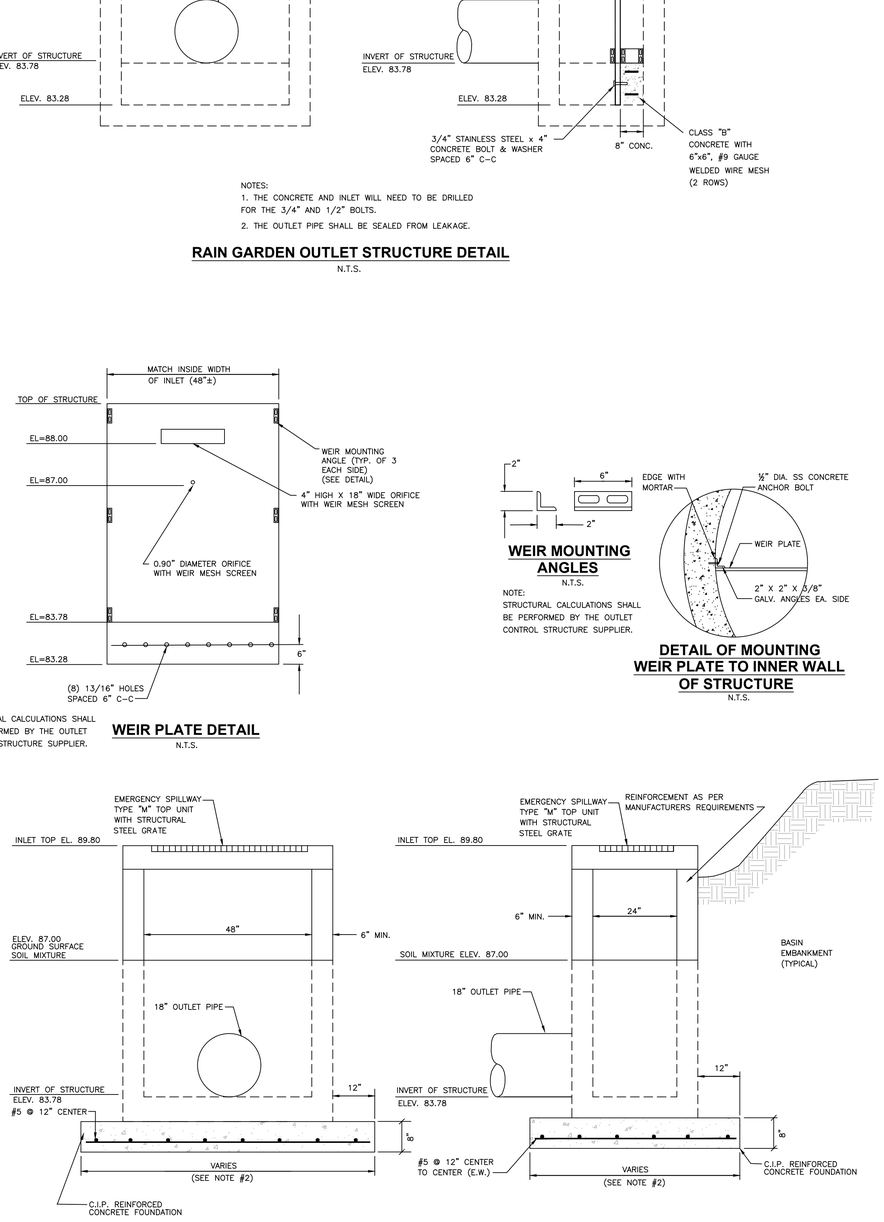
NOTE:
STRUCTURAL CALCULATIONS SHALL BE PERFORMED BY THE OUTLET CONTROL STRUCTURE SUPPLIER.

WEIR PLATE DETAIL
N.T.S.

NOTE:
STRUCTURAL CALCULATIONS SHALL BE PERFORMED BY THE OUTLET CONTROL STRUCTURE SUPPLIER.

WEIR MOUNTING ANGLES
N.T.S.

DETAIL OF MOUNTING WEIR PLATE TO INNER WALL OF STRUCTURE
N.T.S.



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3. THE OUTLET PIPE SHALL BE SEALED FROM LEAKAGE.

EMERGENCY SPILLWAY #3 DETAIL
N.T.S.

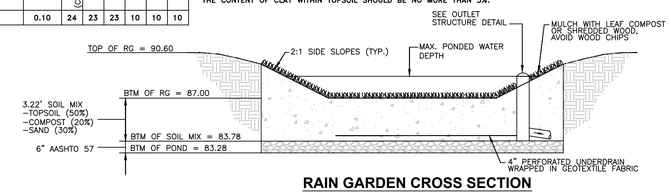
RAIN GARDEN PLANTING SCHEDULE						
		NUMBER OF PLANTS				
		SHRUBS			TREES	
BASIN NO.	TOTAL ACRES OF TOP CONTOUR	BUTTON BUSH, COMMON (CEPHALANTHUS OCCIDENALIS)	ROSE, SWAMP (ROSA PALUSTRIS)	ALDER, SPECKLED (ALNUS RUGOSA)	BLACK WILLOW (SALIX NIGRA)	OAK, SWAMP WHITE (QUERCUS BICOLOR)	BLACK GUM (NYSSA SYLVATICA)
1	0.10	24	23	23	10	10	10

NOTES:

TREES AND SHRUBS SHOULD BE PLANTED FROM MID-MARCH THROUGH THE END OF JUNE, OR MID-SEPTEMBER THROUGH MID-NOVEMBER.

A MAXIMUM OF 2 TO 3 INCHES OF SHREDDED MULCH OR LEAF COMPOST (OR OTHER COMPARABLE PRODUCT) SHOULD BE UNIFORMLY APPLIED IMMEDIATELY AFTER SHRUBS AND TREES ARE PLANTED TO PREVENT EROSION, ENHANCE METAL REMOVALS, AND SIMULATE LEAF LITTER IN A NATURAL FOREST SYSTEM. WOOD CHIPS SHOULD BE AVOIDED AS THEY TEND TO FLOAT DURING INUNDATION PERIODS. MULCH/COMPOST LAYER SHOULD NOT EXCEED 3" IN DEPTH SO AS NOT TO RESTRICT OXYGEN FLOW TO ROOTS.

THE CONTENT OF CLAY WITHIN TOPSOIL SHOULD BE NO MORE THAN 5%.



RAIN GARDEN CROSS SECTION
N.T.S.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN ROBERT GALES
ENGINEER
PE-11386-E

John Robert Gales
J.R. GALES, P.E.

9-24-25
DATE

DATE	REVISION
9/3/25	REVISED PER COMMENT LETTER
9/24/25	REVISED PER COMMENT LETTER

POSTCONSTRUCTION STORMWATER MANAGEMENT PLAN DETAILS

SITUATE IN
PETERS TOWNSHIP
WASHINGTON COUNTY, PA
MADE FOR
COUGHLIN'S LAW SOUTH HILLS

SCALE: AS SHOWN DATE: AUGUST 14, 2025

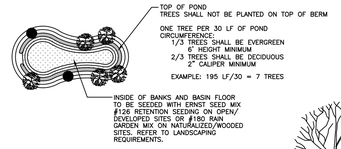
PREPARED BY:
J.R. GALES & ASSOCIATES, INC.
2704 Brownsville Road
Pittsburgh, Pennsylvania 15227
Phone: 412-885-8885 Fax: 412-885-1320

15-135098
SL 15-135038 SITE

PLANT LIST

SYMBOL	QUANTITY	LATIN NAME	COMMON NAME	TYPE	CALIPER
	23	Fagus grandfolia	American Beech	TREE	2 1/2"
	27	Ilex Glabra	Inberry Holly	SHRUB	1 GAL.

STORMWATER TREATMENT FACILITY LANDSCAPING



RETENTION BASIN FLOOR SEEDING
LOW MAINTENANCE GRASS & GRASS-LIKE SPECIES
ERNST SEEDING MIX #126

20%	Agrostis alba	Redtop
20%	Elymus virginicus	Virginia Wild Rye
20%	Puccinellia distans	Alkaligrass 'Fults'
15%	Carex vulpinoidea	Fox Sedge
10%	Agrostis stolonifera	Creeping Bentgrass
10%	Poa palustris	Fowl Bluegrass
2%	Agrostis scabra	Ticklegrass (Rough Bentgrass)
2%	Agrostis perennans	Autumn Bentgrass
1%	Juncus tenuis	Path Rush

SEEDING RATE: 20-40 BULK LBS PER ACRE OR
1/2 - 1 LBS PER 1,000 SQ. FT.

NOTES:

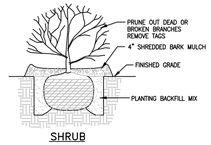
TREES AND SHRUBS SHOULD BE PLANTED FROM MID-MARCH THROUGH THE END OF JUNE, OR MID-SEPTEMBER THROUGH MID-NOVEMBER.

A MAXIMUM OF 2 TO 3 INCHES OF SHREDDED MULCH OR LEAF COMPOST (OR OTHER COMPARABLE PRODUCT) SHOULD BE UNIFORMLY APPLIED IMMEDIATELY AFTER SHRUBS AND TREES ARE PLANTED TO PREVENT EROSION, ENHANCE METAL REMOVALS, AND SIMULATE LEAF LITTER IN A NATURAL FOREST SYSTEM. WOOD CHIPS SHOULD BE AVOIDED AS THEY TEND TO FLOAT DURING INUNDATION PERIODS. MULCH/COMPOST LAYER SHOULD NOT EXCEED 3" IN DEPTH SO AS NOT TO RESTRICT OXYGEN FLOW TO ROOTS.

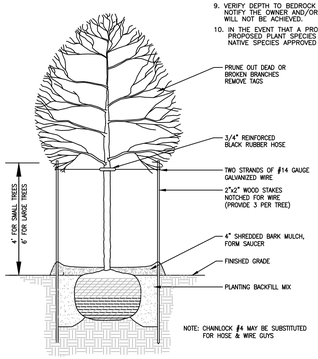
THE CONTENT OF CLAY WITHIN TOPSOIL SHOULD BE NO MORE THAN 5%.

PLANTING NOTES:

1. ALL TREES SHALL BE A MINIMUM 2 1/2" CALIPER MEASURED AT 6" ABOVE THE GROUND, PER ANSI Z60.1.
2. LOCATE THE TRUNK FLARE/ROOT FLARE, EXCAVATE ANY SOIL ON OR ABOVE THE FLARE TO EXPOSE THE FLARE AT FINAL PLANTING HEIGHT.
3. EACH PLANT SHOULD BE FREE FROM DISEASE, INSECT INFESTATION AND MECHANICAL INJURIES IN ALL RESPECTS, BE READY FOR FIELD PLANTING.
4. ALL PLANTS SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERYMEN STOCK IN REGARDS TO SIZING, GROWING AND B & B SPECIFICATIONS.
5. IF DECIDUOUS TREES ARE PLANTED IN THE FALL THEN ALL TREES SHALL BE STAKED FOR ONE SEASON. IF PLANTING OCCURS IN THE SPRING, THEN NO STAKING IS REQUIRED.
6. TREE MULCH RINGS IN TURF AREAS ARE 5 FOOT DIAMETER, TYPICAL. THE CONTRACTOR SHALL PROVIDE A 3" THICK MULCH RING AROUND ALL PROPOSED TREES IN TURF AREAS. REMOVE ALL EXISTING GRASS FROM AREA TO BE MULCHED AND PROVIDE A TYPICAL V-TRENCH EDGE.
7. A 3" THICK SHREDDED HARDWOOD MULCH SHALL BE PROVIDED IN ALL PLANTING BEDS CONTAINING TREES, SHRUBS AND UNDER BUILDING OVERHANGS.
8. ALL PLANTS INDICATED ON PLANS SHALL BE GROWN IN CLIMATES SIMILAR TO PROJECT AREA.
9. VERIFY DEPTH TO BEDROCK IN EACH PLANTING BED AND/OR TREE RING. NOTIFY THE OWNER AND/OR OWNER'S REPRESENTATIVE IF PROPER DRAINAGE WILL NOT BE ACHIEVED.
10. IN THE EVENT THAT A PROPOSED PLANT CANNOT BE ACQUIRED, THE PROPOSED PLANT SPECIES SHALL ONLY BE SUBSTITUTED WITH AN EQUIVALENT NATIVE SPECIES APPROVED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE.

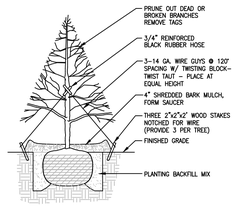


SHRUB



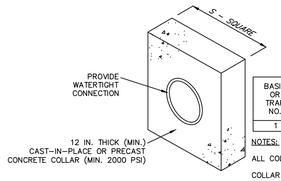
NOTE: CHAINLOCK #4 MAY BE SUBSTITUTED FOR HOSE & WIRE GUYS

SHADE TREE



EVERGREEN TREE

PLANTING DETAILS ARE NOT TO SCALE



BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
1	18	45	3	13.13	13.13

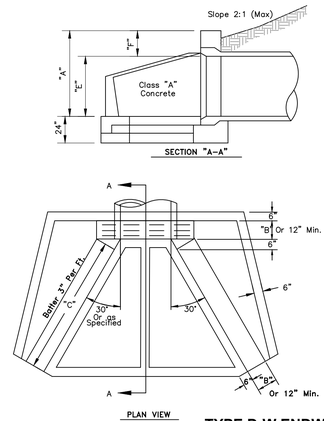
NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

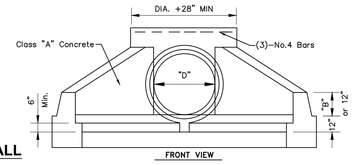
STANDARD CONSTRUCTION DETAIL #7-16
CONCRETE ANTI-SEEP COLLAR FOR
PERMANENT BASINS OR TRAPS

NOT TO SCALE

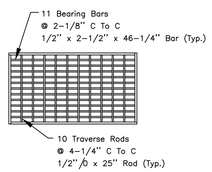


PIPE DIAMETER	A	B	C	D	E	F
15"	2'-6"	9"	2'-0"	12"	1'-9"	9"
18"	2'-6"	9"	2'-0"	12"	2'-0"	9"
24"	3'-3"	9"	2'-0"	12"	2'-6"	9"
30"	4'-0"	12"	2'-6"	15"	3'-0"	12"
36"	4'-6"	12"	2'-6"	15"	3'-6"	12"
42"	5'-3"	15"	4'-3"	18"	4'-0"	15"
48"	5'-9"	15"	4'-9"	21"	4'-6"	15"
54"	6'-3"	15"	5'-3"	24"	5'-0"	15"
60"	7'-0"	15"	5'-9"	2'-3"	5'-6"	18"
66"	7'-6"	15"	7'-0"	2'-6"	6'-0"	18"
72"	8'-0"	18"	7'-0"	2'-6"	6'-6"	18"
84"	9'-0"	18"	8'-3"	2'-9"	7'-6"	18"

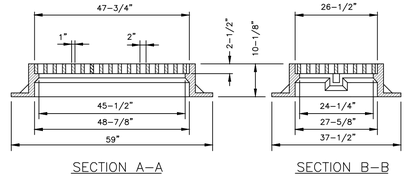
NOTE: Shop Drawings For All Precast Headwalls/Endwalls or Concrete End Section Must Be Submitted For Approval.



TYPE D-W ENDWALL
N.T.S.



BICYCLE SAFE GRATE
NOT TO SCALE



NOT TO SCALE

STORM INLET (TYPE M)
NOT TO SCALE

NOTES

Weep holes will be required.

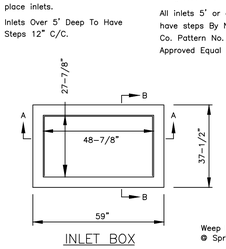
All inlets shall be in accordance with specifications set forth in Penn D.O.T. publication 408 and 72 for precast and poured in place inlets.

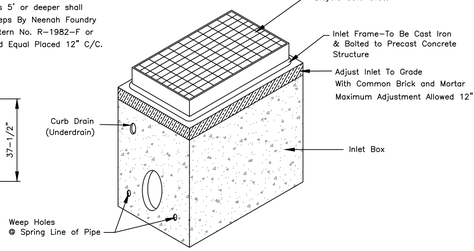
Inlets Over 5' Deep To Have Steps 12" C/C.

Concrete inverts to be poured to flow line, To Make Inlets Self Cleaning. Refer to Precast Concrete Manhole for Pipes Detail for Additional Information.

All grates shall be bicycle safe

All inlets 5' or deeper shall have steps By Neenah Foundry Co. Pattern No. R-1982-F or Approved Equal Placed 12" C/C.





COMMONWEALTH OF PENNSYLVANIA
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