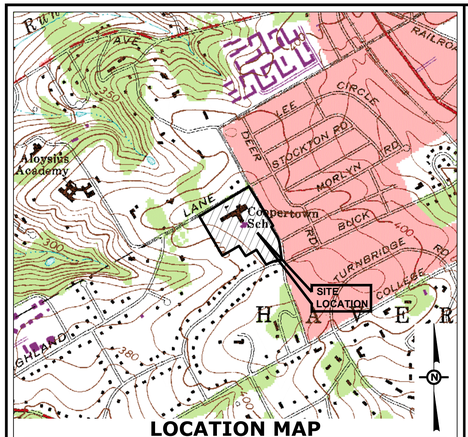


LOCATION MAP

SCALE: 1"=1000 FEET

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION

FOR

HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

K&W
DESIGNING ENVIRONMENTS
2201 North Front Street, Suite 200
Harrisburg, PA 17110
P: 717.635.2835
www.kandwengineers.com

LANDOWNER / APPLICANT

HAVERFORD TOWNSHIP SCHOOL DISTRICT
400 ALLSTON ROAD
HAVERTOWN, PA 19083

TELEPHONE: 610.853.5900 X 7204
CONTACT: MAUREEN REUSCHE, Ed,d., SUPERINTENDENT

SITE ENGINEER / PLAN PREPARER

KUROWSKI & WILSON, LLC
2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: CAROLYN E. DUBOIS, R.L.A.

SITE SURVEYOR

KUROWSKI & WILSON, LLC
2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: DENNIS P. BURKHARD, PLS

ACT 287 UTILITY INFORMATION

THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION (ULLP) LAW, PA ACT 287 OF 1974, AS AMENDED BY ACT 50 OF 2017 FOR NOTIFICATION OF UTILITIES BEFORE EXCAVATION IN CONTRACT AREA. THE UNDERGROUND UTILITIES LOCATION CALL NUMBER IS 1-800-242-1776 (or 811)

PA ONE-CALL SERIAL NUMBER: 20242822735 (DESIGN TICKET)
PA ONE-CALL SERIAL NUMBER DATE: 10/08/2024

THE FOLLOWING UTILITY FACILITY OWNERS WERE NOTIFIED BY THE PA ONE-CALL SYSTEM, INC.

AQUA PENNSYLVANIA
762 LANCASTER AVE
BRYN MAWR, PA. 19010
CONTACT:THOMAS WADDY
EMAIL:tbwaddy@aquaamerica.com
PHONE:610-525-1400 EXT. 52105

PECO AN EXELON COMPANY C/O USIC
450 S HENDERSON ROAD SUITE B
KING OF PRUSSIA, PA. 19406
CONTACT:NIKKIA SIMPKINS
EMAIL:nikkiasimpkins@usicllc.com
PHONE:484-681-5720

HAVERFORD TOWNSHIP
1014 DARBY RD
HAVERTOWN, PA. 19083
CONTACT:DAN MARIANI
EMAIL:dmariani@havtwp.org
PHONE:610-446-1000 EXT. 2262

VERIZON BUSINESS FORMERLY MCI
7000 WESTON PKWY
CARY, NC. 27513
CONTACT:VICTOR WOOD
EMAIL:victor.s.wood@verizon.com
PHONE:919-414-2782

COMCAST
1250 HADDONFIELD-BERLIN RD
CHERRY HILL, NJ. 08034
CONTACT:WYATT PARRISH
EMAIL:WYATT_PARRISH@CABLE.COMCAST.COM
PHONE:484-368-4391

ZONING DATA

ZONING DISTRICT: (IN) INSTITUTIONAL			
PROPOSED USE: PUBLIC EDUCATIONAL INSTITUTION (CONDITIONAL USE GRANTED)			
REQUIREMENT:	REQUIRED:	EXISTING:	PROPOSED:
MINIMUM LOT AREA:	2 ACRES	11.992 ACRES	11.992 ACRES
MINIMUM LOT WIDTH:	150 FEET	781 FEET	781 FEET
FRONT YARD SETBACK:	100 FEET	114 FEET	114 FEET
SIDE YARD SETBACK:	50 FEET EACH	110 FEET	110 FEET
REAR YARD SETBACK:	75 FEET	213 FEET	213 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET OR 3 STORIES*	<35 FEET	<35 FEET
MAX. BUILDING COVERAGE:	20%	13.3%	16.3%
MAX. IMPERVIOUS COVERAGE:	40%	28.8 %	39.6%

* PROVIDED, HOWEVER, THAT THE HEIGHT OF A BUILDING MAY BE INCREASED TO A MAXIMUM HEIGHT OF 60 FEET OR FIVE STORIES BY PROVIDING TWO FEET OF ADDITIONAL FRONT, REAR AND SIDE YARD SETBACKS FOR EACH ONE ADDITIONAL FOOT OF HEIGHT OF THE BUILDING ABOVE 35 FEET.

SITE DATA

TAX PARCEL:	22-05-006-000
DEED REF. / INSTRUMENT #:	DEED BOOK 633, PAGE 578
EXISTING LOT AREA:	11.992 ACRES
PROPOSED SEWAGE DISPOSAL:	PUBLIC
PROPOSED WATER SUPPLY:	PUBLIC

PARKING DATA

OFF-STREET PARKING REGULATIONS SHALL BE AS REQUIRED BY SECTION 182-707 OF THIS CHAPTER, EXCEPT THAT NO PARKING SHALL BE ALLOWED WITHIN 50 FEET OF AN R-1, R-2 OR R-3 RESIDENTIAL DISTRICT OR WITHIN 25 FEET OF AN R-4-OR-HIGHER-DENSITY RESIDENTIAL DISTRICT.

PARKING REQUIRED: 182-707.B

BUILDING OR USES OTHER THAN SPECIFIED
1 SPACE / 1,000 SF OF GROSS FLOOR AREA
84,265 GROSS FLOOR AREA / 1,000 = 85 SPACES REQUIRED

EXISTING SPACES: 72
PROPOSED SPACES: 13
TOTAL PROVIDED: 85

WAIVER REQUESTS

THE FOLLOWING WAIVERS OF THE HAVERFORD TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ARE REQUESTED BY THE APPLICANT:

160-3.B - PRELIMINARY PLAN.
160-4.E.5.b - ZONING BOUNDARIES WITHIN 2000 FEET OF THE SITE.
160-4.E.5.e.3 - PUBLIC IMPROVEMENTS AND PROPERTY OWNER INFORMATION WITHIN 200 FEET OF THE SITE.
160-4.E.5.e.4 - PUBLIC UTILITIES WITHIN 400 FEET OF THE SITE.
160-5.B(4)(A) – DESIGN CRITERIA AND REQUIREMENTS FOR CURBS, SIDEWALKS AND STREETLIGHTING

ZONING VARIANCES

THE FOLLOWING ZONING VARIANCES ARE REQUESTED OF THE HAVERFORD TOWNSHIP ZONING BOARD BY THE APPLICANT:

182-602.B.2.B - "PUBLIC OR PRIVATE EDUCATIONAL INSTITUTIONS, INCLUDING COLLEGES, ELEMENTARY AND SECONDARY SCHOOLS AND NURSERY SCHOOLS, BUT NOT INCLUDING BUSINESS OR TRADE SCHOOLS, DANCE STUDIOS OR SIMILAR FACILITIES." CONDITIONAL USE IN THE INS INSTITUTIONAL ZONING DISTRICT

182-708.A.1 - "OFF-STREET LOADING AND UNLOADING SPACE(S) WITH PROPER AND SAFE ACCESS FROM A STREET OR ALLEY SHALL BE PROVIDED ON EACH LOT USED FOR COMMERCIAL OR OTHER PURPOSES WHERE IT IS DEEMED THAT SUCH FACILITIES ARE NECESSARY TO ADEQUATELY SERVE ANY SUCH USE WITHIN THE DISTRICT. ALL SUCH LOADING AND UNLOADING SPACES SHALL BE LOCATED AT THE REAR OF THE BUILDING."

182-708.A.1.D - "NO LOADING SPACE SHALL BE PERMITTED WITHIN THE REQUIRED FRONT YARD SETBACK FROM ANY STREET."

182-708.A.4 - "NO TRUCK SHALL BE ALLOWED TO STAND IN A RIGHT-OF-WAY OR AUTOMOBILE PARKING AREA, INCLUDING AISLES, DURING ANY TIME IN WHICH ANY SUCH AREA IS USED FOR PARKING OR IN ANY WAY BLOCK THE FLOW OF PERSONS OR VEHICLES."

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C-001	COVER SHEET
C-002	PCSM SUPPORTING INFORMATION
C-003	E&S SUPPORTING INFORMATION
C-101	OVERALL EXISTING FEATURES PLAN
C-101.1	EXISTING FEATURES PLAN
C-102	DEMOLITION PLAN
C-103	OVERALL SITE PLAN
C-103.1	SITE PLAN
C-103.2	SITE PLAN
C-103.3	SITE DISTANCE PLAN
C-104	GRADING PLAN
C-104.1	GRADING PLAN
C-105	PCSM PLAN
C-105.1	PCSM PLAN
C-106	UTILITY PLAN
C-107	LANDSCAPE PLAN
C-300	STORMWATER PROFILES
C-301	STORMWATER PROFILES
C-302	STORMWATER PROFILES
C-501	DETAILS
C-502	DETAILS
C-601	PCSM DETAILS
C-602	PCSM DETAILS
C-701	OVERALL E&S PLAN
C-701.1	E&S PLAN
C-701.2	E&S PLAN
C-702	E&S DETAILS
C-703	E&S DETAILS
C-801	OFFSITE DRAINAGE PLAN

WETLANDS CERTIFICATION

I, _____ _____
BRADLY GOCHNAUER DATE

HEREBY CERTIFY THAT THERE ARE NO WETLANDS IN THE AREA OF PROPOSED DEVELOPMENT ON THE SUBJECT PROPERTY. THE PROPOSED PROJECT WILL NOT IMPACT OFF-SITE WETLANDS, AND WETLAND FILL PERMITS ARE NOT REQUIRED FROM THE STATE OR FEDERAL GOVERNMENT.

CERTIFICATE OF ACCURACY (PLAN)

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE LAND DEVELOPMENT PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT.

_____, 20_____

_____
J. MARC KUROWSKI, P.E

CERTIFICATE OF ACCURACY (SURVEY)

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE BOUNDARY SURVEY SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT.

_____, 20_____

_____
DENNIS P. BURKHARD, P.L.S.

STORMWATER CERTIFICATION OF ACCURACY

I, _____, HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF HAVERFORD TOWNSHIP'S STORMWATER MANAGEMENT ORDINANCE.

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGMENT OF PLAN

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DELAWARE

ON THIS THE_____ DAY OF _____, 20_____ BEFORE ME THE

UNDERSIGNED PERSONALLY APPEARED.

OWNER(S) _____

OWNER(S) _____

WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN AND THAT THEY ACKNOWLEDGE THE SAME TO BE THEIR ACT AND DEED AND DESIRE THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW. WITNESS MY HAND AND NOTORIAL SEAL THE DAY AND THE DATE ABOVE WRITTEN

_____
NOTARY PUBLIC MY COMMISSION EXPIRES

IT IS HEREBY CERTIFIED THAT THE UNDERSIGNED ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAT AND THAT ALL STREETS OR PARTS THEREOF, IF NOT PREVIOUSLY DEDICATED, ARE HEREBY TENDERED FOR DEDICATION TO PUBLIC USE.

OWNER(S) _____

OWNER(S) _____

TOWNSHIP ENGINEER

THIS PLAN REVIEWED BY THE HAVERFORD TOWNSHIP ENGINEER THIS

_____ DAY OF _____ 20_____

TOWNSHIP ENGINEER _____

TOWNSHIP BOARD OF COMMISSIONERS

THIS PLAN APPROVED BY THE HAVERFORD TOWNSHIP BOARD OF COMMISSIONERS, AND ALL CONDITIONS IMPOSED WITH RESPECT TO SUCH APPROVAL WERE COMPLETED ON THIS

_____ DAY OF _____ 20_____

_____ _____
PRESIDENT SECRETARY

TOWNSHIP PLANNING COMMISSION

THIS PLAN RECOMMENDED FOR APPROVAL BY THE HAVERFORD TOWNSHIP

PLANNING COMMISSION THIS _____ DAY OF _____ 20_____

CHAIRMAN _____

SECRETARY _____

OWNER STORMWATER STATEMENT

I _____ (OWNER) ACKNOWLEDGE THAT THE STORMWATER BMP'S SHOWN WITHIN THESE PLANS ARE PERMANENT FIXTURES THAT CANNOT BE ALTERED OR REMOVED WITHOUT PRIOR APPROVAL BY HAVERFORD TOWNSHIP.

DELAWARE COUNTY PLANNING COMMISSION

THIS PLAN REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION

THIS _____ DAY OF _____ 20___

CHAIRMAN _____

SECRETARY _____

GENERAL NOTES

1. THE PURPOSE OF THIS PLAN IS THE CONSTRUCTION THREE BUILDING ADDITIONS, AND ASSOCIATED SITE IMPROVEMENTS ON THE SUBJECT PROPERTY.
2. THE EXISTING SITE FEATURES, TOPOGRAPHY AND PROPERTY BOUNDARY LINES SHOWN HEREON ARE OBTAINED FROM A DRAWING OF SURVEY INFORMATION PRODUCED BY KUROWSKI & WILSON, LLC.
3. PUBLIC WATER TO BE PROVIDED BY AQUA PENNSYLVANIA.
4. PUBLIC SEWER TO BE PROVIDED BY HAVERFORD TOWNSHIP.
5. THE SITE DEVELOPMENT WILL COMPLY WITH ALL APPLICABLE TOWNSHIP ORDINANCES IN EFFECT AT THE TIME OF THIS LAND DEVELOPMENT PLAN SUBMISSION.
6. STREET CURB & SIDEWALKS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HAVERFORD TOWNSHIP, AS APPLICABLE.
7. ALL CONSTRUCTION SHALL CONFORM TO PENNDOT PUBLICATIONS 408 & 72 STANDARDS AND ALL APPLICABLE SUSQUEHANNA TOWNSHIP ORDINANCES.
8. ALL SIGNS SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION AND TOWNSHIP SPECIFICATIONS AND SHALL BE INSTALLED BY THE DEVELOPER IN A MANNER SPECIFIED BY THE MUNICIPAL ENGINEER. A SEPARATE PERMIT IS REQUIRED FOR ANY NEW SIGNS AND ALL NEW SIGNS MUST MEET TOWNSHIP REQUIREMENTS.
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES OUTSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL BE OWNED, OPERATED, AND MAINTAINED BY THE PROPERTY OWNER. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DEDICATED TO HAVERFORD TOWNSHIP OR PENNDOT.
10. THERE ARE NO EXISTING COVENANTS FOR THE SUBJECT TRACT.
11. THE DEVELOPER / CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A MINIMUM OF 48 HOURS NOTICE AND TO COORDINATE WITH THE TOWNSHIP / TOWNSHIP ENGINEER IN REGARDS TO ALL MUNICIPAL INSPECTION WORK REQUIRED ON THE PROJECT SITE.

RECORDER OF DEEDS

THIS PLAN RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN AND

FOR DELAWARE COUNTY THIS _____ DAY OF _____ 20____

INSTRUMENT NUMBER_____

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN
COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT
HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

PROFESSIONAL SEAL

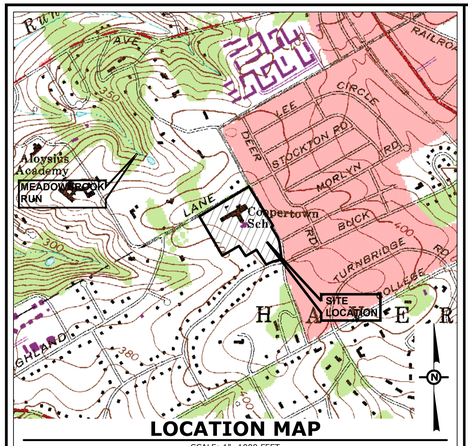
SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING: 2003089-A_Id CVR_24x36.dwg	

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
COVER SHEET

SHEET:
C-001



LOCATION MAP

SCALE: 1"=1000 FEET

LANDOWNER / APPLICANT

HAVERFORD TOWNSHIP SCHOOL DISTRICT
400 ALLSTON ROAD
HAVERTOWN, PA 19083

TELEPHONE: 610.853.5900 X 7204
CONTACT: MAUREEN REUSCHE, Ed,d., SUPERINTENDENT

SITE ENGINEER / PLAN PREPARER

KUROWSKI & WILSON, LLC
2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: CAROLYN E. DUBOIS, R.L.A.

SITE SURVEYOR

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2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: DENNIS P. BURKHARD, PLS

WATERSHED NOTE

THE SITE IS LOCATED IN THE DARBY CREEK AND COBBS CREEK WATERSHEDS APPROXIMATELY 0.2 MILES SOUTHEAST OF TRIBUTARY 00780 TO MEADOWBROOK RUN AND 0.4 MILES EAST OF TRIBUTARY 00779 TO MEADOWBROOK RUN, BOTH WHICH FLOWS INTO MEADOWBROOK RUN. ACCORDING TO 25 PA CODE CHAPTER 93, BOTH TRIBUTARIES AND MEADOWBROOK RUN IS DESIGNATED AS A COLD WATER FISHERY (CWF) AND MIGRATORY FISH (MF).

RECYCLING OR DISPOSAL OF MATERIALS

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 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.
2. ANTICIPATED CONSTRUCTION WASTE MAY INCLUDE TYPICAL BUILDING MATERIALS (I.E. LUMBER, DRYWALL, MASONRY, CARDBOARD AND PAPER, INSULATION, ASPHALT, ROOFING, PLASTIC AND VINYL, PAINTS, STAINS, SOLVENTS AND SEALANTS, (ETC.)
3. IT IS STRONGLY ENCOURAGED THAT SUCH RECOVERABLE WASTE MATERIALS BE SEPARATED AND APPROPRIATELY RECYCLED. NO POTENTIAL TOXIC OR HAZARDOUS WASTE IS KNOWN TO BE PRESENT ON SITE. IF ANY TOXIC OR HAZARDOUS WASTE IS ENCOUNTERED, THE CONTRACTOR SHALL FOLLOW ANY AND ALL APPLICABLE STATE OR FEDERAL REGULATIONS ASSOCIATED WITH THE DISPOSAL OF SUCH MATERIALS.

PCSM PLAN SET LIST

SHEET NUMBER	SHEET TITLE
C-002	PCSM SUPPORTING INFORMATION
C-101	OVERALL EXISTING FEATURES PLAN
C-101.1	EXISTING FEATURES PLAN
C-105	PCSM PLAN
C-105.1	PCSM PLAN
C-300	STORMWATER PROFILES
C-301	STORMWATER PROFILES
C-302	STORMWATER PROFILES
C-601	PCSM DETAILS
C-602	PCSM DETAILS
C-801	OFFSITE DRAINAGE PLAN

PCSM PLAN GENERAL NOTES

THE SITE CONTRACTOR AND SUBCONTRACTORS SHALL COMPLY WITH ALL REQUIREMENTS OF THE N.P.D.E.S. PERMIT FOR THE PROJECT SITE, INCLUDING OBTAINING STATUS AS A CO-PERMITTEE OF THE PERMIT. FOR INFORMATION REGARDING COMPLIANCE WITH THE N.P.D.E.S. PERMIT, CONTACT:

CHESTER COUNTY CONSERVATION DISTRICT
688 UNIONVILLE ROAD, SUITE 200
KENNETT SQUARE, PA 19348
610.455.1360 PHONE

1. THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPs. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF BMPs TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs SHALL CONDUCT THE OVERSIGHT.
2. THE "POST CONSTRUCTION STORMWATER MANAGEMENT NARRATIVE AND CALCULATIONS" REPORT SHALL BE CONSIDERED PART OF THE PLANS.
3. A "NOTICE OF TERMINATION" (NOT) WILL BE REQUIRED TO BE SUBMITTED. PRIOR TO ACCEPTING THE NOT, CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERIFY ADEQUATE INSTALLATION AND FUNCTION OF STORMWATER BMPs.
4. COMPACTION OF FILL. ALL STRUCTURAL FILL TO BE PLACED IN 6" LIFTS AND COMPACTED TO NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM. APPLICABLE FOR BERMS, STREETS, ETC. UNLESS SPECIFIED OTHERWISE ON THE PLANS OR IN ANY SUPPLEMENTAL SPECIFICATIONS.
5. THE APPROVED PCSM PLAN SHALL BE ON FILE AT THE PROJECT SITE THROUGHOUT THE DURATION OF THE CONSTRUCTION ACTIVITY.
6. AREAS PROPOSED FOR INFILTRATION BMPS SHALL BE PROTECTED FROM SEDIMENTATION AND COMPACTION DURING THE CONSTRUCTION PHASE TO MAINTAIN MAXIMUM INFILTRATION CAPACITY.

ENVIRONMENTAL DUE DILIGENCE

1. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATABASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OF AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF CLEAN FILL".
2. ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FR-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL.

MULCH SPECIFICATIONS

ON ALL DISTURBED AREAS WHICH DO NOT HAVE AN EROSION CONTROL BLANKET SPECIFIED FOR INSTALLATION, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 3.0 TONS PER ACRE IMMEDIATELY AFTER SEEDING THE SURFACE. ON STEEP SLOPES OF 3:1 OR GREATER, MULCH SHALL BE ANCHORED THROUGH THE USE OF JUTE NETTING OR MIXING WITH ASPHALT AT THE RATE OF 100 GALLONS PER 3 TONS OF STRAW MULCH.

APPLY THE FOLLOWING SOIL SUPPLEMENTS PRIOR TO PERMANENT SEEDING IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 804:

A) PULVERIZED AGRICULTURAL LIMESTONE APPLIED AT A RATE OF 800 POUNDS PER 1,000 SQUARE YARDS.
B) 10-20-20 ANALYSIS COMMERCIAL FERTILIZER APPLIED AT A RATE OF 140 POUNDS PER 1,000 SQUARE YARDS
C) 38-0-0 UREAFORM SLOW-RELEASE NITROGEN FERTILIZER APPLIED AT A RATE OF 50 POUNDS PER 1,000 SQUARE YARDS.

SEED MIXTURES

TEMPORARY SEED MIXTURE
TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYEGRASS (100% BY WEIGHT), OR EQUIVALENT, AND SHALL BE PLACED AT THE RATE OF 40 POUNDS PER ACRE; PURITY - 95%; GERMINATION - 85. TEMPORARY SEEDING SHALL BE APPLIED TO DISTURBED AREAS THAT ARE TO BE REDISTURBED LATER IN THE CONSTRUCTION PROCESS.

PERMANENT SEED MIXTURE
TURF TYPE TALL FESCUE SHALL BE APPLIED AT A RATE OF 21.0 POUNDS PER 1,000 SY. 80% MIN. GERMINATION; MIN. PURITY 98%.

SOIL LIMITATIONS RESOLUTIONS

1. CAVING CUT BANKS - CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION, STABILIZATION, AND SAFE WORKING TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS AND WITHIN AND AROUND ALL EXCAVATIONS INCLUDING FOOTERS, FOUNDATIONS AND UTILITY TRENCHES. BENCHING AND TRENCH BOXES SHOULD BE EMPLOYED WHERE REQUIRED OR APPROPRIATE TO ENSURE SAFE WORKING CONDITIONS AND COMPLIANCE WITH APPLICABLE SAFETY STANDARDS AND REGULATIONS.
2. CORROSIVE TO CONCRETE/STEEL - WHERE PERMITTED, UNDERGROUND PIPES, CONDUITS, AND STORAGE TANKS SHOULD BE MADE CORROSION RESISTANT MATERIALS. WHERE NECESSARY, SUITABLE PRECAUTIONS SHOULD BE TAKEN TO PROTECT UNDERGROUND CONCRETE AND UNCOATED STEEL STRUCTURES AND FACILITIES FROM CORROSION.
3. EASILY ERODIBLE - CONTRACTOR SHALL LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE TO THE LEAST AMOUNT PRACTICABLE TO COMPLETE THE PROJECT. CONTRACTOR SHOULD PHASE CONSTRUCTION WHERE POSSIBLE TO LIMIT THE TOTAL AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME. TEMPORARY AND PERMANENT STABILIZATION MEASURES SHOULD BE IMPLEMENTED AS SOON AS POSSIBLE. SEDIMENT CONTROL BMPS MAY REQUIRE MORE FREQUENT MAINTENANCE AND SEDIMENT REMOVAL AS COMPARED WITH SITES THAT DO NOT HAVE EASILY ERODIBLE SOIL. CONTRACTOR SHALL CONTACT THE SITE DESIGN ENGINEER AND THE CONSERVATION DISTRICT TO DEVISE ALTERNATIVE SOLUTIONS IF ANY EROSION CONDITIONS OCCUR THAT CANNOT BE ADDRESSED BY MEASURES FOUND IN THE PLANS.
4. DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER TABLE - STRUCTURES WITH BASEMENTS AND OTHER SUBSURFACE STRUCTURES SHOULD BE AVOIDED. BUILDING FOUNDATIONS SHOULD BE FURNISHED WITH APPROPRIATE FOUNDATION DRAINS AND SUMP PUMPS WHERE NECESSARY. SATURATED SOILS SHOULD BE DEWATERED PRIOR TO USE IN GRADING. WET, MUCKY, OR SOUPY SOILS SHOULD NOT BE USED IN THE CONSTRUCTION OF FILLS OR SLOPES. IF ACCUMULATED WATER NEEDS TO BE REMOVED FROM A WORK AREA, THE WATER SHALL BE TO A SEDIMENT CONTROL BMP, SUCH AS A SEDIMENT TRAP, SEDIMENT BASIN, OR PUMPED WATER FILTER BAG PLACED FOR DISCHARGE OVER A STABILIZED, WELL-VEGETATED AREA. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
5. HYDRIC / HYDRIC INCLUSIONS - HYDRIC SOILS OR SOILS WITH HYDRIC INCLUSIONS MAY BE INDICATIVE OF WETLANDS, HIGH GROUNDWATER TABLE, OR POORLY DRAINED SOILS. WETLANDS SHOULD BE IDENTIFIED AND AVOIDED IF POSSIBLE. DEWATERING TECHNIQUES SHALL BE USED AS NEEDED.
6. LOW STRENGTH/LANDSLIDE PRONE - FOR SOILS WITH LOW STRENGTH, PRECAUTIONS SHOULD BE TAKEN TO PREVENT SLOPE FAILURES DUE TO IMPROPER CONSTRUCTION PRACTICES SUCH AS OVER-STEEPENING AND OVERLOADING OF SLOPES, REMOVAL OF LATERAL SUPPORT, AND FAILURE TO PREVENT SATURATION OF SLOPES. SETBACKS SHOULD BE APPLIED IN ACCORDANCE WITH PADEP STANDARDS UNLESS IT CAN BE SHOWN THAT PROPOSED CUTS AND FILLS DO NOT POSE A HAZARD TO PUBLIC SAFETY OR SURFACE WATERS. ALSO, ROAD FILL MATERIAL WILL LIKELY NEED TO BE IMPORTED IN AREAS WHERE SOILS HAVE LOW STRENGTH. CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER/INSPECTOR FOR APPROPRIATE MEASURES TO BE IMPLEMENTED TO COMPACT, MITIGATE, AND/OR STABILIZE AREAS OF LOW STRENGTH OR LANDSLIDE PRONE SOILS.
7. SLOW PERCOLATION - CONTRACTOR SHALL PERFORM SITE GRADING TO PROVIDE SUFFICIENT POSITIVE DRAINAGE AWAY FROM BUILDINGS, FOUNDATIONS, AND OTHER STRUCTURES. IF ACCUMULATED WATER NEEDS TO BE REMOVED FROM A WORK AREA, THE WATER SHALL BE TO A SEDIMENT CONTROL BMP, SUCH AS A SEDIMENT TRAP, SEDIMENT BASIN, OR PUMPED WATER FILTER BAG PLACED FOR DISCHARGE OVER A STABILIZED, WELL-VEGETATED AREA.
8. PIPING - SOILS THAT ARE SUSCEPTIBLE TO PIPING CAN BE ERODIBLE AND NOT WELL SUITED FOR CONSTRUCTION OF EMBANKMENTS, DIKES, AND LEVEES. CONSTRUCTION TECHNIQUES SHALL BE EMPLOYED TO ENSURE THESE SOILS ARE PROPERLY COMPACTED AND STABILIZED
9. POOR SOURCE OF TOPSOIL - MANY SOIL TYPES ARE DROUGHTY OR TOO WET TO BE SUITABLE SOURCES OF TOPSOIL. SOIL TESTS SHOULD BE DONE TO DETERMINE THE PROPER APPLICATION OF SOIL AMENDMENTS TO PROMOTE THE GROWTH OF THE DESIRED VEGETATION. WHEREVER SOILS THAT ARE FAIR OR GOOD SOURCES OF TOPSOIL EXIST ON A SITE, THEY SHOULD BE CAREFULLY PRESERVED AND STORED FOR LATER USE IN RESTORATION. IF NECESSARY, TOPSOIL MAY BE IMPORTED TO THE SITE.
10. FROST ACTION - CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER / INSPECTOR REGARDING ANY SPECIAL MEASURES TO BE TAKEN FOR EARTHWORK THAT IS TO OCCUR DURING PERIODS OF FROST.
11. WETNESS - PROPER DRAINAGE AND DEWATERING MEASURES SHALL BE EMPLOYED AT ALL TIMES.
12. SLOPES - EXCAVATIONS SHOULD BE STABILIZED TO PREVENT EROSION AND CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS.
13. DEPTH OF ROCK - IF BEDROCK IS ENCOUNTERED, REMOVE AS NECESSARY IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
14. SOIL PH LEVELS - CONTRACTOR SHALL HAVE SOIL PH TESTED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES.
15. FLOODING POTENTIAL - ENSURE THAT THE SITE HAS PROPER DRAINAGE.
16. HIGH GROUNDWATER LEVEL - CONTRACTOR SHALL EMPLOY DEWATERING TECHNIQUES AS APPROVED BY THE CONSERVATION DISTRICT. PUMPED WATER FILTER BAGS SHALL BE USED TO DEWATER UTILITY TRENCHES AND BELOW GRADE EXCAVATIONS.
17. BASIN AREAS AND EMBANKMENTS - FILL FOR BASIN EMBANKMENTS SHALL BE COMPACTED IN 8" LIFTS TO 98% MAXIMUM DRY DENSITY (STANDARD PROCTOR) +/- 2% MOISTURE CONTENT PER ASTM D-1557. ANTI-SEEP COLLARS SHALL BE INSTALLED ON A BASIN DISCHARGE PIPING TO PREVENT SEEPAGE OF WATER FROM THE BASIN. CONSULT WITH SITE DESIGN ENGINEER FOR THE SPECIFIC ANTI-SEEP COLLAR SIZE REQUIREMENTS.

OPERATION & MAINTENANCE PROGRAM FOR BMPs AND SWM FACILITIES

1. THE PURPOSE OF THESE INSTRUCTIONS IS TO IDENTIFY THE OWNERSHIP AND MAINTENANCE ACTIVITIES ASSOCIATED WITH THE PROPOSED STRUCTURAL STORMWATER BMP'S. THE SUBJECT SITE HAS BEEN DESIGNED SUCH THAT THE INCREASE IN STORMWATER VOLUME SHALL BE ATTENUATED BY SCM 1.
2. A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT TO OBSERVE THE ITEMS LISTED BELOW AS THEY TAKE PLACE DURING CRITICAL STAGES OUTLINED IN THE SEQUENCE OF **CONSTRUCTION LISTED HEREIN:**
   - **2.1. OVERLYING VEGETATION SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.**
   - **2.2. ALL CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED OUT. VEHICULAR ACCESS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.**
   - **2.3. VEHICULAR ACCESS SHOULD BE PROHIBITED AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.**
3. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER FACILITIES AND BMP'S LOCATED OUTSIDE OF THE PUBLIC-RIGHT-OF-WAY. THESE FACILITIES INCLUDE BUT ARE NOT LIMITED TO SCM 1 THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR KEEPING THE FACILITIES FREE OF OBSTRUCTIONS.
4. THE PROPERTY OWNER SHALL GRANT TO THE HAVERFORD TWP THE RIGHT TO ENTER ALL PARTS OF THE PROPERTY TO INSPECT ON SITE STORMWATER MANAGEMENT FACILITIES IN ORDER TO ENSURE THEY ARE BEING OPERATED AS INTENDED PER THE PROVIDED MAINTENANCE REQUIREMENTS. THE PROPERTY OWNER SHALL FURTHER RECOGNIZE THAT IF SAID STORMWATER FACILITIES ARE NOT MAINTAINED IN ACCORDANCE WITH THE ABOVE, HAVERFORD TOWNSHIP HAS LEGAL RIGHT TO ACCESS THE PROPERTY, APPLY REQUIRED MAINTENANCE MEASURES TO SAID AREAS, AND ASSESS PENALTIES AND COSTS INVOLVED.

THE AFOREMENTIONED FACILITIES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
HAVERFORD TOWNSHIP SCHOOL DISTRICT
400 ALLSTON ROAD
HAVERTOWN, PA 19083

TELEPHONE: 610.853.5900 X 7204
CONTACT: MAUREEN REUSCHE, Ed,d., SUPERINTENDENT

SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

SCHEDULE SHALL INCLUDE REGULAR INSPECTION AND MAINTENANCE REQUIREMENTS INCLUDING ENGINEER'S PRESENCE AT SITE TO OBSERVE CONSTRUCTION AT CRITICAL STAGES AS INDICATED HEREIN. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO CONSTRUCTION OF STAGES.

1. AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DELEWARE COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
2. AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. CONTRACTOR SHALL CLEARLY MARK THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLAN. ORANGE CONSTRUCTION FENCE OR WOODEN STAKES WITH FLAG TAPE ARE ADEQUATE FOR FIELD MARKING. ADDITIONALLY, CONTRACTOR SHALL CLEARLY MARK ALL WATERS OF THE COMMONWEALTH.
4. INSTALL ALL SEGMENTS OF COMPOST FILTER SOCK IN THE LOCATIONS SHOWN ON THE PLANS.
5. ROUGH GRADE THE ACCESS DRIVE OFF OF HIGHLAND LANE INTO THE SITE AND IMMEDIATELY CONSTRUCT THE TEMPORARY ROCK CONSTRUCTION ENTRANCE #1 AS SHOWN ON THE PLAN. ALL VEHICLES ENTERING THE SITE SHALL DO SO VIA THE ROCK CONSTRUCTION ENTRANCE. ANY MUD OR SEDIMENT TRACKED ONTO MACADAM ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY. WASHING OF THE ROADWAY IS NOT PERMITTED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL TRAFFIC CONTROL DEVICES ASSOCIATED WITH THE ACCESS DRIVES THROUGHOUT THE TERM OF CONSTRUCTION ACTIVITIES.
7. CLEAR AND GRUB THE PORTIONS OF THE SITE AND DEMO ITEMS SOUTH OF THE SCHOOL AND PARKING AREAS. STRIP TOPSOIL AND STOCKPILE AT THE TEMPORARY AREA PROVIDED, SURROUND WITH COMPOST FILTER SOCK AND SEED PER TEMPORARY SEEDING SPECIFICATIONS, FERTILIZE AND MULCH. BEGIN BULK EXCAVATION OF THE SITE TO THE REQUIRED GRADES AS SHOWN ON THE PLANS, ANY EXCAVATED SOIL MATERIAL REMOVED FROM THE SITE SHALL ONLY BE PLACED IN AN AREA THAT HAS AN APPROVED EROSION CONTROL PLAN. ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN APPROPRIATE EROSION CONTROL BMP.
8. **CRITICAL STAGE: INSTALL UNDERGROUND INFILTRATION BASIN (SCM 1). EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.**
   - **8.1. INSTALL CONSTRUCTION FENCING AROUND LOCATIONS OF SCM 1, AS SHOWN ON THE PLANS.**
   - **8.1. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.**
   - **8.2. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS.**
   - **8.3. CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.**
   - **8.4. APPROVED SOIL MEDIA SHOULD BE PLACED OVER INFILTRATION BASINS IN MAXIMUM 6-INCH LIFTS.**
9. INSTALL STORMWATER COLLECTION AND CONVEYANCE FACILITIES FOR SCM 1 BEGINNING AT THE DOWNSTREAM CONNECTIONS AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED AND, IF NEEDED, TEMPORARY DIVERSION MEASURES UTILIZED TO MINIMIZE THE AMOUNT OF SEDIMENT REACHING THEM. INSTALL TEMPORARY INLET PROTECTION WHERE INDICATED ON THE PLAN. INSTALL STEEL OR PLYWOOD PLATES ON EACH INLET GRATE IN ORDER TO BLOCK OFF SEDIMENT FROM ENTERING THE INLETS DURING CONSTRUCTION.
10. CLEAR AND GRUB THE REMAINING PORTIONS OF THE SITE AND DEMO ITEMS ALONG COOPERTOWN ROAD AND HIGHLAND LANE. STRIP TOPSOIL AND STOCKPILE AT THE TEMPORARY AREA PROVIDED, SURROUND WITH COMPOST FILTER SOCK AND SEED PER TEMPORARY SEEDING SPECIFICATIONS, FERTILIZE AND MULCH. BEGIN BULK EXCAVATION OF THE SITE TO THE REQUIRED GRADES AS SHOWN ON THE PLANS, ANY EXCAVATED SOIL MATERIAL REMOVED FROM THE SITE SHALL ONLY BE PLACED IN AN AREA THAT HAS AN APPROVED EROSION CONTROL PLAN. ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN APPROPRIATE EROSION CONTROL BMP.
11. INSTALL REMAINING STORMWATER COLLECTION AND CONVEYANCE FACILITIES FOR THE REMAINDER OF THE SITE AND PARKING AREAS BEGINNING AT THE DOWNSTREAM CONNECTIONS FOR SCM 1 AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED AND, IF NEEDED, TEMPORARY DIVERSION MEASURES UTILIZED TO MINIMIZE THE AMOUNT OF SEDIMENT REACHING THEM. INSTALL TEMPORARY INLET PROTECTION WHERE INDICATED ON THE PLAN. INSTALL STEEL OR PLYWOOD PLATES ON EACH INLET GRATE IN ORDER TO BLOCK OFF SEDIMENT FROM ENTERING THE INLETS DURING CONSTRUCTION.
12. ROUGH GRADE SITE DRIVEWAY ONTO COOPERTOWN ROAD AND PARKING AREAS ALONG COOPERTOWN ROAD AND HIGHLAND LANE ACCORDING TO THE PROPOSED GRADES.
13. PLACE STONE SUBBASE IN AREAS OF PAVING AS SOON AS PRACTICAL TO PREVENT EROSION. E&S MATTING SHALL BE INSTALLED ON DISTURBED SLOPES WHICH ARE 3:1 OR GREATER. CONTRACTOR TO ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN E&S CONTROL BMP.
14. UPON ACHIEVING FINAL ELEVATION IN THE PROPOSED BUILDING PAD AREAS FOR EACH BUILDING ADDITION, EXCAVATE THE BUILDING FOOTERS. POUR CONCRETE FOR FOOTERS AND CONSTRUCT FOUNDATION WALL. WHEN CONDITIONS WARRANT, THE FOOTERS AND FOUNDATION WALLS MAY BE BACKFILLED. FILL MATERIAL SHALL BE FREE OF ROOTS, SOD, AND OTHER ORGANIC MATERIAL, FROZEN SOIL, STONES, AND DISCARDED CONSTRUCTION MATERIAL. THE FILL SHALL BE PLACED IN 8" LAYERS, WITH EACH LAYER BEING ROLLED AND COMPACTED PRIOR TO THE NEXT LAYER BEING PLACED. WHEN THE AREA REACHES THE PRESCRIBED ELEVATION, THE SUBBASE SHOULD BE THOROUGHLY ROLLED AND COMPACTED TO ELIMINATE ANY SOFT OR UNSETTLED AREAS.
15. INSTALL WATER SERVICE PIPING, ELECTRIC, AND OTHER REQUIRED UTILITIES.
16. INSTALL PAVEMENT OR CONCRETE TO ALL AREAS INDICATED ON THE PLANS AND APPLY TOPSOIL WITH PERMANENT SEEDING TO ALL AREAS TO REMAIN AS LANDSCAPE OR GRASS. IF NEEDED, IMPORT TOPSOIL AND APPLY THE MINIMUM REQUIRED DEPTH TO ESTABLISH PERMANENT VEGETATION. SEED, FERTILIZE, AND MULCH EXPOSED OR DISTURBED AREAS.
17. REMOVE ALL TEMPORARY SILT SOCK.
18. INSTALL ALL PROPOSED LANDSCAPING AT THIS TIME. SEE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN FOR PLANTINGS AND SPECIFICATIONS.
19. THE CONTRACTOR SHALL REMOVE TEMPORARY INLET PROTECTION AND ANY INSTALLED STEEL OR PLYWOOD PLATS, AND FLUSH ALL STORM SEWER PIPES AFTER THE SITE IS COMPLETELY STABILIZED.
20. ONCE SITE IS COMPLETELY STABILIZED, THE CONSTRUCTION FENCING AROUND SCM 1 SHALL BE REMOVED.
21. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL PREPARE A DRAFT NOTICE OF TERMINATION (NOT) AND AS-BUILT PLANS SUITABLE TO CONDUCT FINAL INSPECTION. CONTACT THE DELEWARE COUNTY CONSERVATION DISTRICT FOR A FINAL INSPECTION. PROPER DISPOSAL AND/OR RECYCLING OF THE BMPS IS REQUIRED BY THE SITE CONTRACTOR.

* STABILIZATION- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

**IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

K&W
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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

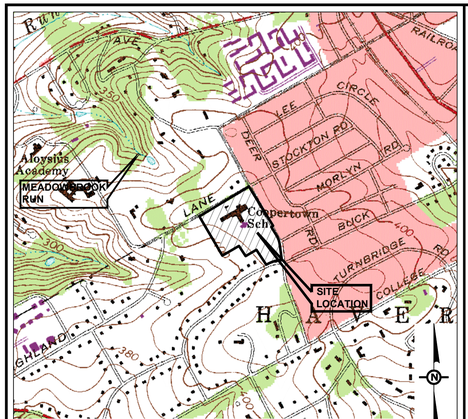
SCALE: AS SHOWN
DATE: JANUARY 2, 2025
K&W PROJECT: 2003.089
DRAWN BY: PKS
CAD DRAWING: 2003089-A_ld CVR_24x36.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
PCSM SUPPORTING INFORMATION

SHEET:
C-002



LOCATION MAP

SCALE: 1"=1000 FEET

LANDOWNER / APPLICANT

HAVERFORD TOWNSHIP SCHOOL DISTRICT
400 ALLSTON ROAD
HAVERTOWN, PA 19083

TELEPHONE: 610.853.5900 X 7204
CONTACT: MAUREEN REUSCHE, Ed,d., SUPERINTENDENT

SITE ENGINEER / PLAN PREPARER

KUROWSKI & WILSON, LLC
2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: CAROLYN E. DUBOIS, R.L.A.

SITE SURVEYOR

KUROWSKI & WILSON, LLC
2201 NORTH FRONT STREET, SUITE 200
HARRISBURG, PA 17110

TELEPHONE: 717.635.2835
CONTACT: DENNIS P. BURKHARD, PLS

WATERSHED NOTE

THE SITE IS LOCATED IN THE DARBY CREEK AND COBBS CREEK WATERSHEDS APPROXIMATELY 0.2 MILES SOUTHEAST OF TRIBUTARY 00780 TO MEADOWBROOK RUN AND 0.4 MILES EAST OF TRIBUTARY 00779 TO MEADOWBROOK RUN, BOTH WHICH FLOWS INTO MEADOWBROOK RUN. ACCORDING TO 25 PA CODE CHAPTER 93, BOTH TRIBUTARIES AND MEADOWBROOK RUN IS DESIGNATED AS A COLD WATER FISHERY (CWF) AND MIGRATORY FISH (MF).

RECYCLING OR DISPOSAL OF MATERIALS

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 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.
2. ANTICIPATED CONSTRUCTION WASTE MAY INCLUDE TYPICAL BUILDING MATERIALS (I.E. LUMBER, DRYWALL, MASONRY, CARDBOARD AND PAPER, INSULATION, ASPHALT, ROOFING, PLASTIC AND VINYL, PAINTS, STAINS, SOLVENTS AND SEALANTS, (ETC.)
3. IT IS STRONGLY ENCOURAGED THAT SUCH RECOVERABLE WASTE MATERIALS BE SEPARATED AND APPROPRIATELY RECYCLED. NO POTENTIAL TOXIC OR HAZARDOUS WASTE IS KNOWN TO BE PRESENT ON SITE. IF ANY TOXIC OR HAZARDOUS WASTE IS ENCOUNTERED, THE CONTRACTOR SHALL FOLLOW ANY AND ALL APPLICABLE STATE OR FEDERAL REGULATIONS ASSOCIATED WITH THE DISPOSAL OF SUCH MATERIALS.

E&S PLAN SET LIST

SHEET NUMBER	SHEET TITLE
C-003	E&S SUPPORTING INFORMATION
C-101	OVERALL EXISTING FEATURES PLAN
C-101.1	EXISTING FEATURES PLAN
C-701	OVERALL E&S PLAN
C-701.1	E&S PLAN
C-701.2	E&S PLAN
C-702	E&S DETAILS
C-703	E&S DETAILS

E&S PLAN GENERAL NOTES

THE SITE CONTRACTOR AND SUBCONTRACTORS SHALL COMPLY WITH ALL REQUIREMENTS OF THE N.P.D.E.S. PERMIT FOR THE PROJECT SITE, INCLUDING OBTAINING STATUS AS A CO-PERMITTEE OF THE PERMIT. FOR INFORMATION REGARDING COMPLIANCE WITH THE N.P.D.E.S. PERMIT, CONTACT:

CHESTER COUNTY CONSERVATION DISTRICT
688 UNIONVILLE ROAD, SUITE 200
KENNET SQUARE, PA 19384
610.455.1360 PHONE

1. THE EROSION AND SEDIMENT CONTROL PLAN WAS DESIGNED TO MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE, WHILE ALSO PROTECTING EXISTING DRAINAGE FEATURES AND VEGETATION.
2. THE EROSION AND SEDIMENT CONTROL PLAN MINIMIZES SOIL COMPACTION TO ONLY THOSE AREAS REQUIRED FOR CONSTRUCTION, AND UTILIZES APPROPRIATE CONTROL MEASURES TO MINIMIZE ANY INCREASE IN STORMWATER RUNOFF.

ENVIRONMENTAL DUE DILIGENCE

1. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATABASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OF AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF CLEAN FILL".
2. ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FR-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL.

MULCH SPECIFICATIONS

ON ALL DISTURBED AREAS WHICH DO NOT HAVE AN EROSION CONTROL BLANKET SPECIFIED FOR INSTALLATION, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 3.0 TONS PER ACRE IMMEDIATELY AFTER SEEDING THE SURFACE. ON STEEP SLOPES OF 3:1 OR GREATER, MULCH SHALL BE ANCHORED THROUGH THE USE OF JUTE NETTING OR MIXING WITH ASPHALT AT THE RATE OF 100 GALLONS PER 3 TONS OF STRAW MULCH.

APPLY THE FOLLOWING SOIL SUPPLEMENTS PRIOR TO PERMANENT SEEDING IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 804:

A) PULVERIZED AGRICULTURAL LIMESTONE APPLIED AT A RATE OF 800 POUNDS PER 1,000 SQUARE YARDS.
B) 10-20-20 ANALYSIS COMMERCIAL FERTILIZER APPLIED AT A RATE OF 140 POUNDS PER 1,000 SQUARE YARDS
C) 38-0-0 UREAFORM SLOW-RELEASE NITROGEN FERTILIZER APPLIED AT A RATE OF 50 POUNDS PER 1,000 SQUARE YARDS.

SEED MIXTURES

TEMPORARY SEED MIXTURE
TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYEGRASS (100% BY WEIGHT), OR EQUIVALENT, AND SHALL BE PLACED AT THE RATE OF 40 POUNDS PER ACRE; PURITY - 95%; GERMINATION - 85. TEMPORARY SEEDING SHALL BE APPLIED TO DISTURBED AREAS THAT ARE TO BE REDISTURBED LATER IN THE CONSTRUCTION PROCESS.

PERMANENT SEED MIXTURE
TURF TYPE TALL FESCUE SHALL BE APPLIED AT A RATE OF 21.0 POUNDS PER 1,000 SY. 80% MIN. GERMINATION; MIN. PURITY 98%.

SOIL LIMITATIONS RESOLUTIONS

1. CAVING CUT BANKS - CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION, STABILIZATION, AND SAFE WORKING TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS AND WITHIN AND AROUND ALL EXCAVATIONS INCLUDING FOOTERS, FOUNDATIONS AND UTILITY TRENCHES. BENCHING AND TRENCH BOXES SHOULD BE EMPLOYED WHERE REQUIRED OR APPROPRIATE TO ENSURE SAFE WORKING CONDITIONS AND COMPLIANCE WITH APPLICABLE SAFETY STANDARDS AND REGULATIONS.
2. CORROSIVE TO CONCRETE/STEEL - WHERE PERMITTED, UNDERGROUND PIPES, CONDUITS, AND STORAGE TANKS SHOULD BE MADE CORROSION RESISTANT MATERIALS. WHERE NECESSARY, SUITABLE PRECAUTIONS SHOULD BE TAKEN TO PROTECT UNDERGROUND CONCRETE AND UNCOATED STEEL STRUCTURES AND FACILITIES FROM CORROSION.
3. EASILY ERODIBLE - CONTRACTOR SHALL LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE TO THE LEAST AMOUNT PRACTICABLE TO COMPLETE THE PROJECT. CONTRACTOR SHOULD PHASE CONSTRUCTION WHERE POSSIBLE TO LIMIT THE TOTAL AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME. TEMPORARY AND PERMANENT STABILIZATION MEASURES SHOULD BE IMPLEMENTED AS SOON AS POSSIBLE. SEDIMENT CONTROL BMPS MAY REQUIRE MORE FREQUENT MAINTENANCE AND SEDIMENT REMOVAL AS COMPARED WITH SITES THAT DO NOT HAVE EASILY ERODIBLE SOIL. CONTRACTOR SHALL CONTACT THE SITE DESIGN ENGINEER AND THE CONSERVATION DISTRICT TO DEVISE ALTERNATIVE SOLUTIONS IF ANY EROSION CONDITIONS OCCUR THAT CANNOT BE ADDRESSED BY MEASURES FOUND IN THE PLANS.
4. DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER TABLE - STRUCTURES WITH BASEMENTS AND OTHER SUBSURFACE STRUCTURES SHOULD BE AVOIDED. BUILDING FOUNDATIONS SHOULD BE FURNISHED WITH APPROPRIATE FOUNDATION DRAINS AND SUMP PUMPS WHERE NECESSARY. SATURATED SOILS SHOULD BE DEWATERED PRIOR TO USE IN GRADING. WET, MUCKY, OR SOUPY SOILS SHOULD NOT BE USED IN THE CONSTRUCTION OF FILLS OR SLOPES. IF ACCUMULATED WATER NEEDS TO BE REMOVED FROM A WORK AREA, THE WATER SHALL BE TO A SEDIMENT CONTROL BMP, SUCH AS A SEDIMENT TRAP, SEDIMENT BASIN, OR PUMPED WATER FILTER BAG PLACED FOR DISCHARGE OVER A STABILIZED, WELL-VEGETATED AREA. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
5. HYDRIC / HYDRIC INCLUSIONS - HYDRIC SOILS OR SOILS WITH HYDRIC INCLUSIONS MAY BE INDICATIVE OF WETLANDS, HIGH GROUNDWATER TABLE, OR POORLY DRAINED SOILS. WETLANDS SHOULD BE IDENTIFIED AND AVOIDED IF POSSIBLE. DEWATERING TECHNIQUES SHALL BE USED AS NEEDED.
6. LOW STRENGTH/LANDSLIDE PRONE - FOR SOILS WITH LOW STRENGTH, PRECAUTIONS SHOULD BE TAKEN TO PREVENT SLOPE FAILURES DUE TO IMPROPER CONSTRUCTION PRACTICES SUCH AS OVER-STEEPENING AND OVERLOADING OF SLOPES, REMOVAL OF LATERAL SUPPORT, AND FAILURE TO PREVENT SATURATION OF SLOPES. SETBACKS SHOULD BE APPLIED IN ACCORDANCE WITH PADEP STANDARDS UNLESS IT CAN BE SHOWN THAT PROPOSED CUTS AND FILLS DO NOT POSE A HAZARD TO PUBLIC SAFETY OR SURFACE WATERS. ALSO, ROAD FILL MATERIAL WILL LIKELY NEED TO BE IMPORTED IN AREAS WHERE SOILS HAVE LOW STRENGTH. CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER/INSPECTOR FOR APPROPRIATE MEASURES TO BE IMPLEMENTED TO COMPACT, MITIGATE, AND/OR STABILIZE AREAS OF LOW STRENGTH OR LANDSLIDE PRONE SOILS.
7. SLOW PERCOLATION - CONTRACTOR SHALL PERFORM SITE GRADING TO PROVIDE SUFFICIENT POSITIVE DRAINAGE AWAY FROM BUILDINGS, FOUNDATIONS, AND OTHER STRUCTURES. IF ACCUMULATED WATER NEEDS TO BE REMOVED FROM A WORK AREA, THE WATER SHALL BE TO A SEDIMENT CONTROL BMP, SUCH AS A SEDIMENT TRAP, SEDIMENT BASIN, OR PUMPED WATER FILTER BAG PLACED FOR DISCHARGE OVER A STABILIZED, WELL-VEGETATED AREA.
8. PIPING - SOILS THAT ARE SUSCEPTIBLE TO PIPING CAN BE ERODIBLE AND NOT WELL SUITED FOR CONSTRUCTION OF EMBANKMENTS, DIKES, AND LEVEES. CONSTRUCTION TECHNIQUES SHALL BE EMPLOYED TO ENSURE THESE SOILS ARE PROPERLY COMPACTED AND STABILIZED
9. POOR SOURCE OF TOPSOIL - MANY SOIL TYPES ARE DROUGHTY OR TOO WET TO BE SUITABLE SOURCES OF TOPSOIL. SOIL TESTS SHOULD BE DONE TO DETERMINE THE PROPER APPLICATION OF SOIL AMENDMENTS TO PROMOTE THE GROWTH OF THE DESIRED VEGETATION. WHEREVER SOILS THAT ARE FAIR OR GOOD SOURCES OF TOPSOIL EXIST ON A SITE, THEY SHOULD BE CAREFULLY PRESERVED AND STORED FOR LATER USE IN RESTORATION. IF NECESSARY, TOPSOIL MAY BE IMPORTED TO THE SITE.
10. FROST ACTION - CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER / INSPECTOR REGARDING ANY SPECIAL MEASURES TO BE TAKEN FOR EARTHWORK THAT IS TO OCCUR DURING PERIODS OF FROST.
11. WETNESS - PROPER DRAINAGE AND DEWATERING MEASURES SHALL BE EMPLOYED AT ALL TIMES.
12. SLOPES - EXCAVATIONS SHOULD BE STABILIZED TO PREVENT EROSION AND CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS.
13. DEPTH OF ROCK - IF BEDROCK IS ENCOUNTERED, REMOVE AS NECESSARY IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
14. SOIL PH LEVELS - CONTRACTOR SHALL HAVE SOIL PH TESTED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES.
15. FLOODING POTENTIAL - ENSURE THAT THE SITE HAS PROPER DRAINAGE.
16. HIGH GROUNDWATER LEVEL - CONTRACTOR SHALL EMPLOY DEWATERING TECHNIQUES AS APPROVED BY THE CONSERVATION DISTRICT. PUMPED WATER FILTER BAGS SHALL BE USED TO DEWATER UTILITY TRENCHES AND BELOW GRADE EXCAVATIONS.
17. BASIN AREAS AND EMBANKMENTS - FILL FOR BASIN EMBANKMENTS SHALL BE COMPACTED IN 8" LIFTS TO 98% MAXIMUM DRY DENSITY (STANDARD PROCTOR) +/- 2% MOISTURE CONTENT PER ASTM D-1557. ANTI-SEEP COLLARS SHALL BE INSTALLED ON A BASIN DISCHARGE PIPING TO PREVENT SEEPAGE OF WATER FROM THE BASIN. CONSULT WITH SITE DESIGN ENGINEER FOR THE SPECIFIC ANTI-SEEP COLLAR SIZE REQUIREMENTS.

GENERAL E&S CONTROL

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 LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT 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 AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(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 SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL 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 PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
11. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL 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 THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
12. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE. TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION MUST BE NOTED IN THE LOG FOLLOWING EACH INSPECTION. THE INSPECTION LOG WILL ALWAYS BE KEPT ON THE SITE AND MADE AVAILABLE TO THE CONSERVATION DISTRICT UPON REQUEST.
13. 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.
14. 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.
15. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
16. 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.
17. 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.
18. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
19. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
20. 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 BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
21. 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.
22. E&S BMPS SHALL 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.
23. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
24. 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.
25. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
26. WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION, THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION,
    - 26.1. THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND POLLUTION EVENTS.
    - 26.2. ALL STEPS TAKEN TO REDUCE, ELIMINATE, AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE.
    - 26.3. THE TIME FRAME TO CORRECT THE NON-COMPLIANT, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
27. SILT SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. ENDS OF SILT FENCING MUST EXTEND TRAVELING UP-SLOPE AT 45 DEGREES.
28. STORM WATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY ACRES ARE STABILIZED.
29. UNLESS OTHERWISE NOTED, THE LIMITS OF GRADING SHALL BE CONSIDERED THE LIMITS OF DISTURBANCE.
30. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE APPLICANT TO ELIMINATE ALL SUCH PROBLEMS.
31. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL ACT TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
32. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 6-4, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART G, PROTECTION OF NATURAL. RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
33. AREAS OF DISTURBANCE ASSOCIATED WITH SITE RESTORATION ONLY MUST BE RESTORED TO EXISTING COVER CONDITION.
34. AREAS LABELED AS ROADWAY MAINTENANCE ACTIVITIES WILL CONSIST SOLELY OF MILLING AND OVERLAYING EXISTING SURFACES.

SEQUENCE OF CONSTRUCTION

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

SCHEDULE SHALL INCLUDE REGULAR INSPECTION AND MAINTENANCE REQUIREMENTS INCLUDING ENGINEER'S PRESENCE AT SITE TO OBSERVE CONSTRUCTION AT CRITICAL STAGES AS INDICATED HEREIN. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO CONSTRUCTION OF STAGES.

1. AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE DELEWARE COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
2. AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. CONTRACTOR SHALL CLEARLY MARK THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLAN. ORANGE CONSTRUCTION FENCE OR WOODEN STAKES WITH FLAG TAPE ARE ADEQUATE FOR FIELD MARKING. ADDITIONALLY, CONTRACTOR SHALL CLEARLY MARK ALL WATERS OF THE COMMONWEALTH.
4. INSTALL ALL SEGMENTS OF COMPOST FILTER SOCK IN THE LOCATIONS SHOWN ON THE PLANS.
5. ROUGH GRADE THE ACCESS DRIVE OFF OF HIGHLAND LANE INTO THE SITE AND IMMEDIATELY CONSTRUCT THE TEMPORARY ROCK CONSTRUCTION ENTRANCE #1 AS SHOWN ON THE PLAN. ALL VEHICLES ENTERING THE SITE SHALL DO SO VIA THE ROCK CONSTRUCTION ENTRANCE. ANY MUD OR SEDIMENT TRACKED ONTO MACADAM ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY. WASHING OF THE ROADWAY IS NOT PERMITTED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL TRAFFIC CONTROL DEVICES ASSOCIATED WITH THE ACCESS DRIVES THROUGHOUT THE TERM OF CONSTRUCTION ACTIVITIES.
7. CLEAR AND GRUB THE PORTIONS OF THE SITE AND DEMO ITEMS SOUTH OF THE SCHOOL AND PARKING AREAS. STRIP TOPSOIL AND STOCKPILE AT THE TEMPORARY AREA PROVIDED, SURROUND WITH COMPOST FILTER SOCK AND SEED PER TEMPORARY SEEDING SPECIFICATIONS, FERTILIZE AND MULCH. BEGIN BULK EXCAVATION OF THE SITE TO THE REQUIRED GRADES AS SHOWN ON THE PLANS, ANY EXCAVATED SOIL MATERIAL REMOVED FROM THE SITE SHALL ONLY BE PLACED IN AN AREA THAT HAS AN APPROVED EROSION CONTROL PLAN. ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN APPROPRIATE EROSION CONTROL BMP.
8. **CRITICAL STAGE: INSTALL UNDERGROUND INFILTRATION BASIN (SCM 1). EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.**
    - **8.1. INSTALL CONSTRUCTION FENCING AROUND LOCATIONS OF SCM 1, AS SHOWN ON THE PLANS.**
    - **8.1. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.**
    - **8.2. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS.**
    - **8.3. CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.**
    - **8.4. APPROVED SOIL MEDIA SHOULD BE PLACED OVER INFILTRATION BASINS IN MAXIMUM 6-INCH LIFTS.**
9. INSTALL STORMWATER COLLECTION AND CONVEYANCE FACILITIES FOR SCM 1 BEGINNING AT THE DOWNSTREAM CONNECTIONS AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED AND, IF NEEDED, TEMPORARY DIVERSION MEASURES UTILIZED TO MINIMIZE THE AMOUNT OF SEDIMENT REACHING THEM. INSTALL TEMPORARY INLET PROTECTION WHERE INDICATED ON THE PLAN. INSTALL STEEL OR PLYWOOD PLATES ON EACH INLET GRATE IN ORDER TO BLOCK OFF SEDIMENT FROM ENTERING THE INLETS DURING CONSTRUCTION.
10. CLEAR AND GRUB THE REMAINING PORTIONS OF THE SITE AND DEMO ITEMS ALONG COOPERTOWN ROAD AND HIGHLAND LANE. STRIP TOPSOIL AND STOCKPILE AT THE TEMPORARY AREA PROVIDED, SURROUND WITH COMPOST FILTER SOCK AND SEED PER TEMPORARY SEEDING SPECIFICATIONS, FERTILIZE AND MULCH. BEGIN BULK EXCAVATION OF THE SITE TO THE REQUIRED GRADES AS SHOWN ON THE PLANS, ANY EXCAVATED SOIL MATERIAL REMOVED FROM THE SITE SHALL ONLY BE PLACED IN AN AREA THAT HAS AN APPROVED EROSION CONTROL PLAN. ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN APPROPRIATE EROSION CONTROL BMP.
11. INSTALL REMAINING STORMWATER COLLECTION AND CONVEYANCE FACILITIES FOR THE REMAINDER OF THE SITE AND PARKING AREAS BEGINNING AT THE DOWNSTREAM CONNECTIONS FOR SCM 1 AND WORKING UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION. ALL AREAS DRAINING TO STORMWATER COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES SHALL BE IMMEDIATELY STABILIZED AND, IF NEEDED, TEMPORARY DIVERSION MEASURES UTILIZED TO MINIMIZE THE AMOUNT OF SEDIMENT REACHING THEM. INSTALL TEMPORARY INLET PROTECTION WHERE INDICATED ON THE PLAN. INSTALL STEEL OR PLYWOOD PLATES ON EACH INLET GRATE IN ORDER TO BLOCK OFF SEDIMENT FROM ENTERING THE INLETS DURING CONSTRUCTION.
12. ROUGH GRADE SITE DRIVEWAY ONTO COOPERTOWN ROAD AND PARKING AREAS ALONG COOPERTOWN ROAD AND HIGHLAND LANE ACCORDING TO THE PROPOSED GRADES.
13. PLACE STONE SUBBASE IN AREAS OF PAVING AS SOON AS PRACTICAL TO PREVENT EROSION. E&S MATTING SHALL BE INSTALLED ON DISTURBED SLOPES WHICH ARE 3:1 OR GREATER. CONTRACTOR TO ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN E&S CONTROL BMP.
14. UPON ACHIEVING FINAL ELEVATION IN THE PROPOSED BUILDING PAD AREAS FOR EACH BUILDING ADDITION, EXCAVATE THE BUILDING FOOTERS. POUR CONCRETE FOR FOOTERS AND CONSTRUCT FOUNDATION WALL. WHEN CONDITIONS WARRANT, THE FOOTERS AND FOUNDATION WALLS MAY BE BACKFILLED. FILL MATERIAL SHALL BE FREE OF ROOTS, SOD, AND OTHER ORGANIC MATERIAL, FROZEN SOIL, STONES, AND DISCARDED CONSTRUCTION MATERIAL. THE FILL SHALL BE PLACED IN 8" LAYERS, WITH EACH LAYER BEING ROLLED AND COMPACTED PRIOR TO THE NEXT LAYER BEING PLACED. WHEN THE AREA REACHES THE PRESCRIBED ELEVATION, THE SUBBASE SHOULD BE THOROUGHLY ROLLED AND COMPACTED TO ELIMINATE ANY SOFT OR UNSETTLED AREAS.
15. INSTALL WATER SERVICE PIPING, ELECTRIC, AND OTHER REQUIRED UTILITIES.
16. INSTALL PAVEMENT OR CONCRETE TO ALL AREAS INDICATED ON THE PLANS AND APPLY TOPSOIL WITH PERMANENT SEEDING TO ALL AREAS TO REMAIN AS LANDSCAPE OR GRASS. IF NEEDED, IMPORT TOPSOIL AND APPLY THE MINIMUM REQUIRED DEPTH TO ESTABLISH PERMANENT VEGETATION. SEED, FERTILIZE, AND MULCH EXPOSED OR DISTURBED AREAS.
17. REMOVE ALL TEMPORARY SILT SOCK.
18. INSTALL ALL PROPOSED LANDSCAPING AT THIS TIME. SEE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN FOR PLANTINGS AND SPECIFICATIONS.
19. THE CONTRACTOR SHALL REMOVE TEMPORARY INLET PROTECTION AND ANY INSTALLED STEEL OR PLYWOOD PLATS, AND FLUSH ALL STORM SEWER PIPES AFTER THE SITE IS COMPLETELY STABILIZED.
20. ONCE SITE IS COMPLETELY STABILIZED, THE CONSTRUCTION FENCING AROUND SCM 1 SHALL BE REMOVED.
21. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL PREPARE A DRAFT NOTICE OF TERMINATION (NOT) AND AS-BUILT PLANS SUITABLE TO CONDUCT FINAL INSPECTION. CONTACT THE DELEWARE COUNTY CONSERVATION DISTRICT FOR A FINAL INSPECTION. PROPER DISPOSAL AND/OR RECYCLING OF THE BMPS IS REQUIRED BY THE SITE CONTRACTOR.

* STABILIZATION- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

**IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN
COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT
HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING: 2003089-A_ld CVR_24x36.dwg	

REVISIONS

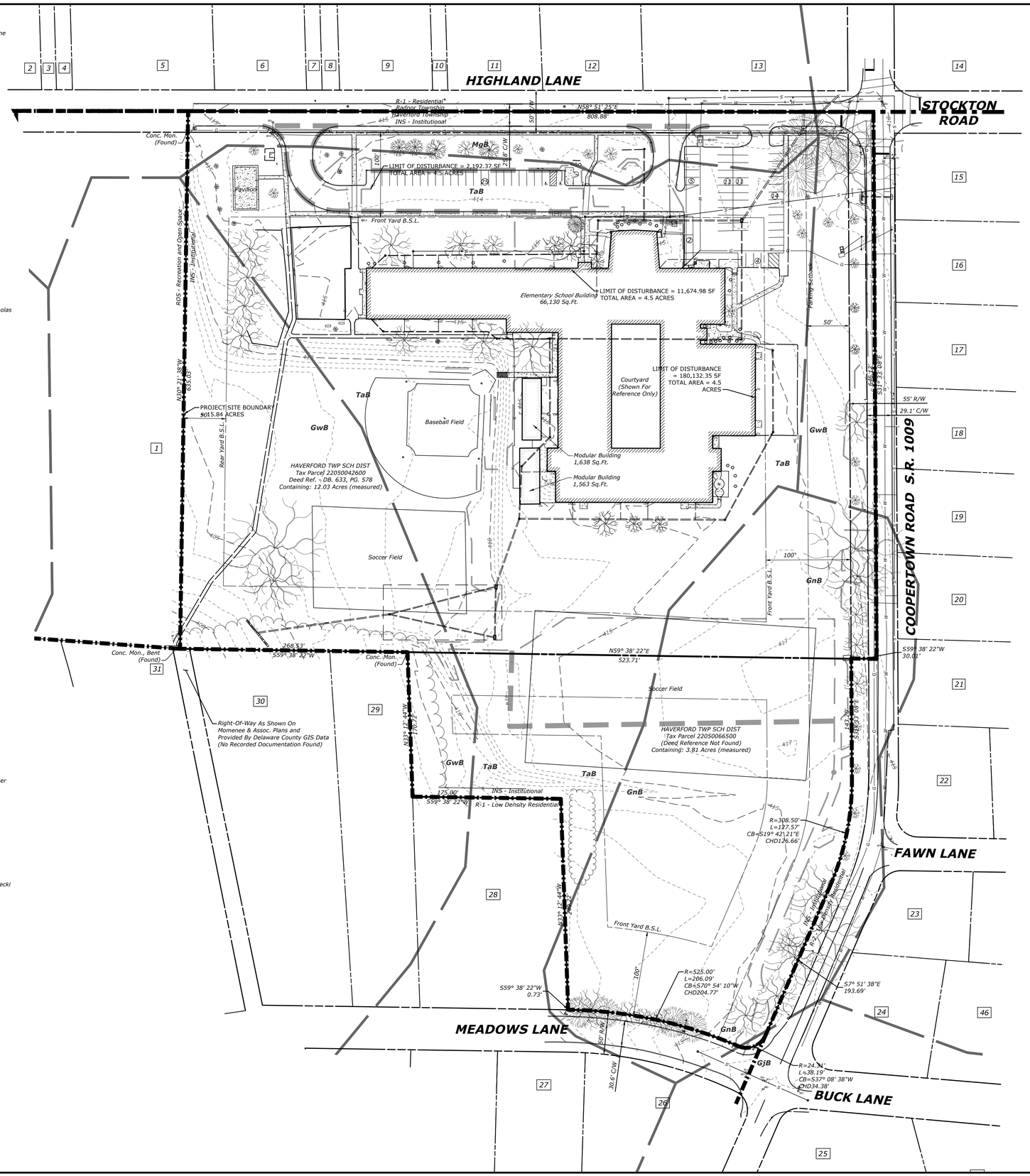
NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
E&S SUPPORTING INFORMATION

SHEET:
C-003

Adjacent Owners List

1. Township of Haverford
   Highland Farm Park, Highland Lane
   Tax Parcel 22-04-007:000
   (No Deed Reference Found)
2. Matthew & Christina Bernier
   340 Highland Lane
   Tax Parcel 36-47-019:000
   Deed Ref. 6836-4519
3. Craig Conway & Dr. Kristin Lisi
   338 Highland Lane
   Tax Parcel 36-47-004:005
   Deed Ref. 2105-0222
4. Craig Conway & Dr. Kristin Lisi
   338 Highland Lane
   Tax Parcel 36-47-004:005
   Deed Ref. 2105-0222
5. Craig Conway & Dr. Kristin Lisi
   338 Highland Lane
   Tax Parcel 36-47-004:005
   Deed Ref. 2105-0222
6. Andrew G. & Annmarie C. Bunn
   336 Highland Lane
   Tax Parcel 36-47-018:000
   Deed Ref. 1531-2245
7. Joseph J. Jr. & Linda C. Schanne
   332 Highland Lane
   Tax Parcel 36-47-008:000
   Deed Ref. 1727-441
8. Jilda Ann Stowe &
   Edward Opczynski III
   328 Highland Lane
   Tax Parcel 36-47-009:000
   Deed Ref. 6021-199
9. Gregory G. & Christine M. McNicholas
   326 Highland Lane
   Tax Parcel 36-47-017:000
   Deed Ref. 2584-1987
10. Girish & Rita Patwardhan
    318 Highland Lane
    Tax Parcel 36-47-010:000
    Deed Ref. 1027-2337
11. Joseph J. & Marla O. Schneider
    314 Highland Lane
    Tax Parcel 36-47-016:000
    Deed Ref. 6773-3971
12. Erin McInnes &
    Nathaniel Jay Kohlenberg
    306 Highland Lane
    Tax Parcel 36-47-015:000
    Deed Ref. 6878-3574
13. Laura & Brett Tabano
    302 Highland Lane
    Tax Parcel 36-47-014:000
    Deed Ref. 6681-3669
14. Donald Neema Tavakoli &
    Staci Marie Rakowiecki
    901 Coopertown Road
    Tax Parcel 22-06-003:000
    Deed Ref. 4739-453
15. Brian C. Kim & So Ra Choe
    829 Coopertown Road
    Tax Parcel 22-06-342:000
    Deed Ref. 6696-5747
16. Joseph P. & Melinda C. Daly
    825 Coopertown Road
    Tax Parcel 22-06-343:000
    Deed Ref. 1220-1648
17. William H. Lilienthal, Jr.
    821 Coopertown Road
    Tax Parcel 22-06 -344:000
    Deed Ref. 5941-1359
18. Christopher J. & Emily I. Royle
    817 Coopertown Road
    Tax Parcel 22-06-345:000
    Deed Ref. 4867-465
19. Harry R. Neilson III
    813 Coopertown Road
    Tax Parcel 22-06-346:000
    Deed Ref. 4946-250
20. Kathleen Love-Weitz &
    Jonathan David Weitz
    809 Coopertown Road
    Tax Parcel 22-06-347:000
    Deed Ref. 6446-1376
21. John P. & Cynthia G. McGoldrick
    805 Coopertown Road
    Tax Parcel 22-06-348:000
    Deed Ref. 2206-999
22. Gregory R. Moran & Jamie L. Moser
    2 Fawn Lane
    Tax Parcel 22-06-349:000
    Deed Ref. 5123-204
23. Hirdyesh Bhatia
    1 Fawn Lane
    Tax Parcel 22-06-233:000
    Deed Ref. 6881-5023
24. Matthew D. & Ramona E. Clayton
    2 Buck Lane
    Tax Parcel 22-06-236:000
    Deed Ref. 2687-862
25. Frederick W. & Catherine W. Piasecki
    1 Buck Lane
    Tax Parcel 22-06-293:000
    Deed Ref. 6762-2747
26. Lu Fan Cai & Elizabeth Iwamaye
    69 Meadows Lane
    Tax Parcel 22-06-338:000
    Deed Ref. 6579-274
27. Brian Carroll
    65 Meadows Lane
    Tax Parcel 22-06-337:000
    Deed Ref. 4425-696
28. Brian G. & Deena J. Oneill
    58 Meadows Lane
    Tax Parcel 22-06-340:000
    Deed Ref. 617-818
29. Michael F. & Agnes E. Guerin
    Meadows Lane
    Tax Parcel 22-05-071:001
    (No Reference Found)
30. Gordon Y. Chang & Cindy S. Ng
    50 Meadows Lane
    Tax Parcel 22-05-017:000
    Deed Ref. 1311-2143
31. Theodore O. Haas, Et Ux
    46 Meadows Lane
    Tax Parcel 22-05-016:000
    (No Reference Found)



SOILS INFORMATION

GjB	*GLENELG CHANNERY LOAM, 3 TO 8 PERCENT SLOPES [HYDROLOGIC GROUP C]*
GnB	*GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES [HYDROLOGIC GROUP D]*
GwB	*GLENELG-WHEATON COMPLEX, 0 TO 8 PERCENT SLOPES [HYDROLOGIC GROUP C]*
MgB	*MANOR LOAM, 3 TO 8 PERCENT SLOPES [HYDROLOGIC GROUP C]*
TaB	*TALEYVILLE-DELANCO COMPLEX, 0 TO 8 PERCENT SLOPES [HYDROLOGIC GROUP D]*

LEGEND

EXISTING FEATURES

- EDGE OF PAVED BITUMINOUS SURFACE
- EDGE OF GRAVEL OR CRUSHED STONE SURFACE
- PROPERTY BOUNDARY LINE
- CONCRETE MONUMENT
- FENCE POST
- LEGAL RIGHT OF WAY LINE
- MINIMUM BUILDING SETBACK LINE
- 420 INDEX CONTOUR LINE
- 421 INTERMEDIATE CONTOUR LINE
- BUILDING
- CONCRETE SURFACE
- CURB
- ue UNDERGROUND ELECTRIC LINES
- ut UNDERGROUND TELECOM LINES
- MANHOLE
- UTILITY POLE
- GUY WIRE
- Ls LIGHT STANDARD OR LAMPPOST
- Bol BOLLARD
- Em ELECTRIC METER
- Eb ELECTRIC BOX
- Tb TELEPHONE BOX
- TRAFFIC MAST
- Ds DOWNSPOUT
- DRAINAGE PIPE
- DRAINAGE INLET
- RIP-RAP
- G UNDERGROUND NATURAL GAS LINE
- Gv GAS VALVE
- Gm GAS METER
- TREELINE
- WALL
- S SANITARY SEWER GRAVITY LINE
- Co SANITARY SEWER CLEANOUT
- W WATER LINE
- Wv WATER VALVE
- Fh FIRE HYDRANT
- Wm WATER METER
- Sp WATER SPIGOT
- FENCE
- GUIDERAIL
- Mb MAILBOX
- SIGN
- MUNICIPAL BOUNDARY LINE

SURVEY NOTES

1. THIS SURVEY WAS PERFORMED AND MAPPING PREPARED WITHOUT THE BENEFIT OF A TITLE SEARCH.
2. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN ARE BASED ON A FIELD SURVEY PERFORMED BY K&W ENGINEERS AND CONSULTANTS, COMPLETED IN OCTOBER, 2024.
3. PROPERTY LINES SHOWN ARE BASED ON PROPERTY CORNER MARKERS AND OTHER EVIDENCE FOUND, CURRENT DEEDS OF RECORD, AND THE FOLLOWING PLANS:

   LAND DEVELOPMENT PLANS TITLED "COOPERTOWN ELEMENTARY SCHOOL", PREPARED BY MOMENEE AND ASSOCIATES, DATED JULY 27, 1990, FILE NO. 90-60, NOT RECORDED.

   LAND DEVELOPMENT PLANS TITLED "COOPERTOWN ELEMENTARY SCHOOL", PREPARED BY HOWELL LEWIS SHAY AND ASSOCIATES, DATED JUNE 4, 1956, COMM NO. 1488, NOT RECORDED.
4. CONTOURS AND ELEVATIONS ARE BASED ON NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. BEARINGS ARE BASED ON PENNSYLVANIA STATE PLANE COORDINATES, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
6. RIGHT-OF-WAY LINES SHOWN FOR COOPERTOWN ROAD ARE BASED ON FIELD SURVEY LOCATIONS, AND INFORMATION PROVIDED BY PENNDOT DISTRICT 6-0 FOR L.R. 23036/S.R. 1009.
7. UTILITY LOCATIONS ARE BASED ON SURFACE EVIDENCE AND LIMITED PA ONE-CALL MARKINGS EVIDENT AT THE TIME OF THE FIELD SURVEY. PA ONE-CALL SERIAL NO. 20242822735 WAS ASSIGNED ON OCTOBER 8, 2024.
8. SOME UTILITIES AND UNDERGROUND PIPE LOCATIONS COULD NOT BE VERIFIED AND FURTHER INVESTIGATION IS REQUIRED. APPROXIMATE UTILITY AND PIPE LOCATIONS SHOWN ARE BASED ON THIS PREVIOUSLY MENTIONED PLANS.
9. THE SUBJECT PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN THE 100-YEAR FLOODPLAIN AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) AND SHOWN ON THE FLOOD INSURANCE RATE MAP (FIRM) FOR HAVERFORD TOWNSHIP, COMMUNITY PANEL NO. 420417, FEMA FIRM NO. 42045C0039F, EFFECTIVE DATE NOVEMBER 18, 2009.

GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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FOR
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HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
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K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-B_ld EXF.dwg

REVISIONS

NO.	DATE	DESCRIPTION
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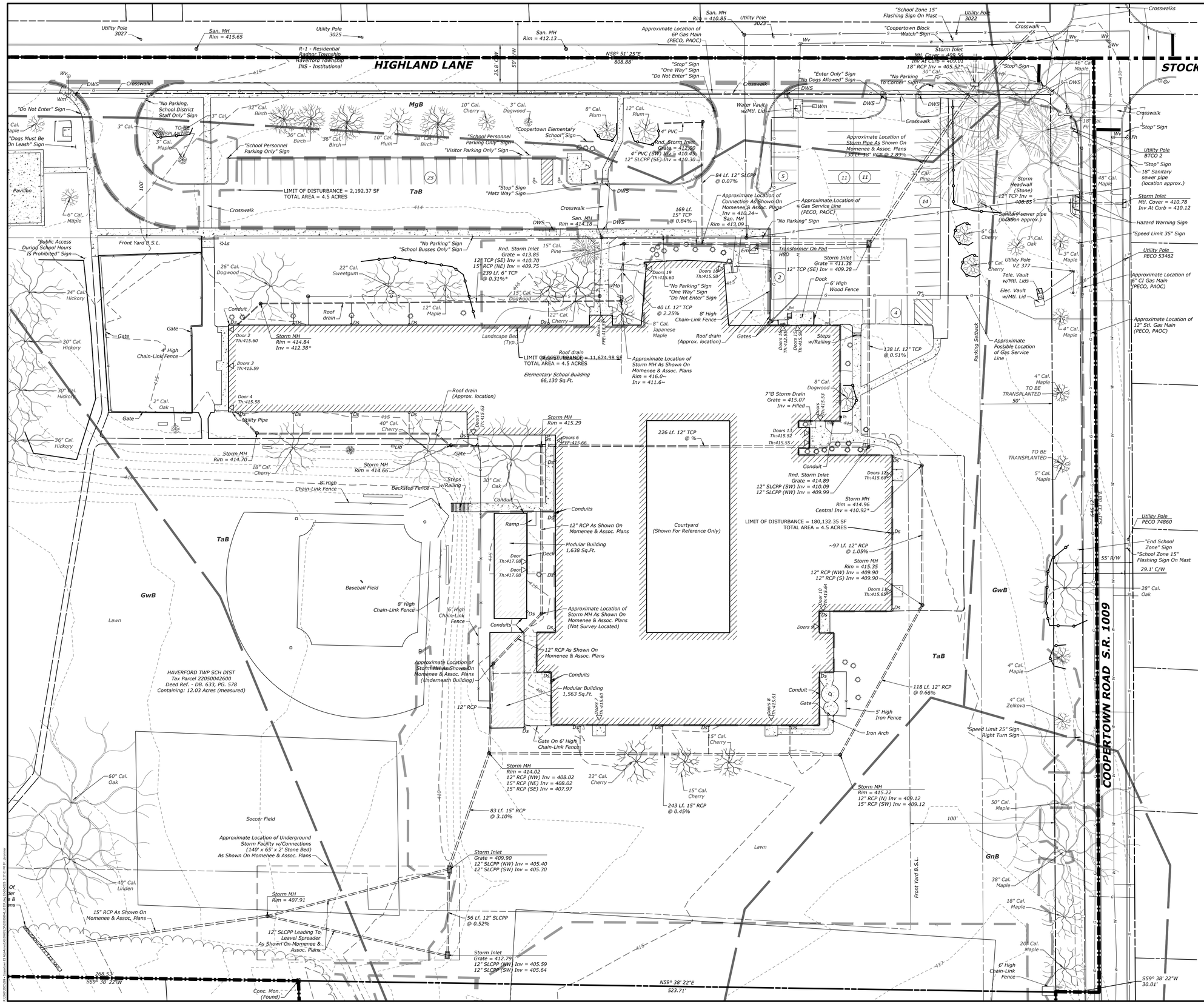
PLAN TYPE:
OVERALL EXISTING FEATURES PLAN

SHEET:
C-101



LEGEND

EXISTING FEATURES

- EDGE OF PAVED BITUMINOUS SURFACE
- EDGE OF GRAVEL OR CRUSHED STONE SURFACE
- PROPERTY BOUNDARY LINE
- CONCRETE MONUMENT
- FENCE POST
- LEGAL RIGHT OF WAY LINE
- MINIMUM BUILDING SETBACK LINE
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- GUY WIRE
- Ls LIGHT STANDARD OR LAMPPOST
- Bol BOLLARD
- Em ELECTRIC METER
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- Tb TELEPHONE BOX
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HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

PROFESSIONAL SEAL

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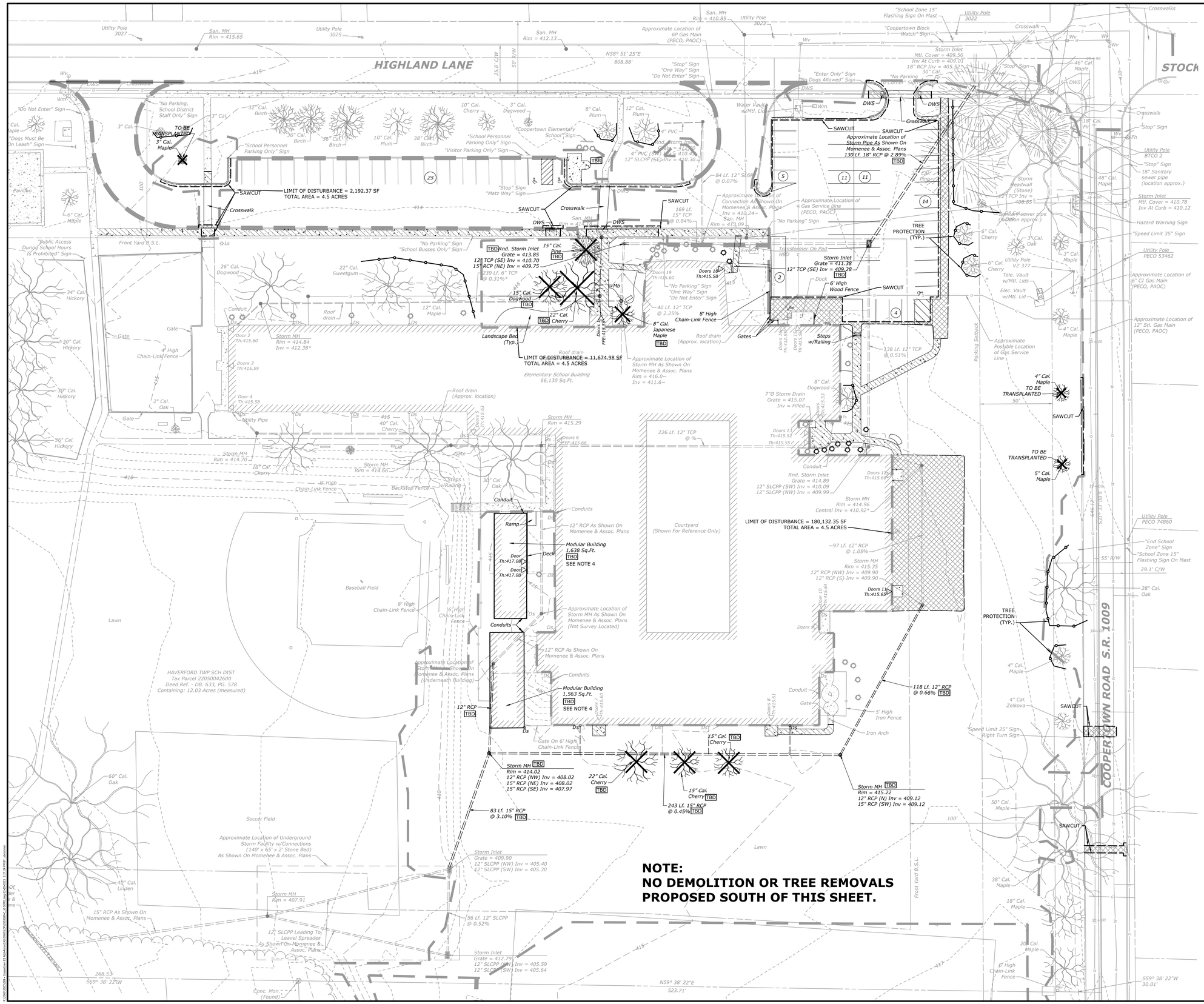
PLAN TYPE:
EXISTING FEATURES PLAN

SHEET:
C-101.1



LEGEND

DEMOLITION FEATURES

- PROPOSED SAWCUT
- TBD — DENOTES A FEATURE TO BE DEMOLISHED
- TBR — DENOTES A FEATURE TO BE REMOVED AND RELOCATED
- EX. BITUMINOUS PAVEMENT SURFACE TO BE REMOVED
- EX. CONCRETE PAVEMENT SURFACE TO BE REMOVED
- TREE TO BE REMOVED
- TREE PROTECTION

DEMOLITION NOTES

1. ALL FEATURES IN BOLD PRINT AND SO LABELED SHALL BE DEMOLISHED, REMOVED, OR RELOCATED AS INDICATED.
2. ITEMS LABELED TO BE REMOVED BY OTHERS WILL BE RELOCATED AND/OR DEMOLISHED BY THE OWNER OR A CONTRACTOR HIRED BY THE OWNER. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK TO BE PERFORMED BY OTHERS.
3. ALL EXISTING UTILITY LIDS (MANHOLE, CLEANOUTS, VALVE COVERS, ETC.) AND ASSOCIATED APPURTENANCES TO REMAIN SHALL BE BROUGHT TO FINAL FINISHED GRADE AS PART OF CONSTRUCTION.
4. MODULAR CLASSROOMS TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.

PENNSYLVANIA ONE CALL SYSTEM, INC.
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STOP-CALL BEFORE YOU DIG!

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION

FOR

HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP — DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
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DRAWN BY:	PKS
CAD DRAWING:	2003089-C_ld DEMO.dwg

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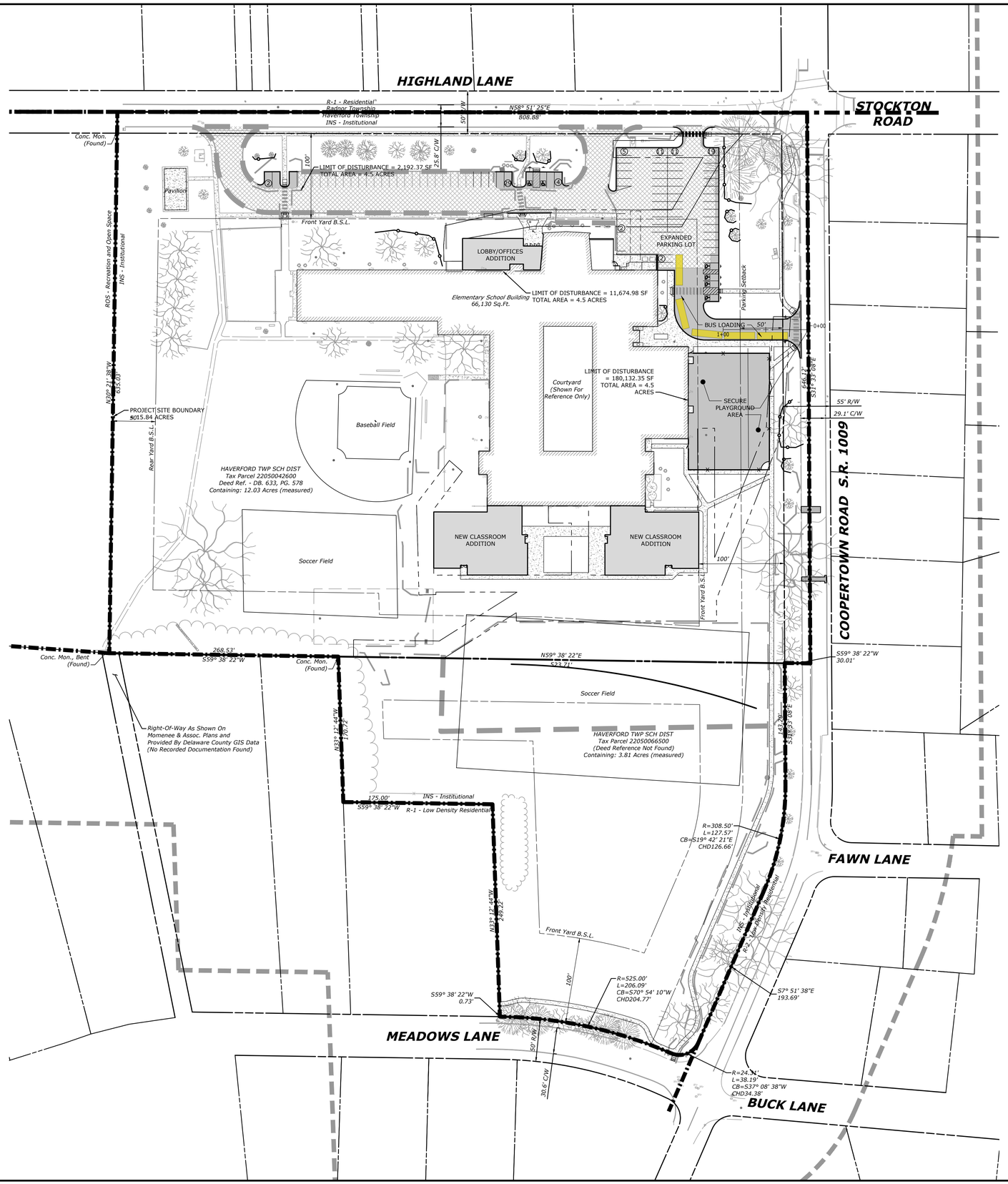
PLAN TYPE:

DEMOLITION PLAN

SHEET:

C-102



LEGEND

PROPOSED SITE FEATURES

- BUILDING
- CENTER LINE
- CONCRETE SURFACE
- CURB
- EDGE OF BITUMINOUS PAVEMENT
- STANDARD DUTY PAVEMENT
- MILL & OVERLAY
- EASEMENT LINE
- WALL
- BOLLARD
- FENCE
- (47) PARKING SPACE COUNT
- (A) STOP SIGN PENNDOT DESIGNATION R1-1
- (B) HANDICAP PARKING SIGN
- (C) VAN ACCESSIBLE HANDICAP PARKING SIGN
- (D) NO PARKING SIGN
- (E) DO NOT ENTER SIGN
- (F) ONE-WAY SIGN PENNDOT DESIGNATION R6-2L

SITE PLAN NOTES

1. REFER TO ARCHITECTURAL PLANS FOR CONCRETE PADS OUTSIDE OF EXTERIOR DOORWAYS.
2. ALL RADII ARE 5 FEET, UNLESS SPECIFICALLY DIMENSIONED OTHERWISE WITHIN THE PLAN VIEW. THIS INCLUDES CURB RADII, RADII ON PROPOSED EDGES OF BITUMINOUS PAVEMENT, AND RADII INDICATED FOR PAVEMENT MARKINGS.
3. N.I.C. = NOT IN CONTRACT
4. SIGNS AND PAVEMENT MARKINGS SHALL COMPLY WITH PENNDOT PUBLICATION 408, SECTION 1103, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AS AMENDED.
5. MAXIMUM SIDEWALK CROSS SLOPE = 2%.
6. ALL REMAINING BITUMINOUS PAVEMENT NOT IDENTIFIED TO BE REPLACED SHALL BE SEAL COATED. REPLACE ALL PAVEMENT MARKINGS IN KIND.

GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

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HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

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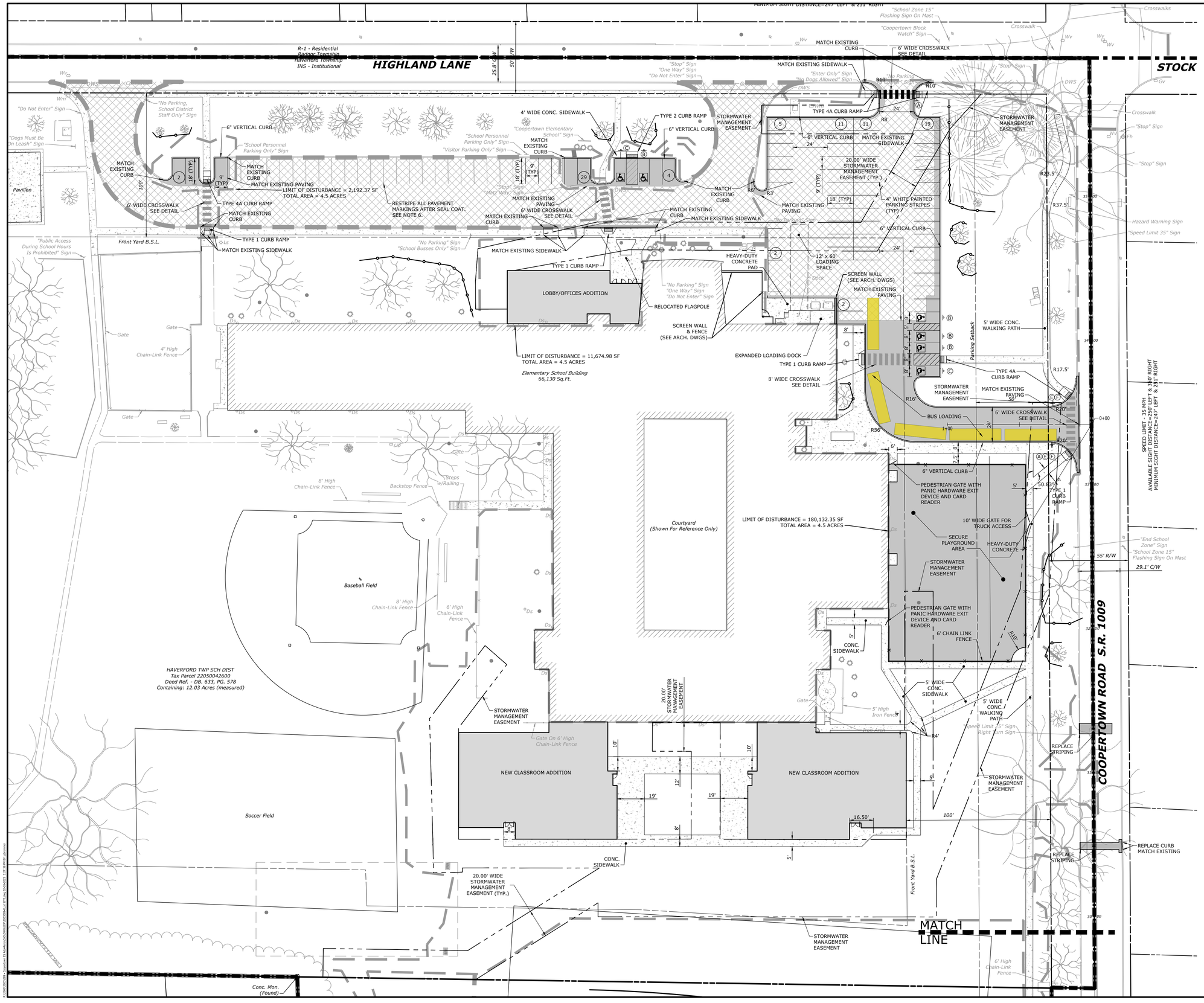
PLAN TYPE:
OVERALL SITE PLAN

SHEET:
C-103



LEGEND

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0 15 30 60
SCALE: 1" = 30'

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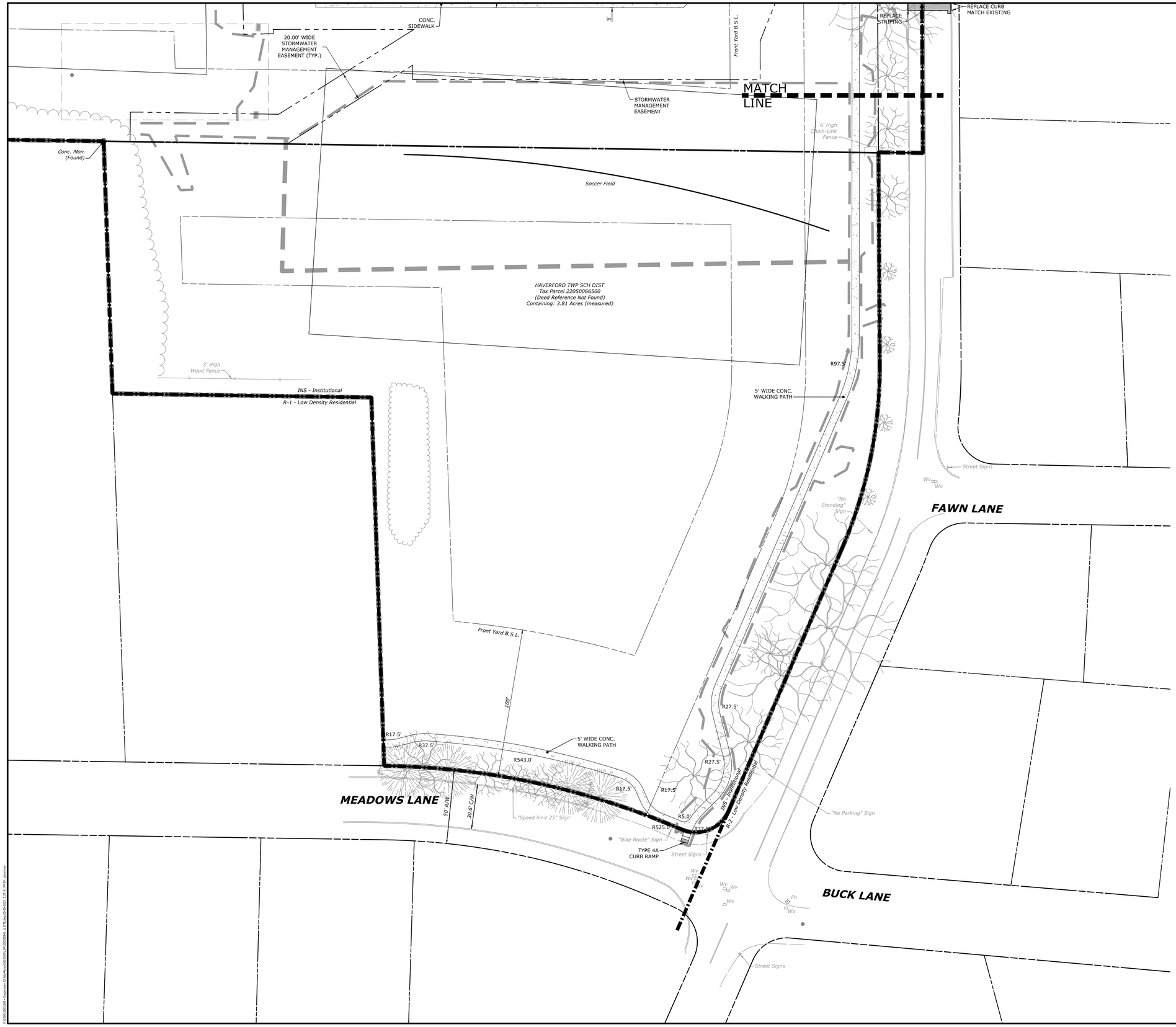
PLAN TYPE:
SITE PLAN

SHEET:
C-103.1



LEGEND

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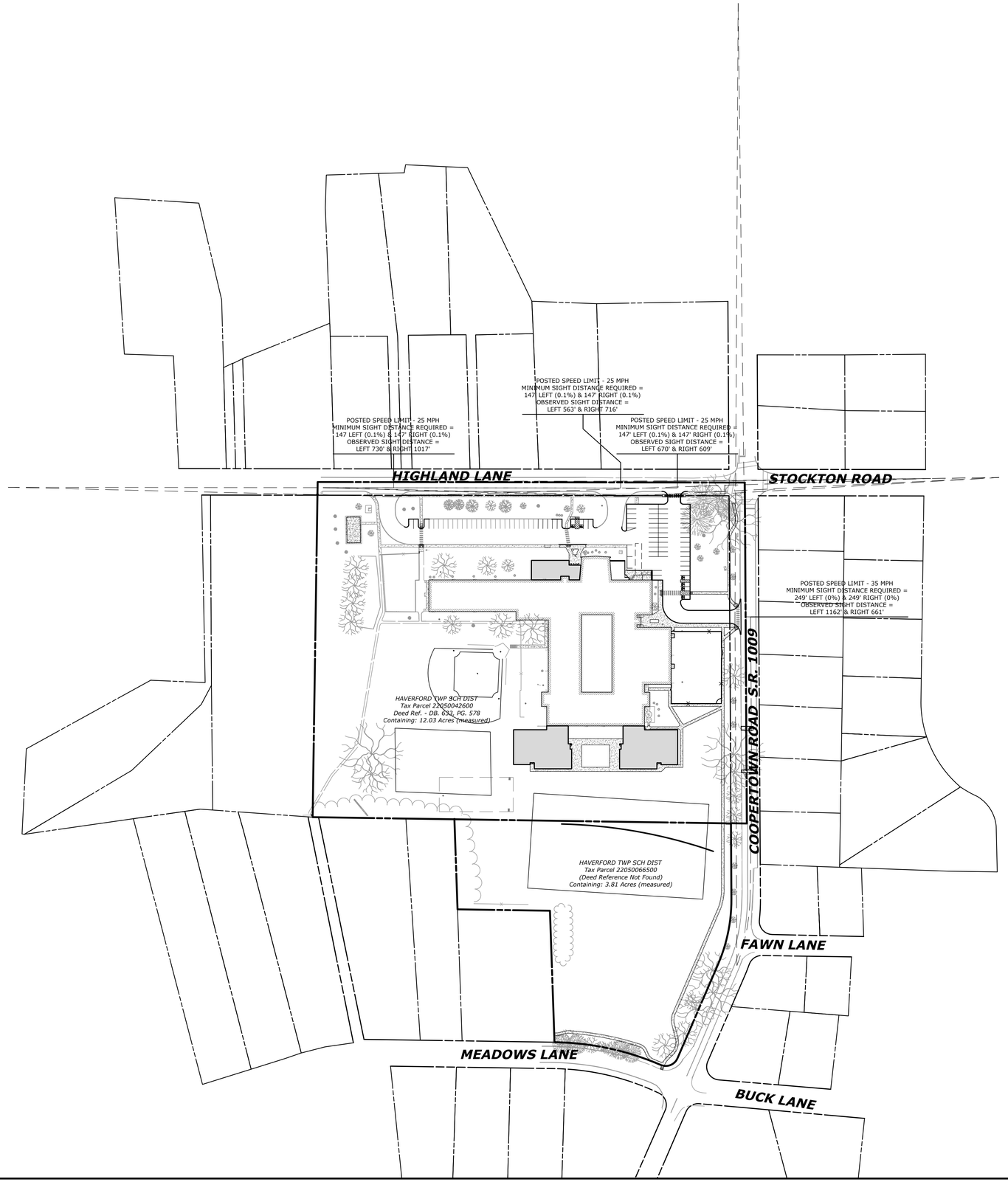
PLAN TYPE:
SITE PLAN

SHEET:
C-103.2



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2201 North Front Street, Suite 200
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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING: 2003089-D_Id SITE.dwg	

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
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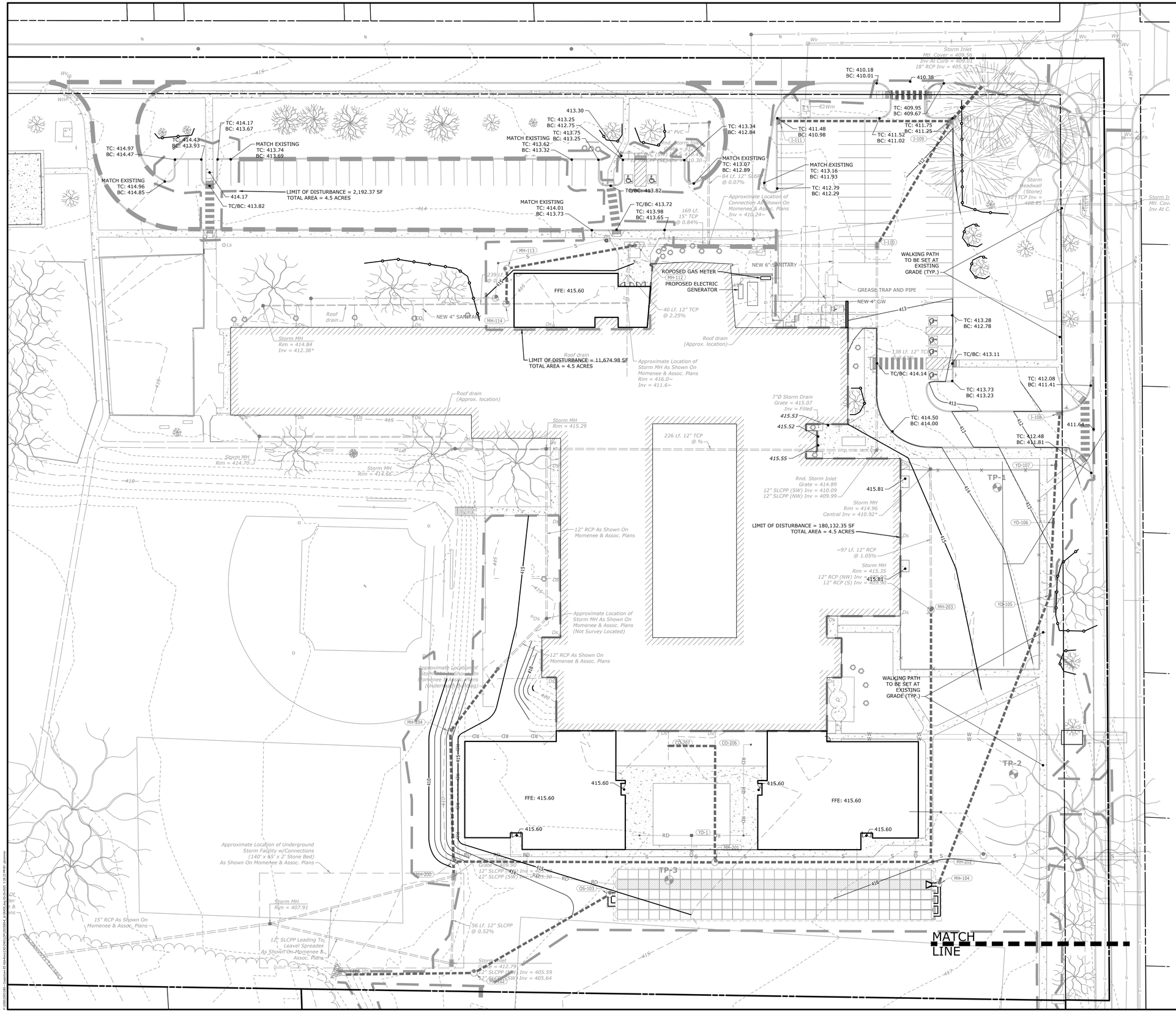
PLAN TYPE:
SITE DISTANCE PLAN

SHEET:
C-103.3



LEGEND

PROPOSED GRADING FEATURES

421	INTERMEDIATE CONTOUR LINES
420	INDEX CONTOUR LINES
•422.53	SPOT ELEVATIONS
2.00%	SLOPE OR GRADE LABEL
	TEST PIT
TC BC	SPOT LABEL ABBREVIATIONS: TOP OF CURB BOTTOM OF CURB

GRADING NOTES

1. FINISHED GRADE ALONG THE EXTERIOR FACE OF THE BUILDING SHALL BE 415.60 UNLESS OTHERWISE NOTED.
2. POSITIVE DRAINAGE SHALL BE PROVIDED ACROSS THE ENTIRE PROJECT AREA AND DIRECTED TOWARDS EXISTING AND PROPOSED DRAINAGE FACILITIES.

GRAPHIC SCALE
0 15 30 60
SCALE: 1" = 30'

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PLAN TYPE:
GRADING PLAN

SHEET:
C-104

LEGEND

PROPOSED GRADING FEATURES

421	INTERMEDIATE CONTOUR LINES
420	INDEX CONTOUR LINES
422.53	SPOT ELEVATIONS
2.00%	SLOPE OR GRADE LABEL
	TEST PIT
	SPOT LABEL ABBREVIATIONS:
TC	TOP OF CURB
BC	BOTTOM OF CURB

GRADING NOTES

1. FINISHED GRADE ALONG THE EXTERIOR FACE OF THE BUILDING SHALL BE 415.60 UNLESS OTHERWISE NOTED.
2. POSITIVE DRAINAGE SHALL BE PROVIDED ACROSS THE ENTIRE PROJECT AREA AND DIRECTED TOWARDS EXISTING AND PROPOSED DRAINAGE FACILITIES.

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SCALE: 1" = 30'

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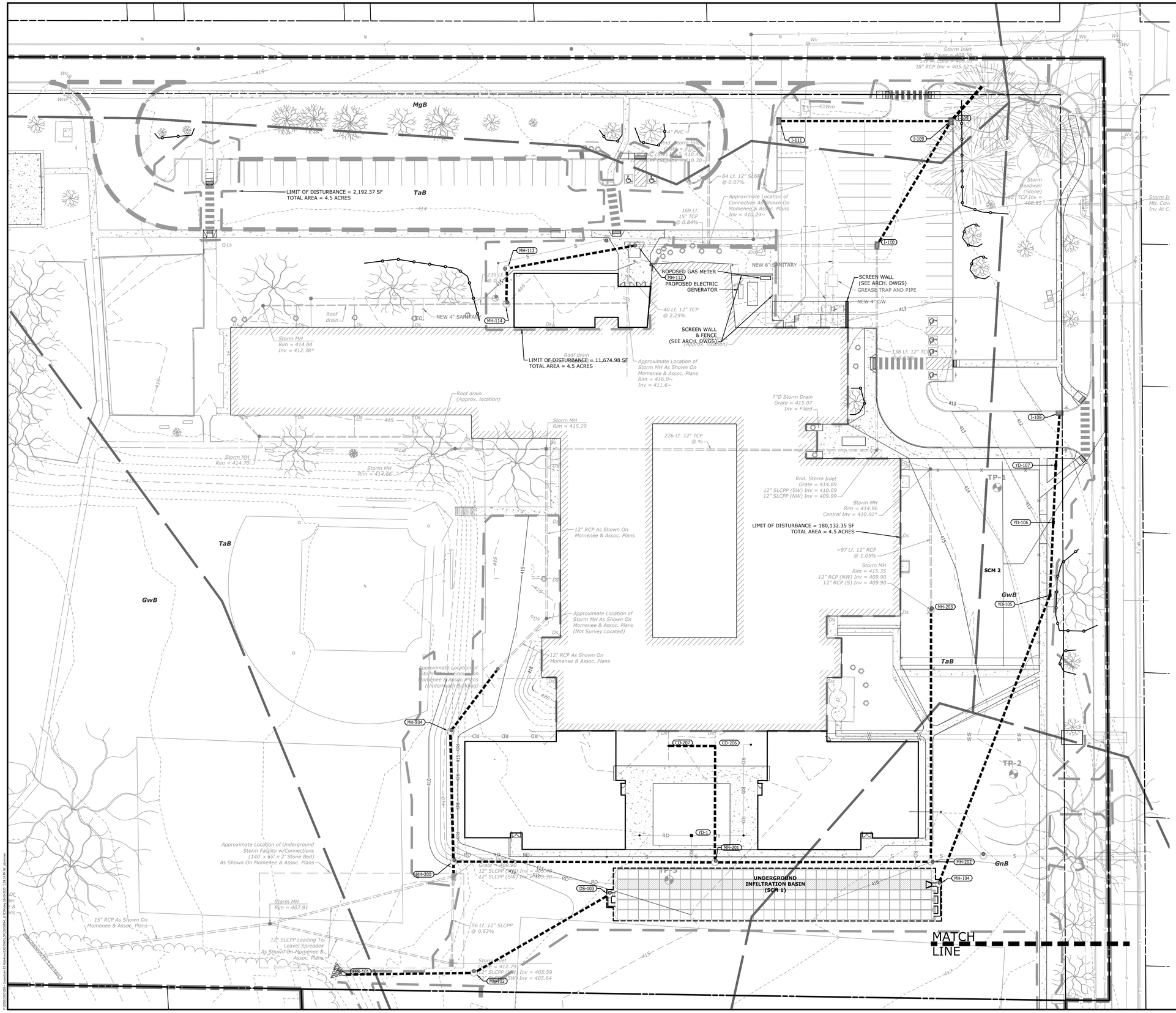
PLAN TYPE:
GRADING PLAN

SHEET:
C-104.1



LEGEND

PROPOSED PCSM CONTROL PLAN FEATURES

- NPDES PERMIT BOUNDARY
- LIMIT OF DISTURBANCE
- DP-001 — BMP DISCHARGE POINT
- POI-1 — WATERSHED POINT OF INTEREST
- TP-1 — TEST PIT LOCATION

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HAVERFORD TOWNSHIP — DELAWARE COUNTY, PA

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PLAN TYPE:
PCSM PLAN

SHEET:
C-105

LEGEND

PROPOSED PCSM CONTROL PLAN FEATURES

NPDES PERMIT BOUNDARY

LIMIT OF DISTURBANCE

DP-001 — BMP DISCHARGE POINT

POI-1 — WATERSHED POINT OF INTEREST

TP-1 — TEST PIT LOCATION

GRAPHIC SCALE

0 15 30 60

SCALE: 1" = 30'

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PLAN TYPE:
PCSM PLAN

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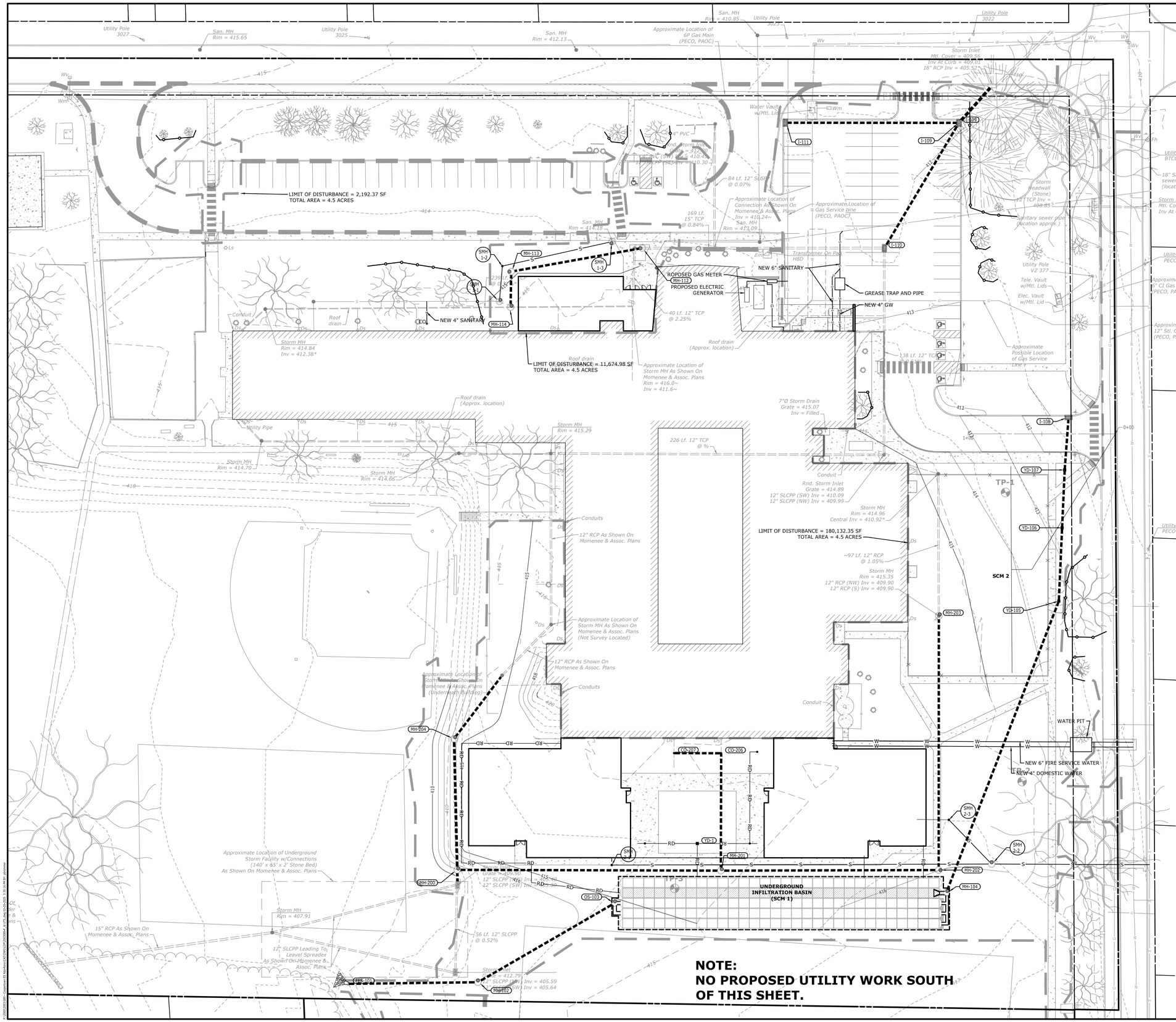
C-105.1



LEGEND

PROPOSED UTILITY FEATURES

- SANITARY SEWER MANHOLE
- MH 4 — SANITARY SEWER STRUCTURE LABEL
- S — SANITARY SEWER MAIN
- DRAINAGE MANHOLE
- DRAINAGE INLET
- YARD DRAINAGE INLET
- DRAINAGE CULVERT OR PIPE
- I-45 — DRAINAGE STRUCTURE LABEL
- RD — ROOF DRAIN PIPE

UTILITY NOTES

1. ALL ROOF DRAIN PIPING SHALL BE INSTALLED AT A MINIMUM SLOPE OF 1% AND SHALL CONNECT TO STUBS LEFT BY P.C. AT FIVE (5) FEET OUTSIDE THE BUILDING..
2. REFER TO M.E.P. DRAWINGS FOR SITE LIGHTING, TRANSFORMER, AND BUILDING ELECTRICAL LAYOUT AND CONNECTION TO EXISTING UTILITY POLE.
3. REFER TO M.E.P. DRAWINGS FOR WATER AND GAS SERVICE LINES AND ROOF DRAIN PIPING FROM BUILDING TO 5'-0" BEYOND BUILDING FACE.
4. ALL SANITARY SEWER CONSTRUCTION MATERIALS, METHOD AND APPURTENANCES SHALL BE IN ACCORDANCE WITH PADEP'S DOMESTIC WASTEWATER FACILITIES MANUAL AND (MUNICIPALITY)'S STANDARD SPECIFICATIONS AND DETAILS AT THE TIME OF CONSTRUCTION.
5. THE PENETRATION INTO THE EX. SANITARY SEWER MANHOLE SHALL BE 0.10' ABOVE THE EX. CHANNEL INVERT AND A PSX II BOOT AND TWO (2) STAINLESS STEEL CLAMPS SHALL BE USED. A NEW CHANNEL MUST BE CUT OUT AND FORMED TO XXXXX AUTHORITY SPECIFICATIONS.
6. ALL SANITARY SEWER LATERAL SECTIONS SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 1%.
7. CURB BOXES ARE REQUIRED OVER ALL SANITARY SEWER CLEANOUTS AND WATER LINE VALVES. ALL CURB BOXES SHALL BE BROUGHT TO FINISHED GRADE
8. REFER TO ARCHITECTURAL DRAWINGS FOR INSTALLATION OF CABLE TELEVISION AND TELEPHONE PEDESTALS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR INSTALLATION OF NATURAL GAS EMERGENCY GENERATOR AND RELATED GAS SERVICE LINE AND ELECTRICAL CONNECTIONS.
10. EXACT NATURAL GAS CONNECTION POINT TO EXISTING DISTRIBUTION SYSTEM TO BE DETERMINED BY UGI UTILITIES, INC. CONTRACTOR IS RESPONSIBLE FOR EXCAVATING THE ENTIRE SERVICE TRENCH. SEE UGI GAS TRENCH DETAIL ON SHEET # # FOR LIMIT OF WORK BY CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE GAS LINE INSTALLATION WITH UGI UTILITIES, INC.
11. ALL DRAINAGE STRUCTURES (INCLUDING INLETS, MANHOLES, ENDWALLS, ETC.) PROPOSED FOR DEDICATION OR LOCATED WITHIN A STREET SECTION SHALL BE CAPABLE OF HANDLING AN HS-25 LOADING.
12. ALL STORMWATER PIPES, CULVERTS, MANHOLES, INLETS, ENDWALLS AND END SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408, AS AMENDED, AND SHALL CONFORM TO THE REQUIREMENTS OF THE PENNDOT, BUREAU OF DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION (RC), PUBLICATION NO. 72, IN EFFECT AT THE TIME THE DESIGN IS SUBMITTED.
13. ALL WATER MAINS ARE TO BE CEMENT LINED DUCTILE IRON PIPE, CLASS 52.
14. ALL PADEP WATER SUPPLY REGULATIONS SHALL APPLY.
15. WATER LINES SHALL BE KEPT SEPARATED A MINIMUM OF FIVE (5) FEET HORIZONTALLY FROM ANY OTHER UTILITY, EXCEPT SANITARY SEWER LINES, THE SEPARATION FOR WHICH SHALL BE IN ACCORDANCE WITH PADEP REGULATIONS.
16. ALL WATER MAINS ARE TO BE PRESSURE TESTED WITH A REPRESENTATIVE OF THE WATER DEPARTMENT PRESENT DURING THE TESTING.

NOTE:
NO PROPOSED UTILITY WORK SOUTH OF THIS SHEET.

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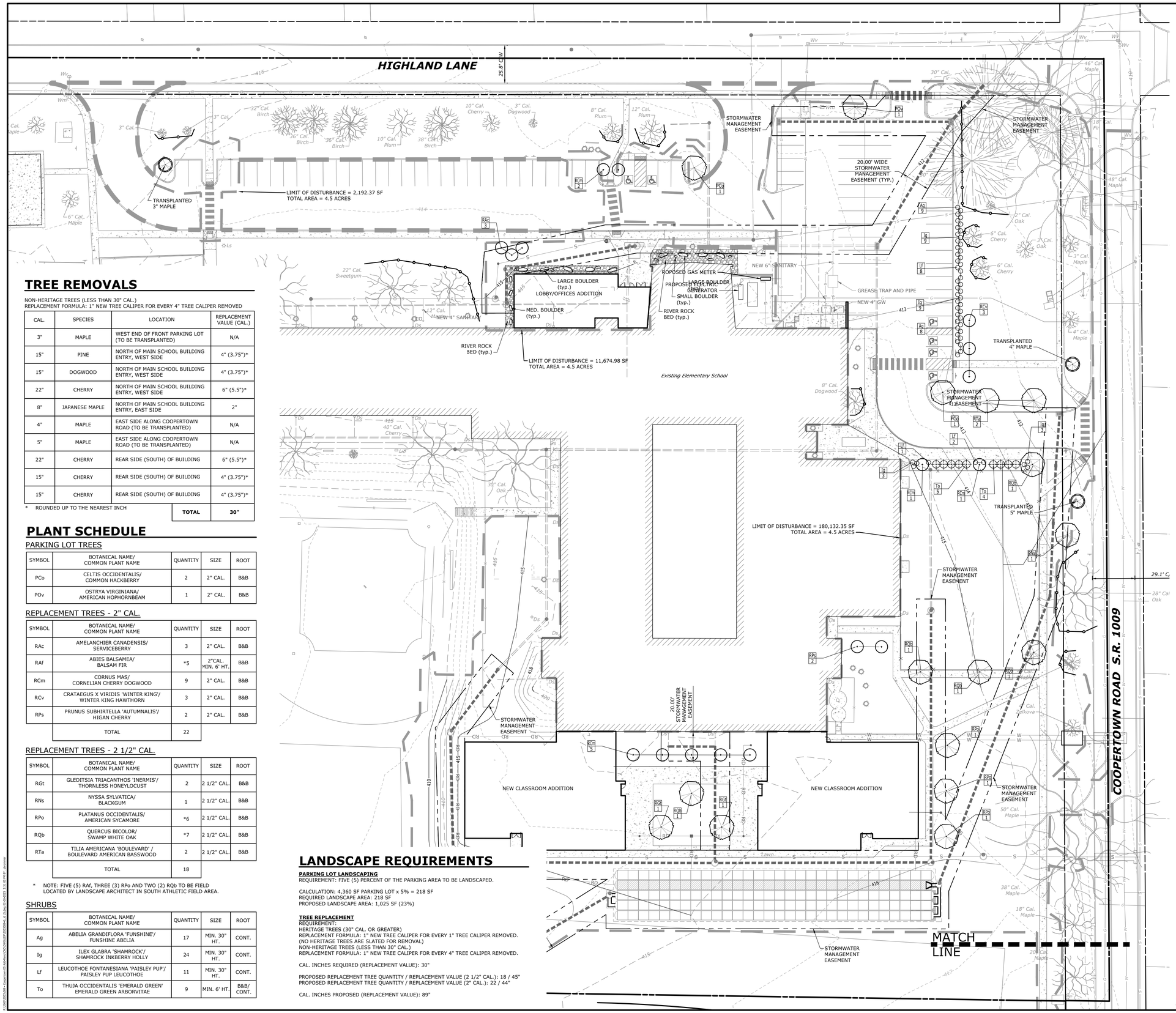
PLAN TYPE:
UTILITY PLAN

SHEET:
C-106



TREE REMOVALS

NON-HERITAGE TREES (LESS THAN 30" CAL.)
REPLACEMENT FORMULA: 1" NEW TREE CALIPER FOR EVERY 4" TREE CALIPER REMOVED

CAL.	SPECIES	LOCATION	REPLACEMENT VALUE (CAL.)
3"	MAPLE	WEST END OF FRONT PARKING LOT (TO BE TRANSPLANTED)	N/A
15"	PINE	NORTH OF MAIN SCHOOL BUILDING ENTRY, WEST SIDE	4" (3.75")*
15"	DOGWOOD	NORTH OF MAIN SCHOOL BUILDING ENTRY, WEST SIDE	4" (3.75")*
22"	CHERRY	NORTH OF MAIN SCHOOL BUILDING ENTRY, WEST SIDE	6" (5.5")*
8"	JAPANESE MAPLE	NORTH OF MAIN SCHOOL BUILDING ENTRY, EAST SIDE	2"
4"	MAPLE	EAST SIDE ALONG COOPERTOWN ROAD (TO BE TRANSPLANTED)	N/A
5"	MAPLE	EAST SIDE ALONG COOPERTOWN ROAD (TO BE TRANSPLANTED)	N/A
22"	CHERRY	REAR SIDE (SOUTH) OF BUILDING	6" (5.5")*
15"	CHERRY	REAR SIDE (SOUTH) OF BUILDING	4" (3.75")*
15"	CHERRY	REAR SIDE (SOUTH) OF BUILDING	4" (3.75")*
		TOTAL	**30"**

* ROUNDED UP TO THE NEAREST INCH

PLANT SCHEDULE

PARKING LOT TREES

SYMBOL	BOTANICAL NAME/ COMMON PLANT NAME	QUANTITY	SIZE	ROOT
PCo	CELTIS OCCIDENTALIS/ COMMON HACKBERRY	2	2" CAL.	B&B
POv	OSTRYA VIRGINIANA/ AMERICAN HOPHORNBEAM	1	2" CAL.	B&B

REPLACEMENT TREES - 2" CAL.

SYMBOL	BOTANICAL NAME/ COMMON PLANT NAME	QUANTITY	SIZE	ROOT
RAc	AMELANCHIER CANADENSIS/ SERVICEBERRY	3	2" CAL.	B&B
RAf	ABIES BALSAMEA/ BALSAM FIR	*5	2"CAL. MIN. 6' HT.	B&B
RCm	CORNUS MAS/ CORNELIAN CHERRY DOGWOOD	9	2" CAL.	B&B
RCv	CRATAEGUS X VIRIDIS 'WINTER KING'/ WINTER KING HAWTHORN	3	2" CAL.	B&B
RPs	PRUNUS SUBHIRTELLA 'AUTUMNALIS'/ HIGAN CHERRY	2	2" CAL.	B&B
	TOTAL	22		

REPLACEMENT TREES - 2 1/2" CAL.

SYMBOL	BOTANICAL NAME/ COMMON PLANT NAME	QUANTITY	SIZE	ROOT
RGt	GLEDITSIA TRIACANTHOS 'INERMIS'/ THORNLESS HONEYLOCUST	2	2 1/2" CAL.	B&B
RNs	NYSSA SYLVATICA/ BLACKGUM	1	2 1/2" CAL.	B&B
RPo	PLATANUS OCCIDENTALIS/ AMERICAN SYCAMORE	*6	2 1/2" CAL.	B&B
RQb	QUERCUS BICOLOR/ SWAMP WHITE OAK	*7	2 1/2" CAL.	B&B
RTa	TILIA AMERICANA 'BOULEVARD' / BOULEVARD AMERICAN BASSWOOD	2	2 1/2" CAL.	B&B
	TOTAL	18		

* NOTE: FIVE (5) RAf, THREE (3) RPo AND TWO (2) RQb TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT IN SOUTH ATHLETIC FIELD AREA.

SHRUBS

SYMBOL	BOTANICAL NAME/ COMMON PLANT NAME	QUANTITY	SIZE	ROOT
Ag	ABELIA GRANDIFLORA 'FUNSHINE'/ FUNSHINE ABELIA	17	MIN. 30" HT.	CONT.
Ig	ILEX GLABRA 'SHAMROCK'/ SHAMROCK INKBERRY HOLLY	24	MIN. 30" HT.	CONT.
Lf	LEUCOTHOE FONTANESIANA 'PAISLEY PUP'/ PAISLEY PUP LEUCOTHOE	11	MIN. 30" HT.	CONT.
To	THUJA OCCIDENTALIS 'EMERALD GREEN' EMERALD GREEN ARBORVITAE	9	MIN. 6' HT.	B&B/ CONT.

LANDSCAPE REQUIREMENTS

PARKING LOT LANDSCAPING
REQUIREMENT: FIVE (5) PERCENT OF THE PARKING AREA TO BE LANDSCAPED.

CALCULATION: 4,360 SF PARKING LOT x 5% = 218 SF
REQUIRED LANDSCAPE AREA: 218 SF
PROPOSED LANDSCAPE AREA: 1,025 SF (23%)

TREE REPLACEMENT
REQUIREMENT:
HERITAGE TREES (30" CAL. OR GREATER)
REPLACEMENT FORMULA: 1" NEW TREE CALIPER FOR EVERY 1" TREE CALIPER REMOVED.
(NO HERITAGE TREES ARE SLATED FOR REMOVAL)
NON-HERITAGE TREES (LESS THAN 30" CAL.)
REPLACEMENT FORMULA: 1" NEW TREE CALIPER FOR EVERY 4" TREE CALIPER REMOVED.

CAL. INCHES REQUIRED (REPLACEMENT VALUE): 30"

PROPOSED REPLACEMENT TREE QUANTITY / REPLACEMENT VALUE (2 1/2" CAL.): 18 / 45"
PROPOSED REPLACEMENT TREE QUANTITY / REPLACEMENT VALUE (2" CAL.): 22 / 44"

CAL. INCHES PROPOSED (REPLACEMENT VALUE): 89"

LEGEND

PROPOSED LANDSCAPE PLAN FEATURES

- EVERGREEN TREE
- DECIDUOUS TREE
- SMALL/MEDIUM DECIDUOUS TREE
- SHRUB
- TRANSPLANTED TREE
- PLANTING LABEL

LANDSCAPE NOTES

SITE PREPARATION

1. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, AND LAWNS AND EXISTING EXTERIOR PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS, CONTACT PA-1-CALL 1-800-242-1776 AT A MINIMUM OF THREE WORKING DAYS PRIOR TO COMMENCEMENT OF WORK.
2. PROVIDE EROSION CONTROL MEASURE TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUN-OFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.
3. ALL TREE AND SHRUB REMOVAL AS SHOWN ON THE DEMOLITION PLAN SHALL HAVE ALL STUMPS AND ROOTS REMOVED BY MEANS OF STUMP GRINDING AND/OR BACKHOE. ALL BIODEGRADABLE PLANT MATERIAL FROM THE REMOVAL PROCESS SHALL BE COLLECTED AND REMOVED FROM THE SITE.

PLANT BED ESTABLISHMENT

1. CONTRACTOR TO CONFIRM EXISTING TOPSOIL DEPTH AND SHALL FURNISH SOIL ANALYSIS BY QUALIFIED LAB STATING PERCENTAGES OF ORGANIC MATTER, GRADUATION OF SAND, SILT AND CLAY CONTENT, DELETERIOUS MATERIAL, PH AND MINERAL AND PLANT-NUTRIENT CONTENT OF TOPSOIL. CONTRACTOR TO PROVIDE DATA AT A MINIMUM OF 5 DIFFERENT PLANTING AREAS. CONTRACTOR TO SUBMIT EXISTING TOPSOIL DEPTH AND RECOMMENDED QUANTITIES OF NITROGEN, PHOSPHORUS AND POTASH INGREDIENTS TO BE ADDED TO PRODUCE A SATISFACTORY TOPSOIL TO LANDSCAPE ARCHITECT FOR APPROVAL.
2. TOPSOIL SHALL HAVE ACIDITY RANGE OF PH 5.0 TO PH 7.0 AND AN ORGANIC CONTENT OF AT LEAST 3-4%. MINIMUM TOPSOIL DEPTH IN PLANTING BEDS SHALL BE 12" BUT 18" IS RECOMMENDED. ADDITIONAL TOPSOIL SHALL BE ADDED WHEN POSSIBLE.
3. APPLY APPROVED SOIL AMENDMENTS AND FERTILIZER ON SURFACE AND THOROUGHLY BLEND PLANTING SOIL MIX FOR PLANTING BACKFILL.
4. LAY OUT INDIVIDUAL TREE LOCATIONS AND AREAS FOR MULTIPLE EXTERIOR PLANTINGS. STAKE LOCATIONS, OUTLINE AREAS, ADJUST LOCATIONS WHEN REQUESTED, AND OBTAIN LANDSCAPE ARCHITECTS ACCEPTANCE OF LAYOUT BEFORE PLANTING. MAKE MINOR ADJUSTMENTS AS REQUIRED.

PLANT MATERIAL

1. FURNISH NURSERY-GROWN TREES AND SHRUBS COMPLYING WITH ANSI Z60.1, WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING, PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK-FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALE, INJURIES, ABRASIONS, AND DISFIGUREMENT.
2. PROVIDE TREES OF SIZES AND GRADES COMPLYING WITH ANSI Z60.1 FOR THE TYPE OF TREES AND SHRUBS REQUIRED. TREES OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO ARCHITECT, WITH A PROPORTIONATE INCREASE IN SIZE OF ROOTS OR BALLS.
3. IF FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF TREES IS SHOWN, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND NUMBER LABEL TO ASSURE SYMMETRY IN PLANTING.

CLEANUP AND PROTECTION

1. DURING EXTERIOR PLANTING, KEEP ADJACENT PAVEMENTS AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
2. PROTECT EXTERIOR PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED EXTERIOR PLANTING.

DISPOSAL

1. REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

WARRANTY

1. WARRANT THE FOLLOWING EXTERIOR PLANTS FOR THE WARRANTY PERIOD INDICATED IN THE SPECIFICATIONS, AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. WARRANTY PERIODS FOR ALL PLANT MATERIAL: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
2. REMOVE DEAD EXTERIOR PLANTS IMMEDIATELY. REPLACE IMMEDIATELY UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON.
3. REPLACE EXTERIOR PLANTS THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD.
4. A LIMIT OF ONE REPLACEMENT OF EACH EXTERIOR PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.

MISC. PLANTING NOTES

1. ALL PLANTING MATERIAL TO BE INSTALLED AS PER SIZE INDICATED ON PLANT SCHEDULE.
2. ANY SUBSTITUTIONS THAT MAY BE REQUIRED SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ORDERING MATERIAL.
3. ALL PLANTINGS AND PLANTING PROCEDURES SHALL CONFORM TO GOOD NURSERY AND LANDSCAPE PRACTICE AND THE STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMAN.
4. PRIOR TO COMMENCEMENT OF WORK ALL UTILITIES BOTH ABOVE AND BELOW GROUND SHALL BE LOCATED THROUGH THE PA 1CALL SYSTEM AND/OR THE GENERAL CONTRACTOR ON SITE. IF ANY CONFLICTS DO OCCUR THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY FOR RELOCATION.
5. CONTRACTOR TO VERIFY ALL PLANT COUNTS AND LOCATIONS PRIOR TO ORDERING MATERIAL. K&W AND THE OWNER ACCEPT NO RESPONSIBILITY FOR TYPOGRAPHICAL ERRORS AND MISCOUNTS.
6. ALL PLANTINGS SHALL HAVE WATER RETAINING CRYSTALS SUCH AS TERRASORB, OR APPROVED EQUAL, INCORPORATED INTO PLANTING SOIL AS RECOMMENDED BY MANUFACTURER.
7. ANY PLANT NOT INCLUDED IN A PLANTING BED SHALL HAVE A MULCHED CIRCLE. THE SIZE OF THE MULCHED CIRCLE SHALL BE DETERMINED ACCORDING TO THE OVERALL PLANT SIZE OR CALIPER. CONSULT THE LANDSCAPE ARCHITECT FOR CLARIFICATION IF REQUIRED.
8. EACH PLANT SHALL BE PLANTED SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT, AT ANY TIME, COVER THE ROOTBALL WITH TOPSOIL BACKFILL.
9. THE TOPSOIL BACKFILL SHALL BE FIRMLY TAMPED, COMPARABLE TO FOOT PRESSURE, IN 3" LIFTS TO STABILIZE THE ROOT BALL AND TO PREVENT AIR POCKETS.
10. WATER ALL PLANTINGS INDIVIDUALLY WITH AN OPEN ENDED GARDEN HOSE SUBSEQUENT TO INSTALLATION. DO NOT USE MECHANICAL SPRINKLERS TO WATER PLANTINGS.
11. LANDSCAPE MATERIAL PLANTING SHALL TAKE PLACE IN THE SPRING OR FALL DURING THE RECOGNIZED ACCEPTABLE PLANTING PERIODS AS NOTED IN THE SPECIFICATIONS. SUMMER PLANTING WILL NOT BE ACCEPTED.

GRAPHIC SCALE
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SCALE: 1" = 30'

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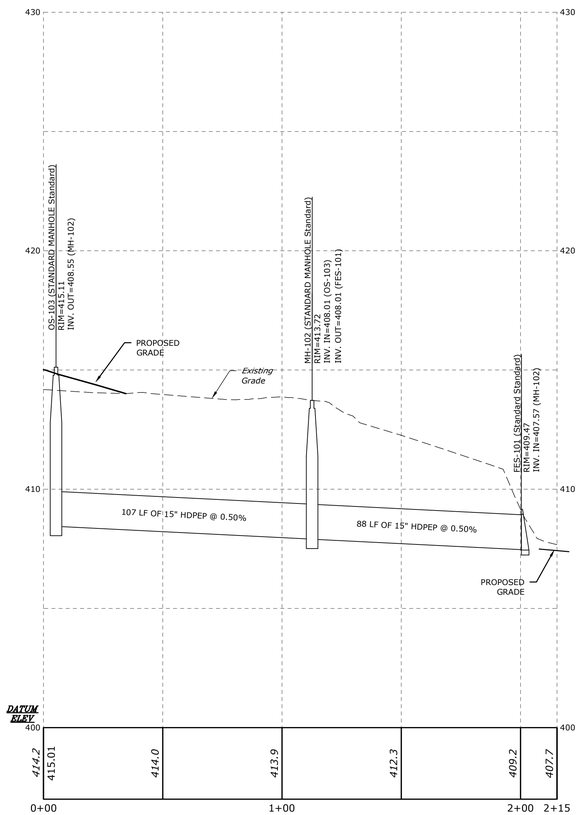
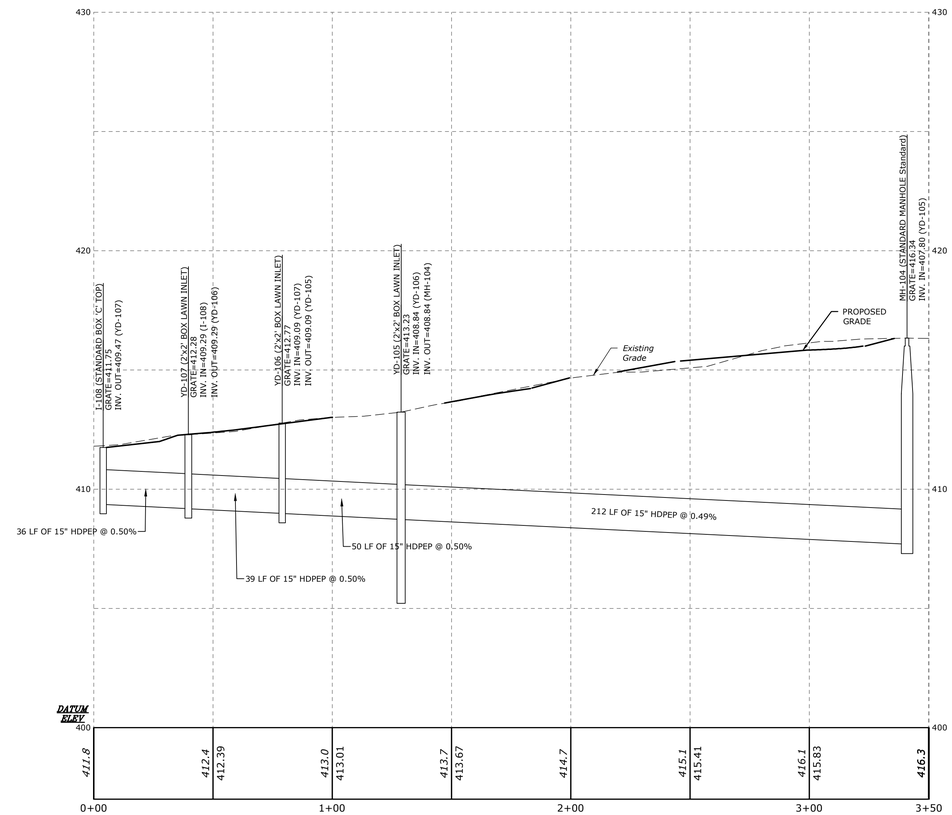
PLAN TYPE:
LANDSCAPE PLAN

SHEET:
C-107



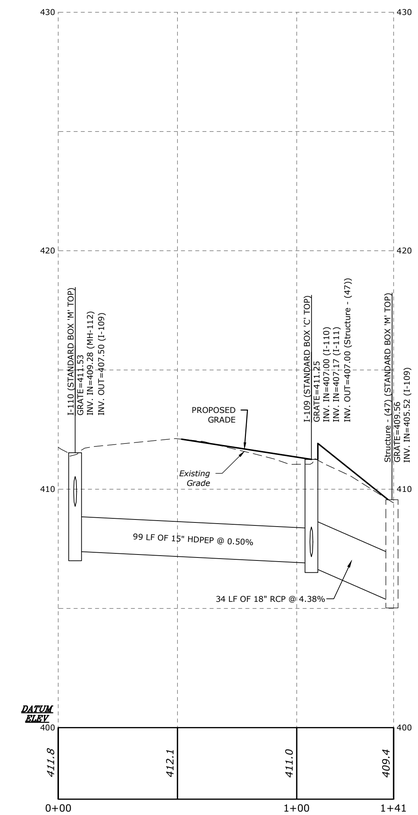
OS-103 TO MH-100

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'



I-108 TO MH-104

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'



I-110 TO EX. INLET

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'

GRAPHIC SCALE
HORIZONTAL
0 15 30 60
SCALE: 1" = 30'
VERTICAL
0 1.5 3 6
SCALE: 1" = 3'

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP — DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-H_ld PROF.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
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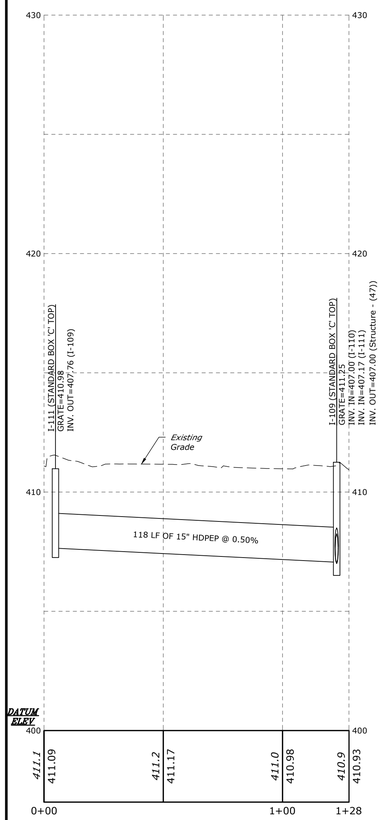
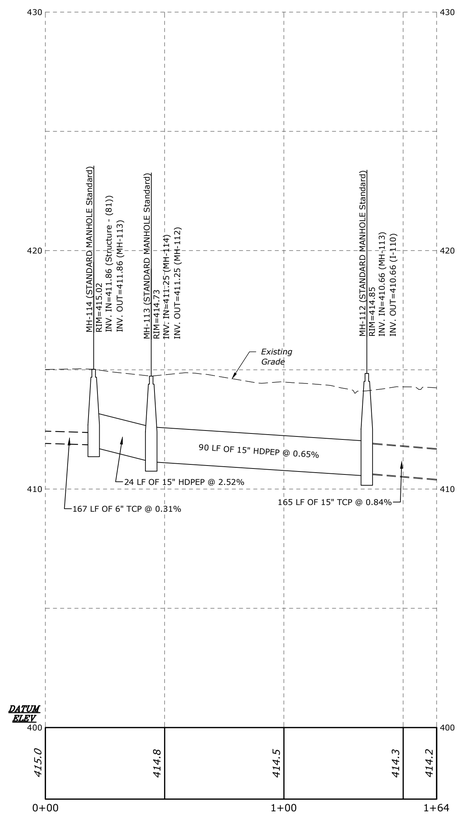
PLAN TYPE:
STORMWATER PROFILES

SHEET:
C-300



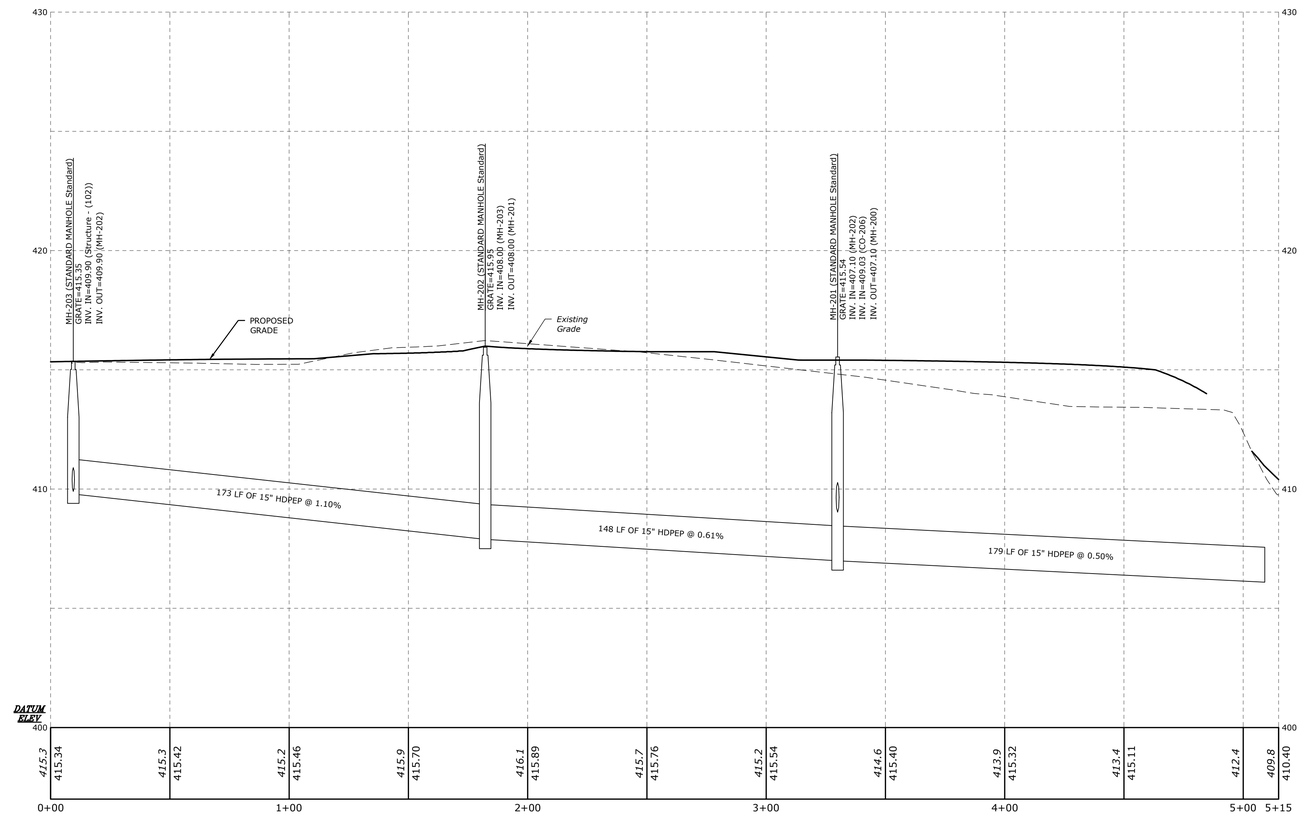
I-111 TO I-109

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'



MH-114 TO MH-112

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'



MH-203 TO MH-200

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'

GRAPHIC SCALE
HORIZONTAL
0 15 30 60
SCALE: 1" = 30'
VERTICAL
0 1.5 3 6
SCALE: 1" = 3'

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DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS

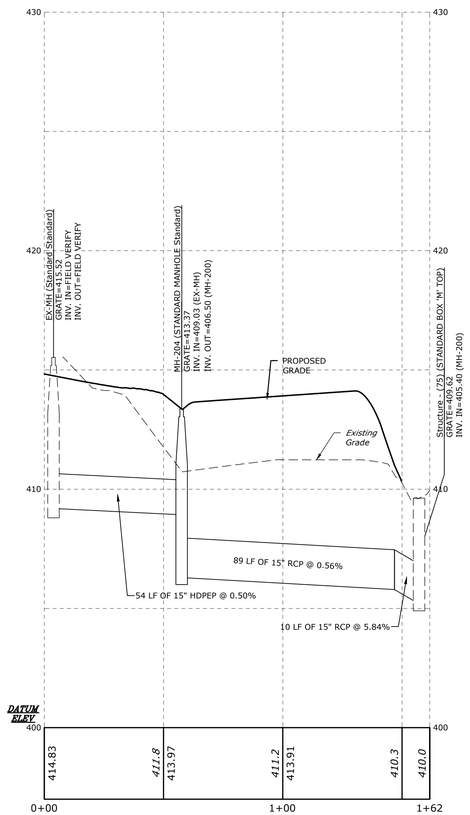
CAD DRAWING:
2003089-H_ld PROF.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
STORMWATER PROFILES

SHEET:
C-301



MH-204 TO MH-200

HORZ. SCALE: 1"=30'
VERT. SCALE: 1"= 3'

GRAPHIC SCALE

HORIZONTAL

0 15 30 60

SCALE: 1" = 30'

VERTICAL

0 1.5 3 6

SCALE: 1" = 3'

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PROFESSIONAL SEAL

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DRAWN BY:	PKS
CAD DRAWING:	2003089-H_ld PROF.dwg

REVISIONS

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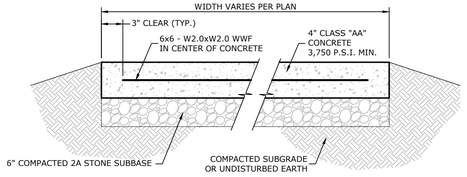
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
STORMWATER PROFILES

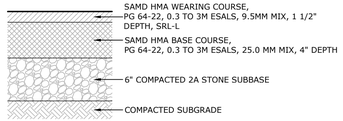
SHEET:
C-302



NOTES:
- SPACE CONTROL JOINTS AT A 5'. PLACE EXPANSION JOINTS AT 20' MAXIMUM, STRUCTURE FACE, AND MATCH EXISTING IF APPLICABLE AND AS PER AMERICAN CONCRETE INSTITUTE STANDARDS.
- FIBER REINFORCEMENT MAY BE UTILIZED IN PLACE OF WWF.

CONCRETE SIDEWALK

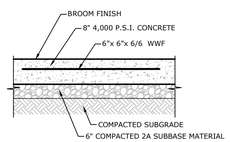
NOT TO SCALE



NOTE:
1. ALL PAVING MATERIALS AND INSTALLATION MATERIALS SHALL CONFORM TO PENNDOT PUBLICATION 408, AS AMENDED.

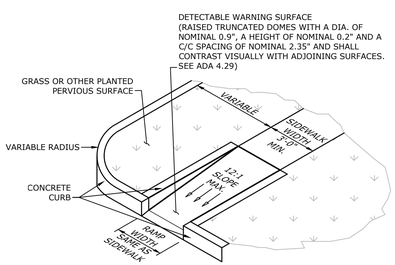
STANDARD DUTY PAVEMENT SECTION

NOT TO SCALE



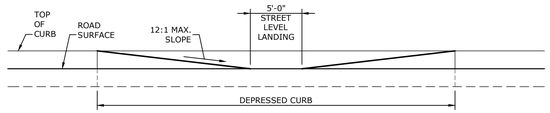
HEAVY DUTY CONCRETE

NOT TO SCALE

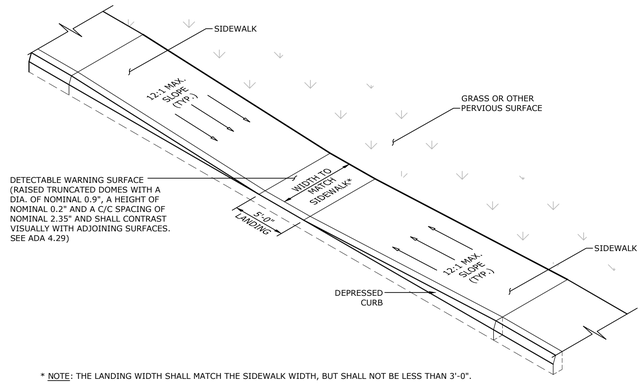


TYPE 4A CURB RAMP

NOT TO SCALE



ELEVATION

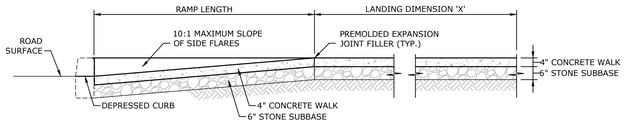


* NOTE: THE LANDING WIDTH SHALL MATCH THE SIDEWALK WIDTH, BUT SHALL NOT BE LESS THAN 3'-0".

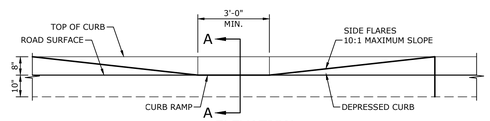
ISOMETRIC

TYPE 2 CURB RAMP

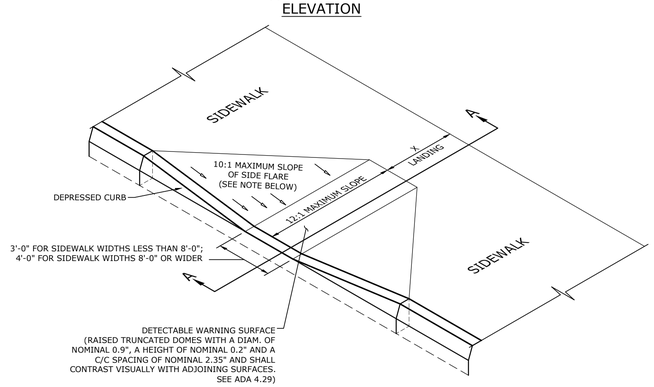
NOT TO SCALE



SECTION A-A



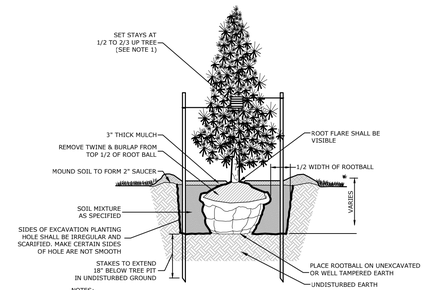
ELEVATION



NOTE:
DIMENSION 'X' SHALL BE EQUAL TO OR GREATER THAN 3'-0". IF DIMENSION 'X' IS LESS THAN 4'-0", THEN THE SLOPE OF THE FLARED SIDES SHALL NOT EXCEED 12:1.

TYPE 1 CURB RAMP

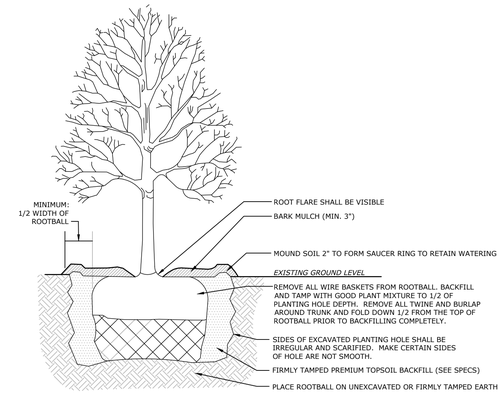
NOT TO SCALE



NOTES:
1. STAKE ALL EVERGREEN TREES OVER 6 FEET TALL.
2. TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE (OR SLIGHTLY ABOVE).
3. NEVER CUT LEADERS.
4. PRUNE ONLY TO REMOVE DAMAGED OR BROKEN BRANCHES.
5. REMOVE ALL WIRE BRACKETS FROM ROOTBALL.
6. REMOVE ALL STAKES 1 YEAR AFTER PLANTING.

EVERGREEN TREE PLANTING

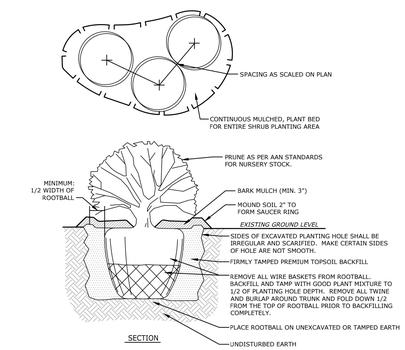
NOT TO SCALE



NOTES:
1. ROOTBALLS OF CONTAINERIZED TREES / SHRUBS SHALL BE SCARIFIED PRIOR TO TOPSOIL BACKFILL.
2. STAKING OF TREE IS REQUIRED. SEE DETAIL.

DECIDUOUS TREE PLANTING

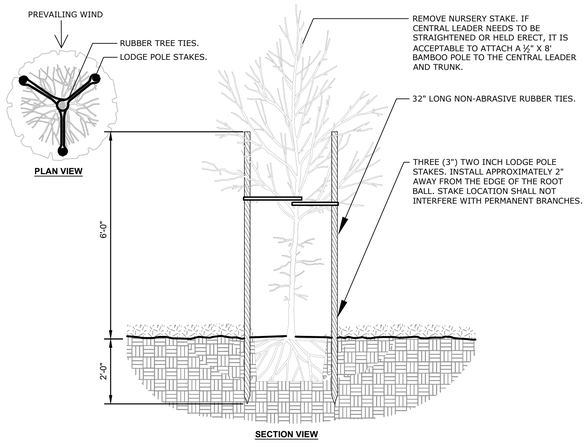
NOT TO SCALE



NOTES:
ROOTBALLS OF CONTAINERIZED SHRUBS SHALL BE SCARIFIED PRIOR TO TOPSOIL BACKFILL.

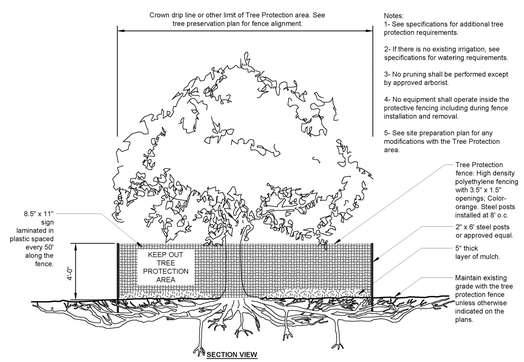
TYPICAL SHRUB PLANTING

NOT TO SCALE



TREE STAKING DETAIL

NOT TO SCALE



Notes:
1- See specifications for additional tree protection requirements.

2- If there is no existing irrigation, see specifications for watering requirements.

3- No pruning shall be performed except by approved arborist.

4- No equipment shall operate inside the protective fencing including during fence installation and removal.

5- See site preparation plan for any modifications with the Tree Protection area.

TREE PROTECTION DETAIL

NOT TO SCALE

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
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K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-1_ld DETAILS.dwg

REVISIONS

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2		
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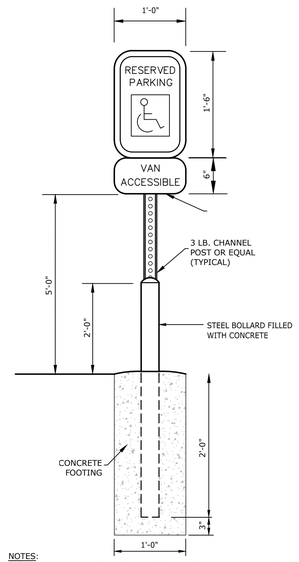
PLAN TYPE:
DETAILS

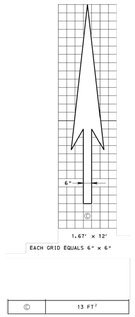
SHEET:
C-501



NOTES:
1. SIGN SHALL BE INSTALLED IN ACCORDANCE WITH THE AMERCIANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES, AS AMENDED.

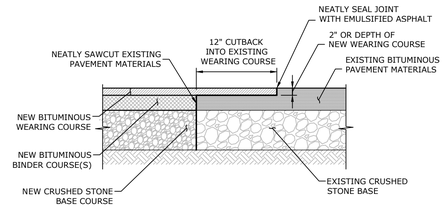
TYPICAL H/C ACCESSIBLE PARKING SIGN

NOT TO SCALE



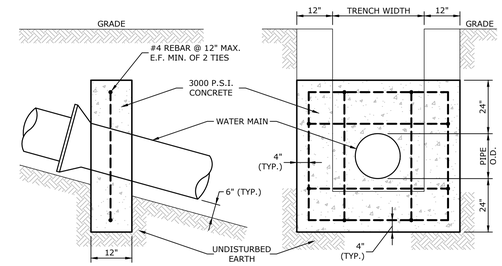
PAVEMENT MARKING ARROWS

NOT TO SCALE



PAVEMENT JOINT WITH CUTBACK INTO EXISTING WEARING COURSE

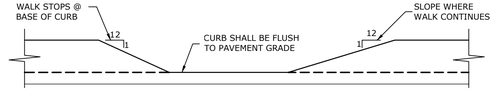
NOT TO SCALE



SIDE ELEVATION FRONT ELEVATION

INTERMEDIATE CONCRETE ANCHOR

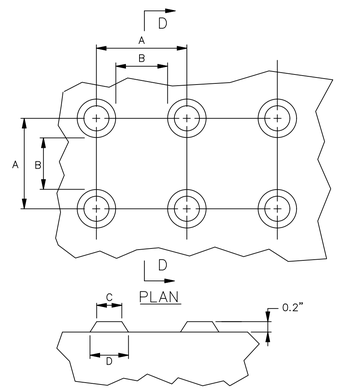
NOT TO SCALE



PLAN

FLUSH CURB

NOT TO SCALE



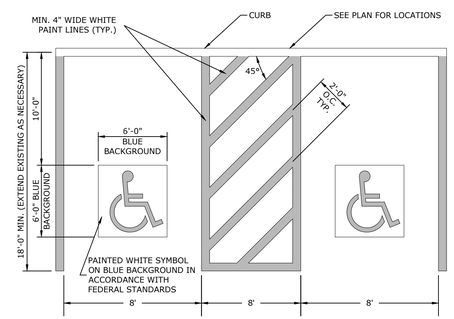
PLAN

SECTION D–D

TRUNCATED DOME DIMENSIONS		
DIM	MIN mm (inch)	MAX mm (inch)
A	1.6"	2.4"
B	0.65"	1.5"
C	(13)	(13)
D	0.9"	1.4"

DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAILS

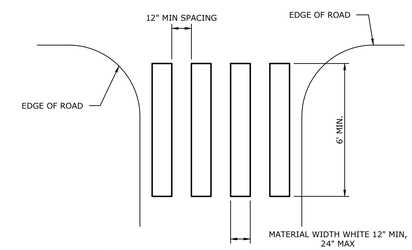
NOT TO SCALE



NOTES:
1. SEE SITE PLAN FOR ACCESSIBLE SPACE LOCATION AND DIMENSIONS.
2. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.

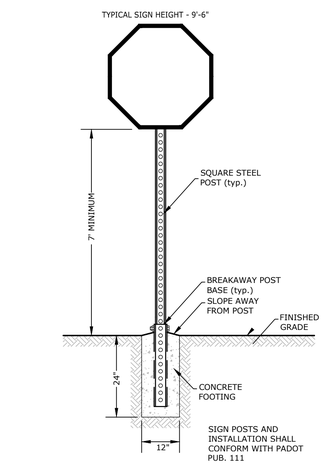
H.C. ACCESSIBLE PARKING SPACE

NOT TO SCALE



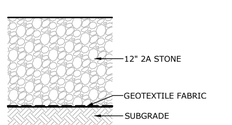
STANDARD CROSSWALK

NOT TO SCALE



BREAKAWAY SIGN POST

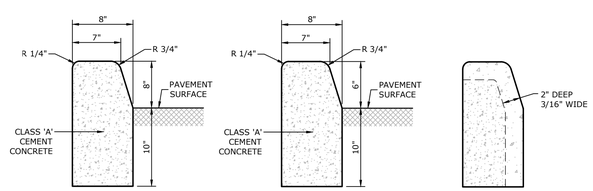
NOT TO SCALE



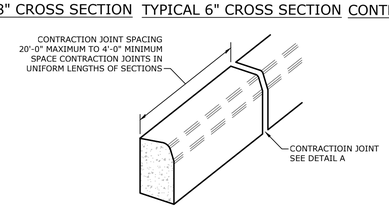
NOTE:
1. GEOTEXTILE FABRIC TO EXTEND MIN. 24" PAST EDGE OF LAY-DOWN AREA.

STONE CONSTRUCTION LAY-DOWN AREA CROSS-SECTION

NOT TO SCALE

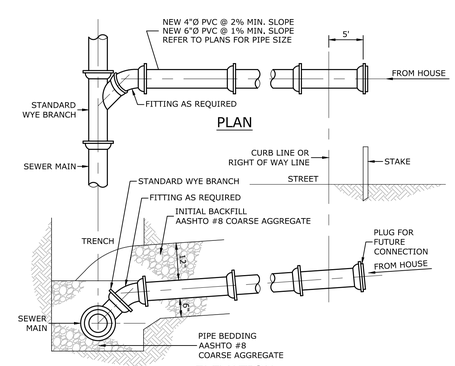


TYPICAL 8" CROSS SECTION TYPICAL 6" CROSS SECTION CONTRACTION JOINT



VERTICAL CONCRETE CURB

NOT TO SCALE

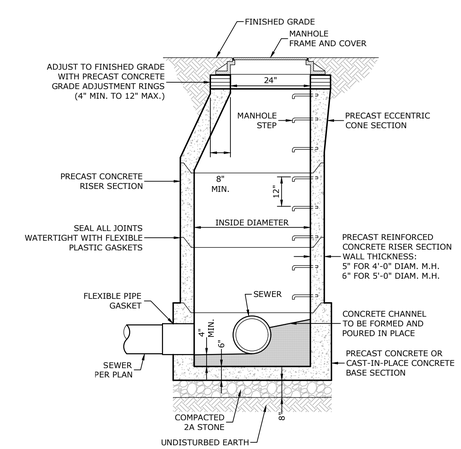


PLAN

ELEVATION

STANDARD SANITARY LATERAL

NOT TO SCALE



PRECAST CONCRETE SANITARY SEWER MANHOLE

NOT TO SCALE

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DRAWN BY:	PKS
CAD DRAWING: 2003089-1_ld DETAILS.dwg	

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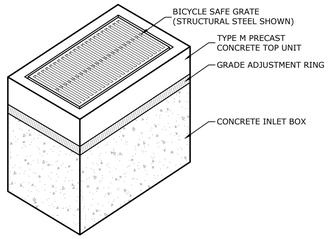
PLAN TYPE:
DETAILS

SHEET:
C-502

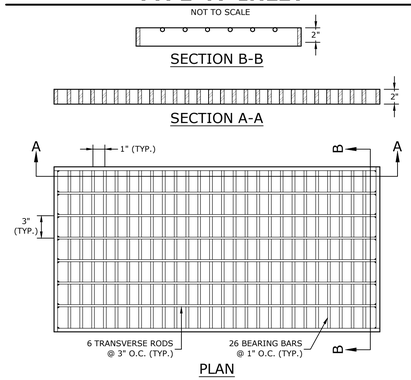


NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENN DOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-46M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES. STRUCTURE SHALL BE CERTIFIED FOR H20 LOADING.
2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
3. USE PRECAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED.
4. ALL INLETS IN PARKED AREAS SHALL HAVE HEAVY-DUTY BICYCLE SAFE GRATING.
5. ALL INLETS IN PEDESTRIAN/PLAYGROUND AREAS SHALL HAVE ADA COMPLIANT GRATING.
6. ALL INLETS SHALL BE SUMPED BELOW GRADE (2 INCHES) TO AID IN THE RUNOFF FLOW TO THE INLETS.
7. ALL FRAMES, CONCRETE TOP UNITS, AND GRADE ADJUSTMENTS RINGS SHALL BE SET IN A BED OF FULL MORTAR IN ACCORDANCE WITH PENNDOT PUBLICATION 408.
8. ALL INLETS DEEPER THAN FIVE FEET SHALL BE PROVIDED WITH MANHOLE-TYPE STEPS FOR ACCESS.

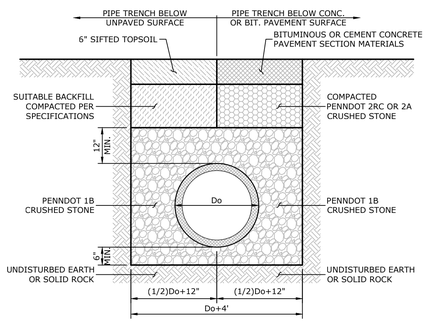
TYPE 'M' INLET

NOT TO SCALE



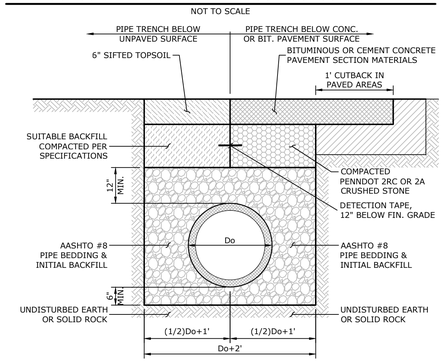
STRUCTURAL STEEL BICYCLE SAFE GRATE

NOT TO SCALE



STORM PIPE TRENCH SECTION

NOT TO SCALE



SANITARY SEWER PIPE TRENCH SECTION

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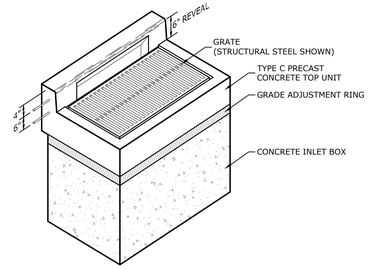
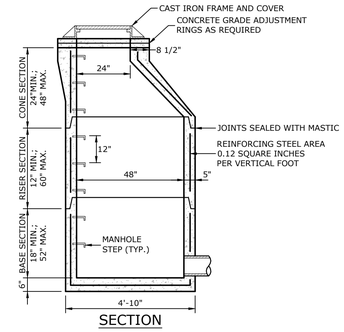


NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENN DOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-45M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES. STRUCTURE SHALL BE CERTIFIED FOR H20 LOADING.
2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
3. USE PRECAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED.
4. ALL INLETS SHALL HAVE BICYCLE SAFE GRATES.
5. ALL INLETS SHALL BE SUMPED BELOW GRADE (2 INCHES) TO AID IN THE RUNOFF FLOW TO THE INLETS.
6. ALL FRAMES, CONCRETE TOP UNITS, AND GRADE ADJUSTMENTS RINGS SHALL BE SET IN A BED OF FULL MORTAR IN ACCORDANCE WITH PENNDOT PUBLICATION 408.
7. ALL INLETS OVER FOUR FEET IN DEPTH, AS DETERMINED FROM FINISHED GRADE TO THE BOTTOM OF THE INLET, SHALL BE PROVIDED WITH STEPS FOR ACCESSIBILITY

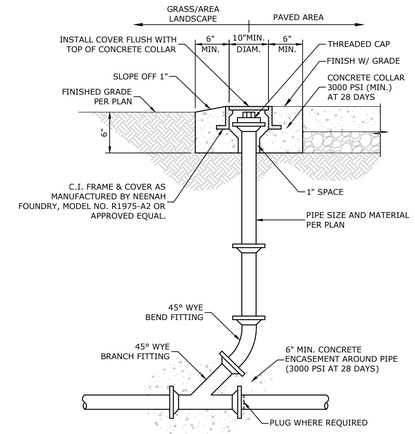
TYPE 'C' INLET

NOT TO SCALE



4' DIAMETER PRECAST CONCRETE MANHOLE

NOT TO SCALE



STORM SEWER CLEANOUT

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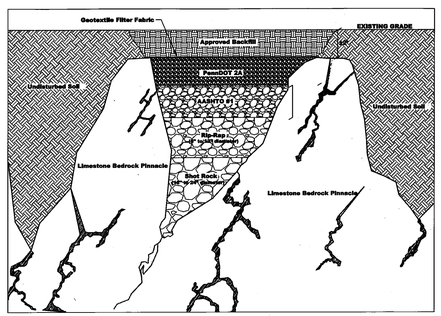


NOTES:

1. THE REPAIRS OUTLINED BELOW ARE GENERAL GUIDELINES AND EACH SINKHOLE OCCURRENCE SHOULD BE THOROUGHLY REVIEWED BY THE GEOTECHNICAL ENGINEER OF RECORD FOR AN APPROPRIATE REMEDIATION PLAN:

STRUCTURAL AREAS (AREAS WITHIN THE BUILDING FOOTPRINT OR BENEATH PAVEMENT)

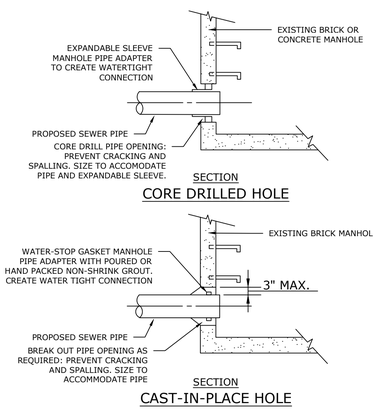
- ANY AND ALL LOOSE AND/OR SATURATED SOILS WITHIN THE SINKHOLE SHOULD BE EXCAVATED AND CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE EXCAVATION EQUIPMENT IS REACHED.
- UPON REMOVAL OF THE UNSTABLE SOILS, THE EXCAVATION SHOULD BE BACKFILLED USING HIGH MOBILITY, LOW STRENGTH FLOWABLE FILL (500 PSI) TO FINAL SUBGRADE ELEVATION.

NON-STRUCTURAL AREAS (NON-BUILDING/LANDSCAPED AREAS)

- ANY AND ALL LOOSE AND/OR SATURATED SOILS SHOULD BE EXCAVATED FROM THE SINKHOLE. EXCAVATION SHOULD CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE EXCAVATION EQUIPMENT IS REACHED.
- THE EXCAVATION SHOULD BE BACKFILLED WITH AGGREGATE OF DECREASING SIZE AS DEPICTED ON THE *INVERTED FILTER DETAIL*

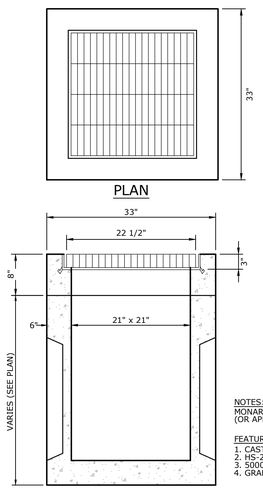
SINKHOLE REPAIR DETAIL

NOT TO SCALE



CONNECTION TO EXISTING MANHOLE DETAIL

NOT TO SCALE



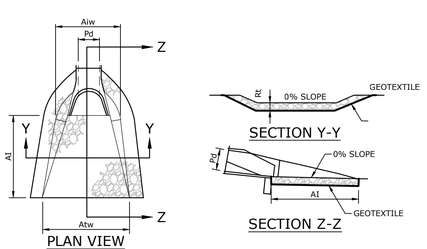
NOTES:
MONARCH 24" CATCH BASIN
(OR APPROVED EQUAL)

FEATURES:
1. CAST IRON FRAME & GRATE
2. HS-25 LOAD RATING
3. 5000 PSI CONCRETE
4. GRADE 60 REBAR

NOTE:
1. ALL YARD INLETS IN PAVED AREAS SHALL HAVE HANDICAPPED ACCESSIBLE GRATES INSTALLED.
2. ALL OTHER YARD INLETS SHALL HAVE BICYCLE SAFE GRATES

2'x2' YARD INLET

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE (R-_)	THICK Rt (IN)	LENGTH Ai (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
FES-101	15	3	9	8	3.75	11.75

NOTES:

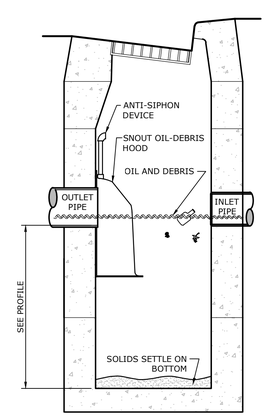
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

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 APRONS AT PIPE OUTLETS

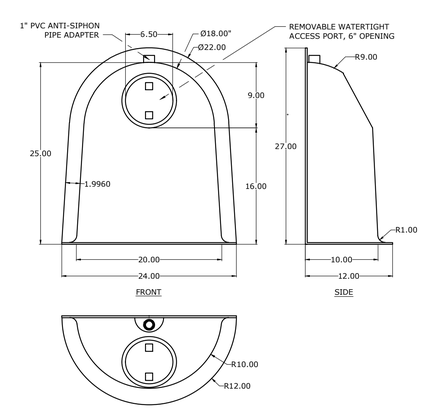
NOT TO SCALE



NOTE:
1. SNOUT TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS
2. SUMP DEPTH OF 36" MIN. FOR < OR= 12" DIAM.
3. SUMP DEPTH FOR OUTLETS >OR= 15", DEPTH = 2.5-3X DIAM.

SNOUT WATER QUALITY INSERT INSTALLATION (YD-105)

NOT TO SCALE



18F SNOUT WATER QUALITY INSERT (YD-105)

NOT TO SCALE

K&W
DESIGNING ENVIRONMENTS
2201 North Front Street, Suite 200
Harrisburg, PA 17110
P: 717.635.2835
www.kandwengineers.com

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION FOR HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP — DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-1_ld DETAILS.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:
PCSM DETAILS

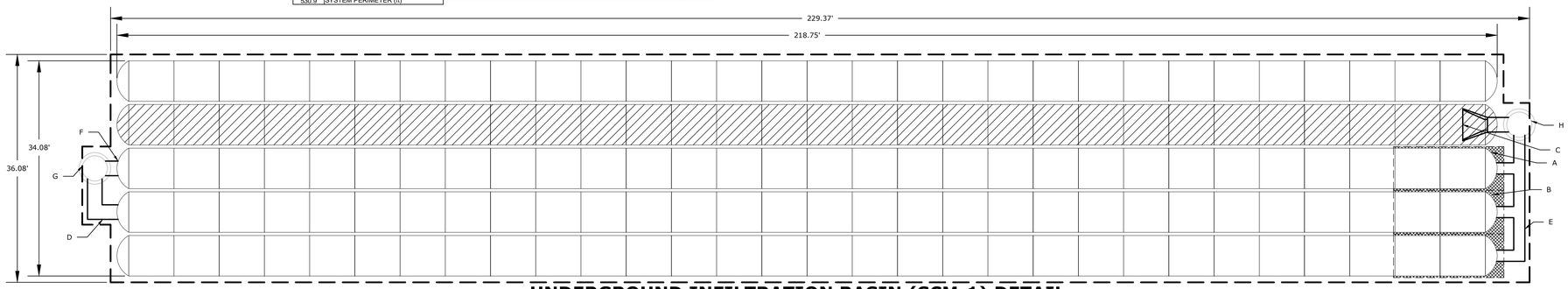
SHEET:
C-601

PROPOSED LAYOUT: UNDERGROUND INFILTRATION BASIN (SCM 1)	
150	STORMTECH MC-3500 CHAMBERS
10	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
27889	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
8138	SYSTEM AREA (SF)
530.9	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	420.30
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	414.30
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	413.80
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	413.80
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	413.80
TOP OF STONE:	413.30
TOP OF MC-3500 CHAMBER:	412.30
18" x 18" TOP MANIFOLD INVERT:	410.22
24" x 24" BOTTOM MANIFOLD INVERT:	408.72
24" ISOLATOR ROW PLUS INVERT:	408.72
24" BOTTOM CONNECTION INVERT:	408.72
BOTTOM OF MC-3500 CHAMBER:	408.55
BOTTOM OF STONE:	407.80

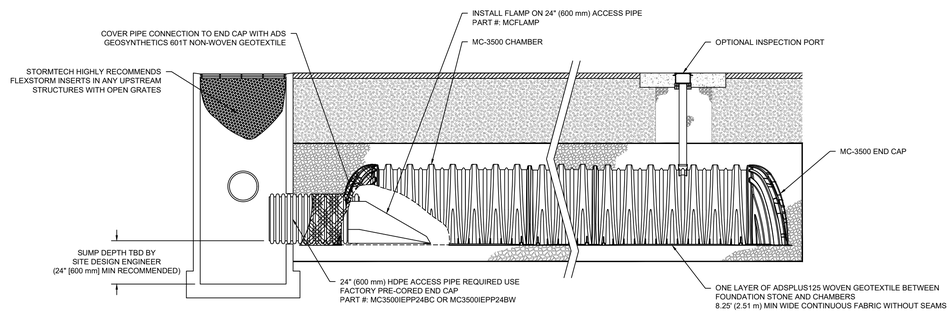
*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PRE-CORED END CAP. PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	18" TOP PRE-CORED END CAP. PART#: MC3500IEPP18TC / TYP OF ALL 18" TOP CONNECTIONS	20.03"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP		
MANIFOLD	D	24" x 24" BOTTOM MANIFOLD, ADS N-12	2.06"	
MANIFOLD	E	18" x 18" TOP MANIFOLD, ADS N-12	20.03"	
PIPE CONNECTION	F	24" BOTTOM CONNECTION	2.06"	
CONCRETE STRUCTURE	G	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		14.0 CFS OUT
CONCRETE STRUCTURE	H	I(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		16.2 CFS IN



UNDERGROUND INFILTRATION BASIN (SCM-1) DETAIL
ADS STORMTECH MC-3500 CHAMBER SYSTEM

NOT TO SCALE

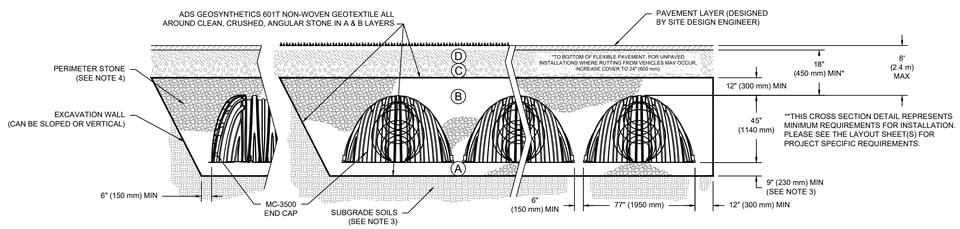


MC-3500 ISOLATOR ROW DETAIL

NOT TO SCALE

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

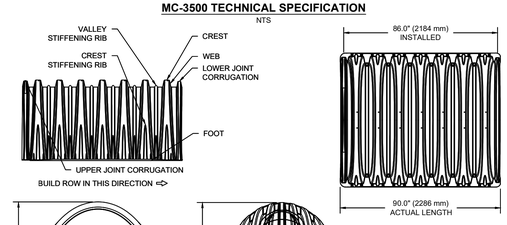
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

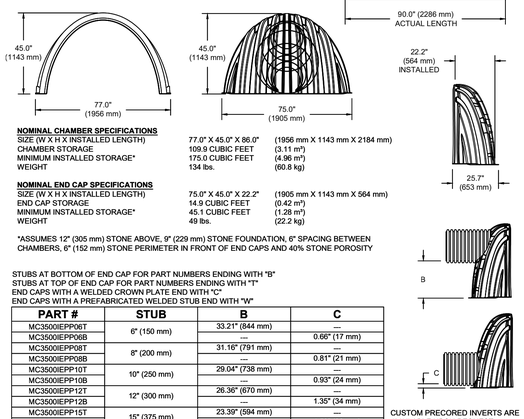
ADS STORMTECH MC-3500 CHAMBER SYSTEM CROSS SECTION DETAIL

NOT TO SCALE

MC-3500 TECHNICAL SPECIFICATION

NTS





NOMINAL CHAMBER SPECIFICATIONS		
SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS		
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

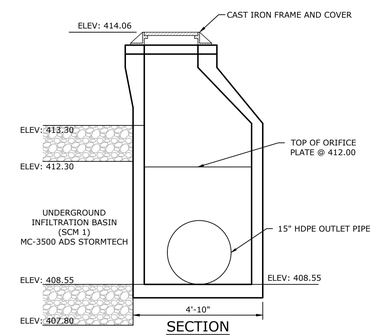
PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

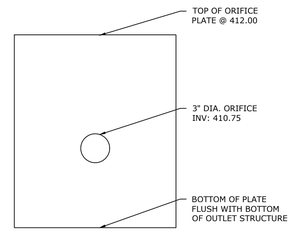
MC-3500 TECHNICAL SPECIFICATION DETAIL

NOT TO SCALE



OS-103 (SCM 1) DETAIL

NOT TO SCALE



OS-103 ORIFICE PLATE DETAIL

NOT TO SCALE

K&W
DESIGNING ENVIRONMENTS
2201 North Front Street, Suite 200
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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-1_ld DETAILS.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
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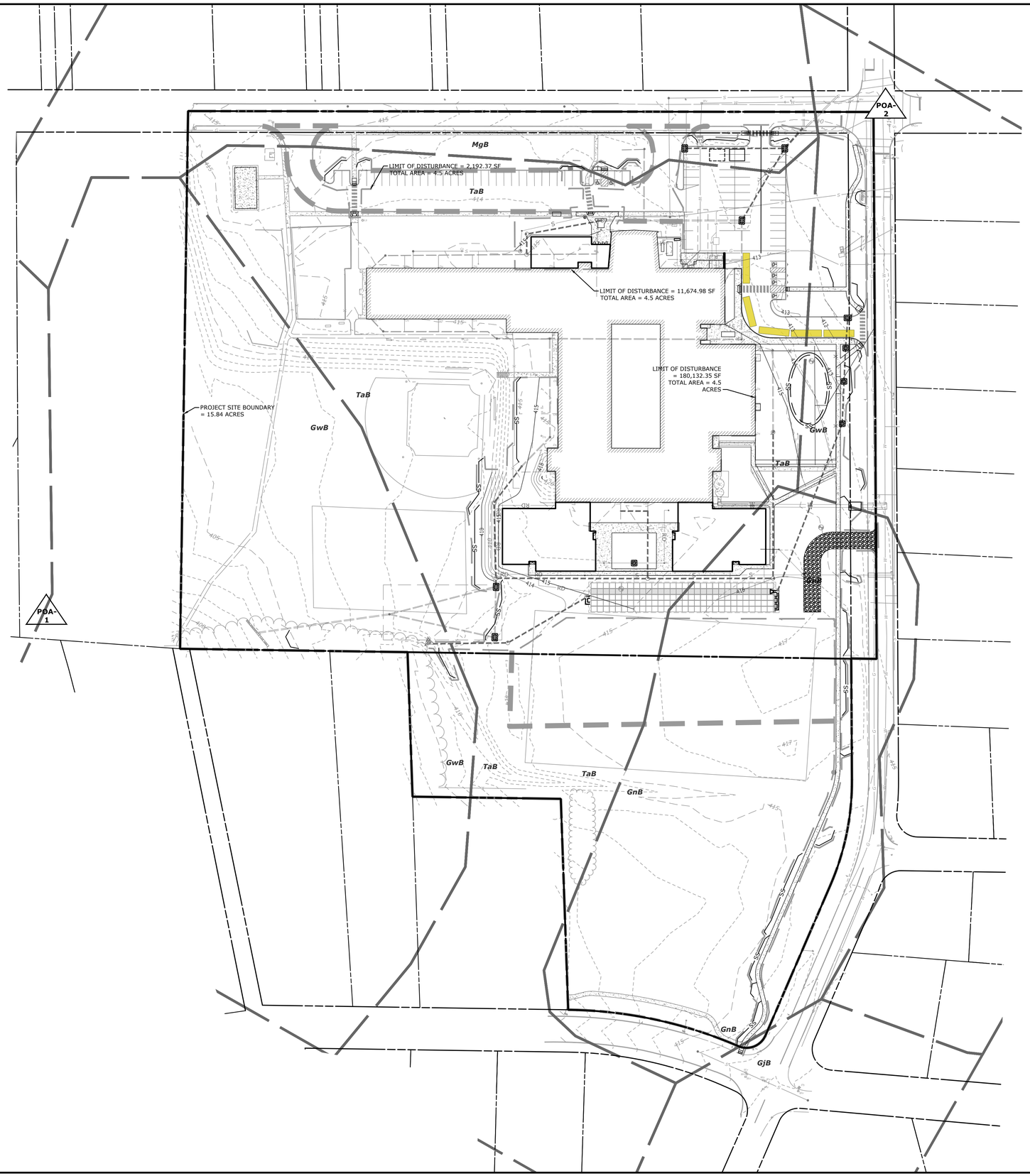
PLAN TYPE:
PCSM DETAILS

SHEET:
C-602



LEGEND

PROPOSED E&S CONTROL PLAN FEATURES

- LIMIT OF DISTURBANCE
- NPDES PERMIT BOUNDARY
- STABILIZED ROCK CONSTRUCTION ENTRANCE
- SOIL MATERIAL STOCKPILE
- SS — SS — SILT SOCKS
- INLET PROTECTION
- CONCRETE WASHOUT

SOIL LIMITATION RESOLUTIONS

1. SLOPES - EXCAVATIONS SHOULD BE STABILIZED TO PREVENT EROSION AND CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS.
2. DEPTH OF ROCK - IF BEDROCK IS ENCOUNTERED, REMOVE AS NECESSARY IN ACCORDING WITH PROJECT SPECIFICATIONS.
3. FROST ACTION - CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER/INSPECTOR REGARDING ANY SPECIAL MEASURES TO BE TAKEN FOR EARTHWORK WHICH IS TO OCCUR DURING PERIODS OF FROST.
4. SOIL pH LEVELS - CONTRACTOR SHALL HAVE SOIL pH TESTED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES.
5. FLOODING POTENTIAL - ENSURE THAT THE SITE HAS PROPER DRAINAGE.
6. HIGH GROUNDWATER LEVEL - CONTRACTOR SHALL EMPLOY DEWATERING TECHNIQUES AS APPROVED BY THE CONSERVATION DISTRICT. PUMPED WATER FILTER BAGS SHALL BE USED TO DEWATER UTILITY TRENCHES AND BELOW GRADE EXCAVATIONS.
7. EROSION - ANY EROSION THAT OCCURS THAT CAN NOT BE ADDRESSED BY MEASURES FOUND IN THE PLANS THE CONTRACTOR SHALL CONTACT THE SITE DESIGN ENGINEER AND THE CONSERVATION DISTRICT.
8. BASIN AREAS AND EMBANKMENTS - FILL FOR BASIN EMBANKMENTS SHALL BE COMPACTED IN 8" LIFTS TO 98% MAXIMUM DRY DENSITY (STANDARD PROCTOR) ±2% MOISTURE CONTENT PER PER ASTM D-1557. ANTI-SEEP COLLARS SHALL BE INSTALLED ON A BASIN DISCHARGE PIPING TO PREVENT SEEPAGE OF WATER FROM THE BASIN. CONSULT WITH SITE DESIGN ENGINEER FOR THE SPECIFIC ANTI-SEEP COLLAR SIZE REQUIREMENTS.

GENERAL E&S NOTES

1. BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DELAWARE COUNTY CONSERVATION DISTRICT.
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3. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
4. SPECIAL CARE SHALL BE TAKEN TO PREVENT SEDIMENT LADEN STORMWATER FROM ENTERING ALL STORMWATER MANAGEMENT AND CONVEYANCE FACILITIES UNTIL THE SITE HAS BEEN PROPERLY STABILIZED.

GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING: 2003089-K_ld E&S.dwg	

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
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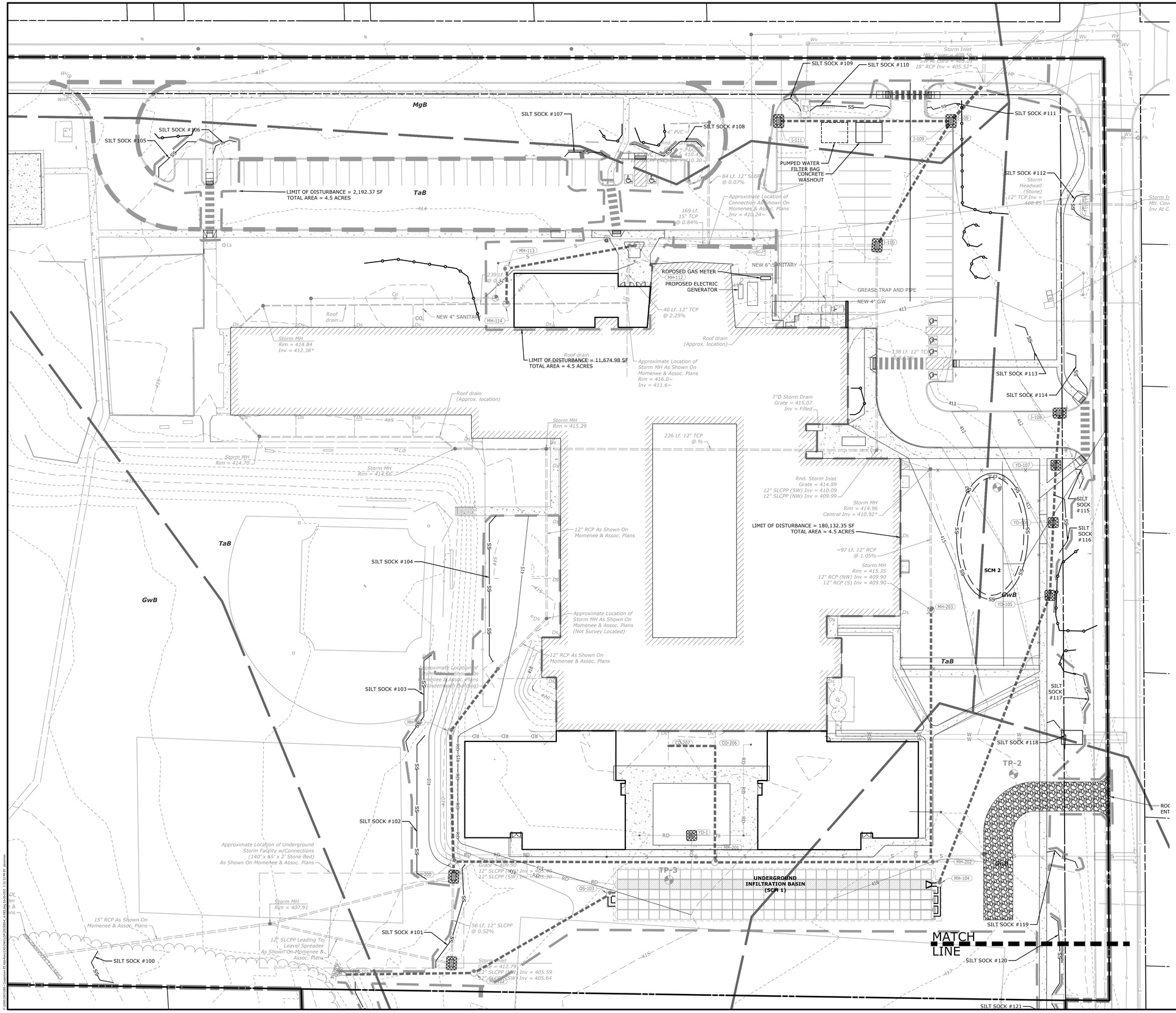
PLAN TYPE:
OVERALL E&S PLAN

SHEET:
C-701



LEGEND

PROPOSED E&S CONTROL PLAN FEATURES

- LIMIT OF DISTURBANCE
- NPDES PERMIT BOUNDARY
- STABILIZED ROCK CONSTRUCTION ENTRANCE
- SOIL MATERIAL STOCKPILE
- SILT SOCKS
- INLET PROTECTION
- CONCRETE WASHOUT

SOIL LIMITATION RESOLUTIONS

1. SLOPES - EXCAVATIONS SHOULD BE STABILIZED TO PREVENT EROSION AND CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION TECHNIQUES TO ENSURE SAFETY ON STEEP SLOPE AREAS.
2. DEPTH OF ROCK - IF BEDROCK IS ENCOUNTERED, REMOVE AS NECESSARY IN ACCORDING WITH PROJECT SPECIFICATIONS.
3. FROST ACTION - CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER/INSPECTOR REGARDING ANY SPECIAL MEASURES TO BE TAKEN FOR EARTHWORK WHICH IS TO OCCUR DURING PERIODS OF FROST.
4. SOIL pH LEVELS - CONTRACTOR SHALL HAVE SOIL pH TESTED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES.
5. FLOODING POTENTIAL - ENSURE THAT THE SITE HAS PROPER DRAINAGE.
6. HIGH GROUNDWATER LEVEL - CONTRACTOR SHALL EMPLOY DEWATERING TECHNIQUES AS APPROVED BY THE CONSERVATION DISTRICT. PUMPED WATER FILTER BAGS SHALL BE USED TO DEWATER UTILITY TRENCHES AND BELOW GRADE EXCAVATIONS.
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GENERAL E&S NOTES

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COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION FOR HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP, DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-K_ld E&S.dwg

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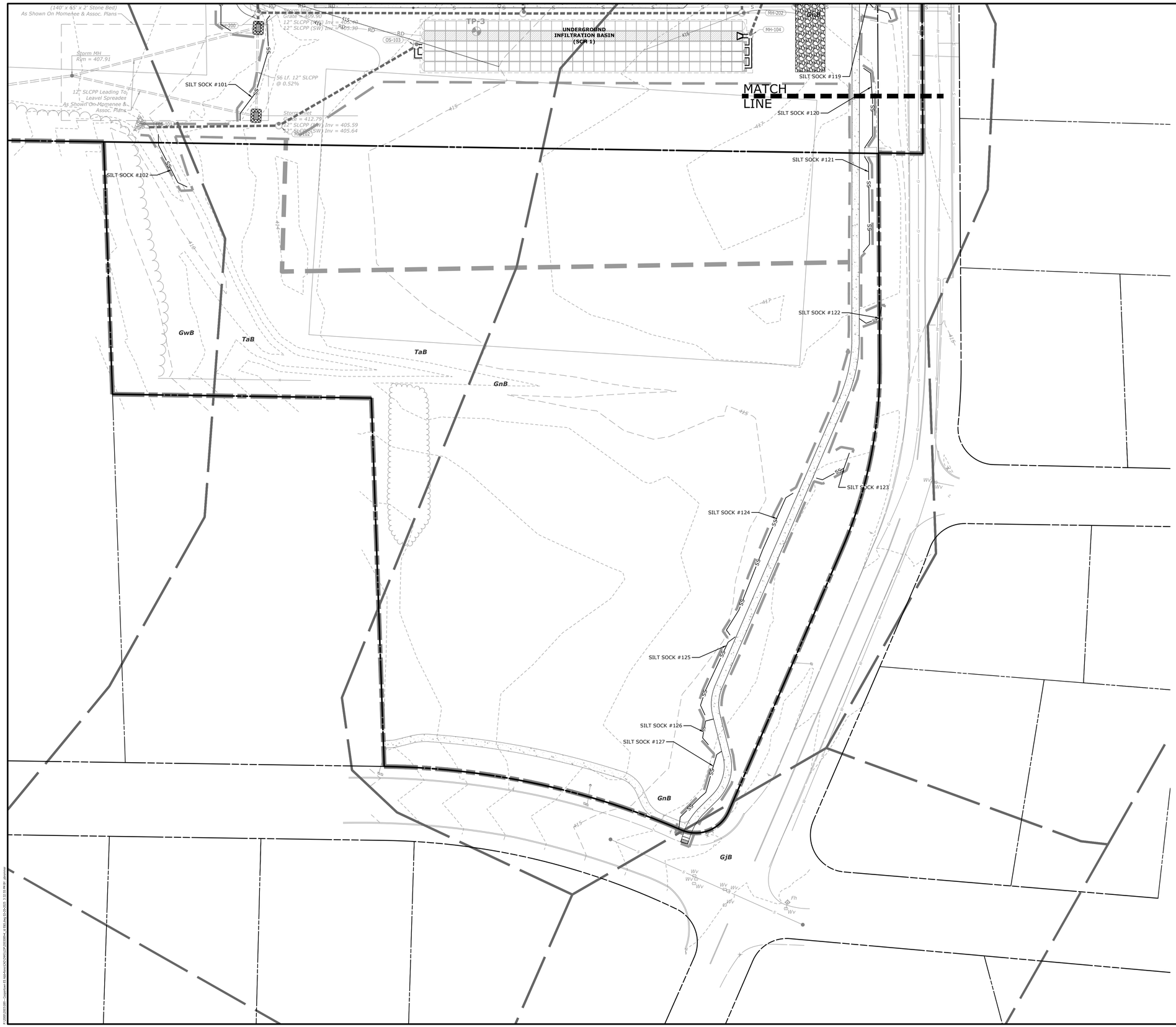
PLAN TYPE:
E&S PLAN

SHEET:
C-701.1



LEGEND

PROPOSED E&S CONTROL PLAN FEATURES

- LIMIT OF DISTURBANCE
- NPDES PERMIT BOUNDARY
- STABILIZED ROCK CONSTRUCTION ENTRANCE
- SOIL MATERIAL STOCKPILE
- SS — SILT SOCKS
- INLET PROTECTION
- CONCRETE WASHOUT

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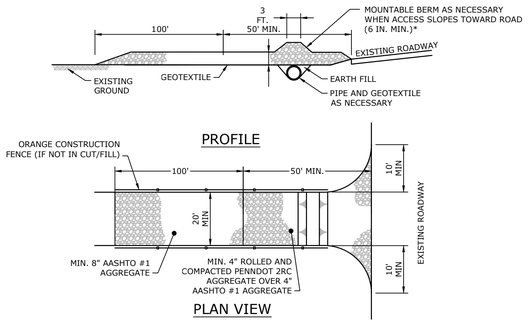
PLAN TYPE:
E&S PLAN

SHEET:
C-701.2



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

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.

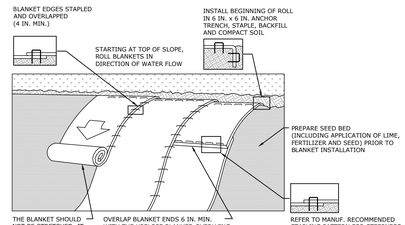
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

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.

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED

ALTERNATIVE CONSTRUCTION DETAIL
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



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.

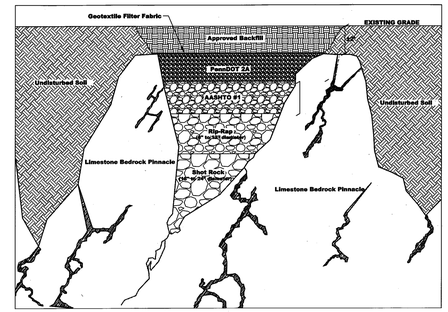
THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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.

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE



NOTES:

1. THE REPAIRS OUTLINED BELOW ARE GENERAL GUIDELINES AND EACH SINKHOLE OCCURRENCE SHOULD BE THOROUGHLY REVIEWED BY THE GEOTECHNICAL ENGINEER OF RECORD FOR AN APPROPRIATE REMEDIATION PLAN:

STRUCTURAL AREAS (AREAS WITHIN THE BUILDING FOOTPRINT OR BENEATH PAVEMENT)

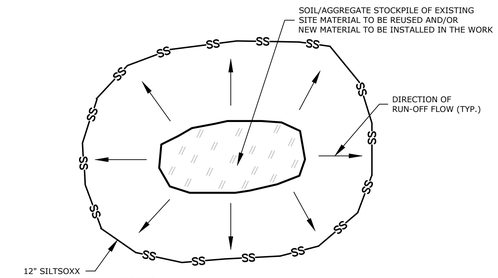
- ANY AND ALL LOOSE AND/OR SATURATED SOILS WITHIN THE SINKHOLE SHOULD BE EXCAVATED AND CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE EXCAVATION EQUIPMENT IS REACHED.
- UPON REMOVAL OF THE UNSTABLE SOILS, THE EXCAVATION SHOULD BE BACKFILLED USING HIGH MOBILITY, LOW STRENGTH FLOWABLE FILL (500 PSI) TO FINAL SUBGRADE ELEVATION.

NON-STRUCTURAL AREAS (NON-BUILDING/LANDSCAPED AREAS)

- ANY AND ALL LOOSE AND/OR SATURATED SOILS SHOULD BE EXCAVATED FROM THE SINKHOLE. EXCAVATION SHOULD CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE EXCAVATION EQUIPMENT IS REACHED.
- THE EXCAVATION SHOULD BE BACKFILLED WITH AGGREGATE OF DECREASING SIZE AS DEPICTED ON THE *INVERTED FILTER DETAIL*

SINKHOLE REPAIR DETAIL

NOT TO SCALE



NOTES:

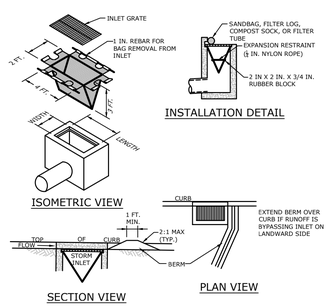
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

TEMPORARY TOPSOIL STOCKPILE

NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

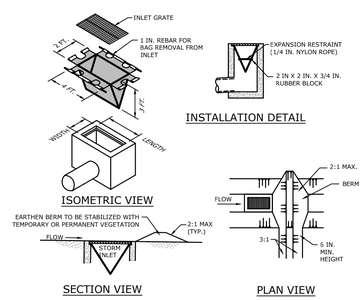
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET

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.

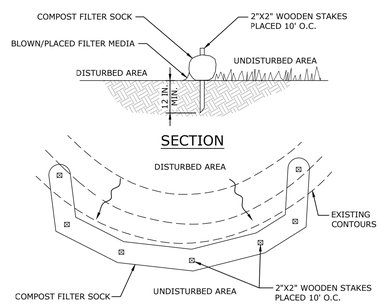
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED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

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED.

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

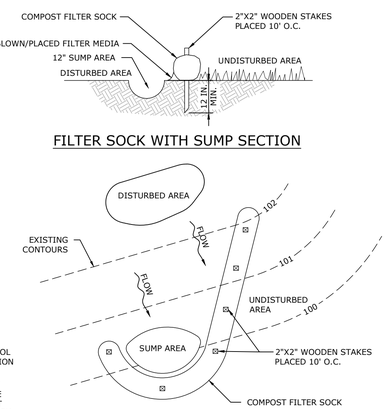
NOT TO SCALE



NOTES:

1. 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.
2. 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.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. 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.
5. 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.
6. 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.
7. 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.
8. TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED. REFER TO TABLE 4.1 & 4.2 FOR FABRIC SPECIFICATIONS AND COMPOST STANDARDS.
9. A SUMP AREA MAY BE ADDED TO THE STANDARD COMPOST FILTER SOCK PLACEMENT AT THE DISCRETION OF THE CONTRACTOR.
10. A J-HOOK WITH SUMPED AREA MUST BE INSTALLED WHERE SPACE LIMITATIONS PREVENT THE PLACEMENT OF COMPOST FILTER SOCK AT LEVEL GRADE.

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 CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM



COMPOST FILTER SOCK #	SOCK DIAMETER (IN)
100	12
101	12
102	18
103	12
104	12
105	12
106	12
107	12
108	12
109	12
110	12
111	12
112	12
113	12
114	12
115	12
116	12
117	12
118	12
119	12
120	12
121	12
122	12
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125	12
126	12
127	12

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	26 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 MO. OR LESS					

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE

K&W
DESIGNING ENVIRONMENTS
2201 North Front Street, Suite 200
Harrisburg, PA 17110
P: 717.635.2835
www.kandwengineers.com

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-1_ld DETAILS.dwg

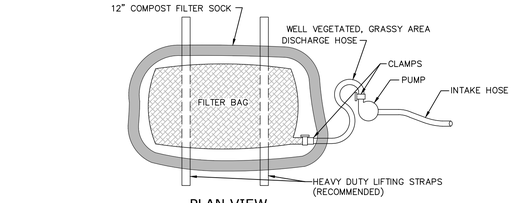
REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

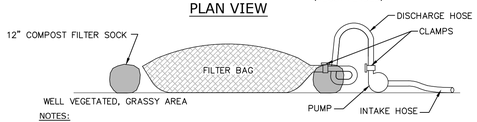
PLAN TYPE:
E&S DETAILS

SHEET:
C-702

2003089-1_Coopertown ES Site Plan-CAD-Civil-LDP-2025-01_LD DETAILS.dwg [C-702-C-703] 2/21/2025 3:31:11 PM BY: jpommer



PLAN VIEW



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.

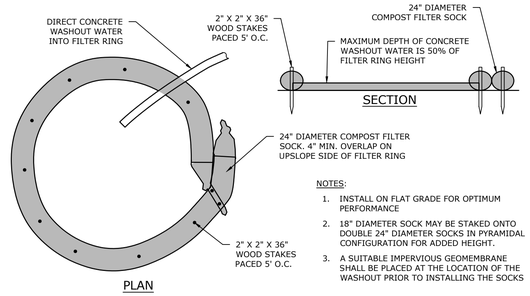
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED.

ALTERNATIVE CONSTRUCTION DETAIL

PUMPED WATER FILTER BAG

NOT TO SCALE



PLAN

NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER SOCK MAY BE STAKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS

FIGURE 3.18

TYPICAL COMPOST SOCK WASHOUT INSTALLATION

NOT TO SCALE

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2201 North Front Street, Suite 200
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PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	PKS

CAD DRAWING:
2003089-I_ld DETAILS.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
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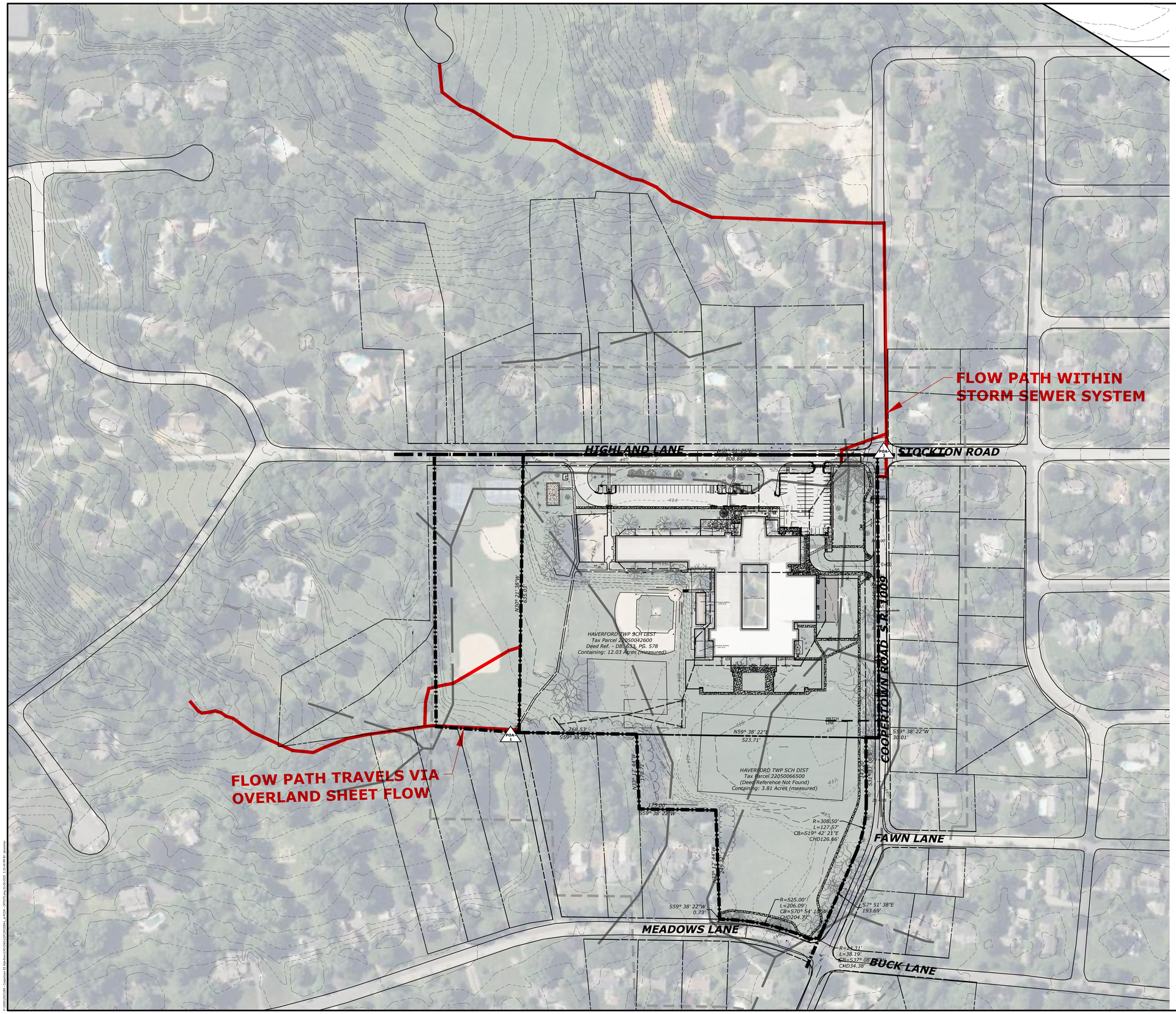
PLAN TYPE:
E&S DETAILS

SHEET:
C-703



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Harrisburg, PA 17110
P: 717.635.2835
www.kandwengineers.com

PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION

FOR

HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP

DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	
DATE:	JANUARY 2, 2025
K&W PROJECT:	2003.089
DRAWN BY:	
CAD DRAWING:	2003089-L_ld PCSM - OFFSITE.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1	02/21/2025	REVISED PER COMMENT LETTER
2		
3		
4		
5		
6		
7		

PLAN TYPE:

OFFSITE DRAINAGE PLAN

SHEET:

C-801

EXTERIOR LUMINAIRE SCHEDULE

Mark	Manufacturer	Catalog Number	Description	Volts	Lamps			Driver		Mtg.	Mtg. Height	Notes
					No.	Watts	Type/Lumens	No.	Type			
OP1/2	Lithonia	DSX1 LED-P1-40K-80CRI-T4M-MVOLT-SPA-NLTAIR2 PIRHN-XXX	Two head, 180-degree apart, 18-foot square pole,Tyle II Medium distribution; full cutoff	UNV	2	51	LED 7507	2	DLD	PM	Pole Base	1,2,4
OP2	Lithonia	RADPT LED-P1-40K-PATH-MVOLT-PT4-NLTAIR2-HS-XXXXX with RSS-10-4B-PT-XXXXX	120" pole mounted circular post top pathway luminaire; Pathway Type 3 optics; house-side shield; full cutoff	UNV	1	21.4	LED 2739	1	DLD	PM	Pole Base	1,2,4
OP3	Lithonia	DSX1 LED-P1-40K-80CRI-TFTM-MVOLT-SPA-NLTAIR2 PIRHN-XXX	Single head, 18-foot square pole, Forward Throw Medium distribution; full cutoff	UNV	1	51	LED 7507	2	DLD	PM	Pole Base	1,2,4
OP3/HS	Lithonia	DSX1 LED-P1-40K-80CRI-TFTM-MVOLT-SPA-NLTAIR2 PIRHN-XXX-HS	Single head, 18-foot square pole,Forward Throw Medium distribution; house-side shield; full cutoff	UNV	1	51	LED 7507	2	DLD	PM	Pole Base	1,2,4
OW1	Lithonia	WPX2 LED-40K-MVOLT-PE-XX	DLC wall pack with full cut-off; IP66 housing; full cutoff	UNV	1	24	LED 2900	1	DLD	SW	144" U.O.N.	2,3
OW2	Luminaire LED LSI	BLD-24"-MIN10-10W-40K-MVOLT-DP-XXX-PIR LiniArc LAW2 Series	LED 24" wall-mounted luminaire, with motion/photocell; full cutoff	UNV	1	10	LED 1024	1	DLD	SW	6" above door or mullion mtd if applicable	2,3
OW2B	Luminaire LED LSI	BLD-36"-MIN10-15W-40K-MVOLT-DP-XXX-PIR LiniArc LAW2 Series	LED 36" wall-mounted luminaire, with motion/photocell; full cutoff	UNV	1	15	LED 1537	1	DLD	SW	6" above door or mullion mtd if applicable	2,3

General Notes

G1	Check descriptions against catalog numbers. Report any discrepancies prior to submitting a proposal for this work.
G2	Where the listed manufacturer of acceptable substitutes makes more than one grade of the fixture, provide the grade of fixture with equal or better construction, materials and performance as determined by the manufacturer.
G3	Engineer must approve all substitutes prior to bid.
G5	All drivers/ballasts shall be Universal 120-277 voltage. If universal driver is unavailable, furnish 120 volt type.
G6	Refer to Specifications Sections 265100 and 265600 for additional requirements.
G7	All approved equal pendant manufacturers will be required to submit footcandle layouts to verify they meet the basis of design.

Luminaire Notes

1	Provide all additional mounting accessories, including chain hung where applicable, for each application.
2	Architect to select finish of luminiare. All standard (non-custom chip matching) color options should be included in Base Bid. Provide color samples with submittals to Architect for review and selection.
3	Locations/Heights shown on Electrical Drawings are approximate. Coordinate exact mounting height and location with Architectural Elevations. Review with Architect before rough-in.
4	Provide a base per for mounting luminaire.

Driver & Ballast Legend

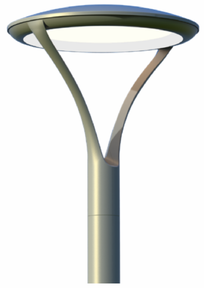
Symbol	Description
DLD	Dimming LED Driver, 0-10 volts.
LD	LED driver.
SD	Step Dimming

Mounting Legend

Symbol	Description	Symbol	
RC	Recessed Ceiling	S	Suspended
RW	Recessed Wall	UC	Under Cabinet
SC	Surface Ceiling	PD	Per Detail on Drawings
SW	Surface Wall	PM	Pole Mounted
CH	Chain Hung	IG	Recessed In-Ground
AH	Aircraft Cable Hung	PT	Pole Top Mounted
P	Pendant	G	Ground Mounted
WB	Wall Bracket	B	Bollard

TYPICAL TYPE OP1/2, OP3 AND OP3/HS LIGHT IMAGE

NO SCALE



TYPICAL TYPE OP2 POLE LIGHT IMAGE

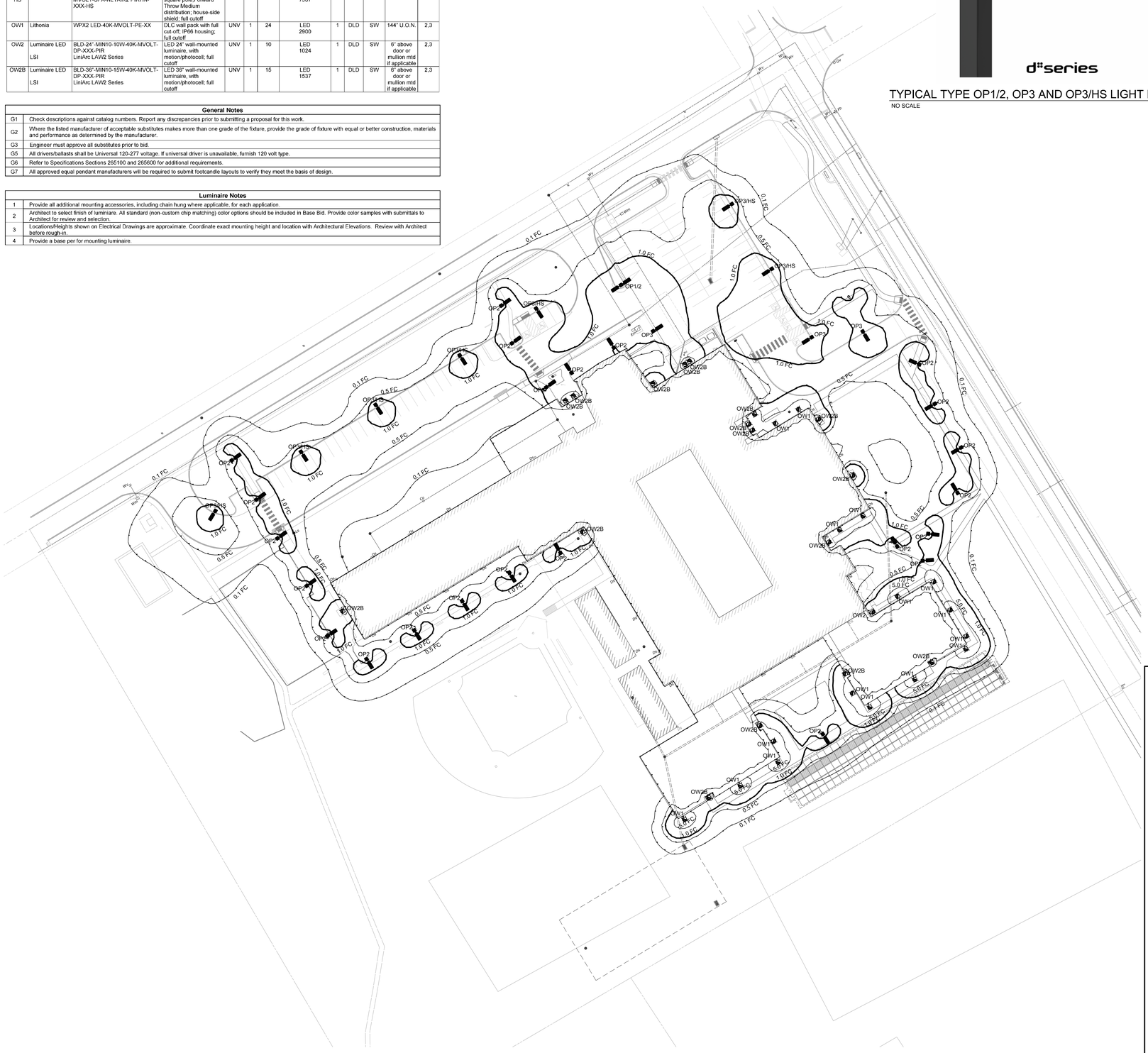
NO SCALE

TYPICAL TYPE OW1 WALL LIGHT IMAGE

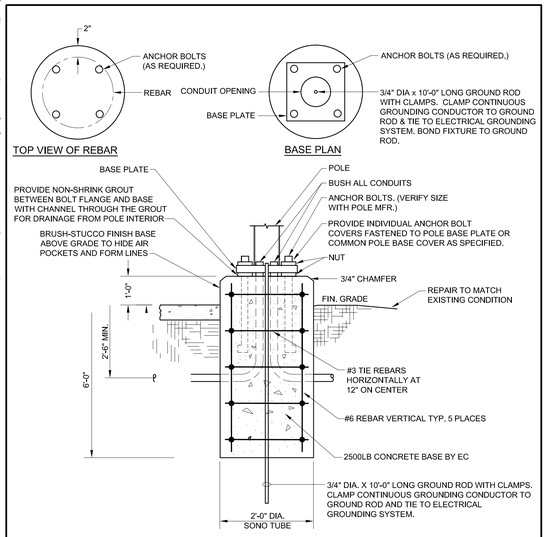
NO SCALE

TYPICAL TYPE OW2 AND OW2B MULLION MOUNTED LIGHT IMAGE

NO SCALE



1 SITE PLAN - LIGHTING - PHOTOMETRICS
1" = 40'-0"



2 E2.0 TYPICAL POLE BASE MOUNTING DETAIL
NO SCALE

NOT FOR CONSTRUCTION

MOORE ENGINEERING COMPANY
3637 Columbia Avenue
Lancaster PA 17603
P: 717.285.3141
MooreEngineering.com

REVISIONS

	MM-DD-YR	NAME	DESCRIPTION OF CHANGES

CRABTREE ROHRBAUGH & ASSOCIATES - ARCHITECTS
401 EAST WINDING HILL ROAD
MECHANICSBURG PA 17055
717-458-0272
www.cra-architects.com

TOWSON, MARYLAND
CHARLOTTESVILLE, VIRGINIA
WHITE SULPHUR SPRINGS, WEST VIRGINIA

ADDITIONS AND RENOVATIONS TO
COOPERTOWN ELEMENTARY SCHOOL
SCHOOL DISTRICT OF HAVERFORD TOWNSHIP
800 COOPERTOWN ROAD
BRYN MAWR, PA. 19010

CR

SITE PLAN - LIGHTING

PLOT SCALE: AS INDICATED
FILENAME: 24066
DATE: FEBRUARY 21, 2025

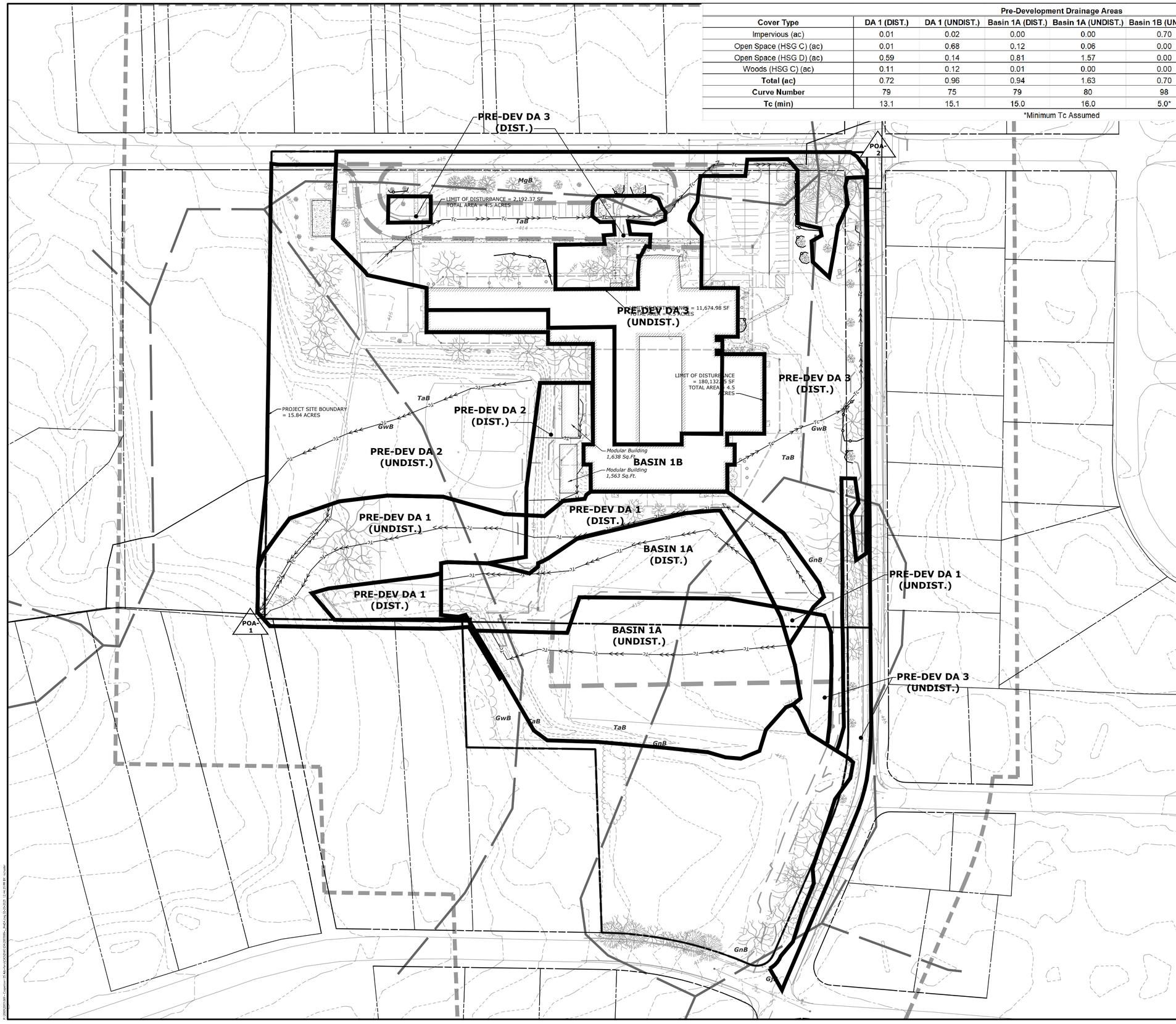
PROJECT
3758

E2.0

Pre-Development Drainage Areas

Cover Type	DA 1 (DIST.)	DA 1 (UNDIST.)	Basin 1A (DIST.)	Basin 1A (UNDIST.)	Basin 1B (UNDIST.)	DA 2 (DIST.)	DA 2 (UNDIST.)	DA 3 (DIST.)	DA 3 (UNDIST.)
Impervious (ac)	0.01	0.02	0.00	0.00	0.70	0.11	0.15	0.67	2.09
Open Space (HSG C) (ac)	0.01	0.68	0.12	0.06	0.00	0.00	1.31	0.63	0.43
Open Space (HSG D) (ac)	0.59	0.14	0.81	1.57	0.00	0.20	1.30	1.12	1.09
Woods (HSG C) (ac)	0.11	0.12	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Total (ac)	0.72	0.96	0.94	1.63	0.70	0.31	2.76	2.42	3.61
Curve Number	79	75	79	80	98	86	78	83	90
Tc (min)	13.1	15.1	15.0	16.0	5.0*	6.9	14.4	19.5	8.6

*Minimum Tc Assumed



LEGEND

PRE-DEVELOPMENT DRAINAGE AREA FEATURES

- DRAINAGE AREA BOUNDARY
- Tc — TIME OF CONCENTRATION TRAVEL PATH
- DP-001 — BMP DISCHARGE POINT
- POA-1 — WATERSHED POINT OF INTEREST

GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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DRAINAGE AREA PLAN

COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION FOR HAVERFORD TOWNSHIP SCHOOL DISTRICT

HAVERFORD TOWNSHIP

DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	DECEMBER 19, 2024
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-L_PreDA.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
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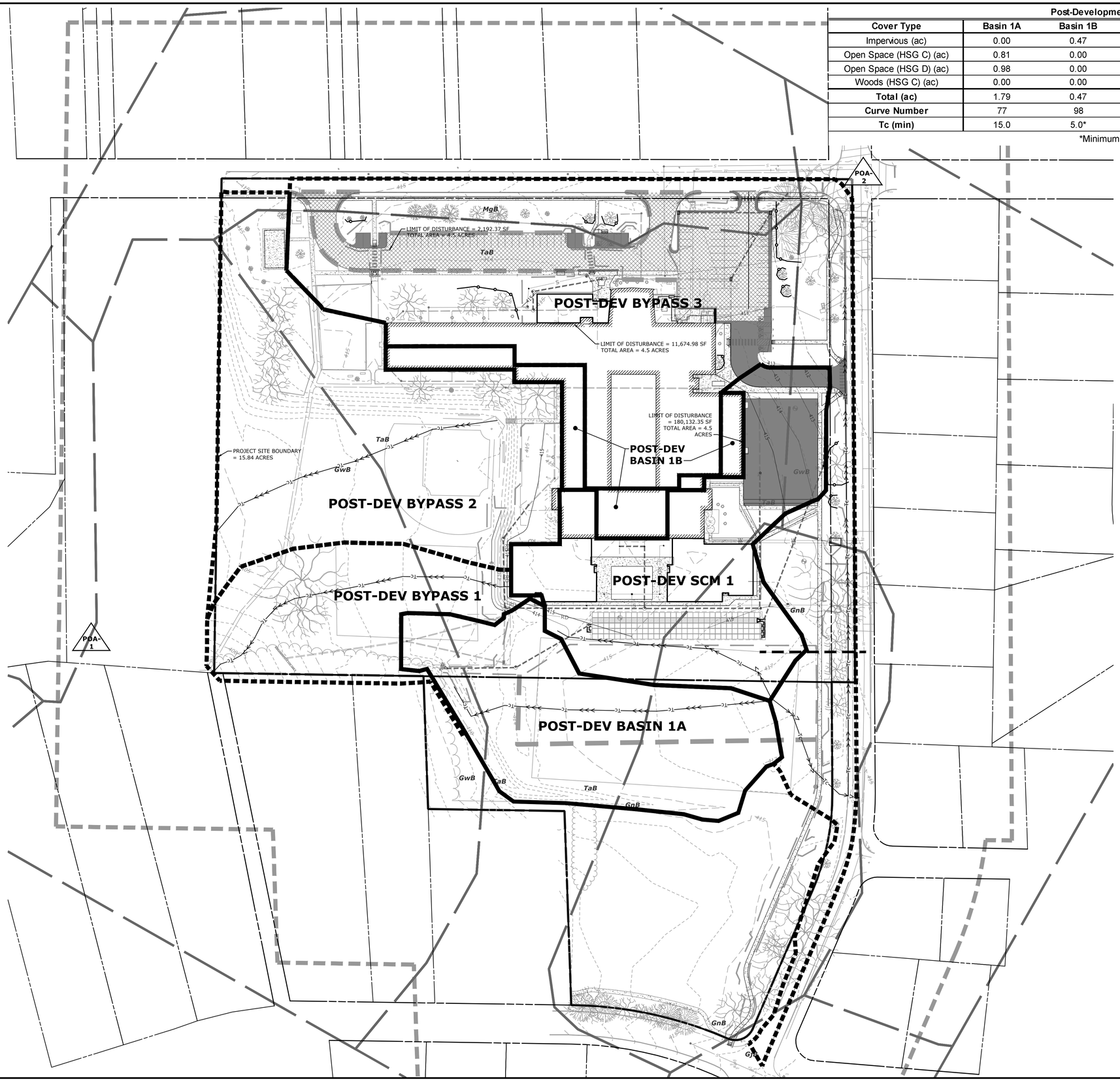
7		

PLAN TYPE:
PRE-DEV DRAINAGE AREA PLAN

SHEET:
1 OF 3

Post-Development Drainage Areas						
Cover Type	Basin 1A	Basin 1B	SCM 1	Bypass 1	Bypass 2	Bypass 3
Impervious (ac)	0.00	0.47	1.01	0.02	0.16	2.93
Open Space (HSG C) (ac)	0.81	0.00	0.03	0.99	1.31	0.79
Open Space (HSG D) (ac)	0.98	0.00	0.99	0.18	1.60	1.80
Woods (HSG C) (ac)	0.00	0.00	0.00	0.00	0.00	0.00
Total (ac)	1.79	0.47	2.03	1.19	3.07	5.52
Curve Number	77	98	89	75	78	89
Tc (min)	15.0	5.0*	13.1	13.1	14.4	20.1

*Minimum Tc Assumed



LEGEND PRE-DEVELOPMENT DRAINAGE AREA FEATURES

- DRAINAGE AREA BOUNDARY
- Tc — TIME OF CONCENTRATION TRAVEL PATH
- DP-001 — BMP DISCHARGE POINT
- POA-1 — WATERSHED POINT OF INTEREST

GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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DRAINAGE AREA PLAN
COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT
HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	DECEMBER 19, 2024
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-M_PostDA.dwg

REVISIONS

NO.	DATE	DESCRIPTION
1		
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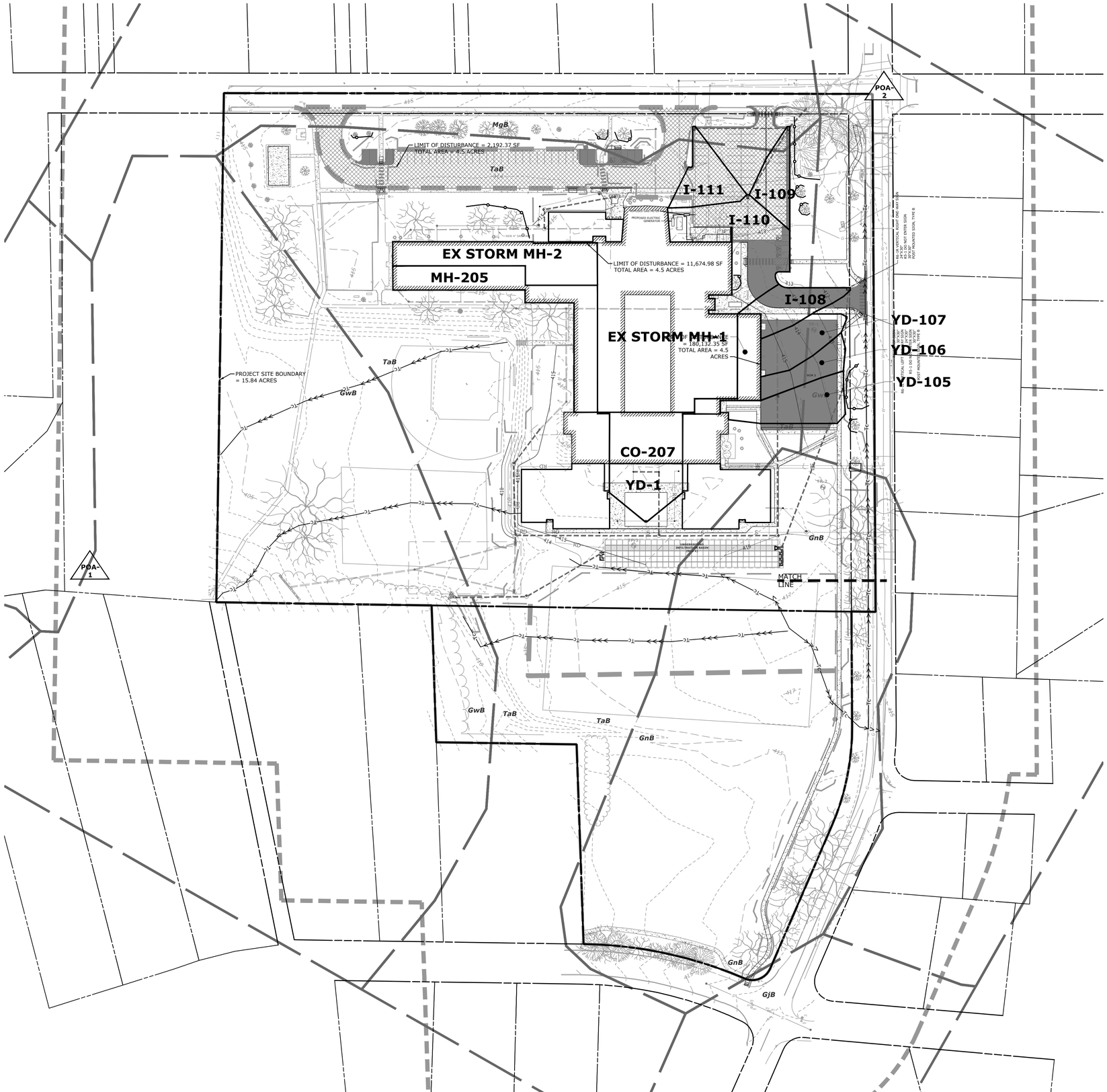
PLAN TYPE:
POST-DEV DRAINAGE AREA PLAN

SHEET:
2 OF 3



Post Development Inlet Drainage Area

Drainage Area	Impervious (ac)	Open Space (ac)	Total (ac)	Runoff Coefficient
I-108	0.10	0.00	0.10	0.99
I-109	0.08	0.00	0.08	0.99
I-110	0.22	0.05	0.27	0.90
I-111	0.09	0.01	0.11	0.94
YD-107	0.11	0.00	0.11	0.98
YD-106	0.07	0.00	0.08	0.97
YD-105	0.12	0.02	0.14	0.91
EX-MH	0.25	0.00	0.25	0.99
CO-207	0.14	0.00	0.14	0.99
EX Storm MH-2	0.09	0.00	0.09	0.99
EX Storm MH-1	0.22	0.00	0.22	0.99

LEGEND PRE-DEVELOPMENT DRAINAGE AREA FEATURES

- DRAINAGE AREA BOUNDARY
- Tc — TIME OF CONCENTRATION TRAVEL PATH
- DP-001 — BMP DISCHARGE POINT
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GRAPHIC SCALE
0 30 60 120
SCALE: 1" = 60'

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DRAINAGE AREA PLAN
COOPERTOWN ELEMENTARY SCHOOL ADDITION/RENOVATION
FOR
HAVERFORD TOWNSHIP SCHOOL DISTRICT
HAVERFORD TOWNSHIP DELAWARE COUNTY, PA

PROFESSIONAL SEAL

SCALE:	AS SHOWN
DATE:	DECEMBER 19, 2024
K&W PROJECT:	2003.089
DRAWN BY:	PKS
CAD DRAWING:	2003089-N_InletDA.dwg

REVISIONS

NO.	DATE	DESCRIPTION
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2		
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5		
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7		

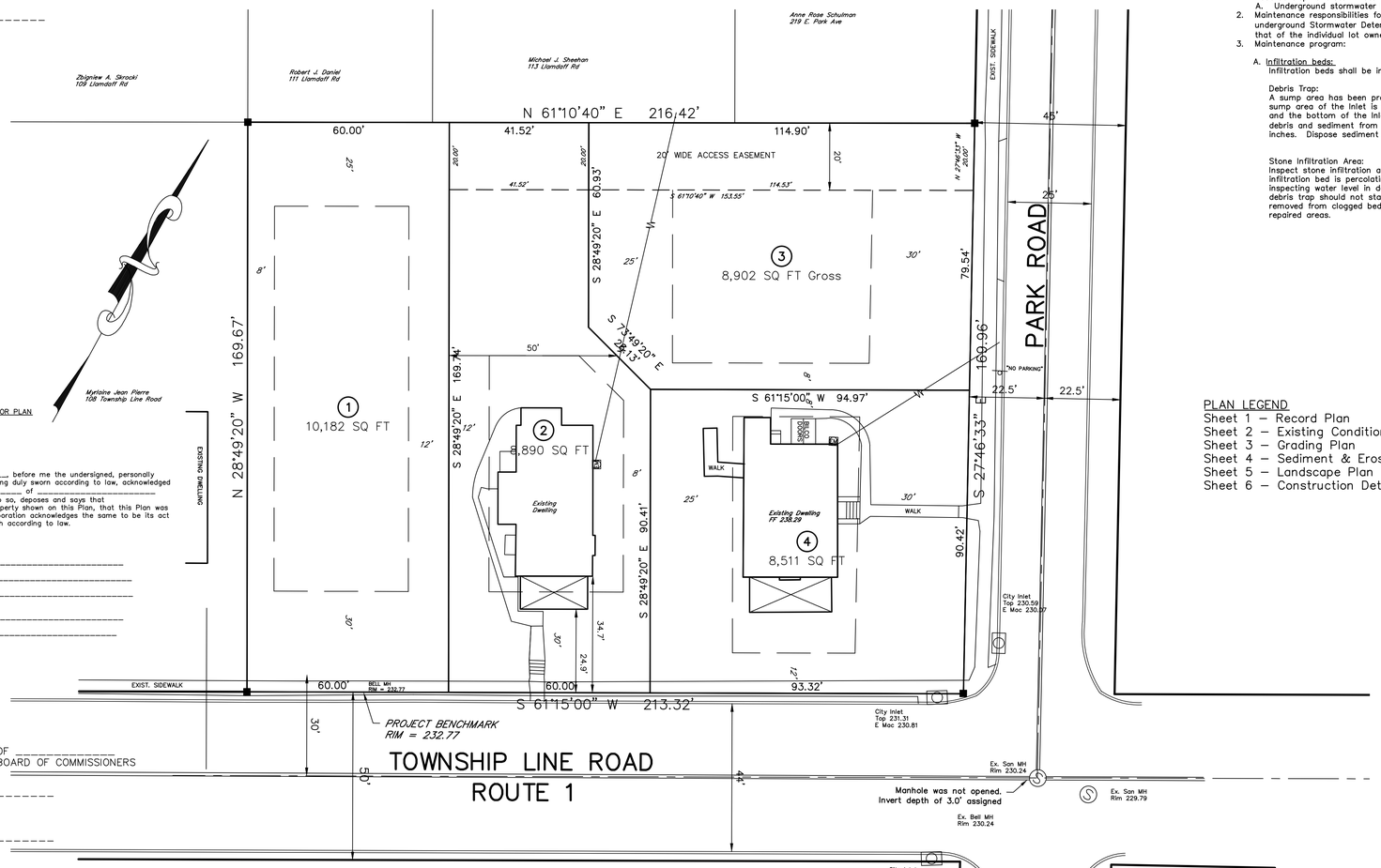
PLAN TYPE:
INLET DRAINAGE AREA PLAN

SHEET:
3 OF 3

The Applicant hereby acknowledges that any revision to the approved SWM site plan must be approved by the Municipality ,and that a revised erosion and sediment control plan must be submitted to the Conservation District for a determination of adequacy.

_____
Present Owner

_____
Date



CORPORATE ACKNOWLEDGMENT FOR PLAN

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF DELAWARE :

On this _____ day of _____, 20___, before me the undersigned, personally appeared _____, who being duly sworn according to law, acknowledged himself/herself to be _____ of _____ and that he/she, as such officer duly authorized to do so, deposes and says that _____ is the owner of the property shown on this Plan, that this Plan was made at the direction of the Corporation and the Corporation acknowledges the same to be its act and Plan and desires the same to be recorded as such according to law.

Witness my hand and seal the day above written.

Corporate Name: _____

By: _____

Title: _____

Notary Public: _____

My Commission Expires: _____

APPROVED THIS _____ DAY OF _____
BY THE HAVERFORD TOWNSHIP BOARD OF COMMISSIONERS

_____
PRESIDENT

_____
MEMBER

REVIEWED THIS _____ DAY OF _____
BY THE HAVERFORD TOWNSHIP PLANNING COMMISSION

_____
PRESIDENT

_____
MEMBER

REVIEWED THIS _____ DAY OF _____
BY THE HAVERFORD TOWNSHIP ENGINEER

_____

Impervious Coverage Tabulation – Proposed

	Lot 1	Lot 2	Lot 3	Lot 4
Dwelling	1,800 s.f.	1,375 s.f.	1,800 s.f.	1,430 s.f.
Driveway	1,310 s.f.	1,615 s.f.	1,480 s.f.	400 s.f.
Walkways	55 s.f.	405 s.f.	75 s.f.	490 s.f.
Total	3,165 s.f.	3,395 s.f.	3,355 s.f.	2,320 s.f.

Impervious Coverage Tabulation – Existing

	22-02-01078-00 112 E. Township Line	22-02-00893-00 223 E. Park Road
Dwelling & Porch	1,375 s.f.	1,427 s.f.
Detached Garage	376 s.f.	431 s.f.
Driveway	2,415 s.f.	2,920 s.f.
Walkways/Patio	642 s.f.	674 s.f.
Total	4,808 s.f.	5,452

Zoned R-4		Required	Lot 1	Lot 2	Lot 3	Lot 4
Minimum Lot Size	–	6,000 Sq.Ft. Min	10,182 s.f.	8,890 s.f.	8,902 s.f.	8,511 s.f.
Minimum Lot Width						
at street	–	38'	60.00'	60.00'	79.5'	90.4'
at building	–	50'	60.00'	60.00'	79.5'	90.4'
Minimum Front Yard	–	30'	33.3	24.9' – Porch (*) 34.7' – Dwelling	34.6'	24.1
Minimum Side Yard	–	8'	8.0'	14.6'	10.4'	8.3'
Minimum Side Yard Aggr.	–	20'	20.0'	31.1'	39.4'	N/A
Minimum Rear Yard	–	25'	86.4'	85.0'	34.0'	27.7'
Maximum Building Coverage	–	30%	17.7% (1,800 s.f.)	15.5% (1375 s.f.)	20.2% (1,800 s.f.)	16.8% (1,427 s.f.)
Maximum Impervious Coverage	–	45%	31.3% (3,165 s.f)	38.2% (3,395 s.f)	37.7% (3,355 s.f)	27.2% (2,320 s.f.)
Maximum Height	–	35' or 3.5 Stories	35' or 3.5 Stories	35' or 3.5 Stories	35' or 3.5 Stories	35' or 3.5 Stories

(*) – Requires zoning variance from 182–206 C.(5)(a) and 182–713 or removal of the front porch.

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES:

1. Post development stormwater management facilities at the property consist of the following:
   A. Underground stormwater Infiltration Bed.
2. Maintenance responsibilities for all the the Stormwater facilities on the site, including the underground Stormwater Detention/Retention Basins and Underground Infiltration Bed, shall be that of the individual lot owner(s) on which the BMP's are located.
3. Maintenance program:

   A. Infiltration beds:
   Infiltration beds shall be inspected on a Quartely Basis

   Debris Trap:
   A sump area has been provided within each Inlet servicing the proposed seepage bed. The sump area of the Inlet is the area between the bottom of the lowermost pipe in the inlet and the bottom of the Inlet Box. Inspect debris trap at the noted frequencies. Remove debris and sediment from the sump areas when it has reached a depth of eight (8) inches. Dispose sediment and debris in accordance with local ordinances.

   Stone Infiltration Area:
   Inspect stone infiltration area at the noted frequencies. Ensure that ponded water at infiltration bed is percolating properly. Monitor water level in seepage bed area by inspecting water level in debris traps Water at infiltration bed location as viewed from debris trap should not stay ponded for more than 3 days. Stone and sediment shall be removed from clogged beds and replaced as necessary. Install new filter fabric at repaired areas.

LOCATION MAP SCALE: 1" = 1000'

PLAN LEGEND
Sheet 1 – Record Plan
Sheet 2 – Existing Conditions Plan
Sheet 3 – Grading Plan
Sheet 4 – Sediment & Erosion Control Plan
Sheet 5 – Landscape Plan
Sheet 6 – Construction Details Plan

GENERAL NOTES:

1. | Tax Folio No. | Tax Map No. | Deed of Record | Existing Lot Area |
   |---|---|---|---|
   | 22–02–01078–00 | 22–33–237.1 | Bk 5683 Pg 1170 | 0.428 Ac. Gross |
   | 22–02–00893–00 | 22–34–560.0 | Bk 0992 Pg 1962 | 0.409 Ac. Gross |
2. Zoned R–4
   Minimum Lot Size – 6,000 Sq.Ft.
   Minimum Lot Width
   at street – 38'
   at building – 50'
   Minimum Front Yard – 30'
   Minimum Side Yard – 8'
   Minimum Side Yard Aggr. – 20'
   Minimum Rear Yard – 25'
   Maximum Building Coverage – 30%
   Maximum Impervious Coverage – 45%
3. Township Line Road Route 1 is a State Highway thus a Highway Occupancy Permit (HOP) is required prior to any work being performed within the Highway Right–of–way limits.
4. Site contains no Steep or Very Steep Slopes.
5. Lots serviced by public water service and sewage disposal.
6. Contours from field survey performed using Global Positioning System (GPS) Equipment. Elevation Per North American Vertical Datum of 1988. Project Benchmark – Rim of Bell M.H. at Lot 1.
7. Rim El.= 232.77
8. (■) Indicates concrete monument to be set at all boundary corners.
9. Soils information from Soil Survey– Chester and Delaware Counties, Pennsylvania, Series 1959, No. 19, Issued May 1963. The Soil Types are as follows:
   GfB – Gladstone–Parker Complex; 0–8% Slopes
10. Owner/Applicant: Caramanico Homes, LLC
    13 Stratford Drive
    Springfield, PA 19064
11. There is no 100–Year Flood Plain on this site as shown on the Flood Insurance rate Map (FIRM), Delaware County, Pa, Panel 106 of 250, Map Number 42045C0102F – Map revised November 18, 2009
12. Reference Plan:
13. Addresses for the proposed lots are to be provided by the Township and or local post office.
14. All substandard curb and sidewalk along the property frontages shall be replaced at the discretion of the Township Engineer.
15. Work is scheduled to begin March '25 and completed in March '26
16. Foundation as–built plans are required to be submitted to the Township for review and approval prior to the installation of framework at each of the housing sites.
17. A payment in fee in–lieu of providing dedicated open space will be made by the Applicant prior to plan recording

REQUIRED RELIEF:

WAIVERS:

1. 160–5 B.(3)(j)[1] Applicant is requesting a waiver for the requirement to widen the existing rights–of–way of Township Line and Park Roads.
2. 160–5 C(4) – Applicant is requesting a waiver to provide payment in fee in–lieu of providing open space.

DESIGN ENGINEERS CERTIFICATIONS:

1. I hereby certify that the Stormwater Management Site Plan meets all design standards and criteria of the Haverford Township Stormwater Management Ordinance.
2. The proposed grading activities shall not significantly increase stormwater runoff to, and/or otherwise adversely impact, downstream properties except as may be part of an approved Stormwater Management Plan (as defined by Haverford Township Code
3. The accuracy of this plan and details are in accordance with Act 367, known as the Professional Engineers Registration Law (P.L. 913, No. 367.63 P.S. 151), as amended.

I, Gustave N. Houtmann, P.E., on this date hereby certify, to the best of my knowledge and belief, that they aforementioned statements and certifications are true and accurate.

(Signature & Seal) Date

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Note: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depth of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective Mar. 29, 2007

These plans were prepared to obtain Subdivision/Land Development approval from the governing Municipality and to obtain certain permits from state and federal agencies. If a surveyor or engineer other than G.D. Houtman & Son, Inc. is contracted to perform construction stake–out services, said surveyor or engineer shall assume the responsibility for verifying dimensions, elevations, presence of underground utilities, utility interference, building size, etc., for coordinating information shown on lay–out plans, grading plans, utility plans, profiles, and details; and for coordinating these plans with plans prepared by others such as utility companies, architectural building plans, landscape plans, lighting plans and etc.

DATE	REVISION
12/09/24	Revised Layout – Lots 1 & 2 60' Width
01/27/25	Twp Engineer Review, Waiver Requests

SCALE 1" = 20'

DATE October 31, 2024

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GUSTAVE N. HOUTMANN
ENGINEER 50026-E

FINAL MINOR

RECORD PLAN
PREPARED FOR

CARAMANICO HOMES, LLC

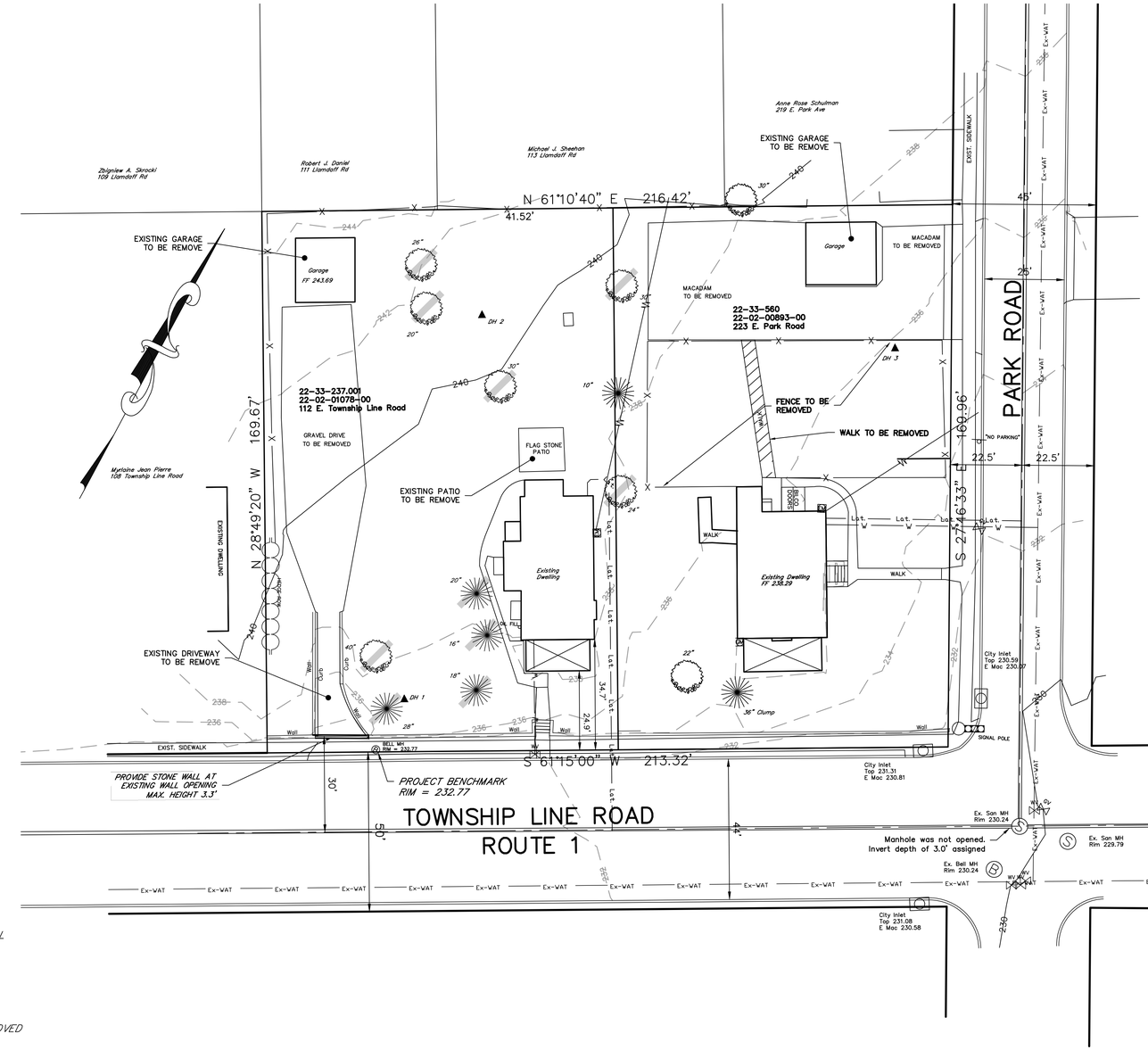
HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS–LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE MEDIA, PA 19063
(610)565–6363

Sheet 1 of 6
PROJECT Caramanico
WORK ORDER 40055
FILE 19730

Recorder of Deeds | Delaware County Planning Commission

K:\ACAD 2000\HAVERFORD TWP\19730–40055–CARAMANICO–TWPLINE\DWG\40055–RECORD–01–28



GENERAL NOTES:

1. Tax Folio No.

Tax Map No.	Deed of Record	Existing Lot Area
22-02-01078-00	22-33-237.1	Bk 5683 Pg 1170	0.428 Ac. Gross
22-02-00893-00	22-34-560.0	Bk 0992 Pg 1962	0.409 Ac. Gross

2. Zoned R-4

Minimum Lot Size	–	6,000 Sq.Ft.
Minimum Lot Width		
at street	–	38'
at building	–	50'
Minimum Front Yard	–	30'
Minimum Side Yard	–	8'
Minimum Side Yard Aggr.	–	20'
Minimum Rear Yard	–	25'
Maximum Building Coverage	–	30%
Maximum Impervious Coverage	–	45%

3. Boundary, Topography and Locations From Field Survey by G.D. Houtman & Son, Inc.
4. Township Line Road Route 1 is a State Highway thus a Highway Occupancy Permit (HOP) is required prior to any work being performed within the Highway Right-of-way limits.
5. Each of the Lots will be provided with sufficient parking spaces as required by the Zoning Ordinance.

Impervious Coverage Tabulation

Existing

	22-02-01078-00 112 E. Townhship Line	22-02-00893-00 223 E. Park Road
Dwelling & Porch	1,375 s.f.	1,427 s.f.
Detached Garage	376 s.f.	431 s.f.
Driveway	2,415 s.f.	2,920 s.f.
Walkways/Patio	642 s.f.	674 s.f.
Total	4,808 s.f.	5,452

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING WATER SERVICE
- EXISTING SANITARY LATERAL
- EXISTING GAS VALVE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING TREE TO BE REMOVED
- EXISTING SHRUB LINE
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- SOIL BOUNDARY LINE
- EXISTING "CITY" INLET
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING FENCES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

The information shown on this plan is the result of a professional service rendered by G.D. Houtman & Son, Inc.. Reproduction of this plan without approval of G.D. Houtman & Son, Inc. is not permitted. The reproduction of a copy of this plan for the purpose of creating additional copies or revising said plan shall, in no circumstance, be approved. Certification for the work contained herein is limited to the entity for whom the work was performed as of the date shown on the plans.

Note: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depth of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective Mar. 29, 2007

These plans were prepared to obtain Subdivision/Land Development approval from the governing Municipality and to obtain certain permits from state and federal agencies. If a surveyor or engineer other than G. D. Houtman & Son, Inc is contracted to perform construction stake-out services, said surveyor or engineer shall assume the responsibility for verifying dimensions, elevations, presence of underground utilities, utility interference, building size, etc.; for coordinating information shown on lay-out plans, grading plans, utility plans, profiles, and details; and for coordinating these plans with plans prepared by others such as utility companies, architectural building plans, landscape plans, lighting plans and etc.

DATE	REVISION
12/09/24	Revised Layout – Lots 1 & 2 60' Width
01/27/25	Twp Engineer Review, Waiver Requests

SCALE
1" = 20'

DATE
October 31, 2024

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GUSTAVE N. HOUTMANN
ENGINEER
50026-E

FINAL

PRE-DEVELOPED DRAINAGE AREA PLAN
PREPARED FOR

CARAMANICO HOMES, LLC

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS–LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE MEDIA, PA 19063
(610)565-6363

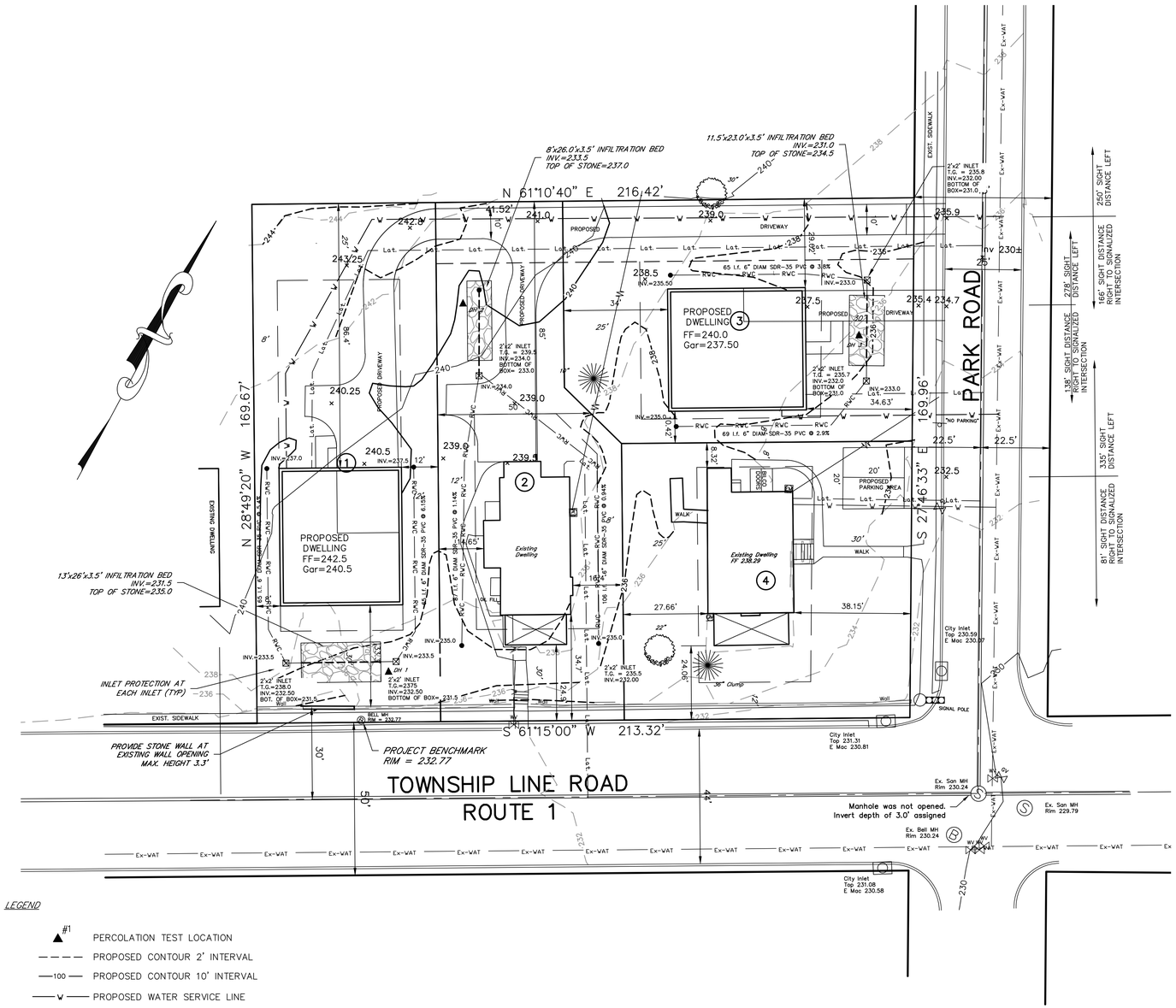
Sheet 2 of 6

PROJECT
CARAMANICO-TWP LINE

WORK ORDER
40055

FILE
19730

K:\ACAD 2000\HAVERFORD TWP\19730-40055-CARAMANICO-TWPLINE\DWG\40055-R2.DWG 2025-01-28



GENERAL NOTES:

1. | Tax Folio No. | Tax Map No. | Deed of Record | Existing Lot Area |
|---|---|---|---|
| 22-02-01078-00 | 22-33-237.1 | Bk 5683 Pg 1170 | 0.428 Ac. Gross |
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2. Zoned R-4

Minimum Lot Size	–	6,000 Sq.Ft.
Minimum Lot Width		
at street	–	38'
at building	–	50'
Minimum Front Yard	–	30'
Minimum Side Yard	–	8'
Minimum Side Yard Aggr.	–	20'
Minimum Rear Yard	–	25'
Maximum Building Coverage	–	30%
Maximum Impervious Coverage	–	45%

3. The existing improvements shown on this Plan were obtained from aerial photographs provided by Google Earth
4. Township Line Road Route 1 is a State Highway thus a Highway Occupancy Permit (HOP) is required prior to any work being performed within the Highway Right-of-way limits.
5. Each of the Lots will be provided enough parking spaces as required by the Zoning Ordinance.

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING WATER SERVICE
- EXISTING SANITARY LATERAL
- EXISTING GAS VALVE
- EXISTING DECIDUOUS TREE
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- EXISTING 10' CONTOUR
- SOIL BOUNDARY LINE
- EXISTING "CITY" INLET
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING FENCES

LEGEND

- PERCOLATION TEST LOCATION
- PROPOSED CONTOUR 2' INTERVAL
- PROPOSED CONTOUR 10' INTERVAL
- PROPOSED WATER SERVICE LINE
- PROPOSED GAS LINE
- PROPOSED SANITARY SEWER LATERAL
- ROOF LEADER PIPE
- PROPOSED SANITARY SEWER LATERAL CLEAN-OUT
- PROPOSED 2'X2" INLET

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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DATE	REVISION
12/09/24	Revised Layout – Lots 1 & 2 60' Width
01/27/25	Twp Engineer Review, Waiver Requests

SCALE
1" = 20'

DATE
October 31, 2024

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GUSTAVE N. HOUTMANN
ENGINEER 50026-E

FINAL

GRADING PLAN
PREPARED FOR

CARAMANICO HOMES, LLC

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS–LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE MEDIA, PA 19063
(610)565-6363

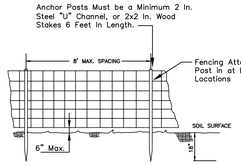
Sheet 3 of 6

PROJECT
CARAMANICO–TWP LINE

WORK ORDER
40055

FILE
19730

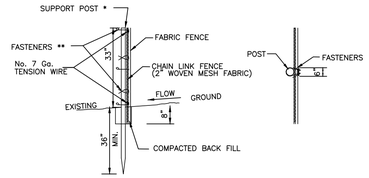
K:\ACAD 2000\HAVERFORD TWP\19730-40055-CARAMANICO-TWPLINE\DWG\40055-R2024-01-28



NOTES:

1. Protection barrier to be installed at the dripline of proposed individual trees and protected forested areas.
2. Anchor post to be driven into the ground at least 18 inches.
3. Provide a maximum clearance between the protection barrier fencing and the ground surface of 6 inches.
4. Protection barrier shall be 4 feet high, constructed of durable and highly visible material (Plastic orange construction fence and snow-fence may be used)
5. Protection barriers shall be maintained throughout the duration of the work at the site.
6. Additional warning signs should also be placed on the fencing and in appropriate areas near the work zone.

TREE PROTECTION/CONSTRUCTION FENCING DETAIL



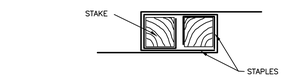
NOTE: NO. 7 GA. TENSION WIRE TO BE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN LINK FENCE.

* Posts spaced @ 10' max. use 2 1/2" Dia. Galvanized or aluminum posts.
** Chain Link to post fasteners spaced @ 14" max. Use No. 6 Ga. aluminum wire or No. 9 steel galvanized performed clips. Chain link to tension wire fasteners spaced @ 60" max. use No. 10 Ga. Galvanized steel wire. Fabric to chain link fasteners @ 24" max. C. to C.

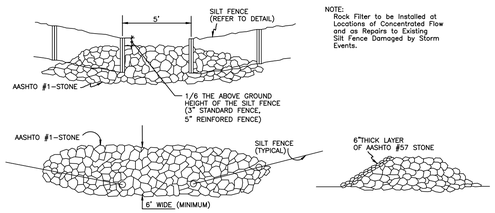
Filter fabric fence must to be placed at level grade. both ends of the barrier must be extended at least 8 feet up slope as 45 degrees to the main barrier alignment.

Sediment must be removed when accumulations reach 1/2 the above ground height of the fence.

SUPER FILTER FABRIC FENCE DETAIL

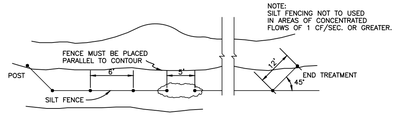


JOINING FENCE SECTIONS



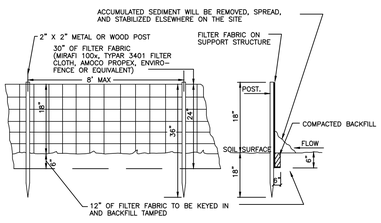
NOTE:
Rock Filter to be Installed at Locations of Concentrated Flow and as Repairs to Existing Silt Fence Damaged by Storm Events.

ROCK FILTER OUTLET FOR SILT FENCE



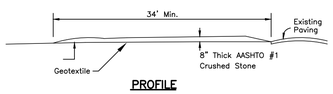
NOTE:
SILT FENCING NOT TO USED IN AREAS OF CONCENTRATED FLOWS OF 1 CF/SEC. OR GREATER.

TEMPORARY SILT FENCE INSTALLATION

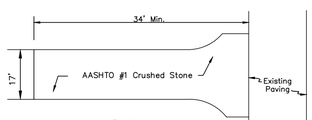


INSPECT SILT FENCING AFTER EACH STORM EVENT. REMOVE ACCMULATED SEDIMENT WHEN IT REACHES A DEPTH OF 1/2 THE FABRIC HEIGHT (MAXIMUM 12"). ANY SILT FENCING WHICH HAS BEEN TOPPED OR UNDERMINED SHALL BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY.

TEMPORARY SILT FENCE DETAIL



PROFILE



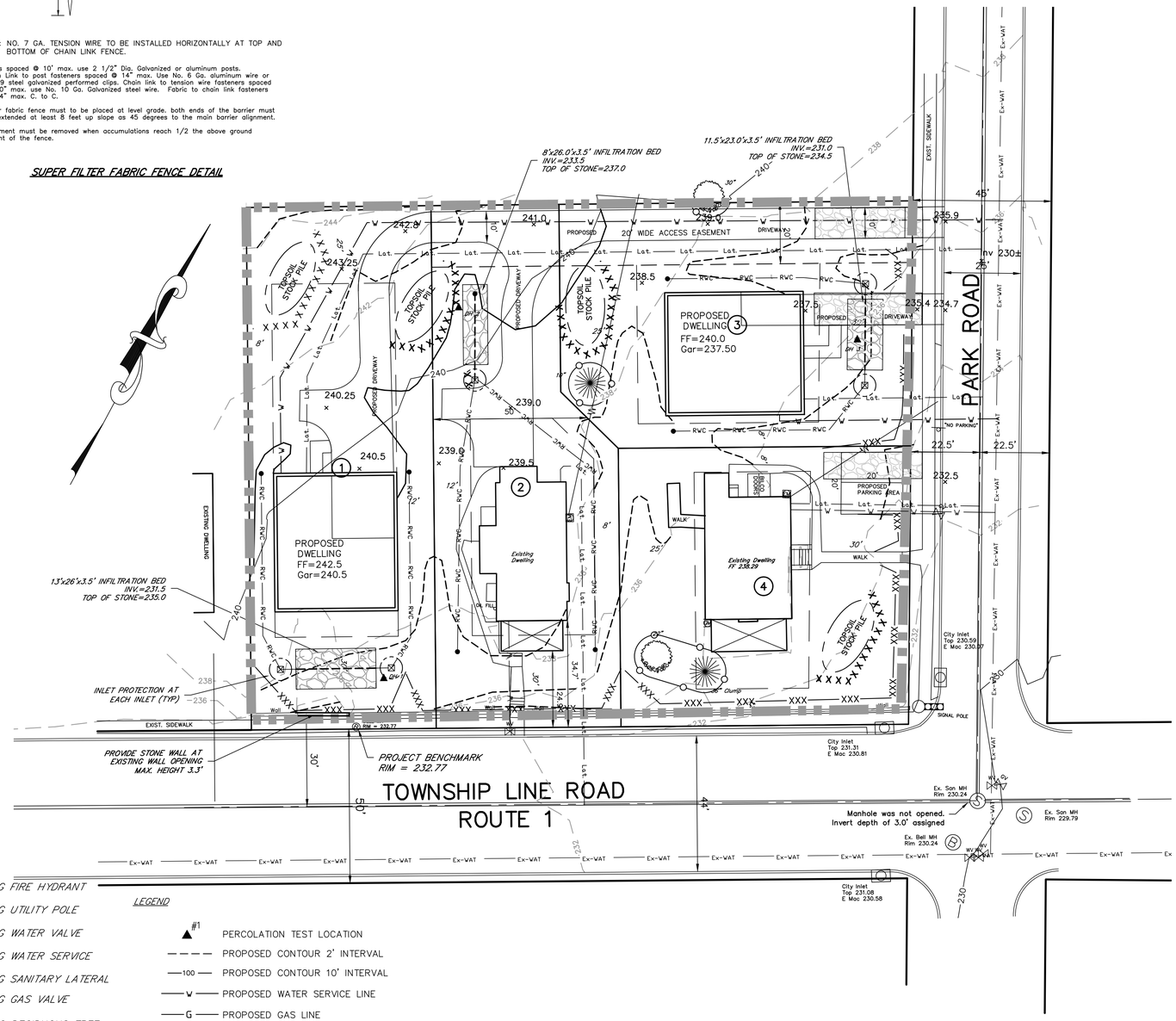
PLAN

Note: Provide Geotextile Fabric under stone

Maintenance Notes:
1. Rock Construction Entrance Thickness Shall Be Constantly Maintained To The Specified Dimensions By Adding Rock.
2. A Stockpile Shall Be Maintained On-Site For This Purpose.
3. At the End Of Each Construction Day, All Sediment Deposited On Paved Roadways Shall Be removed and Returned To The Construction Site.

CONSTRUCTION ENTRANCE - DETAIL

Note:
Rock Construction entrance to be adjusted for site conditions as necessary



Disturbed areas on which grading activities have ceased shall be stabilized immediately.

I. Growing Season (March 15 through November 15)
   A. Temporary Cover – for disturbed areas which are not at finished grade and which will be redisturbed within 1 year.
      1. Site Preparation: Apply 2 ton/acre of Agricultural grade limestone, plus fertilizer 50-50-50-50 per acre (50 lbs of N. 50 lbs of P205 and 50 lbs of K20 per acre and work in where possible.
      2. Seeding: 50% Annual Ryegrass 50% Winter Rye. Apply at rate of 3 lb/1000 S.F.
      3. Mulch: 3 tons per acre of small grain straw.
   B. Permanent Cover – for disturbed areas at finish grade or will not be redisturbed within 1 year.
      1. Site Preparation: Apply 3 tons/acre of Agricultural grade Limestone plus Fertilizer 100-200-200 (100 lbs of N. 200 lbs of P205 and 200 lbs of K20) and work in where possible.
      2. Seeding: 60% Kentucky Bluegrass 10% Perennial Ryegrass 30% Pennlawn Red Fescue Apply at rate of 4 lb/1000 S.F.
      3. Mulch: 3 tons per acre of small grain straw.

II. Non-germinating Period (Nov 15 through March 1)
   1. Apply mulch (3 tons per acre of small grain straw) to disturbed areas.
   2. Those areas that were stabilized by mulching only are to be limed, fertilized, seeded and mulched according to permanent or temporary seeding specifications within 20 days of the end of the non-germinating period.

III CRITICAL SLOPE PROTECTION TO BE USED ON SLOPES 3:1

1. Seedbed Preparation: Loosen Top 1 to 3 Inches of Soil.
2. Site Preparation: Apply 2 Tons of Agricultural Grade Limestone Per Acre.
3. Treatment:
   a. Broadcast Seed and Fertilizer With Hydroseeder.
   b. Apply Straw With Blower at 3 Tons/Acre.
   c. Anchor Straw With Mulch Binder.
4. Application: A Water-Slurry Mixture Composed of the Below Mentioned Materials Shall be Sprayed Uniformly Over Prepared Area.
   a. Mowed Areas.
      80 Lb/Acre Winter Rye
      70 Lb/Acre Tall Fescue
      20 Lb/Acre Perennial Ryegrass
   Non-Mowed Areas
      80 Lb/Acre Winter Rye
      10 Lb/Acre Crownvetch
      20 Lb/Acre Perennial Ryegrass
   b. Soil Supplements.
      a. 10-20-20 Analysis Commercial Fertilizer 930 Lb/Acre
      b. 38- 0- 0 Urea-Form Fertilizer 250 Lb/Acre
   c. Wood Cellulose Fiber 1500 Lb/Acre.
5. Mulch Anchor – Netting May be Used as Mulch Anchor-Refer to 6.c & 6.d.
   a. Emulsified Asphalt 200 Gallons/Acre or Terra Tack Used at Manufacturer's Recommended Rates.
   b. Wood Cellulose 800 Lb/Acre.
6. Netting: Netting is to be Applied if Persistent Erosion Occurs on Slopes.
   a. Repair any Gullied Areas.
   b. Reseed and Refertilize Affected Area.
   c. Apply Mulch at Rates Stated.
   d. Anchor with Erosion Control Netting With the Following Properties: Uniformly Extruded Rectangular Plastic Mesh. 26 Lb/1000 S.F. Weight 1/2 Inch X 1/2 Inch Mesh Opening. Anchor Each Square Yard With Two Staples as Per PA D.O.T. Specs.
   e. Anchor Small Areas With Jute Mesh.

HOUSE CONSTRUCTION NOTES:

1. Install silt fence where shown on the plan. Install Construction Barrier Fencing at perimeter of infiltration beds and install tree protection fencing as shown. . Construction vehicles shall not traverse over infiltration bed area. Infiltration bed areas shall remain undisturbed until bed is constructed.
2. Cut in driveway, apply layer of crushed stone and maintain as construction access to the house site.
3. Install Storm Water Infiltration bed. Place orange construction fencing around infiltration bed area. Provide inlet filter bag at grate of debris trap while site remains disturbed. Sediment laden run-off shall not be allowed to enter the stone infill of the bed. Contact the Township a minimum of 2 days Prior to the start of Construction to allow for inspection.
4. Construct house foundation. As soon as first floor decking is in place, backfill foundation and rough grade surrounding area.
5. Any topsoil stockpile generated by ITEMS 2 through 4 shall be placed in an area not subject to erosion and a silt fence barrier shall be installed and maintained around the downslope perimeter.
6. To all areas which earthmoving activities have ceased and will be subject to the action of earthmoving and other equipment, apply a mulch (wood chip – 2-3 tons per acre; hay or straw – 3 tons per acre). All other disturbed areas remaining open shall be temporarily seeded and mulched.
7. Install underground utilities following procedures set forth in UTILITIES following final grading.
8. Complete house construction and discharge roof drains to infiltration bed system.
9. Permanent grass cover shall be established by seeding and mulching following final grading.
10. Driveway is to be stabilized with crushed stone or paving following the completion of the house construction. Stone filter berms may be incorporated into the driveway if relatively clean. Remove if choked with sediment.
11. Erosion and sediment control facilities are to be checked and properly maintained weekly and after each storm event. Sufficient quantities of silt fencing, crushed stone, straw bales, seeding and mulching should be readily available for remedial work if required.
12. Silt fencing may be removed when the site is stabilized. Accumulated sediment may be spread at the site in areas not subject to erosion.
13. Remove Inlet Filter Bag at storm water infiltration facilities.
14. The Contractor is advised to become familiar with the " Erosion and Sediment Pollution Control Program Manual" by the Commonwealth of PA., Department of Environmental Resources, April 2000 edition.
15. Copies of these plans must be available on site throughout construction.

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING WATER SERVICE
- EXISTING SANITARY LATERAL
- EXISTING GAS VALVE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING TREE TO BE REMOVED
- EXISTING SHRUB LINE
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- SOIL BOUNDARY LINE
- EXISTING "CITY" INLET
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING FENCES

LEGEND

- PERCOLATION TEST LOCATION
- PROPOSED CONTOUR 2' INTERVAL
- PROPOSED CONTOUR 10' INTERVAL
- PROPOSED WATER SERVICE LINE
- PROPOSED GAS LINE
- PROPOSED SANITARY SEWER LATERAL
- ROOF LEADER PIPE
- PROPOSED SANITARY SEWER LATERAL CLEAN-OUT
- PROPOSED TREE PROTECTION/CONSTRUCTION FENCING
- PROPOSED SILT FENCE
- PROPOSED SUPER SILT FENCE
- LIMIT OF DISTURBANCE (32,390 S.F.)
- PROPOSED 2'X2' INLET
- CONSTRUCTION BARRIER FENCING

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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DATE	REVISION
12/09/24	Revised Layout – Lots 1 & 2 60' Width
01/27/25	Twp Engineer Review, Waiver Requests

SCALE
1" = 20'

DATE
October 31, 2024

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GUSTAVE N. HOUTMANN
ENGINEER
50026-E

FINAL

SEDIMENT & EROSION CONTROL PLAN PREPARED FOR

CARAMANICO HOMES, LLC

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

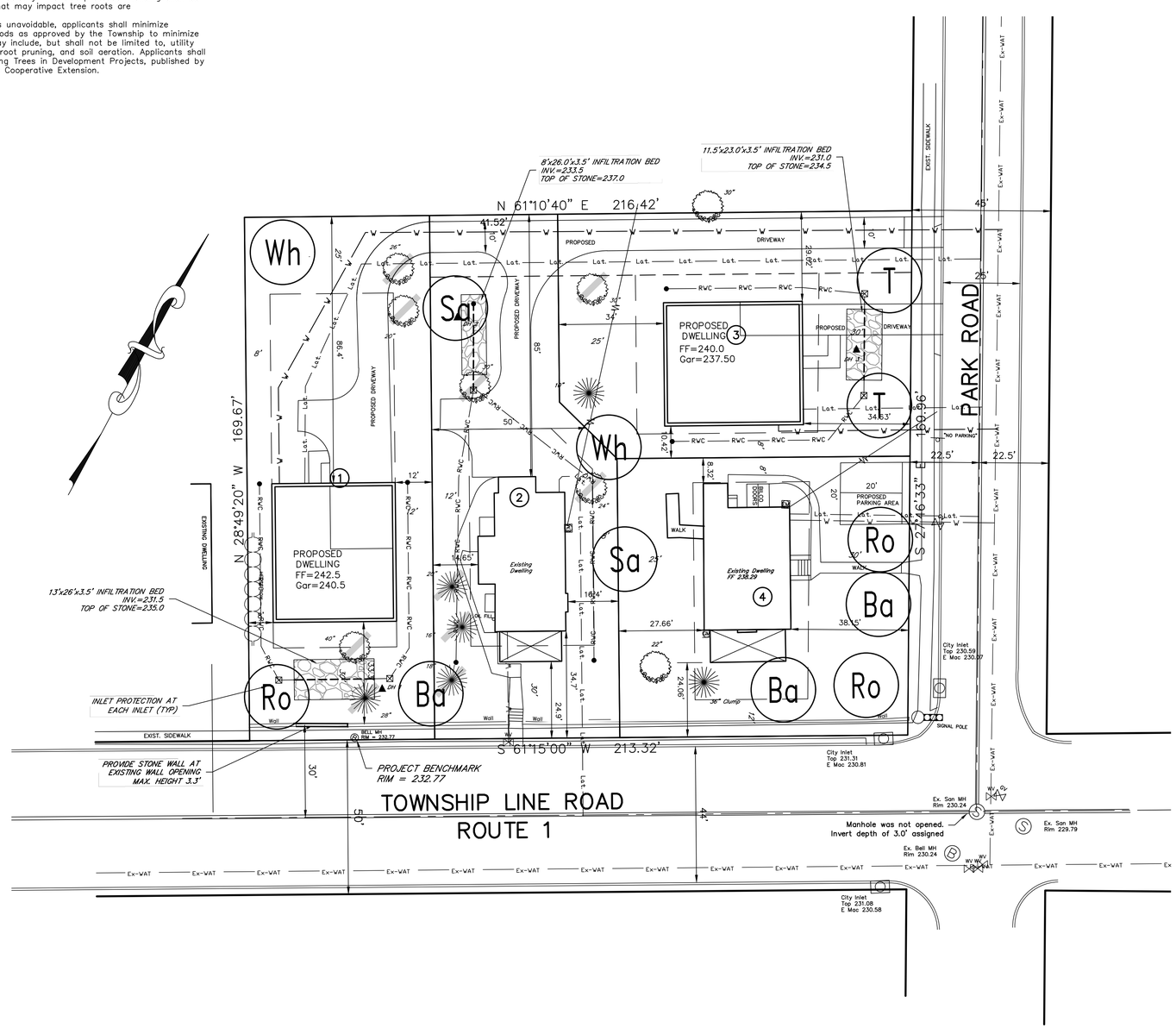
G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE MEDIA, PA 19063
(610)565-6363

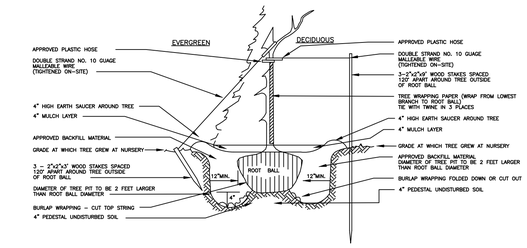
Sheet 4 of 6
PROJECT: CARAMANICO-TWP LINE
WORK ORDER: 40055
FILE: 19730

K:\ACAD 2000\HAVERFORD TWP\19730-40055-CARAMANICO-TWPLINE\DWG\40055-R2025-01-28

TREE PROTECTION REQUIREMENTS

1. Prior to any clearing or site disturbance, the Township requires a meeting with the applicant and/or site Contractor, to determine the methods to be implemented by the applicant to minimize tree loss. Applicant is required to follow standards as established in Section 170.
2. All trees and other vegetation to be preserved shall be protected from damage by construction fencing or other effective barriers approved by the Township. Fencing or barriers around trees shall be placed outside the critical root zone, unless otherwise approved by the Township. Tree Protection fencing must be installed and approved by the Township prior to the start of any clearing or earth disturbance and monitored periodically. The tree protection fencing shall be removed only after all construction activities that may impact tree roots are completed.
3. When disturbance within the critical root zone is unavoidable, applicants shall minimize encroachment and use the best available methods as approved by the Township to minimize damage and preserve trees. These methods may include, but shall not be limited to, utility tunneling, use of Geo-textiles, mulching, hand root pruning, or soil aeration. Applicants shall consult references such as a Guide to Preserving Trees in Development Projects, published by the Penn State College of Agricultural Sciences Cooperative Extension.





TREE PLANTING DETAIL
NO SCALE

NOTE: OMIT STAKING FOR EVERGREENS PLANTED IN CONTINOUS ROW AT 10 FEET SPACING OR LESS

TREE REPLACEMENT:

- TREES OVER 30" DBH ARE TO BE REPLACED INCH FOR INCH OF DBH REMOVAL.
- TREES UNDER 30" DBH ARE TO BE REPLACED 1 INCH TO 4 INCHES OF DBH REMOVAL

TREES REMOVED 30" DBH OR LESS	TREES REMOVED 30" DBH OR MORE
26" DBH	30" DBH X 2
28" DBH	40" DBH
20" DBH	TOTAL 100" DBH
24" DBH	
20" DBH	
18" DBH	
16" DBH	
28" DBH	
TOTAL 124" DBH	
REQUIRED REPLACEMENT:	REQUIRED REPLACEMENT:
124/4= 31 DBH	100"/1= 100 DBH

TOTAL REPLACEMENT REQUIRED - 31+100=131 DBH

PLAN PROPOSES 12 (2" DBH) TREES TO BE PLANTED = 24" DBH REPLACEMENT
REMAINING 107" DBH AT $250.00 PER 2" TREE = 54 TREES @ 2" DBH = $13,500
PAYMENT FOR FEE IN-LIEU OF TREE PLANTING

LEGEND

- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING WATER SERVICE
- EXISTING SANITARY LATERAL
- EXISTING GAS VALVE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- DENOTES EXISTING TREE TO BE REMOVED
- PROPOSED WATER SERVICE LINE
- PROPOSED SANITARY SEWER LATERAL
- ROOF LEADER PIPE
- PROPOSED 2'X2" INLET

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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DATE	REVISION
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SCALE
1" = 20'

DATE
October 31, 2024

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GUSTAVE N. HOUTMANN
ENGINEER
50026-E

FINAL

LANDSCAPE PLAN
PREPARED FOR

CARAMANICO HOMES, LLC

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
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139 EAST BALTIMORE PIKE MEDIA, PA 19063
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Sheet 5 of 6
PROJECT: CARAMANICO-TWP LINE
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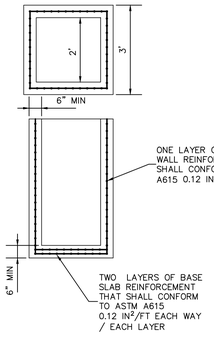
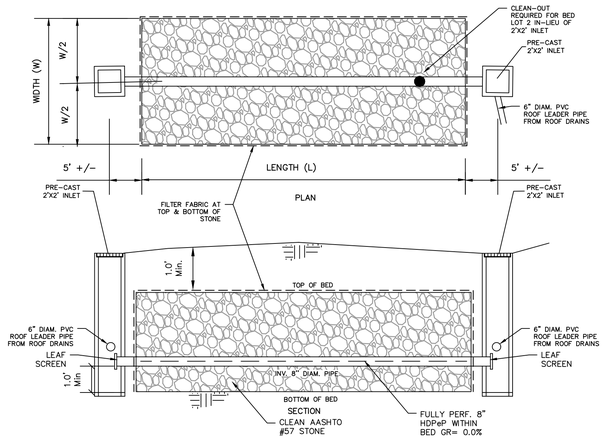
K:\ACAD 2000\HAVERFORD TWP\19730-40055-CARAMANICO-TWPLINE\DWG\40055-R2025-01-28



NOTES:
1. MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB. 408.
2. CLASS AA CONCRETE 4000 PSI @ 28 DAYS
3. REINFORCEMENT SHALL COMPLY WITH ASTM A615

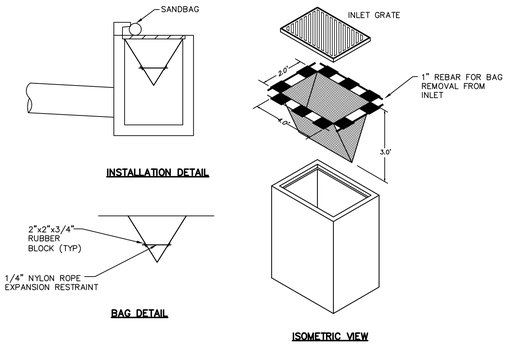
2'x2' PRE-CAST INLET DETAIL



LOCATION	TOP OF GRATE ELEV.	INV. ROOF LEADER PIPE ELEV.	INV. PIPE TO BED ELEV.	BOTTOM OF BOX ELEV.	TOP OF BED ELEV.	BOTTOM OF BED ELEV.	BED LENGTH (L)	BED WIDTH (W)	BED DEPTH (D)
LOT #1	238.0, 237.5	233.5	232.5	231.5	235.0	231.5	13.0'	26.0'	3.5'
LOT #2	239.5	234.0	234.0	233.0	237.0	233.5	8.0'	26.0'	3.5'
LOT #3	235.7, 235.8	233.0	232.0	231.0	234.5	231.0	11.5'	23.0'	3.5'

NOTES:
1. TOWNSHIP SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION FOR INSPECTION.
2. ALL EQUIPMENT SHALL BE KEPT OFF INFILTRATION BED AREA TO PREVENT ANY COMPACTION.
3. GEOTEXTILE SHALL BE PLACED AT ALL STONE/SOIL INTERFACES AT THE TOP AND SIDES OF THE INFILTRATION BED.
4. ALL GEO-TEXTILE SHALL CONFORM TO PA.D.O.T. CLASS 1 SPECIFICATIONS AND SHALL HAVE A MINIMUM OVERLAP OF 12".
5. ALL STONE SHALL BE CLEAN WASHED AASHTO #57 STONE.
6. ALL PIPE WITHIN STONE SHALL BE FULLY PERFORATED AND SHALL BE RIDGED SCHD. 40 PVC OR SDR 35 PIPE OR ADS N-12 PIPE. ALL OTHER PIPE SHALL BE RIGID SOLID SCHD 40 PVC, SDR 35 PIPE OR ADS N-12 PIPE.
7. BOTTOM OF BED SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF STONE.
8. ALL ROOF DRAINS SHALL BE PIPED DIRECTLY TO INFILTRATION BED
9. LEAF SCREEN SHALL BE PROVIDED ON ALL OUTLET PIPES TO INFILTRATION BED

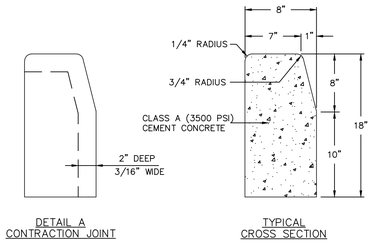
INFILTRATION BED DETAIL – LOTS 1–3

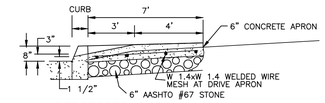


Maximum Drainage Area = 1/2 Acre
Inlet Protection is not required for inlet tributary to sediment basin or trap.

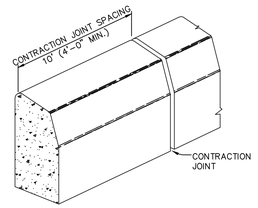
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS

DETAIL – FILTER BAG INLET PROTECTION CURBED ROADWAY



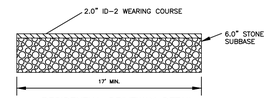


DEPRESSED CURB WITH APRON
N.T.S.

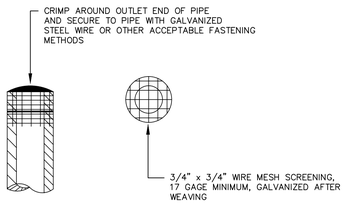


PLAIN CEMENT CONCRETE CURB
NOT TO SCALE

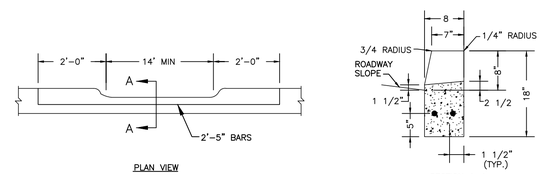
NOTE:
1. Concrete to have minimum 28 day compressive strength of 3,750 psi.



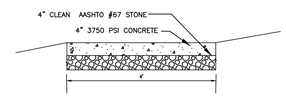
RESIDENTIAL DRIVEWAY DETAIL



LEAF SCREEN DETAIL

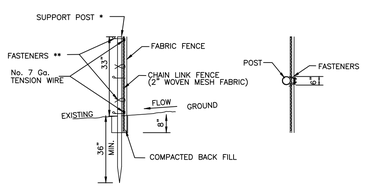


DEPRESSED CURB FOR DRIVES



SIDEWALK DETAIL

NOTES:
1. Concrete to have minimum 28 day compressive strength of 3,750 psi.
2. Construction Joints Shall be Placed a Minimum of 4 ft Apart and Expansion Joints Shall be Placed a Minimum of 20 ft Apart.



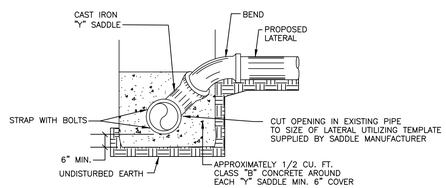
NOTE: NO. 7 GA. TENSION WIRE TO BE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN LINK FENCE.

* Posts spaced @ 10' max. use 2 1/2" Dia. Galvanized or aluminum posts.
** Chain Link to post fasteners spaced @ 14" max. Use No. 6 Ga. aluminum wire or No. 9 steel galvanized performed clips. Chain link to tension wire fasteners spaced @ 60" max. use No. 10 Ga. Galvanized steel wire. Fabric to chain link fasteners @ 24" max. C. to C.

Filter fabric fence must to be placed at level grade, both ends of the barrier must be extended at least 8 feet up slope as 45 degrees to the main barrier alignment.

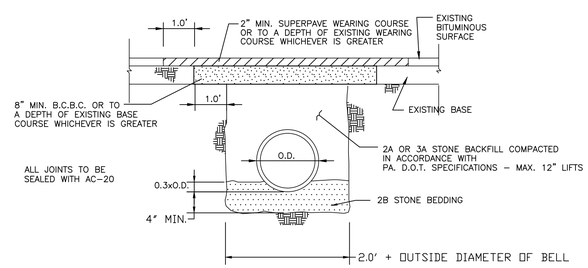
Sediment must be removed when accumulations reach 1/2 the above ground height of the fence.

SUPER FILTER FABRIC FENCE DETAIL



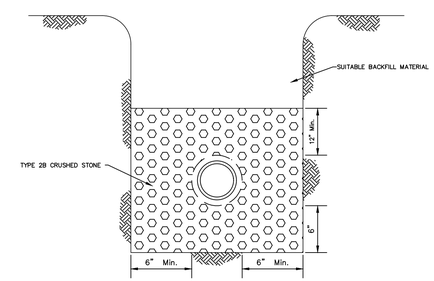
NOTE:
SERVICE BEND AND Y BRANCH SHALL BE EITHER 4" OR 6" IN ACCORDANCE WITH SIZE OF SERVICE

"Y" SADDLE CONNECTION

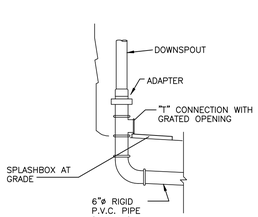


TOWNSHIP ROAD TRENCHING AND RESTORATION DETAIL

NOTES: ROAD RESTORATION SHALL BE IN CONFORMANCE WITH SECTION 157-30 OF HAVERFORD CODE.
EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 401.3(f).

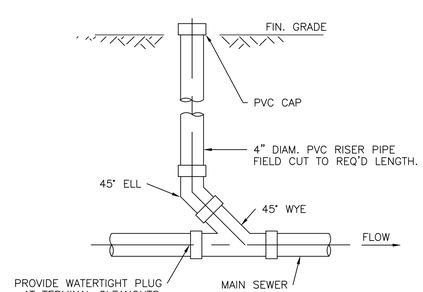


TYPICAL SANITARY SEWER BEDDING DETAIL



NOTE: ALL ROOF DRAINS FROM THE DWELLINGS SHALL BE DIRECTLY CONNECTED TO THE PROPOSED INFILTRATION BEDS AS SHOWN.

ROOF DRAIN CONNECTION DETAIL



CLEANOUT DETAIL
NOT TO SCALE

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01/27/25	60' Width Twp Engineer Review, Waiver Requests

SCALE: NTS
DATE: October 31, 2024

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — GUSTAVE N. HOUTMANN — 50026-E

FINAL

CONSTRUCTION DETAILS PLAN
PREPARED FOR

CARAMANICO HOMES, LLC

HAVERFORD TOWNSHIP
DELAWARE COUNTY, PA

G.D. HOUTMAN & SON, INC.
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