

GEOTECHNICAL DRAWING SERIES (G-X) NOTES

GENERAL NOTES

- THE GEOTECHNICAL SERIES (G-X) DRAWINGS ARE INTENDED TO ADDRESS GEOTECHNICALLY PERTINENT/SALIENT DESIGN AND CONSTRUCTION ISSUES. ATTEMPTS HAVE BEEN MADE TO CONCIDE THESE DRAWINGS WITH OTHER DRAWINGS IN THE SET. HOWEVER, IN THE EVENT OF CONFLICTS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S GEOTECHNICAL ENGINEER (OGE) FOR GUIDANCE. AS A GENERAL RULE, THE DRAWINGS INTENDED TO ADDRESS OTHER DISCIPLINES SHALL GOVERN NON-GEOTECHNICAL ISSUES.
- THE DOCUMENT TITLED "REVISED GEOTECHNICAL EXPLORATION AND ENGINEERING REPORT – PART II, MASS GRADING RECOMMENDATIONS, PROPOSED QUAKER VALLEY HIGH SCHOOL CAMPUS, LEET TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA GARVIN BOWARD BEITKO PROJECT 16123A" THAT WAS PREPARED BY GARVIN BOWARD BEITKO ENGINEERING, INC., DATED NOVEMBER 14, 2023 AND REVISED MARCH 8, 2024" IS INCLUDED IN THE PROJECT DOCUMENTS FOR INFORMATIONAL PURPOSES. HOWEVER, THESE NOTES OUTLINE THE EARTHWORK SPECIFICATIONS FOR THE PROJECT.
- POST-REPORT TEST BORINGS, GENERALLY LOCATED ALONG CAMP MEETING ROAD, IN THE POND AREAS, AND NEAR MECHANICALLY-STABILIZED EARTH (MSE) RETAINING WALL NO. 6, ARE ALSO PROVIDED FOR INFORMATIONAL PURPOSES.
- SUPPLEMENTAL POST-REPORT SHEAR STRENGTH-RELATED LABORATORY TEST RESULTS ARE ALSO PROVIDED FOR INFORMATIONAL PURPOSES. THE CONTRACTOR SHALL MANIPULATE, PULVERIZE, DISC, BLEND, OR MOISTURE CONDITION ON-SITE SOILS TO THE DEGREE NECESSARY TO ACHIEVE THE MINIMUM SHEAR STRENGTH PARAMETERS REQUIRED, FOR EACH RESPECTIVE USE, AT NO ADDITIONAL COST TO THE OWNER.

EXCAVATION

- THESE NOTES SPECIFY EXCAVATING TO REACH FINAL GRADE, FOR BUILDING VOLUME BELOW GRADE, TO REMOVE UNSUITABLE SOIL/DEBRIS, TO EXPOSE TOE BENCHES/KEYWAY BENCHES, AND INTERMEDIATE BENCHES FOR SLOPE CONSTRUCTION, PAVING, AND UTILITIES. ANY FILL EMBANKMENT OVER 5 FEET HIGH AND STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL (4H:1V) ON THE PROJECT, WHETHER OR NOT IT IS SPECIFICALLY SHOWN ON A GEOTECHNICAL CROSS-SECTION, SHALL BE CONSTRUCTED, AT MINIMUM, UTILIZING THE BENCHING AND DRAINAGE REQUIREMENTS OUTLINED ON DRAWING G-9.
- ALL EXCAVATION IS UNCLASSIFIED. CONTRACTOR SHALL RECOGNIZE THAT SOME HARDER BEDROCK SEAMS MAY REQUIRE HOE-RAMMING, BULLDOZERS EQUIPPED WITH RIPPERS, OR BLASTING AND THAT DIFFICULT BEDROCK OR BURIED ABANDONED FOUNDATION REMOVAL SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER. BEDROCK SAMPLES ARE AVAILABLE FOR REVIEW IN THE OGE OFFICE.
- IF BLASTING IS REQUIRED, THE CONTRACTOR SHALL ENGAGE AN ENGINEERING CONSULTANT THAT SPECIALIZES IN VIBRATION MONITORING TO DEVELOP A VIBRATION RISK MANAGEMENT PROGRAM (VRMP) THAT INCLUDES PRE-BLAST CONDITION BLAST SURVEYS, VIBRATION MONITORING AT APPROPRIATE POINTS DURING BLASTING, AND POST-BLASTING CONDITION SURVEYS OF ALL STRUCTURES LOCATED WITHIN THE ZONE THAT COULD BE AFFECTED BY BLASTING OPERATIONS. THE VRMP SHALL BE SUBMITTED, IN WRITING, ALONG WITH SCALED DRAWINGS SHOWING ALL LOCATIONS CRITICAL TO THE VRMP, TO THE OGE AT LEAST 60 DAYS PRIOR TO BLASTING/EARTHWORK START-UP.
- ALL EXCAVATION AND FILLING REQUIRED TO ACHIEVE FINAL GRADES IN CUT AREAS, UTILITY TRENCHES, OR OTHER BELOW GRADE STRUCTURES ASSOCIATED WITH PROJECT SHALL BE CONSIDERED PART OF THE BASE BID.
- ALL ABANDONED UTILITIES SHALL BE REMOVED, INCLUDING ANY OLD FILL SOILS ASSOCIATED WITH THE UTILITY UNTIL UNDISTURBED SOILS ARE EXPOSED ON THE TRENCH BOTTOMS AND SIDEWALLS. THE EXTENT OF REMOVAL SHALL BE AT THE SOLE DISCRETION OF THE OGE AT NO ADDITIONAL COST TO THE OWNER.
- ALL EXCAVATION REQUIRED TO INSTALL TOE BENCH/KEYWAYS AND INTERMEDIATE BENCHES SHALL BE CONSIDERED PART OF THE BASE BID. THE APPROXIMATE DIMENSIONS AND ELEVATIONS OF TOE BENCH/KEYWAYS AND INTERMEDIATE BENCHES ARE SHOWN ON THE DRAWINGS. THE DIMENSIONS AND ELEVATIONS ARE BASED ON WIDELY SPACED TEST BORINGS, STRAIGHT-LINE INTERPOLATION BETWEEN TEST BORINGS AND SOME EXTRAPOLATION BEYOND TEST BORINGS AND WILL REQUIRE SOME ADJUSTMENT BASED ON THE ACTUAL CONDITIONS EXPOSED DURING INITIAL EXCAVATION. ANY ADJUSTMENTS REQUIRED SHALL BE LEFT TO THE SOLE DISCRETION OF THE OGE AT NO ADDITIONAL COST TO THE OWNER.
- SOME OF THE EXCAVATED MATERIAL (FROM GENERAL SITE GRADING AND UNDERCUT) WILL BE SUITABLE FOR RE-USE AS AN ENGINEERED FILL, ALTHOUGH IT WILL REQUIRE MECHANICAL MANIPULATION, CRUSHING, MIXING, SIEVING, WASHING, DISKING, PROCESSING, TO ATTAIN A WELL-GRADED ACCEPTABLE MIXTURE, AND LIKELY MOISTURE CONDITIONING PRIOR TO REUSE. THE OGE SHALL REVIEW AND ORDER TEST OF EXCAVATED MATERIAL DURING THE EXCAVATION PROCESS AND SHALL HAVE THE SOLE DISCRETION TO DETERMINE WHETHER OR NOT THE MATERIAL IS SUITABLE FOR A PARTICULAR REUSE. THE CONTRACTOR SHALL ENGAGE AN APPROVED TESTING LABORATORY TO COMPLETE THE TESTING NEEDED BY THE OGE TO SUPPORT THE USE OF A GIVEN SOIL MATERIAL FOR A SPECIFIC USE. THE CONTRACTOR SHALL PREPARE SUITABLE MATERIAL AND SUBMIT TEST RESULTS INDICATING THE MATERIAL MEETS THE SPECIFICATIONS TO THE OGE. THE OGE SHALL HAVE THE DISCRETION TO WAIVE THE TESTING PROVIDED SUFFICIENT INFORMATION HAS ALREADY BEEN DEVELOPED DURING THE PROJECT. THE CONTRACTOR SHALL THEN SELECTIVELY STOCKPILE SUITABLE MATERIAL ON SITE AS DIRECTED BY THE OGE FOR FUTURE USE, CONDITIONING, OR INCORPORATION INTO CONCURRENT FILLING OPERATIONS ON SITE. SPECIFIC REQUIREMENTS FOR EACH ENGINEERED FILL TYPE ARE INCLUDED IN THE **ENGINEERED FILL PLACEMENT** SECTION OF THESE SPECIFICATIONS.

- SOME OF THE EXCAVATED MATERIAL (FROM GENERAL SITE GRADING AND UNDERCUT) WILL NOT BE SUITABLE FOR RE-USE. THAT MATERIAL SHALL BE HAULED OFF SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
- UNDERPIN ADJACENT STRUCTURES THAT COULD BE DAMAGED BY EXCAVATING WORK.
- SHORE AND PROTECT EXCAVATIONS AS REQUIRED BY OSHA AND AS REQUIRED TO PROTECT ADJACENT STRUCTURES, UTILITIES, AND WORKERS/INSPECTORS THAT MUST ENTER EXCAVATIONS.
- EXCAVATE TO REMOVE UNSUITABLE SOILS (UNDERCUT) AS DEFINED BY THE OGE, AND TO ACCOMMODATE NEW STRUCTURES AND CONSTRUCTION OPERATIONS.
- NOTIFY OGE OF UNEXPECTED SUBSURFACE CONDITIONS AND DISCONTINUE AFFECTED WORK IN AREA UNTIL NOTIFIED TO RESUME WORK.
- SLOPE BANKS OF EXCAVATIONS DEEPER THAN 4 FEET TO ANGLE OF REPOSE OR LESS UNTIL SHORED.
- DO NOT INTERFERE WITH 45 DEGREE BEARING SPLAY OF NEARBY FOUNDATIONS, STRUCTURES, OR UTILITY LINES.
- CUT UTILITY TRENCHES WIDE ENOUGH TO ALLOW INSPECTION OF INSTALLED UTILITIES.

ENGINEERED FILL PLACEMENT

- ENGINEERED FILL – IS DEFINED AS SUITABLE FILL/GENERAL FILL/GRANULAR FILL OR ANY FILL THAT HAS BEEN JUDGED SUITABLE BY THE OGE, FOR A SPECIFIC PURPOSE, THAT HAS BEEN PLACED IN LOOSE LIFT THICKNESSES CONSISTENT WITH THIS SECTION, COMPACTED TO THE DEGREE SPECIFIED IN THIS SECTION AS APPROPRIATE, AND UNTIL NON-MOVEMENT, UNDER COMPACTION EQUIPMENT, HAS BEEN DOCUMENTED BY THE OGE.
- GENERAL FILL/SUITABLE FILL MATERIAL SHALL CONSIST OF INORGANIC, LOW-PLASTICITY SOIL WITH A LIQUID LIMIT (LL) LESS THAN 30 AND A PLASTICITY INDEX (PI) OF LESS THAN 10. FILL MATERIAL SHOULD BE FREE OF TOPSOIL, CARBONACEOUS SHALE, PYRITIC/MARCASITIC MINERALS, ORGANIC MATTER, SLAG, "RED-DOG", OTHER DELETERIOUS MATERIAL, AND ROCK FRAGMENTS LARGER THAN 3 INCHES IN DIAMETER. INERT (NON-PYRITIC/MARCASITIC) DECOMPOSED SHALE AND SANDSTONE ARE COMMONLY USED AS FILL IN THIS AREA. IF THE CONTRACTOR ELECTS TO UTILIZE THIS TYPE OF MATERIAL, IT IS LIKELY THAT SOME EFFORT WILL BE REQUIRED TO BREAK DOWN THE ROCK FRAGMENTS INTO A WELL-GRADED MIXTURE SUITABLE FOR RE-USE. THE CONTRACTOR SHALL SPREAD SUCH MATERIAL IN THIN LAYERS AND PULVERIZE IT WITH LARGE, TRACK-MOUNTED EQUIPMENT, SHEEPS-FOOT ROLLERS, AND LARGE VIBRATORY COMPACTORS TO THE SATISFACTION OF THE OGE. BEFORE FILLING OPERATIONS BEGIN, REPRESENTATIVE SAMPLES OF EACH PROPOSED FILL MATERIAL SHALL BE COLLECTED BY THE CONTRACTOR AND SUBMITTED TO THE OGE FOR HIS REVIEW. THE GEOTECHNICAL ENGINEER WILL REQUIRE THAT LABORATORY TESTING BE COMPLETED BY AN APPROVED TESTING LABORATORY PRIOR TO FINAL APPROVAL. THE LABORATORY TESTING MAY INCLUDE DIRECT SHEAR TESTING TO VERIFY THE MINIMUM SHEAR STRENGTH (COMPACTED FRICTION ANGLES AND COHESION) DESCRIBED BELOW FOR EACH DIFFERENT APPLICATION WILL BE MET BY THE PROPOSED SOIL WHEN COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557. AS SUCH, THE TESTING MAY ALSO INCLUDE LABORATORY COMPACTION TESTS (ASTM D 1557) OR RELATIVE DENSITY TESTS (ASTM D 4253 AND D 4254) AS APPROPRIATE, AND TESTS TO DETERMINE THE GRADATION AND PLASTICITY OF THE BLENDED OR UNBLENDED SOIL. THESE TESTS ARE NEEDED FOR QUALITY CONTROL DURING COMPACTION OPERATION AND TO DETERMINE IF THE FILL MATERIAL IS ACCEPTABLE. FROZEN SOILS SHALL NOT BE USED FOR ENGINEERED FILL. REGARDLESS OF THE TEST RESULTS, THE OGE SHALL HAVE THE SOLE DISCRETION ON WHETHER OR NOT CONTRACTOR-PROPOSED SOILS MAY BE USED FOR SPECIFIC PURPOSES ON THE PROJECT.
- THE SOIL MATERIAL USED FOR THE CONSRUCTION OF BOTH THE UPPER AND LOWER CAMP MEETING ROAD INTERSECTIONS SHALL UTILIZE SOIL MATERIAL WITH THE SAME PROPERTIES. THIS WILL APPLY FROM THE LOWER INTERSECTION OF CAMP MEETING ROAD AT APPROXIMATE CAMP MEETING ROAD STATION 109+00 TO STATION 110+90, UP UNTIL APPROXIMATE STATION 20+55 OF THE PROPOSED LOWER ENTRANCE ROAD. IT WILL ALSO APPLY BETWEEN APPROXIMATE CAMP MEETING ROAD STATIONS 127+90 TO STATION 135+70 AND INTO THE PROPOSED UPPER ENTRANCE ROAD TO APPROXIMATE STATION 13+00. THIS INCLUDES ANY UNREINFORCED SLOPE ON THE SITE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3H:1V) THAT ARE NOT PART OF THE SEDIMENT/DETENTION POND ENGINEERED FILL EMBANKMENTS. THE SOIL SHALL CONSIST OF BLENDED OR UNBLENDED SOIL WITH A FRICTION ANGLE OF AT LEAST 33 DEGREES, A COHESION OF AT LEAST 100 POUNDS PER SQUARE FOOT (PSF), AND A MOIST UNIT WEIGHT LESS THAN 135 POUNDS PER CUBIC FOOT (PCF) WHEN COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557. ALTERNATELY, THE OGE MAY APPROVE, AT HIS SOLE DISCRETION, OTHER COMBINATIONS OF SHEAR STRENGTH AND COMPACTED UNIT WEIGHTS THAT WOULD YIELD SIMILAR FACTORS OF SAFETY.
- THE SOIL MATERIAL USED FOR THE CONSRUCTION OF THE EMBANKMENTS FOR THE SEDIMENT/STORMWATER MGT POND (SWMF) STARTING BEYOND APPROXIMATE STATION 20+55 FROM THE LOWER CAMP MEETING ROAD INTERSECTION, SHALL CONSIST OF BLENDED OR UNBLENDED SOIL WITH A MEDIUM TO LOW PLASTICITY CLAY CONTENT

OF AT LEAST 40% WITH A FRICTION ANGLE OF AT LEAST 20 DEGREES, A COHESION OF AT LEAST 150 POUNDS PER SQUARE FOOT (PSF) AND A MOIST UNIT WEIGHT ON THE ORDER OF 135 POUNDS PER CUBIC FOOT (PCF) WHEN COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557. ALTERNATELY, THE OGE MAY APPROVE, AT HIS SOLE DISCRETION, OTHER COMBINATIONS OF SHEAR STRENGTH AND COMPACTED UNIT WEIGHTS THAT WOULD YIELD SIMILAR FACTORS OF SAFETY.

- THE SOIL MATERIAL USED FOR THE CONSRUCTION OF THE REINFORCED ONE (1) HORIZONTAL TO ONE (1) VERTICAL (1H:1V) FILL EMBANKMENTS FROM LOWER ENTRANCE ROAD STATION 29+00 TO STATION 42+60 SHALL CONSIST OF SAND (SP, SW) WITH LESS THAN 10% PASSING THE #200 U.S. SIEVE SIZE AND WHICH ATTAINS A FRICTION ANGLE OF AT LEAST 33 DEGREES WHEN COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557. ALTERNATELY, THE OGE MAY APPROVE, AT HIS SOLE DISCRETION, OTHER COMBINATIONS OF SHEAR STRENGTH AND COMPACTED UNIT WEIGHTS THAT WOULD YIELD SIMILAR FACTORS OF SAFETY.
- THE SOIL MATERIAL USED FOR THE CONSRUCTION OF THE REINFORCED ZONES OF THE MECHANICALLY STABILIZED EARTH (MSE) WALLS SUPPORTING THE PERIMETER ROADWAY THAT ENCIRCLES THE SCHOOL BUILDING SHALL CONSIST OF SAND (SP, SW) WITH LESS THAN 10% PASSING THE # 200 U.S. SIEVE SIZE AND WHICH ATTAINS A FRICTION ANGLE OF AT LEAST 33 DEGREES WHEN COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 1557. ALTERNATELY, THE OGE MAY APPROVE, AT HIS SOLE DISCRETION, OTHER COMBINATIONS OF SHEAR STRENGTH AND COMPACTED UNIT WEIGHTS THAT WOULD YIELD SIMILAR FACTORS OF SAFETY.
- CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ORGANIC MATTER FROM ANY SURFACE TO RECEIVE ENGINEERED FILL.
- ENGINEERED FILL SHALL ONLY BE PLACED ON SUBGRADES THAT HAVE BEEN PROOFROLLED OR OTHERWISE APPROVED BY THE OGE.
- AT THE SOLE DISCRETION OF THE OGE, THE CONTRACTOR SHALL PROOFROLL THE NEWLY EXPOSED SUBGRADE TO RECEIVE FILL, SUPPORT FLOOR SLABS, OR PAVEMENTS WITH OVERLAPPING PASSES OF A FULLY LOADED TANDEM AXLE DUMP TRUCK OR APPROVED EQUIVALENT. THE CONTRACTOR SHALL COORDINATE WITH THE OGE AT LEAST 48 HOURS IN ADVANCE OF PROOFROLLING OPERATIONS SO THAT OGE CAN OBSERVE PROOFROLLING OPERATIONS. PROOFROLLING SHALL ONLY BE COMPLETED AFTER A SUITABLE PERIOD OF DRY WEATHER TO AVOID DEGRADING A PREVIOUSLY ACCEPTABLE SUBGRADE. ANY SOFT OR UNSUITABLE SOILS SHALL BE REMOVED AND EITHER WASTED FROM THE SITE, OR SET ASIDE FOR MOISTURE CONDITIONING/MIXING AND REUSE AS ENGINEERED FILL AS JUDGED BY OGE.
- IF REQUESTED BY OGE, SCARIFY SUBGRADE SURFACE TO A DEPTH OF 6 INCHES TO HELP IDENTIFY SOFT SPOTS.
- CUT OUT SOFT AREAS OF SUBGRADE NOT CAPABLE OF COMPACTION IN PLACE. BACKFILL WITH ENGINEERED FILL.
- COMPACT SUBGRADE TO DENSITY EQUAL TO OR GREATER THAN REQUIREMENTS FOR SUBSEQUENT FILL MATERIAL.
- UNTIL READY TO FILL, MAINTAIN EXCAVATIONS AND PREVENT LOOSE SOIL FROM FALLING INTO EXCAVATION.
- FILL TO CONTOURS AND ELEVATIONS INDICATED USING UNFROZEN MATERIALS THAT HAVE BEEN JUDGED SUITABLE BY THE OGE.
- EMPLOY A PLACEMENT METHOD THAT DOES NOT DISTURB OR DAMAGE OTHER WORK.
- DO NOT FILL OVER POROUS, WET, FROZEN OR SPONGY SUBGRADE SURFACES.
- MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS TO ATTAIN REQUIRED COMPACTION DENSITY.
- SUITABLE SOIL TO BE COMPACTED WITH LARGE COMPACTION EQUIPMENT IN OPEN AREAS SHALL BE PLACED IN LOOSE LIFTS THAT DO NOT EXCEED 8 INCHES OF LOOSE THICKNESS. IN CONFINED AREAS WHEN HAND OPERATED TAMPERS, OR SMALLER ROLLERS MUST BE USED, THE LOOSE LIFT THICKNESS SHALL BE LIMITED TO 4 INCHES.
- EACH LOOSE LIFT OF ENGINEERED FILL SHALL BE COMPACTED UNTIL IT HAS ACHIEVED A DENSITY EQUIVALENT TO AT LEAST 95 PERCENT OF THE MAXIMUM DENSITY DETERMINED BY ASTM D 1557 AND UNTIL NON-MOVEMENT IS DOCUMENTED UNDER THE COMPACTION OR OTHER APPROVED CONSTRUCTION EQUIPMENT BY THE OGE.
- ALL GRANULAR ENGINEERED FILL, SUCH AS CRUSHED LIMESTONE MEETING PENNDOT DURABILITY REQUIREMENT FOR TYPE C COARSE AGGREGATE AND PENNDOT GRADATION REQUIREMENTS FOR 2A OR NO. 57 COARSE AGGREGATE SHALL BE COMPACTED UNTIL ATTAINING AT LEAST 70% OF THE RELATIVE DENSITY AS DETERMINED BY ASTM D 4253 AND ASTM D 4254.

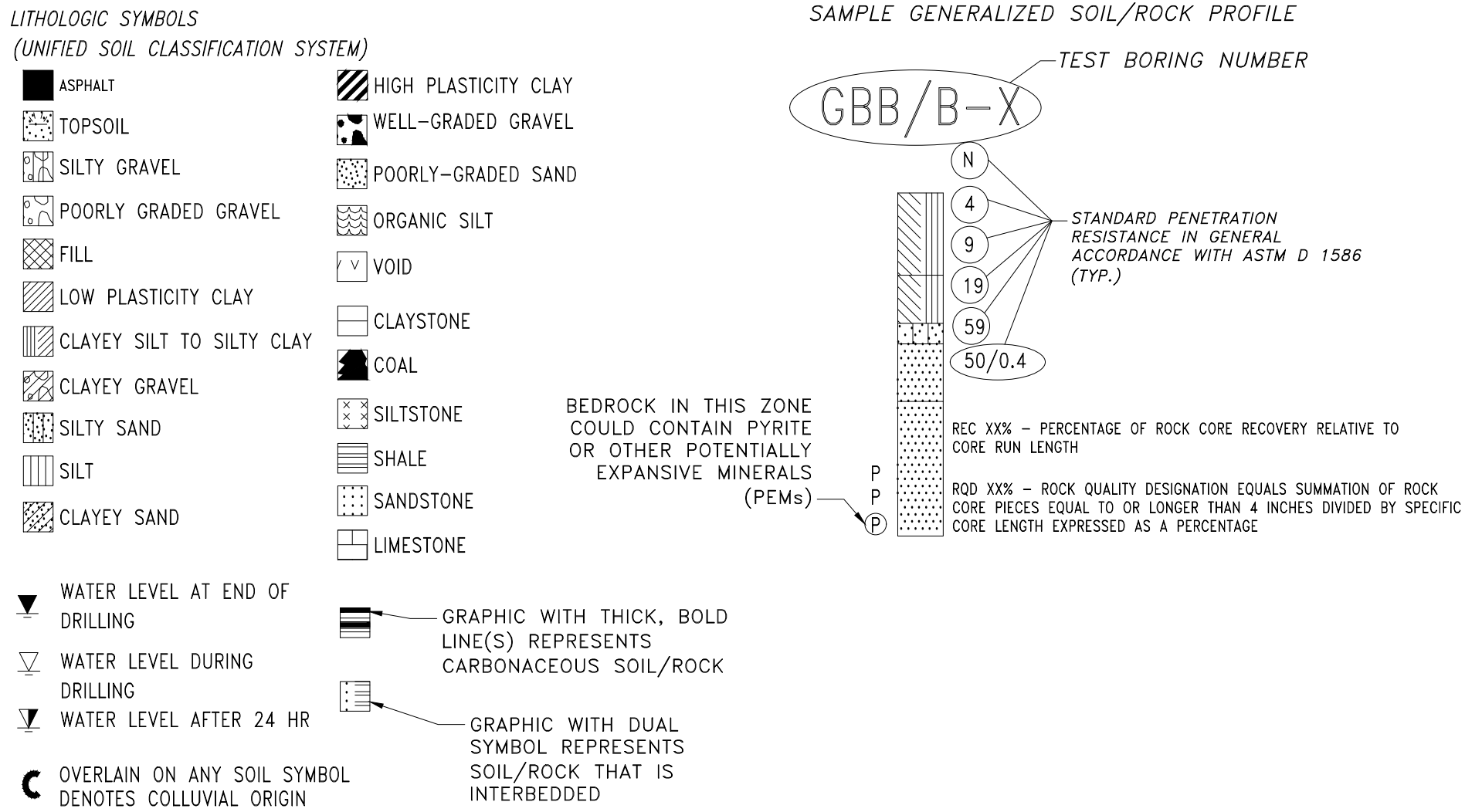
FIELD QUALITY CONTROL

- THE OGE OR THE OGE-REPRESENTATIVE WILL PERFORM COMPACTION DENSITY TESTING ON COMPACTED FILL IN ACCORDANCE WITH ASTM D1556, ASTM D2922, OR ASTM D3017.
- THE OGE WILL EVALUATE RESULTS IN RELATION TO COMPACTION CURVE DETERMINED BY TESTING COMPACTED OR UNCOMPACTED MATERIAL IN ACCORDANCE WITH ASTM D 1557 ("MODIFIED PROCTOR"), OR ASTM D 4253 OR ASTM D 4254, AS APPROPRIATE FOR GRANULAR MATERIAL.
- IF TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST.
- ONE TEST IN EACH LIFT FOR EVERY 2500 SQUARE FEET OF SURFACE AREA IN OPEN SPACES, OR FRACTION THEREOF. ONE TEST IN EACH LIFT FOR EVERY 50 LINEAL FEET OF TRENCH LENGTH OR FRACTION THEREOF.

CROSS-SECTION NOTES:

- EXISTING AND PROPOSED UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE BASED ON CAD FILES PROVIDED BY PHILLIPS AND ASSOCIATES, INC. (PAI).
- PROPOSED GAS LINE AND THE EXISTING WATER LINE DEPTHS ARE UNKNOWN BUT ARE SHOWN AT 4-FT-DEEP ON THE CROSS-SECTIONS BASED ON GENERAL CONSTRUCTION PRACTICES.
- EXISTING GAS LINE DEPTH VARIES.
- SEE TYPICAL EARTHWORK PROFILE ON DRAWING G-9.
- LOCATION AND EXTENT OF COLLECTOR/OUTLET DRAINS FOR THE KEYWAY AND BENCH DRAINS TO BE DETERMINED IN THE FIELD. ALL OUTLET DRAINS SHALL EXTEND TO PROPER STORM FACILITIES, OR EQUAL, APPROVED BY THE ENGINEER.
- CULVERT NO. 5 LOCATION AND INVERT ELEVATION FROM STORM DRAINAGE PLAN AND STORM DRAINAGE PROFILES, NEW QUAKER VALLEY HIGH SCHOOL BY PAI DATED 11/01/2023. SHEETS SD200B, SD201, AND SD208. CULVERT NUMBER 5 SIZE AND INVERT ELEVATION WAS UPDATED IN JULY 2025 AND PROVIDED IN A CAD FILE BY PAI.
- SEE TYPICAL PIPE TRENCH DETAIL ON STORM DRAINAGE DETAILS, NEW QUAKER VALLEY HIGH SCHOOL, BY PAI DATED 11/01/2023, SHEET SD300.
- PROPOSED PAVEMENT SECTION DETAIL CAN BE FOUND ON QUAKER VALLEY SCHOOL DISTRICT, NEW QUAKER VALLEY HIGH SCHOOL, DRAWING C206, DATED JULY 31, 2024 BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC), DETAIL 201 HEAVY DUTY FLEXIBLE PAVEMENT. CAMP MEETING ROAD PAVEMENT SECTION CAN BE FOUND ON HIGHWAY OCCUPANCY PERMIT PLAN FOR QUAKER VALLEY SCHOOL DISTRICT, DRAWINGS FOR CONSTRUCTION OF CAMP MEETING ROAD (CR-1061-00), DRAWINGS FOR CONSTRUCTION, CAMP MEETING ROAD, UNDATED.
- AT MINIMUM, KEYWAY/BENCH OUTLET DRAINS SHALL SPACED EVERY 50 FEET, OR LOCALIZED LOW SPOTS, ALONG EVERY FILL EMBANKMENT OR REINFORCED SOIL SLOPE (RSS).

GENERALIZED SUBSURFACE PROFILE LEGEND



GARVIN BOWARD BEITKO	SCALE:	AS NOTED	GARVIN BOWARD BEITKO ENGINEERING, INC.		180 BILMAR DRIVE, SUITE IV
	DATE:	08/06/2025	BUILT ON REPUTATION		PITTSBURGH, PA 15205
	REVISED:	06/11/2026	GEOTECHNICAL CONTRUCTION DRAWINGS		PHONE: 412-922-4440
	DRAWN BY:	MAW	NEW QUAKER VALLEY HIGH SCHOOL CAMPUS		
	APPROVED BY:	DAB	FOR:	PHILLIPS & ASSOCIATES, INC.	GBBE PROJECT NUMBER: 16123A

GBB-XX

B-XXX

LEGEND

GBBE BOREING NUMBER DRILLED PERIODICALLY FROM JULY 19, 2023 TO OCTOBER 9, 2024

EXISTING MAJOR GROUND SURFACE CONTOUR (FT-MSL)

EXISTING MINOR GROUND SURFACE CONTOUR (FT-MSL)

PROPOSED MAJOR GROUND SURFACE CONTOUR (FT-MSL)

PROPOSED MINOR GROUND SURFACE CONTOUR (FT-MSL)

APPROXIMATE PROPERTY LINE LOCATION

APPROXIMATE EXISTING SANITARY SEWER LINE LOCATION

APPROXIMATE EXISTING GAS LINE LOCATION

APPROXIMATE STORM SEWER LINE LOCATION

APPROXIMATE EXISTING WATER LINE LOCATION

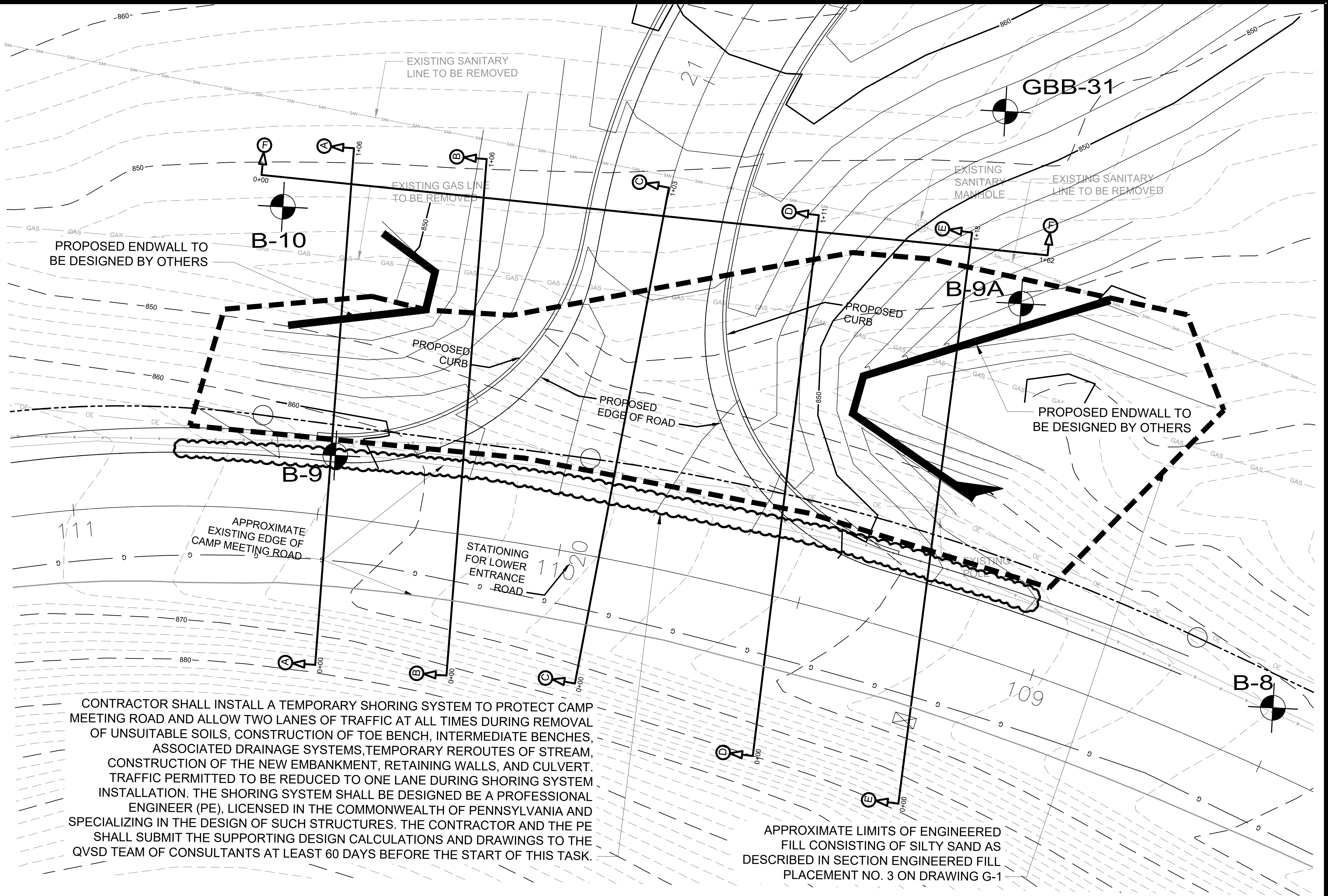
APPROXIMATE EXISTING OVERHEAD UTILITY LINE LOCATION

APPROXIMATE PROPOSED GAS LINE LOCATION

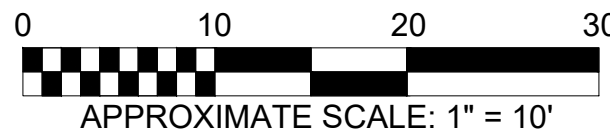
APPROXIMATE PROPOSED WATER LINE LOCATION

APPROXIMATE PROPOSED OVERHEAD UTILITY LINE LOCATION

APPROXIMATE PROPOSED GUIDERAIL LOCATION



LOWER ENTRANCE ROAD GRADING PLAN



REFERENCE:
PROPOSED CONTOURS, GRADING, SITE ELEMENTS, UTILITIES WERE PROVIDED TO US AS A CAD FILE BY PHILLIPS AND ASSOCIATES, INC. IN AN EMAIL DATED DECEMBER 30, 2024. THE CAD FILENAME IS 11-00-24 BULK GRADING. PROPOSED CONTOURS FOR STORMWATER PONDS, LOWER ENTRANCE, AND CULVERTS WERE UPDATED AND EMAILED ON JULY 14, 2025.

THE BASE FILE FOR EXISTING CONTOURS, SITE ELEMENTS, AND UTILITIES WERE PROVIDED TO US BY PHILLIPS AND ASSOCIATES, INC. AS A CAD FILE ON OCTOBER 26, 2023.
CAD FILE NAME FOR EXISTING BASE CONTOURS AND SITE ELEMENTS: THRASHER-TOPO-QVHS_83PAS_V2 - GCP5.
CAD FILE NAME FOR EXISTING UTILITIES: BASE-UTILITIES-06-14-23-MILES.

STATIONING FOR LOWER ROAD ENTRANCE PROVIDED BY PHILLIPS AND ASSOCIATES, INC. IN AN EMAIL ON DECEMBER 31, 2024.
CAD FILE NAME: LOWER-DW-STATIONS

GARVIN

BOWARD BEITKO

SCALE: AS NOTED

DATE: 08/06/2025

REVISED: 06/11/2026

DRAWN BY: MAW

APPROVED BY: DAB

GARVIN BOWARD BEITKO ENGINEERING, INC.

BUILT ON REPUTATION

GEOTECHNICAL CONSTRUCTION DRAWINGS

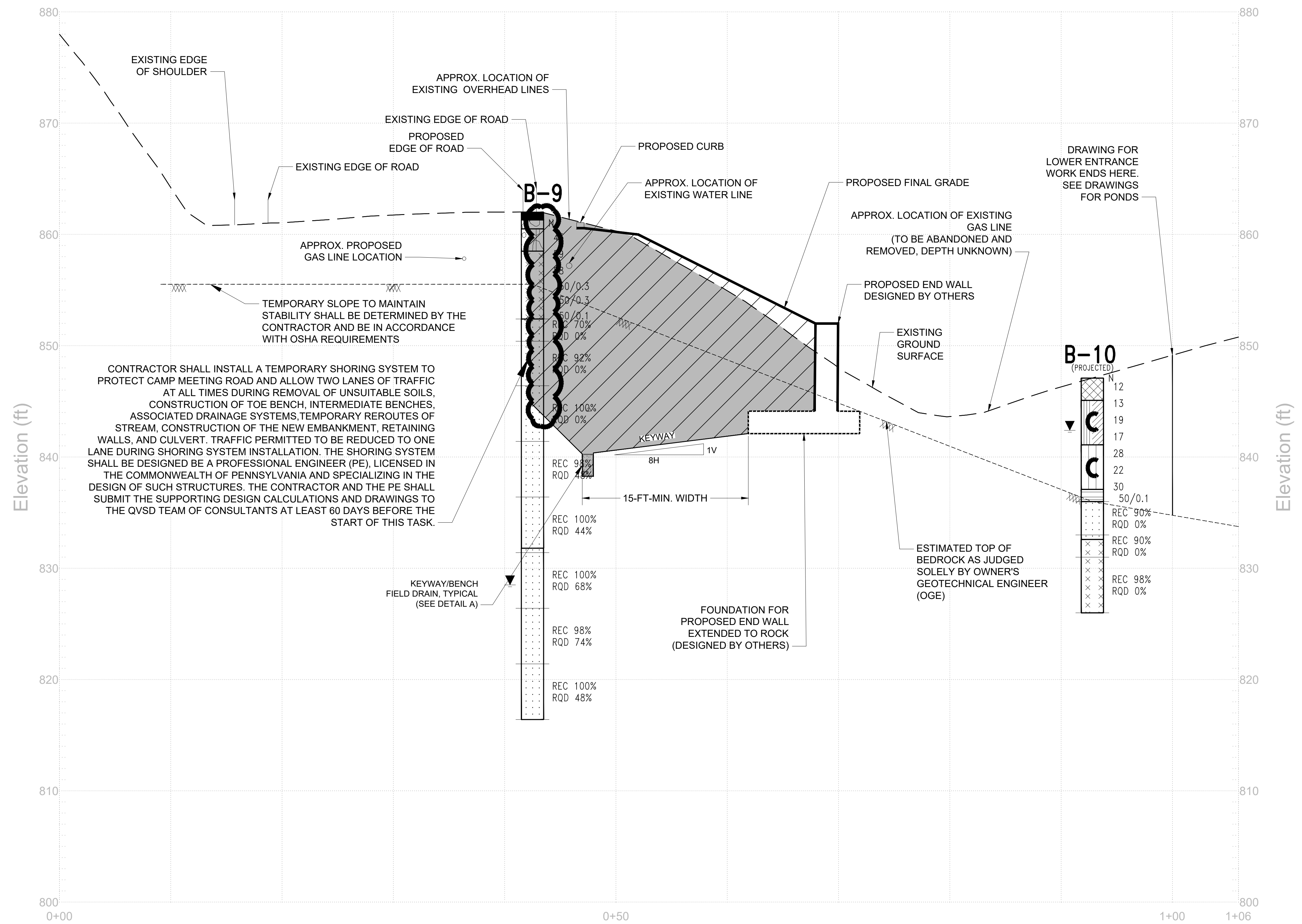
NEW QUAKER VALLEY HIGH SCHOOL CAMPUS

FOR: PHILLIPS & ASSOCIATES, INC.

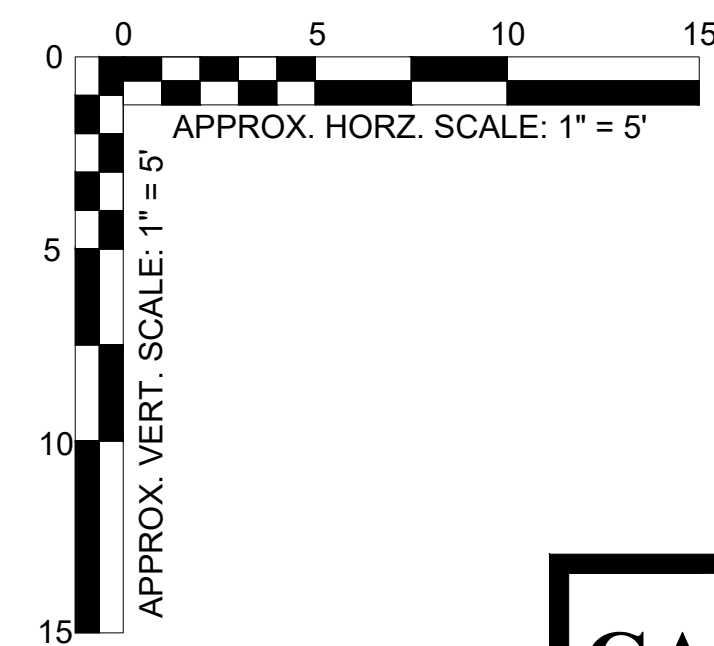
PROJECT NUMBER: 16123A

DRAWING NUMBER: G-2

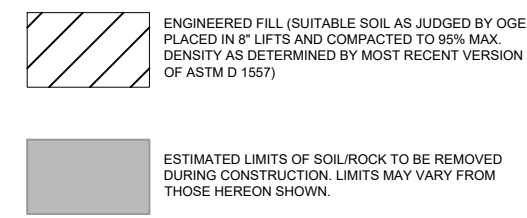
180 BILMAR DRIVE, SUITE IV
PITTSBURGH, PA 15205
PHONE: 412-922-4440



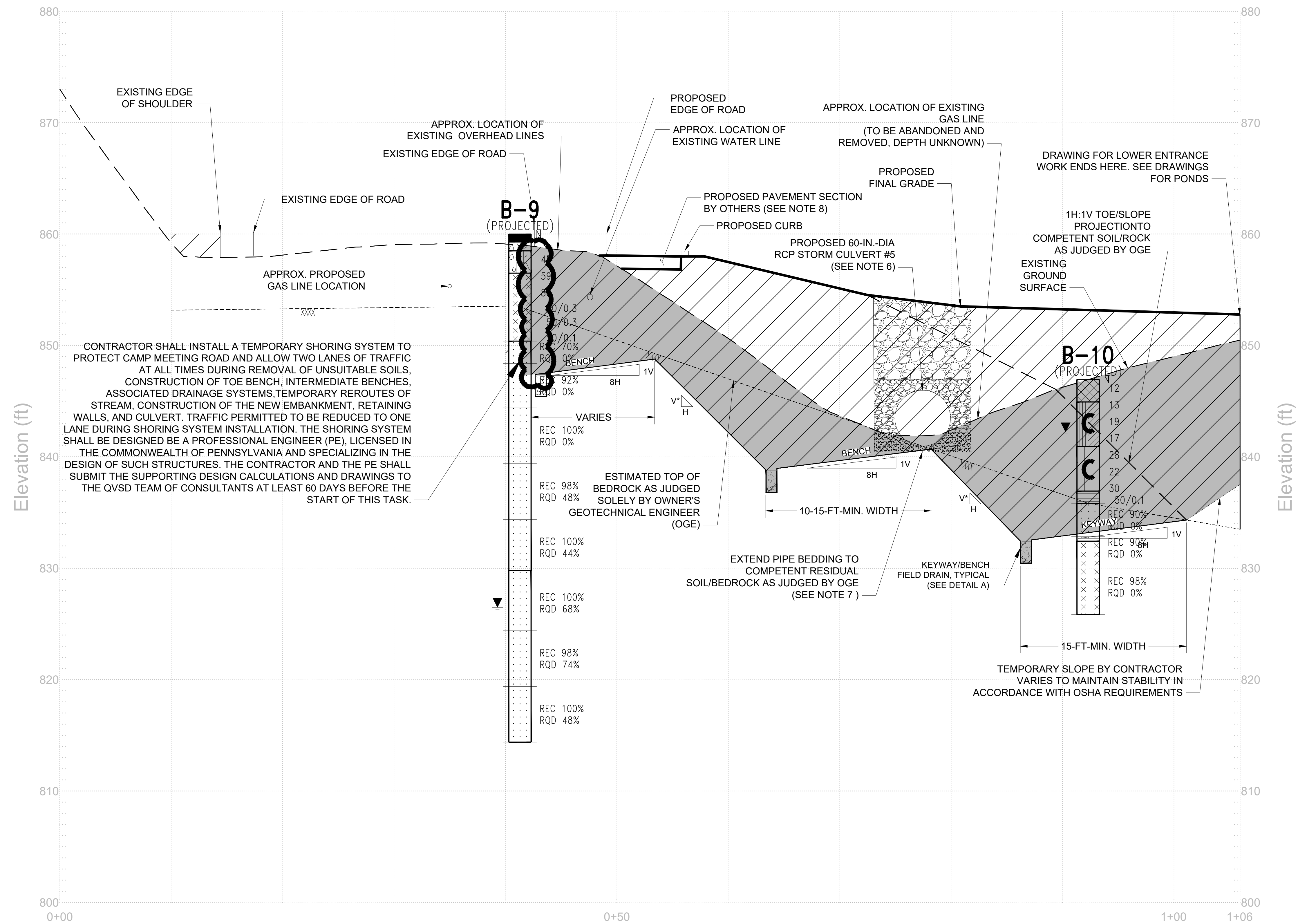
LOWER ENTRANCE CROSS-SECTION A-A



EARTHWORK LEGEND

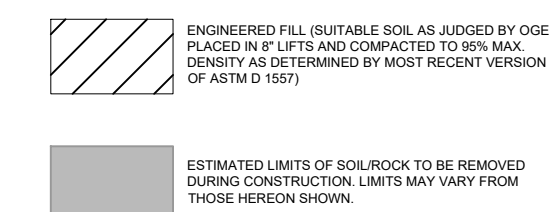
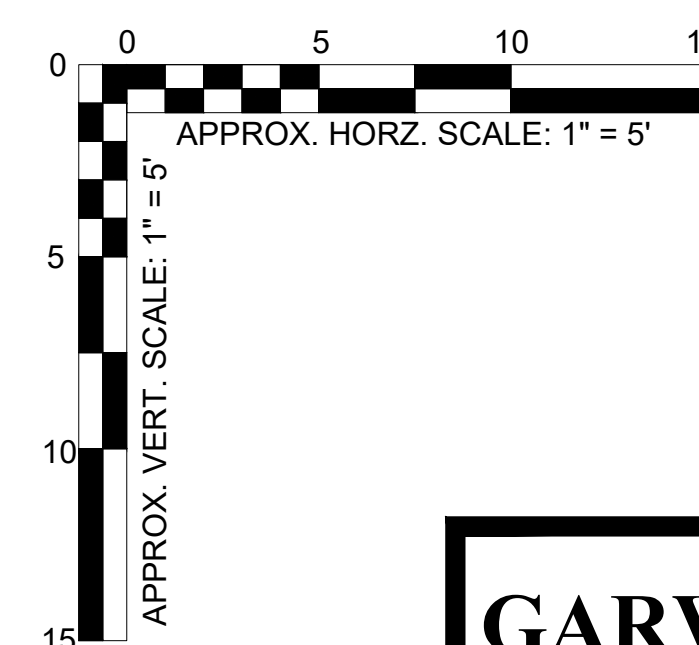


GARVIN BOWARD BEITKO	SCALE:	AS NOTED	GARVIN BOWARD BEITKO ENGINEERING, INC. <i>BUILT ON REPUTATION</i>		180 BILMAR DRIVE, SUITE IV PITTSBURGH, PA 15205 PHONE: 412-922-4440			
	DATE:	08/06/2025						
	REVISED:	08/27/2025	GEOTECHNICAL CONSTRUCTION DRAWINGS NEW QUAKER VALLEY HIGH SCHOOL CAMPUS					
	DRAWN BY:	MAW						
	APPROVED BY:	DAB						
			FOR:	PHILLIPS & ASSOCIATES, INC.	GBBE PROJECT NUMBER:	16123A	DRAWING NUMBER:	G-3

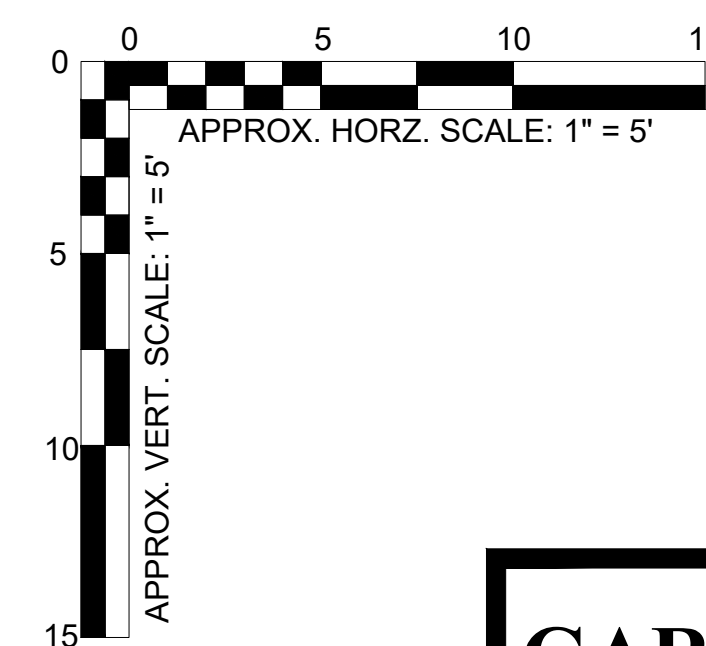


LOWER ENTRANCE CROSS-SECTION B-B

EARTHWORK LEGEND



GARVIN BOWARD BEITKO	SCALE:	AS NOTED	GARVIN BOWARD BEITKO ENGINEERING, INC.		180 BILMAR DRIVE, SUITE IV
	DATE:	08/06/2025	BUILT ON REPUTATION		PITTSBURGH, PA 15205
	REVISED:	08/27/2025	GEOTECHNICAL CONSTRUCTION DRAWINGS		PHONE: 412-922-4440
	DRAWN BY:	MAW	NEW QUAKER VALLEY HIGH SCHOOL CAMPUS		
	APPROVED BY:	DAB	FOR:	PHILLIPS & ASSOCIATES, INC.	
			GBBE PROJECT NUMBER:	16123A	DRAWING NUMBER:
			G-4		



EARTHWORK LEGEND

 ENGINEERED FILL (SUITABLE SOIL AS JUDGED BY OGE PLACED IN 8" LIFTS AND COMPACTED TO 95% MAX. DENSITY AS DETERMINED BY MOST RECENT VERSION OF ASTM D 1557)

 ESTIMATED LIMITS OF SOIL/ROCK TO BE REMOVED DURING CONSTRUCTION. LIMITS MAY VARY FROM THOSE HEREON SHOWN.

GARVIN

BOWARD BEITKO

SCALE:	AS NOTED
DATE:	08/06/2025
REVISED:	08/27/2025
DRAWN BY:	MAW
APPROVED BY:	DAB

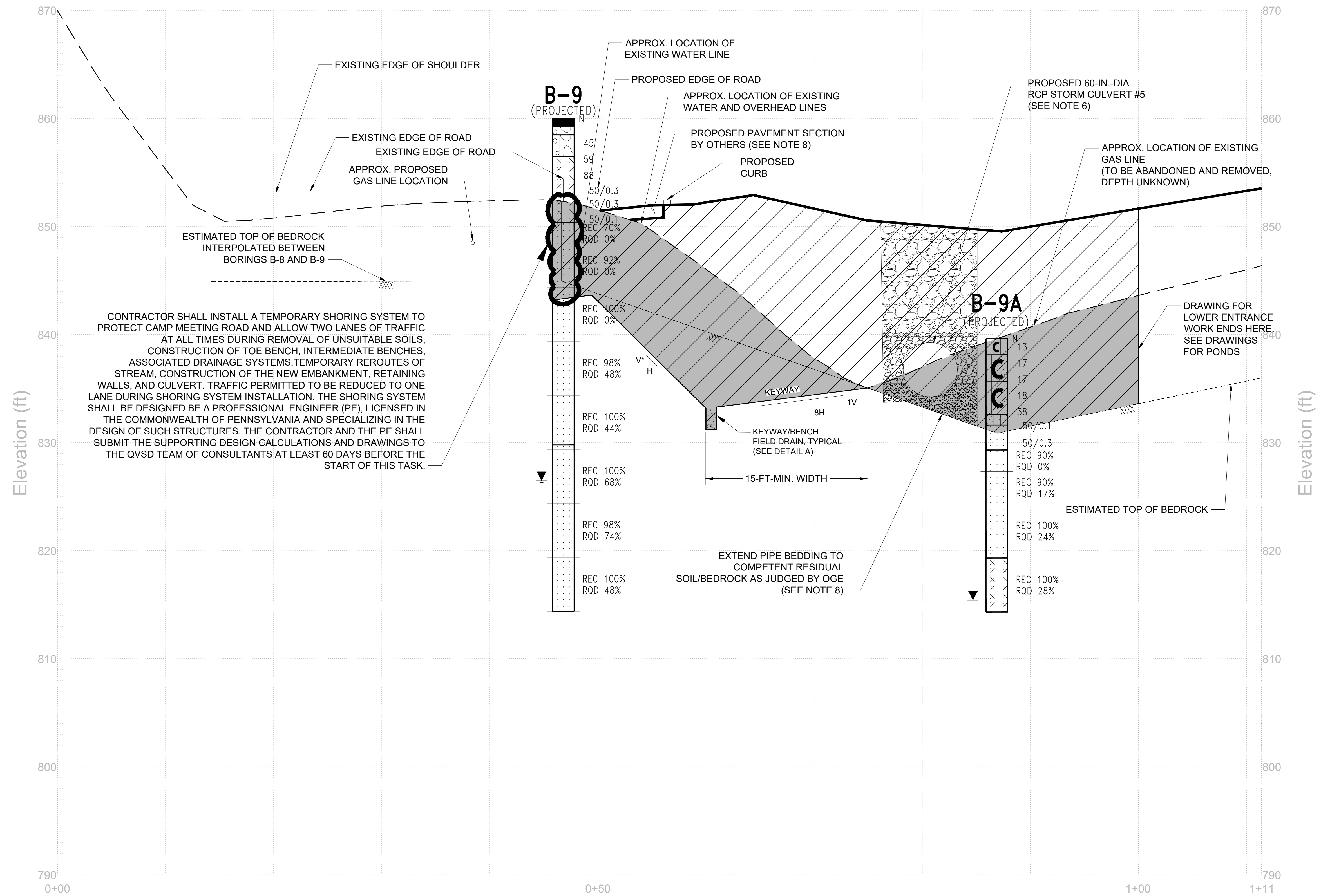
GARVIN BOWARD BEITKO ENGINEERING, INC.
BUILT ON REPUTATION

GEOTECHNICAL CONTRUCTION DRAWINGS
NEW QUAKER VALLEY HIGH SCHOOL CAMPUS

FOR: PHILLIPS & ASSOCIATES, INC.

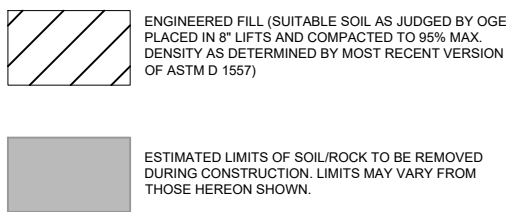
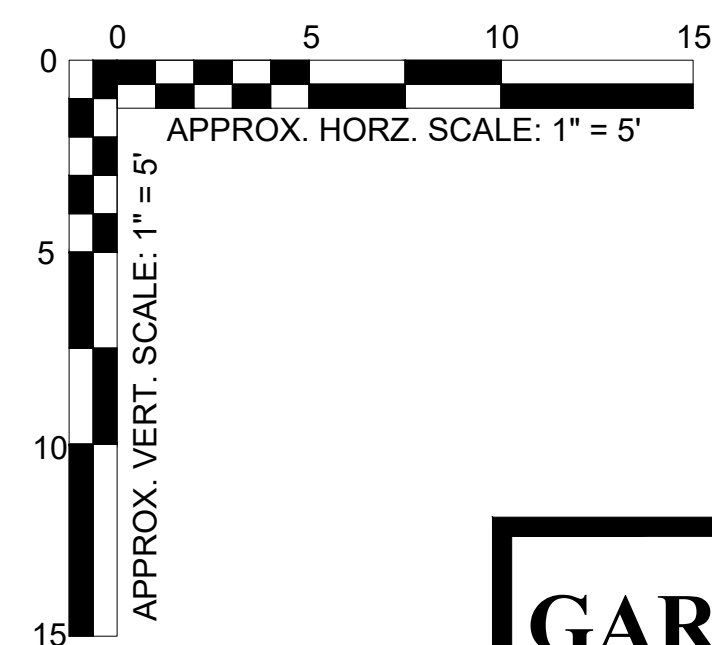
180 BILMAR DRIVE, SUITE IV
PITTSBURGH, PA 15205
PHONE: 412-922-4440

GBBE PROJECT NUMBER: 16123A	DRAWING NUMBER: G-5
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LOWER ENTRANCE CROSS-SECTION D-D

EARTHWORK LEGEND

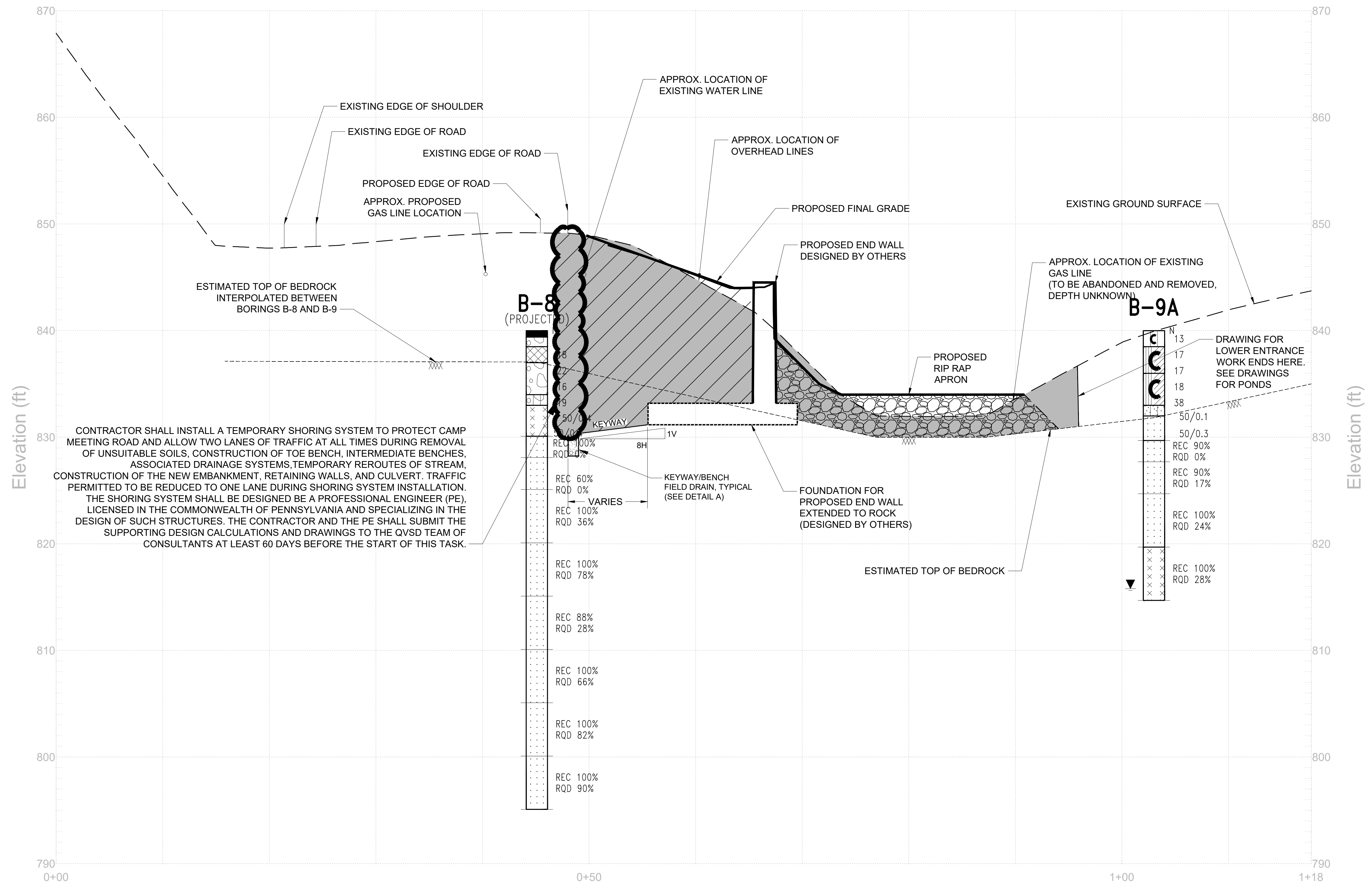


GARVIN
BOWARD BEITKO

SCALE:	AS NOTED
DATE:	08/06/2025
REVISED:	08/27/2025
DRAWN BY:	MAW
APPROVED BY:	DAB

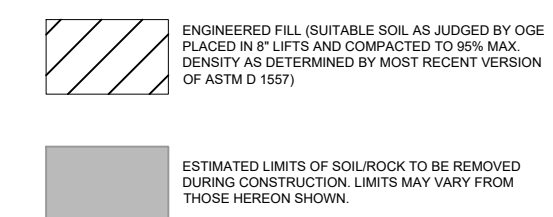
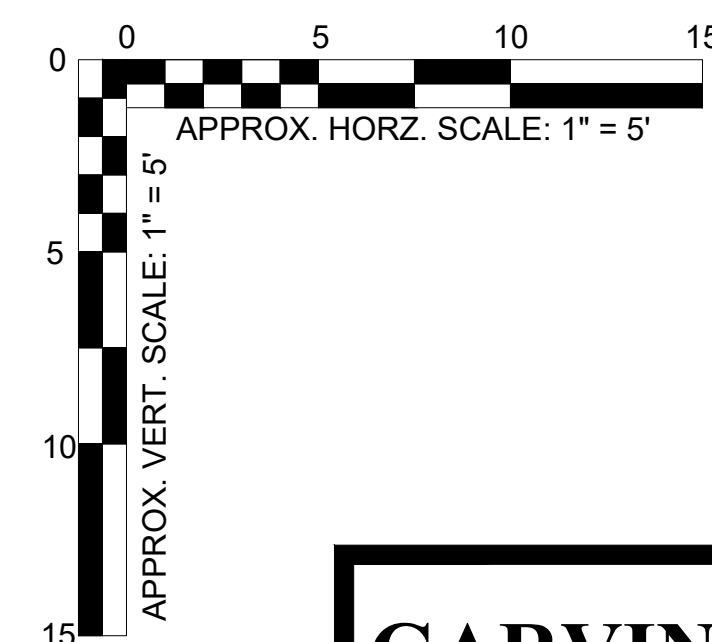
GARVIN BOWARD BEITKO ENGINEERING, INC. BUILT ON REPUTATION	
GEOTECHNICAL CONSTRUCTION DRAWINGS NEW QUAKER VALLEY HIGH SCHOOL CAMPUS	
FOR:	PHILLIPS & ASSOCIATES, INC.

180 BILMAR DRIVE, SUITE IV PITTSBURGH, PA 15205 PHONE: 412-922-4440	GBBE PROJECT NUMBER: 16123A	DRAWING NUMBER: G-6
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LOWER ENTRANCE CROSS-SECTION E-E

EARTHWORK LEGEND



GARVIN

BOWARD BEITKO

SCALE:	AS NOTED
DATE:	08/06/2025
REVISED:	08/27/2025
DRAWN BY:	MAW
APPROVED BY:	DAB

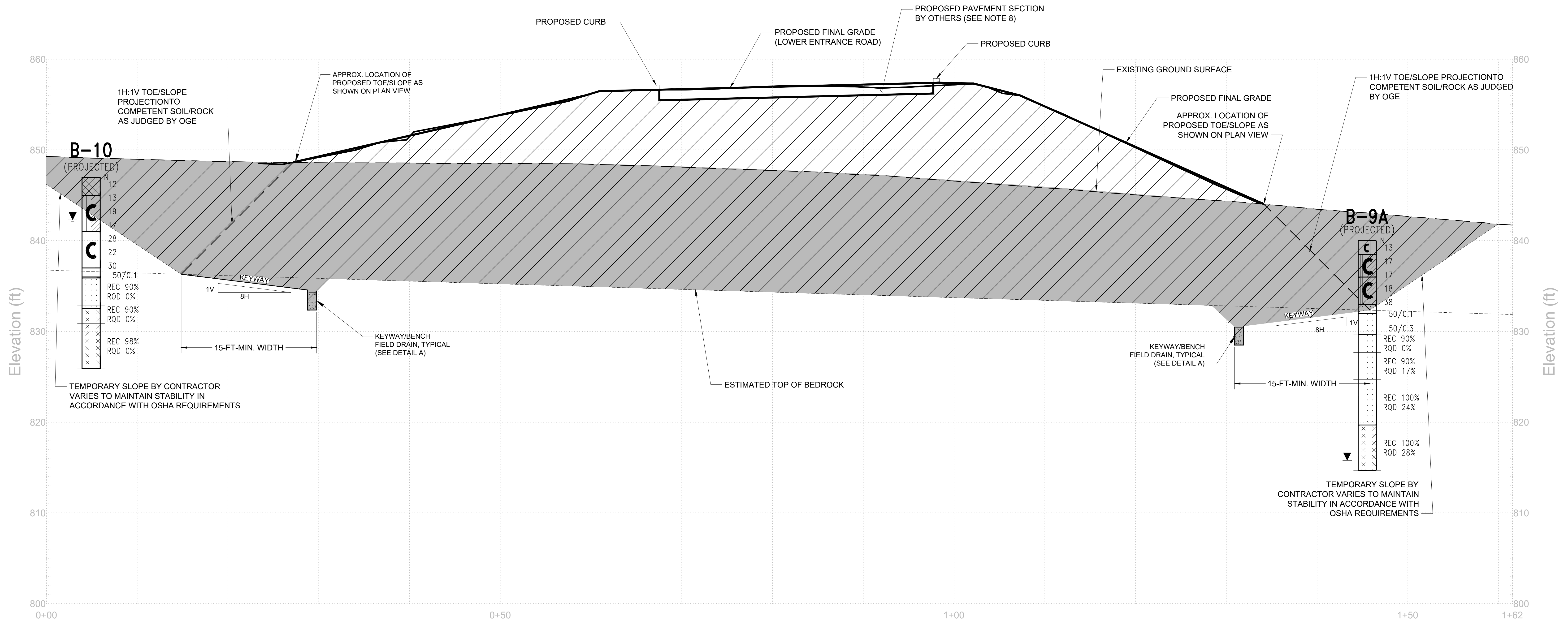
GARVIN BOWARD BEITKO ENGINEERING, INC.
BUILT ON REPUTATION

GEOTECHNICAL CONSTRUCTION DRAWINGS
NEW QUAKER VALLEY HIGH SCHOOL CAMPUS

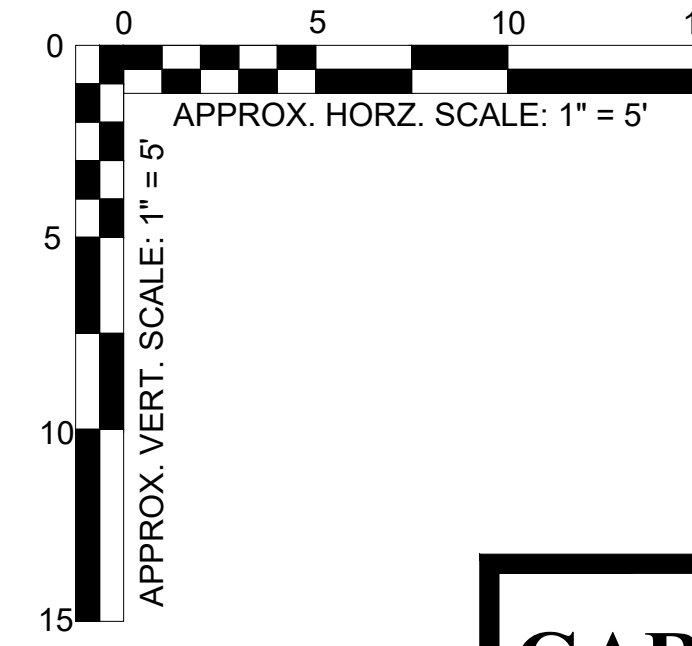
FOR: **PHILLIPS & ASSOCIATES, INC.**

180 BILMAR DRIVE, SUITE IV
PITTSBURGH, PA 15205
PHONE: 412-922-4440

GBBE PROJECT NUMBER: **16123A**
DRAWING NUMBER: **G-7**



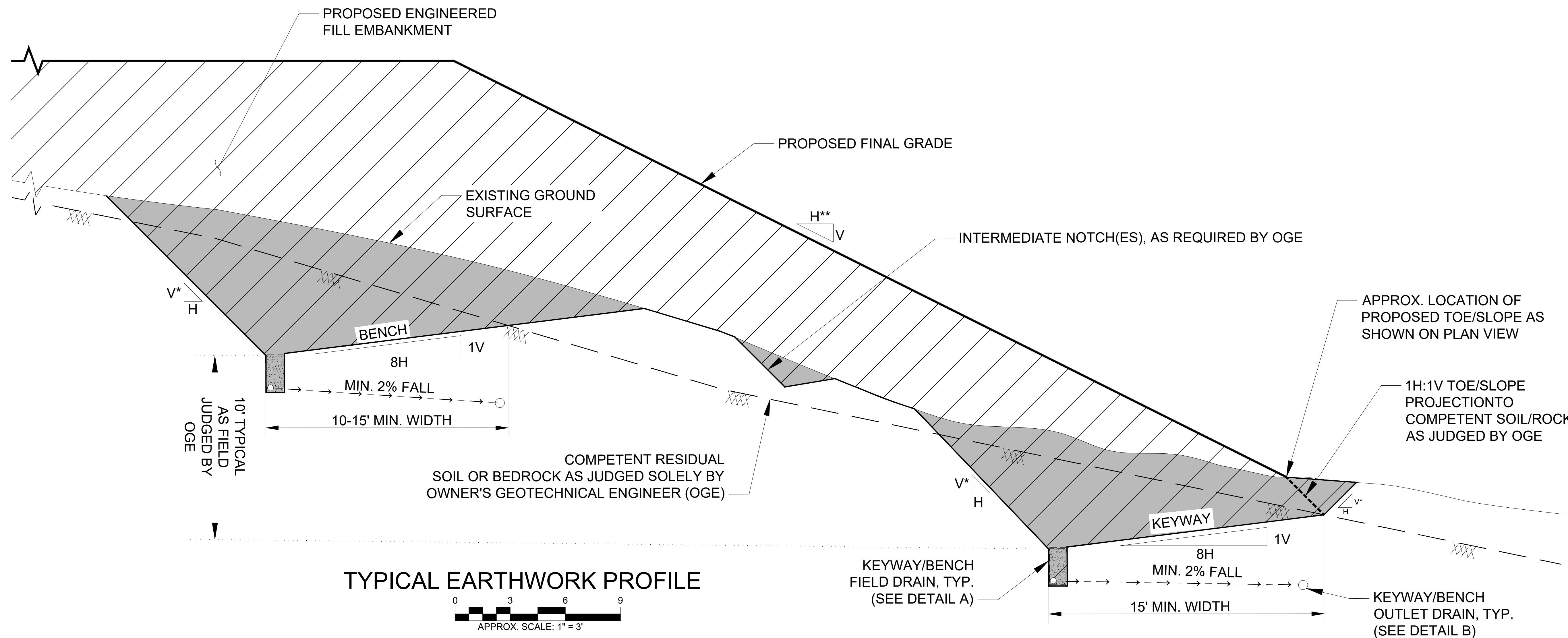
LOWER ENTRANCE CROSS-SECTION F-F



EARTHWORK LEGEND

- ENGINEERED FILL (SUITABLE SOIL AS ADJUDGED BY OGE PLACED IN 8" LIFTS AND COMPACTED TO 98% MAX. DENSITY AS DETERMINED BY MOST RECENT VERSION OF ASTM D 1557)
- ESTIMATED LIMITS OF SOIL/ROCK TO BE REMOVED DURING CONSTRUCTION. LIMITS MAY VARY FROM THOSE HEREIN SHOWN.

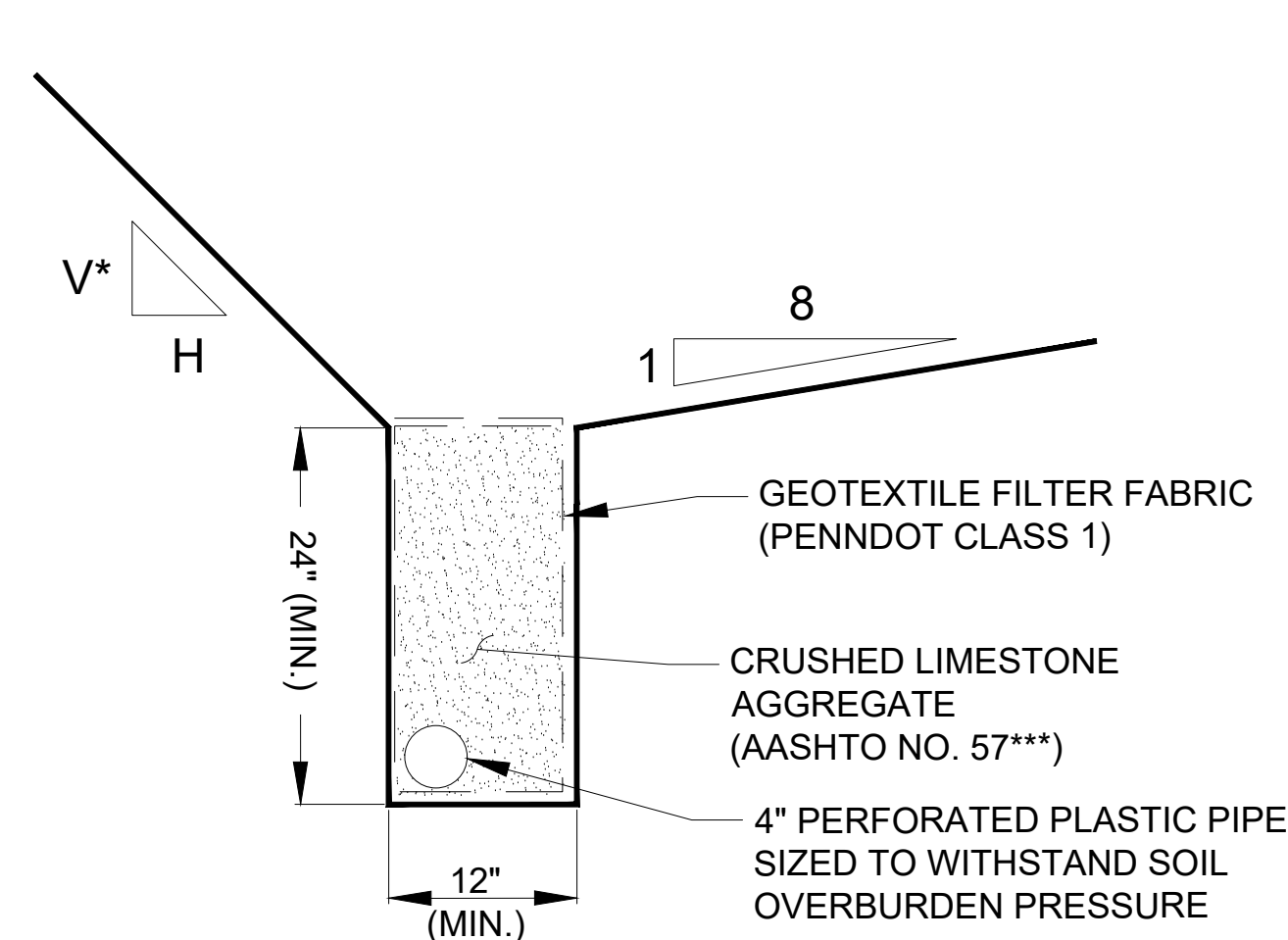
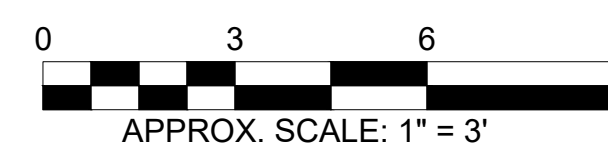
GARVIN BOWARD BEITKO	SCALE:	AS NOTED	GARVIN BOWARD BEITKO ENGINEERING, INC.		180 BILMAR DRIVE, SUITE IV PITTSBURGH, PA 15205 PHONE: 412-922-4440
	DATE:	08/06/2025	BUILT ON REPUTATION		
	REVISED:	08/27/2025	GEOTECHNICAL CONSTRUCTION DRAWINGS		
	DRAWN BY:	MAW	NEW QUAKER VALLEY HIGH SCHOOL CAMPUS		
	APPROVED BY:	DAB	FOR:	PHILLIPS & ASSOCIATES, INC.	GBBE PROJECT NUMBER: 16123A



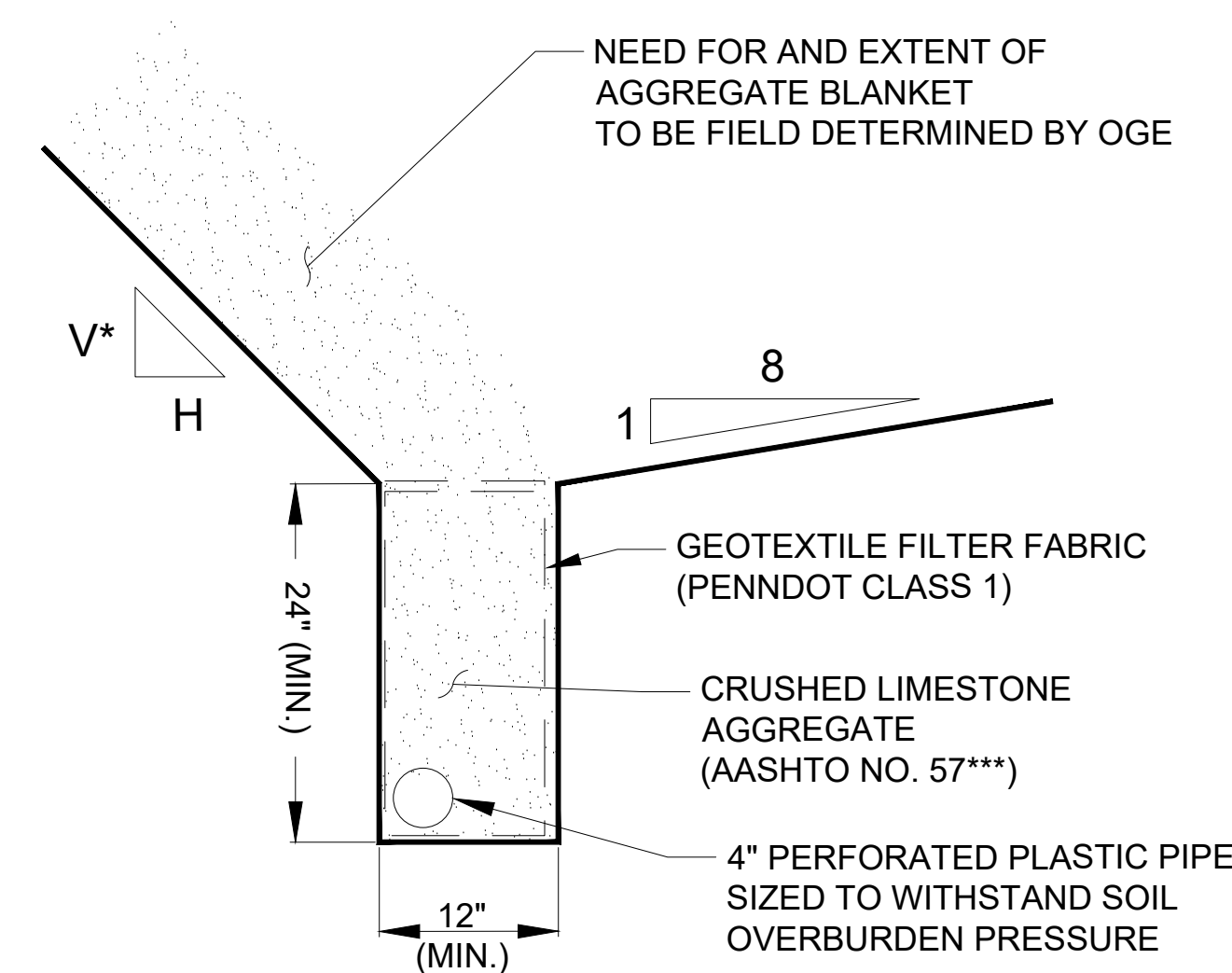
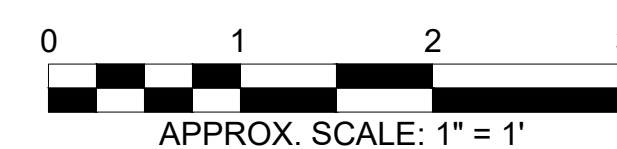
EARTHWORK LEGEND

- ENGINEERED FILL (SUITABLE SOIL AS JUDGED BY OGE PLACED IN 8" LIFTS AND COMPACTED TO 90% MAX. DENSITY AS DETERMINED BY MOST RECENT VERSION OF ASTM D 1557)
- ESTIMATED LIMITS OF SOIL/ROCK TO BE REMOVED DURING CONSTRUCTION. LIMITS MAY VARY FROM THOSE HEREON SHOWN.

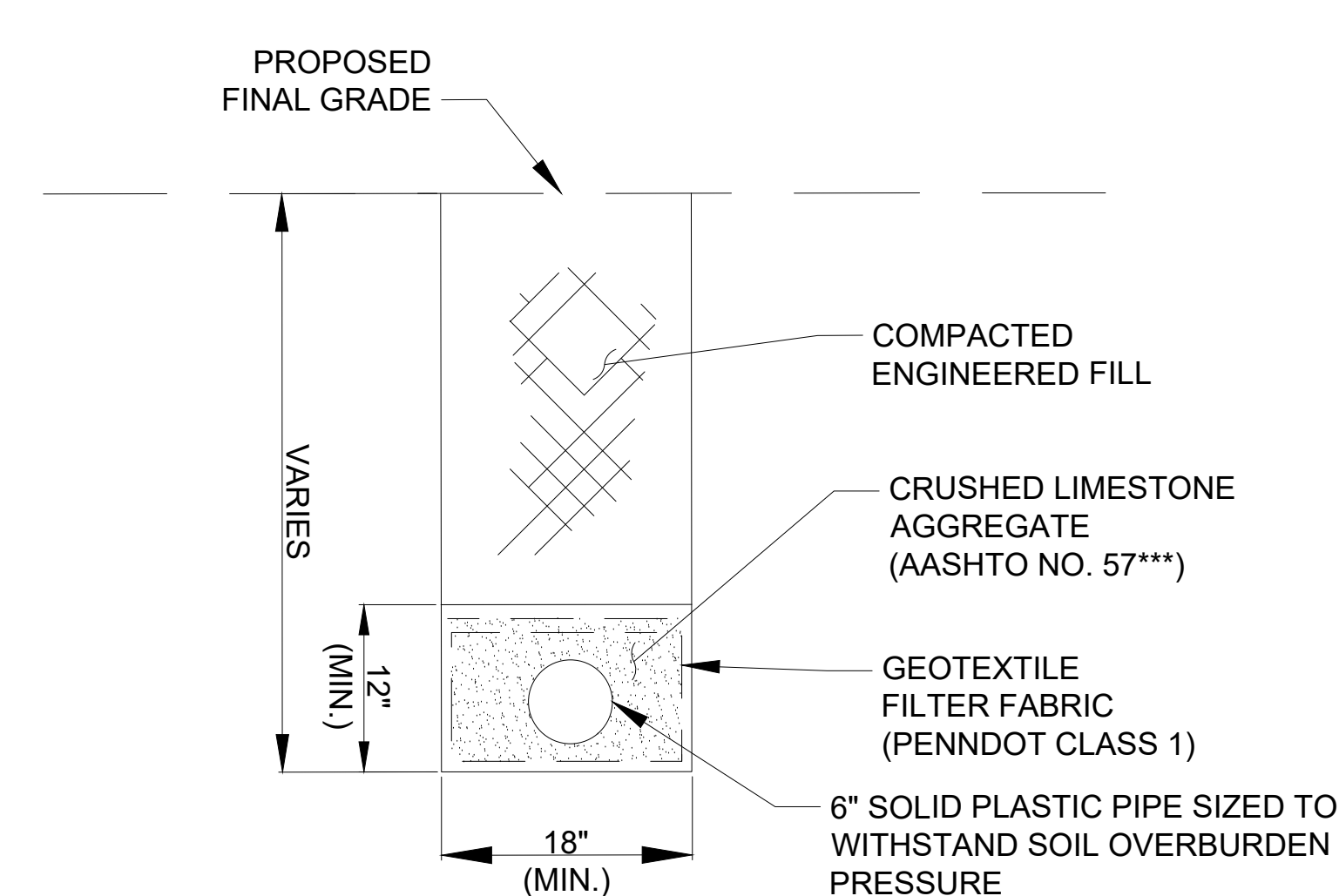
TYPICAL EARTHWORK PROFILE



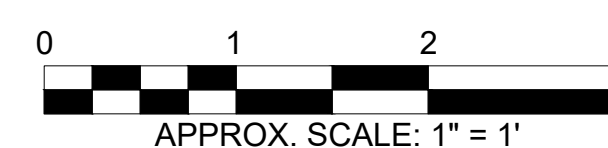
DETAIL A
TYPICAL KEYWAY/BENCH
FIELD DRAIN



ALTERNATE DETAIL A
TYPICAL KEYWAY/BENCH
FIELD DRAIN WITH
AGGREGATE BLANKET



DETAIL B
TYPICAL KEYWAY/BENCH
COLLECTOR/OUTLET DRAIN****



*TEMPORARY SLOPE BY CONTRACTOR VARIES TO MAINTAIN STABILITY IN ACCORDANCE WITH OSHA REQUIREMENTS

**VARIES BETWEEN 2H:1V AND 3H:1V

***MEETING PENNDOT DURABILITY REQUIREMENTS FOR TYPE C COARSE AGGREGATE

****KEYWAY/BENCH OUTLET DRAINS SHALL SPACED EVERY 50 FEET.

GARVIN

BOWARD BEITKO

SCALE:	AS NOTED
DATE:	08/06/2025
REVISED:	08/27/2025
DRAWN BY:	MAW
APPROVED BY:	DAB

GARVIN BOWARD BEITKO ENGINEERING, INC.
BUILT ON REPUTATION

GEOTECHNICAL CONSTRUCTION DRAWINGS
NEW QUAKER VALLEY HIGH SCHOOL CAMPUS

FOR: **PHILLIPS & ASSOCIATES, INC.**

GBBE PROJECT NUMBER:
16123A

DRAWING NUMBER:
G-9

180 BILMAR DRIVE, SUITE IV
PITTSBURGH, PA 15205
PHONE: 412-922-4440

TEST BORING RECORDS



Test Boring Record

B-8

Project Number: 16123A		Project Name: Proposed QVSD High School				Sheet: 1 of 2					
Project Location: Edgeworth, Leet Twp., Leetsdale, PA		Start Date: 10/4/24				Water Level During Drilling:					
Drilled By: W. Ewing (Test Boring Services, Inc.)		Completion Date: 10/4/24				Water Level Before Coring:					
Drilling Rig: Acker Rebel Track Mounted Rig		Weather: Sunny, 50s				Water Level Upon Completion:					
Drilling Method: 3 1/4 HSA & NQ2 Core		Logged By: C. Ledney				Water Level After 24 Hours:					
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit	
839.4'		ASPHALTIC CONCRETE	0.6								
		SUBBASE (slag)	1.5								
		FILL sampled as brown sand, sandstone fragments, and slag, little silt, medium dense, dry	3.0								
		(FILL)									
834		Brown SANDSTONE FRAGMENTS (GP), some sand, iron stained, medium dense, dry	5	S-1	100	18-11-7 (18)					
		(RESIDUAL)		S-2	100	16-13-9 (22)					
		Gray SILTSTONE FRAGMENTS (GM), some sand, little silt, medium dense, dry	6.0	S-3	100	10-9-7 (16)					
		(RESIDUAL)	7.0	S-4	100	6-7-12 (19)					
		Gray SILTSTONE SAPROLITE, relic bedding, iron stained, dry		S-5	100	16-36-50/0.4					
		(RESIDUAL)	9.9	S-6	100	22-50/0.4					
829		Gray SANDSTONE, hard, extensive iron staining, medium bedded	10	R-1	100	(0)					
		-slightly to moderately weathered and slightly broken from 9.9' to 12.0'									
		-lost water return at 12'									
		-clay seam from 13.4' to 13.6'									
824			15	R-2	60	(0)					
		-slightly weathered from 12.0' to 22.0'									
819		-vertical fracture from 19.0' to 19.9'	20	R-3	100	(26)					
				R-4	100	(78)					
814		-vertical fracture from 24.5' to 24.9'	25	R-5	88	(28)					
				R-6	100	(66)					
809		-massive from 30.0' to 44.9'	30								
804			35								

(Continued Next Page)



Test Boring Record

B-8

Project Number: 16123A			Project Name: Proposed QVSD High School			Sheet: 2 of 2				
Project Location: Edgeworth, Leet Twp., Leetsdale, PA			Start Date: 10/4/24			☑ Water Level During Drilling:				
Drilled By: W. Ewing (Test Boring Services, Inc.)			Completion Date: 10/4/24			☑ Water Level Before Coring:				
Drilling Rig: Acker Rebel Track Mounted Rig			Weather: Sunny, 50s			☑ Water Level Upon Completion:				
Drilling Method: 3 1/4 HSA & NQ2 Core			Logged By: C. Ledney			☑ Water Level After 24 Hours:				
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit
				R-7	100 (82)					
799			40							
				R-8	100 (90)					
794		-clay seam at 43.3'	44.9							
		Boring Terminated at 44.9 feet								
789			50							
784			55							
779			60							
774			65							
769			70							



Test Boring Record

B-9

Project Number: 16123A			Project Name: Proposed QVSD High School			Sheet: 1 of 2					
Project Location: Edgeworth, Leet Twp., Leetsdale, PA			Start Date: 10/7/24			Water Level During Drilling:					
Drilled By: W. Ewing (Test Boring Services, Inc.)			Completion Date: 10/7/24			Water Level Before Coring:					
Drilling Rig: Acker Rebel Track Mounted Rig			Weather: Sunny			Water Level Upon Completion: 33.5'					
Drilling Method: 3 1/4 HSA & NQ2 Core			Logged By: C. Ledney			Water Level After 24 Hours:					
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit	
859.8'		ASPHALTIC CONCRETE	0.7								
		SUBBASE (slag)	1.5								
		Light brown clayey SILT to silty CLAY (CL/ML), little rock fragments, trace sand, iron stained, hard, dry (RESIDUAL)	3.5								
855		Light brown SILTSTONE SAPROLITE, relic bedding, iron stained, very dense, dry	5	S-1	87	17-21-24 (45)					
				S-2	100	15-26-33 (59)					
				S-3	100	21-43-45 (88)					
				S-4	100	13-27-50/0.3'					
				S-5	100	30-50/0.3'					
		(RESIDUAL)	9.6								
850			Gray silty SANDSTONE, slightly weathered, hard, medium bedded, extensive iron staining, slightly broken	10	S-6	100	30-50/0.1'				
				R-1	70 (0)						
				R-2	93 (0)						
845			15								
				R-3	100 (0)						
840			20								
		-subvertical fracture from 23.6' to 23.9'		R-4	98 (48)						
835			25								
		-subvertical fracture from 25.7' to 26.1'		R-5	100 (44)						
830		Light gray SANDSTONE, fresh, hard, minor iron staining, micaceous, massive	30.2	R-6	100 (68)						
825			35								

(Continued Next Page)



Test Boring Record

B-9

Project Number: 16123A		Project Name: Proposed QVSD High School		Sheet: 2 of 2						
Project Location: Edgeworth, Leet Twp., Leetsdale, PA		Start Date: 10/7/24		Water Level During Drilling:						
Drilled By: W. Ewing (Test Boring Services, Inc.)		Completion Date: 10/7/24		Water Level Before Coring:						
Drilling Rig: Acker Rebel Track Mounted Rig		Weather: Sunny		Water Level Upon Completion: 33.5'						
Drilling Method: 3 1/4 HSA & NQ2 Core		Logged By: C. Ledney		Water Level After 24 Hours:						
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit
		-vertical fracture from 35.7' to 36.5'		R-7	98 (74)					
820			40							
				R-8	100 (48)					
815			45							
		Boring Terminated at 45.6 feet	45.6							
810			50							
805			55							
800			60							
795			65							
790			70							



Test Boring Record

B-9A

Project Number: 16123A

Project Location: Edgeworth, Leet Twp., Leetsdale, PA

Drilled By: W. Ewing (Test Boring Services, Inc.)

Drilling Rig: Acker Rebel Track Mounted Rig

Drilling Method: 3 1/4 HSA & NQ2 Core

Project Name: Proposed QVSD High School

Start Date: 9/23/24

Completion Date: 9/23/24

Weather: Overcast, 70's

Logged By: C. Ledney

Sheet: 1 of 1

Water Level During Drilling:

Water Level Before Coring:

Water Level Upon Completion: 24.2'

Water Level After 24 Hours:

Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit
839.6'		Brown to gray SILT (ML), some sand, trace rock fragments, stiff, dry	1.5	S-1	100	3-7-6 (13)				
		(COLLUVIAL)		S-2	100	8-10-7 (17)				
		Brown, some red clayey SILT to silty CLAY (CL/ML), trace sand, very stiff, dry	4.0	S-3	100	10-7-10 (17)				
835			(COLLUVIAL)	5	S-4	100	6-6-12 (18)			
		Yellow-brown clayey SILT to silty CLAY (CL/ML), very to extremely stiff, dry	7.0	S-5	100	12-18-20 (38)				
		(COLLUVIAL)	8.0	S-6	100	16-24-50/0.1'				
		Light brown SAND (SM), some sandstone fragments, little silt, dense, dry								
		(RESIDUAL)	10.3	S-7	92	13-32-50/0.3'				
830			Light brown SANDSTONE SAPROLITE, relic bedding, dry		R-1	90	(0)			
		(RESIDUAL)			R-2	90	(17)			
			15							
825				R-3	100	(24)				
			20							
820			Gray SILTSTONE, fresh, medium hard, medium bedded	20.3						
					R-4	100	(28)			
		-lost water return at 22.5'	25.3							
815										
			Boring Terminated at 25.3 feet							
810				30						
805				35						

BOREING LOG - DOUGS BETRO - GERMING DOT - 16022 13-48 - 10.0 FT - 1.5 SHAHARED DOCUMENT SIGN - NEW/PROJECTS/2021/16123A QVSD.GPJ



Test Boring Record

B-10

Project Number: 16123A			Project Name: Proposed QVSD High School			Sheet: 1 of 1				
Project Location: Edgeworth, Leet Twp., Leetsdale, PA			Start Date: 9/16/24			✓ Water Level During Drilling:				
Drilled By: W. Ewing (Test Boring Services, Inc.)			Completion Date: 9/16/24			✓ Water Level Before Coring:				
Drilling Rig: Acker Rebel Track Mounted Rig			Weather: Sunny, 80's			✓ Water Level Upon Completion: 4.7'				
Drilling Method: 3 1/4 HSA & NQ2 Core			Logged By: C. Ledney			✓ Water Level After 24 Hours:				
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit
847		FILL sampled as light brown sandy silt, some siltstone fragments, stiff, dry to moist	2.0	S-1	100	3-4-8 (12)				
		(FILL)			S-2	100				
		Brown clayey SILT to silty CLAY (CL/ML), trace sand, some iron staining, stiff to very stiff, moist	5	S-3	100	12-9-10 (19)				
		(COLLUVIAL)			S-4	80				
842		Light brown SILT (ML), some sand, little rock fragments, iron stained, very stiff, dry to moist	6.0	S-5	100	8-12-16 (28)				
		(COLLUVIAL)			S-6	100				
			10.0	S-7	100	12-16-14 (30)				
837		Gray SHALE SAPROLITE, relic bedding, iron staining, dry (RESIDUAL)			S-8	100				
		Gray SANDSTONE, slightly to moderately weathered, hard, extensive iron staining, highly broken, some small clay seams, thinly bedded	14.5	R-1	90 (0)					
832		Gray SILTSTONE, fresh, hard, slightly broken, thinly to medium bedded			R-2	90 (0)				
		20	R-3	98 (0)						
827										
		Boring Terminated at 21.1 feet	21.1							
822			25							
817			30							
812			35							



Test Boring Record

GBB-31

Project Number: 16123		Project Name: Tull Property		Sheet: 1 of 1							
Project Location: Edgeworth, Leet Twp., Leetsdale, PA		Start Date: 06/13/17		Water Level During Drilling:							
Drilled By: K. Erickson (Test Boring Services, Inc.)		Completion Date: 06/13/17		Water Level Before Coring:							
Drilling Rig: CME 45C Track Mounted		Weather: Sunny, 75°		Water Level Upon Completion: 17.9							
Drilling Method: 3 1/4 HSA & NQ2 Core		Logged By: M. Walker, E.I.T.		Water Level After 24 Hours: 8.3'							
Ground Elevation (ft)	Graphic Log	Material Description	Depth (ft)	Sample Type Number	Recovery % (ROD)	Blow Counts (N Value)	% < #200 Sieve	Water Content (%)	Liquid Limit	Plastic Limit	
853'		Brown silty CLAY (CL), some sandstone fragments, trace sand, soft, dry		S-1	67	1-2-1 (3)		16.9			
		(COLLUVIAL)	3.0	S-2	33	4-5-4 (9)		10.6			
848		Light brown DECOMPOSED SANDSTONE (GW) (possible boulder) sampled as SANDSTONE FRAGMENTS, few clay, loose, dry	5	S-3	100	4-5-6 (11)		14.8			
		(COLLUVIAL)	6.0								
		Light gray to medium gray DECOMPOSED sandy SILTSTONE sampled as siltstone fragments, trace red clay in spoon, dense to very dense, dry	9.0	S-4	53	12-15-21 (36)		4.4			
843		(COLLUVIAL)	12.0	S-5	100	36-50-0.4'		3.7			
		Medium gray CARBONACEOUS fine to very fine coarse-grained SANDSTONE to SILTSTONE, slightly weathered to fresh, very broken to moderately broken, medium hard	15	R-1	81 (0)						
838		MOHS 2.5 at 15.7'									
			20	R-2	100 (0)						
833		Light gray and brown medium-grained SANDSTONE, few carbonaceous laminations in light gray portion of rock core, slightly weathered, blocked to massive, medium hard to hard, limy inclusions	22.0	R-3	100 (56)						
828		MOHS 7.5 at 23.0'	25								
				R-4	100 (84)						
823			30								
				R-5	100 (80)						
			33.0								
818	Boring Terminated at 33.0 feet. Ground Surface Elevations and Coordinates Surveyed and Provided by Phillips & Associates, Inc.		35								

16123A - NEW QUAKER VALLEY HIGH SCHOOL CAMPUS
 LOWER ENTRANCE ROAD
 SLOPE STABILITY - CROSS-SECTION C-C

Method Name	Min FS
Bishop simplified	1.5

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (°)	Water Surface	Ru Value
Eng Fill	Blue	135	Mohr-Coulomb	25	33	None	0
Residual	Orange	130	Mohr-Coulomb	100	35	None	0
Bedrock	Gray	140	Mohr-Coulomb	500	40	None	0

