

GENERAL NOTE:

1. SITE ADDRESS: 31-33 MOREHALL ROAD MALVERN, PA 19360 UPI42-4-269
- OWNER: HORATIO REALTY TRUST 400 DEVON PARK DRIVE WAYNE, PA 19087
- APPLICANT: THE VANGUARD GROUP 400 DEVON PARK DRIVE WAYNE, PA 19087
2. THE PURPOSE OF THIS PLAN IS THE PROPOSED CONSTRUCTION OF TWO OFFICE BUILDINGS WITH RELATED SITE IMPROVEMENTS (INCLUDING BUT NOT LIMITED TO EXPANDING THE EXISTING PARKING LOT), PHASE 1 OFFICE BUILDING IS 240,000 SQUARE FEET AND PHASE 2 OFFICE BUILDING IS 240,000 SQUARE FEET.
3. THIS SITE IS CURRENTLY ZONED D98P - OFFICE/BUSINESS PARK DISTRICT BY THE TOWNSHIP OF EAST WHITELAND ZONING MAP OR CONING REZONING INFORMATION PLEASE REFER TO THE ZONING CODE OF THE TOWNSHIP OF EAST WHITELAND.
4. THE EXISTING FEATURES WERE OBTAINED BY SURVEY BY AERCO, INC., GIS, AND AERIAL PHOTOGRAPHS. A WETLANDS DELINEATION SURVEY WAS ALSO PERFORMED ON JUNE 26, 2017.
5. BENCHMARK: THE BENCHMARK FOR THE SITE IS AN INLET LOCATED NEAR THE SOUTHEAST CORNER OF THE TRAFFIC CIRCLE AT BRENNAN BOULEVARD WITH GREAT ELEVATION 321.86. THE VERTICAL DATUM USED WAS NAVD83.
6. BY GRAPHIC PLOTTING ONLY, SUBJECT PARCEL AREA IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 50-YEAR FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP PANEL NO. 150 OF 385, COMMUNITY MAP NO. 4202920160F WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 20, 2006. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
7. UNLESS SPECIFICALLY STATED OR SHOWN HEREON FOR THIS CONSTRUCTION, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:
 - A. RIGHTS OR INTERESTS OF THE UNITED STATES OF AMERICA OR COMMONWEALTH OF PENNSYLVANIA OVER LANDS NOW OR HERETOFORE FLOODED BY TIDEWATER, BUT NOT LONGER VISIBLE OR PLANS CONTAINING ANY ANIMAL, MARINE, OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OF ANY FEDERAL, STATE OR LOCAL AGENCY.
 - B. BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - C. ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING, BUT NOT LIMITED TO MINERAL OR RIGHTS TO LOCATE OR DRILL FOR OIL, GAS, COAL, OR ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN-MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
8. THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE. IN ADDITION IN THE AREA OF CONSTRUCTION FOR NEW BUILDING A UTILITY LOCATOR SURVEY WAS PERFORMED ON JUNE 27, 2017.
9. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
10. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
11. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, ASSIGNED SERIAL NUMBER 20171320890 IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 121 OF 2008 ENTITLED "UNDERGROUND UTILITY LINE PROTECTION LAW" (89C-246-1776). THIS WAS PERFORMED ON MAY 12TH, 2017.
12. IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 1996, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-246-1776), A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
13. THE SITE IS SERVED BY PUBLIC SEWER AND WATER SERVICE.
14. ALL RADII SHOWN ARE 4 FT UNLESS OTHERWISE SPECIFIED.
15. THE ENTIRE TRACT IS LOCATED WITHIN THE LITTLE VALLEY CREEK WATERSHED, WHICH IS CLASSIFIED AS EXCEPTIONAL VALUE (EV) BY TITLE 25, CHAPTER 93 OF THE PENNSYLVANIA CODE.
16. WITHIN 90 DAYS OF SUBSTANTIAL COMPLETION, THE DEVELOPER SHALL FILE AS-BUILT PLANS AND PROFILE SHEETS TO THE TOWNSHIP, AS REQUIRED BY THE CODE.
17. A PRE-CONSTRUCTION MEETING SET UP WITH THE TOWNSHIP WILL BE REQUIRED BEFORE ANY CONSTRUCTION COMMENCES.

GENERAL CONSTRUCTION AND GRADING NOTES:

1. ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL AND LOCAL CODES AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER/DEVELOPER.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS, AS APPLICABLE:
 - A. PENNDOT SPECIFICATION, PUB 408/2007 OR LATEST REVISION.
 - B. PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, PUBLICATION 72, LATEST REVISED 5/1988 OR LATEST REVISION.
 - C. PENNDOT HANDBOOK OF APPROVED SIGNS, PUB 236/2006 OR LATEST REVISION.
 - D. AMERICANS WITH DISABILITIES ACT OF JULY 1990 AS AMENDED.
 - E. THE PENNSYLVANIA CLEAN STREAM LAW (35 P.S. SECTION 691.1 ET. SEQ.).
 - F. REGULATIONS OF PA CODE TITLE 25, CHAPTER 102.
 - G. EAST WHITELAND TOWNSHIP STANDARDS AND SPECIFICATIONS (LATEST EDITION).

IN EVENT OF A CONFLICT AMONG THESE REQUIREMENTS AND/OR PLANS, THE MORE RESTRICTIVE REGULATION SHALL APPLY OR A CLARIFICATION SHALL BE OBTAINED FROM THE ENGINEER.

3. THE CONTRACTOR SHALL BE REQUIRED TO REVIEW AND ABIDE BY SPECIFICATIONS OF THE PLAN AND ALL SUPPORTING DOCUMENTS, PERMITS, AND REPORTS FOR THIS SITE, INCLUDING BUT NOT LIMITED TO:
 - EROSION AND SEDIMENTATION CONTROL PLAN
 - POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.
4. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERROR THEY DISCOVER IN THE PLANS.
5. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE OF THE WORK TO BE UNACCEPTABLE.
6. UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS THE EXPLICIT RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE PROJECT SCHEDULE INCLUDES THE NECESSARY RELOCATIONS. THE CONTRACTOR WILL NOT BE PAID ADDITIONALLY FOR THIS COORDINATION. THE CONTRACTOR SHOULD SEEK ASSISTANCE FROM ALL UTILITY COMPANIES TO LOCATE AND PROTECT THEIR FACILITIES. IF CONFLICTS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND CONSULT THE ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
7. ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER AND TENANT.
8. TRAFFIC CONTROL METHODS, SUCH AS BARRICADES, SUFFICIENT LIGHTS, SIGNS, ETC., THAT MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION.
9. CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES AROUND THE WORK AREA.
10. HIGH INTENSITY LIGHTING FACILITIES SHALL BE SO ARRANGED THAT THE SOURCE OF ANY LIGHT IS CONCEALED FROM PUBLIC VIEW AND FROM ADJACENT RESIDENTIAL PROPERTY AND DOES NOT INTERFERE WITH TRAFFIC.
11. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES AROUND AND TO ALL BUILDINGS NEAR CONSTRUCTION. IN TIME OF RAIN OR MUD, ROADS SHALL BE ABLE TO CARRY A FIRE TRUCK BY BEING PAVED OR HAVING A CRUSHED STONE BASE, ETC., WITH A MINIMUM WIDTH OF 20 FEET. ACCESS TO BUILDINGS THAT HAVE SPRINKLER OR STAIRPIPE SYSTEMS SHALL BE WITHIN 40 FEET OF THE FIRE DEPARTMENT CONNECTOR. (NFPA 1141 3-1)
12. BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUMS FOR RELATIVELY DRY, STABLE EARTH CONDITIONS. ADDITIONALLY BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES AND WET AREAS. CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO PROVIDE SUCH ADDITIONAL BEDDING AS MAY BE REQUIRED TO PROPERLY CONSTRUCT THE WORK.
13. BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D988). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" IN COMPACTED FILL THICKNESS. A REPORT FROM A GEOTECHNICAL ENGINEER MAY BE REQUIRED BY THE PUBLIC WORKS INSPECTOR. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. THE CONTRACTOR WILL ENSURE THAT POSITIVE AND ADEQUATE DRAINAGE IS MAINTAINED AT ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT BE LIMITED TO REPLACING OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR REGARDING AS REQUIRED BY THE ENGINEER. EXCEPT FOR THOSE DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS, NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO COMPLY WITH THIS REQUIREMENT.
15. THE CONTRACTOR SHALL PROVIDE ANY AND ALL EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL TESTS. ALL ARRANGEMENTS AND SCHEDULING FOR THE TESTING SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
16. SOIL TESTING AND ON-SITE INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER. A GEOTECHNICAL ENGINEER IS REQUIRED TO INSPECT, TEST AND CERTIFY THE COMPACTION OF ALL LOAD BEARING FILLS. THE GEOTECHNICAL ENGINEER SHALL PROVIDE COPIES OF TEST REPORTS TO THE CONTRACTOR, THE OWNER AND THE OWNER'S REPRESENTATIVE AND SHALL PROMPTLY NOTIFY THE OWNER, HIS REPRESENTATIVE AND THE CONTRACTOR, SHOULD WORK PERFORMED BY THE CONTRACTOR FAIL TO MEET THESE SPECIFICATIONS.
17. ALL PERMITS MUST BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.
18. ALL PAVEMENT MARKINGS ON PRIVATE PROPERTY SHALL CONFORM TO CURRENT MUTCD STANDARDS.
19. ARCHITECT TO PROVIDE DETAIL FOR ALL EARTH ACTIVITY WITHIN 8" OF FINISHED FLOOR ELEVATION FOR ALL BUILDING CONSTRUCTION.

GENERAL UTILITY NOTES:

1. IN ACCORDANCE WITH PA ACT 287 (1974), AS AMENDED, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
2. UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS THE EXPLICIT RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE PROJECT SCHEDULE INCLUDES THE NECESSARY RELOCATIONS. THE CONTRACTOR WILL NOT BE PAID ADDITIONALLY FOR THIS COORDINATION.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATIONS AND DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK AND TO TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS DILIGENTLY ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THESE PLANS. HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN COMPLETELY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES FOR EXACT LOCATION AND PROTECTION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE CAUSED TO UTILITIES BY THE CONTRACTOR.
5. CONTRACTOR MUST APPLY FOR ALL UTILITY CONNECTION APPLICATIONS. CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY CONNECTION FEES FOR CONSTRUCTION. REFER TO THIS SHEET FOR AVAILABLE UTILITY COMPANY LIST.
6. CONTRACTOR MUST OBTAIN ANY REQUIRED UTILITY DETAILS FOR RECONNECTION OF EXISTING SERVICES OR NEW SERVICE AND IS RESPONSIBLE FOR THE CONSTRUCTION OF EACH NEW SERVICE PER THE APPROPRIATE UTILITY COMPANY'S SPECIFICATIONS.
7. THE LOCATION OF THE EXISTING OVERHEAD UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM FIELD OBSERVATION.
8. ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND.
9. THE CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF ALL UNDERGROUND UTILITIES AND APPURTENANCES TO MINIMIZE DISTURBANCE TO CURBING, PAVING, AND COMPACTED SUB-GRADE.
10. IF CONFLICTS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
11. ALL PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.
12. THE CONTRACTOR SHALL PROVIDE ANY AND ALL EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL TESTS. ALL ARRANGEMENTS AND SCHEDULING FOR THE TESTING SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
13. SOILS TESTING AND ON-SITE INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER. THE SOILS ENGINEER SHALL PROVIDE COPIES OF TEST REPORTS TO THE CONTRACTOR, THE OWNER AND THE OWNER'S REPRESENTATIVE AND SHALL PROMPTLY NOTIFY THE OWNER, HIS REPRESENTATIVE AND THE CONTRACTOR SHOULD WORK PERFORMED BY THE CONTRACTOR FAIL TO MEET THESE SPECIFICATIONS.
14. CONTRACTOR SHALL EXCAVATE ONLY ENOUGH TRENCH FOR WHICH PIPE CAN BE INSTALLED AND TRENCH BACKFILLED BY THE END OF EACH WORK DAY.
15. BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUMS FOR RELATIVELY DRY, STABLE EARTH CONDITIONS. ADDITIONAL BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES AND WET AREAS. CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO PROVIDE SUCH ADDITIONAL BEDDING AS MAY BE REQUIRED TO PROPERLY CONSTRUCT THE WORK.
16. BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D988). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" IN COMPACTED FILL THICKNESS. A REPORT FROM A GEOTECHNICAL ENGINEER MAY BE REQUIRED BY THE PUBLIC WORKS INSPECTOR. CORRECTION OF ANY TRENCH SETTLEMENT WITHIN A YEAR FROM THE DATE OF APPROVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. RUNOFF FROM IMPERVIOUS AREAS SHALL NOT BE DIRECTED INTO THE SANITARY SEWER NOR ONTO ADJACENT PROPERTIES.
18. ALL ON-SITE BUILDING IMPROVEMENTS SHALL CONFORM TO THE TOWNSHIP'S INTERNATIONAL BUILDING CODE.
19. THE MINIMUM DISTANCE BETWEEN THE PLACEMENT OF TREES, LIGHT POLES, ETC. AND UTILITY SERVICE LINES SHALL BE 10'.
20. ALL JOINTS ON THE STORM WATER CONVEYANCE SYSTEM SHALL BE WATERTIGHT.
21. ALL PROPOSED LIGHT FIXTURES MUST MEET IEESA FULL CUTOFF.

WATER NOTES:

1. THE WATER PROVIDER IS AQUA PENNSYLVANIA CONTACT WATER COMPANY BEFORE TAPPING THE EXISTING WATER MAIN. ALL WORK ON THE WATER DISTRIBUTION SYSTEM SHALL BE IN ACCORDANCE WITH THE TOWNSHIP STANDARDS AND SPECIFICATIONS (LATEST EDITION).
2. FIRE HYDRANT AND WATER MAINS TO BE INSTALLED AND UNDER PRESSURE BEFORE ANY COMBUSTIBLE CONSTRUCTION IS STARTED.
3. WATER LINE CONSTRUCTION SHALL BE SEQUENCED IN SUCH A MANNER AS TO MINIMIZE LOSS OF SERVICE TO ANY OTHER AUTHORITY CUSTOMER. CONTRACTOR SHALL NOTIFY THE TOWNSHIP AND THE OWNER 48 HOURS IN ADVANCE OF ANY LOSS OF SERVICE. DEPENDING UPON THE NATURE OF THE WORK, THE TOWNSHIP MAY REQUIRE THAT WORK BE COMPLETED IN THE EVENING AFTER NORMAL BUSINESS. ALL VALVES NEEDED FOR SHUT-DOWN SHALL BE OPERATED BY TOWNSHIP PERSONNEL ONLY, UNLESS OTHERWISE APPROVED.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS FOR ALL WATER SYSTEM CONSTRUCTION FOR REVIEW AND APPROVAL BY AQUA PENNSYLVANIA PRIOR TO CONSTRUCTION.
5. MINIMUM COVER OF ALL WATER MAIN AND APPURTENANCES SHALL BE FOUR FEET (4').
6. A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES BETWEEN ANY UTILITY AND THE WATER MAIN AND APPURTENANCES OF THE TOWNSHIP.
7. WATER LINE SHALL HAVE A BEDDING CONSISTENT WITH THE AQUA PENNSYLVANIA REQUIREMENTS AND SPECIFICATIONS.

SANITARY SEWER NOTES:

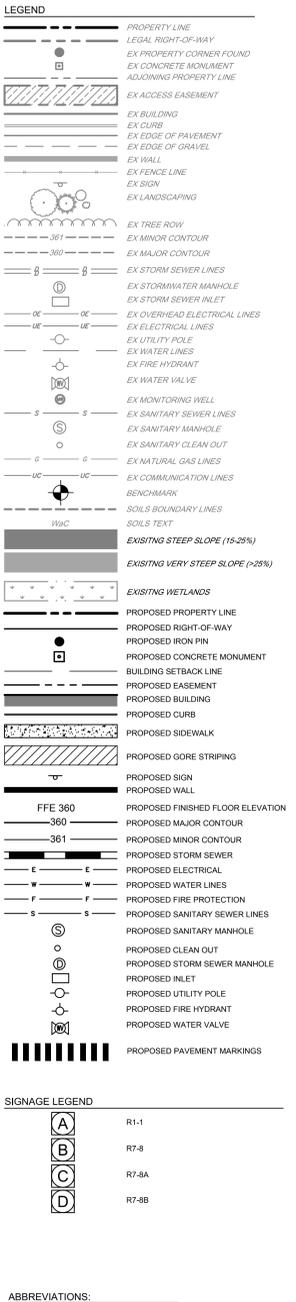
1. ALL SANITARY SEWER CONSTRUCTION MUST CONFORM TO THE TOWNSHIP OF EAST WHITELAND STANDARDS AND SPECIFICATIONS (LATEST EDITION).
2. CONTRACTOR TO FIELD VERIFY LOCATION AND INVERT OF EXISTING SANITARY SEWER MAINS AND EXISTING LATERALS FOR CONNECTION TO EXISTING SEWER SYSTEM.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS FOR ALL SANITARY SYSTEM CONSTRUCTION FOR REVIEW AND APPROVAL BY THE TOWNSHIP OF EAST WHITELAND PRIOR TO CONSTRUCTION.
4. TYPICAL COVER OF THE SANITARY SEWER MAIN SHALL BE FOUR FEET (4').
5. THE SANITARY MAIN PIPE AND FITTINGS SHALL BE GASKETED SDR-26 SEWER PIPE, UNLESS OTHERWISE NOTED.
6. MANHOLE STRUCTURES SHALL CONFORM TO ASTM C-478 AND PENNDOT PUB. 408, TO SUPPORT HS20-4 LOADING.

DEMOLITION NOTES:

1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH ARCHITECTURAL PLANS.
2. DEMOLITION WILL BEGIN UPON RECEIPT OF ALL NECESSARY APPROVALS AND PERMITS FROM ALL APPLICABLE GOVERNMENTAL AGENCIES. ALL WORK SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE AREAS FOR BOTH VEHICULAR AND PEDESTRIAN TRAFFIC BE SAFE, CLEAN, AND ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION.
4. CONTRACTOR SHALL CONTACT THE PA ONE CALL SYSTEM (1-800-242-1776) PER ACT 287, AS AMENDED, NOT LESS THAN THREE DAYS NOR MORE THAN TEN WORKING DAYS BEFORE DEMOLITION.
5. DEMOLITION SHALL BE IN ACCORDANCE WITH THE SELECTED PROJECT ENVIRONMENTAL ENGINEER OF RECORD FOR CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR UTILIZING APPLICABLE EROSION CONTROL MEASURES PRIOR TO AND DURING DEMOLITION. REFER TO EROSION AND SEDIMENTATION CONTROL PLANS, NOTES AND DETAILS FOR EROSION AND SEDIMENT CONTROL PROCEDURES.
7. THE CONTRACTOR SHALL ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS THAT COULD ADVERSELY IMPACT WATER QUALITY. DEMOLITION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIAL, CONCRETE WASTE, SANITARY WASTES, ETC. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSE KEEPING, MATERIAL MANAGEMENT AND LITTER CONTROL WHEREVER POSSIBLE. RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL. DIRECT AIR PLUME DISCHARGES RESULTING FROM DEWATERING OPERATIONS TO A SUITABLE FILTERING DEVICE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN.
8. SAFETY DEVICES (I.E. BARRICADES, WARNING TAPE, CHAIN LINK FENCING, ETC.) SHALL BE USED DURING DEMOLITION PROCEDURE TO INSURE THE SAFETY OF THE SURROUNDING PUBLIC.
9. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ANY AND ALL DEBRIS THAT MAY FALL ON THE ROADWAY AND/OR MAY BE TRACKED ONTO THE ROADWAY.
10. ALL STRUCTURES, PAVEMENT, SUBBASE AND MISCELLANEOUS ITEMS SHALL BE REMOVED IN THEIR ENTIRETY. SIDEWALKS ARE TO BE REMOVED TO THE NEAREST CONSTRUCTION/EXPANSION JOINT. SAWCUT TO PROVIDE CLEAN, STRAIGHT EDGES. ALL OPEN EXCAVATION AS A RESULT OF DEMOLITION WORK (I.E. FOUNDATIONS, BASEMENTS, TRENCHES, MANHOLES, INLETS, CLEANOUTS AND STORMWATER PIPING) SHALL BE BACKFILLED TO SURROUNDINGS GRADE LEVEL, IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AFTER DEMOLITION IS COMPLETE.
11. UTILITY REMOVAL/ABANDONMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING ADDITIONAL SPECIFICATIONS:
 - A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND TO TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS DILIGENTLY ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THESE PLANS. HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE CAUSED TO UTILITIES BY THE CONTRACTOR.
 - B. CONTRACTOR TO NOTIFY APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL/ABANDONMENT OF PRIVATE UTILITY COMPANY SERVICES TO BE IN ACCORDANCE WITH EACH RESPECTIVE UTILITY COMPANY STANDARD SPECIFICATIONS OR THE FOLLOWING PROCEDURE, WHICH EVER IS MORE RESTRICTIVE:
 - ALL PIPES TO BE ABANDONED SHALL BE EITHER EXCAVATED, REMOVED AND THE TRENCH BACKFILLED WITH COURSE AGGREGATE MATERIAL OR ALTERNATE MATERIAL APPROVED BY THE ENVIRONMENTAL ENGINEER OF RECORD OR THE PIPE SHALL BE COMPLETELY FILLED WITH FLOWABLE FILL/SAND AND THE ENDS SEALED WITH WATERTIGHT GROUT.
 - ALL STRUCTURES TO BE ABANDONED IN-PLACE SHALL HAVE AT MINIMUM THE FIRST 6 FEET BELOW PROPOSED GRADE REMOVED. THE REMAINING STRUCTURE SHALL BE COMPLETELY FILLED WITH FLOWABLE FILL, CAPPED WITH A WATERTIGHT CONCRETE COVER AND SEALED WITH WATERTIGHT GROUT. WHERE SITE GRADING NECESSITATES STRUCTURE REMOVAL, THE ASSOCIATED PIPES SHALL BE FILLED WITH FLOWABLE FILL AND THE ENDS SEALED WITH WATERTIGHT GROUT. THE CONTRACTOR SHALL FIELD VERIFY THE FLOW PATH OF ALL PIPES TO ENSURE THAT PLUGGING PIPES WILL NOT ADVERSELY AFFECT DRAINAGE ON ANY ADJACENT ROADWAY OR PROPERTY.
 - C. REMOVAL/ABANDONMENT OF PRIVATE UTILITY COMPANY SERVICES TO BE IN ACCORDANCE WITH EACH RESPECTIVE UTILITY COMPANY STANDARD SPECIFICATIONS OR THE FOLLOWING PROCEDURE, WHICH EVER IS MORE RESTRICTIVE:
 - ALL PIPES TO BE ABANDONED SHALL BE EITHER EXCAVATED, REMOVED AND THE TRENCH BACKFILLED WITH COURSE AGGREGATE MATERIAL OR ALTERNATE MATERIAL APPROVED BY THE ENVIRONMENTAL ENGINEER OF RECORD OR THE PIPE SHALL BE COMPLETELY FILLED WITH FLOWABLE FILL/SAND AND THE ENDS SEALED WITH WATERTIGHT GROUT.
 - ALL STRUCTURES TO BE ABANDONED IN-PLACE SHALL HAVE AT MINIMUM THE FIRST 6 FEET BELOW PROPOSED GRADE REMOVED. THE REMAINING STRUCTURE SHALL BE COMPLETELY FILLED WITH FLOWABLE FILL, CAPPED WITH A WATERTIGHT CONCRETE COVER AND SEALED WITH WATERTIGHT GROUT. WHERE SITE GRADING NECESSITATES STRUCTURE REMOVAL, THE ASSOCIATED PIPES SHALL BE FILLED WITH FLOWABLE FILL AND THE ENDS SEALED WITH WATERTIGHT GROUT. THE CONTRACTOR SHALL FIELD VERIFY THE FLOW PATH OF ALL PIPES TO ENSURE THAT PLUGGING PIPES WILL NOT ADVERSELY AFFECT DRAINAGE ON ANY ADJACENT ROADWAY OR PROPERTY.
12. REMOVAL AND DISPOSAL OF BITUMINOUS MATERIAL SHALL BE IN ACCORDANCE WITH DETAILS AND REGULATIONS OF THE TOWNSHIP, PADEP AND PENNDOT, AS APPLICABLE AND IS SUBJECT TO INSPECTION AND APPROVAL AS APPROPRIATE.

TRAFFIC NOTE:

APPLICANT WILL MONITOR (AND PROVIDE THE TOWNSHIP WITH THE RESULTS) THE OPERATION OF THE BRENNAN ROAD ROUNDABOUT ANNUALLY, OR WHEN THE TOWNSHIP REQUESTS BECAUSE ADDITIONAL VOLUME CREATES A SAFETY CONCERN. UPON SUBMISSION OF THE PHASE 2 FINAL LAND DEVELOPMENT PLANS (WHICHEVER FIRST OCCURS), SHOULD APPLICANT CHOOSE, IT MAY CHECK WITH THE TOWNSHIP TRAFFIC CONSULTANT EACH OF THOSE YEARS TO DETERMINE IF THE MONITORING WILL BE REQUIRED FOR THAT PARTICULAR YEAR.

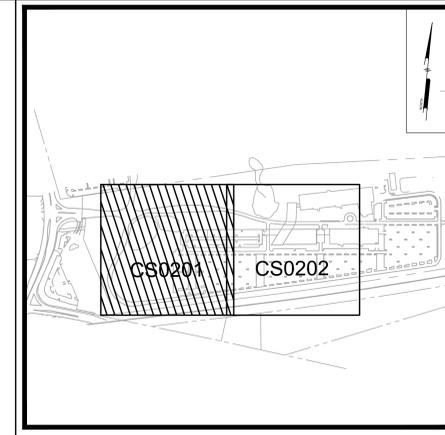
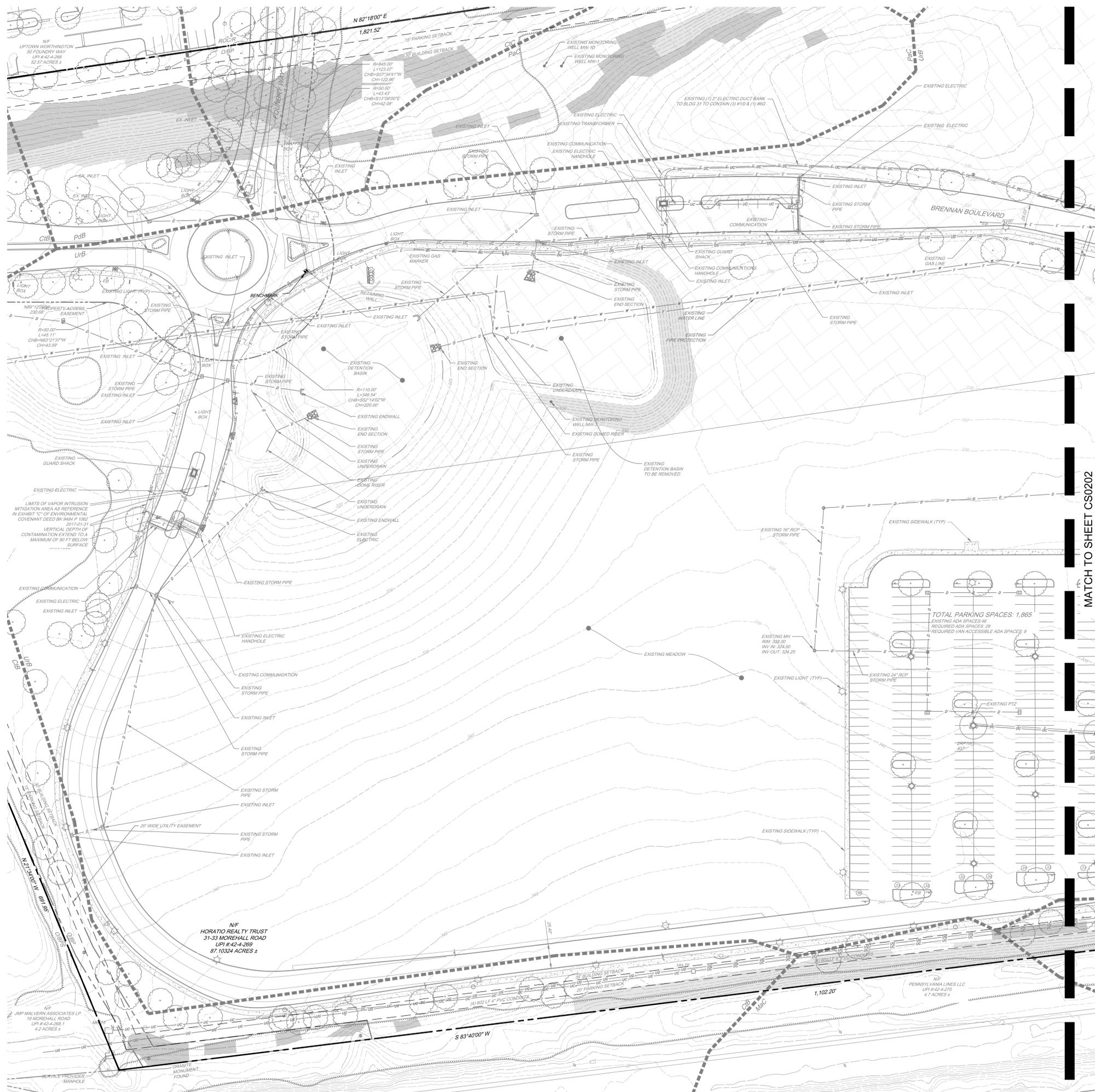


SHEET LIST:

SHEET	PAGE	SHEET NAME	ORIGINAL PLAN DATE	LAST REVISED
CS0001	1	COVER SHEET	07/28/17	05/31/19
CS0002	2	NOTES SHEET	07/28/17	05/31/19
CS0003	3	AERIAL PLAN	09/13/17	03/15/18
CS0020	4	OVERALL EXISTING CONDITIONS PLAN	07/28/17	05/31/19
CS0201	5	EXISTING CONDITIONS PLAN	07/28/17	03/15/18
CS0202	6	EXISTING CONDITIONS PLAN	07/28/17	03/15/18
CS0203	7	OVERALL CONSERVATION PLAN	07/28/17	05/31/19
CS0204	8	CONSERVATION PLAN	07/28/17	03/15/18
CS0205	9	CONSERVATION PLAN	07/28/17	03/15/18
CS0206	10	EXISTING CONDITIONS PLAN	05/31/19	
CS0207	11	CONSERVATION PLAN	05/31/19	
CS0501	12	DEMOLITION PLAN	07/28/17	05/03/18
CS0501	13	DEMOLITION PLAN	07/28/17	09/17/18
CS1000	14	OVERALL SITE PLAN - PHASE 1	07/28/17	03/15/18
CS1001	15	SITE PLAN	07/28/17	03/15/18
CS1002	16	SITE PLAN	07/28/17	03/15/18
CS1003	17	OVERALL SITE PLAN - PHASE 2	07/28/17	5/31/2019
CS1004	18	SITE PLAN	05/31/19	
CS1501	19	GRADING PLAN	07/28/17	03/15/18
CS1502	20	GRADING PLAN	07/28/17	11/4/2019
CS1503	21	GRADING PLAN - PHASE 2	05/23/17	03/15/18
CS1504	22	GRADING PLAN	05/31/19	
CS1700	23	OVERALL UTILITY PLAN	07/28/17	03/15/18
CS1701	24	UTILITY PLAN	07/28/17	05/15/18
CS1702	25	UTILITY PLAN	07/28/17	05/17/19
CS1703	26	UTILITY PLAN - PHASE 2	05/23/17	03/15/18
CS1704	27	UTILITY PLAN	05/31/19	
CS2001	28	LANDSCAPE PLAN	07/28/17	03/15/18
CS2002	29	LANDSCAPE PLAN	07/28/17	03/15/18
CS2003	30	LANDSCAPE PLAN	05/31/19	
CS2201	31	LIGHTING PLAN	07/28/17	03/15/18
CS2202	32	LIGHTING PLAN	07/28/17	08/10/18
CS2203	33	LIGHTING PLAN	05/31/19	
CS4001	34	STORM SEWER PROFILES	07/28/17	03/15/18
CS4002	35	STORM SEWER PROFILES	07/28/17	03/15/18
CS4003	36	STORM SEWER PROFILES	07/28/17	03/15/18
CS4004	37	STORM SEWER PROFILES	01/18/18	03/15/18
CS4005	38	DUCT BANK PROFILES	02/20/18	05/10/18
CS4006	39	STORM SEWER PROFILES	05/31/19	
CS4007	40	STORM SEWER PROFILES	05/31/19	
CS6001	41	SITE DETAILS	07/28/17	03/15/18
CS6002	42	SITE DETAILS	07/28/17	03/15/18
CS6021	43	DRAINAGE DETAILS	07/28/17	03/15/18
CS6041	44	WATER DETAILS	07/28/17	02/25/19
CS6051	45	SANITARY DETAILS	07/28/17	03/15/18
CS6061	46	LANDSCAPING DETAILS	07/28/17	03/15/18
CS8000	47	OVERALL EROSION AND SEDIMENTATION CONTROL PLAN	07/28/17	05/07/19
CS8001	48	EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 1	07/28/17	09/11/18
CS8002	49	EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 1	07/28/17	05/07/19
CS8003	50	EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 2	05/23/17	09/11/18
CS8004	51	EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 2	09/13/17	09/11/18
CS8005	52	EROSION AND SEDIMENTATION CONTROL PLAN	05/31/19	
CS8801	53	EROSION AND SEDIMENTATION CONTROL NOTES	05/23/17	09/11/18
CS8802	54	EROSION AND SEDIMENTATION CONTROL DETAILS	07/28/17	03/15/18
CS8803	55	EROSION AND SEDIMENTATION CONTROL DETAILS	09/13/17	05/11/18
CS8804	56	EROSION AND SEDIMENTATION CONTROL DETAILS	09/13/17	03/15/18
CS9000	57	OVERALL POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	07/28/17	05/07/19
CS9001	58	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	07/28/17	09/11/18
CS9002	59	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	07/28/17	05/07/19
CS9003	60	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	05/31/19	
CS9500	61	POST CONSTRUCTION STORMWATER MANAGEMENT NOTES	09/13/17	05/31/19
CS9501	62	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	07/28/17	07/09/18
CS9502	63	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	07/28/17	07/09/18
CS9503	64	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	05/23/17	03/15/18
CS9504	65	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	05/23/17	05/07/19
CS9505	66	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	09/13/17	07/09/18
CS9506	67	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	05/23/17	03/15/18
CS9507	68	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	12/18/17	03/15/18
CS9508	69	POST CONSTRUCTION STORMWATER MANAGEMENT PROFILES	12/18/17	03/15/18
CS9509	70	POST CONSTRUCTION STORMWATER MANAGEMENT PROFILES	12/08/17	05/07/19
CS9510	71	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	05/31/19	
CS9511	72	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	05/31/19	

AGS

AGS	DATE	BY
09/01/19	7	
09/01/19	8	
09/01/19	9	
09/01/19	10	
09/01/19	11	
09/01/19	12	
09/01/19	13	
09/01/19	14	
09/01/19	15	
09/01/19	16	
09/01/19	17	
09/01/19	18	
09/01/19	19	
09/01/19	20	
09/01/19	21	
09/01/19	22	
09/01/19	23	</



KEY MAP
Scale: 1" = 600'

LEGEND

	PROPERTY LINE
	LEGAL RIGHT-OF-WAY
	EX PROPERTY CORNER PINNED
	EX CONCRETE MONUMENT
	ADJOINING PROPERTY LINE
	EX ACCESS EASEMENT
	EX BUILDING
	EX CURB
	EX EDGE OF PAVEMENT
	EX EDGE OF GRAVEL
	EX WALL
	EX FENCE LINE
	EX SIGN
	EX LANDSCAPING
	EX TREE ROW
	EX MINOR CONTOUR
	EX MAJOR CONTOUR
	EX STORM SEWER LINES
	EX STORMWATER MANHOLE
	EX STORM SEWER INLET
	EX OVERHEAD ELECTRICAL LINES
	EX UTILITY POLE
	EX WATER LINES
	EX FIRE HYDRANT
	EX WATER VALVE
	EX MONITORING WELL
	EX SANITARY SEWER LINES
	EX SANITARY MANHOLE
	EX SANITARY CLEAN OUT
	EX NATURAL GAS LINES
	EX COMMUNICATION LINES
	BENCHMARK
	SOILS BOUNDARY LINES
	SOILS TEXT
	EXISTING STEEP SLOPE (15-25%)
	EXISTING VERY STEEP SLOPE (>25%)
	EXISTING WETLANDS

MATCH TO SHEET CS0202

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

EXISTING CONDITIONS PLAN

THE VANGUARD GROUP
400 DEWON PARK DRIVE
MALVERN, PA 19367

NO.	DATE	BY	REVISIONS
001518	5	MEL	60% CONSTRUCTION DOCUMENTS
000718	4	MEL	REVISED PER CCDC COMMENTS
010418	3	MEL	REVISED PER CCDC COMMENTS
101517	2	MEL	BID SET
091317	1	FFS	REVISIONS PER TOWNSHIP COMMENTS

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE OBTAINED FOR REUSE BY OWNER OR OTHERS ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR REAPPROPRIATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY ON THE PART OF PENNONI ASSOCIATES. PENNONI ASSOCIATES SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE, LOSS OR EXPENSE ARISING OUT OF OR RESULTING THEREFROM.

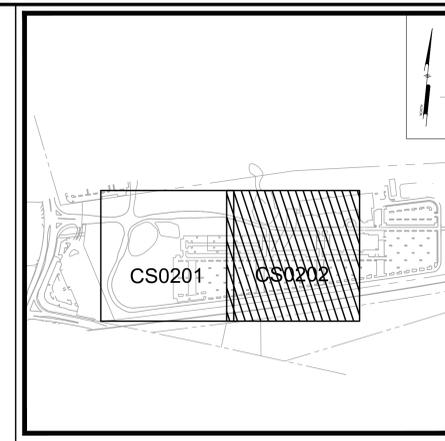
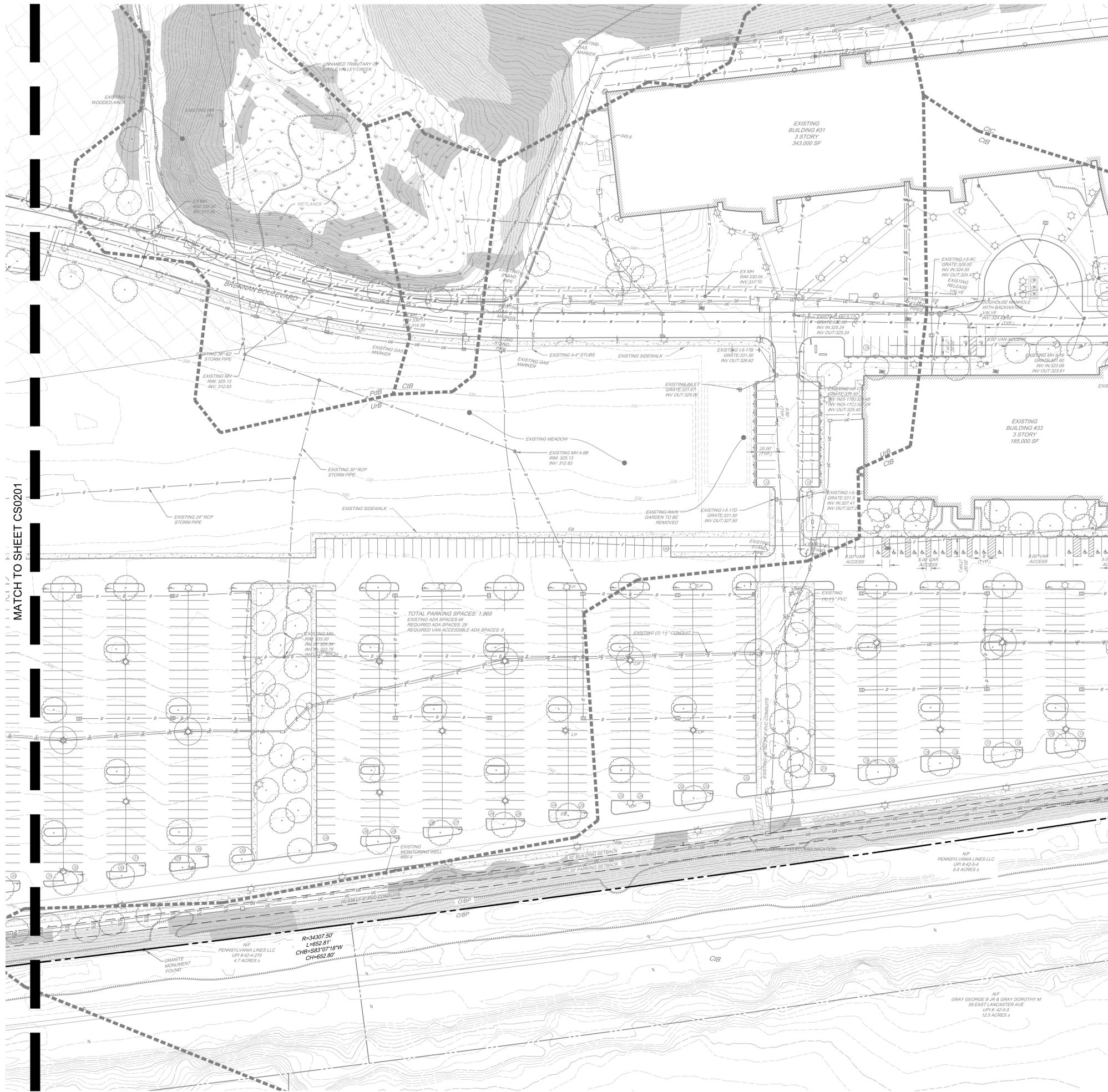


CALL BEFORE YOU DIG
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CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS0201	
SHEET	5 OF 72



KEY MAP
Scale: 1" = 60'

- LEGEND**
- PROPERTY LINE
 - - - LEGAL RIGHT-OF-WAY
 - EX PROPERTY CORNER FOUND
 - EX CONCRETE MONUMENT ADJOINING PROPERTY LINE
 - ▨ EX ACCESS EASEMENT
 - ▭ EX BUILDING
 - ▭ EX CURB
 - ▭ EX EDGE OF PAVEMENT
 - ▭ EX EDGE OF GRAVEL
 - ▭ EX WALL
 - ▭ EX FENCE LINE
 - ▭ EX SIGN
 - ▭ EX LANDSCAPING
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 - EX MINOR CONTOUR
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 - EX STORM SEWER LINES
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 - EX WATER LINES
 - EX FIRE HYDRANT
 - EX WATER VALVE
 - EX MONITORING WELL
 - EX SANITARY SEWER LINES
 - EX SANITARY MANHOLE
 - EX SANITARY CLEAN OUT
 - EX NATURAL GAS LINES
 - EX COMMUNICATION LINES
 - BENCHMARK
 - SOILS BOUNDARY LINES
 - SOILS TEXT
 - EXISTING STEEP SLOPE (15-25%)
 - EXISTING VERY STEEP SLOPE (>25%)
 - EXISTING WETLANDS

MATCH TO SHEET CS0201

PLOTTED: 5/20/2017 12:28 PM BY: JAY GILLESPIE PROJECT STATUS: ---

PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T: 610-423-8807 F: 610-423-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

EXISTING CONDITIONS PLAN

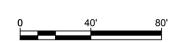
THE VANGUARD GROUP
400 DEWOLFE PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
001/18	5	60% CONSTRUCTION DOCUMENTS	MRL
002/18	4	REVISED PER CCDC COMMENTS	MRL
012/18	3	REVISED PER CCDC COMMENTS	MRL
10/18	2	BID SET	MRL
08/18	1	REVISIONS PER TOWNSHIP COMMENTS	FFS

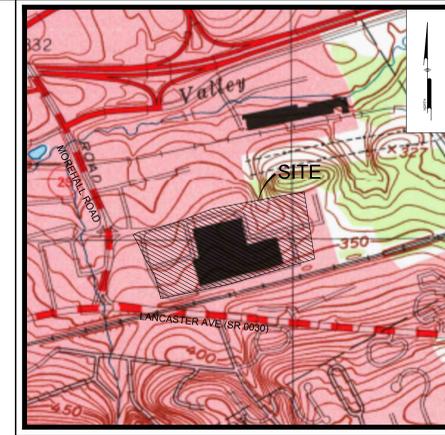
PROJECT	TVGH1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS0202	
SHEET	6 OF 72



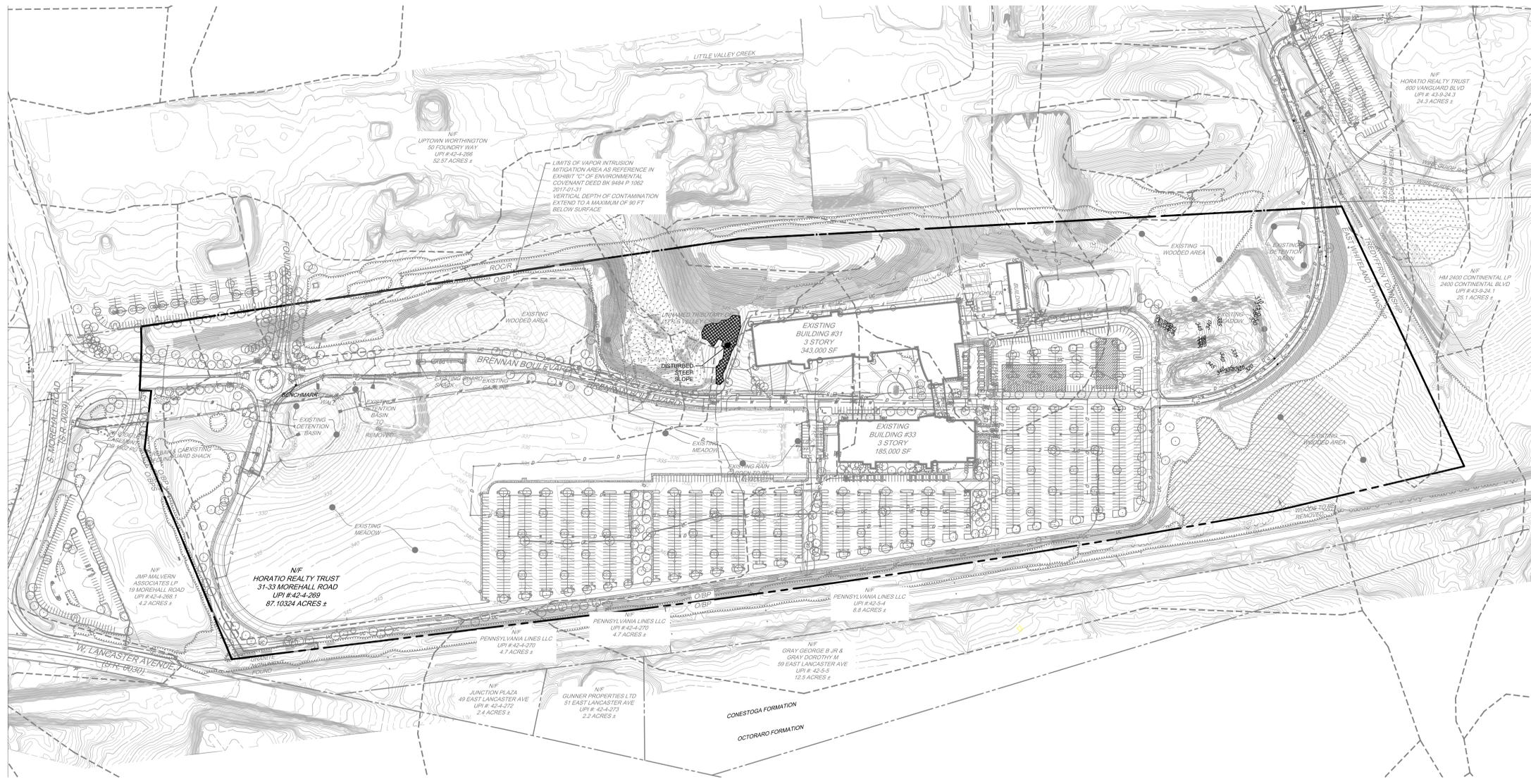
CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION



USGS MAP
Scale: 1" = 800'



LEGEND

[Symbol]	PROPERTY LINE
[Symbol]	LEGAL RIGHT-OF-WAY
[Symbol]	EX PROPERTY CORNER FOUND
[Symbol]	EX CONCRETE MONUMENT
[Symbol]	ADJOINING PROPERTY LINE
[Symbol]	EX EASEMENT
[Symbol]	EX BUILDING
[Symbol]	EX CURB
[Symbol]	EX EDGE OF PAVEMENT
[Symbol]	EX EDGE OF GRAVEL
[Symbol]	EX WALL
[Symbol]	EX FENCE LINE
[Symbol]	EX SIGN
[Symbol]	EX LANDSCAPING
[Symbol]	EX TREE ROW
[Symbol]	EX MINOR CONTOUR
[Symbol]	EX MAJOR CONTOUR
[Symbol]	EX STORM SEWER LINES
[Symbol]	EX STORMWATER MANHOLE
[Symbol]	EX STORM SEWER INLET
[Symbol]	EX OVERHEAD ELECTRICAL LINES
[Symbol]	EX UTILITY POLE
[Symbol]	EX WATER LINES
[Symbol]	EX FIRE HYDRANT
[Symbol]	EX WATER VALVE
[Symbol]	EX MONITORING WELL
[Symbol]	EX SANITARY SEWER LINES
[Symbol]	EX SANITARY MANHOLE
[Symbol]	EX SANITARY CLEAN OUT
[Symbol]	EX NATURAL GAS LINES
[Symbol]	EX COMMUNICATION LINES
[Symbol]	BENCHMARK
[Symbol]	SOILS BOUNDARY LINES
[Symbol]	SOILS TEXT
[Symbol]	EX RIPARIAN BUFFER
[Symbol]	EX STREAM
[Symbol]	EX WETLANDS
[Symbol]	EXISTING STEEP SLOPE (15-25%)
[Symbol]	EXISTING VERY STEEP SLOPE (>25%)
[Symbol]	DISTURBED STEEP SLOPES
[Symbol]	WOODS TO BE REMOVED

WOODS AREA REMOVAL CALC.

AREA (AC)	
EXISTING WOODS	22.20
WOODS TO BE REMOVED	3.00 (14%)

SOIL CHART:

OBTAINED FROM NRCS SOIL CHART ON 04/08/2016. SURVEY AREA VERSION DATE: 12/02/2008

SYMBOL	NAME	HYDROLOGIC GROUP	SLOPES	HYDRIC	DEPTH TO			LIMITATIONS			RESOLUTION NOTES
					WATER TABLE (FT)	BEDROCK (IN)	FROST	PIPES	BUILDING		
U#B	URBAN LAND	---	0 TO 8%	NO	---	10-98	NONE	---	---	---	SEE RESOLUTION NOTES
CB	CONESTOGA SILT LOAM	B	3 TO 8%	NO	---	60-99	MODERATE	MODERATE	HIGH	---	SEE RESOLUTION NOTES
P#B	PENNSYLVANIAN SILT LOAM	D	3 TO 8%	NO	0.5-1.5	40-72	HIGH	HIGH	MODERATE	---	SEE RESOLUTION NOTES
P#C	PARKER GRAVELLY LOAM	B	8 TO 15%	NO	---	60-118	MODERATE	LOW	HIGH	---	SEE RESOLUTION NOTES
OC	CONESTOGA SILT LOAM	B	8 TO 15%	YES	---	60-99	MODERATE	MODERATE	HIGH	---	SEE RESOLUTION NOTES
P#D	PARKER GRAVELLY LOAM	B	15 TO 25%	NO	---	60-118	MODERATE	LOW	HIGH	---	SEE RESOLUTION NOTES
M#C	MANOR LOAM	B	8 TO 15%	YES	---	72-99	MODERATE	LOW	MODERATE	---	SEE RESOLUTION NOTES

RESOLUTION NOTES:

- HIGH WATER TABLE**
IF SITE IS TO BE USED FOR CONSTRUCTION, DEWATER EXCAVATIONS THROUGH A PUMPED WATER FILTER BAG AS NECESSARY. AVOID PONDING DURING CONSTRUCTION. CLOSE ALL EXCAVATIONS AS SOON AS PRACTICAL. ENSURE ALL INSTALLED PIPE IS WATERTIGHT.
- NATURALLY ACIDIC**
CONTRACTOR TO WRAP ALL METAL-BASED PIPING WITH PLASTIC LINERS. LINERS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION.
- EROSION HAZARD**
THE CONTRACTOR SHALL FOLLOW THE EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION AND PLANS. THE EROSION CONTROL MEASURES SHALL BE INSPECTED AFTER EVERY RUNOFF EVENT AND ON A WEEKLY BASIS. IMMEDIATELY AFTER EVERY RUNOFF EVENT THE EROSION AND SEDIMENTATION FACILITIES AND MEASURES WILL BE CLEANED, REPAIRED, AND REPLACED AS NEEDED. WASHED-OUT AREAS WILL BE RE-GRADED AND RE-SEED. SILT FENCES WILL BE INSPECTED AND RESTORED TO AN UPRIGHT AND EFFECTIVE POSITION AFTER EVERY RUNOFF EVENT OR WHEN THEY ARE OBSERVED TO BE IN NEED OF MAINTENANCE.
- SOLUTION CAVERNS IN UNDERLYING BEDROCK**
IF THE SITE IS TO BE USED FOR BUILDING, AND FOUNDATIONS ARE PROPOSED THEN THE SITE SHALL BE EVALUATED BY A GEOTECHNICAL ENGINEER TO DETERMINE IF SOLUTION CAVERNS ARE PRESENT. CONSULT THE GEOTECHNICAL ENGINEER AND REPAIR ACCORDING TO APPROVED DETAILS.
AVOID PONDING DURING CONSTRUCTION. CLOSE ALL EXCAVATIONS AS SOON AS PRACTICAL. ENSURE ALL INSTALLED PIPE IS WATERTIGHT.
- SNK HOLE OR CLOSED DEPRESSION**
THE CONTRACTOR SHALL CONTACT A GEOTECHNICAL ENGINEER TO ANALYZE THE SNK-HOLE AREA. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER FOR REMEDIATION REQUIREMENTS.

GEOLOGY CHART:

CONESTOGA FORMATION
LIGHT-GRAY, THIN-BEDED, IMPURE, CONTORTED LIMESTONE HAVING SHALE PARTINGS; IN CHESTER VALLEY.
STATE: PENNSYLVANIA
NAME: CONESTOGA FORMATION
GEOLOGIC AGE: ORDOVICIAN AND CAMBRIAN
ORIGINAL MAP LABEL: OC
PRIMARY ROCK TYPE: LIMESTONE
SECONDARY ROCK TYPE: PHYLLITE
OTHER ROCK TYPES: CONGLOMERATE; DOLOSTONE(DOLOMITE); SHALE

CONTAMINANTS NOTES:

- KNOWN CONTAMINANT: TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
- THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.
- CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNONI FOR ALL SITE WORK.
- CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
- THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PADEP ON JANUARY 11, 2016



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CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK



VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

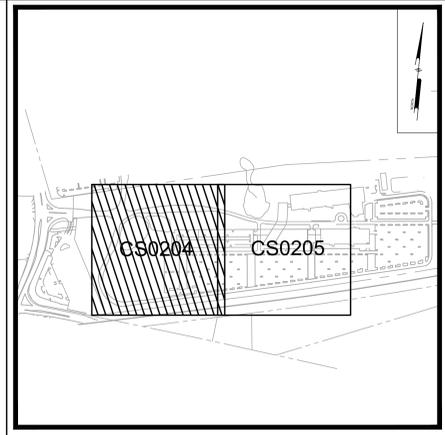
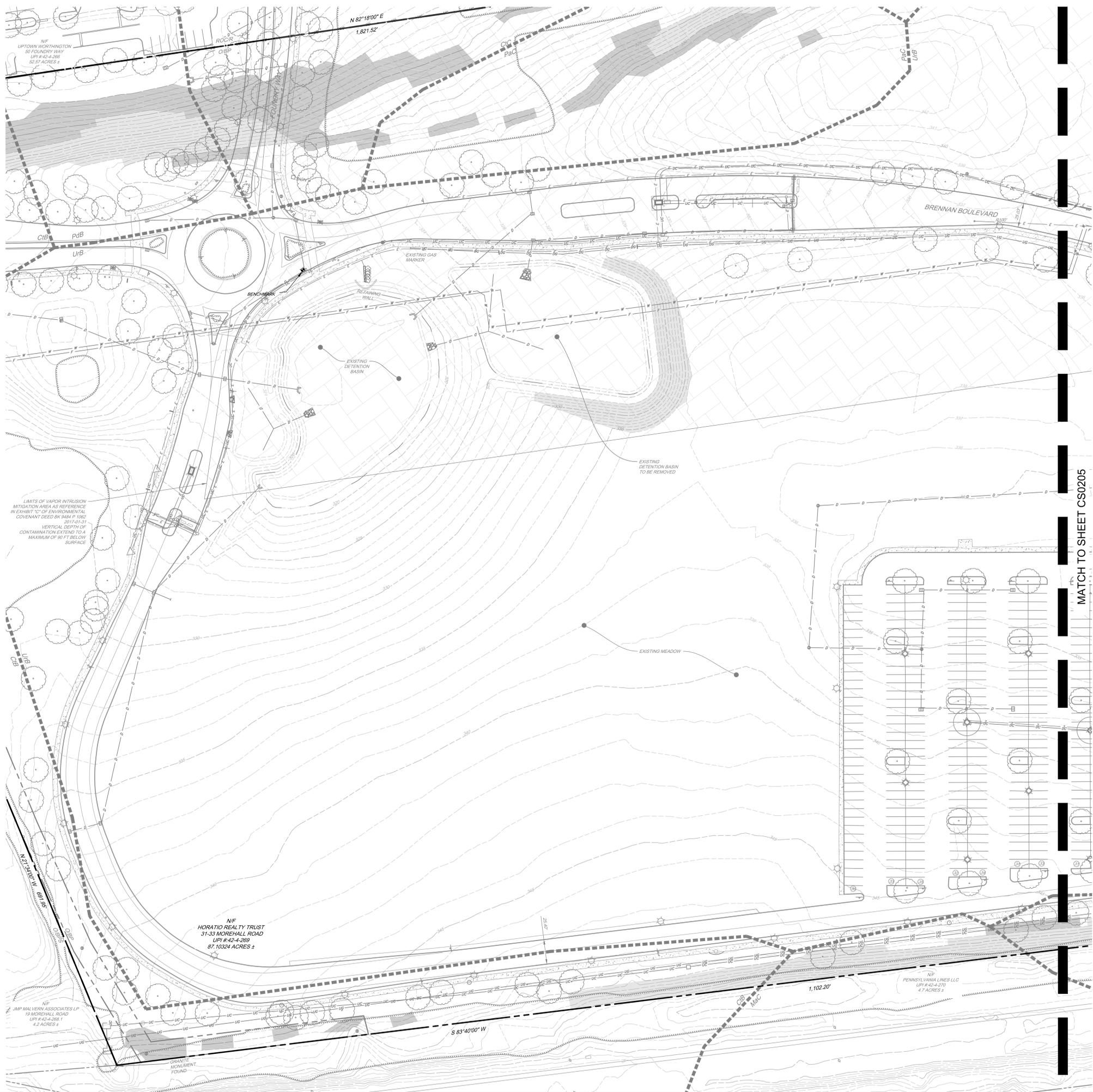
OVERALL CONSERVATION PLAN

THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

NO.	DATE	BY	REVISIONS
001/19	4	ACS	ARRANGED LAND DEVELOPMENT PLANS
001/18	3	MBL	60% CONSTRUCTION DOCUMENTS
10/17	2	MBL	BID SET
09/17	1	FSS	REVISIONS PER TOWNSHIP COMMENTS

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PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=150'
DRAWN BY	MEM
APPROVED BY	MK



KEY MAP
Scale: 1" = 600'

LEGEND

- PROPERTY LINE
- LEGAL RIGHT-OF-WAY
- EX PROPERTY CORNER FOUND
- EX CONCRETE MONUMENT
- ADJOINING PROPERTY LINE
- EX EASEMENT
- EX BUILDING
- EX CURB
- EX EDGE OF PAVEMENT
- EX EDGE OF GRAVEL
- EX WALL
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- EX COMMUNICATION LINES
- BENCHMARK
- SOILS BOUNDARY LINES
- SOILS TEXT
- EX RIPARIAN BUFFER
- EX STREAM
- EX WETLANDS
- EXISTING STEEP SLOPE (15-25%)
- EXISTING VERY STEEP SLOPE (>25%)
- DISTURBED STEEP SLOPES
- WOODS TO BE REMOVED

MATCH TO SHEET CS0205



CALL BEFORE YOU DIG
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NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Pennoni
PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK



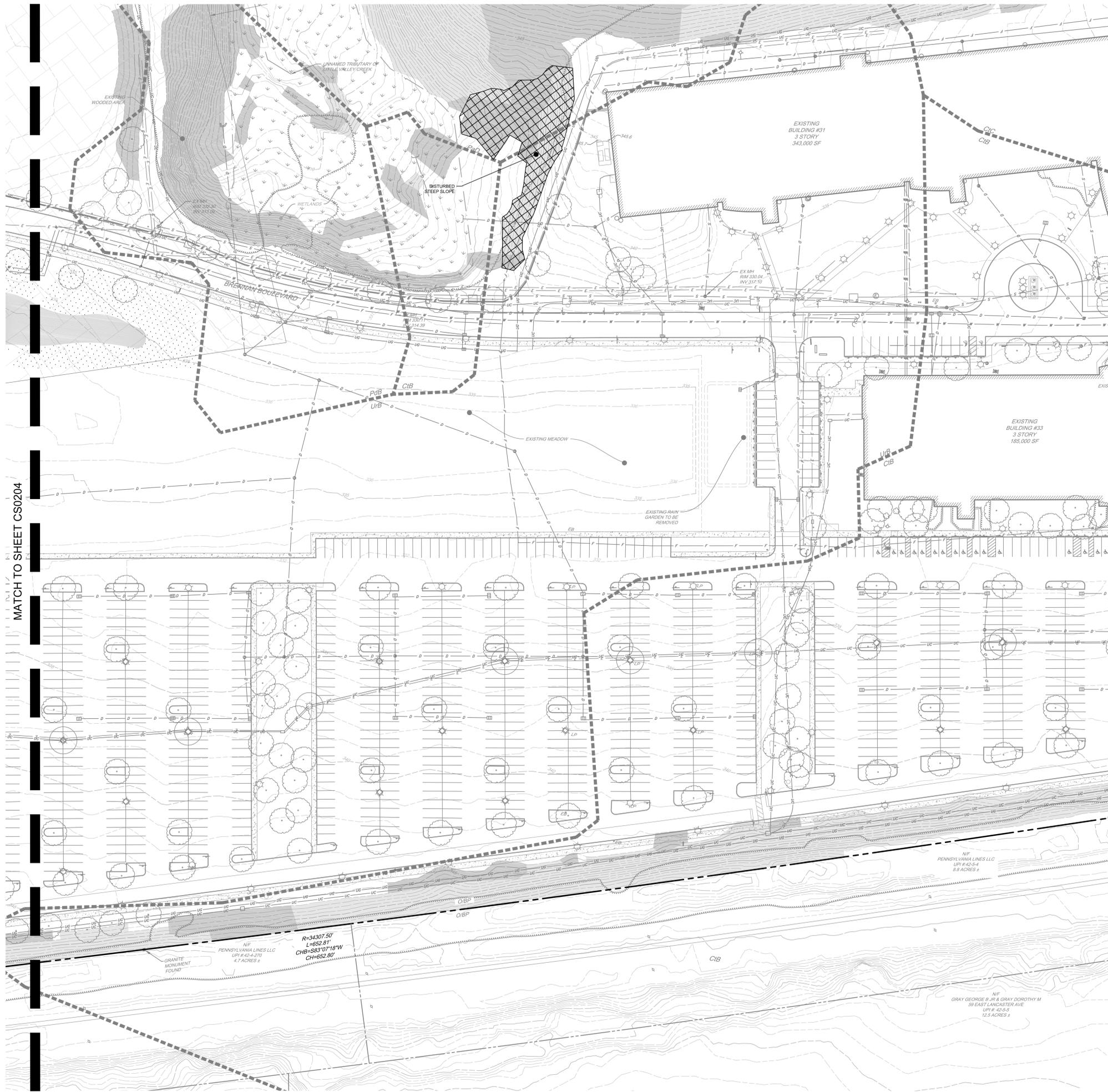
VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

CONSERVATION PLAN
THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

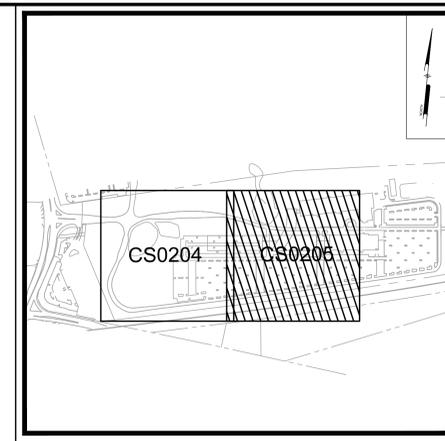
NO.	DATE	REVISIONS	BY
001518	3	60% CONSTRUCTION DOCUMENTS	MRL
101517	2	BID SET	MRL
001517	1	REVISIONS PER TOWNSHIP COMMENTS	FRS

PROJECT	TVGH1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS0204	
SHEET	8 OF 72

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MATCH TO SHEET CS0204



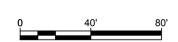
KEY MAP
Scale: 1" = 600'

LEGEND

	PROPERTY LINE
	LEGAL RIGHT-OF-WAY
	EX PROPERTY CORNER FOUND
	EX CONCRETE MONUMENT
	ADJOINING PROPERTY LINE
	EX EASEMENT
	EX BUILDING
	EX CLUMP
	EX EDGE OF PAVEMENT
	EX EDGE OF GRAVEL
	EX WALL
	EX FENCE LINE
	EX SIGN
	EX LANDSCAPING
	EX TREE ROW
	EX MINOR CONTOUR
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	EX SANITARY SEWER LINES
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	EX SANITARY CLEANOUT
	EX NATURAL GAS LINES
	EX CONSTRUCTION LINES
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	SOILS BOUNDARY LINES
	SOILS TEXT
	EX RIPARIAN BUFFER
	EX STREAM
	EX WETLANDS
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	EXISTING VERY STEEP SLOPE (>25%)
	DISTURBED STEEP SLOPES
	WOODS TO BE REMOVED



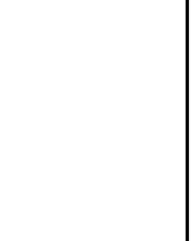
CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Pennoni
PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
Malvern, PA 19355
T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK



VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

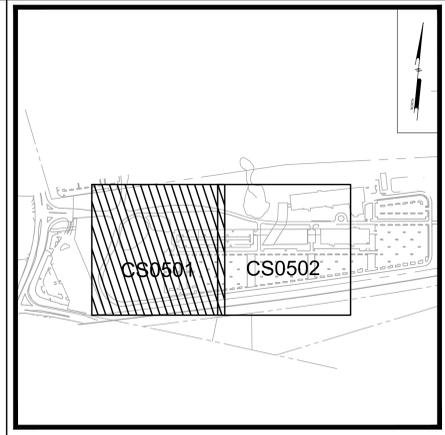
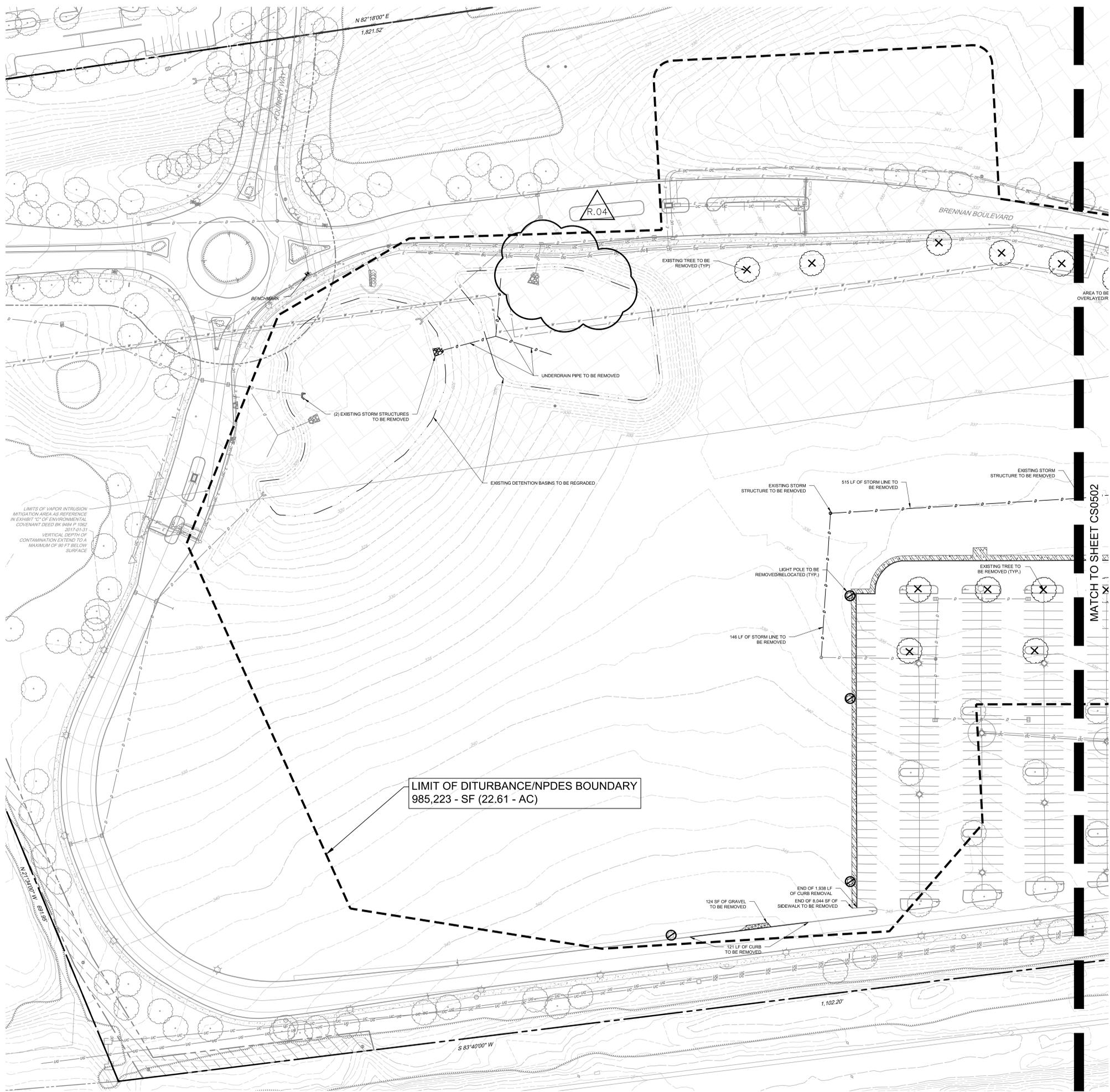
CONSERVATION PLAN

THE VANGUARD GROUP
400 DEWOLP PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
001518	3	60% CONSTRUCTION DOCUMENTS	MRL
101517	2	BID SET	MRL
001517	1	REVISIONS PER TOWNSHIP COMMENTS	FFS

PROJECT	DATE	DRAWING SCALE	DRAWN BY	APPROVED BY
TVG1702	2017-07-28	1"=40'	MEM	MK

CS0205
SHEET 9 OF 72



KEY MAP
Scale: 1" = 600'

- DEMOLITION LEGEND**
- AREA TO BE DEMOLISHED
 - TREE TO BE DEMOLISHED
 - SIDEWALK TO BE DEMOLISHED
 - ASPHALT TO BE DEMOLISHED
 - GRAVEL TO BE DEMOLISHED
 - FENCE TO BE DEMOLISHED
 - CURB TO BE DEMOLISHED
 - LIGHT TO BE DEMOLISHED
 - STORM SEWER LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - WATER LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - GAS LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - SANITARY SEWER LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - OVERHEAD ELECTRIC LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - UNDERGROUND ELECTRIC LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - COMMUNICATIONS LINE TO BE DEMOLISHED/ABANDON IN PLACE
 - FIRE LINE TO BE DEMOLISHED/ABANDON IN PLACE

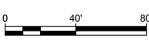
MATCH TO SHEET CS0502

LIMIT OF DISTURBANCE/NPDES BOUNDARY
985,223 - SF (22.61 - AC)



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NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171329890

**CONTRACTOR TO REFER
TO SHEET CS0002 FOR
DEMOLITION NOTES**



NOT FOR CONSTRUCTION

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DISCREPANCIES BEFORE PROCEEDING WITH WORK



VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

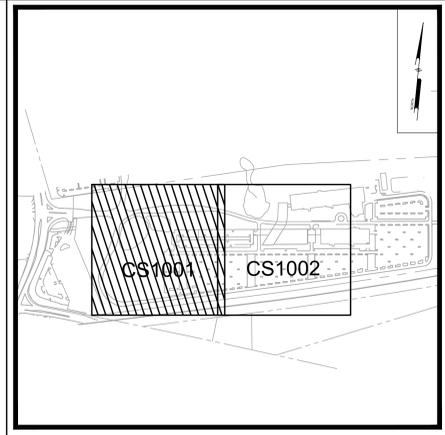
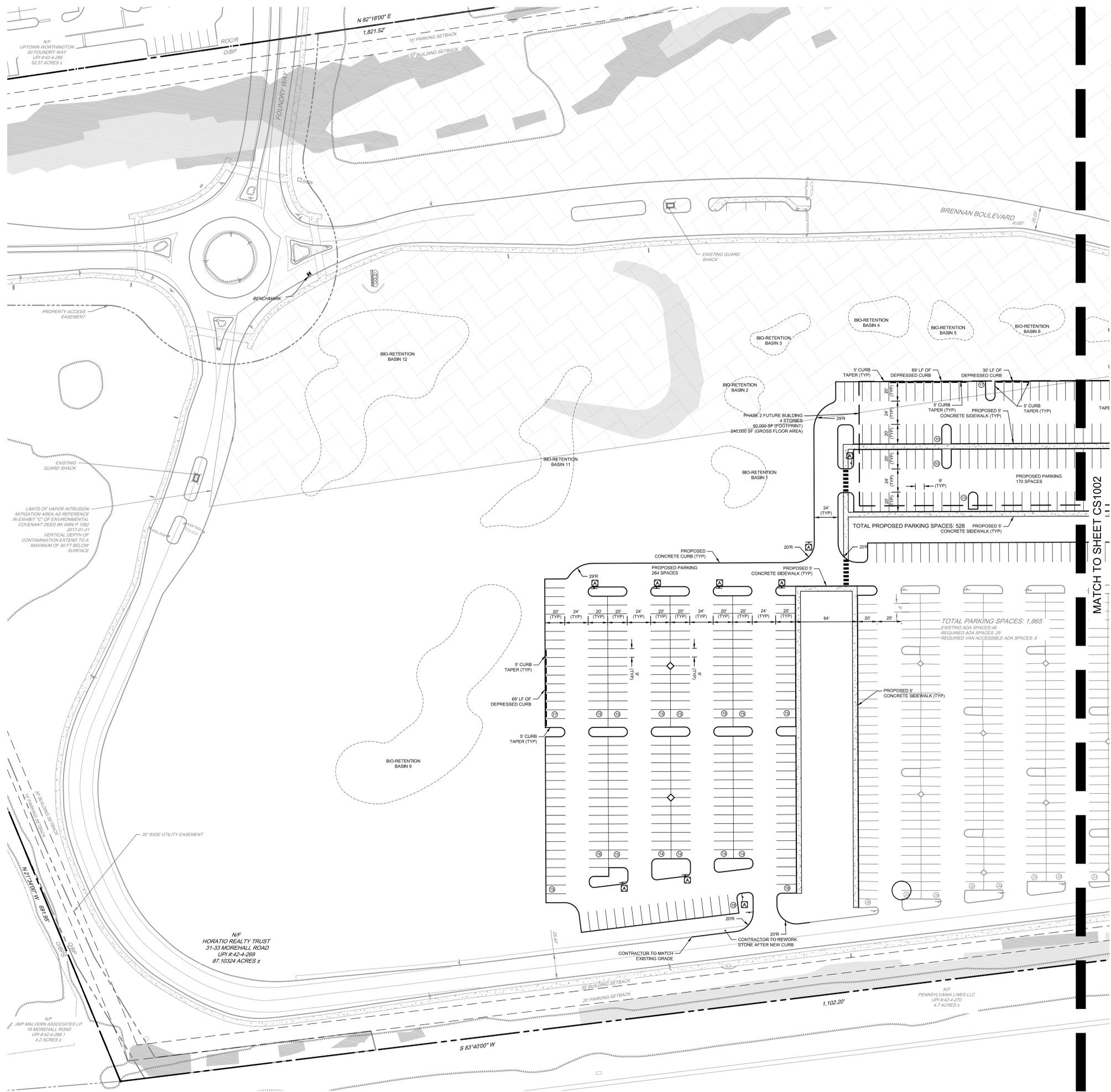
DEMOLITION PLAN

THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
050318	05/03/18	REVISED STORM PIPE	JAP
050518	05/05/18	80% CONSTRUCTION DOCUMENTS	MEL
10/13/17	10/13/17	BID SET	MEL
09/13/17	09/13/17	REVISIONS PER TOWNSHIP COMMENTS	FFS
		REVISIONS	BY

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PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS0501	
SHEET	12 OF 72



Pennoni
PENNONI ASSOCIATES INC.
 One South Church Street, 2nd Floor
 West Chester, OH 41001
 T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
 DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
 31 MOREHALL ROAD
 MALVERN, PA 19355
SITE PLAN
 THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WYOMING, PA 19387

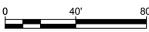
NO.	DATE	BY	REVISIONS
001518	3	MBL	60% CONSTRUCTION DOCUMENTS
101517	2	MBL	BID SET
001517	1	MBL	REVISIONS PER TOWNSHIP COMMENTS

PROJECT: TVGH1702
 DATE: 2017-07-28
 DRAWING SCALE: 1"=40'
 DRAWN BY: MEM
 APPROVED BY: MK

CS1001
 SHEET 15 OF 72

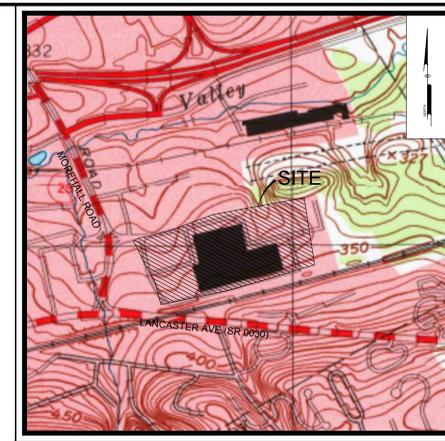
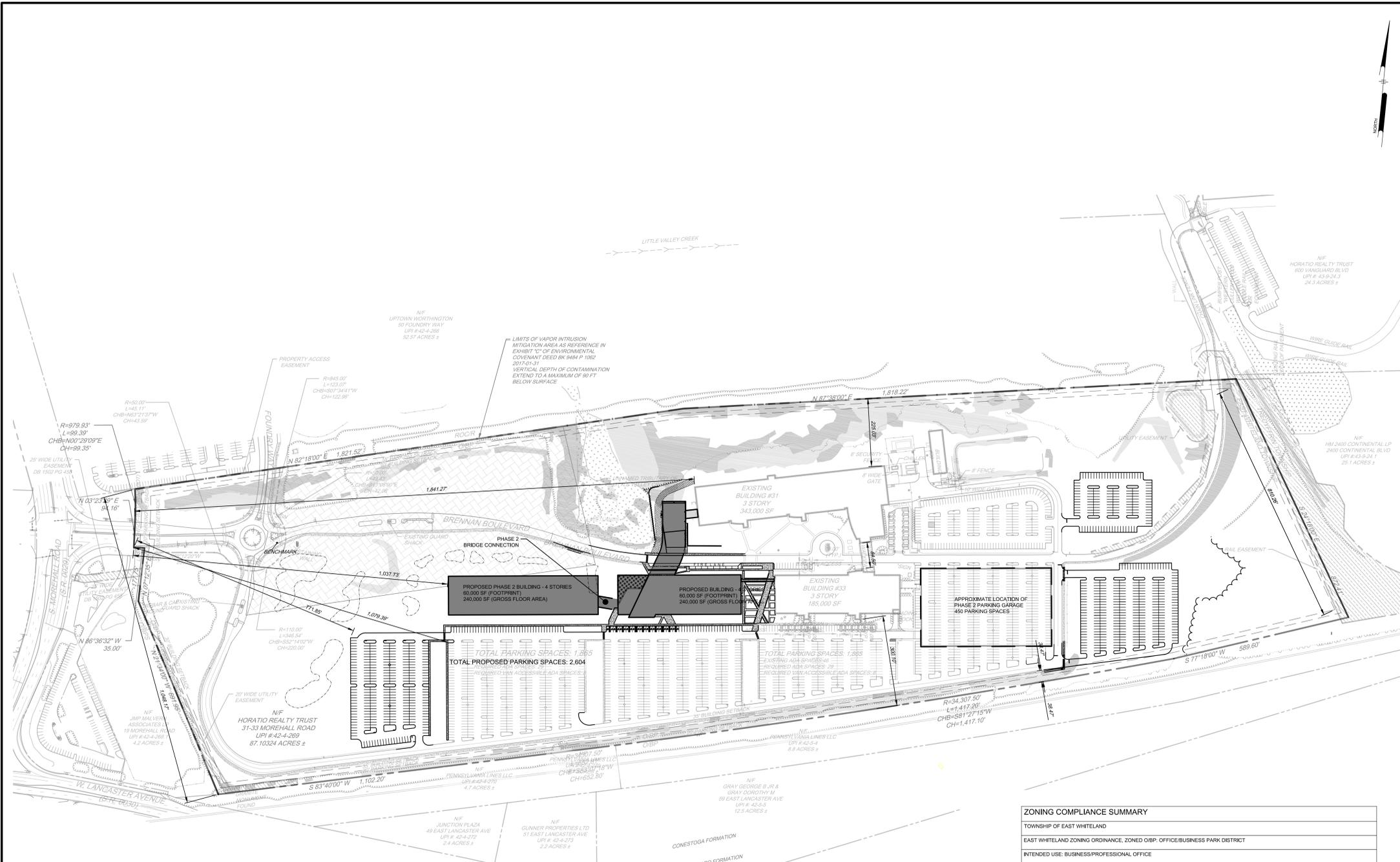


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 BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
 SERIAL NUMBER: 20171520890



NOT FOR CONSTRUCTION

P:\Projects\2017\TVGH1702\SitePlan\Main\SitePlan.dwg, DATE: 07/28/17, 1:57 PM, BY: JMB, PLOT TITLE: Pennoni.dwg, PROJECT STATUS: -



USGS MAP
Scale: 1" = 800'

- GENERAL NOTE:**
1. SITE ADDRESS: 31-33 MOREHALL ROAD MALVERN, PA 19380 UPI #42-4-269
 2. OWNER: HORATIO REALTY TRUST 400 DEVON PARK DRIVE WAYNE, PA 19387
 3. APPLICANT: THE VANGUARD GROUP 400 DEVON PARK DRIVE WAYNE, PA 19387
 4. THE PURPOSE OF THIS PLAN IS THE PROPOSED CONSTRUCTION OF TWO OFFICE BUILDINGS WITH RELATED SITE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: EXPANDING THE EXISTING PARKING LOT, PHASE 1 OFFICE BUILDING IS 240,000 SQUARE FEET AND PHASE 2 OFFICE BUILDING IS 240,000 SQUARE FEET.
 5. THIS SITE IS CURRENTLY ZONED OBP - OFFICE/BUSINESS PARK DISTRICT BY THE TOWNSHIP OF EAST WHITELAND ZONING MAP. FOR COMPLETE ZONING INFORMATION PLEASE REFER TO THE ZONING CODE OF THE TOWNSHIP OF EAST WHITELAND.
 6. THE EXISTING FEATURES WERE OBTAINED BY SURVEY BY AER02, INC. GIS, AND AERIAL PHOTOGRAPHS. A WETLANDS DELINEATION SURVEY WAS ALSO PERFORMED ON JUNE 26, 2017.
 7. BENCHMARK: THE BENCHMARK FOR THE SITE IS AN INLET LOCATED NEAR THE SOUTHWEST CORNER OF THE TRAFFIC CIRCLE AT BRENNAN BOULEVARD WITH GRATE ELEVATION 321.86. THE VERTICAL DATUM USED WAS NAVD83.
 8. BY GRAPHIC PLOTTING ONLY, SUBJECT PARCEL AREA IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 180 OF 380, COMMUNITY MAP NO. 402203010F WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 29, 2006. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
 9. UNLESS SPECIFICALLY STATED OR SHOWN HEREON TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:
 - A. RIGHTS OR INTERESTS OF THE UNITED STATES OF AMERICA OR COMMONWEALTH OF PENNSYLVANIA OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER, BUT NOT COVERED BY TITLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MARINE, OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OF ANY FEDERAL, STATE, OR LOCAL AGENCY.
 - B. BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - C. ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING BUT NOT LIMITED TO MINERAL OR MINING RIGHTS, OR THE LOCATION OF OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN-MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 10. THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE. IN ADDITION IN THE AREA OF CONSTRUCTION FOR NEW BUILDING A UTILITY LOCATOR SURVEY WAS PERFORMED ON JUNE 27, 2017.
 11. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
 12. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
 13. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, ASSIGNED SERIAL NUMBER 20171320890 IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 121 OF 2008 ENTITLED 'UNDERGROUND UTILITY LINE PROTECTION LAW', (905-242-1776). THIS WAS PERFORMED ON MAY 12TH, 2017.
 14. IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 1996, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (905-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.

ZONING COMPLIANCE SUMMARY

AREA REQUIREMENTS	REQUIRED	EXISTING	PROPOSED
MAXIMUM TRACT DENSITY (FLOOR AREA RATIO (FAR))	0.5	0.10	0.24
MINIMUM TRACT AREA (AC)	1.84	87.10	87.10
MAXIMUM BUILDING COVERAGE (% OF TRACT)	25	3.87	7.03
MAXIMUM IMPERVIOUS COVERAGE (% OF TRACT)	60	34.26	45.31
CENTRAL WATER AND SEWER FACILITIES REQUIRED	YES	YES	YES
MAXIMUM HEIGHT OF PRINCIPAL STRUCTURES (FT)	42	>55	65'
MINIMUM LOT WIDTH AT RIGHT-OF-WAY LINE (FT)	200	1,048.16	1,048.16
MINIMUM LOT WIDTH AT BUILDING SETBACK LINE (FT)	200	810.26	810.26
MINIMUM SETBACKS FROM STREET (FT):			
ANY BUILDING FACE TO ARTERIAL STREET ULTIMATE RIGHT-OF-WAY	60	1,841.27	1,037.73
ANY BUILDING FACE TO COLLECTOR OR LOCAL STREET ULTIMATE RIGHT-OF-WAY	40	N/A	N/A
ANY BUILDING FACE TO COMMON PARKING AREA	10	N/A	N/A
SURFACE PARKING AREAS TO ARTERIAL STREET ULTIMATE RIGHT-OF-WAY	35	1,079.39	771.85
SURFACE PARKING AREAS TO COLLECTOR STREET ULTIMATE RIGHT-OF-WAY	20	N/A	N/A
SURFACE PARKING AREAS TO LOCAL STREET ULTIMATE RIGHT-OF-WAY	15	N/A	N/A
MINIMUM PRINCIPAL STRUCTURE SETBACKS FROM TRACT PERIMETER (EXCLUDING STREET FRONTAGES)(FT)			
FROM OTHER LIKE ZONED TRACTS (FT)	35	300.10	300.10
FROM ANY RESIDENTIAL DISTRICT BOUNDARY LINE	50	N/A	N/A
FROM OTHER DISTRICT BOUNDARY LINES	30	225.03	225.03
MINIMUM ACCESSORY STRUCTURE SETBACKS FROM TRACT PERIMETER (EXCLUDING STREET FRONTAGES)(FT)			
FROM OTHER LIKE ZONED TRACTS (FT)	35	N/A	N/A
FROM ANY RESIDENTIAL DISTRICT BOUNDARY LINE	50	N/A	N/A
FROM OTHER DISTRICT BOUNDARY LINES	30	N/A	N/A
MINIMUM SURFACE PARKING AREAS, DRIVEWAYS, INTERIOR ROADWAYS SETBACKS FROM TRACT PERIMETER (EXCLUDING STREET FRONTAGES)(FT)			
FROM OTHER LIKE ZONED TRACTS (FT)	20	38.47	38.47
FROM ANY RESIDENTIAL DISTRICT BOUNDARY LINE	35	N/A	N/A
FROM OTHER DISTRICT BOUNDARY LINES	15	N/A	N/A
MINIMUM PRINCIPAL BUILDING SPACING (FT)			
WINDOW WALL TO WINDOWLESS WALL	20	N/A	N/A
WINDOW WALL TO WINDOW WALL	-	-	-
FRONT TO FRONT	60	84.50	84.50
REAR TO REAR	55	N/A	N/A
END TO END	45	N/A	N/A
FRONT TO REAR	60	N/A	N/A
FRONT TO END	60	N/A	N/A
REAR TO END	55	N/A	N/A
INTERIOR VEHICULAR USE LANDSCAPING REQUIREMENT (%)	5	10.95	13.26

LEGEND

	PROPERTY LINE
	EX BUILDING
	ADJOINING PROPERTY LINE
	EX EASEMENT
	EX CURB
	EX EDGE OF PAVEMENT
	EX EDGE OF GRAVEL
	EX WALL
	EX FENCE LINE
	EX CONCRETE
	EX GORE STRIPING
	EXISTING STEEP SLOPE (15-25%)
	EXISTING VERY STEEP SLOPE (>25%)
	EX SIGN
	PROPOSED CURB
	PROPOSED CONCRETE
	PROPOSED GORE STRIPING
	PROPOSED SIGN
	PROPOSED PARKING LOT LINE
	PROPOSED BUILDING
	PROPOSED PAVEMENT MARKINGS
	BUILDING SETBACK LINE

PARKING COMPLIANCE SUMMARY

PARKING REQUIREMENTS	REQUIREMENTS
EXISTING PARKING SPACES ON PROPERTY	1,865
EXISTING OFFICE GROSS AREA (388,000 SF)	
PROPOSED PHASE 1 OFFICE GROSS AREA (240,000 SF) **	
PROPOSED PHASE 2 OFFICE GROSS AREA (240,000 SF) **	
TOTAL PARKING SPACES FOR OFFICE GROSS AREA - 868,000 SF (PHASE 1 AND 2) (3 PER 1000) **	2,604*
TOTAL PROVIDED PARKING SPACES	3,014

ADA REQUIREMENTS

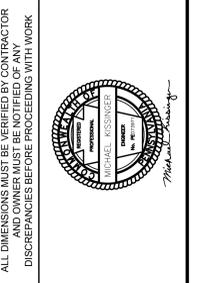
REQUIREMENTS	REQUIREMENTS
EXISTING	46
PROPOSED (ADDITIONAL)	22
TOTAL	68

VARIANCE APPROVAL:
THE FOLLOWING VARIANCES WERE GRANTED BY THE EAST WHITELAND TOWNSHIP ZONING HEARING BOARD ON JUNE 26, 2017:

1. A VARIANCE FROM THE REQUIREMENT OF ZONING ORDINANCE §200-70 TO PERMIT THREE PARKING SPACES PER 1,000 SQUARE FEET OF GROSS FLOOR AREA FOR THE EXISTING AND PROPOSED BUILDINGS.
2. A VARIANCE FROM THE MAXIMUM HEIGHT OF 42 FEET AS SET FORTH IN ATTACHMENT 7 OF THE ZONING ORDINANCE (TABLE OF DEVELOPMENT STANDARDS FOR MIXED USE DISTRICTS) IN ORDER TO CONSTRUCT THE PROPOSED BUILDINGS WITH A HEIGHT OF 65 FEET.
3. A VARIANCE FROM THE PROHIBITION OF CONSTRUCTION WITHIN STEEP AND VERY STEEP SLOPES IN ZONING ORDINANCE § 200-57D.(1) IN ORDER TO PROVIDE FOR THE OFFICE BUILDING TO ENDOUR WITHIN THE AREA OF MANMADE STEEP AND VERY STEEP SLOPES ON THE SUBJECT PROPERTY.

WAIVER REQUESTED FROM EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT

1. WAIVER 175-21 C.(10) - PLAN CONTENT: THE PRELIMINARY PLAN SHALL SHOW: ALL EXISTING SEWER LINES, WATER LINES, FIRE HYDRANTS, UTILITY TRANSMISSION LINES, CULVERTS, BRIDGES, RAILROADS, WATERCOURSES, TOWNSHIP ZONING AND FLOOD HAZARD DISTRICT BOUNDARIES (IF ANY), EASEMENTS, RIGHT-OF-WAYS AND OTHER SIGNIFICANT MAN-MADE OR NATURAL FEATURES, SUCH AS MAJOR TREE MASSES (ABOVE FOUR-INCH CALIPER) AND SOIL CLASSIFICATION WITHIN THE PROPOSED SUBDIVISION AND WITHIN 300 FEET OF THE BOUNDARIES OF THE PROPOSED DEVELOPMENT.
2. WAIVER 175-27 H - CUTS AND FILLS, SUBDIVISIONS AND LAND DEVELOPMENTS SHALL BE LAID OUT SO AS TO AVOID THE NECESSITY FOR EXCESSIVE CUT OR FILL UNLESS SPECIFICALLY WARRANTED BY TERRAIN OR LOCATION, NO CUT OR FILL, WITH THE EXCEPTION OF THE AREA OF A BASEMENT OR A CUT AND FILL ON AN INDIVIDUAL LOT NECESSARY TO ALLOW THE CONSTRUCTION OF A HOUSE THEREON SHALL EXCEED FIVE FEET UNLESS A WAIVER IS GRANTED BY THE BOARD UPON DUE CAUSE SHOWN.
3. WAIVER APPENDIX V (175 ATTACHMENT 4-3) - ALL CURBS SHALL HAVE AN 8" REVEAL.
4. WAIVER 175-21D.E.(1)(v) - A FENCE OR SUITABLE VEGETATIVE SCREEN SHALL BE PROVIDED AROUND ALL DETENTION AND RETENTION BASINS AS REQUIRED BY THE TOWNSHIP ENGINEER.
5. WAIVER 175-27 H - CUTS AND FILLS, SUBDIVISIONS AND LAND DEVELOPMENTS SHALL BE LAID OUT SO AS TO AVOID THE NECESSITY FOR EXCESSIVE CUT OR FILL UNLESS SPECIFICALLY WARRANTED BY TERRAIN OR LOCATION, NO CUT OR FILL, WITH THE EXCEPTION OF THE AREA OF A BASEMENT OR A CUT AND FILL ON AN INDIVIDUAL LOT NECESSARY TO ALLOW THE CONSTRUCTION OF A HOUSE THEREON SHALL EXCEED FIVE FEET UNLESS A WAIVER IS GRANTED BY THE BOARD UPON DUE CAUSE SHOWN.

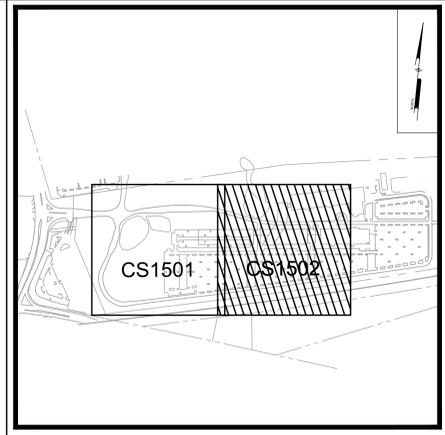
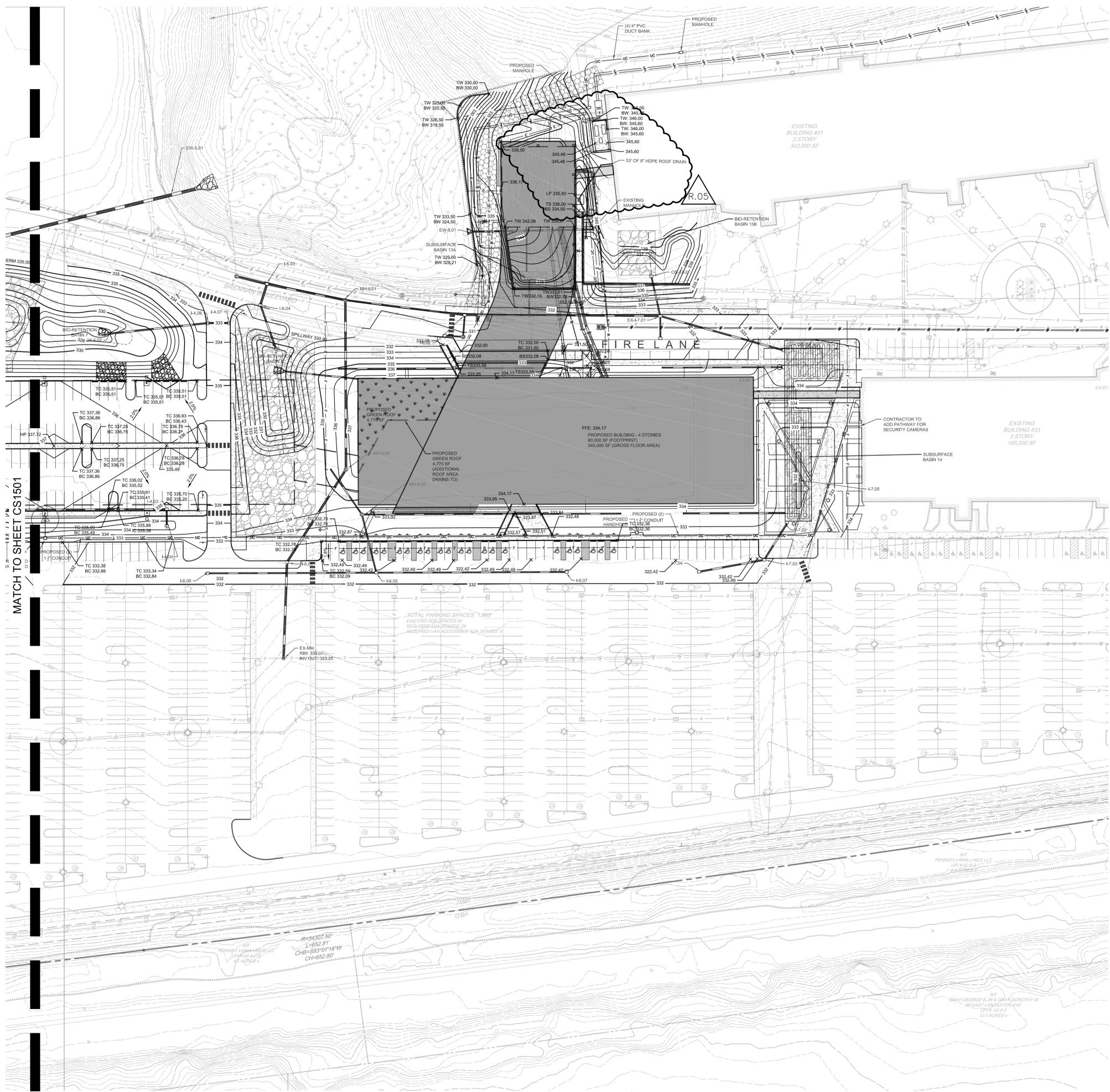


VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19385
OVERALL SITE PLAN - PHASE 2
THE VANGUARD GROUP
400 DEVON PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS
05/11/19	05/11/19	AMG
05/15/19	05/15/19	MEL
05/15/19	05/15/19	MEL
05/15/19	05/15/19	FFS
05/15/19	05/15/19	BY

PROJECT: TVG1702
DATE: 2017-07-28
DRAWING SCALE: 1"=150'
DRAWN BY: MEM
APPROVED BY: MK
CS1003
SHEET 17 OF 72

NOT FOR CONSTRUCTION



KEY MAP
Scale: 1" = 60'



MATCH TO SHEET CS1501

PLOTTED: 5/20/2018 9:00 PM BY: JIM GALLO - PLOTTING: PENNONI INC. PROJECT STATUS: -



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PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Pennoni
PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

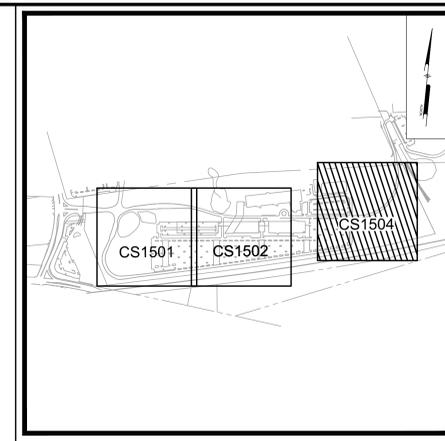
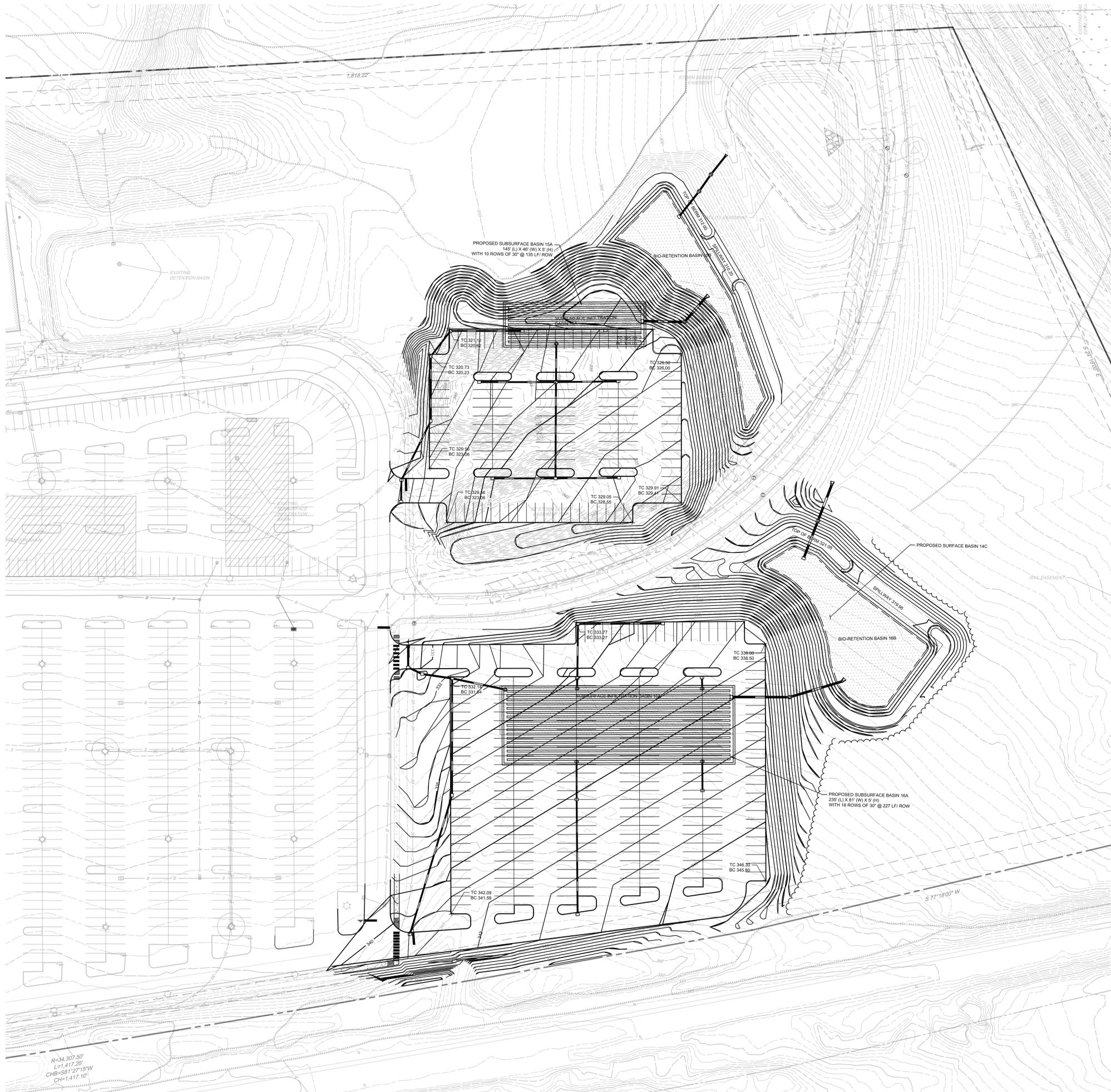
GRADING PLAN

THE VANGUARD GROUP
400 DEWOLP PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
01/14/19	5	AS-BUILT	
11/12/18	4	REVISED ADA PARKING LAYOUT	
03/15/18	3	60% CONSTRUCTION DOCUMENTS	
10/13/17	2	BID SET	
09/13/17	1	REVISIONS PER TOWNSHIP COMMENTS	

PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK

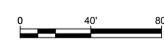
CS1502
SHEET 20 OF 72



KEY MAP
Scale: 1" = 800'



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BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Project Path: C:\Users\jmc\OneDrive\Documents\CS1504.dwg
 PLOTTED: 5/30/2019 10:08 AM BY: Michael Galati
 PLOT STYLE: Penwork.ctb
 PROJECT STATUS:

Pennoni
PENNONI ASSOCIATES INC.
 One South Church Street, 2nd Floor
 West Chester, OH 41001
 T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK



VANGUARD MALVERN WEST EXPANSION
 31 MOREWALL ROAD
 MALVERN, PA 19355

GRADING PLAN

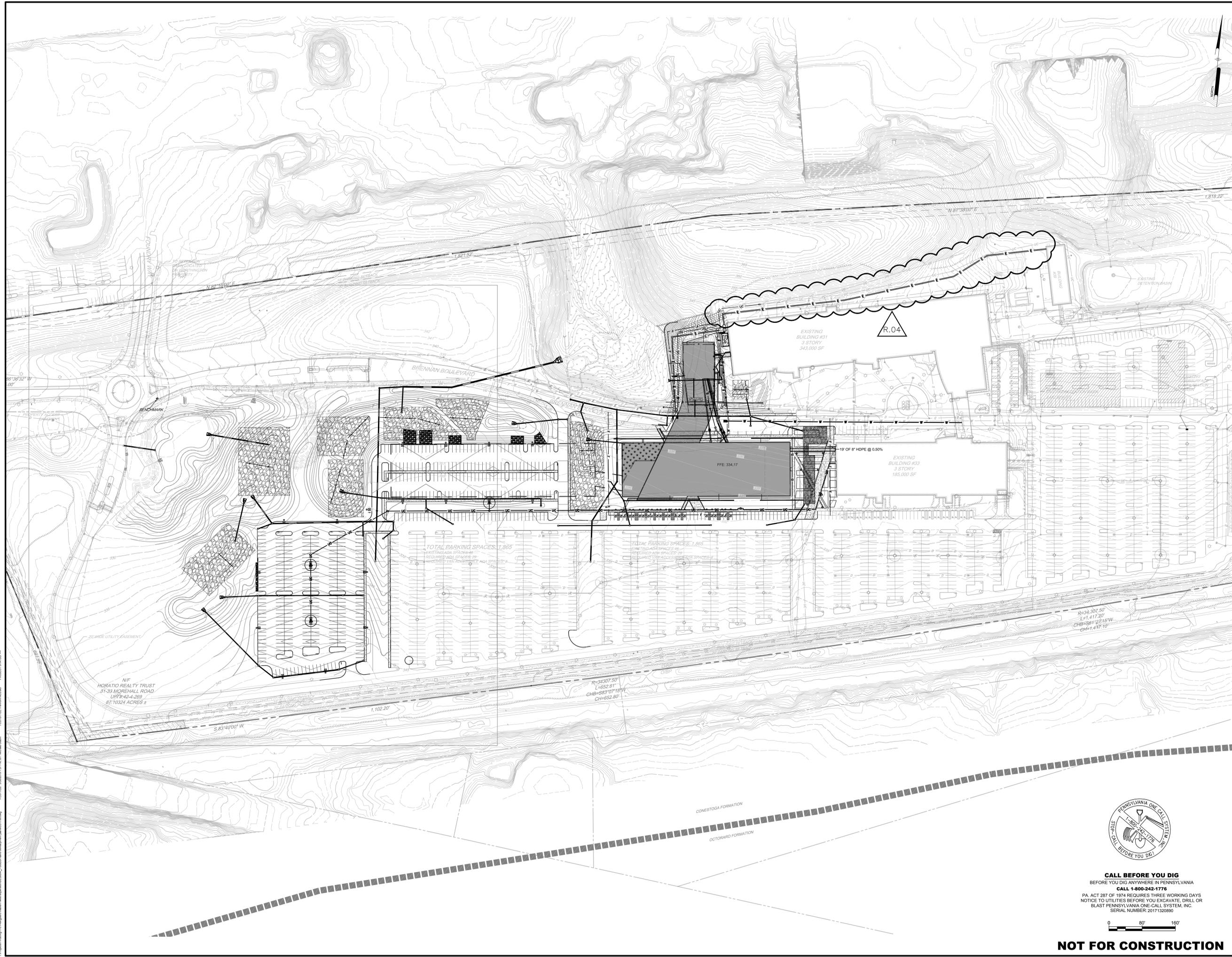
THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WAYNE, PA 19387

NO.	DATE	REVISIONS	BY

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PROJECT: TVG1702
 DATE: 2019-05-31
 DRAWING SCALE: 1"=40'
 DRAWN BY: JMG
 APPROVED BY: MK

CS1504
 SHEET 22 OF 72



Pennoni
PENNONI ASSOCIATES INC.
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 Malvern, PA 19355
 T 610-428-8807 F 610-428-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
 DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
 31 MOREHALL ROAD
 MALVERN, PA 19355

OVERALL UTILITY PLAN

THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WAYNE, PA 19387

NO.	DATE	BY	REVISIONS
1	08/13/17	MEM	REVISIONS PER TOWNSHIP COMMENTS
2	10/13/17	MEM	BID SET
3	12/08/2017	MEM	REVISED SITE PLAN
4	03/16/18	MEM	60% CONSTRUCTION DOCUMENTS

PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=80'
DRAWN BY	MEM
APPROVED BY	MK

CS1700
 SHEET 23 OF 72

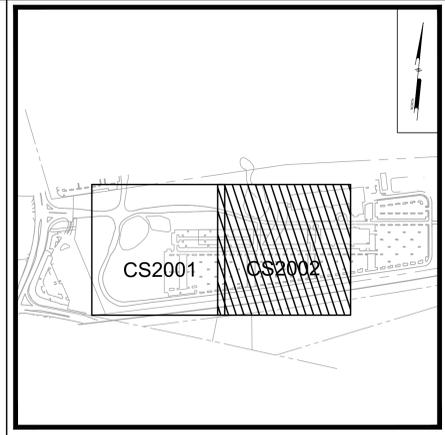
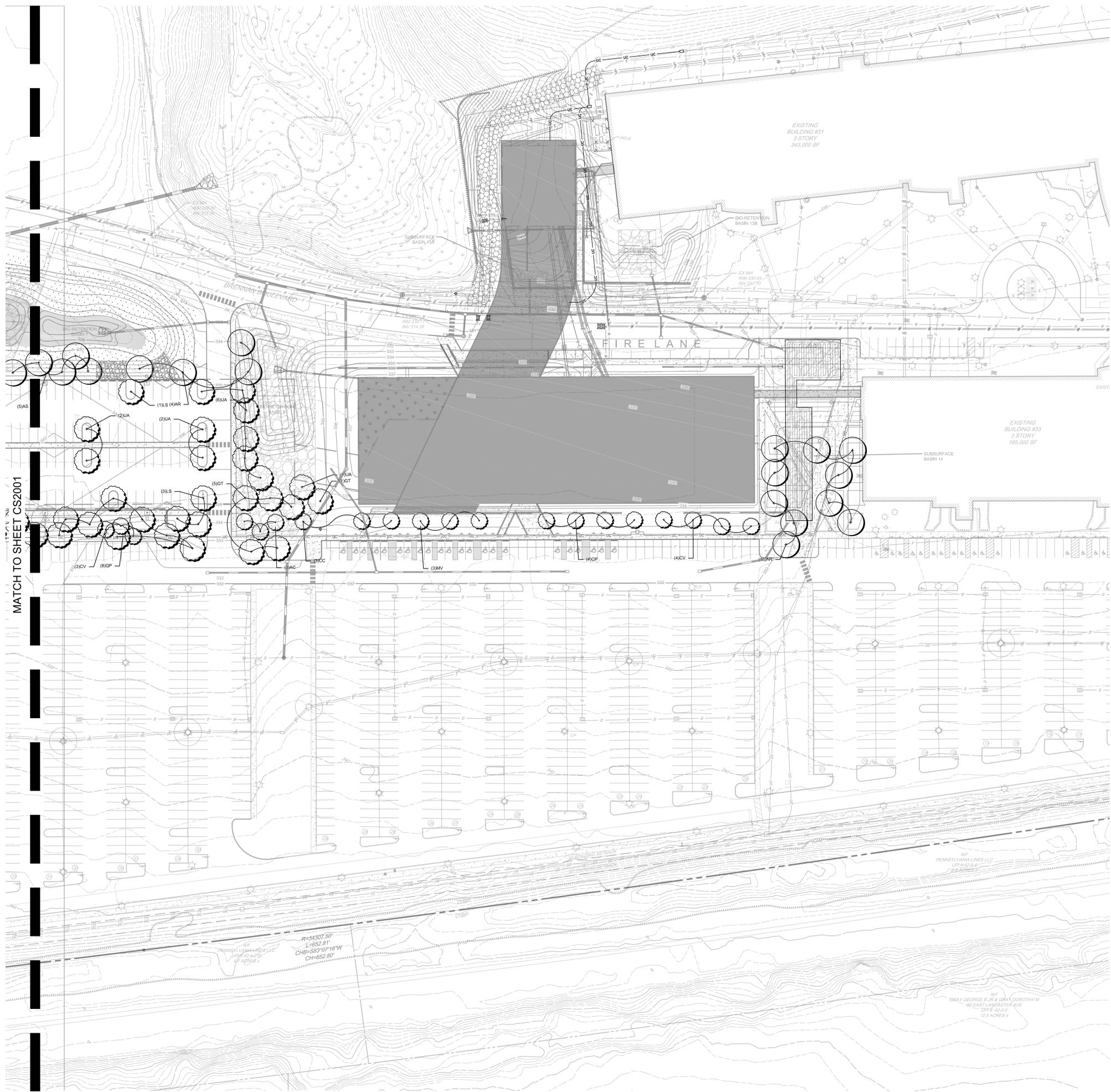


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 PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
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 SERIAL NUMBER: 20171320890



NOT FOR CONSTRUCTION

PROJECT STATUS: — PLOTTED: 3/20/2018 12:52 PM BY: Michael Calkins PLOTFILE: Pennoni\CS1700.dwg



KEY MAP
Scale: 1" = 600'

LEGEND (LANDSCAPE)

- PROPOSED DECIDUOUS SHADE TREE (PERIMETER PARKING LOT LANDSCAPING)
- PROPOSED DECIDUOUS SHADE TREE (PARKING LOT LANDSCAPING)
- PROPOSED ORNAMENTAL TREE (PARKING LOT LANDSCAPING)
- PROPOSED RIPARIAN BUFFER SEED MIX
- PROPOSED MEADOW SEED MIX
- PROPOSED STORMWATER SEED MIX

MATCH TO SHEET CS2001



ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

LANDSCAPE PLAN

THE VANGUARD GROUP
400 DECON PARK DRIVE
WAYNE, PA 19387

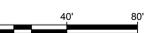
NO.	DATE	REVISIONS	BY
001518	5	60% CONSTRUCTION DOCUMENTS	MRL
002018	4	REVISED PER CCDC COMMENTS	MRL
012418	3	REVISED PER CCDC COMMENTS	MRL
101517	2	BID SET	MRL
091517	1	REVISIONS PER TOWNSHIP COMMENTS	FFS

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PROJECT	TVG1702
DATE	2017-07-28
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS2002	
SHEET	29 OF 72



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PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BURY PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Project: C:\p\171-vanguard-malvern-west-expansion\BIDDING\LANDSCAPE.dwg, PLOTFILE: Pennoni\CS2002.dwg, PLOTDATE: 2009/07/28 PM 01:51, BY: Michael Gable, PROJECT STATUS: -



PENNONI ASSOCIATES INC.
 One South Church Street, 2nd Floor
 West Chester, PA 19380
 T 610-423-8807 F 610-423-8818



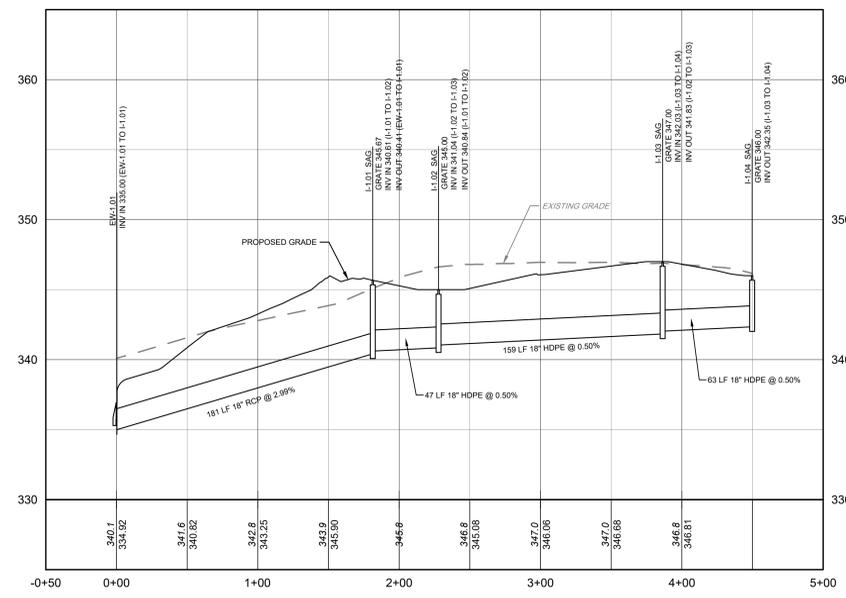
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
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VANGUARD MALVERN WEST EXPANSION

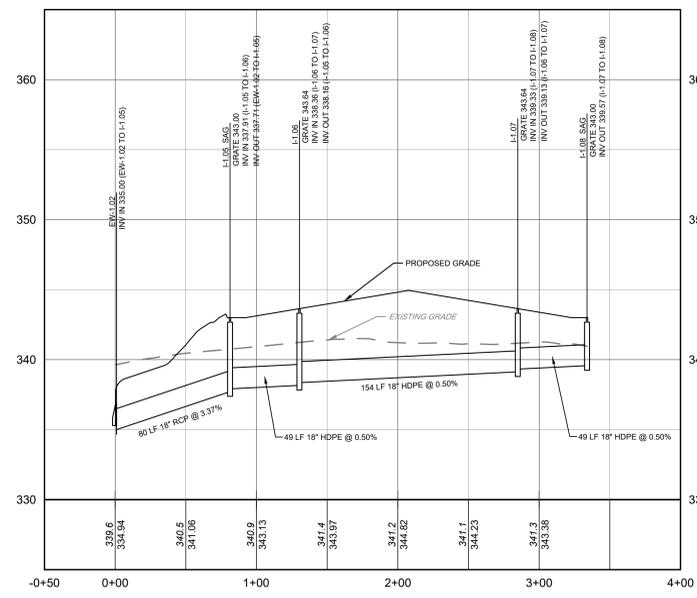
31 MOREHALL ROAD
 MALVERN, PA 19355

STORM SEWER PROFILES

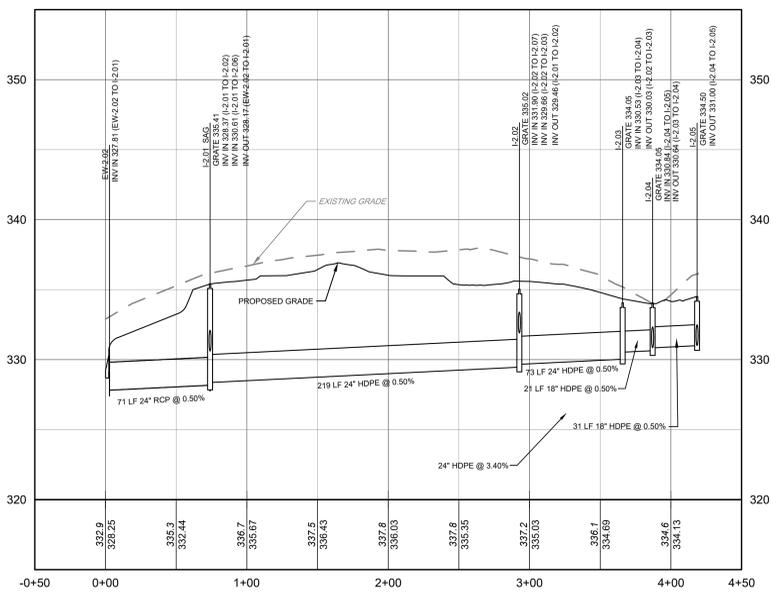
THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WAYNE, PA 19387



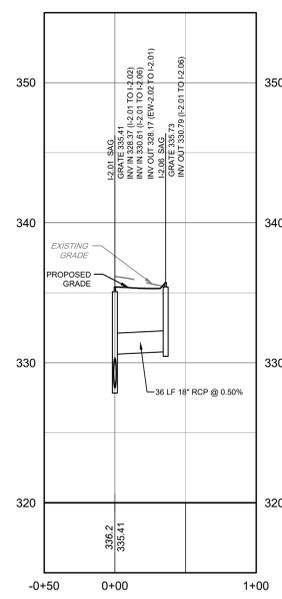
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 VERTICAL SCALE: 1" = 5'



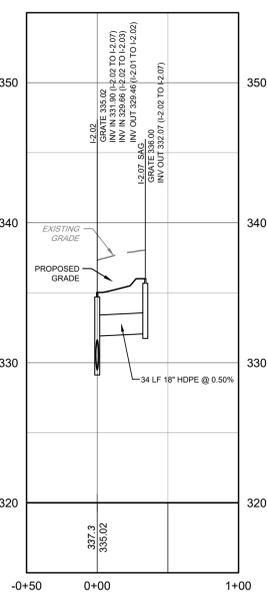
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 VERTICAL SCALE: 1" = 5'



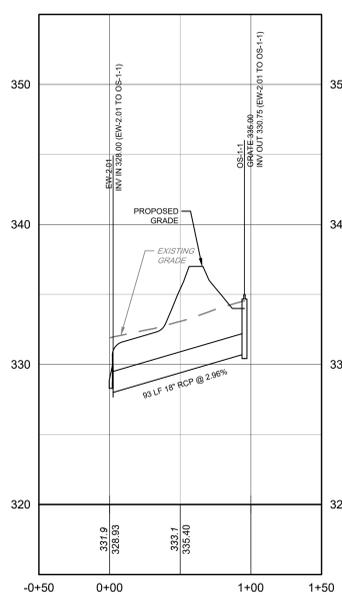
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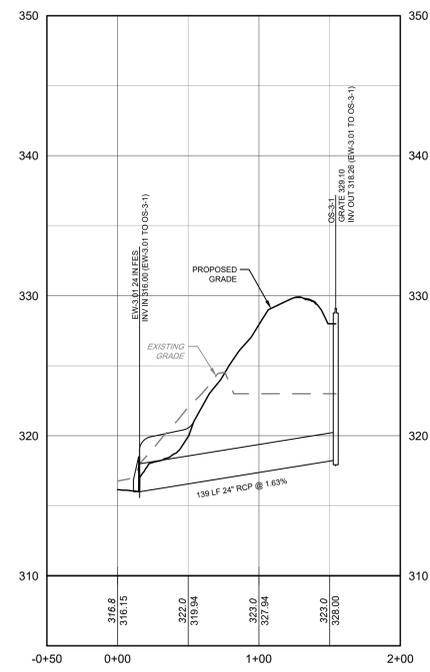
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 VERTICAL SCALE: 1" = 5'



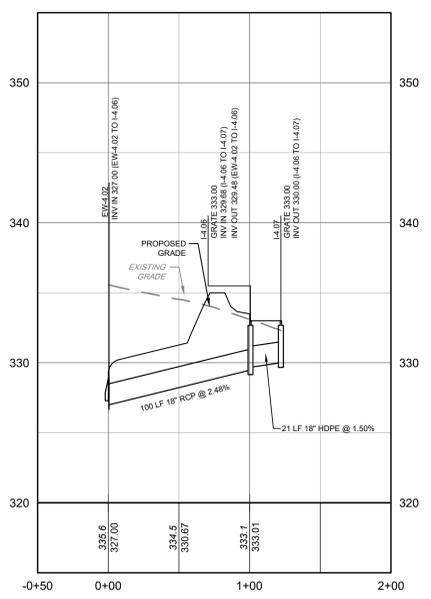
I-2.02 TO I-2.07
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EW-2.01 TO OS-1-1
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EW-3.01 TO OS-3-1
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EW-4.02 TO I-4.07
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



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 SERIAL NUMBER(S): 20171320890

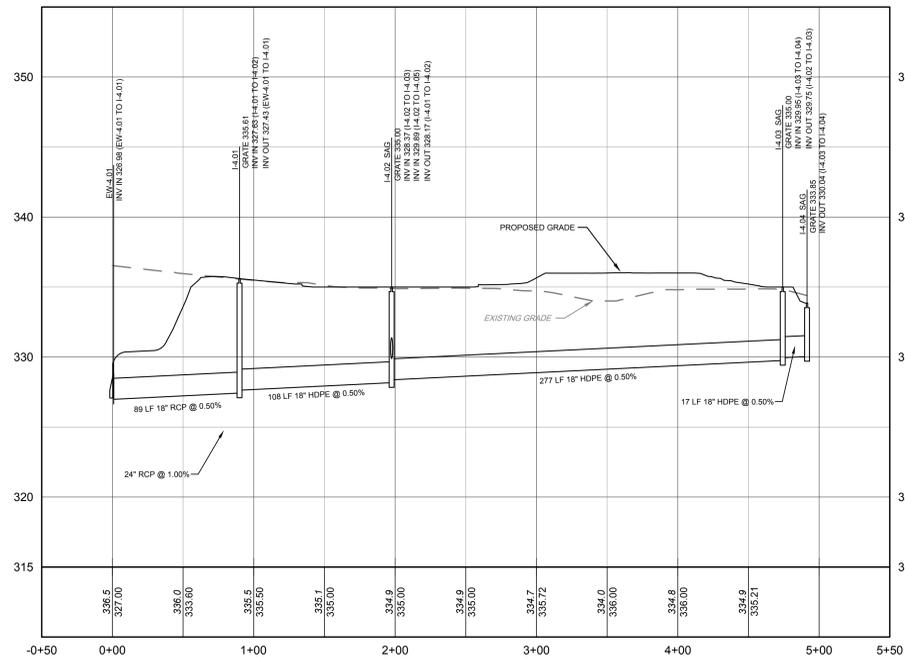
NOT FOR CONSTRUCTION

NO.	DATE	REVISIONS	BY
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10/17	2	BID SET	MEL
09/17	1	REVISIONS PER TOWNSHIP COMMENTS	FFS

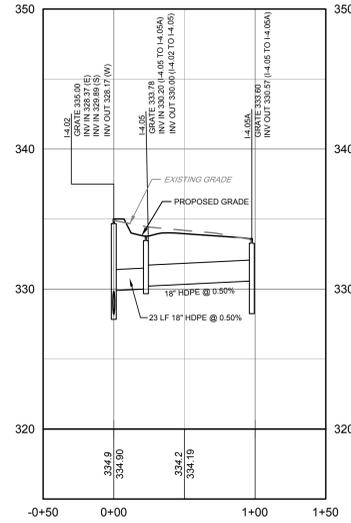
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PROJECT: TVG1702
 DATE: 2017-07-28
 DRAWING SCALE: 1" = 50'
 DRAWN BY: MEM
 APPROVED BY: MK

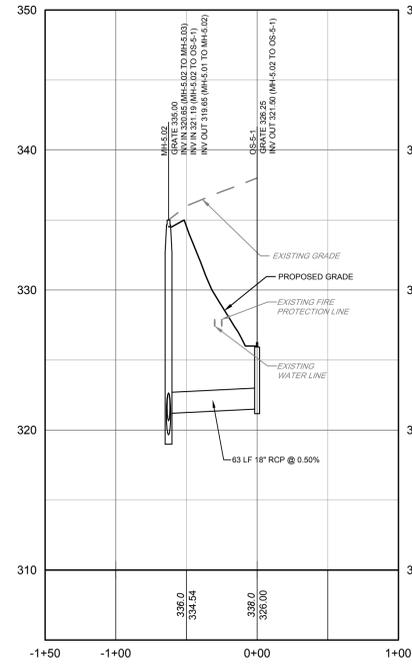
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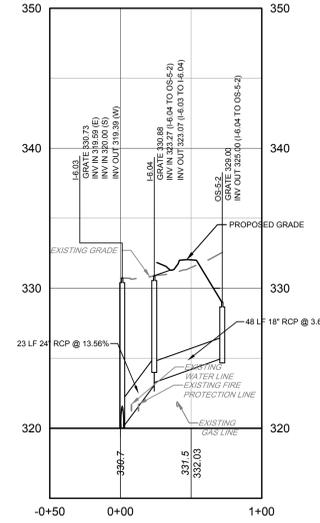
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 VERTICAL SCALE: 1" = 5'



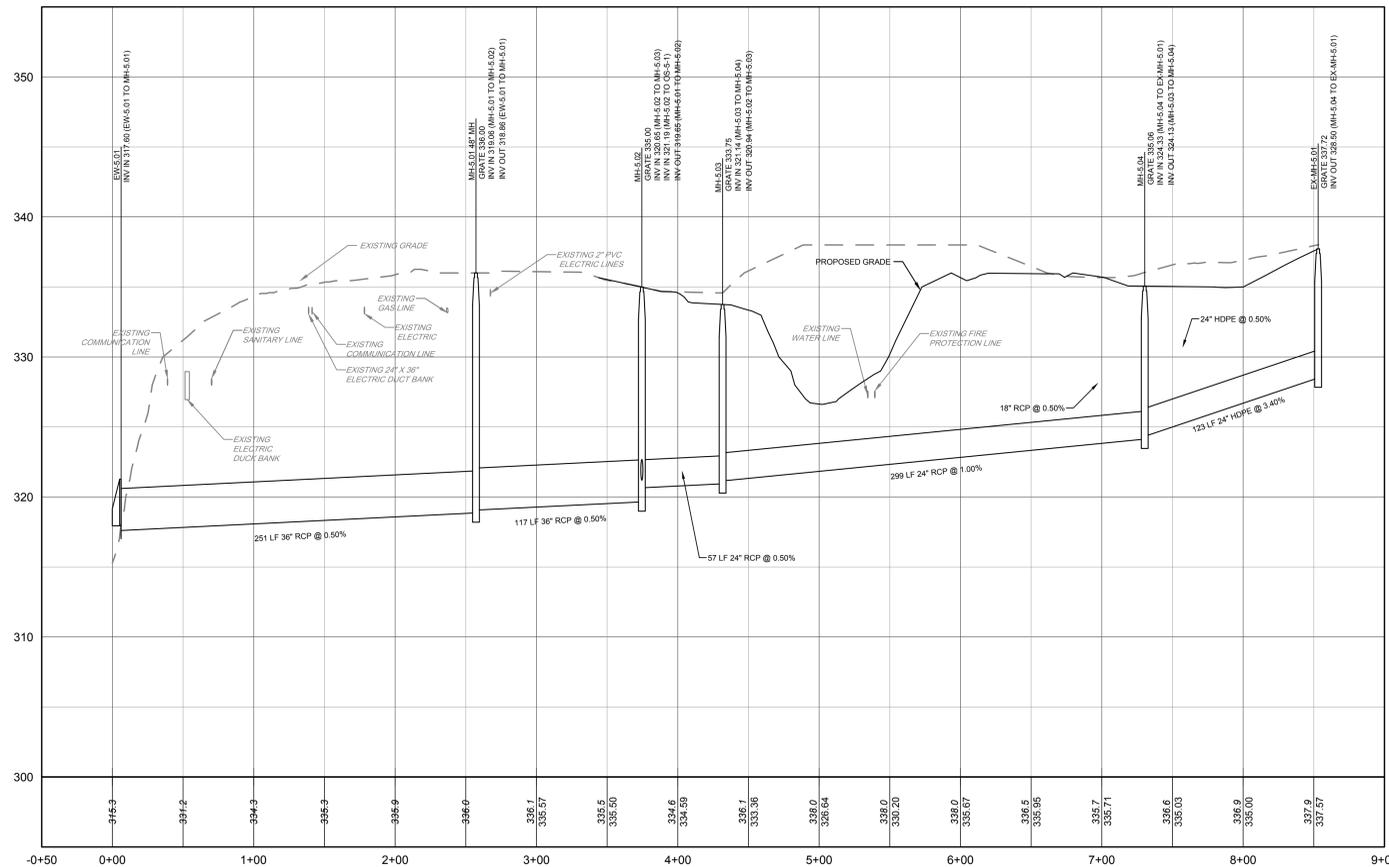
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 VERTICAL SCALE: 1" = 5'



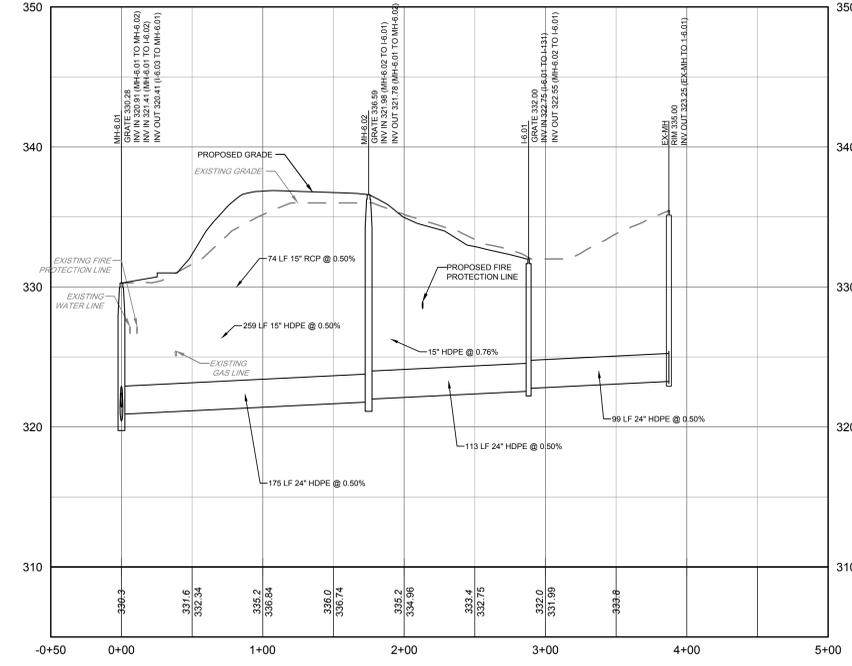
MH-5.02 TO OS-5-1
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



I-6.03 TO OS-5-2
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EW-5.01 TO EX-MH-5.01
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



MH-6.01 TO EX-MH
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



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 SERIAL NUMBER(S): 20171320890

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 West Chester, PA 19380
 T 610-423-8807 F 610-423-8818



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VANGUARD MALVERN WEST EXPANSION

31 MOREHALL ROAD
 MALVERN, PA 19355

STORM SEWER PROFILES

THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
001518	3	60% CONSTRUCTION DOCUMENTS	MRL
101517	2	BID SET	MRL
091517	1	REVISIONS PER TOWNSHIP COMMENTS	FSS

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PROJECT	TVGH1702
DATE	2017-07-28
DRAWING SCALE	1" = 50'
DRAWN BY	MEM
APPROVED BY	MK



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 One South Church Street, 2nd Floor
 West Chester, PA 19380
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VANGUARD MALVERN WEST EXPANSION
 31 MOREHALL ROAD
 MALVERN, PA 19355

STORM SEWER PROFILES

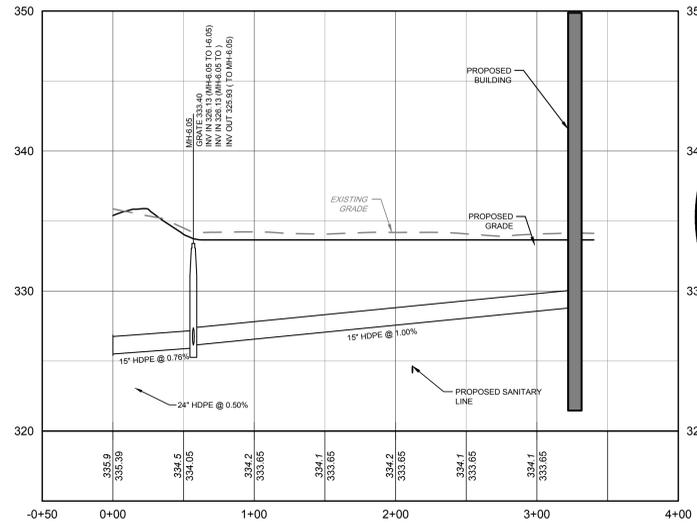
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 WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
1	03/15/18	1 80% CONSTRUCTION DOCUMENTS	MBL

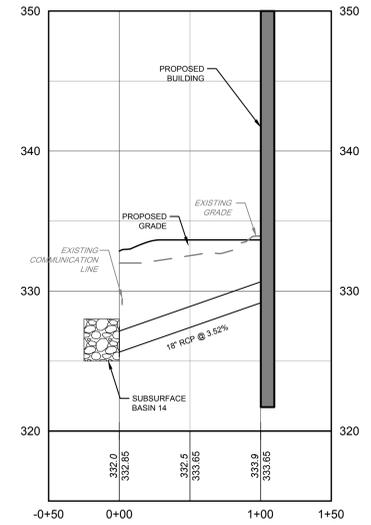
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PROJECT	TVGH1702
DATE	2018-01-18
DRAWING SCALE	1"=50'
DRAWN BY	MEM
APPROVED BY	MK

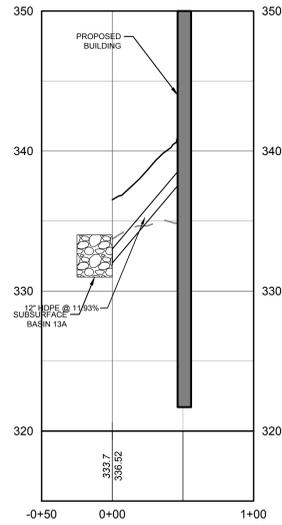
CS4004
 SHEET 37 OF 72



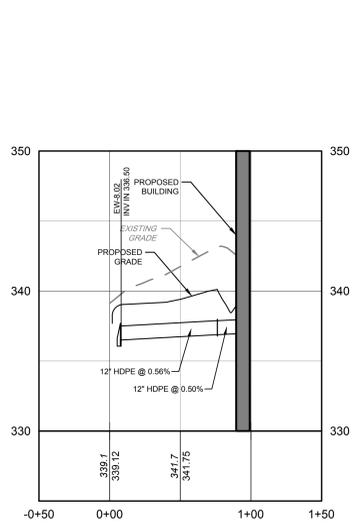
BASIN 8 TO PROPOSED BUILDING (SOUTHWEST)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



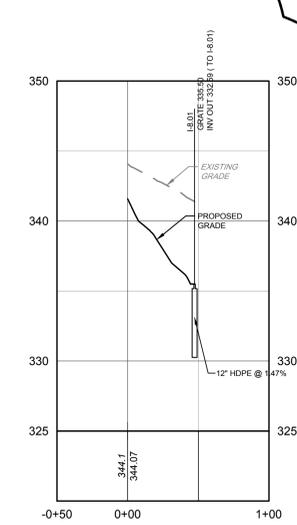
BASIN 14 TO PROPOSED BUILDING (SOUTHEAST)
 HORIZONTAL SCALE: 1" = 50'
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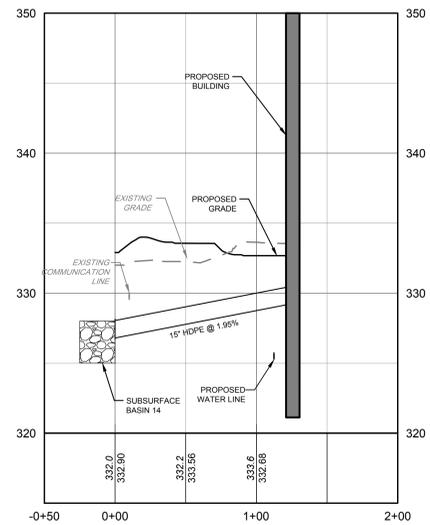
SUBSURFACE BASIN TO ROOF DRAIN
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



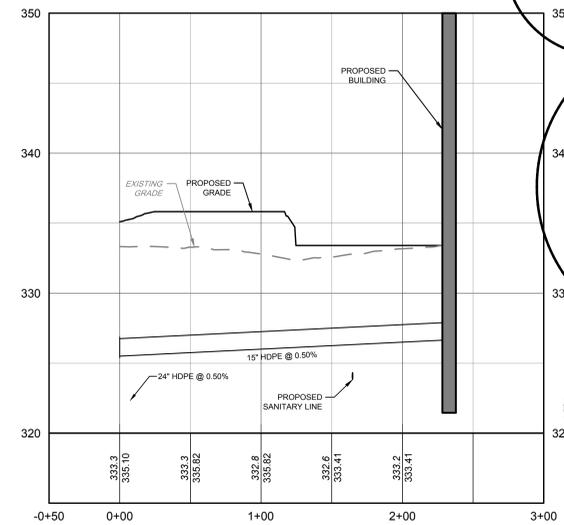
ROOF DRAIN
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



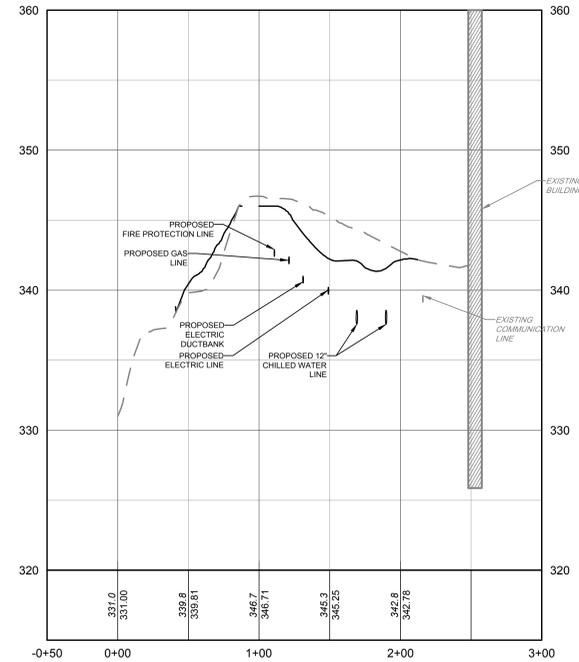
MH-8.03 TO I-8.01
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



I-7.01 TO PROPOSED BUILDING (NORTHEAST)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



BASIN 8 TO PROPOSED BUILDING (NORTHWEST)
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'



EW-8.01 TO EXISTING BUILDING #31
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

R.01

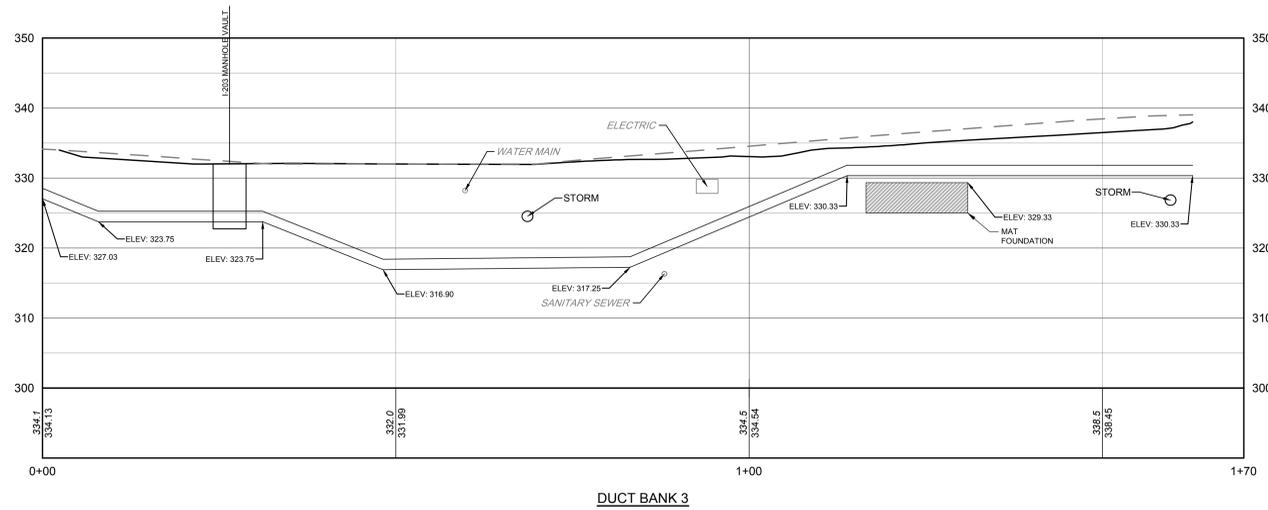


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 SERIAL NUMBER(S): 20171320890

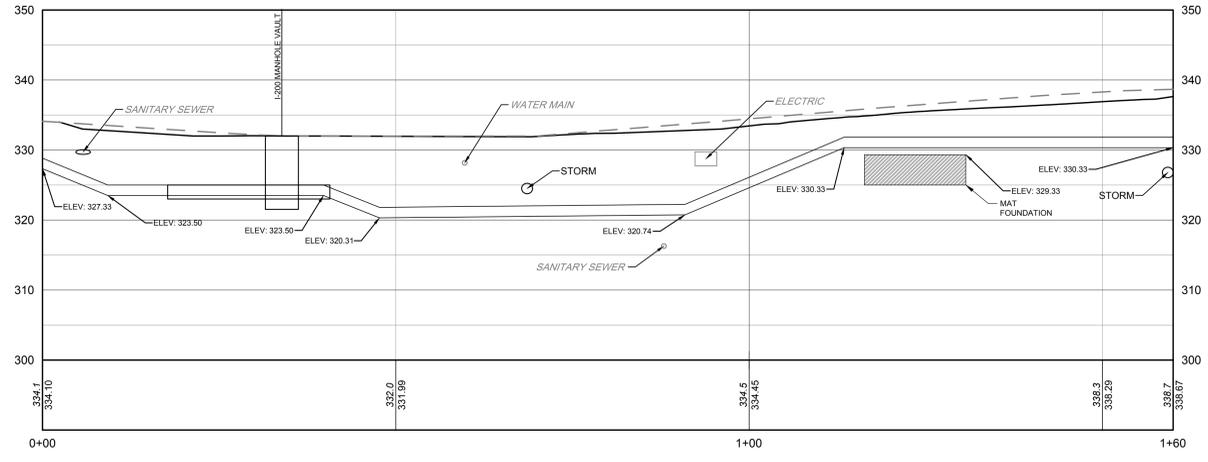
NOT FOR CONSTRUCTION

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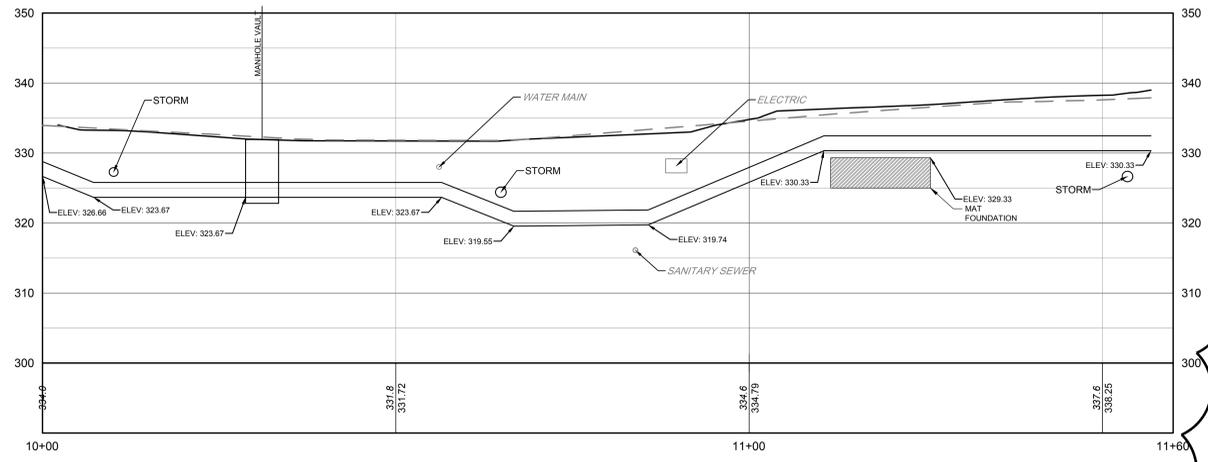
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 PLOT FILE: Pennon\MS2018



DUCT BANK 3



DUCT BANK 2



DUCT BANK 1.

R.02

R.01



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 SERIAL NUMBER(S): 20171320890

NOT FOR CONSTRUCTION

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DISCREPANCIES BEFORE PROCEEDING WITH WORK



VANGUARD MALVERN WEST EXPANSION

31 MOREHALL ROAD
MALVERN, PA 19355

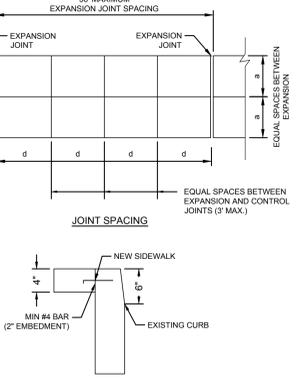
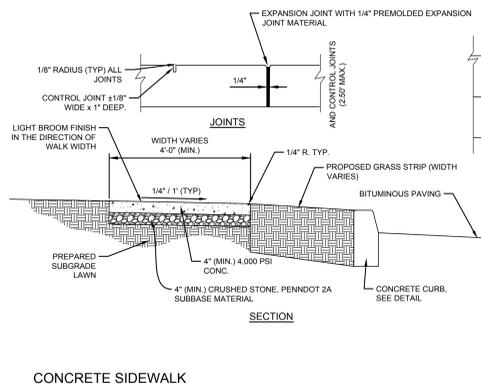
DUCT BANK PROFILES

THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

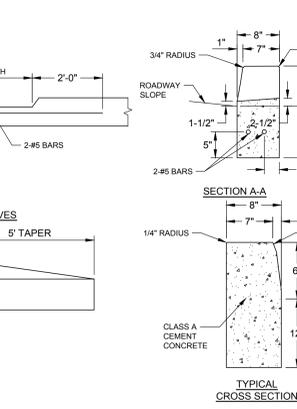
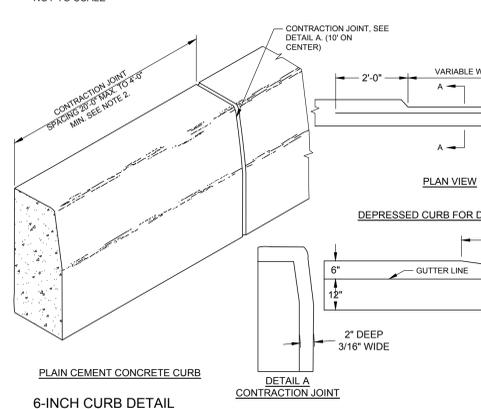
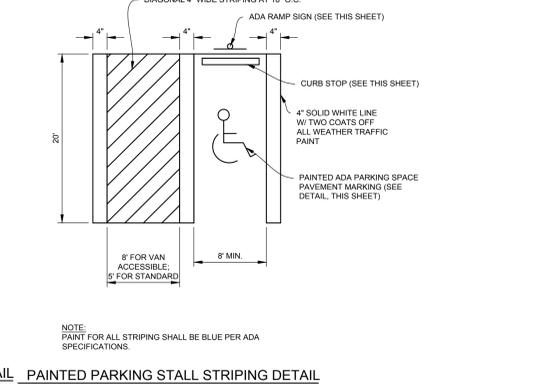
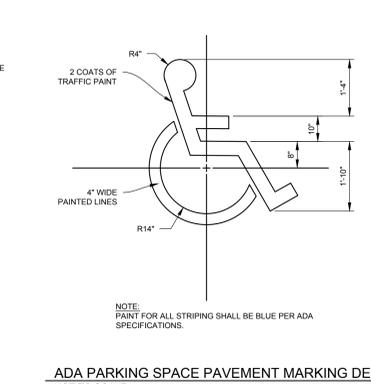
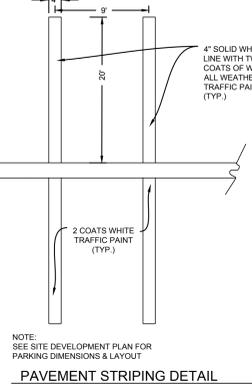
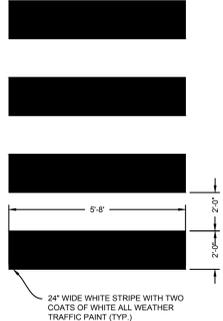
NO.	DATE	REVISIONS	BY
2	02/15/18	REVISED DUCT BANKS	MBL
1	02/15/18	100% CONSTRUCTION DOCUMENTS	MBL

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 ARISING OUT OF OR RESULTING THEREFROM.

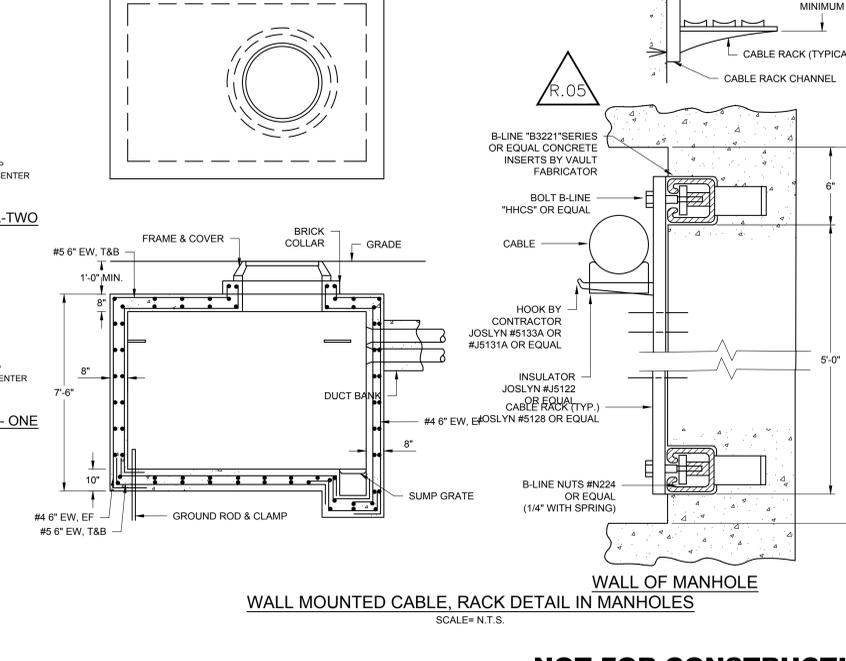
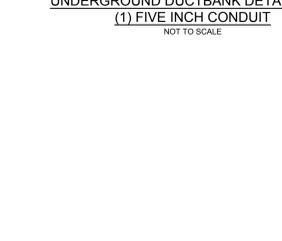
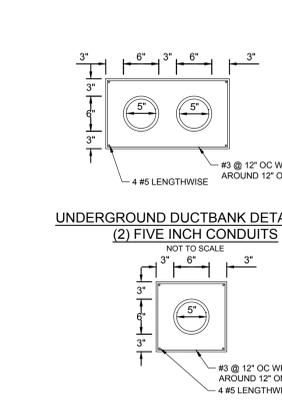
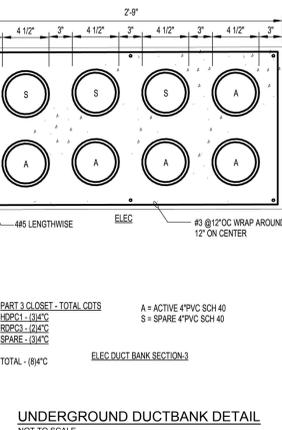
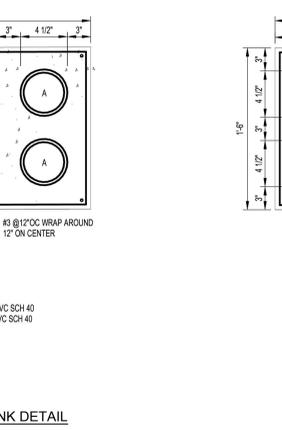
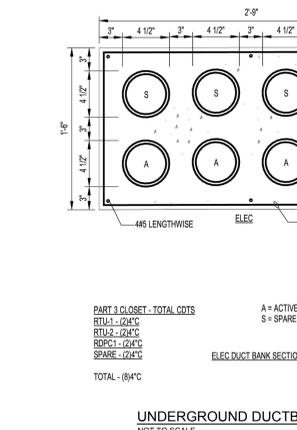
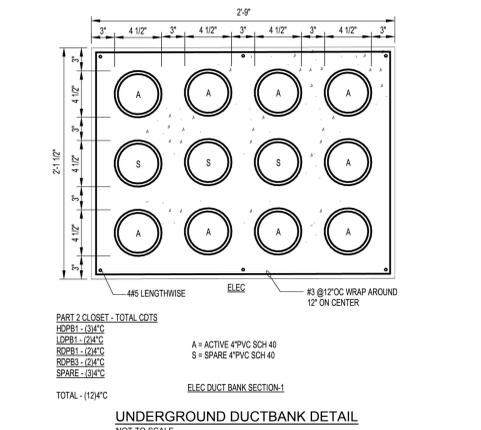
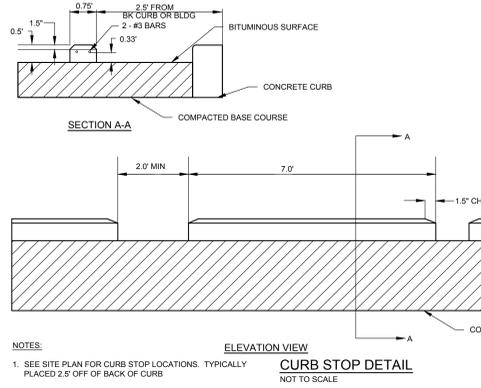
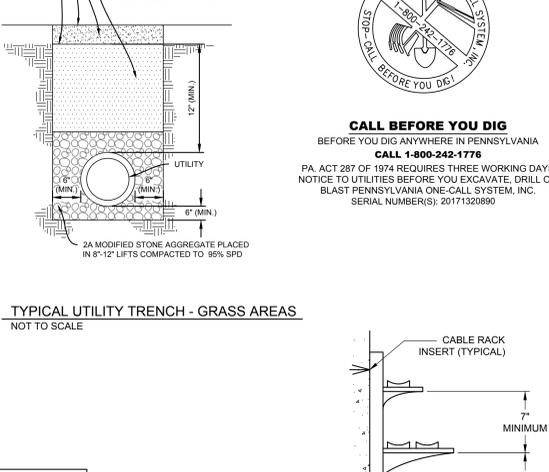
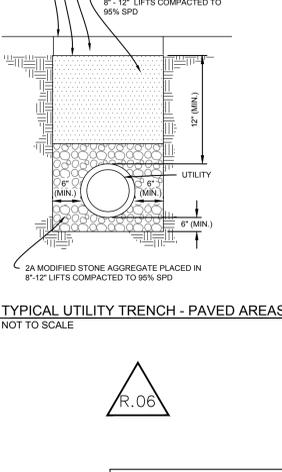
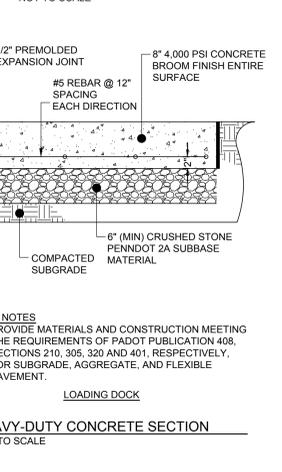
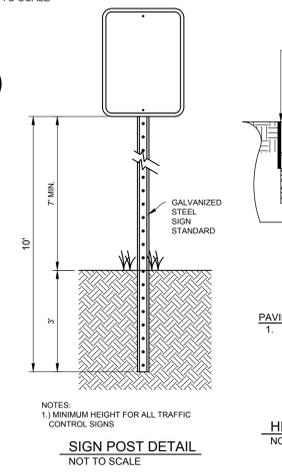
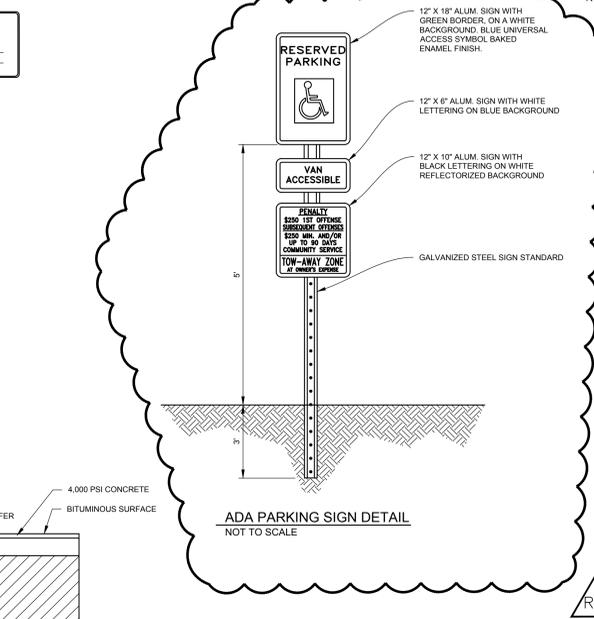
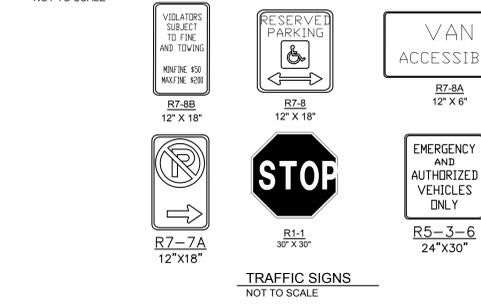
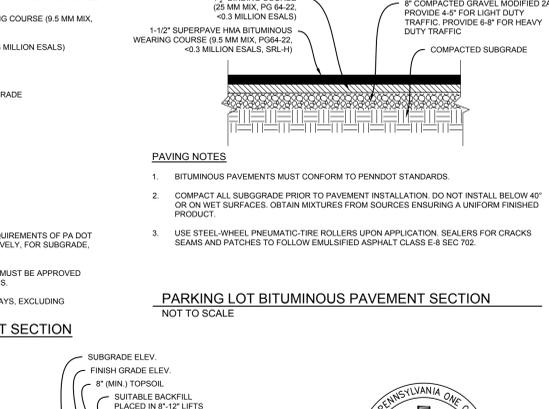
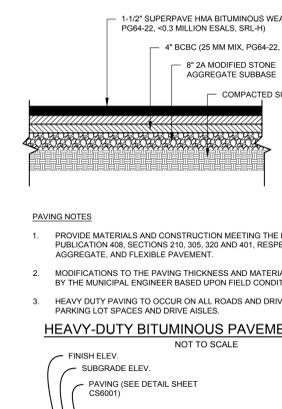
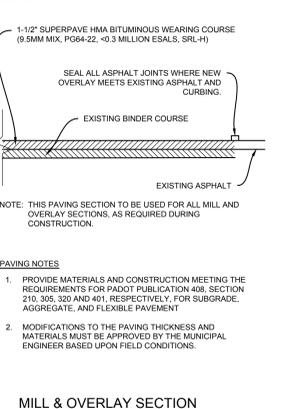
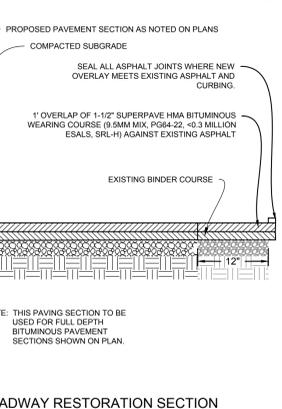
PROJECT	TVG11702
DATE	2018-02-20
DRAWING SCALE	1" = 10'
DRAWN BY	SML
APPROVED BY	MK



- SIDEWALK CONSTRUCTION NOTES:**
1. PROVIDE MATERIALS AND CONSTRUCTION METHODS MEETING THE REQUIREMENTS OF PDOT PUB. 408.
 2. COORDINATE JOINT LOCATIONS TO MATCH EXISTING BLOCKS.
 3. THE PRIMARY SURFACE OF THE CONCRETE SIDEWALK SHALL HAVE A BROOM FINISH AND AN AREA TWO (2) INCHES IN WIDTH, PARALLEL TO THE CONTROL JOINTS, SHALL HAVE A SMOOTH-TROWLED FINISH.
 4. WHERE SIDEWALK IS BEING REPLACED ALONG A CURB, CONTRACTOR TO DOWEL INTO ADJACENT CURB TO STABILIZE THE NEW SIDEWALK.
 5. AREAS OF SPALLING CONCRETE THAT ARE LESS THAN 1\"/>



- NOTES:**
1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CEMENT CONCRETE CURB.
 2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS, A MINIMUM OF 10' ON CENTER.
 3. PLACE 3/4\"/>



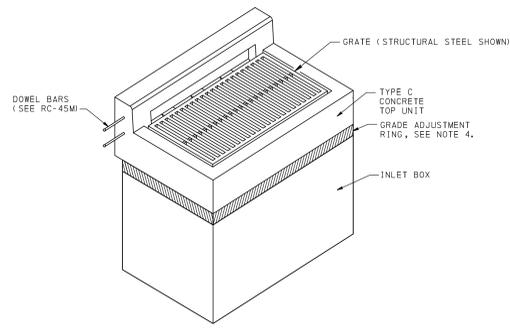
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
 31 MOREHALL ROAD
 MALVERN, PA 19355

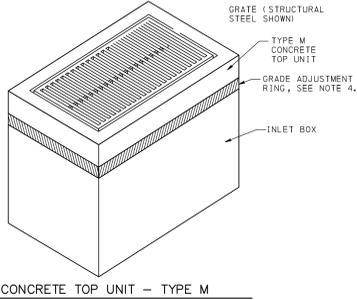
SITE DETAILS
 THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WARRINGTON, PA 18987

REV	DATE	DESCRIPTION	BY
01	10/11/18	REVISED ADA PARKING SIGN DETAIL	MEM
02	03/01/18	REVISED DUCT BANK DETAILS	MEL
03	03/01/18	REVISED DUCT BANK DETAILS	MEL
04	03/01/18	REVISED CONSTRUCTION DOCUMENTS	MEM
05	10/04/17	REVISED SITE PLAN	MEL
06	10/03/17	REVISED BID SET	MEL
07	09/13/17	REVISIONS PER TOWNSHIP COMMENTS	MEM

PROJECT	DATE	DRAWING SCALE	DRAWN BY	APPROVED BY
TVGH1702	2017-07-28	N.T.S.	MEM	MK

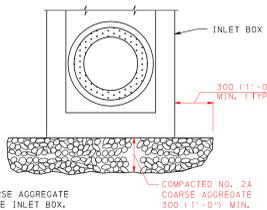


CONCRETE TOP UNIT - TYPE C

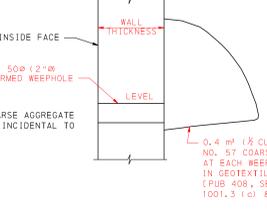


CONCRETE TOP UNIT - TYPE M

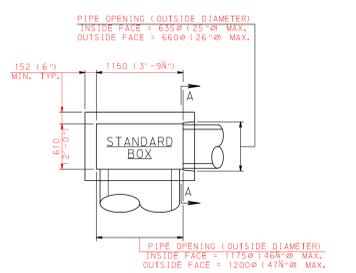
- NOTES:**
- FOR ADDITIONAL NOTES, SEE SHEETS 1 - 3.
 - STANDARD INLET BOXES SHOWN, PROVIDE TOP SLABS FOR OTHER INLET BOX TYPES.
 - SEE RC-45M FOR DETAILS FOR THE CONCRETE TOP UNITS, FRAMES, AND GRATES.
 - PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. SEE RC-45M FOR DETAILS.



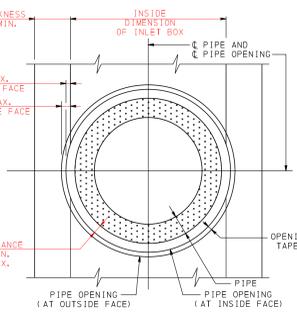
INLET BOX SUBBASE PREPARATION DETAIL (SEE FIELD CONSTRUCTION NOTES ON SHEET 1)



WEEPHOLE DETAIL (SEE GENERAL NOTE 15 ON SHEET 1)



PLAN - INLET BOXES

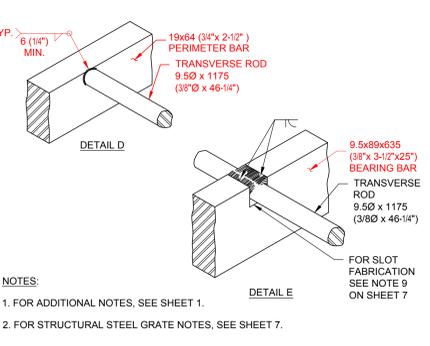
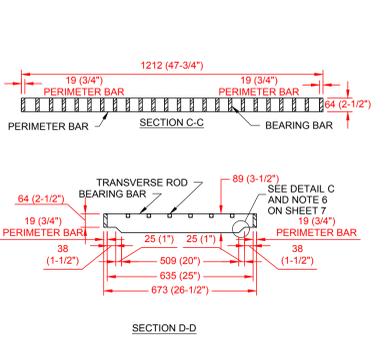
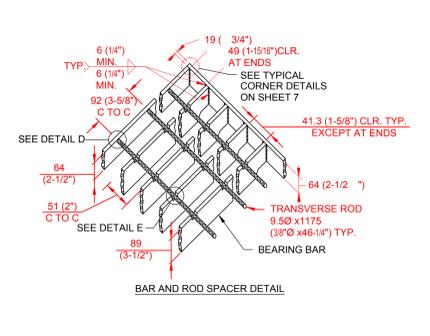
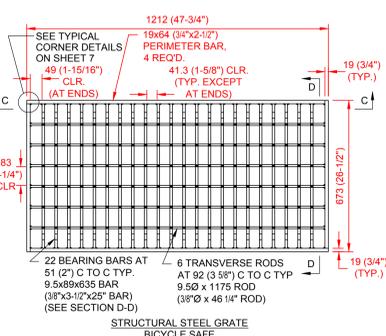


SECTION A-A (STANDARD INLET BOX ONLY)

PRECAST CONCRETE INLET BOX NOTES:

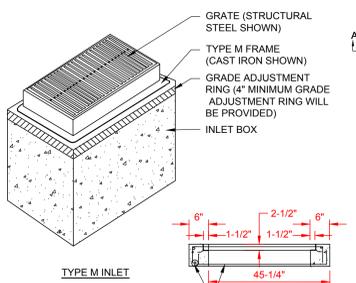
- CONSTRUCT INLET BOXES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 114.
- PROVIDE PRECAST CONCRETE INLET BOXES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15.
- PROVIDE A TOP SLAB TO SUPPORT THE INLET TOP UNITS M, S, C AND C ALTERNATE WHEN A STANDARD INLET BOX IS NOT SPECIFIED. PROVIDE OPENING TO ACCOMMODATE THE STANDARD TOP COMPONENTS. PROVIDE A TOP SLAB WITH A ROUND OPENING FOR MANHOLE COVER WHEN SPECIFIED ON THE CONTRACT DRAWINGS.
- PROVIDE A TRANSITION SLAB BETWEEN TWO SEPARATE INLET BOX SIZES, WHEN TWO SEPARATE INLET BOX SIZES ARE USED. (SEE TRANSITION SLAB NOTES.)
- CLEAR COVER FOR STEEL: WALLS: 38 mm (1 1/2") FOOTINGS (BOTTOM SLAB): TOP COVER: 50 mm (2") BOTTOM COVER: 38 mm (1 1/2") SIDE COVER: 38 mm (1 1/2") TOP AND TRANSITION SLABS (TOP AND BOTTOM): 38 mm (1 1/2")
- MINIMUM SLAB AND WALL THICKNESS: MINIMUM TOP SLAB THICKNESS: 203 mm (8") MINIMUM WALL THICKNESS: 152 mm (6") MINIMUM BOTTOM SLAB THICKNESS: 178 mm (7")
- THICKNESS OF WALL IS PERMITTED TO VARY FROM SECTION TO SECTION. INSIDE FACE OF WALLS MUST ALIGN BETWEEN SECTIONS.
- FABRICATOR IS RESPONSIBLE FOR LIFTING, HANDLING AND TRANSPORTATION STRESSES.
- LIFTING DEVICES: PROVIDE GALVANIZED STEEL OR PLASTIC LIFTING DEVICES FOR HANDLING AND INSTALLATION. FILL LIFTING DEVICES WITH NON-SHRINK GROUT AFTER INSTALLATION. PROVIDE LIFTING DEVICES WITH A MINIMUM CAPACITY OF AT LEAST FOUR TIMES THE CALCULATED LOAD ON THE DEVICES.
- TAPERS MAY BE PROVIDED ON THE INSIDE AND/OR OUTSIDE VERTICAL FACES OF THE INLET BOXES TO FACILITATE FORM STRIPPING. TAPERS MAY RESULT IN INTERNAL BOTTOM DIMENSIONS THAT VARY 20 mm (3/4") PER SIDE TO A MAXIMUM OF 25 mm (1") PER SIDE.
- KEYED JOINTS MAY BE CONSTRUCTED UPWARDS OR DOWNWARDS. CLEAN JOINTS AND KEYS THOROUGHLY BEFORE PLACING NEXT SEGMENT. PLACE MORTAR OR CAULKING COMPOUND BETWEEN JOINTS IN ACCORDANCE WITH THIS STANDARD.
- PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOX.
- PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN THE TRANSITION SLAB AND THE ADJACENT TOP AND BOTTOM SECTIONS.
- PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN PRECAST SECTIONS.
- SEGMENT HEIGHTS: MINIMUM HEIGHT: RISER SECTIONS = 305 mm (1'-0") BASE SECTIONS = 610 mm (2'-0") MAXIMUM HEIGHT = 2438 mm (8'-0")

PRE CAST INLET BOXES (PENNDOT STANDARD RC-46) NOT TO SCALE



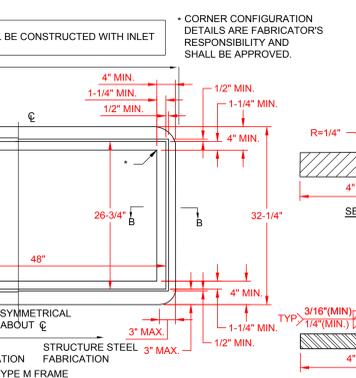
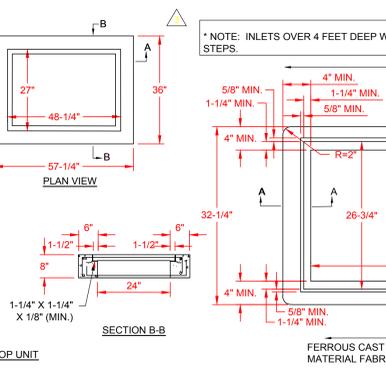
- NOTES:**
- FOR ADDITIONAL NOTES, SEE SHEET 1.
 - FOR STRUCTURAL STEEL GRATE NOTES, SEE SHEET 7.

STRUCTURAL STEEL GRATE - BICYCLE SAFE (PENNDOT STANDARD RC-45) NOT TO SCALE



TYPE M INLET - PENNDOT STANDARD RC-34 NOT TO SCALE

TYPE A STORM MANHOLE (IN-PLACE CONSTRUCTION) NOT TO SCALE

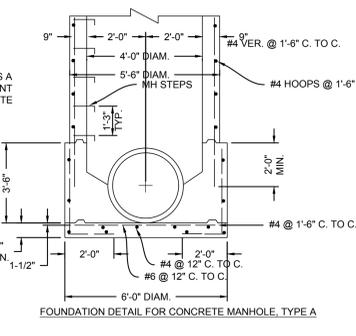


- NOTES:**
- INLETS OVER 4 FEET DEEP WILL BE CONSTRUCTED WITH INLET STEPS.
 - CORNER CONFIGURATION DETAILS ARE FABRICATOR'S RESPONSIBILITY AND SHALL BE APPROVED.

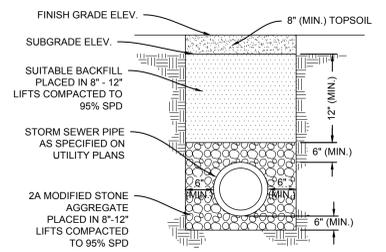
TABLE A
BASE SLAB DIMENSIONS

MAXIMUM DIAMETER OF PIPE	TYPE OF MANHOLE	DEPTH FROM TOP OF MANHOLE TO INVERT OF PIPE	TONS PER SQUARE FOOT	MINIMUM WIDTH OF BASE	MINIMUM THICKNESS OF BASE BELOW BOTTOM OF THE PIPE
36"	A	MAX. 10'-0"	0.65	6" - 6"	0' - 8"
30"	A	MAX. 20'-0"	0.82	7' - 0"	0' - 8"
30"	A	MAX. 30'-0"	1.12	7' - 0" DIA.	0' - 8"
30"	B	MAX. 40'-0"	1.38	7' - 6" DIA.	1' - 0"
30"	B	MAX. 50'-0"	1.50	8' - 6" DIA.	1' - 6"
30"	B	MAX. 60'-0"	1.55	9' - 6" DIA.	2' - 0"
---	MOD.	MAX. 40'-0"	1.05	7'-0" x 7'-0"	---

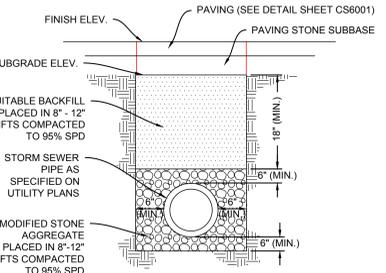
** A SAFE BEARING CAPACITY OF 1.50 TONS PER SQUARE FOOT IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE CONTRACTING OFFICER SPECIFIES AN ADEQUATE BASE DESIGN.



FOUNDATION DETAIL FOR CONCRETE MANHOLE, TYPE A



TYPICAL STORM SEWER TRENCH - GRASS AREAS NOT TO SCALE



TYPICAL STORM SEWER TRENCH - PAVED AREAS NOT TO SCALE

Trash Racks
Water Screening Devices



Trash Racks are available in standard sizes and shapes to accommodate nearly every application, however, we can customize to your exact requirements. Plastic Solutions, Inc. offers a Limited Lifetime Warranty. They will replace a trash rack for any defect related to material or workmanship for the life of the structure/pipe. All of these features and benefits combine to make Plastic Solutions the most environmentally responsible Trash Rack and the very best value on the market today!

- Structural Plastic Trash Rack Advantages**
- Strong, light
 - Lighter Weight - Installation Savings
 - 100% Maintenance free
 - UV Resistant - per ASTM D2554-99
 - Load tested to 2,030 lbs./ft.
 - Elimination of Corrosion
 - High Chemical Resistance
 - Easily Customized - Call with your needs
 - Limited Lifetime Warranty
- Plastic Solutions Trash Racks are made from structural plastic, which provides a high strength, lightweight, impact resistant alternative to metal trash racks. Structural Plastic Trash Racks are 100% maintenance free and are made to withstand rough handling, high/low temperatures and long term weather exposure. Each rack comes pre-drilled and all mounting hardware is supplied. This makes for quick and easy installation, without the need for heavy equipment (1-2 person installation in most cases). Structural Plastic Trash Racks provide a structurally sound product with a long-lasting quality appearance.

Pennoni ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, OH 41087
T 610-423-8807 F 610-423-8818

ACF Environmental
2831 Carlwell Road
Richmond, VA 23234
Ph: (804)48-3636
Fax: (804)43-7770
www.acfenvironmental.com

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK.

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

DRAINAGE DETAILS
THE VANGUARD GROUP
400 DEER CREEK DRIVE
WAYNE, PA 19380

NO.	DATE	BY	REVISIONS
01/15/18		MEL	60% CONSTRUCTION DOCUMENTS
10/13/17		MEL	1. BID SET
09/13/17		FSS	1. REVISIONS PER TOWNSHIP COMMENTS

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE OBTAINABLE FOR REUSE BY OWNER OR OTHERS. THE EXTENSION OF THE PROJECT OR ON ANY OTHER PROJECT, ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY ON LEASERS EXPOSURE TO PENNONI ASSOCIATES AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171328090

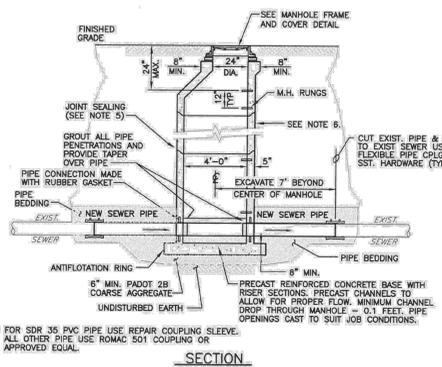
PROJECT: TVGH1702
DATE: 2017-07-28
DRAWING SCALE: N.T.S.
DRAWN BY: MEM
APPROVED BY: MK

CS6021
SHEET 43 OF 72

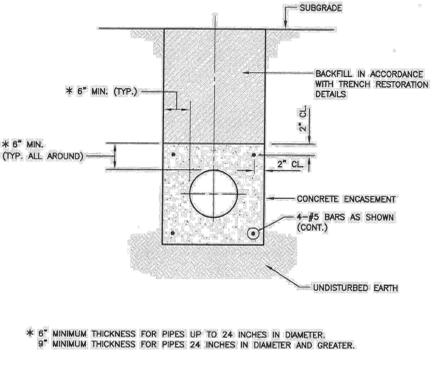
NOT FOR CONSTRUCTION

NOTES:

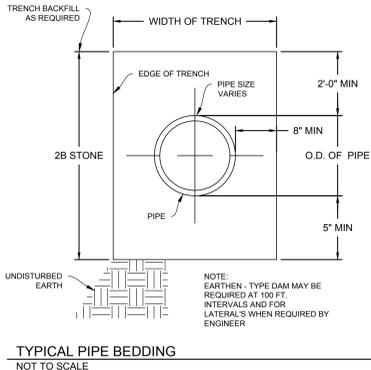
- ADJUST TO GRADE WITH CONCRETE GRADE RINGS MAXIMUM VERTICAL ADJUSTMENT 6". SEE FRAME & COVER DETAILS.
- MECHANICALLY VIBRATED PRECAST CONCRETE SHALL CONFORM TO A.S.T.M. SPEC. C-478.
- FOR MANHOLES WHERE TOP OF RIM TO INVERT DISTANCE IS LESS THAN 6'-0" USE FLAT TOP MANHOLE IN LIEU OF CONE TOP.
- FILL ALL LIFTING HOLES WITH NON-SHRINK GROUT.
- PROVIDE 2 RINGS OF PREFORMED BUTYL RUBBER SEALING COMPOUND (INSIDE & OUTSIDE) AT ALL MANHOLE JOINTS.
- COAT INTERIOR WITH NSF APPROVED EPOXY, 20-MIL DFT. & EXTERIOR WITH BITUMASTIC, 20-MIL DFT. INTERIOR COLOR: WHITE EXTERIOR COLOR: BLACK
- CONTRACTOR SHALL VERIFY O.D. OF PIPES SCHEDULED FOR REPLACEMENT PRIOR TO ORDERING OF COUPLINGS.



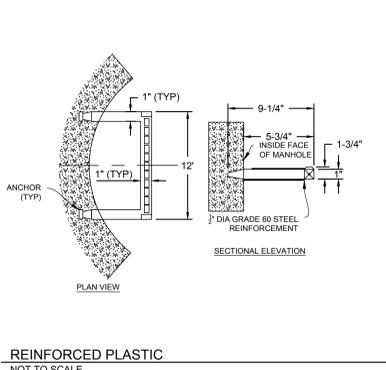
PRECAST INSERTION MANHOLE OVER EXISTING SEWER
NOT TO SCALE



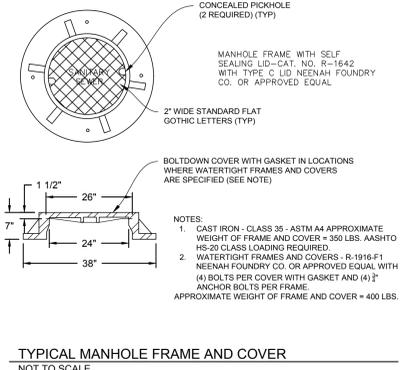
CONCRETE ENCASEMENT
NOT TO SCALE



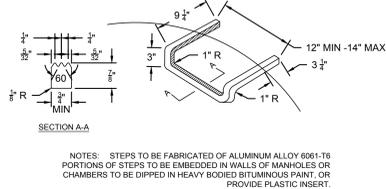
TYPICAL PIPE BEDDING
NOT TO SCALE



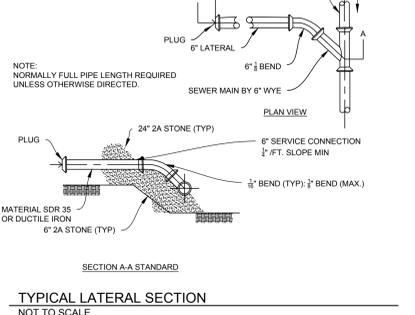
REINFORCED PLASTIC
NOT TO SCALE



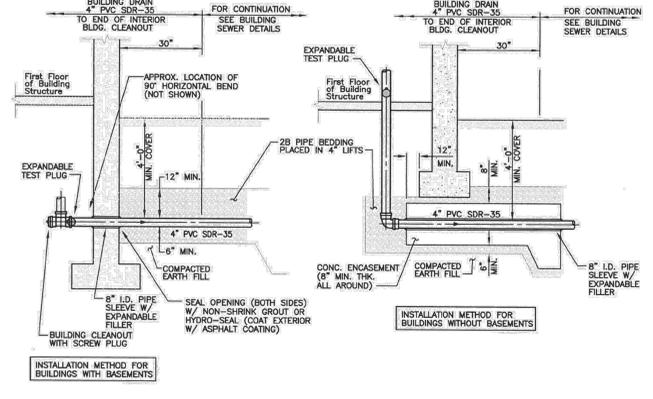
TYPICAL MANHOLE FRAME AND COVER
NOT TO SCALE



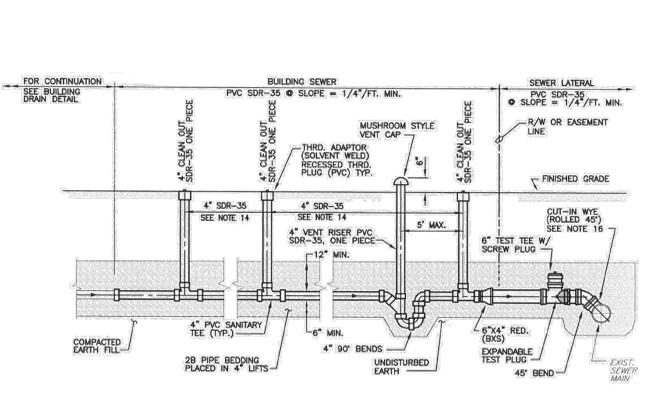
TYPICAL ALUMINUM MANHOLE STEPS
NOT TO SCALE



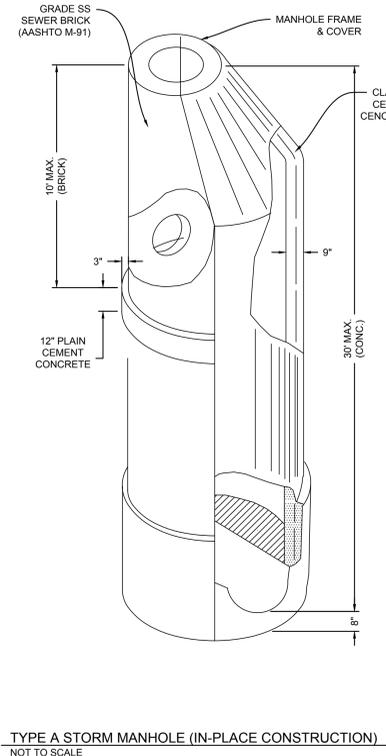
TYPICAL LATERAL SECTION
NOT TO SCALE



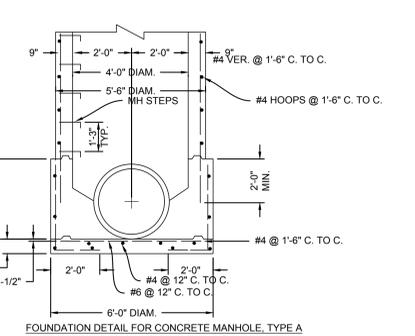
NEW BUILDING DRAIN - THROUGH FOUNDATION OR UNDER FOUNDATION
NOT TO SCALE



NEW BUILDING SEWER & LATERAL CONNECTION TO EXISTING MAIN
NOT TO SCALE



TYPICAL A STORM MANHOLE (IN-PLACE CONSTRUCTION)
NOT TO SCALE



FOUNDATION DETAIL FOR CONCRETE MANHOLE, TYPE A

**TABLE A
BASE SLAB DIMENSIONS**

MAXIMUM DIAMETER OF PIPE	TYPE OF MANHOLE	DEPTH FROM TOP OF MANHOLE TO INVERT OF PIPE	TONS PER SQUARE FOOT	MINIMUM WIDTH OF BASE	MINIMUM THICKNESS OF BASE BELOW BOTTOM OF THE PIPE
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30"	A	MAX. 20'-0"	0.82	7'-0"	0'-8"
30"	A	MAX. 30'-0"	1.12	7'-0" DIA.	0'-8"
30"	B	MAX. 40'-0"	1.38	7'-6" DIA.	1'-0"
30"	B	MAX. 50'-0"	1.50	8'-6" DIA.	1'-6"
30"	B	MAX. 60'-0"	1.55	9'-6" DIA.	2'-0"
---	MOD.	MAX. 40'-0"	1.05	7'-0" x 7'-0"	---

** A SAFE BEARING CAPACITY OF 1.50 TONS PER SQUARE FOOT IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE CONTRACTING OFFICER SPECIFIES AN ADEQUATE BASE DESIGN.

NOTES:

- BUILDING SEWER SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL PLUMBING CODE.
- BUILDING SEWER (4") IS MINIMUM LARGER PIPE MAY BE USED IF REQUIRED & CONSISTENT WITH LOCAL PLUMBING CODE.
- ALL LATERALS SHALL BE PLUGGED AS INDICATED WHEN INSTALLED PRIOR TO BUILDING SEWER.
- ACCORDING TO FIELD CONDITIONS, VERTICAL RISER (SEE STANDARD DETAIL) MAY BE UTILIZED WHEN AUTHORIZED BY THE TOWNSHIP ENGINEER.
- TO CONDUCT TESTING OF BUILDING SEWER, INSTALL EXPANDABLE TEST PLUGS AT LOCATIONS SHOWN. AT COMPLETION OF SUCCESSFUL TESTING, REMOVE PLUGS.
- NO BUILDING SEWER VENT CAPS SHALL BE INSTALLED WITHIN A 100-YR FLOOD PLAIN OR WITHIN FLOOD PRONE AREAS.
- NO VENT CAPS OR CLEANOUTS SHALL BE INSTALLED IN DRIVEWAYS OR OTHER PAVED AREAS, UNLESS SPECIFICALLY APPROVED BY THE TOWNSHIP.
- WHEN INSTALLED PRIOR TO BUILDING SEWER THE LATERAL SHALL BE INSTALLED TO THE EDGE OF THE SEWER EASEMENT FOR SEWERS LOCATED IN AN EASEMENT OR TO THE STREET RIGHT-OF-WAY AS A MIN., OR TO SUCH POINT, AS REQUIRED, TO CLEAR STREET SIDEWALKS & UNDERGROUND UTILITIES.
- FOR NEW SEWER MAINS AND LATERALS INSTALLED PRIOR TO BUILDING SEWER, INSTALL & TEST LATERAL CONCURRENTLY WITH MAIN.
- FOR CONNECTION TO EXISTING SEWER MAINS, CONCURRENTLY TEST BUILDING SEWER & LATERAL UP TO TEST TEE.
- REFER TO SECTION 6 OF TECHNICAL SPECIFICATIONS FOR COMPLETE MATERIAL, INSTALLATION & TESTING REQUIREMENTS.
- TEST PRESSURE: MINIMUM RESIDUAL PRESSURE OF 5.0 PSI MUST BE MAINTAINED FOR 15 MINUTES WITHOUT INTRODUCTION OF ADDITIONAL AIR.
- (Left Blank Intentionally)
- CLEANOUTS SHALL BE INSTALLED AT MAXIMUM SEVENTY FIVE (75) FOOT INTERVALS, UNLESS 6" DIAMETER BUILDING SEWER PIPE IS UTILIZED. IN WHICH CASE THE CLEANOUTS SHALL BE INSTALLED AT MAXIMUM ONE HUNDRED (100) FOOT INTERVALS. A CLEANOUT SHALL BE INSTALLED AT EACH CHANGE IN HORIZONTAL DIRECTION.
- THE TOWNSHIP ENGINEER MAY APPROVE MINOR DEVIATION(S) FROM THE REQUIREMENT(S) OF THE 17-SERIES DETAILS ON A CASE-BY-CASE BASIS (E.G. DEPTH OF COVER OVER BUILDING SEWER, TRAP LOCATION, ETC.) UPON BEING FURNISHED SUFFICIENT JUSTIFICATION THAT SAID REQUIREMENT(S) CANNOT BE MET DUE TO ACTUAL FIELD CONDITIONS.
- NEW BUILDING SEWERS & LATERALS SHALL BE CONNECTED TO EXISTING MAINS VIA CUT-IN WYES. THE CUT-IN WYE SHALL BE CONNECTED TO THE EXISTING MAIN ON BOTH SIDES WITH MECHANICAL COUPLINGS, AS APPROVED BY THE TOWNSHIP ENGINEER.
- ON DETAIL 17B, THE CONNECTION TO THE EXISTING LATERAL MAY ALTERNATIVELY BE MADE WITH A 2-4" REDUCER (BKS) FOLLOWED BY A 4" TEST TEE (B&B) WITH 4" CLEAN OUT RISER. TEST TEE TO BE INSTALLED ONLY IF CLEANOUT DOES NOT EXIST WITHIN 5 FEET OF R/W OR EASEMENT LINE.

NEW BUILDING DRAIN, BUILDING SEWER, & LATERAL NOTES
NOT TO SCALE



CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK

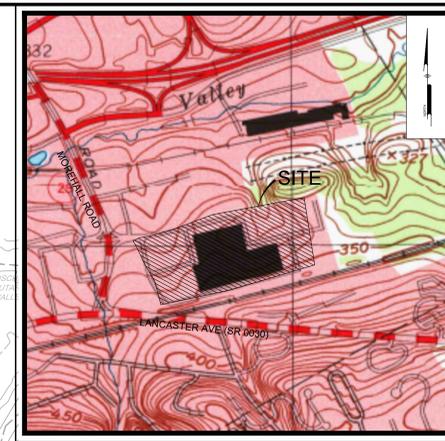
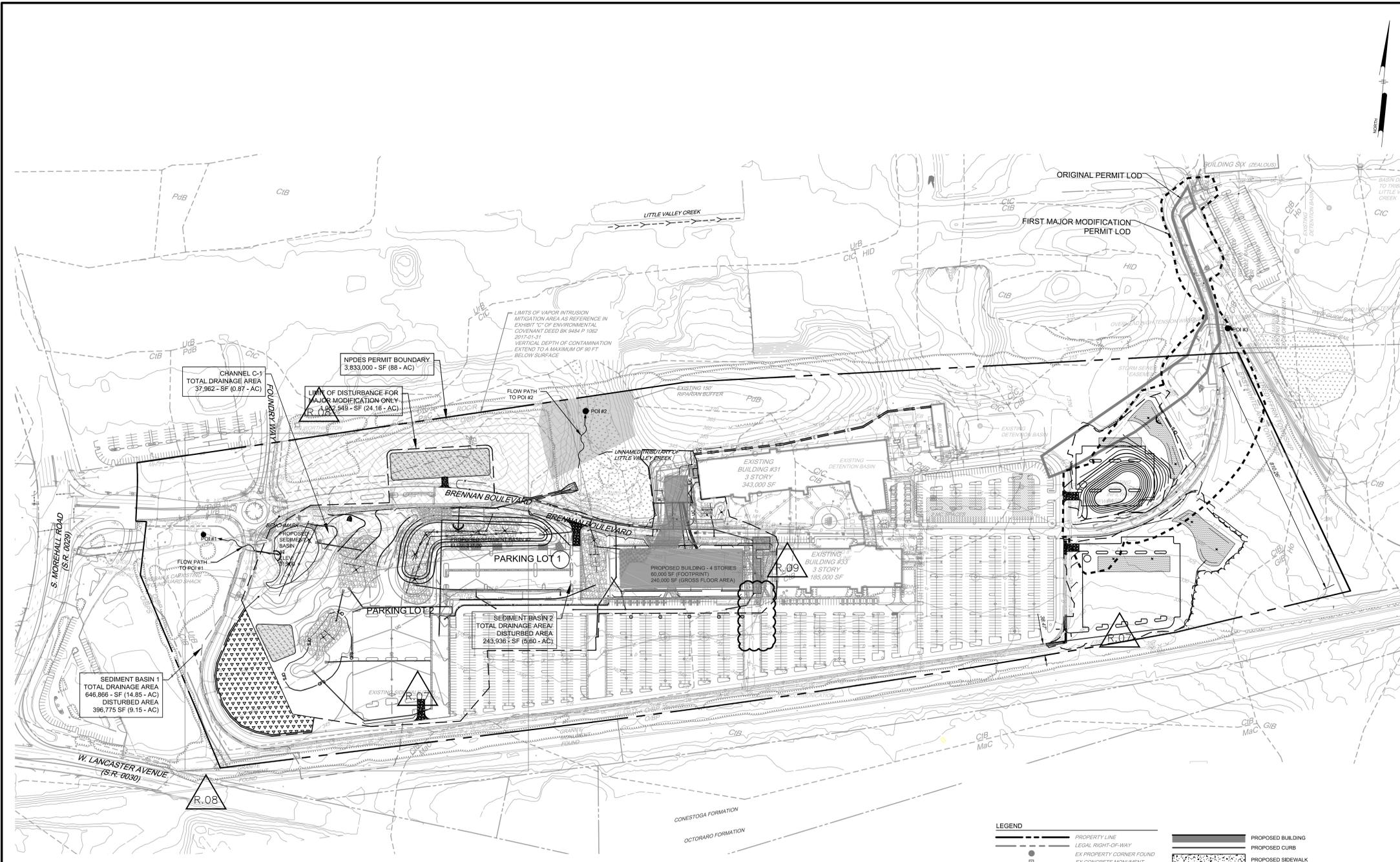
VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355
SANITARY DETAILS
THE VANGUARD GROUP
400 DECONVOY PARK DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY
001518	3	60% CONSTRUCTION DOCUMENTS	MBL
101517	2	BID SET	MBL
091517	1	REVISIONS PER TOWNSHIP COMMENTS	FFS

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE OBTAINABLE FOR REUSE BY OWNER OR OTHERS OR THE EXTENSION OF THE TRUST OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR REAPPROVAL BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY ON LEASER. EXPOSURE TO PENNONI ASSOCIATES AND OWNER SHALL INDISTINGUISHABLY BE HELD HARMLESS FROM PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PROJECT	NO.
TVGH1702	2017-07-28
DATE	N.T.S.
DRAWING SCALE	MEM
DRAWN BY	MK
APPROVED BY	MK

NOT FOR CONSTRUCTION



USGS MAP
Scale: 1" = 800'

- GENERAL NOTE:**
1. SITE ADDRESS: 31-33 MOREHALL ROAD MALVERN, PA 19360 UPR42-4-269
 2. OWNER: HORATIO REALTY TRUST 400 DEVON PARK DRIVE WAYNE, PA 19087
 3. APPLICANT: THE VANGUARD GROUP 400 DEVON PARK DRIVE WAYNE, PA 19087
 4. THE PURPOSE OF THIS PLAN IS THE PROPOSED CONSTRUCTION OF TWO OFFICE BUILDINGS WITH RELATED SITE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: EXPANDING THE EXISTING PARKING LOT, PHASE 1 OFFICE BUILDING IS 240,000 SQUARE FEET AND PHASE 2 OFFICE BUILDING IS 240,000 SQUARE FEET.
 5. THIS SITE IS CURRENTLY ZONED ORSP - OFFICE/BUSINESS PARK DISTRICT BY THE TOWNSHIP OF EAST WHITELAND. FOR COMPLETE ZONING INFORMATION PLEASE REFER TO THE ZONING CODE OF THE TOWNSHIP OF EAST WHITELAND.
 6. THE EXISTING FEATURES WERE OBTAINED BY SURVEY BY AEROS, INC., GIS AND AERIAL PHOTOGRAPHS. A WETLANDS DELINEATION SURVEY WAS ALSO PERFORMED ON JUNE 26, 2017.
 7. BENCHMARK: THE BENCHMARK FOR THE SITE IS AN INLET LOCATED NEAR THE SOUTHEAST CORNER OF THE TRAFFIC CIRCLE AT BRENNAN BOULEVARD WITH GRATE ELEVATION 321.86, THE VERTICAL DATUM USED WAS NAVD83.
 8. BY GRAPHIC PLOTTING ONLY, SUBJECT PARCEL AREA IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 160 OF 380, COMMUNITY MAP NO. 4292C0160F WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 29, 2006. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
 9. UNLESS SPECIFICALLY STATED OR SHOWN HERETO TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:
 - A. RIGHTS OR INTERESTS OF THE UNITED STATES OF AMERICA OR COMMONWEALTH OF PENNSYLVANIA OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER, BUT NO LONGER VISIBLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MARINE, OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OF ANY FEDERAL, STATE, OR LOCAL AGENCY.
 - B. BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - C. ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS OF PENNSYLVANIA OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER, OR THE LOCATION OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MANMADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 10. THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE. IN ADDITION IN THE AREA OF CONSTRUCTION FOR NEW BUILDING A UTILITY LOCATOR SURVEY WAS PERFORMED ON JUNE 27, 2017.
 11. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
 12. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
 13. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM ASSIGNED SERIAL NUMBER 20171320890 IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 121 OF 2008 ENTITLED "UNDERGROUND UTILITY LINE PROTECTION LAW". (800-242-1776) THIS WAS PERFORMED ON MAY 12TH, 2017.
 14. IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 1996, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
 15. THE SITE IS SERVED BY PUBLIC SEWER AND WATER SERVICE.
 16. ALL RADI SHOWN ARE 5 FT UNLESS OTHERWISE SPECIFIED.
 17. THE ENTIRE TRACT IS LOCATED WITHIN THE LITTLE VALLEY CREEK WATERSHED, WHICH IS CLASSIFIED AS EXCEPTIONAL VALUE (EV) BY TITLE 25, CHAPTER 93 OF THE PENNSYLVANIA CODE.
 18. WITHIN 90 DAYS OF SUBSTANTIAL COMPLETION, THE DEVELOPER SHALL FILE AS-BUILT PLANS AND PROFILE SHEETS TO THE TOWNSHIP AS REQUIRED BY CODE.
 19. A PRE-CONSTRUCTION MEETING SET UP WITH THE TOWNSHIP WILL BE REQUIRED BEFORE ANY CONSTRUCTION COMMENCES.
 20. PENNONI WILL BE RETAINED AS THE ENVIRONMENTAL ENGINEER TO PROVIDE OVERSIGHT

SOIL CHART:
OBTAINED FROM NRCS SOIL MART ON 04/08/2016, SURVEY AREA VERSION DATE: 12/02/2008

SYMBOL	NAME	HYDROLOGIC GROUP	SLOPES	HYDRIC	DEPTH TO		LIMITATIONS			RESOLUTION NOTES
					WATER TABLE (FT)	BEDROCK (IN)	FROST	PIPES	BUILDING	
URB	URBAN LAND	---	0 TO 8%	NO	---	10-98	NONE	---	---	SEE RESOLUTION NOTES
CIB	CONESTOGA SILT LOAM	B	3 TO 8%	NO	---	60-99	MODERATE	MODERATE	HIGH	SEE RESOLUTION NOTES
PdB	PENLAWS SILT LOAM	D	3 TO 8%	NO	0.5-1.5	40-72	HIGH	HIGH	MODERATE	SEE RESOLUTION NOTES
PiC	PARKER GRAVELLY LOAM	B	8 TO 15%	NO	---	60-118	MODERATE	LOW	HIGH	SEE RESOLUTION NOTES
CiC	CONESTOGA SILT LOAM	B	8 TO 15%	YES	---	60-99	MODERATE	MODERATE	HIGH	SEE RESOLUTION NOTES
PiD	PARKER GRAVELLY LOAM	B	15 TO 25%	NO	---	60-118	MODERATE	LOW	HIGH	SEE RESOLUTION NOTES
MiC	MANOR LOAM	B	8 TO 15%	YES	---	72-99	MODERATE	LOW	MODERATE	SEE RESOLUTION NOTES

RESOLUTION NOTES:

1. HIGH WATER TABLE
IF SITE IS TO BE USED FOR CONSTRUCTION, DEWATER EXCAVATIONS THROUGH A PUMPED WATER FILTER BAG AS NECESSARY. AVOID PONDING DURING CONSTRUCTION. CLOSE ALL EXCAVATIONS AS SOON AS PRACTICAL. ENSURE ALL INSTALLED PIPE IS WATER TIGHT.
2. NATURALLY ACIDIC
CONTRACTOR TO WRAP ALL METAL-BASED PIPING WITH PLASTIC LINERS. LINERS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION.
3. EROSION HAZARD
THE CONTRACTOR SHALL FOLLOW THE EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION AND PLANS. THE EROSION CONTROL MEASURES SHALL BE INSPECTED AFTER EVERY RUNOFF EVENT AND ON A WEEKLY BASIS. IMMEDIATELY AFTER EVERY RUNOFF EVENT THE EROSION AND SEDIMENTATION FACILITIES AND MEASURES WILL BE CLEANED, REPAIRED, AND REPLACED AS NEEDED. WASHED-OUT AREAS WILL BE RE-GRADED AND RE-SEED. SILT FENCES WILL BE INSPECTED AND RESTORED TO AN UPRIGHT AND EFFECTIVE POSITION AT EVERY RUNOFF EVENT OR WHEN THEY ARE OBSERVED TO BE IN NEED OF MAINTENANCE.
4. SOLUTION CAVERNS IN UNDERLYING BEDROCK
IF THE SITE IS TO BE USED FOR BUILDING, AND FOUNDATIONS ARE PROPOSED THEN THE SITE SHALL BE EVALUATED BY A GEOTECHNICAL ENGINEER TO DETERMINE IF SOLUTION CAVERNS ARE PRESENT. CONSULT THE GEOTECHNICAL ENGINEER AND REPAIR ACCORDING TO APPROVED DETAILS.
5. SINK HOLE OR CLOSED DEPRESSION
AVOID PONDING DURING CONSTRUCTION. CLOSE ALL EXCAVATIONS AS SOON AS PRACTICAL. ENSURE ALL INSTALLED PIPE IS WATER TIGHT.
THE CONTRACTOR SHALL CONTACT A GEOTECHNICAL ENGINEER TO ANALYZE THE SINK HOLE AREA. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER FOR REMEDIATION REQUIREMENTS.

GEOLOGY CHART:
CONESTOGA FORMATION
LIGHT-GRAY, THIN-BEDED, IMPURE, CONTORTED LIMESTONE HAVING SHALE PARTINGS; IN CHESTER VILLEY.
STATE PENNSYLVANIA
NAME CONESTOGA FORMATION
GEOLOGIC AGE ORDOVICIAN AND CAMBRIAN
ORIGINAL MAP LABEL LOC
PRIMARY ROCK TYPE LIMESTONE
SECONDARY ROCK TYPE PHYLLITE
OTHER ROCK TYPES CONGLOMERATE; DOLOSTONE(DOLOMITE); SHALE

CONTAMINANTS NOTES:

1. KNOWN CONTAMINANT: TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
2. THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PRIZER AND VANGUARD.
3. CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNONI FOR ALL SITE WORK.
4. CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
5. THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PADEP ON JANUARY 11, 2016

EROSION AND SEDIMENT CONTROL PLAN NOTES:

1. THE LIMIT OF DISTURBANCE IS EQUAL TO THE AREA HIGHLIGHTED ON THIS PLAN.
2. THE ENTIRE TRACT IS LOCATED WITHIN LITTLE VALLEY CREEK, WHICH IS CLASSIFIED AS EXCEPTIONAL VALUE (EV) BY TITLE 25, CHAPTER 93 OF THE PENNSYLVANIA CODE.
3. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMPs AFTER EACH RAINFALL EVENT AND AT THE END OF EACH WORKING DAY. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION, THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

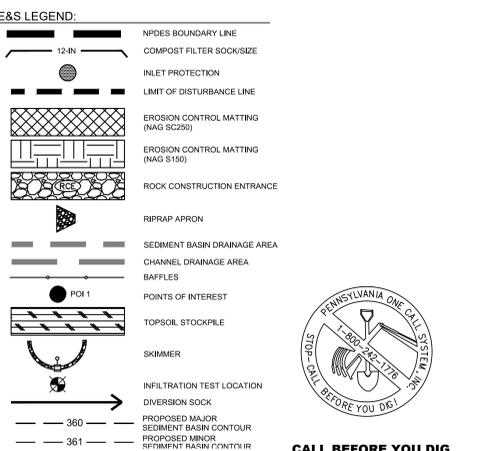
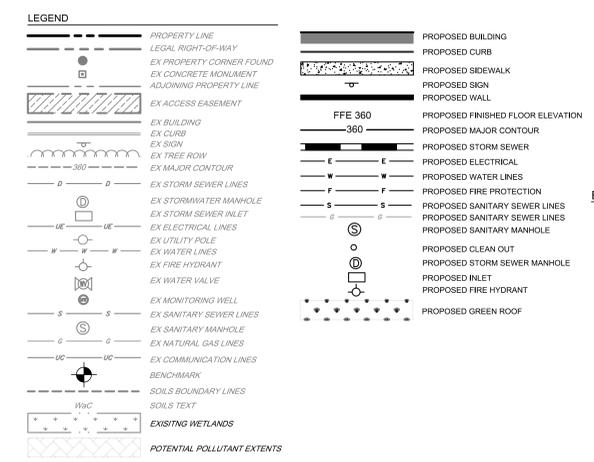
ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, MULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED.

WHERE BMPs ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION, THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:

- a. THE LOCATION AND SEVERITY OF THE BMPs FAILURE AND ANY POLLUTION EVENTS.
- b. ALL STEPS TAKEN TO REDUCE, ELIMINATE AND PREVENT THE RECURRENT OF THE NON-COMPLIANCE.
- c. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPs SHALL BE STABILIZED IMMEDIATELY.

4. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS 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 RESTrain 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.
5. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. PLEASE NOTE THAT HYDROSEED IS NOT CONSIDERED STABILIZATION UNTIL IT GERMINATES. HAY OR STRAW MULCH MUST BE APPLIED AT 5.0 TONS PER ACRE.
6. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (8 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE TOP-SOILED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS.
7. SEDIMENT TRACKED ON ANY ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY AND DISPOSED AS A MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEEPED INTO ANY ROAD SIDE DITCH, STORM SEWER OR SURFACE WATER.
8. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.



CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776

PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE. DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20171320890



Pennoni
PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T 610-423-0807 F 610-423-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19365

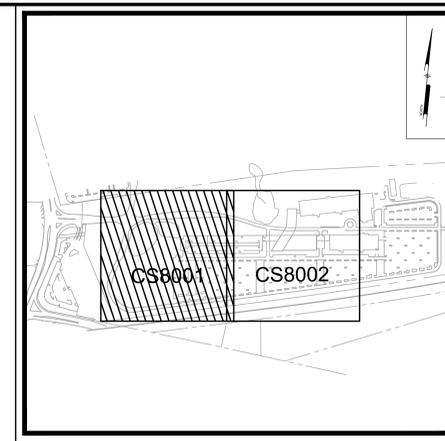
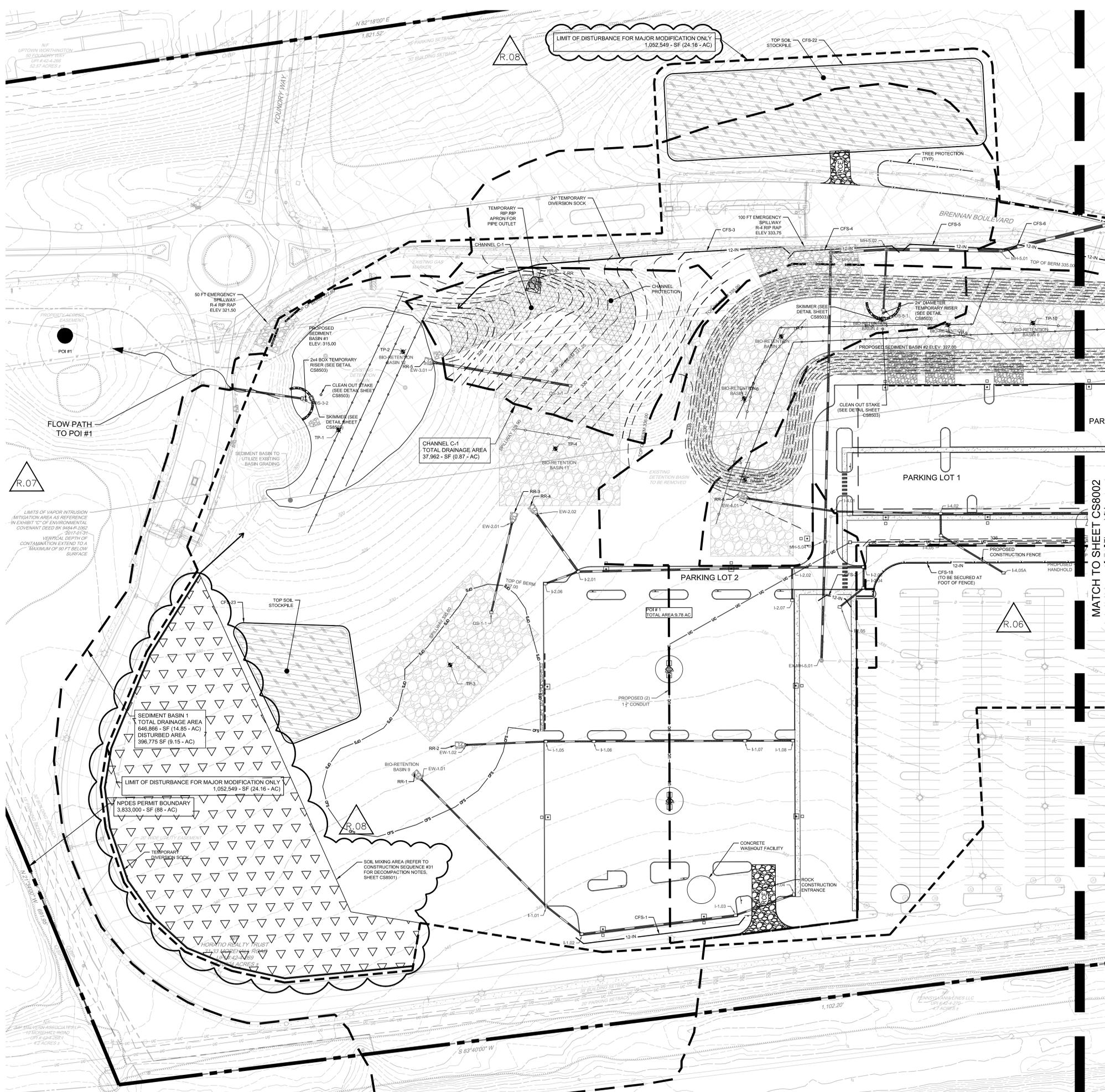
OVERALL EROSION AND SEDIMENTATION CONTROL PLAN

THE VANGUARD GROUP
400 DEVON PARK DRIVE
WAYNE, PA 19087

AMENDED LAND DEVELOPMENT PLANS	DATE	BY	REVISIONS
REVISED SUBSURFACE BASIN 14	08/11/19	MEM	
ADDED SOIL MIX AREA	08/11/19	MEM	
60% CONSTRUCTION DOCUMENTS	08/11/19	MEM	
REVISED PER CCDC COMMENTS	08/11/19	MEM	
REVISED PER CCDC COMMENTS	10/18/17	MEM	
REVISED-MAJOR MODIFICATION	10/18/17	MEM	

PROJECT: TVG11702
DATE: 2017-07-28
DRAWING SCALE: 1"=150'
DRAWN BY: MEM
APPROVED BY: MK

CS8000
SHEET 47 OF 72



LOCATION MAP
Scale: 1" = 600'

LEGEND

PROPERTY LINE	LEGAL RIGHT-OF-WAY	EX PROPERTY CORNER FOUND	ADJOINING PROPERTY LINE	EX ACCESS EASEMENT	EX BUILDING	EX CURB	EX SIGN	EX TREE ROW	EX MAJOR CONTOUR	EX STORM SEWER LINES	EX STORMWATER MANHOLE	EX STORM SEWER INLET	EX ELECTRICAL LINES	EX UTILITY POLE	EX WATER LINES	EX FIRE HYDRANT	EX WATER VALVE	EX MONITORING WELL	EX SANITARY SEWER LINES	EX SANITARY MANHOLE	EX NATURAL GAS LINES	EX COMMUNICATION LINES	BENCHMARK	SOILS BOUNDARY LINES	SOILS TEXT	EXISTING WETLANDS	POTENTIAL POLLUTANT EXTENTS	EXISTING STEEP SLOPE (15-25%)	EXISTING VERY STEEP SLOPE (>25%)	EX MINOR CONTOUR	PROPOSED BUILDING	PROPOSED CURB	PROPOSED SIDEWALK	PROPOSED SIGN	PROPOSED WALL	FFE 360	360	PROPOSED FINISHED FLOOR ELEVATION	PROPOSED MAJOR CONTOUR	PROPOSED STORM SEWER	PROPOSED ELECTRICAL	PROPOSED WATER LINES	PROPOSED FIRE PROTECTION	PROPOSED SANITARY SEWER LINES	PROPOSED SANITARY SEWER LINES	PROPOSED SANITARY MANHOLE	PROPOSED CLEAN OUT	PROPOSED STORM SEWER MANHOLE	PROPOSED INLET	PROPOSED FIRE HYDRANT	PROPOSED GREEN ROOF	PROPOSED MINOR CONTOUR
NPDES BOUNDARY LINE	COMPOST FILTER SOCK/SIZE	INLET PROTECTION	LIMIT OF DISTURBANCE LINE	EROSION CONTROL MATTING (NAG SC250)	EROSION CONTROL MATTING (NAG S150)	ROCK CONSTRUCTION ENTRANCE	RR/RIP APRON	SEDIMENT BASIN DRAINAGE AREA	CHANNEL DRAINAGE AREA	BAFFLES	POINTS OF INTEREST	POI1	TOPSOIL STOCKPILE	SKIMMER	INFILTRATION TEST LOCATION	DIVERSION SOCK	PROPOSED MAJOR SEDIMENT BASIN CONTOUR	PROPOSED MINOR SEDIMENT BASIN CONTOUR																																		

- CONTAMINANTS NOTES:**
- KNOWN CONTAMINANT, TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
 - THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.
 - CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNONI FOR ALL SITE WORK.
 - CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
 - THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PADEP ON JANUARY 11, 2016.
- SINKHOLE MITIGATION:**
- IN THE EVENT THAT A SINKHOLE OR A CLOSED DEPRESSION IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER OF RECORD TO INVESTIGATE AND PROVIDE GUIDANCE FOR THE PROPER REPAIR.



CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER: 20171320890



NOT FOR CONSTRUCTION

Pennoni

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
Malvern, PA 19355
Tel: 610-429-8807 Fax: 610-429-8818

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

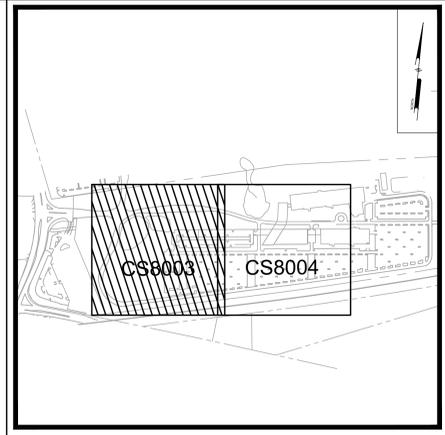
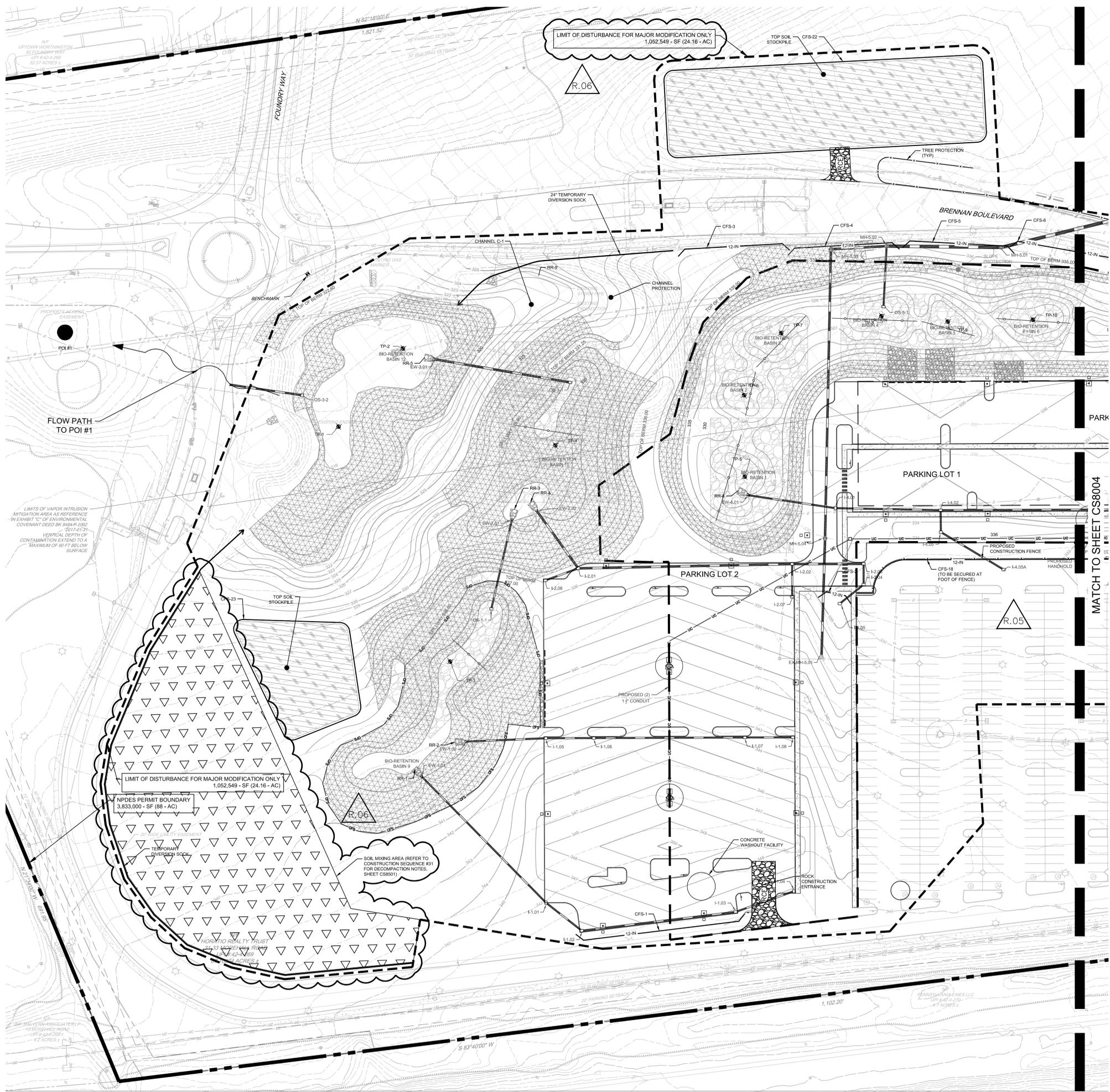
EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 1

THE VANGUARD GROUP
400 DEWOLP PARK DRIVE
MALVERN, PA 19357

NO.	DATE	BY	REVISIONS
01/11/18			ADDED SOIL MIX AREA
03/11/18			REVISED SEDIMENT BASIN
03/11/18			60% CONSTRUCTION DOCUMENTS
03/07/18			REVISED PER CCCC COMMENTS
01/24/18			REVISED PER CCCC COMMENTS
12/18/17			REVISED: MAJOR MODIFICATION
10/13/17			BIO BET
			REVISIONS

PROJECT: TVG1702
DATE: 2017-07-28
DRAWING SCALE: 1"=40'
DRAWN BY: MEM
APPROVED BY: MK

CS8001
SHEET 48 OF 72



LOCATION MAP
Scale: 1" = 600'

LEGEND

	PROPERTY LINE		NPDES BOUNDARY LINE
	LEGAL RIGHT-OF-WAY		COMPOSITE FILTER SOCK/SIZE
	EX PROPERTY CORNER FOUND		INLET PROTECTION
	EX CONCRETE MONUMENT		LIMIT OF DISTURBANCE LINE
	ADJOINING PROPERTY LINE		EROSION CONTROL MATTING (NAG SC250)
	EX ACCESS EASEMENT		EROSION CONTROL MATTING (NAG S150)
	EX BUILDING		ROCK CONSTRUCTION ENTRANCE
	EX CURB		RRIPRAP APRON
	EX SIGN		SEDIMENT BASIN DRAINAGE AREA
	EX TREE ROW		CHANNEL DRAINAGE AREA
	EX MAJOR CONTOUR		BAFFLES
	EX STORM SEWER LINES		POINTS OF INTEREST
	EX STORMWATER MANHOLE		TOPSOIL STOCKPILE
	EX STORM SEWER INLET		SKIMMER
	EX ELECTRICAL LINES		INFILTRATION TEST LOCATION
	EX UTILITY POLE		DIVERSION SOCK
	EX WATER LINES		
	EX FIRE HYDRANT		
	EX WATER VALVE		
	EX MONITORING WELL		
	EX SANITARY SEWER LINES		
	EX SANITARY MANHOLE		
	EX NATURAL GAS LINES		
	EX COMMUNICATION LINES		
	BENCHMARK		
	SOILS TEXT		
	EXISTING WETLANDS		
	POTENTIAL POLLUTANT EXTENTS		
	EXISTING STEEP SLOPE (15-25%)		
	EXISTING VERY STEEP SLOPE (>25%)		
	EX MINOR CONTOUR		
	PROPOSED BUILDING		
	PROPOSED CURB		
	PROPOSED SIDEWALK		
	PROPOSED SIGN		
	PROPOSED WALL		
	PROPOSED FINISHED FLOOR ELEVATION		
	PROPOSED MAJOR CONTOUR		
	PROPOSED STORM SEWER		
	PROPOSED ELECTRICAL		
	PROPOSED WATER LINES		
	PROPOSED FIRE PROTECTION		
	PROPOSED SANITARY SEWER LINES		
	PROPOSED SANITARY SEWER MANHOLE		
	PROPOSED CLEAN OUT		
	PROPOSED STORM SEWER MANHOLE		
	PROPOSED INLET		
	PROPOSED FIRE HYDRANT		
	PROPOSED GREEN ROOF		
	PROPOSED MINOR CONTOUR		

CONTAMINANTS NOTES:

- KNOWN CONTAMINANT, TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
- THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.
- CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNON FOR ALL SITE WORK.
- CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
- THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PAEPD ON JANUARY 11, 2016.

SINKHOLE MITIGATION:
IN THE EVENT THAT A SINKHOLE OR A CLOSED DEPRESSION IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER OF RECORD TO INVESTIGATE AND PROVIDE GUIDANCE FOR THE PROPER REPAIR.



CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER: 20171520890



NOT FOR CONSTRUCTION

Pennoni
PENNON ASSOCIATES INC.
One South Church Street, 2nd Floor
P.O. Box 1000, Malvern, PA 19355
T 610-429-8807 F 610-429-8818

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

EROSION AND SEDIMENTATION CONTROL PLAN - STAGE 2
THE VANGUARD GROUP
400 DEWON PARK DRIVE
MALVERN, PA 19357

NO.	DATE	BY	REVISIONS
01/11/18			ADD SOIL MAP AREA
03/11/18			60% CONSTRUCTION DOCUMENTS
03/27/18			REVISED PER CCDD COMMENTS
01/24/18			REVISED PER CCDD COMMENTS
12/18/17			REVISED - MAJOR MODIFICATION
10/13/17			BID SET

PROJECT	TVGH1702
DATE	2017-05-23
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS8003	
SHEET	50 OF 72

CONSTRUCTION SEQUENCE

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE WILL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO ONLY THOSE AREAS DESCRIBED IN EACH STAGE.

CONSTRUCTION WILL BEGIN UPON RECEIPT OF ALL REQUIRED PERMITS FROM THE TOWNSHIP, PENNDOT, PA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND THE CONSERVATION DISTRICT. AT LEAST 5 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL NOTIFY ALL STAKEHOLDERS INVOLVED IN THOSE ACTIVITIES. THE LAND OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND A REPRESENTATIVE FROM THE CHESTER COUNTY CONSERVATION DISTRICT TO SCHEDULE A FOUNDATION AREA FOR THE PROPOSED BUILDING. AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM, INC. AT 1-800-242-1176 FOR BURIED UTILITY LOCATIONS.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 280.1 et seq. AND 287.1 et seq. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL PROPOSED SLOPE ROOF SPACES AND BORROW AREAS ON OR OFF SITE.

CRITICAL STAGE: FOR ALL CRITICAL STAGES, THE CRITICAL ITEMS ARE A MINIMUM. IF PROBLEMS ARISE OR ADVERSE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHOULD BE NOTIFIED AND SHOULD BE PRESENT ON SITE FOR ANY NEW DESIGN ELEMENTS.

STAGE 1:

- 1. PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH ALL NOTES ON THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLANS.
2. PRIOR TO PROCEEDING WITH CONSTRUCTION, CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES, MAINTAIN AND PROTECT ALL EXISTING UTILITIES TO REMAIN AT ALL TIMES.
3. INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.

- 4. DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.
5. INSTALL SILT SOCKS AT LOCATIONS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE SILT SOCKS SHALL BE INSTALLED BY AN APPROVED CONTRACTOR FAMILIAR WITH THE INSTALLATION PROCEDURES. CONTRACTORS SHALL INSPECT THE SILT SOCKS ON A WEEKLY BASIS AND AFTER EVERY RUNOFF EVENT. NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY AND ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING HALF THE HEIGHT OF THE SILT SOCKS.
6. INSTALL TRENCH PROTECTION AS INDICATED ON THE PLANS.

- 7. CRITICAL STAGE: SEDIMENT BASIN CONSTRUCTION: BEGIN CONSTRUCTION OF SEDIMENT BASIN #1 AS FOLLOWS:
a. ALL EXISTING OBSTACLES SHOULD BE SEALED WITH WATER TIGHT SEALS IF THEY ARE NOT PART OF THE SEDIMENT BASIN DESIGN.
b. CLEAR AND GRUB AREA OF PROPOSED SEDIMENT BASIN. STOCKPILE TOPSOIL IN AREA INDICATED ON THE PLAN.
c. PROPOSED SEDIMENT BASIN WILL BE LOCATED WITHIN AN EXISTING STORMWATER BASIN, SO CHANGES TO BERMS WILL BE KEPT TO A MINIMUM. MODIFY THE BASIN BERM AND INSTALL THE OUTLET STRUCTURES AS SHOWN ON DETAIL SHEETS.
d. INSTALL SKIMMER WITH STONE LANDING BERM AND TEMPORARY RISER EXTENSION IN SEDIMENT BASIN.

- 8. CONSTRUCT CHANNEL C-1 TO DIRECT RUNOFF TOWARDS SEDIMENT BASIN #1:
a. CLEAR AND GRUB AREA OF PROPOSED CHANNEL. STOCKPILE TOPSOIL IN AREA INDICATED ON THE PLAN.
b. LINE CHANNEL WITH SLOPE PROTECTION AND SEED AS SHOWN ON THE DETAILS.
9. REMOVE OLD ENDWALL AND INSTALL NEW ENDWALL AND RIP RAP. AS SHOWN ON THE PLANS, TO DIRECT STORMWATER FROM BRENNAN BLVD INTO SEDIMENT BASIN 1.
10. INITIAL DIVERSION SOCKS LEADING TO SEDIMENT BASIN #1 AS SHOWN ON SHEET CS8011.

- 11. CRITICAL STAGE: SEDIMENT BASIN CONSTRUCTION: BEGIN CONSTRUCTION OF SEDIMENT BASIN #2 AS FOLLOWS:
a. CLEAR AND GRUB AREA OF PROPOSED BERM AND OUTLET STRUCTURES.
b. BEGIN CONSTRUCTION OF BASIN BERM AND OUTLET STRUCTURES AS DETAILED ON DETAIL SHEETS.
c. CONCURRENT WITH SEDIMENT BASIN #2 CONSTRUCTION, THE STORM SEWER WILL BE INSTALLED. BEGINNING WITH EW-5.01 AND WORKING FROM DOWNSTREAM TO UPSTREAM, TO EX MH-5.01. CONSTRUCTION OF STORM SEWER SYSTEMS SHALL PROCEED FROM DOWNSTREAM TO UPSTREAM. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.
d. INSTALL SKIMMER WITH STONE LANDING BERM AND TEMPORARY RISER EXTENSION IN SEDIMENT BASIN.

- 12. CONCURRENT WITH CONSTRUCTION OF SEDIMENT BASIN 2, THE STORM UTILITY LINES FROM EW-5.01 TO EXISTING MANHOLE EXMH-5.01. PIPE INSTALLATION SHOULD OCCUR FROM DOWNSTREAM TO UPSTREAM. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.
13. CONCURRENT WITH CONSTRUCTION OF SEDIMENT BASIN 2, THE STORM UTILITY LINES FROM MH-4 TO EXISTING MANHOLE EXMH-4.01. PIPE INSTALLATION SHOULD OCCUR FROM DOWNSTREAM TO UPSTREAM. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.
14. UPON COMPLETION OF SEDIMENT BASIN 2, COMPLETE STAGE 1 GRADING TO ALLOW STORMWATER TO FLOW TO SEDIMENT BASIN 2.

- 15. CLEAR AND GRUB AREA FOR FUTURE BUILDING PAD LOCATION AND PARKING AREAS DIRECTLY ADJACENT TO BUILDING PAD. STRIP AND STONE TOPSOIL IN THE AREA NOTED ON THE APPROVED PLAN.
16. BEGIN UTILITY RELOCATION IN AREA OF PROPOSED BUILDING.
17. AS NEEDED DEMOLISH SITE FEATURES AS NOTED ON DEMOLITION PLAN, INCLUDING PAVING, CURBS, AND SIDEWALK.
18. ROUGH GRADE AREA FOR PROPOSED BUILDING AND PARKING AREA ADJACENT TO BUILDING. THE EXISTING MAIN GROUND SURFACE TO BE MAINTAINED AND DISPOSED AS A MANNER DESCRIBED IN THE CONSTRUCTION DESIGN. GRADING WILL OCCUR TO CAPTURE STORMWATER, UNTIL THE BUILDING PAD HAS BEEN INSTALLED AND FINAL STORM SEWERS ARE INSTALLED.

- 19. CLEAR AND GRUB AREA FOR CONNECTION TO EXISTING BUILDING #31 AND PROPOSED RETAINING WALL.
20. BEGIN ROUGH GRADING OF AREA NORTH OF BRENNAN BOULEVARD, FOR RAMP INTO BUILDING AND SPH THEATER AREA.
21. BEGIN CONSTRUCTION OF BUILDING PAD NORTH OF BRENNAN BLVD.

- 22. CONCURRENT WITH ROUGH GRADING AND BUILDING PAD CONSTRUCTION, BEGIN INSTALLATION OF UTILITIES. INSTALL REINFORCING WIRE, ELECTRIC, NATURAL GAS, COMMUNICATION, FIRE, SANITARY UTILITIES.

- 23. CONCURRENT WITH ROUGH GRADING AND BUILDING PAD CONSTRUCTION, BEGIN INSTALLATION OF UTILITIES. INSTALL REINFORCING WIRE, ELECTRIC, NATURAL GAS, COMMUNICATION, FIRE, SANITARY UTILITIES.

- 24. CONCURRENT WITH ROUGH GRADING AND BUILDING PAD CONSTRUCTION, BEGIN INSTALLATION OF UTILITIES. INSTALL REINFORCING WIRE, ELECTRIC, NATURAL GAS, COMMUNICATION, FIRE, SANITARY UTILITIES.

- 25. CONCURRENT WITH ROUGH GRADING AND BUILDING PAD CONSTRUCTION, BEGIN INSTALLATION OF UTILITIES. INSTALL REINFORCING WIRE, ELECTRIC, NATURAL GAS, COMMUNICATION, FIRE, SANITARY UTILITIES.

- 26. DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.

- 27. CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION AND LANDSCAPING.
28. ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

- 29. CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION AND LANDSCAPING.
30. ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

- 31. UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND CO PERMITTEE SHALL SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. REFER TO "TERMINATION OF COVERAGE" AND "COMPLETION CERTIFICATION AND FINAL PLANS" NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.

- 32. ONCE ALL SOIL MIXING OPERATIONS ARE COMPLETE, THE SOIL MIX AREA HIGHLIGHTED ON PLAN SHEET CS8002 SHALL BE DECOMPACTED. DE-COMPACT SUBSOIL WITH A BACKHOE OR OTHER APPROVED METHOD TO A MIN. DEPTH OF 18-INCHES BELOW SUBGRADE. ONCE DE-COMPACTION IS COMPLETE, FINE GRADE AREA AND SEED WITH PERMANENT SEEDING.
33. CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE, BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGN ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:
a. INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.
b. INSPECT GREEN ROOF MEDIA.
c. INSPECT VEGETATION ONCE INSTALLED.

- 34. ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.
35. INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.
36. DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.

FOR THE PARKING AREAS ON THE EAST SIDE OF THE SITE:
1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.

CALL BEFORE YOU DIG
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CALL 1-800-242-1176
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



SEWERS AND STORM SEWERS. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.
29. BEGIN INSTALLING CONCRETE CURBING AND STONE SUBBASE AT AREAS SPECIFIED ON THE PLANS.
30. CRITICAL STAGE: ONCE ALL BASINS CONTRIBUTING RUNOFF TO THE SURFACE BASINS #8, #9, AND #11 HAVE BEEN STABILIZED WITH STONE SUBBASE, THE CONSTRUCTION OF BASINS #8, #9, AND #11 MAY BE ACCORDING TO PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:
a. INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.
b. INSPECT AND VERIFY THAT THE STONE IS CLEAN.
c. INSPECT THAT THE GEOTEKSTILE IS INSTALLED AS SHOWN ON DETAILS.
d. INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEKSTILE.
e. INSPECT THE AMENDED SOIL PRIOR TO PLACEMENT IN THE BASIN AREAS.
f. INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.
g. INSPECT THE VEGETATION AFTER PLANTING.

25. CRITICAL STAGE: CONCURRENT WITH THE ROUGH GRADING AROUND THE BUILDING AND 70% STABILIZATION OF SURROUNDING AREA, INSTALL SUBSURFACE BASINS 13A AND 14, AND BIO-RETENTION BASIN 15B ACCORDING TO PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:
a. INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.
b. INSPECT AND VERIFY THAT THE STONE IS CLEAN.
c. INSPECT THAT THE GEOTEKSTILE IS INSTALLED AS SHOWN ON DETAILS.
d. INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEKSTILE.
e. INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.
f. INSPECT THE VEGETATION AFTER PLANTING.

26. CRITICAL STAGE: CONCURRENT WITH THE ROUGH GRADING AROUND THE BUILDING AND 70% STABILIZATION OF SURROUNDING AREA, INSTALL SUBSURFACE BASINS 13A AND 14, AND BIO-RETENTION BASIN 15B ACCORDING TO PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:
a. INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.
b. INSPECT AND VERIFY THAT THE STONE IS CLEAN.
c. INSPECT THAT THE GEOTEKSTILE IS INSTALLED AS SHOWN ON DETAILS.
d. INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEKSTILE.
e. INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.
f. INSPECT THE VEGETATION AFTER PLANTING.

27. CRITICAL STAGE: ONCE CONTRIBUTING DRAINAGE AREA TO SEDIMENT BASIN #1 IS 70% UNIFORMLY STABILIZED, IT MAY BE CONVERTED TO THE PERMANENT STORMWATER FACILITIES SHOWN AS BASIN #1, #2, #3, #4, #5, #6, #7, AND #7 IN ACCORDANCE WITH THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BASINS:
a. INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.
b. INSPECT OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.
c. INSPECT THE VEGETATION AFTER PLANTING.

28. PRIOR TO REMOVAL OR CONVERSION OF A SEDIMENT BASIN, AN INSPECTION SHALL BE CONDUCTED BY THE CHESTER COUNTY CONSERVATION DISTRICT.
a. FLUSH ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORM SEWER PIPES.
b. DEWATER SEDIMENT BASIN BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.
c. REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.
d. EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

29. CRITICAL STAGE: ONCE CONTRIBUTING DRAINAGE AREA TO SEDIMENT BASIN #1 IS 70% UNIFORMLY STABILIZED, IT MAY BE CONVERTED TO THE PERMANENT STORMWATER FACILITIES SHOWN AS BASIN #1, #2, #3, #4, #5, #6, #7, AND #7 IN ACCORDANCE WITH THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BASINS:
a. INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.
b. INSPECT OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.
c. INSPECT THE VEGETATION AFTER PLANTING.

30. PRIOR TO REMOVAL OR CONVERSION OF A SEDIMENT BASIN, AN INSPECTION SHALL BE CONDUCTED BY THE CHESTER COUNTY CONSERVATION DISTRICT.
a. FLUSH ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORM SEWER PIPES.
b. DEWATER SEDIMENT TRAP BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.
c. REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.
d. EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

31. UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND CO PERMITTEE SHALL SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. REFER TO "TERMINATION OF COVERAGE" AND "COMPLETION CERTIFICATION AND FINAL PLANS" NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.

32. ONCE ALL SOIL MIXING OPERATIONS ARE COMPLETE, THE SOIL MIX AREA HIGHLIGHTED ON PLAN SHEET CS8002 SHALL BE DECOMPACTED. DE-COMPACT SUBSOIL WITH A BACKHOE OR OTHER APPROVED METHOD TO A MIN. DEPTH OF 18-INCHES BELOW SUBGRADE. ONCE DE-COMPACTION IS COMPLETE, FINE GRADE AREA AND SEED WITH PERMANENT SEEDING.

33. CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE, BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGN ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:
a. INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.
b. INSPECT GREEN ROOF MEDIA.
c. INSPECT VEGETATION ONCE INSTALLED.

34. ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.
35. INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.
36. DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.

37. CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION AND LANDSCAPING.
38. ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

39. CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION AND LANDSCAPING.
40. ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

41. UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND CO PERMITTEE SHALL SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. REFER TO "TERMINATION OF COVERAGE" AND "COMPLETION CERTIFICATION AND FINAL PLANS" NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.

42. ONCE ALL SOIL MIXING OPERATIONS ARE COMPLETE, THE SOIL MIX AREA HIGHLIGHTED ON PLAN SHEET CS8002 SHALL BE DECOMPACTED. DE-COMPACT SUBSOIL WITH A BACKHOE OR OTHER APPROVED METHOD TO A MIN. DEPTH OF 18-INCHES BELOW SUBGRADE. ONCE DE-COMPACTION IS COMPLETE, FINE GRADE AREA AND SEED WITH PERMANENT SEEDING.

43. CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE, BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGN ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:
a. INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.
b. INSPECT GREEN ROOF MEDIA.
c. INSPECT VEGETATION ONCE INSTALLED.

44. ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.
45. INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.
46. DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.

47. CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION AND LANDSCAPING.
48. ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

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53. CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE, BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGN ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:
a. INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.
b. INSPECT GREEN ROOF MEDIA.
c. INSPECT VEGETATION ONCE INSTALLED.

54. ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.
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a. INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.
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POLLUTION CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPROPRIATE.

37. INSTALL SILT SOCKS AT LOCATIONS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE SILT SOCKS SHALL BE INSTALLED BY AN APPROVED CONTRACTOR FAMILIAR WITH THE INSTALLATION PROCEDURES. CONTRACTORS SHALL INSPECT THE SILT SOCKS ON A WEEKLY BASIS AND AFTER EVERY RUNOFF EVENT. NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY AND ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING HALF THE HEIGHT OF THE SILT SOCKS.

38. CRITICAL STAGE: SEDIMENT TRAP CONSTRUCTION: BEGIN CONSTRUCTION OF SEDIMENT TRAPS #1 AND #2 AS FOLLOWS:
a. CLEAR AND GRUB AREA OF PROPOSED BERM AND OUTLET STRUCTURES.
b. BEGIN CONSTRUCTION OF TRAP BERM AND OUTLET STRUCTURES AS DETAILED ON DETAIL SHEETS.
c. INSTALL SKIMMER WITH STONE LANDING BERM AND TEMPORARY RISER EXTENSION IN SEDIMENT TRAPS.
d. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL NOTIFY ALL STAKEHOLDERS INVOLVED IN THOSE ACTIVITIES. THE LAND OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE CHESTER COUNTY CONSERVATION DISTRICT TO SCHEDULE AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1176 FOR BURIED UTILITIES LOCATIONS.

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b. BEGIN CONSTRUCTION OF TRAP BERM AND OUTLET STRUCTURES AS DETAILED ON DETAIL SHEETS.
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40. THE E88 CONTROL PLAN MAPPING MUST DISPLAY A PA ONE CALL SYSTEM INCORPORATED INTO THE CONTROL PLAN INCLUDING THE SITE IDENTIFICATION NUMBERS.

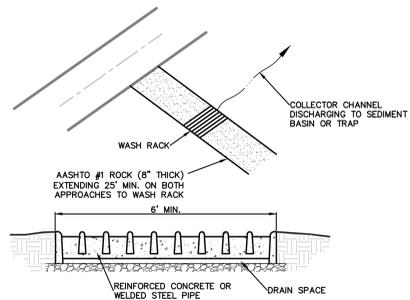
41. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE TO BE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO THE DISCHARGE OF OR STABILIZATION OF SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMPLEMENTED IMMEDIATELY BY THE OPERATOR TO ELIMINATE THE DISTURBANCE.

42. THE LIMITS OF WORK SHOWN ON THIS PLAN ARE THE REAL EXACTS REQUIRED FOR CONSTRUCTION, THE CONTRACTOR SHALL ADHERE TO THESE LIMITS IN MINIMIZING DISTURBED LAND, AND ALL CONSTRUCTION SHALL BE CONDUCTED WITHIN THESE LIMITS.

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

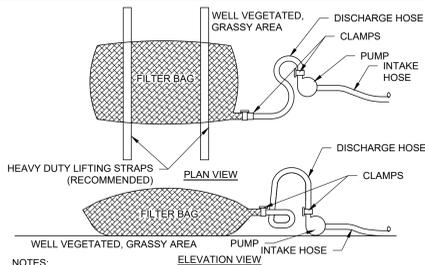
44. PRIOR TO INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED EAS CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CHESTER COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.

45. CONCURRENT WITH ROUGH GRADING, BEGIN INSTALLATION OF CURBING, PAVEMENT SUBBASE AND



NOTES:
 WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.
 WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.
 A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.
 MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**STANDARD CONSTRUCTION DETAIL #3-2
 ROCK CONSTRUCTION ACCESS WITH WASH RACK**
 NOT TO SCALE



NOTES:
 LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH	ASTM D-4884	60 LB/IN
STRENGTH	ASTM D-4632	205 LB
GRAB TENSILE	ASTM D-4833	110 LB
PUNCTURE	ASTM D-3786	350 PSI
MULLEN BURST	ASTM D-4355	70%
UV RESISTANCE	ASTM D-4751	80 SIEVE
AOS % RETAINED		

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPAIRED 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.

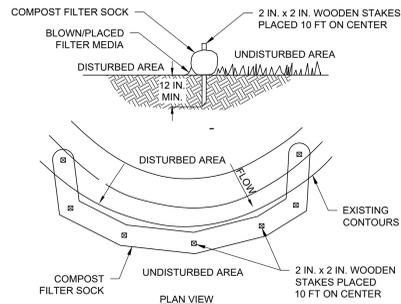
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HO OR EY WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

**STANDARD CONSTRUCTION DETAIL #3-16
 PUMPED WATER FILTER BAG**
 NOT TO SCALE



COMPOST FILTER SOCKS

SOCK NO.	DIA. (IN. H)	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
1	12 IN.	South of Proposed Parking Lot	5.0	87
2	12 IN.	North of Proposed Island Within Proposed Parking Lot	3.2	340
3	12 IN.	North of Proposed Basin 3	5.0	112
4	12 IN.	North of Proposed Basin 4	6.1	81
5	12 IN.	North of Proposed Basin 5	2.8	71
6	12 IN.	North of Proposed Basin 6	2.3	82
7	12 IN.	North of Proposed Basin 7	3.1	153
8	12 IN.	North of Proposed Basin 7	3.1	153
9	12 IN.	North of Proposed Basin 8	5.2	105
10	12 IN.	North of Proposed Basin 8	6.3	100
11	12 IN.	North of Proposed Basin 8	4.8	39
12	12 IN.	North of Proposed Basin 8	5.9	36
13	12 IN.	North of Proposed Phase 1 Building	6.8	28
14	12 IN.	North of Proposed Phase 1 Building	9.5	13
15	12 IN.	North of Proposed Phase 1 Building	12.9	13
16	12 IN.	South of Proposed Phase 1 Building	6.8	28
17	12 IN.	South of Proposed Phase 1 Building	6.8	28
18	32 IN.	West of Proposed Wall	20	50
19	32 IN.	West of Proposed Wall	20	50
20	32 IN.	West of Proposed Wall	20	30
21	32 IN.	Downstream of Eriwell 5.01	20	10
22	12 IN.	Surrounding Soil Stockpile North of Proposed Parking Lot	2	13
23	12 IN.	Surrounding Soil Stockpile West of Proposed Parking Lot	3	275

NOTES:
 SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

**STANDARD CONSTRUCTION DETAIL #4-1
 COMPOST FILTER SOCK**
 NOT TO SCALE

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFFPP)
MATERIAL CHARACTERISTICS	PHOTODEGRADABLE	PHOTODEGRADABLE	PHOTODEGRADABLE	PHOTODEGRADABLE	PHOTODEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

TWO-PLY SYSTEMS

INNER CONTAINMENT NETTING	HDPE BIAXIAL NET
	CONTINUOUSLY WOUND
OUTER FILTRATION MESH	FUSION-WELDED JUNCTURES
	34" x 34" MAX APERTURE SIZE

COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)
 3/16" MAX APERTURE SIZE

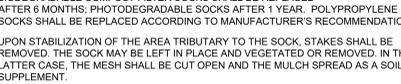
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS

COMPOST STANDARDS

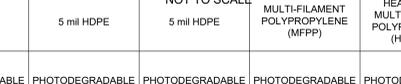
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 ds/m (MMHOS/CM) MAX

TREE PROTECTION NOTES

- THE PERMANENT CONSTRUCTION FENCING WILL DELINEATE THE TREE PROTECTION AREAS FROM THE CONSTRUCTION SITE. NO CONTRACTORS SHALL ENTER THESE AREAS AT ANY TIME. TREE PROTECTION FENCES WILL BE INSTALLED PER THE TREE PROTECTION SPEC A CERTAIN DISTANCE OUTSIDE OF THE TREES DRIP LINE TO PROTECT THE ROOTS. ANYONE TRESPASSING IN THESE AREAS CAN BE SUBJECT TO REPLACING THE TREES AT THE POSTED COST.
- THE MAXIMUM DISTANCE FOR STAKING THE TREE PROTECTION FENCE IS 10'.



**STANDARD CONSTRUCTION DETAIL #11-1
 EROSION CONTROL BLANKET INSTALLATION**
 NOT TO SCALE

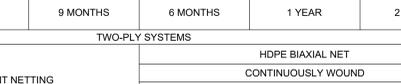


NOTES:

- PRIOR TO REPAIRING ANY SINK HOLE, A GEOTECHNICAL ENGINEER SHOULD BE CONTACTED TO PERFORM A SITE VISIT AND PROVIDE THE PROPER STABILIZATION METHOD.
- LOOSE MATERIAL SHALL BE EXCAVATED FROM THE SINKHOLE AND EXPOSE SOLUTION VOID(S) IF POSSIBLE. ENLARGE SINKHOLE IF NECESSARY TO ALLOW FOR FILTER MATERIALS. OSHA REGULATIONS MUST BE FOLLOWED AT ALL TIMES DURING EXCAVATION.
- GEOTEXTILE SHALL BE NON-WOVEN SUCH AS TC MIRAFI OR EQUIPMENT.
- MINIMUM THICKNESS OF #4 BALLAST IS 18" AASHTO #67 STONE THICKNESS SHALL BE 1 TO 1 THAT OF THE #4 BALLAST. AASHTO #57 STONE SHALL BE VIBRATED AFTER EACH PLACEMENT.
- ENGINEER AMENDED SOIL/GRADED FILTER IS TO MEET THE STORMWATER INFILTRATION REQUIREMENTS.
- TOPSOIL SHALL BE A MINIMUM OF 12" THICK. GRADE FOR POSITIVE DRAINAGE AWAY FROM SINKHOLE AREA.

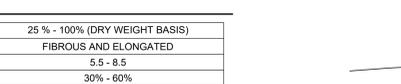
CALL BEFORE YOU DIG
 BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
 CALL 1-800-242-1776
 PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890

**STANDARD CONSTRUCTION DETAIL #4-15
 FILTER BAG INLET PROTECTION - TYPE C INLET**
 N.T.S.



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 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 ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
 DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**STANDARD CONSTRUCTION DETAIL #4-16
 FILTER BAG INLET PROTECTION - TYPE M INLET**
 N.T.S.



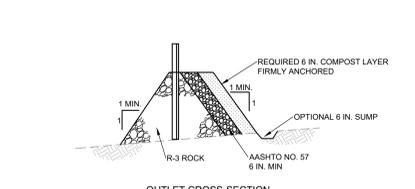
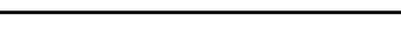
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 DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**STANDARD CONSTRUCTION DETAIL #3-2
 ROCK CONSTRUCTION ACCESS WITH WASH RACK**
 NOT TO SCALE



NOTES:
 WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.
 WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.
 A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.
 MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**STANDARD CONSTRUCTION DETAIL #3-16
 PUMPED WATER FILTER BAG**
 NOT TO SCALE



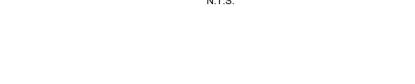
NOTES:
 A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. 6" ANCHORED COMPOST LAYER MUST BE UTILIZED ON UPSLOPE FACE DUE TO THE EY WATERSHED.
 SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

**STANDARD CONSTRUCTION DETAIL #4-6
 ROCK FILTER OUTLET**
 N.T.S.



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 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.

**STANDARD CONSTRUCTION DETAIL #4-15
 FILTER BAG INLET PROTECTION - TYPE C INLET**
 N.T.S.



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

**STANDARD CONSTRUCTION DETAIL #4-16
 FILTER BAG INLET PROTECTION - TYPE M INLET**
 N.T.S.



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



NOTES:
 THE BLANKET SHOULD NOT BE STRETCHED. IT MUST MAINTAIN GOOD SOIL CONTACT.
 OVERLAP BLANKET ENDS 6 IN. MIN. WITH THE UPSLOPE. ROLL BLANKETS IN DIRECTION OF WATER FLOW.
 REFER TO MANUF. RECOMMENDED STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE BEING BLANKETED.

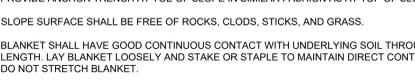
SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
 SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
 THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

**STANDARD CONSTRUCTION DETAIL #4-15
 FILTER BAG INLET PROTECTION - TYPE C INLET**
 N.T.S.



NOTES:
 MAXIMUM DRAINAGE AREA = 1/2 ACRE.
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 DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**STANDARD CONSTRUCTION DETAIL #4-16
 FILTER BAG INLET PROTECTION - TYPE M INLET**
 N.T.S.



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**STANDARD CONSTRUCTION DETAIL #3-2
 ROCK CONSTRUCTION ACCESS WITH WASH RACK**
 NOT TO SCALE

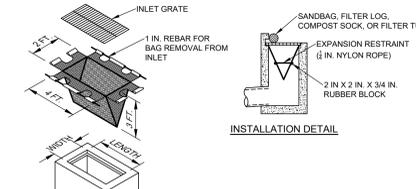


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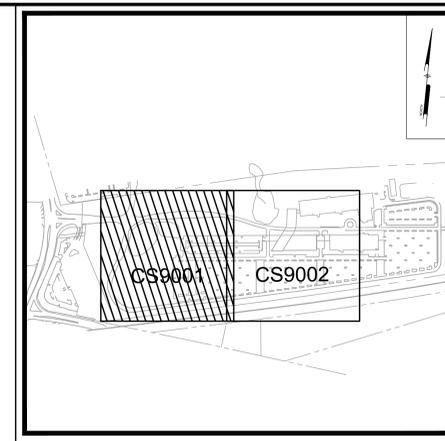
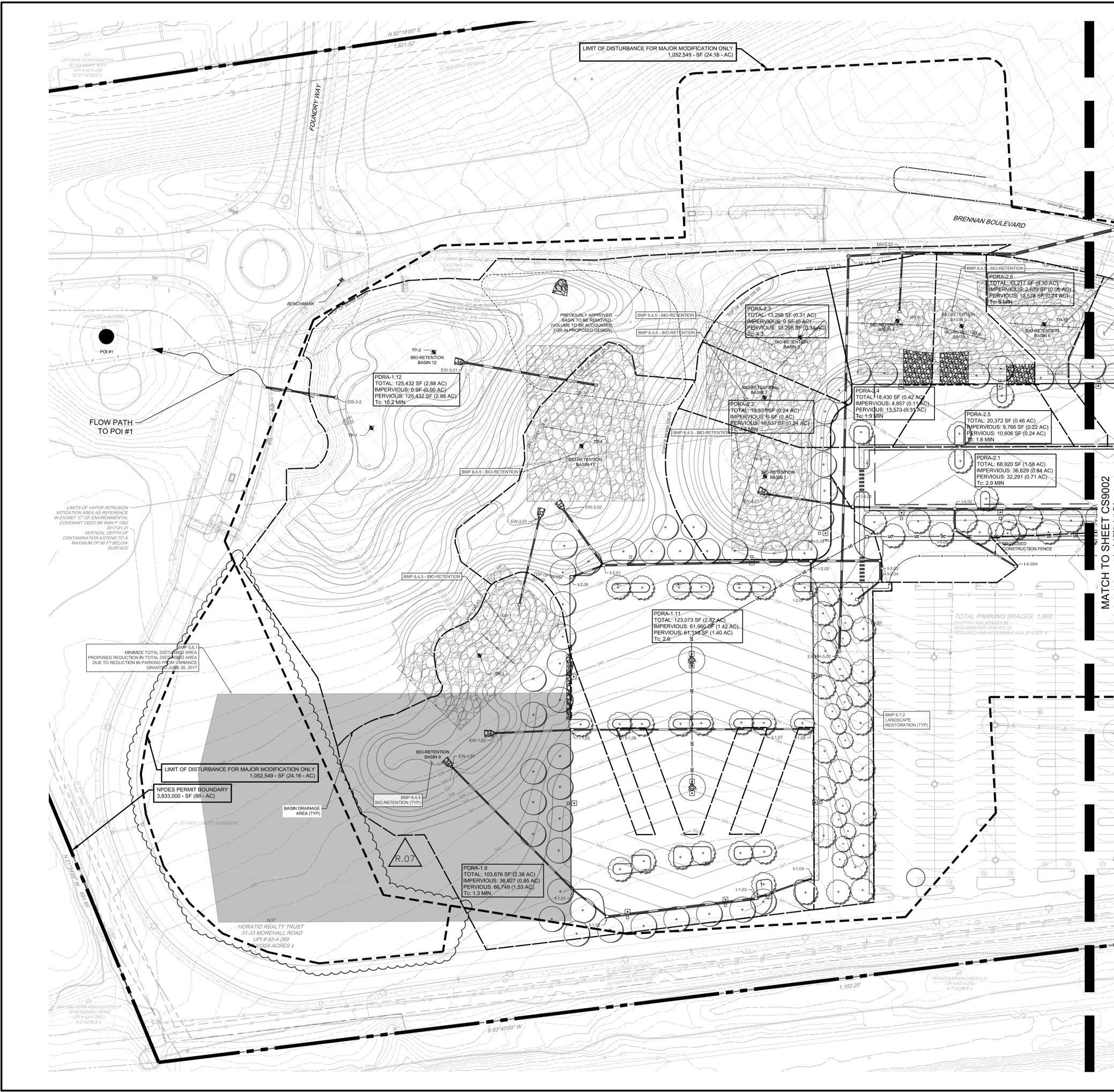
**STANDARD CONSTRUCTION DETAIL #3-16
 PUMPED WATER FILTER BAG**
 NOT TO SCALE



NOTES:
 1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
 2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.



NOTES:
 MAXIMUM DRAINAGE AREA



INfiltration TEST

TEST	NORTHING	EASTING	ELEVATION OF TEST	RATE
TP-1	267476.8902	2592635.8476	314	0.5
TP-2	267566.3312	2592689.0658	314	0.5
TP-3	267253.5164	2592784.7241	331	0.75
TP-4	267490.3784	2592658.0064	324	>10
TP-5	267487.1679	2593054.5420	324	1.9
TP-6	267570.2500	2593041.4109	323	1.7
TP-7	267639.2099	2593069.3548	323	0.2
TP-8	267671.8126	2593168.1770	322	0.2
TP-9	267676.3220	2593236.0625	322	1.5
TP-10	267691.1507	2593321.9966	324	0.5

LEGEND

PROPERTY LINE	EXISTING WETLANDS
LEGAL RIGHT-OF-WAY	EXISTING 150' RIPARIAN BUFFER
EX PROPERTY CORNER FOUND	PROPOSED BUILDING
EX CONCRETE MONUMENT	PROPOSED CURB
ADJOINING PROPERTY LINE	PROPOSED SIDEWALK
EX EASEMENT	PROPOSED GORE STRIPING
EX BUILDING	PROPOSED SIGN
EX CURB	PROPOSED WALL
EX EDGE OF PAVEMENT	PROPOSED FINISHED FLOOR ELEVATION
EX EDGE OF GRAVEL	360
EX WALL	361
EX FENCE LINE	PROPOSED MAJOR CONTOUR
EX SIGN	PROPOSED MINOR CONTOUR
EX LANDSCAPING	PROPOSED STORM SEWER
EX TREE ROW	PROPOSED STORM SEWER MANHOLE
EX MINOR CONTOUR	PROPOSED INLET
EX MAJOR CONTOUR	PROPOSED ELECTRICAL
EX STORM SEWER LINES	PROPOSED UTILITY POLE
EX STORMWATER MANHOLE	PROPOSED WATER LINES
EX OVERHEAD ELECTRICAL LINES	PROPOSED FIRE HYDRANT
EX ELECTRICAL LINES	PROPOSED FIRE PROTECTION
EX UTILITY POLE	PROPOSED SANITARY SEWER LINES
EX WATER LINES	PROPOSED SANITARY MANHOLE
EX FIRE HYDRANT	PROPOSED BASIN DRAINAGE AREA
EX WATER VALVE	NPDES BOUNDARY LINE
EX MONITORING WELL	LIMIT OF DISTURBANCE LINE
EX SANITARY SEWER LINES	PROPOSED GREEN ROOF
EX SANITARY MANHOLE	INFILTRATION TEST LOCATION
EX SANITARY CLEAN OUT	
EX NATURAL GAS LINES	
POTENTIAL POLLUTANT EXTENTS	

- CONTAMINANTS NOTES:
- KNOWN CONTAMINANT: TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
 - THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.
 - CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNONI FOR ALL SITE WORK.
 - CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
 - THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PADEP ON JANUARY 11, 2016.
 - A CARBONATE GEOLOGY REPORT WAS PERFORMED ON THE SITE, PREPARED BY PENNONI ASSOCIATES AND DATED JULY 27, 2017.
 - ACCORDING TO THE APPROVED GOLDER REPORT AND THE CARBONATE GEOLOGY REPORT, INFILTRATION ON-SITE IS ACCEPTABLE. THE CARBONATE GEOLOGY REPORT SHOULD BE REFERENCED IN THE EVENT THAT A SINK HOLE IS ENCOUNTERED DURING CONSTRUCTION.



CALL BEFORE YOU DIG
 BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
 PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
 NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
 BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
 SERIAL NUMBER: 20171320890



NOT FOR CONSTRUCTION

Pennoni
 PENNONI ASSOCIATES INC.
 One South Church Street, 2nd Floor
 Malvern, PA 19355
 T 610-423-9807 F 610-423-8918

VANGUARD MALVERN WEST EXPANSION
 31 MOREHALL ROAD
 MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

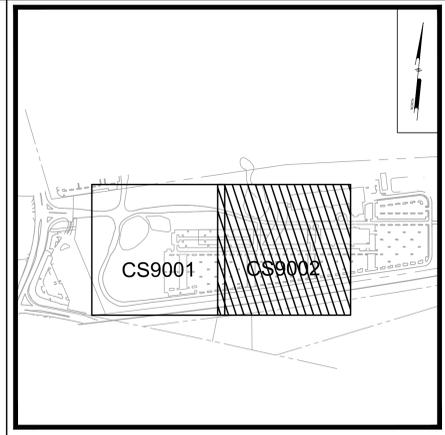
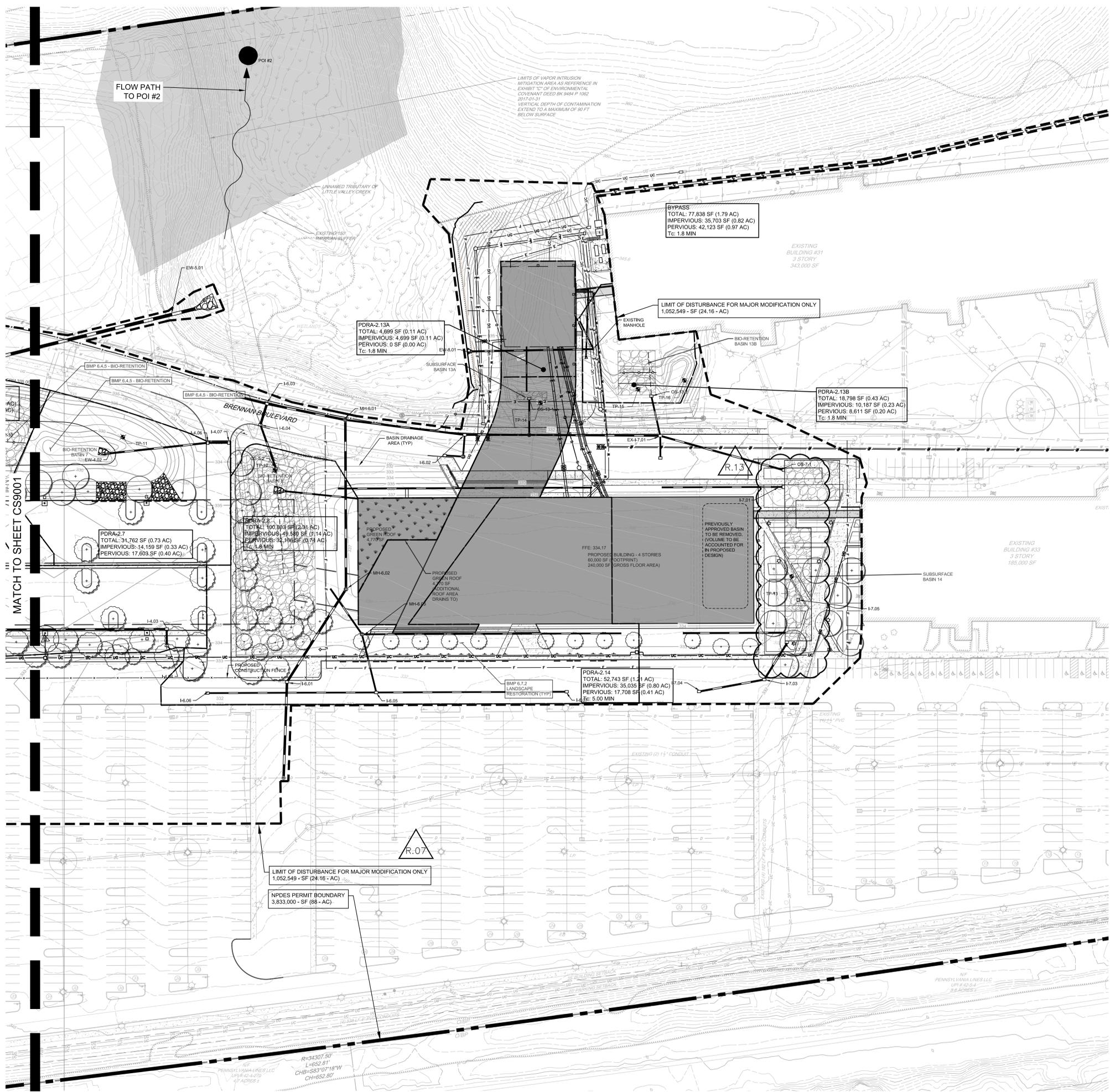
THE VANGUARD GROUP
 400 DEWON PARK DRIVE
 WYOMING, PA 19387

NO.	DATE	BY	REVISIONS
01/11/18			
03/05/18			
03/07/18			
03/28/18			
10/16/17			
10/13/17			
09/13/17			
08/13/17			

PROJECT: TVG1702
 DATE: 2017-07-28
 DRAWING SCALE: 1"=40'
 DRAWN BY: MEM
 APPROVED BY: MK

CS9001
 SHEET 58 OF 72

PROJECT STATUS:
 PLOTTED: 3/30/2018 10:18 AM BY: Connor McSwain
 PLOT FILE: Pennoni\CS9001.dwg
 PLOTTER: HP DesignJet 2400



KEY MAP
Scale: 1" = 600'

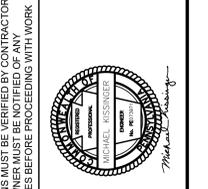
INFILTRATION TEST				
TEST	NORTHING	EASTING	ELEVATION OF TEST	RATE
TP-11	26714.0034*	2593457.5679*	324	0.1
TP-12	26702.9372*	2593616.3632*	326	0.0
TP-13	267630.4302*	2594133.5489*	325	2.3
TP-14	267811.0929*	2593844.7734*	331	0.25
TP-15	267840.9524*	2593971.2852*	333	0.125
TP-16	267857.0482*	2594016.9170*	334	0.125

LEGEND	
PROPERTY LINE	EXISTING WETLANDS
LEGAL RIGHT-OF-WAY	EXISTING 150' RIPARIAN BUFFER
EX PROPERTY CORNER FOUND	PROPOSED BUILDING
EX CONCRETE MONUMENT	PROPOSED CURB
ADJOINING PROPERTY LINE	PROPOSED SIDEWALK
EX EASEMENT	PROPOSED GORE STRIPING
EX BUILDING	PROPOSED SIGN
EX CURB	PROPOSED WALL
EX EDGE OF PAVEMENT	FFFE 360
EX EDGE OF GRAVEL	360
EX WALL	361
EX FENCE LINE	360
EX SIGN	361
EX LANDSCAPING	360
EX TREE ROW	PROPOSED STORM SEWER
EX MINOR CONTOUR	PROPOSED STORM SEWER MANHOLE
EX MAJOR CONTOUR	PROPOSED INLET
EX STORM SEWER LINES	PROPOSED ELECTRICAL
EX STORMWATER MANHOLE	PROPOSED UTILITY POLE
EX STORM SEWER INLET	PROPOSED WATER LINES
EX OVERHEAD ELECTRICAL LINES	PROPOSED FIRE HYDRANT
EX ELECTRICAL LINES	PROPOSED FIRE PROTECTION
EX UTILITY POLE	PROPOSED SANITARY SEWER LINES
EX WATER LINES	PROPOSED SANITARY MANHOLE
EX FIRE HYDRANT	PROPOSED SANITARY SEWER LINES
EX WATER VALVE	PROPOSED SANITARY MANHOLE
EX MONITORING WELL	NPDES BOUNDARY LINE
EX SANITARY SEWER LINES	LIMIT OF DISTURBANCE LINE
EX SANITARY MANHOLE	PROPOSED GREEN ROOF
EX SANITARY CLEAN OUT	INFILTRATION TEST LOCATION
EX NATURAL GAS LINES	
POTENTIAL POLLUTANT EXTENTS	

- CONTAMINANTS NOTES:**
- KNOWN CONTAMINANT: TCE. EXTENTS SHOWN ON PLAN. THE VERTICAL DEPTH OF CONTAMINATION EXTENDS TO A MAXIMUM OF 90 FT BELOW THE SURFACE.
 - THE REFERENCED CONTAMINANTS WERE FROM THE PLAN REVIEWED AND APPROVED BY THE DEP BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.
 - CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" PREPARED BY PENNONI FOR ALL SITE WORK.
 - CONTRACTOR TO REFER TO "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN" IF CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.
 - THE REPORT WAS PREPARED BY GOLDER AND APPROVED BY PADEP ON JANUARY 11, 2016.
 - A CARBONATE GEOLOGY REPORT WAS PERFORMED ON THE SITE, PREPARED BY PENNONI ASSOCIATES AND DATED JULY 27, 2017.
 - ACCORDING TO THE APPROVED GOLDER REPORT AND THE CARBONATE GEOLOGY REPORT, INFILTRATION ON-SITE IS ACCEPTABLE. THE CARBONATE GEOLOGY REPORT SHOULD BE REFERENCED IN THE EVENT THAT A SINK-HOLE IS ENCOUNTERED DURING CONSTRUCTION.



CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER(S): 20171320890



ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREPAUL ROAD
MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

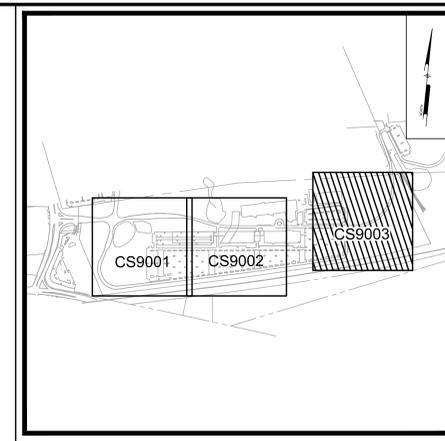
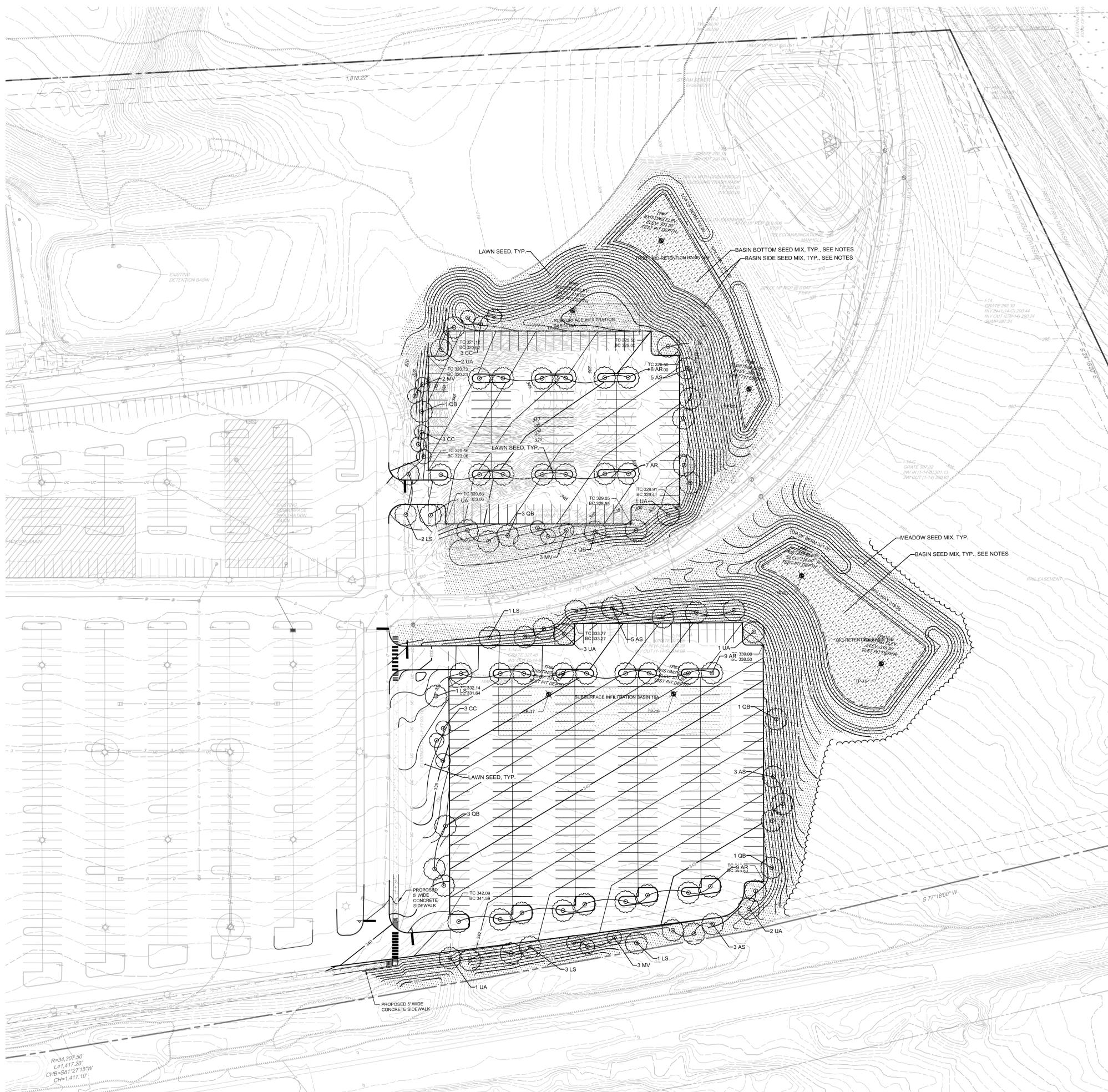
THE VANGUARD GROUP
400 DEWOLP PARK DRIVE
WAYNE, PA 19387

AEK	NAC	AGS	MRL	MRL	NAC	MRL	BY
090719	13	REVISED SUBSURFACE BASIN 14					REVISIONS
01/14/19	12	JAS008					
09/18/18	11	REVISED STORM SEWER					
09/07/18	10	REVISED PER RFI					
08/24/18	9	REVISED STORM SEWERS PER RFI					
05/03/18	8	REVISED WATER LINE AND SANITARY INLET					
09/11/18	7	ADDED SOIL MIX AREA					
	DATE	NO.					

PROJECT: TVG1702
DATE: 2017-07-28
DRAWING SCALE: 1"=40'
DRAWN BY: MEM
APPROVED BY: MK

CS9002
SHEET 59 OF 72

Project: TVG1702 - Vanguard Malvern West Expansion (EIR) - Submittal drawings for CS9002.dwg
PLOTTED: 5/30/2018 10:18:18 PM BY: Connor McSwain PROJECT STATUS: -
C:\Users\cmcs\OneDrive\Documents\TVG1702\Drawings\Submittal\CS9002.dwg



KEY MAP
Scale: 1" = 800'

INFILTRATION TEST				
TEST	NORTHING	EASTING	ELEVATION OF TEST	RATE
TP-17	267976.1654'	2595643.9089'	316.50	
TP-18	268053.9032'	2595550.1312'	316.50	
TP-19	267914.0902'	2595438.9466'	325.50	
TP-20	267894.8389'	2595313.0786'	325.50	
TP-21	268289.2036'	2595278.9038'	310.00	
TP-22	268236.0417'	2595468.5578'	307.50	
TP-23	268373.8485'	2595357.3618'	307.50	

LEGEND			
	PROPERTY LINE		EXISTING WETLANDS
	LEGAL RIGHT-OF-WAY		EXISTING 150' RIPARIAN BUFFER
	EX PROPERTY CORNER FOUND		PROPOSED BUILDING
	EX CONCRETE MONUMENT		PROPOSED CURB
	ADJOINING PROPERTY LINE		PROPOSED SIDEWALK
	EX EASEMENT		PROPOSED GORE STRIPING
	EX BUILDING		PROPOSED SIGN
	EX CURB		PROPOSED WALL
	EX EDGE OF PAVEMENT		PROPOSED FINISHED FLOOR ELEVATION
	EX EDGE OF GRAVEL		PROPOSED MAJOR CONTOUR
	EX WALL		PROPOSED MINOR CONTOUR
	EX FENCE LINE		PROPOSED STORM SEWER
	EX SIGN		PROPOSED STORM SEWER MANHOLE
	EX LANDSCAPING		PROPOSED INLET
	EX TREE ROW		PROPOSED ELECTRICAL
	EX MINOR CONTOUR		PROPOSED UTILITY POLE
	EX MAJOR CONTOUR		PROPOSED WATER LINES
	EX STORM SEWER LINES		PROPOSED FIRE HYDRANT
	EX STORM SEWER MANHOLE		PROPOSED FIRE PROTECTION
	EX STORM SEWER INLET		PROPOSED SANITARY SEWER LINES
	EX OVERHEAD ELECTRICAL LINES		PROPOSED SANITARY MANHOLE
	EX ELECTRICAL LINES		NPDES DRAINAGE AREA
	EX UTILITY POLE		NPDES BOUNDARY LINE
	EX WATER LINES		LIMIT OF DISTURBANCE LINE
	EX FIRE HYDRANT		PROPOSED GREEN ROOF
	EX WATER VALVE		INFILTRATION TEST LOCATION
	EX MONITORING WELL		
	EX SANITARY SEWER LINES		
	EX SANITARY MANHOLE		
	EX SANITARY CLEAN OUT		
	EX NATURAL GAS LINES		
	POTENTIAL POLLUTANT EXTENTS		

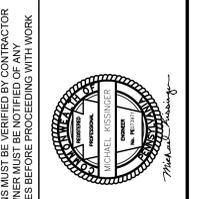


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PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER(S): 20171320890



NOT FOR CONSTRUCTION

Pennoni
PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, OH 41001
T 610-429-8807 F 610-429-8818



ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

THE VANGUARD GROUP
400 DEWOLP DRIVE
WAYNE, PA 19387

NO.	DATE	REVISIONS	BY

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE INSTALLED FOR REUSE BY OWNER OR OTHERS OR THE EXTENSION OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR PERMISSION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS RISK AND WITHOUT LIABILITY ON BEHALF OF PENNONI ASSOCIATES. OWNER SHALL VERIFY AND HOLD PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PROJECT: TVG1702
DATE: 2019-05-31
DRAWING SCALE: 1"=40'
DRAWN BY: CCM
APPROVED BY: MK

CS9003
SHEET 60 OF 72

Project: C:\p\1702\1702.dwg, Plot: 1702.dwg, Plot Date: 5/31/2019 11:11 AM, Plot By: Connor McGowan, Plot Title: Pennoni\CS9003.dwg, Project Status: -

YCLE & DISPOSAL OF MATERIALS

OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTE AT THE SITE.

IF WASTE OR BORROW AREA MUST HAVE A PCSM PLAN REVIEWED AND APPROVED BY SISTER COUNTY CONSERVATION DISTRICT PRIOR TO BEING ACTIVATED.

PCSM LONGTERM OPERATION & MAINTENANCE NOTES

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPs ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs.

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDING INSTRUMENT MUST BE COORDINATED WITH THE PCSM BMP PREPARER, AND A REPRESENTATIVE FROM THE CHESTER COUNTY CONSERVATION DISTRICT TO SCHEDULE A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM, INC. AT 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED ERS CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CHESTER COUNTY CONSERVATION DISTRICT.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601 ET SEQ. AND 287.1 ET SEQ.

THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL PROPOSED SOILROCK SPOIL AND BORROW AREAS ON OR OFF-SITE.

ON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. PLEASE NOTE THAT HYDROSEED IS NOT CONSIDERED STABILIZATION UNTIL IT GERMINATES. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.

CRITICAL STAGES FOR ALL CRITICAL STAGES, THE CRITICAL ITEMS ARE A MINIMUM. IF PROBLEMS ARISE OR ADVERSE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHOULD BE NOTIFIED AND SHOULD BE PRESENT ON SITE FOR ANY NEW DESIGN ELEMENTS.

STAGE 1: PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH ALL NOTES ON THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLANS.

PRIOR TO PROCEEDING WITH CONSTRUCTION, CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES. MAINTAIN AND PROTECT ALL EXISTING UTILITIES TO REMAIN AT ALL TIMES.

INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.

DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPLICABLE.

INSTALL SILT SOCKS AT LOCATIONS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE SILT SOCKS SHALL BE INSTALLED BY AN APPROVED CONTRACTOR FAMILIAR WITH THE INSTALLATION PROCEDURES. CONTRACTORS SHALL INSPECT THE SILT SOCKS ON A WEEKLY BASIS AND AFTER EVERY RAINFALL EVENT. NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY AND ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING HALF THE HEIGHT OF THE SILT SOCKS.

INSTALL TREE PROTECTION AS INDICATED ON THE PLANS.

CRITICAL STAGE: SEDIMENT BASIN CONSTRUCTION: BEGIN CONSTRUCTION OF SEDIMENT BASIN #1 AS FOLLOWS:

ALL EXISTING OFFICERS SHOULD BE SEALED WITH WATERTIGHT SEALS IF THEY ARE NOT PART OF THE SEDIMENT BASIN DESIGN.

CLEAR AND GRUB AREA OF PROPOSED SEDIMENT BASIN. STOCKPILE TOPSOIL IN AREA INDICATED ON THE PLAN.

EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

INSTALL STONE BERM IN AREAS AS SHOWN ON THE PLANS.

FINAL GRADE BASIN SLOPES AND STABILIZE ACCORDINGLY.

REMOVE TEMPORARY RISER AND SKIMMER. STABILIZE ANY AREA DISTURBED DURING REMOVAL OF RISERS/SKIMMER.

REMOVE ANY TEMPORARY BLOCKAGES OR PERMANENT RISER AND ENSURE RISER MEETS PCSM DESIGN.

CRITICAL STAGE: ONCE CONTRIBUTING DRAINAGE AREA TO SEDIMENT BASIN #1 IS 70% UNIFORMLY STABILIZED, IT MAY BE CONVERTED TO PERMANENT STORMWATER FACILITIES SHOWN AS BASIN #2. IN ACCORDANCE WITH THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE, A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BASINS:

INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

INSPECT THE VEGETATION AFTER PLANTING.

PRIOR TO REMOVAL OR CONVERSION OF A SEDIMENT BASIN, AN INSPECTION SHALL BE CONDUCTED BY THE CHESTER COUNTY CONSERVATION DISTRICT.

FLUSH ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORM SEWER PIPES.

DEWATER SEDIMENT BASIN BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.

REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.

EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

INSTALL AMENDED SOIL IN AREAS AS SHOWN ON THE PLANS.

REMOVE TEMPORARY RISER AND SKIMMER. STABILIZE ANY AREA DISTURBED DURING REMOVAL OF RISERS/SKIMMER.

REMOVE ANY TEMPORARY BLOCKAGES OR PERMANENT RISER AND ENSURE RISER MEETS PCSM DESIGN.

ONCE ALL SOIL MIXING OPERATIONS ARE COMPLETE, THE SOIL MIX AREA HIGHLIGHTED ON PLAN SHEET CS8003 SHALL BE DE-COMPACTED WITH A BACKHOE RIPPER OR OTHER APPROVED METHOD TO A MIN. DEPTH OF 18-INCHES BELOW SUBGRADE. ONCE DE-COMPACTED IS COMPLETE, FINE GRADE AREA AND SEED WITH PERMANENT SEEDING.

CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGNER/ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:

INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.

INSPECT GREEN ROOF MEDIA.

INSPECT VEGETATION ONCE INSTALLED.

ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.

INSTALL ALL FINAL SIDEWALKS AND PAVEMENT AREAS.

INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.

DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT

CONSTRUCTION SEQUENCE

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE WILL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO ONLY THOSE AREAS DESCRIBED IN EACH STAGE.

CONSTRUCTION WILL BEGIN UPON RECEIPT OF ALL REQUIRED PERMITS FROM THE TOWNSHIP, PENNDOT, PA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND THE CONSERVATION DISTRICT.

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LAND OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND A REPRESENTATIVE FROM THE CHESTER COUNTY CONSERVATION DISTRICT TO SCHEDULE A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM, INC. AT 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.

BEFORE IMPLEMENTING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED ERS CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CHESTER COUNTY CONSERVATION DISTRICT.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601 ET SEQ. AND 287.1 ET SEQ.

THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL PROPOSED SOILROCK SPOIL AND BORROW AREAS ON OR OFF-SITE.

ON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. PLEASE NOTE THAT HYDROSEED IS NOT CONSIDERED STABILIZATION UNTIL IT GERMINATES. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.

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STAGE 1: PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH ALL NOTES ON THE APPROVED EROSION & SEDIMENT POLLUTION CONTROL PLANS.

PRIOR TO PROCEEDING WITH CONSTRUCTION, CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES. MAINTAIN AND PROTECT ALL EXISTING UTILITIES TO REMAIN AT ALL TIMES.

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DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPLICABLE.

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INSTALL TREE PROTECTION AS INDICATED ON THE PLANS.

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EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

INSTALL STONE BERM IN AREAS AS SHOWN ON THE PLANS.

FINAL GRADE BASIN SLOPES AND STABILIZE ACCORDINGLY.

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INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

INSPECT THE VEGETATION AFTER PLANTING.

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DEWATER SEDIMENT BASIN BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.

REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.

EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

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REMOVE ANY TEMPORARY BLOCKAGES OR PERMANENT RISER AND ENSURE RISER MEETS PCSM DESIGN.

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INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.

INSPECT GREEN ROOF MEDIA.

INSPECT VEGETATION ONCE INSTALLED.

ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.

INSTALL ALL FINAL SIDEWALKS AND PAVEMENT AREAS.

INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.

DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT

SEWERS AND STORM SEWERS. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.

CLEAR AND GRUB AREA OF REMAINING PARKING LOT 2 ALONG WESTERN EDGE.

ROUGH GRADE PARKING LOT 1 AND 2 AREA.

BEGIN INSTALLING CONCRETE CURBING AND STONE SUBBASE AT AREAS SPECIFIED ON THE PLANS.

CRITICAL STAGE: ONCE ALL AREAS CONTRIBUTING RUNOFF TO THE SURFACE BASINS #6, #9, AND #11 HAVE BEEN STABILIZED WITH STONE SUBBASE, THE CONSTRUCTION OF BASINS #6, #9, AND #11 MAY BEGIN ACCORDING TO PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:

INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.

INSPECT AND VERIFY THAT THE STONE IS CLEAN.

INSPECT THAT THE GEOTEXTILE IS INSTALLED AS SHOWN ON DETAILS.

INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEXTILE.

INSPECT THE AMENDED SOIL PRIOR TO PLACEMENT IN THE BASIN AREAS.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

INSPECT THE VEGETATION AFTER PLANTING.

CRITICAL STAGE: CONCURRENT WITH THE ROUGH GRADING AROUND THE BUILDING AND 70% STABILIZATION OF SURROUNDING AREA, INSTALL SUB-SURFACE BASINS 13A AND 14, AND BIO-RETENTION BASIN 15B ACCORDING TO PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:

INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.

INSPECT AND VERIFY THAT THE STONE IS CLEAN.

INSPECT THAT THE GEOTEXTILE IS INSTALLED AS SHOWN ON DETAILS.

INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEXTILE.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

CONCURRENT WITH ROUGH GRADING, BEGIN INSTALLATION OF CURBING, PAVEMENT SUBBASE AND PAVEMENT BINDER COURSE.

ONCE PAVEMENT SITE IS BROUGHT TO FINAL GRADE, INSTALL TOPSOIL AND PROPOSED LANDSCAPING.

CRITICAL STAGE: ONCE CONTRIBUTING DRAINAGE AREAS TO SEDIMENT TRAPS #1 AND #2 ARE 70% UNIFORMLY STABILIZED, THE TRAPS MAY BE CONVERTED TO PERMANENT STORMWATER FACILITIES SHOWN AS BASIN #15B AND #16B. IN ACCORDANCE WITH THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE, A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BASINS:

INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

INSPECT THE VEGETATION AFTER PLANTING.

PRIOR TO REMOVAL OR CONVERSION OF A SEDIMENT BASIN, AN INSPECTION SHALL BE CONDUCTED BY THE CHESTER COUNTY CONSERVATION DISTRICT.

FLUSH ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORM SEWER PIPES.

DEWATER SEDIMENT BASIN BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.

REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.

EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

INSTALL STONE BERM IN AREAS AS SHOWN ON THE PLANS.

FINAL GRADE BASIN SLOPES AND STABILIZE ACCORDINGLY.

REMOVE TEMPORARY RISER AND SKIMMER. STABILIZE ANY AREA DISTURBED DURING REMOVAL OF RISERS/SKIMMER.

REMOVE ANY TEMPORARY BLOCKAGES OR PERMANENT RISER AND ENSURE RISER MEETS PCSM DESIGN.

CRITICAL STAGE: LANDSCAPE RESTORATION INSTALLATION. REFER TO LANDSCAPE RESTORATION CONSTRUCTION SEQUENCE.

ONCE THE SITE HAS ACHIEVED A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION, REMOVE TEMPORARY EROSION AND SEDIMENTATION BMPs INCLUDING ALL COMPOST FILTER SOCKS. ANY AREA DISTURBED DURING THE REMOVAL OF A TEMPORARY BMP SHALL BE IMMEDIATELY STABILIZED WITH SEEDING AND STRAW MULCH.

PRIOR TO NOT SUBMISSION, ALL PCSM FACILITIES SHALL BE INSPECTED FOR FUNCTIONALITY AS THEY WERE INSTALLED DURING ACTIVE CONSTRUCTION.

ON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO-PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B SECTION 1.C. STATUTORY REQUIREMENTS, OF THIS PERMIT. REFER TO "TERMINATION OF COVERAGE" AND "COMPLETION CERTIFICATION AND FINAL PLANS" NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.

ONCE ALL SOIL MIXING OPERATIONS ARE COMPLETE, THE SOIL MIX AREA HIGHLIGHTED ON PLAN SHEET CS8003 SHALL BE DE-COMPACTED WITH A BACKHOE RIPPER OR OTHER APPROVED METHOD TO A MIN. DEPTH OF 18-INCHES BELOW SUBGRADE. ONCE DE-COMPACTED IS COMPLETE, FINE GRADE AREA AND SEED WITH PERMANENT SEEDING.

CRITICAL STAGE: ONCE PROPOSED BUILDING STRUCTURE IS COMPLETE BEGIN INSTALLATION OF GREEN ROOF. GREEN ROOF INSTALLATION MUST BE COORDINATED WITH THE DESIGNER/ARCHITECT. A LICENSED PROFESSIONAL KNOWLEDGEABLE ABOUT THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE CONSTRUCTION OF THE GREEN ROOF:

INSPECT THE ROOF MEMBRANE PRIOR TO INSTALLATION OF THE GREEN ROOF MEDIA.

INSPECT GREEN ROOF MEDIA.

INSPECT VEGETATION ONCE INSTALLED.

ONCE THE CONSTRUCTION ACTIVITIES NO LONGER REQUIRE HEAVY EQUIPMENT FOR ITS CONSTRUCTION, THE CONTRACTOR SHALL SWEEP ALL PAVEMENT AREAS AND INSTALL THE FINAL WEARING COURSE. PERFORM PAVEMENT LINE STRIPING AS INDICATED ON THE APPROVED PLANS. REMOVE ALL REMAINING ACCESS BARRIERS.

INSTALL ALL FINAL SIDEWALKS AND PAVEMENT AREAS.

INSTALL ROCK CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE APPROVED PLAN. ALL CONSTRUCTION VEHICLES SHALL ENTER AND/OR EXIT THE SITE THROUGH THIS ENTRANCE DURING CONSTRUCTION.

DELINEATE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED EROSION AND SEDIMENT

POLLUTION CONTROL PLANS AND PROTECT THE CONSTRUCTION SITE FROM UNAUTHORIZED PEDESTRIAN AND VEHICULAR ACCESS BY INSTALLING ORANGE CONSTRUCTION FENCE WHERE APPLICABLE.

INSTALL SILT SOCKS AT LOCATIONS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE SILT SOCKS SHALL BE INSTALLED BY AN APPROVED CONTRACTOR FAMILIAR WITH THE INSTALLATION PROCEDURES. CONTRACTORS SHALL INSPECT THE SILT SOCKS ON A WEEKLY BASIS AND AFTER EVERY RAINFALL EVENT. NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY AND ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING HALF THE HEIGHT OF THE SILT SOCKS.

CRITICAL STAGE: SEDIMENT TRAP CONSTRUCTION: BEGIN CONSTRUCTION OF SEDIMENT TRAPS #1 AND #2 AS FOLLOWS:

CLEAR AND GRUB AREA OF PROPOSED BERM AND OUTLET STRUCTURES.

BEGIN CONSTRUCTION OF TRAP LANDING AND OUTLET STRUCTURES AS DETAILED ON DETAIL SHEETS.

INSTALL SKIMMER WITH STONE LANDING BERM AND TEMPORARY RISER EXTENSION IN SEDIMENT TRAPS.

CONCURRENT WITH CONSTRUCTION OF SEDIMENT TRAPS, INSTALL TEMPORARY DIVERSION SOCKS AS NOTED ON PLANS AND DETAILS.

ONCE SEDIMENT TRAPS ARE INSTALLED AND FUNCTIONING PROPERLY, CLEAR AND GRUB AREAS OF SITE, STRIP TOPSOIL AND STOCKPILE IN AREA NOTED ON PLANS.

BEGIN ROUGH GRADING OF PARKING AREAS.

CONCURRENT WITH ROUGH GRADING ACTIVITIES INSTALL THE STORM UTILITY LINES. PIPE INSTALLATION SHOULD OCCUR FROM DOWNSTREAM TO UPSTREAM. THE CONTRACTOR SHALL ONLY EXCAVATE TRENCH FOR THE AMOUNT OF PIPE THAT CAN BE INSTALLED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.

CRITICAL STAGE: CONCURRENT WITH ROUGH GRADING, BEGIN INSTALLATION OF SUBSURFACE INFILTRATION BASINS #1A AND #16A ACCORDING TO PLANS AND DETAILS AND BMP SPECIFIC CONSTRUCTION SEQUENCE. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION:

INSPECT BOTTOM AND SIDES OF BMP PRIOR TO BACKFILLING WITH STONE. BOTTOM SHALL BE UNCOMPACTED.

INSPECT AND VERIFY THAT THE STONE IS CLEAN.

INSPECT THAT THE GEOTEXTILE IS INSTALLED AS SHOWN ON DETAILS.

INSPECT THE TOP OF STONE PRIOR TO COVERING WITH GEOTEXTILE.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

CONCURRENT WITH ROUGH GRADING, BEGIN INSTALLATION OF CURBING, PAVEMENT SUBBASE AND PAVEMENT BINDER COURSE.

ONCE PAVEMENT SITE IS BROUGHT TO FINAL GRADE, INSTALL TOPSOIL AND PROPOSED LANDSCAPING.

CRITICAL STAGE: ONCE CONTRIBUTING DRAINAGE AREAS TO SEDIMENT TRAPS #1 AND #2 ARE 70% UNIFORMLY STABILIZED, THE TRAPS MAY BE CONVERTED TO PERMANENT STORMWATER FACILITIES SHOWN AS BASIN #15B AND #16B. IN ACCORDANCE WITH THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE, A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BASINS:

INSPECT THE BASIN BOTTOM TO ENSURE ALL SEDIMENT HAS BEEN REMOVED.

INSPECT THE OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS.

INSPECT AMENDED SOIL MIXTURE FOR CONFORMANCE WITH DESIGN.

INSPECT THE VEGETATION AFTER PLANTING.

PRIOR TO REMOVAL OR CONVERSION OF A SEDIMENT BASIN, AN INSPECTION SHALL BE CONDUCTED BY THE CHESTER COUNTY CONSERVATION DISTRICT.

FLUSH ACCUMULATED SEDIMENT FROM THE CONTRIBUTING STORM SEWER PIPES.

DEWATER SEDIMENT TRAP BY USING A PUMPED WATER FILTER BAG OR OTHER APPROVED METHOD.

REMOVE TEMPORARY BARRIERS AND CLEANOUT STAKES.

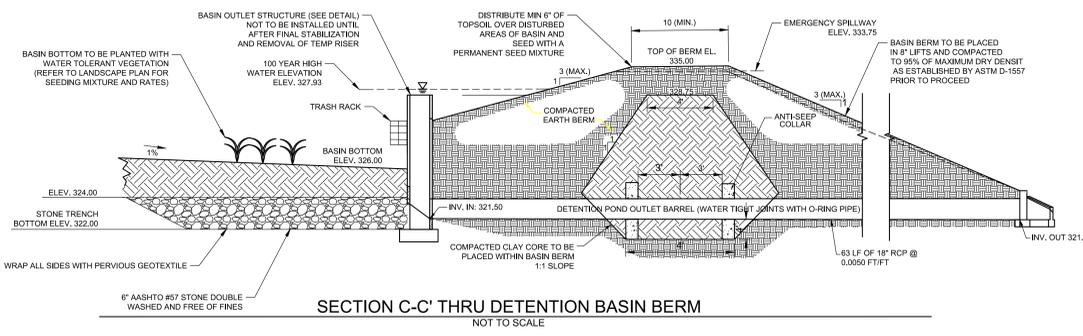
EXCAVATE BASIN TO REQUIRED DEPTH AS SHOWN ON THE PLANS, DETAILS, AND BMP SPECIFIC CONSTRUCTION SEQUENCE.

INSTALL AMENDED SOIL IN AREAS AS SHOWN ON THE PLANS.

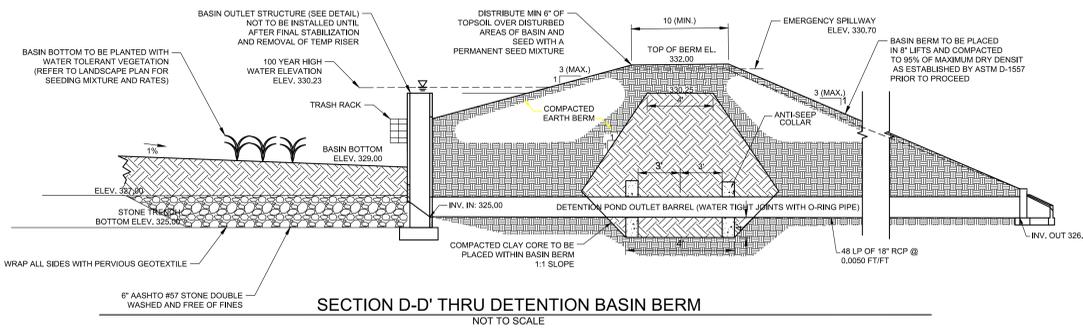
FINAL GRADE BASIN SLOPES AND STABILIZE ACCORDINGLY.

REMOVE TEMPORARY RISER AND SKIMMER. STABILIZE ANY AREA DISTURBED DURING REMOVAL OF RISERS/SKIMMER.

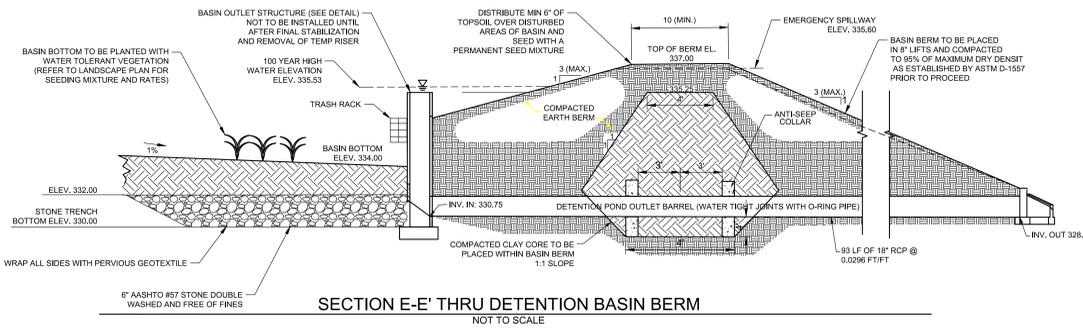
REMOVE ANY TEMPORARY BLOCKAGES OR PERMANENT RISER AND ENSURE RISER ME



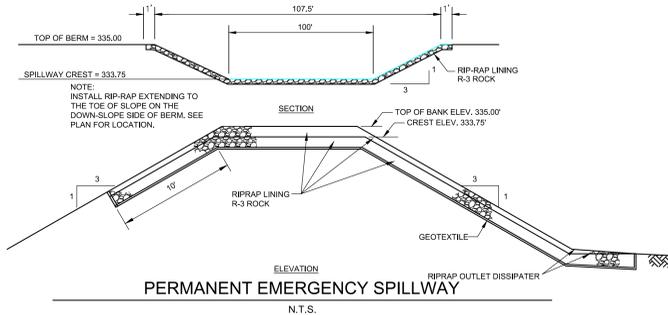
SECTION C-C' THRU DETENTION BASIN BERM
NOT TO SCALE



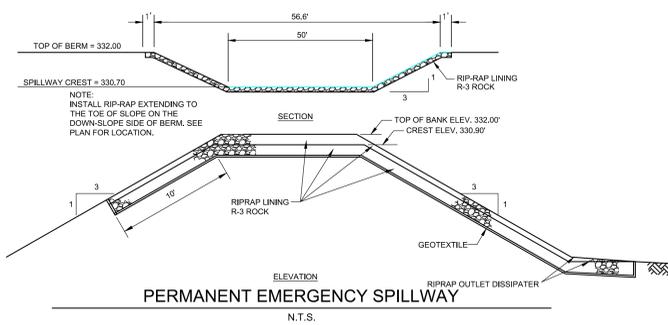
SECTION D-D' THRU DETENTION BASIN BERM
NOT TO SCALE



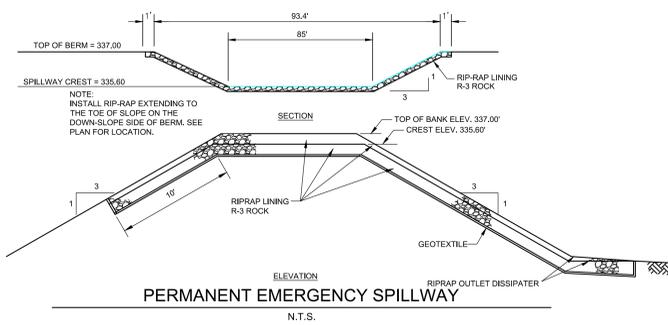
SECTION E-E' THRU DETENTION BASIN BERM
NOT TO SCALE



PERMANENT EMERGENCY SPILLWAY
N.T.S.



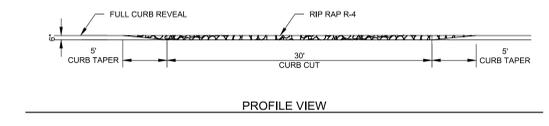
PERMANENT EMERGENCY SPILLWAY
N.T.S.



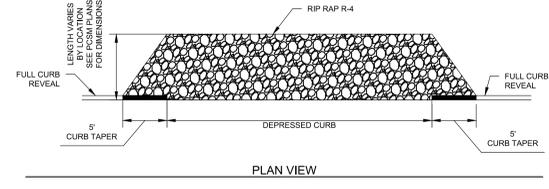
PERMANENT EMERGENCY SPILLWAY
N.T.S.

SURFACE BIO-RETENTION/DETENTION BASIN CONSTRUCTION NOTES:

- BIO-RETENTION AREAS SHALL BE PROTECTED FROM SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION. APPROPRIATE MEASURES ARE TO BE TAKEN IN THE EVENT OF SEDIMENT ENTERING AND CLOGGING THE BIO-RETENTION SCM.
- SHOULD UNFAVORABLE CONDITIONS (I.E. GROUNDWATER AND/OR BEDROCK, ETC.) BE ENCOUNTERED DURING THE CONSTRUCTION PROCESS OF THE BIO-RETENTION BASIN, THE DESIGN ENGINEER SHOULD BE CONTACTED TO ADDRESS SUCH ISSUES.
- ALL CONSTRUCTION ACTIVITIES FOR THE BIO-RETENTION BASIN SHOULD OCCUR WITHIN A SHORT TIME PERIOD TO ENSURE THAT SILT AND SEDIMENT DO NOT ENTER THE TRENCH.
- IF INSPECTION INDICATES THAT SOIL OR SEDIMENT HAS ENTERED ANY OF THE BIO-RETENTION BASIN AREA, APPROPRIATE MEASURES (I.E. CLEARING THE SOIL SEDIMENT FROM THE FABRIC, STONE BED, ETC. AND/OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
- ALL AREAS DESIGNATED FOR BIO-RETENTION SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTING DRAINAGE AREA HAS ACHIEVED FINAL STABILIZATION.
- THE BIO-RETENTION BASIN SHALL BE PLANTED WITH THE APPROPRIATE SEED MIXTURE AS SPECIFIED ON LANDSCAPE PLANS.
- BACKFILL ADJACENT TO PIPES AND STRUCTURES SHOULD BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHOULD BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 4' IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT.
- THE TOP AND SIDES OF BIO-RETENTION BASIN STONE TRENCH SHALL BE COVERED WITH PERVIOUS GEOTEXTILE MEETING THE SPECIFICATIONS OF PENNDOT PUBLICATION 408, SECTION 735, CONSTRUCTION CLASS 1.
 - CLAY CONTENT: LESS THAN 5%
 - SAND CONTENT: 50-60%
 - LEAF COMPOST OR AGED LEAF MULCH: 20-30%
 - HIGH QUALITY TOPSOIL: 20-30%
- BIO-RETENTION BASIN SOIL CAN BE CREATED BY AMENDING EXISTING SOIL, DEPENDING ON THE QUALITY OF THE SOIL, COMBINE 20-30% NATIVE SOIL WITH 20-30% COMPOST AND 50% SAND.
 - HAVE A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5 INCHES PER HOUR).
 - BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 0.5 INCH IN DIAMETER. IT SHOULD ALSO BE FREE OF BRUSH OR SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12-18 INCHES, LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).



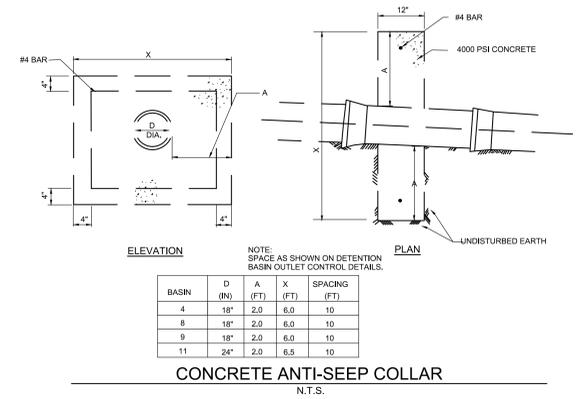
PROFILE VIEW



PLAN VIEW



TYPICAL RIP RAP BMP SECTION
N.T.S.



CONCRETE ANTI-SLEEP COLLAR
N.T.S.

NO.	DATE	REVISIONS	BY
1	03/15/17	REVISIONS PER TOWNSHIP COMMENTS	FFS
2	03/15/17	BID SET	MEM
3	10/18/17	REVISED - MAJOR MODIFICATION	MEM
4	01/24/18	REVISED PER CCDC COMMENTS	MEL
5	03/07/18	REVISED PER CCDC COMMENTS	MEL
6	03/15/18	100% CONSTRUCTION DOCUMENTS	MEL

PROJECT: TVG1702
DATE: 2017-05-23
DRAWING SCALE: 1"=40'
DRAWN BY: MEM
APPROVED BY: MK

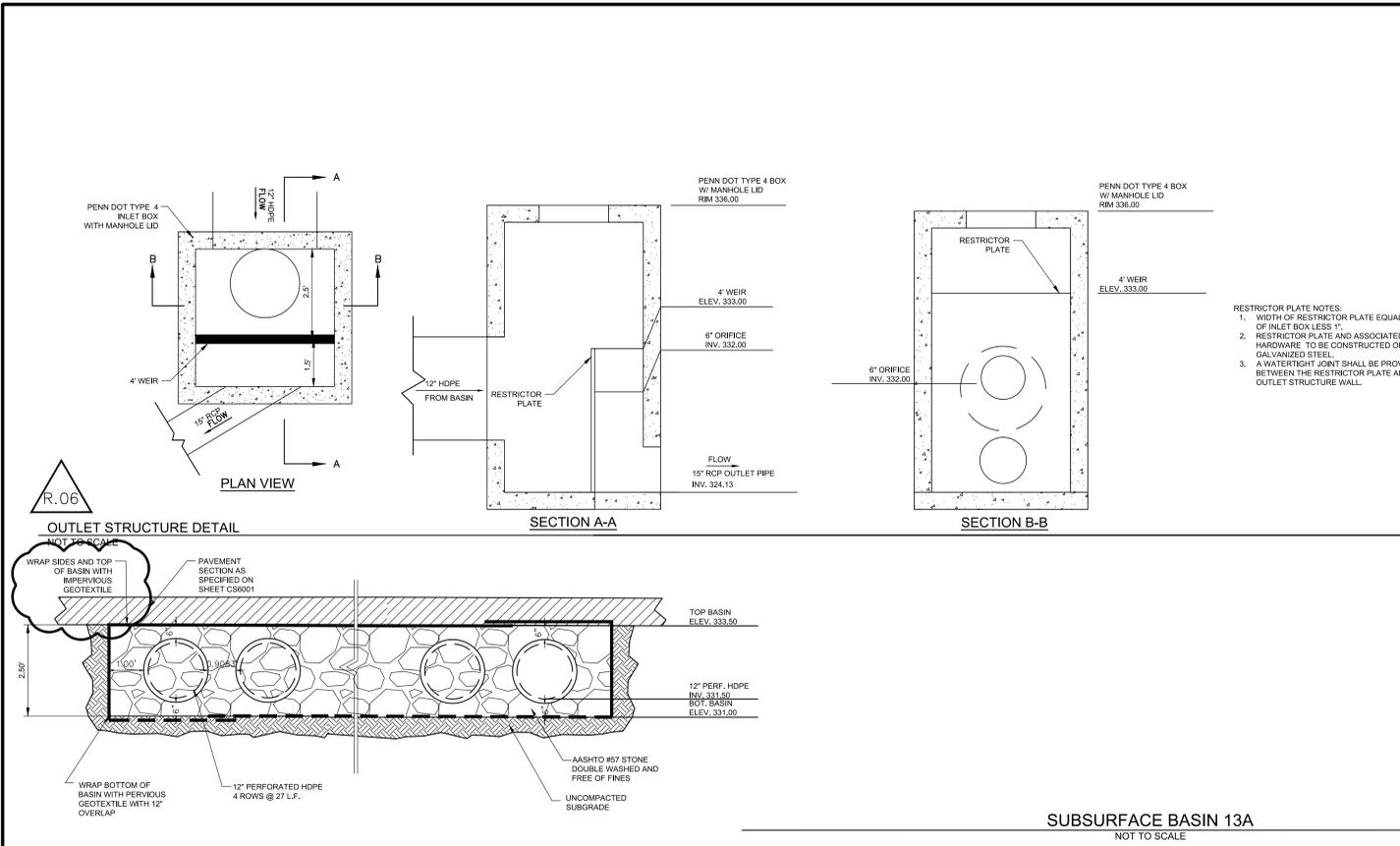
CS9503
SHEET 64 OF 72



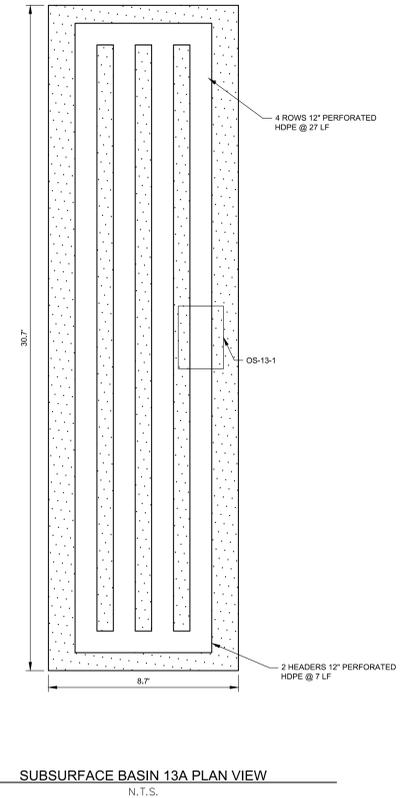
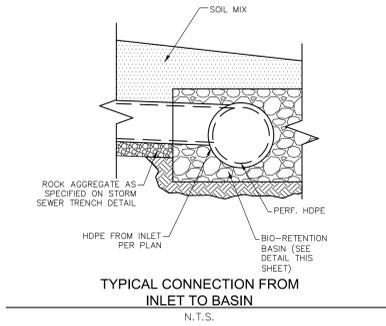
CALL BEFORE YOU DIG
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
CALL 1-800-242-1776
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER: 20171320890



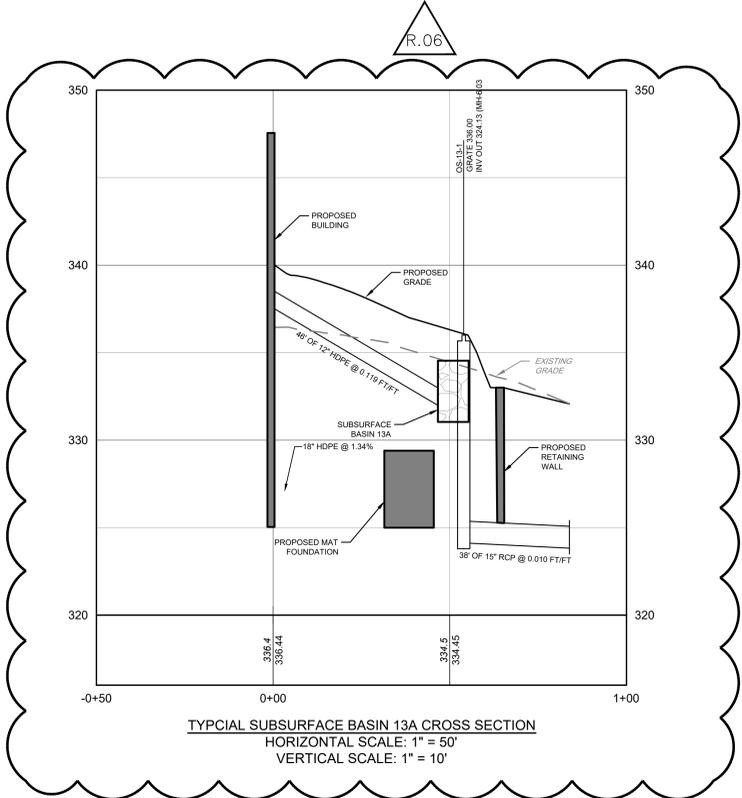
NOT FOR CONSTRUCTION



SUBSURFACE BASIN 13A
NOT TO SCALE

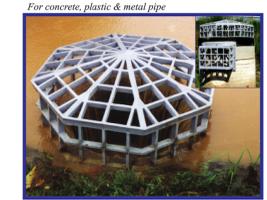


SUBSURFACE BASIN 13A PLAN VIEW
N.T.S.



TYPICAL SUBSURFACE BASIN 13A CROSS SECTION
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

Trash Racks
Water Screening Devices



Trash Racks - Inlet Protection
Structural Plastic Trash Rack Advantages

- Strong, light
- Lighter Weight - Installation Savings
- 100% Maintenance-Free
- UV Resistant - per ASTM D2565-99
- Load tested to 2,010 King ft.
- Elimination of Corrosion
- High Chemical Resistance
- Easily Customized - Call with your needs
- Limited Lifetime Warranty

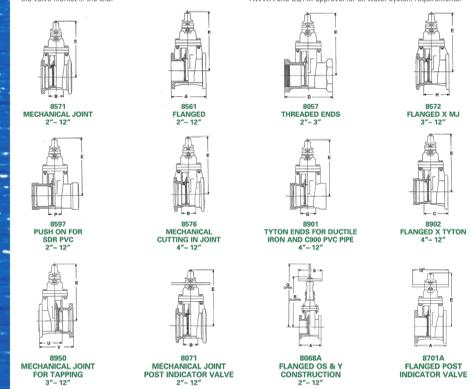
Trash Racks are available in standard sizes and shapes to accommodate nearly every application, however, we can customize to your exact requirements. Plastic Solutions, Inc. offers a Limited Lifetime Warranty. They will replace a trash rack for any defect related to material or workmanship for the life of the structure/pipe. All of these features and benefits combine to make Plastic Solutions the most environmentally responsible Trash Rack and the very best value on the market today!

For more information about Trash Racks and Debris Cages call your ACF Environmental or Plastic Solutions representative.

ACF Environmental
2831 Cardwell Road
Richmond, VA 23234
PH: (800) 448-3636
Fax: (804) 743-7779
www.acfenvironmental.com

RESILIENT WEDGE VALVE

In 1975, Kennedy recognized the increased requirements and escalating maintenance cost of water systems in the United States. Kennedy responded by introducing the first RW (Resilient Wedge Valve) in America. This innovation revolutionized the valve market in the U.S.



NOTE: It is recommended that valves be installed with stems vertical when used in raw sewage or sludge applications or in water with excessive sediment. Flanged and connections not recommended for buried service.

VALVE SIZE	A	B	C	D	E	G	H	P	Q	R	S	U	V	NO. OF TURNS TO FULL OPEN
2"	7	3-1/4	-	9-3/8	10-7/8	-	-	3	10	12	7-1/4	-	-	6-1/2
2-1/2"	7-1/2	-	-	9-1/8	11-3/8	-	-	3-1/4	10-3/8	12-7/8	7-1/4	-	-	6
3"	8	3-1/2	-	9-1/4	12-3/8	-	-	3-1/2	10-3/4	13-1/4	8	-	-	8
4"	9	4-1/2	6-3/4	-	14-3/4	4-5/8	6-3/4	4-1/2	12-3/4	15-1/4	10	5-3/4	8-1/4	13-1/2
6"	10-1/2	5-1/2	7-7/8	-	19	5-1/4	8	5	16-1/8	23-3/4	12	8	10-1/2	18-1/2
8"	11-1/2	6-1/8	8-1/2	-	22-1/2	5-5/8	9-3/4	5-1/2	18-3/4	26-1/4	14	10-3/4	13-1/4	20-1/2
10"	12	6-1/2	9	-	25-1/2	7	11-3/4	7	20-3/4	29-3/8	15	11-1/2	14-7/8	21-1/2
12"	14	10-3/4	11-1/4	-	30	8-1/2	12	8-1/2	23-1/8	32-3/8	16	12-1/2	15	23-3/4

ENGINEERING FEATURES

- THRUST BEARINGS**
Dainin thrust bearings above and below the throat collar reduce friction and minimize operating torques.
- COPPER ALLOY STEM**
Long, trouble-free life with high strength, non-corrosive copper alloy stem and stem nut.
- STAINLESS STEEL HARDWARE**
304 stainless steel nuts and bolts provide long-life corrosion protection.
- 100% COATED WEDGE**
100% coated wedge ensures bubble-tight seal every time up to 250 PSI. With twin seal design.
- ELLIPTICAL BOLT HOLES**
Hole design on MJ connection eliminates the need for anti-rotation bolts.
- MINIMAL FLOW LOSS**
Smooth, unobstructed waterway is free of pockets, cavities and depressions, allowing for minimal flow loss and lower pumping costs. All valves accept full-size tapping cutter.
- REPLACEABLE O-RINGS**
Two O-ring seals are replaceable with the valve fully open and subjected to full-rated working pressure.
- NO FLAT GASKETS**
O-ring seals at stuffing box and bonnet to body flanges to ensure the best possible seal. No flat gaskets.
- EPOXY COATING**
Kennedy corrosion resistant fusion-bonded epoxy coating, conforming to AWWA C550 and NSF B1 Certified, protects both inside and outside of valve.
- EASY STORAGE**
Pads on the bottom of all valves keep valve in upright position for easier storage and protection from the elements.

VALVE RATING: All valves are rated at 250 PSI for AWWA service and 200 PSI for ULFM service. All valves are hydrostatically tested to 500 PSI.

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR DISCREPANCIES BEFORE PROCEEDING WITH WORK

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

THE VANGUARD GROUP
400 DEWOLP PARK DRIVE
WAYNE, PA 19387

NO.	DATE	BY	REVISIONS
010018	6	MTC	REVISED BASIN DETAILS
010118	5	MRL	60% CONSTRUCTION DOCUMENTS
020118	4	MRL	REVISED PER CCDD COMMENTS
010218	3	MRL	REVISED PER CCDD COMMENTS
101817	2	MEM	REVISED - MAJOR MODIFICATION
101317	1	MEM	BID SET

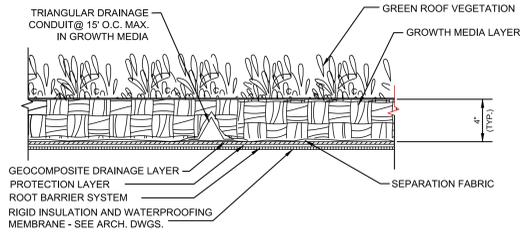
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CALL 1-800-242-1776

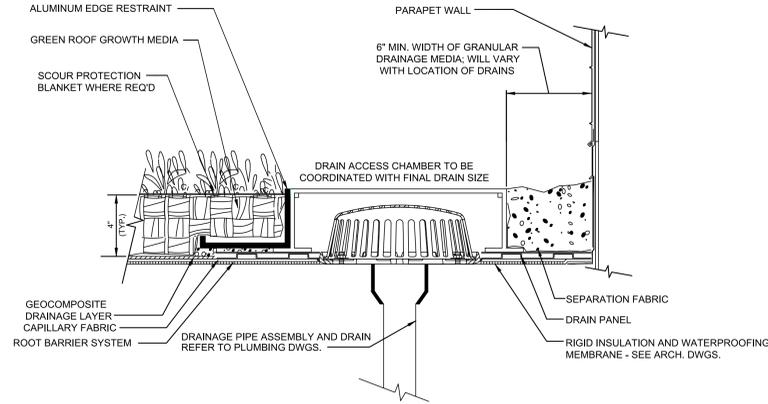
PA ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20171320890

PROJECT: TVG11702
DATE: 2017-09-13
DRAWING SCALE: N.T.S.
DRAWN BY: MEM
APPROVED BY: MK

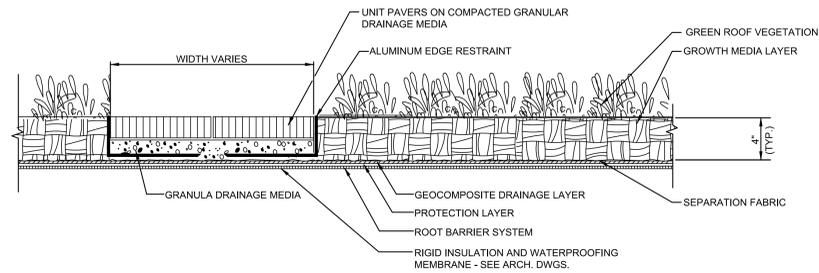
NOT FOR CONSTRUCTION



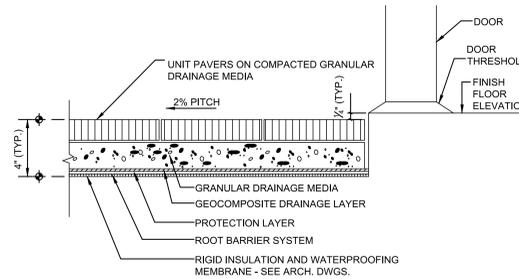
EXTENSIVE GREEN ROOF SECTION
NOT TO SCALE



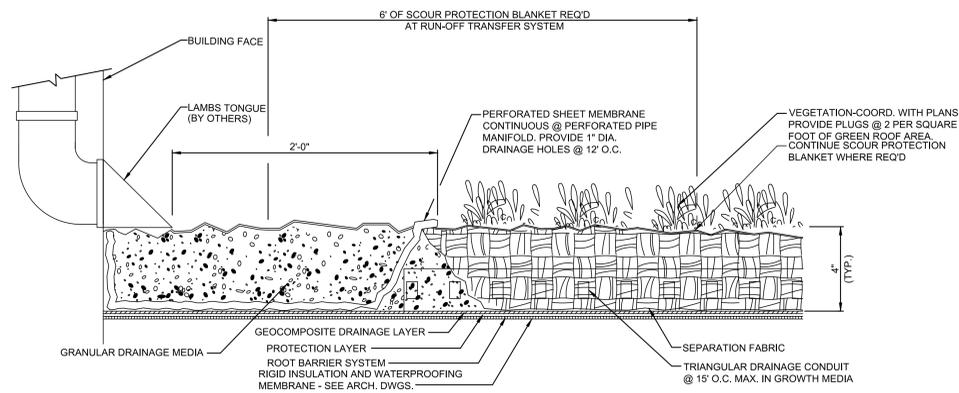
ROOF DRAIN DETAIL
NOT TO SCALE



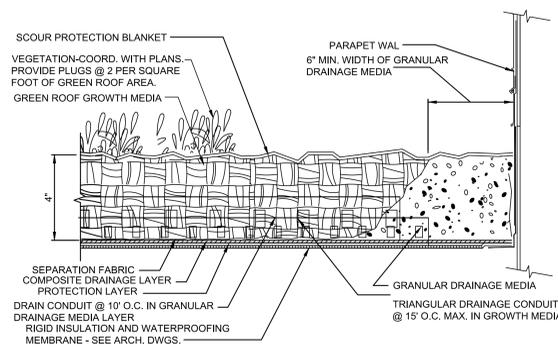
UNIT PAVERS ON GREEN ROOF
NOT TO SCALE



UNIT PAVERS AND FINISH FLOOR INTERFACE
NOT TO SCALE



RUN-OFF TRANSFER SYSTEM
NOT TO SCALE



PARAPET WALL / GREEN ROOF DETAIL
NOT TO SCALE

GREEN ROOF SEQUENCE OF CONSTRUCTION

1. INSTALL WATERPROOFING ON ROOF PER ARCHITECTURAL PLANS.
2. INSTALL PROTECTION LAYER ON ROOF. CHECK MATERIALS FOR MANUFACTURER DEFECTS BEFORE INSTALLATION.
3. INSTALL ROOF DRAIN COVERS WITH FILTER FABRIC PROTECTION PER DETAIL 2 ON THIS SHEET.
4. PLACE DRAINAGE MEDIA WHERE NECESSARY. USE CAUTION TO NOT DAMAGE THE PROTECTION LAYER. IF PROTECTION LAYER IS DAMAGED IT SHALL BE UNCOVERED AND REPAIRED ACCORDINGLY.
5. INSTALL UNIT PAVERS WHERE SHOWN ON SHEET CS2002, PER THE DETAILS ON THIS SHEET.
6. INSTALL SEPARATION FABRIC OVER DRAINAGE MEDIA.
7. PLACE GROWTH MEDIA IN ALL AREAS TO BE PLANTED, AS SHOWN ON SHEET CS2002. THE GROWTH MEDIA SHALL BE LIGHTWEIGHT MINERAL MATERIAL WITH A MINIMUM OF ORGANIC MATERIAL AND WILL MEET THE FOLLOWING SPECIFICATIONS:
 - 7.1. MOISTURE CONTENT AT MAXIMUM WATER HOLDING CAPACITY \geq 35%
 - 7.2. POROSITY AT MAXIMUM WATER HOLDING CAPACITY \geq 6%
 - 7.3. TOTAL ORGANIC MATTER = 3-8%
 - 7.4. pH = 5.5-8.0
 - 7.5. SOLUBLE SALTS $<$ 6 mmhos/cm
 - 7.6. WATER PERMEABILITY \geq 0.5 in/min
 - 7.7. GRAIN SIZE DISTRIBUTION PER FLL RECOMMENDATIONS
8. DISTRIBUTE SEDUM AND DELOSPERMA CUTTINGS EVENLY THROUGHOUT ENTIRE GREEN ROOF AREA AT A RATE OF 25 POUNDS PER 1,000 SQUARE FEET. SATURATE GROWTH MEDIA WITH WATER BEFORE DISTRIBUTION.
9. INSTALL SCOUR/WIND PROTECTION TEMPORARY EROSION BLANKET WHERE NECESSARY.



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PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.
SERIAL NUMBER: 20111320990



NOT FOR CONSTRUCTION



PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T 610-423-8807 F 610-423-8818



ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
AND DISCREPANCIES BEFORE PROCEEDING WITH WORK.

VANGUARD MALVERN WEST EXPANSION
31 MOREHALL ROAD
MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

NO.	DATE	BY	REVISIONS
1	10/13/17	MEM	REVISED - MAJOR MODIFICATION
2	10/13/17	MEM	REVISED PER CCOD COMMENTS
3	01/24/18	MEM	REVISED PER CCOD COMMENTS
4	02/07/18	MEM	REVISED PER CCOD COMMENTS
5	03/15/18	MEM	60% CONSTRUCTION DOCUMENTS

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PROJECT: TVGH1702
DATE: 2017-05-23
DRAWING SCALE: 1"=40'
DRAWN BY: MEM
APPROVED BY: MK

CS9506
SHEET 67 OF 72

P:\Project\TVGH1702\dwg\1702-05-23-1702-05-23-1702-05-23.dwg PLOTTED: 3/20/2018 11:17 AM BY: Connor McSwain PLOT TITLE: Pennoni\NCS.dwg PROJECT STATUS: -

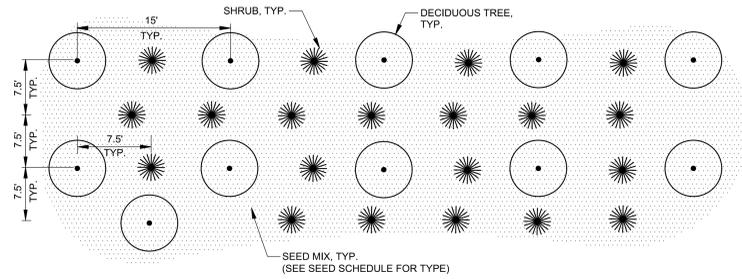


FIGURE 4-ADSORBED MASS OF NUTRIENTS AND METALS IN UNVEGETATED PLOT RUNOFF FROM 30-MINUTE, HIGH-INTENSITY (100-MMH/R) RAINSTORM

ELEMENT	COMPOST TREATMENTS		CONVENTIONAL TREATMENTS		
	BIOSOLIDS	YARDWASTE	BIOINDUSTRIAL COMPOST	COMPACTED SUBSOIL	TOPSOIL
	GEOMETRIC MEAN (MG)				
CHROMIUM	0.01 ^a	<0.01 ^a	<0.01 ^b	0.92 ^c	0.76 ^c
COPPER	0.02 ^a	<0.01 ^a	0.01 ^b	1.03 ^c	0.66 ^c
NICKEL	<0.01 ^a	<0.01 ^a	<0.01 ^b	0.96 ^c	0.87 ^c
LEAD	0.01 ^a	<0.01 ^a	<0.01 ^b	1.82 ^c	0.95 ^c
ZINC	0.10 ^a	<0.01 ^a	0.03 ^b	6.55 ^c	9.99 ^c
NITROGEN	0.47 ^a	<0.01 ^a	0.09 ^{a,b}	286.85 ^c	211.87 ^c
PHOSPHORUS	0.45 ^a	<0.01 ^a	0.09 ^{a,b}	36.47 ^c	29.07 ^c
POTASSIUM	0.17 ^a	<0.01 ^a	0.09 ^{a,b}	103.94 ^c	71.57 ^c

MEANS WITHIN THE SAME ROW WITH DIFFERENT LETTER DESIGNATIONS ARE SIGNIFICANTLY DIFFERENT (P<0.05).

SEEDING MIXTURE SCHEDULE

MOWN LAWN SEED MIX (ERNMX-114) OR APPROVED EQUAL

- 30% CREEPING RED FESCUE (FESTUCA RUBRA)
- 25% KENTUCKY BLUEGRASS, 'CORSAIR' (POA PRATENSIS, 'CORSAIR')
- 25% KENTUCKY BLUEGRASS, 'CADET' (POA PRATENSIS, 'CADET')
- 10% ANNUAL RYEGRASS (LOLIUM MULTIFLORUM (L. PERENNE VAR. ITALICUM))
- 10% PERENNIAL RYEGRASS, 'NOMERLY' (LURE TYPE) (LOLIUM PERENNE, 'NOMERLY')
- 100% TOTAL APPLIED 150-200 LB PER ACRE

MEADOW SEED MIX (ERNMX-153) OR APPROVED EQUAL

- 28.0% LITTLE BLUESTEM, 'CAMPER' (SCHIZACHYRIUM SCOPARIUM, 'CAMPER')
- 10.0% SEEDS OF GRAMA, 'TRAILWAY' (BOUTELOUA CURTIPENDULA, 'TRAILWAY')
- 10.0% INDIANGRASS, 'SOUTHW-M' ECOTYPE (SORGHASTRUM NUTANS, 'SOUTHW-M' ECOTYPE)
- 10.0% VIRGINIA WILDRYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- 4.00% WILD SENNA, VA & WY ECOTYPE (SENNA HEBCACARPA (CASSIA H.), VA & WY ECOTYPE)
- 4.00% PARTIDGE PEA, PA ECOTYPE (CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE)
- 4.00% BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE (RUBROCKIA HIRTA, COASTAL PLAIN NC ECOTYPE)
- 3.00% TALL WHITE BEAKTONGUE, PA ECOTYPE (PENSTEMON DIGITALIS, PA ECOTYPE)
- 2.00% MARYLAND SENNA (SENNA MARILANDICA (CASSIA M.))
- 2.00% COMMON MILKWEED, PA ECOTYPE (ASCLEPIAS SYRIACA, PA ECOTYPE)
- 2.00% BLUE 9 INDIGO, SOUTHERN WV ECOTYPE (BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE)
- 2.00% GRAY GOLDENROD, PA ECOTYPE (SOLIDAGO NEMORALIS, PA ECOTYPE)
- 2.00% WILD BERGAMOT (MONARDA FISTULOSA)
- 2.00% MARSH (DENSE) BLAZING STAR (SPIKED GAYFEATHER), PA ECOTYPE (LIATRIS SPICATA, PA ECOTYPE)
- 2.00% OHIO SPIDERWORT, PA ECOTYPE (TRADESCANTIA OHENSIS, PA ECOTYPE)
- 2.00% APPALACHIAN BEAKTONGUE, PA ECOTYPE (PENSTEMON LASIOVATUS, PA ECOTYPE)
- 2.00% BIG BLUESTEM, NIAGARA (ANDROPOGON GERARDI, NIAGARA)
- 2.00% GOLDEN ALEXANDER, PA ECOTYPE (ZIZA AUREA, PA ECOTYPE)
- 1.00% EARLY GOLDENROD, PA ECOTYPE (SOLIDAGO JUNCEA, PA ECOTYPE)
- 1.00% WHORLED ROBINWEEED (SILPHIUM TRIFOLIATUM)
- 1.00% ZIZOGAL ASTER, PA ECOTYPE (ASTER PRENANTHODES (SYMPHYOTRICHUM P.), PA ECOTYPE)
- 1.00% NEW ENGLAND ASTER, PA ECOTYPE (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE)
- 1.00% SMOOTH BLUE ASTER, NY ECOTYPE (ASTER LAEVIS (SYMPHYOTRICHUM LAEVE), NY ECOTYPE)
- 1.00% OXEYE SUNFLOWER, PA ECOTYPE (HELIOPSIS HELIANTHODES, PA ECOTYPE)
- 1.00% ORANGE CONEFLOWER, NORTHERN VA ECOTYPE (RUBROCKIA FULGIDA VAR. FULGIDA, NORTHERN VA ECOTYPE)
- 1.00% SOFT RUSH (JUNCUS EFFUSUS)
- 1.00% PATH RUSH, PA ECOTYPE (JUNCUS TENUIS, PA ECOTYPE)
- 1.00% SCOT RUSH (JUNCUS EFFUSUS)
- 0.8% WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE (MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE)
- 0.5% MISTFLOWER, VA ECOTYPE (EUPATORIUM COLEOSTEMUM (CONOCLINUM C.), VA ECOTYPE)
- 0.5% BLUE FALSE INDIGO, SOUTHERN WV ECOTYPE (BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE)
- 0.5% EARLY GOLDENROD, VA ECOTYPE (SOLIDAGO JUNCEA, VA ECOTYPE)
- 0.2% SLENDER MOUNTAINMINT (PYDNANTHEMUM TENIFOLIUM)
- 100% TOTAL APPLIED 20 LB PER ACRE OR 12 LB PER 1,000 SQ FT

RAIN GARDEN SEED MIX (ERNMX-180) OR APPROVED EQUAL

- 38% RIVER OATS, PAVA ECOTYPE BLEND (CHASMANTHUM LATIFOLIUM (LONCHA LATIFOLIA), PAVA ECOTYPE BLEND)
- 25% VIRGINIA WILDRYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- 10% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
- 4% PURPLE CONEFLOWER (ECHINACEA PURPUREA)
- 3% TALL WHITE BEAKTONGUE, PA ECOTYPE (PENSTEMON DIGITALIS, PA ECOTYPE)
- 3% BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE (RUBROCKIA HIRTA, COASTAL PLAIN NC ECOTYPE)
- 3% LANCELEAF CORDESPICE, COASTAL PLAIN NC ECOTYPE (CORDESPICE LANCEOLATA, COASTAL PLAIN NC ECOTYPE)
- 2% OHIO SPIDERWORT, PA ECOTYPE (TRADESCANTIA OHENSIS, PA ECOTYPE)
- 2% OXEYE SUNFLOWER, PA ECOTYPE (HELIOPSIS HELIANTHODES, PA ECOTYPE)
- 2% AUTUMN BENTGRASS, PA ECOTYPE (AGROSTIS PERENNANS, PA ECOTYPE)
- 2% PARTIDGE PEA, PA ECOTYPE (CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE)
- 2% MARSH (DENSE) BLAZING STAR (SPIKED GAYFEATHER), PA ECOTYPE (LIATRIS SPICATA, PA ECOTYPE)
- 1.5% SMOOTH BLUE ASTER, NY ECOTYPE (ASTER LAEVIS (SYMPHYOTRICHUM LAEVE), NY ECOTYPE)
- 1% WILD SENNA, VA & WY ECOTYPE (SENNA HEBCACARPA (CASSIA H.), VA & WY ECOTYPE)
- 1% NEW ENGLAND ASTER, PA ECOTYPE (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE)
- 1% SWAMP MILKWEED, PA ECOTYPE (ASCLEPIAS INCARNATA, PA ECOTYPE)
- 1% PATH RUSH, PA ECOTYPE (JUNCUS TENUIS, PA ECOTYPE)
- 1% SOFT RUSH (JUNCUS EFFUSUS)
- 0.8% WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE (MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE)
- 0.5% MISTFLOWER, VA ECOTYPE (EUPATORIUM COLEOSTEMUM (CONOCLINUM C.), VA ECOTYPE)
- 0.5% BLUE FALSE INDIGO, SOUTHERN WV ECOTYPE (BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE)
- 0.5% EARLY GOLDENROD, VA ECOTYPE (SOLIDAGO JUNCEA, VA ECOTYPE)
- 0.2% SLENDER MOUNTAINMINT (PYNANTHEMUM TENIFOLIUM)
- 100% TOTAL APPLIED 20 LB PER ACRE WITH A COVER CROP OF GRASS RYE AT 30 LB PER ACRE

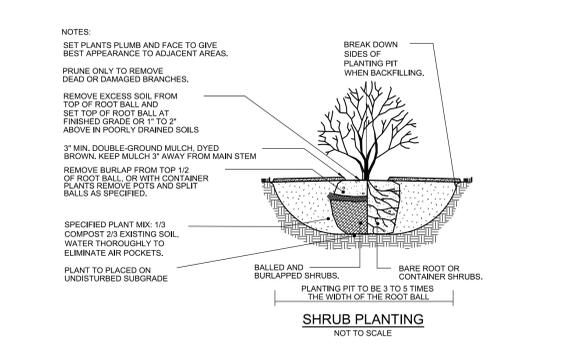
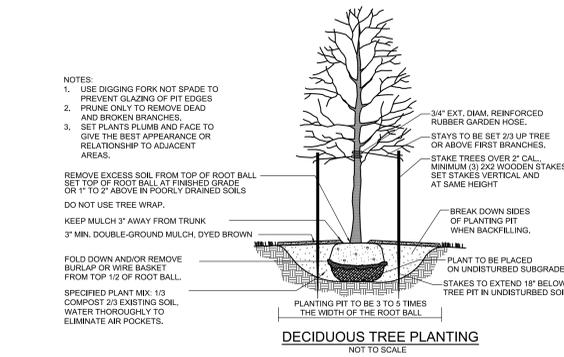
LANDSCAPE MAINTENANCE NOTES

THE OWNERS OF THE COMPANY AND THEIR AGENTS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE INSTALLATION, PRESERVATION AND MAINTENANCE OF ALL PLANTING AND PHYSICAL FEATURES SHOWN ON THE PLANS. ANY AND ALL PLANT MATERIAL THAT DIES OR FAILS TO THRIVE SHALL BE IMMEDIATELY REPLACED WITH LIKE SPECIES. THE OWNERS SHALL BE RESPONSIBLE FOR ANNUAL MAINTENANCE OF SITE VEGETATION TO INCLUDE BUT NOT BE LIMITED TO:

- FERTILIZER - MOWN LAWN - FERTILIZE TWICE PER YEAR. MEADOW - DO NOT FERTILIZE THE AREAS. RAIN GARDEN - DO NOT FERTILIZE THE AREAS.
- PRUNING - PRUNING SHALL BE LIMITED TO REMOVAL OF DEAD WOOD OR BRANCHES FOR TREES OR FOR SIGHT DIFFERENCES/SAFETY REASONS. PRUNING OF SHRUBS AND TREES SHALL BE LIMITED TO THE PRUNING NECESSARY TO MAINTAIN THE NATURAL SHAPE OF THE PLANT EXCEPT FOR SHEARED HEDGES.
- PEST CONTROL - PRE-EMERGENT WEED CONTROL FOR MOWN LAWNS AND SHRUB BEDS MAY BE APPLIED IN FEBRUARY. CHEMICAL TREATMENT FOR INSECT INFESTATION AND DISEASE MAY BE APPLIED AND SHALL BE SPECIFIC TO THE PROBLEM.
- MULCHING - MULCHING SHALL BE MAINTAINED AT A DEPTH OF 2" IN PLANT BEDS AND AROUND BASE OF TREES.
- MOWING - MOWN LAWN SEED MIX SHALL BE MOWN AT REGULAR INTERVALS THROUGHOUT THE GROWING SEASON. GRASS HEIGHT SHOULD NOT EXCEED 3 INCHES. MOWER BLADES SHALL BE SET AT 2-1/2 INCHES UNLESS OTHERWISE DIRECTED. RAIN GARDEN SEED MIX AND MEADOW SEED MIX SHALL BE MOWN ONLY TWICE YEARLY, ONCE IN LATE FALL AND ONCE IN EARLY SPRING.
- PLANT PROTECTION - AVOID EXCESS INTRUSION INTO THE ROOT ZONE AREA OF ESTABLISHED PLANTINGS.
- WATERING - UNLESS STATED OTHERWISE IN THESE DOCUMENTS, PROVIDE APPROXIMATELY 1-INCH OF RAINFALL/WATER PER WEEK THROUGHOUT THE GROWING SEASON FOR THE FIRST YEAR.

PERENNIAL AND GROUNDCOVER MAINTENANCE

- WEED CONTROL CAN BE A PROBLEM UNTIL THE GROUNDCOVERS/ PERENNIALS HAVE SPREAD AND FILLED IN THE AREA. CONTROL OF PERSISTENT, PERENNIAL WEEDS, SUCH AS BERNARDGRASS AND NITGRASS SHOULD BE ACHIEVED BEFORE PLANTING. USE A NONSELECTIVE HERBICIDE, SUCH AS ROUNDUP. A MULCH APPLIED AFTER PLANTING AND REAPPLIED AS NEEDED TO MAINTAIN A DEPTH OF 3 INCHES WILL REDUCE THE NEED TO WEED BY HAND. PRE-EMERGENCE HERBICIDES CAN BE USED ON MANY TYPES OF GROUNDCOVER TO AID WEED CONTROL, READ THE LABEL CAREFULLY BEFORE APPLYING. AS THE GROUNDCOVER FILLS IN WEEDS WILL BECOME LESS OF A PROBLEM BECAUSE OF THE SHADED SOIL. SOME HAND WEEDING WILL MOST LIKELY BE NEEDED.
- FERTILIZER - MOST GROUNDCOVERS WILL BENEFIT FROM AN APPLICATION OF FERTILIZER IN LATE WINTER TO EARLY SPRING. USE 2 TO 4 POUNDS OF A COMPLETE FERTILIZER PER 1,000 SQUARE FEET. WATER OR BRUSH FERTILIZER OFF THE FOLIAGE AFTER BROADCASTING.



- PLANTING NOTES**
- ALL PLANT LOCATIONS SHALL BE STAKED IN THE FIELD AND LOCATIONS APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
 - TOPSOIL WITH A QUALITY ORGANIC SOIL AMENDMENT SHALL BE USED FOR ALL PLANTING AND SEEDING OPERATIONS.
 - NOTIFY ALL UTILITY COMPANIES AND LOCATE ALL UTILITIES PRIOR TO EXCAVATING PLANT PITS. PLANT LOCATIONS MAY BE ADJUSTED IN THE FIELD TO AVOID INTERFERENCE WITH UNDERGROUND UTILITIES.
 - SHOULD ANY DISCREPANCY ARISE BETWEEN THE PLANTING AND SEEDING SCHEDULE, THE PLAN SHALL GOVERN AS TO THE QUANTITY OF PLANT MATERIAL.
 - ALL PLANT MATERIAL SHALL BE OF NURSERY STOCK QUALITY AS DEFINED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. ALL PLANT MATERIAL SHALL BE GUARANTEED TO LIVE AT LEAST 18 MONTHS FOLLOWING INSTALLATION.
 - ALL NON-BIODEGRADABLE ROOT WRAPPING TO BE REMOVED COMPLETELY BEFORE PLANTING.
 - ALL SHADE TREES TO BE PRUNED OF SIDE BRANCHES TO A HEIGHT OF 6" ABOVE GRADE EXCEPT WHERE NOTED IN PLANT SCHEDULE.
 - ALL PLANT MATERIAL SHALL BE APPROVED UPON ARRIVAL TO THE SITE, UNLESS OTHERWISE NOTIFIED.
 - PROPOSED PLANT MATERIAL MAY BE SUBSTITUTED BY SIMILAR PLANTS PRIOR TO INSTALLATION, SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND THE TOWNSHIP.
 - DISBURSANCE OF EXISTING VEGETATION SHALL BE LIMITED TO WORK AREA. CONTRACTOR IS RESPONSIBLE FOR FINE GRADING AND SEEDING ALL DISTURBED AREAS.
 - ALL PLANTS SPACED 7' O.C. OR CLOSER SHALL BE IN CONTINUOUS MULCHED BEDS.
 - SEED ALL DISTURBED AREAS WITH REQUIRED SEED MIX (SEEDING MIX SCHEDULE & SEEDING NOTES).
 - PLANTING SHALL BE DONE APRIL 15TH THRU MAY 31ST OR AUGUST 17TH THRU OCTOBER 15TH.
 - A MINIMUM OF 2" TOPSOIL SHALL BE PLACED ON ALL AREAS AFFECTED BY CONSTRUCTION.

- SEEDING NOTES**
- SEED ALL AREAS DISTURBED BY CONSTRUCTION NOT OTHERWISE CONTAINING PLANTING BEDS, SIDEWALKS, BUILDINGS, ETC.
 - BEFORE SEEDING, CONTRACTOR SHALL PROVIDE SOIL TESTS, AND APPLICATIONS OF FERTILIZER AND/OR GROUND LIMESTONE SHALL BE MADE PER SOIL TEST RECOMMENDATIONS. INCORPORATE FERTILIZER OR LIMESTONE INTO TOPSOIL TO A 2" DEPTH.
 - PERFORM ALL FINISH GRADING, WITHIN AREAS OF DISTURBANCE, NECESSARY TO BRING SITE TO REQUIRED FINISHED ELEVATIONS. FINISH GRADING SHALL CONSIST OF PREPARING SUBGRADE AND SPREADING TOPSOIL READY FOR SEEDING OPERATIONS.
 - SUBGRADE SHALL BE LOOSENEED AND GRADED BY HARROWING, DISCING, OR GRADING, AS DICTATED BY THE CONDITION OF THE SUBGRADE. THE ENTIRE SUBGRADE SHALL THEN BE RAVED AND ALL STONES OVER 1-1/2" GRADE STAKES, RUBBISH AND GENERAL DEBRIS REMOVED.
 - ALL UNDISTURBED PORTIONS OF THE SITE THAT ARE TO RECEIVE SEEDING SHALL HAVE SURFACE LOOSENEED BY HARROWING OR DISCING. ALL MECHANICAL OPERATIONS SHALL BE KEPT OUTSIDE OF AREAS DELINEATED BY TREE PROTECTION FENCING.
 - TOPSOIL SHALL BE UNIFORMLY SPREAD WITH BLADE GRADER, OR BY ANY OTHER APPROVED METHOD, TO A MINIMUM DEPTH OF 6 INCHES TO PERMIT 1 INCH OF SETTLEMENT. CORRECT ANY SURFACE IRREGULARITIES TO PREVENT FORMATION OF LOW SPOTS AND POCKETS THAT WOULD RETAIN WATER. PRIOR TO FINE GRADING, REMOVE ALL EXISTING ANNUAL TYPE VEGETATION.
 - BEFORE SEEDING, CONTRACTOR SHALL PROVIDE SOIL TESTS, AND APPLICATIONS OF FERTILIZER AND/OR GROUND LIMESTONE SHALL BE MADE PER SOIL TEST RECOMMENDATIONS. INCORPORATE FERTILIZER OR LIMESTONE INTO TOPSOIL TO A 2" DEPTH.
 - SEEDING SHALL BE COMPLETED USING THE HYDROSEEDING OR HYDRALIC BROADCASTING OF PREPARED MATERIAL AT THE FOLLOWING RATES PER ACRE:
 - A. WATER AS SPECIFIED.
 - B. 1,500 POUNDS OF WOOD CELLULOSE, PLUS 15% FOR SLOPES 5% AND STEEPER.
 - C. LIME QUANTITY AS REQUIRED TO ACHIEVE PH OF 6.5.
 - D. SOIL STABILIZER OF TYPE AND AT RATE RECOMMENDED BY THE MANUFACTURER.
 - E. SEED MIX AS SPECIFIED.
 - HYDRALIC SEEDING SHALL BE APPLIED WHEN WIND IS FIVE MILES PER HOUR OR LESS. PREPARED BED SHALL BE IN A MODERATELY DRY CONDITION DURING SEEDING WITH A MINIMUM THREE INCH DEPTH OF LOOSE FLUFFY SOIL. HYDRO SEED SHALL BE MIXED INTO TOP ONE INCH OF SOIL BY DIRECTING HYDRO-MULCHING NOZZLE AT SOIL SURFACE. BROADCAST SPRAYING OF SEED SHALL NOT BE ACCEPTABLE UNLESS SEED IS LATER RAKED INTO TOP ONE INCH OF SURFACE SOIL.
 - ADD GREEN COLORING AGENT TO MULCH IN ORDER TO GUAGE ADEQUATE COVERAGE.
 - SOIL SEED AT THE RECOMMENDED SEEDING RATE AS SHOWN IN THE SEEDING MIX SCHEDULE.
 - SEED SHALL BE APPLIED APRIL 15TH THRU MAY 31ST OR AUGUST 17TH THRU OCTOBER 15TH.
 - USE MECHANICAL SEEDING EQUIPMENT WHEN HYDRALIC SEEDING IS NOT PRACTICAL DUE TO CLOSENESS OF BUILDINGS, ETC.
 - AFTER SEEDING APPLICATION, WOOD CELLULOSE FIBER SHALL BE APPLIED HYDRALICALLY AT A NET RATE DRY WEIGHT OF 1,500 LBS PER ACRE OR AT RATES RECOMMENDED BY THE MANUFACTURER. MULCH ALL SEEDED AREAS WITH CLEAN STRAW.
 - ON ALL SLOPES 3% OR GREATER, USE AN ORGANIC SOIL STABILIZER SUCH AS 'CON-TACK' OR EQUAL AT THE RATE OF 25 LBS PER 1,000 SQUARE FEET OR AT RATES RECOMMENDED BY THE MANUFACTURER.
 - KEEP NEWLY SEEDD GRASS AREAS MOISTENED DURING SEED GERMINATION AND UNTIL THE GRASS COVERS AT LEAST 75% OF THE SEEDDED AREAS TO A HEIGHT OF 2 TO 3 INCHES.
 - ALL AREAS AND SPOTS, WHICH DO NOT SHOW A PROMPT CATCH OF GRASS, SHALL THEN BE RE-SEEDD, AND THE OPERATION REPEATED UNTIL COMPLETE COVERAGE IS OBTAINED.

- LANDSCAPE REMOVAL NOTES**
- TREE REMOVAL SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS SPECIFIED BY THE TREE CARE INDUSTRY ASSOCIATION, INC. IN THE LATEST EDITION OF THE 'AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS' ANSI 300 (PART -1) - 2008 PRUNING OR LATEST EDITION.
 - WHERE THE PRUNING, REPAIRING, MAINTAINING, OR REMOVAL OF TREES, THE CUTTING OF BRUSH, OR PERFORMING OF PEST OR SOIL MANAGEMENT IS REQUIRED, OPERATIONS SHALL CONFORM TO THE STANDARDS SPECIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE IN THE 'AMERICAN NATIONAL STANDARD FOR ARBORICULTURAL OPERATIONS - SAFETY REQUIREMENTS' ANSI Z133.1-2006 OR LATEST EDITION.
 - AS A MINIMUM, THE CREW SUPERVISORS MUST BE A CURRENT INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST, THEIR NAMES AND CERTIFICATION NUMBERS MUST BE SUBMITTED TO THE OWNERS REPRESENTATIVE FOR BEFORE PRUNING OR REMOVAL ACTIVITIES. AN ISA CERTIFIED ARBORIST SHALL BE ON SITE AT ALL TIMES DURING WORK ACTIVITIES.
 - AT THE DIRECTION OF THE TOWNSHIP ENGINEER, TOWNSHIP SHADE TREE COMMISSION OR TOWNSHIP LANDSCAPE ARCHITECT, EXISTING TREES WHICH HAVE NOT BEEN ADEQUATELY PROTECTED AREA TO BE REMOVED AND REPLACED.
 - STUMP REMOVALS - ALL THE DEBRIS GENERATED FROM THE REMOVAL SHALL BE PROPERLY AND LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR. SUCH WORK SHALL INCLUDE COMPLETE REMOVAL OF THE STUMP/ROOT MASS, IN THE CASE OF YOUNG / SMALLER TREES OR GRINDING DOWN OF THE STUMP TO TWELVE (12) INCHES BELOW GRADE IN THE CASE OF MATURE/ LARGER TREES. IN BOTH CASES ALL DEBRIS SHALL BE COMPLETELY REMOVED, AND SCREENED FERTILE TOPSOIL PLACED IN THE HOLE AND LIGHTLY COMPACTED TO BRING THE DEPRESSION UP TO MEET THE SURROUNDING GRADE. SMOOTH AND FLUSH. SEED SHALL BE INSTALLED OVER THE REFURBISHED AREA WHEN SURROUNDED BY LAWN, OR A THREE (3) INCH THICKNESS OF DOUBLE SHREDDED HARDWOOD BARK MULCH SHALL BE INSTALLED WHEN IN CONTINUOUS PLANTING BEDS.



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SERIAL NUMBER: 2017152090



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Pennoni

PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19380
T 610-423-8807 F 610-423-8818

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VANGUARD MALVERN WEST EXPANSION
31 MORELAND ROAD
MALVERN, PA 19355

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

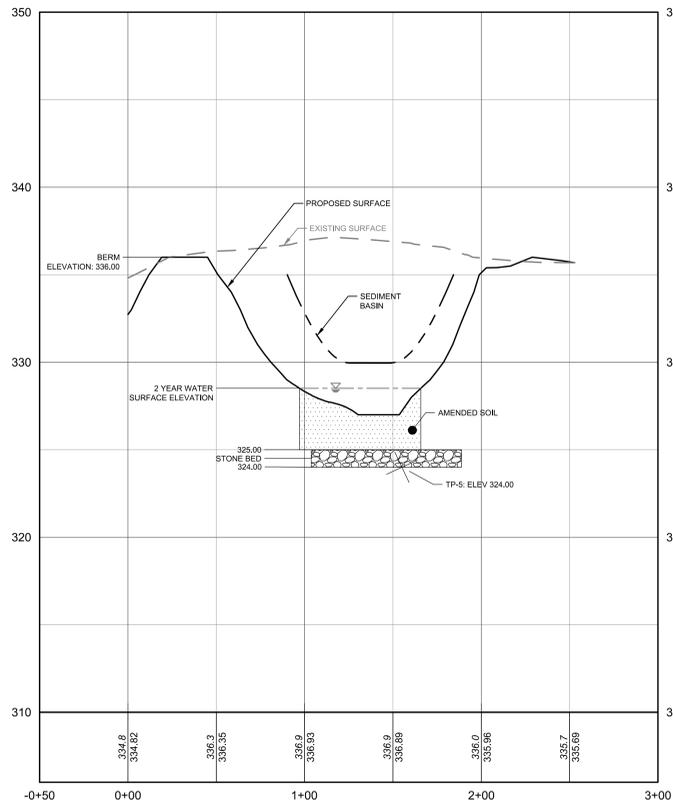
THE VANGUARD GROUP
400 DEWON PARK DRIVE
WYOMING, PA 19387

NO.	DATE	REVISIONS
1	03/15/18	ISSUE FOR CONSTRUCTION DOCUMENTS
2	03/27/18	REVISED PER CCDC COMMENTS
3	07/24/18	REVISED PER CCDC COMMENTS

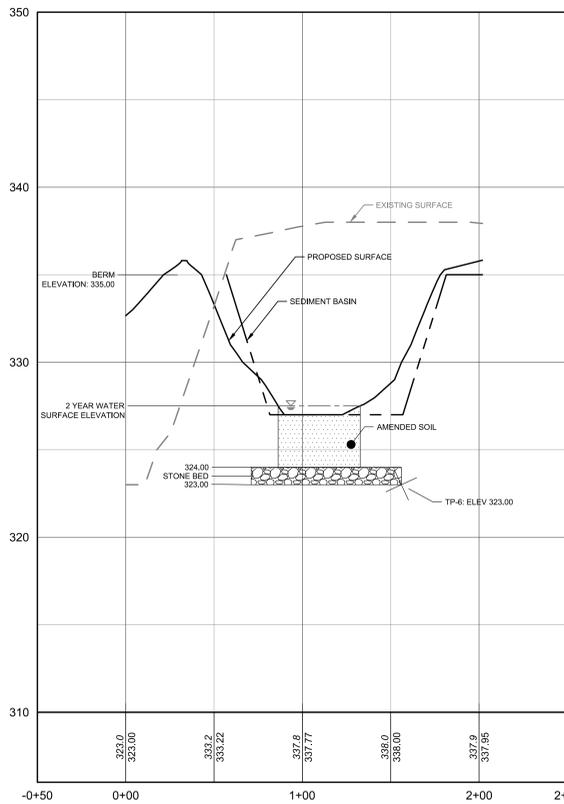
PROJECT: TVGH1702
DATE: 2017-12-18
DRAWING SCALE: 1"=40'
DRAWN BY: MEM
APPROVED BY: MK

CS9507
SHEET 68 OF 72

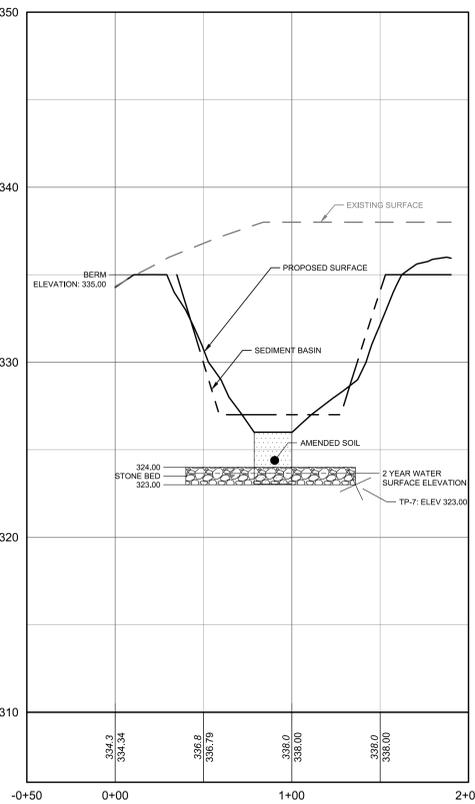
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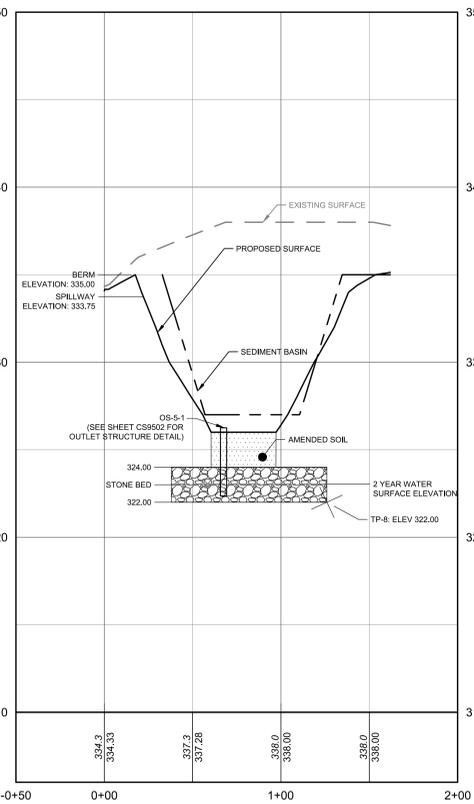
BIO-RETENTION BASIN 1
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



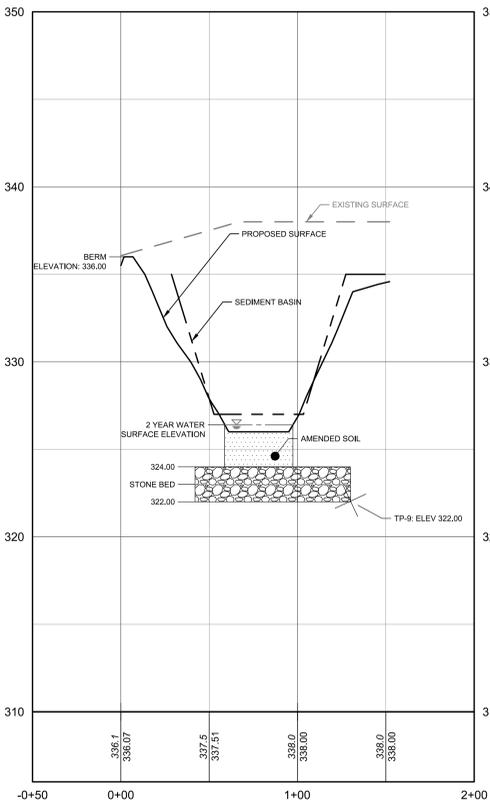
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VERTICAL SCALE: 1" = 4'



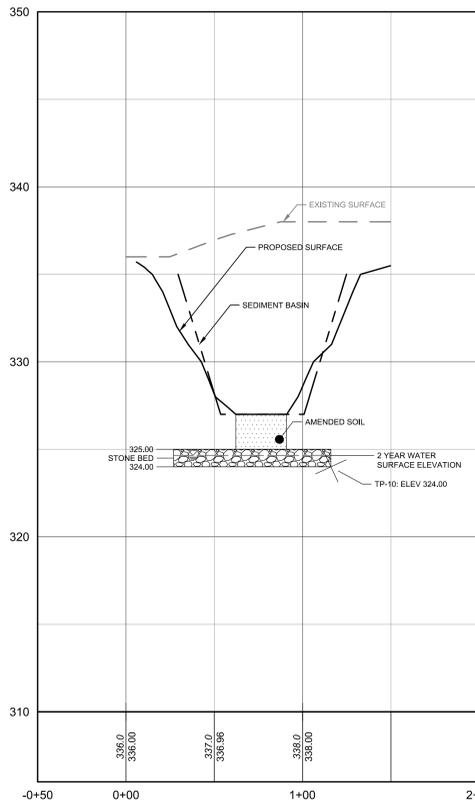
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VERTICAL SCALE: 1" = 4'



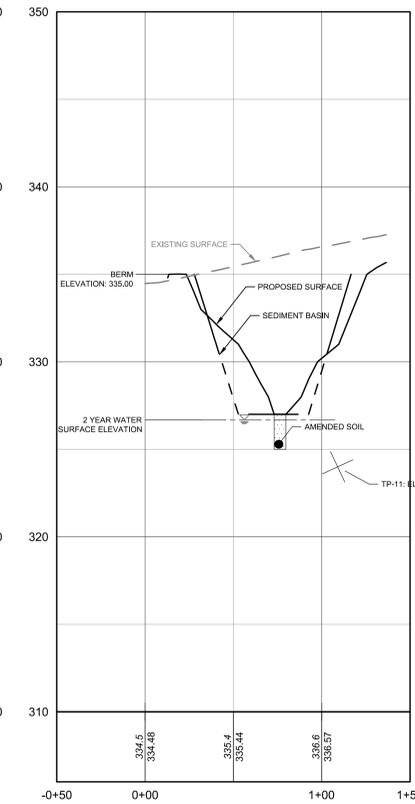
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HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



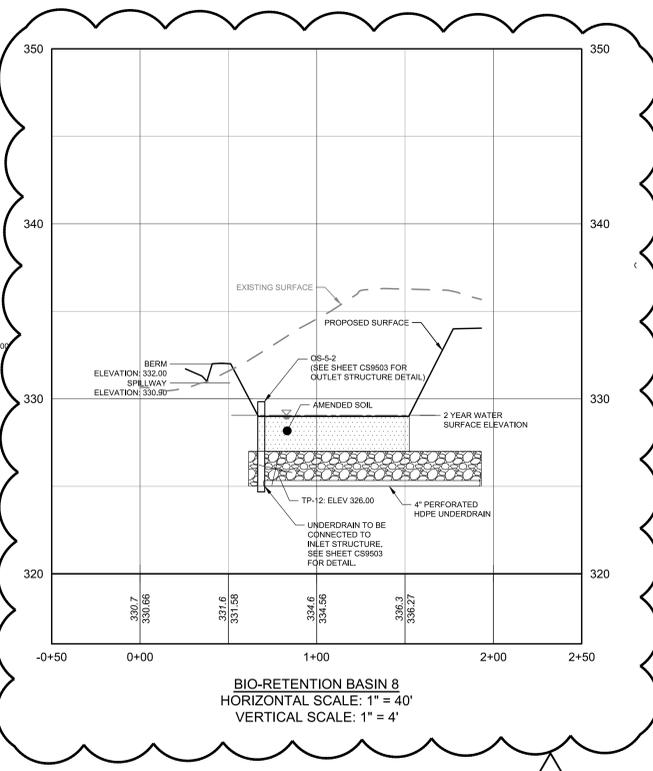
BIO-RETENTION BASIN 5
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



BIO-RETENTION BASIN 6
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



BIO-RETENTION BASIN 7
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



BIO-RETENTION BASIN 8
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

**NO LIMITING ZONE
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SERIAL NUMBER: 20171320890



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31 MOREHALL ROAD
MALVERN, PA 19355

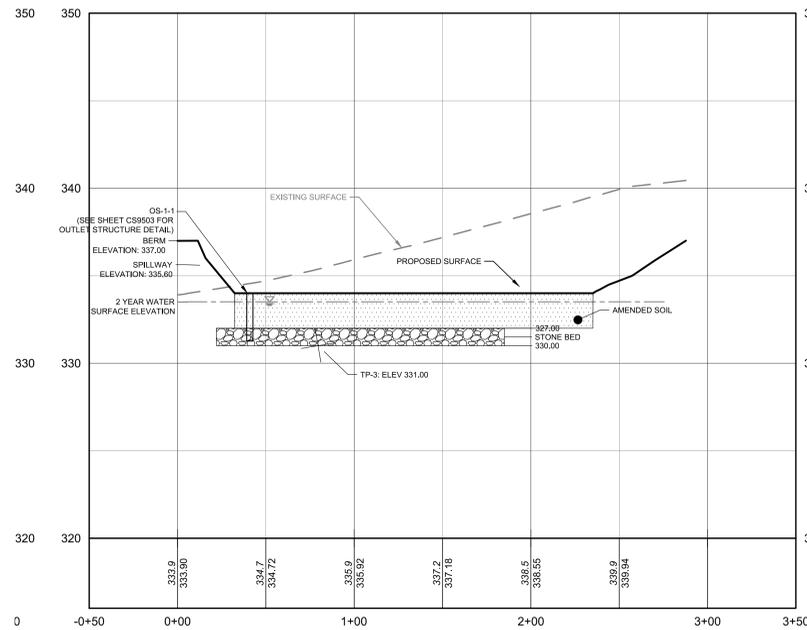
POST CONSTRUCTION STORMWATER MANAGEMENT PROFILES

THE VANGUARD GROUP
400 DEWON PARK DRIVE
WAYNE, PA 19387

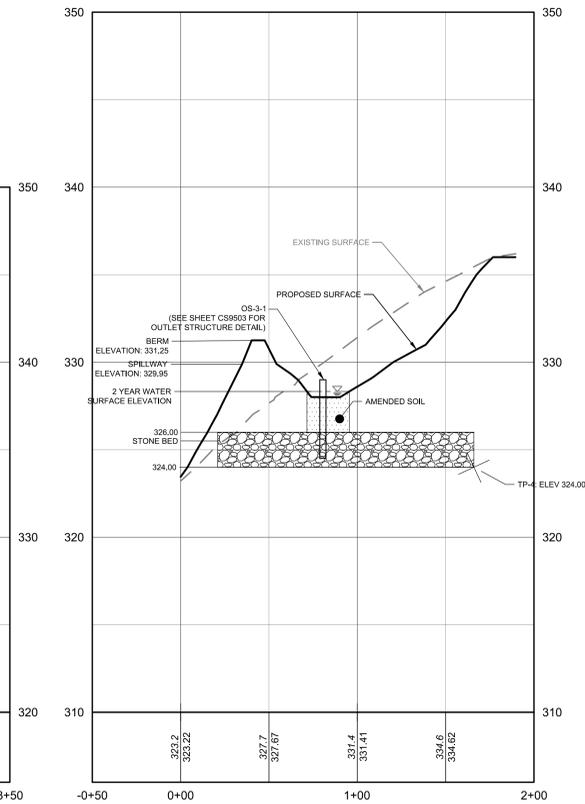
NO.	DATE	REVISIONS	BY
1	01/15/18	10% CONSTRUCTION DOCUMENTS	MBL
2	02/07/18	REVISED PER CCDD COMMENTS	MBL
3	01/24/18	REVISED PER CCDD COMMENTS	MBL

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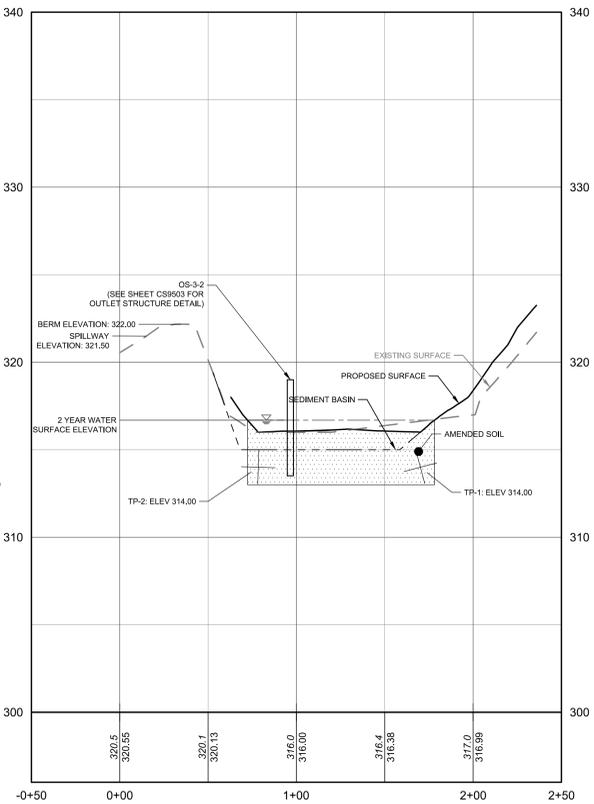
PROJECT	TVG1702
DATE	2017-12-18
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK
CS9508	
SHEET	69 OF 72



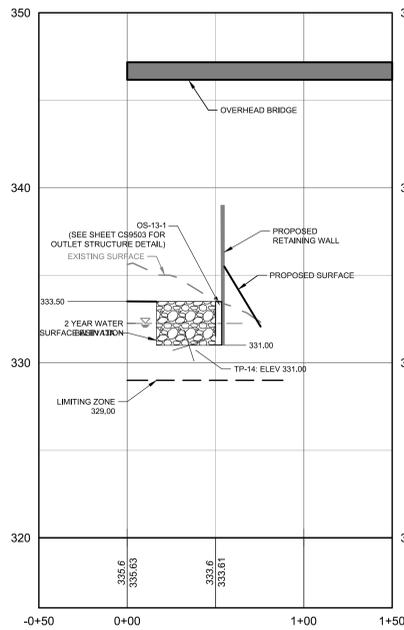
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VERTICAL SCALE: 1" = 4'



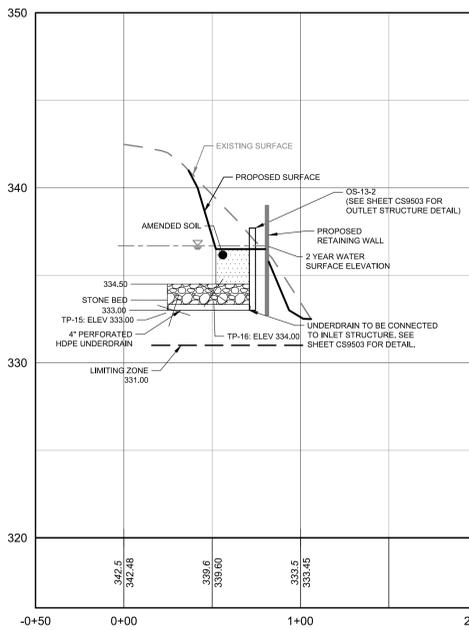
BIO-RETENTION BASIN 11
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VERTICAL SCALE: 1" = 4'



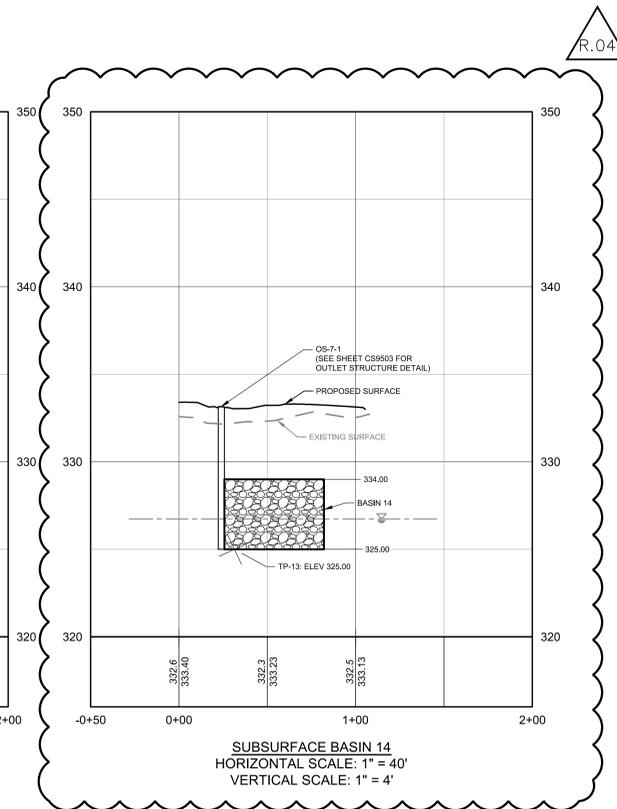
BIO-RETENTION BASIN 12
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



SUBSURFACE BASIN 13A
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



BIO-RETENTION BASIN 13B
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



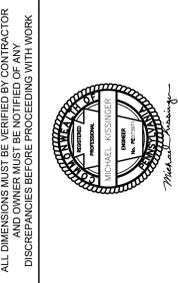
SUBSURFACE BASIN 14
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

R.03

R.04



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SERIAL NUMBER: 20171320890



POST CONSTRUCTION STORMWATER MANAGEMENT PROFILES

NO.	DATE	REVISIONS	BY
060719		REVISED SUBSURFACE BASIN 14	ASK
091518		60% CONSTRUCTION DOCUMENTS	MEL
090718		REVISED PER CCDD COMMENTS	MEL
012418		REVISED PER CCDD COMMENTS	MEL

PROJECT	TVGH1702
DATE	2017-12-08
DRAWING SCALE	1"=40'
DRAWN BY	MEM
APPROVED BY	MK

Project: TVGH1702 - Vanguard Malvern West Expansion (BIBB)_SUBSURFACE.dwg, 12/11/2017 10:45:00 AM, PLOT DATE: 12/11/2017 10:45:00 AM, PLOT TIME: 10:45:00 AM, PLOT BY: Connor McSwain, PLOT TITLE: Pennoni MGS-08

