

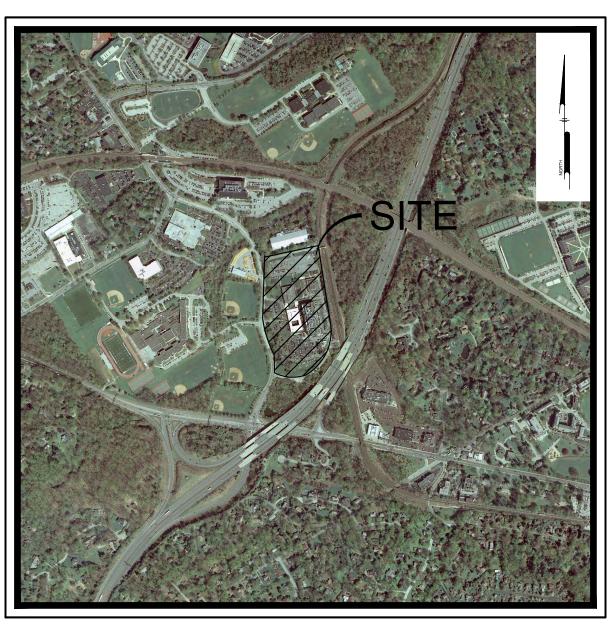
PRELIMINARY LAND DEVELOPMENT PLAN

DELAWARE COUNTY, PENNSYLVANIA **SEPTEMBER 29, 2017** REVISED: FEBRUARY 5, 2018

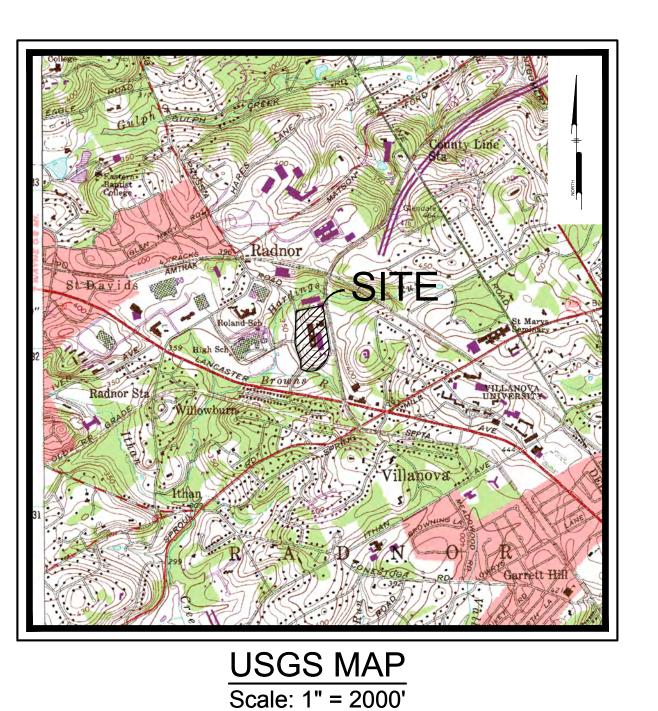
> PREPARED FOR: OWNER/DEVELOPER

THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEMS

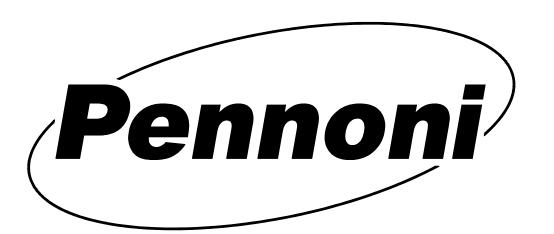
3400 CIVIC CENTER BOULEVARD PHILADELPHIA, PA 19355 (610) 889-3600



LOCATION MAP Scale: 1" = 1000'



PREPARED BY: PENNONI ASSOCIATES INC.



One South Church Street, 2nd Floor West Chester, PA 19382 **T** 610.429.8907 **F** 610.429.8918

Penn Medicine

PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA

BALLINGER

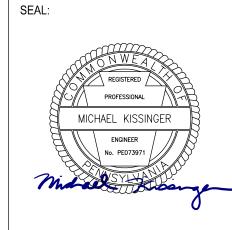
833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 448 0900 F 215 446 3931

BALLINGER.COM

CONSULTANTS: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382

LANDSCAPE ARCHITECT LANDSCAPE ARCHITECTS INC. WAYNE, PA 19087 T 610 341 9925

SUITE 1100 PHILADELPHIA, PA 19130



CONDITION OF USE

01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

COVER SHEET

CALL BEFORE YOU DIG BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO SHEET: 01 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

CS0001

NOT FOR CONSTRUCTION

LANDSCAPE ARCHITECT:

LANDSCAPE ARCHITECTS INC.

JONATHAN ALDERSON

PO BOX 661

FIRE PROTECTION ENGINEER: 1500 SPRING GARDEN PHILADELPHIA, PA 19130 T 215 665 7000

CONDITION OF USE

SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THI THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECTOR THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FO PERPERATION OF THEIR REQUIRED SHOP DRAWING

02 - REVISED PLANS - 02/05/18 01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

NOTES SHEET

GENERAL NOTES: 145 KING OF PRUSSIA ROAD SITE ADDRESS:

RADNOR, PA 19087 THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEMS 3400 SPRUCE STREET PHILADELPHIA, PA 19104

THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEMS 3400 SPRUCE STREET PHILADELPHIA, PA 19104 2. THE PURPOSE OF THIS PLAN IS TO DEPICT THE DEMOLITION OF 5 EXISTING BUILDINGS AND

RELATED FEATURES IN ORDER TO CONSTRUCT 3 NEW BUILDINGS, 2 NEW PARKING GARAGES, AND ASSOCIATED SITE IMPROVEMENTS. 3. THIS SITE IS CURRENTLY ZONED PLO - PLANNED LABORATORY OFFICES DISTRICT BY THE RADNOR TOWNSHIP ZONING MAP. FOR COMPLETE ZONING INFORMATION PLEASE REFER TO THE

ZONING CODE OF THE RADNOR TOWNSHIP. 4. BENCHMARK: THE BENCHMARK FOR THE SITE IS A SANITARY MANHOLE IN KING OF PRUSSIA ROAD TO THE WEST OF THE PROPERTY NEAR THE INTERSECTION WITH RADNOR ROAD WITH A RIM ELEVATION OF 368.88

5. A FIELD SURVEY ON THE SITE WAS PERFORMED BY PENNONI ASSOCIATES, INC., ON MAY 13, 2015. TOPOGRAPHIC FEATURES ARE SHOWN BASED ON A SURVEY PERFORMED BY NAVE

NEWELL INC. ON MAY 1, 2007. THE ELEVATIONS SHOWN HEREIN ARE BASED UPON PA STATE PLANE COORDINATE, PA SOUTH (NAVD88). 6. 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, OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE OF THE WORK TO BE PANEL NO. 36 OF 250, COMMUNITY MAP NO. 42045C0036F, WHICH BEARS AN EFFECTIVE DATE OF NOVEMBER 18, 2009. 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 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

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

PENNSYLVANIA OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER. BUT NO

POTENTIAL OF THE SUBJECT PROPERTY. 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 10. HIGH INTENSITY LIGHTING FACILITIES SHALL BE SO ARRANGED THAT THE SOURCE OF ANY MAN-MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR

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. 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 20152360845 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) 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. (800-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF

13. THE SITE IS TO BE SERVED BY PUBLIC SEWER AND WATER SERVICE.

DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY

14. THE ENTIRE TRACT IS LOCATED WITHIN THE BROWNS RUN WATERSHED, WHICH IS CLASSIFIED AS COLD WATER FISHES, MIGRATORY FISHES (CWF-MF) BY TITLE 25, CHAPTER 93 OF THE PENNSYLVANIA CODE.

15. ALL STEEP SLOPES WITHIN THE PROPERTY LIMITS ARE MAN MADE AND EXCLUDE PER RADNOR ZONING ORDINANCE 280-112.

16. ALL RADII SHOWN ARE 5 FT UNLESS OTHERWISE SPECIFIED.

INDIVIDUAL TENANT CONNECTION.

REQUIREMENTS AND SPECIFICATIONS.

1. THE WATER PROVIDER IS AQUA PENNSYLVANIA. CONTACT AQUA BEFORE TAPPING THE EXISTING WATER MAIN. ALL WORK ON THE WATER DISTRIBUTION SYSTEM SHALL BE IN

ACCORDANCE WITH THE AQUA 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 AQUA CUSTOMER. CONTRACTOR SHALL NOTIFY THE TOWNSHIP AND THE OWNER 48 HOURS IN ADVANCE OF ANY LOSS OF SERVICE. DEPENDING UPON THE NATURE OF THE LOSS OF SERVICE, 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 THE TOWNSHIP 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. A SEPARATE WATER METER, SHUT-OFF VALVE AND TAPPING FEE WILL BE REQUIRED FOR EACH

8. WATER MAINS SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE, DOUBLE CEMENT LINED AND TAR COATED WITH PUSH-ON JOINTS, CLASS 52.

9. ALL FITTINGS SHALL BE DUCTILE IRON CLASS 350 ANSI A21.10 OR ANSI A21.53. EPOXY COATED MECHANICAL OR PUSH-ON JOINTS, NOTE: FITTINGS NOT FURNISHED WITH AN EPOXY COATING CAN BE FURNISHED WITH A DOUBLE CEMENT LINING AND TAR COATING.

SANITARY SEWER NOTES: I. ALL SANITARY SEWER CONSTRUCTION MUST CONFORM TO RADNOR TOWNSHIPS

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

10. WATER LINE SHALL HAVE A BEDDING CONSISTENT WITH THE WATER AUTHORITY

SANITARY SYSTEM CONSTRUCTION FOR REVIEW AND APPROVAL BY RADNOR TOWNSHIP PRIOR TO CONSTRUCTION.

4. TYPICAL COVER OF THE SANITARY SEWER MAIN SHALL BE A MINIMUM OF FIVE FEET (5'). 5. THE SANITARY MAIN PIPE AND FITTINGS SHALL BE GASKETED SDR-26 SEWER PIPE.

6. MANHOLE STRUCTURES SHALL CONFORM TO ASTM C-478 AND PENNDOT PUB. 408, TO

SUPPORT HS20-44 LOADING. 7. UNLESS OTHERWISE NOTED, SANITARY LATERALS SHALL CONSIST OF SIX (6") INCH DIAMETER SDR-26 SEWER PIPE AT A MINIMUM SLOPE OF 1/4" PER FOOT.

GENERAL CONSTRUCTION AND GRADING NOTES:

NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER/DEVELOPER. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS, AS APPLICABLE:

1. ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL AND LOCAL CODES AND ALL

A. PENNDOT SPECIFICATION, PUB 408/2007 OR LATEST REVISION. B. PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, PUBLICATION 72, LAST REVISED 9/19/08 OR LATEST REVISION. C. PENNDOT HANDBOOK OF APPROVED SIGNS, PUB 236/2006 OR LATEST REVISION. D. AMERICANS WITH DISABILITIES ACT OF JULY 1991 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. TOWNSHIP STANDARDS AND SPECIFICATIONS AND THE RADNOR CODE (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 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

NOT BUT NOT LIMITED TO: EROSION AND SEDIMENTATION CONTROL PLAN POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR

ERROR THEY DISCOVER IN THE PLANS. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER

UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS 1 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 DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.

UNACCEPTABLE.

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

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

WIDTH OF 20 FEET. ACCESS TO BUILDINGS THAT HAVE SPRINKLER OR STANDPIPE SYSTEMS SHALL BE WITHIN 40 FEET OF THE FIRE DEPARTMENT CONNECTOR. (NFPA 1141 3-1) 2. 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 PROPERTY CONSTRUCT THE

A FIRE TRUCK BY BEING PAVED OR HAVING A CRUSHED STONE BASE, ETC., WITH A MINIMUM

13. BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D698). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS. STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX (6) INCHES 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 17. ALL ON-SITE BUILDING IMPROVEMENTS SHALL CONFORM TO THE TOWNSHIP'S BUILDING ALL TIMES WITHIN THE PROJECT LIMITS. THIS MAY INCLUDE, BUT NOT BE LIMITED TO REPLACEMENT OR RECONSTRUCTION OF EXISTING DRAINAGE STRUCTURES THAT HAVE BEEN DAMAGED OR REMOVED OR REGRADING AS REQUIRED BY THE ENGINEER, EXCEPT FOR THOSE

18. THE MINIMUM DISTANCE BETWEEN THE PLACEMENT OF TREES, LIGHT POLES, ETC. AND DRAINAGE ITEMS SHOWN AT SPECIFIC LOCATIONS AND HAVING SPECIFIC PAY ITEMS IN THE DETAILED ESTIMATE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY COSTS INCURRED TO

15. THE CONTRACTOR SHALL PROVIDE ANY AND ALL EXCAVATION AND MATERIAL SAMPLES NECESSARY TO CONDUCT REQUIRED SOIL TESTS. ALL ARRANGEMENTS AND SCHEDULING

COMPLY WITH THIS REQUIREMENT.

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 TO THE COMPACTION OF ALL LOAD BEARING FILLS. THE GEOTECHNICAL ENGINEER SHALL PROVIDE COPIES OF TEST REPORTS TO THE CONTRACTOR, THE OWNER AND TO 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 IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY MUST COMPLY WITH RADNOR TOWNSHIPS STANDARDS AND SPECIFICATIONS.

18. ALL PERMITS MUST BE OBTAINED PRIOR TO THE START OF CONSTRUCTION. 19. ALL PAVEMENT MARKINGS ON PRIVATE PROPERTY SHALL CONFORM TO CURRENT MUTCD

20. ARCHITECT TO PROVIDE DETAIL FOR ALL EARTH ACTIVITY WITHIN 8" OF FINISHED FLOOR ELEVATION FOR ALL BUILDING CONSTRUCTION.

GENERAL UTILITY NOTES:

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.

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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATIONS AND DEPTHS AMENDED, NOT LESS THAN THREE DAYS NOR MORE THAN TEN WORKING DAYS BEFORE 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 4 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. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH 5.

OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED. 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 MADE

TO UTILITIES BY THE CONTRACTOR. CONTRACTOR MUST APPLY FOR ALL UTILITY CONNECTION APPLICATIONS. CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY CONNECTION FEES FOR CONSTRUCTION. REFER TO SHEET

CS0002 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 8. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ANY AND ALL DEBRIS THAT MAY FALL ON THE THE CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF ALL UNDERGROUND 9. ALL STRUCTURES, PAVEMENT, SUBBASE AND MISCELLANEOUS ITEMS SHAL UTILITIES AND APPURTENANCES TO MINIMIZE DISTURBANCE TO CURBING, PAVING, AND

IF CONFLICTS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.

. ALL PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.

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. 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.

AND TRENCH BACKFILLED BY THE END OF EACH WORK DAY. 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

13. CONTRACTOR SHALL EXCAVATE ONLY ENOUGH TRENCH FOR WHICH PIPE CAN BE INSTALLED

COMPACTION OF THE BACKFILL OF ALL TRENCHES SHALL BE COMPACTED TO THE DENSITY OF 95% OF THEORETICAL MAXIMUM DRY DENSITY (ASTM D698). BACKFILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, OR OTHER FOREIGN DEBRIS AND SHALL BE PLACED IN LIFTS NOT TO EXCEED 6 INCHES 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. 16. RUNOFF FROM IMPERVIOUS AREAS SHALL NOT BE DIRECTED INTO THE SANITARY SEWER NOR ONTO ADJACENT PROPERTIES.

UTILITY SERVICE LINES SHALL BE 10'

ALL OF THE STORMWATER CONTROLS AND BMPS.

19. ALL JOINTS ON THE STORM WATER CONVEYANCE SYSTEM SHALL BE WATERTIGHT. 20. THE MUNICIPALITY SHALL MAKE THE FINAL DETERMINATION ON THE CONTINUING OPERATIONS AND MAINTENANCE RESPONSIBILITIES. THE MUNICIPALITY RESERVES THE RIGHT TO ACCEPT OR REJECT THE OPERATIONS AND MAINTENANCE RESPONSIBILITY FOR ANY OR

DEMOLITION NOTES

UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS THE 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE AREAS FOR BOTH

IN ACCORDANCE WITH PA ACT 287 (1974), AS AMENDED, THE CONTRACTOR SHALL NOTIFY ALL 1, 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.

> VEHICULAR AND PEDESTRIAN TRAFFIC BE SAFE, CLEAN, AND ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION. 3. CONTRACTOR SHALL CONTACT THE PA ONE CALL SYSTEM (1-800-242-1776) PER ACT 287, AS COMMENCING WITH DEMOLITION.

DEMOLITION SHALL BE IN ACCORDANCE WITH THE SELECTED PROJECT ENVIRONMENTAL

ENGINEER OF RECORD FOR CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR UTILIZING APPLICABLE EROSION CONTROL MEASURES PRIOR TO AND DURING DEMOLITION. REFER TO EROSION AND SEDIMENT CONTROL PLANS. 6. 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 WATER, 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 ALL PUMP DISCHARGES RESULTING FROM DEWATERING OPERATIONS TO A SUITABLE FILTERING

DEVICE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN. SAFETY DEVICES (I.E. BARRICADES, WARNING TAPE, CHAIN LINK FENCING. ETC.) SHALL BE USED DURING DEMOLITION PROCEDURE TO INSURE THE SAFETY OF THE SURROUNDING

BE REMOVED IN THEIR ENTIRETY. SIDEWALKS ARE TO BE REMOVED TO THE NEAREST EXCAVATION AS A RESULT OF DEMOLITION WORK (I.E. FOUNDATIONS, BASEMENTS,

AFTER DEMOLITION IS COMPLETE. 10. UTILITY REMOVALS/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

TO SURROUNDING GRADE LEVEL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS

RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR. B. CONTRACTOR TO NOTIFY APPROPRIATE UTILITY COMPANY PRIOR

THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE

REMOVAL/ABANDONMENT OF SUCH UTILITY. 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 ABANDON 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

COMPLETED 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 5 FEET BELOW PROPOSED GRADE REMOVED. THE REMAINING STRUCTURE SHALL BE ---- BUILDING SETBACK LINE COMPLETELY FILLED WITH FLOWABLE FILL, CAPPED WITH A WATERTIGHT CONCRETE ______ _ _ _ _ _ PROPOSED PROPERTY LINE COVER AND SEALED WITH WATERTIGHT GROUT. WHERE SITE GRADING 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

REMOVAL AND DISPOSAL OF BITUMINOUS MATERIAL SHALL BE IN COMPLETED IN ACCORDANCE WITH DETAILS AND REGULATIONS OF THE TOWNSHIP, PADEP AND PENNDOT, AS APPLICABLE AND IS SUBJECT TO INSPECTION AND APPROVAL AS APPROPRIATE. STABILIZATION NOTES:

BASEMENTS. AS AN ALTERNATE, THE STONE MAY BE CRUSHED IN

ACCORDANCE WITH PA DOT 2A MATERIAL STANDARDS.

WILL NOT ADVERSELY AFFECT DRAINAGE ON ANY ADJACENT ROADWAY OR

PROPOSED EASEMENT ALL BUILDINGS TO BE REMOVED SHALL BE CRUSHED ON SITE TO A STONE SIZE OF 4" OR LESS AND USED AS BACKFILL FOR THE

—— PROPOSED STORMWATER BASIN EX BUILDING PROPOSED SIGN = EX CURB EX EDGE OF PAVEMENT PROPOSED LIGHT POLE — — EX EDGE OF GRAVEL — × × × EX FENCE LINE EX SIGN —— · · · —— DETENTION BASIN //// PROPOSED GORE STRIPING PROPOSED WHEEL STOP PROPOSED FINISHED FLOOR ELEVATION EX STREAM FLOW EX WALL PROPOSED NATURAL GAS UNDERGROUND EXISTING STEEP SLOPE (14-20%) ----- WETLAND LIMITS 9%) SEDIMENT AND EROSION LIN PROPOSED PARKING LOT LINE PROPOSED ROAD MARKINGS PROPOSED CURB PROPOSED ROAD GUARD PROPOSED CLEAN OUT INFILTRATION TEST POINT TRENCHES, MANHOLES, INLETS, CLEANOUTS AND STORMWATER PIPING) SHALL BE BACKFILLED —————360———— EX MAJOR CONTOUR EX STORM SEWER LINES EX UTILITY MANHOLE EX STORM SEWER INLET PROPOSED STORM MANHOLE EX STORMWATER MANHOLE PROPOSED INLET EX OVERHEAD ELECTRICAL LINES ----- UE ------ EX ELECTRICAL LINES PROPOSED ELECTRICAL EX UTILITY POLE PROPOSED ELECTRIC MANHOLE —— EX WATER LINES PROPOSED UTILITY POLE EX FIRE HYDRANT PROPOSED TELEPHONE MANHOLE EX WATER VALVE PROPOSED WATER VALVE ——— S ———— S ——— EX SANITARY SEWER LINES PROPOSED FIRE HYDRANT EX SANITARY MANHOLE PROPOSED FIRE PROTECTION EX SANITARY CLEAN OUT —— S ——— S —— PROPOSED SANITARY SEWER LINES EX NATURAL GAS LINES PROPOSED SANITARY SEWER MANHOLE PROPOSED WETLAND FLAGS - - - SOILS BOUNDARY LINES

PROPOSED CONCRETE MONUMENT

PROPOSED BUILDING

PROPOSED SIDEWALK

PROPOSED PERMEABLE PAVEMENT

PROPERTY LINE

——— — EX EASEMENT

— LEGAL RIGHT-OF-WAY

———— — ADJOINING PROPERTY LINE

EX PROPERTY CORNER FOUND

EX CONCRETE MONUMENT

PLAN NAME | x | x | x NOTES SHEET CS0200 03 EXISTING CONDITIONS PLAN | X | X CS0201 04 EXISTING CONDITIONS PLAN X | X | CS0501 05 **DEMOLITION PLAN - PHASE 1B** X | X | CS0502 06 DEMOLITION PLAN - PHASE 2 - SITE FEATURES X | X | DEMOLITION PLAN - PHASE 2 - UTILITIES CS0503 07 CS0901 08 **BOUNDARY PLAN** | X | X | CS1001 09 SITE PLAN CS1501 10 | X | X | X UTILITY PLAN LIGHTING PLAN | X | X | CS6001 13 SITE DETAILS | X | X | SITE DETAILS X X DRAINAGE DETAILS | X | X | CS6022 16 DRAINAGE DETAILS X | X | CS6051 17 SANITARY SEWER DETAILS | X | X | CS8001 | 18 EROSION AND SEDIMENT CONTROL PLAN CS8501 19 EROSION AND SEDIMENT CONTROL NOTES x | x | CS8502 20 EROSION AND SEDIMENT CONTROL DETAILS | X | X | POST CONSTRUCTION STORMWATER MANAGEMENT PLAN CS9501 22 POST CONSTRUCTION STORMWATER MANAGEMENT NOTES CS9502 | 23 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS CS9503 | 24 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS | X | X | X CS9504 | 25 | POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS TRUCK TURNING PLAN | x | x | CS9802 27 EMERGENCY VEHICLE TURNING PLAN | X | X | PLANS PREPARED BY JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. TREE REMOVALS PLAN

TREE REMOVALS PLAN

| X | X |

REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM ASSIGNED SERIAL NUMBER 20152360845 IN ACCORDANCE WITH PA ACT 287 OF 1974, AS AMENDED BY PA ACT 121 OF 2008, ENTITLED "UNDERGROUND UTILITY LINE PROTECTION LAW." THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA, VIA THE PENNSYLVANIA ONE CALL SYSTEM A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION. (800) 242-1776.

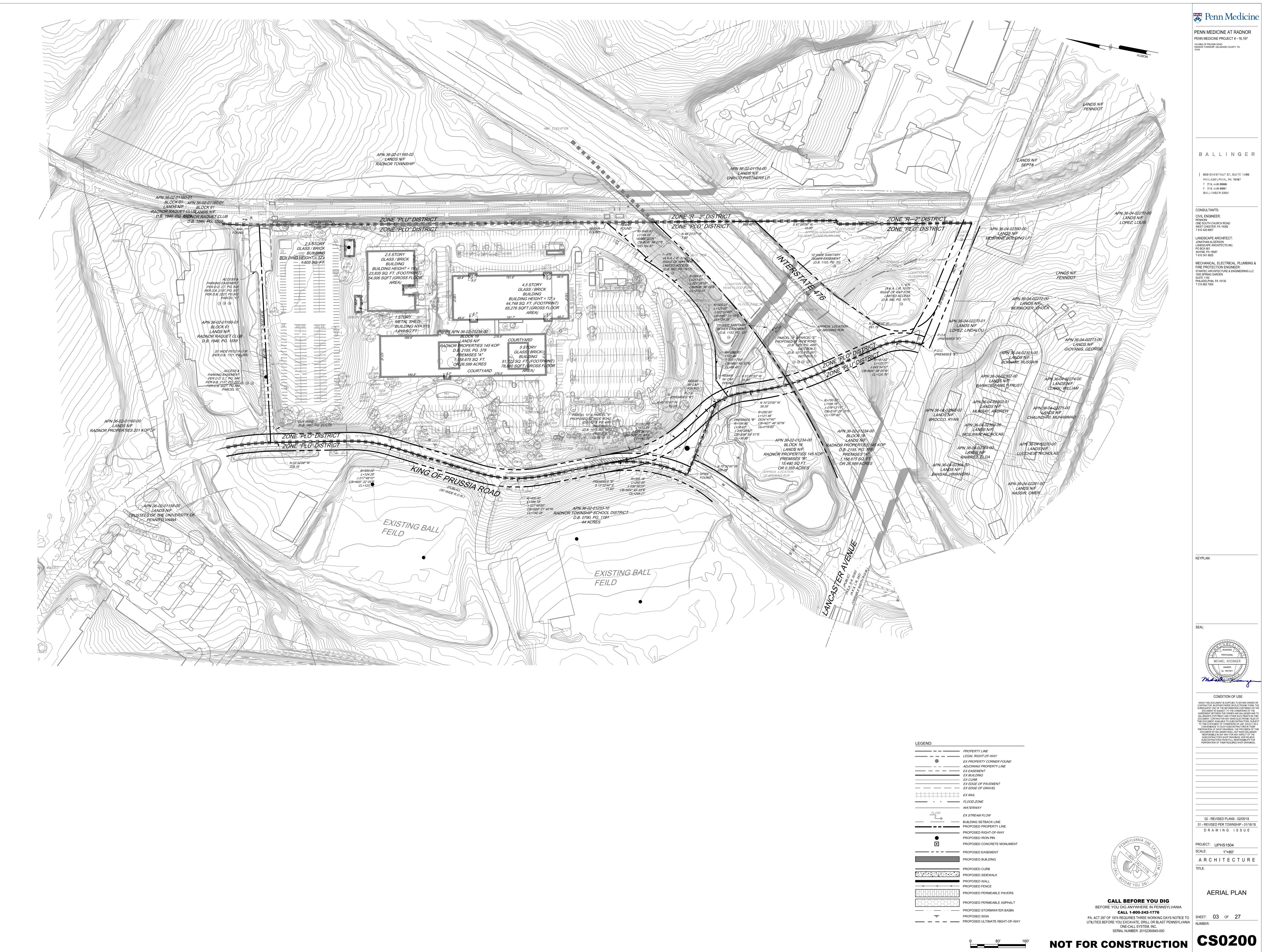
COMPANY: AT&T ATLANTA COMPANY: PECO ENERGY 2315 SALEM RD F11 CONYERS, GA. 30013 450 S HENDERSON RD SUITE B KING OF PRUSSIA, PA. 19406 CONTACT: NANCY SPENCE nspence@ems.att.com CONTACT: NIKKIA SIMPKINS EMAIL: nikkiasimpkins@usicllc.com COMPANY: WINDSTREAM ADDRESS: 929 MARTHAS WAY COMPANY: LEVEL 3 COMMUNICATIONS LLC HIAWATHA IA 52233 ADDRESS: 2400 N GLENVILLE DAMAGE GROUP PERSONNEL RICHARDSON, TX 75082 CONTACT: LEVEL 3 OPERATOR PERSONNEL COMPANY: COMCAST CABLEVISION relo@level3.com ADDRESS: 110 SPRINGBROOKE BLVD ASTON, PA 19014 COMPANY: ZAYO BANDWITH RICH KAIN ADDRESS: 1060 HARDEES DR UNIT H ABERDEEN, MD 21001 richard_kain@cable.comcast.com CONTACT: GEORGE HUSS COMPANY: AQUA PENNSYLVANIA INC george.huss@zayo.com 762 W LANCASTER AVE BRYN MAWR, PA 19010 COMPANY: VERIZON PENNSYLVANIA LLC CONTACT: STEVE PIZZI ADDRESS: 180 SHEREE BLVD STE 2100 ROOM N/A sbpizzi@aquaamerica.com **FXTON PA 19341** CONTACT: KELLY BLOUNT COMPANY: SOUTHEASTERN PA TRANSPORTATION AUTHORITY EMAIL: kelley.b.blount@verizon.com 1234 MARKET ST 12TH FL ADDRESS: COMPANY: RADNOR TOWNSHIP PHILADELPHIA, PA 1910 CONTACT: DAVID MONTVYDAS ADDRESS: 301 IVEN AVENUE WAYNE, PA 19087 EMAIL: dmontvydas@septa.org CONTACT: STEVE NORCINI

snorcini@radnor.org

SIGN TABLE:

YMBOL	SIGN CHARACTERISTICS	PENNDOT #	SIZE	
A	STOP	R1-1	30"X30"	
B	RESERVED PARKING	R7-8	12"X18"	
	VAN ACCESSIBLE	R7-8B	12"X6"	
D	RESERVED PARKING PENALTIES	R7-8F	12"X18"	
E	NO TRUCK SIGN	R5-2	30"X30"	
E	NO PARKING SYMBOL/ARROW	R7-302	12"X18"	
G	EMERGENCY AND AUTHORIZED VEHICLES ONLY	R5-101	24"X30"	

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 SHEET: 02 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA | NUMBER: ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000



PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER:
STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

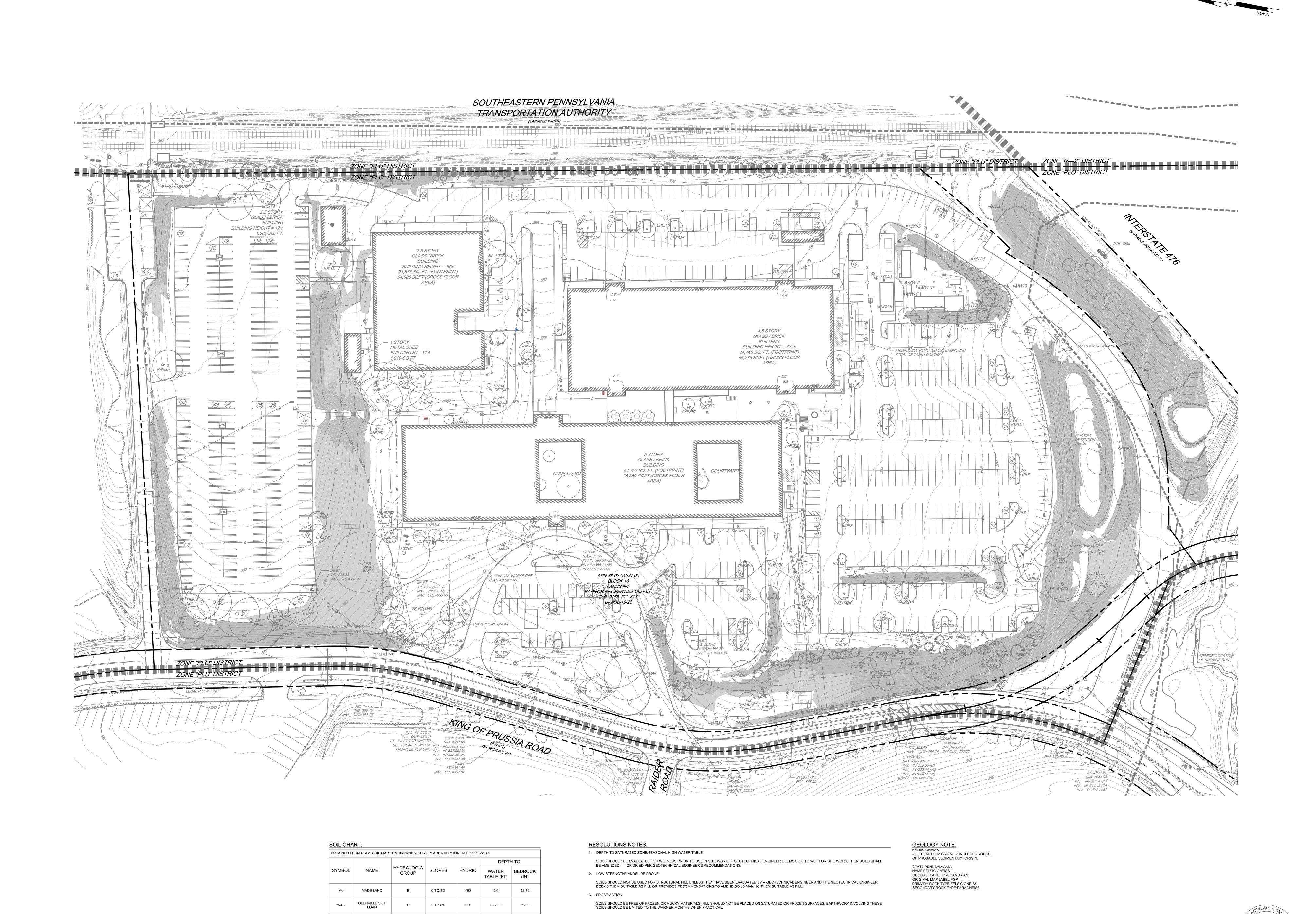
MICHAEL KISSINGER ENGINEER No. PE073971 Middle SYL Dange

WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS.

02 - REVISED PLANS - 02/05/18

01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

AERIAL PLAN



SOILS SHOULD BE EVALUATED FOR WETNESS PRIOR TO USE IN SITE WORK. IF GEOTECHNICAL ENGINEER DEEMS SOIL TOO WET FOR SITE WORK, THEN SOILS SHALL

SOILS SHALL BE STABILIZED, WITH EITHER TEMPORARY OR FINAL STABILIZATION, IN AREAS WHERE EARTHWORK IS DELAYED OR STOPPED FOR FOUR CONSECUTIVE

SOILS SHOULD NOT BE USED FOR STRUCTURAL FILL UNLESS THEY HAVE BEEN EVALUATED BY A GEOTECHNICAL ENGINEER AND THE GEOTECHNICAL ENGINEER

AREAS OF EMBANKMENTS WITH PIPES PASSING THROUGH THEM SHALL HAVE ANTI-SEEP COLLARS INSTALLED PER THE PENNSYLVANIA DEPARTMENT OF

BE AMENDED OR DRIED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

ENVIRONMENTAL PROTECTION'S (PA DEP) EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM.

DEEMS THEM SUITABLE AS FILL OR PROVIDES RECOMMENDATIONS TO AMEND SOILS MAKING THEM SUITABLE AS FILL.

0 TO 3%

3 TO 8%

BUILDING

BASEMENTS

NOT LIMITED

HIGH MODERATE VERY LIMITED

HIGH

LIMITATIONS

0.5-3.0

SOMEWHAT VERY

60-120

0.32

0.43

RESOLUTION

SEE RESOLUTION

NOTES

SEE RESOLUTION

NOTES

SEE RESOLUTION

NOTES

SEE RESOLUTION

NOTES

EASILY ERODIBLE

SHRINK/SWELL

CALIFON LOAM

CHANNERY SILT

SYMBOL | FROST | PIPES | BUILDING | WITH

Me | MODERATE | MODERATE |

Penn Medicine

PENN MEDICINE AT RADNOR
PENN MEDICINE PROJECT # - 16.197

145 KING OF PRUSSIA ROAD
RADNOR TOWNSHIP, DELAWARE COUNTY, PA
19104

BALLINGER

| 833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 446 3900 F 215 446 3901 BALLINGER.COM

CONSULTANTS:

CIVIL ENGINEER:
PENNONI
ONE SOUTH CHURCH ROAD
WEST CHESTER, PA 19382
T 610 429 8907

T 610 429 8907

LANDSCAPE ARCHITECT:
JONATHAN ALDERSON
LANDSCAPE ARCHITECTS INC.

1500 SPRING GARDEN

SUITE 1100 PHILADELPHIA, PA 19130

LANDSCAPE ARCHITECTS INC.
PO BOX 661
WAYNE, PA 19087
T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING &
FIRE PROTECTION ENGINEER:
STANTEC ARCHITECTURE & ENGINEERING LLC

PLAN:

REGISTERED

PROFESSIONAL

MICHAEL KISSINGER

ENGINEER

No. PE073971

CONDITION OF USE

WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS.

01 - REVISED PER TOWNSHIP - 01/16/18

DRAWING ISSUE

PROJECT: UPHS1504

SCALE: 1"=40'

SCALE: 1"=40'

A R C H I T E C T U R E

TITLE:

EXISTING CONDITIONS PLAN

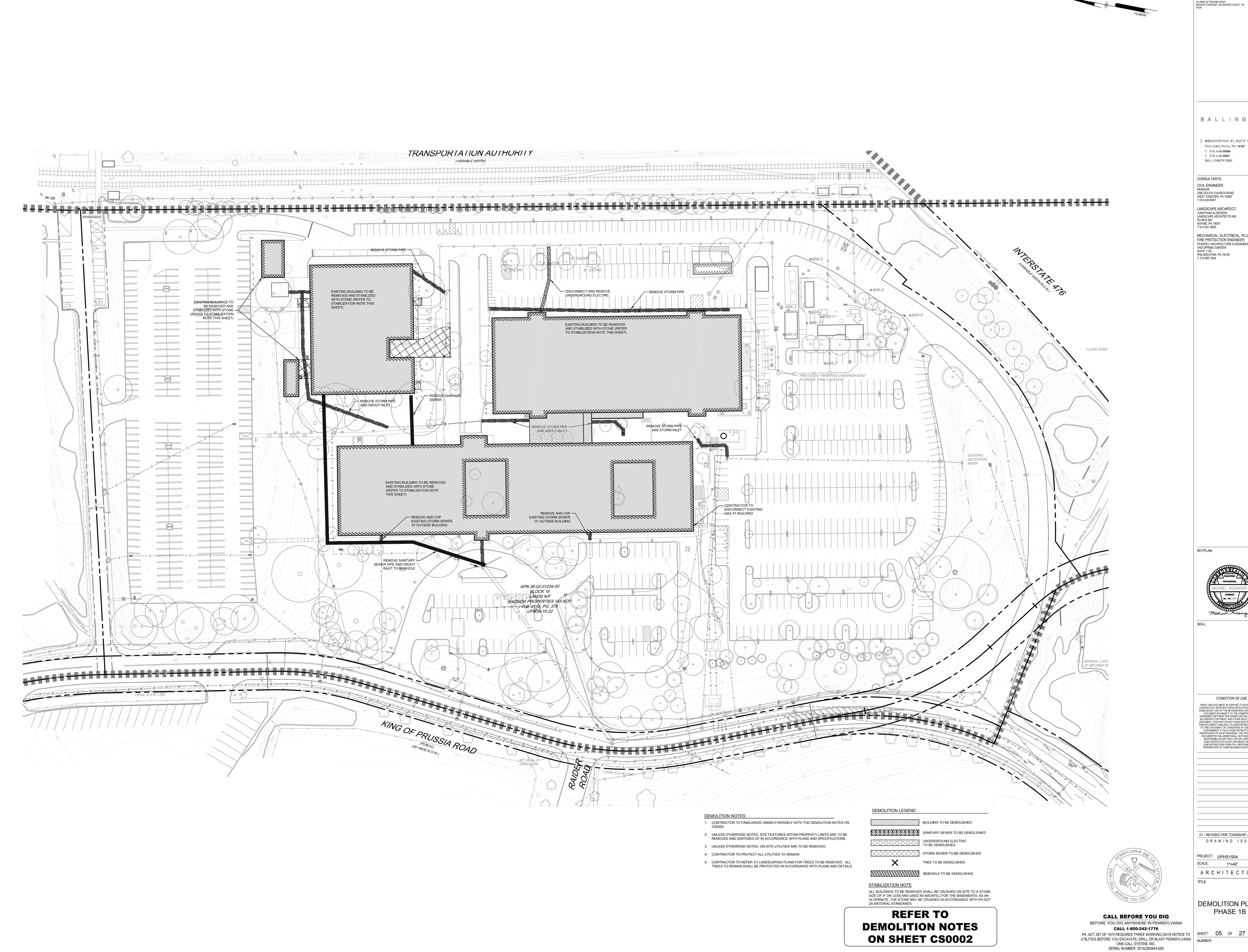
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.

SERIAL NUMBER: 20152360845-000

CALL BEFORE YOU DIG

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA

CALL 1-800-242-1776



PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER:

PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

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01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

DEMOLITION PLAN -PHASE 1B

NOT FOR CONSTRUCTION CS0501

PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT:

JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925 MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER:
STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

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01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

DEMOLITION PLAN -PHASE 2 - SITE **FEATURES**

REFER TO DEMOLITION NOTES ON SHEET CS0002

DEMOLITION LEGEND

BUILDING TO BE DEMOLISHED

SIDEWALK TO BE DEMOLISHED

FENCE TO BE DEMOLISHED CURB TO BE DEMOLISHED

TREE TO BE DEMOLISHED

AREA TO BE MILLED AND OVERYLAYED

AREA TO BE DEMOLISHED

1. CONTRACTOR TO FAMILIARIZE HIMSELF/HERSELF WITH THE DEMOLITION NOTES ON

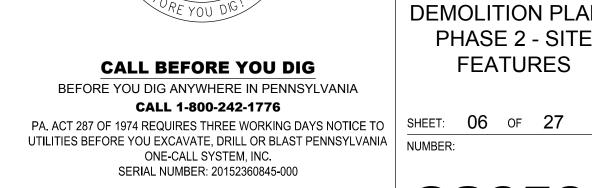
2. UNLESS OTHERWISE NOTED, SITE FEATURES WITHIN PROPERTY LIMITS ARE TO BE

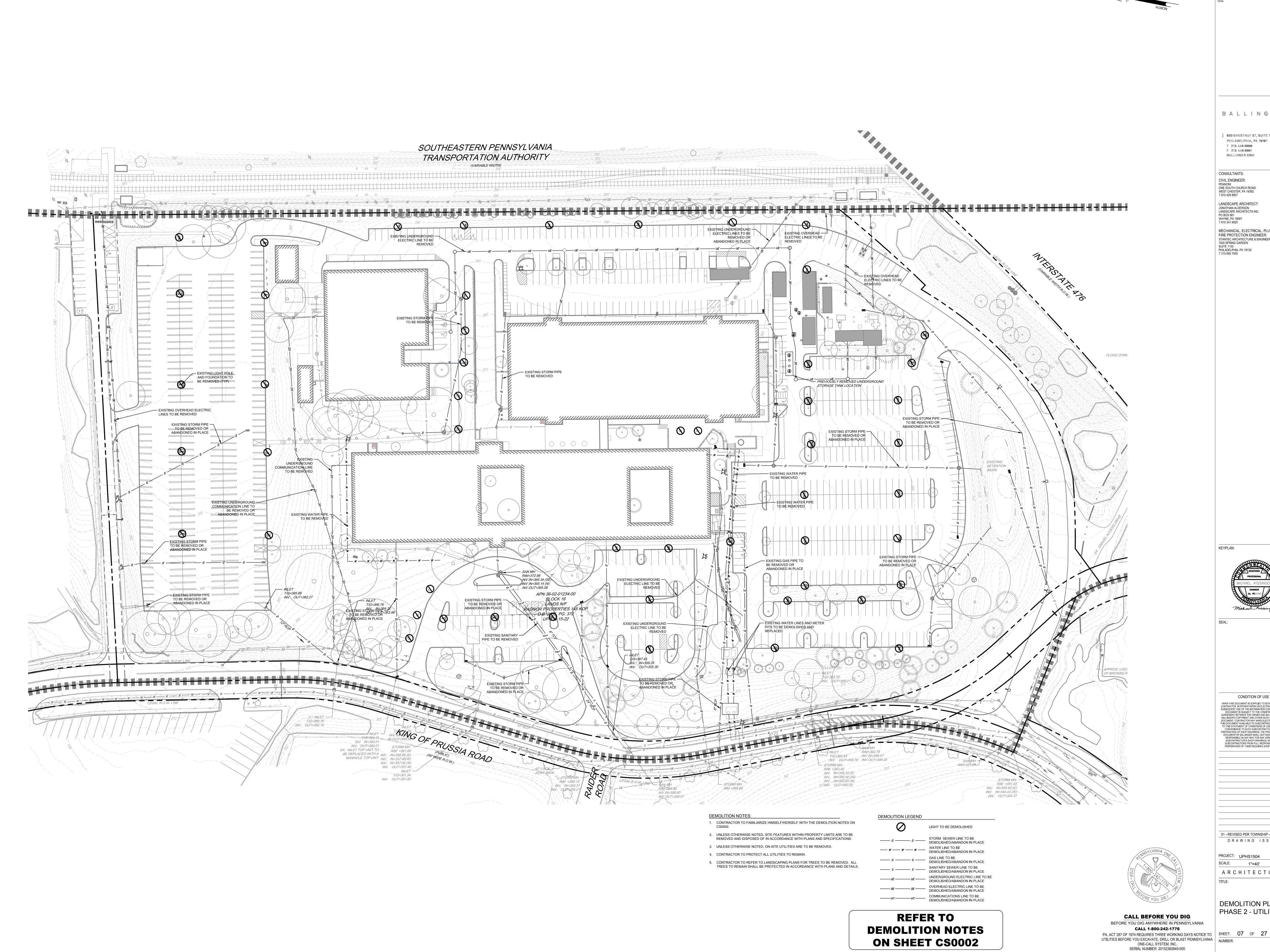
3. UNLESS OTHERWISE NOTED, ON-SITE UTILITIES ARE TO BE REMOVED.

4. CONTRACTOR TO PROTECT ALL UTILITIES TO REMAIN.

REMOVED AND DISPOSED OF IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

5. CONTRACTOR TO REFER TO LANDSCAPING PLANS FOR TREES TO BE REMOVED. ALL TREES TO REMAIN SHALL BE PROTECTED IN ACCORDANCE WITH PLANS AND DETAILS.





PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 446 3900 F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER:

PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

CONDITION OF USE WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PERPERATION OF THEIR REQUIRED SHOP DRAWING

01 - REVISED PER TOWNSHIP - 01/16/18

DRAWING ISSUE PROJECT: UPHS1504 ARCHITECTURE

DEMOLITION PLAN -PHASE 2 - UTILITIES

NOT FOR CONSTRUCTION

PENN MEDICINE AT RADNOR
PENN MEDICINE PROJECT # - 16.197

145 KING OF PRUSSIA ROAD
RADNOR TOWNSHIP, DELAWARE COUNTY, PA

BALLINGER

| 833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 3900
F 215 446 3901
BALLINGER.COM

CONSULTANTS:

CIVIL ENGINEER:
PENNONI
ONE SOUTH CHURCH ROAD
WEST CHESTER, PA 19382

T 610 429 8907

LANDSCAPE ARCHITECT:
JONATHAN ALDERSON
LANDSCAPE ARCHITECTS INC.
PO BOX 661

WAYNE, PA 19087
T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING &
FIRE PROTECTION ENGINEER:
STANTEC ARCHITECTURE & ENGINEERING LLC
1500 SPRING GARDEN
SUITE 1100
PHILADELPHIA, PA 19130
T 215 665 7000

PROFESSIONAL

MICHAEL KISSINGER

ENGINEER

SEAL:

CONDITION OF USE

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01 - REVISED PER TOWNSHIP - 01/

01 - REVISED PER TOWNSHIP - 01/16/18
DRAWING ISSUE

PROJECT: UPHS1504

SCALE: 1"=80'

ARCHITECTURE

BOUNDARY PLAN

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.

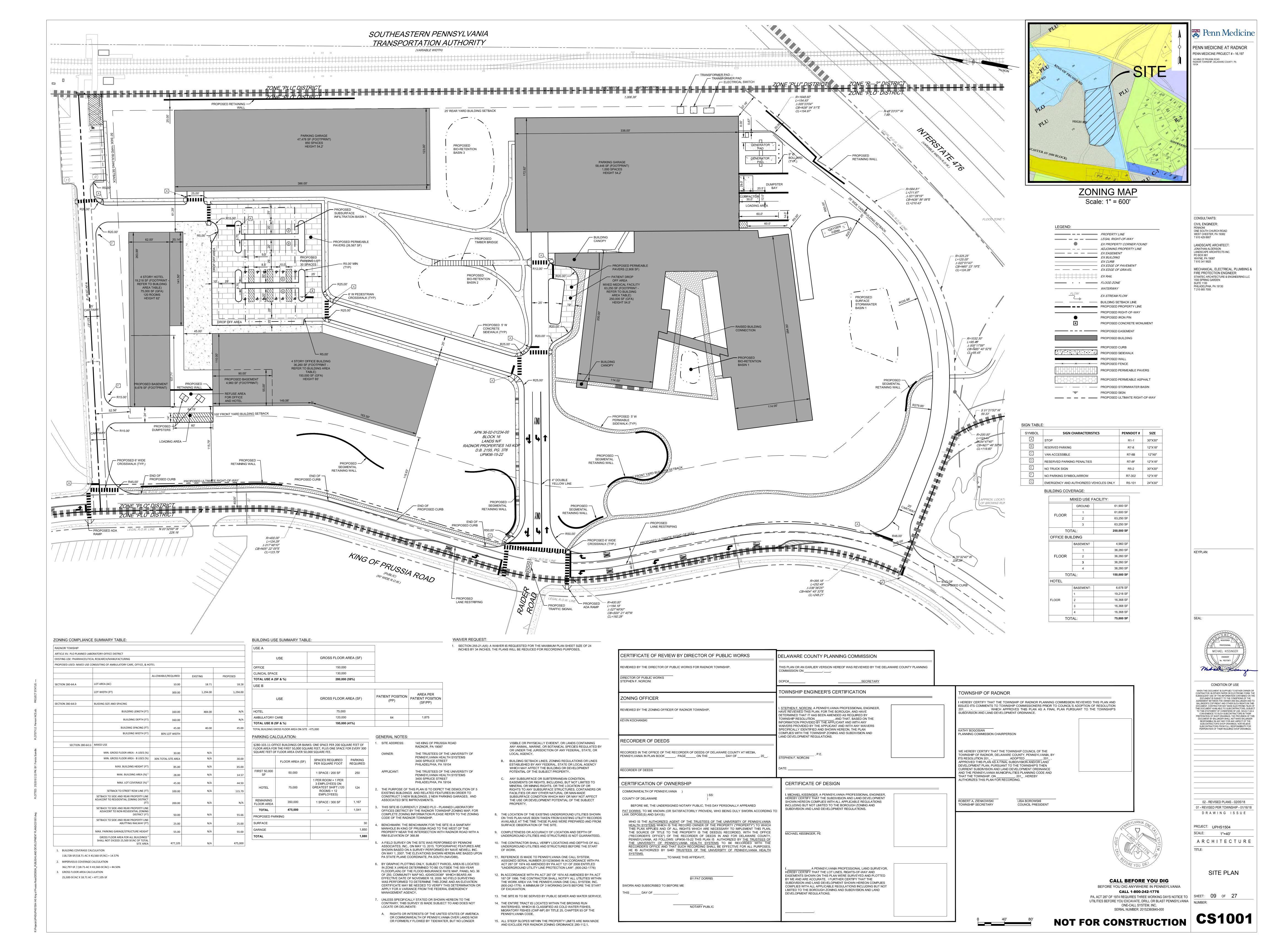
SHEET: 08 OF 27

NUMBER:

CALL BEFORE YOU DIG

SERIAL NUMBER: 20152360845-000

ONSTRUCTION CS090



PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

ENGINEER CONDITION OF USE

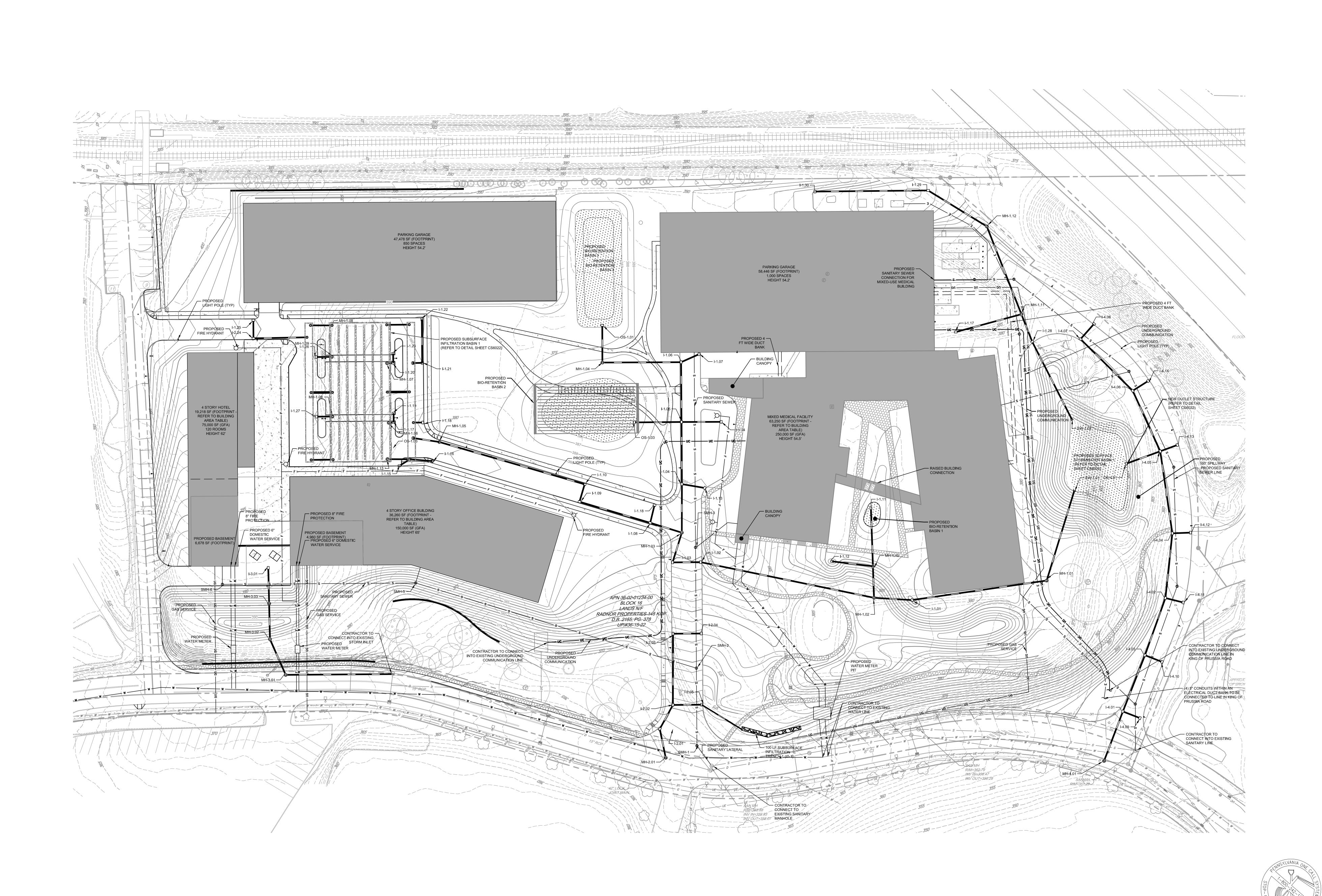
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02 - REVISED PLANS - 02/05/18 01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

GRADING PLAN

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 SHEET: 10 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA
ONE-CALL SYSTEM, INC.
SERIAL NUMBER: 20152360845-000



PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

> MICHAEL KISSINGER CONDITION OF USE

KEYPLAN:

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02 - REVISED PLANS - 02/05/18 01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 ARCHITECTURE

UTILITY PLAN

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 SHEET: 11 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER:

BALLINGER

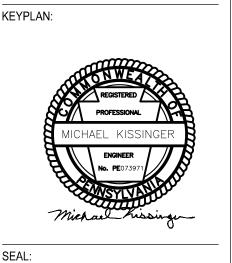
833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3900** F 215 446 3901 BALLINGER.COM

CIVIL ENGINEER:

CONSULTANTS:

LANDSCAPE ARCHITECT JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: SUITE 1100 PHILADELPHIA, PA 19130



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01 - REVISED PER TOWNSHIP - 01/16/18

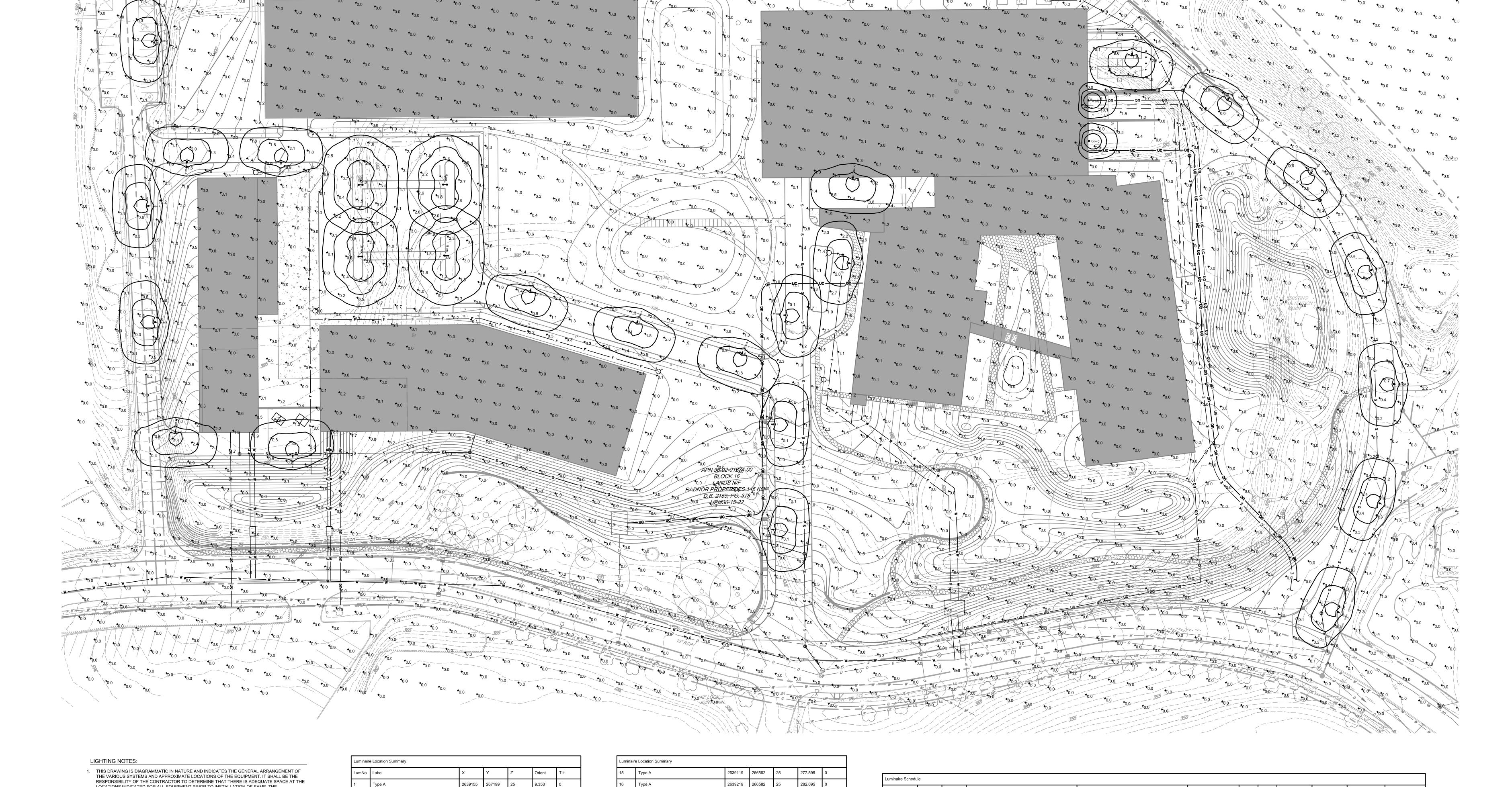
DRAWING ISSUE PROJECT: UPHS1504

ARCHITECTURE

LIGHTING PLAN

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 SHEET: 12 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC.

SERIAL NUMBER: 20152360845-000



2639045 265916 25

2639370 266052 25

2639456 266259 25

2639356. 266285.4 15

2639185 266503.4 25

150.698

LOCATIONS INDICATED FOR ALL EQUIPMENT PRIOR TO INSTALLATION OF SAME. THE

3. CONTRACTOR IS RESPONSIBLE FOR PERFORMING THE WORK AND CONSTRUCTING ALL

2. MATERIAL QUANTITIES SHOWN ON THE DRAWINGS ARE INTENDED TO ASSIST IN DEFINING THE SCOPE OF THE WORK. IT IS NOT A COMPLETE LISTING OF ALL MATERIALS REQUIRED TO PERFORM

COMMENCEMENT OF CONSTRUCTION.

APPROVED REPRESENTATIVE.

EMPLOYED ON THE PROJECT.

REPRESENTATIVE.

NECESSARY TO COMPLETE THE LIGHTING PLAN.

U.L. LABEL. PROVIDE ONLY NEW UNDAMAGED EQUIPMENT.

11. SITE LIGHTING SHALL MEET IESNA FULL-CUTOFF CRITERIA.

9. CONTRACTOR SHALL OBTAIN ALL PERMITS.

CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD, PRIOR TO THE

THE WORK. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES

PROPOSED IMPROVEMENTS AS SHOWN ON THE PLAN AND DETAIL SHEETS. CONTRACTOR IS

4. PERFORM ALL CONSTRUCTION AND WORKMANSHIP IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, ALL REGULATIONS AND CODES OF ALL JURISDICTIONAL

AUTHORITIES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA STANDARDS.

5. ALL WORK AND MATERIALS SHALL BE INSPECTED BY THE TOWNSHIP ENGINEER AND/OR THEIR

7. CONTRACTOR RESPONSIBLE FOR THE CONDUIT RUNS OR DIRECT BURIAL ELECTRIC SERVICE.

10. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER CONTRACTORS

8. ALL EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC. AND SHALL BEAR THE

6. FINAL LOCATION OF LIGHT FIXTURES AND POLES SHALL BE APPROVED BY OWNERS

RESPONSIBLE FOR VERIFYING QUANTITIES AND NO ALLOWANCE WILL BE MADE FOR ANY CLAIM THAT THE BID WAS BASED ON INCOMPLETE INFORMATION PROVIDED ON THE QUANTITY LIST.

2639168 267018 25

2639185 266932 25

2639113 266917 25

2639074 266596 25

2639085 266709 25

2639096 266824 25

2639275 267253 25

2639105 267228 25

2638988 267198 25

2638882 267158 25

Type B

100.491

100.491

171.806 0

102.529

192.47

LDD Lum. Watts

0.900 0.800 130.48

BACK-BACK

LEOTEK ELECTRONICS USA CORP.

LEOTEK ELECTRONICS USA CORP.

lluminance

lluminance

lluminance

lluminance

uminance

Illuminance

Calculation Summary

Access Drive

Island Areas

Parking Areas

oading Dock Areas

Parking Garage Access Drive

Raider Road Entrance

Rear Access Drive

Leotek Electronics USA, LLC. 1955 Lundy

AR13-15M-MV-NW-3-DB-700

AR13-15M-MV-NW-3-DB-700

ES1-24H-MV-NW-FT-XX-700

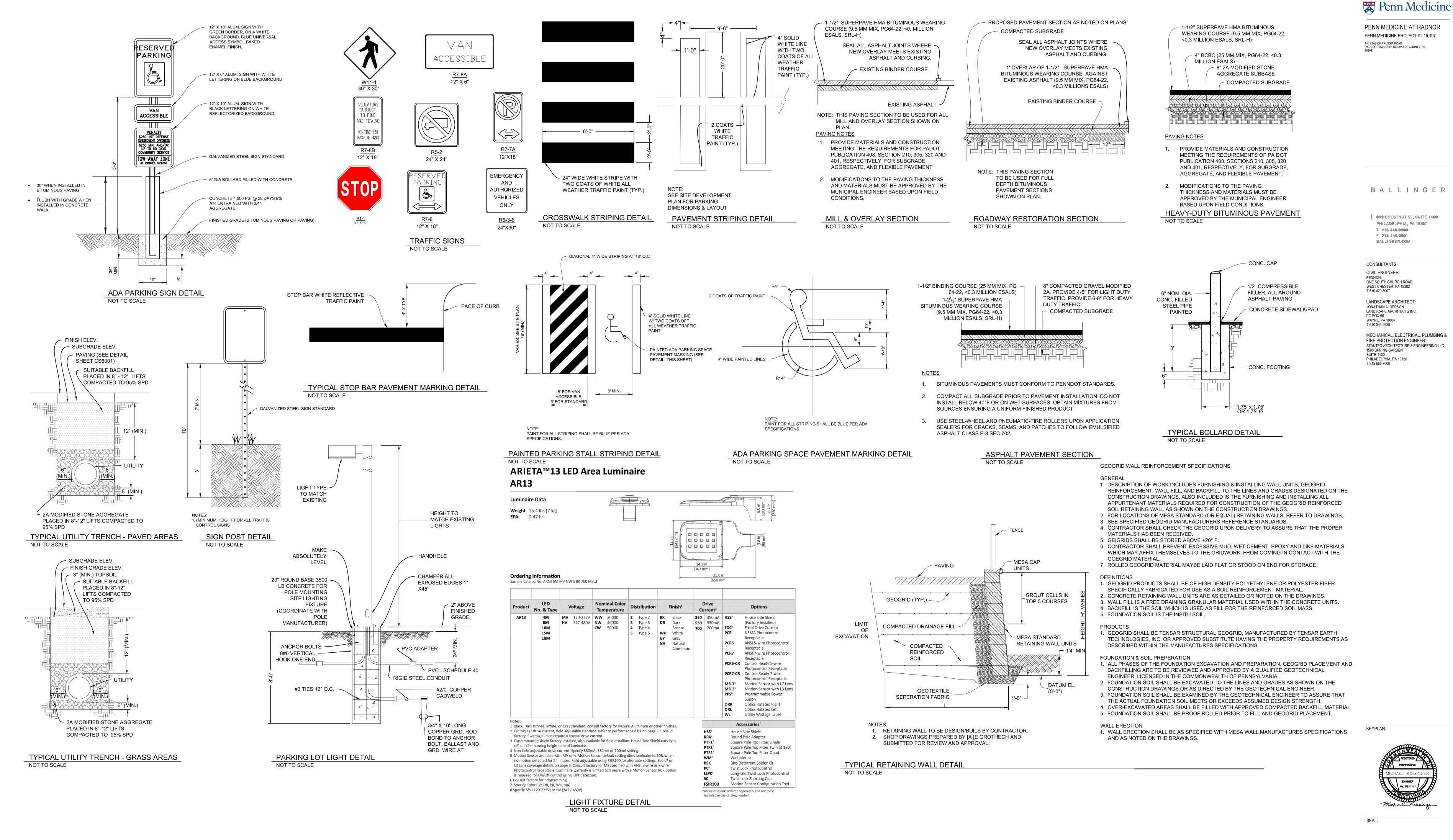
Cutoff Class

Full Cutoff

Full Cutoff

Semi-Cutoff

Type III



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01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

SITE DETAILS

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 SHEET: 13 OF 27

ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER:

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 446 3900 F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000

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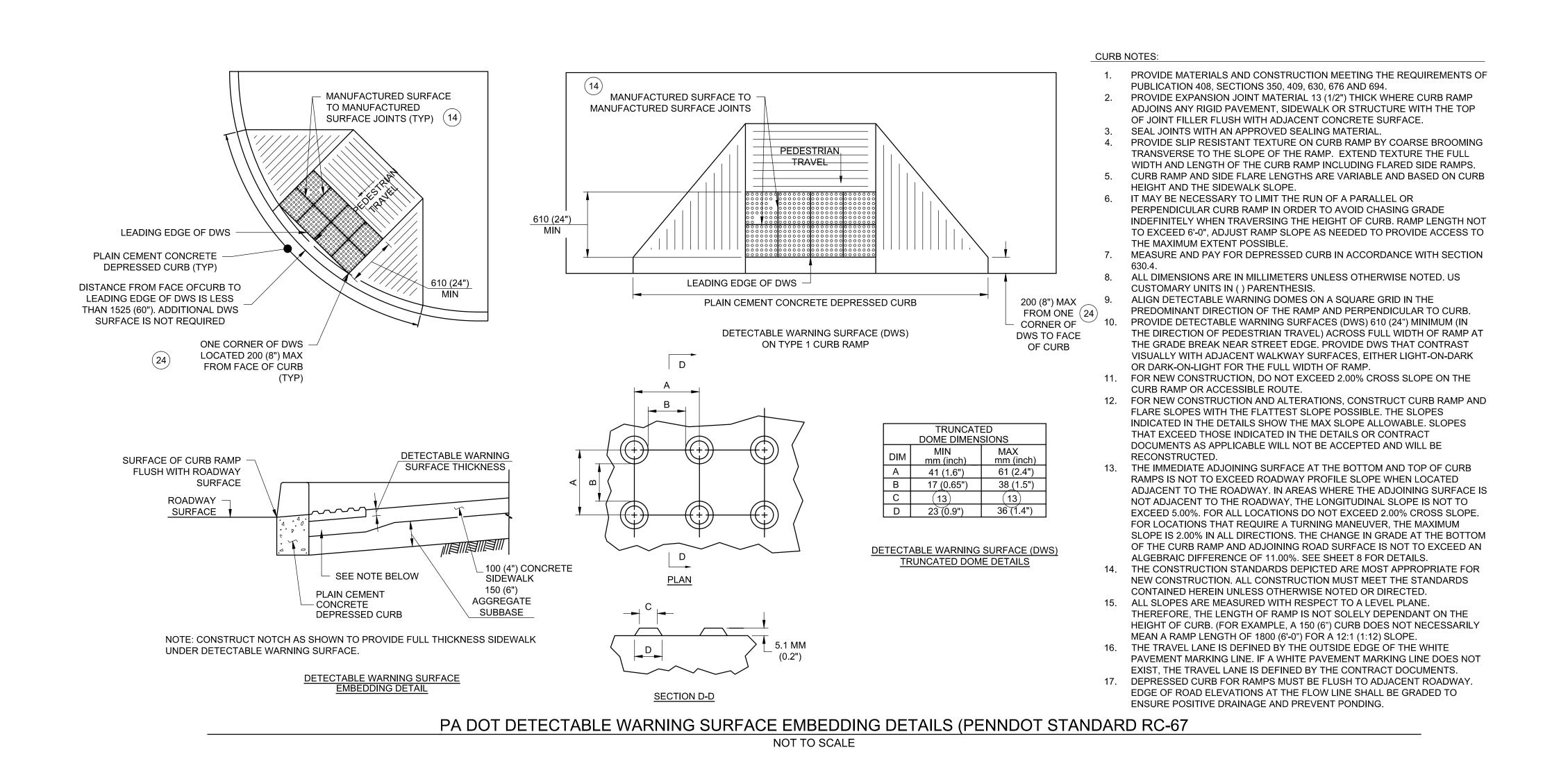
ARCHITECTURE

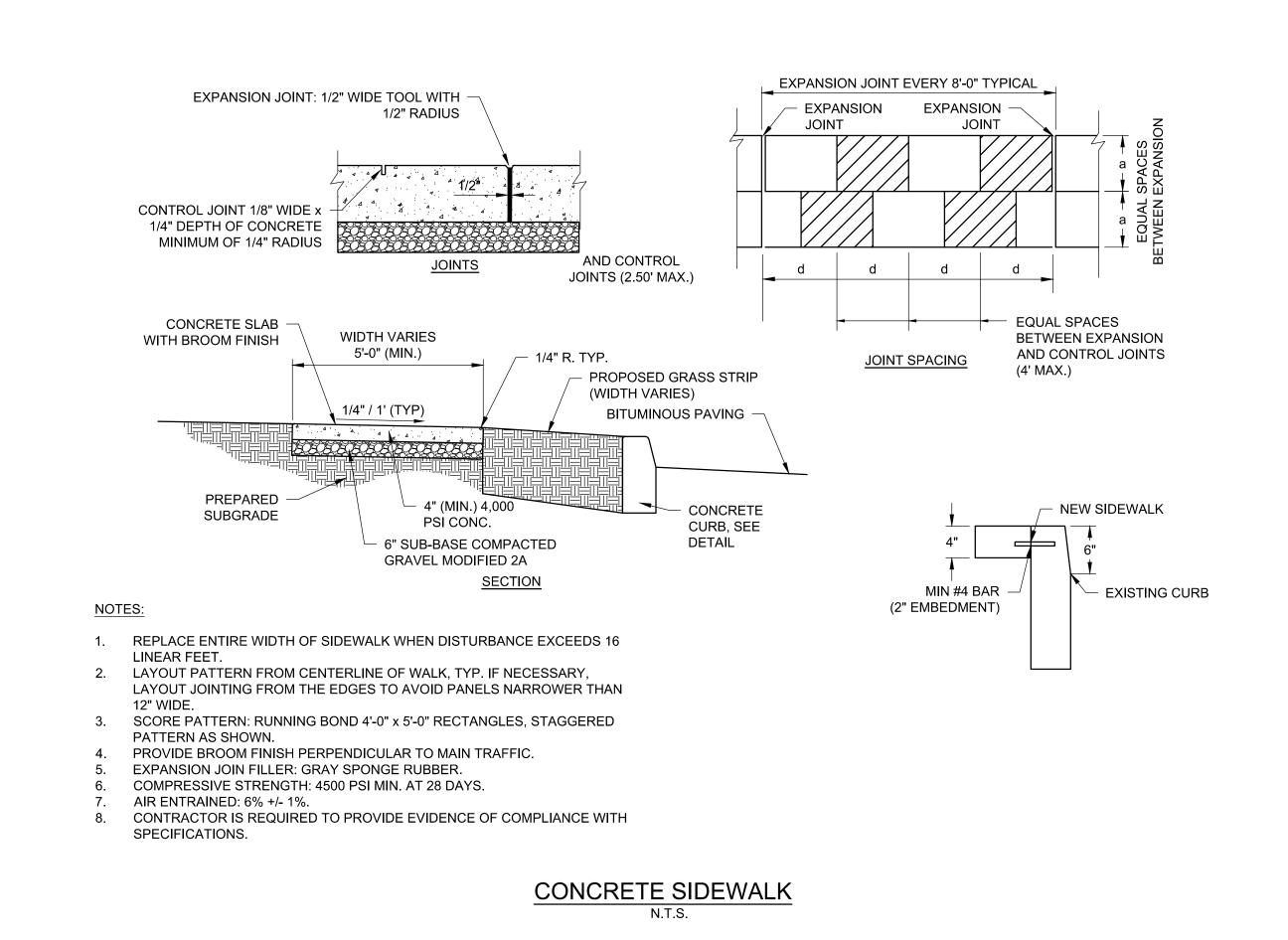
SITE DETAILS

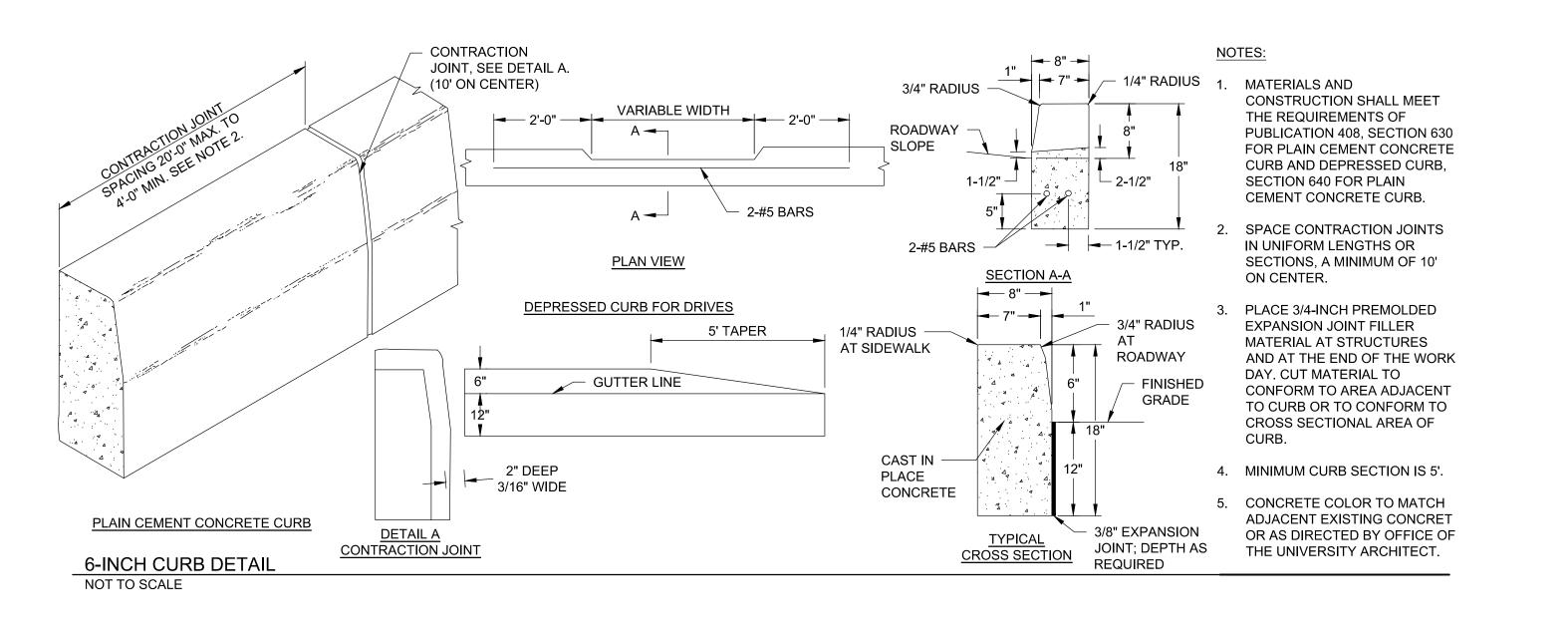
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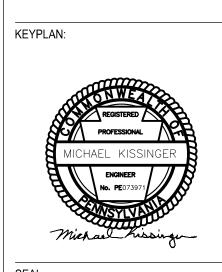
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CIVIL ENGINEER: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

CONSULTANTS:

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ARCHITECTURE

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PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO SHEET: 15 OF 27 SERIAL NUMBER: 20152360845-000

REFER TO DETAIL SHEETS

CS9501 TO CS9504 FOR ALL

STORMWATER BASIN DETAILS

NOT FOR CONSTRUCTION

WEEPHOLE DETAIL

(SEE GENERAL NOTE 15 ON SHEET 1

CONCRETE TOP UNIT - TYPE M PRE CAST INLET BOXES (PENNDOT STANDARD RC-46)

1212 (47-3/4")

19x64 (3/4"x2-1/2")

PERIMETER BAR,

∠ 22 BEARING BARS AT
∠ 6 TRANSVERSE RODS
D |

STRUCTURAL STEEL GRATE BICYCLE SAFE

1212 (47-3/4")

SECTION C-C

(1-1/2") 509 (20") (1-1/2")

673 (26-1/2")

635 (25") —

SECTION D-D

TRANSVERSE ROD ->

PERIMETER BAR 25 (1") 25 (1")

BEARING BAR

9.5Ø x 1175 ROD

(3/8"Ø x 46 1/4" ROD)

41.3 (1-5/8") CLR.

(TYP. EXCEPT

(TYP.)

AT 92 (3 5/8") C TO C TYP (TYP.)

19 (3/4")

PERIMETER BAR

SEE DETAIL C

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

AND NOTE 6

ON SHEET 7

19 (3/4")

PERIMETER BAR

BEARING BAR

4 REQ'D.

CORNER DETAILS

ON SHEET 7

<u></u> CLR.

49 (1-15/16")

(AT ENDS)

51 (2") C TO C TYP.

(3/8"x3-1/2"x25" BAR)

(SEE SECTION D-D)

9.5x89x635 BAR

19 (3/4")
PERIMETER BAR

PERIMETER BAR

19 (3/4")

- GRATE (STRUCTURAL STEEL SHOWN) 1. FOR ADDITIONAL NOTES, SEE SHEETS 1 - 3. PIPE OPENING (OUTSIDE DIAMETER) INSIDE FACE = 6350 (25"0) MAX. 2. STANDARD INLET BOXES SHOWN, PROVIDE TOP SLABS FOR OTHER INLET BOX TYPES. OUTSIDE FACE = 6600 (26"0) MAX. DOWEL BARS CONCRETE (SEE RC-45M)— 3. SEE RC-45M FOR DETAILS FOR THE CONCRETE TOP UNIT 152 (6") 1150 (3'-9¼") TOP UNITS, FRAMES, AND GRATES. ← GRADE ADJUSTMENT RING, SEE NOTE 4. 4. PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. 408, SECTION 714. SEE RC-45M FOR DETAILS. IN BULLETIN 15. - INLET BOX <u>B0X</u> 4. PROVIDE A TRANSITION SLAB BETWEEN TWO SEPARATE INLET BOX SIZES, WHEN TWO SEPARATE INLET BOX SIZES ARE USED. (SEE TRANSITION SLAB NOTES.) 300 (1′-0") MIN. (TYP.) 5. CLEAR COVER FOR STEEL: WALLS: 38 mm (1½") FOOTINGS [BOTTOM SLAB]: TOP COVER: 50 mm (2") BOTTOM COVER: 38 mm (1½") PIPE OPENING (OUTSIDE DIAMETER)
INSIDE FACE = 11750 (4640) MAX. SIDE COVER: 38 mm (1½") OUTSIDE FACE = 12000 (471/4"0) MAX. PLAN - INLET BOXES NOTE: COST OF NO. 2A COARSE AGGREGATE COMPACTED NO. 2A CONCRETE TOP UNIT - TYPE C COARSE AGGREGATE MINIMUM WALL THICKNESS: 152 mm (6") IS INCIDENTAL TO THE INLET BOX. 300 (1'-0") MIN. THICKNESS 7. THICKNESS OF WALL IS PERMITTED TO VARY FROM SECTION TO SECTION. INSIDE FACE OF WALLS MUST ALIGN BETWEEN SECTIONS. OF INLET BOX GRATE (STRUCTURAL / CPIPE OPENING-STEEL SHOWN) INLET BOX SUBBASE PREPARATION DETAIL / TYPE M CONCRETE (SEE FIELD CONSTRUCTION NOTES ON SHEET 1) 2) 13 (½") MAX. AT INSIDE FACE TOP UNIT 2) 25 (1") MAX. AT OUTSIDE FACE GRADE ADJUSTMENT RING, SEE NOTE 4. WALL THICKNESS THE CALCULATED LOAD ON THE DEVICE. INSIDE FACE — ___INLET BOX 25 mm (1") PER SIDE. 50ø (2"ø) FORMED WEEPHOLE -COST OF NO. 57 COARSE AGGREGATE AND GEOTEXTILE IS INCIDENTAL TO 0.4 m³ (½ CU. YD.) OF 1 PIPE CLEARANCE 25 (1") MIN. THE INLET BOX.

NO. 57 COARSE AGGREGATE

[PUB 408, SECTION

1001.3 (c) & (d)]

AT EACH WEEPHOLE WRAPPED IN GEOTEXTILE, CLASS 1

50 (2") MAX.

49 (1-15/16")CLR.

— SEE TYPICAL

ON SHEET 7

CORNER DETAILS

41.3 (1-5/8") CLR. TYP.

EXCEPT AT ENDS

9.5x89x635

(3/8"x 3-1/2"x25")

BEARING BAR

9.5Ø x 1175

FABRICATION

SEE NOTE 9

ON SHEET 7

(3/8Ø x 46-1/4")

ROD

TRANSVERSE

<u>64 (2-1/2")</u>

- TRANSVERSE ROD

(3/8"Ø x46-1/4") TYP.

9.5Ø x1175

BEARING BAR

FINISH GRADE ELEV. -

95% SPD

SUBGRADE ELEV. -

SUITABLE BACKFILL

PLACED IN 8" - 12"

STORM SEWER PIPE -

AS SPECIFIED ON

2A MODIFIED STONE -

PLACED IN 8"-12"

LIFTS COMPACTED

TYPE M INLET

#4 BARS TOP & $^{\sim}$

TYPE M INLET - PENNDOT STANDARD RC-34

BOTTOM (TYP.)

UTILITY PLANS

AGGREGATE

TO 95% SPD

TYPICAL STORM SEWER TRENCH - GRASS AREAS

LIFTS COMPACTED TO

AT ENDS

MIN.

92 (3-5/8")

SEE DETAIL E

DETAIL D

1. FOR ADDITIONAL NOTES, SEE SHEET 1

2. FOR STRUCTURAL STEEL GRATE NOTES, SEE SHEET 7.

(3-1/2")

BAR AND ROD SPACER DETAIL

19x64 (3/4"x 2-1/2") PERIMÈTER BAŔ

9.5Ø x 1175

(3/8"Ø x 46-1/4")

SEE DETAIL D

PRECAST CONCRETE INLET BOX NOTES: 1. CONSTRUCT INLET BOXES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION

\ / ___PIPE_

PIPE OPENING

(AT INSIDE FACE)

PIPE OPENING —

(STANDARD INLET BOX ONLY)

(AT OUTSIDE FACE)

FINISH ELEV.

SUBGRADE ELEV. -

SUITABLE BACKFILL

PLACED IN 8" - 12"

LIFTS COMPACTED

STORM SEWER

SPECIFIED ON

AGGREGATE

TO 95% SPD

TYPICAL STORM SEWER TRENCH - PAVED AREAS

└─ 5/8" MIN.

FERROUS CAST

└─ 1-1/4" MIN.

4" MIN. 🕹

32-1/4"

PLACED IN 8"-12"

LIFTS COMPACTED

── 57-1/4" -

SECTION B-B

PLAN VIEW

1-1/4" X 1-1/4" -

X 1/8" (MIN.)

TYPE M TOP UNIT

UTILITY PLANS

2A MODIFIED STONE ·

TO 95% SPD

PIPE AS

- 8" (MIN.) TOPSOIL

⊱∰: 6" (MIN.)

GRATE (STRUCTURAL

STEEL SHOWN)

TYPE M FRAME (CAST IRON SHOWN)

BE PROVIDED)

INLET BOX

- GRADE ADJUSTMENT

RING (4" MINIMUM GRADE

ADJUSTMENT RING WILL

45-1/4"

SECTION A-A

2. PROVIDE PRECAST CONCRETE INLET BOXES SUPPLIED BY A MANUFACTURER LISTED 3. 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.

- PAVING (SEE DETAIL SHEET CS6001)

PAVING STONE SUBBASE

* NOTE: INLETS OVER 4 FEET DEEP WILL BE CONSTRUCTED WITH INLET

1-1/4" MIN.

* CORNER CONFIGURATION

RESPONSIBILITY AND

SHALL BE APPROVED.

┌─ 1-1/4" MIN.

└─ 1-1/4" MIN. Î

└─ 1/2" MIN.

1-1/4" MIN.

3" MAX.

26-3/4"

STRUCTURE STEEL 3" MAX.

SYMMETRICAL

ABOUT Ç

TYPE M FRAME

MATERIAL FABRICATION FABRICATION

DETAILS ARE FABRICATOR'S

5/8" (MIN.)

INSIDE DIRECTION

1-1/4" 2-1/2"

(MIN.)

∭ (MIN.)

INSIDE DIRECTION

1-1/4" 2-1/2"

4" (MIN.)

4" (MIN.)

SECTION B-B

7 1/4"(MIN.)

SECTION A-A

TOP AND TRANSITION SLABS [TOP AND BOTTOM]: 38 mm (1½")

6. MINIMUM SLAB AND WALL THICKNESS:
MINIMUM TOP SLAB THICKNESS: 203 mm (8") MINIMUM BOTTOM SLAB THICKNESS: 178 mm (7")

8. FABRICATOR IS RESPONSIBLE FOR LIFTING, HANDLING AND TRANSPORTATION STRESSES. PROVIDE GALVANIZED STEEL OR PLASTIC LIFTING DEVICES FOR HANDLING AND FILL LIFTING DEVICES WITH NON-SHRINK GROUT AFTER INSTALLATION. PROVIDE LIFTING DEVICES WITH A MINIMUM CAPACITY OF AT LEAST FOUR TIMES

10. 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/m ($rac{1}{4}$ "/FOOT) PER SIDE TO A MAXIMUM OF 11.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. 12. PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOX. 13.PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN THE TRANSITION SLAB AND THE ADJACENT TOP AND BOTTOM SECTIONS. 14.PROVIDE EITHER A SHIPLAP OR KEYED JOINT BETWEEN PRECAST SECTIONS.

15.SEGMENT HEIGHTS: MINIMUM HEIGHT: RISER SECTIONS = 305 mm (1'-0")BASE SECTIONS = 610 mm (2'-0")MAXIMUM HEIGHT = 2438 mm (8'-0")

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 9991 BALLINGER.COM

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PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

DRAINAGE DETAILS

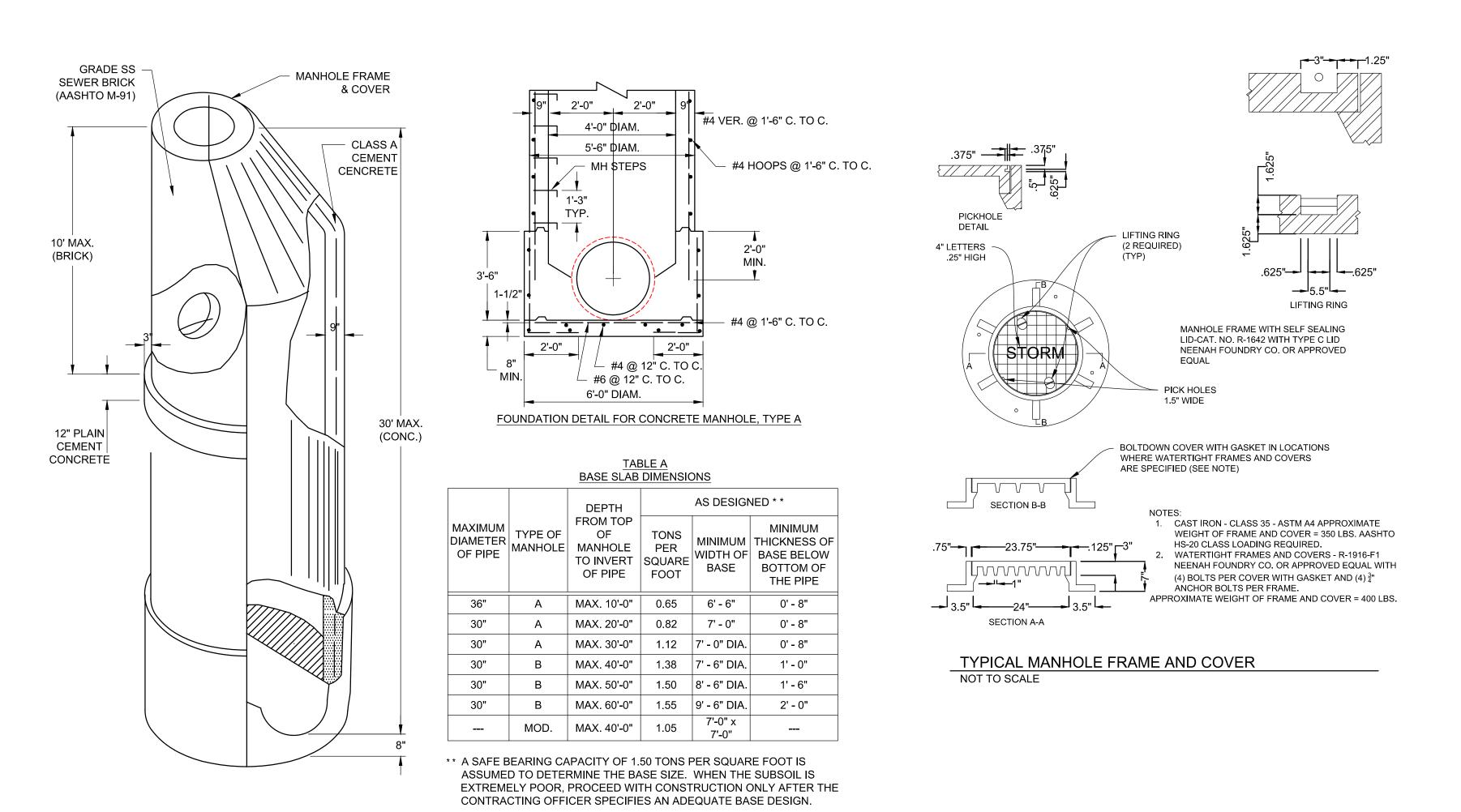
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REFER TO DETAIL SHEETS

CS9501 TO CS9504 FOR ALL

STORMWATER BASIN DETAILS





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

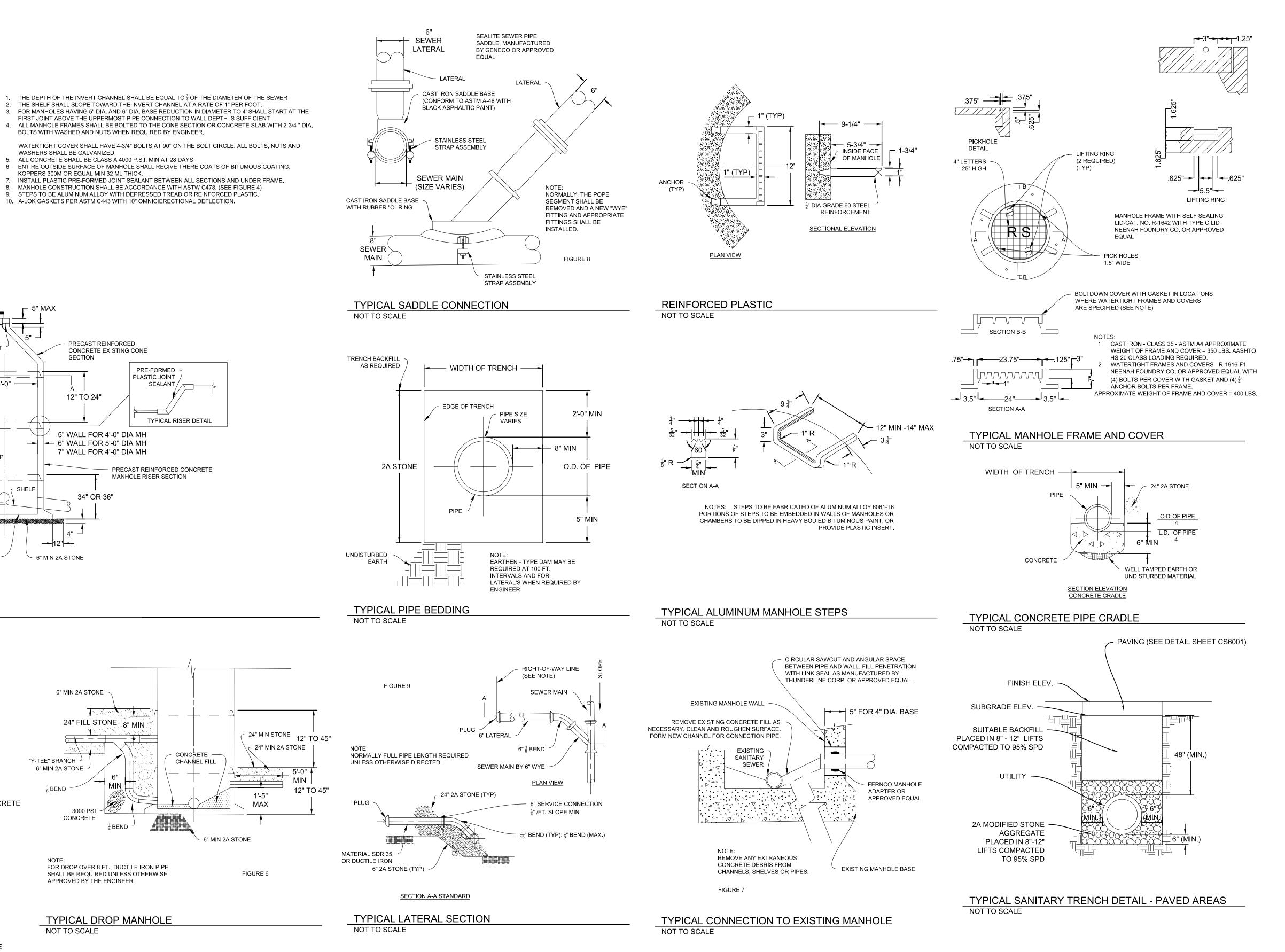
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. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO $rac{3}{4}$ OF THE DIAMETER OF THE SEWER

THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.

BOLTS WITH WASHED AND NUTS WHEN REQUIRED BY ENGINEER.

5. ALL CONCRETE SHALL BE CLASS A 4000 P.S.I. MIN AT 28 DAYS.

PRECAST REINFORCED

5" WALL FOR 4'-0" DIA MH 6" WALL FOR 5'-0" DIA MH

6" MIN 2A STONE

6" MIN 2A STONE <

"Y-TEE" BRANCH

6" MIN 2A STONE

24" FILL STONE 8" MIN

3000 PSI

APPROVED BY THE ENGINEER

NOT TO SCALE

 $\frac{1}{4}$ BEND

FOR DROP OVER 8 FT., DUCTILE IRON PIPE SHALL BE REQUIRED UNLESS OTHERWISE

TYPICAL DROP MANHOLE

└ 6" MIN 2A STONE

CONCRETE

7" WALL FOR 4'-0" DIA MH

CONCRETE EXISTING CONE

WASHERS SHALL BE GALVANIZED.

MANHOLE STEP

TYPICAL STANDARD MANHOLE NOT TO SCALE

12"

4" MIN. ─

STANDARD WYE BRANCH

SECTION OF 12" -

CAST IRON PIPE

- CONCRETE

BLOCK MIN.

C.I. MAIN

CLEANOUT DETAIL

WIDTH O.D. + 12"/*

PLAN BELOW LINE A-A

PRECAST CONCRETE

PRECAST REINFORCED ~

CONCRETE BASE

12" MAX (EXCEPT AT

ENTRANCE

16" MAX)

 $-\frac{3}{4}$ " DIA. OF LARGEST PIPE

ADJUSTER PAD

5"

4" MIN CONCRETE CHANNEL FILL

- 12" CAST IRON CLEANOUT

CAP WITH BRONZE FINISH

- REDUCER

— STD. 1/8" BEND

- 4" MIN. CONCRETE **ENCASEMENT WHERE** CLEANOUT IS LOCATED

IN PAVED AREA

3000 PSI CONCRETE

KOPPERS 300M OR EQUAL MIN 32 ML THICK.

FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL DEPTH IS SUFFICIENT

6. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECIVE THERE COATS OF BITUMOUS COATING,

7. INSTALL PLASTIC PRE-FORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.

PRE-FORMED -

PRECAST REINFORCED CONCRETE

MANHOLE RISER SECTION

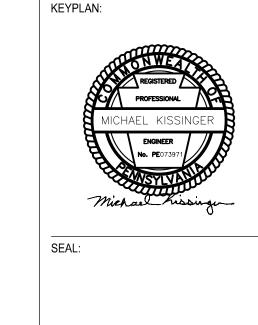
SEALANT/

TYPICAL RISER DETAIL

8. MANHOLE CONSTRUCTION SHALL BE ACCORDANCE WITH ASTW C478. (SEE FIGURE 4)

9. STEPS TO BE ALUMINUM ALLOY WITH DEPRESSED TREAD OR REINFORCED PLASTIC.

10. A-LOK GASKETS PER ASTM C443 WITH 10" OMNICIERECTIONAL DEFLECTION.



CONDITION OF USE WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS.

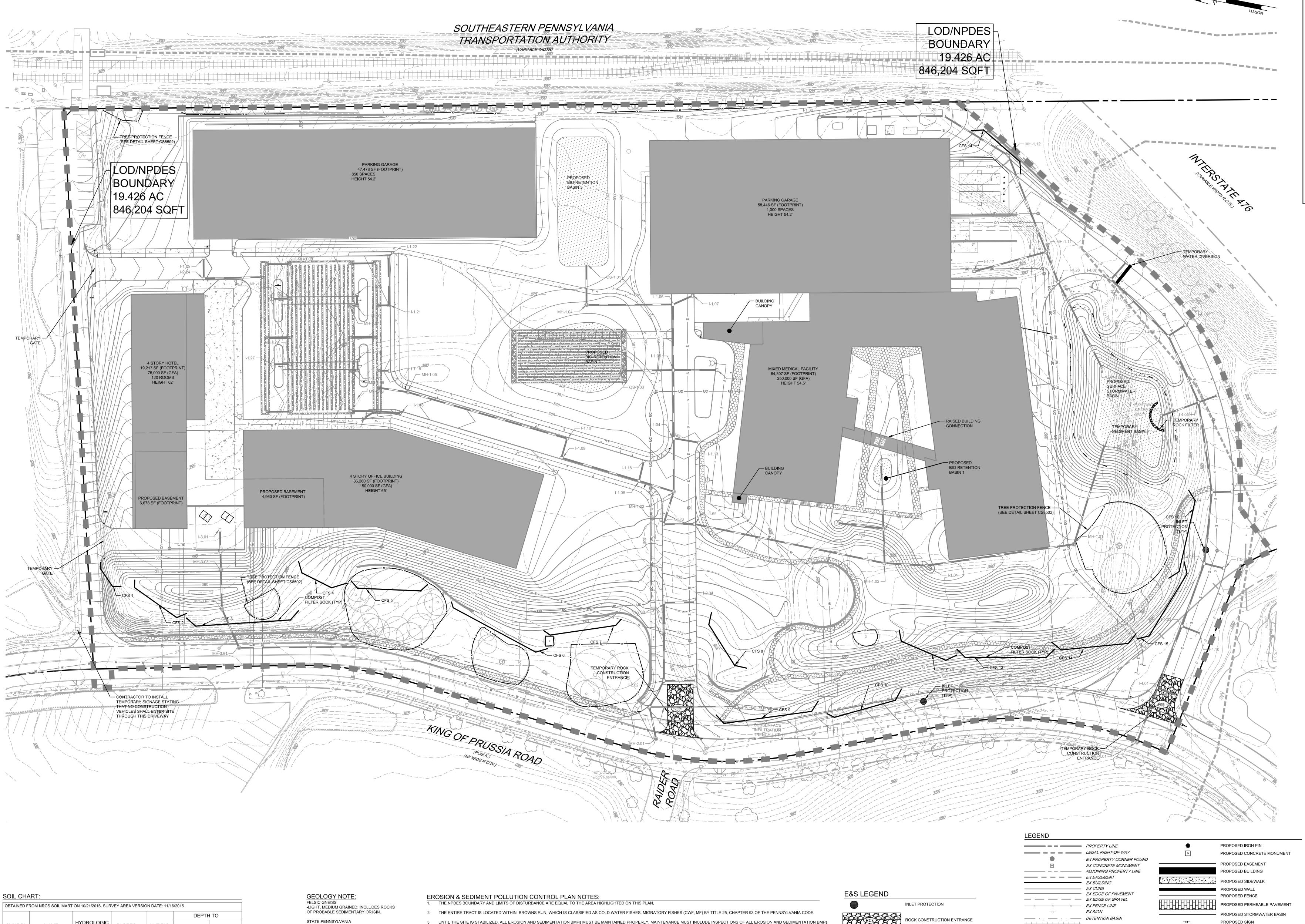
01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

SANITARY SEWER **DETAILS**

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA CALL 1-800-242-1776 PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO SHEET: 17 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

CALL BEFORE YOU DIG



EX RAIL • • FLOOD ZONE EX STREAM FLOW EXISTING STEEP SLOPE (14-20%) EXISTING VERY STEEP SLOPE (>20%) EX LANDSCAPING EX TREE ROW ---- 361 --- EX MINOR CONTOUR ————360——— EX MAJOR CONTOUR ==== EX STORM SEWER LINES EX UTILITY MANHOLE EX STORM SEWER INLET EX STORMWATER MANHOLE ------OE -------- EX OVERHEAD ELECTRICAL LINES -----UE ------- EX ELECTRICAL LINES EX UTILITY POLE —— EX WATER LINES EX FIRE HYDRANT EX WATER VALVE ——— S ———— S ——— EX SANITARY SEWER LINES

SOILS TEXT

PROPOSED ULTIMATE RIGHT-OF-WAY

---- BUILDING SETBACK LINE

PROPOSED PROPERTY LINE

OD/ NPDES BOUNDARY

TOPSOIL STOCKPILE

EROSION CONTROL MATTING

TEMPORARY SKIMMER

RIP RAP APRON

ROCK FILTER

DIVERSION SOXX

CFS-12 COMPOST FILTER SOCK AND SIZE

— —— —— BAFFLE

TREE PROTECTION

PROPOSED LIGHT POLE PROPOSED GORE STRIPING PROPOSED WHEEL STOP PROPOSED FINISHED FLOOR ELEVATION ------360 PROPOSED MAJOR CONTOUR SEDIMENT AND EROSION LINE PROPOSED PARKING LOT LINE PROPOSED ROAD MARKINGS PROPOSED CURB PROPOSED ROAD GUARD PROPOSED CLEAN OUT INFILTRATION TEST POINT PROPOSED STORM MANHOLE PROPOSED INLET ------UE -------- PROPOSED ELECTRICAL PROPOSED ELECTRIC MANHOLE EX SANITARY MANHOLE PROPOSED UTILITY POLE ---- W ---- W ---- PROPOSED WATER LINES EX SANITARY CLEAN OUT PROPOSED TELEPHONE MANHOLE EX NATURAL GAS LINES BENCHMARK PROPOSED WATER VALVE ---- SOILS BOUNDARY LINES PROPOSED FIRE HYDRANT

PROPOSED FIRE PROTECTION

PROPOSED SANITARY SEWER MANHOLE

—— s —— s —— PROPOSED SANITARY SEWER LINES

CALL 1-800-242-1776 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000 NOT FOR CONSTRUCTION

USGS MAP

CALL BEFORE YOU DIG BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS NOTICE TO SHEET: 18 OF 27

CONDITION OF USE

WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE OF SUCH SUBCONTRACTORS IN THEIR

CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER

RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS.

01 - REVISED PER TOWNSHIP - 01/16/18

DRAWING ISSUE

ARCHITECTURE

EROSION AND

SEDIMENT CONTROL

PROJECT: UPHS1504

PENN MEDICINE AT RADNOR

PENN MEDICINE PROJECT # - 16.197

CIVIL ENGINEER:

WAYNE, PA 19087 T 610 341 9925

1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130

ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC.

MECHANICAL, ELECTRICAL, PLUMBING &

STANTEC ARCHITECTURE & ENGINEERING LLC

FIRE PROTECTION ENGINEER:

OBTAINED FROM NRCS SOIL MART ON 10/21/2016. SURVEY AREA VERSION DATE: 11/16/2015 WATER BEDROCK GROUP TABLE (FT) | (IN) MADE LAND 0 TO 8% 5.0 42-72 GLENVILLE SILT 3 TO 8% YES 0.5-3.0 72-99 GnB2 LOAM CALIFON LOAM YES 0.5-3.0 72-99 CaaA 3 TO 8% 60-120 CHANNERY SILT LIMITATIONS RESOLUTION NOTES SYMBOL FROST PIPES BUILDING WITH BASEMENTS SOMEWHAT SEE RESOLUTION Me | MODERATE | MODERATE | LIMITED LIMITED LIMITED NOTES VERY VERY SEE RESOLUTION LIMITED LIMITED NOTES

HIGH NOT LIMITED

LIMITED LIMITED

LIMITED LIMITED

SOMEWHAT

VERY

NAME:FELSIC GNEISS GEOLOGIC AGE: PRECAMBRIAN ORIGINAL MAP LABEL:FGP PRIMARY ROCK TYPE:FELSIC GNEISS

SECONDARY ROCK TYPE:PARAGNEISS

SEE RESOLUTION

SEE RESOLUTION

AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST. ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PREFORMED 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 BMP'S FAILURE AND ANY POLLUTION EVENTS. b. ALL STEPS TAKEN TO, REDUCE, ELIMINATE AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE. c. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED 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 RESIST SLIDING AND OTHER MOVEMENTS. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY

VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH

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

6. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS. 7. SEDIMENT TRACKED ONTO 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 SWEPT 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. 9. UPON REQUEST, THE PERMIT HOLDER AND/OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR

10. CONTRACTOR IS TO ENSURE THAT THE BIO-RETENTION AREAS ARE PROTECTED FROM SEDIMENTATION UNTIL ALL FLOW SOURCES TO THAT AREA ARE FULLY STABILIZED. ONCE THE BIO-RETENTION AREA IS CONSTRUCTED, IMMEDIATELY INSTALL FILTER SOXX ALONG THE PERIMETER OF THE BIO-RETENTION AREA TO PREVENT SEDIMENT FROM ENTERING THE BIO-RETENTION AREA. THE SILT SOXX MUST REMAIN IN PLACE UNTIL THE CONTRIBUTING AREA TO THE BIO-RETENTION AREA ACHIEVES 70% UNIFORM STABILIZATION. IMMEDIATELY INSTALL INLET PROTECTION ON ALL NEW INLETS.

CONSULTANTS: CIVIL ENGINEER: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

> LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN PHILADELPHIA, PA 19130 T 215 665 7000

MONITORING, INSPECTION, AND REPORTING REQUIREMENTS: VISUAL INSPECTIONS

THE PERMITTEE AND CO PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOTICE OF TERMINATION (NOT) BY THE DEPARTMENT OR LOCAL CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL. TO ASCERTAIN THAT E&S BMPS AND PCSM BMPS ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

- INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND CO PERMITTEE(S) SHALL, WITHIN 24 PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING
- 3. STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE
- 4. THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.
- UPON REDUCTION, LOSS, OR FAILURE OF THE BMPS, THE PERMITTEE AND CO PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPS OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPS.
- 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/OR CO PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B. SECTION 1.C. SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER. IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE
- COMPLETION CERTIFICATE AND FINAL PLANS THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER. THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR

THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT

1. A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS. 2. THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION. NONCOMPLIANCE REPORTING WHERE E&S, PCSM OR PPC BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR

- 1. ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY. OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION. 2. THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
- REDUCTION, LOSS, OR FAILURE OF THE BMP'S REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE

TERMINATION OF COVERAGE

- RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT <u>WWW.PACODE.COM.</u> PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPS AND PCSM BMPS ON
 - WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH

THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

MAINTENANCE NOTES:

STANDARD E&S CONTROL PLAN NOTES

PROPERLY AND COMPLETELY IMPLEMENTED.

WITHIN THESE PLANS

OWNER / OPERATOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND

FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREA OF THOSE

PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25,

NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

THE PROJECT SITE AT ALL TIMES. THE OPERATOR SHALL ASSURE THAT AN EROSION AND

CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR

SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE DELAWARE COUNTY

4. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION & SEDIMENT CONTROL PLAN IS

5. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR

SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL

INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM

6. THE E&S CONTROL PLAN MAPPING MUST DISPLAY A PA ONE CALL SYSTEM INCORPORATED

7. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE TO BE INCAPABLE OF

IMMEDIATELY BY THE OWNER/ DEVELOPER TO ELIMINATE SUCH PROBLEMS.

LAND, AND ALL CONSTRUCTION SHALL BE CONDUCTED WITHIN THESE LIMITS.

THE LIMITS OF WORK SHOWN ON THIS PLAN ARE THE REAL EXTENT REQUIRED FOR

9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL

FOR ACCELERATED EROSION AND/OR SEDIMENT POLITITION, THE OPERATOR SHALL

10. BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL

PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE FFFECTIVENESS OF THE

FROM THE DELAWARE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE

IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR

11. TOPSOIL TAKEN FROM CONSTRUCTION AREAS SHALL BE SEEDED WITH A VEGETATIVE COVER

12. ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL

13. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT TRAP

14. ANY DISTURBED AREA, ON WHICH ACTIVITY HAS CEASED FOR AN EXTENDED AMOUNT OF TIME,

15. DISTURBED AREAS WHICH ARE NOT AT FINISH GRADE AND WHICH WILL BE RE-DISTURBED

16. FILLS GREATER THAN 3:1 SLOPE AND CUTS GREATER THAN 2-1/2:1 SHALL BE SEEDED AND

MULCHED, AND PROTECTED WITH EROSION CONTROL MATTING (SEE INSTALLATION

17. CHANNELS, SEDIMENTATION BASINS, SEDIMENTATION TRAPS AND STOCKPILES MUST BE

19. DUST CONTROL SHALL BE PROVIDED BY THE CONTRACTOR AT ALL TIMES DURING

18. THERE IS TO BE NO EARTH DISTURBANCE OR VEGETATIVE CLEARING IN AREAS OF STAKED (OR

20. CONSTRUCTION VEHICLES LEAVING THE SITE SHALL NOT DEPOSIT ANY MATERIAL OUTSIDE OF THE PROJECT SITE BOUNDARIES AND/OR A PUBLIC RIGHT-OF-WAY. ANY MATERIAL DEPOSITED

21. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS

22. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A

NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE

23. UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE PERMITTEE AND COPERMITTEE SHALL

ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED. OPERATED. AND

REPLACEMENT, REGARDING, RESEEDING, AND RESTABILIZATION SHALL BE PERFORMED

24. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT

25. AT STREAM CROSSINGS, A 50' BUFFER AREA SHOULD BE MAINTAINED. WITHIN THE BUFFER,

26. SEDIMENT TRACKED ONTO ANY ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE

27. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN

28. SHOULD ANY AREAS OF EXCAVATION BE FOUND TO CONTAIN CONTAMINANTS THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE DESIGN ENGINEER.

MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BEST MANAGEMENT PRACTICE FACILITIES AND MAINTAIN AND MAKE AVAILABLE TO THE

DELAWARE COUNTY COUNTY CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS ALL MAINTENANCE WORK INCLUDING CLEANING REPAIR

BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST

CLEARING. SOD DISTURBANCES. EXCAVATION AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZEI

ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING WATER FROM

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 SWEPT INTO ANY

ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER

TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE

STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION

NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE

EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER

MOVEMENTS. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING

PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE

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

MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT

INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN

FENCED) WETLANDS. EARTH DISTURBANCE WITHIN THESE AREAS WITHOUT THE REQUIRED.

PERMITS WILL RESULT IN POTENTIAL VIOLATION OF COMMONWEALTH AND FEDERAL WETLANDS

MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH

WITHIN ONE YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEED

MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISH GRADE OR WILL NOT

BE RE-DISTURBED WITHIN ONE YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND

BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG

FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE BMP'S.

APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS

THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY

IMPLEMENTED. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE

POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL

AND STOCKPILED FOR REUSE IN FINISH GRADING. STOCKPILE HEIGHTS SHALL NOT EXCEED 35

THE LOW SIDE OF THE PILE. THERE SHALL BE NO EARTH DISTURBANCE WITHIN THE STOCKPILE

FEET. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER. SILT FENCING SHALL BE INSTALLED ON

IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR

APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER,

AND THE DELAWARE COUNTY CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT

LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS

ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO THE DISCHARGE OF OR

CONSTRUCTION. THE CONTRACTOR SHALL ADHERE TO THESE LIMITS IN MINIMIZING DISTURBED

STABILIZING OF SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMPLEMENTED

PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF

3. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT

ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.

INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

SYMBOL INCLUDING THE SITE IDENTIFICATION NUMBER.

ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

DISCHARGING OVER NON-DISTURBED AREAS.

MUST BE APPLIED AT RECOMMENDED RATES.

SEEDED AND MULCHED IMMEDIATELY.

SHALL BE IMMEDIATELY REMOVED.

VEGETATIVE STABILIZATION SPECIFICATIONS.

BE STABILIZED IMMEDIATELY.

ACCOMPLISHED OUTSIDE OF BUFFERS.

ROAD SIDE DITCH, STORM SEWER OR SURFACE WATER.

MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED

1. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED AND

2. THE OPERATOR/CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE

1. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION REPORT LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME WILL BE KEPT ON THE SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

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

WHERE BMP'S 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 BMP'S FAILURE AND ANY POLLUTION EVENTS.

b. ALL STEPS TAKEN TO, REDUCE, ELIMINATE AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE c. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED, AS NECESSARY, AND THEN

RESSEDED. A STRAW COVER SHALL BE APPLIED TO RETAIN THE SEED ALONG WITH AN ANCHORING METHOD DESCRIBED ON THE ATTACHED MULCH ANCHORING GUIDE, UNTIL IT HAS A CHANCE TO ROOT 3. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY, IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE 4. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK: . SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. NOTE: WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGEWAYS IS NOT ACCEPTABLE. 2. ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED

DIMENSIONS BY ADDING ROCK. . INSPECT AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER INSPECTION.

FILTER SOCKS INSPECT AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER INSPECTION. COMPOST FILTER SOCKS ARE TO BE MAINTAINED, AND REPLACED IF NECESSARY, DURING THE ENTIRE CONSTRUCTION PERIOD UNTIL A PERMANENT VEGETATIVE COVER WITHIN THE TRIBUTARY AREA IS

3. CONSTRUCT COMPOST FILTER SOCKS ALONG THE DOWNSTREAM SIDE OF ALL PROPOSED CUT AND FILL 4. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF THE SOCKS.

EROSION CONTROL BLANKETS (CURLEX MAT): 1. CURLEX MAT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. INSPECT AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. NEEDED REPAIRS SHOULD BE INITIATED

IMMEDIATELY AFTER INSPECTION.

INLET PROTECTION: 1. EARTHEN BERM TO BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM TO BE MAINTAINED UNTIL ROAD IS PAVED. SIX INCH ROADWAY ASPHALT BERM TO BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

INSPECT AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER INSPECTION. 3. SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF

1. AT STREAM CROSSINGS, 50' BUFFER AREAS SHOULD BE MAINTAINED. ON BUFFERS, CLEARING, SOD DISTURBANCES, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN 2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG

CLEAN FILL & ENVIRONMENTAL DUE DILIGENCE:

PROCESSED FOR RE-USE).

"MANAGEMENT OF FILL".

INSTRUCTIONS.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON

FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT

IMPORT OR EXPORT MATERIAL FROM THE SITE. THE RESPONSIBILITY FOR PERFORMING

ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH

NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE,

CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE

AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN

OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE

TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN

DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM

3. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL

MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL

QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL

RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF

A REGULATED SUBSTANCE MUST USE FORM EP-001 TO CERTIEY THE ORIGIN OF THE FILL

CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY

RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE

DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT

ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF

TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR

AUDITS ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS. VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY

OF A REGULATED SUBSTANCE. IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED

MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287

FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S

1. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL

BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S

. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION,

THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO

CRUSHED STONE, AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL

AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES,

PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF

DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.

SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET

DEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR

INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF

DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

RECYCLE & DISPOSAL OF MATERIAL:

UNFORESEEN EROSIVE CONDITIONS:

TECHNIQUES INCLUDING BUT NOT LIMITED TO VISUAL PROPERTY INSPECTIONS

PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES,

MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE

QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE

CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE

QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING. IF THE SITE WILL NEED TO

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE.

SITE IS CLEAN FILL, FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY

CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION

3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF

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

6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY

TEMPORARY STABILIZATION & PERMANENT STABILIZATION: 1. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND

2. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.

3. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN. 4. GRADED AREAS ARE TO BE TEMPORARILY SEEDED AND MULCHED IMMEDIATELY FOLLOWING EARTHMOVING PROCEDURES. TEMPORARY SEED SHALL BE ANNUAL RYE GRASS APPLIED AT THE RATES SPECIFIED. MULCH SHALL BE HAY OR STRAW APPLIED AT THE RATE OF AT LEAST 3 TONS PER

POLLUTION CONTROL PROGRAM MANUAL.

6. PRIOR TO CONSTRUCTION SOIL TESTING SHALL BE PERFORMED TO DETERMINE ACTUAL RATES OF FERTILIZER APPLICATION FOR SEEDED AREAS. AT A MINIMUM, ALL TEMPORARILY SEEDED AREAS SHALL HAVE 10-10-10 FERTILIZER APPLIED AT A RATE OF 100 LBS PER 1,000 SQ. YDS. PER TABLE 11.2 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

8. PERMANENTLY SEEDED AREAS SHALL HAVE HAY OR STRAW APPLIED AT THE RATE OF AT LEAST 3

TEMPORARY SEEDINGS FOR CRITICAL AREAS:

5. PRIOR TO CONSTRUCTION SOIL TESTING SHALL BE PERFORMED TO DETERMINE ACTUAL RATES OF LIME APPLICATION. AT A MINIMUM, LIME SHALL BE APPLIED TO ALL TEMPORARILY SEEDED AREAS AT A RATE OF 410 LBS PER 1,000 SQ. YDS. PER TABLE 11.2 OF THE PA DEP EROSION AND SEDIMENT

7. ESTABLISH PERMANENT SEEDING AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETED. PERMANENT SEEDING SHALL BE AT THE RATES SPECIFIED. LIME SHALL BE APPLIED AT A MINIMUM RATE OF 2,480 LBS PER 1,000 SQ. YDS. AND 10-10-20 FERTILIZER APPLIED AT A RATE OF 210 LBS PER 1,000 SQ. YDS. PER TABLE 11.2 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

9. ANY AREAS WHERE HYDROSEED IS USED, MULCH IS NEEDED AT A MINIMUM RATE OF 3 TONS PER

MULCH ANCHORING GUIDE:

Anchoring Method Kind of Mulch to be Anchored or Material MANUAL Mulch Netting Hay or Straw

Staple Anti-Wash/Geojute netting to soil BELTON INDUSTRIES INC. surface according to manufacturer's 8613 ROSWELL ROAD, SUITE 200 recommendations. ATLANTA GEORGIA 30350 1 (800) 225-4099

Manufacturer

How to Apply

ADAPTION TO SOIL-SITE SEEDING RATE CONDITIONS PERCENT BY PERCENT PURE RECOMMENDED WEIGHT LIVE SEED GERMINATION SEEDING DATES

SPECIES OR MIXTURE LBS/1,000-SF LBS/AC ANNUAL RYEGRASS (PENN DOT MAR. 15 TO OCT. 15 | X | X | X | X | 100.0% 98.0% 90.0% FORMULA E) PERMANENT SEEDINGS FOR CRITICAL AREAS:

	PERCENT BY WEIGHT	PERCENT PURE LIVE SEED	PERCENT GERMINATION	SEEDING RATE			ADAPTION TO SOIL-SITE CONDITIONS				
SPECIES OR MIXTURE				LBS/1,000-SF	LBS/AC	RECOMMENDED SEEDING DATES	SHALLOW WELL DRAINED	MOD. DEEP WELL DRAINED	DEEP WELL DRAINED	MOD. WELL DRAINED	SOMEWHAT POORLY TO POORLY DRAINED
WINNING COLORS TALL FESCUE	100.0%	98.0%	90.0%	8	348	APR. 1 TO JUNE 15 OR JULY 25 TO SEPT. 15	Х	х	х	х	Х



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 | SHEET: 19 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA

ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

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KEYPLAN:

PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

EROSION AND SEDIMENT CONTROL

JONATHAN ALDERSON

WAYNE, PA 19087

LANDSCAPE ARCHITECTS INC.

KEYPLAN:

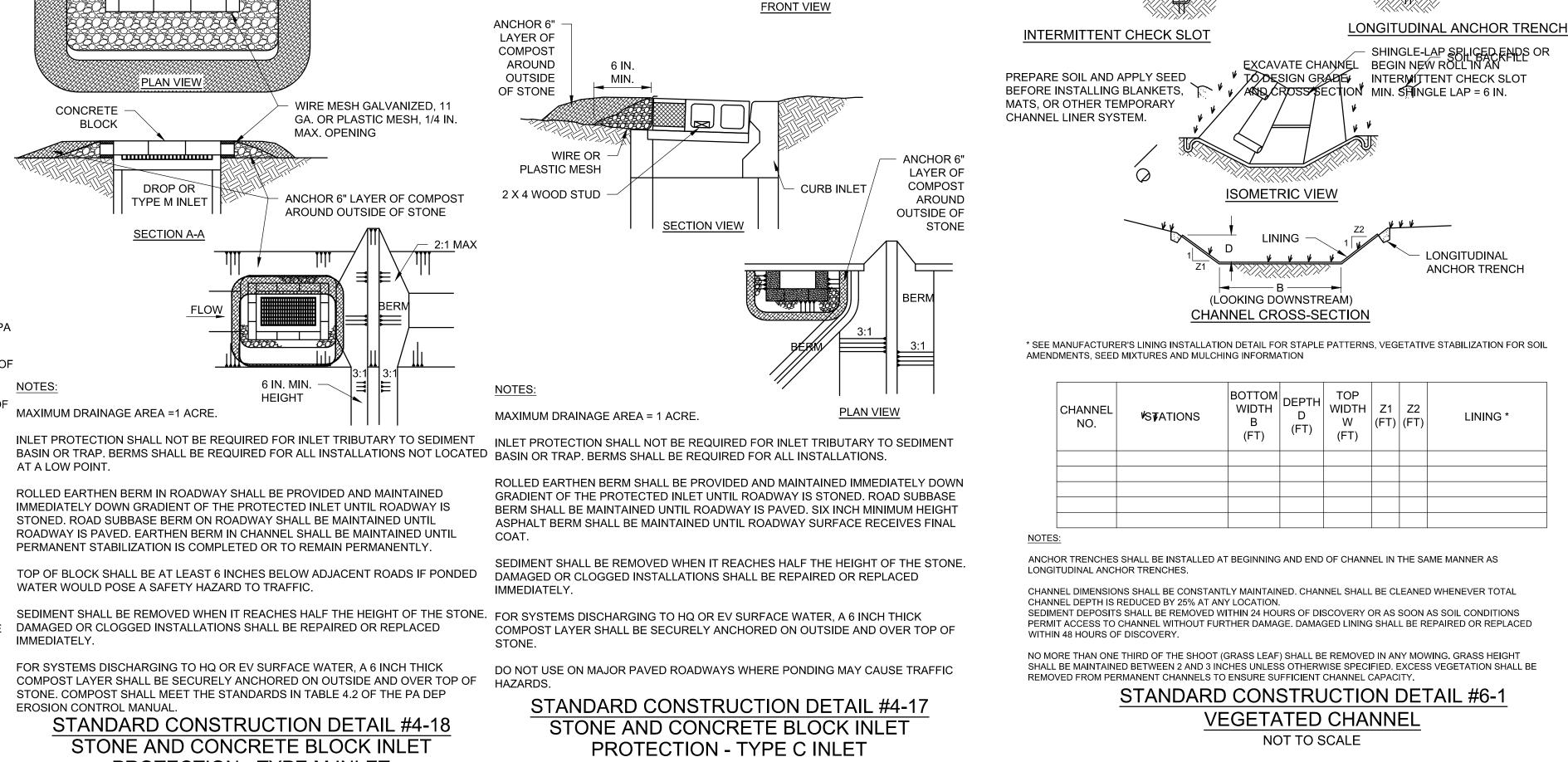
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DRAWING ISSUE PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

EROSION AND SEDIMENT CONTROL DETAILS

SERIAL NUMBER: 20152360845-000



AASHTO NO.

57 STONE

BLOCK

OVERLAP

6 IN. MIN.

ANCHOR TRENCH

-PLYWOOD 48" x 24"

---- BLACK LETTERS

- LAG SCREWS

 WOOD POST 3.5" x 3.5"

P.O. Box 542, Ridley Park, PA 19078

Phone (610) 731-7969

jhtrees@verizon.net

Fax (610) 521-0108

6" HEIGHT

OVERCUT CHANNEL 2 IN. TO $\,-$

ALLOW BULKING DURING

SEED BED PREPARATION

WELL VEGETATED, 50' (MIN) MOUNTABLE BERM (6 IN. MIN.) DISCHARGE HOSE GEOTEXTILE EXISTING MIN 8" AASHTO #1 - PIPE AS NECESSARY HEAVY DUTY LIFTING STRAPS -(RECOMMENDED) 50' (MIN) WELL VEGETATED, GRASSY AREA **ELEVATION VIEW** 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: TEST METHOD | MINIMUM STANDARD AVG. WIDE WIDTH ASTM D-4884 * MOUNTABLE BERM USED TO STRENGTH PROVIDE PROPER COVER FOR PIPE **GRAB TENSILE** ASTM D-4632 PUNCTURE ASTM D-4833 REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER ASTM D-3786 **UV RESISTANCE** ASTM D-4355 RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO AOS % RETAINED ASTM D-4751 ENTERING ROCK CONSTRUCTION ENTRANCE. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

GROUND

FULL WIDTH OF ENTRANCE.

SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS

ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL

CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON

INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

CONSTRUCTION ENTRANCE

REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED HE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS 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 ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE

AT A LOW POINT. PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER ELSEWHERE IN THE PLAN. THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE IS RECOMMENDED FOR THIS PURPOSE.

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

SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE

COMPOST FILTER SOCK - 2 IN. x 2 IN. WOODEN STAKES PLACED 10 FT ON CENTER BLOWN/PLACED -FILTER MEDIA DISTURBED AREA CONTOURS 2 IN. x 2 IN. WOODEN UNDISTURBED AREA COMPOST STAKES PLACED FILTER SOCK 10 FT ON CENTER 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

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. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF

, DEP EROSION CONTROL MANUAL.

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. REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL IMMEDIATELY. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SUPPLEMENT STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

NOT TO SCALE

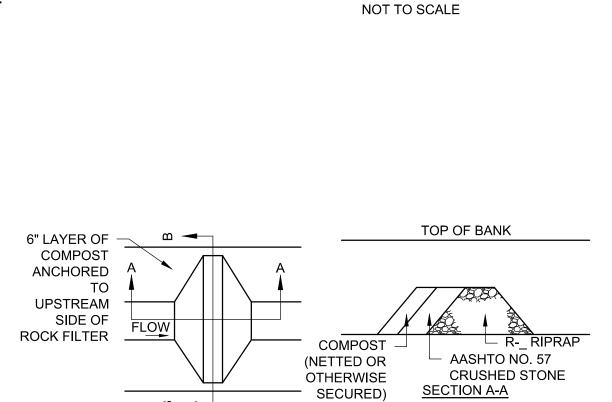
PROTECTION - TYPE M INLET NOT TO SCALE

CONCRETE BLOCK

ANCHOR 6" LAYER OF

COMPOST AROUND

OUTSIDE OF STONE



TOP OF CURB

WIRE MESH GALVANIZED,

11 GA., OR PLASTIC MESH

1/4 IN MAX. OPENING

ANCHOR 6" LAYER

AROUND OUTSIDE

OF COMPOST

SECTION B-B FOR D > 2 FT. TO D < 3 FT. - USE R-3 NOT APPLICABLE FOR D < 2 FT.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS. STANDARD CONSTRUCTION DETAIL #4-14 **ROCK FILTER** NOT TO SCALE

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF

THE FILTERS.

FIGURE 3.18 Typical Compost Sock Washout Installation

NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO
DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL
CONFIGURATION FOR ADDED HEIGHT. → DIRECT CONCRETE WASHOUT WATER INTO FILTER RING — 24" DIAMETER COMPOST FILTER SOCK. 4' MIN. OVERLAP ON UPSLOPE SIDE OF FILTER RING A suitable impervious geomembrane shall be placed at the location of the washout prior to

Adapted from Filtrexx CONCRETE WASHOUT FACILITIES DETAIL NOT TO SCALE

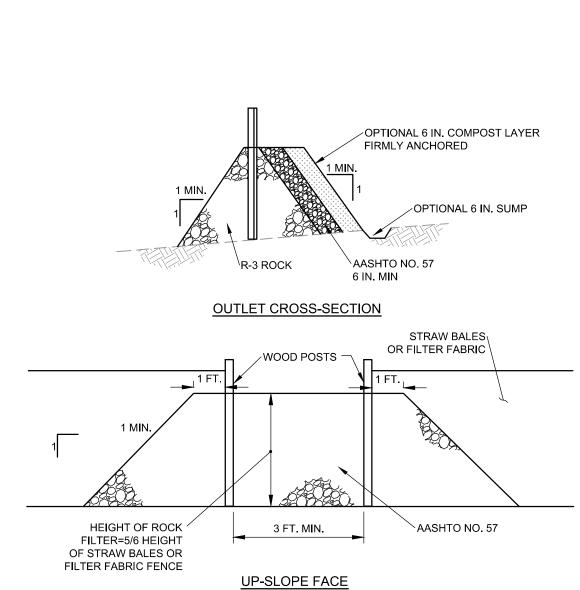
24" DIAMETER COMPOST FILTER SOCK EXISTING GRADE —

installing the socks.

<u>Plan view</u> THICK. LENGTH WIDTH WIDTH R-- | (IN) | (FT) | $\frac{2}{2}$

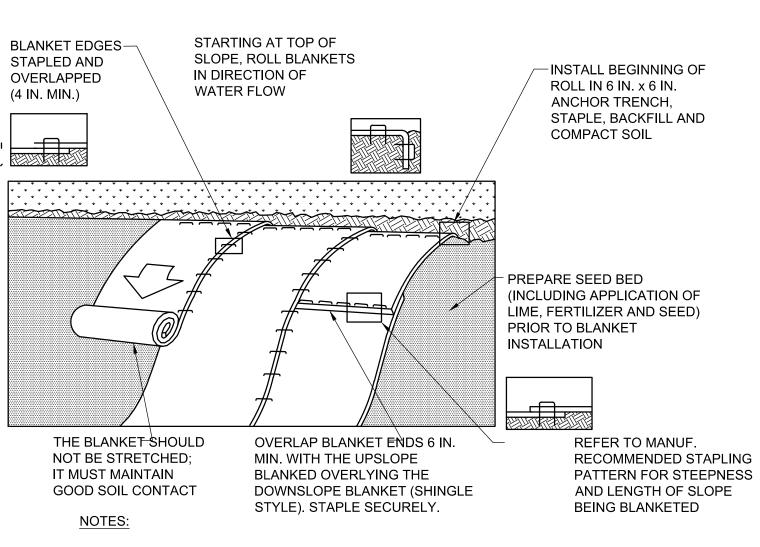
NOTES: ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN, TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

> STANDARD CONSTRUCTION DETAIL #9-1 RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL NOT TO SCALE



NOTES: A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET. STANDARD CONSTRUCTION DETAIL #4-6 **ROCK FILTER OUTLET** NOT TO SCALE



SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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

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

CRITICAL ROOT ZONE PROPOSED 6' HIGH CHAIN LINK FENCING <u>PLAN VIEW</u> REE PROTECTION SPECIFICATIONS

L.A. 4" layer of coarse mulicion or woodchips is to be placed beneath the dripline of the protected trees. Mulch is to be kept 12" from the trunk. II. A protective barrier of 6' chain link fencing shall be installed around the dripline of protected tree(s). The fencing can be moved within the dripline if authorized by the Consulting Arbarist but not closer than 2' from the trunk of any tree. Fence posts shall be 2.0' in diameter and are to be driven 2' into the ground. The distance between posts shall not be more than 10'. This enclosed area is the Tree Protection Zone (TPZ). III. Movable barriers of chain link fencing secured to cement blacks can be substituted for "fixed" fencing if the Consulting Arborist agree that the fencing will "have to be moved to accommodate certain phases of construction. The builder may not move the fence without authorization form the N. Where the Consulting Arborist has determined that tree protection fencing will interfere with the safety of work crews. Tree Wrap may be used as an alternative form of tree protection. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the Consulting Arborist. Straw woodle may also be used as a trunk wrap by coiling the woodle around the trunk up to a minimum height of six feet from grade. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the straw woodle. 10' MAX. POST SPACING (TYP.) DO NOT: A. Allow run off of spillage of damaging materials into the area below any tree conopy.

B. Store materials, stockpile soil, or park or drive vehicles within the TPZ.

C. Cut, break, skin, or bruise roots, branches, or trunks without first obtaining authorization from the Consulting Arborist.

D. Allow fires under and adjacent to trees.

E. Discharge exhaust into foliage.

F. Secure cable, chain, or rope to trees or shrubs.

G. Trench, dig., or otherwise excavate within the dripline or TPZ of the

ROCKWELL

Consulting • Planning • Management

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CONCRETE

WASHOUT

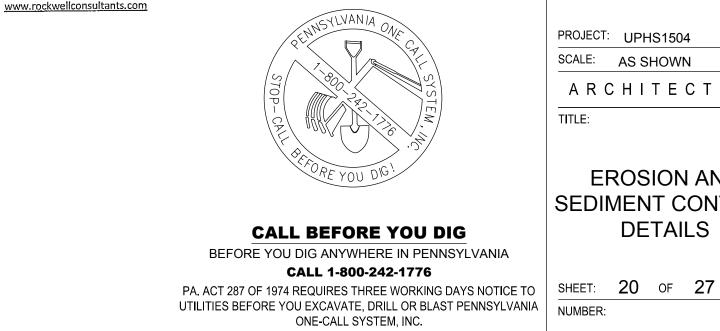
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

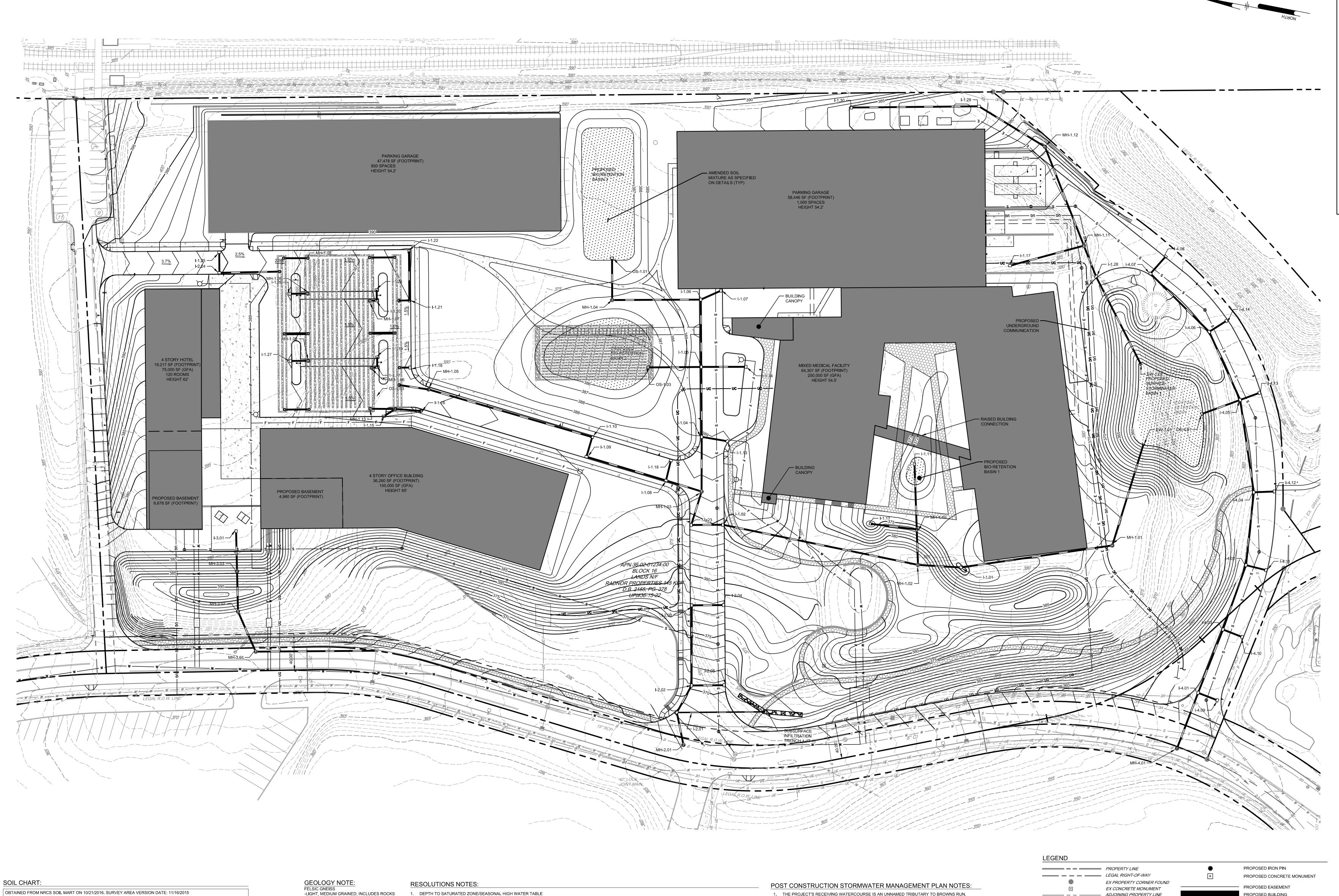
NOT TO SCALE

TREE PROTECTION DETAIL NOT TO SCALE

tree(s) without first obtaining authorization from the Consulting Arborist. H. Apply soil sterilants under povement neor existing trees.

TREE PROTECTION DETAIL





USGS MAP

CIVIL ENGINEER: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197

LANDSCAPE ARCHITECT: JONATHAN ALDERSON

LANDSCAPE ARCHITECTS INC. WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130

CONDITION OF USE WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS.

01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE PROJECT: UPHS1504 1"=40' ARCHITECTURE

CONSTRUCTION STORMWATER MANAGEMENT PLAN

SERIAL NUMBER: 20152360845-000

SOILS SHOULD BE EVALUATED FOR WETNESS PRIOR TO USE IN SITE WORK, IF GEOTECHNICAL ENGINEER DEEMS SOIL TO WET FOR SITE WORK, THEN SOILS SHALL STATE:PENNSYLVANIA BE AMENDED OR DRIED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. NAME:FELSIC GNEISS GEOLOGIC AGE: PRECAMBRIAN ORIGINAL MAP LABEL:FGP SOILS SHOULD NOT BE USED FOR STRUCTURAL FILL UNLESS THEY HAVE BEEN EVALUATED BY A GEOTECHNICAL ENGINEER AND THE GEOTECHNICAL ENGINEER PRIMARY ROCK TYPE:FELSIC GNEISS DEEMS THEM SUITABLE AS FILL OR PROVIDES RECOMMENDATIONS TO AMEND SOILS MAKING THEM SUITABLE AS FILL. SECONDARY ROCK TYPE:PARAGNEISS SOILS SHOULD BE FREE OF FROZEN OR MUCKY MATERIALS. FILL SHOULD NOT BE PLACED ON SATURATED OR FROZEN SURFACES. EARTHWORK INVOLVING THESE SOILS SHOULD BE LIMITED TO THE WARMER MONTHS WHEN PRACTICAL. SOILS SHOULD BE EVALUATED FOR WETNESS PRIOR TO USE IN SITE WORK. IF GEOTECHNICAL ENGINEER DEEMS SOIL TOO WET FOR SITE WORK, THEN SOILS SHALL BE AMENDED OR DRIED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. AREAS OF EMBANKMENTS WITH PIPES PASSING THROUGH THEM SHALL HAVE ANTI-SEEP COLLARS INSTALLED PER THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (PA DEP) EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM.

OF PROBABLE SEDIMENTARY ORIGIN.

DEPTH TO

WATER BEDROCK

42-72

72-99

72-99

60-120

0.43

RESOLUTION

NOTES

SEE RESOLUTION

SEE RESOLUTION

SEE RESOLUTION

SEE RESOLUTION

NOTES

TABLE (FT) (IN)

5.0

0.5-3.0

0.5-3.0

ROADS | SEPTIC

LIMITED LIMITED

SOMEWHAT VERY

LIMITED LIMITED

LIMITED

LIMITED

HYDROLOGIC

GROUP

SLOPES

0 TO 8%

3 TO 8%

0 TO 3%

3 TO 8%

BUILDING

BASEMENTS

LIMITED

HIGH | MODERATE | VERY LIMITED

HIGH VERY LIMITED

HYDRIC

YES

YES

YES

LIMITATIONS

SYMBOL

GnB2

CaaA

MADE LAND

GLENVILLE SILT

LOAM

CALIFON LOAM

CHANNERY SILT

SYMBOL FROST PIPES BUILDING WITH

HIGH

GeB3 | MODERATE | LOW | HIGH | NOT LIMITED

Me | MODERATE | MODERATE |

EASILY ERODIBLE SOILS SHALL BE STABILIZED, WITH EITHER TEMPORARY OR FINAL STABILIZATION, IN AREAS WHERE EARTHWORK IS DELAYED OR STOPPED FOR FOUR CONSECUTIVE 7. SHRINK/SWELL

SOILS SHOULD NOT BE USED FOR STRUCTURAL FILL UNLESS THEY HAVE BEEN EVALUATED BY A GEOTECHNICAL ENGINEER AND THE GEOTECHNICAL ENGINEER DEEMS THEM SUITABLE AS FILL OR PROVIDES RECOMMENDATIONS TO AMEND SOILS MAKING THEM SUITABLE AS FILL.

THE PROJECT'S RECEIVING WATERCOURSE IS AN UNNAMED TRIBUTARY TO BROWNS RUN, WHICH IS CLASSIFIED AS COLD WATER FISHES, MIGRATORY FISHES (CWF, MF) BY TITLE 25,

CHAPTER 93 OF THE PENNSYLVANIA CODE. 2. A NOTICE OF TERMINATION (NOT) WILL BE REQUIRED TO BE SUBMITTED FOLLOWING APPROVAL OF THE FINAL AS-BUILT PLANS. PRIOR TO ACCEPTING THE NOTICE OF TERMINATION, THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERIFY ADEQUATE INSTALLATION AND FUNCTION OF STORMWATER BMP'S.

. UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER §102.22(A)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPS IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH §102.4 AND §102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

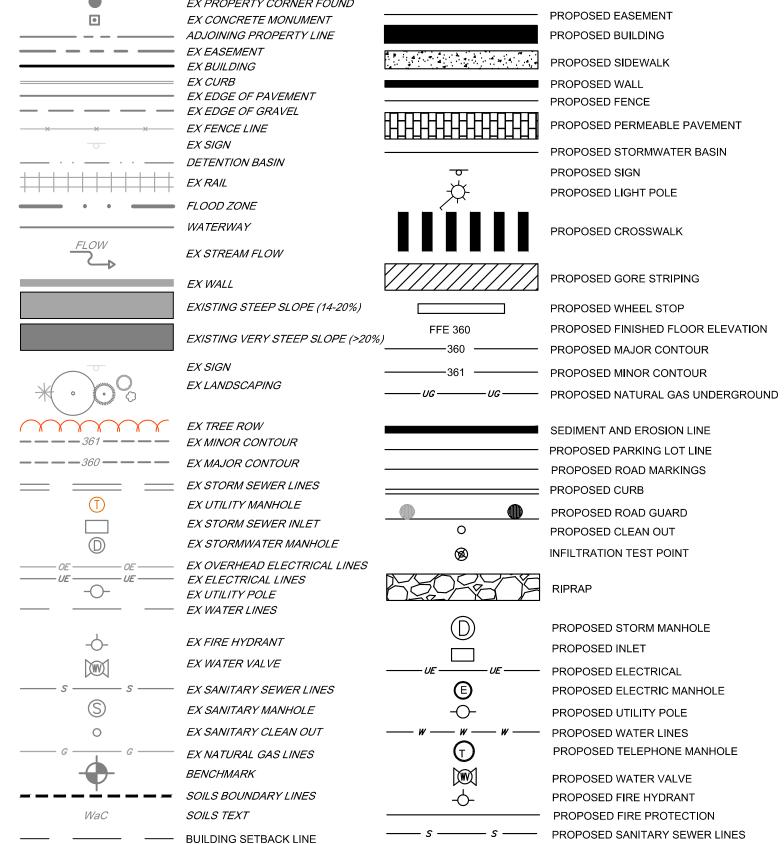
THE NOTICE OF TERMINATION MUST INCLUDE: (1) THE FACILITY NAME, ADDRESS AND LOCATION. (2) THE OPERATOR NAME AND ADDRESS.

(3) THE PERMIT NUMBER. (4) THE REASON FOR PERMIT TERMINATION. (5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH §102.8(M) AND PROOF OF COMPLIANCE WITH §102.8(M)(2).

PRIOR TO ACCEPTING THE NOT. THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION. THE PERMITTEE SHALL INCLUDE WITH A NOTICE OF TERMINATION "RECORD DRAWINGS"

WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS: "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA. C. S. A. §4904 TO

THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES." (1) THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE (2) THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERSON IDENTIFIED IN THIS SECTION AS BEING RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM



PROPOSED SANITARY SEWER MANHOLE

PROPOSED AMENDED SOILS

PROPOSED PROPERTY LINE

PROPOSED ULTIMATE RIGHT-OF-WAY

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 SHEET: 21 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC.

NOT FOR CONSTRUCTION

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3900** F 215 446 3901 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382

T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN PHILADELPHIA, PA 19130 T 215 665 7000

PCSM LONGTERM OPERATION AND 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

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 RECORDED INSTRUMENT MUST IDENTIFY WITH THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES. AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER §102.7(B)(5) (RELATING TO PERMIT

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.

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT. NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION, OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

INSPECTIONS SHALL BE PERFORMED AS NOTED FOR EACH BMP AND ANNUALLY. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES SHALL BE PROVIDED ANNUALLY.

A STORMWATER BMP FAILURE FOR THIS SITE IS DEFINED AS:

STRUCTURAL BMP 6.4.5 - RAIN GARDEN/BIO-RETENTION

1. THE BIO-RETENTION BASIN NOT DEWATERING WITHIN 72-HOURS. IN THE EVENT THAT THIS OCCURS, THE DESIGN ENGINEER SHOULD BE CONTACTED TO INVESTIGATE THE CAUSE OF THE FAILURE. IF THE BMP HAS NOT DEWATERED WITHIN 72-HOURS AND A PRECIPITATION EVENT IS FORECASTED THE FACILITY SHOULD BE DEWATERED PRIOR TO THE PRECIPITATION EVENT. 2. THE BIO-RETENTION BASIN VEGETATION DIES OR FAILS TO ESTABLISH. IN THE EVENT THAT THIS OCCURS THE LANDSCAPING SHALL BE REPLACED IN KIND.

NON-STRUCTURAL BMP 5.4.3 - PROTECT/UTILIZE NATURAL DRAINAGE FEATURES THIS PROJECT HAS BEEN DESIGNED TO UTILIZE AN EXISTING DETENTION BASIN.

BIO-RETENTION BASINS PROVIDE TEMPORARY STORAGE BELOW THE OUTLET WITHIN THE AMENDED SOILS AND STONE. THESE SYSTEMS PROVIDE INFILTRATION OF STORMWATER RUNOFF AS WELL AS EVAPOTRANSPIRATION THROUGH THE VEGETATION WITHIN THE BASIN.

THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE BIO-RETENTION BASINS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. DURING THE FIRST GROWING SEASON OR UNTIL ESTABLISHED, VEGETATION SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS. 3. THE BIO-RETENTION FACILITY VEGETATION MAY NEED SUPPORT (WATERING, WEEDING, MULCHING, REPLANTING, ETC) DURING THE FIRST YEAR. 4. MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM

EVENT (> 1 INCH RAINFALL DEPTH) A. THE BIO-RETENTION FACILITY SHOULD BE INSPECTED AT LEAST TWO (2) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH. THE INSPECTION SHOULD ACCESS THE VEGETATION, EROSION, FLOW CHANNELIZATION, BANK STABILITY, CLOGGING AT INLETS AND OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION. B. MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN

C. DETRITUS SHOULD BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON. D. VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85% COVER. E. EXCESSIVE BUILD-UP OF SEDIMENT SHALL BE REMOVED. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BIO-RETENTION FACILITY IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND VEGETATED.

F. TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH. 5. MAINTENANCE ACTIVITIES AS NEEDED: A. EVALUATE THE DRAIN-DOWN TIME OF THE BIO-RETENTION BASIN TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOTE BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM TIME, DRAIN THE BIO-RETENTION BASIN VIA PUMPING AND CONTACT THE DESIGN ENGINEER TO DETERMINE THE PROPER REMEDIATION FOR THE SYSTEM. B. MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLENISHED AS NEEDED.

ONCE EVERY TWO (2) TO THREE (3) YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT. C. DURING PERIODS OF EXTENDED DROUGHT, THE BIO-RETENTION AREAS MAY REQUIRE WATERING.

A STORM SEWER SYSTEM HAS BEEN DESIGNED TO CONVEY RUNOFF FROM THE NEW CONNECTOR ROADWAY TO BIO-RETENTION BASIN #4. STORM SEWER PIPES ARE ALSO PROPOSED TO CONVEY WATER FROM THE VARIOUS BIO-RETENTION BASINS TO STABLE OUTLETS AND ALSO TO DIVERT WATER FROM OFF-SITE AROUND THE SITE.

THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE STORM SEWER SYSTEM AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. THE STORM SEWER SYSTEM SHALL BE INSPECTED AT LEAST FOUR (4) TIMES A YEAR. 3. REMOVE SEDIMENT FROM ALL STRUCTURES AT LEAST ONCE PER YEAR. 4. DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTE MATERIAL REMOVED FROM THE STORM SEWER SYSTEM AT A SUITABLE DISPOSAL/RECYCLING SITE AND IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL WASTE REGULATIONS.

STRUCTURAL BMP CREDIT 6.7.2 - LANDSCAPE RESTORATION AREAS OF THE SITE HAVE BEEN DESIGNED TO BE PLANTED WITH A MEADOW GRASS MIXTURE WHICH WILL REDUCE THE RATE AND VOLUME OF STORMWATER RUNOFF FROM THE SITE. THESE AREAS WILL ALSO PROVIDE NATURAL HABITAT FOR WILDLIFE.

DPERATION & MAINTENANCE: THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE MEADOW AREAS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. MAINTENANCE ACTIVITIES AS NEEDED:

A. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. B. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING. C. VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85%

D. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION: DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY. E. MEADOW GRASSES SHOULD BE MOWED ANNUALLY. MOWING SHOULD BE DONE DURING THE SUMMER TO ENSURE ADEQUATE REGROWTH OF VEGETATION PRIOR TO WINTER. SPECIAL CARE SHOULD BE TAKEN TO MINIMIZE DISTURBANCE ASSOCIATED WITH THE MOWING OF THE MEADOW

RECYCLE & DISPOSAL OF MATERIALS

1. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET DEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING

MATERIAL OR WASTES AT THE SITE. 2. AT ANY TIME DURING THE CONSTRUCTION SHOULD EVIDENCE OF A POSSIBLE SINKHOLE BE ENCOUNTERED THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE DESIGN ENGINEER AND A LICENSED GEOTECHNICAL ENGINEER TO PERFORM A SITE VISIT AND DETERMINE THE PROPER REMEDIATION ACTIVITY.

STRUCTURAL BMP - SUBSURFACE DETENTION BASIN

EVENT (>1 INCH RAINFALL DEPTH)

A SUBSURFACE DETENTION BASIN HAS BEEN SIZED TO TEMPORARILY STORE RUNOFF ASSOCIATED WITH THE 2-YEAR DESIGN STORM FOR A PORTION OF THE SITE. STORAGE VOLUME IS PROVIDED WITHIN THE PERFORATED PIPING AS WELL AS THE STONE VOIDS FOR THE DETENTION BASIN.

OPERATION & MAINTENANCE 1. THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE SUBSURFACE DETENTION BASIN AND FOR PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48-HOURS AFTER EVERY MAJOR STORM

A. ALL INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST ONE (1) TIMES PER YEAR. B. THE DETENTION BASIN SHOULD BE INSPECTED ANNUALLY FOR SEDIMENT BUILDUP. EXCESSIVE SEDIMENT BUILD-UP SHOULD BE REMOVED AND DISPOSED OF APPROPRIATELY. C. THE BASIN OUTLET STRUCTURE SHOULD BE INSPECTED AT LEAST ONE (1) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH. THE INSPECTION SHOULD ACCESS CLOGGING AT INLETS AND OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION. 3. MAINTENANCE ACTIVITIES AS NEEDED: A. EVALUATE THE DRAIN-DOWN TIME OF THE SUBSURFACE DETENTION BASIN TO ENSURE THAT THE

MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM TIME, DRAIN THE SUBSURFACE DETENTION BASIN VIA UNDERDRAIN AND CONTACT THE DESIGN ENGINEER TO DETERMINE THE PROPER REMEDIATION FOR THE SYSTEM. INSPECTION SCHEDULE:

THE SUBSURFACE DETENTION BASIN SHOULD BE INSPECTED AT LEAST TWO (2) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH. THE INSPECTION SHOULD ASSESS CLOGGING AT INLETS AND OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION.

STRUCTURAL BMP - SURFACE DETENTION BASIN SURFACE DETENTION BASINS PROVIDE TEMPORARY STORAGE BELOW THE OUTLET WITHIN THE AMENDED SOILS AND STONE. THESE SYSTEMS PROVIDE PEAK RUNOFF RATE CONTROL.

OPERATION & MAINTENANCE: 1. THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE SURFACE DETENTION BASINS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. DURING THE FIRST GROWING SEASON OR UNTIL ESTABLISHED, VEGETATION SHOULD BE INSPECTED

EVERY TWO (2) TO THREE (3) WEEKS. 3. THE SURFACE DETENTION BASIN FACILITY VEGETATION MAY NEED SUPPORT (WATERING, WEEDING, MULCHING, REPLANTING, ETC) DURING THE FIRST YEAR. 4. MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH) A. THE SURFACE DETENTION BASIN SHOULD BE INSPECTED AT LEAST TWO (2) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH. THE INSPECTION SHOULD ACCESS THE VEGETATION, EROSION, FLOW CHANNELIZATION, BANK STABILITY, CLOGGING AT INLETS AND

OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION.

B. MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. C. DETRITUS SHOULD BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON. D. VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85% COVER. E. EXCESSIVE BUILD-UP OF SEDIMENT SHALL BE REMOVED. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE SURFACE DETENTION BASIN FACILITY IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND VEGETATED. F. TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH.

5. MAINTENANCE ACTIVITIES AS NEEDED: A. EVALUATE THE DRAIN-DOWN TIME OF THE SURFACE DETENTION BASIN TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOTE BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM TIME, DRAIN THE DETENTION BASIN VIA PUMPING AND CONTACT THE DESIGN ENGINEER TO DETERMINE THE PROPER REMEDIATION FOR THE SYSTEM. B. MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLENISHED AS NEEDED. ONCE EVERY TWO (2) TO THREE (3) YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT. C. DURING PERIODS OF EXTENDED DROUGHT, THE SURFACE DETENTION BASIN AREAS MAY REQUIRE WATERING.

. DURING THE FIRST GROWING SEASON OR UNTIL ESTABLISHED, VEGETATION SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS. . THE DETENTION BASIN FACILITY SHOULD BE INSPECTED AT LEAST TWO (2) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH. THE INSPECTION SHOULD ACCESS THE VEGETATION, EROSION, FLOW CHANNELIZATION, BANK STABILITY, CLOGGING AT INLETS AND OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION.

STRUCTURAL BMP - PERMEABLE PAVERS

PERMEABLE PAVERS PROVIDE STORMWATER MANAGEMENT CONTROL. POROUS PAVEMENT MATERIALS REDUCE RUNOFF AND IMPROVES WATER QUALITY. . THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE

PERMEABLE PAVERS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. PERMEABLE PAVERS SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS. 3. PLANTED AREAS ADJACENT TO PERMEABLE PAVERS SHOULD BE WELL MAINTAINED TO PREVENT SOIL WASHOUT ONTO THE PAVERS. IF WASHOUT DOES OCCUR IT SHOULD BE CLEANED OFF THE PAVERS IMMEDIATELY TO PREVENT FURTHER CLOGGING OF THE PORES AND/OR OPEN VOIDS. 4. IF BARE SPOTS OR ERODED AREAS ARE OBSERVED WITHIN THE PLANTED AREAS ADJACENT TO THE

PERMEABLE PAVERS, THEY SHOULD BE REPLANTED AND/OR STABILIZED. 5. ALL TRASH AND OTHER LITTER THAT IS OBSERVED DURING INSPECTION SHOULD BE REMOVED. 6. TRUCKS OR OTHER HEAVY VEHICLES SHOULD BE PREVENTED FROM TRACKING ON SPILLING DIRT ONTO THE PAVERS. 7. WINTER MAINTENANCE 7.1. PERVIOUS PAVEMENT SYSTEMS PROVIDE SNOW MELTING WITHOUT THE USE OF CHEMICALS OR SALTS, SINCE THE UNDERLYING STONE BED TENDS TO ABSORB AND RETAIN HEAT.

7.2. ABRASIVES SUCH AS AND OR CINDERS SHOULD BE APPLIED ON OR ADJACENT TO THE PERMEABLE

7.3. SALT IS AN ACCEPTABLE DEICER ON THE PERMEABLE PAVERS.

1. PERMEABLE PAVERS SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS.

STRUCTURAL BMP CREDIT 6.7.3 - SOIL AMENDMENT AND RESTORATION

AREAS OF THE SITE HAVE BEEN DESIGNATED TO BE CONVERTED FROM PAVING TO LANDSCAPED AREAS WHICH WILL REDUCE THE RATE AND VOLUME OF STORMWATER RUNOFF FROM THE SITE.

THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE SOIL RESTORATION AREAS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES. 2. MAINTENANCE ACTIVITIES AS NEEDED: A. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. B. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES UNTIL VEGETATION

C. VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED

COVER. DURING THE FIRST GROWING SEASON OR UNTIL ESTABLISHED, VEGETATION SHOULD BE INSPECTED

GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85%

SOIL RESTORATION CONSTRUCTION NOTES:

IN AREAS WHERE EXISTING PAVEMENT WILL BE CONVERTED TO LAWN, REMOVE PAVEMENT TO SUBGRADE. SUBGRADE SHALL BE RELIEVED OF COMPACTION AS FOLLOWS: 1.1. BEFORE THE TIME THE COMPOST IS PLACED AND PREFERABLY WHEN EXCAVATION IS COMPLETED, THE SUBSOIL SHALL BE IN A LOOSE, FRIABLE CONDITION TO A DEPTH OF 20

WASHOUTS IN THE SUBSOIL SURFACE EXCEEDING 3 INCHES IN DEPTH.

INCHES BELOW FINAL TOPSOIL GRADE AND THERE SHALL BE NO EROSION RILLS OR

1.2. TO ACHIEVE THIS CONDITION, SUBSOILING, RIPPING, OR SCARIFICATION OF THE SUBSOIL WILL BE REQUIRED AS DIRECTED BY THE OWNER'S REPRESENTATIVE, WHEREVER THE SUBSOIL HAS BEEN COMPACTED BY EQUIPMENT OPERATION OR HAS BECOME DRIED OUT AND CRUSTED, AND WHERE NECESSARY TO OBLITERATE EROSION RILLS. SUB-SOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN ALL AREAS WHERE PLANT ESTABLISHMENT IS PLANNED. SUB-SOILING SHALL BE PERFORMED BY THE PRIME OR EXCAVATING CONTRACTOR AND SHALL OCCUR BEFORE COMPOSE PLACEMENT.

1.3. SUBSOILED AREAS SHALL BE LOOSENED TO LESS THAN 1400 KpA (200PSI) TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE. WHEN DIRECTED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL VERIFY THE SUB-SOILING CONFORMS TO THE

1.4. SUB-SOILING SHALL FORM A TWO-DIMENSIONAL GRID. CHANNELS SHALL BE CREATED BY A COMMERCIALLY AVAILABLE, MULTI-SHANKED, PARALLELOGRAM IMPLEMENT. THE EQUIPMENT SHALL BE CAPABLE OF EXERTING A PENETRATION FORCE NECESSARY FOR THE SITE. NO DISC CULTIVATORS, CHISEL PLOWS, OR SPRING-LOADED EQUIPMENT WILL NOT ALLOWED. THE GRID CHANNELS SHALL BE SPACED A MINIMUM O F12 INCHES TO A MAXIMUM OF 36 INCHES APART. THE CHANNEL DEPTH SHALL BE A MINIMUM OF 20 INCHES OR AS SPECIFIED IN THE SOIL MANAGEMENT PLAN. IF SOILS ARE SATURATED, THE CONTRACTOR SHALL DELAY OPERATIONS UNTIL THE SOIL WILL NOT HOLD A BALL WHEN SQUEEZED. ONLY ONE PASS SHALL BE PERFORMED ON ERODIBLE SLOPES GREATER THAN 1 VERTICAL TO 3 HORIZONTAL. WHEN ONLY ONE PASS IS USED, WORK SHOULD BE AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE, WHENEVER PRACTICAL.

1.5. EXCEPTIONS TO SUB-SOILING INCLUDE AREAS WITHIN THE DRIP LINE OF ANY EXISTING TREES OVER LITHITY INSTALLATIONS WITHIN 30 INCHES OF THE SURFACE WHERE TRENCHING/DRAINAGE LINES ARE INSTALLED, WHERE COMPACTION IS BY DESIGN, AND ON INACCESSIBLE SLOPES, AS APPROVED BY THE OWNER'S REPRESENTATIVE. IN CASES WHERE EXCEPTIONS OCCUR, THE CONTRACTOR SHALL OBSERVE A MINIMUM SETBACK OF 20 FEET OR AS DIRECTED BY THE OWNER'S REPRESENTATIVES. ARCHEOLOGICAL CLEARANCES MAY BE REQUIRED IN SOME INSTANCES.

INSTALL A MINIMUM OF 12 INCHES OF TOP SOIL AS NEEDED TO BRING AREAS TO PROPOSED

2.1. THE FINAL, RESULTING SOIL AMENDMENT MUST MEET ALL OF THE MANDATORY CRITERIA

CONTRACTOR TO ADD SOIL AMENDMENTS, SUCH AS COMPOST, MULCH, MANURE, SAND AND/OR MANUFACTURED MICROBIAL SOLUTIONS IN ORDER TO ACHIEVE THE SOIL CRITERIA

OUTLINED IN TABLE 4 ON THIS SHEET. 3.1. COMPOST SHOULD BE ADDED AT A RATE OF 2:1 (SOIL:COMPOST).

3.2. IF A PROPRIETARY PRODUCT IS USED , THE MANUFACTURERS INSTRUCTIONS SHOULD BE FOLLOWED FOR MIXING AND APPLICATION RATE. 3.3. ON-SITE SOILS WITH ORGANIC CONTENT OF AT LEAST 5 PERCENT CAN BE PROPERLY

STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED. 3.4. PROCEDURE: ROTOTILL, OR RIP THE SUBGRADE, REMOVE ROCKS, DISTRIBUTE THE

COMPOST, SPREAD THE NUTRIENTS, ROTOTILL AGAIN. 3.5. ADD 6 INCHES COMPOST / AMENDMENT AND TILL UP TO 8 INCHES FOR MINOR

3.6. ADD 10 INCHES COMPOST / AMENDMENT AND TILL UP TO 20 INCHES FOR MAJOR COMPACTION.

CONDITION OF USE WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT CONTRACTOR MAY MAKE ELECTRONIC BLES OF DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THIS STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPERATION OF SHOP DRAWINGS. THE PROVISION OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER

RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PERPERATION OF THEIR REQUIRED SHOP DRAWINGS

01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

PROJECT: UPHS1504 SCALE: AS SHOWN ARCHITECTURE

POST

MANAGEMENT

STORMWATER 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 SHEET: 22 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER:

ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

NOT FOR CONSTRUCTION

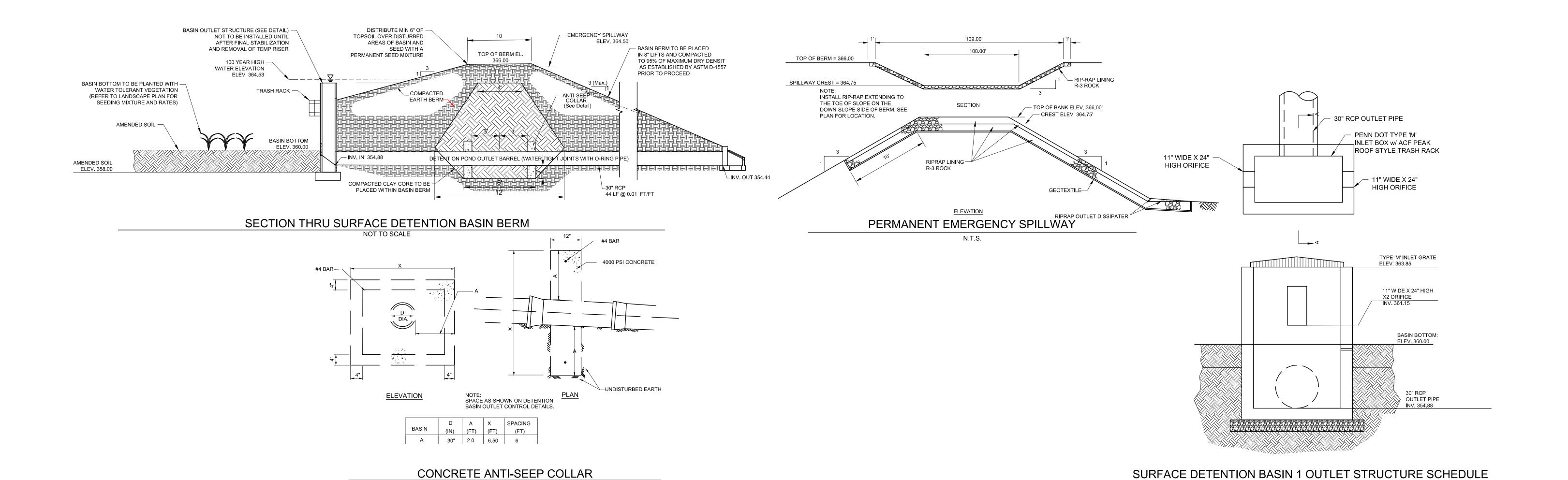
BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3900** F 215 446 3991 BALLINGER.COM

CONSULTANTS: CIVIL ENGINEER: PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

> LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130 T 215 665 7000



SURFACE DETENTION BASIN 1 CONSTRUCTION SEQUENCE:

- 1. CRITICAL STAGE: SURFACE DETENTION BASIN CONSTRUCTION SHOULD PROCEED ACCORDING TO PLANS AND DETAILS. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMP'S, PREFERABLY THE DESIGN ENGINEER SHALL BE ON-SITE TO MONITOR THE FOLLOWING STAGES OF THE CONSTRUCTION OF THE BIO-RETENTION BASIN: a. INSPECT BOTTOM OF BMP PRIOR TO SEEDING.
- b. INSPECT OUTLET STRUCTURE TO ENSURE CONSTRUCTION PER APPROVED PLANS AND DETAILS. c. INSPECT THE VEGETATION AFTER PLANTING.
- 2. REGRADE DETENTION BASIN AS SHOWN ON PLANS AND DETAILS. SPECIAL CARE SHOULD BE TAKEN TO ENSURE THAT THE AREA WITHIN THE BASIN IS NOT COMPACTED.
- 3. INSTALL AMENDED SOIL MIXTURE.
- 4. INSTALL OUTLET STRUCTURE, PIPE AND ENDWALL BEGINNING AT DOWNSTREAM END.
- 5. ONCE THE BASIN HAS BEEN CONSTRUCTED AND PRIOR TO THE INSTALLATION OF PERMANENT VEGETATION, THE DESIGN ENGINEER OR SITE ENGINEER SHALL BE CONTACTED TO PERFORM A SITE VISIT TO INSPECT THE BASIN BOTTOM.
- 6. INSTALL PERMANENT VEGETATION ACCORDING TO LANDSCAPE PLANS AND DETAILS AND IMMEDIATELY STABILIZE WITH TEMPORARY
- 7. SHOULD ANY UNFAVORABLE CONDITIONS BE ENCOUNTERED DURING THE INSTALLATION OF THE RAIN GARDENS OR DETENTION BASIN (I.E. GROUNDWATER AND/OR BEDROCK, ETC.) THE OWNER / ENGINEER SHALL BE NOTIFIED AND THE PROPOSED BMP SHALL BE RELOCATED TO A MORE SUITABLE LOCATION.

SURFACE DETENTION BASIN 1 CONSTRUCTION NOTES:

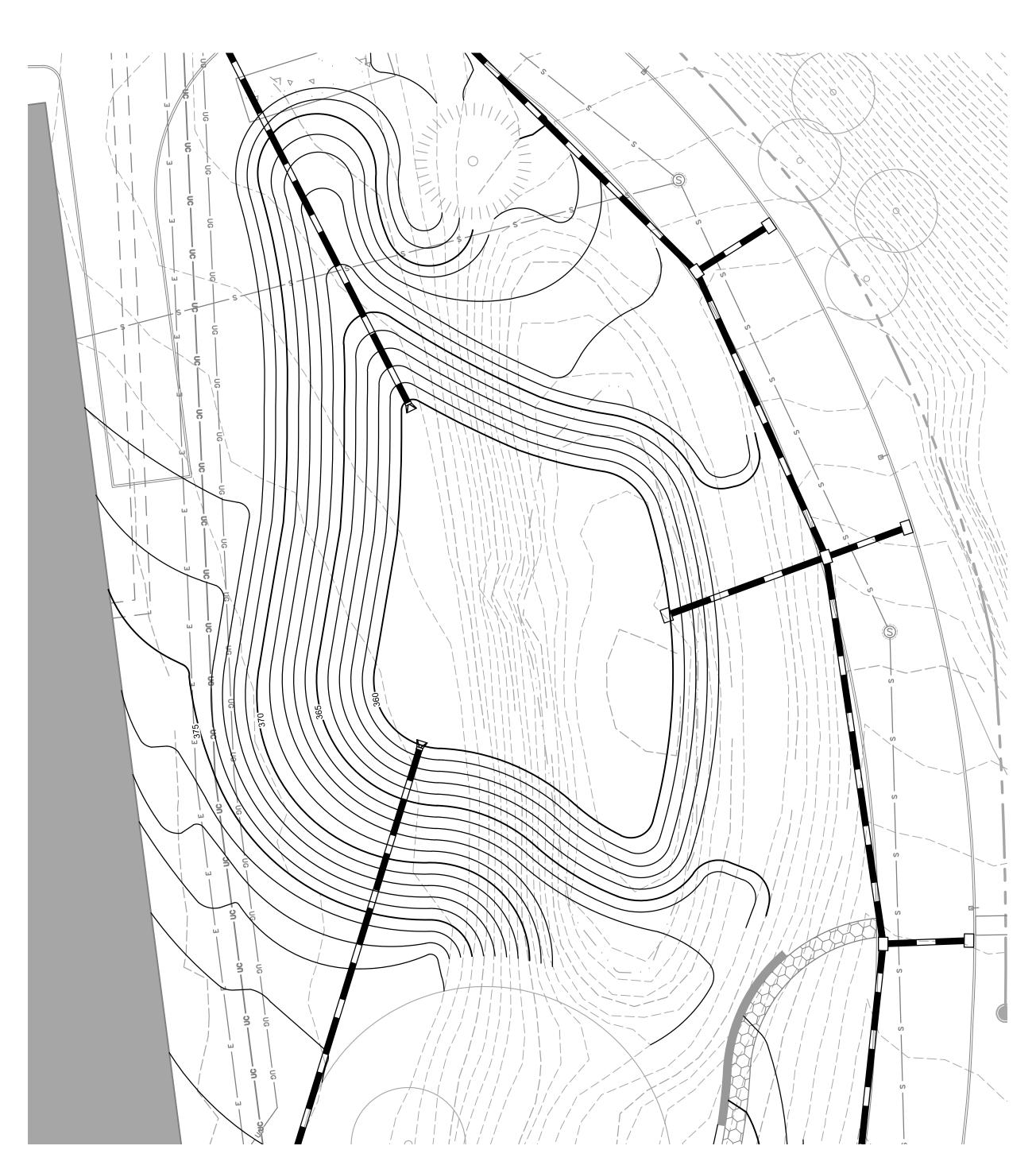
- 1. THE DETENTION BASIN SHALL BE PROTECTED FROM COMPACTION DUE TO HEAVY EQUIPMENT OPERATION OR STORAGE OF FILL OR CONSTRUCTION MATERIAL.
- 2. INFILTRATION AREAS SHALL BE PROTECTED FROM SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION. APPROPRIATE MEASURES ARE TO BE TAKEN IN THE EVENT OF SEDIMENT ENTERING AND CLOGGING THE INFILTRATION SCM.

SURFACE DETENTION BASIN 1

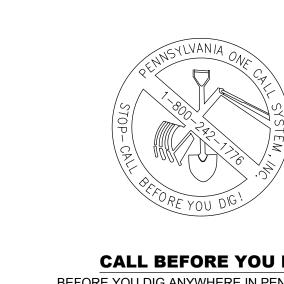
- 3. SHOULD UNFAVORABLE CONDITIONS (I.E. GROUNDWATER AND/OR BEDROCK, ETC.) BE ENCOUNTERED DURING THE CONSTRUCTION PROCESS OF
- THE INFILTRATION BASIN, THE DESIGN ENGINEER SHOULD BE CONTACTED TO ADDRESS SUCH ISSUES. 4. ALL CONSTRUCTION ACTIVITIES FOR THE INFILTRATION BASIN SHOULD OCCUR WITHIN A SHORT TIME PERIOD TO ENSURE THAT SILT AND SEDIMENT DO NOT ENTER THE TRENCH.
- 5. IF INSPECTION INDICATES THAT SOIL OR SEDIMENT HAS ENTERED ANY OF THE INFILTRATION 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.
- 6. AREAS THAT ARE ACCIDENTALLY COMPACTED OR GRADED SHALL BE REMEDIATED TO RESTORE SOIL COMPOSITION AND POROSITY. ADEQUATE DOCUMENTATION TO THIS EFFECT SHALL BE SUBMITTED FOR REVIEW BY THE MUNICIPAL ENGINEER.
- 7. ALL AREAS DESIGNATED FOR INFILTRATION SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTING DRAINAGE AREA HAS ACHIEVED FINAL
- 8. EXCAVATION FOR THE INFILTRATION BASIN SHALL BE PERFORMED WITH EQUIPMENT THAT WILL NOT COMPACT THE BOTTOM OF THE BASIN. 9. THE BOTTOM OF ALL INFILTRATION SCMS SHALL BE UNDISTURBED, UNCOMPACTED SUBGRADE, AND SCARIFIED.

APPROVAL OF THE DESIGN ENGINEER.

- 10. THE INFILTRATION BASIN SHALL BE PLANTED WITH THE APPROPRIATE SEED MIXTURE AS SPECIFIED ON LANDSCAPE PLANS. 11. THE FOUNDATION OF THE EMBANKMENT SHALL BE STRIPPED AND GRUBBED TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND
- COMPACTION OF EARTHEN FILL. 12. THE FILL MATERIAL SHOULD BE TAKEN FROM APPROVED DESIGNATED EXCAVATION AREAS. IT SHOULD BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6 INCHES, OR OTHER OBJECTIONABLE MATERIALS.
- 13. SOILS ACCEPTABLE FOR EMBANKMENT CONSTRUCTION SHOULD BE LIMITED TO GC, CM, SC, SM, CL OR ML AS DESCRIBED IN ASTMD-2487 (UNIFIED SOILS CLASSIFICATION). OTHER SOILS MAY BE ACCEPTABLE WITH
- 14. ALL BASIN EMBANKMENTS SHOULD BE COMPACTED BY SHEEPSFOOT OR PAD ROLLER. THE LOOSE LIFT THICKNESS SHOULD BE 8" OR LESS, DEPENDING ON ROLLER SIZE, AND THE MAXIMUM PARTICLE SIZE IS 6" OR LESS - 2/3 LIFT THICKNESS. EACH LIFT SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR. FILL MATERIAL SHOULD CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED IN TO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.
- 15. A KEY TRENCH, OR CUTOFF TRENCH, IS REQUIRED WITH A MINIMUM TRENCH DEPTH = 2', MINIMUM WIDTH = 4', MAXIMUM SIDE SLOPE STEEPNESS IS 1H:1V. THE KEY TRENCH SHALL BE CONSTRUCTED IN 6" TO 9" LAYERS AND COMPACTED TO 95% OF THE STANDARD PROCTOR. 16. THE EMBANKMENT CORE SHOULD BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS AND CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE PLANS. THE CORE SHOULD BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. THE CORE SHOULD BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE
- 17. 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.
- 18. ANY SPRINGS ENCOUNTERED IN THE FOUNDATION AREA OF THE BASIN EMBANKMENT SHOULD BE DRAINED TO THE OUTSIDE/DOWNSTREAM TOE OF THE EMBANKMENT WITH A DRAIN SECTION 2' BY 2' IN DIMENSION CONSISTENT WITH PENNDOT TYPE A SAND, COMPACTED BY HAND TAMPER. NO GEOTEXTILES ARE TO BE USED AROUND THE SAND. THE LAST 3' OF THIS DRAIN AT THE OUTSIDE/DOWNSTREAM SLOPE SHOULD BE CONSTRUCTED WITH AASTHO #8 MATERIAL. OTHER METHODS OF DRAINING SPRING DISCHARGES MAY BE ACCEPTED WITH APPROVAL OF THE DESIGN ENGINEER.
- 19. ALL EXPOSED EMBANKMENT SLOPES SHOULD BE LIMED, FERTILIZED, SEEDED AND MULCHED. PERMANENT VEGETATIVE GROUND COVER IN COMPLIANCE WITH 25 PA. CODE §102.22 (RELATING TO SITE STABILIZATION) SHOULD BE ESTABLISHED UPON COMPLETION OF BASIN CONSTRUCTION. OUTSIDE SLOPES SHOULD BE BLANKETED.



SURFACE DETENTION BASIN 1 DETAIL SCALE: 1" = 20'



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 SHEET: 25 OF 27 UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST PENNSYLVANIA NUMBER: ONE-CALL SYSTEM, INC. SERIAL NUMBER: 20152360845-000

market Syllange

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02 - REVISED PLANS - 02/05/18 01 - REVISED PER TOWNSHIP - 01/16/18 DRAWING ISSUE

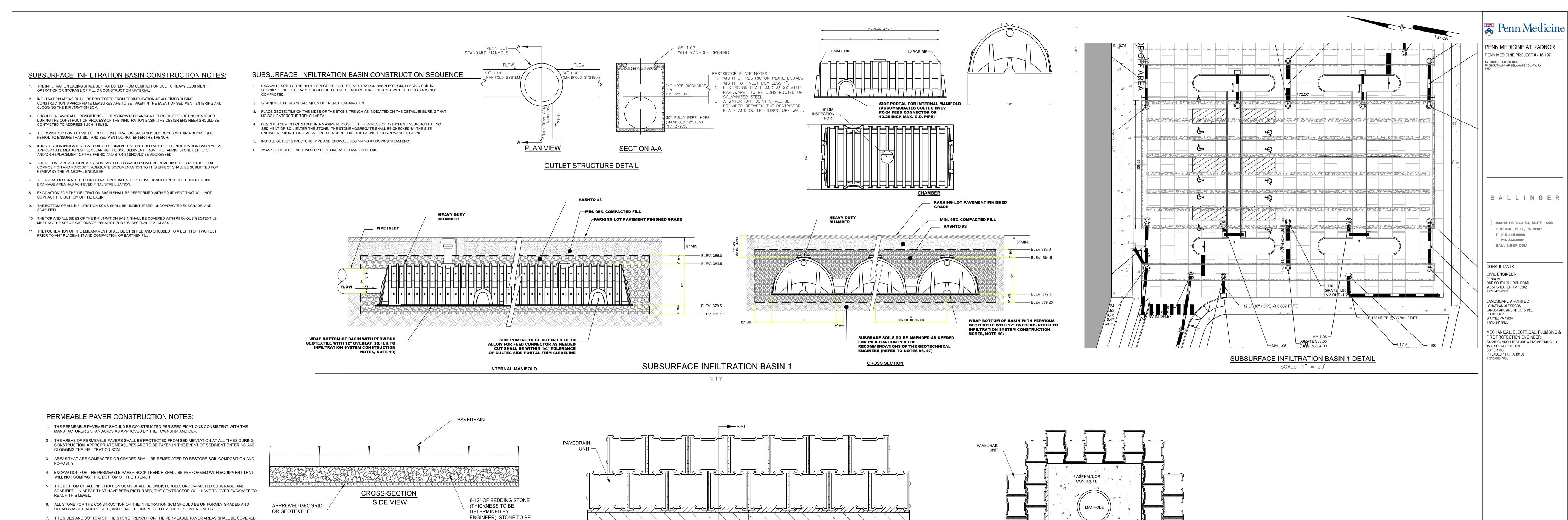
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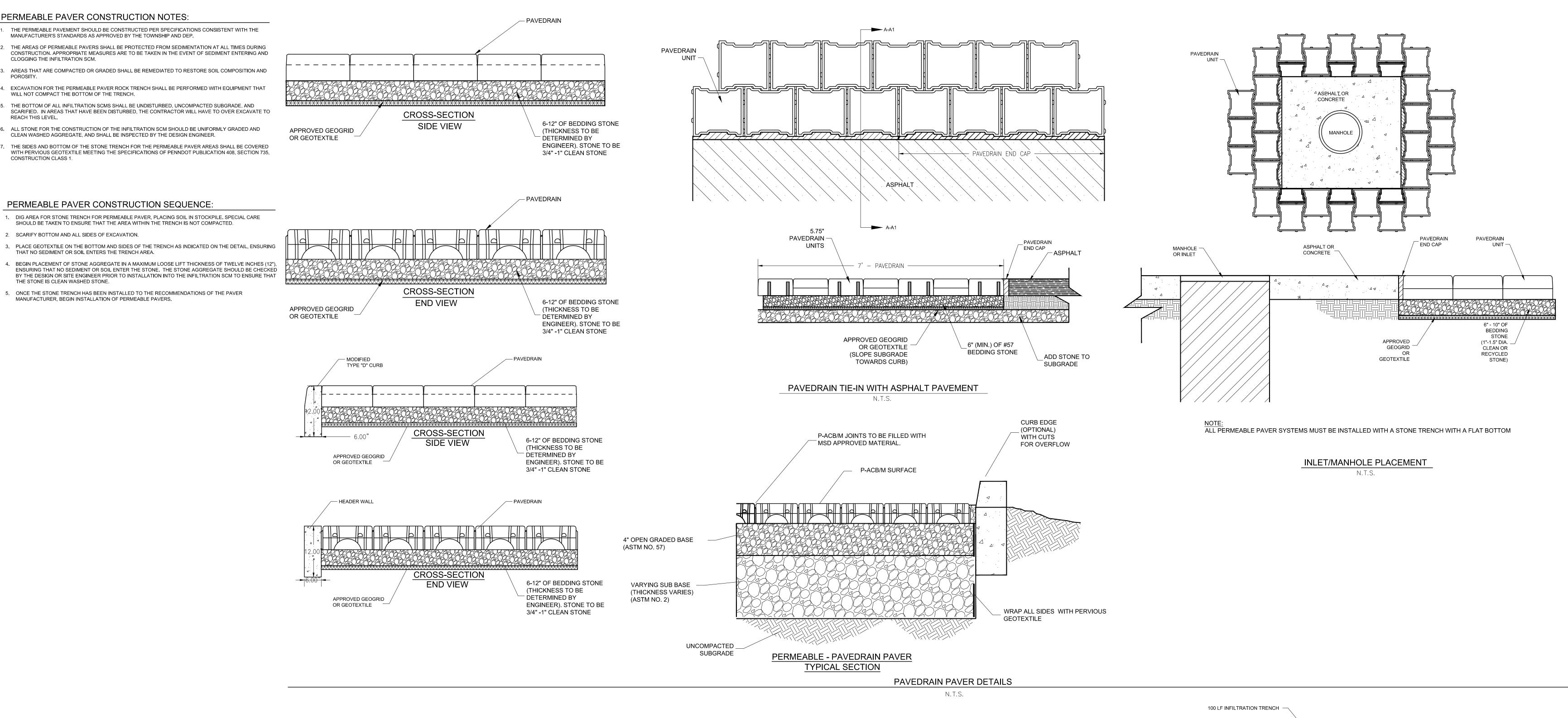
POST CONSTRUCTION

STORMWATER MANAGEMENT

DETAILS

PROJECT: UPHS1504 SCALE: AS SHOWN





21/2" PERVIOUS PAVING

15" DEPTH

(TYP)

ALL PERVIOUS PAVEMENT AREAS ARE TO BE INSTALLED ON UNCOMPACTED/UNDISTURBED SUBGRADE. IN THE

EVENT THAT DELETERIOUS OR UNSUITABLE SOILS ARE FOUND TO EXIST AT THE SUBGRADE. THAT MATERIAL

SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL AS DETERMINED BY THE GEOTECHNICAL

PERVIOUS PAVING

AGGREGATE GRADATION

SIEVE SIZE % PASSING

100

85-95

40-20

12-20

8-12

3-8

1/2"

3/8"

#8

#16

#30

#200

- 3" CHOKER COURSE

AASHTO #57

CLEAN WASHED

AASHTO #3 STONE

INSTALLED WHERE BEDROCK IS EXPOSED

UNCOMPACTED

SUBGRADE

3. DO NOT PAVE WITH CONVENTIONAL PAVEMENT OR PAVEMENT SEALANT. 8. AT NO TIME SHALL PERVIOUS PAVING AREAS BE USED BY

- C-40NW NON-WOVEN

GEOTEXTILE FILTER FABRIC

PERVIOUS PAVING MAINTENANCE:

1. DO NOT APPLY SAND OR CINDERS DURING SNOW REMOVAL

5. DO NOT PLACE MULCH OR DIRT ON PERVIOUS PAVEMENT.

4. DO NOT PRESSURE WASH PAVEMENT SURFACE.

2. PERVIOUS PAVING AREAS SHALL BE VACUUM SWEPT SEMI-ANNUALLY.

PERVIOUS ASPHALT PAVING DETAIL

— 6" COARSE SAND, TO BE

BASE MATERIAL SHALL BE WASHED AASHTO #3 STONE (OR PENNDOT 3A)

SEPARATION FROM SUBGRADE MATERIAL AND STONE UNDER STANDARD

STONE BASE SHALL BE COMPACTED WITH STATIC ROLLER ONLY. USE OF

ASHPALT BINDER SHALL BE MODIFIED WITH AN ELASTOMERIC POLYMER

TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22.

PERVIOUS PAVING SHALL CONSIST OF THE SPECIFIED AGGREGATE

THICKNESS. PAVING MATERIAL SHALL BE COMPACTED BY NO MORE

CONSTRUCTION VEHICLES OR FOR THE STORAGE OF MATERIALS.

10. SLOPE OF SUBGRADE SHALL MATCH SLOPE OF PAVEMENT SURFACE

9. C-40NW NON-WOVEN GEOTEXTILE FILTER FABRIC SUPPLIED BY CONTECH

6. PERVIOUS PAVING SHALL BE PLACED IN A SINGLE LIFT OF 2 1/2" FINAL

7. AFTER COMPACTION, PERVIOUS PAVING AREAS SHALL REMAIN

BASE MATERIAL SHALL BE WRAPPED IN FILTER FABRIC TO MAINTAIN

FREE OF SLATE, SHALE, CLAY, SILT, AND/OR VEGETATION.

A VIBRATORY ROLLER IS NOT PERMITTED.

THAN 2 PASSES OF A 10-TON ROLLER.

UNDISTURBED FOR A MINIMUM OF 48 HOURS.

BINDER BY WEIGHT.

OR APPROVED EQUAL.

UNLESS OTHERWISE NOTED.

CHOKER COURSE SHALL BE AASHTO #57 STONE.

WITH PERVIOUS GEOTEXTILE MEETING THE SPECIFICATIONS OF PENNDOT PUBLICATION 408, SECTION 735,

1. DIG AREA FOR STONE TRENCH FOR PERMEABLE PAVER, PLACING SOIL IN STOCKPILE. SPECIAL CARE SHOULD BE TAKEN TO ENSURE THAT THE AREA WITHIN THE TRENCH IS NOT COMPACTED.

5. ONCE THE STONE TRENCH HAS BEEN INSTALLED TO THE RECOMMENDATIONS OF THE PAVER

PERMEABLE PAVER CONSTRUCTION SEQUENCE:

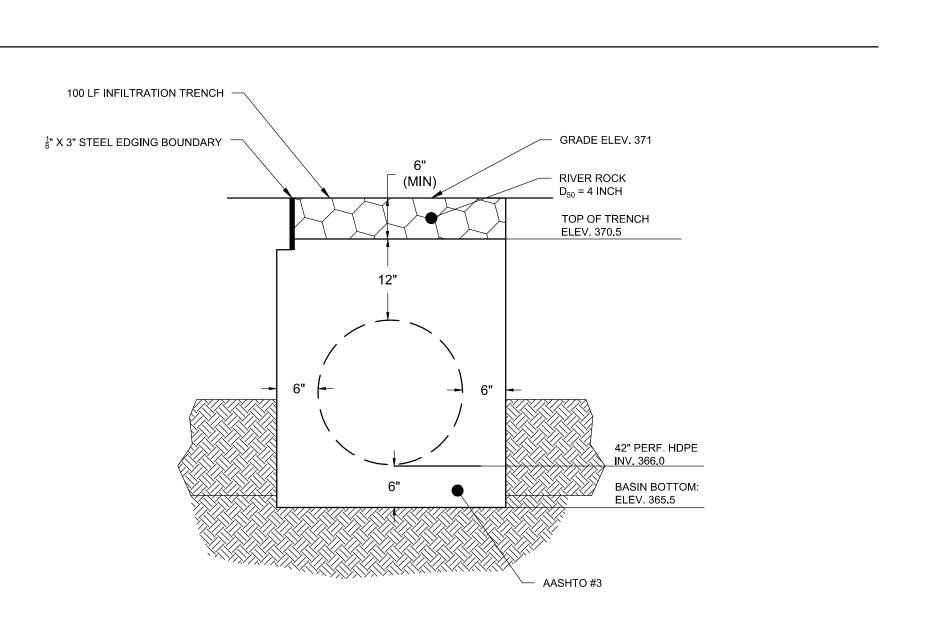
2. SCARIFY BOTTOM AND ALL SIDES OF EXCAVATION.

THE STONE IS CLEAN WASHED STONE.

THAT NO SEDIMENT OR SOIL ENTERS THE TRENCH AREA.

MANUFACTURER, BEGIN INSTALLATION OF PERMEABLE PAVERS.

CONSTRUCTION CLASS 1.



SUBSURFACE INFILTRATION TRENCH DETAIL

N.T.S.



SCALE: AS SHOWN ARCHITECTURE STORMWATER **MANAGEMENT** DETAILS SHEET: 26 OF 27

NOT FOR CONSTRUCTION

MICHAEL KISSINGER

No. PE073971 /

CONDITION OF USE

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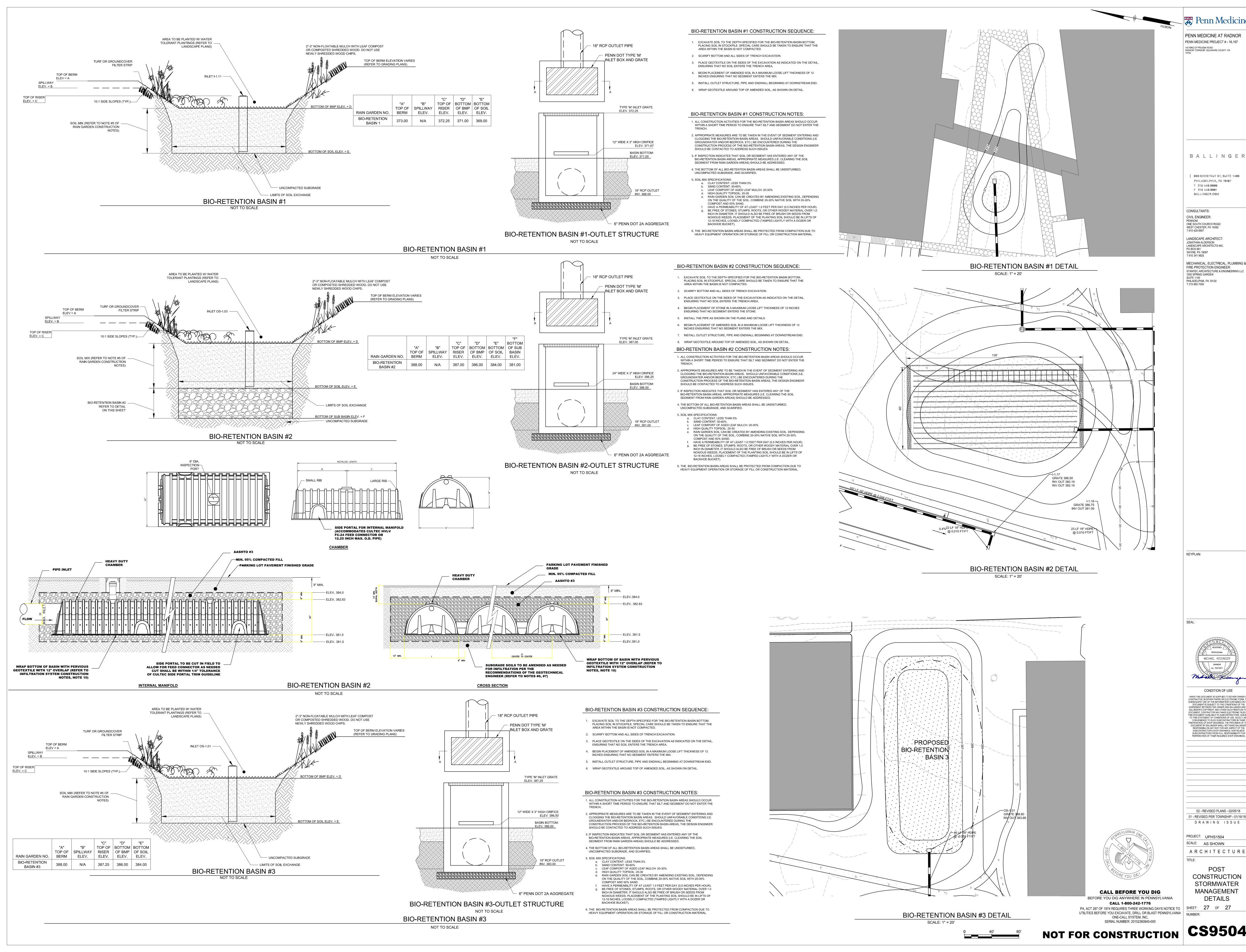
RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR

PERPERATION OF THEIR REQUIRED SHOP DRAWING

02 - REVISED PLANS - 02/05/18

01 - REVISED PER TOWNSHIP - 01/16/18

DRAWING ISSUE



PENN MEDICINE AT RADNOR

PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA

BALLINGER

833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 446 3900 F 215 446 3901

ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382

LANDSCAPE ARCHITECT:

JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC.

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION ENGINEER: STANTEC ARCHITECTURE & ENGINEERING LLC 1500 SPRING GARDEN SUITE 1100 PHILADELPHIA, PA 19130

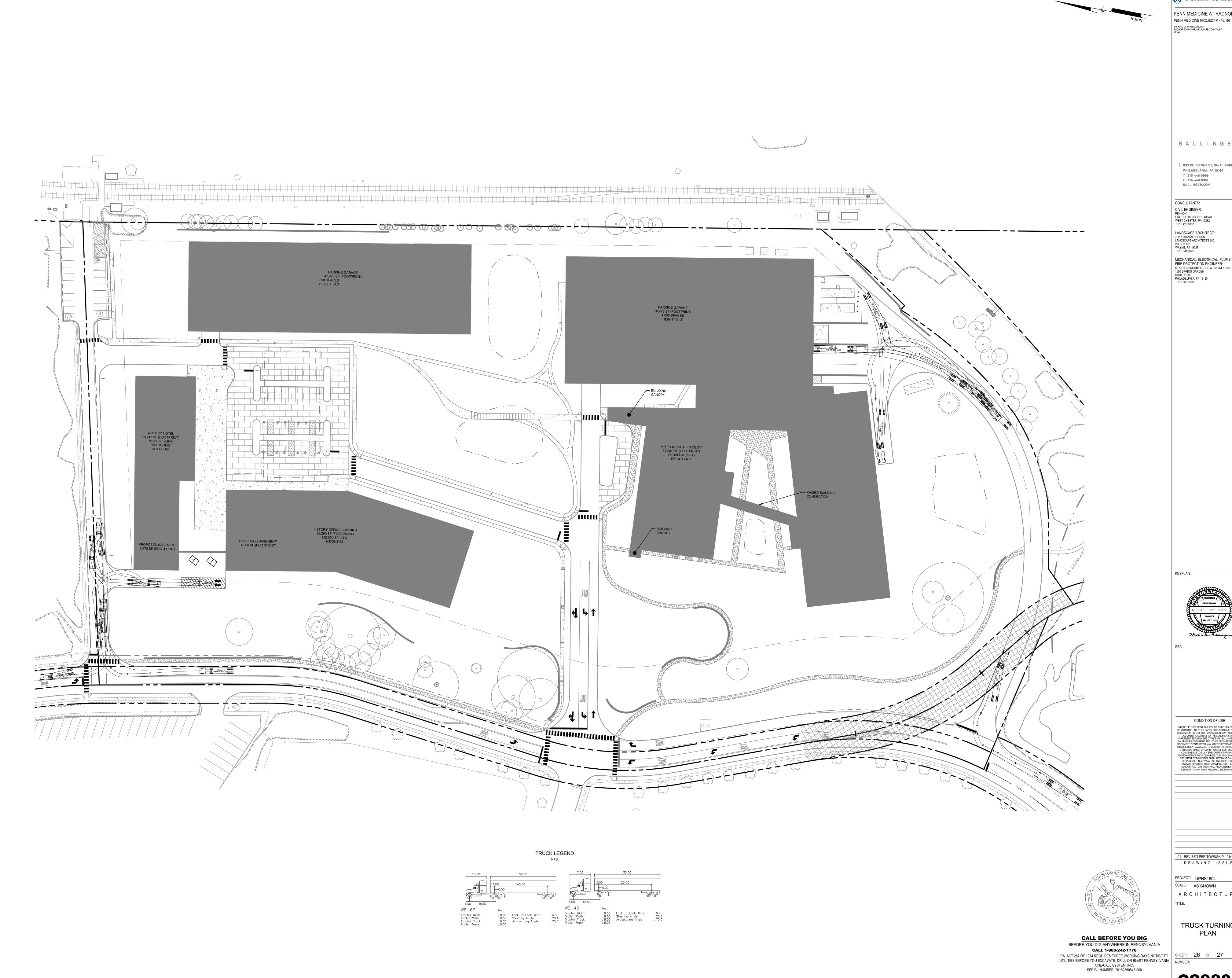
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PROJECT: UPHS1504 SCALE: AS SHOWN

ARCHITECTURE POST

CONSTRUCTION STORMWATER **MANAGEMENT** DETAILS



PENN MEDICINE AT RADNOR PENN MEDICINE PROJECT # - 16.197 145 KING OF PRUSSIA ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PA 19104

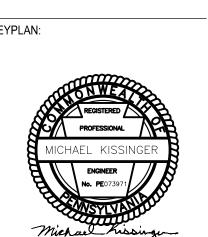
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833 CHESTNUT ST, SUITE 1400 PHILADELPHIA, PA 19107 T 215 44**6 3990** F 215 446 9991

CONSULTANTS: CIVIL ENGINEER: PENNONI ONE SOUTH CHURCH ROAD WEST CHESTER, PA 19382 T 610 429 8907

LANDSCAPE ARCHITECT: JONATHAN ALDERSON LANDSCAPE ARCHITECTS INC. PO BOX 661 WAYNE, PA 19087 T 610 341 9925

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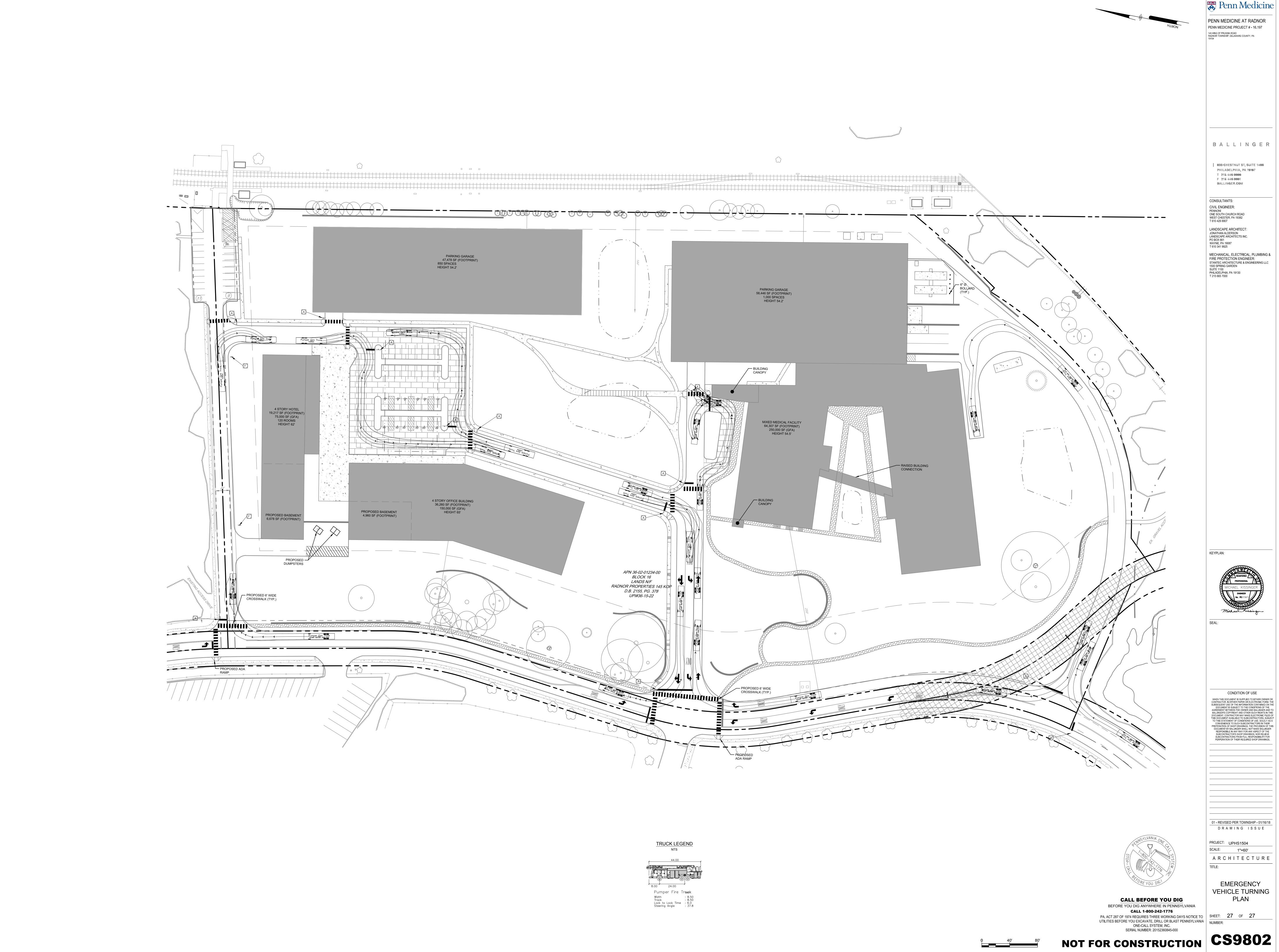
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SCALE: AS SHOWN ARCHITECTURE

TRUCK TURNING

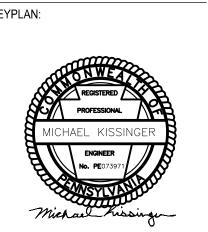
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PROJECT: UPHS1504 ARCHITECTURE

EMERGENCY VEHICLE TURNING

