PRELIMINARY/FINAL LAND DEVELOPMENT PLAN FOR WESTTOWN SCHOOL - OAK LANE PROJECT

WESTTOWN TOWNSHIP - CHESTER COUNTY - PENNSYLVANIA

REQUESTED WAIVERS/MODIFICATIONS

1. SECTIONS 144-311.B(3) AND 144-803.B(3)(c) - TO PERMIT HDPE DRAIN BASINS TO BE INSTALLED AS OPPOSED TO CONCRETE INLETS IN SELECT LOCATIONS

   ACTION BY THE SUPERVISORS: _____

2. SECTIONS 144-311.B(4) AND 144-803.B(3)(d) - TO WAIVE THE REQUIREMENT OF A TWO-INCH DROP FROM ALL INLET PIPE INVERT ELEVATIONS TO MOST SHALLOW OUTLET PIPE INVERT ELEVATION

   ACTION BY THE SUPERVISORS: _____

3. SECTIONS 144-311.B(8) AND 144-803.B(3)(g) - TO REDUCE THE MINIMUM STORM SEWER SIZE TO EIGHT-INCHES

   ACTION BY THE SUPERVISORS: _____

4. SECTIONS 144-311.B(9) AND 144-803.B(3)(h) - TO REDUCE THE REQUIRED COVER FOR STORM SEWERS IN LAWN AREAS FROM 24-INCHES TO 12-INCHES

   ACTION BY THE SUPERVISORS: _____

5. SECTION 144-311.B(11) - TO ALLOW VELOCITIES WITHIN STORM SEWER TO BE LESS THAN THREE FEET PER SECOND

   ACTION BY THE SUPERVISORS: _____

6. SECTIONS 144-311.C(3) AND 144-803.B(4)(c) - TO ALLOW 0% SLOPE FOR INFILTRATION/WATER QUALITY BASIN BOTTOMS

   ACTION BY THE SUPERVISORS: _____

7. SECTIONS 144-311.C(5) AND 144-803.B(4)(e) - TO ALLOW SMOOTH-LINED CORRUGATED HDPE (SLCPP) OUTLET PIPES FOR BASINS, TO ALLOW CONCRETE ANTI-SEEP COLLARS FOR BMP 1 AND BMP-4 TO BE DESIGNED IN ACCORDANCE WITH THE PADEP E&S CONTROL MANUAL

   ACTION BY THE SUPERVISORS: _____

8. SECTION 149-700.A - PRELIMINARY PLAN APPLICATION

   ACTION BY THE SUPERVISORS: _____

9. SECTIONS 149-702.B(7) AND 144-402.C(7) - TOTAL TRACT BOUNDARY LINES WITH BEARINGS AND DISTANCES

   ACTION BY THE SUPERVISORS: _____

10. SECTION 149-903.C(1) - DEDICATION OF ADDITIONAL RIGHT-OF-WAY

    ACTION BY THE SUPERVISORS: _____

10. SECTION 149-907.F - STREET CURB INTERSECTIONS HAVING A TANGENT ARC WITH A RADIUS OF 35 FEET.

    ACTION BY THE SUPERVISORS: _____

11. SECTION 149-925.B(1) - LOT OR PERIMETER YARD REQUIREMENTS

    ACTION BY THE SUPERVISORS: _____

PROJECT NARRATIVE

THE APPLICANT/OWNER (WESTTOWN SCHOOL) PROPOSES TO CONSTRUCT TWO (2) NEW SYNTHETIC TURF ATHLETIC FIELDS, ONE OF WHICH IS PROPOSED TO BE LIGHTED, ALONG OAK LANE - A LOCATION WITHIN THE SCHOOL CAMPUS WHERE EXISTING ATHLETIC FIELDS AND FACILITIES PRESENTLY EXIST. A NEW SUPPORT BUILDING HAVING TEAM ROOMS, RESTROOMS, AN ELEVATOR, AND STORAGE IS PROPOSED AS WELL AS A NEW 93-SPACE OFF-STREET PARKING FACILITY. THE SCHOOL'S EXISTING SOFTBALL FIELD WILL BE DISPLACED AND RECONSTRUCTED. THE NEW SUPPORT BUILDING WILL BE SERVED BY THE CAMPUS WATER SYSTEM (PRIVATE), PECO ELECTRIC, AND PUBLIC SEWER.

STRUCTURAL STORMWATER BMPs ARE PROPOSED IN ORDER TO ADDRESS RATE CONTROL, VOLUME CONTROL, AND WATER QUALITY REQUIREMENTS.

THE PROPOSED STRUCTURAL BMPs INCLUDE TWO (2) INFILTRATION BASINS AND TWO (2) SUBSURFACE DETENTION/INFILTRATION BEDS (EACH LOCATED BENEATH THE SYNTHETIC TURF ATHLETIC FIELDS). ALSO, THE SAND/RUBBER INFILL, GEOTEXTILE FABRIC, AND AGGREGATE BASE OF THE SYNTHETIC TURF ATHLETIC FIELDS ACT AS A CONSTRUCTED FILTER PRIOR TO RUNOFF REACHING THE UNDERGROUND BMPs.

THE DEVELOPMENT AREA COMPRISES 17.59 AC OF THE 194.05 ACRE SUBJECT PARCEL.

PENNSYLVANIA ACT 121 (2008) REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

DATE: 12/11/2018 BY: TURNER LAND SURVEYING SERIAL NO: 20183452567

UTILITY LIST

CONTACT PA ONE CALL AT 1-800-242-1776 FOR INDIVIDUAL UTILITY TELEPHONE NUMBERS.

WESTTOWN TOWNSHIP

COMCAST CABLE
1004 CORNERSTONE BLVD
DOWNINGTOWN, PA 19335
ATTN: TOM RUSSO
TOM_RUSSO@CABLE.COMCAST.COM

AQUA PENNSYLVANIA INC
762 W LANCASTER AVE
BRYN MAWR, PA 19010
ATTN: STEVE PIZZI
SBPIZZI@AQUAAMERICA.COM

BUCKEYE PARTNERS
FIVE TEK PARK
9999 HAMILTON BLVD
BREINIGSVILLE, PA 18031
ATTN: DAVE JONES
DAJONES@BUCKEYE.COM

PECO ENERGY C/O USIC
450 S HENDERSON RD SUITE B
KING OF PRUSSIA, PA 19406
ATTN: NIKKIA SIMPKINS
NIKKIASIMPKINS@USICLLC.COM

TRANSCONTINENTAL GAS / WILLIAMS GAS
99 FARMER RD
PRINCETON, NJ 08540
ATTN: DAN SCHAEITZER
DAN.SCHAEITZER@WILLIAMS.COM

WESTTOWN TOWNSHIP
1039 WILMINGTON PIKE
WEST CHESTER, PA 19382
ATTN: MARK GROSS
MGROSS@WESTTOWN.ORG

VERIZON PENNSYLVANIA LLC
1050 VIRGINIA DR
FORT WASHINGTON, PA 19034
ATTN: LURA LIPPINCOTT
LAURA.M.LIPPINCOTT@ONE.VERIZON.COM

OVERVIEW PLAN

SCALE: 1" = 500'

PARKING DATA

CALCULATION OF PARKING BURDEN:
(BASED ON TPD TRANSPORTATION OPERATIONAL ANALYSIS, AMENDMENT NO. 1, DATED 3/29/2023 - 83 ENTERING VEHICLES)

NEW SPACES REQUIRED:	83	
NEW SPACES PROPOSED:	93	164 TOTAL SPACES (SURPLUS OF 86 SPACES)
EXISTING EVENT PARKING SPACES:	76	

ALTERNATE CALCULATION OF PARKING BURDEN:
(BASED ON WESTTOWN TWP CODE 170-1705.E(1) - 2 SPACES/5 SEATS (300 BLEACHER SEATS))

NEW SPACES REQUIRED:	120	
NEW SPACES PROPOSED:	93	164 TOTAL SPACES (SURPLUS OF 44 SPACES)
EXISTING EVENT PARKING SPACES:	76	

AREA AND BULK REQUIREMENTS

MIN. LOT AREA = 2 AC
LOT AREA: 8,452,730.91 SF (194.05 AC)*

MIN LOT WIDTH = 200 FEET
LOT WIDTH (WESTTOWN RD) = 1,800 FEET**

SETBACKS:
SIDE YARD - ONE (50'), BOTH (100')
REAR YARD - 50'
FRONT YARD - 50' MIN. (60' ALONG RT 926)

MAX BUILDING COVERAGE: 20%
EXISTING BUILDING COVERAGE: 0.74%
PROPOSED BUILDING COVERAGE: 0.78%

MAX TOTAL IMPERVIOUS COVERAGE: 40%
EXISTING IMPERVIOUS COVERAGE: 6.49 AC / 3.34%
PROPOSED IMPERVIOUS COVERAGE: 7.97 AC / 4.11%

MAX DENSITY: (TRACT AREA X 0.5) = 97.02 AC

MAX BUILDING HEIGHT: 38 FEET (3 STORY)
MAX PROPOSED BUILDING HEIGHT: 38 FEET (2 STORY)

BUFFER REQUIREMENTS: 50 FEET

SEWER: PUBLIC

WATER: PRIVATE

* A PORTION OF THE SUBJECT TRACT (113.55 ACRES) IS LEASED FOR AGRICULTURAL PURPOSES

** REPRESENTS THE SMALLEST LOT FRONTAGE

IMPERVIOUS AREA (§144-402.C(11))	
EX. IMPERVIOUS SURFACES	10,676 SF
EX. IMPERVIOUS PROPOSED TO BE REPLACED	10,181 SF
EX. IMPERVIOUS TO BE PERMANENTLY REMOVED AND REPLACED WITH PERVIOUS GROUNDCOVER	445 SF
NEW ADDITIONAL IMPERVIOUS SURFACES	248,103 SF
PERCENTAGE OF SITE COVERED BY IMPERVIOUS SURFACES:	
EXISTING (%)	1.34 %
PROPOSED (%)	33.71 %

CONDITIONAL USE APPROVAL

AND NOW, THIS 19TH DAY OF JUNE 2023, UPON CONSIDERATION OF THE CONDITIONAL USE APPLICATION OF WESTTOWN SCHOOL PURSUANT TO § 170-2004 (CONDITIONAL USES) OF THE ZONING ORDINANCE AND § 170-1514.D(5) (OUTDOOR LIGHTING - PERMANENT RECREATIONAL AND SPORTS LIGHTING AND NIGHTTIME EVENTS) OF THE ZONING ORDINANCE TO PERMIT THE INSTALLATION OF PERMANENT EXTERIOR ATHLETIC FIELD LIGHTS FOR ATHLETIC EVENTS ON A SINGLE TURFED ATHLETIC FIELD FOR THE INDIVIDUAL PARCEL LOCATED AT 975 WESTTOWN ROAD, WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (UPI NO. 67-5-27), IT IS HEREBY ORDERED THAT THE CONDITIONAL USE REQUESTED SHALL BE GRANTED, SUBJECT TO THE FOLLOWING CONDITIONS:

1. THE APPLICANT SHALL CONSIDER DURING LAND DEVELOPMENT THE INSTALLATION OF EMERGENCY BACKUP LIGHTING TO ILLUMINATE SEGMENTS OF THE PATHWAY LEADING FROM THE PARKING LOT TO THE ATHLETIC FIELD WHERE THE POLE LIGHTS WILL BE INSTALLED.
2. LIGHTING FOR ALL PARKING LOTS ASSOCIATED WITH THE USE OF THE ATHLETIC FIELDS SHALL COMPLY WITH ALL APPLICABLE TOWNSHIP ORDINANCES AND REGULATIONS.
3. ALL CONDITIONS OF THE CONDITIONAL USE APPROVED IMPOSED BY THE BOARD SHALL BE CLEARLY SET FORTH ON THE LAND DEVELOPMENT PLANS AND RECORDED AS CONDITIONS OF FINAL LAND DEVELOPMENT APPROVAL.
4. THE APPLICANT SHALL PROVIDE TRUCK TURNING TEMPLATES TO THE TOWNSHIP DEMONSTRATING THAT EMERGENCY VEHICLES MAY SAFELY ACCESS THE PARKING LOT LOCATED CLOSEST TO THE ATHLETIC FIELDS.
5. THE APPLICANT SHALL PROVIDE THE SPECIFICATIONS FOR THE SCOREBOARD WHICH MUST MEET ALL RELEVANT TOWNSHIP ORDINANCE REQUIREMENTS.
6. APPLICANT SHALL ANALYZE THE INTERSECTION OF OAK LANE AND WESTTOWN ROAD AND COORDINATE IMPROVEMENTS WITH THE TOWNSHIP AND ITS CONSULTANTS TO THE EXTENT NECESSARY TO ADDRESS VISIBILITY AND ENSURE APPROPRIATE SIGHT DISTANCE.
7. IF REQUIRED BY PENNDOT OR TOWNSHIP CRITERIA, THE APPLICANT SHALL OBTAIN A PERMIT FOR THE EXISTING FLASHING SIGNAL THAT HAS INSTALLED ON OAK LANE.
8. THE APPLICANT SHALL PROVIDE SPECIFICATIONS FOR THE PUBLIC ANNOUNCEMENT SYSTEM AND SUCH SYSTEM MUST COMPLY WITH ALL RELEVANT TOWNSHIP ORDINANCE CRITERIA.
9. IF THE APPLICANT OR ITS AGENT(S) OBTAINS CONDITIONAL USE APPROVAL FOR THE INSTALLATION OF SOLAR PANELS ON ITS PROPERTY, IT SHALL PROVIDE CONSISTENT LANDSCAPING BUFFERS ON THE LAND DEVELOPMENT PLAN ASSOCIATED WITH THE ATHLETIC FIELDS IMPROVEMENTS AS WELL AS THE PLANS FOR SOLAR PANEL INSTALLATION.
10. THE APPLICANT AND THE USE AND DEVELOPMENT OF THE PROPERTY SHALL COMPLY WITH THE REPRESENTATIONS AND COMMITMENTS MADE IN THE TESTIMONY AND EXHIBITS PRESENTED AT THE HEARING TO THE BOARD.
11. THE APPLICANT AND THE USE AND DEVELOPMENT OF THE PROPERTY SHALL COMPLY IN ALL RESPECTS WITH ALL ORDINANCES AND REGULATIONS OF WESTTOWN TOWNSHIP AND WITH ALL APPLICABLE PROVISIONS OF ANY STATUE, ORDINANCE OR REGULATION OF ANY MUNICIPAL OR GOVERNMENTAL ENTITY HAVING JURISDICTION OVER THE PROPERTY OR THE USES THEREON.
12. THE ATHLETIC FIELD LIGHT SYSTEM MAY ONLY BE ENERGIZED IN CONJUNCTION WITH AN EVENT DIRECTLY RELATED TO AND UNDER THE CONTROL OF THE EDUCATIONAL OR SPORTS PROGRAM OF WESTTOWN SCHOOL. NO PRIVATE ORGANIZATIONS OR OTHER PUBLIC ENTITIES MAY USE THE ATHLETIC FIELD LIGHTS FOR LIGHTED EVENTS OF ANY REASON.

LIST OF DRAWINGS

*DENOTES POST CONSTRUCTION STORMWATER MANAGEMENT PLAN SHEETS

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGMENT OF PLAN, AND OFFER OF DEDICATION - CORPORATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF CHESTER

ON THIS THE _____ DAY OF _____, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED _____ BEING _____ OF _____ WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT THE CORPORATION IS THE _____ OF THE PROPERTY SHOWN ON THIS PLAN, THAT THEY ARE AUTHORIZED TO EXECUTE SAID PLAN ON BEHALF OF THE CORPORATION, THAT THE PLAN IS THE ACT AND DEED THE CORPORATION, THAT THE PLAN IS SUBMITTED WITH THE FREE WILL AND CONSENT OF THOSE WHO HAVE SIGNED, THAT THE CORPORATION DESIRES THE SAME TO BE RECORDED AND THAT ON BEHALF OF THE CORPORATION FURTHER ACKNOWLEDGES THAT ALL STREETS AND OTHER PROPERTY IDENTIFIED AS PROPOSED PUBLIC PROPERTY ARE HEREBY DEDICATED TO THE PUBLIC USE - (EXCEPTING THOSE AREAS LABELED "NOT FOR DEDICATION").

_____
OWNER

_____
NOTARY

MY COMMISSION EXPIRES _____, 20____

DRAINAGE PLAN ACKNOWLEDGEMENT

THE STORMWATER MANAGEMENT SYSTEM IS TO BE A PERMENENT FIXTURE THAT CAN NOT BE ALTERED OR REMOVED WITHOUT APPROVAL BY WESTTOWN TOWNSHIP. ANY REVISION TO THE APPROVED SWM SITE PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE MUNICIPALITY. A REVISED EROSION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED TO, AND APPROVED BY, THE CONSERVATION DISTRICT OR MUNICIPALITY (AS APPLICABLE) FOR A DETERMINATION OF ADEQUACY PRIOR TO CONSTRUCTION OF THE REVISED FEATURES.

_____
SIGNATURE OF OWNER DATE

DRAINAGE PLAN CERTIFICATION

_____, ON THIS DATE _____, HAS REVIEWED AND HEREBY CERTIFIES THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE WESTTOWN TOWNSHIP CODE, CHAPTER 144: "STORMWATER MANAGEMENT" AS AMENDED.

_____

ON BEHALF OF WESTTOWN TOWNSHIP, _____, ON THIS DATE _____ 20 ___ HAS REVIEWED AND HEREBY CERTIFIES TO THE BEST OF MY KNOWLEDGE THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF WESTTOWN TOWNSHIP CODE, CHAPTER 144, STORMWATER MANAGEMENT

CERTIFICATE OF REVIEW BY THE WESTTOWN TOWNSHIP PLANNING COMMISSION

REVIEWED BY THE PLANNING COMMISSION OF WESTTOWN TOWNSHIP, CHESTER COUNTY, PA,

THIS _____ DAY OF_____, 20___.

_____ _____
_____

CERTIFICATE OF APPROVAL BY THE WESTTOWN TOWNSHIP BOARD OF SUPERVISORS

APPROVED BY THE BOARD OF SUPERVISORS OF WESTTOWN TOWNSHIP, CHESTER COUNTY, PA,

THIS _____ DAY OF_____, 20___.

_____ _____
_____

CERTIFICATE OF REVIEW BY THE CHESTER COUNTY PLANNING COMMISSION

REVIEWED BY THE CHESTER COUNTY PLANNING COMMISSION THIS _____ DAY OF_____, 20___.

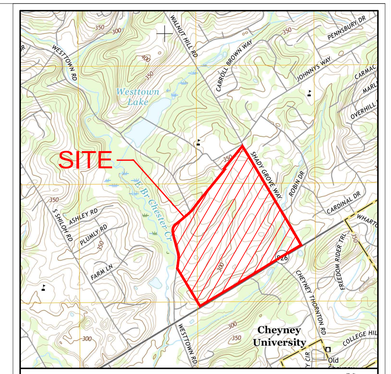
_____
SECRETARY

RECORDER'S CERTIFICATE

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF CHESTER COUNTY AT WEST CHESTER, PA, IN PLAN BOOK _____, PAGE _____, THIS _____ DAY OF_____, 20___.

_____
RECORDER OF DEEDS

UPI NO(S): 67-5-27



LOCATION MAP

USGS QUADRANGLE: WEST CHESTER SCALE: 1"=2000'

OWNER/APPLICANT

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

SOURCE OF TITLE

UPI NO:

67-5-27

DEED BOOK/PAGE:

DEEK BOOK 9407, PAGE 491

ZONING

ZONING DISTRICT: A/C (AGRICULTURAL / CLUSTER RESIDENTIAL

EXISTING USE(S): SCHOOL (PRINCIPAL USE)
AGRICULTURE (ACCESSORY USE)
ATHLETIC FIELD (ACCESSORY USE)

PROPOSED USE(S): SCHOOL (PRINCIPAL USE)
AGRICULTURE (ACCESSORY USE)
ATHLETIC FIELD (ACCESSORY USE)

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
2. CCCD COMMENTS	3-17-2023	TEH
3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4. CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5. CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

743 S. BROAD ST.
LITITZ, PA 17543
(717) 626-7271
elagroup.com
ELA group, inc.
ENGINEERS • LANDSCAPE ARCHITECTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAVER
REGISTRATION NUMBER
LA001266
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
COVER SHEET
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
1 of 48

NOTES:

A. SURVEYING AND BASEMAPPING NOTES

1. PLANIMETRIC AND TOPOGRAPHIC SURVEY PREPARED BY SITE ENGINEERING CONCEPTS, LLC - SOUTHEASTERN, PA 19399, (484) 222-0061. SURVEY DATE(S): 2013 AS AMENDED/UPDATED THROUGH 2018.
2. LIMIT OF DETAILED, FIELD-RUN TOPOGRAPHIC AND PLANIMETRIC SURVEY ARE DEFINED ON THE EXISTING CONDITIONS PLANS. ALL BOUNDARY AND PLANIMETRIC INFORMATION OUTSIDE OF THE DEFINED SURVEY AREA IS TAKEN FROM AVAILABLE CHESTER COUNTY GIS RESOURCES.
3. BENCHMARK: CONCRETE MONUMENT EAST OF THE OAK LANE/WESTTOWN ROAD INTERSECTION. ELEVATION= 320.88 NAVD 88 VERTICAL DATUM. OTHER CAMPUS BENCHMARKS CAN BE FOUND FROM PLANS TITLED "WESTTOWN SCHOOL CONTROL MONUMENT LOCATION MAPS" PREPARED BY HOWELL KLINE SURVEYING, LLC., DATED 7/31/2006.
4. DETAILED SURVEY AREA REPRESENTS A COMPILATION OF SEVERAL SURVEYS OF VARIOUS AREAS OF THE WESTTOWN SCHOOL CAMPUS CONDUCTED FROM 2013 TO 2018 THAT HAVE BEEN COMBINED TOGETHER. COORDINATE SYSTEM USED IS LAMBERT NA 83 / CORS 96 PA SOUTH ZONE 3702.
5. UNDERGROUND ELECTRIC LINES WERE FIELD SURVEYED FROM MASTER LOCATORS INC. FIELD MARKINGS IN AUGUST 2018. MOST WATER, STEAM, AND SANITARY UTILITY PIPE LOCATIONS AND SIZES WERE TAKEN FROM ARCHIVED PLANS FROM WESTTOWN SCHOOL AND CONSULTATIONS/MARKUPS BY WESTTOWN FACILITIES STAFF BASED ON THEIR RECOLLECTIONS. THUS PIPE LOCATIONS AND SIZES ARE VERY APPROXIMATE AND WERE NOT FIELD LOCATED OR SURVEYED. SOME MANHOLES, CLEANOUTS, ETC. WERE FIELD SURVEY LOCATED. CONSTRUCTION/EXCAVATION ACTIVITIES SHALL NOT RELY ON THIS SURVEY. PA ONE CALL, FIELD INVESTIGATION, OR OTHER UTILITY LOCATING METHODS OR SERVICES SHALL BE UTILIZED.
6. WETLANDS DELINEATION PERFORMED BY LANDSTUDIES, INC., WWW.LANDSTUDIES.COM, IN MAY 2018. WETLANDS FLAGGING LOCATED BY FIELD SURVEY IN MAY 2018. ON SEPTEMBER 18, 2022, VORTEX ENVIRONMENTAL, INC. (WWW.VORTEXENVIRONMENTAL.COM) CONDUCTED A SUBSEQUENT WETLAND ASSESMENT AND CONFIRMED THAT THE BOUNDARIES OF THE WETLAND AREAS AND OTHER "WATERS OF THE COMMONWEALTH" DELINEATED BY LANDSTUDIES, INC. IN 2018 ARE ACCURATELY DEPICTED ON THESE LAND DEVELOPMENT PLANS.

B. STORMWATER MANAGEMENT

1. THE APPLICANT/OWNER IS RESPONSIBLE FOR SUBMITTING STORMWATER MANAGEMENT FACILITY INSPECTION REPORTS TO WESTTOWN TOWNSHIP IN A FORMAT AND ON A SCHEDULE AS DIRECTED BY WESTTOWN TOWNSHIP. THE FIRST REPORT IS TO BE SUBMITTED 1 YEAR AFTER COMPLETION OF CONSTRUCTION, BE PREPARED AT THE DIRECTION OF A PROFESSIONAL ENGINEER, AND INCLUDE INFORMATION REGARDING THE CONDITION OF THE FACILITIES AND RECOMMENDATIONS FOR ANY NECESSARY REPAIRS.
2. ALL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, AND PA DEP CHAPTER 102 REGULATIONS.
3. IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 102 OF THE ADMINISTRATIVE CODE, TITLE 25 (PA DEP RULES AND REGULATIONS), A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND ITS ACCOMPANYING NARRATIVE MUST BE AVAILABLE ON SITE DURING CONSTRUCTION UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL FACILITIES.
4. THE WATERSHED AREA CONTRIBUTING TO THE UNNAMED TRIBUTARY OF EAST BRANCH CHESTER CREEK FOR THIS PROJECT/PROJECT AREA DISCHARGES APPROXIMATELY 390 LF UPSTREAM OF THE FEMA FLOODPLAIN OF TRIBUTARY 2 OF EAST BRANCH CHESTER CREEK. THIS FLOODPLAIN AREA IS NOT CLOSE ENOUGH TO THE PROJECT LIMIT LINE TO BE SHOWN ON THE GRADING PLANS FOR THIS PROJECT. THE FLOODPLAIN SHOWN ON THE FEMA MAPPING FOR TRIBUTARY 2 OF THE EAST BRANCH CHESTER CREEK REFLECTS "ZONE X", A SPECIAL FLOOD HAZARD BOUNDARY (0.2% ANNUAL CHANCE FLOOD AREA, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH OF LESS THAN 1 FOOT, OR WITH DRAINAGE AREAS OF LESS THAN 1 SQ MILE). REFER TO FLOOD INSURANCE RATE MAP (MAP NO. 42029402156) PUBLISHED BY THE U.S. DEPARTMENT OF HOMELAND SECURITY, FEDERAL EMERGENCY MANAGEMENT AGENCY ON 9/29/2017.
5. A BLANKET EASEMENT OVER THE ENTIRETY OF PROJECT AREA (LIMIT OF DISTURBANCE) IS GRANTED TO THE TOWNSHIP FOR THE PURPOSE OF ACCESSING PRIVAE UTILITIES AND STORM DRAINAGE INFRASTRUCTURE FOR INSPECTIONS, REPAIRS, AND (IF NECESSARY) REPLACEMENT. THIS BLANKET EASEMENT.
6. NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN THE AREA OF ANY STORMWATER MANAGEMENT FACILITIES THAT COULD ADVERSELY AFFECT THE FUNCTION OF THE FACILITIES OR CONFLICT WITH THE EASEMENT AGREEMENT. THE MUNICIPALITY SHALL HAVE THE RIGHT TO:

   6.1. ACCESS THE SITE TO INSPECT STORMWATER FACILITIES AT ANY REASONABLE TIME

   6.2 REQUIRE THAT THE LAND OWNER TAKE CORRECTIVE MEASURES AND ASSIGN THE LAND OWNER REASONABLE TIME PERIODS FOR ANY NECESSARY ACTION.

   6.3 AUTHORIZE MAINTENANCE TO BE DONE AND LIEN ALL COST OF ALL WORK AGAINST THE PROPERTIES OF THE PRIVATE ENTITY RESPONSIBLE FOR MAINTENANCE.
7. IF THE MUNICIPALITY DETERMINES, AT ANY TIME, THAT ANY PERMANENT STORMWATER MANAGEMENT FACILITY HAS BEEN ELIMINATED, ALTERED, OR IMPROPERLY MAINTAINED, THE LANDOWNER OF THE LOT SHALL BE ADVISED OF CORRECTIVE MEASURES REQUIRED AND GIVEN A REASONABLE PERIOD OF TIME, WITHIN WHICH TO TAKE SUCH CORRECTIVE ACTION. IF SUCH CORRECTIVE ACTION IS NOT TAKEN BY THE LANDOWNER, THE MUNICIPALITY MAY CAUSE THE WORK TO BE DONE AND SHALL TAKE THE APPROPRIATE ACTION TO FILE A MUNICIPAL CLAIM PURSUANT TO THE PA MUNICIPAL CLAIMS AND TAX LIENS ACT, ACT 1923, MAY 16, P.L.207, AS AMENDED AND SUPPLEMENTED, AS A LIEN UPON THE REAL PROPERTY UPON WHICH THE WORK WAS DONE.
8. ALL STORMWATER MANAGEMENT FACILITIES ARE PERMANENT AND SHALL BE MAINTAINED BY THE LANDOWNER TO THE "DESIGN CONDITION" AS ESTABLISHED BY THESE PLANS, INCLUDING ALL REQUIREMENTS OF THE PADEP NPDES POST CONSTRUCTION STORMWATER PERMIT. STORMWATER MANAGEMENT FACILITIES SHALL NOT BE ALTERED OR REMOVED WITHOUT THE APPROVAL OF A REVISED PLAN BY THE MUNICIPALITY OR ITS DESIGNEE.
9. THE OWNERSHIP AND MAINTENANCE OF ALL "DURING CONSTRUCTION" STORMWATER BMPs SHALL BE BY THE PERMITTEE AND/OR CO-PERMITTEE(S) OF THE NPDES PERMIT. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO:
   - A. REMOVAL OF SILT AND DEBRIS FROM ALL STORMWATER STRUCTURES.
   - B. PERIODIC REPLACEMENT OF STRAW BALES, DIKES, STRAW FILTERS, OR SIMILAR MEASURES.
   - C. ESTABLISHMENT OR RE-ESTABLISHMENT OF VEGETATION BY SEEDING AND MULCHING OR SODDING OF SCOURED AREAS OR AREAS WHERE VEGETATION HAS NOT SUCCESSFULLY BEEN ESTABLISHED.
   - D. INSTALLATION OF NECESSARY CONTROLS TO CORRECT UNFORESEEN PROBLEMS CAUSED BY STORM EVENTS WITHIN DESIGN FREQUENCIES.
   - E. REMOVAL OF ALL TEMPORARY STORMWATER MANAGEMENT CONTROL FACILITIES UPON INSTALLATION OF PERMANENT STORMWATER FACILITIES AT THE COMPLETION OF THE PROJECT.
   - F. REPAIR OF STRUCTURAL DAMAGE OR DETERIORATION OF ANY KIND, INCLUDING THAT CAUSED BY SINKHOLES OR OTHER EVENTS.
10. REPRESENTATIVES OF THE MUNICIPALITY MAY ENTER, AT REASONABLE TIMES, UPON ANY PROPERTY, WITHIN THEIR JURISDICTION, TO INVESTIGATE OR ASCERTAIN THE CONDITION OF THE SUBJECT PROPERTY WITH REGARD TO ANY ASPECT REGULATED BY THE APPLICABLE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND/OR STORMWATER MANAGEMENT ORDINANCE. THE MUNICIPALITY IS GRANTED THE RIGHT, BUT NOT THE OBLIGATION, TO ENTER THE PROPERTY FOR THE PURPOSES OF INSPECTIONS AND MAINTENANCE ACTIVITIES REGARDING THE STORMWATER CONVEYANCE FACILITIES AND BMPs SHOWN ON THIS PLAN. A BLANKET EASEMENT FOR THIS PURPOSE IS HEREBY ESTABLISHED AS PART OF THESE PLANS.
11. UNLESS SPECIFICALLY NOTED OTHERWISE, THE PROPERTY OWNER IS RESPONSIBLE FOR THE MOWING OF ALL STORMWATER MANAGEMENT FACILITIES AS NECESSARY TO MAINTAIN ADEQUATE STANDS OF GRASS AND TO CONTROL WEEDS.
12. ALL INLET GRATES SHALL BE BICYCLE SAFE.
13. TOP OF GRATE ELEVATIONS REFLECT SPECIFIED SUMP AS APPLICABLE. LENGTH OF PIPE IS MEASURED FROM CENTERLINES OF STRUCTURES.
14. ALL SMOOTH LINED CORRUGATED POLYETHYLENE STORM PIPE (SLCPP) PROPOSED FOR THE PURPOSE OF BASIN DISCHARGE SHALL BE PROVIDED WITH INTEGRAL BELL AND SPIGOT JOINTS MEETING THE REQUIREMENTS OF AASHTO M252, AASHTO M294 OR ASTM F2306. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477 AND SHALL BE INSTALLED BY THE PIPE MANUFACTURER AND COVERED WITH A REMOVABLE, PROTECTIVE WRAP TO ENSURE THE GASKET IS FREE OF DEBRIS. IF SLCPP IS NOT DEEMED ACCEPTABLE FOR BASIN DISCHARGE, RCP SHALL BE USED. ALL REINFORCED CONCRETE STORM PIPE (RCP) SHALL BE PROVIDED WITH WATERTIGHT "O" RING GASKETS.
15. DISCHARGE FROM SITE IMPROVEMENTS SHALL HONOR DRAINAGE DIVIDES SHOWN ON THE STORMWATER MANAGEMENT PLAN OR IN THE POST CONSTRUCTION STORMWATER MANAGEMENT REPORT. ROOF DRAINS FROM THE PROPOSED BUILDINGS SHALL BE CONNECTED DIRECTLY TO THE DRAINAGE STRUCTURES WHERE INDICATED. SPLASH BLOCKS SHALL BE PROVIDED WHERE DOWNSPOUTS DISCHARGE AT-GRADE.
16. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS, INCLUDING OVERLAND FLOWS AND DISCHARGE FROM ROOF DOWNSPOUTS AND OVERFLOWS.
17. ALL STORMWATER FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE MUNICIPALITY AND/OR PENNDOT, AS APPLICABLE.

C. OTHER UTILITIES

1. UNDERGROUND ELECTRIC LINES WERE FIELD SURVEYED FROM MASTER LOCATORS INC. FIELD MARKINGS IN AUGUST 2018. MOST WATER, STEAM, AND SANITARY UTILITY PIPE LOCATIONS AND SIZES WERE TAKEN FROM ARCHIVED PLANS FROM WESTTOWN SCHOOL AND CONSULTATIONS/MARKUPS BY WESTTOWN FACILITIES STAFF BASED ON THEIR RECOLLECTIONS. THUS PIPE LOCATIONS AND SIZES ARE VERY APPROXIMATE AND WERE NOT FIELD LOCATED OR SURVEYED. SOME MANHOLES, CLEANOUTS, ETC. WERE FIELD SURVEY LOCATED. CONSTRUCTION/EXCAVATION ACTIVITIES SHALL NOT RELY ON THIS SURVEY. PA ONE CALL, FIELD INVESTIGATION, OR OTHER UTILITY LOCATING METHODS OR SERVICES SHALL BE UTILIZED.
2. ALL WATER MAINS SHOWN AS PROPOSED ON THESE PLANS ARE PRIVATELY OWNED AND MAINTAINED.
3. ALL SANITARY SEWER MAINS/FACILITIES SHOWN AS PROPOSED ON THESE PLANS ARE PRIVATELY OWNED AND MAINTAINED.
4. A BLANKET EASEMENT IS HEREBY ESTABLISHED AS PART OF THESE PLANS FOR THE RIGHT OF ENTRY AND ACCESS BY WESTTOWN TOWNSHIP FOR THE INSPECTION AND ENFORCEMENT OF OPERATIONS AND MAINTENANCE REQUIREMENTS FOR SANITARY SEWER INFRASTRUCTURE IN ACCORDANCE WITH ORDINANCE REQUIREMENTS AND/OR O&M AGREEMENT(S).
5. ALL FIRE PROTECTION SYSTEMS MUST BE DESIGNED BY A PROFESSIONAL LICENSED IN PENNSYLVANIA, APPROVED BY LOCAL CODE OFFICIALS, AND BASED ON REAL CONDITIONS WITH THE NECESSARY TESTING.

D. ACCESS & STREETS

1. NO NEW PUBLIC STREETS ARE PROPOSED OR OFFERED FOR DEDICATION AS PART OF THIS PLAN. CONSTRUCTION OF ANY IMPROVEMENTS TO PUBLIC STREETS SHOWN ON THIS PLAN SHALL BE THE RESPONSIBILITY OF THE DEVELOPER.
2. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945 BEFORE DRIVEWAY ACCESS TO A STATE HIGHWAY IS PERMITTED (P.L. 1242, NO. 428), KNOWN AS THE "STATE HIGHWAY LAW." ACCESS TO THE STATE HIGHWAY SHALL ONLY BE AS AUTHORIZED BY THE HIGHWAY OCCUPANCY PERMIT, AND THE BOROUGH COUNCIL'S APPROVAL OF THIS PLAN IN NO WAY IMPLIES THAT SUCH PERMIT CAN BE ACQUIRED. THE TOWNSHIP, UPON APPROVING THE BUILDING PERMIT REQUESTED, SHALL NOT BE HELD LIABLE FOR DAMAGES TO PERSONS OR PROPERTY ARISING OUT OF THE ISSUANCE OR DENIAL OF A PERMIT BY THE DEPARTMENT.
3. ON A CORNER LOT OR AT A POINT OF ENTRY ON A PUBLIC ROAD, NOTHING SHALL BE ERECTED, PLACED, OR ALLOWED TO GROW IN A MANNER WHICH OBSCURES VISION:
   - ABOVE THE HEIGHT OF 2.5 FEET MEASURED FROM THE CENTER LINE GRADES OF THE INTERSECTING STREETS; AND
   - WITHIN THE AREA BOUNDED BY THE CENTER LINES OF INTERSECTING STREETS AND A LINE JOINING POINTS ON THESE CENTER LINES DISTANCES FROM THE INTERSECTION AS SPECIFIED IN CHAPTER 149, SUBDIVISION AND LAND DEVELOPMENT.
4. THERE SHALL BE NO PLANTINGS, GROUND COVER, OR OTHER OBJECTS PLACED WITHIN THE ROAD RIGHT-OF-WAY ABOVE 18 INCHES IN HEIGHT.

E. ATHLETIC FIELD LIGHTING NOTES

1. THE ATHLETIC FIELD LIGHTING SYSTEM MAY ONLY BE ENERGIZED IN CONJUNCTION WITH AN EVENT DIRECTLY RELATED TO AND UNDER THE CONTROL OF THE EDUCATIONAL OR SPORTS PROGRAM OF WESTTOWN SCHOOL.
2. NO PRIVATE ORGANIZATIONS OR OTHER PUBLIC ENTITIES MAY USE THE ATHLETIC FIELD LIGHTS FOR LIGHTED EVENTS OF ANY REASON.

F. GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE TO INSTALL CURB RAMPS TO THE LATEST ADA OR PENNDOT STANDARDS AT THE TIME OF CONSTRUCTION.
2. ALL CONSTRUCTION SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA) WHERE REQUIRED.
3. ALL CONSTRUCTION SHALL BE SUBJECT TO THE REQUIREMENTS OF THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE, AS ADOPTED BY THE MUNICIPALITY.
4. THE CONTRACTOR SHALL INSPECT THE SITE AND VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. ELA GROUP, INC. MAKES NO REPRESENTATIONS AS TO THE SUBSURFACE CONDITIONS OF THE PROJECT SITE INCLUDING DEPTH OF BEDROCK, GEOLOGICAL CONDITIONS, SOIL STABILITY, ETC. THE CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH ALL SURVEYING AND BASEMAPPING NOTES ASSOCIATED WITH THESE PLANS PRIOR TO BIDDING AND CONSTRUCTION.

INFILTRATION SYSTEM CONSTRUCTION NOTES

INFILTRATION SYSTEM CONSTRUCTION NOTES

1. ENTIRE BOTTOM OF INFILTRATION SYSTEM SHALL BE CONSTRUCTED ON UNDISTURBED GROUND. THE AREAS FOR THE INFILTRATION SYSTEMS SHALL BE FIELD STAKED AND FENCED OFF WITH HIGH VISIBILITY CONSTRUCTION FENCING AS INDICATED IN THE CONSTRUCTION SEQUENCE AND WHERE SHOWN ON THE PLANS.
2. SEE INFILTRATION SYSTEMS DETAILS.
3. THE INFILTRATION AREAS MUST REMAIN UNDISTURBED PRIOR TO CONSTRUCTION TO PREVENT COMPACTION OF THE UNDERLYING SOILS. THE INFILTRATION AREAS MUST BE PROTECTED AT ALL TIMES FROM ANY SILTATION AND COMPACTION BOTH DURING AND FOLLOWING CONSTRUCTION. INSTALL AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES IMMEDIATELY.
4. THE CONTRACTOR MUST UTILIZE APPROPRIATE EARTHMOVING EQUIPMENT AND TECHNIQUES IN THE CONSTRUCTION OF THE INFILTRATION SYSTEMS TO ELIMINATE POTENTIAL COMPACTION OF THE SOIL WITHIN THE AREA RESERVED FOR THE INFILTRATIONS SYSTEMS. EARTHMOVING EQUIPMENT SHALL NOT BE PERMITTED DIRECTLY ON THE AREA OF THE INFILTRATION TRENCH DURING OR AFTER CONSTRUCTION.
5. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED LOCATION OF THE INFILTRATIONS SYSTEMS TO MINIMIZE COMPACTION OF THE SOIL.
6. EXCAVATE THE INFILTRATION SYSTEMS TO DESIGN DIMENSIONS.

INFILTRATION VERIFICATION NOTES:

1. INFIELD VERIFICATION OF INFILTRATION RATES ARE REQUIRED FOR ALL INFILTRATION FACILITIES AND SHALL BE CONDUCTED AT THE INFILTRATION ELEVATION (IE SUBGRADE ELEVATION). INFILTRATION TEST SHALL UTILIZE A DOUBLE RING INFILTOMETER TEST AND IN ACCORDANCE WITH PROCEDURES IN APPENDIX C OF THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL. NO FACTOR OF SAFETY SHOULD BE CONSIDERED IN DETERMINING IF POST-DEVELOPMENT INFILTRATION RATES ARE WITHIN THE ACCEPTABLE RANGE. A MINIMUM OF TWO (2) TESTS SHALL BE COMPLETED IN EACH INFILTRATION FACILITY.
2. THE PRESENCE/ABSENCE OF A LIMITING LAYER WITHIN 2 FEET OF THE BOTTOM OF THE BASIN SHALL BE VERIFIED WITH THE USE OF A HAND-PROBE HAVING AN APPROXIMATE DIAMETER OF $\frac{3}{8}$" OR GREATER BY EXTENDING THE PROBE INTO THE GROUND A MINIMUM OF 2 FEET ON AN APPROXIMATELY 20-25 FT GRID PATTERN ACROSS THE BOTTOM OF THE BASINS. THE TOWNSHIP SHALL BE NOTIFIED IF A LIMITING LAYER IS ENCOUNTERED WITHIN 2 FEET OF THE PROPOSED BASIN SUBGRADE ELEVATION.
3. IF BEDROCK IS PRESENT, A GEO-TECHINCAL PROFESSIONAL SHALL INSPECT THE EXPOSED ROCK IN ORDER TO DETERMINE THE MOST APPROPRIATE COURSES OF ACTION. IN GENERAL, OVER-EXCAVATE A MINIMUM OF 2' BELOW INFILTRATION ELEVATION AND BACKFILL WITH SUITABLE ON SITE SOIL LIGHTLY TAMPED IN PLACE. THE SUITABILITY OF ONSITE SOILS IS TO BE DETERMINED BY THE OVERSEEING ENGINEER/GEOTECHNICAL PROFESSIONAL. INFILTRATION TESTING SHALL BE PERFORMED IN BACKFILLED AREAS IF THE AREA EXCEEDS 100 SF OR AS DEEMED APPROPRIATE BY THE OVERSEEING ENGINEER/GEOTECHNICAL PROFESSIONAL. ROCK REMOVAL SHOULD BE HANDLED ON A CASE-BY-CASE BASIS AND UNDER THE SUPERVISION OF A GEOTECHNICAL PROFESSIONAL. FLOATING BOULDERS AND/OR FRAGMENTED ROCKS WHICH CAN READILY BE REMOVED AND WHICH ARE DEEMED NOT TO NEGATIVELY IMPACT THE FUNCTIONALITY OF THE FACILITY MAY PROVIDE STABILITY WITHIN THE SOIL/BEDROCK INTERFACE, REDUCE THE LIKELIHOOD OF SUBSIDENCE, AND MAY BE LEFT IN PLACE.
4. FOR BELOW-GROUND FACILITIES, A GEOTECHNICAL ENGINEER SHALL BE CONTACTED TO ENSURE BACKFILL MATERIALS PROVIDE PROPER STRUCTURAL SUPPORT AND INFILTRATION RATES.
5. IF OTHER LIMITING LAYERS, SUCH AS GROUNDWATER, OR REDOXIMORPHIC FEATURES INDICATIVE OF A SEASONALLY HIGH WATER TABLE ARE ENCOUNTERED THE GEOTECHNICAL ENGINEER, STORMWATER DESIGN ENGINEER, AND TOWNSHIP ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN ORDER TO DETERMINE AN APPROPRIATE COURSE OF ACTION. ADDITIONAL MEASURES AND/OR AN ALTERNATE DESIGN MAY BE REQUIRED.
6. IF FIELD VERIFIED RATES ARE LESS THAN 0.20 IN/HR OR GREATER THAN 6.0 IN/HR, THE FOLLOWING STEPS SHOULD BE TAKEN:

IF THE FIELD VERIFIED INFILTRATION RATES ARE EXCESSIVELY HIGH (>6.0 IN/HR):

1. DETERMINE THE EXTENT OF THE MATERIALS EXHIBITING THE HIGH INFILTRATION RATES THROUGH A COMBINATION OF VISUAL-MANUAL CLASSIFICATION, HAND PROBING, DENSITY TESTING, OR OTHER SUITABLE METHODS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
2. OVER EXCAVATE THE MATERIALS TO THE DEPTH WHERE THE MATERIAL TYPE CHANGES OR A MAXIMUM DEPTH OF 2 FEET, WHICHEVER IS ENCOUNTERED FIRST.
3. IN-PLACE INFILTRATION TESTING (MIN. TWO TEST PITS) OF THE NATURAL SOIL MATERIAL MUST BE PERFORMED AFTER THE UNSUITABLE MATERIAL IS EXCAVATED TO CONFIRM ACCEPTABLE INFILTRATION RATES PRIOR TO PLACEMENT OF THE SUITABLE SOIL. SOIL TESTING SHALL UTILIZE A DOUBLE RING INFILTROMETER TEST AND BE IN ACCORDANCE WITH PROCEDURES IN APPENDIX C OF THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL.
4. IF EXCESSIVE RATES ARE ASSOCIATED WITH WEATHERED OR BROKEN ROCK, THE ROCK SURFACE SHOULD BE EXAMINED BY THE GEOTECHNICAL ENGINEER PRIOR TO REPLACEMENT OF SUITABLE MATERIAL TO EVALUATE KARST POTENTIAL.
5. REPLACE THE EXCAVATED MATERIAL WITH FINER GRAINED MATERIALS APPROVED BY THE GEOTECHNICAL ENGINEER. SUITABLE SOIL MIXTURES CAN CONSIST OF A BLEND OF ON-SITE AND/OR OFF-SITE MATERIALS AVAILABLE TO THE CONTRACTOR, AND SUBJECT TO TESTING AND APPROVAL OF THE GEOTECHNICAL ENGINEER, OR SHOULD BE CONSISTENT WITH THE INFILTRATION BASIN AMENDED SOIL SPECIFICATIONS. IN-SITU INFILTRATION TESTING (MIN. 2 TESTS) OF THE BACKFILLED MATERIAL IS REQUIRED FOR ALL BACKFILLED AREAS EXCEEDING 100 SF.
6. SUITABLE SOIL MIXTURES MAY CONSIST OF MATERIALS BLENDED BY VOLUME RATIOS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
7. MATERIALS SHOULD BE LIGHTLY TRACKED INTO PLACE IN NON-STRUCTURAL AREAS.
8. IF MATERIAL REPLACEMENT IS LOCATED OUTSIDE OF STRUCTURAL AREAS, SOIL SHOULD BE PLACED IN ACCORDANCE WITH THE RECOMMENDED METHODS DESCRIBED FOR AMENDED SOIL PLACEMENT IN THE CONSTRUCTION SEQUENCE.
9. IF MATERIAL REPLACEMENT IS REQUIRED IN STRUCTURAL AREAS (EX: BELOW GRADE SWM FACILITIES IN PAVED AREAS), MATERIAL PLACEMENT SPECIFICATIONS, INCLUDING MATERIALS TYPE, MIX RATIO, COMPACTIVE EFFORT AND REQUIRED DENSITY SHOULD BE DETERMINED BY THE GEOTECHNICAL ENGINEER.

IF THE FIELD VERIFIED INFILTRATION RATES ARE EXCESSIVELY LOW (<0.20 IN/HR):

1. DETERMINE THE EXTENT OF THE MATERIALS EXHIBITING THE LOW INFILTRATION RATES THROUGH A COMBINATION OF VISUAL-MANUAL CLASSIFICATION, HAND PROBING, DENSITY TESTING, OR OTHER SUITABLE METHODS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
2. OVER EXCAVATE THE MATERIALS TO THE DEPTH WHERE THE MATERIAL TYPE CHANGES OR A MAXIMUM DEPTH OF 2 FEET, WHICHEVER IS ENCOUNTERED FIRST. IF SUFFICIENTLY PERMEABLE SOIL IS NOT ENCOUNTERED WITHIN TWO FEET OF THE INSUFFICIENTLY PERMEABLE MATERIAL, IT IS NOT SUITABLE TO MERELY REPLACE THE UNSUITABLE MATERIAL WITH MORE PERMEABLE MATERIAL, AS THIS SIMPLY CREATES A "BATH TUB."
3. IN-PLACE INFILTRATION TESTING (MIN. TWO TEST PITS) OF THE NATURAL SOIL MATERIAL MUST BE PERFORMED AFTER THE UNSUITABLE MATERIAL IS EXCAVATED TO CONFIRM ACCEPTABLE INFILTRATION RATES PRIOR TO PLACEMENT OF THE SUITABLE SOIL. SOIL TESTING SHALL UTILIZE A DOUBLE RING INFILTROMETER TEST AND BE IN ACCORDANCE WITH PROCEDURES IN APPENDIX C OF THE PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL.
4. IF ROCK IS ENCOUNTERED, THE ROCK SHOULD BE REMOVED TO A MINIMUM DEPTH OF 2 FEET BELOW THE BOTTOM OF BASIN AND SHOULD BE EXAMINED BY THE GEOTECHNICAL ENGINEER PRIOR TO REPLACEMENT OF SUITABLE MATERIAL TO EVALUATE KARST POTENTIAL AND ENSURE THE ROCK HAS SUFFICIENT INFILTRATION ABILITY TO MEET THE MINIMUM CRITERIA (>0.20IN/HR).
5. REPLACE THE EXCAVATED MATERIAL WITH MORE COARSELY GRAINED MATERIALS APPROVED BY THE GEOTECHNICAL ENGINEER. SUITABLE SOIL MIXTURES CAN CONSIST OF A BLEND OF ON-SITE AND/OR OFFSITE MATERIALS AVAILABLE TO THE CONTRACTOR, AND SUBJECT TO TESTING AND APPROVAL OF THE GEOTECHNICAL ENGINEER OR SHOULD BE CONSISTENT WITH THE INFILTRATION BASIN AMENDED SOIL SPECIFICATIONS.
6. SUITABLE SOIL MIXTURES MAY CONSIST OF MATERIALS BLENDED BY VOLUME RATIOS AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
7. MATERIALS SHOULD BE LIGHTLY TRACKED INTO PLACE IN NON-STRUCTURAL AREAS.
8. IF MATERIAL REPLACEMENT IS LOCATED OUTSIDE OF STRUCTURAL AREAS, SOIL SHOULD BE PLACED IN ACCORDANCE WITH THE RECOMMENDED METHODS DESCRIBED FOR AMENDED SOIL PLACEMENT IN THE CONSTRUCTION SEQUENCE.
9. IF MATERIAL REPLACEMENT IS REQUIRED IN STRUCTURAL AREAS (EX: BELOW GRADE SWM FACILITIES IN PAVED AREAS), MATERIAL PLACEMENT SPECIFICATIONS, INCLUDING MATERIALS TYPE, MIX RATIO, COMPACTIVE EFFORT AND REQUIRED DENSITY SHOULD BE DETERMINED BY THE GEOTECHNICAL ENGINEER.
10. IF, THROUGH REMEDIATION, EXCESSIVELY LOW INFILTRATION RATES CANNOT BE MADE TO MATCH THE MINIMUM ACCEPTABLE INFILTRATION RATE AT THE LOCATION OF THE PROPOSED FACILITY(AS DETERMINED BY THE REQUIRED INFILTRATION TESTS DURING CONSTRUCTION), WORK MUST CEASE AND THE APPLICANT MUST SUBMIT FOR REVIEW AND APPROVAL A REVISED COURSE OF ACTION.

INSPECTION SCHEDULE
CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN

CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN FOR WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE:

1. ALL STAGES OF CONSTRUCTION OF INFILTRATION BASINS BMP 1 & BMP 4; INCLUDING, BUT NOT LIMITED TO: EXCAVATION/SUBGRADE PREPARATION, UNDERDRAIN INSTALLATION, APPROVAL OF AND PLACEMENT OF AMENDED SOIL MATERIALS.
2. ALL STAGES OF CONSTRUCTION OF SYNTHETIC TURF FIELDS AND BELOW-FIELD DRAINAGE SYSTEMS, INCLUDING INFILTRATION BEDS BMP 2 & BMP 3. THIS INCLUDES: EXCAVATION/SUBGRADE PREPARATION, FILL PLACEMENT AND COMPACTION, GEOTEXTILE FABRIC INSTALLATION, STONE BACKFILL PLACEMENT, AND DISTRIBUTION PIPE/OUTLET STRUCTURE INSTALLATION.
3. ALL OTHER SPECIFIC TIMES REQUIRED BY THE MUNICIPALITY, CONTRACT DOCUMENTS, PADEP, AND THE CHESTER COUNTY CONSERVATION DISTRICT.

PCSM PLANNING AND DESIGN NOTES §102.8(B)

1. THIS PCSM PLAN PRESERVES THE INTEGRITY OF STREAM CHANNELS AND MAINTAINS AND PROTECTS THE PHYSICAL, BIOLOGICAL, AND CHEMICAL QUALITIES OF THE RECEIVING SYSTEM THROUGH THE USE OF STORMWATER BMPS, INCLUDING ABOVE- AND BELOW-GROUND INFILTRATION BMPS TO MITIGATE THE INCREASE IN PEAK RUNOFF RATES, MITIGATE THERMAL IMPACTS, REDUCE/MINIMIZE POLLUTANTS.
2. THIS PCSM PLAN MINIMIZES THE INCREASE OF STORMWATER RUNOFF RATE AND VOLUME AS THE TURF FIELD IS PERVIOUS, ALLOWING RUNOFF TO SLOWLY PERCOLATE THROUGH THE STONE SUBBASE TO THE SUBGRADE BENEATH WHERE IT INFILTRATES INTO THE GROUND. TWO INFILTRATION BASINS WILL PROVIDE ADDITIONAL RATE AND VOLUME CONTROL.
3. THIS PCSM PLAN MINIMIZES IMPERVIOUS AREAS BY PROVIDING PERVIOUS SYNTHETIC TURF FIELD SURFACES WHICH ALLOWS PERCOLATION THROUGH THE BASE STONE AND THE SCARIFIED, UNCOMPACTED SUBGRADE ALLOWS INFILTRATION. ADDITIONALLY, A LARGE PORTION OF THE PROJECT INVOLVES REGRADING EXISTING GRASS AND AGRICULTURAL AREAS.
4. THIS PCSM PLAN MAXIMIZES THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION THROUGH AVOIDING ENCROACHMENT UPON EXISTING DRAINAGE FEATURES, LIMITING THE EARTH DISTURBANCES TO ONLY AREAS NECESSARY FOR THE PROJECT COMPLETION.
5. THIS PCSM PLAN MINIMIZES LAND CLEARING AND GRADING BY CONSTRUCTING IN AN ALREADY-DEVELOPED AREA AND CONSTRUCTING IMPROVEMENTS IN STAGES.
6. THIS PCSM PLAN MINIMIZES SOIL COMPACTION BY CONSTRUCTING OVER ALREADY-DEVELOPED AREAS AND INSTALLING INFILTRATION/WATER QUALITY BMPS TO THE MAXIMUM EXTENT FEASIBLE.
7. THIS PCSM PLAN UTILIZES OTHER STRUCTURAL OR NON-STRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF, INCLUDING BIO-INFILTRATION BASINS AND SUBSURFACE INFILTRATION BEDS.

PCSM REPORT REFERENCE

REFER TO THE APPROVED PCSM REPORT TITLED 'NPDES PCSM MODULE 2/POST CONSTRUCTION STORMWATER MANAGEMENT REPORT FOR WESTTOWN SCHOOL - OAK LANE PROJECT', DATED JANUARY 27, 2023, WITH A REVISION DATE OF OCTOBER 27, 2023 FOR COMPLETE SUPPORTING CALCULATIONS AND DOCUMENTATION REGARDING THE PROPOSED STORMWATER MANAGEMENT IMPROVEMENTS DEPICTED IN THIS PLAN SET.

SURFACE WATERS

RECEIVING SURFACE WATER: EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

RECEIVING SURFACE WATER: UNT. TO EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

SOILS

CaB	CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
GgC	GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
MaA	MANOR LOAM, 0 TO 3 PERCENT SLOPES, HSG 'B'
MaB	MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
MaB	MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

Stormwater BMP Information Chart 5.B revised March 15, 2016

	Infiltration Information					Drainage Information						BMP Information					
Proposed Structural BMPs (site specific)	Measured Infiltration Rate[9]	Factor of Safety	Design Infiltration Rate	Dewatering Time[1]	Elevation of Limiting Zone - Water Table, Bedrock, etc.[2]	Total Drainage Area to BMP	Total Impervious Drainage Area to BMP	Infiltration BMP Surface Area	Total Drainage Area Loading Ratio[6]	Impervious Area Loading Ratio[7]	Volume of Runoff Tributary to BMP During the 2yr/24hr Design Storm[5]	Calculated Infiltration Volume (from storms up to and including 2yr/24hr)	Calculated Managed Volume (from storms up to and including 2yr/24hr)[8]	Maximum water surface elevation in BMP from 2yr storm[3]	Infiltration Elevation Bottom of Bed/ Basin[3]	Elevation of Infiltration Test[4]	Elevation of E&S Sediment Basin Bottom (if applies)
	in./hr.	*Min. of 2*	*in./hr.*	*hrs.*		*sq. ft*	*sq. ft.*	*sq. ft.*			*cf*	*cf*	*cf*				
BMP 6.4.2 **Infiltration Basin**																	
BMP 1	0.81	2	0.41	33.7	N/E @ 285	216,893	53504	11,329	19.1	5	19,880	11,844	15,322	290.57	288.5(sg)/289.5(fg)	287, 288.5, 289	289.5
BMP 4	1.67	2	0.84	16.7	GW @ 307	424,430	15823	18,641	22.8	0.8	25,095	18,850	18,850	311.01	309(sg)/310(fg)	309.0	310.0
BMP 6.4.3 **Subsurface Infiltration Bed**																	
BMP 2	4.65	2	2.32	1.7	N/E @ 312	96,824	96,824	75,725	1	1	24,426	24,426	24,426	316.75	316.0	315.5/316	n/a
BMP 3	2.02	2	1.01	10.8	N/E @ 315	96,824	96,824	26,795	4	4	24,426	24,426	24,426	321.04	319.0	318.5/319.5	n/a

All information should be based on the 2-year/24-hour storm

Provide page numbers from the stormwater narrative identifying the location of the above information.

[1] Can include active infiltration time - dewatering time should not exceed 72 hours after the 2-year/24-hour storm

[2] Depth to limiting zone is recommended to be at least 2 ft below infiltration testing elevation/proposed infiltration elevation.

[3] A maximum of 2 feet of Hydraulic head is recommended.

[4] Provide supporting field notes/documenation from soil evaluation.

[5] This value should be greater than or equal to the Volume to be Infiltrated or Managed by the BMP.

[6] A maximum of 8:1 is recommended.

[7] A maximum of 5:1 is recommended; however, in carbonate geology areas, a maximum of 3:1 is recommended.

[8] Calculated runoff volume that is managed in ways other than infiltration to address 25 PA Code Ch 102.8(g)(2)

[9] The infiltration testing information should be located on the plan view of the PCSM Plan and should include infiltration test elevation and rate.

Any deviations from the recommendations above should be adequately justified by a qualified professional and included with the application.

NOTE: This chart is for summary purposes only and should be consistent with all design calculations and worksheets.

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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ENGINEER
No. PE086960

JASON C BEST
REGISTRATION NUMBER
LA002566

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT
SUBJECT:
GENERAL PLAN NOTES
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	N/A

UPI NO(S): 67-5-27

DRAWING NO.
2 of 48

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\COVER.dwg - PLOTTED: Oct 26, 2023 3:07 pm

TEMPORARY CONTROL MEASURES

1. STABILIZED CONSTRUCTION ENTRANCE
    a. A STABILIZED PAD OF CRUSHED STONE (AASHTO NO. 1) SHALL BE LOCATED WHERE CONSTRUCTION TRAFFIC WILL BE ENTERING AND EXISTING THE SITE. THE STABILIZED CONSTRUCTION ENTRANCE IS USED TO REDUCE OR ELIMINATE THE TRACKING OR FLOWING OF SEDIMENT INTO THE EXISTING TRAVELWAYS AND STREETS BORDERING THE SITE.
    b. ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK AS NEEDED. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WATER SHALL NOT BE USED TO REMOVE SEDIMENT.
2. TOPSOIL STOCKPILE
    a. A STOCKPILE SHALL BE USED TO CONTAIN ALL STRIPPED TOPSOIL IN A LIMITED AREA IN ORDER TO KEEP DISTURBANCE TO A MINIMUM.
    b. STOCKPILES SHALL BE IMMEDIATELY STABILIZED WITH A TEMPORARY COVER CROP OF ANNUAL RYEGRASS (1 LB. / 1,000 SQUARE FEET) OF WINTER RYE (3.5 LBS. / 1,000 SQUARE FEET) IN ACCORDANCE WITH ACCEPTED SEEDING PRACTICES.
    c. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
    d. STOCKPILES SHALL BE LOCATED WHERE SHOWN ON THE PLANS OR AT AN ALTERNATE LOCATIONS APPROVED BY THE CONSERVATION DISTRICT.
    e. BEFORE DISPOSING OF SOIL, OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 1102 REGULATIONS.
3. FILTER SOCK
    a. FILTER SOCKS SHALL BE USED TO INTERCEPT SEDIMENT-LADEN RUNOFF FOR SMALL WATERSHEDS.
    b. FILTER SOCKS SHALL BE INSTALLED IN ACCORDANCE WITH THE MAXIMUM SLOPE TO LENGTH RELATIONSHIPS AS PER MANUFACTURER, PADEP, AND CONSERVATION DISTRICT RECOMMENDATIONS.
    c. THE CONTRACTOR SHALL MAINTAIN THE SOCK IN A FUNCTIONAL CONDITION AT ALL TIMES, AND IT SHALL BE ROUTINELY INSPECTED.
    d. THE SOCK SHALL BE ROUTINELY MAINTAINED THROUGHOUT CONSTRUCTION AND REPAIRED WHEN NECESSARY.
    e. THE CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SOCK WHEN SEDIMENT DEPTHS REACH ONE HALF OF THE EXPOSED HEIGHT OF THE SOCK, OR AS DIRECTED BY INSPECTION AUTHORITIES.
4. INLET SEDIMENT PROTECTION
    a. INLET SEDIMENT PROTECTION SHALL BE UTILIZED AT ALL STORM SEWER INLETS SUSCEPTIBLE TO RECEIVING SEDIMENT LADEN RUNOFF, AND WHICH DO NOT DISCHARGE TO A DESIGNATED SEDIMENT TRAP OR SEDIMENT BASIN.
    b. THE CONTRACTOR SHALL UTILIZE THE TYPE OF INLET PROTECTION SHOWN ON THE EROSION CONTROL PLANS AND DETAILS. AT THE CONTRACTOR'S DISCRETION, A ©BAG TYPE^ INLET INSERT MAY BE USED FOR INLET PROTECTION IN ALL PROPOSED PAVED AREAS.
    c. THE INLET SEDIMENT PROTECTION SHALL BE CHECKED AND FLUSHED, AS REQUIRED, AFTER EACH RAINFALL/RUNOFF EVENT. IF NECESSARY, THE INLET SEDIMENT PROTECTION SHALL BE REPLACED TO ENSURE SEDIMENTS DO NOT ENTER THE STORM SEWER SYSTEM.
    d. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INLET SEDIMENT PROTECTION TO MAINTAIN STORM WATER DRAINAGE, AND TO PREVENT SEDIMENT FROM COLLECTING AROUND THE INLET.
    e. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT, OR WHEN THE DISTANCE BETWEEN THE GRATE AND THE SEDIMENT LEVEL IS REDUCED TO 18".
    f. STORM WATER INLETS, WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.
5. TEMPORARY SEEDING/MULCHING
    a. TEMPORARY SEEDING AND MULCHING SHALL BE APPLIED WHERE INDICATED IN THE NARRATIVE TO PROVIDE STABILIZATION TO EXPOSED AREAS. ALL AREAS WHERE CONSTRUCTION ACTIVITY HAS CEASED SHALL IMMEDIATELY BE SEEDED WITH THE SPECIFIED TEMPORARY SEED MIX.
    b. STRAW OR HAY MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 3.0 TONS PER ACRE (ENOUGH TO LIGHTLY COVER 75% TO 90% OF THE DESIGNATED AREAS).
    c. THE TEMPORARY SEEDING/MULCHING SHALL BE AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS, AND AS OUTLINED IN THE SEEDING/MULCHING SECTION OF THIS NARRATIVE.
    d. MULCH CONTROL NETTING, OR EROSION CONTROL BLANKETS, MUST BE INSTALLED ON ALL SLOPES GREATER THAN 3:1.

PERMANENT CONTROL MEASURES AND FACILITIES

1. PERMANENT GRASS
    a. ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED SHALL BE COVERED WITH GRASS IN ORDER TO MINIMIZE EROSION. THE SEED MIXTURE SHALL BE APPLIED AS SPECIFIED OR IT MAY BE HYDRO-SEEDED BY A PERSON EXPERIENCED IN SUCH APPLICATIONS. SEED SHALL BE APPLIED DURING THE REGULAR GROWING SEASON OF THE SPECIES SPECIFIED.
    b. PERMANENT SEEDING SHALL NOT OCCUR BEFORE APRIL 1 OR AFTER OCTOBER 15. DURING SUMMER APPLICATIONS, THE PERCENTAGE OF HARD SEED IN THE MIX, AND THE RATE OF APPLICATION, SHALL BE INCREASED. IF SEEDING CANNOT OCCUR DURING THE REGULAR GERMINATION PERIOD, THE EXPOSED AREAS SHALL BE MULCHED AS INDICATED PREVIOUSLY, AND THEN SEEDED WHEN THE GERMINATION PERIOD OCCURS.
    c. SEED MIXTURE FOR PERMANENT SEEDING BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH SEEDING SCHEDULE ON THE DRAWINGS.
    d. SOIL AMENDMENTS, SUCH AS LIME AND FERTILIZER, SHALL BE APPLIED IN ACCORDANCE WITH A SOIL TEST FOR THE TYPE OF SEED PROPOSED. IN LIEU OF A SOIL TEST, AMENDMENTS SHALL BE APPLIED AT THE RATES SPECIFIED IN THE SEEDING/MULCHING SECTION OF THIS NARRATIVE.
2. MULCH
    a. STRAW MULCH SHALL BE APPLIED TO SEEDING AREAS TO HELP ESTABLISH A PERMANENT GRASS COVER AND TO PREVENT EROSION.
    b. STRAW OR HAY MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 3.0 TONS PER ACRE (ENOUGH TO LIGHTLY COVER 75% TO 90% OF THE DESIGNATED AREA).
    c. AREAS MAY BE HYDRO-MULCHED AS AN ALTERNATIVE TO STRAW MULCH, IF DESIRED.
3. SOD
    a. IN AREAS WHERE THE SLOPE IS 2:1 OR GREATER, THE DEVELOPER WILL INSTALL SOD. SOD MATERIAL AND INSTALLATION SHALL CONFORM TO THE GUIDELINE SPECIFICATIONS TO SODDING, BY THE AMERICAN SOD PRODUCERS ASSOCIATION.
    b. SOD SHALL BE INSTALLED DURING THE REGULAR GROWING SEASON OF THE SEED SPECIES OF WHICH THE SOD IS COMPRISED, OR GENERALLY NOT BEFORE APRIL 1 OR AFTER OCTOBER 15.
4. EROSION CONTROL MATTING AND WATERCOURSE PROTECTION
    a. EROSION CONTROL MATTING SHALL BE USED WHERE INDICATED ON THE PLAN AND AT THE OWNER'S/ CONTRACTOR'S DISCRETION AT ALL AREAS WHERE STABILIZATION APPEARS TO BE DIFFICULT.
    b. EROSION CONTROL MATTING/WATERCOURSE PROTECTION SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH THE PLAN DETAILS.
    c. EROSION CONTROL MATTING MAY BE USED ON STEEP SLOPE AREAS IF DISTURBANCE IS TO OCCUR DURING NO-GERMINATING PERIODS AND STABILIZATION APPEARS DIFFICULT.
    d. EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES GREATER THAN 3:1.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE ACCOMPANYING CONSTRUCTION SEQUENCE/STAGING OF EARTHMOVING ACTIVITIES. EACH STAGE SHALL BE COMPLETED BEFORE A SUBSEQUENT STAGE IS INITIATED. BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES AT LEAST 7 DAYS PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES. (THE LANDOWNER, THE EROSION AND SEDIMENTATION CONTROL PLAN DESIGNER, AND A REPRESENTATIVE OF THE COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP FOR AN ONSITE PRE-CONSTRUCTION MEETING, ALSO AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INCORPORATED AT 800-242-1776 TO LOCATE BURIED UTILITIES.
2. 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 LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE. TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION MUST BE NOTED IN THE LOG FOLLOWING EACH INSPECTION. THE INSPECTION LOG WILL BE KEPT ON THE SITE AT ALL TIMES AND MADE AVAILABLE TO THE COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP UPON REQUEST.
3. 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.
4. WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION, THE PERMITTEE OR CO-PERMITEE SHALL INCLUDE THE FOLLOWING INFORMATION:
    A. THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND 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-COMPLIANT, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
5. ONLY LIMITED UP-SLOPE DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT TRAPS, CONVEYANCE CHANNELS, DIVERSION CHANNELS, AND INTERCEPTOR CHANNELS FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE CONTROLS AS REQUIRED.
6. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
7. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.
8. VEHICLES MAY ONLY ENTER AND EXIT AT THE LOCATION OF APPROVED CONSTRUCTION ENTRANCE(S).
9. STOCK PILE HEIGHTS MUST NOT EXCEED 35 FEET NOR SHALL THE SIDE SLOPE EXCEED 2:1.
10. SEDIMENT BASINS/TRAPS MUST BE PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.
11. CLEANOUT STAKES SHALL BE PLACED AT HALF DISTANCES FROM POINTS OF CONCENTRATED INFLOWS INTO BASINS/TRAPS TO OUTLET STRUCTURES. SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATED TO THE CLEAN OUT ELEVATION ON THE STAKES.
12. COMPOST FILTER SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. ENDS OF SILT FENCING MUST EXTEND 8', TRAVELING UP-SLOPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCING SECTION.
13. SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH ONE-HALF THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
14. ANY FENCING THAT HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED WITH FILTER OUTLETS IMMEDIATELY.
15. STORM WATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY ACRES ARE STABILIZED.
16. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM.
17. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH AS SPECIFIED.
18. DIVERSIONS, CHANNELS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY. THEY SHALL BE CONSTRUCTED FREE OF ROCKS, TREE ROOTS, STUMPS, OR OTHER PROJECTIONS THAT IMPEDE NORMAL CHANNEL FLOW AND/OR PREVENT GOOD LINING TO SOILS CONTACT. CHANNEL SHALL BE INITIALLY OVER EXCAVATED TO ALLOW FOR THE PLACEMENT OF TOPSOIL.
19. THE APPLICANT WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED ON THIS PLAN.
20. THE APPLICANT MUST DEVELOP, AND HAVE APPROVED BY THE COUNTY CONSERVATION DISTRICT, A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN FOR EACH SPOIL, BORROW, OR OTHER WORK AREA NOT DETAILED ON THE APPROVED PLAN, WHETHER LOCATED WITHIN OR OUTSIDE THE CONSTRUCTION LIMITS. PLAN MUST BE IN COMPLIANCE WITH CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS.
21. UNLESS OTHERWISE NOTED, THE LIMITS OF GRADING SHALL BE CONSIDERED THE LIMITS OF DISTURBANCE.
22. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE APPLICANT TO ELIMINATE ALL SUCH PROBLEMS.
23. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
24. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
25. PROTECTION TO EXISTING TREES AND SHRUBS SHALL BE TAKEN BY THE CONTRACTOR TO ELIMINATE UNNECESSARY DAMAGE.
26. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
27. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP.
28. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.
29. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ER SEQ., AND 287.1 ER SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
30. ALL SLOPES 3:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKETING (ECB).
31. SEDIMENT REMOVED FROM BMPS DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE WITH EXISTING SEDIMENT PROTECTION MEASURES IN PLACE AND INCORPORATED INTO THE SITE GRADING.
32. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES, PERMANENT STABILIZATION OF ALL DISTURBED AREAS SHALL OCCUR. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
33. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP FOR A FINAL INSPECTION PRIOR TO REMOVAL OF THE BMPS.
34. SEDIMENT BASINS/TRAPS SHALL BE KEPT FREE OF ALL TRASH, CONCRETE WASH WATER AND OTHER DEBRIS THAT POSE THE POTENTIAL FOR CLOGGING THE BASIN/TRAP OUTLET STRUCTURES AND/OR POSE THE POTENTIAL FOR POLLUTION TO WATERS OF THE COMMONWEALTH.
35. WHEN SEDIMENT HAS ACCUMULATED TO THE CLEAN OUT ELEVATION ON ANY STAKE, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE ENTIRE TRAP/BASIN BOTTOM.
36. APPROVAL OF THE USE OF SKIMMER(S) DOES NOT APPROVE USE OF ANY SKIMMER(S) IN VIOLATION OF ANY PATENT, PATENT RIGHTS, AND/OR PATENT LAWS.
37. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 6" LAYERED LIFTS AT 95% DENSITY.
38. A MINIMUM 6" LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS PRIOR TO PERMANENT STABILIZATION AND RE VEGETATION.
39. 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 IMMEDIATELY.

FILL DETERMINATION

1. TO DETERMINE WHETHER FILL IS CLEAN OR REGULATED, THE CONTRACTOR MUST PERFORM ENVIRONMENTAL DUE DILIGENCE.

    ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATABASE SEARCHES, REVIEW OF OWNERSHIP AND USE HISTORY OF PROPERTY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.

    A) IF DUE DILIGENCE SHOWS NO EVIDENCE OF A RELEASE OF A REGULATED SUBSTANCE, THE MATERIAL MAY BE MANAGED AS CLEAN FILL UNDER DEP'S MANAGEMENT OF FILL POLICY.

    B) IF DUE DILIGENCE SHOWS EVIDENCE OF A RELEASE, THE MATERIAL MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING MUST BE PERFORMED IN ACCORDANCE WITH THE PENNSYLVANIA DEP, BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT'S "MANAGEMENT OF FILL POLICY."

        I. IF TESTING REVEALS THAT THE MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS ESTABLISHED IN DEP'S MANAGEMENT OF FILL POLICY, THE MATERIAL MUST BE MANAGED AS CLEAN FILL.

        II. IF TESTING REVEALS THAT THE MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT EXCEED THE LIMITS ESTABLISHED IN DEP'S MANAGEMENT OF FILL POLICY, THE MATERIAL MUST BE MANAGED AS REGULATED FILL.

    CLEAN FILL IS DEFINED AS, UNCONTAMINATED, NONWATER-SOLUBLE, NONDECOMPOSABLE INERT SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND RECOGNIZABLE AS SUCH (25 PA CODE, SECTIONS 271.101 AND 287.101). THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE NOTED.

2. THE CONTRACTOR MAY NOT BLEND OR MIX MATERIALS TO BECOME CLEAN FILL. MATERIALS THAT CONTAIN REGULATED SUBSTANCES THAT ARE INTENTIONALLY RELEASED MAY NOT BE MANAGED UNDER DEP'S MANAGEMENT OF FILL POLICY.

RECYCLING OR DISPOSAL OF MATERIALS

1. PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT REGULATIONS.
2. INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS.
3. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY.
4. THE CONTRACTOR SHALL PLAN AND IMPLEMENT MEASURES FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL DURING CONSTRUCTION.
5. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL. DISPOSAL OF CONSTRUCTION WASTES SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1E. SEQ. AND 287.1 ET SEQ).

MAINTENANCE

1. ALL SEDIMENT AND EROSION CONTROL FACILITIES SHALL BE CHECKED FOR DAMAGE WEEKLY AND/OR AFTER EACH PRECIPITATION EVENT. ALL FACILITIES THAT ARE DAMAGED, CLOGGED, OR CAN NO LONGER EFFECTIVELY PERFORM THE JOB IN WHICH THEY ARE DESIGNED, SHALL BE REPLACED.
2. ALL SEDIMENT REMOVED FROM SEDIMENT TRAPPING DEVICES SHALL BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE EROSION OR SEDIMENTATION, AND SHALL BE PLACED IN AN AREAS WITHIN THE DEFINED LIMITS OF DISTURBANCE.
3. ANY PERMANENTLY SEEDED AREAS THAT BECOME ERODED OR DISTURBED SHALL HAVE THE TOPSOIL REPLACED, THE GRASS RESEEDED, AND THE MULCH REAPPLIED, OR, AT THE DISCRETION OF THE OWNER, SOD MAY BE INSTALLED.
4. UNTIL THE SITE HAS ACHIEVED FINAL STABILIZATION, THE OWNER AND OR CONTRACTOR SHALL PROPERLY IMPLEMENT, OPERATE AND MAINTAIN, ALL THE BEST MANAGEMENT PRACTICES AND EROSION AND SEDIMENT CONTROL FEATURES. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS 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.
5. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF, ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AS INDICATED IN CHAPTER 25 OF THE PENNSYLVANIA CODE.

SITE STABILIZATION

1. UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY, OR ANY STAGE OR PHASE OF AN ACTIVITY, THE OPERATOR SHALL IMMEDIATELY STABILIZE THE DISTURBED AREAS TO PROTECT FROM ACCELERATED EROSION. 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 MAY BE STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING SPECIFICATIONS. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1-YEAR, MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS.
2. SPREAD TOPSOIL (6") OVER ALL AREAS WHICH HAVE NOT BEEN PAVED (OR WILL NOT BE PAVED) AND ALL AREAS WHICH WERE NOT SEEDED. FINAL PASSES DURING FINE GRADING SHALL BE MADE AT RIGHT ANGLES TO THE SLOPES. SEED ALL AREAS WITH A PERMANENT SEED MIX AS SPECIFIED, AND PROVIDE MULCH OVER ALL FRESHLY SEEDED AREAS. ALL SEEDED AREAS MUST BE MULCHED IMMEDIATELY AFTER SEEDING HAS BEEN COMPLETED.
3. ASSURE SITE STABILIZATION OF ALL AREAS OF THE SITE PRIOR TO REMOVING EROSION AND SEDIMENT CONTROLS. SEED AND MULCH ANY AREAS OF MINIMAL DISTURBANCE RESULTING FROM THE REMOVAL OF EROSION AND SEDIMENT CONTROLS.
4. UNTIL THE SITE HAS ACHIEVED FINAL STABILIZATION, THE OWNER AND/OR CONTRACTOR SHALL PROPERLY IMPLEMENT, OPERATE, AND MAINTAIN ALL THE BEST MANAGEMENT PRACTICES. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROL AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
5. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OF OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

102.4(b)(4) E&S PLANNING AND DESIGN NOTES

1. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES HAVE BEEN DESIGNED TO THE STANDARDS ESTABLISHED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATERWAYS ENGINEERING AND WETLANDS, DIVISION OF WETLANDS, ENCROACHMENT AND TRAINING) FINAL - MARCH 2012 (TECHNICAL GUIDANCE NUMBER 363-2134-008).
2. THIS E&S PLAN MINIMIZES THE EXTENT AND DURATION OF EARTH DISTURBANCES THROUGH THE THOUGHTFUL AND INTENTIONAL SEQUENCING OF CONSTRUCTION ACTIVITIES. THE SEQUENCE OF CONSTRUCTION ATTEMPTS TO MINIMIZE AREA(S) OF THE SITE THAT ARE OPEN/DISTURBED AT ANY GIVEN TIME AND ENDEAVORS TO PROMOTE THE IMMEDIATE STABILIZATION OF DISTURBED AREAS THROUGH SEEDING/MULCHING AND/OR OTHER STABILIZATION METHODS.
3. THIS E&S PLAN MAXIMIZES THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION THROUGH THE INSTALLATION OF TREE PROTECTION FENCING AND OTHER PHYSICAL BARRIERS SUCH AS FILTER SOCKS TO HELP DELINEATE CONSTRUCTION AREAS AND TO PREVENT UNNECESSARY OR UNINTENTIONAL ENCROACHMENT.
4. THIS E&S PLAN MINIMIZES SOIL COMPACTION BY PROVIDING UNDISTURBED/SCARIFIED SUBGRADE FOR THE INFILTRATION FACILITY BOTTOM FIELDS AND ALSO THROUGH MINIMIZING DISTURBANCES OUTSIDE OF PROPOSED IMPERVIOUS AREAS.
5. THIS E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE THE GENERATION OF INCREASED STORMWATER. THE MAIN MEASURE IS BY PRESERVING EXISTING FLOW PATHS AND ENSURING ALL RUNOFF IS CLEANED USING E&S BMPs PRIOR TO DISCHARGING TO EXISTING NATURAL DRAINAGE WAYS. SLOPE AND CHANNEL STABILIZATION ALSO HELP MINIMIZE THE GENERATION OF INCREASED STORMWATER AND EROSION.

GENERAL MAINTENANCE PROGRAM NOTES

1. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPS 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 CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
2. ANY SEDIMENT REMOVED FROM BMPS DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE AND INCORPORATED INTO THE SITE GRADING.
3. A LOG SHOWING THE DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THAT THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO THE YORK COUNTY CONSERVATION DISTRICT OR OTHER REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

MID-ATLANTIC SPORTS CONSTRUCTION
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REGISTERED PROFESSIONAL TYLER E. HILL ENGINEER No. PE086960

JASON C BEST REGISTRATION NUMBER LA002566

PRELIMINARY/FINAL LAND DEVELOPMENT
SUBJECT:
EROSION & SEDIMENT CONTROL NOTES
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
CLIENT:
WESTTOWN SCHOOL
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MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	N/A

UPI NO(S): 67-5-27

DRAWING NO.
3 of 48

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\COVER.dwg - PLOTTED: Oct 24, 2023 9:25 am

CONSTRUCTION SEQUENCE

(CRITICAL STAGES OF IMPLEMENTATION IN **BOLD AND UNDERLINED** BELOW)

CONTRACTOR TO ASSURE THAT A LICENSED PROFESSIONAL OR THEIR DESIGNEE IS PRESENT ON SITE DURING ALL CRITICAL STAGES IDENTIFIED BELOW AS UNDERLINED.

CONSTRUCTION IS EXPECTED TO BEGIN IN THE SPRING OF 2019. AFTER ALL MUNICIPAL AND STATE APPROVALS HAVE BEEN RECEIVED. CONSTRUCTION WILL PROCEED IN A TIMELY MANNER IN ORDER TO LIMIT THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONSTRUCTION SEQUENCE PRIOR TO BREAKING GROUND TO MINIMIZE THE POTENTIAL FOR ANY SCHEDULING CONFLICTS. THE SEQUENCE OF EARTHMOVING ACTIVITIES SHALL BE APPROXIMATED AS FOLLOWS:

CONSTRUCTION STAGING NOTES

A. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. ANY DEVIATION FROM THE FOLLOWING SEQUENCE MUST BE APPROVED IN WRITING FROM THE CHESTER COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP.

B. BEFORE COMMENCEMENT OF EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE OF THE CHESTER COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP TO AN ON-SITE PRE-CONSTRUCTION MEETING.

C. AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INCORPORATED AT 1-800-242-1776 TO LOCATE BURIED UTILITIES.

D. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 64, EROSION AND SEDIMENT CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102 - EROSION CONTROL.

E. PROCEDURES ENSURING THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEP / COUNTY CONSERVATION DISTRICT REGULATIONS. INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, AND SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED TO DISPOSAL.

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

G. UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, DISTURBED AREAS OF THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION. EROSION AND SEDIMENT CONTROL BMP'S SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ACHIEVED. IN ORDER FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE/PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: (1) A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. (2) AN ACCEPTABLE BMP, WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.

H. NOTE THAT THE PADEP NPDES REQUIRES INSPECTION OF THE POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES BY A LICENSED PROFESSIONAL. SEE CRITICAL STAGES OF PCSM IMPLEMENTATION.

GENERAL SEQUENCING OF CONSTRUCTION ACTIVITIES:

1. DELINEATE LIMITS OF DISTURBANCE AS PART OF THE GRADING/STAKING PROCESS. LIMITS OF DISTURBANCE SHALL BE DEFINED BY THE LIMITS OF PROPOSED GRADING OR AS INDICATED ON THE PLANS.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES #1 & #2 IN ACCORDANCE WITH THE PLAN LOCATION AND DETAILS PROVIDED. RCE #3 MAY BE INSTALLED AT THE SITE TIME OR LATER IN CONSTRUCTION AS THE CONTRACTOR SEES NECESSARY. AT THE DISCRETION OF THE CONTRACTOR, INLET I-A5 AND THE PIPE TO I-A6 MAY BE INSTALLED CONCURRENTLY WITH RCE #1 INSTALLATION TO AVOID DISTURBING THE ENTRANCE LATER IN CONSTRUCTION. INLETS I-A10 AND I-A11, AS WELL THE PIPE CONNECTING THESE INLETS MAY SIMILARLY BE INSTALLED CONCURRENTLY WITH RCE #3 INSTALLATION. STONE AND BERM INLET FILTER PROTECTION SHALL BE INSTALLED IN ALL INLETS PLACED WITHIN OR ADJACENT TO A CONSTRUCTION ENTRANCE. SEDIMENT LADEN RUNOFF AND TRACKING OF MUD ONTO THE PUBLIC ROADWAY IS NOT PERMITTED.
3. STABILIZE AREA(S) THAT WILL BE USED FOR CONSTRUCTION STAGING. THE LOCATION OF STAGING AREA(S) IS TO BE APPROVED BY THE CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP AT THE TIME OF THE PRE-CONSTRUCTION MEETING.
4. INSTALL ALL PERIMETER E&S CONTROLS SUCH AS COMPOST FILTE SOCKS AND SILT FENCES.
5. CLEAR AND GRUB ONLY THE AREAS NECESSARY TO INSTALL PERIMETER BMPs, SUCH AS COMPOST FILTER SOCK, SILT FENCE, AND OUTLET FILTERS, AS SHOWN ON THE PLAN.
6. INSTALL ALL PERIMETER CONTROLS IN THE LOCATIONS SHOW ON THE PLANS AND IN ACCORDANCE WITH THE DETAILS PROVIDED. SOCK SHALL BE INSTALLED PARALLEL TO THE CONTOURS OR CONSTRUCTED AT LEVEL ALIGNMENTS. BOTH ENDS OF THE SOCK SECTIONS MUST EXTEND AT LEAST 8 FEET UP-SLOPE AT 45 DEGREES TO THE MAIN FILTER SOCK ALIGNMENT. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF OF THE HEIGHT OF THE EXPOSED FILTER SOCK OR AS DIRECTED BY THE ENGINEER. ANY SECTION THAT BECOMES COMPROMISED MUST IMMEDIATELY BE REPLACED OR AN ADDITIONAL FILTER SOCK ADDED DEPENDANT ON ENGINEER AND/OR MANUFACTURER RECOMMENDATIONS.
7. DELINEATE AREA(S) NEEDED FOR STAGING WITHIN THE LIMITS SHOWN ON THE PLANS. ALTERNATE OR ADDITIONAL LOCATIONS SHALL BE APPROVED BY THE CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP.
8. THE CONSTRUCTION STAGING AREA MUST BE IMMEDIATELY STABILIZED AND MAINTAINED IN ORDER TO PREVENT ANY SEDIMENT LADEN RUNOFF. STONE OR OTHER SUITABLE STABILIZATION FOR THE STAGING AREA SHALL BE PROVIDED AND MAINTAINED AT ALL TIMES. SEDIMENT LADEN RUNOFF IS NOT PERMITTED FROM THE CONSTRUCTION STAGING AREAS.
9. WHEN ALL PERIMETER E&S CONTROLS HAVE BEEN INSTALLED EARTHWORK MAY COMMENCE. STRIP AND STOCKPILE TOPSOIL ONLY FROM AREAS NECESSARY.
10. AFTER TOPSOIL HAS BEEN REMOVED FROM THE PROPOSED SYNTHETIC TURF FIELDS AND BMP'S 2 AND 3, FIELD STAKE AND INSTALL HIGH VISIBILITY CONSTRUCTION FENCING AROUND THE LIMITS OF THESE BMP'S. THE FENCING SHALL REMAIN IN PLACE TO PREVENT CONSTRUCTION TRAFFIC FROM COMPACTING THESE AREAS UNTIL SUCH TIME THAT EXCAVATION OF THE BMP'S IS READY TO COMMENCE.
11. **BEGIN BY CONSTRUCTING SEDIMENT BASIN 4 (SEE SITE SPECIFIC SEQUENCE OF BMP INSTALLATION).**
12. **CONCURRENTLY, OR FOLLOWING THE CONSTRUCTION OF SEDIMENT BASIN 4, BEGIN CONSTRUCTION OF SEDIMENT TRAP 1 (SEE SITE SPECIFIC SEQUENCE OF BMP INSTALLATION).**
13. BEGIN REMOVING EXISTING ATHLETIC IMPROVEMENTS AND OTHER FEATURES TO BE REMOVED.
14. DUE TO THE LIMITED DRAINAGE AREAS TO SEDIMENT TRAP 1 AND SEDIMENT BASIN 4 DURING EARLY STAGES OF CONSTRUCTION, BULK EARTHMOVING IS PERMITTED TO OCCUR CONCURRENTLY WITH INSTALLATION OF THE SEDIMENT REMOVAL FACILITIES.
15. DURING BULK EARTHMOVING, THE CONTRACTOR SHOULD MAINTAIN A DIVERSION BERM AT THE CREST OF THE SOUTHEASTERN FILL SLOPE TO DIVERT RUNOFF FROM THE SITE TO SEDIMENT BASIN 4 TO THE MAXIMUM EXTENT PRACTICAL.
16. CONTINUE BULK EARTHMOVING, INSTALL PIPE RUNS FROM EW-B2 TO I-B6 AND MH-B3 TO I-B14 AS PRACTICAL.
17. AS BULK EARTHWORK NEARS COMPLETION IN THE AREA OF THE PROPOSED PARKING LOT BEGIN INSTALLING PROPOSED SEWER LINE AND STORM PIPE RUN FROM EW-A2 TO I-A11.
18. FINE GRADE THE PARKING AREA AND INSTALL STONE SUBBASE AS SOON AS POSSIBLE.
19. BEGIN CONSTRUCTION OF THE BUILDING LOCATED BETWEEN THE PARKING LOT AND FIELDS.
20. **CONCURRENTLY FINE GRADE SYNTHETIC TURF FIELD AREAS AND BEGIN EXCAVATION OF INFILTRATION BMP's 2 AND 3 (SEE SITE SPECIFIC SEQUENCE OF BMP INSTALLATION). DUE TO SHALLOW SUBGRADE ELEVATIONS, THE CONTRACTOR IS TO TAKE THE UTMOST CAUTION IN FINE GRADING THE FIELD AREAS AND EXCAVATION OF THE INFILTRATION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUBGRADE REMAINS UNCOMPACTED AND THAT DESIGN INFILTRATION RATES ARE ACHIEVED. IT IS RECOMMENDED THAT THE INFILTRATION AREAS BE MARKED OR FENCED OFF DURING FINE GRADING OF THE FIELD PERIMETER AREAS.**
21. AS FINE GRADING AND BUILDING FRAMING NEAR COMPLETION BEGIN INSTALLING OTHER SITE IMPROVEMENTS SUCH AS CURB, SIDEWALK, FENCING, DUGOUTS, SOFTBALL/BASEBALL IMPROVEMENTS, ETC. SPREAD TOPSOIL AND SEED.
22. **WHEN ALL AREAS TRIBUTARY TO INFILTRATION BASINS 1 AND 4 HAVE BEEN SUBSTANTIALLY STABILIZED CONTACT THE DESIGN ENGINEER, COUNTY CONSERVATION DISTRICT, AND WESTTOWN TOWNSHIP TO CONFIRM THE CONDTIONS AND BEGIN CONVERTING THE SEDIMENT REMOVAL FACILITIES TO PERMANENT PCSM BMPS (SEE SITE SPECIFIC SEQUENCE OF BMP INSTALLATION).**
23. **FINISH SYNTHETIC TURF FIELD INSTALLATION.**
24. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE CHESTER COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO THE REMOVAL/CONVERSION OF THE E&S BMP'S.
25. WHEN THE SITE HAS ACHIEVED A UNIFORM 70% VEGETATIVE COVER,THE REMAINING TEMPORARY SITE EROSION CONTROLS (SUCH AS FILTER SOCKS, INLET PROTECTION, SEDIMENT TRAP, ETC.) SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING THIS PROCEDURE SHALL BE STABILIZED IMMEDIATELY THROUGH SEEDING AND MULCHING. SEE SITE SPECIFIC SEQUENCE OF BMP INSTALLATION FOR NOTES REGARDING THE CONVERSION OF TEMPORARY SEDIMENT REMOVAL FACILITIES TO PERMANENT STORMWATER BMPs
26. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS, **INSTALLATION OF ALL PERMANENT PCSM BMPS**, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OPERATORS SHALL CONTACT THE CHESTER COUNTY CONSERVATION DISTRICT AND WESTTOWN TOWNSHIP FOR A FINAL INSPECTION.

SITE SPECIFIC SEQUENCE OF BMP INSTALLATION

BMP 1 SEQUENCE OF CONSTRUCTION:

1. BEGIN CONSTRUCTION BY STRIPPING TOPSOIL FROM THE AREA AND EXCAVATE KEY TRENCH FOR BASIN BERM. THE KEY TRENCH SHOULD ROLLED OR TAMPED PRIOR TO CLAY CORE INSTALLATION. A GEOTECHNICAL PROFESSIONAL SHALL BE ON SITE DURING CONSTRUCTION OF THE BASIN BERM/CLAY CORE.
2. INSTALL THE ENDWALL/OUTLET PROTECTION, OUTLET PIPE, AND ANTI-SEEP COLLAR(S).
3. INSTALL THE OUTLET STRUCTURE AND TEMPORARY 6" PVC RISER. CONNECT THE RISER PIPE TO THE UNDERDRAIN KNOCKOUT AND DRILL (1) 1" HOLE PER VERTICAL FOOT BEGINNING AT THE CLEANOUT ELEVATION. INSTALL A TEMPORARY WOOD OR METAL PLATE OVER THE OUTLET STRUCTURE WEIR.
4. BEGIN INSTALLING CLAY CORE AND BASIN BERM. CONCURRENTLY, EXCAVATION OF THE BASIN AREA MAY BEGIN AT THE CONTRACTOR'S DISCRETION.
5. EXCAVATE BASIN TO FINISHED GRADE ELEVATION. DO NOT EXCAVATE TO SUBGRADE ELEVATION OR INSTALL AMENDED SOILS UNTIL ALL IMPROVEMENTS ARE CONSTRUCTED AND THE ENTIRE CONTRIBUTING AREA HAS BEEN STABILIZED. INSTALL DEWATERING FACILITY/SKIMMER.
6. FINE GRADE BASIN SIDES/BERM AND EMERGENCY SPILLWAY. INSTALL EROSION CONTROL MATTING AND STABILIZE ALL SIDE SLOPES WITH SLOPE MATTING.
7. WELL ALL SITE IMPROVEMENTS HAVE BEEN CONSTRUCTED AND THE CONTRIBUTING AREA STABILIZED BEGIN BASIN CONVERSION PROCESS.
8. REMOVE DEWATERING FACILITY/SKIMMER.
9. EXCAVATE BASIN BOTTOM TO SUBGRADE ELEVATION, BEGINNING IN ONE END AND WORKING BACKWARDS WITH THE EXCAVATOR AS TO MAINTAIN A MINIMUM 12" OF COVER BETWEEN SUBGRADE AND EQUIPMENT TRACKS.
10. IN-SITU INFILTRATION TESTING SHALL BE CONDUCTED AT THE SUBGRADE ELEVATION PRIOR TO AMENDED SOIL PLACEMENT. BASED ON PRELIMINARY GEOTECHNICAL TESTING, AN AREA OF UNSUITABLE SOIL MAY BE PRESENT IN THE AREA OF TP-15 WHICH SHOULD BE INVESTIGATED BY A GEOTECHNICAL PROFESSIONAL IN ORDER TO DETERMINE THE EXTENT OF UNSUITABLE SOIL AND TO DETERMINE AN APPROPRIATE RESTORATION TECHNIQUE (SEE INFILTRATION SYSTEM CONSTRUCTION NOTES).
11. THE CONTRACTOR SHALL SCHEDULE INFILTRATION IN ADVANCE TO ALLOW FOR TESTING IMMEDIATELY AFTER EXCAVATION IN ORDER TO ENSURE THAT THE BACKFILLING OF STONE IS ACCOMPLISHED IN A TIMELY MANNER. THE INFILTRATION SUBGRADE MAY NOT BE EXPOSED FOR MORE THAN 48 HOURS AND SHOULD BE OPENED DURING A PERIOD OF DRY WEATHER.
12. FOLLOWING SUBGRADE APPROVAL, BEGIN INSTALLING THE AMENDED SOILS UTILIZING A METHOD WHICH DOES NOT CAUSE COMPACTION TO THE AMENDED SOIL MATERIALS OR THE NATIVE SUBGRADE. AN APPROPRIATE METHOD WOULD BE TO DUMP THE AMENDED SOIL ALONG THE EASTERN EDGE OF THE BASIN AND UTILIZE A TRACKED SKID LOADER TO PUSH AND SPREAD THE SOILS ACROSS THE BOTTOM, FREQUENTLY SCARIFYING THE SOIL WITH THE BUCKET TEETH.
13. IT IS RECOMMENDED THAT THE CONTRACTOR HAS A FROST HOOK/RIPPER IMPLEMENT ON SITE FOR SUBGRADE/AMENDED SOIL PREPARATION IN THE EVENT THAT COMPACTION IS OBSERVED, SOIL BLENDING/RESTORATION IS NECESSARY, OR OTHER CONSTRUCTION TECHNIQUES ARE REQUIRED.
14. IF THE UTILIZED AMENDED SOIL BLEND DIFFERS FROM THE SPECIFIED PROPRIETARY BLEND OR IS MIXED ONSITE ADDITIONAL INFILTRATION TESTING MAY BE REQUIRED AT THE DISCRETION OF THE DESIGN ENGINEER, MUNICIPALITY, OR CONSERVATION DISTRICT.
15. FOLLOWING AMENDED SOIL PLACEMENT/APPROVAL, INSTALL UNDERDRAINS AND CONNECT TO OUTLET STRUCTURE. IMMEDIATELY STABILIZE BASIN BOTTOM.

BMP 4 SEQUENCE OF CONSTRUCTION:

1. BEGIN CONSTRUCTION BY STRIPPING TOPSOIL FROM THE AREA AND EXCAVATE KEY TRENCH FOR BASIN BERM. THE KEY TRENCH SHOULD ROLLED OR TAMPED PRIOR TO CLAY CORE INSTALLATION. A GEOTECHNICAL PROFESSIONAL SHALL BE ON SITE DURING CONSTRUCTION OF THE BASIN BERM/CLAY CORE.
2. INSTALL THE ENDWALL/OUTLET PROTECTION, OUTLET PIPE, ANTI-SEEP COLLAR(S) AND OUTLET STRUCTURE.
3. BEGIN INSTALLING CLAY CORE AND BASIN BERM. CONCURRENTLY, EXCAVATION OF THE BASIN AREA MAY BEGIN AT THE CONTRACTOR'S DISCRETION.
4. EXCAVATE BASIN TO FINISHED GRADE ELEVATION. DO NOT EXCAVATE TO SUBGRADE ELEVATION OR INSTALL AMENDED SOILS UNTIL ALL IMPROVEMENTS ARE CONSTRUCTED AND THE ENTIRE CONTRIBUTING AREA HAS BEEN STABILIZED. INSTALL DEWATERING FACILITY/SKIMMER.
5. FINE GRADE BASIN SIDES/BERM AND EMERGENCY SPILLWAY. INSTALL EROSION CONTROL MATTING AND STABILIZE ALL SIDE SLOPES WITH SLOPE MATTING.
6. WELL ALL SITE IMPROVEMENTS HAVE BEEN CONSTRUCTED AND THE CONTRIBUTING AREA STABILIZED BEGIN BASIN CONVERSION PROCESS.
7. REMOVE DEWATERING FACILITY/SKIMMER.
8. EXCAVATE BASIN BOTTOM TO SUBGRADE ELEVATION, BEGINNING IN ONE END AND WORKING BACKWARDS WITH THE EXCAVATOR AS TO MAINTAIN A MINIMUM 12" OF COVER BETWEEN SUBGRADE AND EQUIPMENT TRACKS.
9. IN-SITU INFILTRATION TESTING SHALL BE CONDUCTED AT THE SUBGRADE ELEVATION PRIOR TO AMENDED SOIL PLACEMENT (SEE INFILTRATION SYSTEM CONSTRUCTION NOTES).
10. THE CONTRACTOR SHALL SCHEDULE INFILTRATION IN ADVANCE TO ALLOW FOR TESTING IMMEDIATELY AFTER EXCAVATION IN ORDER TO ENSURE THAT THE BACKFILLING OF STONE IS ACCOMPLISHED IN A TIMELY MANNER. THE INFILTRATION SUBGRADE MAY NOT BE EXPOSED FOR MORE THAN 48 HOURS AND SHOULD BE OPENED DURING A PERIOD OF DRY WEATHER.
11. FOLLOWING SUBGRADE APPROVAL, BEGIN INSTALLING THE AMENDED SOILS UTILIZING A METHOD WHICH DOES NOT CAUSE COMPACTION TO THE AMENDED SOIL MATERIALS OR THE NATIVE SUBGRADE. AN APPROPRIATE METHOD WOULD BE TO DUMP THE AMENDED SOIL IN THE SOUTHERN END OF THE BASIN AND, DUE TO THE SIZE OF THE BASIN, UTILIZE A SMALL TRACKED BULLDOZER, SUCH AS A CAT D5, TO PUSH AND SPREAD THE SOILS ACROSS THE BOTTOM, FREQUENTLY SCARIFYING THE SOIL WITH THE BUCKET TEETH OR A REAR-MOUNTED FROST HOOK/RIPPER.
12. IT IS RECOMMENDED THAT THE CONTRACTOR HAS A FROST HOOK/RIPPER IMPLEMENT ON SITE FOR SUBGRADE/AMENDED SOIL PREPARATION IN THE EVENT THAT COMPACTION IS OBSERVED, SOIL BLENDING/RESTORATION IS NECESSARY, OR OTHER CONSTRUCTION TECHNIQUES ARE REQUIRED. GIVEN THE TOPOGRAPHY IN THE AREA OF BASIN 4 AND THE LIKELIHOOD OF COMPACTION DURING INSTALLATION AND EXCAVATOR WITH A FROST HOOK/RIPPER MAY BE REQUIRED TO PROVIDE ADEQUATE SCARIFICATION/DE-COMPACTION.
13. IF THE UTILIZED AMENDED SOIL BLEND DIFFERS FROM THE SPECIFIED PROPRIETARY BLEND OR IS MIXED ONSITE ADDITIONAL INFILTRATION TESTING MAY BE REQUIRED AT THE DISCRETION OF THE DESIGN ENGINEER, MUNICIPALITY, OR CONSERVATION DISTRICT.
14. FOLLOWING AMENDED SOIL PLACEMENT/APPROVAL, INSTALL UNDERDRAINS AND CONNECT TO OUTLET STRUCTURE. IMMEDIATELY STABILIZE BASIN BOTTOM.

BMP 2 SEQUENCE OF CONSTRUCTION:

1. BEGIN BY STRIPPING TOPSOIL FROM THE ENTIRE SYNTHETIC TURF FIELD AREA.
2. ROUGH GRADE FIELD AREA TO PERIMETER SUBGRADE ELEVATIONS AND BEGIN PLACING FILL IN THE SOUTHEASTERN END OF THE FIELD.
3. BEGIN EXCAVATING PERIMETER TRENCHES AND INFILTRATION STORAGE VOLUME AREA BEGINNING AT EITHER END OF THE FIELD AND WORKING BACKWARDS AS TO KEEP THE EXCAVATOR OFF OF THE SUBGRADE.
4. IN-SITU INFILTRATION TESTING IS REQUIRED TO CONFIRM THE INFILTRATIVE CAPACITY OF THE SUBGRADE HAS BEEN MAINTAINED THROUGH THE EXCAVATION PROCESS. IF EQUIPMENT OR METHOD OTHER THAN THAT DESCRIBED HEREIN IS UTILIZED A GEOTECHNICAL PROFESSIONAL SHALL PROVIDE OVERSIGHT FOR PRESERVING, RESTORING, OR ENHANCING THE INFILTRATION CAPACITY OF THE SUBGRADE SOILS.
5. THE CONTRACTOR SHALL SCHEDULE INFILTRATION IN ADVANCE TO ALLOW FOR TESTING IMMEDIATELY AFTER EXCAVATION IN ORDER TO ENSURE THAT THE BACKFILLING OF STONE IS ACCOMPLISHED IN A TIMELY MANNER. THE INFILTRATION SUBGRADE MAY NOT BE EXPOSED FOR MORE THAN 48 HOURS AND SHOULD BE OPENED DURING A PERIOD OF DRY WEATHER.
6. FINE GRADE REMAINING FIELD SUBGRADE (OUTSIDE OF INFILTRATION AREA) AND INSTALL DRAINAGE COMPONENTS (I.E. GEOTEXTILE FABRIC ON SIDEWALLS, PERIMETER COLLECTOR PIPES, OUTLET STRUCTURE, ETC.)
7. INSTALL FIELD CURBING.
8. BEGIN SPREADING STONE SUBBASE UTILIZING STONE THROWER OR BULLDOZER. CONSTRUCTION EQUIPMENT IS NOT PERMITTED ON THE INFILTRATION SUBGRADE AT ANY TIME DURING CONSTRUCTION.
9. CAP STONE SUBGRADE WITH LEVELING COURSE AND FINE GRADE TO FINISHED GRADE.
10. INSTALL TURF CARPET.

BMP 3 SEQUENCE OF CONSTRUCTION:

1. TOPSOIL FROM THE ENTIRE SYNTHETIC TURF FIELD AREA.
2. ROUGH GRADE FIELD AREA TO PERIMETER SUBGRADE ELEVATIONS AND BEGIN PLACING FILL IN THE SOUTHEASTERN END OF THE FIELD.
3. BEGIN EXCAVATING PERIMETER TRENCHES AND INFILTRATION STORAGE VOLUME AREA BEGINNING AT EITHER END OF THE FIELD AND WORKING BACKWARDS AS TO KEEP THE EXCAVATOR OFF OF THE SUBGRADE.
4. IN-SITU INFILTRATION TESTING IS REQUIRED TO CONFIRM THE INFILTRATIVE CAPACITY OF THE SUBGRADE HAS BEEN MAINTAINED THROUGH THE EXCAVATION PROCESS. IF EQUIPMENT OR METHOD OTHER THAN THAT DESCRIBED HEREIN IS UTILIZED A GEOTECHNICAL PROFESSIONAL SHALL PROVIDE OVERSIGHT FOR PRESERVING, RESTORING, OR ENHANCING THE INFILTRATION CAPACITY OF THE SUBGRADE SOILS.
5. THE CONTRACTOR SHALL SCHEDULE INFILTRATION IN ADVANCE TO ALLOW FOR TESTING IMMEDIATELY AFTER EXCAVATION IN ORDER TO ENSURE THAT THE BACKFILLING OF STONE IS ACCOMPLISHED IN A TIMELY MANNER. THE INFILTRATION SUBGRADE MAY NOT BE EXPOSED FOR MORE THAN 48 HOURS AND SHOULD BE OPENED DURING A PERIOD OF DRY WEATHER.
6. FINE GRADE REMAINING FIELD SUBGRADE (OUTSIDE OF INFILTRATION AREA) AND INSTALL DRAINAGE COMPONENTS (I.E. GEOTEXTILE FABRIC ON SIDEWALLS, PERIMETER COLLECTOR PIPES, OUTLET STRUCTURE, ETC.)
7. INSTALL FIELD CURBING.
8. BEGIN SPREADING STONE SUBBASE UTILIZING STONE THROWER OR BULLDOZER. CONSTRUCTION EQUIPMENT IS NOT PERMITTED ON THE INFILTRATION SUBGRADE AT ANY TIME DURING CONSTRUCTION.
9. CAP STONE SUBGRADE WITH LEVELING COURSE AND FINE GRADE TO FINISHED GRADE.
10. INSTALL TURF CARPET.

SOIL LIMITATIONS AND RESOLUTIONS

THE FOLLOWING RESOLUTIONS ADDRESS TYPICAL ON-SITE SOIL USE LIMITATIONS THAT MAY BE ENCOUNTERED AND GENERIC RESOLUTIONS. **A QUALIFIED GEOTECHNICAL PROFESSIONAL SHALL BE CONSULTED DURING APPROPRIATE STAGES/PHASES OF CONSTRUCTION TO EVALUATE, MAKE RECOMMENDATIONS, AND PROVIDE RESOLUTIONS FOR ALL SOIL USE LIMITATIONS, CONSTRUCTION TECHNIQUES, AND OTHER SOILS-RELATED ITEMS.**

1. CAVING OF CUTBANKS: EXCAVATIONS SHOULD BE ADEQUATELY SLOPED, BENCHED, OR SUPPORTED TO MINIMIZE COLLAPSE AND TO PROTECT PERSONNEL. ALL EXCAVATIONS SHOULD BE COMPLETED IN ACCORDANCE WITH OSHA REQUIREMENTS.
2. CORROSION OF CONCRETE: GENERALLY NOT WITNESSED DURING CONSTRUCTION AS THIS OCCURS OVER EXTENDED PERIODS OF TIME. WHERE SULFATES OF SODIUM, POTASSIUM, CALCIUM OR MAGNESIUM ARE NATURALLY OCCURRING IN THE SOIL OR GROUNDWATER, LOSS OF CONCRETE COHESION AND STRENGTH CAN OCCUR DUE TO REACTIONS WITH HYDRATED COMPOUNDS WITHIN THE HARDENED CEMENT. IF SOILS OR GROUNDWATER ARE FOUND TO CONTAIN SIGNIFICANT AMOUNTS OF THE ABOVE SULFATES, CONCRETE MIXTURES WITH A LOW WATER-TO-CEMENT RATIO AND CEMENT WITH LIMITED AMOUNTS OF TRICALCIUM ALUMINATES SHOULD BE USED. FLY ASH MEETING THE REQUIREMENTS OF ASTM C 618 AND SLAGS MEETING THE REQUIREMENTS OF ASTM C 989 CAN INCREASE THE LIFE EXPECTANCY OF CONCRETE EXPOSED TO SULFATES. CALCIUM CHLORIDE REDUCES SULFATE RESISTANCE, SO IT SHOULD NOT BE USED AS AN ACCELERATING ADMIXTURE.
3. CORROSION OF STEEL: GENERALLY NOT WITNESSED DURING CONSTRUCTION AS THIS OCCURS OVER EXTENDED PERIODS OF TIME. WHERE SOILS ARE HIGH IN CHLORIDES, LOW IN PH, OR WHERE SOILS HAVE HIGH MOISTURE CONTENT, CORROSION OF STEEL IS ACCELERATED. IF ONSITE SOILS ARE FOUND TO BE HIGH IN CHLORIDES, LOW IN PH, OR HIGH IN MOISTURE AS IS TYPICAL IN CLAYEY SOILS, THE THICKNESS OF THE COATINGS (E.G. HOT-DIPPED GALVANIZED) SHOULD BE INCREASED ACCORDING TO THE RECOMMENDATIONS OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI). SOILS WHERE STEEL IS BURIED OR PRESENT SHOULD BE KEPT DRY, IDEALLY WITH LESS THAN 17.5% MOISTURE CONTENT. MAINTAINING DRY SOILS ALSO PREVENTS CHLORIDES FROM BECOMING CORROSIVE TO STEEL. FINALLY, LIMING THE SOIL CAN RAISE THE PH TO >7.0, WHICH IS NOT CONSIDERED CORROSIVE TO STEEL.
4. DROUGHTY: DROUGHT VULNERABLE SOILS HAVE AVAILABLE WATER STORAGE WITHIN THE ROOT ZONE FOR COMMODITY CROPS LESS THAN OR EQUAL TO 6". SOIL AMENDMENT/RESTORATION TECHNIQUES MAY BE EMPLOYEDT TO INCREASE WATER HOLDING CAPACITY. IRRIGATION PRACTICES MAY BE NECESSARY FOR CERTAIN LANDSCAPING APPLICATIONS. PROVIDE DUST SUPPRESSION TECHNIQUES AS NECESSARY OR WHERE REQUIRED.
5. EASILY ERODIBLE SOILS: SITES WITH EASILY ERODIBLE SOILS SHOULD BE SLOPED TO PROMOTE DRAINAGE AWAY FROM WORK AREAS. DISTURBED SOILS SHOULD BE SEALED WITH A SMOOTH DRUM ROLLER EACH DAY AND PRIOR TO PRECIPITATION. NETWORKS OF HAUL/CONSTRUCTION ROADS SHOULD BE ESTABLISHED AND CONSTRUCTION TRAFFIC RESTRICTED TO USING THEM IN ORDER TO KEEP DISTURBANCE MINIMAL. DISTURBED AREAS SHOULD BE SEEDED AND MULCHED IMMEDIATELY.
6. DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE: IF GROUNDWATER IS ENCOUNTERED DURING TRENCHING PROCEDURES, THE SEDIMENT-LADEN WATER SHALL BE PUMPED TO AN APPROVED SEDIMENT-REMOVAL FACILITY SUCH AS A SILT FILTER BAG AND DISCHARGED AT A STABILIZED POINT OF DISCHARGE.
7. FROST ACTION: FILL AND/OR BACKFILL SHALL NOT BE PLACED ON FROZEN OR SATURATED GROUND.
8. HYDRIC/HYDRIC INCLUSIONS: REFER TO THE SITE PLANS FOR LOCATION(S) OF WETLANDS AND THE APPLICABLE WETLANDS DELINEATION REPORT FOR DETAILED DESCRIPTION OF WETLANDS PRESENT ON SITE. DISTURBANCE WITHIN WETLAND AREAS IS STRICTLY PROHIBITED WITHOUT PADEP AND/OR ARMY CORP AUTHORIZATION.
9. LOW STRENGTH/LANDSLIDE PRONE: STRUCTURAL FILL SHOULD BE PLACED IN LIFTS NOT EXCEEDING 10 INCHES IN LOOSE THICKNESS AND COMPACTED WITH A VIBRATORY ROLLER HAVING A MINIMUM STATIC WEIGHT OF 10 TONS. A MINIMUM OF 5 OVERLAPPING PASSES OF THE ROLLER SHOULD BE COMPLETED ACROSS THE ENTIRETY OF THE BUILDING PAD AND OTHER STRUCTURAL AREAS. IN AREAS WHERE STRUCTURAL FILL IS PLACED AND COMPACTED WITH HAND-OPERATED COMPACTION EQUIPMENT, A MAXIMUM LOOSE LIFT THICKNESS OF 4 INCHES IS RECOMMENDED. FOLLOWING COMPACTION PROCEDURES, PROOF-ROLLING SHOULD BE PERFORMED USING A LOADED, TANDEM-AXLE DUMP TRUCK. ANY LOOSE OR UNSTABLE AREAS ENCOUNTERED DURING PROOF-ROLLING AND COMPACTION SHOULD BE COMPACTED IN PLACE OR REMOVED AND REPLACED WITH STRUCTURAL FILL (AS DEFINED). THE NATIVE ONSITE STRATUM II SOILS ARE WELL-SUITED FOR USE AS STRUCTURAL FILL AND SHOULD BE USED WHEREVER POSSIBLE, THOUGH QUANTITIES ARE EXPECTED TO BE LIMITED. STRATUM I SOILS MAY BE USED AS STRUCTURAL FILL BUT ARE EXPECTED TO BE MOISTURE SENSITIVE WITH HIGH SILT AND CLAY CONTENT. ALL FILL SHOULD BE PLACED AT, OR DEVIATE NOMINALLY FROM (+/- 2%) THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH ASTM D1557 AND COMPACTED TO THE MINIMUM PERCENTAGE OF THE SOIL'S MAXIMUM DRY DENSITY, WHICH IS 95%. CAUTION SHOULD BE EXERCISED TO NOT DISTURB FOUNDATION SUBGRADE SOILS. SHOULD THE SUBGRADE BE DISTURBED, THE SOIL SHOULD BE COMPACTED IN PLACE OR REMOVED UNTIL FIRM SOIL IS ENCOUNTERED AND THE RESULTING EXCAVATION BACKFILLED WITH CONCRETE OR CONTROLLED STRUCTURAL FILL. EVERY EFFORT SHOULD BE MADE TO PREVENT WATER FROM ENTERING OPEN EXCAVATIONS. IT IS RECOMMENDED THAT FOOTING EXCAVATION AND PLACEMENT OF FOUNDATION CONCRETE BE PERFORMED ON THE SAME DAY AND DURING FAIR WEATHER CONDITIONS.
10. SLOW PERCOLATION: MAINTAIN POSITIVE GRADES ON SIDE AND SLOPE AWAY FROM BUILDINGS TO REDUCE PONDING OF WATER. IN-SITU INFILTRATION TESTING WITHIN INFILTRATION BMPs IS REQUIRED AS PART OF THE CRITICAL STAGES OF PCSM IMPLEMENTATION.
11. PIPING: INCORPORATE ANTI-SEEP COLLARS IN SEDIMENT TRAPS AND BASINS AND ON PCSM BASIN DISCHARGE PIPES. INSTALL TRENCH PLUGS (CLAY DIKES) WITHIN STORM DRAINAGE AND UTILITY TRENCHING.
12. POOR SOURCE OF TOPSOIL: PERFORM SOIL TESTING TO DETERMINE APPROPRIATE SUPPLEMENTATION. SOIL AMENDMENTS AND/OR RESTORATION PRACTICES MAY BE NECESSARY IN ORDER TO ESTABLISH PERMANENT VEGETATIVE STABILIZATION.
13. SHRINK-SWELL POTENTIAL: THE SHRINK-SWELL POTENTIAL IS THE EXTENT TO WHICH THE SOIL SHRINKS AS IT DRIES OR SWELLS AS IT BECOMES WET. THE SHRINK-SWELL POTENTIAL IS INFLUENCED BY THE TYPE AND AMOUNT OF CLAY PRESENT WITHIN THE SOIL. ADDITIONAL GEOTECHNICAL TESTING AND OVERSIGHT SHOULD BE EMPLOYED WHERE STRUCTURAL FILL IS REQUIRED. STRUCTURAL FILL MAY NEED TO BE IMPORTED FROM OFFSITE.
14. POTENTIAL FOR SINKHOLE FORMATION: THE POTENTIAL FOR SINKHOLE FORMATION EXISTS IN ALL AREAS WHERE CARBONATE BEDROCK IS PRESENT AND MAY BE INCREASED WHERE SUBSURFACE DRAINAGE PATTERNS ARE ALTERED. THE PCSM BMPS HAVE BEEN DESIGNED TO MINIMIZE THE RISK FOR SINKHOLE DEVELOPMENT. HOWEVER, DUE TO THE UNPREDICTABLE NATURE OF SINKHOLE FORMATION IT IS NOT POSSIBLE TO ENTIRELY ELIMINATE THE RISK. IN THE EVENT THAT A SINKHOLE IS OBSERVED PRIOR, DURING, OR FOLLOWING CONSTRUCTION A QUALIFIED GEOTECHNICAL PROFESSIONAL SHALL BE CONTACTED TO PROVIDE OVERSIGHT FOR REPAIR.
15. PONDING: PONDING OCCURS IN AREAS WITH COMPACTED OR POORLY DRAINED SOILS WITHOUT POSITIVE DRAINAGE. THE SITE SHOULD BE GRADED TO PROVIDED POSITIVE DRAINAGE TO THE MAXIMUM EXTENT POSSIBLE. DO NOT ALLOW PONDING NEAR STRUCTURAL IMPROVEMENTS OR IN AREAS OF STRUCTURAL FILL. UTILIZE PUMPED WATER FILTER BAGS TO DEWATER EXCAVATIONS AS NECESSARY. SUBSURFACE DRAINAGE(I.E. UNDERDRAINS) SHOULD BE INSTALLED IN AREAS WHERE POST-CONSTRUCTION PONDING IS ANTICIPATED.
16. WETNESS: DUE TO THE HIGH AMOUNT OF FINES (SILT AND CLAY), THE NATIVE ONSITE SOILS MAY BE MOISTURE SENSITIVE AND DIFFICULT TO PLACE DURING PERIODS OF ADVERSE WEATHER. IN ADDITION, THE OPTIMUM MOISTURE CONTENT IS EXPECTED TO BE SIGNIFICANTLY BELOW THE IN-PLACE MOISTURE CONTENT; THEREFORE, THIS SOIL WILL LIKELY REQUIRE MIXING OR SCARIFYING TO REDUCE THE MOISTURE CONTENT TO ACCEPTABLE LEVELS PRIOR TO PLACEMENT. EVERY EFFORT SHOULD BE MADE TO PREVENT WATER FROM ENTERING OPEN FOUNDATION EXCAVATIONS. ANY WATER WHICH MAY ACCUMULATE IN THE BOTTOMS OF THE EXCAVATIONS SHOULD BE REMOVED IMMEDIATELY. IF WETNESS IS PRESENT DURING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL PROFESSIONAL FOR FURTHER EVALUATION AND INSTRUCTION. THE GEOTECHNICAL PROFESSIONAL SHALL PROVIDE SITE-SPECIFIC MEASURES TO RESOLVE THE SOIL LIMITATIONS.
17. A GEOTECHNICAL PROFESSIONAL IS REQUIRED FOR OBSERVATION AND APPROVAL OF PROOF-ROLLING PROCEDURES, STRUCTURAL FILL PLACEMENT, FOUNDATION SUBGRADE REVIEW, STORMWATER BASIN BERM CONSTRUCTION, AND ALL CRITICAL EARTHWORK OPERATIONS.

HYDRIC SOILS

GROUNDWATER WAS ENCOUNTERED WITHIN FOUR (4) OF THE SIXTEEN (16) TEST PITS (TP-7, TP-8, TP-12 & TP-13) AT DEPTHS RANGING FROM 1.5'-6' BELOW EXISTING GRADE, AS DOCUMENTED IN THE STORMWATER INFILTRATION FEASIBILITY REPORT, DATED OCTOBER 8, 2018. THERE ARE NO HYDRIC SOILS WITHIN THE LIMIT OF DISTURBANCE. WETLANDS HAVE BEEN IDENTIFIED ADJACENT TO THE PROJECT SITE AS INDICATED ON THE PLANS. NO DISTURBANCE IS PERMITTED WITHIN THE WETLANDS ONSITE.

REFRE TO THE STORMATER INFILTRATION FEASIBILITY REPORT PREPARED BY ADVANTAGE ENGINEERS, DATED OCTOBER 8, 2018 FOR MORE INFORMATION.

THERMAL IMPACTS

THERMAL IMPACTS ARE MITIGATED BY IMPLEMENTING MULTIPLE INFILTRATION BMP'S WHICH WILL CAPTURE AND INFILTRATE ALL 'FIRST FLUSH' RUNOFF.

GEOLOGIC FORMATION

ACCORDING TO THE PENNSYLVANIA GEOLOGIC SURVEY'S GEOLOGIC MAP OF THE STATE OF PENNSYLVANIA, 1980, THE PROJECT SITE IS UNDERLAIN BY POLITIC SCHIST OF THE GLENARM WISSAHICKON FORMATION (GEOLOGIC SYMBOL Xgw). THE FORMATION INCLUDES LENTICULAR AMPHIBOLITES BODIES HAVING OCEAN-FLOOR BASALT CHEMISTRY.

THE UNDERLYING GEOLOGY IS NOT CARBONATE AND THEREFORE NOT SUSCEPTIBLE TO THE FORMATIN OF KARST FEATURES. THERE ARE NO KNOWN GEOLOGIC FORMATIONS OR **SOIL CONDITIONS THAT MAY HAVE POTENTIAL TO CAUSE POLLUTION DURING OR AFTER EARTH DISTURBANCE ACTIVITES.**

SEE THE STORMWATER INFILTRATION FEASIBILITY REPORT PREPARED BY ADVANTAGE ENGINEERS, DATED OCTOBER 8, 2018 FOR DETAILED GEOLOGIC INFORMATION AND SITE SPECIFIC CONSTRUCTION RECOMMENDATIONS.

GENERAL WASTE MANAGEMENT NOTES

1. PROCEDURES, WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE, WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT REGULATIONS. INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. THE CONTRACTOR SHALL PLAN AND IMPLEMENT MEASURES FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL DURING CONSTRUCTION. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL. DISPOSAL OF CONSTRUCTION WASTES SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS (CHAPTER 25 OF THE PENNSYLVANIA CODE).
2. ALL BUILDING MATERIALS AND WASTES THAT ARE REMOVED FROM THE SITE SHALL BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE §260.1 ET SEQ., §271.1 ET SEQ., AND §287.1 ET SEQ. NO BUILDING MATERIAL OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
3. IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL RESIDE WITH THE CONTRACTOR, AND SUBJECT TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE WILL BE ON THE GEOTECHNICAL ENGINEER, ON BEHALF OF THE APPLICANT.
4. DEFINITIONS AND ENVIRONMENTAL DUE DILIGENCE
    - 4.1. CLEAN FILL: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND 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 PROCESSED FOR RE-USE.)
        - 4.1.1. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.
        - 4.1.2. ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL.
    - 4.2. ENVIRONMENTAL DUE DILIGENCE: ACCEPTABLE INVESTIGATIVE TECHNIQUES INCLUDE, BUT ARE NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, 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 INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCES. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL". ENVIRONMENTAL DUE DILIGENCE, INCLUDING ANY SAMPLING, WILL BE CONDUCTED BY THE GEOTECHNICAL ENGINEER, ON BEHALF OF THE APPLICANT.

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

PCSM/E&SC NOTES

FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	N/A

UPI NO(S): 67-5-27

DRAWING NO.
4 of 48

OPERATION AND MAINTENANCE

NOTES:

1. THE POST CONSTRUCTION STORMWATER PLAN FOR THE PROPERTY AS APPROVED BY THE MUNICIPALITY, PROVIDES FOR DETENTION, RETENTION, INFILTRATION AND/OR TREATMENT OF STORMWATER WITHIN THE CONFINES OF THE PROPERTY.
2. THE MUNICIPALITY REQUIRES, THROUGH THE IMPLEMENTATION OF THE CONESTOGA RIVER 167 WATERSHED STUDY, THAT STORMWATERMANAGEMENT FACILITIES AND BMPS AS SHOWN ON THE PLAN BE CONSTRUCTED AND ADEQUATELY MAINTAINED BY THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS.
3. THE ON-SITE STORMWATER MANAGEMENT FACILITIES AND BMPS SHALL BE CONSTRUCTED BY THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS, IN ACCORDANCE WITH THE TERMS, CONDITIONS, DETAILS AND SPECIFICATIONS IDENTIFIED IN THE PLAN.
4. THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS, SHALL MAINTAIN THE STORMWATER MANAGEMENT FACILITIES AND BMPS IN GOOD WORKING CONDITION, ACCEPTABLE TO THE MUNICIPALITY SO THAT THEY ARE PERFORMING THEIR DESIGN FUNCTIONS
5. THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS, HEREBY GRANT PERMISSION TO THE MUNICIPALITY, ITS AUTHORIZED AGENTS AND EMPLOYEES, UPON PRESENTATION OF PROPER IDENTIFICATION, TO ENTER UPON THE PROPERTY AT REASONABLE TIMES, AND TO INSPECT THE STORMWATER MANAGEMENT FACILITIES AND BMPS WHENEVER THE MUNICIPALITY DEEMS NECESSARY. THE PURPOSE OF THE INSPECTION IS TO ASSURE SAFE AND PROPER FUNCTIONING OF THE FACILITIES.
6. AT A MINIMUM, MAINTENANCE INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SCHEDULE SPECIFIED IN THE 'MAINTENANCE REQUIREMENTS' SECTION AND INDIVIDUAL BMP O&M TABLES INCLUDED IN THE BMP OPERATIONS AND MAINTENANCE PLAN.
7. IN THE EVENT THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS, FAIL TO MAINTAIN THE STORMWATER MANAGEMENT FACILITIES AND BMPS IN GOOD WORKING CONDITION ACCEPTABLE TO THE MUNICIPALITY, THE MUNICIPALITY SHALL GIVE PROPER NOTICE TO OWNER SETTING FORTH THE SPECIFICS OF SUCH FAILURE TO MAINTAIN, THE REMEDIATION REQUIRED, AND DEADLINE TO COMPLETE SUCH ACTION.
8. THE OWNER, SUCCESSORS, HEIRS AND ASSIGNS, WILL PERFORM MAINTENANCE IN ACCORDANCE WITH THE BMP OPERATIONS AND MAINTENANCE PLAN FOR THE STORMWATER MANAGEMENT FACILITIES AND BMPS INCLUDING SEDIMENT REMOVAL AS OUTLINED ON THE APPROVED PLAN.
9. DURING EARTH MOVING ACTIVITIES, MAINTENANCE SHOULD INCLUDE DAILY INSPECTIONS OF ALL STORMWATER BMP FACILITIES AND THEIR STRUCTURAL COMPONENTS TO ASSURE THEY ARE FUNCTIONING PROPERLY. ALL PIPES, BASINS, AND OUTLET STRUCTURES SHALL BE KEPT FREE OF ANY SEDIMENT OR DEBRIS THAT WOULD IMPAIR THE FUNCTION OF THE FACILITY. CAREFUL ATTENTION SHALL BE TAKEN AFTER MAJOR STORM EVENTS AS TO THE AMOUNT OF SEDIMENT NEAR THE OUTLET STRUCTURE. PERIODIC REMOVAL OF SEDIMENT IS ESSENTIAL IN THE ESTABLISHMENT OF NEWLY SOWED OR PLANTED VEGETATION.
10. AFTER CONSTRUCTION HAS CEASED AND THE BMP IS STABILIZED TO ITS DESIGNED CONDITION, CAREFUL MONITORING DURING INSPECTIONS SHALL VERIFY IF THE BASIN IS FUNCTIONING PROPERLY.
11. WEEKLY MAINTENANCE WOULD INCLUDE SCHEDULED INSPECTIONS AND TURF MOWING AS APPROPRIATE IN AND AROUND THE BMP FACILITY. TURF HEIGHT SHALL BE AS DESIRED BY THE LAND OWNER. AFTER TWO (2) YEARS, REGULAR TURF MOWING AND OPERATION INSPECTIONS WILL GOVERN MOST OF THE MAINTENANCE INVOLVED WITH THE BMP. CAREFUL OBSERVATION IS NECESSARY TO ENSURE UNWANTED PLANTS DO NOT ESTABLISH THEMSELVES AND DOMINATE THE DESIRED VEGETATIVE STATE, ESPECIALLY IN THE NEWLY CREATED LOW LYING AREA OF THE BMP. THIS LOW LYING AREA HAS BEEN DESIGNED TO BE PERIODICALLY INUNDATED WITH WATER DURING STORM EVENTS, THEREFORE, IT IS IMPORTANT THAT THE AREA BE ESTABLISHED WITH A GOOD STAND OF GRASS.
12. DURING AND AFTER CONSTRUCTION, THE BMP FACILITY SHALL BE MONITORED FOR ESTABLISHMENT PROGRESS AND TO VERIFY THEFUNCTIONALITY ON A DAILY BASIS. WHEN VEGETATION HAS ESTABLISHED ITSELF, WEEKLY INSPECTIONS SHOULD BE ADEQUATE. A REGULAR PROGRAM OF INSPECTING THE BMP FACILITY SHOULD BE ESTABLISHED. ADDITIONAL INSPECTIONS SHALL OCCUR AFTER ANY MAJOR STORM EVENT TO ENSURE THE INTEGRITY OF THE STORMWATER BMP FACILITY. THE PURPOSE OF THE INSPECTIONS ARE TO NOT ONLYENSURE THE FACILITY IS FUNCTIONING PROPERLY, BUT MORE IMPORTANTLY THAT THE FACILITY IS OPERATING SAFELY.

INFILTRATION BASIN (SEE INSPECTION AND MAINTENANCE ACTIVITIES)

AN INFILTRATION BASIN IS A SHALLOW IMPOUNDMENT THAT IS DESIGNED TO INFILTRATE STORMWATER. INFILTRATION BASINS USE THE NATURAL FILTERING ABILITY OF THE SOIL TO REMOVE POLLUTANTS IN STORMWATER RUNOFF. INFILTRATION FACILITIES STORE RUNOFF UNTIL IT GRADUALLY INFILTRATES INTO THE SOIL AND EVENTUALLY INTO THE WATER TABLE.

INSPECTION/MAINTENANCE CONSIDERATIONS

- INFILTRATION BASINS PERFORM BETTER IN WELL-DRAINED PERMEABLE SOILS. INFILTRATION BASINS IN AREAS OF LOW PERMEABILITY CAN CLOG WITHIN A COUPLE YEARS, AND REQUIRE MORE FREQUENT INSPECTIONS AND MAINTENANCE.
- THE USE AND REGULAR MAINTENANCE OF PRETREATMENT BMPS WILL SIGNIFICANTLY MINIMIZE MAINTENANCE REQUIREMENTS FOR THE BASIN. SPILL RESPONSE PROCEDURES AND CONTROLS SHOULD BE IMPLEMENTED TO PREVENT SPILLS FROM REACHING THE INFILTRATION SYSTEM.
- SCARIFICATION OR OTHER DISTURBANCE SHOULD ONLY BE PERFORMED WHEN THERE ARE ACTUAL SIGNS OF CLOGGING OR SIGNIFICANT LOSS OF INFILTRATIVE CAPACITY, RATHER THAN ON A ROUTINE BASIS.
- ALWAYS REMOVE DEPOSITED SEDIMENTS BEFORE SCARIFICATION, AND USE A HAND- GUIDED ROTARY TILLER, IF POSSIBLE, OR A DISC HARROW PULLED BY A LIGHT TRACTOR.
- THIS BMP MAY REQUIRE GROUNDWATER MONITORING. BASINS CANNOT BE PUT INTO OPERATION UNTIL THE UPSTREAM TRIBUTARY AREA IS STABILIZED. LIGHT EQUIPMENT, WHICH WILL NOT COMPACT THE UNDERLYING SOIL, SHOULD BE USED TO REMOVE THE TOP LAYER OF SEDIMENT. THE REMAINING SOIL SHOULD BE TILLED AND RE-VEGETATED AS SOON AS POSSIBLE.
- SEDIMENT REMOVAL WITHIN THE BASIN SHOULD BE PERFORMED WHEN THE SEDIMENT IS DRY ENOUGH SO THAT IT IS CRACKED AND READILY SEPARATES FROM THE BASIN FLOOR. THIS ALSO PREVENTS SMEARING OF THE BASIN FLOOR.
- BASINS SHOULD BE MONITORED CONTINUALLY AND INSPECTED BI-ANNUALLY(TWICE PER YEAR) FOR SIGNS OF SINKHOLES OR SUBSIDENCE FOR THE FIRST FIVE YEARS; AND ANNUALLY THEREAFTER. IN THE EVENT A SINKHOLE SHOULD OPEN SIGNS OF SUBSIDENCE ARE OBSERVED, A GEOTECHNICAL PROFESSIONAL AND THE TOWNSHIP SHALL BE NOTIFIED. SINKHOLES ARE TO BE PROMPTLY REPAIRED.
- RODENT HOLES ON A DAM OR BERM CAN PIPE WATER. DESTROY THE RODENTS, PREFERABLY BY TRAPPING, AND REPAIR THE DAM OR BERM.
- UNDERDRAINS AND BACKUP VALVES ARE PROPOSED TO ALLOW FOR EMERGENCY MAINTENANCE ACTIVITIES ONLY. VALVES ARE TO REMAIN CLOSED AT ALL TIMES. IF UNSUITABLE CONDITIONS ARISE, SUCH AS SATURATED SOILS OR DEWATERING TIMES EXCEEDING 24 HOURS, VALVES MAY BE OPEN TEMPORARILY IN ORDER TO ESTABLISH PERMANENT VEGETATION. AFTER ESTABLISHMENT, VALVES MAY ONLY BE OPEN IN ORDER TO DRAIN THE FACILITIES AS REQUIRED FOR PERIODIC MAINTENANCE OR FOR UNFORESEEN MAINTENANCE SUCH AS SINKHOLE REPAIR OR BASIN REMEDIATION.

SUBGRADE PREPARATION AND EARTHWORK SPECIFICATIONS

- SUBGRADE PREPARATION FOR INFILTRATION LOCATIONS SHALL BE LIMITED TO STRIPPING OF TOPSOIL AND EXCAVATION TO DESIGN DEPTH.
- SOIL TYPES AND INFILTRATION CHARACTERISTICS SHALL BE VERIFIED DURING CONSTRUCTION.
- IF ROCK IS OBSERVED OR ENCOUNTERED AT OR ABOVE THE BOTTOM OF THE BASIN ELEVATION, THE BEDROCK SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 2 FEET BELOW THE BOTTOM OF THE BASIN.
- REPLACEMENT SOILS SHOULD CONSIST OF SOILS FROM THE SITE AND SHOULD BE PLACED IN A CONTROLLED MANNER AND LIGHTLY TRACKED IN TO PLACE.
- EXCAVATION BELOW BELOW THE BUCKET REFUSAL DEPTHS NOTED ON THE TEST PIT LOGS WILL REQUIRE USE OF A HYDRAULIC HOE RAM.
- THE GEOTECHNICAL ENGINEER FROM ECS AND THE TOWNSHIP SHALL BE NOTIFIED IF ROCK IS ENCOUNTERED IN ORDER TO ASSESS ITS CONDITION RELATIVE TO KARST FEATURE FORMATION POTENTIAL AND TO DOCUMENT REMOVAL TO APPROPRIATE DEPTHS. SINKHOLES ARE TO BE PROMPTLY REPAIRED.

OVERVIEW OF BEST MANAGEMENT PRACTICE (BMP) FACILITY - MAINTENANCE & INSPECTION GUIDELINES

THE OPERATION AND MAINTENANCE OF THE BMP FACILITIES IS VERY SIMILAR TO TRADITIONAL STORMWATER MANAGEMENT FACILITIES. LIKE TRADITIONAL FACILITIES, SOME TURF GRASS SHALL BE UTILIZED ON THE TERRESTRIAL (UPLAND) AREAS OF THE BMP FACILITIES. THE EXCEPTION WOULD BE ANY SPECIALIZED MAINTENANCE INVOLVED WITH THE NATIVE HERBACEOUS PLANT SPECIES ESTABLISHED WITHIN THE AQUATIC AREAS OF BMP FACILITIES. BECAUSE OF THE PERIODIC INUNDATION OF STORMWATER AND THE ATTEMPT TO USE BIORETENTION, IT IS CRITICAL THAT SPECIALIZED PLANTS BE ESTABLISHED TO GUARANTEE THE FACILITIES DESIGNED INTENTION. THE FIRST TWO YEARS OF VEGETATIVE ESTABLISHMENT IN THE BASIN BOTTOM IS THE MOST IMPORTANT TO THE FUNCTION OF THE BMP FACILITIES. AFTER THIS TIME, MAINTENANCE WILL BE MINIMIZED TO THE REGULAR WEEKLY OPERATION INSPECTIONS AND THE OCCASIONAL NEED TO REMOVE WEEDS AND EXOTIC PLANTS.

DURING EARTH MOVING ACTIVITIES, MAINTENANCE WOULD INCLUDE DAILY INSPECTIONS OF ALL STORMWATER & BMP FACILITIES AND THEIR STRUCTURAL COMPONENTS TO ASSURE THEY ARE FUNCTIONING PROPERLY. ALL PIPES, SWALES, BASINS AND OUTLET STRUCTURES SHALL BE KEPT FREE OF ANY SEDIMENT OR DEBRIS THAT WOULD IMPAIR THE FUNCTION OF THE FACILITY. CAREFUL ATTENTION SHALL BE TAKEN AFTER MAJOR STORM EVENTS AS TO THE AMOUNT OF SEDIMENT NEAR THE OUTLET STRUCTURES. PERIODIC REMOVAL OF SEDIMENT IS ESSENTIAL IN THE ESTABLISHMENT OF NEWLY SOWED OR PLANTED VEGETATION.

AFTER CONSTRUCTION HAS CEASED AND THE BMP IS STABILIZED TO ITS DESIGNED CONDITION, CAREFUL MONITORING DURING INSPECTIONS SHALL VERIFY IF THE FILTRATION/INFILTRATION BASINS ARE FUNCTIONING PROPERLY. IF INFILTRATION OF WATER IS NOT TAKING PLACE AFTER A PERIOD OF USE, THE SEDIMENT MUST BE REMOVED FROM THE BASIN BOTTOM, DISPOSED OF PROPERLY AND THE AREA NEEDS TO BE IMMEDIATELY REESTABLISHED TO ITS ORIGINAL SPECIFIED DESIGN INCLUDING THE SOIL MIX AND PLANTINGS. THE USE OF STRAW MULCH OR SECURING APPROVED BIODEGRADABLE EROSION CONTROL MATTING AS NEEDED IS RECOMMENDED WHEN NEW SEEDING IS PERFORMED.

WEEKLY MAINTENANCE WOULD INCLUDE SCHEDULED INSPECTIONS AND TURF MOWING AS APPROPRIATE IN AND AROUND THE BMP FACILITIES. REGULAR TURF MOWING TO A HEIGHT OF NOT LESS THAN THREE (3) INCHES INVOLVES MAINLY THE FACILITY BERMS AND SIDE SLOPES AND PREVENTING THE GROWTH OF WEEDS. AFTER TWO YEARS, REGULAR TURF MOWING AND OPERATION INSPECTIONS WILL GOVERN MOST OF THE MAINTENANCE INVOLVED WITH THE BMP'S. CAREFUL OBSERVATION IS NECESSARY TO ENSURE UNWANTED PLANTS DO NOT ESTABLISH THEMSELVES AND DOMINATE THE DESIRED VEGETATIVE COMMUNITY, ESPECIALLY IN THE DESIGNATED BMP PLANTING AREAS. MOST OF THE BMP AREAS THAT HAVE BEEN DESIGNED TO BE PERIODICALLY INUNDATED WITH WATER DURING STORM EVENTS. THESE ZONES ARE ESPECIALLY IMPORTANT TO THE ESTABLISHMENT AND MAINTENANCE OF THE BIO-RETENTION PLANTINGS. THESE ZONES ARE NOT MOWED REGULARLY. HOWEVER, THEY NEED TO BE MOWED AT LEAST ONCE ANNUALLY IN THE EARLY SPRING AT A HEIGHT LESS THEN THREE (3) INCHES. THE CONTROL OF WEEDS AND EXOTIC PLANTS IN THESE ZONES ARE OF THE UTMOST IMPORTANCE. THE MANUAL REMOVAL OF INVASIVE WEEDS AND EXOTIC VEGETATION MOST ADEQUATELY ACHIEVE THIS TASK. THIS IS ESPECIALLY CRITICAL IN THE FIRST TWO YEARS FOR PLANT ESTABLISHMENT AND WILL ENSURE THE EFFECTIVENESS OF THE FACILITY AND REDUCE MAINTENANCE COSTS IN THE LONG RUN. IF MANUAL REMOVAL IS NOT PRACTICAL, THEN "HIGH MOWING" IS ADVISABLE. WHEN WEEDS DOMINATE THE "ZONE" AND BECOME TWELVE TO EIGHTEEN INCHES (12"-18") HIGH, IT IS RECOMMENDED THAT THE "ZONES" BE MOWED DOWN TO SIX TO EIGHT INCHES (6"-8"). THIS WILL HELP WARM UP THE SOIL AND WEAKEN THE COOL SEASON WEEDS TO DETER EXCESSIVE GROWTH AND WILL ENCOURAGE THE SPECIFIED PLANTS IN THE BIO-RETENTION AREA TO BECOME PROPERLY ESTABLISHED. CHEMICAL WEED CONTROL IS NOT RECOMMENDED BUT MAY BE USED IF FEDERAL, STATE AND LOCAL REGULATIONS ARE MET.

DURING AND AFTER CONSTRUCTION ALL BMP FACILITIES SHALL BE MONITORED FOR ESTABLISHMENT PROGRESS AND VERIFY THEIR FUNCTIONALITY ON A DAILY BASIS. WHEN VEGETATION HAS ESTABLISHED ITSELF, WEEKLY INSPECTIONS SHOULD BE ADEQUATE. A REGULAR PROGRAM OF INSPECTING THE TERRESTRIAL (UPPER) AND AQUATIC (LOWER) BENCHES OF THE BMP FACILITIES SHOULD BE ESTABLISHED. ADDITIONAL INSPECTIONS SHALL OCCUR AFTER ANY MAJOR STORM EVENT TO ENSURE THE INTEGRITY OF THE STORMWATER & BMP FACILITIES. THE PURPOSES FOR THE INSPECTIONS ARE NOT ONLY TO ENSURE THE FACILITIES ARE FUNCTIONING PROPERLY BUT MORE IMPORTANTLY THAT THE FACILITIES ARE OPERATING SAFELY.

CATCH BASINS, MANHOLES AND INLETS (DRAINAGE STRUCTURES)

THE FOLLOWING ITEMS SHALL BE THE RESPONSIBILITY OF THE OWNER(S) OF THE PROPERTY(IES) WHICH THE STRUCTURE(S) EXIST, EXCEPT THAT DRAINAGE STRUCTURES LOCATED WITHIN DEDICATED STREET RIGHTS-OF-WAY SHALL BE THE RESPONSIBILITY OF THE TOWNSHIP FOR MAINTENANCE AND INSPECTION AS IDENTIFIED BELOW:

- CATCH BASINS TRAP SEDIMENT AND SOME OILS THAT CAN POLLUTE WATER BODIES. THEY NEED TO BE INSPECTED AND CLEANED ANNUALLY TO REMOVE ACCUMULATED SEDIMENT, FLUIDS, AND TRASH.
- AVOID OR MINIMIZE SEDIMENT AND POLLUTANT DISCHARGES FROM THE WORK AREA.
- PREVENT PARKING AREAS, ROADS, DRAINAGE SYSTEMS, FACILITIES AND PROPERTY FROM BECOMING POLLUTANT SOURCES
- INSPECT CATCH BASINS AT LEAST ONCE PER YEAR.
- PERIODICALLY INSPECT THE CATCH BASIN AND SURROUNDING AREAS FOR POLLUTANTS SUCH AS LEAKS FROM DUMPSTERS, MINOR SPILLS, AND OIL DUMPING. ACT TO HAVE THE POLLUTANT SOURCE REMOVED.
- CLEAN CATCH BASINS WHEN THEY BECOME ONE THIRD FULL TO MAINTAIN SEDIMENT-TRAPPING CAPACITY.
- CATCH BASIN AND MANHOLE CLEANING SHOULD BE PERFORMED IN A MANNER THAT KEEPS REMOVED SEDIMENT AND WATER FROM BEING DISCHARGED BACK INTO THE STORM SEWER.
- CLEAN PUTRID MATERIALS FROM CATCH BASINS WHEN DISCOVERED OR REPORTED.
- KEEP THE INLET CLEARED OF DEBRIS AND LITTER.
- WORK INSIDE UNDERGROUND STRUCTURES REQUIRES SPECIAL OSHA-REQUIRED CONFINED SPACE EQUIPMENT AND PROCEDURES. THE MOST PRACTICAL OPTION MAY BE TO CONTRACT WITH A SEWER- CLEANING CONTRACTOR.
- DISPOSAL OF WASTE FROM MAINTENANCE OF DRAINAGE FACILITIES SHALL BE CONDUCTED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- REMOVED SEDIMENT MUST BE DISPOSED OF IN THE GARBAGE AS SOLID WASTE. WATER SHOULD BE DISPOSED OF IN A SANITARY SEWER AFTER OILS ARE REMOVED USING OIL ABSORBENT MATERIALS OR OTHER MECHANICAL MEANS. USED OIL ABSORBENTS SHOULD BE RECYCLED OR DISPOSED ACCORDING THE MANUFACTURE'S INSTRUCTIONS.
- REPAIR ANY DAMAGES THAT PREVENT THE CATCH BASIN FROM FUNCTIONING AS DESIGNED.

STORM PIPES

THE FOLLOWING ITEMS SHALL BE THE RESPONSIBILITY OF THE OWNER(S) OF THE PROPERTY(IES) WHICH THE PIPES EXIST, EXCEPT THAT STORM PIPES LOCATED WITHIN DEDICATED STREET RIGHTS-OF-WAY SHALL BE THE RESPONSIBILITY OF THE TOWNSHIP FOR MAINTENANCE AND INSPECTION AS IDENTIFIED BELOW:

1. DETERIORATED OR DAMAGED PIPES.STORM PIPES MUST BE CLEAR OF OBSTRUCTIONS AND BREAKS TO PREVENT LOCALIZED FLOODING.
2. CLEAN PIPES WHEN SEDIMENT AFFECTS THE DESIGNED HYDRAULIC CAPACITY. WHEN CLEANING A PIPE, MINIMIZE SEDIMENT AND DEBRIS DISCHARGES FROM PIPES TO THE STORM SEWER. INSTALL DOWNSTREAM DEBRIS TRAPS (WHERE APPLICABLE) BEFORE CLEANING AND THEN REMOVE MATERIAL.
3. WORK INSIDE UNDERGROUND STRUCTURES REQUIRES SPECIAL OSHA-REQUIRED CONFINED SPACE EQUIPMENT AND PROCEDURES. REPAIR OR REPLACE

OUTLET CONTROL STRUCTURES

1. INSPECT AFTER ALL SIGNIFICANT RAIN EVENTS (0.50 INCHES OR GREATER) OR WHEN THE FACILITY DOES NOT DRAIN PROPERLY OR OTHER PROBLEMS OCCUR.
2. REMOVE SEDIMENT WITHIN ONE AND ½ FEET OF THE BOTTOM OF AN ORIFICE PLATE.
3. REMOVE TRASH AND DEBRIS THAT MAY BLOCK THE ORIFICE PLATE. REMOVE ANY TRASH OR DEBRIS THAT MAY BLOCK AN OVERFLOW PIPE.
4. WORK INSIDE UNDERGROUND STRUCTURES REQUIRES SPECIAL OSHA-REQUIRED CONFINED SPACE EQUIPMENT AND PROCEDURES. THE MOST PRACTICAL OPTION MAY BE TO CONTRACT WITH A SEWER- CLEANING CONTRACTOR.
5. DISPOSAL OF WASTE FROM MAINTENANCE OF DRAINAGE FACILITIES SHALL BE CONDUCTED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
6. REMOVED SEDIMENT MUST DISPOSED IN THE GARBAGE AS SOLID WASTE. WATER SHOULD BE DISPOSED OF IN A SANITARY SEWER AFTER OILS ARE REMOVED USING OIL ABSORBENT MATERIALS OR OTHER MECHANICAL MEANS. USED OIL ABSORBENTS SHOULD BE RECYCLED OR DISPOSED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
7. REPAIR OR REPLACE TO ORIGINAL DESIGN SPECIFICATION ANY OUTLET ORIFICE THAT IS ENLARGED, BYPASSED OR DAMAGED.
8. MAKE CERTAIN THAT OVERFLOW OUTLETS ARE NOT BLOCKED.
9. STRUCTURES SHOULD BE SECURELY IN PLACE AND WITHIN 10 PERCENT OF VERTICAL.
10. REPAIR OUTLET PIPE STRUCTURES THAT HAVE LEAKING CONNECTIONS OR HOLES NOT SPECIFIED BY THE DESIGN.
11. REPAIR OR REPLACE A NON-FUNCTIONAL OR DAMAGED CLEANOUT GATE.
12. REPAIR OR REPLACE DAMAGED ORIFICE PLATES TO ORIGINAL DESIGN SPECIFICATION.
    NO OUTFLOW CONTROLS CAN BE MODIFIED WITHOUT APPROVAL.

DEBRIS BARRIERS/TRASH RACKS

- TRASH RACKS ARE BARRED COVERS TO PIPE OPENINGS. THEY PREVENT LARGE OBJECTS FROM ENTERING PIPES AND KEEP PETS AND PEOPLE OUT OF PIPES.
- INSPECT TRASH RACKS AT LEAST ONCE PER YEAR.
- CLEAN TRASH RACKS WHEN DEBRIS IS PLUGGING MORE THAN 20 PERCENT OF THE OPENINGS.
- IMMEDIATELY REPLACE MISSING RACKS AND MISSING BARS.
- REPLACE BARS THAT ARE DETERIORATED TO THE POINT WHERE THEY MAY BE EASILY REMOVED.
- BEND BENT BARS BACK INTO POSITION.

BEST MANAGEMENT PRACTICE (BMP) FACILITY NON- STRUCTURAL - REPAIR/REPLACEMENT GUIDELINES

NON-STRUCTURAL ITEMS, WHICH COMPRISE THE BMP'S, ARE NATURAL COMPONENTS SUCH AS VEGETATION, MULCHES AND SOIL. IF NON-STRUCTURAL DAMAGE OCCURS TO ANY PORTION OF THE BMP FACILITIES, THE FOLLOWING GUIDELINES CAN BE UTILIZED:

MULCHES

WHERE APPROPRIATE AND SPECIFIED, MULCH LAYERS SHALL BE PROVIDED TO COVER THE SOIL MEDIUM OF THE PLANTING AREAS. ACCEPTABLE MULCH TYPES WOULD INCLUDE ANY NATURAL SHREDDED AGED WOOD CHIP OR HARDWOOD/BARK MULCH FREE OF FOREIGN MATERIALS. MULCH LAYERS SHOULD BE AT A MINIMUM OF TWO INCHES (2") IN DEPTH BUT NOT MORE THAN FOUR INCHES (4").

SOIL

SOIL MEDIUM WITHIN BMP FACILITIES IS AN ESSENTIAL COMPONENT TO THE EFFECTIVENESS OF THE FACILITIES PURPOSE AND FUNCTIONALITY, SPECIFICALLY IN REGARD TO THE FILTRATION/INFILTRATION OF THE STORMWATER. A SPECIFIC SOIL MEDIUM MIX HAS BEEN SPECIFIED.

THE TOPSOIL MUST BE OF GOOD QUALITY. GOOD TOPSOIL WOULD CONSIST OF A LOAM OR SANDY LOAM SOIL OF UNIFORM COMPOSITION, CONTAINING NO MORE THAN FIVE PERCENT (5%) CLAY, BE LOOSE AND FREE OF OBJECTS SUCH AS ROCKS, ROOTS, ETC. OF LESS THAN TWO INCHES (2") IN DIAMETER. CAREFUL SELECTION OF TOPSOIL SHALL BE DONE SO THAT NO FOREIGN SUBSTANCES, INCLUDING NOXIOUS WEEDS AND GRASSES, ARE WITHIN THE SOIL THAT WOULD HINDER THE GROWTH OF NEW PLANTINGS. ALSO, CHEMICAL SUBSTANCES SHALL NOT BE IN THE SOIL THAT WOULD PROVE TO BE TOXIC TO THE ENVIRONMENT.

LININGS

THE QUICK ESTABLISHMENT OF THE SPECIFIED VEGETATION WITHIN THE BMP FACILITIES INTO A DENSE STAND IS ESSENTIAL. A DENSE VEGETATIVE COVER WILL NOT ONLY PREVENT SOIL EROSION BUT ALSO WILL NATURALLY FACILITATE THE DESIGNED FUNCTION OF THE BMP VIA INFILTRATION AND PLANT TRANSPIRATION. INFLOW POINTS TO THE BMP FACILITIES SHALL BE PROTECTED WITH EROSION CONTROLS SUCH AS (E.G., APPROVED FABRIC MATING, ROCK RIPRAP, FLOW SPREADERS, ETC.). REPLACEMENTS OF THESE COMPONENTS SHALL BE EQUAL TO OR BETTER THAN SPECIFIED IN THE APPROPRIATE LAND DEVELOPMENT OR EROSION CONTROL PLANS.

PLANTING SPECIFICATIONS

TURF

ANY TURF THAT NEEDS TO BE REPAIRED OR REPLACED BEYOND ITS NORMAL MAINTENANCE CARE SHOULD BE CAREFULLY INVESTIGATED PRIOR TO OVER-SEEDING OR APPLYING FERTILIZERS. SEEDING SPECIFICATIONS ARE AVAILABLE ACCORDING TO THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS. THE USE OF LOW-GROWING, STOLONIFEROUS, TURF TYPE COOL SEASON GRASSES IS RECOMMENDED. FERTILIZATION OF THE TURF AREA SHOULD BE IN LIMITED AMOUNTS AND BE APPLIED ONLY AS NECESSARY TO OVOID CONTRIBUTING TO STORM AND GROUND WATER POLLUTION.

SHRUBS, PERENNIALS & ORNAMENTAL GRASSES

IN ADDITION TO THE PLANTING SPECIFICATIONS PROVIDED IN THE APPROVED PLANS, THE FOLLOWING GUIDELINES MAY ALSO BE UTILIZED FOR THE REPLACEMENT OF PLANTING MATERIALS:

- ALL PLANT MATERIAL SHALL BE INSTALLED IN CONFORMANCE WITH AND MEET THE SPECIFICATIONS OF "THE AMERICAN NURSERY ASSOCIATION" GUIDELINES.
- ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORTATION FROM NURSERY TO JOB SITE AND UNTIL PLANTING. IF NECESSARY, LARGER MATERIAL SUCH AS TREES MAY BE "HEALED IN" IN A DESIGNATED TEMPORARY HOLDING AREA FOR NO MORE THAN TWO (2) MONTHS.
- WALLS OF THE PLANTING HOLE SHALL BE DUG VERTICAL.
- THE DIAMETER OF THE PLANTING HOLE SHALL BE SIX INCHES (6") LARGER ON ALL SIDES THAN THAT OF THE PLANT'S ROOT BALL.
- THE ROOT BALL CROWN SHALL BE PLANTED FLUSH IF NOT SLIGHTLY ABOVE ADJACENT GRADE.
- BACKFILL AROUND ROOT BALL BY HAND WITH SPECIFIED AMENDED SOIL MEDIUM. BACKFILL IN FOUR INCH (4") LIFTS AND TAMP BY HAND TO ENSURE PROPER COMPACTION.
- NEVER COVER THE TOP OF THE ROOT BALL WITH SOIL. MOUND SOIL SLIGHTLY AROUND HOLE TO CREATE A WATERING BOWL.
- COVER PLANTING AREA WITH TWO TO THREE INCHES (2"-3") OF AGED WOOD MULCH AS SPECIFIED.
- WATER THOROUGHLY.
- PLANTS IN GENERAL RECEIVE NEEDED NUTRIENTS FROM GOOD SOIL MEDIUM AND DO NOT REQUIRE ADDITIONAL FERTILIZATION. IF FERTILIZER IS USED, ONLY A NATURAL BIODEGRADABLE FERTILIZER IS RECOMMENDED SUCH AS PROCESSED COW MANURE.

MAINTENANCE REQUIREMENTS

TO ASSURE PROPER IMPLEMENTATION, MAINTENANCE, AND CARE OF STORMWATER MANAGEMENT BMPS, THE BMPS SHOULD BE INSPECTED BY A QUALIFIED PERSON, WHICH MAY INCLUDE THE LANDOWNER, OR THE OWNER'S DESIGNEE (INCLUDING THE TOWNSHIP FOR DEDICATED AND OWNED FACILITIES), ACCORDING TO THE FOLLOWING MINIMUM FREQUENCIES:

I. BI-ANNUALLY (TWICE PER YEAR) FOR THE FIRST FIVE (5) YEARS.

II. ONCE EVERY THREE (3) YEARS THEREAFTER.

III. DURING OR IMMEDIATELY AFTER THE CESSATION OF A TEN (10) YEAR OR GREATER STORM EVENT. A TEN (10) YEAR STORM EVENT IS DEFINED AS RAINFALL EXCEEDING FIVE (5) INCHES IN A TWENTY-FOUR (24) HOUR PERIOD.

I.V. AS SPECIFIED IN THE INDIVIDUAL PCSM BMP OPERATIONS AND MAINTENANCE TABLES PROVIDED ON THIS SHEET.

SINKHOLE / SUBSIDENCE ACTIVITY

THE TOWNSHIP AND THE GEOLOGIST/GEOTECHNICAL ENGINEER OF RECORD SHALL BE NOTIFIED IN THE EVENT THAT A SINKHOLE OR SUBSIDENCE ACTIVITY ARE ENCOUNTERED OR OBSERVED DURING POST-CONSTRUCTION OPERATIONS AND MAINTENANCE INSPECTIONS OF THE STORM WATER MANAGEMENT FACILITIES. A LICENSED PROFESSIONAL GEOLOGIST OR GEOTECHNICAL ENGINEER WITH EXTENSIVE EXPERIENCE IN KARST GEOLOGY STABILIZATION SHALL BE ENGAGED TO INVESTIGATE ALL SINKHOLES OR AREAS OF SUBSIDENCE, TO PREPARE SINKHOLE STABILIZATION PROCEDURES, TO DIRECT THE SINKHOLE STABILIZATION WORK, AND TO MAKE RECOMMENDATIONS FOR CONSTRUCTION TECHNIQUES/PROCEDURES AND DESIGN MODIFICATIONS THAT WILL REDUCE THE POTENTIAL FOR FURTHER SINKHOLE FORMATION. SINKHOLES ARE TO BE PROMPTLY REPAIRED.

INFILTRATION BASIN (BMP"S1 1&4)

INFILTRATION BASINS ARE BASINS WHOSE OUTLETS HAVE BEEN DESIGNED TO ALLOW A CERTAIN VOLUME TO BE INFILTRATED RATHER THAN BEING DETAINED AND RELEASED. IN ADDITION TO PROVIDING INFILTRATION VOLUME, RUNOFF RATES CAN BE REDUCED THROUGH THE USE OF MULTI-STAGE OUTLET STRUCTURES.

INSPECTION/MAINTENANCE CONSIDERATIONS:

- INSPECTIONS SHOULD BE CONDUCTED SEMI-ANNUALLY AND AFTER STORM EVENTS GREATER THEN 0.50 INCHES TO IDENTIFY POTENTIAL PROBLEMS EARLY.
- MOST MAINTENANCE EFFORTS WILL NEED TO BE DIRECTED TOWARD VEGETATION MANAGEMENT AND VECTOR CONTROL, WHICH MAY FOCUS ON BASIC HOUSEKEEPING PRACTICES SUCH AS REMOVAL OF DEBRIS ACCUMULATIONS AND VEGETATION MANAGEMENT TO ENSURE THAT THE BASIN DEWATERS COMPLETELY (RECOMMENDED 72 HOUR RESIDENCE TIME OR LESS) TO PREVENT CREATING MOSQUITO AND OTHER VECTOR HABITATS.
- DURING INSPECTIONS, CHANGES TO THE EXTENDED STORAGE POND OR THE CONTRIBUTING WATERSHED SHOULD BE NOTED, AS THESE MAY AFFECT BASIN PERFORMANCE.

INSPECTION ACTIVITY

	SCHEDULE
INSPECT AFTER STORM EVENTS FOR BANK STABILITY AND VEGETATION GROWTH, SUSPECTED SINKHOLE FORMATION, AND TO CONFIRM DRAIN TIMES OF LESS THAN 72 HOURS HAVE BEEN ACHIEVED.	AFTER CONSTRUCTION
INSPECT OUTLET STRUCTURE FOR EVIDENCE OF CLOGGING OR OUTFLOW RELEASE VELOCITIES THAT ARE GREATER THAN DESIGN FLOW.	
INSPECT FOR THE FOLLOWING ISSUES: DIFFERENTIAL SETTLEMENT, CRACKING, EROSION OF BASIN BANKS OR BOTTOM, LEAKAGE, OR TREE GROWTH ON THE EMBANKMENT; THE CONDITION OF THE RIPRAP IN THE INLET, CLOGGING OF OUTLET AND PILOT CHANNELS, STANDING WATER, SLOPE STABILITY, PRESENCE OF BURROWS, SEDIMENT ACCUMULATION IN THE BASIN, AND OUTLET STRUCTURES, TRASH AND DEBRIS, SUSPECTED SINKHOLE FORMATION, CLOGGING OF GEOTEXTILE IN BASIN UNDERDRAIN, AND THE VIGOR AND DENSITY OF THE GRASS TURF ON THE BASIN SIDE SLOPES AND FLOOR.	SEMI-ANNUAL, AFTER RAIN EVENTS OF 0.50 INCHES OR GREATER, OR MORE FREQUENT
INSPECT FOR THE FOLLOWING ISSUES: SUBSIDENCE, DAMAGE TO THE EMERGENCY SPILLWAY, INADEQUACY OF THE INLET/OUTLET CHANNEL EROSION CONTROL MEASURES, ACCUMULATED SEDIMENT VOLUME, AND SEMI-ANNUAL INSPECTION ITEMS.	ANNUAL
INSPECT FOR SINKHOLES AND SIGNS OF SUBSIDENCE. SHOULD A SINKHOLE OPEN OR IF EVIDENCE OR SUBSIDENCE IS PRESENT, A GEOTECHNICAL PROFESSIONAL AND THE TOWNSHIP SHALL BE NOTIFIED IMMEDIATELY. SINKHOLES ARE TO BE PROMPTLY REPAIRED.	AFTER RAIN EVENTS OF 0.50 INCHES OR GREATER; OR MORE FREQUENTLY; SEMI-ANNUAL FOR FIRST 5 YRS, ANNUALLY THERAFTER

MAINTENANCE ACTIVITIES

	SCHEDULE
IF NECESSARY, MODIFY THE OUTLET ORIFICE TO ACHIEVE DESIGN VALUES IF INSPECTION INDICATES MODIFICATIONS ARE NECESSARY.	AS NEEDED
MOW SIDE SLOPES.	
REPAIR UNDERCUT OR ERODED AREAS.	
REMOVE LITTER AND DEBRIS.	
MANAGE PESTICIDE AND NUTRIENTS.	
CONTROL VECTORS AS NECESSARY.	
REMOVE ACCUMULATED TRASH AND DEBRIS FROM THE BASIN, AROUND THE RISER PIPE, SIDE SLOPES, EMBANKMENT, EMERGENCY SPILLWAY, AND OUTFLOW TRASH RACKS. THE FREQUENCY OF THIS ACTIVITY MAY BE ALTERED TO MEET SPECIFIC SITE CONDITIONS.	SEMI-ANNUAL, OR MORE FREQUENT, AS NEEDED.
TRIM VEGETATION PREVENT ESTABLISHMENT OF WOODY VEGETATION AND FOR AESTHETIC AND VECTOR REASONS.	
SEED OR SOD TO RESTORE DEAD OR DAMAGED GROUNDCOVER.	ANNUAL MAINTENANCE (AS NEEDED)
REPAIR EROSION TO BANKS AND BOTTOM AS REQUIRED.	
REMOVE NUISANCE PLANT SPECIES.	ANNUAL MAINTENANCE (IF NEEDED)
MONITOR SEDIMENT ACCUMULATION AND REMOVE ACCUMULATED SEDIMENT AND REGRADE ABOUT EVERY 10 YEARS OR WHEN THE ACCUMULATED SEDIMENT VOLUME EXCEEDS 10-20% OF THE BASIN VOLUME, OR WHEN ACCUMULATION REACHES 6 INCHES OR IF RESUSPENSION IS OBSERVED. CLEAN IN EARLY SPRING SO VEGETATION DAMAGED DURING CLEANING HAS TIME TO RE-ESTABLISH.	EVERY 10-25 YEARS

INFILTRATION BED (BMP'S 2 & 3)

SUBSURFACE INFILTRATION/DETENTION SYSTEMS ARE LARGE VOID SPACES CONSTRUCTED BENEATH THE GROUND INTENDED TO TEMPORARILY STORE RUNOFF, ALLOWING IT TO COOL AND FOR SEDIMENT TO SETTLE.

INSPECTION/MAINTENANCE CONSIDERATIONS:

- THE BEST MAINTENANCE FOR SUBSURFACE SYSTEMS IS PROPER PREVENTATIVE MEASURES.
- SYSTEMS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SEQUENCE, AND UNDER THE SUPERVISION OF THE DESIGN PROFESSIONAL.
- MAINTAIN ALL TRIBUTARY STORM STRUCTURES AND WATER QUALITY FILTERS

INSPECTION ACTIVITY	SCHEDULE
INSPECT AFTER EVERY MAJOR STORM EVENT WITH 0.50" OF PRECIPATION OR GREATER FOR THE FIRST TWELVE (12) MONTHS TO ENSURE PROPER FUNCTIONING. DRAIN TIMES SHOULD BE OBSERVED TO CONFIRM THAT DESIGNED DRAIN TIMES OF LESS THAN 72 HOURS HAVE BEEN ACHIEVED.	POST CONSTRUCTION (0-12 MONTHS)
INSPECT FACILITY FOR SIGNS OF WETNESS OR DAMAGE TO STRUCTURES, SIGNS OF PETROLEUM HYDROCARBON CONTAMINATION, STANDING WATER, TRASH AND DEBRIS, SEDIMENT ACCUMULATION, SLOPE STABILITY, AND MATERIAL BUILDUP	SEMI-ANNUAL, AFTER RAIN EVENTS OF 0.50 INCHES OR GREATER, OR MORE FREQUENT
CHECK FOR STANDING WATER OR, IF AVAILABLE, CHECK OBSERVATION WELLS FOLLOWING 3 DAYS OF DRY WEATHER TO ENSURE PROPER DRAIN TIME.	
INSPECT PRETREATMENT DEVICES, DIVERSION STRUCTURES, AND UPSTREAM TRIBUTARY AREA FOR DAMAGE, SEDIMENT BUILDUP, AND STRUCTURAL DAMAGE.	
BEDS WITH FILTER FABRIC SHOULD BE INSPECTED FOR SEDIMENT DEPOSITS BY REMOVING A SMALL SECTION OF THE TOP LAYER. IF INSPECTION INDICATES THAT THE BED IS PARTIALLY OR COMPLETELY CLOGGED, IT SHOULD BE RESTORED TO ITS DESIGN CONDITION.	ANNUAL
INSPECT FOR SINKHOLES AND SIGNS OF SUBSIDENCE. SHOULD A SINKHOLE OPEN OR IF EVIDENCE OR SUBSIDENCE IS PRESENT, A GEOTECHNICAL PROFESSIONAL SHALL BE NOTIFIED IMMEDIATELY.	CONTINUALLY/ANNUAL

MAINTENANCE ACTIVITIES	SCHEDULE
REMOVE SEDIMENT, DEBRIS, AND OIL/GREASE FROM PRETREATMENT DEVICES AND OVERFLOW STRUCTURES	STANDARD MAINTENANCE, AS NEEDED
REPAIR UNDERCUT OR ERODED AREAS AT INFLOW AND OUTFLOW STRUCTURES	
REMOVE TRASH, DEBRIS, GRASS CLIPPINGS, TREES, AND OTHER LARGE VEGETATION FROM THE BED PERIMETER AND DISPOSE OF PROPERLY.	SEMI-ANNUAL (APRIL & SEPTEMBER), MORE OFTEN AS NEEDED
CLEAN OUTLET/OUTLET STRUCTURES, OVERFLOW SPILLWAY, AND BEDS, IF NECESSARY.	ANNUAL
REMOVE GRASS CLIPPINGS, LEAVES, AND ACCUMULATED SEDIMENT FROM THE SURFACE OF THE BED. REPLACE FIRST LAYER OF AGGREGATE AND FILTER FABRIC/SYNTHETIC TURF IF CLOGGIGN APPEARS ONLY TO BE AT THE SURFACE.	
IF BYPASS CAPABILITY IS AVAILABLE, IT MAY BE POSSIBLE TO REGAIN THE INFILTRATION RATE IN THE SHORT TERM BY PROVIDING AN EXTENDED DRY PERIOD. (INFILTRATION BMPs ONLY)	5-YEAR MAINTENANCE
FLUSH AND VACUUM SYSTEM WITH VACUUM TRUCK IF SEDIMENT OR OTHER DEBRIS IS OBSERVED.	

BACKUP UNDERDRAIN/ BALL VALVES FOR INFILTRATION FACILITIES

UNDERDRAINS AND BACKUP VALVES ARE PROPOSED TO ALLOW FOR EMERGENCY MAINTENANCE ACTIVITIES ONLY. VALVES ARE TO REMAIN CLOSED AT ALL TIMES. IF UNSUITABLE CONDITIONS ARISE, SUCH AS SATURATED SOILS OR DEWATERING TIMES EXCEEDING 24 HOURS, VALVES MAY BE OPEN TEMPORARILY IN ORDER TO ESTABLISH PERMANENT VEGETATION. AFTER ESTABLISHMENT, VALVES MAY ONLY BE OPEN IN ORDER TO DRAIN THE FACILITIES AS REQUIRED FOR PERIODIC MAINTENANCE OR FOR UNFORESEEN MAINTENANCE SUCH AS SINKHOLE REPAIR OR BASIN REMEDIATION. THE TOWNSHIP SHALL BE NOTIFIED ANY TIME THAT A VALVE OR VALVES ARE OPEN.

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1000 Conshohocken Road | Conshohocken, PA 19428
1.866.MA.SPORTS | WWW.MASPORTS.COM | info@masports.com

ELA group, inc.
ENGINEERS ✦ LANDSCAPE ARCHITECTS
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LITITZ, PA 17543
(717) 626-7271
elagroup.com

TYLER E. HILL
No. PE086960

JASON C BEST
LA002566

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT
SUBJECT:
OPERATION & MAINTENANCE
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	N/A

UPI NO(S): 67-5-27

DRAWING NO.
5 of 48

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\COVER.dwg - PLOTTED: Oct 24, 2023 9:24 am

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\DEED PLOT.dwg - PLOTTED: Oct 24, 2023 9:46 am

ADJOINERS

ADJ. #	UPI	DEED BK/PG	ADDRESS	OWNER 1	OWNER 2
1	67-2-27.48	9407/441	1401 JOHNNYS WAY	WESTTOWN SCHOOL	
2	67-2-62	9407/441	1400 JOHNNYS WAY	WESTTOWN SCHOOL	
3	67-2-61.1	850/219	903 SHADY GROVE WAY	KRAUT WILLIAM D	KRAUT DENISE ENGLANDER
4	67-2-61	7160/716	905 SHADY GROVE WAY	MILLER MARC	ELIZABETH
5	67-2Q-1	8724/1921	911 SHADY GROVE WAY	MACDONALD CHRISTOPHER J	MACDONALD DANIELLE
6	67-2-80.1C	6782/2306	915 SHADY GROVE WAY	LISI JASON P	KRISTINE C
7	67-2Q-19	6591/2190	917 SHADY GROVE WAY	FIORAVANTI JOSEPH M	
8	67-2Q-18	9251/1087	919 SHADY GROVE WAY	BURNS JOSEPH M	BURNS ANNE E
9	67-2Q-20	9511/762	1400 THRUSH LA	HARRIS TERESA J	HARRIS GREGORY J
10	67-2R-38	5072/1509	1005 SHADY GROVE WAY	AQUARO DONA L	
11	67-5D-1	7674/451	1024 ROBIN DR	EGAN PAUL C	ADRIENNE CLEMENTS
12	67-5D-3	6748/232	1025 ROBIN DR	SABATINO CHRISTIAN N	
13	67-5D-4.1	9573/1477	1107 SHADY GROVE WAY	CHESNEY JORDAN FRANCIS	RAYMOND MARYELYSE
14	67-5D-4	7064/1656	1111 SHADY GROVE WAY	BEHRENS EDWARD M	KREIGER PORTIA A
15	67-5D-4.2	7068/1876	1115 SHADY GROVE WAY	GRISILLO ROBERT J	MONICA K
16	67-5-28	5574/911	1191 SHADY GROVE WAY	BLOSSOM GEORGE W	BRODESSER SUSAN
17	66-2-39	6306/1353	1400 E STREET RD	HATTERSLEY SCOTT T	
18	66-2-41.2	8406/503		THORNBURY TOWNSHIP	
19	66-2-36.2	6884/1759	1210 CHEYNEY RD	GOODEN WARREN E	AYO M
20	66-2-36.3	6245/168	1280 E STREET RD	ARMSTRONG JAMES N III	ARMSTRONG GILLIAN
21	66-2-36.4	Q62/123	1260 E STREET RD	HENDERSON JANE K	
22	66-2-35	2048/426	1837 UNIVERSITY CI	COMMONWEALTH OF PA	
23	66-2-34	7642/680	1225 S WESTTOWN RD	RIEDER MICHELE OWENS	
24	67-5-26.5	8757/1263	1106 STATION WAY	MATHIS BRADLEY KENT	
25	67-5-26.4	9213/1641	1103 STATION WAY	GONZALEZ DEBRA	
26	67-5-26.2	9787/571	1151 WESTTOWN RD	ZARELLI JEANETTE	
27	5/26/1967	1154/384	1144 WESTTOWN RD	YORK JANICE LYNNE	
28	67-5-22.1	8179/1997	1071 STABLE LA	BENNER JOHN & JUDITH REVOCABLE TRUST	
29	67-5B-51	7394/753	1027 FARM LA	MCDERMOTT BRYAN	ANNA YATES
30	67-5B-50	Z0061/0261	1025 FARM LA	MANUEL WILLIAM H	GRACE C
31	67-5B-49	7361/1259	1023 FARM LA	SHARMA JAYA	
32	67-5B-48	320/546	1021 FARM LA	BALLATO MICHAEL	BALLATO WHITNEY
33	67-5B-47	15/117	1019 FARM LA	HELMS CHRISTIAN PAUL	HELMS KRISTIN
34	67-5B-46	8687/2170	1017 FARM LA	WALDRON STEPHEN E	STACY L
35	64-5B-36	1591/176	1022 PLUMLY RD	KERSHAW L BARRY	RUTH C
36	67-5B-35	275/91	1025 PLUMLY RD	HATTI SHIVKUMAR	VRINDA
37	67-5B-34	7245/2297	1023 PLUMLY RD	ALOISIO JONATHAN	
38	67-5B-14	8461/2194	1022 ASHLEY RD	KEEFER STEPHEN V	DANA L
39	67-5B-13	K63/18	1025 ASHLEY RD	RUGGERIO WILLIAM ANTHONY	
40	67-5B-12	229/543	1023 ASHLEY RD	KOLLIAS PETER P	KAREN
41	67-5B-1	n/a		WESTTOWN TOWNSHIP	
42	67-2-24	9407/441	1020 WESTTOWN RD	WESTTOWN SCHOOL	
43	67-2-25	9407/441	975 WESTTOWN RD	WESTTOWN SCHOOL	

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER RA037148
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

DEED PLOT PLAN

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

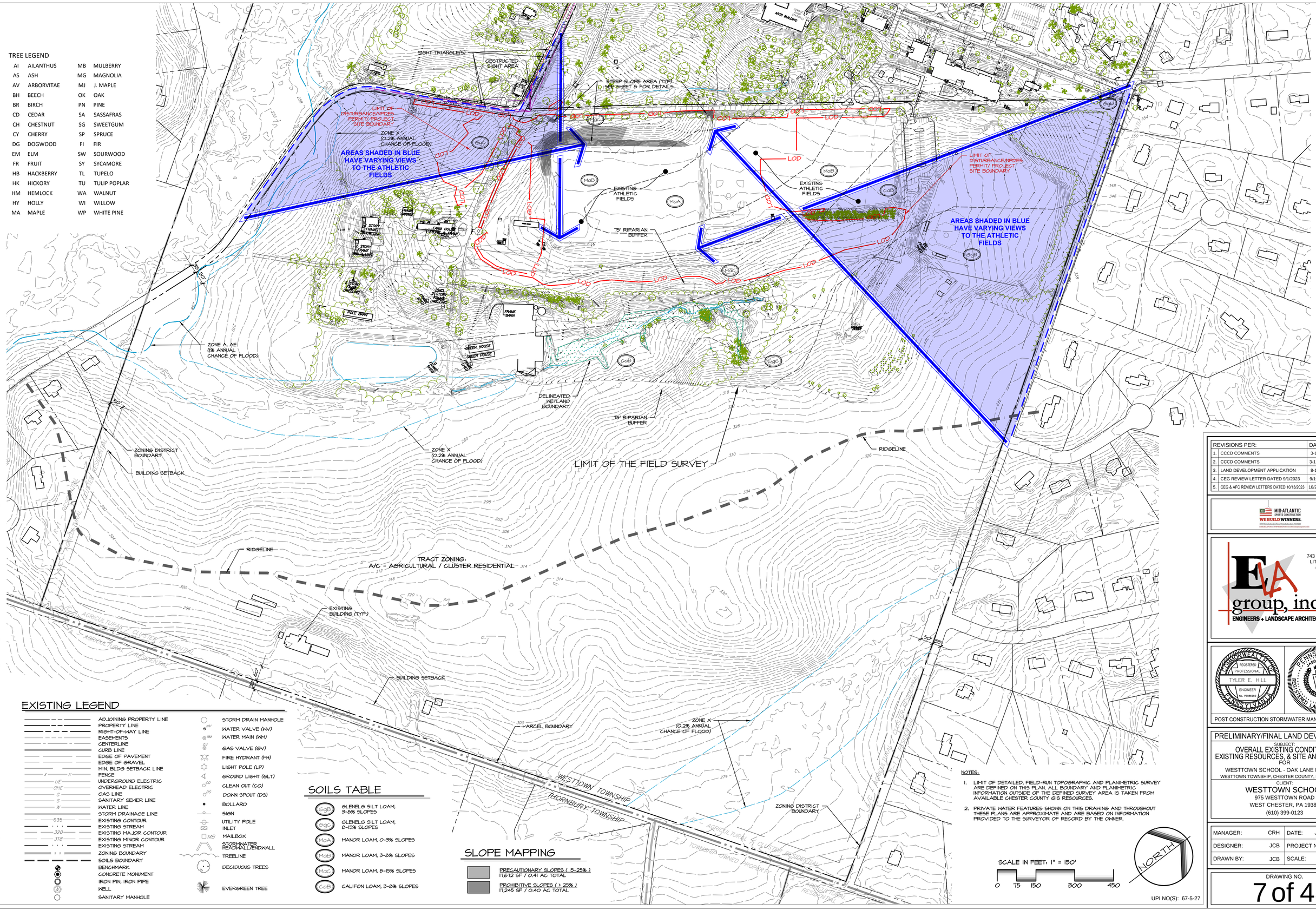
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 200'

DRAWING NO.

TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BH	BEECH	OK	OAK
BR	BIRCH	PN	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	FI	FIR
EM	ELM	SW	SOURWOOD
FR	FRUIT	SY	SYCAMORE
HB	HACKBERRY	TL	TUPELO
HK	HICKORY	TU	TULIP POPLAR
HM	HEMLOCK	WA	WALNUT
HY	HOLLY	WI	WILLOW
MA	MAPLE	WP	WHITE PINE



EXISTING LEGEND

- ADJOINING PROPERTY LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EASEMENTS
- CENTERLINE
- CURB LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- MIN. BLDG SETBACK LINE
- FENCE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- GAS LINE
- SANITARY SEWER LINE
- WATER LINE
- STORM DRAINAGE LINE
- EXISTING CONTOUR
- EXISTING STREAM
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING STREAM
- ZONING BOUNDARY
- SOILS BOUNDARY
- BENCHMARK
- CONCRETE MONUMENT
- IRON PIN, IRON PIPE
- WELL
- SANITARY MANHOLE
- STORM DRAIN MANHOLE
- WATER VALVE (WV)
- WATER MAIN (WM)
- GAS VALVE (GV)
- FIRE HYDRANT (FH)
- LIGHT POLE (LP)
- GROUND LIGHT (GLT)
- CLEAN OUT (CO)
- DOWN SPOUT (DS)
- BOLLARD
- SIGN
- UTILITY POLE
- INLET
- MAILBOX
- STORMWATER HEADWALL/ENDWALL
- TREELINE
- DECIDUOUS TREES
- EVERGREEN TREE

SOILS TABLE

GgB	GLENELG SILT LOAM, 3-8% SLOPES
GgC	GLENELG SILT LOAM, 8-15% SLOPES
MaA	MANOR LOAM, 0-3% SLOPES
MaB	MANOR LOAM, 3-8% SLOPES
MaC	MANOR LOAM, 8-15% SLOPES
CaB	CALIFON LOAM, 3-8% SLOPES

SLOPE MAPPING

- PRECAUTIONARY SLOPES (15-25%) 17,612 SF / 0.41 AC TOTAL
- PROHIBITIVE SLOPES (> 25%) 17,245 SF / 0.40 AC TOTAL

NOTES:

1. LIMIT OF DETAILED, FIELD-RUN TOPOGRAPHIC AND PLANIMETRIC SURVEY ARE DEFINED ON THIS PLAN. ALL BOUNDARY AND PLANIMETRIC INFORMATION OUTSIDE OF THE DEFINED SURVEY AREA IS TAKEN FROM AVAILABLE CHESTER COUNTY GIS RESOURCES.
2. PRIVATE WATER FEATURES SHOWN ON THIS DRAWING AND THROUGHOUT THESE PLANS ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED TO THE SURVEYOR OF RECORD BY THE OWNER.

SCALE IN FEET: 1" = 150'

0 75 150 300 450

NORTH

UPI NO(S): 67-5-27

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086060

PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER
LA002198
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
OVERALL EXISTING CONDITIONS, EXISTING RESOURCES, & SITE ANALYSIS PLAN
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 150'

DRAWING NO.
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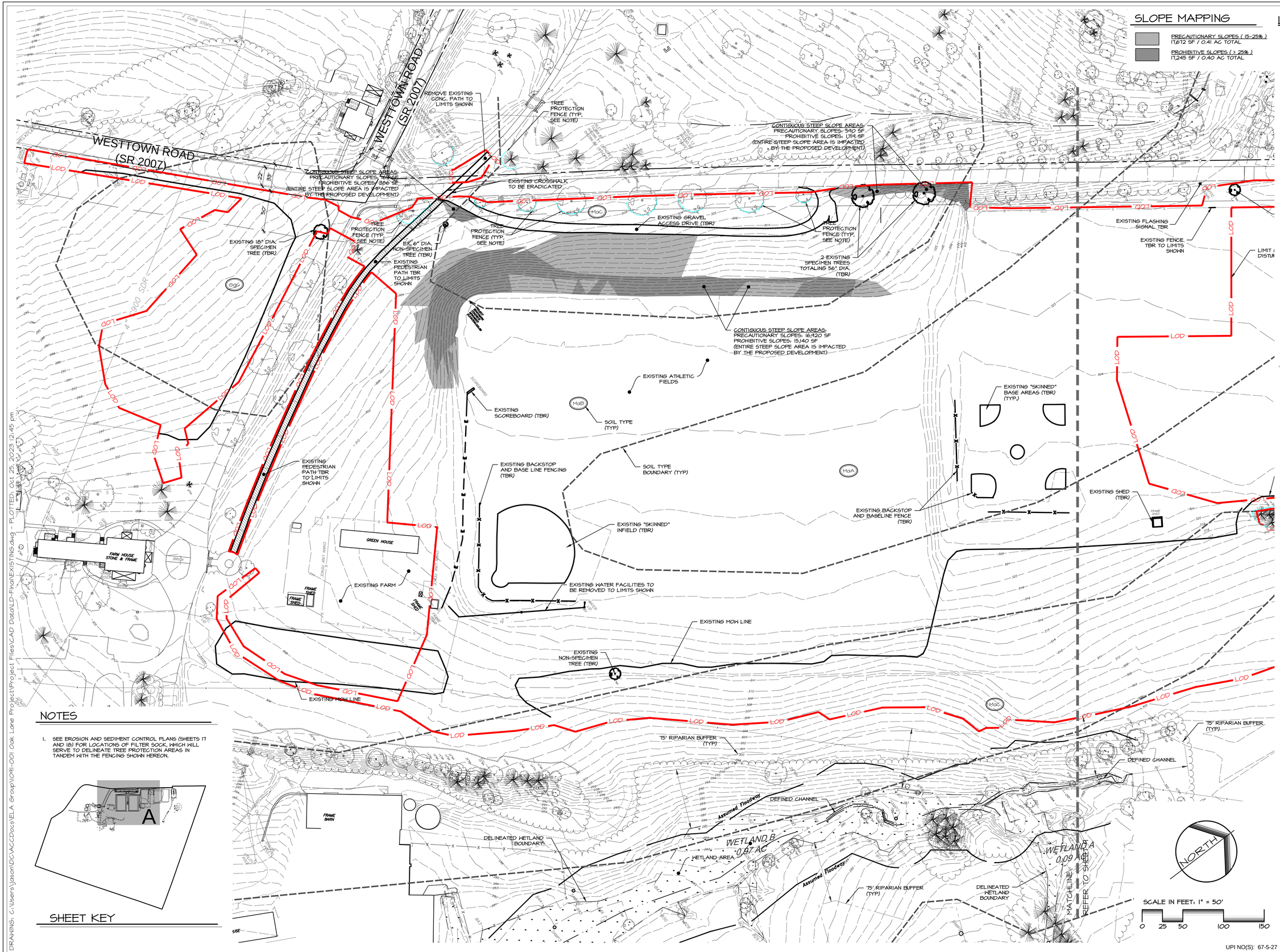

SLOPE MAPPING

PRECAUTIONARY SLOPES (15-25%)
11,612 SF / 0.41 AC TOTAL

PROHIBITIVE SLOPES (> 25%)
11,245 SF / 0.40 AC TOTAL

LEGEND

- ADJOINING PROPERTY LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EASEMENTS
- CENTERLINE
- CURB LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
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- UTILITY POLE
- INLET
- MAILBOX
- STORMWATER HEADWALL/ENDWALL
- TREELINE
- DECIDUOUS TREES
- EVERGREEN TREE
- TREE PROTECTION FENCE

NOTES

1. SEE EROSION AND SEDIMENT CONTROL PLANS (SHEETS 17 AND 18) FOR LOCATIONS OF FILTER SOCK, WHICH WILL SERVE TO DELINEATE TREE PROTECTION AREAS IN TANDEM WITH THE FENCING SHOWN HEREON.

SHEET KEY

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WE BUILD WINNERS.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT
REGISTRATION NUMBER LA002598

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
EXISTING CONDITIONS, TREE PROTECTION, AND DEMOLITION PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

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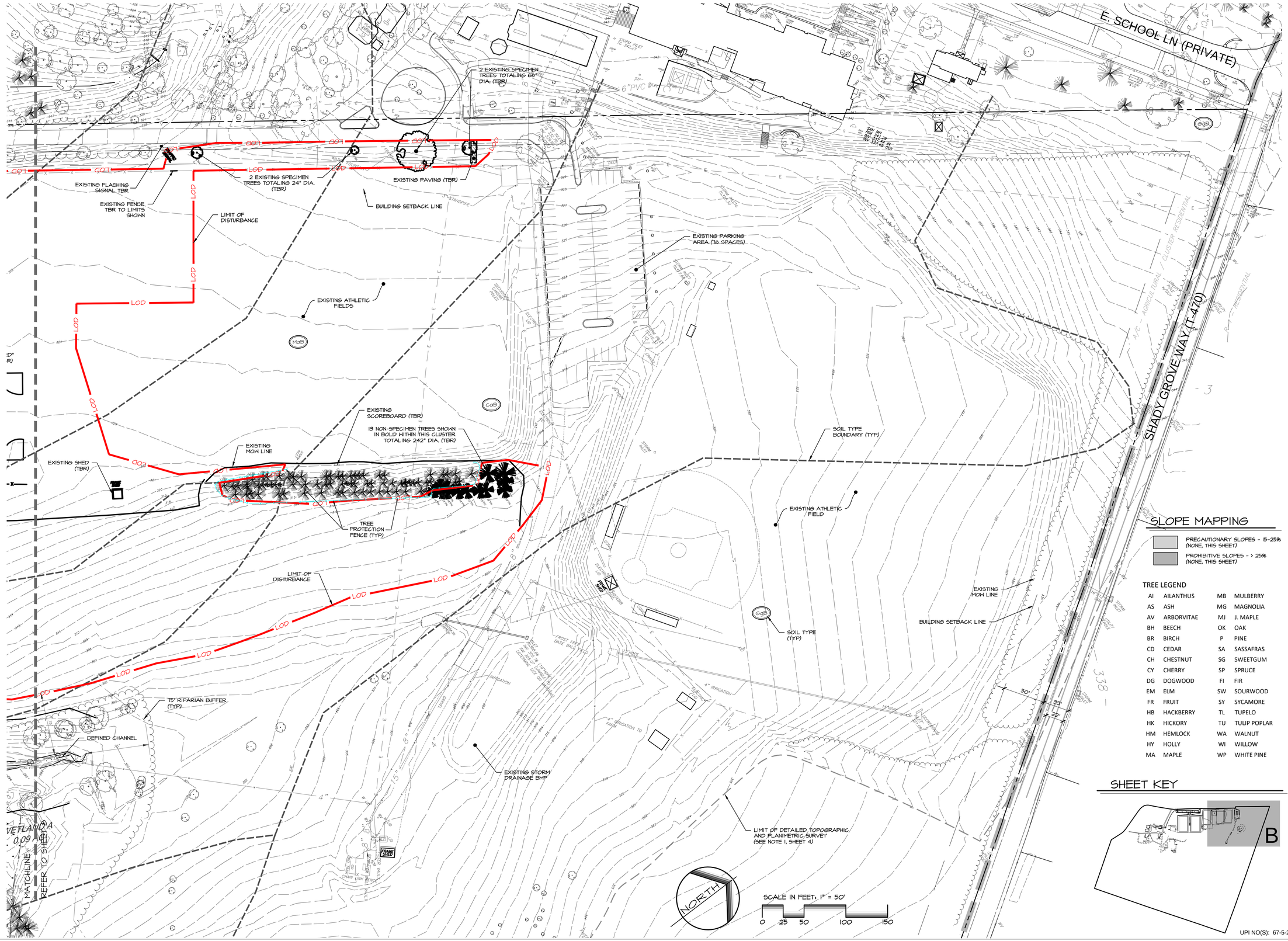

LEGEND

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- INLET
- MAILBOX
- STORMWATER HEADWALL/ENDWALL
- TREELINE
- DECIDUOUS TREES
- EVERGREEN TREE
- TREE PROTECTION FENCE

SLOPE MAPPING

- PRECAUTIONARY SLOPES - 15-25% (NONE, THIS SHEET)
- PROHIBITIVE SLOPES - > 25% (NONE, THIS SHEET)

TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BH	BEECH	OK	OAK
BR	BIRCH	P	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	FI	FIR
EM	ELM	SW	SOURWOOD
FR	FRUIT	SY	SYCAMORE
HB	HACKBERRY	TL	TUPELO
HK	HICKORY	TU	TULIP POPLAR
HM	HEMLOCK	WA	WALNUT
HY	HOLLY	WI	WILLOW
MA	MAPLE	WP	WHITE PINE

SHEET KEY

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CONTACT JASON@MIDATLANTICSPORTSCONSTRUCTION.COM 717-626-7271

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTERED NUMBER
LA001745
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
EXISTING CONDITIONS, TREE PROTECTION, AND DEMOLITION PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

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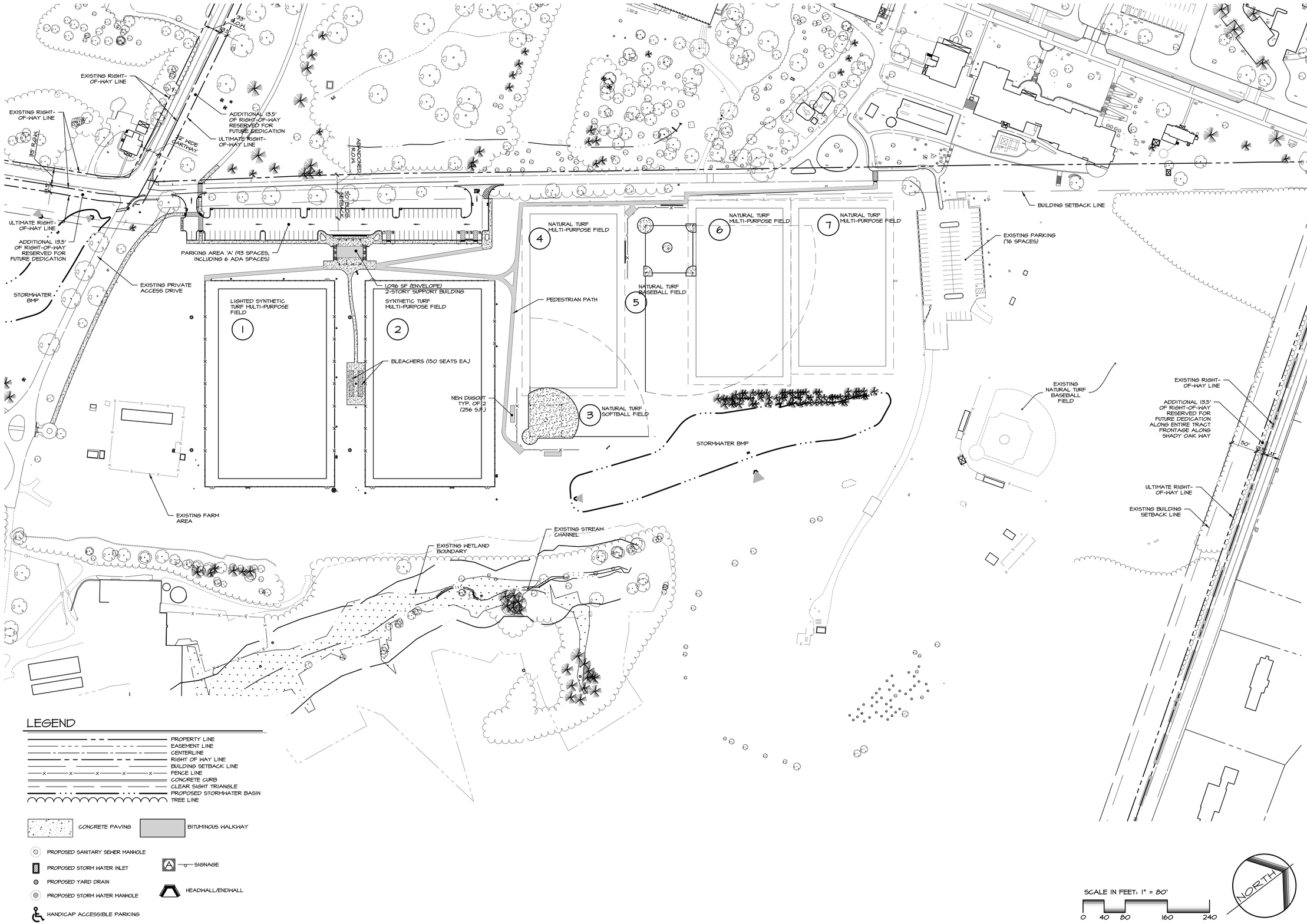
9 of 48



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TYLER E. HILL
ENGINEER
No. PE086960

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER
LA002566
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

OVERALL LAYOUT PLAN

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

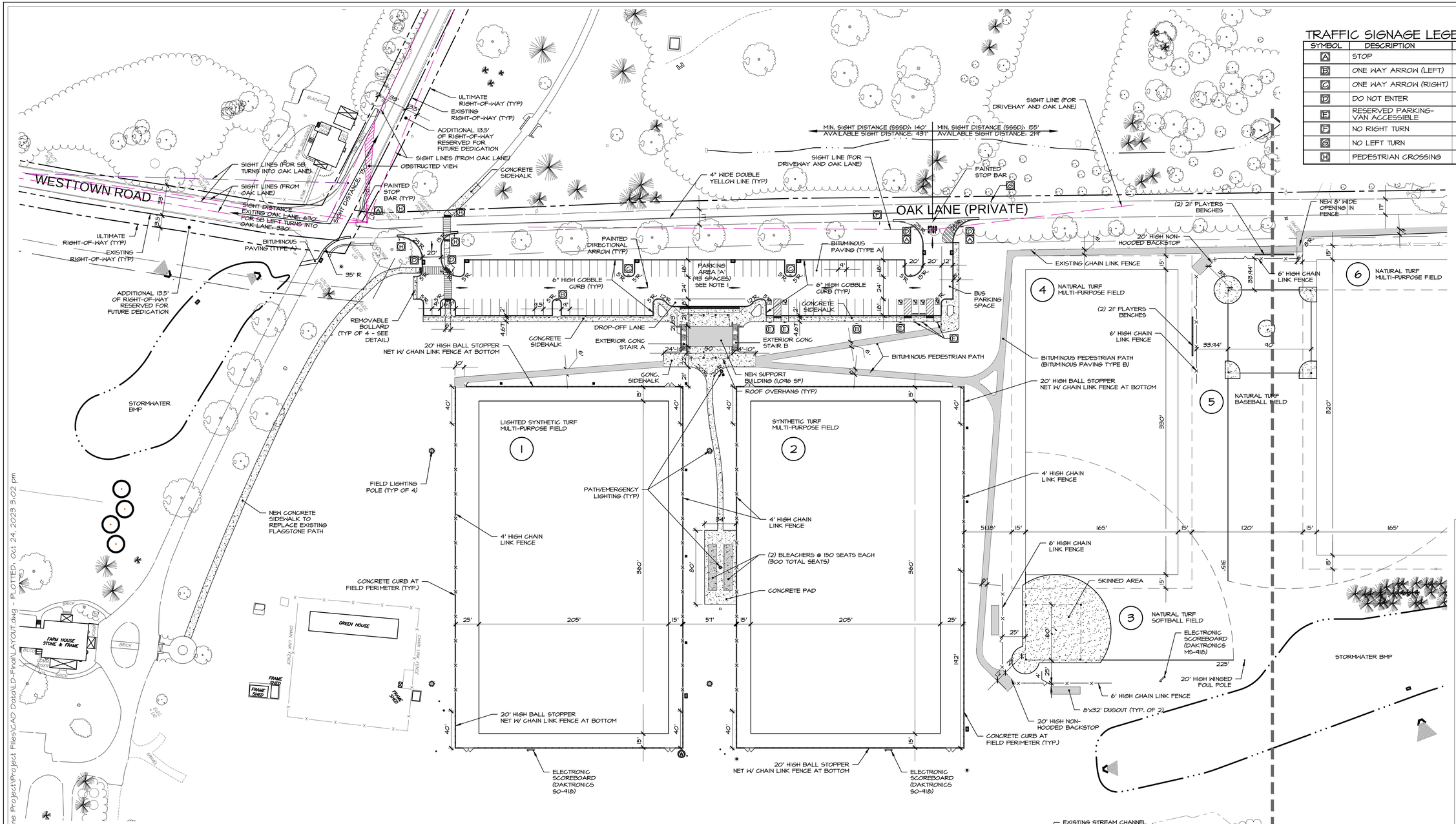
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 80'

DRAWING NO.



TRAFFIC SIGNAGE LEGEND

SYMBOL	DESCRIPTION	SIZE	PA DOT DESIG.	NOTES
A	STOP	30"x30"	R1-1	-
B	ONE WAY ARROW (LEFT)	36"x12"	R6-1L	-
C	ONE WAY ARROW (RIGHT)	36"x12"	R6-1R	-
D	DO NOT ENTER	24"x24"	R5-1	
E	RESERVED PARKING-VAN ACCESSIBLE	12"x18" 12"x 6"	R7-8 W/ R7-8A	MOUNT 5' A.G.
F	NO RIGHT TURN	24"x24"	R3-1	SYMBOL
G	NO LEFT TURN	24"x24"	R3-2	SYMBOL
H	PEDESTRIAN CROSSING	24"x24"	W11-2	

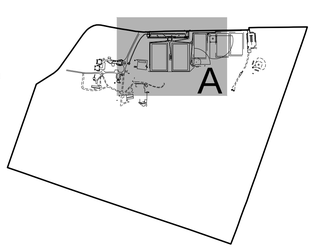
NOTES:

1. ALL CURBING WITHIN THE PARKING AREA 'A' SHALL BE COBBLE CURBING UNLESS OTHERWISE NOTED.
2. PARKING AREA 'A' CONSISTS OF:
   a. 6 ADA SPACES @ 8'x18' EA.
   b. 11 SPACES @ 9.5'x18' EA.
   c. 76 SPACES @ 9'x18' EA.

   TOTAL: 93 SPACES

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- CENTERLINE
- RIGHT OF WAY LINE
- BUILDING SETBACK LINE
- FENCE LINE
- CONCRETE CURB
- CLEAR SIGHT TRIANGLE
- PROPOSED STORMWATER BASIN
- TREE LINE
- CONCRETE PAVING
- BITUMINOUS WALKWAY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM WATER INLET
- PROPOSED YARD DRAIN
- PROPOSED STORM WATER MANHOLE
- HANDICAP ACCESSIBLE PARKING
- SIGNAGE
- HEADWALL/ENDWALL



SHEET KEY

UPI NO(S): 67-5-27

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
2. CCCD COMMENTS	3-17-2023	TEH
3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4. CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5. CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084840

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTA
REGISTRATION NUMBER
LA001266
REGISTERED LANDSCAPE ARCHITECT

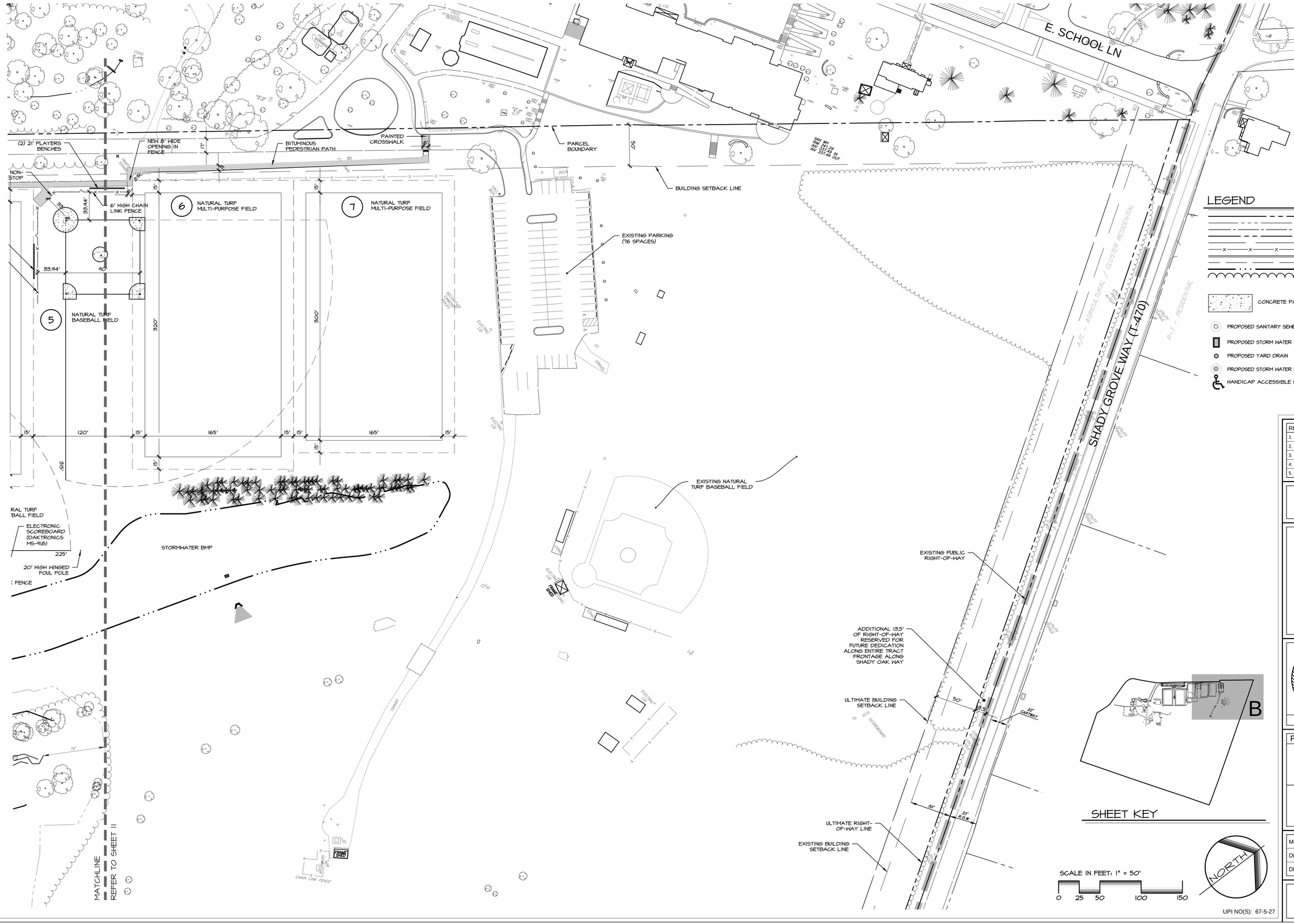
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
LAYOUT PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
11 of 48



LEGEND

- PROPERTY LINE
- EASEMENT LINE
- CENTERLINE
- RIGHT OF WAY LINE
- BUILDING SETBACK LINE
- FENCE LINE
- CONCRETE CURB
- CLEAR SIGHT TRIANGLE
- PROPOSED STORMWATER BASIN
- TREE LINE
- CONCRETE PAVING
- BITUMINOUS WALKWAY
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM WATER INLET
- PROPOSED YARD DRAIN
- PROPOSED STORM WATER MANHOLE
- HANDICAP ACCESSIBLE PARKING
- SIGNAGE
- HEADWALL/ENDWALL

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LITITZ, PA 17543
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084843

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002586
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

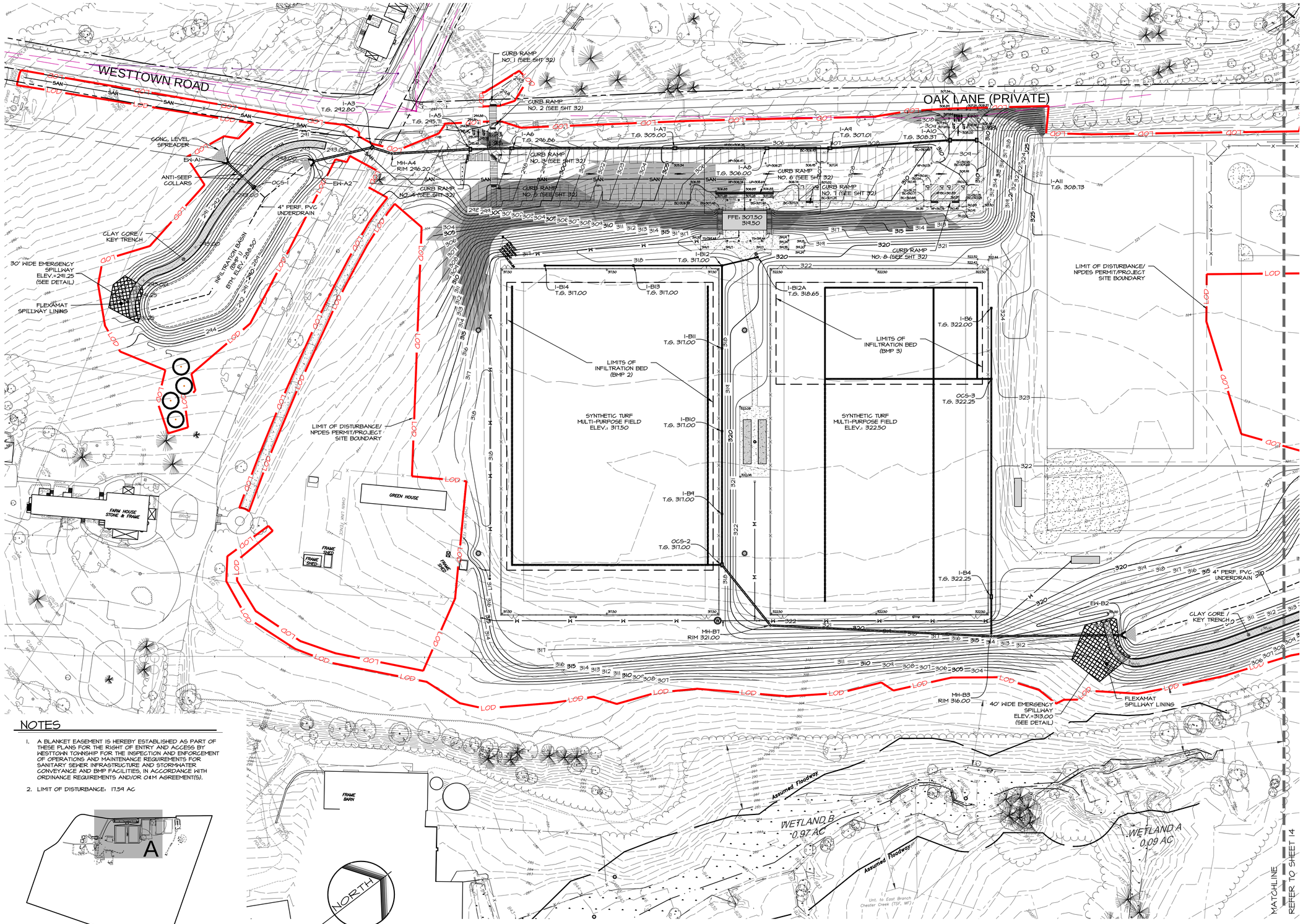
SUBJECT:
LAYOUT PLAN 'B'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
12 of 48

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\LAYOUT.dwg - PLOTTED: Oct 24, 2023 3:04 pm



GRADING LEGEND

- 635 — PROPOSED CONTOUR
- 635 — EXISTING CONTOUR
- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP
- S — EXISTING SANITARY SEWER AND MANHOLE
- W — EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- G — EXISTING UNDERGROUND GAS LINE
- OHE — EXISTING ABOVE GROUND ELECTRIC LINE
- UE — EXISTING UNDERGROUND ELECTRIC LINE
- × 354.05 — EXISTING SPOT GRADE
- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION

SOILS

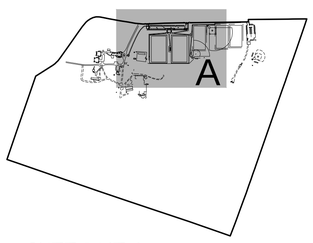
- CaB — CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
- GgB — GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- GgC — GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
- MaA — MANOR LOAM, 0 TO 3 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

EXISTING SLOPE MAPPING

- PRECAUTIONARY SLOPES (15-25%) 17,612 SF / 0.41 AC TOTAL
- PROHIBITIVE SLOPES (> 25%) 17,245 SF / 0.40 AC TOTAL

NOTES

1. A BLANKET EASEMENT IS HEREBY ESTABLISHED AS PART OF THESE PLANS FOR THE RIGHT OF ENTRY AND ACCESS BY WESTTOWN TOWNSHIP FOR THE INSPECTION AND ENFORCEMENT OF OPERATIONS AND MAINTENANCE REQUIREMENTS FOR SANITARY SEWER INFRASTRUCTURE AND STORMWATER CONVEYANCE AND BMP FACILITIES, IN ACCORDANCE WITH ORDINANCE REQUIREMENTS AND/OR O&M AGREEMENT(S).
2. LIMIT OF DISTURBANCE: 17.54 AC



SHEET KEY

REVISIONS PER:	DATE:	BY:

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elagroup.com

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL TYLER E. HILL ENGINEER No. PE086960

PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT JASON C. BEST REGISTRATION NUMBER LA001948

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
GRADING PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

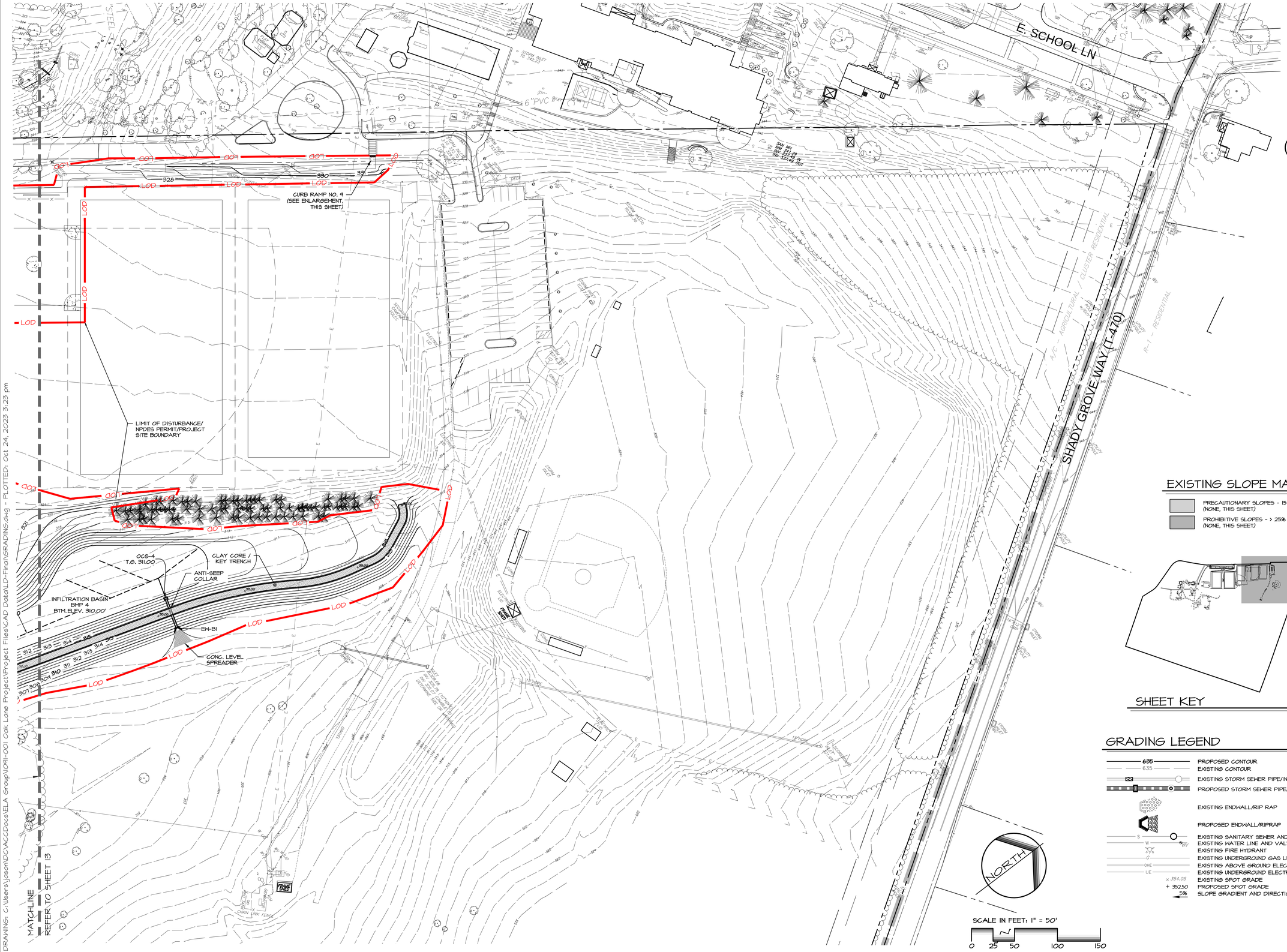
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

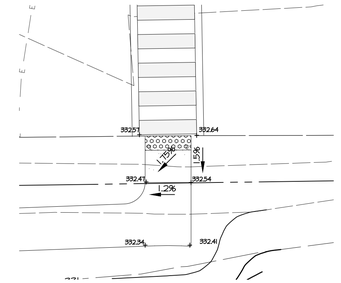
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
13 of 48

UPI NO(S): 67-5-27

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\GRADING.dwg - PLOTTED: Oct 24, 2023 3:22 pm





A GRADING ENLARGEMENT (CURB RAMP 9)

SCALE: 1" = 10'

NOTES

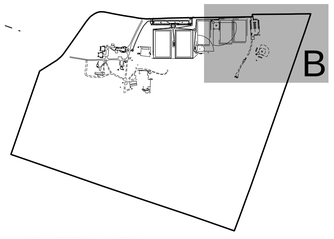
1. A BLANKET EASEMENT IS HEREBY ESTABLISHED AS PART OF THESE PLANS FOR THE RIGHT OF ENTRY AND ACCESS BY WESTTOWN TOWNSHIP FOR THE INSPECTION AND ENFORCEMENT OF OPERATIONS AND MAINTENANCE REQUIREMENTS FOR SANITARY SEWER INFRASTRUCTURE AND STORMWATER CONVEYANCE AND BMP FACILITIES, IN ACCORDANCE WITH ORDINANCE REQUIREMENTS AND/OR O&M AGREEMENT(S).
2. LIMIT OF DISTURBANCE: 17.59 AC

SOILS

- CaB — CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
- GgB — GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- GgC — GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
- MaA — MANOR LOAM, 0 TO 3 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

EXISTING SLOPE MAPPING

- PRECAUTIONARY SLOPES - 15-25% (NONE, THIS SHEET)
- PROHIBITIVE SLOPES - > 25% (NONE, THIS SHEET)



SHEET KEY

GRADING LEGEND

- 635 — PROPOSED CONTOUR
- 635 — EXISTING CONTOUR
- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP
- EXISTING SANITARY SEWER AND MANHOLE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING UNDERGROUND GAS LINE
- OHE — EXISTING ABOVE GROUND ELECTRIC LINE
- UE — EXISTING UNDERGROUND ELECTRIC LINE
- × 354.05 — EXISTING SPOT GRADE
- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION

SCALE IN FEET: 1" = 50'

0 25 50 100 150

UPI NO(S): 67-5-27

REVISIONS PER:	DATE:	BY:

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002388
REGISTERED LANDSCAPE ARCHITECT

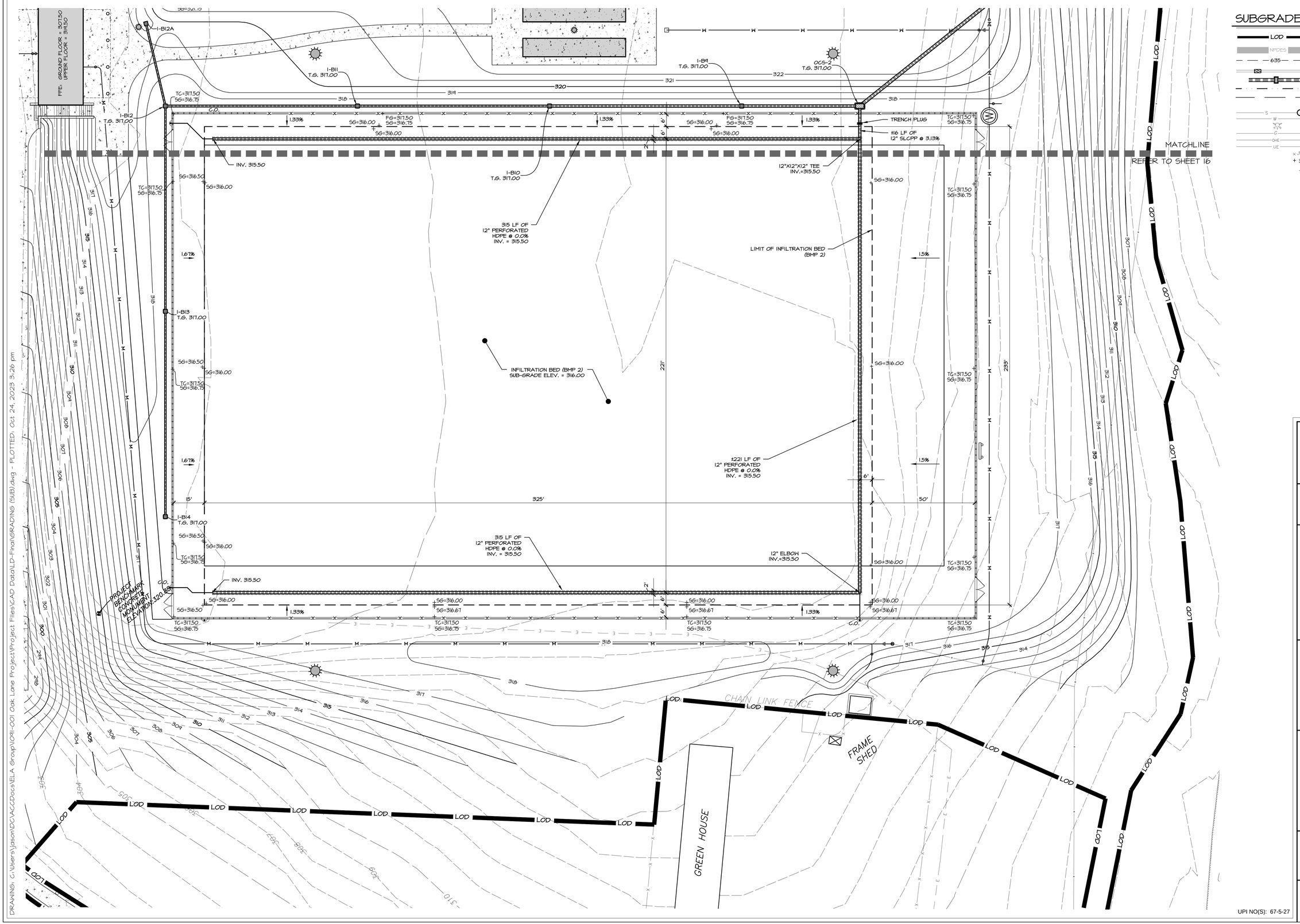
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
GRADING PLAN 'B'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
14 of 48



SUBGRADE/DRAINAGE LEGEND

- LOD — LIMIT OF DISTURBANCE/NPDE BOUNDARY
- NPDES — NPDE BOUNDARY (OUTSIDE LOD)
- 635 — PROPOSED SUBGRADE CONTOUR
- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET
- PERFORATED HDPE COLLECTOR PIPE
- 1'X12' FLAT PIPE/PANEL DRAIN
- PROPOSED CLEANOUT
- S — EXISTING SANITARY SEWER AND MANHOLE
- W — EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- G — EXISTING UNDERGROUND GAS LINE
- OHE — EXISTING ABOVE GROUND ELECTRIC LINE
- UE — EXISTING UNDERGROUND ELECTRIC LINE
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- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION

NORTH

SCALE IN FEET: 1" = 20'

0 10 20 40 60

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
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LITITZ, PA 17543
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER
LA419404
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

FIELD SUB-GRADE PLAN 'A'

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

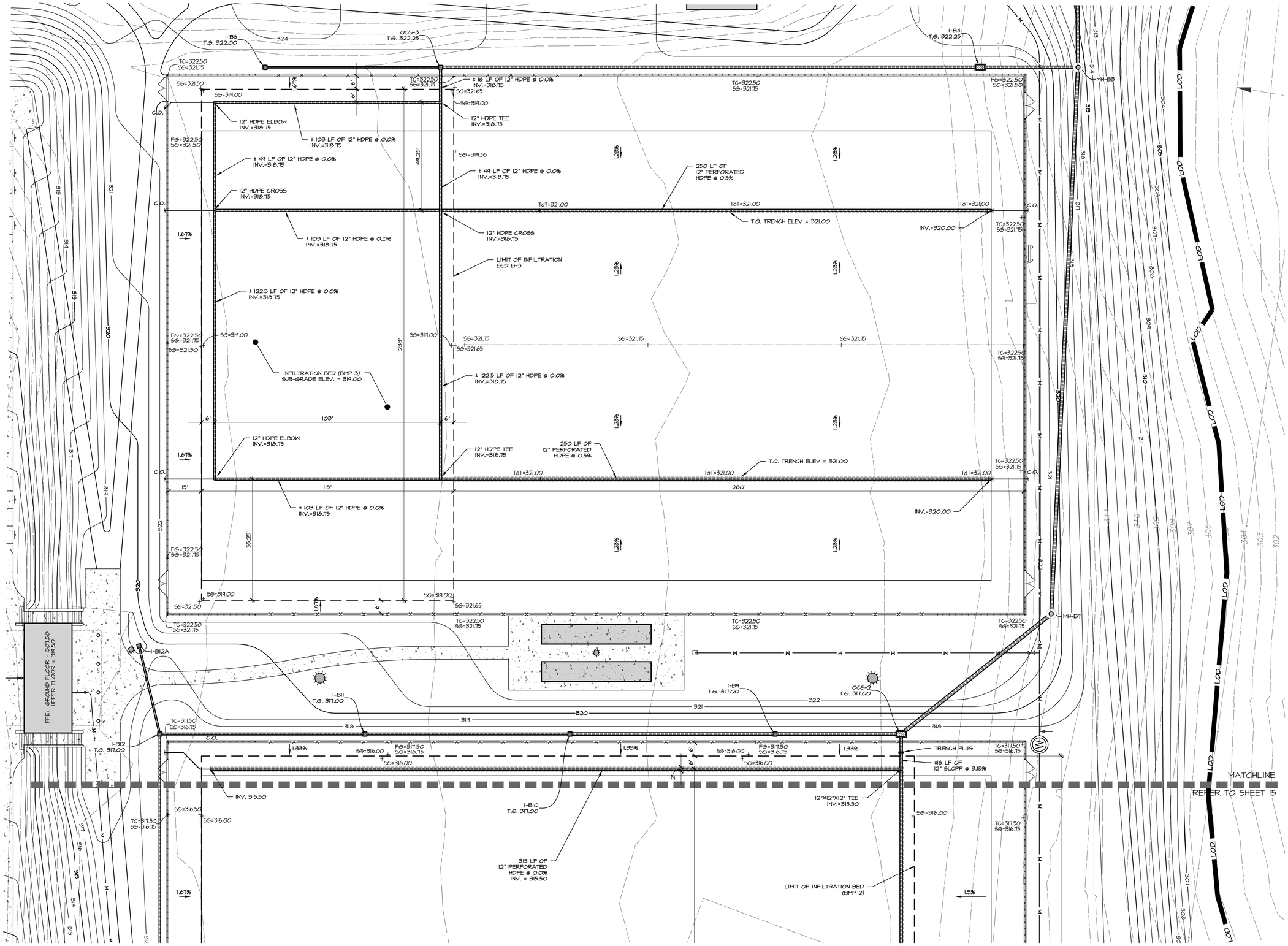
CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 20'

DRAWING NO.

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\GRADING (SUB).dwg - PLOTTED: Oct 24, 2023 3:26 pm



SUBGRADE/DRAINAGE LEGEND

- LOD — LIMIT OF DISTURBANCE/NPDE BOUNDARY
- NPDES — NPDE BOUNDARY (OUTSIDE LOD)
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- EXISTING STORM SEWER PIPE/INLET/MANHOLE
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- PERFORATED HDPE COLLECTOR PIPE
- 1'X12' FLAT PIPE/PANEL DRAIN
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- UE — EXISTING UNDERGROUND ELECTRIC LINE
- × 354.05 — EXISTING SPOT GRADE
- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION

NORTH

SCALE IN FEET: 1" = 20'

0 10 20 40 60

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
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elagroup.com

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEST
REGISTERED LANDSCAPE ARCHITECT
LICENSE NUMBER LA002968

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

FIELD SUB-GRADE PLAN 'B'

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 20'

DRAWING NO.

16 of 48

UPI NO(S): 67-5-27

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\GRADING (SUB).dwg - PLOTTED: Oct 24, 2023 3:26 pm

NORTH

SCALE IN FEET: 1" = 50'

0 25 50 100 150

WESTTOWN ROAD

OAK LANE (PRIVATE)

TP-13

TP-12

CFS #12-4

ROCK CONSTRUCTION ENTRANCE #1

CONCRETE WASHOUT

OPTIONAL ROCK CONSTRUCTION ENTRANCE #3

CFS #12-1a

CFS #12-1b

CFS #12-1c

CFS #18-1

TREE PROTECTION FENCE (TYP)

CFS #18-2

CFS #18-3

CFS #18-4

CFS #18-5

CFS #18-6

CFS #18-7

RIP-RAP APRON

ANTI-SEEP COLLAR

CFS #12-2

DP001

TEMPORARY 6" PERFORATED PVC RISER PIPE CREST ELEV.=240.75

TEMPORARY BAFFLE (SEE DETAIL)

TP-15

CLEANOUT STAKE

INFILTRATION BASIN (BMP 1)/ SEDIMENT TRAP #1

CFS #12-3

TP-16

30' WIDE EMERGENCY SPILLWAY ELEV.=241.25 (SEE DETAIL)

FLEXAMAT SPILLWAY LINING

ROCK CONSTRUCTION ENTRANCE/STABILIZED LOADING AREA #2

TREE PROTECTION FENCE (TYP)

STONE & BERM INLET PROTECTION

TREE PROTECTION FENCE (TYP)

SUGGESTED STAGING AREA

TP-9

TP-10

TP-11

TP-3

TP-5

TP-4

TP-1

TP-2

TP-6

TP-7

TP-8

EROSION & SEDIMENT CONTROL MATTING (TYP.)

INFILTRATION BED (BMP 3)

INFILTRATION BED (BMP 2)

TOPSOIL STOCKPILE AREA

CFS #18-8

LIMIT OF DISTURBANCE/ NPDES PERMIT/PROJECT SITE BOUNDARY

SEDIMENT TRAP 1 DRAINAGE AREA BOUNDARY

FARM HOUSE STONE & FRAME

FRAME SHED

FRAME BARN

SEDIMENT BASIN 4 DRAINAGE AREA BOUNDARY

DIVERSION BERM

EN-B2

CFS #24-6

CFS #24-5

CFS #24-4

40' WIDE EMERGENCY SPILLWAY ELEV.=313.00 (SEE DETAIL)

FLEXAMAT SPILLWAY LINING

75' RIPARIAN BUFFER

Assumed Floodway

WETLAND B 0.97 AC

WETLAND A 0.09 AC

Unt. to East Branch Chester Creek (TSF, MF)

MATCHLINE REFER TO SHEET 1B

SHEET KEY

A

LEGEND

- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING STORM DRAINAGE PIPING
- PROPOSED STORM DRAINAGE PIPING
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY FORCE MAIN
- EXISTING WATER LINE
- LIMIT OF DISTURBANCE/ NPDES PERMIT/ PROJECT SITE BOUNDARY
- WATERSHED BOUNDARY
- LIMIT OF STAGING AREA
- COMPOST FILTER SOCK
- TEMPORARY CONSTRUCTION FENCE
- DISCHARGE POINT
- EROSION CONTROL MATTING (SLOPES)
- ROCK CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- STONE INLET PROTECTION

SOILS

- CaB — CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
- GgB — GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- GgC — GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
- MaA — MANOR LOAM, 0 TO 3 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
2. CCCD COMMENTS	3-17-2023	TEH
3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
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WE BUILD WINNERS.
3000 Conshohocken Road Conshohocken, PA 19428
LICENSE: APPLIED FOR PENNSYLVANIA PA085 PA085@midatlanticsports.com

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084080

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTA
REGISTERED LANDSCAPE ARCHITECT
LICENSE NUMBER LA002586

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

EROSION & SEDIMENT CONTROL PLAN 'A'

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL

975 WESTTOWN ROAD

WEST CHESTER, PA 19382

(610) 399-0123

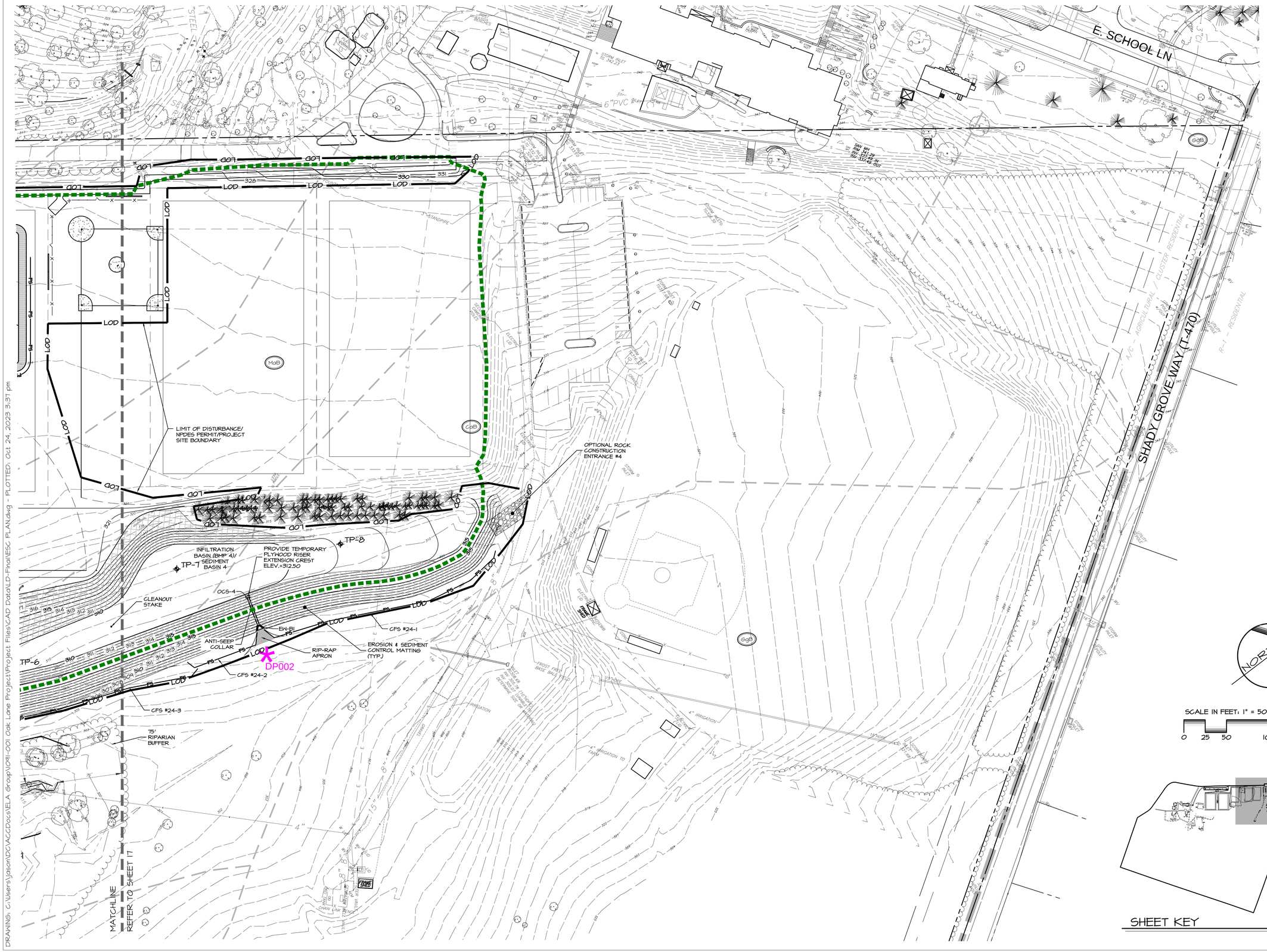
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.

17 of 48

UPI NO(S): 67-5-27

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\ESC PLAN.dwg - PLOTTED: Oct 26, 2023 2:24 pm



UPI NO(S): 67-5-27

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\ESC PLAN.dwg - PLOTTED: Oct 24, 2023 3:31 pm

LEGEND

- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING STORM DRAINAGE PIPING
- PROPOSED STORM DRAINAGE PIPING
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY FORCE MAIN
- EXISTING WATER LINE
- LIMIT OF DISTURBANCE/ NPDES PERMIT/PROJECT SITE BOUNDARY
- WATERSHED BOUNDARY
- LIMIT OF STAGING AREA
- COMPOST FILTER SOCK
- TEMPORARY CONSTRUCTION FENCE
- DISCHARGE POINT
- EROSION CONTROL MATTING (SLOPES)
- ROCK CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- STONE INLET PROTECTION

SOILS

- CaB — CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
- GgB — GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- GgC — GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
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REVISIONS PER:		DATE:	BY:
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COMMONWEALTH OF PENNSYLVANIA
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TYLER E. HILL
ENGINEER
No. PE084843

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTE
REGISTERED LANDSCAPE ARCHITECT
REGISTRATION NUMBER LA002586

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

EROSION & SEDIMENT CONTROL PLAN 'B'

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

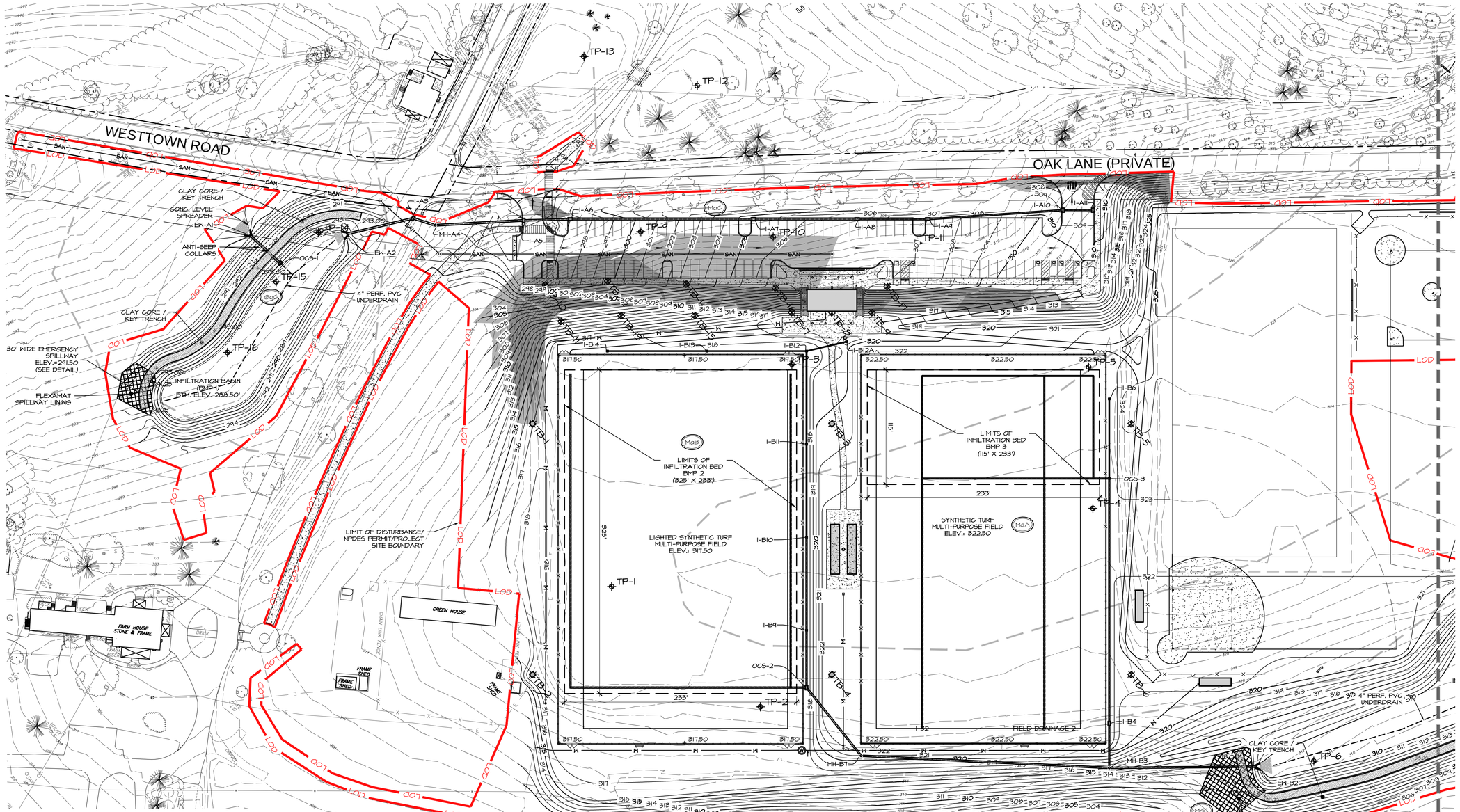
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

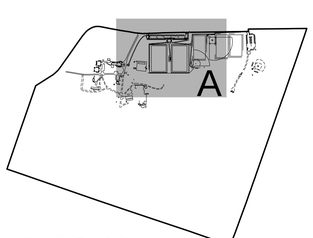
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.



NOTES

1. A BLANKET EASEMENT IS HEREBY ESTABLISHED AS PART OF THESE PLANS FOR THE RIGHT OF ENTRY AND ACCESS BY WESTTOWN TOWNSHIP FOR THE INSPECTION AND ENFORCEMENT OF OPERATIONS AND MAINTENANCE REQUIREMENTS FOR SANITARY SEWER INFRASTRUCTURE AND STORMWATER CONVEYANCE AND BMP FACILITIES, IN ACCORDANCE WITH ORDINANCE REQUIREMENTS AND/OR O&M AGREEMENT(S).
2. LIMIT OF DISTURBANCE: 17.59 AC
3. REFER TO THE APPROVED PCSM REPORT TITLED 'NPDES PCSM MODULE 2/POST CONSTRUCTION STORMWATER MANAGEMENT REPORT FOR WESTTOWN SCHOOL - OAK LANE PROJECT', DATED JANUARY 21, 2023, WITH A REVISION DATE OF OCTOBER 21, 2023 FOR COMPLETE SUPPORTING CALCULATIONS AND DOCUMENTATION REGARDING THE PROPOSED STORMWATER MANAGEMENT IMPROVEMENTS DEPICTED IN THIS PLAN SET.



SHEET KEY

LEGEND

- 315 — PROPOSED CONTOUR
- 315 — EXISTING CONTOUR
- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP
- EXISTING SANITARY SEWER AND MANHOLE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING UNDERGROUND GAS LINE
- EXISTING ABOVE GROUND ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- × 354.05 — EXISTING SPOT GRADE
- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION
- LOD — PROJECT SITE BOUNDARY

SURFACE WATERS

RECEIVING SURFACE WATER: EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

RECEIVING SURFACE WATER: UNT. TO EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

SOILS

CaB	CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
GgB	GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
GgC	GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
MaA	MANOR LOAM, 0 TO 3 PERCENT SLOPES, HSG 'B'
MaB	MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
MaB	MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

EXISTING SLOPE MAPPING

PRECAUTIONARY SLOPES (15-25%)
17,872 SF / 0.41 AC TOTAL

PROHIBITIVE SLOPES (> 25%)
17,245 SF / 0.40 AC TOTAL

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COMMONWEALTH OF PENNSYLVANIA
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TYLER E. HILL
ENGINEER
No. PE088460

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTA
REGISTRATION NUMBER LA002586
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

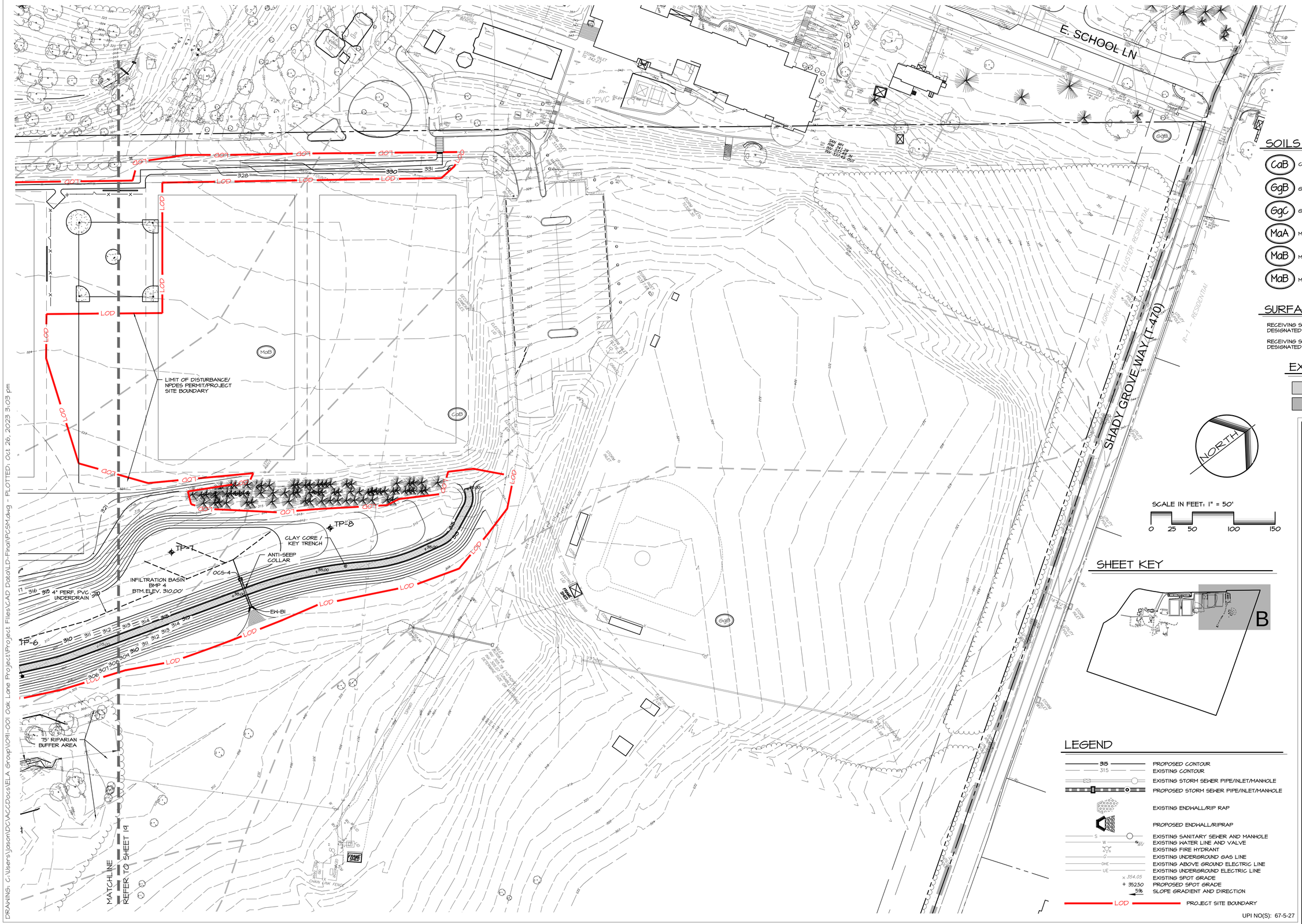
SUBJECT:
PCSM PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
19 of 48

UPI NO(S): 67-5-27



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2. LIMIT OF DISTURBANCE: 17.54 AC
3. REFER TO THE APPROVED PCSM REPORT TITLED 'NPDES PCSM MODULE 2/POST CONSTRUCTION STORMWATER MANAGEMENT REPORT FOR WESTTOWN SCHOOL - OAK LANE PROJECT', DATED JANUARY 27, 2023, WITH A REVISION DATE OF OCTOBER 27, 2023 FOR COMPLETE SUPPORTING CALCULATIONS AND DOCUMENTATION REGARDING THE PROPOSED STORMWATER MANAGEMENT IMPROVEMENTS DEPICTED IN THIS PLAN SET.

SOILS

- CaB — CALIFON LOAM, 3 TO 8 PERCENT SLOPES, HSG 'D'
- GgB — GLENELG SILT LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- GgC — GLENELG SILT LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'
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- MaB — MANOR LOAM, 3 TO 8 PERCENT SLOPES, HSG 'B'
- MaB — MANOR LOAM, 8 TO 15 PERCENT SLOPES, HSG 'B'

SURFACE WATERS

RECEIVING SURFACE WATER: EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

RECEIVING SURFACE WATER: UNT. TO EAST BRANCH CHESTER CREEK
DESIGNATED USE: TSF, MF

EXISTING SLOPE MAPPING

- PRECAUTIONARY SLOPES - 15-25% (NONE, THIS SHEET)
- PROHIBITIVE SLOPES - > 25% (NONE, THIS SHEET)

SHEET KEY

LEGEND

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- 315 — EXISTING CONTOUR
- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP
- S — EXISTING SANITARY SEWER AND MANHOLE
- W — EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- G — EXISTING UNDERGROUND GAS LINE
- OHE — EXISTING ABOVE GROUND ELECTRIC LINE
- UE — EXISTING UNDERGROUND ELECTRIC LINE
- x 354.05 — EXISTING SPOT GRADE
- + 352.50 — PROPOSED SPOT GRADE
- 5% — SLOPE GRADIENT AND DIRECTION
- LOD — PROJECT SITE BOUNDARY

UPI NO(S): 67-5-27

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE088483

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTE
REGISTERED LANDSCAPE ARCHITECT
REGISTRATION NUMBER LA002586

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

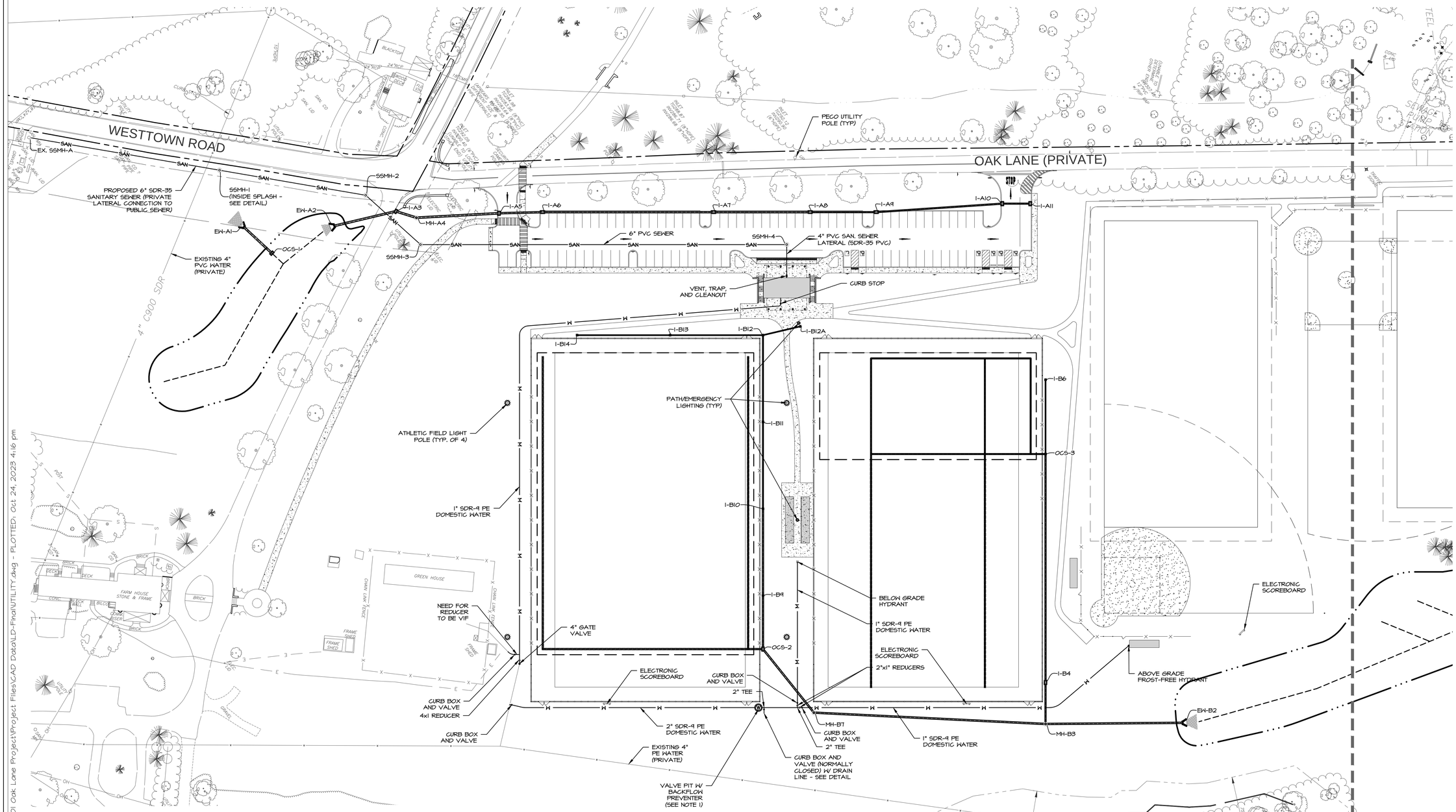
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
PCSM PLAN 'B'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
20 of 48



NOTES

1. VALVE AND BACKFLOW PREVENTER SHALL COMPRISE: FORD PLASTIC PIT SETTER MODEL #PDBHH-788-36-42-NL (OR APPROVED EQUAL) WITH HABASH DOUBLE LID COVER (MODEL #43-LL-EXT-5). OMIT THE METER ASSEMBLY AND INSTEAD PROVIDE A SPOOL PIECE BETWEEN THE BALL VALVE AND DOUBLE CHECK VALVE ASSEMBLIES.
2. ALL SANITARY SEWER IMPROVEMENTS SHALL BE IN ACCORDANCE WITH ALL STANDARDS AND SPECIFICATIONS OF WESTTOWN TOWNSHIP.

NORTH

SCALE IN FEET: 1" = 50'

0 25 50 100 150

REVISIONS PER:		DATE:	BY:
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WE BUILD WINNERS.
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084360

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER 1400026
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
UTILITY PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

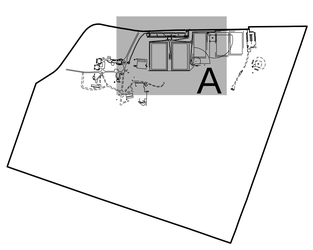
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

DRAWING NO.
21 of 48

UTILITY LEGEND

- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING SANITARY SEWER AND MANHOLE
- PROPOSED SANITARY SEWER PIPE/MANHOLE/CLEAN-OUT
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- EXISTING UNDERGROUND GAS LINE
- PROPOSED UNDERGROUND GAS LINE
- EXISTING ABOVE GROUND ELECTRIC LINE
- PROPOSED ABOVE GROUND ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- PROPOSED ABOVE GROUND ELECTRIC LINE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP



SHEET KEY

UPI NO(S): 67-5-27

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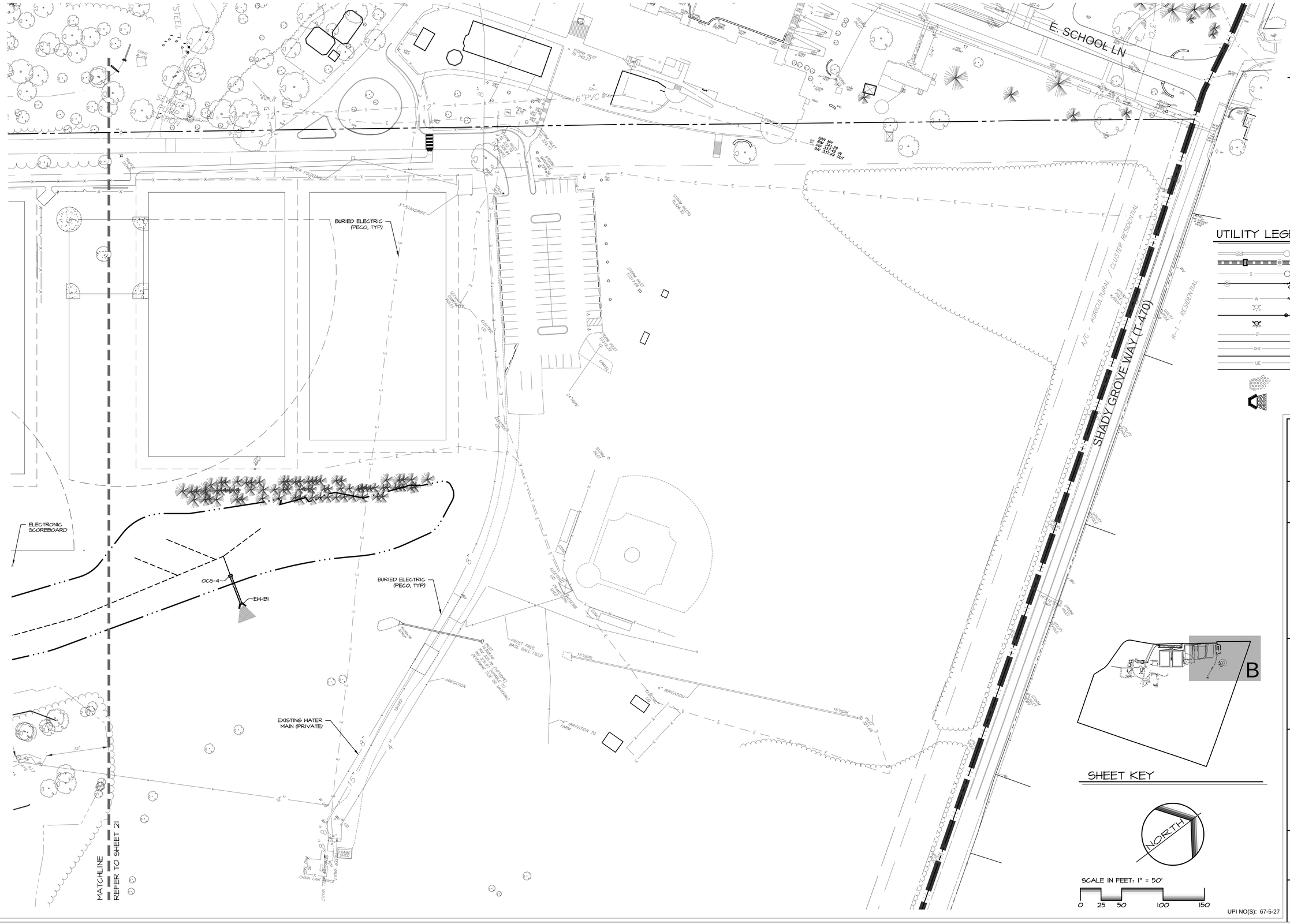

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UTILITY LEGEND

- EXISTING STORM SEWER PIPE/INLET/MANHOLE
- PROPOSED STORM SEWER PIPE/INLET/MANHOLE
- EXISTING SANITARY SEWER AND MANHOLE
- PROPOSED SANITARY SEWER PIPE/MANHOLE/CLEAN-OUT
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- EXISTING FIRE HYDRANT
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- PROPOSED FIRE HYDRANT
- EXISTING UNDERGROUND GAS LINE
- PROPOSED UNDERGROUND GAS LINE
- EXISTING ABOVE GROUND ELECTRIC LINE
- PROPOSED ABOVE GROUND ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- PROPOSED ABOVE GROUND ELECTRIC LINE
- EXISTING ENDWALL/RIP RAP
- PROPOSED ENDWALL/RIPRAP

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002388
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
UTILITY PLAN 'B'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 50'

SHEET KEY

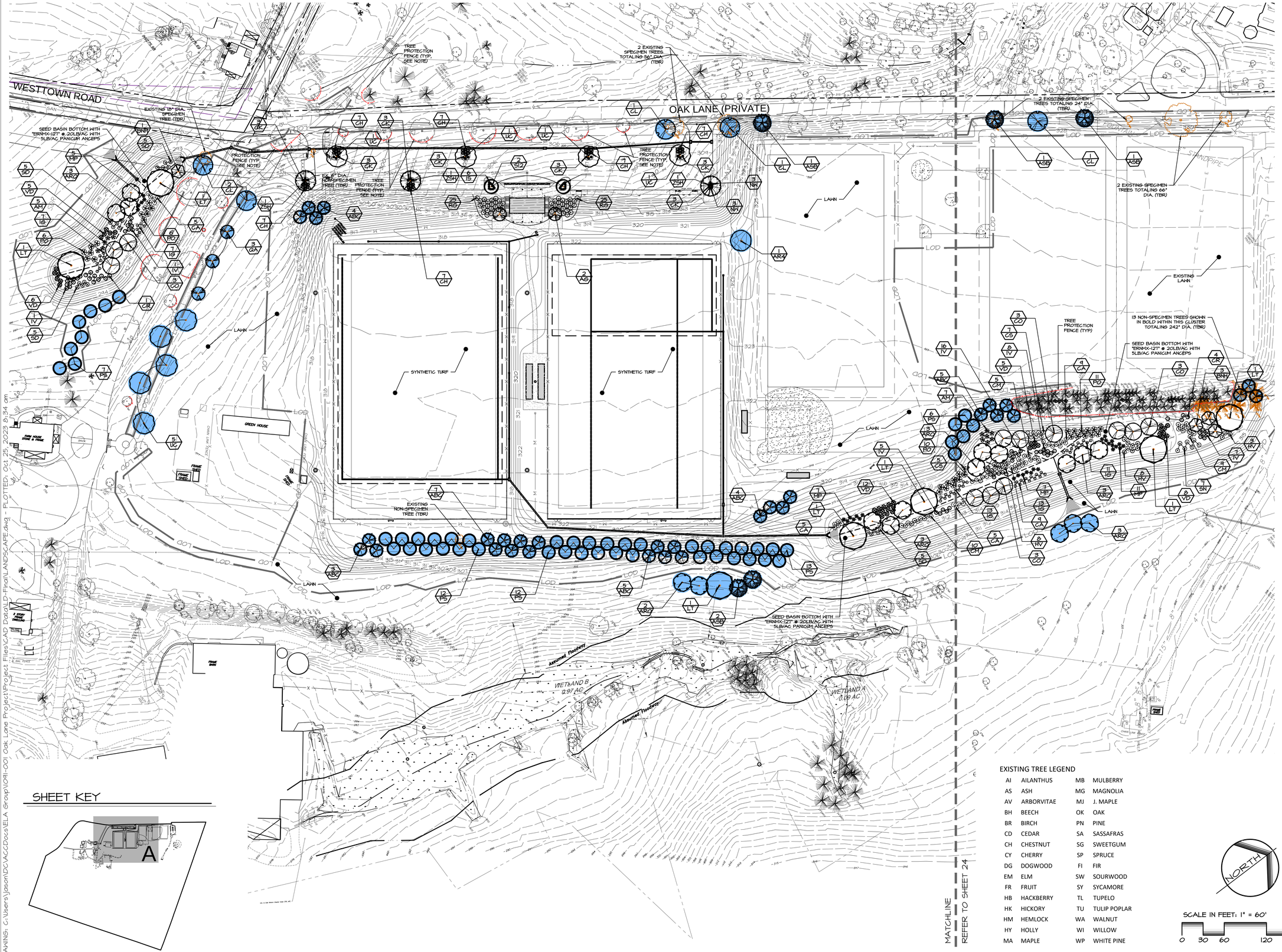
NORTH

SCALE IN FEET: 1" = 50'
0 25 50 100 150

UPI NO(S): 67-5-27

DRAWING NO.
22 of 48

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\UTILITY.dwg - PLOTTED: Oct 24, 2023 4:14 pm



TREE REPLACEMENT REQ'TS

WESTTOWN TWP CODE: 149-924.D(11).

NON-SPECIMEN: INSTALL 1" CALIPER PER 4" CALIPER REMOVED
SPECIMEN: INSTALL 1" CALIPER PER 1" CALIPER REMOVED

TREES TO BE REMOVED:

NON-SPECIMEN: 262"
SPECIMEN: 164"

COMPENSATORY PLANTINGS:

NON-SPECIMEN: 262" / 4 = 66"
SPECIMEN: 164" / 1 = 164"

66" + 164" = 230" (66 TREES AT 3.5" CALIPER)

COMPENSATORY PLANTINGS

TREES HIGHLIGHTED IN BLUE ON THIS PLAN ARE COMPENSATORY PLANTINGS

COMPENSATORY PLANTING NOTES:

1. 82 EVERGREEN TREES ARE PROVIDED AS COMPENSATORY TREES, WHICH ACCOUNT FOR 41 OF THE REQUIRED 66 TREES. THE REMAINDER OF THE COMPENSATORY TREES ARE DECIDUOUS.
2. SEE THE COMPENSATORY PLANTING SCHEDULE FOUND ON SHEET 24A.

NOTES

1. SEE SHEETS 8 AND 9 FOR THE TREES (6" OR GREATER) SCHEDULED FOR DEMOLITION AND FOR THE TREE PROTECTION AREAS THAT ARE TO BE DELINEATED.
2. SEE SHEET 24A FOR THE LIST OF PROPOSED PLANTINGS AND THEIR QUANTITIES AS WELL AS VARIOUS PLANTING DETAILS.
3. IF ANY EXISTING TREES ARE REMOVED IN ADDITION TO THOSE SCHEDULED FOR REMOVAL ON THE DEMOLITION PLANS, THEY SHALL BE REPLACED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE WESTTOWN TOWNSHIP CODE.
4. TREES AND SHRUBS SHALL BE OF NURSERY-GROWN STOCK OF NON-COLUMNAR VARIETIES, AND SHALL BE INSECT AND PEST RESISTANT.
5. A TWO-YEAR MAINTENANCE AND REPLACEMENT GUARANTEE SHALL BE PROVIDED TO THE TOWNSHIP BY THE LANDSCAPE CONTRACTOR. ALL PLANTINGS WHICH DO NOT SURVIVE AFTER THE EXPIRATION OF THE MAINTENANCE GUARANTEE SHALL BE REPLACED BY THE OWNER.

LEGEND

TREE PROTECTION FENCING

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5. CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

MID-ATLANTIC SPORTS CONSTRUCTION
WE BUILD WINNERS.

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LITITZ, PA 17543
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
REGISTERED LANDSCAPE ARCHITECT
TYLER E. HILL
REGISTRATION NUMBER
LA001745

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
TREE PROTECTION MANAGEMENT PLAN AND LANDSCAPE PLAN 'A'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 60'

DRAWING NO.
23 of 48

SHEET KEY

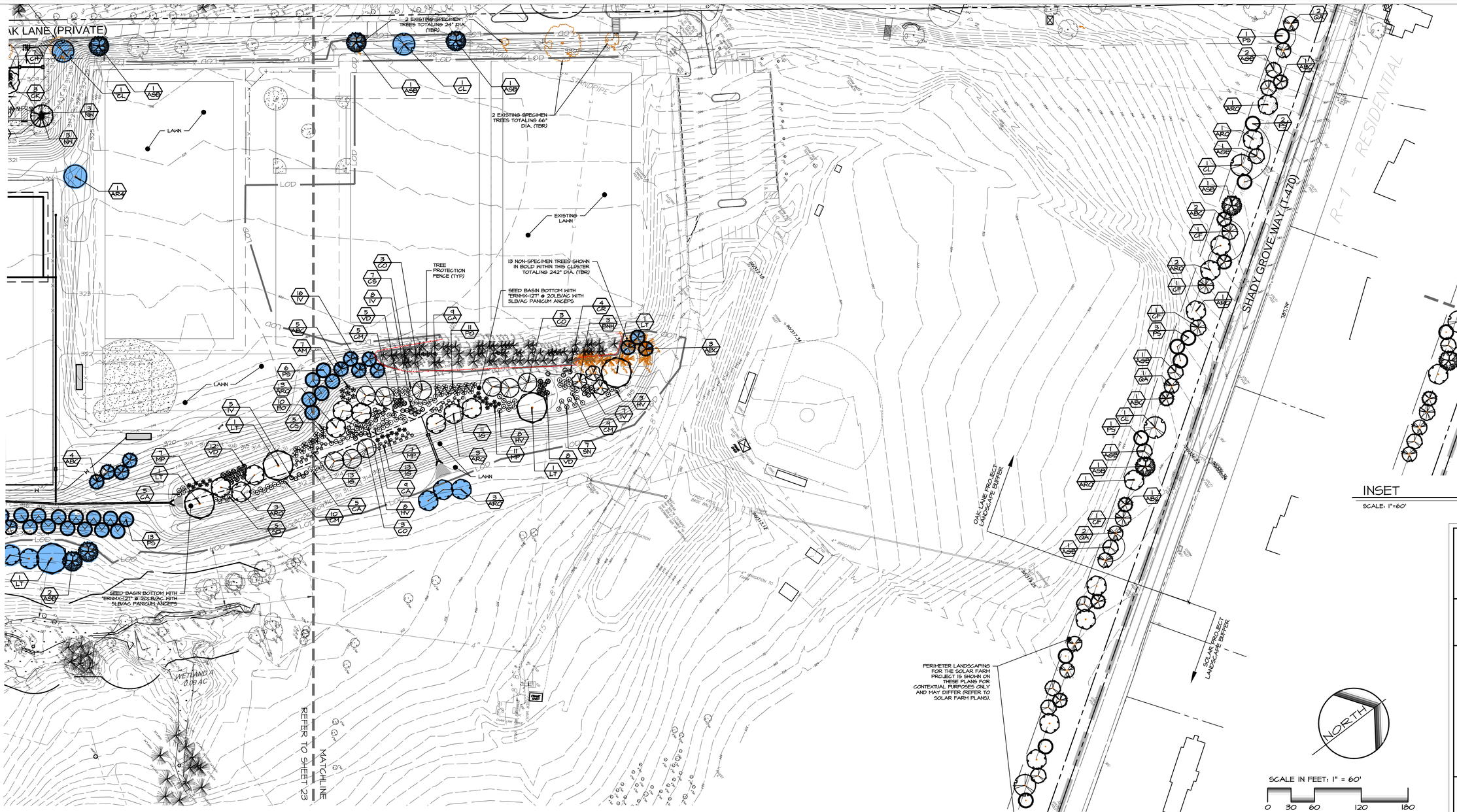
EXISTING TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BH	BEECH	OK	OAK
BR	BIRCH	PN	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	FI	FIR
EM	ELM	SW	SOURWOOD
FR	FRUIT	SY	SYCAMORE
HB	HACKBERRY	TL	TUPELO
HK	HICKORY	TU	TULIP POPLAR
HM	HEMLOCK	WA	WALNUT
HY	HOLLY	WI	WILLOW
MA	MAPLE	WP	WHITE PINE

NORTH

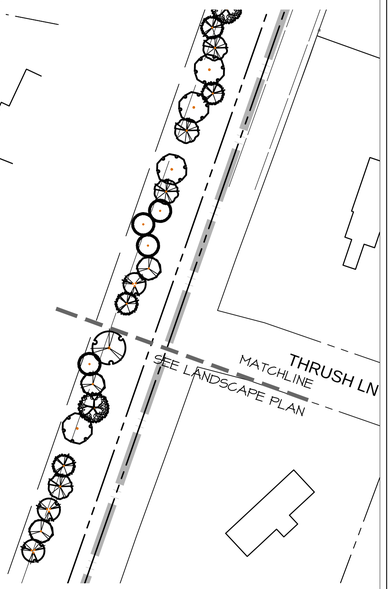
SCALE IN FEET: 1" = 60'
0 30 60 120 180

UPI NO(S): 67-5-27



LANDSCAPE PLAN (SHEET B)

SCALE: 1"=60'



INSET

SCALE: 1"=60'

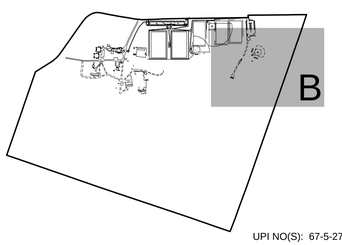
SCALE IN FEET: 1" = 60'

0 30 60 120 180

LEGEND

TREE PROTECTION FENCING

SHEET KEY



TREE REPLACEMENT REQ'TS

WESTTOWN TWP CODE, 144-924.D(11).

NON-SPECIMEN: INSTALL 1" CALIPER PER 4" CALIPER REMOVED
SPECIMEN: INSTALL 1" CALIPER PER 1" CALIPER REMOVED

TREES TO BE REMOVED:

NON-SPECIMEN: 262"
SPECIMEN: 164"

COMPENSATORY PLANTINGS:

NON-SPECIMEN: 262" / 4 = 66"
SPECIMEN: 164" / 1 = 164"

66" + 164" = 230" (66 TREES AT 3.5" CALIPER)

COMPENSATORY PLANTINGS

TREES HIGHLIGHTED IN BLUE ON THIS PLAN ARE COMPENSATORY PLANTINGS

COMPENSATORY PLANTING NOTES:

1. 82 EVERGREEN TREES ARE PROVIDED AS COMPENSATORY TREES, WHICH ACCOUNT FOR 41 OF THE REQUIRED 66 TREES. THE REMAINDER OF THE COMPENSATORY TREES ARE DECIDUOUS.
2. SEE THE COMPENSATORY PLANTING SCHEDULE FOUND ON SHEET 24A.

NOTES

1. SEE SHEETS 8 AND 9 FOR THE TREES (6" OR GREATER) SCHEDULED FOR DEMOLITION AND FOR THE TREE PROTECTION AREAS THAT ARE TO BE DELINEATED.
2. SEE SHEET 24A FOR THE LIST OF PROPOSED PLANTINGS AND THEIR QUANTITIES AS WELL AS VARIOUS PLANTING DETAILS.
3. IF ANY EXISTING TREES ARE REMOVED IN ADDITION TO THOSE SCHEDULED FOR REMOVAL ON THE DEMOLITION PLANS, THEY SHALL BE REPLACED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE WESTTOWN TOWNSHIP CODE.
4. TREES AND SHRUBS SHALL BE OF NURSERY-GROWN STOCK OF NON-COLUMNAR VARIETIES, AND SHALL BE INSECT AND PEST RESISTANT.
5. A TWO-YEAR MAINTENANCE AND REPLACEMENT GUARANTEE SHALL BE PROVIDED TO THE TOWNSHIP BY THE LANDSCAPE CONTRACTOR. ALL PLANTINGS WHICH DO NOT SURVIVE AFTER THE EXPIRATION OF THE MAINTENANCE GUARANTEE SHALL BE REPLACED BY THE OWNER.

EXISTING TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BH	BEECH	OK	OAK
BR	BIRCH	PN	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	FI	FIR
EM	ELM	SW	SOURWOOD
FR	FRUIT	SY	SYCAMORE
HB	HACKBERRY	TL	TUPELO
HK	HICKORY	TU	TULIP POPLAR
HM	HEMLOCK	WA	WALNUT
HY	HOLLY	WI	WILLOW
MA	MAPLE	WP	WHITE PINE

UPI NO(S): 67-5-27

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2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JOHN C. REGI
REGISTRATION NUMBER
LA001298
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
TREE PROTECTION MANAGEMENT PLAN AND LANDSCAPE PLAN 'B'
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
24 of 48

COMPENSATORY PLANTINGS § 149-924.D(12)

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
ABC	31	Abies concolor	White Fir	8'-10'	B&B	
AR4	1	Acer rubrum 'Red Sunset'	Red Sunset Maple	3.5" Cal.	B&B	
ARO	5	Acer rubrum 'October Glory'	October Glory Red Maple	3.5" Cal.	B&B	
ASB	5	Acer saccharum 'Bonfire'	Bonfire Sugar Maple	3.5" Cal.	B&B	
CL	5	Cladrastis lutea	American Yellowwood	3.5" Cal.	B&B	
LT	1	Liriodendron tulipifera	Tulip Tree	3.5" Cal.	B&B	
PS	51	Pinus strobus	White Pine	8'-10'	B&B	
QA	3	Quercus alba	White Oak	3.5" Cal.	B&B	
UC	5	Ulmus x 'Frontier'	American Elm	3.5" Cal.	B&B	

BMP 1 PLANTINGS § 149-925.G(3)

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
ARO	3	Acer rubrum 'October Glory'	October Glory Red Maple	3.5" Cal.	B&B	
BNH	1	Betula nigra 'Heritage'	Heritage River Birch	8'-10' Multi-stem	B&B	
CO	3	Celtis occidentalis	Common Hackberry	3.5" Cal.		
LT	2	Liriodendron tulipifera	Tulip Tree	3.5" Cal.	B&B	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONT**	**REMARKS**
AM	5	Aronia melanocarpa	Chokeberry	24"-30"	3 gal	
CA	5	Clethra alnifolia	Summersweet Clethra	24"-30"	3 gal	
CR	9	Cornus racemosa	Gray Dogwood	24"-30"	3 gal	
IG	14	Ilex glabra	Inkberry Holly	24"-30"	3 gal	
IV	18	Ilex verticillata	Winterberry	24"-30"	3 gal	
MP	5	Myrica pensylvanica	Northern Bayberry	24"-30"	3 gal	
PO	12	Physocarpus opulifolius	Ninebark	24"-30"	3 gal	
SD	15	Salix discolor	Pussy Willow	24"-30"	3 gal	
VD	11	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	24"-30"	3 gal	

BMP 4 PLANTINGS § 149-925.G(3)

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
ARO	9	Acer rubrum 'October Glory'	October Glory Red Maple	3.5" Cal.	B&B	
BNH	3	Betula nigra 'Heritage'	Heritage River Birch	8'-10' Multi-stem	B&B	
CO	9	Celtis occidentalis	Common Hackberry	3.5" Cal.		
LT	4	Liriodendron tulipifera	Tulip Tree	3.5" Cal.	B&B	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONT**	**REMARKS**
AM	7	Aronia melanocarpa	Chokeberry	24"-30"	3 gal	
CA	28	Clethra alnifolia	Summersweet Clethra	24"-30"	3 gal	
CM	24	Cornus amomum	Silky Dogwood	24"-30"	3 gal	
CR	4	Cornus racemosa	Gray Dogwood	24"-30"	3 gal	
CS	12	Cornus sericea	Red Twig Dogwood	24"-30"	3 gal	
HV	19	Hamamelis virginiana	Common Witch Hazel	24"-30"	3 gal	
IG	37	Ilex glabra	Inkberry Holly	24"-30"	3 gal	
IV	36	Ilex verticillata	Winterberry	24"-30"	3 gal	
MP	25	Myrica pensylvanica	Northern Bayberry	24"-30"	3 gal	
PO	21	Physocarpus opulifolius	Ninebark	24"-30"	3 gal	
SD	5	Salix discolor	Pussy Willow	24"-30"	3 gal	
SN	7	Sambucus nigra	Common Elderberry	24"-30"	3 gal	
VD	25	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	24"-30"	3 gal	

PERIMETER LANDSCAPING (SHADY GROVE WAY) § 149-925.G(1)

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
ABC	5	Abies concolor	White Fir	8'-10'	B&B	
ARO	6	Acer rubrum 'October Glory'	October Glory Red Maple	3.5" Cal.	B&B	
ASB	2	Acer saccharum 'Bonfire'	Bonfire Sugar Maple	3.5" Cal.	B&B	
AGB	6	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	3.5" Cal.	B&B	
CL	2	Cladrastis lutea	American Yellowwood	3.5" Cal.	B&B	
CF	4	Cornus florida	Flowering Dogwood	3.5" Cal.	B&B	
PS	7	Pinus strobus	White Pine	8'-10'	B&B	
QA	5	Quercus alba	White Oak	3.5" Cal.	B&B	

PARKING LOT PLANTINGS § 149-925.G(2)

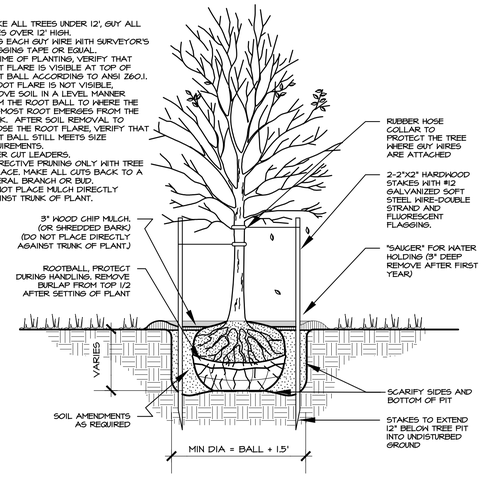
TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
SI2	2	Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	3.5" Cal.	B&B	
UC	4	Ulmus x 'Frontier'	American Elm	3.5" Cal.	B&B	
ZSH	3	Zelkova serrata 'Halka'	Halka Zelkova	3.5" Cal.	B&B	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONT**	**REMARKS**
CK	22	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	3 GAL		
CH	42	Clethra alnifolia 'Hummingbird'	Summersweet	24"-30"	3 gal	
IS	20	Ilea virginica 'Sprich'	Little Henry® Sweetspire	24"-30"	3 gal	
NH	6	Nepeta x 'Walker's Low'	Walker's Low Catmint	3 GAL		

SUPPLEMENTAL PLANTINGS (NOT REQUIRED BY ORD.)

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
AG	2	Acer griseum	Paperbark Maple	2-1/2" to 3" Cal.	B&B	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONT**	**REMARKS**
RG	50	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	24"-30"	3 gal	

NOTES:

1. STAKE ALL TREES UNDER 12', GUY ALL TREES OVER 12' HIGH.
2. FLAG EACH GUY WIRE WITH SURVEYOR'S FLAGGING TAPE OR EQUAL.
3. AT TIME OF PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE THE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS.
4. NEVER CUT LEADERS.
5. CORRECTIVE PRUNING ONLY WITH TREE IN PLACE. MAKE ALL CUTS BACK TO A LATERAL BRANCH OR BUD.
6. DO NOT PLACE MULCH DIRECTLY AGAINST TRUNK OF PLANT.



A DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

NOTES:

1. STAKE ALL TREES UNDER 12', GUY ALL TREES OVER 12' HIGH.
2. FLAG EACH GUY WIRE WITH SURVEYOR'S FLAGGING TAPE OR EQUAL.
3. AT TIME OF PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE THE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS.
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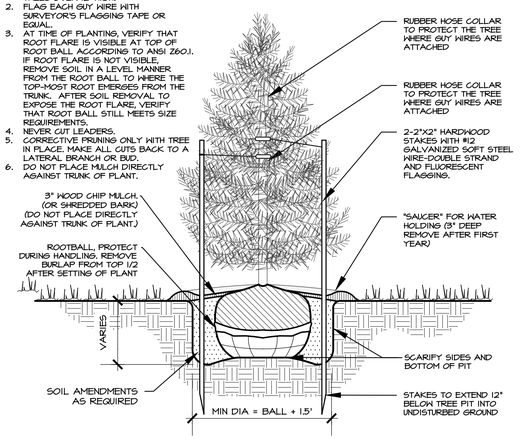
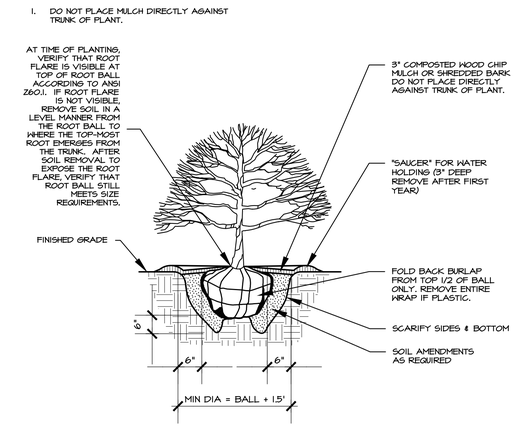


B EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

NOTE:

1. DO NOT PLACE MULCH DIRECTLY AGAINST TRUNK OF PLANT.



C SHRUB PLANTING DETAIL

NOT TO SCALE

TABULATION OF REQUIRED LANDSCAPING

ORDINANCE SECTION/REQUIREMENT			
PERIMETER YARD REQUIREMENTS (§ 149-925.G(1)) - NON-RESIDENTIAL (VARIES - SEE NOTE 1 BELOW)	LENGTH	QTY REQUIRED	QTY PROVIDED
2 CANOPY TREES PER 100 LF OF STREET FRONTAGE	787.79 LF (1)	16	21 (SEE NOTE 3)
1 CANOPY TREE PER 100 LF OF OTHER PROPERTY BOUNDARIES	0 LF	0	0 (SEE NOTE 2)
1.5 ORNAMENTAL FLOWERING TREES PER 100 LF OF STREET FRONTAGE	787.79 LF (1)	12	10 (SEE NOTE 2)
1 ORNAMENTAL FLOWERING TREE PER 100 LF OF OTHER PROPERTY BOUNDARIES	0 LF	0	0 (SEE NOTE 2)
6 SHRUBS PER 100 LF OF STREET FRONTAGE	787.79 LF (1)	47	0 (SEE NOTE 2)
3 SHRUBS PER 100 LF OF OTHER PROPERTY BOUNDARIES	0 LF	0	0 (SEE NOTE 2
PARKING AREA REQUIREMENTS (§ 149-925.G(2)) - VARIES (SEE NOTE 2 BELOW)	NO. OF ISLANDS	QTY REQUIRED	QTY PROVIDED
1 TREE / PLANTER ISLAND < 20'	9	9	9
2 TREES / PLANTER ISLAND > 20'	9	0	0
10 SHRUBS / PLANTER ISLAND < 20'	9	90	90
20 SHRUBS / PLANTER ISLAND > 20'	9	0	0
STORMWATER RETENTION/DETENTION BASINS (§ 149-925.G(3)) - VARIES (SEE NOTE 3 BELOW)	BASIN AREA		
TREES (1 PER 2,000 SF OF BASIN/BMP 1 AREA) -	18,774.39 SF	9	9
SHRUBS (1 PER 200 SF OF BASIN/BMP 1 AREA)	18,774.39 SF	94	94
TREES (1 PER 2,000 SF OF BASIN/BMP 4 AREA) -	49,963.09 SF	25	25
SHRUBS (1 PER 200 SF OF BASIN/BMP 4 AREA)	49,963.09 SF	250	250

NOTES:

1. THE PERIMETER LANDSCAPING REQUIRED ALONG SHADY GROVE WAY IS LIMITED (BY A MODIFICATION TO THE ORDINANCE REQUIREMENTS) TO THE LENGTH OF FRONTAGE BETWEEN THE NORTHEAST PROPERTY CORNER AND THE PERIMETER PLANTINGS ASSOCIATED WITH THE SOLAR FARM PROJECT, WHICH ARE DEPICTED ON THESE PLANS FOR CONTEXTUAL PURPOSES ONLY.
2. A MODIFICATION OF THE ORDINANCE REQUIREMENTS IS BEING SOUGHT WHEREIN THE LIMIT OF REQUIRED PERIMETER LANDSCAPING SHALL BE AS DESCRIBED IN NOTE 1 ABOVE. FURTHER, THE PERIMETER LANDSCAPE PLANTINGS PROPOSED ALONG SHADY GROVE WAY, IN ACCORDANCE WITH THE CONDITIONS OF THE BOARD OF SUPERVISORS' APPROVAL OF THE CONDITIONAL USE APPLICATION, SHALL BE CONSISTENT WITH THE PERIMETER PLANTINGS PROPOSED AS PART OF THE SOLAR FARM PROJECT, WHICH WERE NEGOTIATED WITH NEIGHBORING PROPERTY OWNER(S). RELIEF FROM STRICT CONFORMANCE WITH PERIMETER LANDSCAPING ORDINANCE REQUIREMENT ALSO PROVIDES FOR A REDUCTION IN THE NUMBER OF PERIMETER ORNAMENTAL/FLOWERING TREES PROVIDED AND ALSO WAIVES THE REQUIREMENT TO PROVIDE PERIMETER SHRUB PLANTINGS.
3. IN ACCORDANCE WITH THE ORDINANCE, TWO (2) EVERGREEN TREES ARE EQUIVALENT TO ONE (1) CANOPY TREE. THEREFORE, FOR THE PURPOSES OF TABULATING THE QUANTITY OF CANOPY TREES PROVIDED, TWELVE (12) EVERGREEN TREES ARE BEING COUNTED AS SIX (6) CANOPY TREES.

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. 072360A1

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER LA002366
REGISTERED LANDSCAPE ARCHITECT

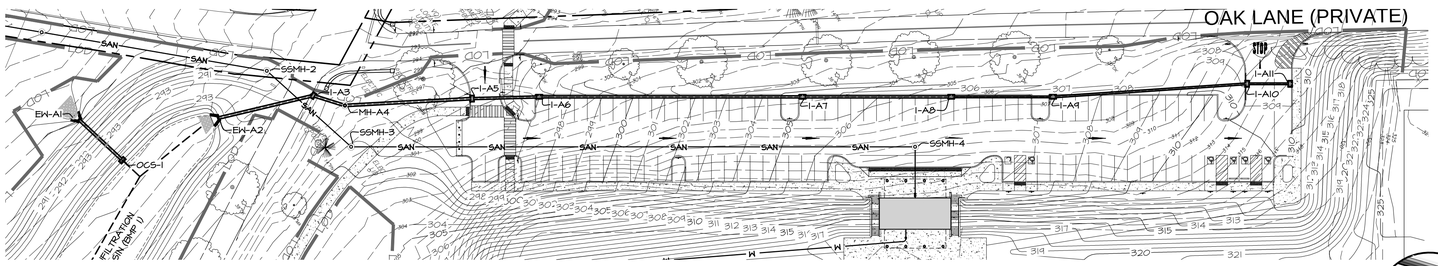
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
PLANTING SCHEDULES / DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
24A of 48



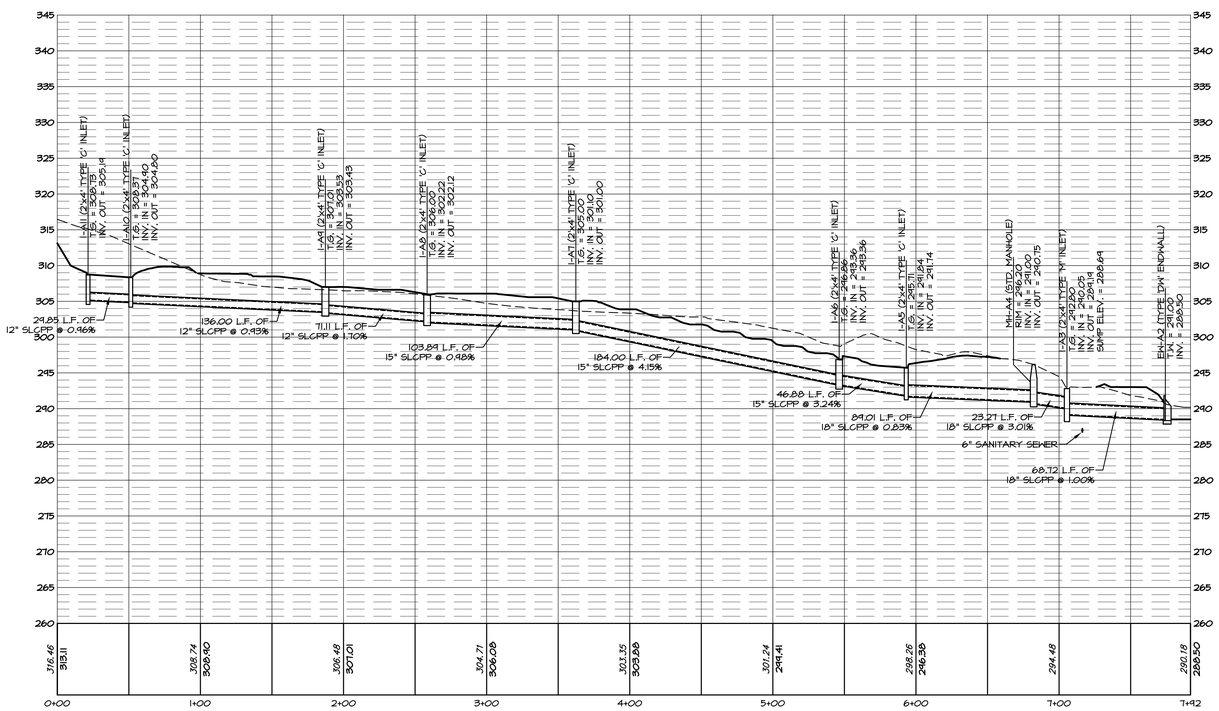
PLAN

SCALE: 1" = 50'

SCALE IN FEET: 1" = 50'

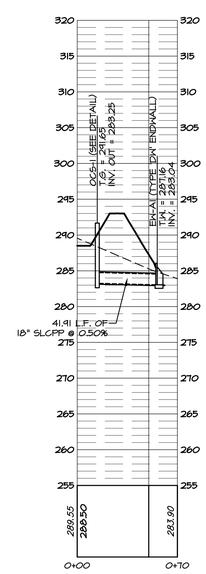
0 25 50 100 150

NORTH



PROFILE: I-A11 TO EW-A2

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



PROFILE: OCS-1 TO EW-A1

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

UPI NO(S): 67-5-27

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084660

PENNSYLVANIA
JASON C. BEAZLEY
REGISTRATION NUMBER LA002566
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

STORMWATER PLAN AND PROFILES

FOR

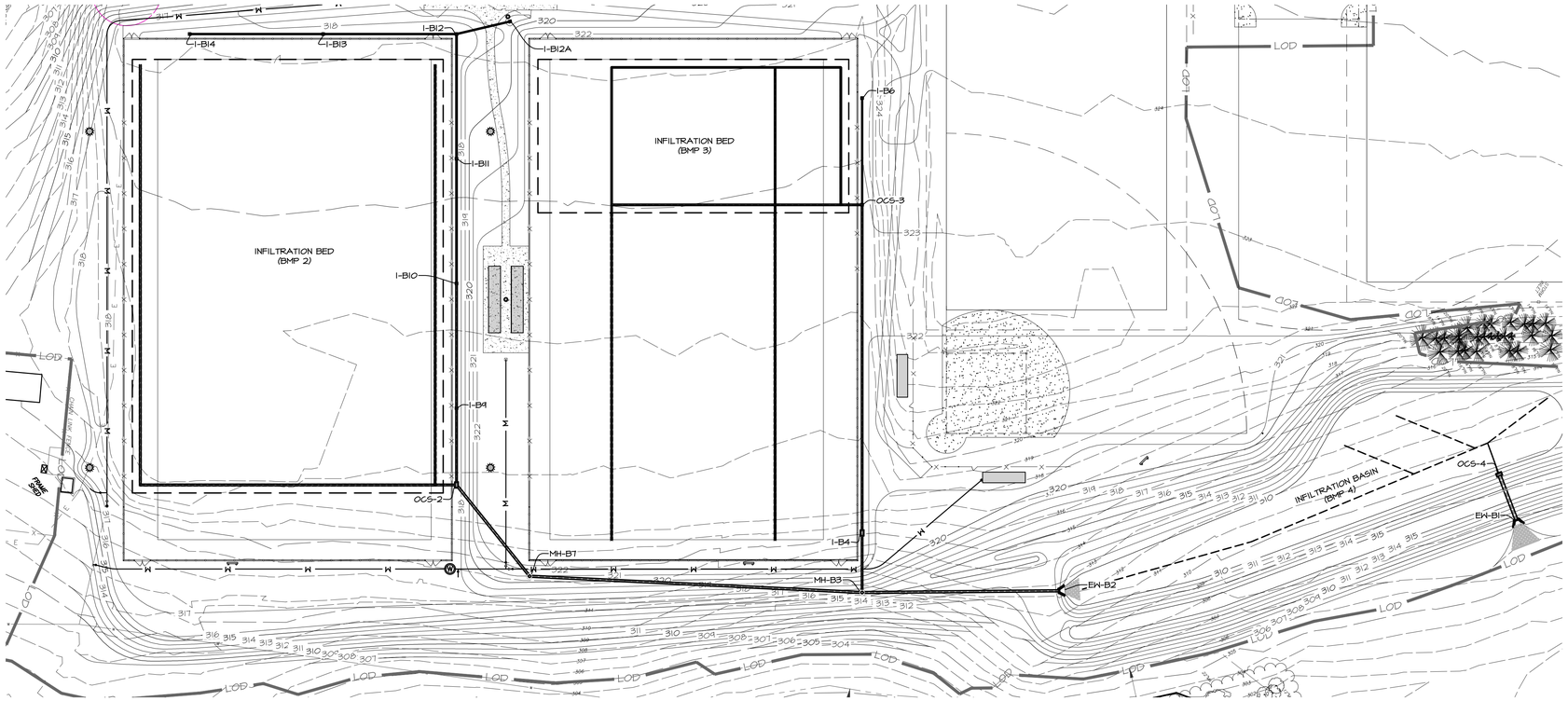
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.



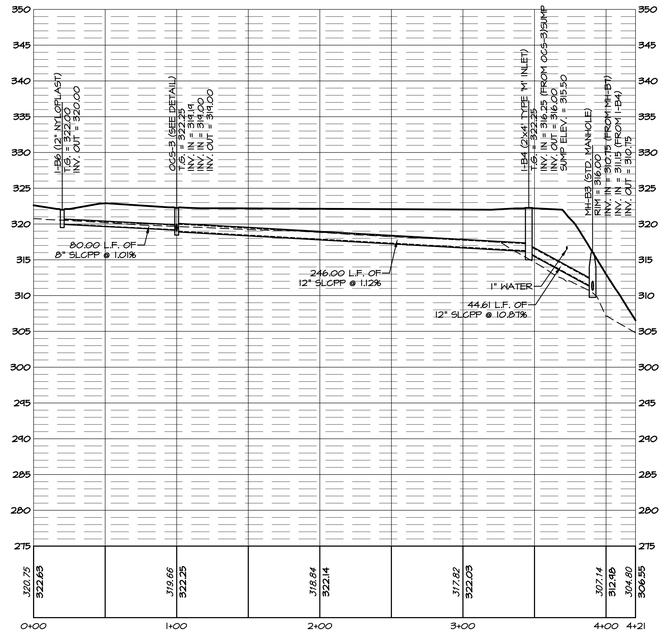
PLAN

SCALE: 1" = 50'

SCALE IN FEET: 1" = 50'

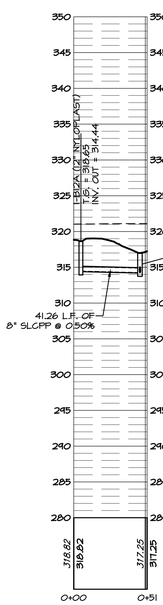
0 25 50 100 150

NORTH



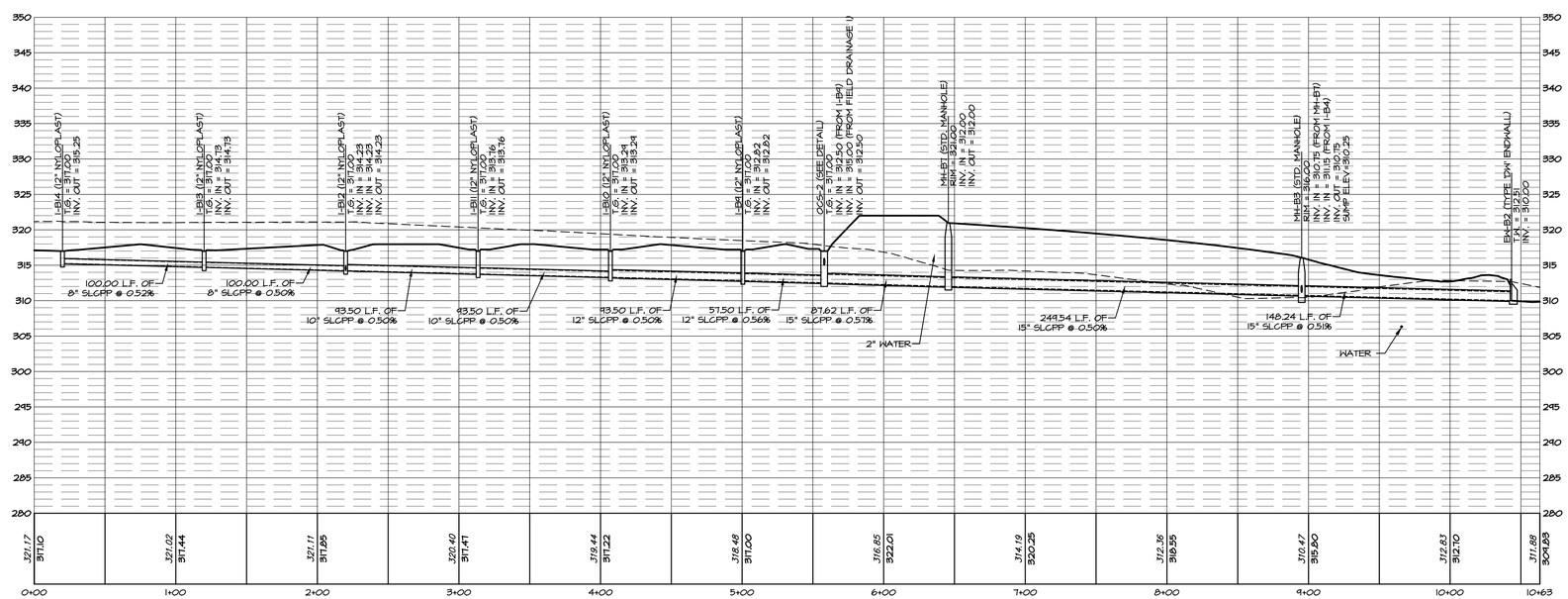
PROFILE: I-B6 TO MH-B3

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



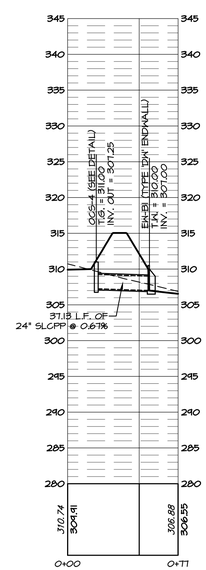
PROFILE: IB-12A TO I-B12

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



PROFILE: I-B14 TO EW-B2

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



PROFILE: OCS-4 TO EW-B1

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE080680

COMMONWEALTH OF PENNSYLVANIA
JASON C. BESTA
REGISTRATION NUMBER
LA002966
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

STORMWATER PLAN AND PROFILES

FOR

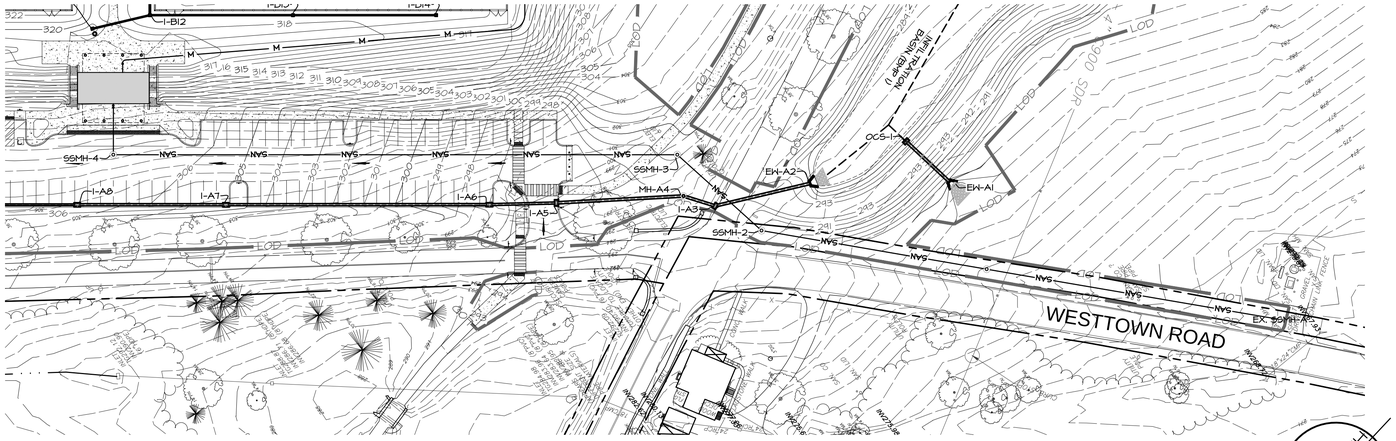
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.



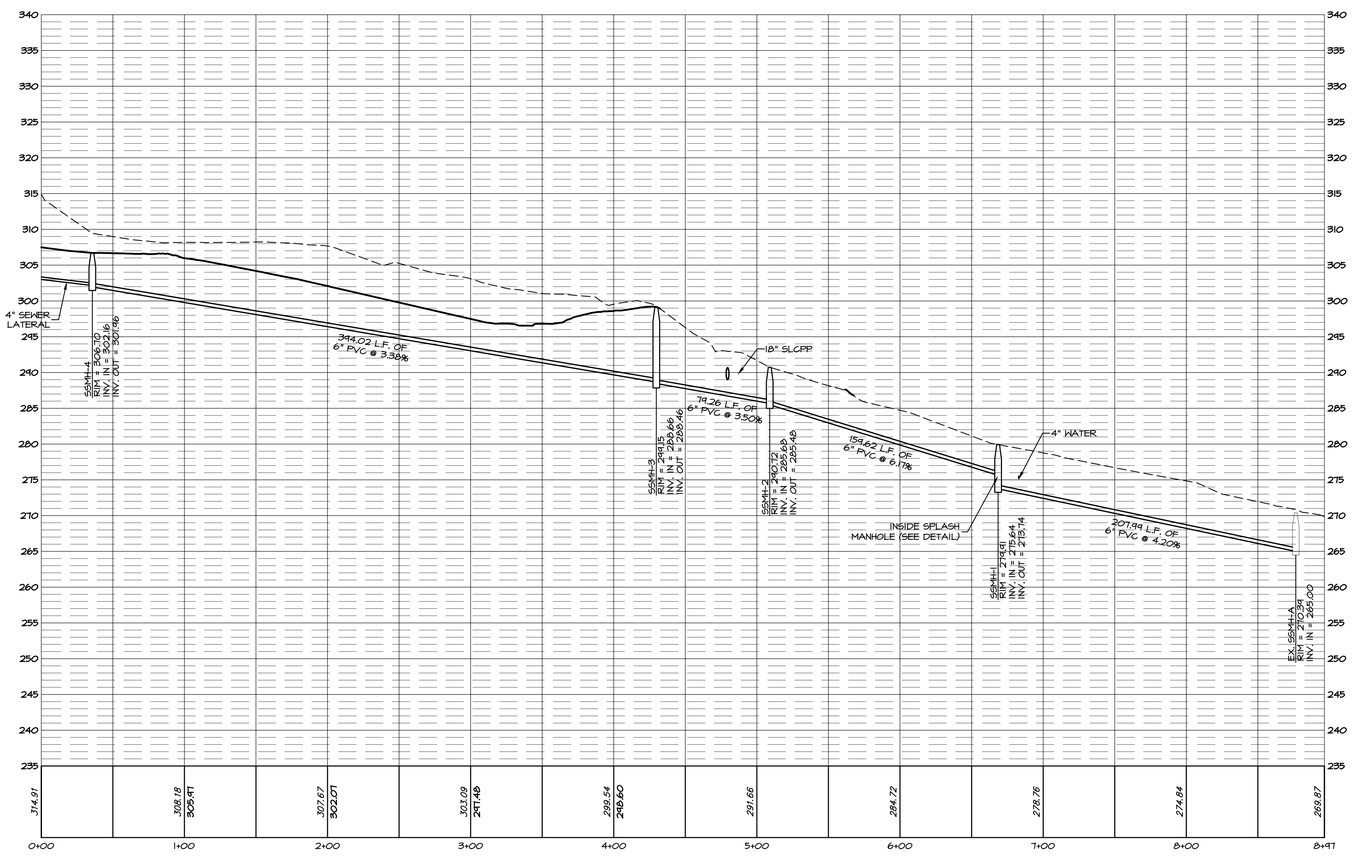
PLAN

SCALE: 1" = 50'

SCALE IN FEET: 1" = 50'

0 25 50 100 150

NORTH



PROFILE: SSMH-3 TO EX. SSMH-A

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER
LA002966
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
SANITARY PLAN AND PROFILE
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

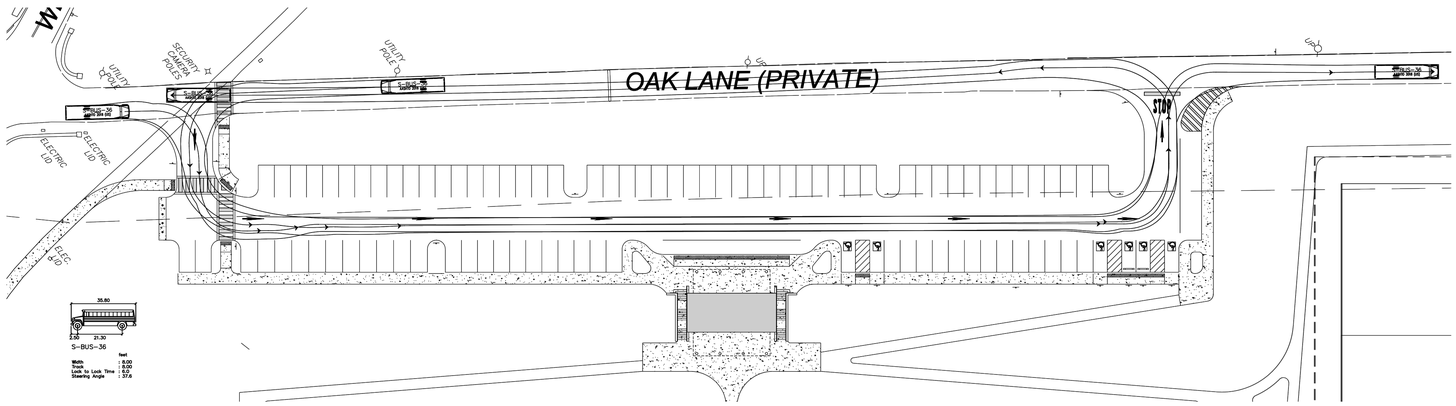
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
27 of 48

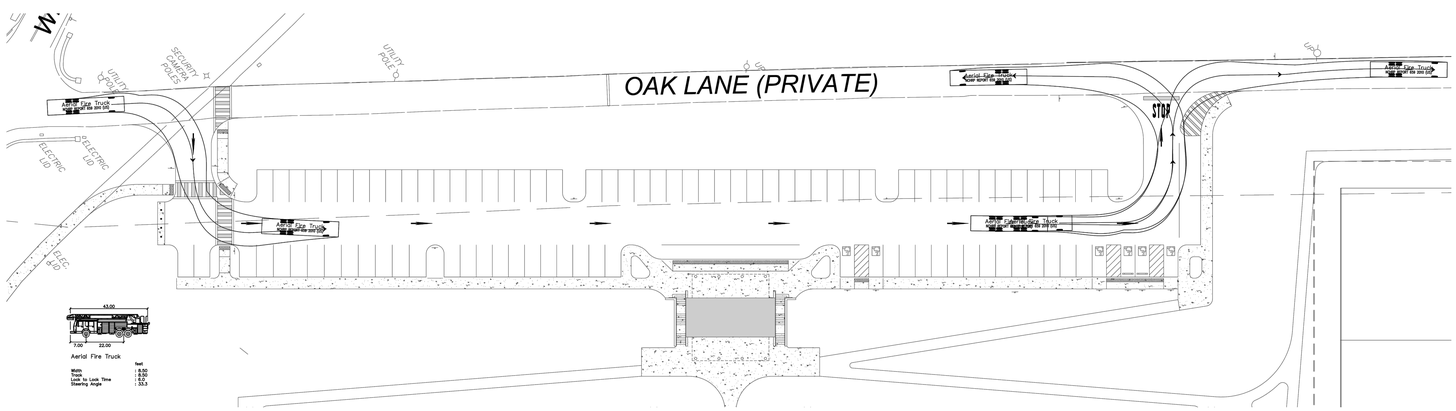
UPI NO(S): 67-5-27

DRAWING: C:\Users\jason\DC\ACCDocs\ELA Group\1091-001 Oak Lane Project\Project Files\CAD Data\LD-Final\PROFILES.dwg - PLOTTED: Oct 25, 2023 8:41 am



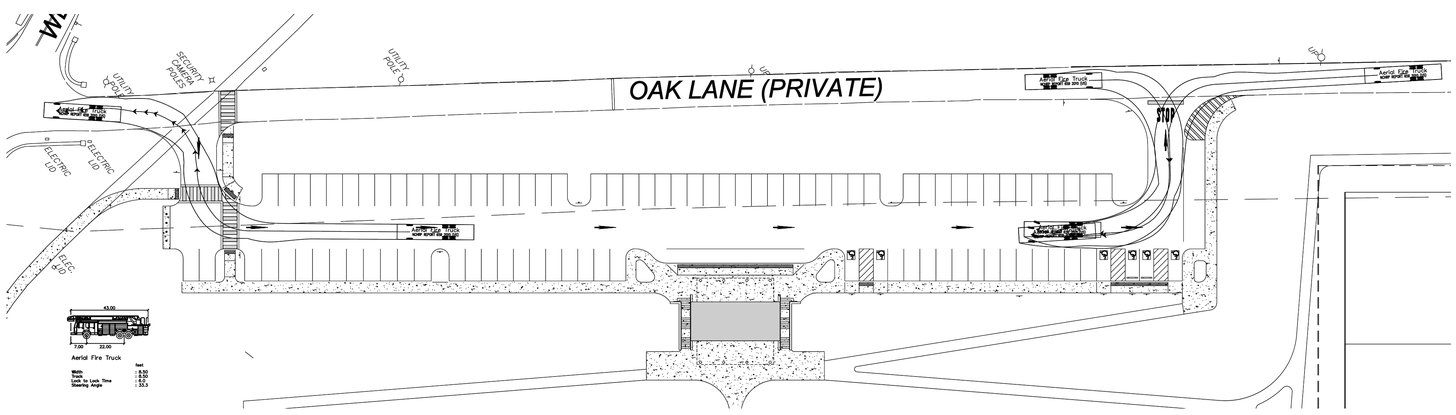
A PLAN EXHIBIT: VEHICLE TURNING MOVEMENTS (SCHOOL BUS)

SCALE: 1" = 40'



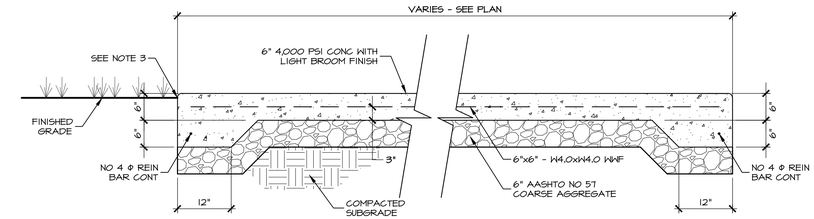
B PLAN EXHIBIT: VEHICLE TURNING MOVEMENTS (AERIAL FIRE TRUCK)

SCALE: 1" = 40'



C PLAN EXHIBIT: VEHICLE TURNING MOVEMENTS (AERIAL FIRE TRUCK)

SCALE: 1" = 40'

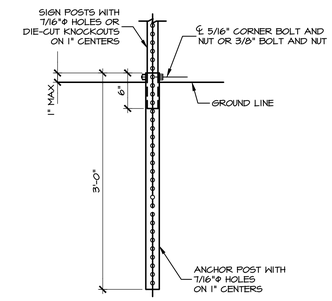


NOTES:

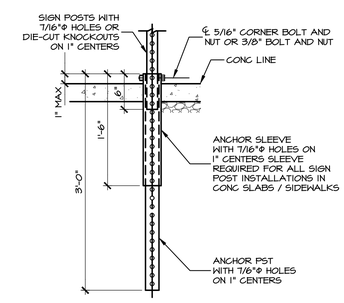
1. PROVIDE EJ WITH FILLER WHERE SLAB EXCEEDS 30' IN ANY DIMENSION. PLACE EJ AT MIDPOINT OF SLAB.
2. DIMENSIONS AS NOTED ON DRAWINGS.
3. SEAL JOINT WITH PG 64-22 WHERE BITUMINOUS PAVING IS ADJACENT. PROVIDE EJ WITH SEALANT WHERE ADJACENT TO CONC PAVING.
4. SLOPE PAD TO DRAIN AWAY FROM SYNTHETIC TURF FIELD WHERE ADJACENT (1.25% UNLESS NOTED OTHERWISE ON GRADING DRAWINGS).

D CONCRETE PAD W/ HAUNCHES

NO SCALE

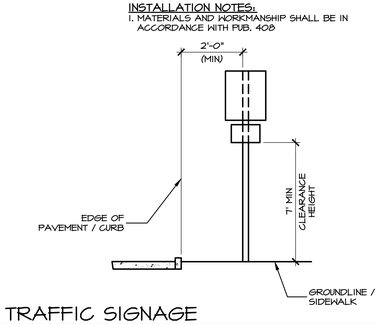


INSTALLATION DETAIL
(STANDARD)



INSTALLATION DETAIL
(CONCRETE)

INSTALLATION NOTES:
1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PUB. 408



E TRAFFIC SIGNAGE

NOT TO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084960

PENNSYLVANIA
JASON C. BESTA
REGISTRATION NUMBER
LA002366
REGISTERED LANDSCAPE ARCHITECT

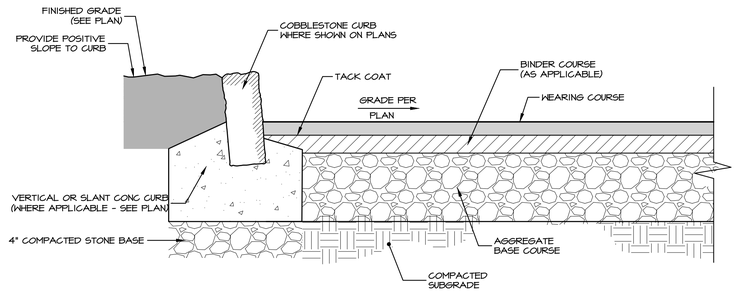
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
VEHICLE TURNING & SITE DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.

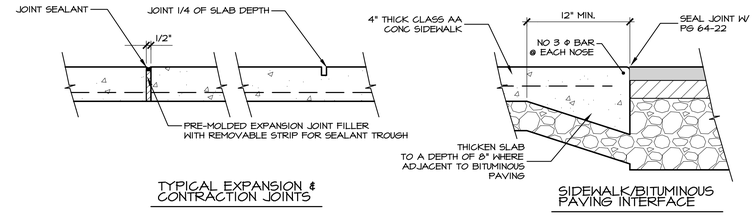


1. BITUMINOUS PAVEMENT MATERIALS ARE LISTED PER PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, PUBLICATION 408 STANDARDS, LATEST REVISIONS.
2. RECLAIMED AGGREGATE MATERIAL SHALL MEET THE REQUIREMENTS OF PA DOT PUBLICATION 408, SECTION 703.1, TABLE A, OR 703.2, TABLE B.

BITUMINOUS PAVING SCHEDULE

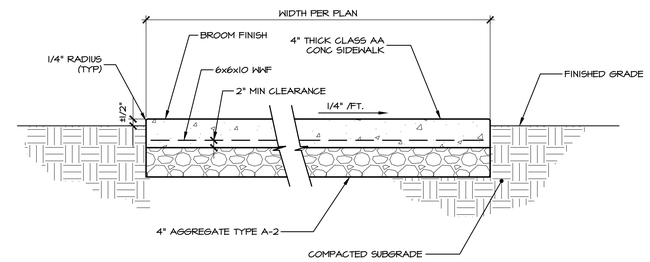
SYM	WEARING COURSE		BINDER COURSE		AGGREGATE BASE COURSE		LOCATION
	TYPE	COMPACTED THICKNESS	TYPE	COMPACTED THICKNESS	TYPE	COMPACTED THICKNESS	
A	SUPERPAVE ASPHALT DESIGN, HMA WEARING COURSE, PG 64-22, 0.0 TO <0.3 MILLION ESAL'S, 12 MM, SRL-L	2.0"	SUPERPAVE ASPHALT DESIGN, HMA BINDER COURSE, PG 64-22, 0.0 TO <0.3 MILLION ESAL'S, 19 MM MIX, 50 GYRATIONS	3.0"	2A MODIFIED	6"	ACCESS DRIVES AND PARKING AREAS
B	SUPERPAVE ASPHALT DESIGN, HMA WEARING COURSE, PG 64-22, 0.0 TO <0.3 MILLION ESAL'S, 12 MM, SRL-L	1.5"	SUPERPAVE ASPHALT DESIGN, HMA BINDER COURSE, PG 64-22, 0.0 TO <0.3 MILLION ESAL'S, 19 MM MIX, 50 GYRATIONS	2.5"	2A MODIFIED	6"	PEDESTRIAN PATHS

A BITUMINOUS PAVEMENT SECTION/SCHEDULE
NOT TO SCALE



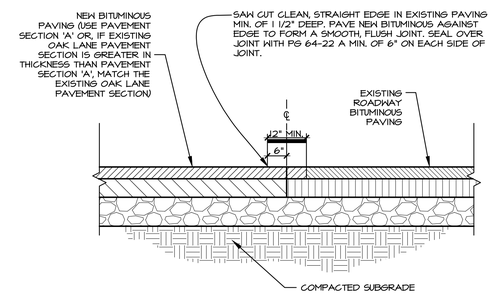
TYPICAL EXPANSION & CONTRACTION JOINTS

SIDEWALK/BITUMINOUS PAVING INTERFACE

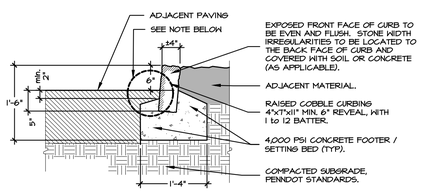


OPEN/LAWN AREA INSTALLATION

B CONCRETE SIDEWALK DETAIL
NOT TO SCALE



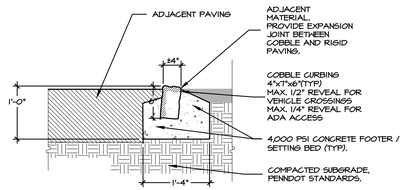
C ROADWAY RESTORATION (OAK LANE)
NO SCALE



GENERAL NOTE:

1. ALL JOINTS BETWEEN COBBLESTONES SHALL HAVE CONVEX RAKED JOINTS, MAX. WIDTH 1". NON SHRINK MORTAR TO CONFORM TO PENNDOT 408/2007, OR AS APPROVED BY ACTUAL SAMPLE PANEL.
2. CONTRACTOR TO COORDINATE LEVEL OF CONCRETE TO ALLOW FOR EASY PLACEMENT OF APPROVED ADJACENT PAVEMENT, ASPHALT OR CONCRETE.

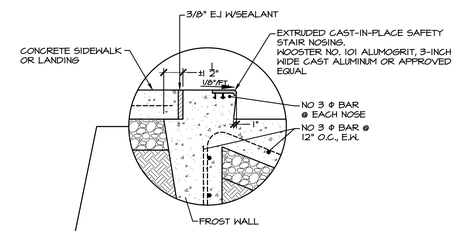
D COBBLE CURB DETAIL
NOT TO SCALE

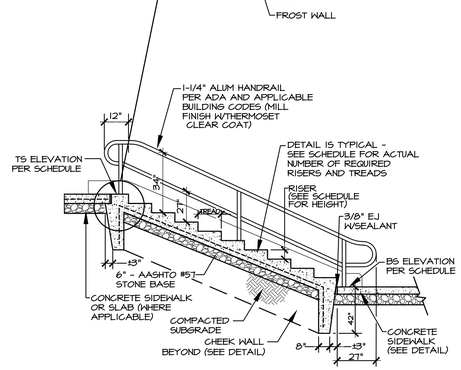


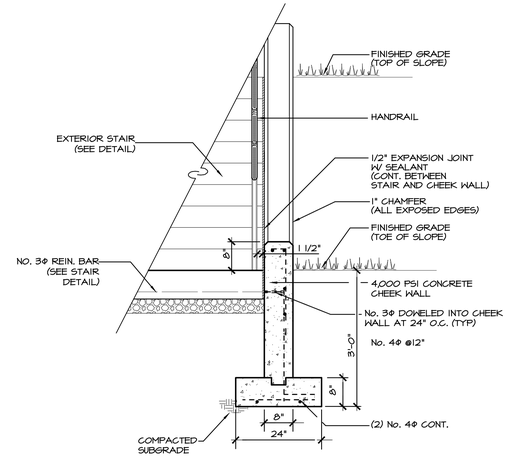
GENERAL NOTE:

1. ALL JOINTS BETWEEN COBBLESTONES SHALL HAVE CONVEX RAKED JOINTS, MAX. WIDTH 1". NON SHRINK MORTAR TO CONFORM TO PENNDOT 408/2007 OR AS APPROVED BY ACTUAL SAMPLE PANEL.
2. FOR ADA RAMPS, SAW CUT THE TOPS OF COBBLESTONES PRIOR TO PLACEMENT OR USE PRECUT STONES TO ENSURE A SMOOTH TRANSITION FROM PAVING TO RAMP AND COMPLIANCE WITH ADA REQUIREMENTS.

E DEPRESSED COBBLE CURB DETAIL
NOT TO SCALE





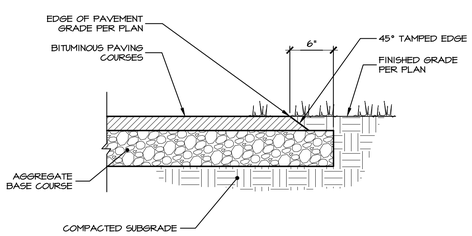


NOTES:

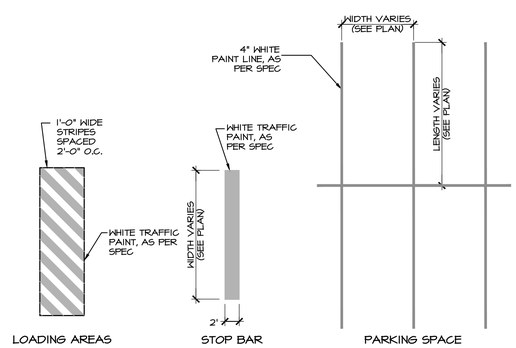
1. ALL CONCRETE MATERIALS FOR STAIR CONSTRUCTION SHALL BE 4000 PSI CONCRETE.
2. PER IBC, HANDRAILS MUST BE LOCATED WITHIN 30-INCHES OF REACH AND/OR NO MORE THAN 60-INCHES APART.
3. THE BOTTOM TWO (2) STAIR TREADS IN STAIRS A.1 AND B.1 VARY IN WIDTH AS THEY BOTH RETURN AROUND THE ADJACENT CHEEK WALL (SEE PLAN).

STAIR (SEE PLAN)	BS ELEV.	TS ELEV.	NO. OF RISERS	RISER HEIGHT	NO. OF TREADS	WIDTH
A.1	307.48	311.42	7	6.75"	6	5.5' (3)
A.2	311.44	315.44	7	6.75"	6	5.5'
A.3	315.51	319.44	7	6.75"	6	5.5'
B.1	307.48	311.42	7	6.75"	6	5.5' (3)
B.2	311.44	315.44	7	6.75"	6	5.5'
B.3	315.51	319.44	7	6.75"	6	5.5'

H EXTERIOR STAIR AND CHEEK WALL DETAIL
NO SCALE



F PAVEMENT EDGE TREATMENT (NO CURB)
NOT TO SCALE



GENERAL NOTE:

1. SEE SHEET 29A FOR PAVEMENT MARKING DETAILS FOR: DIRECTIONAL ARROWS AND STOP LEGENDS, CROSSWALKS, AND UNIVERSAL ACCESSIBILITY (AKA "ADA PARKING") SYMBOL.

G PAVEMENT MARKING DETAIL
NOT TO SCALE

UPI NO(S): 67-5-27

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REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JOHN C. REGA
REGISTRATION NUMBER 400376
REGISTERED LANDSCAPE ARCHITECT

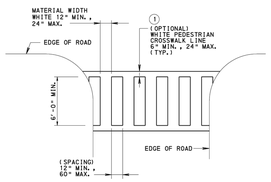
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
SITE DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

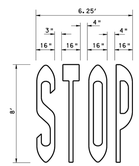
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
29 of 48

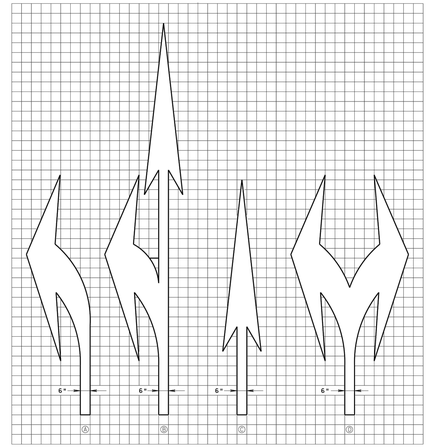


TYPE C - PERPENDICULAR

1 CROSSWALK

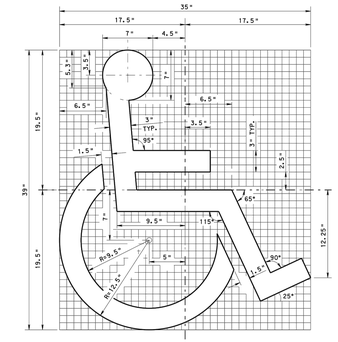


2 STOP



EACH GRID EQUALS 6" x 6"

3 DIRECTIONAL ARROWS



HANDICAPPED MARKING
(EACH GRID EQUALS 1" x 1")

HANDICAPPED SYMBOL SHALL BE WHITE. IT MAY BE INSTALLED ALONE OR WITH A BLUE BACKGROUND WHICH EXTENDS A MINIMUM OF 3 INCHES BEYOND THE SYMBOL. IF MATERIAL THICKNESS OF SYMBOL IS GREATER THAN 20 MILS, THE BLUE BACKGROUND MUST BE USED

4 SYMBOL OF ACCESSIBILITY

A PAVEMENT LEGENDS

NO SCALE

REVISIONS PER:		DATE:	BY:
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MID-ATLANTIC SPORTS CONSTRUCTION
WE BUILD WINNERS.
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REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002368
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

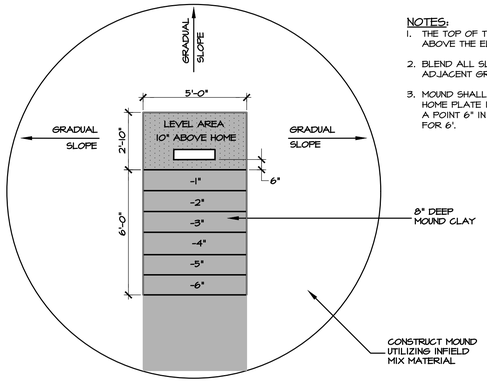
SUBJECT:
SITE DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

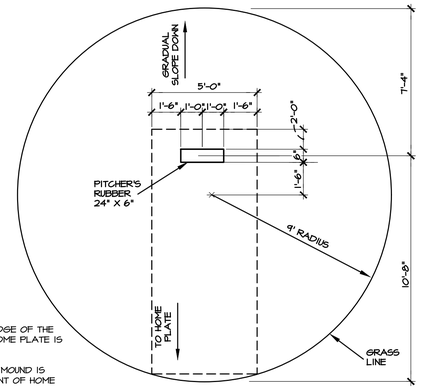
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
29A of 48

UPI NO(S): 67-5-27

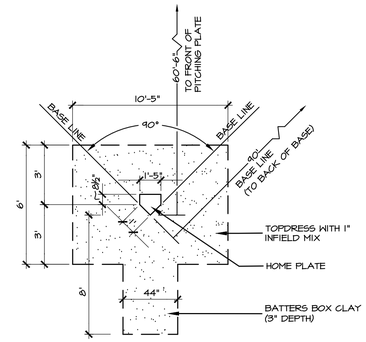


NOTES:
1. THE TOP OF THE PITCHER'S RUBBER SHALL BE 10" ABOVE THE ELEVATION OF HOME PLATE.
2. BLEND ALL SLOPES GRADUAL AND UNIFORM TO ADJACENT GRADES.
3. MOUND SHALL SLOPE UNIFORMLY IN THE DIRECTION OF HOME PLATE 1" PER HORIZONTAL FOOT, BEGINNING AT A POINT 6" IN FRONT OF THE RUBBER AND EXTENDING FOR 6'.



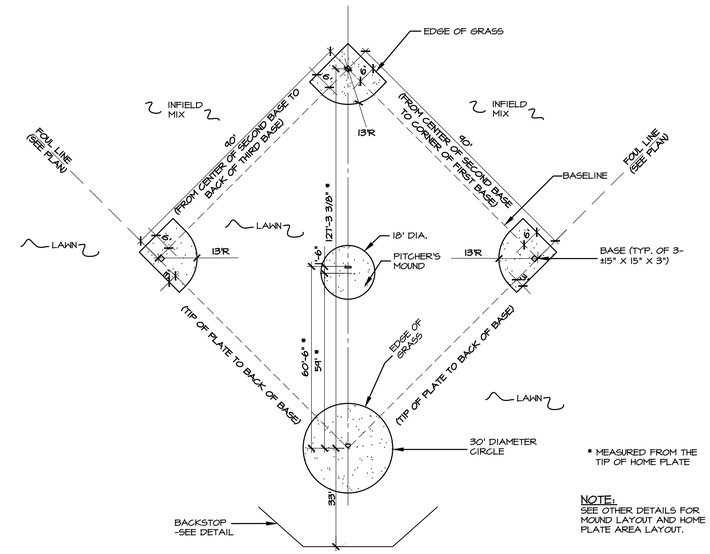
NOTES:
1. THE DISTANCE FROM THE FRONT EDGE OF THE RUBBER TO THE BACK POINT OF HOME PLATE IS 60'-6".
2. THE CENTER RADIUS POINT OF THE MOUND IS LOCATED 54' FROM THE BACK POINT OF HOME PLATE.

(A) BASEBALL PITCHER'S MOUND DETAIL
NO SCALE



BASEBALL FIELD

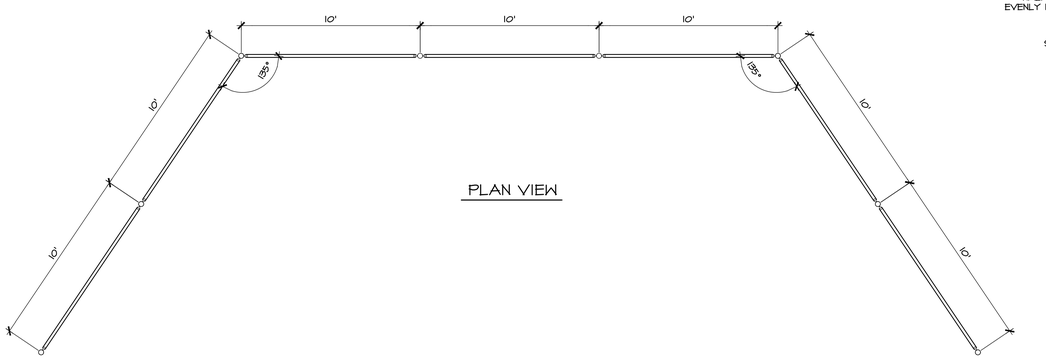
(B) BASEBALL FIELD HOME PLATE AREAS
NO SCALE



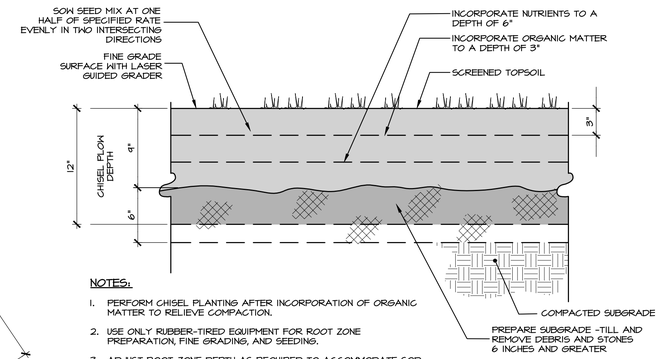
* MEASURED FROM THE TIP OF HOME PLATE

NOTE:
SEE OTHER DETAILS FOR MOUND LAYOUT AND HOME PLATE AREA LAYOUT.

(C) BASEBALL FIELD LAYOUT (90' BASE LINE)
NO SCALE

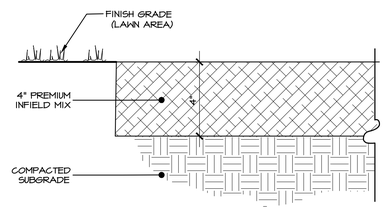


PLAN VIEW

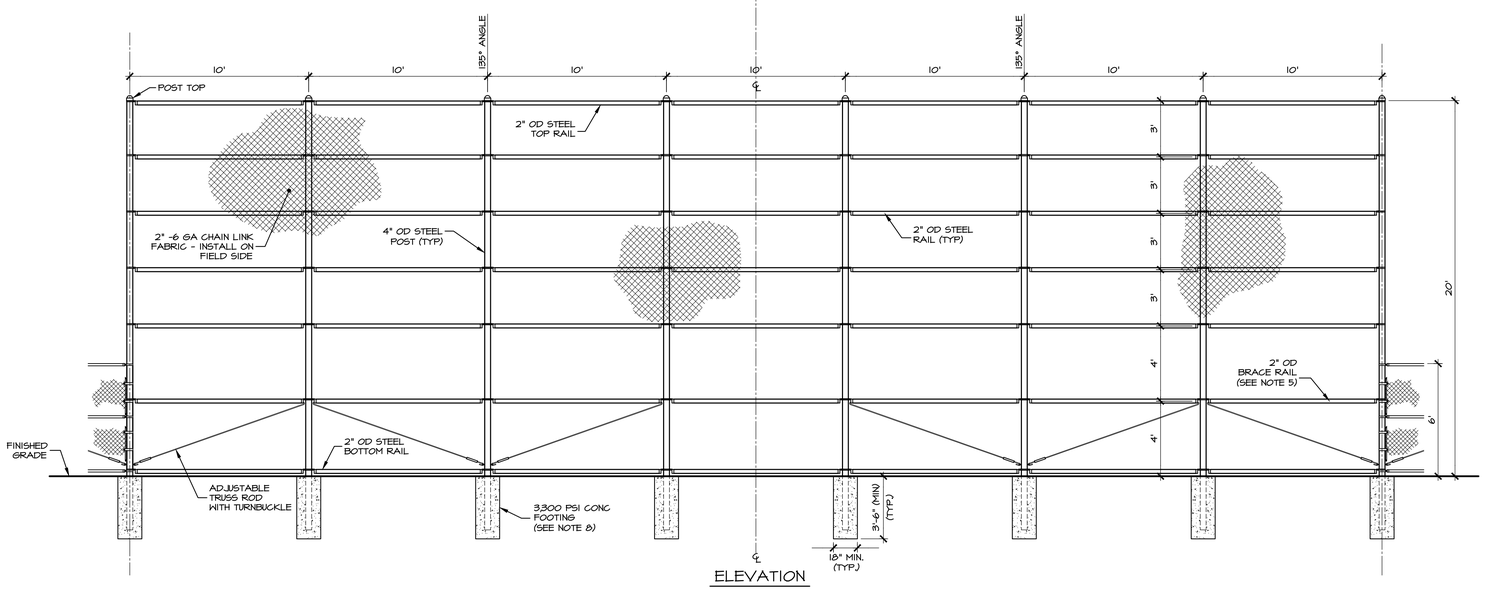


NOTES:
1. PERFORM CHISEL PLANTING AFTER INCORPORATION OF ORGANIC MATTER TO RELIEVE COMPACTION.
2. USE ONLY RUBBER-TIRED EQUIPMENT FOR ROOT ZONE PREPARATION, FINE GRADING, AND SEEDING.
3. ADJUST ROOT-ZONE DEPTH AS REQUIRED TO ACCOMMODATE SOD WHERE SODDING IS INDICATED ON DRAWING, 1" - MAXIMUM.

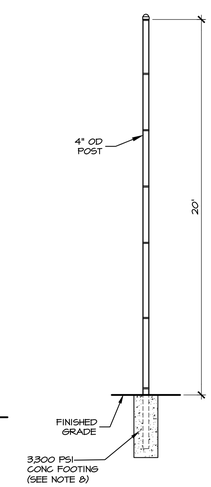
(D) ATHLETIC FIELD PLANTING, SEEDING & SOD, DETAIL
NO SCALE



(E) INFIELD CROSS-SECTION
NO SCALE



ELEVATION



SECTION

FENCE AND GATE NOTES:

1. ALL FENCE MATERIALS SHALL BE STEEL AND PRODUCED AND MANUFACTURED IN THE U.S.A. EXCEPT FENCE POST TOPS, RAIL ENDS, AND TIES MAY BE ALUMINUM. ALL MATERIALS AND FABRICATION SHALL CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL, LATEST EDITION.
2. PROVIDE MANUALLY OPERATED SWING GATES OR CANTILEVER SLIDE GATES AS DESIGNATED ON DRAWINGS.
3. ALL DIMENSIONS ARE NOMINAL. VERIFY ACTUAL FENCE DIMENSIONS AND GATE OPENINGS IN FIELD.
4. ALL FENCE FABRIC, POSTS, RAILS, GATE FRAMES, STRETCHER BARS, AND OTHER PARTS SHALL BE PVC COATED, MEETING THE REQUIREMENTS OF CLFMI STANDARD GUIDE FOR POLYVINYL CHLORIDE (PVC). ALL COATINGS SHALL CONFORM TO CLASS 2b (FUSED), BLACK, PER ASTM 934. ALL FENCE FABRIC SHALL BE 6 GAUGE UNLESS OTHERWISE NOTED.
5. PROVIDE MID-RAIL AND TRUSS ROD AT ALL CORNERS OF FENCE, ADJOINING ALL GATES, AND AT ALL TERMINAL ENDS OF FENCE GREATER THAN FOUR (4) FEET IN HEIGHT.
6. PROVIDE BOTTOM RAIL AND TOP RAIL CONTINUOUS FOR ALL FENCE.
7. POSITION BOTTOM OF FABRIC 2" ABOVE FINISHED GRADE FOR PERIMETER FENCING. POSITION BOTTOM OF FABRIC 1" ABOVE FINISHED GRADE FOR ATHLETIC FIELD FENCING.
8. TOP OF CONCRETE FOOTINGS SHALL BE BELOW FINISH GRADE IN BITUMINOUS PAVING AND LAWN AREAS (3-INCHES IN LAWN AREAS)
9. DETAILS ARE TYPICAL - ALL DETAILS FOR FENCE AND GATES MAY NOT APPLY. PROVIDE FENCE AND GATES AS SCHEDULED ON THE DRAWINGS, IN ACCORDANCE WITH THE APPLICABLE DETAILS ON THIS SHEET, AND PER SUBMITTALS AS APPROVED BY THE OWNER.
10. ALL ATHLETIC FIELD FENCING AND GATES WITH A SCHEDULED HEIGHT OF 6'-0" OR LESS, INCLUDING AREAS WHERE BALLSTOPPER NETTING WILL BE INSTALLED, SHALL BE EQUIPPED WITH A CORRUGATED PVC FENCE TOPPER (SAFETY TOP CAP). COLOR: YELLOW. USE AER-FLO SPORTS "PLASTICAP" FENCE TOPPER OR EQUAL.

(F) CHAIN LINK BASEBALL BACKSTOP (NON-HOODED, 90' BASE LINES)
NO SCALE

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

MID-ATLANTIC SPORTS CONSTRUCTION
WE BUILD WINNERS.

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ENGINEERS + LANDSCAPE ARCHITECTS
743 S. BROAD ST.
LITITZ, PA 17543
(717) 626-7271
elagroup.com

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
EROSION & SEDIMENT CONTROL DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
30 of 48

UPI NO(S): 67-5-27

FENCE AND GATE NOTES:

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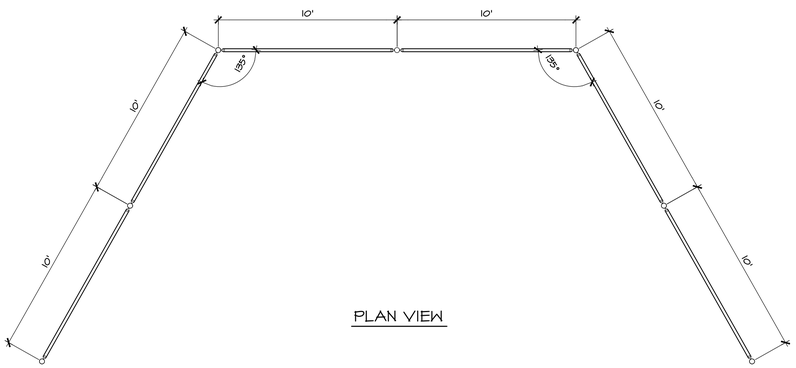
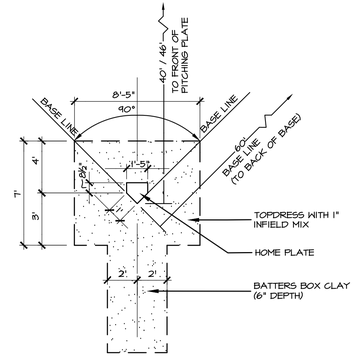
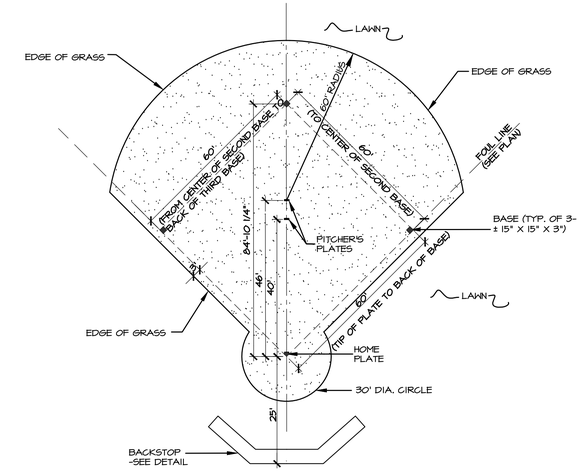


PLAN VIEW



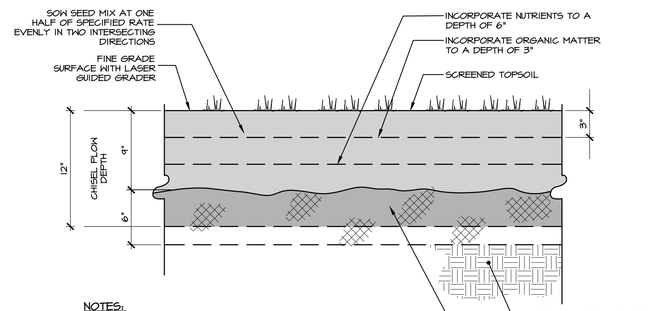
A SOFTBALL FIELD HOME PLATE AREA

NO SCALE



B SOFTBALL INFIELD LAYOUT

NO SCALE



NOTES:

1. PERFORM CHISEL PLANTING AFTER INCORPORATION OF ORGANIC MATTER TO RELIEVE COMPACTION.
2. USE ONLY RUBBER TIRED EQUIPMENT FOR ROOT ZONE PREPARATION, FINE GRADING, AND SEEDING.
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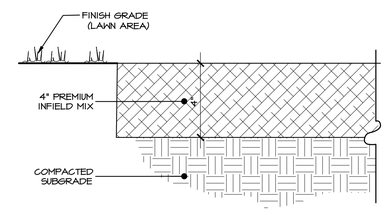
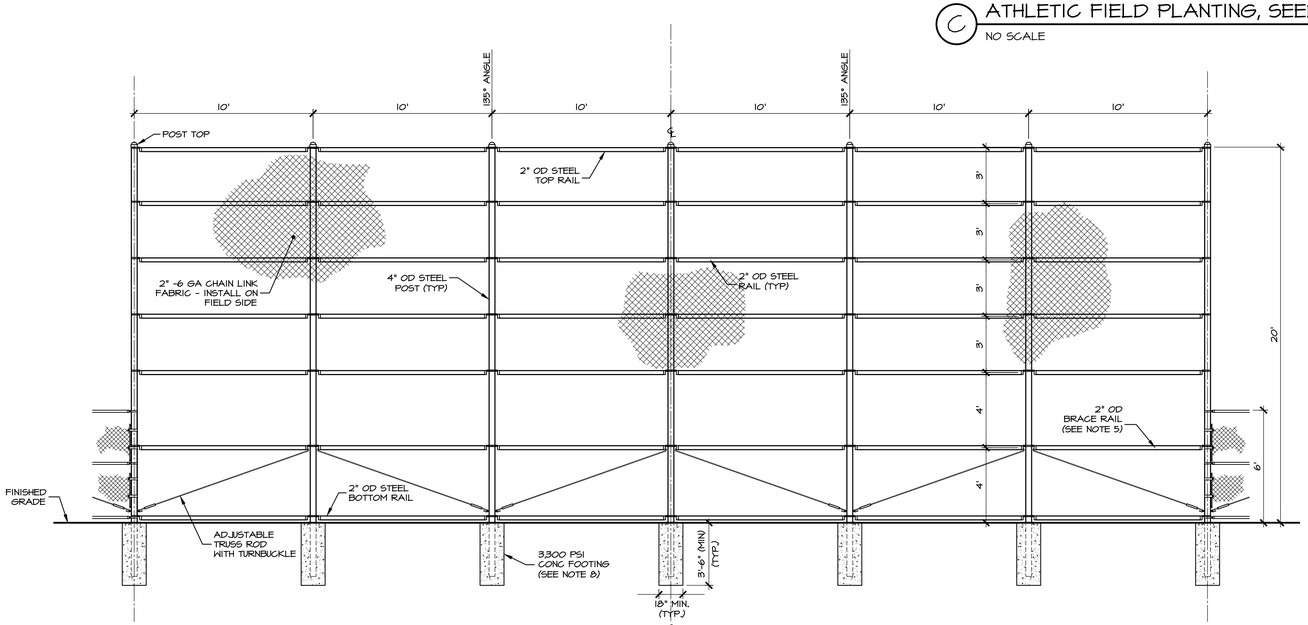
C ATHLETIC FIELD PLANTING, SEEDING & SOD, DETAIL

NO SCALE

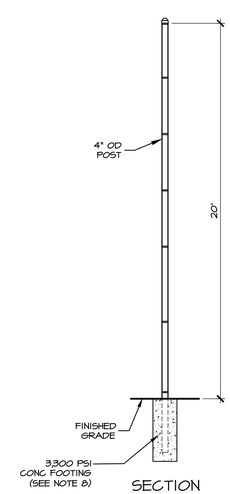


D INFIELD CROSS-SECTION

NO SCALE



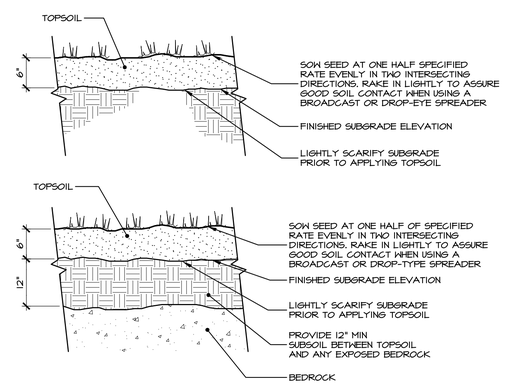
ELEVATION



SECTION

E CHAIN LINK SOFTBALL BACKSTOP (NON-HOODED, 60' BASE LINES)

NO SCALE



F LAWN PLANTING DETAIL

NOT TO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
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4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
TYLER EDWARD HILL
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

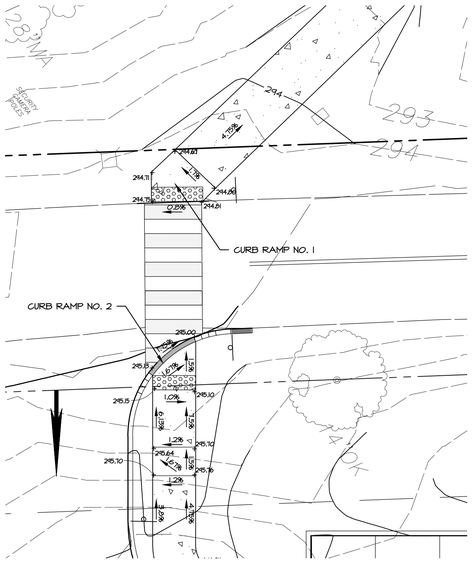
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
SITE DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

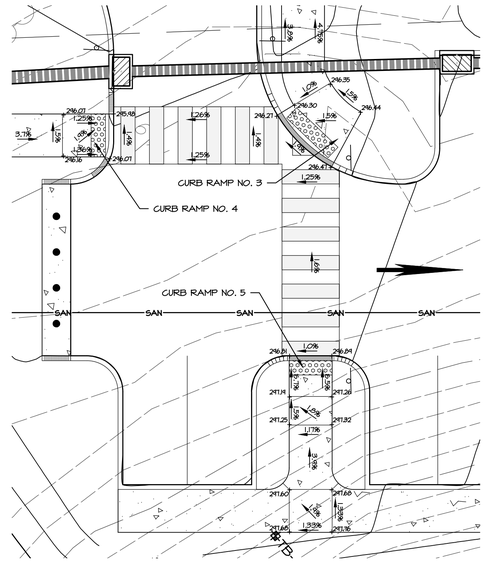
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

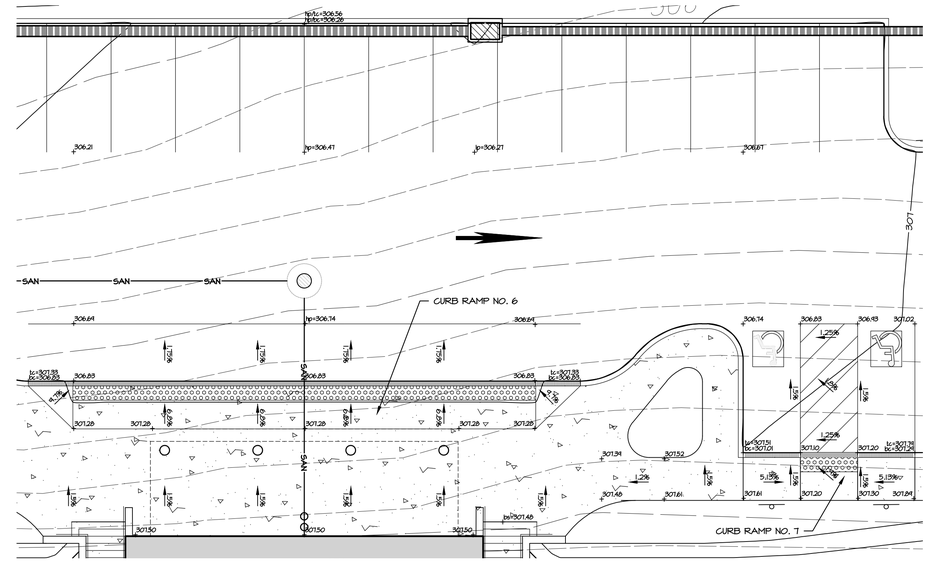
DRAWING NO.
31 of 48



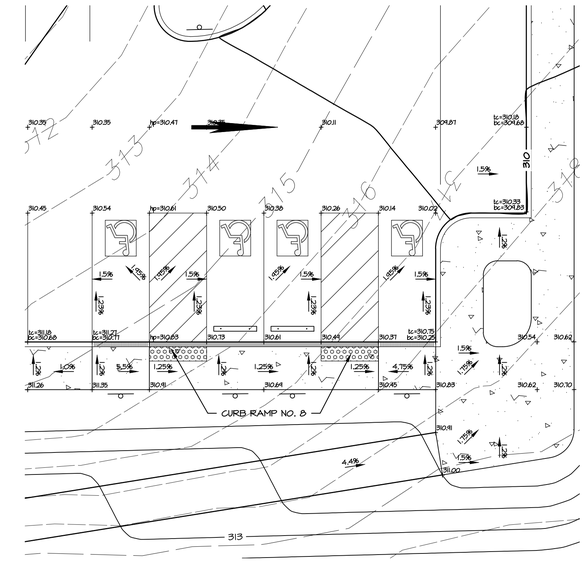
A GRADING ENLARGEMENT (CURB RAMPS 1 & 2)
SCALE: 1" = 10'



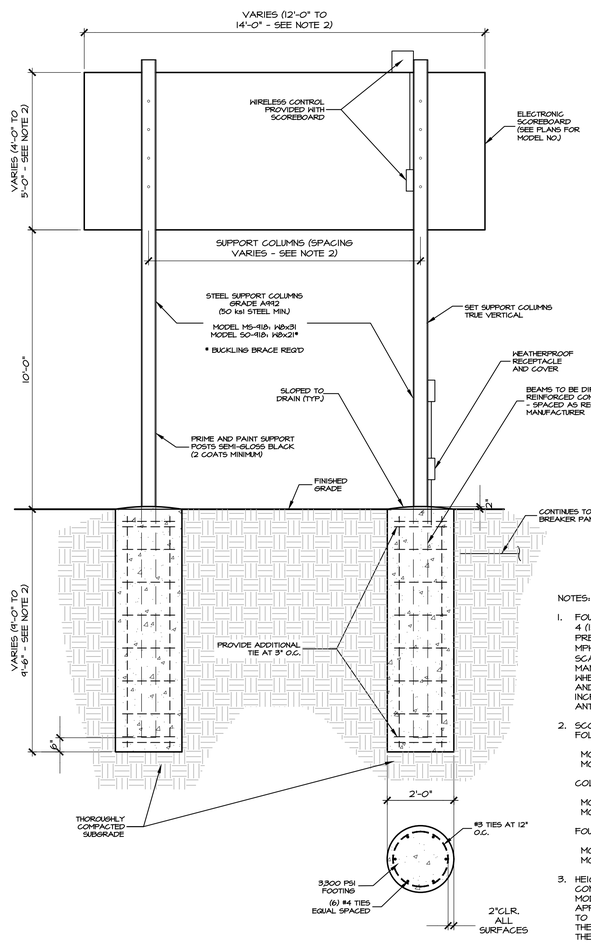
B GRADING ENLARGEMENT (CURB RAMPS 3, 4 & 5)
SCALE: 1" = 10'



C GRADING ENLARGEMENT (CURB RAMP 6)
SCALE: 1" = 10'



D GRADING ENLARGEMENT (CURB RAMP 8)
SCALE: 1" = 10'



NOTES:

1. FOUNDATION DESIGN ASSUMES SOIL CLASS 4 (150 PSF ALLOWABLE LATERAL BEARING PRESSURE), MAXIMUM WIND SPEEDS OF 115 MPH, AND EXPOSURE C (OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS). REFER TO MANUFACTURER'S RECOMMENDATIONS, ESP. WHERE CONDITIONS DIFFER. COLUMN SIZES AND FOUNDATION DIAMETERS WILL INCREASE IF A GREATER WIND LOAD IS ANTICIPATED OR DESIRED.
2. SCOREBOARD DIMENSIONS VARIES AS FOLLOWS:

   MODEL MS-418: 5'-0" H x 14'-0" L
   MODEL SO-418: 4'-0" H x 12'-0" L

   COLUMN SPACING SHALL BE AS FOLLOWS:

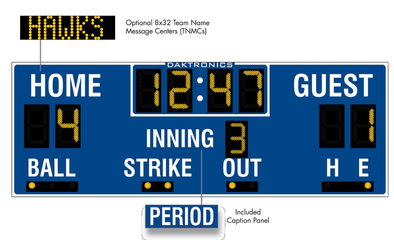
   MODEL MS-418: 9'-0" TO 11'-0"
   MODEL SO-418: 7'-0" TO 9'-0"

   FOUNDATION DEPTH SHALL BE AS FOLLOWS:

   MODEL MS-418: 9'-6"
   MODEL SO-418: 9'-0"
3. HEIGHT ABOVE GRADE SHALL BE CONSISTENT BETWEEN THE TWO MODELS/INSTALLATIONS. PROVIDE THE APPROPRIATE COLUMN LENGTH FOR EACH TO ENSURE CONSISTENCY IN THE DISTANCE THE COLUMNS EXTEND ABOVE THE TOP OF THE SCOREBOARD.

E SCOREBOARD SUPPORT DETAIL
NOT TO SCALE

DAKTRONICS MS-918 PRODUCT SPECIFICATIONS



This outdoor LED multisport scoreboard displays period time to 99:59, HOME and GUEST scores to 99 and INNING or PERIOD to nine with included reversible caption panel. Indicators show BALL, STRIKE, OUT, H (hit) and E (error) in baseball mode. When period time is less than one minute, the scoreboard displays time to 1/10 of a second. Scoreboard shown with optional striping and amber PanoView® digits.

		VINYL CAPTIONS (STANDARD)	TNMCS & VINYL CAPTIONS
POWER (120 VAC)*	Red/Amber Digits	130 Watts, 1.1 Amps	200 Watts, 1.7 Amps
	White Digits	260 Watts, 2.2 Amps	420 Watts, 3.5 Amps
UNCRATED WEIGHT		265 lb (120 kg)	345 lb (156 kg)
DIMENSIONS		5'-0" H x 14'-0" W x 8" D (1.52 m, 4.27 m, 203 mm)	

*Scoreboard requires a dedicated circuit. Models with 240 VAC power at half the indicated amperage are also offered (International Use Only).

DIGITS & INDICATORS
- INNING/PERIOD digit is 15" (381 mm) high. All other digits are 18" (457 mm) high. All indicators are 2" (51 mm) in diameter.
- Select red, amber, or white LED digits and indicators.
- Scoreboard features robust weather-sealed digits (see DD2495646).
- Digits may be dimmed for night viewing.

CAPTIONS
- HOME and GUEST captions are 10" (254 mm) high. All other captions are 8" (203 mm) high.
- Standard captions are vinyl, applied to the display face. INNING and PERIOD captions are on a reversible panel.
- Optional TNMCs are 10.6" (269 mm) high.

DISPLAY COLOR
Choose from 150+ colors (from Martin Senour® paint book) at no additional cost.

CONSTRUCTION
Alcoa aluminum alloy 5052 for excellent corrosion resistance

PRODUCT SAFETY APPROVAL
ETL-listed to UL 48, tested to CSA standards, and CE-labeled

OPERATING TEMPERATURES
- Display: -22° to 122° Fahrenheit (-30° to 50° Celsius)
- Console: 32° to 130° Fahrenheit (0° to 54° Celsius)

WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746
DD2167408 091720 Page 1 of 8

ONE SCOREBOARD TO BE INSTALLED AT FIELDS 3 AND 4

DAKTRONICS SO-918 PRODUCT SPECIFICATIONS

This outdoor LED soccer scoreboard displays period time to 99:59, HOME and GUEST scores to 99 and HALF (or PERIOD or QTR) to nine. When period time is less than one minute, the scoreboard displays time to 1/10 of a second. Scoreboard shown with optional striping and amber PanoView® digits.

DIMENSIONS	UNCRATED WEIGHT	POWER (120 VAC)*	
4'-0" H x 12'-0" W x 8" D (1.22 m, 3.66 m, 203 mm)	180 lb (82 kg)	Red/Amber Digits	120 Watts, 1.0 Amp
		White Digits	260 Watts, 2.2 Amps

*Scoreboard requires a dedicated circuit. Models with 240 VAC power at half the indicated amperage are also offered (International Use Only).

DIGITS
- All digits are 18" (457 mm) high.
- Select red, amber, or white LED digits.
- Scoreboard features robust weather-sealed digits (see DD2495646).
- Digits may be dimmed for night viewing.

CAPTIONS
- HOME and GUEST captions are 10" (254 mm) high. All other captions are 8" (203 mm) high.
- Standard captions are vinyl, applied to the display face.

DISPLAY COLOR
Choose from 150+ colors (from Martin Senour® paint book) at no additional cost.

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WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746
DD2167442 091620 Page 1 of 8

ONE SCOREBOARD EACH TO BE INSTALLED AT FIELDS 1 AND 2

F SCOREBOARD MODEL INFO
NOT TO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
2. CCCD COMMENTS	3-17-2023	TEH
3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4. CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEASLEY
REGISTRATION NUMBER
LA002588
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

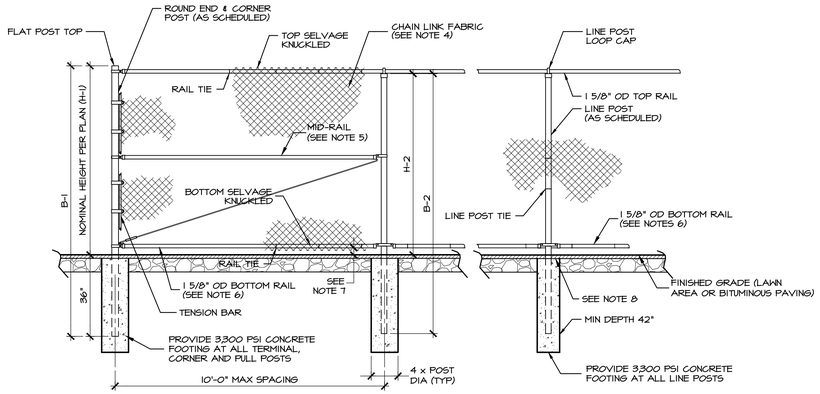
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
SITE DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

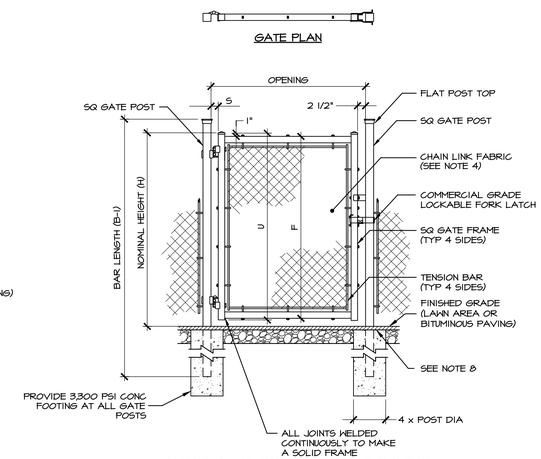
DRAWING NO.
32 of 48



CHAIN LINK FENCE ELEVATION

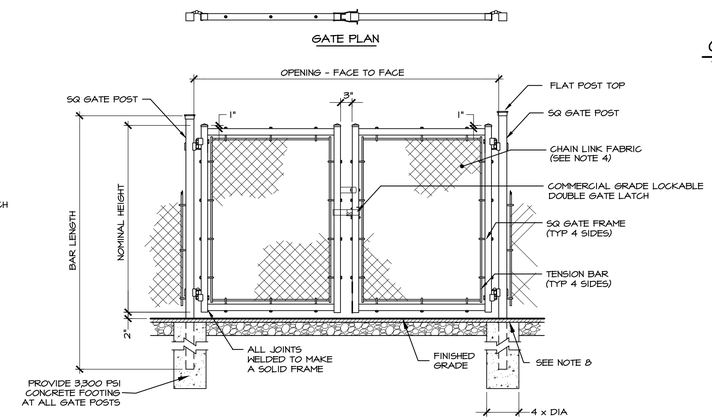
FENCE HEIGHT	END & CORNER POSTS			LINE POSTS		
NOMINAL HEIGHT	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	ROUND PIPE (OD)	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE	ROUND PIPE (OD)
4'-0"	7'-0"	4'-0 5/8"	2 1/2"	6'-8"	3'-8 7/8"	2"
5'-0"	8'-0"	5'-0 5/8"	2 1/2"	7'-8"	4'-8 7/8"	2"
6'-0"	9'-0"	6'-0 5/8"	2 1/2"	8'-8"	5'-8 7/8"	2"
7'-0"	10'-0"	7'-0 5/8"	3"	9'-8"	6'-8 7/8"	2 1/2"
8'-0"	11'-0"	8'-0 5/8"	3"	10'-8"	7'-8 7/8"	2 1/2"
9'-0"	12'-0"	9'-0 5/8"	3"	11'-8"	8'-8 7/8"	3"
10'-0"	13'-0"	10'-0 5/8"	3"	12'-8"	9'-8 7/8"	3"
11'-0"	14'-0"	11'-0 5/8"	3"	13'-8"	10'-8 7/8"	3"
12'-0"	15'-0"	12'-0 5/8"	3"	14'-8"	11'-8 7/8"	3"

A CHAIN LINK FENCE
NOT TO SCALE



SINGLE SWING CHAIN LINK GATE ELEVATION

SINGLE LEAF SWING GATE		
NOMINAL HEIGHT (H)	UPRIGHT HEIGHT (U)	FRAME HEIGHT (F)
4'-0"	3'-10"	3'-8 1/2"
5'-0"	4'-10"	4'-8 1/2"
6'-0"	5'-10"	5'-8 1/2"
7'-0"	6'-10"	6'-8 1/2"
8'-0"	7'-10"	7'-8 1/2"
9'-0"	8'-10"	8'-8 1/2"
10'-0"	9'-10"	9'-8 1/2"
OPENING	GATE POSTS (SEE NOTE 2)	HINGE SPACE (S)
3' TO 6'	2 1/2" SQ	2 1/4"
7' TO 10'	3" SQ	2 1/4"



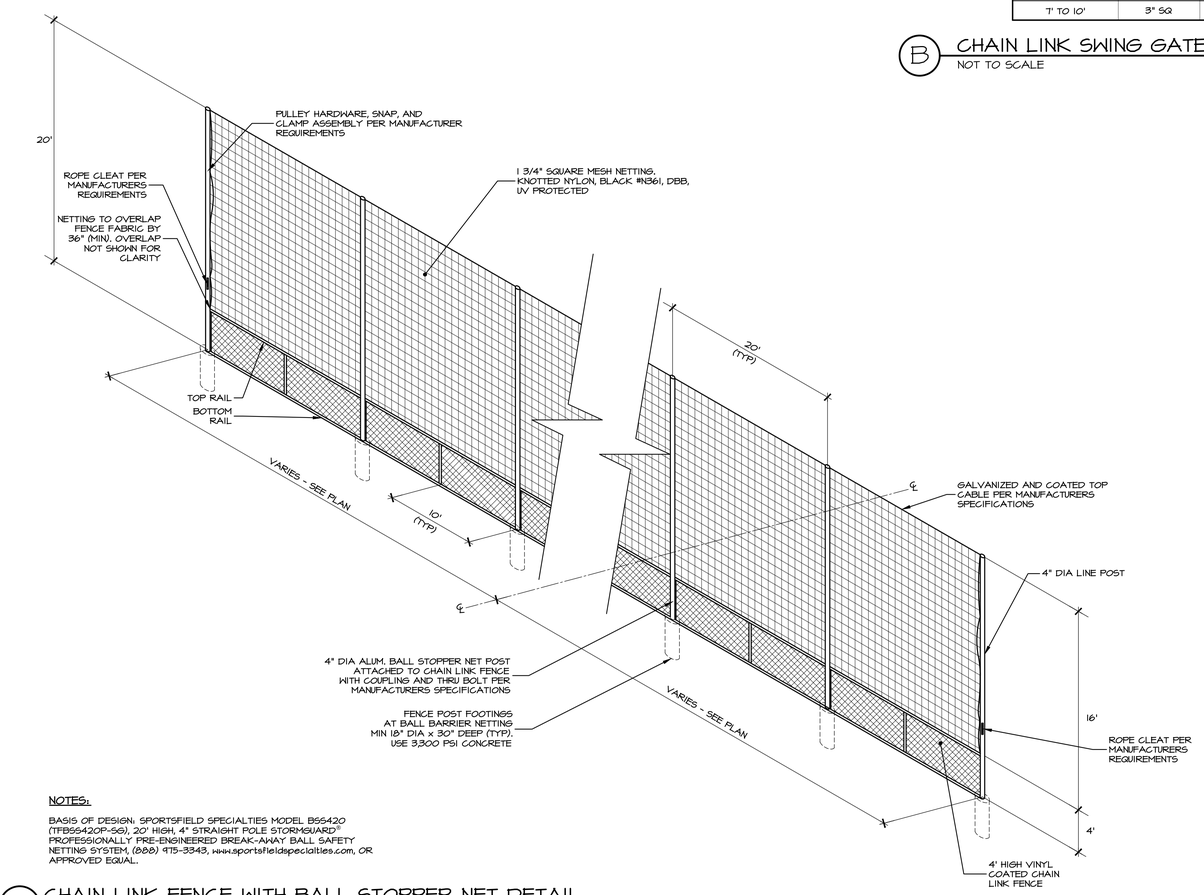
DOUBLE SWING CHAIN LINK GATE ELEVATION

DOUBLE LEAF SWING GATE		
NOMINAL HEIGHT (H)	UPRIGHT HEIGHT (U)	FRAME HEIGHT (F)
4'-0"	3'-10"	3'-8 1/2"
5'-0"	4'-10"	4'-8 1/2"
6'-0"	5'-10"	5'-8 1/2"
7'-0"	6'-10"	6'-8 1/2"
8'-0"	7'-10"	7'-8 1/2"
9'-0"	8'-10"	8'-8 1/2"
10'-0"	9'-10"	9'-8 1/2"
OPENING	GATE POSTS	HINGE SPACE (S)
8'-12'	2 1/2" SQ 2 7/8" OD	2 1/4" 2 1/4"
14'-24'	3" SQ 4" OD	2 1/4" 2 1/4"
26'-36'	6" SQ 6 5/8" OD	2 1/4" 3 1/2"

B CHAIN LINK SWING GATES
NOT TO SCALE

CHAIN LINK FENCE AND GATE NOTES

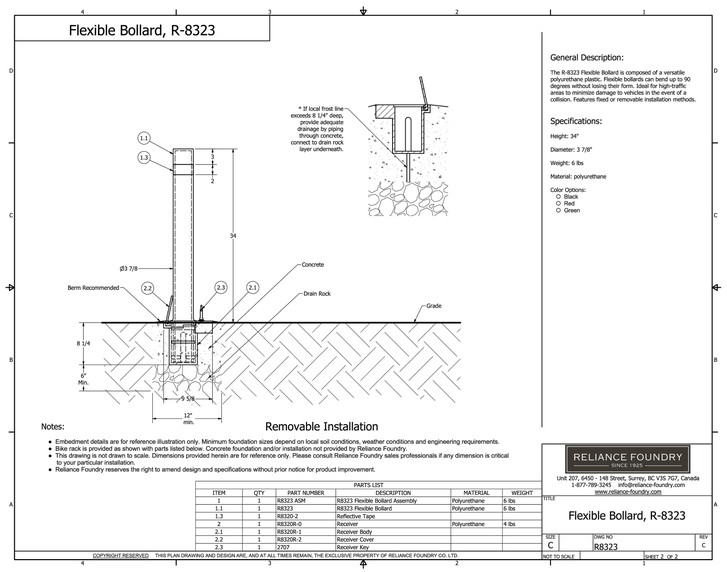
1. ALL FENCE MATERIALS SHALL BE STEEL AND PRODUCED AND MANUFACTURED IN THE U.S.A. EXCEPT FENCE POST TOPS, RAIL ENDS, AND TIES MAY BE ALUMINUM. ALL MATERIALS AND FABRICATION SHALL CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL, LATEST EDITION.
2. PROVIDE MANUALLY OPERATED SWING GATES OR CANTILEVER SLIDE GATES AS DESIGNATED ON DRAWINGS.
3. ALL DIMENSIONS ARE NOMINAL. VERIFY ACTUAL FENCE DIMENSIONS AND GATE OPENINGS IN FIELD.
4. ALL FENCE FABRIC, POSTS, RAILS, GATE FRAMES, STRETCHER BARS, AND OTHER PARTS SHALL BE PVC COATED, MEETING THE REQUIREMENTS OF CLFMI STANDARD GUIDE FOR POLYVINYL CHLORIDE (PVC). ALL COATINGS SHALL CONFORM TO CLASS 2b (FUSED), BLACK, PER ASTM 824. ALL FENCE FABRIC SHALL BE 6 GAUGE UNLESS OTHERWISE NOTED.
5. PROVIDE MID-RAIL AND TRUSS ROD AT ALL CORNERS OF FENCE, ADJOINING ALL GATES, AND AT ALL TERMINAL ENDS OF FENCE GREATER THAN FOUR (4) FEET IN HEIGHT.
6. PROVIDE BOTTOM RAIL AND TOP RAIL CONTINUOUS FOR ALL FENCE.
7. POSITION BOTTOM OF FABRIC 2" ABOVE FINISHED GRADE FOR PERIMETER FENCING. POSITION BOTTOM OF FABRIC 1" ABOVE FINISHED GRADE FOR ATHLETIC FIELD FENCING.
8. SET TOP OF FOOTING 3" MIN BELOW FINISHED GRADE IN GRASS/LAWN AREAS. SET TOP OF FOOTING AT FINISHED GRADE OF PAVEMENT AT BITUMINOUS PAVED AREAS.
9. DETAILS ARE TYPICAL - ALL DETAILS FOR FENCE AND GATES MAY NOT APPLY. PROVIDE FENCE AND GATES AS SCHEDULED ON THE DRAWINGS, IN ACCORDANCE WITH THE APPLICABLE DETAILS ON THIS SHEET, AND PER SUBMITTALS AS APPROVED BY THE OWNER.
10. COMPLY WITH ASTM F900 FOR FABRICATION OF ALL GATE FRAMES. FABRICATE USING RECTANGULAR TUBULAR MEMBERS, WELDED AT ALL CORNERS TO FORM A RIGID ONE-PIECE UNIT. POLYMER COAT ALL GATE FRAMES TO MATCH ADJOINING FENCE FRAMEWORK IN ACCORDANCE WITH ASTM F900.
11. USE SQUARE GATE POSTS FOR ALL GATES - WHERE A CONFLICT EXISTS BETWEEN THE SCHEDULE AND APPLICABLE STANDARDS, CONFORM TO ASTM F900 FOR FRAMING AND GATE POSTS.
12. ALL ATHLETIC FIELD FENCING AND GATES WITH A SCHEDULED HEIGHT OF 6'-0" OR LESS, INCLUDING AREAS WHERE BALLSTOPPER NETTING WILL BE INSTALLED, SHALL BE EQUIPPED WITH A CORRUGATED PVC FENCE TOPPER (SAFETY TOP CAP). COLOR: YELLOW. USE AER-FLO SPORTS "PLASTICAP" FENCE TOPPER OR EQUAL.



NOTES:

BASIS OF DESIGN: SPORTSFIELD SPECIALTIES MODEL BS5420 (TFBS5420P-SG), 20' HIGH, 4" STRAIGHT POLE STORMGUARD® PROFESSIONALLY PRE-ENGINEERED BREAK-AWAY BALL SAFETY NETTING SYSTEM, (888) 415-3343, WWW.SPORTSFIELDSPECIALTIES.COM, OR APPROVED EQUAL.

C CHAIN LINK FENCE WITH BALL STOPPER NET DETAIL
NO SCALE



D REMOVABLE BOLLARD
NO SCALE

UPI NO(S): 67-5-27

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COMMONWEALTH OF PENNSYLVANIA
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ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTERED LANDSCAPE ARCHITECT
ARIZONA

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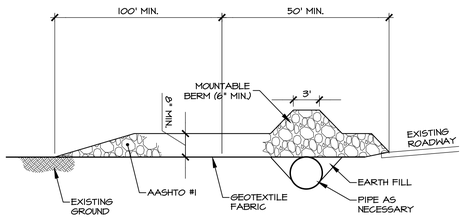
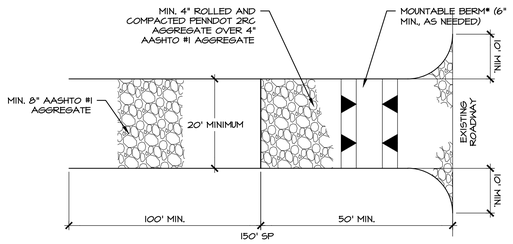


PROFILE



PLAN VIEW

NOTES:

1. SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHOULD BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.
2. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
3. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
4. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

ROCK CONSTRUCTION ENTRANCE MAINTENANCE PROGRAM

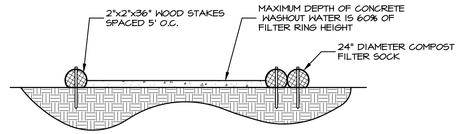
1. ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ONSITE FOR THIS PURPOSE.
2. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS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

ROCK CONSTRUCTION ENTRANCE INSPECTION SCHEDULE AND REPORTING

1. INSPECTION OF ROCK CONSTRUCTION ENTRANCES SHALL OCCUR AS FOLLOWS:
   - WEEKLY
   - AFTER EACH RUNOFF EVENT (THIS IS REQUIRED IN ADDITION TO THE REQUIRED WEEKLY INSPECTION)
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

A ROCK CONSTRUCTION ENTRANCE

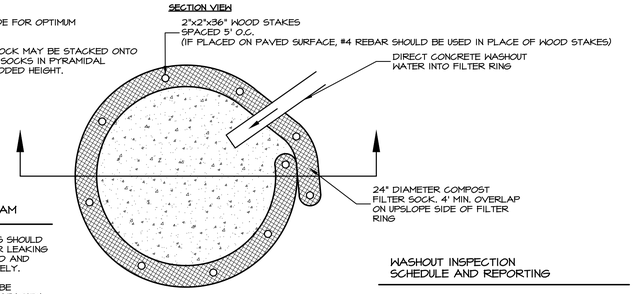
NOT TO SCALE



NOTES:

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

SECTION VIEW



PLAN VIEW

WASHOUT MAINTENANCE PROGRAM

1. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
3. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

CONCRETE WASHOUT - FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON SITE, A SUITABLE WASHOUT FACILITY MUST BE PROVIDED FOR THE CLEANING OF CHUTES, MIXERS, AND HOPPERS OF THE DELIVERY VEHICLES UNLESS SUCH A FACILITY WILL BE USED AT THE SOURCE OF THE CONCRETE. UNDER NO CIRCUMSTANCES MAY WASH WATER FROM THESE VEHICLES BE ALLOWED TO ENTER ANY SURFACE WATERS. MAKE SURE THAT PROPER SIGNAGE IS PROVIDED TO RIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.

WASHOUT FACILITIES SHOULD NOT BE PLACED WITHIN 50 FEET OF STORM DRAINS, OPEN DITCHES OR SURFACE WATERS. THEY SHOULD BE IN A CONVENIENT LOCATION FOR THE TRUCKS, PREFERABLE NEAR THE PLACE WHERE THE CONCRETE IS BEING POURED, BUT FAR ENOUGH FROM OTHER VEHICULAR TRAFFIC TO MINIMIZE THE POTENTIAL FOR ACCIDENTAL DAMAGE OR SPILLS. WHEREVER POSSIBLE, THEY SHOULD BE LOCATED ON SLOPES NOT EXCEEDING A 2% GRADE. ADDITIONAL INFORMATION ON WASHOUTS MAY BE OBTAINED FROM EPA'S STORMWATER WEBSITE.

COMPOST SOCK WASHOUT

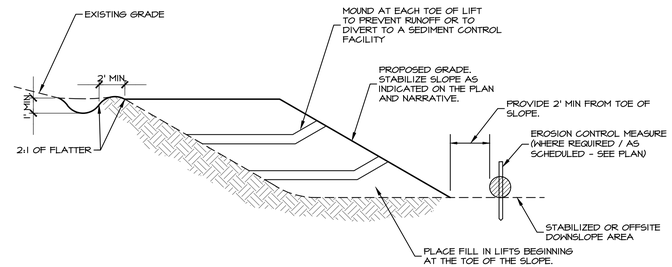
WHEREVER COMPOST SOCK WASHOUTS ARE USED, A SUITABLE IMPERVIOUS GEOMEMBRANE SHOULD BE PLACED AT THE LOCATION OF THE WASHOUT. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANCE SO AS TO FORM A RING WITH ENDS OF THE SOCK LOCATED A THE UPSLOPE CORNER. CARE SHOULD BE TAKEN TO ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANCE AT ALL LOCATIONS. WHERE NECESSARY, SOCKS MAY BE STACKED AND STAKED SO AS TO FOR A TRIANGULAR CROSS-SECTION.

WASHOUT INSPECTION SCHEDULE AND REPORTING

1. INSPECTION OF COMPOST FILTER SOCK WASHOUT AREA SHALL OCCUR AS FOLLOWS:
   - WEEKLY
   - AFTER EACH RUNOFF EVENT (THIS IS REQUIRED IN ADDITION TO THE REQUIRED WEEKLY INSPECTION)
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.
3. FOR ADDITIONAL INSPECTION AND REPORTING REQUIREMENTS AND INFORMATION, SEE THE NPDES PERMIT CONDITIONS, EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS.

B FILTER SOCK CONCRETE WASHOUT

NOT TO SCALE



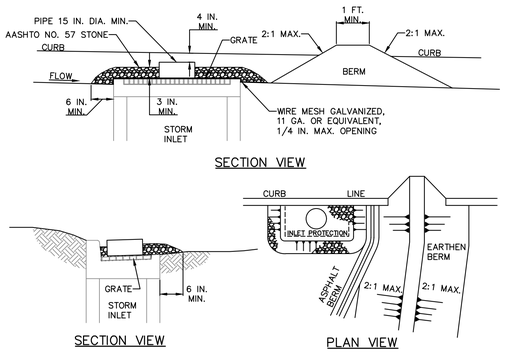
SECTION VIEW

NOTES:

1. TEMPORARY BERMS SHALL BE PLACED, MAINTAINED, AND ADJUSTED CONTINUOUSLY UNTIL 90% VEGETATIVE GROWTH IS ESTABLISHED ON THE EXTERIOR SLOPES WITH PERMANENT STORM DRAINAGE FACILITIES FUNCTIONING.
2. BERMS SHALL OUTLET TO SLOPE PIPES, CHANNELS, OR OTHER APPROVED MEANS OF CONVEYING RUNOFF TO A SEDIMENT TRAP, SEDIMENT BASIN, OR COLLECTOR CHANNEL.
3. CHANNEL BEHIND BERM SHALL HAVE POSITIVE GRADE TO OUTLET AND AN APPROPRIATE PROTECTIVE LINING.
4. BERM SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
5. AN ACCEPTABLE ALTERNATIVE TO TOP-OF-SLOPE BERM IS TO CONTINUOUSLY GRADE THE TOP OF FILL TO DIRECT RUNOFF AWAY FROM THE FILL SLOPE TO A COLLECTOR CHANNEL, SEDIMENT TRAP, OR SEDIMENT BASIN.
6. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOOD VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 8". THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2".

C FILL PLACEMENT / TOP OF SLOPE BERM

NO SCALE



NOTES:

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

ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6 IN. MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

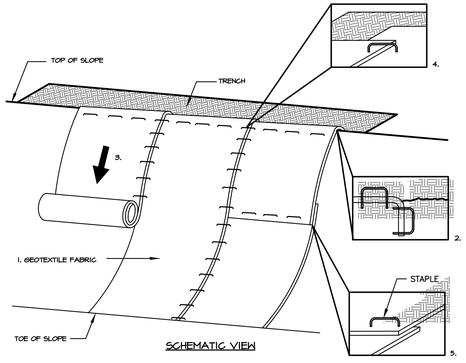
FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

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

D STONE INLET PROTECTION AND BERM - TYPE C

STANDARD CONSTRUCTION DETAIL #4-19

NO SCALE

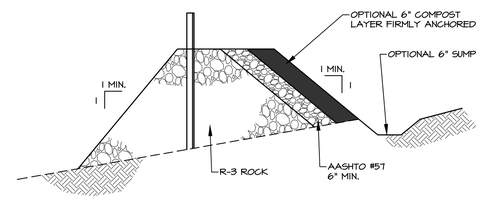


NOTES:

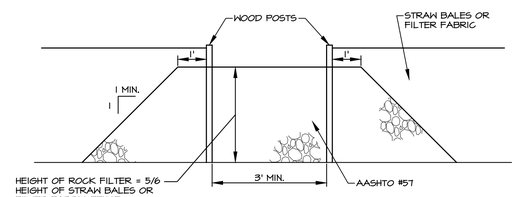
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA. APPROXIMATELY 12" APART.
6. REFER TO MANUFACTURER'S SPECIFICATIONS FOR STAPLE PATTERN AND SPECIFIC INSTALLATION REQUIREMENTS.

E EROSION CONTROL FABRIC INSTALLATION (SLOPES)

NO SCALE



OUTLET CROSS-SECTION



UP-SLOPE FACE

NOTES:

ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT SOCK 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.

ROCK FILTER MAINTENANCE PROGRAM

1. CHECK FOR EROSION, PIPING, AND SETTLEMENT. CLOGGED OR DAMAGED ROCK FILTERS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.
2. DISPLACED RIPRAP SHALL BE REPLACED IMMEDIATELY. DISPOSE OF MATERIALS REMOVED FROM THE ROCK FILTER BERM IN AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRING FILL MATERIAL OR LEGALLY DISPOSE OFFSITE.

ROCK FILTER INSPECTION SCHEDULE AND REPORTING

1. INSPECTION OF ROCK FILTERS SHALL OCCUR AS FOLLOWS:
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3. FOR ADDITIONAL INSPECTION AND REPORTING REQUIREMENTS AND INFORMATION, SEE THE NPDES PERMIT CONDITIONS, EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS.

F ROCK FILTER OUTLET

NO SCALE

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MID-ATLANTIC SPORTS CONSTRUCTION WE BUILD WINNERS.

EA group, inc.
ENGINEERS + LANDSCAPE ARCHITECTS
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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL TYLER E. HILL ENGINEER No. PE084960

PENNSYLVANIA JASON C. BEST REGISTRATION NUMBER 1002288 REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

EROSION & SEDIMENT CONTROL DETAILS

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

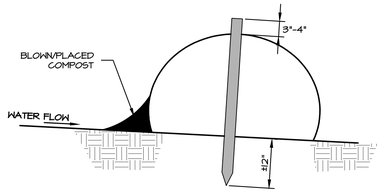
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

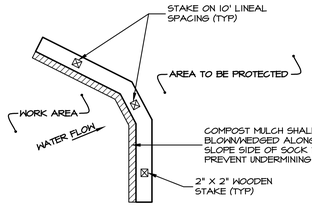
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.

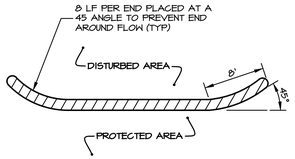


FILTER SOCK COMPOST MATERIAL AS PER SPECIFICATIONS.



GENERAL NOTES:

1. WHERE SOCKS ARE PLACED ON PAVED SURFACES, CONCRETE BLOCKS SHOULD BE USED IMMEDIATELY DOWNSLOPE OF THE SOCKS (AT THE SAME INTERVALS RECOMMENDED FOR THE STAKES) TO HELP HOLD THE SOCK IN PLACE.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS SOCKS.
4. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
5. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.



A FILTER SOCK
NO SCALE

FILTER SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 psi	26 psi	44 psi	202 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 hr.	23% AT 1000 hr.		100% AT 1000 hr.	100% AT 1000 hr.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING				HDPE BIAXIAL NET	
				CONTINUOUSLY WOUND	
				FUSION-WELDED JUNCTURES	
				3/4" X 3/4" MAX. APERTURE SIZE	
OUTER FILTRATION MESH				COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)	
				3/16" MAX. APERTURE SIZE	
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

COMPOST NOTES:

1. COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WORK/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1% BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT HAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPOST OF THE MIX.
2. USE ONLY MATURE COMPOST THAT MEETS THE FOLLOWING SPECIFICATIONS. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

COMPOST STANDARDS

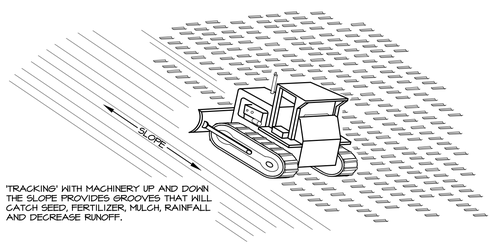
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

FILTER SOCK MAINTENANCE PROGRAM

1. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF OF THE ABOVEGROUND HEIGHT OF THE SOCK. DISPOSE OF SEDIMENT REMOVED FROM THE FILTER SOCK IN AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRING FILL MATERIAL OR LEGALLY DISPOSE OFFSITE.

FILTER SOCK INSPECTION SCHEDULE AND REPORTING

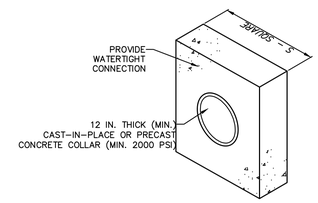
1. INSPECTION OF COMPOST FILTER SOCKS SHALL OCCUR AS FOLLOWS:
   - WEEKLY
   - AFTER EACH RUNOFF EVENT (THIS IS REQUIRED IN ADDITION TO THE REQUIRED WEEKLY INSPECTION)
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.
3. FOR ADDITIONAL INSPECTION AND REPORTING REQUIREMENTS AND INFORMATION, SEE THE NPDES PERMIT CONDITIONS, EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS.



'TRACKING' WITH MACHINERY UP AND DOWN THE SLOPE PROVIDES GROOVES THAT WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

TRACKING

B SLOPE TRACKING
NO SCALE



BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
1	18	58	2	9	9
4	24	72	1	11	N/A

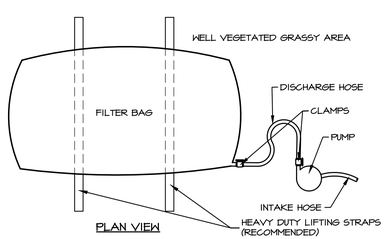
NOTES:

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

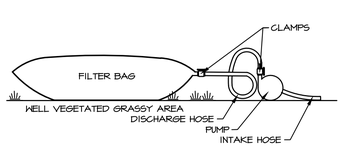
COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16

C CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS
NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

FILTER BAG NOTES:

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

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

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. 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 WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF A PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

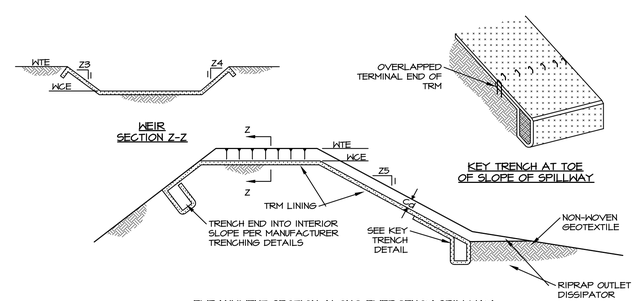
PUMPED WATER FILTER BAG MAINTENANCE PROGRAM

1. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
2. DISPOSE OF SEDIMENT REMOVED FROM FILTER BAGS IN AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRING FILL MATERIAL OR LEGALLY DISPOSE OFFSITE. USED/EMPTIED FILTER BAGS SHALL BE LEGALLY DISPOSED OFFSITE.

PUMPED WATER FILTER BAG INSPECTION SCHEDULE AND REPORTING

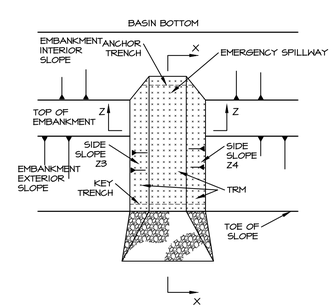
1. INSPECTION OF PUMPED WATER FILTER BAGS SHALL OCCUR AS FOLLOWS:
   - DAILY
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.
3. FOR ADDITIONAL INSPECTION AND REPORTING REQUIREMENTS AND INFORMATION, SEE THE NPDES PERMIT CONDITIONS, EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS, ITEM NO. 2.A (VISUAL INSPECTIONS) FOUND ON SHEET ESC 1.0.

D PUMPED WATER FILTER BAG
NO SCALE



EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY
SECTION X-X

BASIN NO.	WEIR					LINING		CHANNEL	
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	PERM. CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Cd (FT)
1	8	8	293.00	291.25	30	FLEXAMAT	E	3	0.5
4	8	8	314.50	313.00	40	FLEXAMAT	E	3	0.5



PLAN VIEW
RIPRAP OUTLET DISSIPATOR

NOTES:

1. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.
2. THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.
3. HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.
4. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.
5. LINE ENTIRE LENGTH & WIDTH OF SPILLWAY W/ SPECIFIED EROSION CONTROL MATTING & EXTEND TO TOE OF SLOPE OF OUTSIDE EMBANKMENT

E BASIN EMERGENCY SPILLWAY WITH TRM LINING
NO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002388
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

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FOR
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CLIENT:
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975 WESTTOWN ROAD
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MANAGER:	CRH	DATE:	JANUARY 27, 2023
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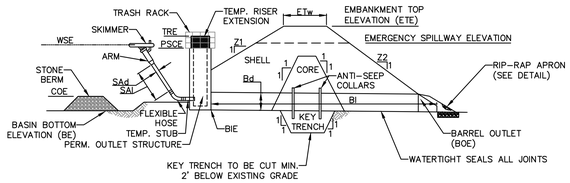
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
35 of 48



BASIN NO.	Z1 (FT)	Z2 (FT)	TEMP RISER EXT. ELEV TRE (FT)	EMERGENCY SPILLWAY		EMBANKMENT				CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
				ELEV. (FT)	WIDTH (FT)	TOP ELEV ETE (FT)	TOP WIDTH ETw (FT)	KEY TRENCH DEPTH (FT)	KEY TRENCH WIDTH (FT)		
4	3	3	312.50	313.00	40	314.50	8	2	4	311.00	310.00

SKIMMER			OUTLET BARREL				
DIA SAd (IN)	LENGTH SAI (FT)	MAT'L	DIA Bd (IN)	INLET ELEV BIE (FT)	MAT'L	LENGTH BI (FT)	OUTLET ELEV BOE (FT)
4" FAIRCLOTH SKIMMER			24	307.25	SLCPP	37	307.00

NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. IN ORDER TO FACILITATE MAINTENANCE AND RESTORATION, THE POOL AREA SHALL BE CLEARED OF ALL BRUSH, TREES, AND OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED, MULCHED, BLANKETED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

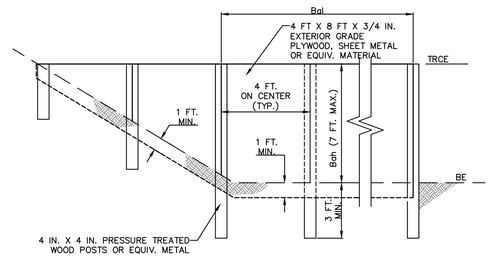
INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PROVIDE ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES. A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE INSPECTED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

STANDARD CONSTRUCTION DETAIL #7-4

A SEDIMENT BASIN 4 DETAIL
NOT TO SCALE



BASIN OR TRAP NO.	BAFFLE		TEMPORARY RISER	BOTTOM
	LENGTH Bal (FT)	HEIGHT Bah (FT)	CREST ELEV. TRCE (FT)	BOTTOM ELEV BE (FT)
1	40	3	290.75	288.50

NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

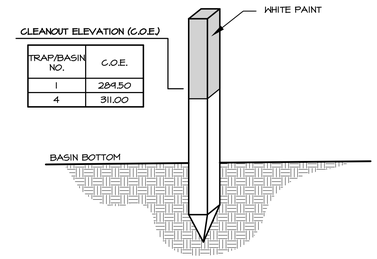
SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7-14

B BAFFLE WALL
NOT TO SCALE



TRAP/BASIN NO.	C.O.E.
1	289.50
4	311.00

NOTES:

1. CLEANOUT MARKER SHALL BE PLACE NEAR THE CENTER OF THE BASIN.
2. TOP OF MARKER SHALL BE PAINTED WHITE TO THE CLEANOUT ELEVATION.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES THE CLEANOUT ELEVATION MARKED ON THE STAKE.

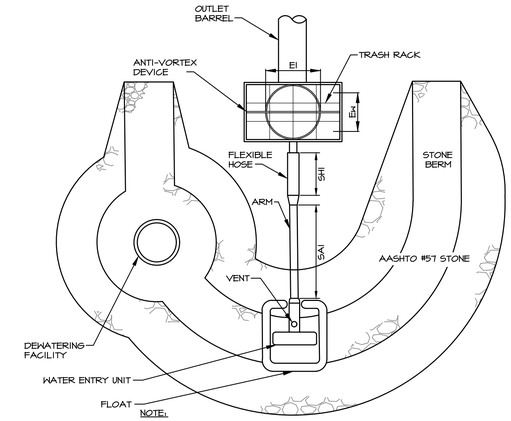
CLEANOUT STAKE INSPECTION SCHEDULE AND REPORTING

1. INSPECTION OF CLEANOUT STAKE SHALL OCCUR AS FOLLOWS:
   - WEEKLY
   - AFTER EACH RUNOFF EVENT (THIS IS REQUIRED IN ADDITION TO THE REQUIRED WEEKLY INSPECTION)
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

CLEANOUT STAKE MAINTENANCE PROGRAM

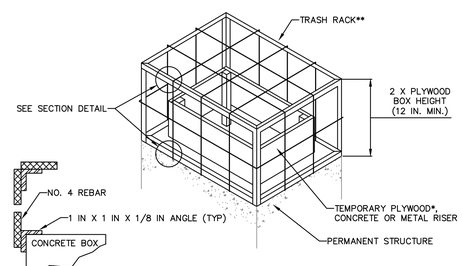
1. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEANOUT ELEVATION ON THE STAKE. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRING FILL MATERIAL OR LEGALLY DISPOSE OFFSITE.

C CLEANOUT MARKER
NO SCALE



NOTE:
1. NO GUIDE RAILS SHALL BE REQUIRED FOR THIS INSTALLATION

D SKIMMER WITH STONE LANDING BERM
NO SCALE



* 3/4 IN. PRESSURE TREATED PLYWOOD BOX WITH 2 IN. X 2 IN. PRESSURE TREATED CORNER SUPPORTS, SET INTO 1-1/2 IN. GRATE OFFSETS, CAULK ALL SEAMS TO FORM WATERTIGHT SEALS.
** TRASH RACK COMPOSED OF 1 IN. X 1 IN. X 1/8 IN. L (TYP.) AND #4 BARS (TYP.) WELDED TO THE ANGLES AND AT EACH INTERSECTION OF THE BARS; #4 BARS SPACED AT HALF THE DIAMETER OF THE BARREL MAX.

NOTES:

BOX SHALL BE BOLTED, STRAPPED, OR OTHERWISE SECURED TO THE PERMANENT RISER.

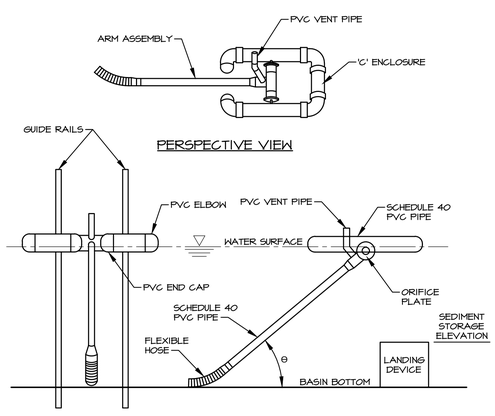
TOP OF TEMPORARY RISER EXTENSION SHALL BE AT LEAST AS HIGH AS SEDIMENT BASIN TEMPORARY RISER AND SHALL BE 6 IN. (MINIMUM) BELOW CREST OF EMERGENCY SPILLWAY.

ALL JOINTS SHALL BE WATER TIGHT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

STANDARD CONSTRUCTION DETAIL #7-10

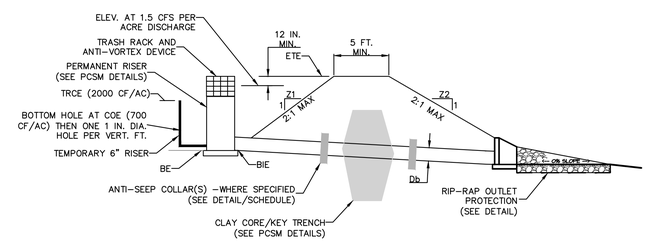
E TEMPORARY RISER EXTENSION AND TRASH RACK FOR PERMANENT STRUCTURE
NOT TO SCALE

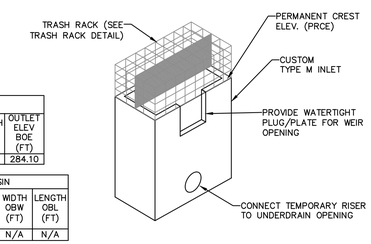


NOTES:

1. THIS DETAIL IS PROVIDED FOR REFERENCE ONLY. SKIMMERS ARE TO BE MANUFACTURED BY J.W. FAIRCLOTH & SON INC. AND TO BE SIZED IN ACCORDANCE WITH THE SPECIFIC DETAILS PROVIDED WITHIN THIS PLAN SET AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.
2. ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER
3. A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.
4. SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
6. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE LANDING DEVICE.
7. A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS.

F SKIMMER
NO SCALE





TRAP NO.	Z1 (FT)	Z2 (FT)	TEMPORARY RISER		PERM. RISER	BARREL				
			BOT PERF ELEV (FT)	CREST ELEV. (TRCE)	CREST ELEV. (PRCE)	MAT'L	DIA Db (IN)	INLET ELEV BIE (FT)	LENGTH BI (FT)	OUTLET ELEV BOE (FT)
1	3	3	289.50	290.75	291.00	SLCPP	18	284.25	28	284.10

TRAP NO.	EMBANKMENT		CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)	OUTLET BASIN				
	TOP ELEV ETE (FT)	TOP WIDTH Etw (FT)			RIPRAP SIZE (R-__)	ROCK THICK Rt (IN)	DEPTH D (IN)	WIDTH OBW (FT)	LENGTH OBL (FT)
1	293.00	10'	289.50	288.50	N/A	N/A	N/A	N/A	N/A

NOTES:

FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

CHECK EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. CLOGGED OR DAMAGED SPILLWAYS AND/OR EMBANKMENTS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.
DISPLACED RIPRAP WITHIN THE OUTLET PROTECTION SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO STORMWATER MANAGEMENT FACILITY.

MODIFIED CONSTRUCTION DETAIL #8-8
CONCRETE RISER WITH TEMPORARY DEWATERING HOLES

G SEDIMENT TRAP 1 CROSS SECTION
NOT TO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

MID-ATLANTIC SPORTS CONSTRUCTION
WE BUILD WINNERS.
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ELA group, inc.
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LITITZ, PA 17543
(717) 626-7271
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE086960
PENNSYLVANIA
REGISTERED LANDSCAPE ARCHITECT
JASON C. BEAM
REGISTRATION NUMBER LA002766

PRELIMINARY/FINAL LAND DEVELOPMENT
SUBJECT:
EROSION & SEDIMENT CONTROL DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
36 of 48

MULCH TYPE	APPLICATION RATES (MIN)			NOTES
	PER ACRE	PER 1,000 sq.ft.	PER 1,000 sq.yd.	
STRAW	3 TONS	140 lb.	1,240 lb.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 lb.	1,240 lb.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS	4-6 TONS	185-275 lb.	1,650-2,500 lb.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 lb.	415 lb.	SEE NOTE 5 FOR LIMITATIONS

NOTES:

1. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
2. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HR CURING PERIOD AND A SOIL TEMPERATURE OF 45° F ARE TYPICALLY REQUIRED.
3. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
4. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
5. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

A MULCH APPLICATION RATES

NO SCALE

1. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
2. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN DRAWINGS IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. TOPSOIL STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SIDE SLOPES MUST BE 2:1 OR FLATTER.
4. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO SEEDING.
6. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE THE DISTURBED AREAS. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
7. AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES 3:1 OR STEEPER, ALL AREAS OF
8. CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF A SURFACE WATER.

B TOPSOIL / STABILIZATION SPECIFICATIONS

NO SCALE

TEMPORARY VEGETATIVE STABILIZATION

SPECIES	ANNUAL RYE (SPRING) OR WINTER RYE (FALL)
% PURE LIVE SEED	95%
APPLICATION RATE	200 LB./ACRE
FERTILIZER TYPE	10-10-10
FERTILIZER APPL. RATE	500 LB./ACRE
LIMING RATE	1 TON/ACRE
MULCH TYPE	HAY OR STRAW
MULCHING RATE	3 TONS/ACRE

PERMANENT VEGETATIVE STABILIZATION

TOPSOIL PLACEMENT DEPTH	4-8 IN.
SPECIES	KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS (1)
% PURE LIVE SEED	95%
APPLICATION RATE	87 LB./ACRE (BLUEGRASS); 240 LB./ACRE (RYEGRASS)
FERTILIZER TYPE	PER SOIL TEST (10-10-20 IF NO TEST DATA)
FERTILIZER APPL. RATE	PER SOIL TEST (1,000 LB./ACRE IF NO TEST DATA)
LIMING RATE	PER SOIL TEST (6 TONS/ACRE IF NO TEST DATA)
MULCH TYPE	HAY OR STRAW
MULCHING RATE	3 TONS/ACRE
ANCHOR MATERIAL	POLYMERIC TACKIFIER
ANCHORING METHOD	SPRAY APPLY W/ A HYDRO-SEEDER OR SIMILAR
RATE OF ANCHOR MATERIAL APPL.	20 LB./ACRE
SEEDING SEASON DATES	APRIL 1 - OCTOBER 15

PERMANENT VEGETATIVE STABILIZATION (SLOPES ≥ 8%)

TOPSOIL PLACEMENT DEPTH	4-8 IN.
SPECIES	KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS (1)
% PURE LIVE SEED	95%
APPLICATION RATE	87 LB./ACRE (BLUEGRASS); 240 LB./ACRE (RYEGRASS)
FERTILIZER TYPE	PER SOIL TEST (10-10-20 IF NO TEST DATA)
FERTILIZER APPL. RATE	PER SOIL TEST (1,000 LB./ACRE IF NO TEST DATA)
LIMING RATE	PER SOIL TEST (6 TONS/ACRE IF NO TEST DATA)
MULCH TYPE	HAY OR STRAW
MULCHING RATE	3 TONS/ACRE
ANCHOR MATERIAL	LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETTING
ANCHORING METHOD	APPLY/STAPLE TO MANUFACTURER'S SPECS
RATE OF ANCHOR MATERIAL APPL.	REFER TO MANUFACTURER'S SPECIFICATIONS
SEEDING SEASON DATES	APRIL 1 - OCTOBER 15

TEMPORARY SEEDING NOTES:

1. TOPSOIL STOCKPILES AND/OR ROUGH GRADED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY IN ACCORDANCE WITH THE SEEDING/MULCHING SCHEDULE.
2. USE HAY OR STRAW MULCH AT THE SPECIFIED RATE FOR AREAS THAT HAVE BEEN SEEDED WITH A TEMPORARY SEED MIXTURE.
3. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES.

PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS:

PERMANENT SEEDING/VEGETATIVE STABILIZATION WILL BE IN ACCORDANCE WITH THE SEEDING SCHEDULE AND THE FOLLOWING PROCEDURES:

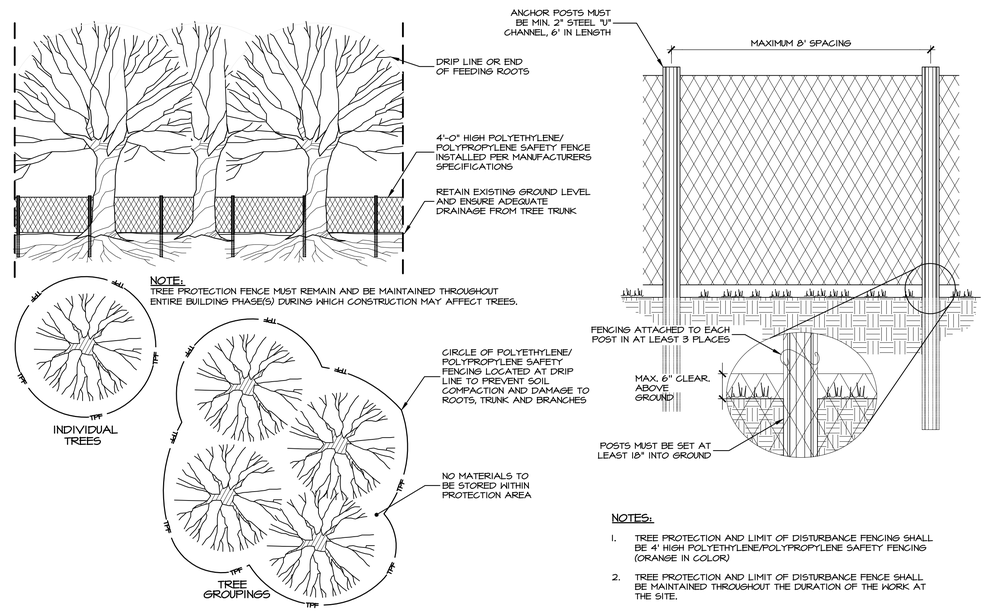
1. ROUGH GRADE AND REMOVE ALL DEBRIS, LARGE STONES, AND CONSTRUCTION MATERIALS.
2. APPLY AGRICULTURAL GRADE LIME AS SPECIFIED BY THE SOIL TEST OR AT A MINIMUM RATE OF 6 TONS/ACRE.
3. APPLY FERTILIZER IN ACCORDANCE WITH THE SOIL TEST. IN THE ABSENCE OF A SOIL TEST, APPLY 10-10-20 FERTILIZER AT A RATE OF 1,000 lbs/ACRE.
4. TILL ALL ABOVE MATERIALS THOROUGHLY INTO A 4"-6" SOIL DEPTH.
5. FINISH GRADE FOR SEEDING.
6. APPLY SEED AT THE SPECIFIED APPLICATION RATE AS INDICATED ON THE SEEDING SCHEDULE(S) - SEE GENERAL SEEDING NOTE 2.
7. RAKE OR DRAG TO COVER SEED LIGHTLY.
8. ROLL LIGHTLY TO PLACE SEED IN CONTACT WITH THE SOIL.
9. APPLY HAY OR STRAW MULCH AT A RATE OF 3 TONS/ACRE.
10. MULCH SHALL BE ANCHORED AS SPECIFIED OR IN ACCORDANCE WITH THE CURRENT PENN STATE UNIVERSITY AGRONOMY GUIDE.

GENERAL SEEDING NOTES:

1. USE TWO (2) VARIETIES OF KENTUCKY BLUEGRASS AND TWO (2) VARIETIES OF PERENNIAL RYEGRASS IN THE PERMANENT/PERMANENT STEEP SLOPE MIXTURES, ALL IN EQUAL PARTS (I.E. 25% EACH).
2. IF PERMANENT SEEDING IS NOT PRACTICAL DUE TO THE TIME OF YEAR, DISTURBED AREA SHALL BE SEEDED WITH ANNUAL RYE (SPRING) OR WINTER RYE (FALL) GRASS AT A RATE OF 200 lbs/ACRE AND MULCHED WITH STRAW AT A RATE OF 3 TONS PER ACRE.
3. THE DEPARTMENT RECOMMENDS THAT SOIL TESTING BE DONE PRIOR TO SEEDING AND MULCHING TO DETERMINE THE PROPER SOIL AMENDMENTS AND APPLICATION RATES FOR THE PROPOSED SEED MIXTURE(S). SOIL TEST KITS ARE INEXPENSIVE AND MAY BE OBTAINED FROM THE COUNTY COOPERATIVE EXTENSION SERVICE OFFICES. WHEN DONE PROPERLY, SOIL TESTS CAN ACTUALLY SAVE MONEY THAT WOULD OTHERWISE BE LOST ON IMPROPER SOIL AMENDMENTS, UNSUCCESSFUL SEEDINGS, AND DAMAGE CAUSED BY EROSION OF UNSTABILIZED AREAS. IN THE ABSENCE OF A SOIL TEST, SOIL AMENDMENTS SHOULD BE ADDED AT THE RATES SPECIFIED BY THE SELECTED SEEDING REFERENCE.
4. FILL SLOPES SHOULD BE SEEDED AND MULCHED AT REGULAR VERTICAL INCREMENTS - 15 TO 25 FEET MAXIMUM - AS THE FILL IS BEING CONSTRUCTED. THIS WILL ALLOW THE BOTTOM OF THE FILL TO PROGRESS TOWARD STABILIZATION WHILE WORK CONTINUES ON THE UPPER PORTION, MAKING FINAL STABILIZATION EASIER TO ACHIEVE AND PROVIDING SOME VEGETATIVE BUFFERING AT THE BOTTOM OF THE SLOPE.
5. WHEREVER SEED AND MULCH IS APPLIED BY HYDROSEEDING METHODS, THE SEED AND MULCH SHOULD BE APPLIED IN SEPARATE APPLICATIONS WITH THE SEED BEING APPLIED FIRST AND THE MULCH SPRAYED ON TOP OF THE SEED. THIS IS TO ENSURE THAT THE SEED MAKES CONTACT WITH THE UNDERLYING SOIL. SOIL PREPARATION SHOULD BE COMPLETED PRIOR TO ADDING SEED TO THE HYDROSEEDING EQUIPMENT. RUNNING SEED THROUGH THE PUMPING SYSTEM CAN RESULT IN EXCESSIVE ABRASION OF THE SEED AND REDUCE THE PERCENTAGE OF PURE LIVE SEED IN THE APPLICATION. THEREFORE ALL SITE PREPARATION SHOULD BE COMPLETED PRIOR TO THE ARRIVAL OF THE HYDROSEEDER.
6. IN CRITICAL AREAS (E.G. ADJACENT TO OR WITHIN 50 FEET OF STREAMS, PONDS, OR WETLANDS) A PROTECTIVE BLANKET SHOULD BE PROVIDED FOR ALL SEEDED AREAS. CONSIDERATION SHOULD BE GIVEN TO USE OF MULCH WITH NETTING OR PROTECTIVE BLANKETS FOR ALL SEEDED AREAS ON SLOPES 3H:1V OR STEEPER.
7. WHEN WETLAND AREAS ARE TEMPORARILY DISTURBED, ISOLATE AND STOCKPILE TOPSOIL FOR REPLACEMENT AFTER GRADING IS COMPLETED. IN MOST CASES, NO SEEDING OF THE DISTURBED AREA IS NECESSARY AFTER THE TOPSOIL IS REPLACED. THE SOIL CONTAINS SUFFICIENT SEED AND ROOT MATERIAL TO REESTABLISH VEGETATION. IF TEMPORARY VEGETATIVE STABILIZATION IS NECESSARY, APPLY ANNUAL RYEGRASS AT THE RATE NOT EXCEEDING 48 LB PLS/ACRE. APPLY CLEAN STRAW AS A MULCH AT THE RATE OF 3 TONS/ACRE. NO SOIL AMENDMENTS SHOULD BE USED ON WETLAND AREAS.
8. VEHICULAR TRAFFIC SHOULD BE RESTRICTED FROM AREAS TO BE SEEDED TO PREVENT SOIL COMPACTION.
9. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
10. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES.
11. 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.
12. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

C SEEDING SCHEDULE & NOTES

NO SCALE



NOTE:
TREE PROTECTION FENCE MUST REMAIN AND BE MAINTAINED THROUGHOUT ENTIRE BUILDING PHASE(S) DURING WHICH CONSTRUCTION MAY AFFECT TREES.

NOTES:

1. TREE PROTECTION AND LIMIT OF DISTURBANCE FENCING SHALL BE 4' HIGH POLYETHYLENE/POLYPROPYLENE SAFETY FENCING (ORANGE IN COLOR)
2. TREE PROTECTION AND LIMIT OF DISTURBANCE FENCE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE WORK AT THE SITE.

D TREE PROTECTION AND LIMIT OF DISTURBANCE FENCING

NO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084690

PENNSYLVANIA
JASON C. BESSER
REGISTRATION NUMBER 1400596
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

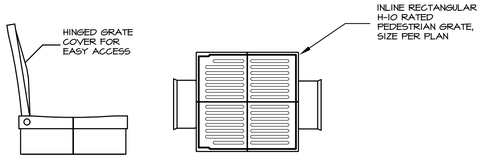
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
EROSION & SEDIMENT CONTROL DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

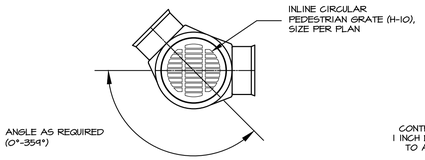
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
37 of 48



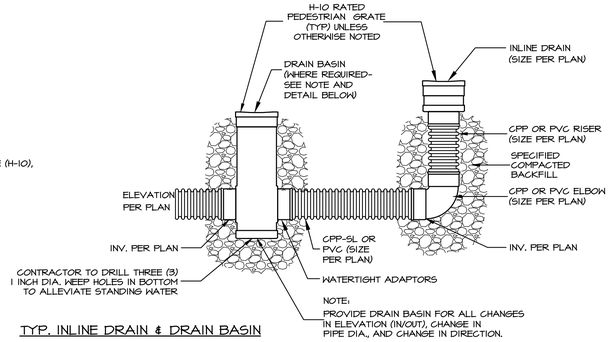
RECTANGULAR DRAIN BASIN



CIRCULAR DRAIN BASIN

NOTES:
1. PROVIDE NYLOPLAST (OR APPROVED EQUAL) COMPONENTS, INCLUDING, BUT NOT LIMITED TO, GRATES, RISERS, CONNECTIONS. ALL COMPONENTS TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURES SPECIFICATIONS. CONTRACTOR TO SELECT NECESSARY COMPONENTS BASED UPON SPECIFIED PIPE SIZE, PIPE ALIGNMENT, AND SPECIFIED ELEVATIONS.

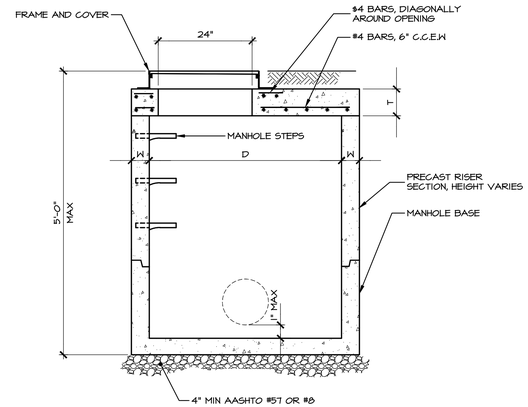
2. GRATE TO BE LOCKED OR BOLTED DOWN FOR SECURE TAMPERPROOF CONNECTION.



TYP. INLINE DRAIN & DRAIN BASIN

A NYLOPLAST INLETS DETAIL

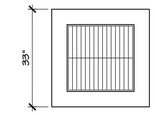
NO SCALE



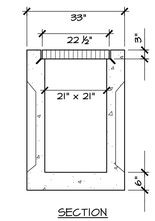
D	W	T
4'-0"	5"	6"
5'-0"	6"	8"
6'-0"	7"	8"

B SHALLOW MANHOLE DETAIL - STORM SEWER

NO SCALE



PLAN



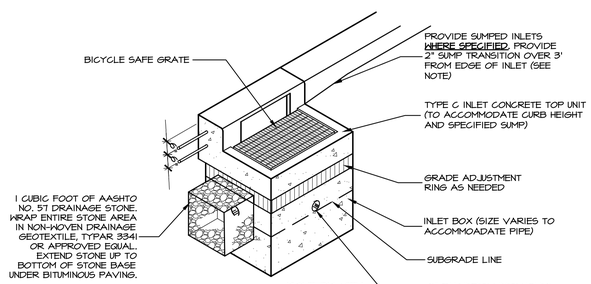
SECTION

NOTES:

1. REFER TO "PADOT TYPE STORMWATER INLET" DETAIL FOR STANDARD INLET NOTES.
2. ALL GRATES TO BE BICYCLE SAFE.
3. USE RISER SECTIONS AND PRECAST GRADE RINGS AS REQUIRED TO PROVIDE INDICATED INVERT AND TOP OF GRATE ELEVATIONS.

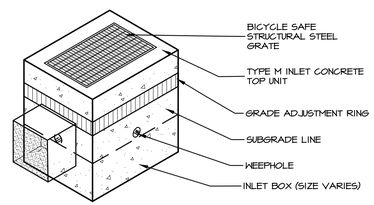
C 2' X 2' PRECAST YARD INLET

NO SCALE



ISOMETRIC VIEW

PA DOT TYPE 'C' INLET



ISOMETRIC VIEW

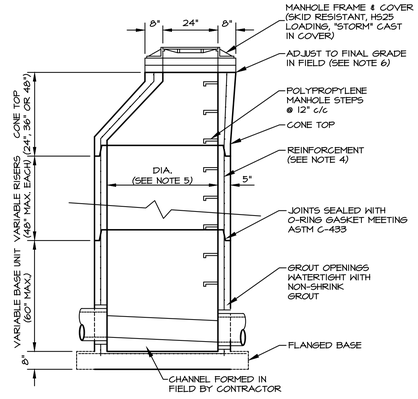
PA DOT TYPE 'M' INLET

INLET NOTES:

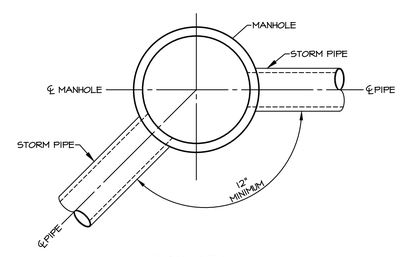
1. MATERIAL AND CONSTRUCTION BASED UPON PENNDOT STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH PA DOT PUBLICATION 408, SECTION 605 & APPLICABLE PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION PERTAINING TO INLET STRUCTURES.
2. THIS DETAIL DEPICTS THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. IT IS NOT INTENDED TO SHOW THE DETAILS REQUIRED FOR MANUFACTURING AND HANDLING. ONLY THOSE ITEMS WHICH ARE SUPPLIED BY AN APPROVED MANUFACTURER AS LISTED IN PA BULLETIN NO 15 WILL BE PERMITTED.
3. INLETS WITHIN THE PENNDOT RIGHT OF WAY SHALL BE IN ACCORDANCE WITH PENNDOT ROADWAY CONSTRUCTION STANDARDS, LATEST REVISION, AND AS PER APPROVED PENNDOT HIGHWAY OCCUPANCY PERMIT PLANS.
4. INLETS WITHIN A MUNICIPAL ROADWAY/RIGHT OF WAY SHALL BE APPROVED BY THE MUNICIPALITY PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES, MATERIAL AND ALIGNMENT PRIOR TO ORDERING PRE CAST STRUCTURES.
6. CONCRETE TOP UNITS WHICH SEAT THE GRATE DIRECTLY WITHIN THE UNIT SHALL UTILIZE 1-1/4" X 1-1/4" ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE GRATE.
7. WHENEVER AN INLET IS REQUIRED WITHIN A MOUNTABLE CURB SECTION, A TYPE M INLET WILL BE LOCATED ADJACENT TO THE BACK EDGE OF THE CURB AND WILL BE FLUSH WITH THE PAVEMENT SURFACE. SEE PA DOT RC-65 FOR INSTALLATION DETAILS.
8. THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET TYPE IS THE CONTRACTOR'S RESPONSIBILITY.
9. PIPES SHALL BE LOCATED AS REQUIRED.
10. WEEP HOLES SHALL BE INSTALLED IN INLET BOXES WITHIN PAVED AREAS TO PERMIT DRAINAGE OF THE PAVEMENT SUBBASE, UNLESS OTHERWISE APPROVED.
11. USE PRE CAST CONCRETE GRADE ADJUSTMENT RINGS FOR FINAL GRADE. BRICKS, BLOCKS, MORTAR, ETC. ARE NOT PERMITTED AS GRADE ADJUSTMENTS.
12. INLET BOX SHALL BE PRE CAST CONCRETE, UNLESS OTHERWISE SPECIFIED OR APPROVED.
13. ALL ON-SITE INLETS SHALL HAVE TOP UNITS TO MATCH CURB REVEAL AND SPECIFIED SUMP.
14. INLETS THAT ARE FIVE FOOT OR GREATER IN DEPTH SHALL HAVE POLYPROPYLENE ENGASED MANHOLE STEPS INSTALLED.
15. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOM, UNLESS OTHERWISE NOTED (SUCH AS SNOUTS, WATER QUALITY INLETS, DESIGNATED SEDIMENT STORAGE, ETC.) ON THE PLANS.
16. PROVIDE PRECAST OPENING IN THE INLET BOX FOR ALL ROOF LEADER DRAINAGE CONNECTIONS, UNLESS OTHERWISE APPROVED. PROVIDE OPENINGS TO THE INLET BOX AT THE REQUIRED ELEVATIONS AND LOCATION. ALL CONNECTIONS SHALL BE WATERTIGHT.
17. PROVIDE PRE-CAST OPENINGS IN THE INLET BOX TO ACCOMMODATE ROADWAY, PARKING, AND BUILDING UNDERDRAINS WHERE SPECIFIED ON THE PLANS.
18. A 2" SUMP ON TYPE 'C' INLETS SHALL BE PROVIDED ONLY WHERE NOTED ON THE STORMWATER PIPE PROFILES. THE 2" SUMP TRANSITION ALONG CURB GUTTER LINE SHALL BE ADJUSTED ACCORDINGLY FOR FIELD CONDITIONS, ADA REQUIREMENTS, AND/OR AS SPECIFIED/DETAILED ON THE PLANS.
19. FINAL INLET TOP OF GRATE ELEVATION SHALL BE ADJUSTED TO ACCOUNT FOR SPECIFIED ROAD GRADE.
20. GROUT OPENINGS AROUND PIPE CONNECTIONS TO PROVIDE A WATERTIGHT JOINT. USE NON-SHRINK GROUT ON INSIDE & OUTSIDE OF STRUCTURE.
21. ALL JOINTS ADJACENT TO BITUMINOUS PAVING SHALL BE SEALED WITH P664-22.
22. PROVIDE 2'X6' INLET BOXES, DOUBLE 2'X4' BOXES, ETC. WHERE NOTED ON THE PLAN.
23. CONSULT THE PLANS FOR ANY SPECIFIC SUMP REQUIREMENTS FOR TYPE M' INLETS LOCATED IN A SAG CONDITION.

D PA DOT TYPE STORMWATER INLETS (TYPE 'C' & 'M')

NO SCALE



SECTION VIEW



PLAN VIEW

NOTES:

1. MANHOLE BASED UPON TERRE HILL CONCRETE PRODUCTS, TERRE HILL, PA (800-242-1504). USE ONLY PADOT MANHOLES CONSTRUCTED IN ACCORDANCE WITH PADOT PUBLICATION 72, RC-34 STANDARD, WHERE PERFORMING WORK IN PADOT RIGHTS-OF-WAY.
2. ALL PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM-C478.
3. ALL CONCRETE SHALL CONFORM TO PADOT PUBLICATION 408, SECTION 714, CLASS AA.
4. PROVIDE REINFORCEMENT IN ACCORDANCE WITH PADOT PUBLICATION 72, RC-34 STANDARD.
5. THE DIAMETER OF THE MANHOLES PROVIDED SHALL BE BASED UPON PROVIDING A MINIMUM OF 12-INCHES OF HORIZONTAL SEPARATION BETWEEN OPENINGS LOCATED AT THE SAME DEPTH. PIPES NOT LOCATED AT THE SAME DEPTH MUST BE LOCATED VERTICALLY AT LEAST ONE TIMES THE MAXIMUM OPENING DIAMETER APART WHERE THE HORIZONTAL SEPARATION IS NOT PROVIDED. IN ALL CASES, THE MAXIMUM PIPE SIZE AND OPENING IN PRECAST MANHOLES SHALL BE AS FOLLOWS:

MANHOLE DIA.	MAXIMUM PIPE SIZE	MAXIMUM OPENING
4'-0"	30"	38"
5'-0"	42"	50"
6'-0"	54"	62"
8'-0"	72"	80"

6. ADJUST MANHOLE TO FINAL GRADE WITH PRECAST CONCRETE GRADING RINGS. MAXIMUM ADJUSTMENT IS 12-INCHES.
7. PROVIDE GRADE ADJUSTMENT RISERS OF ADJUSTABLE INSERTS IN ACCORDANCE WITH PADOT PUBLICATION 72, RC-34 STANDARD. LOCATE TOP OF FRAME OF ADJUSTMENT RISER 1/8" BELOW THE TOP OF THE ROADWAY SURFACE.
8. FRAME AND/OR PRECAST CONCRETE GRADE RINGS TO BE ATTACHED RIGIDLY TO THE TOP OF THE MANHOLE WITH THREADED STUDS IN ACCORDANCE WITH PADOT PUBLICATION 72, RC-34 STANDARD. THE BASE OF THE FRAME AND/OR PRECAST CONCRETE GRADE RINGS TO BE SET IN A BED OF CEMENT MORTAR.
9. SEAL ALL JOINTS BETWEEN MANHOLE SECTIONS WITH "RAMNEK" OR EQUAL SEALANT.
10. ALL PROPOSED AND EXISTING ROOF LEADER DRAINAGE CONNECTIONS TO BE CORE-BORED INTO THE MANHOLE AT THE REQUIRED ELEVATION AND LOCATION AND ATTACHED WITH A WATERTIGHT CONNECTION.
11. CONTRACTOR SHALL VERIFY MANHOLE SIZING BASED ON PIPE SIZES, MATERIAL, AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES.
12. THIS STANDARD DEPICTS THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. IT IS NOT INTENDED TO SHOW THE DETAILS REQUIRED FOR MANUFACTURING AND HANDLING. ONLY THOSE ITEMS WHICH ARE SUPPLIED BY AN APPROVED MANUFACTURER AS LISTED IN PA BULLETIN NO. 15 WILL BE PERMITTED.

E PRECAST STORM SEWER MANHOLE

NO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
2. CCCD COMMENTS	3-17-2023	TEH
3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4. CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5. CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084960

PENNSYLVANIA
JASON C. BESS
REGISTRATION NUMBER 1000298
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

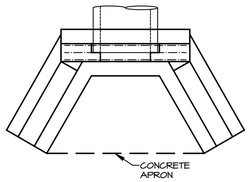
PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
STORMWATER DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

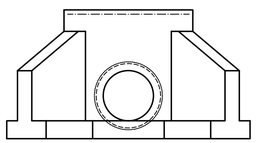
CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

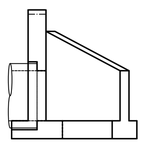
DRAWING NO.
38 of 48



TOP VIEW



FRONT VIEW



SIDE VIEW

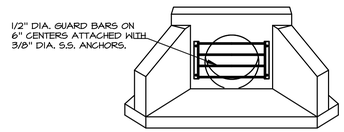
NOTES:

1. ALL ENDWALLS SHALL BE PRECAST IN ACCORDANCE WITH PADOT PUBLICATION 408, SECTION 714, CLASS AA & IN ACCORDANCE WITH PADOT PUBLICATION 72, RC-31 STANDARD, AS AMENDED.
2. ALL CONCRETE SHALL CONFORM TO PADOT PUBLICATION 408, SECTION 704, CLASS AA.
3. REINFORCING STEEL SHALL CONFORM TO PADOT PUBLICATION 408, SECTION 709, AND PUBLICATION 72, RC-31 STANDARD.
4. EXPOSED EDGES SHALL BE CHAMFERED 1".
5. PROVIDE PIPE OPENING SIZE IN PRECAST UNITS TO ACCOMMODATE PIPE SIZE, MATERIAL AND ALIGNMENT.
6. PROVIDE CONCRETE APRON UNLESS OTHERWISE SPECIFIED.
7. GROUT OPENINGS AROUND PIPE CONNECTION TO THE STRUCTURE TO PROVIDE A WATERTIGHT JOINT AND CONNECTION USING A NON-SHRINK GROUT ON THE INSIDE AND OUTSIDE OF THE THE STRUCTURE.

A PRECAST TYPE 'DW' ENDWALL

NO SCALE

(TYPE 'DW' & 'D' ENDWALLS ONLY)



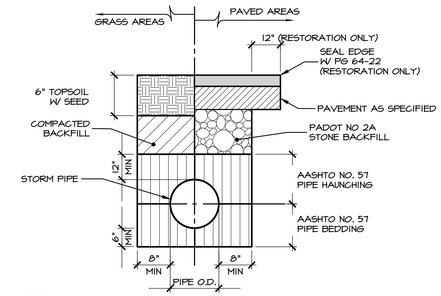
ISOMETRIC

NOTES:

1. MATERIAL TO BE: GALVANIZED STEEL WRUST INHIBITOR OR STAINLESS STEEL.
2. IF STEEL IS UTILIZED, THE UNIT SHALL BE FABRICATED, CLEANED AND THEN HOT DIP GALVANIZED AFTER FABRICATION.
3. DIMENSION APPROPRIATELY FOR HEADWALL UTILIZED.
4. TRASH RACK BASED ON MONARCH PRODUCTS, INC. TRASH RACK (717-938-9785).

B TRASH RACK DETAIL

NO SCALE

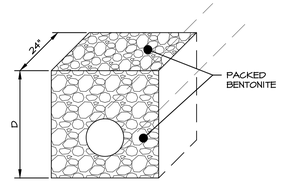


NOTES:

1. THIS DETAIL IS NOT TO BE USED FOR PIPES CONNECTED TO OUTLET STRUCTURES OR INTENDED TO CONVEY RUNOFF FROM STORMWATER MANAGEMENT FACILITIES.
2. STORMWATER FACILITY OUTLET PIPES SHALL BE LAID AND BACKFILLED WITH COMPACTED SOILS FROM THE SITE.

C STORM PIPE TRENCH DETAIL

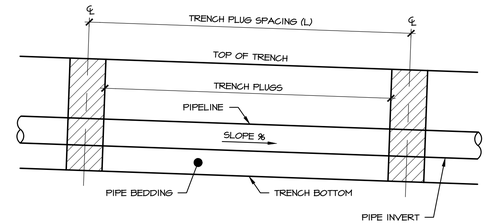
NO SCALE



SECTION VIEW

NOTES:

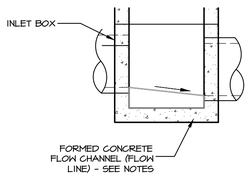
1. TRENCH PLUGS ARE TO BE INSTALLED FOR ALL PIPES GREATER THAN 50' IN LENGTH AND LOCATED IN GRASSED AREAS.
2. FOR ALL PIPES OUTLETTING STORMWATER MANAGEMENT FACILITIES, THE FIRST TRENCH PLUG IS TO BE INSTALLED A MAXIMUM OF 10' FROM THE OUTLET STRUCTURE OR AS INDICATED ON THE DETAILS.

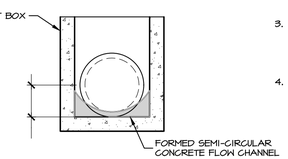


ELEVATION

D TRENCH PLUG DETAIL

NO SCALE



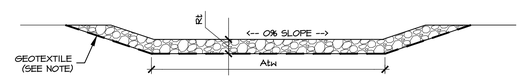


NOTES:

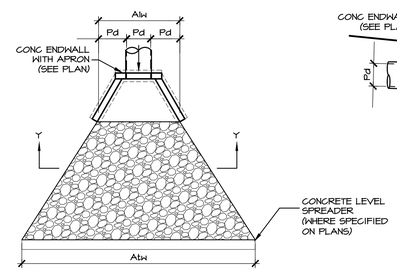
1. FORMED FLOW CHANNEL TO HAVE SEMICIRCULAR GEOMETRY AND BE CONSTRUCTED TO PROVIDE SELF CLEANING OF INLET.
2. CONTRACTOR SHALL PROVIDE A SMOOTH, UNIFORM ELEVATION CHANGE FROM THE INVERT IN TO THE INVERT OUT ALONG THE FLOW CHANNEL FOR ALL STRUCTURES, IN ACCORDANCE WITH THE ELEVATIONS AS IDENTIFIED ON THE STORM WATER PROFILES SHEETS.
3. FLOW CHANNEL TO BE CONSTRUCTED WITH CONCRETE (3000 PSI) OR OTHER SUITABLE, COUNTY APPROVED MATERIAL.
4. ALL UNDERGROUND STORMWATER PIPING, OTHER THAN THOSE SPECIFICALLY INTENDED FOR GROUNDWATER COLLECTION, SHALL BE CONSTRUCTED WITH WATERTIGHT JOINTS AND CONNECTIONS

E CATCH BASIN FLOW CHANNEL

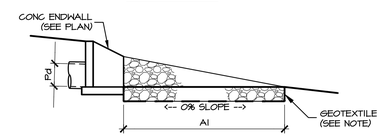
NO SCALE



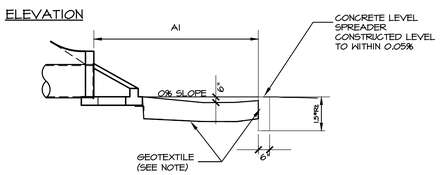
SECTION Y-Y



PLAN



ELEVATION



ELEVATION - W/ LEVEL SPREADER

NOTES:

1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. RIPRAP APRONS SHOULD BE CONSTRUCTED AT OR NEAR ZERO GRADE FROM BACK TO FRONT AND SIDE TO SIDE. WHERE APRONS ARE CONSTRUCTED WITH A GRADIENT BACK TO FRONT, THE ROCK SIZE AND/OR APRON LENGTH SHOULD BE ADJUSTED UPWARDS TO COMPENSATE. IN NO CASE SHOULD RIPRAP APRONS BE CONSTRUCTED WITH A BACK TO FRONT GRADIENT EXCEEDING 5%.
3. INSTALL CLASS 2 GEOTEXTILE MATERIAL BETWEEN RIPRAP AND SUBGRADE.
4. USE THIS CONFIGURATION FOR ALL RIPRAP PLACEMENT AT OUTLET STRUCTURES UNLESS OTHERWISE NOTED.

OUTLET NO.	PIPE DIA. (Pd) (IN)	RIPRAP		APRON		
		SIZE (R-_)	THICK. Rt (IN)	LENGTH Ai (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
EW-A1	18	R-4	18	12	4.5	16.5
EW-A2	18	R-4	18	12	4.5	16.5
EW-B1	24	R-4	18	14	6	22
EW-B2	15	R-3	9	9	3.75	12.75

RIPRAP APRON MAINTENANCE PROGRAM

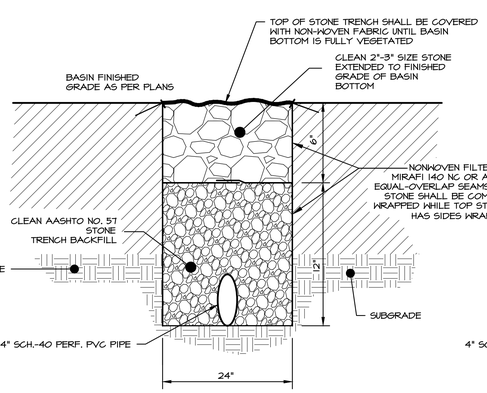
1. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIPRAP APRON INSPECTION SCHEDULE AND REPORTING

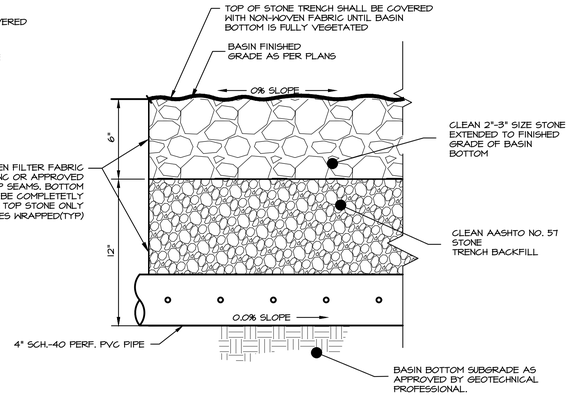
1. INSPECTION OF RIPRAP APRONS SHALL OCCUR AS FOLLOWS:
   - WEEKLY
   - AFTER EACH RUNOFF EVENT (THIS IS REQUIRED IN ADDITION TO THE REQUIRED WEEKLY INSPECTION)
2. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ANY REPAIRS MADE SHALL BE KEPT AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   (1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
   (2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.
3. FOR ADDITIONAL INSPECTION AND REPORTING REQUIREMENTS AND INFORMATION, SEE THE NPDES PERMIT CONDITIONS, EFFLUENT LIMITATIONS, MONITORING, AND REPORTING REQUIREMENTS, ITEM NO. 2.A (VISUAL INSPECTIONS) FOUND ON SHEET ESC 1.0.

G RIPRAP APRON DETAIL (W/ ENDWALL)

NO SCALE



SECTION



PROFILE

F BASIN STONE DEWATERING TRENCH BASIN AND UNDERDRAIN DETAIL

NO SCALE

REVISIONS PER:		DATE:	BY:
1.	CCCD COMMENTS	3-1-2023	TEH
2.	CCCD COMMENTS	3-17-2023	TEH
3.	LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4.	CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5.	CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

MID-ATLANTIC SPORTS CONSTRUCTION
WE BUILD WINNERS.
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE081490

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER LA027266
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

STORMWATER DETAILS

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

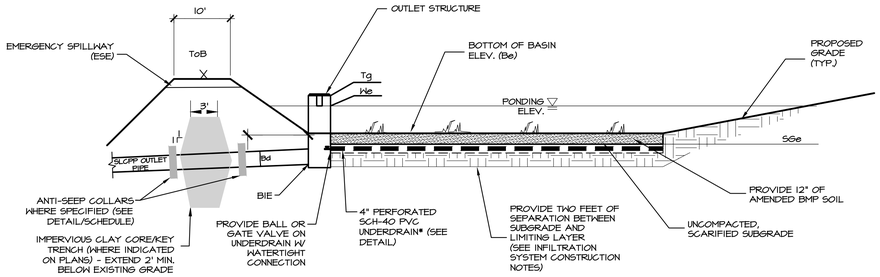
CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.

UPI NO(S): 67-5-27



CROSS SECTION

NOTE:

1. THE BERM SHALL BE CONSTRUCTED OF EARTH OF A CLAY BASE WITH NO TOPSOIL AND A CUTOFF TRENCH KEY CONTINUOUS ALONG THE BERM BASE. BERM MATERIAL & COMPACTION SHALL BE IN ACCORDANCE WITH PADOT SPECIFICATION PUBLIC ACTION 408, SECTION 206.
2. BASIN DISCHARGE PIPE TO BE PROVIDED WITH WATER TIGHT JOINTS. ALL CONNECTIONS TO STORM STRUCTURES SHALL BE WATER TIGHT. BACKFILL TRENCH WITH COMPACTED ONSITE MATERIAL.
3. STRIP AND REMOVE ALL TOPSOIL AND ORGANIC MATTER FROM THE SUBGRADE OF THE BASIN EMBANKMENT AREA.
4. A GEOTECHNICAL PROFESSIONAL SHALL APPROVE THE EMBANKMENT SUBGRADE PRIOR TO FILL PLACEMENT.
5. FINAL INTERIOR/EXTERIOR SIDE SLOPES SHALL NOT EXCEED A 3H:1V SLOPE. SEE APPROVED GRADING PLAN.
6. SEE INFILTRATION SYSTEM CONSTRUCTION NOTES FOR RESTRICTIONS DETAILED INFORMATION ON CONSTRUCTION REQUIREMENTS.

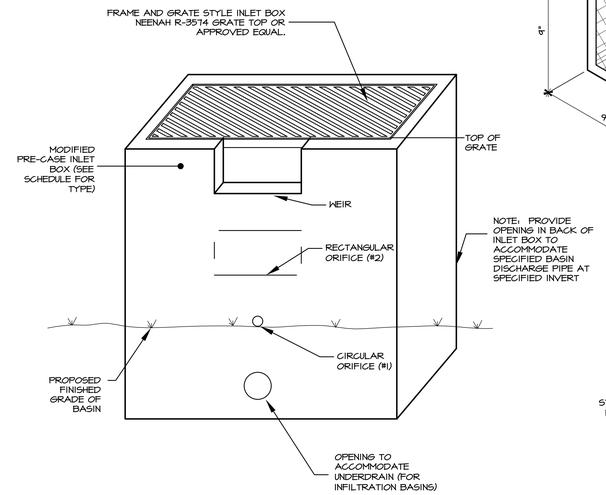
UNDERDRAIN/VALVE NOTES

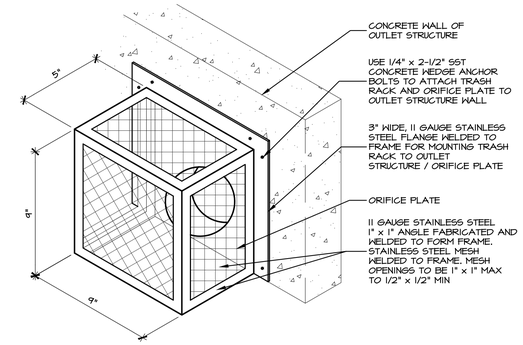
UNDERDRAINS AND BACKUP VALVES ARE PROPOSED TO ALLOW FOR EMERGENCY MAINTENANCE ACTIVITIES ONLY. VALVES ARE TO REMAIN CLOSED AT ALL TIMES. IF UNSUITABLE CONDITIONS ARISE, SUCH AS SATURATED SOILS OR DEWATERING TIMES EXCEEDING 24 HOURS, VALVES MAY BE OPEN TEMPORARILY IN ORDER TO ESTABLISH PERMANENT VEGETATION. AFTER ESTABLISHMENT, VALVES MAY ONLY BE OPEN IN ORDER TO DRAIN THE FACILITIES AS REQUIRED FOR PERIODIC MAINTENANCE OR FOR UNFORESEEN MAINTENANCE SUCH AS SINKHOLE REPAIR OR BASIN REMEDIATION. THE TOWNSHIP SHALL BE NOTIFIED ANY TIME THAT THE VALVE IS OPENED.

INFILTRATON BASIN SCHEDULE										
BMP NO.	BOTTOM ELEV. (Be)	SUBGRADE ELEV. (SGe)	UNDERDRAIN INVERT (UDI)	TOP OF BERM (ToB)	EMERGENCY SPILLWAY (ESE)	OUTLET STRUCTURE			OUTLET PIPE	
						TYPE	TOP OF GRATE (TG)	WEIR/ORIFICE ELEV. (We)	INVERT ELEV. (BIE)	SIZE (IN.)
1	288.50	287.50	287.67	293.00	291.25	2'X4' INLET	291.00	289.50	284.25	18
4	310.00	309.00	309.17	315.00	313.00	2'X4' INLET	311.00	N/A	307.25	24

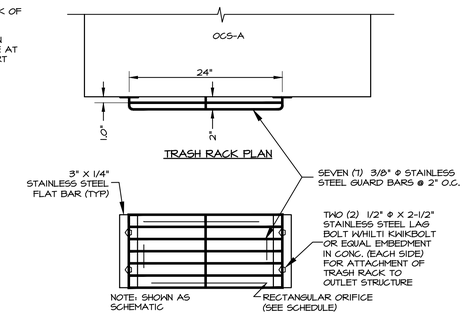
A TYPICAL INFILTRATION BASIN/RAIN GARDEN CROSS SECTION

SCALE: NTS





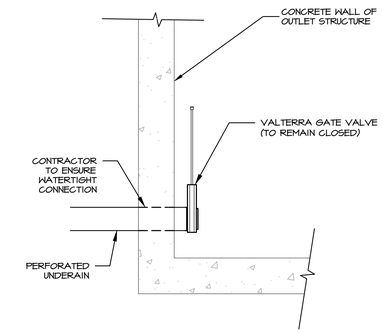
ORIFICE (2" OR LESS DIA) TRASH RACK DETAIL



TRASH RACK PLAN

TRASH RACK ELEVATION

RECTANGULAR ORIFICE TRASH RACK DETAIL



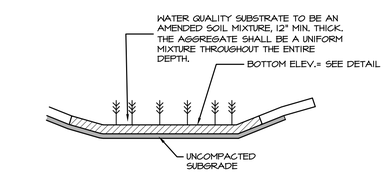
UNDERDRAIN/VALVE CONFIGURATION

OUTLET CONTROL STRUCTURE SCHEDULE														
BMP NO.	STRUCTURE ID	ORIFICE #1		ORIFICE #2		WEIR		GRATE INLET		UNDERDRAIN		OUTLET PIPE	
		SIZE (IN)	INV. ELEV.	SIZE (IN)	INV. ELEV.	WIDTH (IN)	INV. ELEV.	TYPE	TOP OF GRATE ELEV.	SIZE (IN)	INV. ELEV.	SIZE (IN)	INV. ELEV.
1	OCS-1	N/A	N/A	N/A	N/A	24"	289.50	2'X4'	291.00	4"	287.67	18	284.25
4	OCS-4	N/A	N/A	N/A	N/A	N/A	N/A	2'X4'	311.00	4	309.17	24	307.25

*CONTRACTOR TO CONFIRM OUTLET PIPE SIZE/INVERT FOR BASIN B-4 UTILIZING HYDROBLOXX UNDERDRAINS AND HYDROBLOXX TRANSITION BLOCK
**SEE EROSION AND SEDIMENT CONTROL PLAN DETAILS FOR TEMPORARY OUTLET STRUCTURE CONFIGURATION WHEN ORDERING STRUCTURE

B BASIN OUTLET STRUCTURE DETAIL AND SCHEDULE

NO SCALE



AMENDED SOIL MIXTURE NOTES

1. WATER QUALITY SUBSTRATES AND ASSOCIATED SOILS SHALL BE SELECTED TO ENSURE CONVEYANCE AND PERMEABILITY (MIN. 1"/HR, MAX 6"/HR) TO THE PROPOSED UNDERDRAIN OR SUBGRADE.
2. IN-PLACE INFILTRATION TESTS OF THE AMENDED SOIL IS REQUIRED IN ALL INFILTRATION BMPS WHERE AMENDED SOILS ARE PROPOSED. A MINIMUM OF TWO TESTS PER BASIN SHALL BE PERFORMED UTILIZING ACCEPTABLE METHODS AS DESCRIBED IN THE PADEP BMP MANUAL IN ORDER TO CONFIRM THAT ACCEPTABLE INFILTRATION RATES HAVE BEEN ACHIEVED.
3. CLAY SOILS OR OTHER COHESIVES THAT PREVENT INFILTRATION SHALL NOT BE PERMITTED.
4. ALL SOIL TO BE UTILIZED IN THE AMENDED SOIL MIXTURE SHALL BE TESTED AND VERIFIED TO CONTAIN A MAXIMUM OF 5% CLAY CONTENT, OR A PERCENTAGE APPROVED BY THE TESTING AGENCY TO ENSURE PROPER PERMEABILITY.
5. ALL SOILS SHALL BE TESTED AND VERIFIED NOT TO CONTAIN ANY CONTAMINANTS OR OBJECTIONABLE MATERIALS THAT WOULD COMPROMISE THE INTENT OF WATER QUALITY.
6. THE LEAF BASED COMPOST SHALL BE PROVIDED WITH A MATERIAL CERTIFICATION FROM THE SUPPLIER FOR APPROVAL PRIOR TO INSTALLATION. NO BIO-SOLIDS OR OTHER SUCH CONTAMINATES ARE PERMITTED.

SOIL INSTALLATION & COMPACTION NOTES FOR BMP:

1. CONTRACTOR TO SELECT EQUIPMENT TO MINIMIZE COMPACTION OF THE REQUIRED AMENDED SOILS WITHIN THE BMP AREA.
2. THE AMENDED SOIL MIXTURE SHALL BE FULLY AND PROPERLY BLENDED TO PROVIDE A UNIFORM HOMOGENEOUS MIXTURE.
3. PLACE AMENDED SOIL MIXTURE AT 12" MAX. LIFTS. PRESOAK LIFTS WITH LIGHT WATERING TO ENCOURAGE NATURAL COMPACTION OR IF CONSTRUCTION SCHEDULE PERMITS, ALLOW FOR NATURAL SETTLEMENT WITH THE HELP OF RAIN EVENT TO PRESOAK THE SOIL MEDIUM.
4. IF NATURAL SETTLEMENT IS ANTICIPATED, THE CONTRACTOR SHALL BACKFILL AN APPROPRIATE AMOUNT ABOVE THE SPECIFIED BMP BOTTOM INVERT TO ACCOUNT FOR SUCH.

RECOMMENDED PRE-MIXED BLEND:

SMS BIO SOIL BLEND
NEW ENTERPRISE STONE & LIME CO., INC.
814-766-2211
www.nesl.com

IT IS RECOMMENDED THAT SMS BIO-SOIL BY NEW ENTERPRISE STONE & LIME CO, INC. ALTERNATIVE BLENDS MAY BE USED IF PRE-APPROVED BY THE TOWNSHIP AND DESIGN ENGINEER TO MEET THE FOLLOWING MINIMUM REQUIREMENTS:

TYPICAL AMENDED SOIL MIXTURE

33.33%	FINE COMPOST
66.67%	TOPSOIL

FINE COMPOST FOR BMP SOIL:

75%	BY VOLUME RECYCLED PLANT WASTE
25%	MAX. OTHER APPROVED ORGANIC WASTE (NO POST-CONSUMER FOOD WASTE, MANURE OR BIO-SOLIDS)*

*SOIL SAMPLE MUST BE APPROVED BY DESIGN AND TOWNSHIP ENGINEER PRIOR TO PLACEMENT. CONTRACTOR TO VERIFY NO POST CONSUMER FEED WASTE OR SOLIDS USED IN PREPARATION OF SOILS.

TOPSOIL VERIFICATION

1. ANY AND ALL TOPSOIL TO BE USED IN AMENDED SOIL MIXTURE SHALL UNDERGO APPROPRIATE LAB TESTING AS PRESCRIBED BY A QUALIFIED GEOTECHNICAL PROFESSIONAL IN ORDER TO DETERMINE THE SUITABILITY FOR USE IN THE ABOVE AMENDED SOIL BLEND MIX.

SEEDING NOTES AND RECOMMENDATIONS FOR BMP BASINS

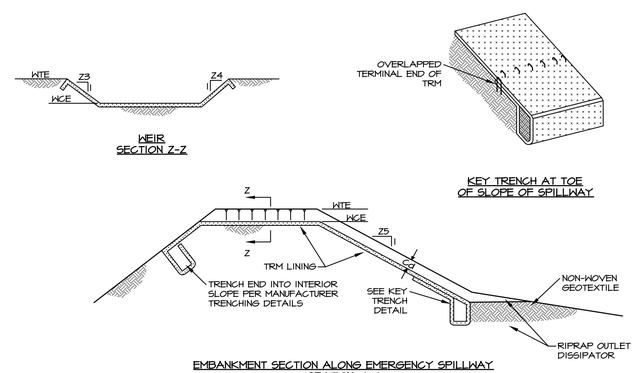
1. TO PREVENT SEED MIGRATION IN RAIN EVENTS, HYDROSEEDING OR AN APPROVED METHOD SHALL BE EMPLOYED TO THE BASIN BOTTOM ACCORDING TO MANUFACTURES RECOMMENDATIONS.
2. SUCH HYDROSEEDING SHALL INCORPORATE AN APPROPRIATE MIXTURE OF SEED, MULCH, AND TACKIFIER COAGULANT TO WATER TO FORM A THICK SLURRY. THIS SLURRY IS APPLIED WITH PRESSURE TO PREPARED SOIL SURFACE FOR BETTER SEED GERMINATION AND PLANT DEVELOPMENT, WHILE PREVENTING EROSION.
3. IN ANTICIPATED AREAS OF EROSION FROM STORMWATER INUNDATION, A JUTE MATTING OR EQUAL APPROVED EROSION CONTROL LINING SHALL BE INSTALLED ALONG THE BASIN BOTTOM TO PROVIDE A SOIL STABILIZER AND ASSIST WITH PROPER GERMINATION OF THE BMP SEED MIX.
4. WHERE A PERMANENT LINING IS SPECIFIED WITHIN THE BMP SEEDING LIMITS, A THIN LAYER OF TOP SOIL SHALL BE PROVIDED OVER THE LINING PRIOR TO SEEDING TO ALLOW FOR A GERMINATION OF THE SEED MIX.

SEEDING SPECIFICATION

1. IT IS THE INTENT OF THE SEEDING TO ESTABLISH A MEADOW GRASS OR TURF GRASS BOTTOM OF THE BMP BASINS, PER THE OWNER'S PREFERENCE. MEADOW BOTTOMS ARE NOT TO BE MOWED OTHER THAN RECOMMENDED ANNUAL MAINTENANCE. IF TURF GRASS IS DESIRED, THE 'TYPICAL AMENDED SOIL MIXTURE' SHOULD BE USED.
2. THE BASIN BOTTOMS, ONCE PLANTED, MUST BE MAINTAINED TO PERMANENTLY ESTABLISH THE REQUIRED VEGETATION. MAINTENANCE MUST INCLUDE WATERING, WEEDING, OVER SEEDING, RESEEDING AND ALL OTHER REQUIRED MAINTENANCE.
3. THE SEED MIXTURE TO BE USED IS THE FOLLOWING (OR APPROVED EQUAL) AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ASSOCIATED SITE CONDITIONS. IT IS RECOMMENDED THAT THE SEED BE HYDRO-SEEDED INTO THE AMENDED SOILS.
4. CONTRACTOR IS TO PROVIDE ERNMX-126 SEED MIX FOR TURF GRASS BOTTOMS AND ERNMX #127 SEED MIX FOR MEADOW BOTTOMS AT A RATE OF 15 LB/AC WITH AN ADDITION OF 4 LB/ACRE (0.1 LB/1,000 SQ FT) OF PANICUM ANCEPS (BEAKED PANICGRASS) MD ECOTYPE INTO THE ERNMX-127. AS SPECIFIED BY ERNST SEED.

C BMP AMENDED SOIL/SEEDING NOTES

NOT TO SCALE

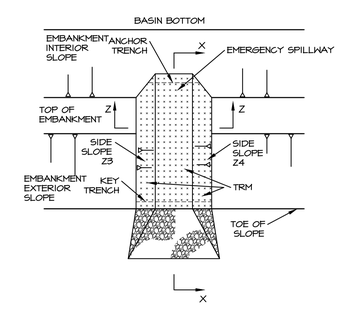


WEIR SECTION Z-Z

KEY TRENCH AT TOE OF SLOPE OF SPILLWAY

EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY SECTION X-X

BASIN NO.	WEIR					LINING
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	PERM. CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE
1	4.5	4.5	293.00	291.25	30	FLEXAMAT
4	6	6	315.00	313.00	40	FLEXAMAT



PLAN VIEW
RIPRAP OUTLET DISSIPATOR

NOTES:

1. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.
2. THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.
3. HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.
4. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.
5. LINE ENTIRE LENGTH & WIDTH OF SPILLWAY W/ SPECIFIED EROSION CONTROL MATTING & EXTEND TO TOE OF SLOPE OF OUTSIDE EMBANKMENT

D BASIN EMERGENCY SPILLWAY WITH TRM LINING

NO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:	DATE:	BY:
1. CCCD COMMENTS	3-1-2023	TEH
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3. LAND DEVELOPMENT APPLICATION	8-1-2023	JCB
4. CEG REVIEW LETTER DATED 9/1/2023	9/19/2023	JCB
5. CEG & AFC REVIEW LETTERS DATED 10/13/2023	10/27/2023	JCB

743 S. BROAD ST.
LITITZ, PA 17543
(717) 626-7271
elagroup.com
ELA group, inc.
ENGINEERS + LANDSCAPE ARCHITECTS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002188
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
STORMWATER DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

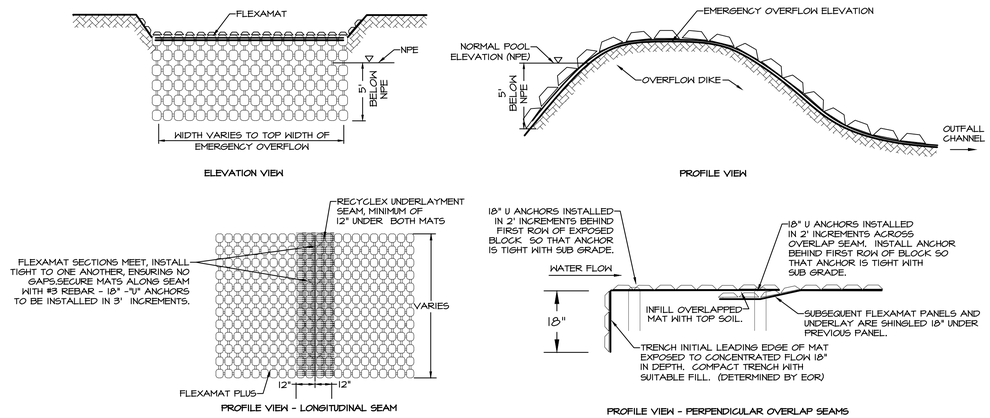
DRAWING NO.
40 of 48

1. EXCAVATION FOR THE INFILTRATION FACILITIES SHALL BE PERFORMED WITH EQUIPMENT THAT WILL NOT COMPACT THE BOTTOM OF THE SEEPAGE BED/TRENCH OR LIKE FACILITY.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF (4) INFILTRATION TESTS FOR ALL INFILTRATION BMPs, EVENLY SPREAD AMONG THE INFILTRATION FOOTPRINT AT SUBGRADE ELEVATION PRIOR TO PLACEMENT OF AGGREGATE OR AMENDED SOILS TO CONFIRM ACCEPTABLE INFILTRATION RATES (0.25 TO 10.0 IN/HR).
3. THE BOTTOM OF THE BED AND/OR TRENCH SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF AGGREGATE.
4. ONLY CLEAN AGGREGATE WITH DOCUMENTED POROSITY, FREE OF FINES, SHALL BE ALLOWED.
5. THE TOPS AND SIDES OF ALL SEEPAGE BEDS, TRENCHES, OR LIKE FACILITIES SHALL BE COVERED WITH DRAINAGE FABRIC. FABRIC SHALL BE NON-WOVEN FABRIC ACCEPTABLE TO THE MUNICIPAL ENGINEER.
6. STORMWATER SHALL BE DISTRIBUTED THROUGHOUT THE ENTIRE SEEPAGE BED/TRENCH OR LIKE FACILITY AND PROVISIONS FOR THE COLLECTION OF DEBRIS SHALL BE PROVIDED IN ALL FACILITIES.

A INFILTRATION BMP CONSTRUCTION NOTES

NO SCALE

Manufacturer: Motz Enterprises, Inc.
Product Name: Flexamat
Address: 3153 Madison Road
Cincinnati, Ohio 45209
Telephone: 513-772-MOTZ (6689)
Fax: 513-772-6690
Email: info@Flexamat.com
Website: www.Flexamat.com

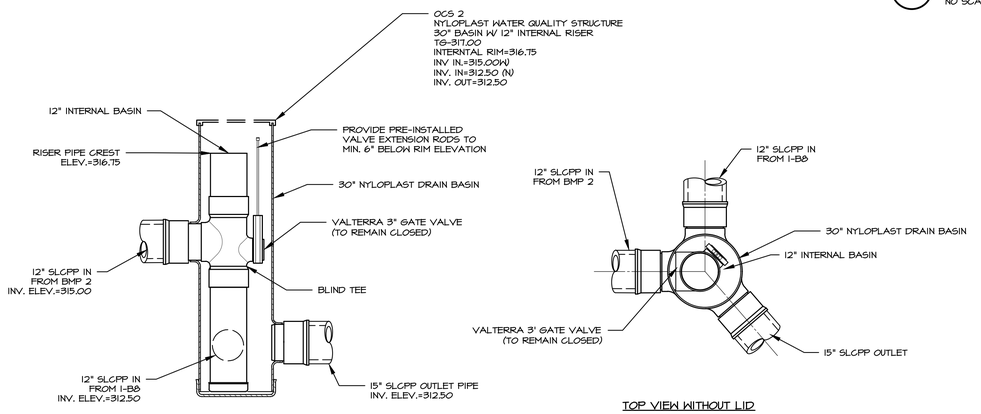


CONSTRUCTION NOTES

1. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING FOUNDATION FOR THE MATS WITH NO SHARP OR ABRUPT BREAKS IN THE GRADE.
2. APPLY SEED DIRECTLY TO PREPARED SOIL PRIOR TO FLEXAMAT INSTALLATION. USE SEED PER PROJECT SPECIFICATIONS.
3. INSTALL FLEXAMAT ROLLS.* MAT SHALL EXTEND 5' BELOW NORMAL POND ELEVATION. (FOR EMERGENCY OVERFLOW INSTALLATIONS EXTEND THE MAT 3' DOWN THE INSIDE FACE OF THE OVERFLOW DIKE.)
   3.1. FOR WIDTHS WIDER THAN 16', INSTALL MATS ADJACENT TO ONE ANOTHER. BRIDGE LONGITUDINAL SEAM WITH RECYCLEX™ UNDERLAYMENT. A MINIMUM OF 12" OF TRM SHALL BE UNDER EACH MAT AND DIRECTLY AGAINST THE SUBGRADE.
   3.2. FLIP FLEXAMAT SECTIONS BACK INTO PLACE SO THAT THEY FIT TIGHTLY.
   3.3. SECURE SEAM BY INSTALLING 18" U-ANCHORS IN 3' INCREMENTS THE LENGTH OF THE LONGITUDINAL SEAM. U-ANCHORS CONSIST OF #3 REBAR, SHAPED INTO A U WITH 18" LEGS.
4. IF ADDITIONAL SECTIONS ARE REQUIRED FOR LENGTH OF CHANNEL, OVERLAP THE DOWNSTREAM SECTION 18" WITH UPSTREAM SECTION OF MAT. PRIOR TO INSTALLING OVERLAP, FLIP UPSTREAM MAT BACK 24". EXCAVATE 2.25' OF SOIL 18" FROM END OF UPSTREAM MAT. DOWNSTREAM SECTION IS LAID IN THE SHALLOW TRENCH. LIGHTLY SPREAD TOPSOIL OVER INITIAL EDGE. FLIP END OF UPSTREAM MAT OVER THE SOIL COVERED INITIAL LEADING EDGE OF DOWNSTREAM MAT.
5. INSTALL 18" U-ANCHORS IN 2' INCREMENTS ACROSS THE OVERLAP.
6. AT THE END OF THE ARMORED CHANNEL, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL.
7. APPLY HYDRO SEEDING OVER MATTING FOLLOWING INSTALLATION.

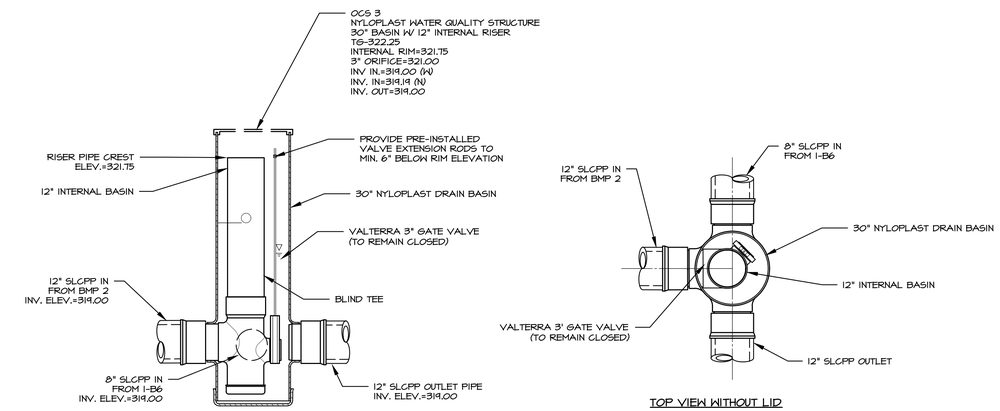
B FLEXAMAT OVERFLOW PLAN AND PROFILE DETAIL

NO SCALE



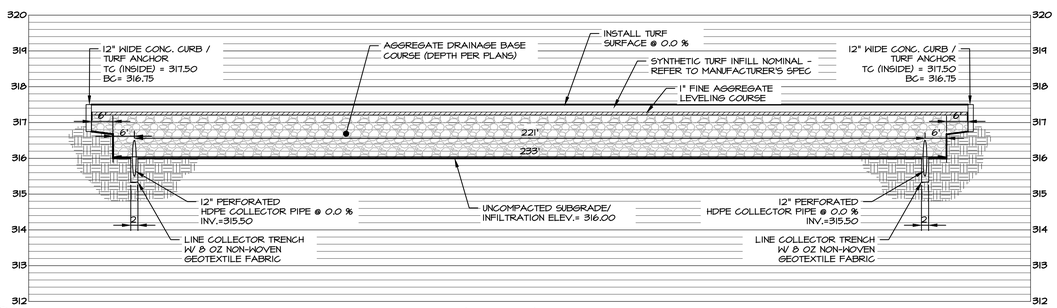
C INFILTRATION BMP 2 OUTLET STRUCTURE DETAIL (OCS-2) - NYLOPLAST WATER CONTROL INLET

NO SCALE



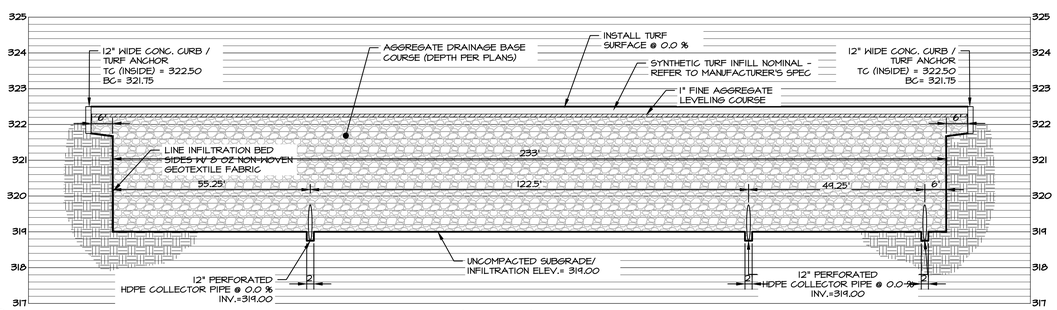
D INFILTRATION BMP 3 OUTLET STRUCTURE DETAIL (OCS-3) - NYLOPLAST WATER CONTROL INLET

NO SCALE



E MULTI-PURPOSE FIELD/INFILTRATION BED (BMP 2) CROSS-SECTION 'A'

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1/2" = 1'



F MULTI-PURPOSE FIELD/INFILTRATION BED (BMP 3) CROSS-SECTION 'A'

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1/2" = 1'

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084801

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER 076272-E
REGISTERED LANDSCAPE ARCHITECT

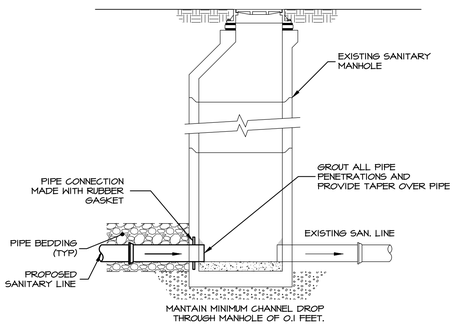
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
STORMWATER DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

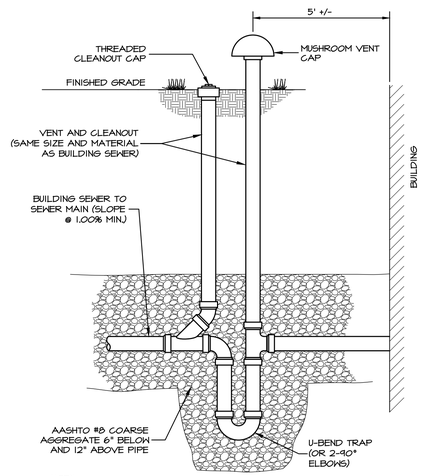
MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED



SECTION

PROPOSED SANITARY CONNECTION TO EXISTING MANHOLE

A NO SCALE

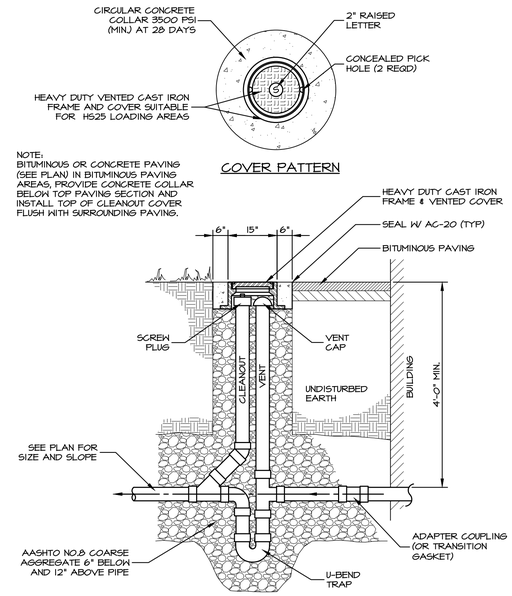


NOTE:

ALL FITTINGS USED FOR CLEANOUT, TRAP AND VENT SHALL BE SOLVENT WELD.

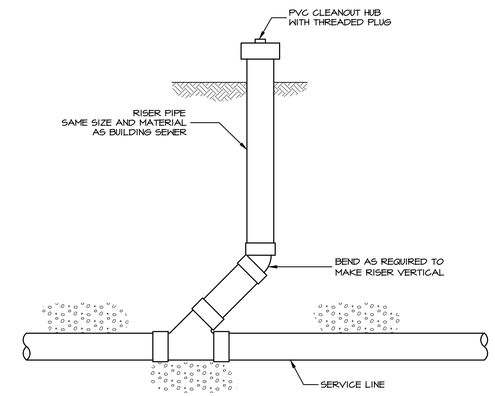
TRAP AND VENT DETAIL

B NO SCALE



TRAP AND VENT DETAIL

C NO SCALE

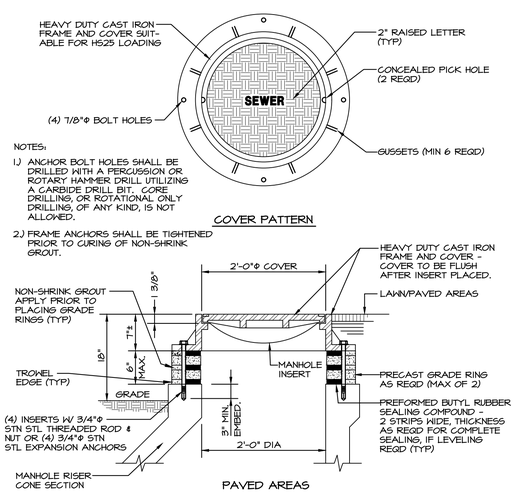


NOTES:

1. CLEANOUTS SHALL BE INSTALLED ON ALL GRAVITY SERVICE LINE AND LATERAL BENDS AND SHALL BE A MAXIMUM OF 100' APART ON STRAIGHT RUNS.
2. TOPS OF CLEANOUTS SHALL BE SET 12" ABOVE GRADE UNLESS OTHERWISE DIRECTED BY THE OWNER.

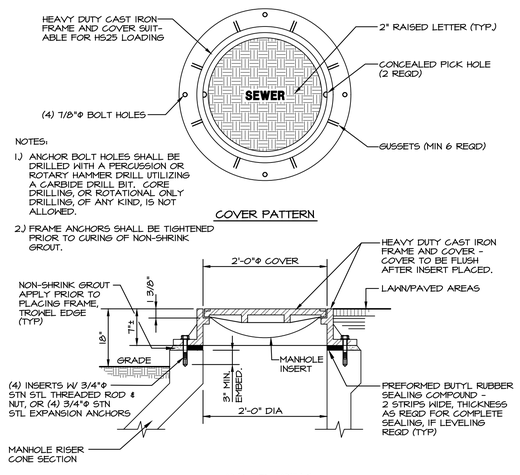
NEW CLEANOUT IN LAWN AREAS

D NO SCALE



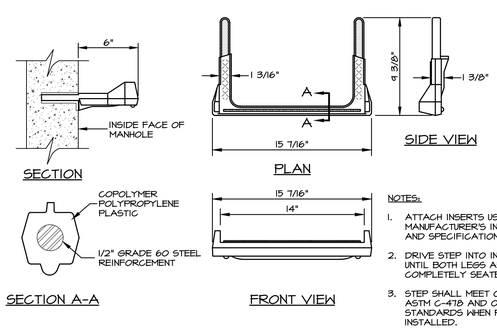
STANDARD MANHOLE FRAME & COVER WITH GRADE RINGS DETAIL

E NO SCALE



STANDARD MANHOLE FRAME & COVER WITHOUT GRADE RINGS DETAIL

F NO SCALE



NOTES:

1. ATTACH INSERTS USING MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
2. DRIVE STEP INTO INSERTS UNTIL BOTH LEGS ARE COMPLETELY SEATED.
3. STEP SHALL MEET OR EXCEED ASTM C-478 AND OSHA STANDARDS WHEN PROPERLY INSTALLED.

MANHOLE STEP DETAIL

G NO SCALE

UPI NO(S): 67-5-27

REVISIONS PER:		DATE:	BY:
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER E. HILL
ENGINEER
No. PE084960

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA002586
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

SANITARY SEWER DETAILS

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

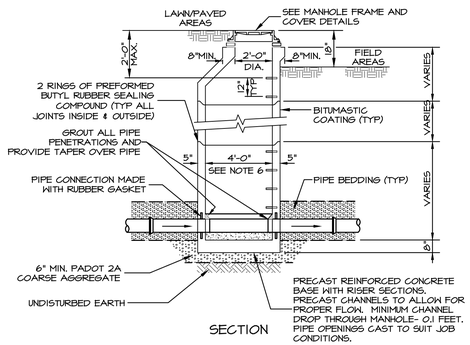
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.

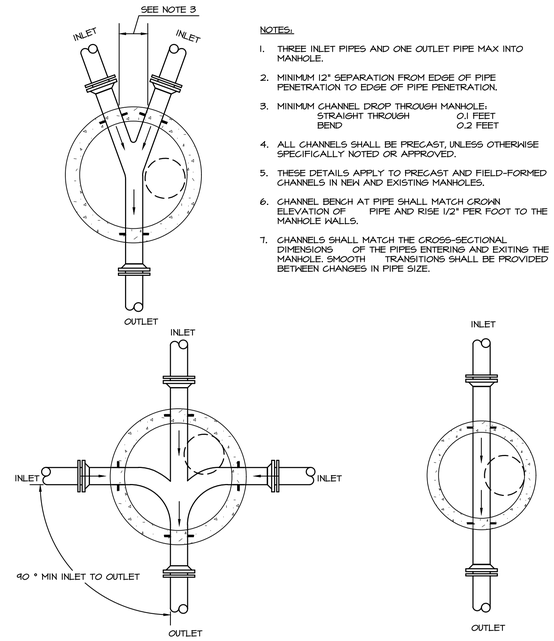
NOTES:

1. ADJUST TO GRADE WITH CONCRETE GRADE RINGS (MAX. VERT. ADJUST. 6") SEE FRAME & COVER DETAILS.
2. MECHANICALLY VIBRATED PRECAST CONC SHALL CONFORM TO A.S.T.M. SPEC. C-478.
3. IF INCOMING INVERT EXCEEDS OUTGOING INVERT BY GREATER THAN OR EQUAL TO 6", SEE INSIDE SPLASH/ INSIDE DROP MANHOLE DETAILS.
4. FOR MANHOLES WHERE TOP OF RIM TO INVERT DISTANCE IS LESS THAN 5'-0", USE FLAT TOP MANHOLE IN LIEU OF CONE TOP.
5. FILL ALL LIFTING HOLES WITH NON-SHRINK GROUT.



A PRECAST MANHOLE 8" THRU 24" SEWERS

NO SCALE



NOTES:

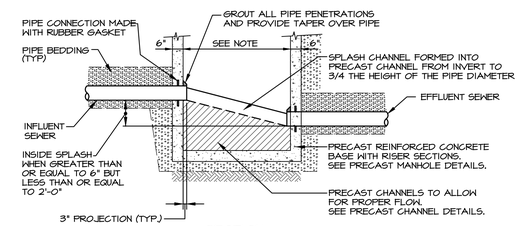
1. THREE INLET PIPES AND ONE OUTLET PIPE MAX INTO MANHOLE.
2. MINIMUM 12" SEPARATION FROM EDGE OF PIPE PENETRATION TO EDGE OF PIPE PENETRATION.
3. MINIMUM CHANNEL DROP THROUGH MANHOLE:
   STRAIGHT THROUGH 0.1 FEET
   BEND 0.2 FEET
4. ALL CHANNELS SHALL BE PRECAST, UNLESS OTHERWISE SPECIFICALLY NOTED OR APPROVED.
5. THESE DETAILS APPLY TO PRECAST AND FIELD-FORMED CHANNELS IN NEW AND EXISTING MANHOLES.
6. CHANNEL BENCH AT PIPE SHALL MATCH CROWN ELEVATION OF PIPE AND RISE 1/2" PER FOOT TO THE MANHOLE WALLS.
7. CHANNELS SHALL MATCH THE CROSS-SECTIONAL DIMENSIONS OF THE PIPES ENTERING AND EXITING THE MANHOLE. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CHANGES IN PIPE SIZE.

B PRECAST CHANNEL

NO SCALE

NOTE:

MANHOLE DIAMETER SHALL BE 4' WHEN SPLASH IS 6" TO 1'-0" AND 5' WHEN SPLASH IS 1'-0" TO 2'-0".



C STRAIGHT RUN INSIDE SPLASH MANHOLE (SSMH-1)

NO SCALE

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ENGINEER
No. PE084960

PENNSYLVANIA
JASON C. BESTA
REGISTRATION NUMBER
LA002588
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

SANITARY SEWER DETAILS

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

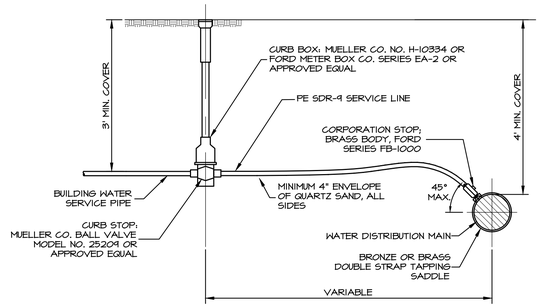
CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.

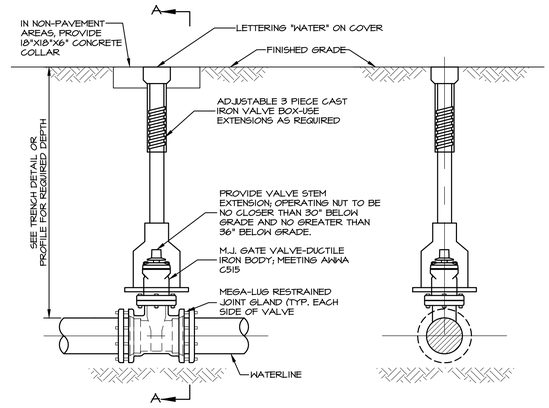
UPI NO(S): 67-5-27



NOTES:

1. WHEN USING POLYETHYLENE SERVICE TUBING, STAINLESS STEEL INSERTS SHALL BE USED.
2. ALL MATERIALS SHALL CONFORM TO NSF 61/ANSI 61; ANNEX F; ANNEX G; AND NSF/ANSI 372.

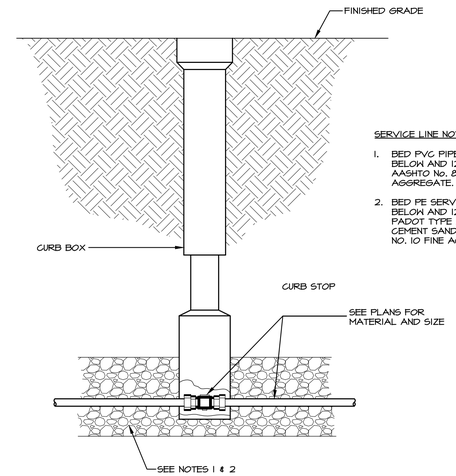
A WATER SERVICE CONNECTION (3/4" AND 1")
NO SCALE



NOTE:

IF EXTENSIONS ARE NECESSARY CONTRACTOR SHALL SET "PLUMB" AND ALIGN PROPERLY FOR ACCESS TO OPERATING NUT.

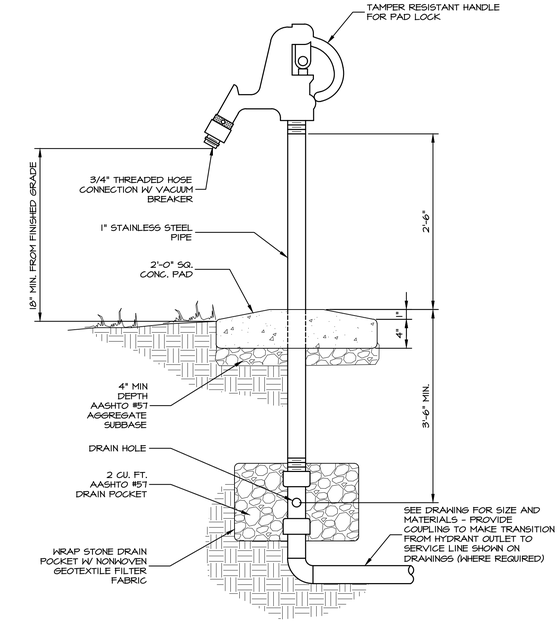
B GATE VALVE AND VALVE BOX
NO SCALE



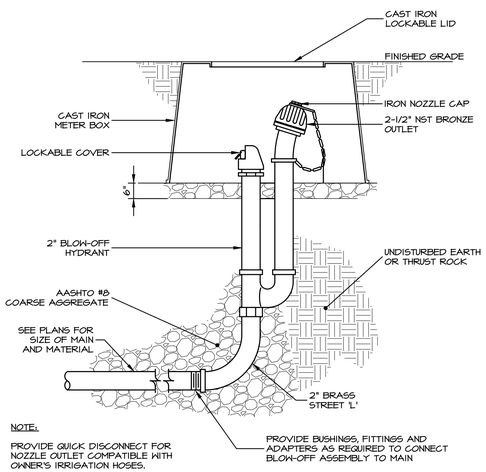
SERVICE LINE NOTES

1. BED PVC PIPE (< 2" DIA) 6" BELOW AND 12" ABOVE IN AASHTO No. 8 COARSE AGGREGATE.
2. BED PE SERVICE TUBING 6" BELOW AND 12" ABOVE IN PADOT TYPE A CONCRETE CEMENT SAND OR AASHTO NO. 10 FINE AGGREGATE.

C CURB STOP AND BOX
NO SCALE



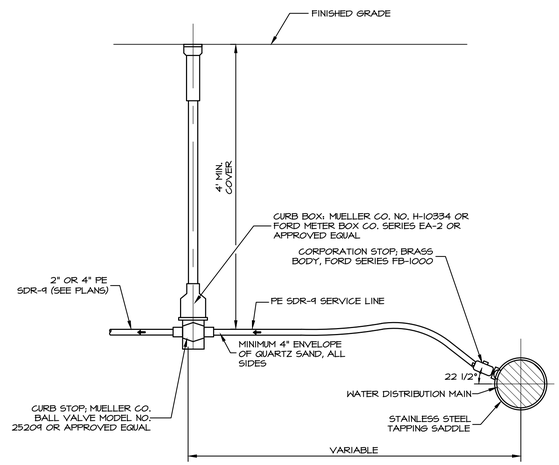
D NON-FREEZE YARD HYDRANT WITH VALVE BREAKER
NO SCALE



NOTE:

PROVIDE QUICK DISCONNECT FOR NOZZLE OUTLET COMPATIBLE WITH OWNER'S IRRIGATION HOSES.

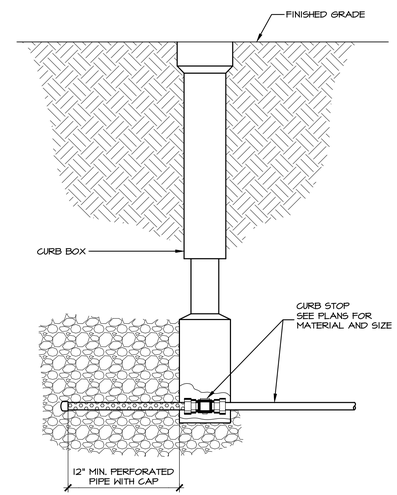
E IRRIGATION HYDRANT (BELOW GRADE)
NO SCALE



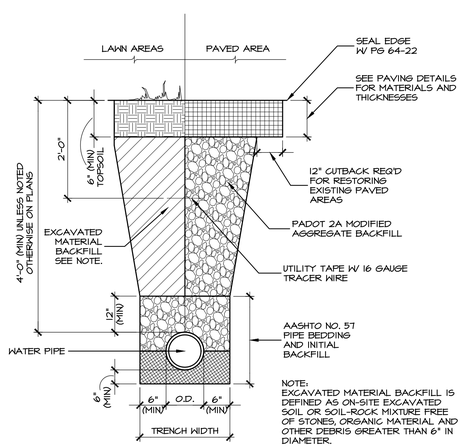
NOTES:

1. POLYETHYLENE PIPE SHALL BE CE BLUE 200 PSI-CTS SDR-9 OR EQUAL.
2. WHEN USING POLYETHYLENE SERVICE TUBING, STAINLESS STEEL INSERTS SHALL BE USED.
3. ALL MATERIALS SHALL CONFORM TO NSF 61/ANSI 61; ANNEX F; ANNEX G; AND NSF/ANSI 372.

F WATER SERVICE CONNECTION (2" AND 4")
NO SCALE



G CURB STOP AND BOX W/ DRAIN LINE
NO SCALE



NOTE:
EXCAVATED MATERIAL BACKFILL IS DEFINED AS ON-SITE EXCAVATED SOIL OR SOIL-ROCK MIXTURE FREE OF STONES, ORGANIC MATERIAL, AND OTHER DEBRIS GREATER THAN 6" IN DIAMETER.

H WATER PIPE INSTALLATION
NO SCALE

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TYLER E. HILL
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No. PE084661

COMMONWEALTH OF PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER 1400256
REGISTERED LANDSCAPE ARCHITECT

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:
WATER DETAILS
FOR
WESTTOWN SCHOOL - OAK LANE PROJECTS
WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:
WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	AS NOTED

DRAWING NO.
44 of 48

UPI NO(S): 67-5-27

POI A

DP001

DP001

EAST BRANCH CHESTER CREEK

(TSF, MF)

WATERSHED BOUNDARY LINE

DP002

UNT TO EAST BRANCH CHESTER CREEK

(TSF, MF)

DP002

POI B

UNT. TO EAST BRANCH CHESTER CREEK

WESTTOWN ROAD

OAK LANE (PRIVATE)

E. SCHOOL LN

SHADY GROVE WAY (T-470)

ARTS BUILDING

SEWAGE PUMP STATION

WETLAND B

0.03 AC

WETLAND A

0.09 AC

Tc PATH

Tc PATH

FARM HOUSE STONE & FRAME

FRAME GARAGE

2 STORY FRAME DWELLING

FRAME BARN

GREEN HOUSE

GREEN HOUSE

FRAME SHED

LOD

NORTH

SCALE IN FEET: 1" = 80

0 40 80 160 240

UPI NO(S): 67-5-27

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No. PE086960

PENNSYLVANIA
JASON C. BEAM
REGISTRATION NUMBER
RL021766
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

PRE-DEVELOPMENT

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL

975 WESTTOWN ROAD

WEST CHESTER, PA 19382

(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 80'

DRAWING NO.

DRAWING: C:\Users\jason\DC\ACCDOCS\EA group\1091-001 Oak Lane Project\Project Files\CAD Data\C-Final\WATERSHED MAP.dwg

POI A

DP001

DP001-UNDETAINED

DP002-UNDETAINED

DP002

POI B

BMP 1

BMP 2

BMP 3

BMP 4

WESTTOWN ROAD

OAK LANE (PRIVATE)

E. SCHOOL LN

SHADY GROVE WAY (T-470)

ARTS BUILDING

WATERSHED BOUNDARY LINE

Tc PATH

FARM HOUSE STONE & FRAME

FRAME GARAGE

FRAME BARN

3 STORY FRAME DWELLING

GREEN HOUSE

WETLAND B 1.27 AC

WETLAND A 10.09 AC

UNT. TO EAST BRANCH CHESTER CREEK

NORTH

SCALE IN FEET: 1" = 80

0 40 80 160 240

UPI NO(S): 67-5-27

DRAWING: C:\Users\jasonDG\ACCDocs\EA Group\1091-001 Oak Lane Project\Project Files\CAD Data\5-FinalWATERSHED MAPS.dwg | PLOTTED: 2023-10-04 10:54 am

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ENGINEER
No. PE088460

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REGISTRATION NUMBER
RA057968
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

POST-DEVELOPMENT

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL

975 WESTTOWN ROAD

WEST CHESTER, PA 19382

(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 80'

DRAWING NO.

POI A

DP001

DP001-UNDETAINED

DP002-UNDETAINED

DP002

POI B

BMP 1

BMP 2

BMP 3

BMP 4

WESTTOWN ROAD

OAK LANE (PRIVATE)

E. SCHOOL LN

SHADY GROVE WAY (T-470)

ARTS BUILDING

SEWAGE PUMP STATION

WATERSHED BOUNDARY LINE

WETLAND B 0.05 AC

WETLAND A 0.09 AC

UNT. TO EAST BRANCH CHESTER CREEK

FARM HOUSE STONE & FRAME

2 STORY FRAME DWELLING

FRAME BARN

GREEN HOUSE

GREEN HOUSE

NORTH

SCALE IN FEET: 1" = 80

0 40 80 160 240

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ENGINEER
No. PE088460

PENNSYLVANIA
JASON C. BEST
REGISTRATION NUMBER
LA001968
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

INLET WATERSHED MAP

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL
975 WESTTOWN ROAD
WEST CHESTER, PA 19382
(610) 399-0123

MANAGER:	CRH	DATE:	JANUARY 27, 2023
DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 80'

DRAWING NO.

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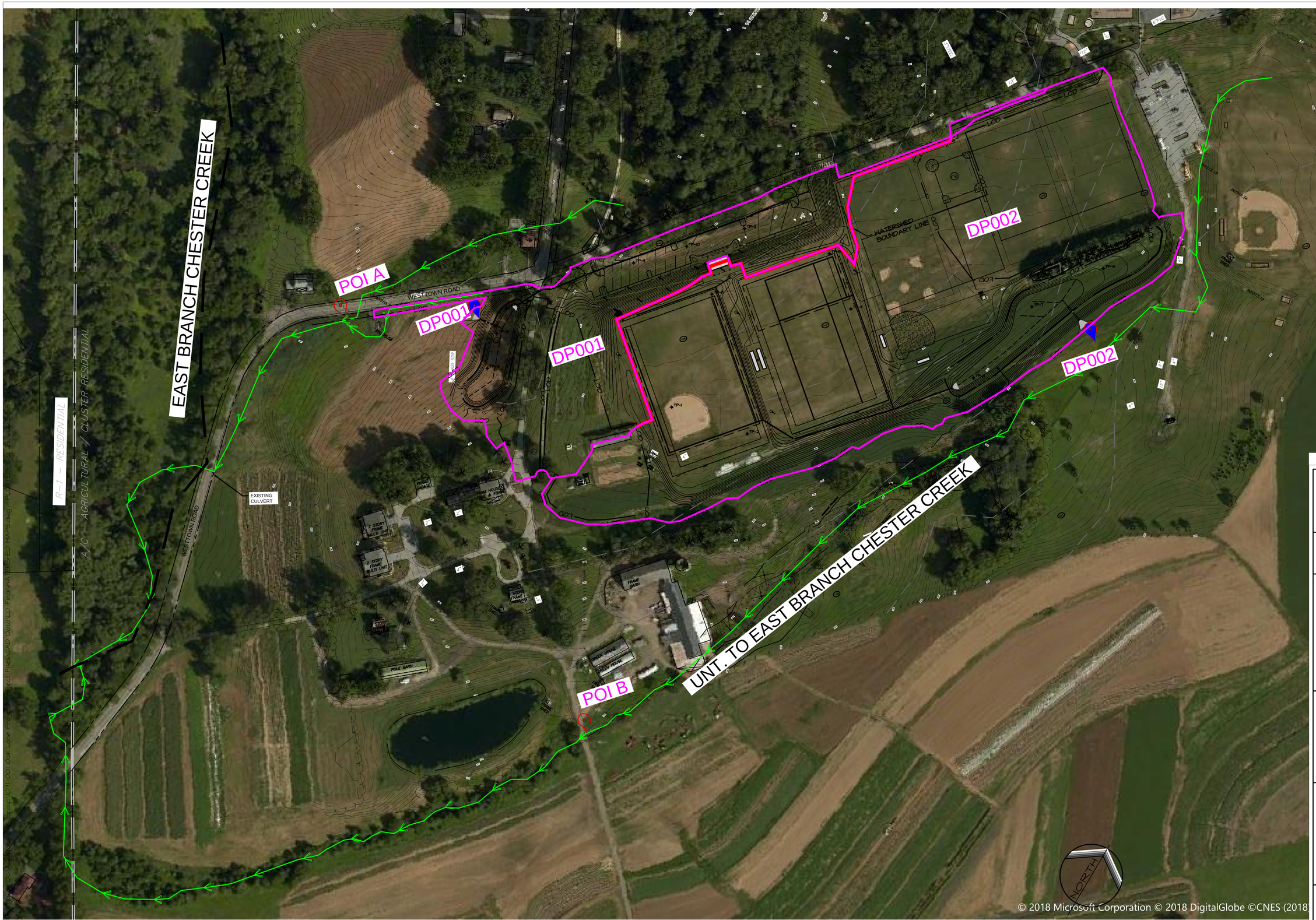

SCALE IN FEET: 1" = 100

0 50 100 200 300

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No. PE086995

PENNSYLVANIA
JASON C. BENDER
REGISTRATION NUMBER
LA002966
REGISTERED LANDSCAPE ARCHITECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PRELIMINARY/FINAL LAND DEVELOPMENT

SUBJECT:

OVERALL DRAINAGE

FOR

WESTTOWN SCHOOL - OAK LANE PROJECTS

WESTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

CLIENT:

WESTTOWN SCHOOL

975 WESTTOWN ROAD

WEST CHESTER, PA 19382

(610) 399-0123

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DESIGNER:	JCB	PROJECT NO.	1091-001
DRAWN BY:	JCB	SCALE:	1" = 100'

DRAWING NO.

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