

**Shade Tree Commission of  
Radnor Township  
Wayne, Pennsylvania**

**AGENDA**

**Tuesday  
December 2, 2014  
6:30 PM**

503 Conestoga Road  
Regrade back yard  
270 CY of dirt (keep on site) GP # 14-193

Villanova University Butler Annex Building 2014-D-09 (Preliminary-Final Plan)  
800 E. Lancaster Avenue  
Demolish existing building  
Construct new facilities building

352 Chamounix Road  
Demolish existing residence  
Remove all impervious from site  
100 CY of dirt (fill in house basement & pool) GP # 14-199

206 Upland Way  
Demo pool  
120 CY of dirty (fill in pool) GP # 14-201

350 Highland Lane  
Construct addition, walks, patio and drive  
690 CY of dirt (keep on site) GP # 14-203

200 Ithan Creek Road  
Single Family Dwelling Project  
750 CY of dirt (keep on site) GP # 14-204

270 Chamounix Road  
Swimming Pool  
60 CY of dirt (keep on site) GP # 14-205

Radnor High School Parking Lot  
130 King of Prussia Road  
Site improvements – parking, circulation and access GP # 14-206

***Hazardous Tree Removals***  
***Approved for removal by Township Arborist***

242 Lowrys Lane

39" Oak Tree            Dead

219 Comrie Drive

40" Poplar Tree        Root decay and heavy lean

30" Poplar Tree        Owner wants removed – will replace with six trees

297 Upper Gulph Road

38" Oak Tree           Struck by lightening

39" Oak Tree           Dying & shedding large branches

105 Fairfax Road

48" Oak Tree           Resident felt it was a hazard – 6 trees required to be planted

448 S. Ithan Avenue

40" Oak                Storm damage in the crown – decay & dead limbs

245 Ashwood Road

31" Ash Tree           Large vertical crack @ ground level - decayed

20" Ash Tree           80% dead top

32" Ash Tree           Double trunked – large cavity @ base

Valley Forge Military Academy

42" Red Oak Tree      80% dead at top

42" White Pine Tree    Dead

36" White Oak Tree    Dead

NOTE: ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004.  
SERIAL #

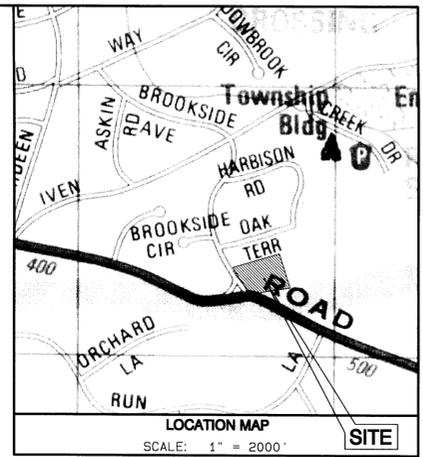


PROPOSED ELECTRIC EASEMENT TO COORDINATE WITH UTILITY COMPANY

EXISTING PRIVATE SEWER EASEMENT

1 STORY STUCCO GARAGE HOUSE #335 OAK TERRACE

LANDS N/F OF LEONARD A. & EMILY J. LOSCIUTO 335 OAK TERRACE TAX MAP No. 36-22-048



**SURVEY NOTES:**

- BOUNDARY INFORMATION IS BASED UPON TITLE COMMITMENT EFFECTIVE DATE MARCH 31, 2003 COMMITMENT NUMBER KA-03-2575-ON COMMONWEALTH LAND TITLE INSURANCE COMPANY.
- ELEVATIONS SHOWN ARE BASED UPON RADNOR TOWNSHIP "PARKES RUN SEWER" PROJECT VERTICAL DATUM.
- REFERENCE PLAN - "MAP OF PROPERTY OF ITHAN LAND COMPANY" BY M.R. & J.B. YERKES, DATED MAY 3, 1950 AND LAST REVISED MAY 11, 1950. (1-21)

**EXCEPTIONS TO TITLE:**

- SCHEDULE B - SECTION 1
- THAT PORTION OF THE PREMISES IN THE BED OF OAK TERRACE, CONESTOGA ROAD AND BROOKSIDE AVENUE IS SUBJECT TO PUBLIC AND PRIVATE RIGHTS OF OTHERS (RIGHT OF WAY SHOWN)
  - SUBJECT TO THE ACTS OF ASSEMBLY AUTHORIZING THE STATE HIGHWAY DEPT. TO EXTEND THAT BOUNDARY LINES OF ALL STATE ROADS.
  - AGREEMENT IN VOLUME 1607 PAGE 53. (SHOWN)
  - RESTRICTIONS IN DEED BOOK E14 PAGE 419 AND DEED BOOK E14 PAGE 611. (NOT PLOTTABLE)

SCHEDULE B - SECTION 2

ITEMS NOT PLOTTABLE

**SOILS INFORMATION**

- GeD - GLENELG CHANNERY SILT LOAM  
WELL DRAINED. 15 TO 20 PERCENT SLOPES.  
3 TO 5 FEET DEPTH TO BEDROCK.  
HYDROLOGIC SOIL GROUP B
- GnB - GLENVILLE SILT LOAM  
3 TO 8 PERCENT SLOPES. MODERATELY WELL DRAINED. 3 TO 6 FEET DEPTH TO BEDROCK.  
HYDROLOGIC SOIL GROUP C

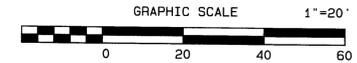
**ZONING REGULATIONS**

**R-3**

**Residence District**

LOT AREA	10,000 s.f. (min.)
BUILDING AREA	25% (max.)
LOT WIDTH	70 Ft. (min.) of street line
FRONT YARD	35 Ft. (min.) from curb
SIDE YARD (Single-family detached)	15 Ft. (min.); 35 Ft. (min.) aggregate
REAR YARD	35 Ft. (min.)
IMPERVIOUS SURFACES	32% (max.)
RIPARIAN BUFFER	30 Ft. (min.) from edge of stream bank
BUILDING HEIGHT	3 Stories (max.); 35 Ft. (max.)

FOR COMPLETE ZONING INFORMATION, REFER TO RADNOR TOWNSHIP ZONING ORDINANCE, CHAPTER 280.



TOTAL TRACT AREA (TO TITLE LINES): 1.004 ACRES (43,757 S.F.)  
NET AREA (TO RIGHT-OF-WAY LINE): 0.859 ACRES (37,419 S.F.)

NO.	DATE	REVISION COMMENT
2	11-16-2014	REVISE WALL DETAIL TO REFERENCE CIRILLI DESIGN
1	10-31-2014	REVISED PER SHADE TREE COMMITTEE COMMENT
0	9-26-2014	ISSUED TO CLIENT FOR TOWNSHIP GRADING PERMIT APPLICATION

**EXISTING FEATURES AND E&S PLAN**

**GRADING PERMIT PLANS**

PREPARED FOR

**GARY McCLAIN**  
503 CONESTOGA ROAD  
WAYNE, PA 19087

Radnor Township • Delaware County • Pennsylvania



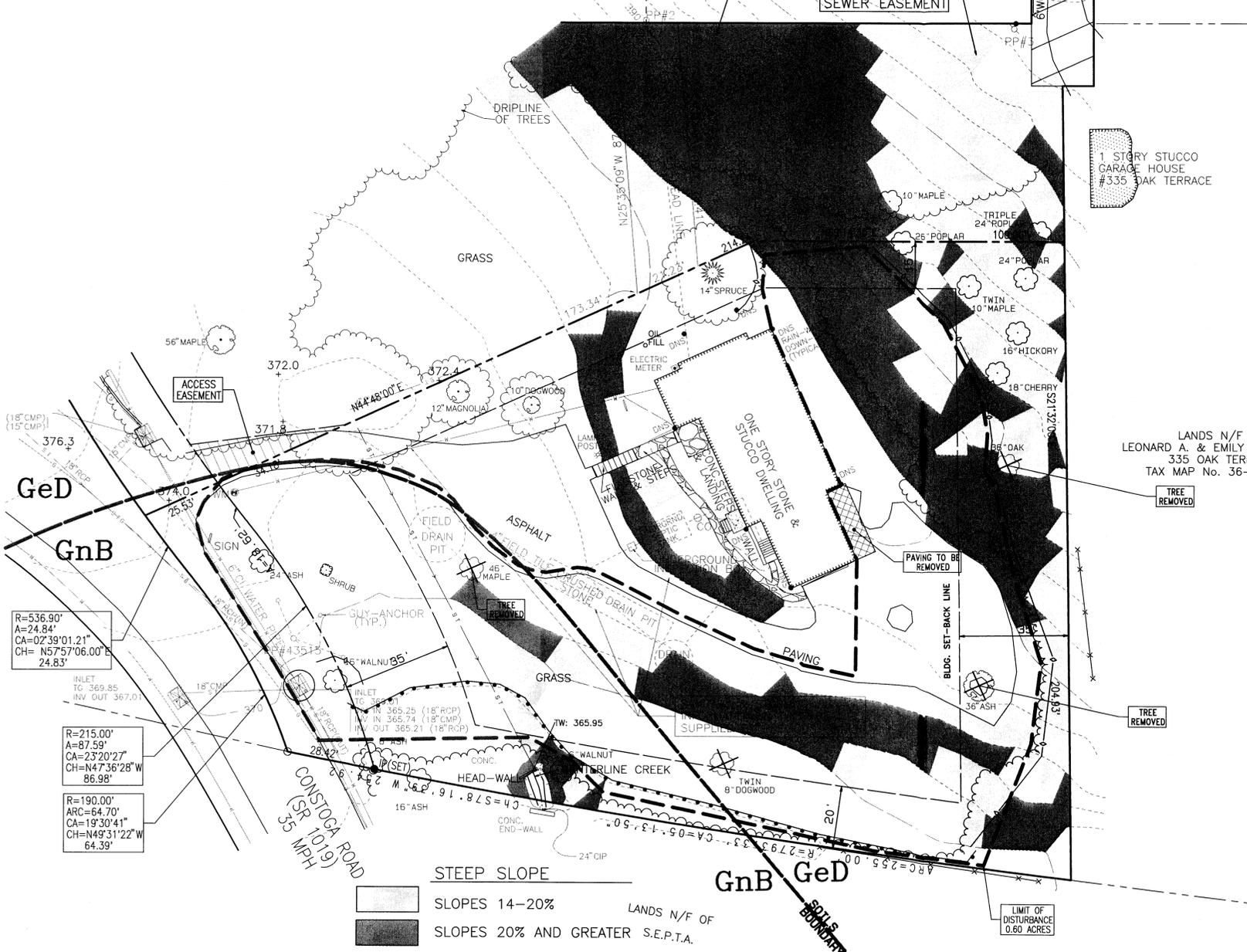
**YERKES ASSOCIATES, INC.**

CONSULTING ENGINEERS • LAND SURVEYORS • LAND PLANNERS

ROSEMONT BUSINESS CAMPUS • BUILDING 3, SUITE 110  
919 CONESTOGA ROAD • ROSEMONT, PA 19010  
TEL: (610) 525-6200 • FAX: (610) 525-0248



PROJECT -	B-14-6766
DATE -	SEPTEMBER 26, 2014
SCALE -	1"=20'
DRAWN -	EJS
CHECKED -	LPS
APPROVED -	LPS
CAD FILE -	B6766-grading.pro
NOTEBOOK -	MM 1108
PLAN NO. -	36-22-49-01
<b>SHEET 1 OF 3</b>	



**IMPERVIOUS SURFACES SUMMARY**

EXISTING	EXISTING
DWELLING	2702 S.F.
WALKWAYS	352 S.F.
DRIVEWAY	6460 S.F.
PATIO	120 S.F.
WALL	16 S.F.
<b>TOTAL</b>	<b>9650 S.F. (22.0%)</b>

- LEGEND:**
- (M/F/S) IRON PIN (FOUND) OR (SET)
  - STAKE (SET)
  - × DOOR SILL
  - CLEAN-OUT
  - × GROUND LAMP
  - POWER POLE
  - ELECTRIC BOX/METER
  - MAILBOX
  - FENCE LINE
  - ▨ FLAGSTONE
  - ▨ WALL
  - EDGE OF TREE/WOODS LINE
  - 2 FT CONTOUR LINE
  - 5 FT INDEX CONTOUR LINE
  - LIMIT OF DISTURBANCE
  - SILT FENCE
  - TREE PROTECTION FENCE

**GENERAL NOTES:**

- ALL WOODY VEGETATION TO BE RETAINED WITHIN 25' OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT DRILINES OR AS SHOWN ON PLANS. TOWNSHIP ARBORIST MUST APPROVE THE LOCATION OF THE TREE PROTECTION FENCE PRIOR TO START OF EARTH WORK.
- TREES SHALL BE TREATED TO PROTECT THE ROOT SYSTEM PRIOR TO CONSTRUCTION WHERE IMPROVEMENTS ARE SHOWN WITHIN THE DRIPLINES OF TREES TO REMAIN.
- WHERE EXCAVATION TRENCHES ARE PROPOSED WITHIN THE DRIPLINES OF TREES, ALL DISTURBED ROOTS MUST BE CUT AS CLEANLY AS POSSIBLE. THE TRENCH MUST BE BACKFILLED AS QUICKLY AS POSSIBLE, AVOIDING COMPACTION.
- SHOULD ANY TREES NOT SCHEDULED OR PERMITTED TO BE REMOVED BE IRREPARABLY DAMAGED DURING CONSTRUCTION AND DIE WITHIN EIGHTEEN (18) MONTHS OF THE CONCLUSION OF CONSTRUCTION ACTIVITIES, THOSE TREES WILL BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 101-94(K2).
- THE TOWNSHIP ENGINEER MUST BE NOTIFIED 48 HOURS PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATES FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004.
- CONTRACTOR TO PROTECT OR RELOCATE UTILITIES AS NEEDED.
- NEWLY GRADED SLOPES OF OVER 25% MUST BE STABILIZED WITH SOD OR EROSION CONTROL BLANKET.

**GENERAL NOTES CONTINUED...**

- THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE DETENTION BASIN AND OTHER STORMWATER FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER. THIS INCLUDES, BUT IS NOT LIMITED TO, CLEANING THE SEDIMENT TRAP AND THE INLET "SUMP" AREA A MINIMUM OF TWO TIMES A YEAR - ONCE IN THE SPRING AND ONCE IN THE FALL AFTER ALL LEAVES HAVE FALLEN. THIS CAN BE DONE USING A WET/DRY VACUUM TO REMOVE ALL DEBRIS FROM THE STRUCTURES.
- NO GRADING CHANGES SHALL BE SHOWN WITHIN THREE (3') FEET OF THE PROPERTY LINE IN ORDER TO ENSURE TRANSITION TO THE GRADING OF THE ADJOINING PROPERTY.
- GRADING AND EARTHMOVING OPERATIONS SHALL BE MINIMIZED DURING THE PERIOD FROM NOVEMBER 15 TO APRIL 1 WHEN RE-VEGETATION OF EXPOSED GROUND SURFACE IS DIFFICULT. MULCH, STRAW, STONE AND/OR SOD SHALL BE USED TO STABILIZE ALL AREAS DENuded DURING THIS TIME PERIOD.
- MAINTAIN MINIMUM COVER OVER ALL EXISTING AND PROPOSED UTILITIES AT ALL TIMES PER PIPE BEDDING DETAIL.
- NO IMPERVIOUS COVER SHALL BE PERMITTED WITHIN THE DRIPLINES OF TREES TO REMAIN WITHOUT APPROVAL FROM THE TOWNSHIP ARBORIST. THE TOWNSHIP ARBORIST MUST APPROVE THE LOCATION AND EXTENT OF THE PAVING.
- DOWNSPOUTS TO BE CONNECTED TO SEEPAGE BED ARE SHOWN ON PLANS. ALL CONNECTED DOWNSPOUTS SHALL HAVE ROOF LEADER CLEANOUT INSTALLED AS PER THE DETAILS ON SHEET 3.
- CLEANOUTS SHALL BE INSTALLED AT ALL PIPE JUNCTIONS AND BENDS GREATER THAN 45 DEGREES.

**GENERAL NOTES CONTINUED...**

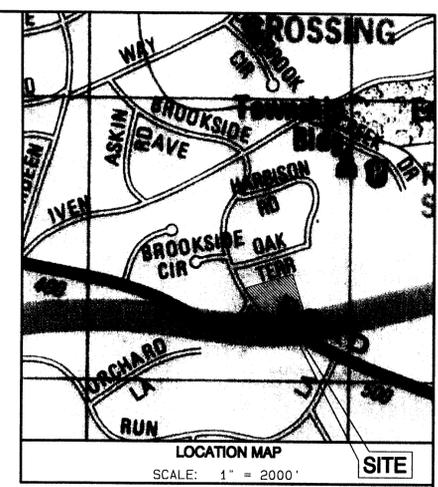
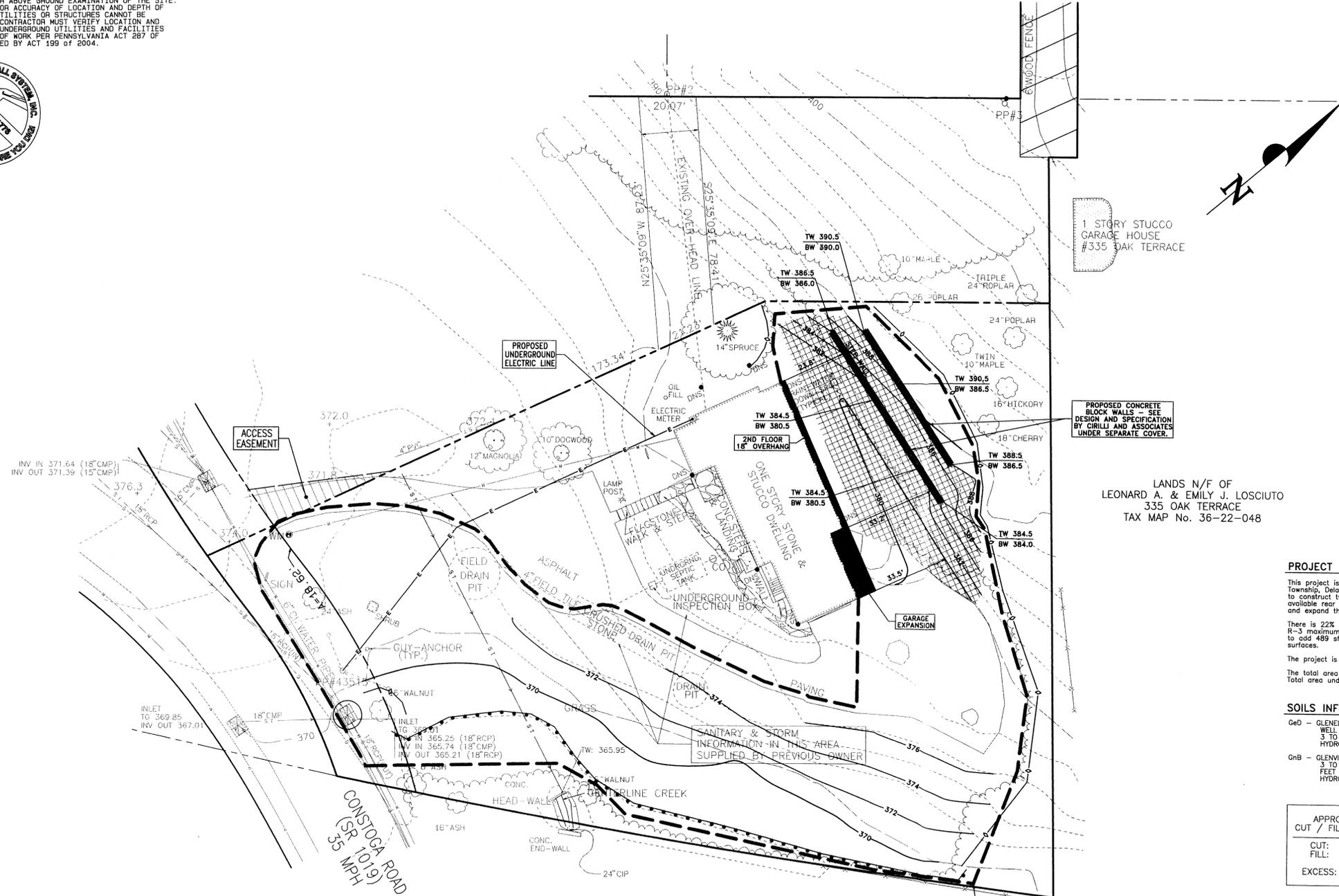
- NOTE TO CONTRACTOR: THIS PLAN CAN BE USED FOR CONSTRUCTION ONLY AFTER ALL REQUIRED AGENCY APPROVALS ARE FINALIZED, PERMITS ARE ISSUED AND WRITTEN AUTHORIZATION TO PROCEED IS GRANTED BY THE OWNER.
- A CUT AND FILL ANALYSIS WAS NOT PERFORMED AND MATERIAL BALANCE IS NEITHER IMPLIED NOR GUARANTEED. PROPOSED GRADES MAY NOT NECESSARILY INCORPORATE SPREADING OF CUT MATERIAL NOR DO THEY PRECLUDE THE NEED FOR IMPORTING FILL MATERIAL TO OBTAIN THE GRADES SHOWN ON THE PLAN. EXCESS MATERIAL MAY BE SPREAD THROUGHOUT THE PROJECT AREA AFTER CONSULTING WITH THE DESIGN ENGINEER AND TOWNSHIP REGARDING IMPACT TO EXISTING AND PROPOSED DRAINAGE PATTERNS OR STORMWATER FACILITIES. IMPORTED MATERIAL MUST BE CLEAN FILL AS DESIGNATED BY THE PAGER.
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- RESPONSIBLE PARTY: SEE CLIENT CONTACT INFORMATION

**CLIENT/APPLICANT**  
GARY McCLAIN  
P.O. BOX 414  
WAYNE, PA 19087

**ENGINEER**  
L. PATRICK SPELLMAN, P.E.  
YERKES ASSOCIATES  
919 CONESTOGA RD  
ROSEMONT BUSINESS CAMPUS  
BUILDING 3, SUITE 110  
ROSEMONT, PA 19010

PLOT DATE: 11/17/2014 X:\B-14-6766 - McClain - 503 Conestoga (see B-08-5806) (Civil) (Eng) (14-11-10 B-14-6766).pro

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LOCATION MAP  
SCALE: 1" = 2000'  
Copyright ADC The Map People  
Permitted Use Number 20202114

- GENERAL NOTES**
- SEE SHEETS 3 AND 4 FOR E&S AND CONSTRUCTION NOTES AND DETAILS.
  - ALL WOODY VEGETATION TO BE RETAINED WITHIN 25' OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT DRIPLINES OR AS SHOWN ON PLANS. TOWNSHIP ARBORIST MUST APPROVE THE LOCATION OF THE PROTECTION FENCE PRIOR TO START OF EARTH WORK.
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  - THE TOWNSHIP ENGINEER MUST BE NOTIFIED 48 HOURS PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
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LANDS N/F OF  
LEONARD A. & EMILY J. LOSCIUTO  
335 OAK TERRACE  
TAX MAP No. 36-22-048

**PROJECT DESCRIPTION**

This project is located at 503 Conestoga Rd. in Radnor Township, Delaware County, Pennsylvania. The applicant proposes to construct two - 4' foot high walls to increase the available rear yard behind the dwelling, a 2nd floor addition and expand the existing garage.

There is 22% of existing impervious coverage. Zoning District R-3 maximum impervious allowed is 35%. The project proposes to add 489 sf of impervious surfaces while removing 156 sf of impervious surfaces.

The project is located in District A of the Darby-Cobbs watershed. The total area of disturbance is approximately 0.60 acres. Total area undisturbed is approximately 0.40 acres.

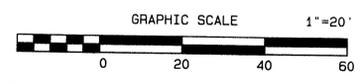
**SOILS INFORMATION**

GeD - GLENELG CHANNERY SILT LOAM WELL DRAINED, 15 TO 20 PERCENT SLOPES, 3 TO 5 FEET DEPTH TO BEDROCK. HYDROLOGIC SOIL GROUP B

GeB - GLENVILLE SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY WELL DRAINED, 3 TO 6 FEET DEPTH TO BEDROCK. HYDROLOGIC SOIL GROUP C

**APPROXIMATE CUT / FILL ANALYSIS**

CUT:	270 CY
FILL:	168 CY
EXCESS:	102 CY



**TOTAL TRACT AREA (TO TITLE LINES): 1.004 ACRES (43,757 S.F.)**  
**NET AREA (TO RIGHT-OF-WAY LINE): 0.859 ACRES (37,419 S.F.)**

NO.	DATE	REVISION COMMENT
2	11-16-2014	REVISE WALL DETAIL TO REFERENCE CIRILLI DESIGN
1	10-31-2014	REVISED PER SHADE TREE COMMITTEE COMMENT
0	09-26-2014	ISSUED TO CLIENT FOR TOWNSHIP GRADING PERMIT APPLICATION

**PROPOSED SITE PLAN**

**GRADING PERMIT PLANS**

PREPARED FOR  
**GARY McCLAIN**  
503 CONESTOGA ROAD  
WAYNE, PA 19087

Radnor Township • Delaware County • Pennsylvania

**Yerkes**

**YERKES ASSOCIATES, INC.**  
CONSULTING ENGINEERS • LAND SURVEYORS • LAND PLANNERS

ROSEMONT BUSINESS CAMPUS • BUILDING 3, SUITE 110  
919 CONESTOGA ROAD • ROSEMONT, PA 19010  
TEL: (610) 525-8200 • FAX: (610) 525-0248

PROJECT - B-14-6786  
DATE - SEPTEMBER 26, 2014  
SCALE - 1"=20'  
DRAWN - EJS  
CHECKED - LPS  
APPROVED - LPS  
CAD FILE - B6786-grading.pro  
NOTEBOOK - BM 1108  
PLAN NO. **36-22-49-01**  
**SHEET 2 OF 3**

- LEGEND:**
- (P/F/S) IRON PIN (FOUND) OR (SET)
  - STAKES (SET)
  - × DS DOOR SILL
  - CO CLEAN-OUT
  - × GROUND LAMP
  - PP POWER POLE
  - EB ELECTRIC BOX/METER
  - MB MAILBOX
  - ×××× FENCE LINE
  - ▨ FLAGSTONE
  - ▨ WALL
  - EDGE OF TREE/WOODS LINE
  - 2 FT CONTOUR LINE
  - 10 FT INDEX CONTOUR LINE
  - SILT FENCE
  - TREE PROTECTION FENCE
  - LIMIT OF DISTURBANCE
  - SOILS BOUNDARY
- EROSION CONTROL LEGEND**
- STANDARD FILTER FABRIC FENCE
  - TREE PROTECTION FENCE
  - LIMIT OF DISTURBANCE
  - EROSION CONTROL BLANKET

**IMPERVIOUS SURFACES SUMMARY**

	EXISTING	REMOVED	CONSTRUCTED	PROPOSED
DWELLING	2702 S.F. (6.2%)		+239 S.F. (0.01%)	2941 S.F. (6.7%)
WALKWAYS	485 S.F.		353 S.F.	838 S.F.
DRIVEWAY	6480 S.F.	-156 S.F.		6324 S.F.
PATIO	120 S.F.		120 S.F.	240 S.F.
WALL	18 S.F.		+250 S.F.	268 S.F.
<b>TOTAL</b>	<b>9650 S.F. (22.0%)</b>	<b>-156 S.F. (0.04%)</b>	<b>+489 S.F. (0.1%)</b>	<b>9983 S.F. (22.8%)</b>

**ZONING REGULATIONS**  
R-3 Residence District

	REQUIRED	EXISTING	CLIENT/APPLICANT
LOT AREA	10,000 s.f. (min.)	43,757 S.F.	GARY McCLAIN P.O. BOX 414 WAYNE, PA 19087
BUILDING AREA	25% (max.)	6.2%	
LOT WIDTH	70 Ft. (min.) at street line	130 Ft.	
FRONT YARD	35 Ft. (min.) from curb	99 Ft.	
SIDE YARD (Single-family detached)	15 Ft. (min.); 35 Ft. (min.) aggregate	18 Ft.	
REAR YARD	35 Ft. (min.)	68 Ft.	
IMPERVIOUS SURFACES	35% (max.)	22.8%	
RIPARIAN BUFFER	30 Ft. (min.) from edge of stream bank	135 Ft.	
BUILDING HEIGHT	3 Stories (max.); 35 Ft. (max.)	<3 Stories; <35 Ft.	

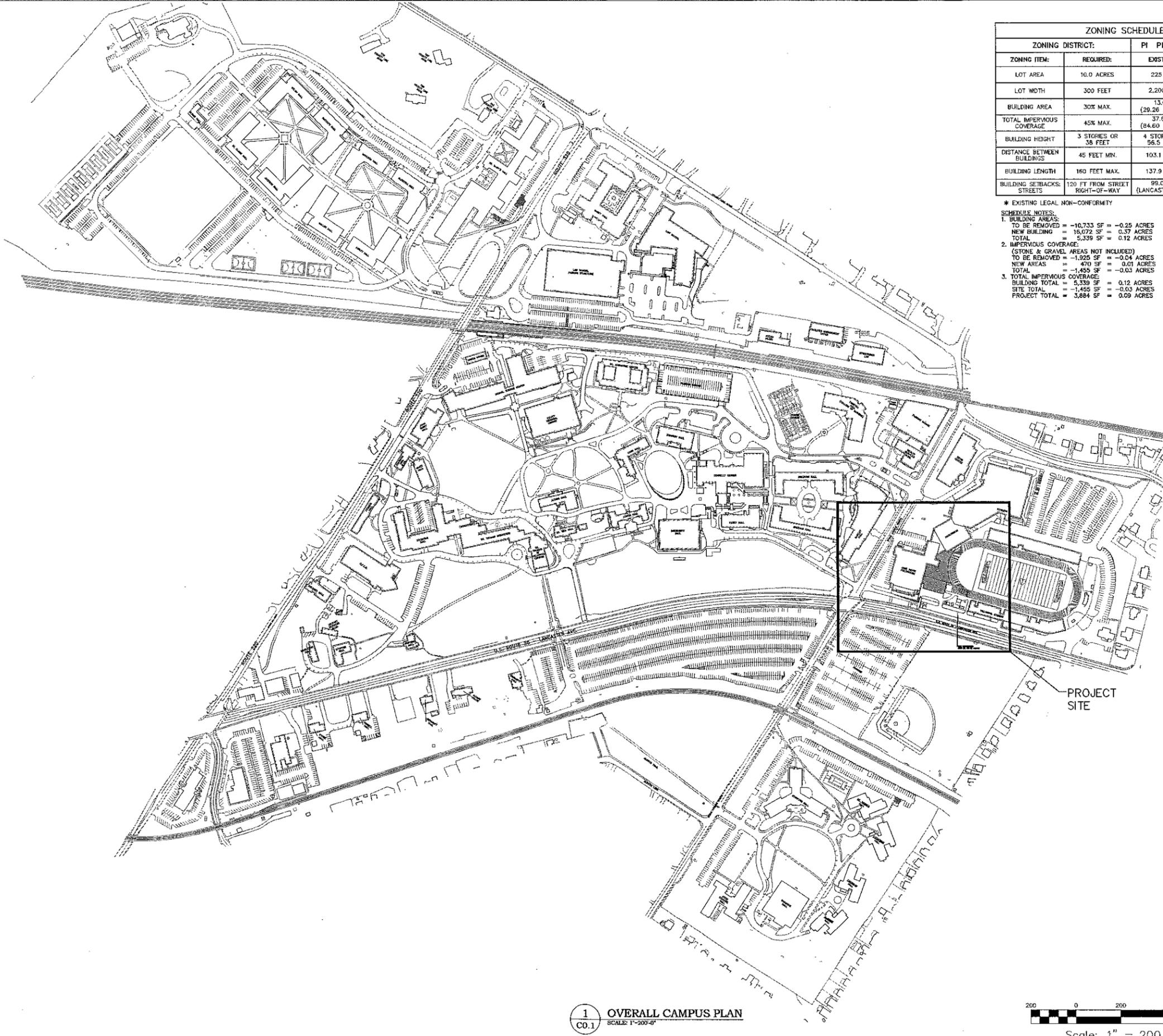
FOR COMPLETE ZONING INFORMATION, REFER TO RADNOR TOWNSHIP ZONING ORDINANCE, CHAPTER 280.

PLOT DATE: 11/16/2014 X:\B-14-6786 - McClain - 503 Conestoga - 301 Conestoga (Cont) (Eng) 2014-11-10 B-14-6786.ppt





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ZONING SCHEDULE			
ZONING DISTRICT:		PI PLANNED INSTITUTIONAL	
ZONING ITEM:	REQUIRED:	EXISTING:	PROPOSED:
LOT AREA	10.0 ACRES	225 AC	NO CHANGE
LOT WIDTH	300 FEET	2,200 FT	NO CHANGE
BUILDING AREA	30% MAX.	13.0% (29.26 ACRES)	13.06% (29.38 ACRES) [1]
TOTAL IMPERVIOUS COVERAGE	45% MAX.	37.60% (84.60 ACRES)	37.64% (84.69 ACRES) [5]
BUILDING HEIGHT	3 STORIES OR 38 FEET	4 STORIES / 56.5 FEET	3 STORIES / 38 FEET MAX.
DISTANCE BETWEEN BUILDINGS	45 FEET MIN.	103.1 FEET	NO CHANGE
BUILDING LENGTH	160 FEET MAX.	137.9 FEET	100 FEET MAX.
BUILDING SETBACKS: STREETS	120 FT FROM STREET RIGHT-OF-WAY	99.0 FT * (LANCASTER AVE)	NO CHANGE

\* EXISTING LEGAL NON-CONFORMITY  
 SCHEDULE NOTES:  
 1. BUILDING AREAS:  
 TO BE REMOVED = -10,733 SF = -0.25 ACRES  
 NEW BUILDING = 16,072 SF = 0.37 ACRES  
 TOTAL = 5,339 SF = 0.12 ACRES  
 2. IMPERVIOUS COVERAGE:  
 (STONE & GRAVEL AREAS NOT INCLUDED)  
 TO BE REMOVED = -1,925 SF = -0.04 ACRES  
 NEW AREAS = 470 SF = 0.01 ACRES  
 TOTAL = -1,455 SF = -0.03 ACRES  
 3. TOTAL IMPERVIOUS COVERAGE:  
 BUILDING TOTAL = 5,339 SF = 0.12 ACRES  
 SITE TOTAL = -1,455 SF = -0.03 ACRES  
 PROJECT TOTAL = 3,884 SF = 0.09 ACRES

  
 Associated Engineers & Consultants Incorporated  
 485 Down Park Drive, Suite 113, Wayne, Pennsylvania 19387, Tel: 610-688-3800, Fax: 610-688-6489  
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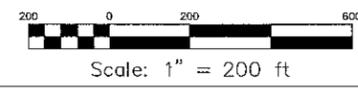
SEAL  
 PROJECT  
**VILLANOVA UNIVERSITY**  
 PROPOSED WEST END ZONE BUILDING  
 800 EAST LANCASTER AVENUE  
 VILLANOVA, PENNSYLVANIA 19085  
 RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/28/14	PRELIM/FINAL APPROVAL

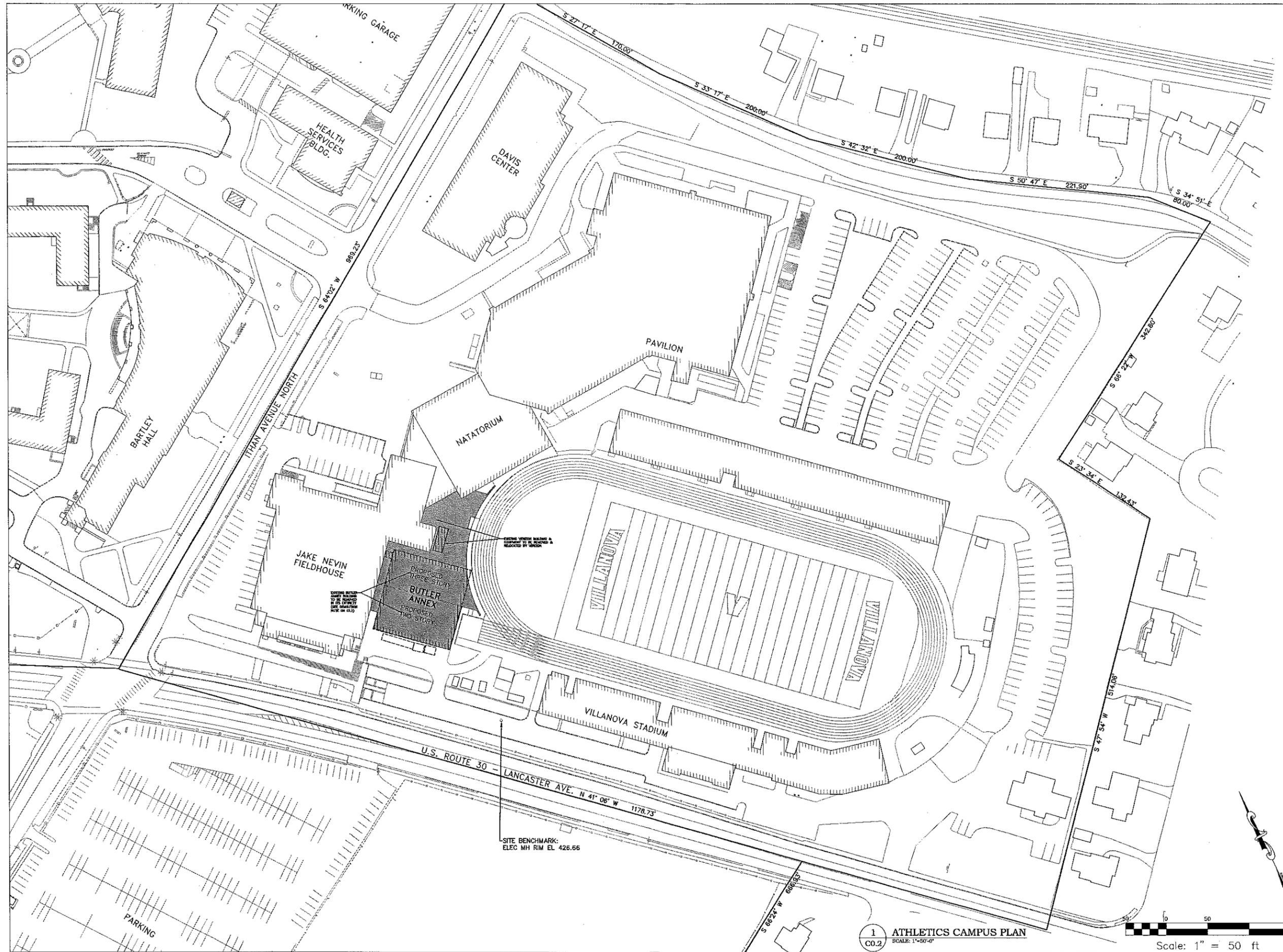
SHEET TITLE  
**OVERALL CAMPUS PLAN**  
 DRAWN BY: BJD  
 CHECKED BY: KRM  
 SHEET NO.

**C0.1**  
 SHEET NO. 2 OF 13  
 PROJECT NO. 0300.014  
 DATE: OCTOBER 29, 2014

**1 OVERALL CAMPUS PLAN**  
 SCALE: 1"=200'-0"



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1  
C0.2 ATHLETICS CAMPUS PLAN  
SCALE: 1"=50'-0"

Scale: 1" = 50 ft

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PROJECT  
**VILLANOVA UNIVERSITY**  
PROPOSED WEST END ZONE BUILDING  
800 EAST LANCASTER AVENUE  
VILLANOVA, PENNSYLVANIA 19085  
RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/29/14	PRELIM.FINAL APPROVAL

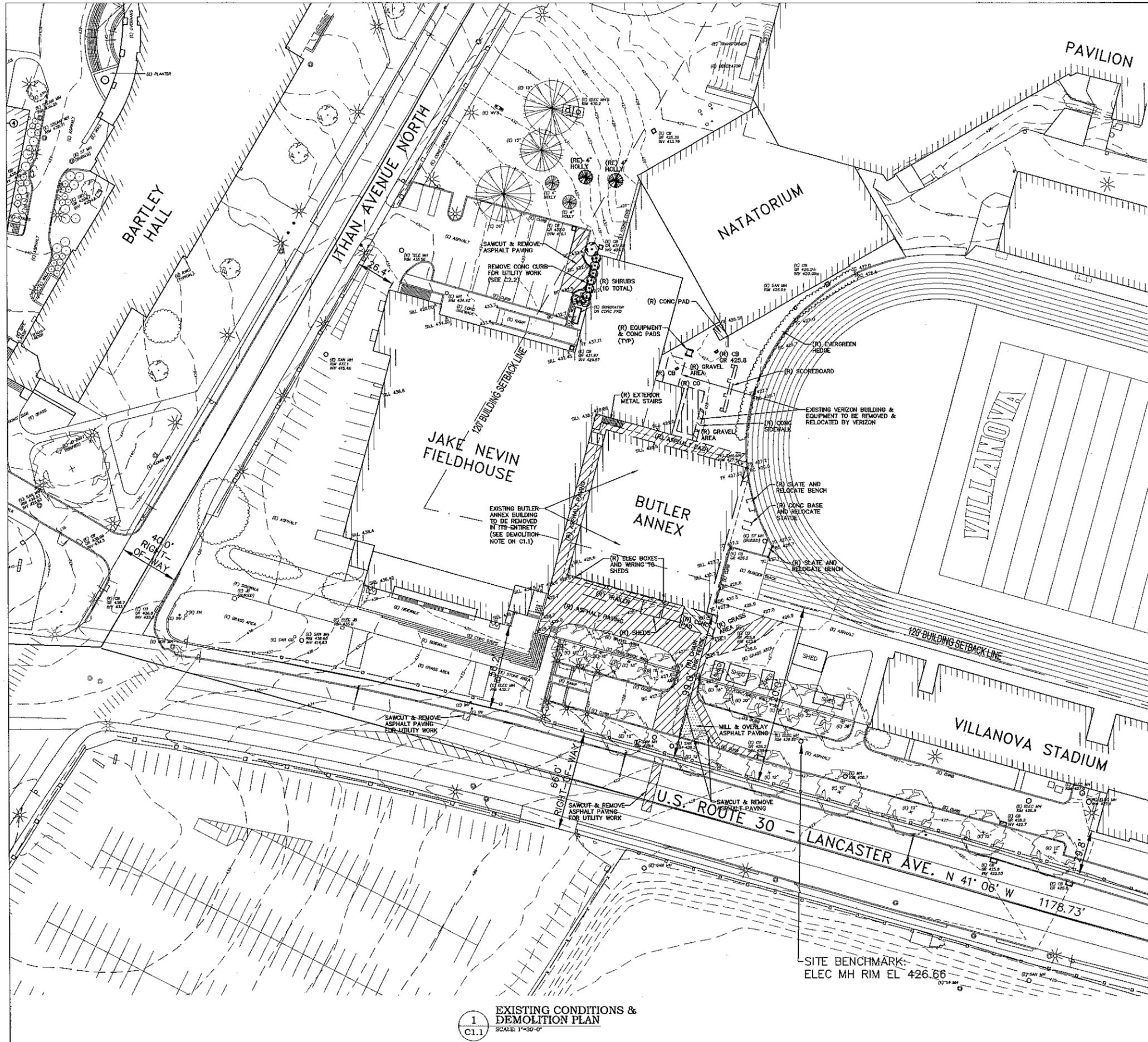
SHEET TITLE  
**ATHLETICS CAMPUS PLAN**

DRAWN BY: BJD  
CHECKED BY: KRM

SHEET NO.  
**C0.2**

SHEET NO. 3 OF 15  
PROJECT NO. 0300.014  
DATE: OCTOBER 29, 2014

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**LEGEND**

EXISTING TO REMAIN	EXISTING TO BE DEMOLISHED
GRADE LINE	---
SPOT ELEVATION	x 142.0
CATCH BASIN & INLET	□
MANHOLE	○
CLEAN OUT OR VALVE	○
UTILITY POLE	□
LIGHT POLES:	
-GOTHIC	⊛
-SHOEBOX	⊛
FIRE HYDRANT	⊛
SIGNAGE	⊛
BUILDING FOOTPRINT	▨
ASPHALT PAVING & CURBING	▨
CONCRETE	▨
SCARIFY	▨
TREES AND SHRUBS	⊛

**ABBREVIATIONS**

(E)	EXISTING TO REMAIN
(ER)	EXISTING TO BE RELOCATED
(R)	REMOVE EXISTING
(RE)	RELOCATE EXISTING
(N)	NEW
(NL)	NEW LOCATION OF EXISTING

**TREE AND SHRUB REMOVAL NOTES:**

- TWO 4" HOLLY TREES LOCATED ALONG THE ITHAN AVENUE SIDE OF THE BUILDING ARE PROPOSED TO BE REMOVED AND REPLANTED.
- TEN SHRUBS ALONG THE ITHAN AVENUE SIDE OF THE BUILDING AND AN EVERGREEN HEDGE ALONG THE TRACK ARE PROPOSED TO BE REMOVED.
- NO TREES GREATER THAN 6" CALIPER ARE PROPOSED TO BE REMOVED FOR THIS PROJECT.

**SEC**  
 Associated Engineering Consultants Incorporated  
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**SEAL**

**PROJECT**

VILLANOVA UNIVERSITY  
 PROPOSED WEST END ZONE BUILDING  
 800 EAST LANCASTER AVENUE  
 VILLANOVA, PENNSYLVANIA 19085  
 RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/28/14	PRELIM/FINAL APPROVAL

**SHEET TITLE**

EXISTING CONDITIONS & DEMOLITION PLAN

**DRAWN BY:** BJD  
**CHECKED BY:** KRM

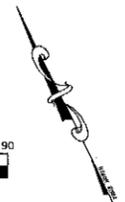
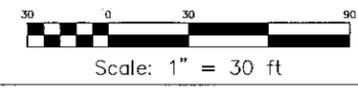
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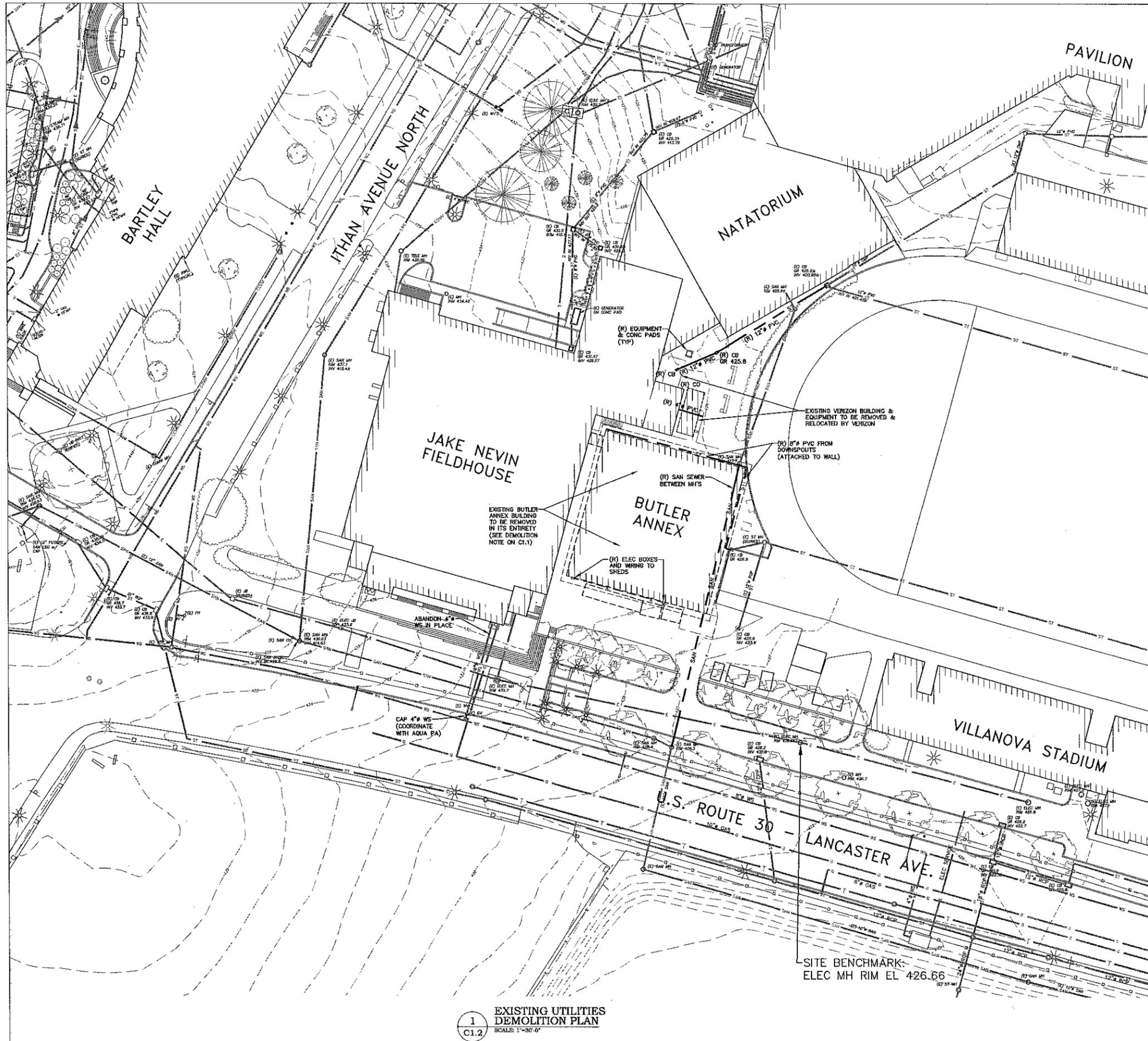
**C1.1**

SHEET NO. 4 OF 13

**PROJECT NO.** 0300.014  
**DATE:** OCTOBER 29, 2014

**1**  
**C1.1** EXISTING CONDITIONS & DEMOLITION PLAN  
 SCALE: 1"=30'-0"





**LEGEND**

EXISTING TO REMAIN	EXISTING TO BE DEMOLISHED
STORM SEWER	ST
SANITARY SEWER	SS
WATER SERVICE	WS
STEAM	S
COMMUNICATIONS	COM
ELECTRIC SERVICE	E
GAS SERVICE	G
CHILLED WATER SUPPLY	CWS
CHILLED WATER RETURN	CWR
CATCH BASIN & INLET	CB
MANHOLE	MH
CLEAN OUT OR VALVE	CO
UTILITY POLE	U
LIGHT POLE	L
FIRE HYDRANT	HY

**ABBREVIATIONS**

(E)	EXISTING TO REMAIN
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(R)	REMOVE EXISTING
(RE)	RELOCATE EXISTING
(N)	NEW
(NL)	NEW LOCATION OF EXISTING

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**VILLANOVA UNIVERSITY**  
 PROPOSED WEST END ZONE BUILDING  
 800 EAST LANCASTER AVENUE  
 VILLANOVA, PENNSYLVANIA 19085  
 RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/29/14	PRELIM/FINAL APPROVAL

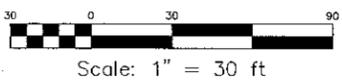
**NOTE:**  
 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

Serial Number: 20141320513

**CALL BEFORE YOU DIG!**

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL Pennsylvania One Call System, Inc. 1-800-242-1776

**NOTE:**  
 AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED SHALL NOTIFY THE PA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.



**1**  
**C1.2**  
 EXISTING UTILITIES DEMOLITION PLAN  
 SCALE: 1"=30'-0"

SHEET TITLE

**EXISTING UTILITIES DEMOLITION PLAN**

DRAWN BY: BJD  
 CHECKED BY: KRM

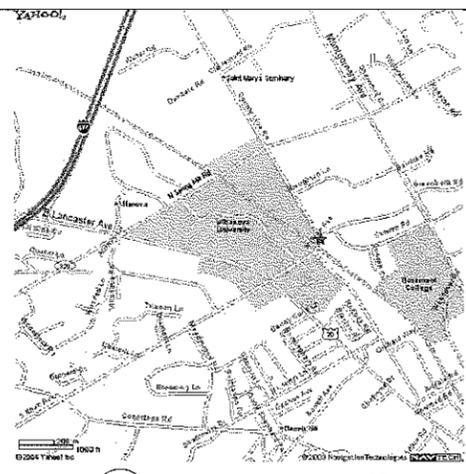
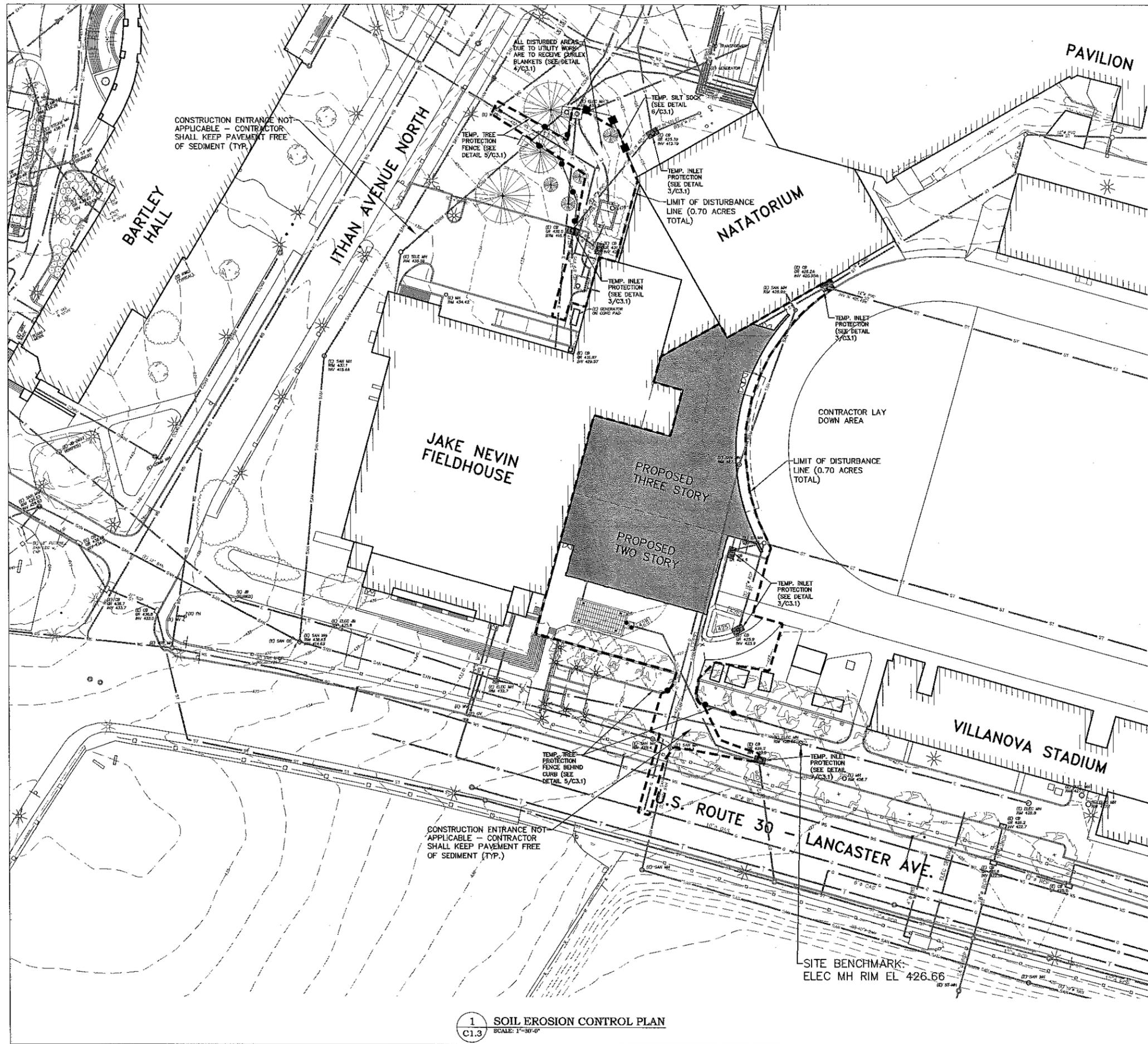
SHEET NO.

**C1.2**

SHEET NO. 6 OF 13

PROJECT NO. 0300.014  
 DATE: OCTOBER 29, 2014

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**A LOCATION MAP**  
SCALE: 1" = 150'±

**SOIL DATA:**  
M<sub>0</sub> - MADE LAND, SCHIST AND GNEISS MATERIALS.  
SLOPE RANGE: 0 TO 8%  
DEPTH TO BEDROCK: 40" - 72"  
DEPTH TO SEASONAL WATER TABLE: 60"  
PERMEABILITY: MODERATE  
HYDROLOGIC SOIL GROUP: C

**SOIL LIMITATIONS:**  
MADE LAND:  
SOMEWHAT LIMITED FOR COMMERCIAL BUILDINGS  
REASONS: SHRINK-SWELL  
SOMEWHAT LIMITED FOR SHALLOW EXCAVATIONS  
REASONS: DEPTH TO SATURATED ZONE

**SOIL LIMITATION RESOLUTIONS:**  
RESOLUTIONS:  
SHRINK-SWELL - THE PROPOSED BUILDING ADDITION WILL BE CONSTRUCTED WITHIN AN AREA OF THE PROPERTY THAT HAS PREVIOUSLY BEEN DEVELOPED. NEW EXCAVATIONS WILL NOT BE ANY DEEPER THAN EXCAVATIONS THAT HAVE ALREADY BEEN DONE IN THIS PART OF THE PROPERTY.  
DEPTH TO SATURATION ZONE - PUMPS ARE TO BE UTILIZED AS NEEDED TO REMOVE EXCESS WATER FROM EXCAVATION AREAS. PUMPS ARE TO DISCHARGE TO EXISTING VEGETATED AREAS. SEE DETAIL ON C3.1.

Serial Number: 20141320513

**CALL BEFORE YOU DIG!**

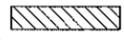
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL Pennsylvania One Call System, Inc. 1-800-242-1776



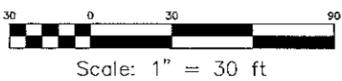
**NOTE:**  
AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED SHALL NOTIFY THE PA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

**WATERSHED NOTE:**  
THE PROJECT IS LOCATED IN THE ITHAN CREEK WATERSHED, WHICH HAS A CHAPTER 93 RECEIVING WATER CLASSIFICATION OF CWF/MF.

**TEMP. CONSTRUCTION LEGEND**

-  LIMIT OF DISTURBANCE BOUNDARY LINE (0.70 ACRES TOTAL)
-  AREAS TO RECEIVE CURLEX BLANKETS (SEE DETAIL 4/C3.1)
-  TEMPORARY SILT SOCK (SEE DETAIL 6/C3.1)
-  TEMPORARY TREE PROTECTION FENCE (SEE DETAIL 5/C3.1)
-  TEMPORARY CONSTRUCTION FENCE TO BE 6'-0" HIGH CHAIN LINK FENCE (MOUNTED ON REMOVABLE PRECAST CONCRETE BASE - UNLESS NOTED OTHERWISE)
-  TEMPORARY INLET PROTECTION (SEE DETAILS 3&7/C3.1)

**NOTE:**  
ANY OFF-SITE WASTE AREA MUST HAVE AN EAS PLAN REVIEWED AND APPROVED BY THE LOCAL COUNTY CONSERVATION DISTRICT PRIOR TO BEING ACTIVATED.



**1 SOIL EROSION CONTROL PLAN**  
C1.3 SCALE: 1"=30'-0"

Associated Engineering Consultants Incorporated  
405 Down Park Drive Suite 113 Wayne Pennsylvania 19387 Tel: 610-668-2800 Fax: 610-668-4099

Professional Seal: DAVID C. BRANDT, ENGINEER, 27452-E, PENNSYLVANIA

**VILLANOVA UNIVERSITY**  
PROPOSED WEST END ZONE BUILDING  
800 EAST LANCASTER AVENUE  
VILLANOVA, PENNSYLVANIA 19085  
RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/29/14	PRELIM/FINAL APPROVAL

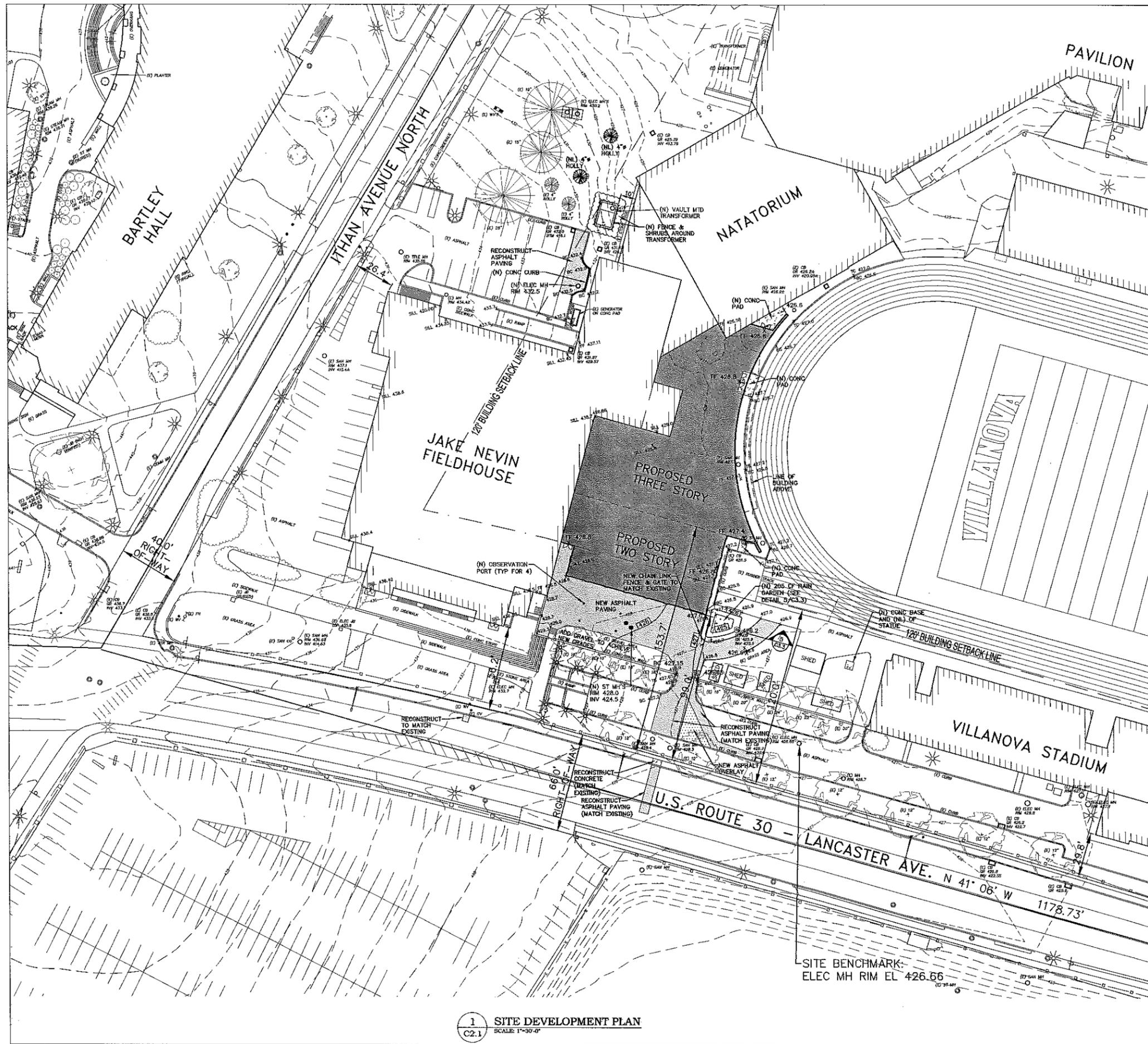
SHEET TITLE: **SOIL EROSION CONTROL PLAN**

DRAWN BY: BJD  
CHECKED BY: KRM

SHEET NO. **C1.3**  
SHEET NO. 6 OF 13

PROJECT NO. 0300.014  
DATE: OCTOBER 29, 2014

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**LEGEND**

	EXISTING TO REMAIN	PROPOSED
GRADE LINE	-142-	[142]
SPOT ELEVATION	x 142.0	x 142.0
CATCH BASIN & INLET	□	●
MANHOLE	○	●
CLEAN OUT OR VALVE	○	●
UTILITY POLE	⊕	●
LIGHT POLES:		
-GOTHIC	⊗	⊗
-SHOEBOX	⊕	⊕
-GLOBE	⊗	⊗
FIRE HYDRANT	⊕	⊕
SIGNAGE	⊕	⊕
BUILDING FOOTPRINT	[Hatched]	[Hatched]
ASPHALT PAVING	[Dotted]	[Dotted]
ASPHALT OVERLAY	[Dotted]	[Dotted]
CONCRETE	[Dotted]	[Dotted]
TREES AND SHRUBS	[Tree Symbols]	[Tree Symbols]

**ABBREVIATIONS**

(E) EXISTING TO REMAIN  
 (ER) EXISTING TO BE RELOCATED  
 (R) REMOVE EXISTING  
 (RE) RELOCATE EXISTING  
 (N) NEW  
 (NL) NEW LOCATION OF EXISTING

**SEAL**

DAVID C. BRANDT  
 ENGINEER  
 27452-E  
 PENNSYLVANIA

**PROJECT**

VILLANOVA UNIVERSITY  
 PROPOSED WEST END ZONE BUILDING  
 800 EAST LANCASTER AVENUE  
 VILLANOVA, PENNSYLVANIA 19085  
 RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/29/14	PRELIM.FINAL APPROVAL

**SHEET TITLE**

SITE DEVELOPMENT PLAN

DRAWN BY: BJD  
 CHECKED BY: KRM

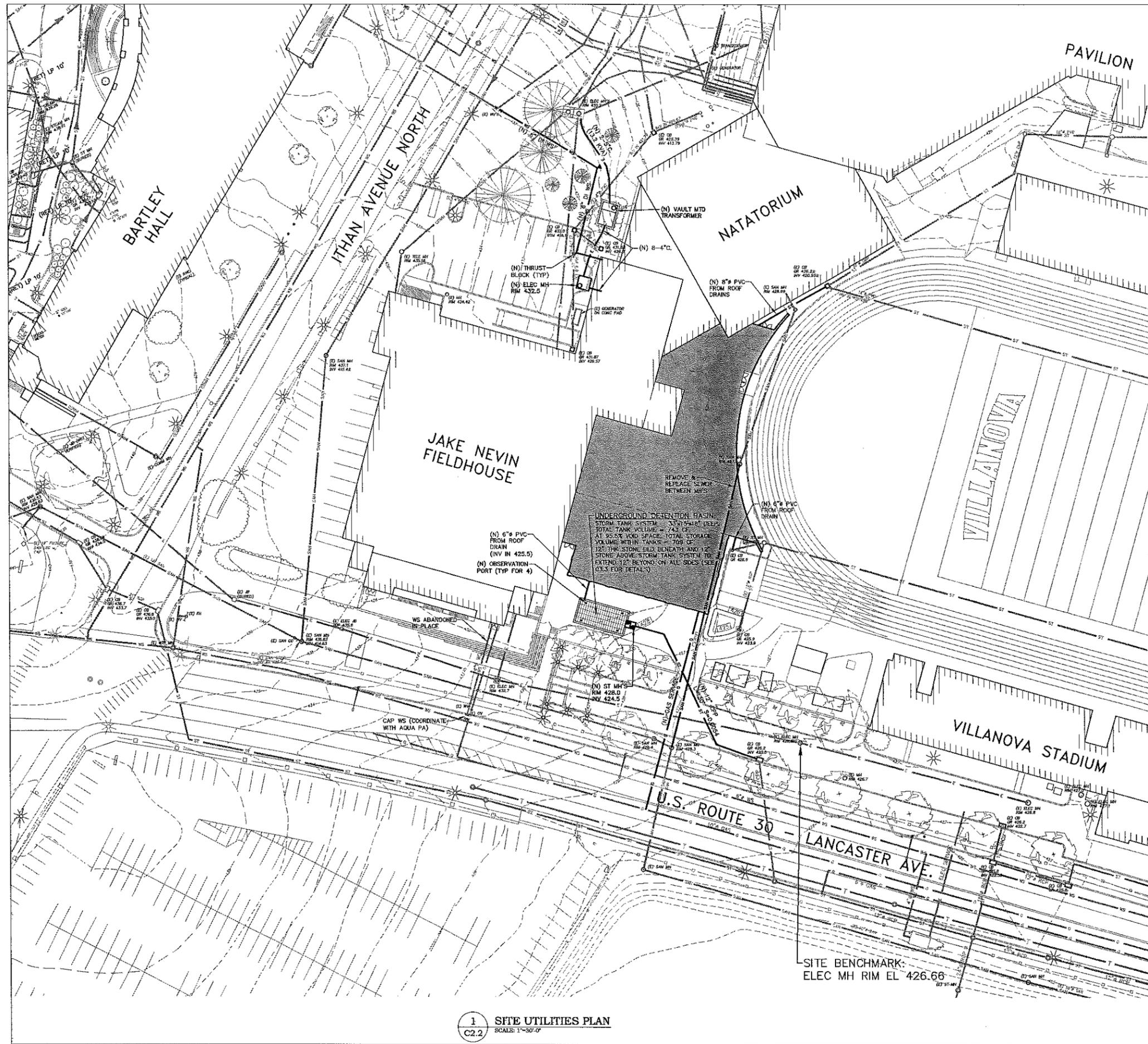
SHEET NO. C2.1

Scale: 1" = 30 ft

PROJECT NO. 0300.014  
 DATE: OCTOBER 29, 2014

1 SITE DEVELOPMENT PLAN  
 C2.1 SCALE: 1"=30'-0"

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**LEGEND**

EXISTING TO REMAIN	PROPOSED	
STORM SEWER	ST	ST
SANITARY SEWER	SAN	SAN
WATER SERVICE	WS	WS
STEAM	S	S
COMMUNICATIONS	COM	COM
ELECTRIC SERVICE	E	E
GAS SERVICE	G	G
CHILLED WATER SUPPLY	CHWS	CHWS
CHILLED WATER RETURN	CHWR	CHWR
CATCH BASIN & INLET	CB	CB
MANHOLE	MH	MH
CLEAN OUT OR VALVE	CO/V	CO/V
UTILITY POLE	U	U
LIGHT POLE	L	L
FIRE HYDRANT	KS	KS

**ABBREVIATIONS**

(E)	EXISTING TO REMAIN
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(R)	REMOVE EXISTING
(RE)	RELOCATE EXISTING
(N)	NEW
(NL)	NEW LOCATION OF EXISTING

SEAL

PROJECT

**TOWNSHIP ACCESS NOTE:**  
The Property Owner allows Radnor Township access to the stormwater management facilities for inspection purposes.

**NOTES:**  
A. No person shall modify, remove, fill, landscape, or alter any existing stormwater control or BMP, unless it is part of an approved maintenance program, without the written approval of the municipality.  
B. No person shall place any structure, fill, landscaping, or vegetation into a stormwater control or BMP or within a drainage easement which would limit or alter the functioning of the stormwater control or BMP without the written approval of the municipality.

**STORMWATER MANAGEMENT FACILITIES - MAINTENANCE REQUIREMENTS:**  
The Property Owner is responsible for ownership and maintenance of the stormwater facilities. The maintenance responsibilities for the stormwater management facilities shall include, but not be limited to: mowing all lawn areas; cutting all weeds and overgrown vegetation; maintaining stable side slopes; maintaining the berm and outlet structure; inspecting the basin once a year and after each storm event greater than 100 years to ensure none of the orifices are clogged; flushing the basin every two years to prevent the build up of debris and sediment; clearing and disposing of all debris, utilizing a vacuum truck as necessary; repairing any problems associated with erosion; maintaining all stormwater pipes, swales, catch basins, manholes and orifices; maintaining an unobstructed flow of stormwater through the outlet structure; and maintaining the design capacity of the stormwater management facility.

DATE	REVISION
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**SHEET TITLE**

**SITE UTILITIES PLAN**

**DRAWN BY:** BJD  
**CHECKED BY:** KRM

**SHEET NO.**

**C2.2**

SHEET NO. 3 OF 13

**PROJECT NO.** 0300.014  
**DATE:** OCTOBER 29, 2014

**Scale:** 1" = 30 ft

**Scale:** 0 30 90

**1 SITE UTILITIES PLAN**  
SCALE: 1"=30'-0"

**VILLANOVA UNIVERSITY**  
PROPOSED WEST END ZONE BUILDING  
800 EAST LANCASTER AVENUE  
VILLANOVA, PENNSYLVANIA 19085  
RADNOR TOWNSHIP, DELAWARE COUNTY

**EROSION AND SEDIMENT CONTROL GENERAL NOTES:**

- 1. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter. Stockpiled topsoil mounds shall be stabilized by applying temporary seed and a perimeter silt fence shall be installed as shown on the plan. Temporary seeding shall be per PENNDOT form 403, Section 804(B).
- 2. The operator shall ensure that the approved erosion and sediment control plan is properly and completely implemented.
- 3. Until the site achieves final stabilization, the operator shall assure that the best management practices are implemented, operated and maintained properly and completely. Maintenance shall include inspections of all best management practice facilities. The operator shall maintain and make available to the Conservation District complete, written inspection logs of all those inspections. All maintenance work, including cleaning, repair, replacement, regrading and restoration shall be performed immediately.
- 4. Immediately upon discovery of unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate potential for accelerated erosion and/or sediment pollution.
- 5. Before initiating any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the local Conservation District.
- 6. The operator shall ensure that an erosion and sediment control plan has been prepared, approved by the local Conservation District and is being implemented and maintained for all soil and/or rock spoil and borrow areas, regardless of their locations.
- 7. 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.
- 8. The operator is advised to become thoroughly familiar with the provisions of the Appendix 64, Erosion Control Rules and Regulations, Title 25, Part 1, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article III, Water Resources, Chapter 102, Erosion Control.
- 9. A copy of the approved erosion and sediment control plan must be available at the project site at all times.
- 10. The E&S control plan mapping must display a PA ONE CALL SYSTEM INCORPORATED symbol including the site identification number.
- 11. Erosion and sediment BMP's must be constructed, stabilized and functional before site disturbance begins within the tributary area of those BMP's.
- 12. After final site stabilization has been achieved, temporary erosion and sediment BMP controls must be removed. Areas disturbed during removal of the BMP's must be stabilized immediately.
- 13. At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion and sedimentation control plan preparer, and a representative of the local Conservation District to an on-site 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 1-800-242-1776 for buried utilities locations.
- 14. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
- 15. Immediately after earth disturbance activities cease, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be restabilized within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
- 16. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover which is densely sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
- OTHER BMP's:
- 17. Sediment must be removed from storm water inlet protection after each runoff event.

- TEMPORARY STABILIZATION & PERMANENT STABILIZATION:
- 18. Hay or straw mulch must be applied at 3.0 tons per acre.
- 19. Provide "Curlex Blankets" as manufactured by American Excelsior Co., or approved equal, on all slopes 3:1 and steeper.
- 20. Straw mulch shall be applied in long strands, not chopped or finely broken.
- 21. Until the site is stabilized, all erosion and sediment control BMP's must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMP's after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including cleaning out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If erosion and sediment control BMP's fail to perform as expected, replacement BMP's, or modifications of those installed will be required.
- 22. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
- 23. The operator shall remove from the site, recycle or dispose of all building materials and waste in accordance with PADEP's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. The contractor shall not illegally bury, dump or discharge any building material or wastes at the site.
- 24. The NPDES Boundary is equal to the outer perimeter boundary of the site, and any off-site areas within the limit of disturbance that are the responsibility of the developer to install. (Off-site facilities, such as: utilities and roadway improvements.)

**UTILITY LINE TRENCH EXCAVATION**

- 1. Limit advanced clearing and grubbing operations to a distance equal to two times the length of the pipe installation that can be completed in one day.
- 2. Work crews and equipment for trenching pipe installation and backfilling shall be self-contained and separate from clearing, grubbing, site restoration and stabilization operations.
- 3. All soil excavated from the trench shall be placed on the uphill side of the trench.
- 4. Limit daily trench excavation to the length of pipe placement and backfilling that can be completed that some day.
- 5. Water which accumulates in the open trench shall be completely removed by pumping before pipe placement and/or backfilling begins. Water removed from the trench shall be pumped through a filtration device.
- 6. On the day following pipe placement and backfilling, the disturbed area shall be graded to final contours and appropriate temporary erosion and sediment pollution control measures/facilities shall be installed. Stabilization shall be done immediately after the backfilling is complete.

**EROSION AND SEDIMENTATION CONTROL CONSTRUCTION NOTES:**

- 1. SILT FENCE: Silt fences shall be installed downslope of all areas to be disturbed before any work begins. Silt fence shall be installed as near as possible to the locations shown on the plan. Installation shall be as follows:
  - a. Silt fencing must be installed parallel to existing contours or constructed level alignments. Both ends of each fence section must be extended at least 8 feet upslope at 45 degrees to the main fence alignment.
  - b. Dig a 6" deep trench along the upslope side of the fence line.
  - c. Install fence posts 18" below the ground surface at 8' minimum intervals on a slight angle toward the anticipated runoff source.
  - d. Stretch and fasten filter fabric to the upslope side of the support stakes. Wherever reinforced fabric fence is installed, the reinforcement mesh shall be fastened to the stakes prior to the fabric.
  - e. At fabric ends, both ends should be wrapped around the support stake and stapled. If the fabric comes already attached to the stakes, the end stakes shall be held together while the fabric is wrapped around the stakes at least one revolution prior to driving the stakes.
  - f. The bottom of the fence shall be anchored by placing the fabric in the bottom of the trench, and backfilling and compacting the fill material in the trench.
  - g. Guy wires shall be attached to reinforced silt fence. An acceptable alternative is to stake straw bales on the downslope side of the fence.
  - h. Silt fence shall be inspected weekly and after each runoff event. Needed repairs shall be performed immediately after the inspection. Damaged fences shall be immediately replaced. Rock filter outlets shall be installed where fences have become overstressed due to sediment build up.
- 2. Stormwater inlets must be protected until the tributary areas are stabilized.
- 3. Diversions, channels, sedimentation basins, sediment traps, and stockpiles must be mulched immediately.
- 4. STRUCTURAL AND CONSTRUCTION FILL: In all areas where structural or construction fill is to be placed, "grubbing" shall be carried out prior to placing any fill. All trees, brush and other vegetation within the construction fill areas shall be removed from the site.
- 5. DUST CONTROL: To control dust generation on-site, the contractor shall wet construction traffic routes and staging areas.
- 6. TEMPORARY VEGETATION BY SITE CONTRACTOR: Upon completion of an earth disturbance activity or any stage or phase of an activity, the site shall be immediately seeded, mulched or otherwise protected from accelerated erosion and sedimentation. Temporary seeding shall be as follows:
  - 1. Lime shall be evenly broadcast @ 150 lbs/1,000 sq. ft. (or as per soil test).
  - 2. 10-25-25 Basic Fertilizer shall be evenly broadcast at the rate of 25 lbs/1,000 sq. ft.
  - 3. Seed with annual ryegrass at a rate of 1 lb/1,000 sq. ft.
  - 4. If the season prevents the establishment of a temporary vegetative cover, the disturbed areas will be mulched with straw or equivalent material, at a rate of 140 pounds per 1000 square feet. Mulch should be applied regardless of the time of year.
- 7. EXISTING ROADWAY CLEANING: Contractor shall maintain a clean approach to the site. If the dirt and/or debris builds up on existing asphalt surfaces, the site contractor shall become a contractor shall professionally clean that surface to the satisfaction of the authority having jurisdiction.
- 8. Inlet protection shall become only be applied, as detailed on the plan, to every inlet which has been constructed to the roadway subsurface elevation.
- 9. All stabilized construction entrances shall be surface as near as possible to the location shown on the plan. Prior to final roadway construction, the aggregate shall be removed, and the roadway prepared and installed according to specifications.
- 10. Pollutants such as fuels, lubricants, bitumens, raw sewage and other harmful materials shall not be discharged into or near rivers, streams and impoundments or into natural or manmade channels leading thereto.

**FILL MATERIAL NOTES:**

If the site will need to import or export material from the site, the responsibility for performing environmental due diligence and determination of fill material will rest with the General Contractor.

**DEFINITIONS:**

Clean Fill is defined as: 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 is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include millied asphalt or asphalt that has been processed for re-use).

Clean Fill affected by a spill or release of a regulated substance: Fill material affected by a spill or release of a regulated substance still qualifies as clean fill provided the testing reveals that the fill material contains concentrations of regulated substances that are below the residential limits in Tables FP-1a and FP-1b found in the Department's policy "Management of Fill".

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. A copy of Form FP-001 can be found at the end of these instructions.

Environmental due diligence: The applicant must perform environmental due diligence to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: Investigative techniques, including, but not limited to, visual property inspections, electronic 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 a regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy "Management of Fill".

**NOTE:**

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 25 Pa. Code Chapters 287 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable. These regulations are available on-line at [www.pascode.com](http://www.pascode.com).

**PERMANENT VEGETATION BY CONTRACTOR:**

**GRADING AND SUB-SOIL PREPARATION**

All areas that will receive permanent vegetation, such as, but not limited to, turf and planting beds, shall be prepared in the following manner:

- A. Sub soils shall be native material free from any construction debris, stones larger than 3", organic material such as wood or dead plants larger than 2" in diameter. Any additional fill soil material brought onto site must be inspected by owner for suitability.
- B. Where sub soils are backfilled or constructed in depths greater than 2 feet, each 2 foot lift shall be compacted to minimize subsidence.
- C. Sub grade to be graded to within 6" of contours called for on plan, to provide proper drainage and be free of standing water.
- D. Sub soils to be aerified and loosened to relieve surface compaction prior to placement of topsoil.
- E. After approval of subsoil grading, no additional equipment or vehicles may be driven on the area approved, except for equipment used in landscape operations. Any compaction or depressions must be corrected to reestablish proper sub grade as previously approved, prior to installation of topsoil and plant material.

**TOPSOIL APPLICATION AND TREATMENT:**

A. After topsoil (6" minimum thickness) is added to the proper elevations, the following materials shall be applied and tilled (mixed) into the top 4" of the surface:

- 1. Lime shall be evenly broadcast @ 150 lbs/1,000 sq. ft. (or as per soil test).
  - 2. Soil Conditioner shall be evenly broadcast @ 50 lbs/1,000 sq. ft.
  - 3. 10-25-25 Basic Fertilizer shall be evenly broadcast at the rate of 25 lbs/1,000 sq. ft.
  - 4. Soil Amendment (Axils or Isolate) is evenly mixed into the top 4" of the field surface.
- B. After incorporation of the above materials, the topsoil shall be re-firmed by dry-rolling (topsoil moisture content must be near zero percent) with a five (5) ton roller on a dual flotation tread agricultural tractor.
- C. The surface grades shall be surveyed and any undulations or irregularities resulting from applications and soil structuring shall be corrected.
- D. Any stones larger than 2 inches in any dimension, shall be removed from the top 3" utilizing a mechanical rock picker.
- E. Final grading shall be accomplished utilizing an automatic draft sensing hydraulic land plane attached to a flotation tread agricultural tractor.
- F. Cultivate and restructure the topsoil to a depth of 3-4". Grade tolerance shall be held to 1/4" per foot.
- G. Cultivate and till the soil to a depth of 4-6" (depth may be limited by subsurface conditions).
- H. Re-grade, re-firm and rake the soil surface. This is a smoothing and leveling operation to establish the final crown contours and elevations.
- I. Final stone pick the surface of any stones larger than 1" in any dimension.

**CUT AND FILL:**

- 1. The contractor must visit the site and verify all existing conditions, prior to commencing any construction operation. Any discrepancies between the conditions and the documents must be reported to the Engineer for resolution, prior to the commencement of construction.
- 2. Topsoil shall be stripped from all areas requiring a cut and fill operation. The topsoil will be stockpiled by the Site Contractor and reused for areas under the landscape requirements. Additional topsoil shall be imported as per Specifications for Phase 2.
- 3. All trees, roots, large rocks and construction debris must be removed from all fill material.
- 4. All fill is to be compacted in eight to twelve inch (8" to 12") lifts, to ninety-five percent (95%) of optimum moisture content under paving areas and ninety percent (90%) at optimum moisture content under grass surfaces.
- 5. All fill operations shall be in accordance with the specifications and under strict guidance of the geotechnical-testing agent.
- 6. All disturbed surfaces not receiving impervious cover shall be prepared and seeded according to the specifications.

**SEEDING AND MULCHING:**

- A. Only Flotation Tire Equipment will be permitted after final grade approval.
- B. Drill seeding shall be accomplished by utilizing a 4' wide seeder constructed with 16 rows of steel slitters spaced 3" or less on center and capable of placing seed 1/4" into the surface at a rate of 8 lbs. per 1000 square feet.
- C. Seed shall be Vilanova Mixture Lot No. L20M-4-FVSM-2, as supplied by Fisher and Son Co., Inc.; 237 King Street, Melvern, PA 19355
- D. Mulching - The Contractor shall mulch all newly seeded areas with acid hay, at the rate of 140 pounds per 1,000 square feet in accordance with DEP specifications.
- E. Provide manufacturer's fabric and straw combination to all seeded areas on banks 3 to 1 or steeper and where potential erosion may take place.

**MAINTENANCE:**

- A. Seeded lawn maintenance shall be for not less than 60 days after substantial completion.
  - a. If seeded in fall and not given full 60 days of maintenance, or if not considered acceptable at that time, continue maintenance the following spring until acceptable lawn is established.
- B. Maintain lawns by watering, fertilizing, weeding, mowing, trimming and other operations such as rolling, regrading and replanting, as required, to establish a smooth, acceptable lawn; free of graded or bare areas.
- C. When seeding is completed, including maintenance, Owner will make an inspection to determine acceptability.
- D. When it becomes necessary, the Owner shall inform the Contractor of unsatisfactory conditions of erosion and sediment devices, at such time the Contractor shall improve the conditions of said devices to meet with the approval of the Owner.
- E. 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.
- F. Seeded areas that have been washed away shall be filled and graded as necessary and then reseeded. This procedure shall be repeated after each storm or until no more signs of erosion are evident.

**GENERAL NOTES**

**GENERAL ITEMS:**

- 1. The CAD documents produced for this project are not to be used for survey datum.
- 2. Horizontal and vertical controls shall be taken from the dimensional plans.
- 3. Any dimensions not shown on the drawings can be scaled.

**EXISTING CONDITIONS AND DEMOLITION:**

- 1. All dimensions and existing conditions are to be field-verified before the commencement of any work. Any discrepancies shall be reported to the Engineer immediately prior to proceeding.
- 2. The Contractor shall take all necessary precautions to insure the safety of all excavations. The Contractor shall construct and maintain all shoring, bracing and supports as required to preserve stability and prevent movement, settlement or collapse of construction to remain, and to prevent the unexpected or uncontrolled movement or collapse of construction being demolished.
- 3. The Contractor shall assume all responsibility of the site, concerning safety of the worker and the personnel of the Owner. At no time shall any non-construction worker be allowed free access to the site.
- 4. All demolition work shall be performed in strict accordance with the Project Specifications. All items to be reused or salvaged, shall be handled with care so as not to be damaged during the operation.
- 5. If items are handed over by the Owner to the Contractor for reinstallation, then those items should be thoroughly inspected and not accepted by the Contractor unless they are in usable condition. Damaged items should be pointed out to the Representative of the Owner and documented in writing.
- 6. All project specifications should be read and adhered to, concerning manufacturers and their requirements for installation on the project.
- 7. Temporary construction requirements for the County Soil Conservation District are extremely important to follow closely. A Representative from the Soil Conservation District may visit the project without warning and stop the progression of the project, until items are corrected.
- 8. The locations of existing underground utilities are shown in an approximate way only and have not been independently verified by the Owner or its Representative. The Contractor shall determine the exact locations of all existing utilities before commencing work and agree to be fully responsible for any and all damages, which might be occasioned by the Contractor's failure to exactly locate and preserve any and all underground utilities.
- 9. The Contractor is responsible for the repair or replacement of any existing improvements damaged by him or his subcontractors during the construction of the project.
- 10. Obtain proper authorization from the Owner in writing 48 hours prior to any and all shutdowns of existing utilities.
- 11. Remove waste material, including unsatisfactory soil, trash and debris, and legally dispose of it off Owner's property as per local authorities having jurisdiction.

**CUT AND FILL:**

- 1. The contractor must visit the site and verify all existing conditions, prior to commencing any construction operation. Any discrepancies between the conditions and the documents must be reported to the Engineer for resolution, prior to the commencement of construction.
- 2. Topsoil shall be stripped from all areas requiring a cut and fill operation. The topsoil will be stockpiled by the Site Contractor and reused for areas under the landscape requirements. Additional topsoil shall be imported as per Specifications for Phase 2.
- 3. All trees, roots, large rocks and construction debris must be removed from all fill material.
- 4. All fill is to be compacted in eight to twelve inch (8" to 12") lifts, to ninety-five percent (95%) of optimum moisture content under paving areas and ninety percent (90%) at optimum moisture content under grass surfaces.
- 5. All fill operations shall be in accordance with the specifications and under strict guidance of the geotechnical-testing agent.
- 6. All disturbed surfaces not receiving impervious cover shall be prepared and seeded according to the specifications.

**SEEDING AND MULCHING:**

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- C. When seeding is completed, including maintenance, Owner will make an inspection to determine acceptability.
- D. When it becomes necessary, the Owner shall inform the Contractor of unsatisfactory conditions of erosion and sediment devices, at such time the Contractor shall improve the conditions of said devices to meet with the approval of the Owner.
- E. 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.
- F. Seeded areas that have been washed away shall be filled and graded as necessary and then reseeded. This procedure shall be repeated after each storm or until no more signs of erosion are evident.

**CONSTRUCTION SEQUENCE KINTERRA:**

**IN GENERAL:**

- A. All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.
- B. At least 7 days before starting any earth disturbance activities, the Contractor shall invite all subcontractors involved in those activities, the Owner, the Civil Engineer, all appropriate municipal officials, and a representative of the Delaware County Conservation District to an on-site pre-construction meeting.
- C. Township engineer shall be notified 48 hours prior to the start of earthmoving activities and prior to the installation of the underground detention basin.

**SEQUENCE OF CONSTRUCTION:**

- 1. Install erosion control measures as shown on the "Soil Erosion Control Plan" Sheet C1.3. The erosion control measures shall include: the temporary inlet protection, the temporary silt sock, the temporary tree protection fence and temporary construction fence.
- 2. Install the new water and electric services along the Ithan Avenue side of the building, removing the trees, shrubs, asphalt paving and concrete curbing as necessary. Backfill the trenches and stabilize the disturbed areas. Install erosion control blankets on all disturbed areas not receiving impervious cover.
- 3. Remove the existing Butler Annex and Verizon buildings. Remove the existing site improvements in the project area beyond the track.
- 4. Remove and replace the sanitary sewer between the two manholes.
- 5. Excavate for and install the underground detention system and backfill. See additional notes below for information regarding Underground Detention Basin and Infiltration Trench Construction.
- 6. Construct the building addition.
- 7. Perform final grading throughout the site and install new site improvements around building.
- 8. Construct the rain garden and plant landscaping, trees and permanent vegetation.
- 9. Once the site is stabilized to 70% uniform coverage of permanent vegetation and the building has been completed, remove the remaining temporary control measures throughout the site. Stabilize all areas that are disturbed due to the removal of the temporary control measures.

**GENERAL NOTES (CONTINUED)**

**FOUNDATIONS, CONCRETE AND REINFORCING STEEL:**

- 1. All concrete shall be four thousand (4,000) psi at twenty-eight (28) days with an air content of five percent (5%) ± one percent (1%).
- 2. All reinforcing steel shall meet the requirements of ASTM A-615, Grade 60, epoxy coated.
- 3. All concrete shall be reinforced and placed in accordance with the building requirements for reinforced concrete, as adapted by ACI 318 and Local Codes.
- 4. All concrete work shall conform to ACI 301 Standard Specification for Reinforced Concrete.
- 5. All concrete reinforcing steel shall be detailed and placed in strict accordance with the latest ACI Building Code.
- 6. All details, reinforcement and accessories shall be fabricated and provided in accordance with the manual of Standard Practice for Detailing Reinforced Concrete.
- 7. All bars shall be lapped with a minimum of thirty-six (36) bar diameter at splices, unless noted otherwise on the Drawings. Welded-wire fabric sheets shall be lapped eight-inch (8") minimum, unless noted otherwise on the Drawings.
- 8. Welded-wire fabric shall meet the requirements of ASTM A-615.
- 9. Before placing concrete, the Mechanical and Electrical Subcontractors shall provide location and sizes of all openings, sleeves, anchors and any other requirements by their trades.
- 10. All precast concrete shall be constructed from a minimum of five thousand (5,000) psi air-entrained concrete.
- 11. All precast concrete catch basin inlets, manholes, hand holes and walls shall be submitted for approval and shall meet all PENNDOT Specifications for H520 loading.
- 12. All exposed horizontal concrete walking surfaces shall receive broom finish as per Specifications.

**PIPING REQUIREMENTS:**

- 1. All corrugated polyethylene pipe to be as manufactured by Advanced Drainage Systems, Inc., or approved equal.
- 2. All corrugated polyethylene tubing and fittings shall meet ASTM F405.
- 3. All 12" and 15" corrugated polyethylene tubing to be ASTM F667.
- 4. All corrugated polyethylene drainage tubing to be AASHTO M252.
- 5. All eight-inch (8") diameter and larger GPP gravity pipe, shall be smooth interior and fittings shall meet ASTM Standard D 3350 and AASHTO M 294 Type S Requirement.
- 6. All six-inch (6") diameter and smaller GPP gravity pipe shall be corrugated interior and shall be supplied and installed in strict accordance with the manufacturer's recommendations. All joints shall be made of watertight, non-corrosive materials as recommended by the manufacturer.
- 7. All ductile iron pipes shall meet the classification of AWWA C151, Thickness Class 58. The lining for the ductile iron pipe shall meet the classification of AWWA C 104, Cement Mortar, Seal-Coated.
- 8. All PVC pipe shall schedule 40. All fittings shall meet the classification of ASTM F 679, Type 1, Bell and Spigot, for elastomeric gasket joints.
- 9. All asphalt coated corrugated metal pipe shall be galvanized and shall have a minimum gage of 14.
- 10. All galvanized sheets used for pipe fabrication shall meet ASTM A444-81.
- 11. All corrugated metal pipe and pipe arches shall be galvanized and to be a minimum of 12 gage (2 2/3" x 1/2" corrugations).
- 12. All pipe to be backfilled a minimum of 6" all around with sand or screenings unless noted otherwise.

**ASPHALT PAVING:**

- 1. All asphalt paving shall be plant mixed and hot-laid, in accordance with ASTM D 2515, in strict accordance with all PENNDOT requirements.
- 2. All installation requirements shall be in accordance with the Project Specification.
- 3. All lane markings shall be in accordance with AASHTO M 248, Type N or F.
- 4. All parking areas are to have a 3" wide, PADOT approved, pointed white parking stripe.
- 5. All high points and low points in asphalt paving and concrete curbing, provide gradual, rounded transition between opposing grades.
- 6. All proposed concrete curb radii shall be 5 feet minimum.

**UNDERGROUND DETENTION BASIN/SUBSURFACE INFILTRATION CONSTRUCTION NOTES:**

- 1. Due to the nature of construction sites, subsurface infiltration should be installed toward the end of the construction period, if possible.
- 2. Install and maintain adequate erosion and sediment control measures during construction.
- 3. The existing subgrade under the bed should NOT be compacted or subject to excessive construction equipment traffic prior to geotextile and stone bed placement.
- 4. Where erosion of subgrade has caused accumulation of fine materials and/or surface ponding, this material should be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake (or equivalent) and light tractor. All fine grading should be done by hand. All bed bottoms should be at level grade.
- 5. Install upstream and downstream control structures, cleanouts, perforated piping, and all other necessary storage structures.
- 6. Geotextile and bed aggregate should be placed immediately after approval of subgrade preparation and installation of structures. Geotextile should be placed in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile should overlap a minimum of 16 inches. It should also be secured at least 4 feet outside of bed in order to prevent any runoff or sediment from entering the storage bed. This edge strip should remain in place until all bare soils contiguous to beds are stabilized and vegetated. As the site is fully stabilized, excess geotextile along bed edges can be cut back to the edge of the bed.
- 7. Clean-washed, uniformly graded aggregate should be placed in maximum 8 inch lifts. Prior to installation, the stone shall be checked by the design or site engineer. Each layer should be lightly compacted, with construction equipment kept off the bed bottom as much as possible.
- 8. In the event that sediment has entered the detention basin, the sediment shall be cleaned from the fabric, stone, bed, etc. If the amount of sediment that has entered the infiltration bed prohibits the in place cleaning of the fabric, stone or bed, then the fabric and stone shall be replaced.
- 9. If unfavorable conditions (such as, but not limited to, groundwater and/or bedrock, etc.) are encountered during the excavation for the pipes, then the Engineer is to be contacted immediately prior to proceeding with the excavation.
- 10. Approved soil media should be placed over infiltration bed in maximum 6 inch lifts.
- 11. Seed and stabilize topsoil.
- 12. Do not remove inlet protection or other erosion and sediment control measures until site is fully stabilized.

**CRITICAL STAGES OF UNDERGROUND DETENTION BASIN CONSTRUCTION:**

- When basin bottom is excavated to proper depth
- When stone and modules are being placed into basin
- When geotextile is being laid and secured over the basin

**NOTE:**

SEE C3.1 FOR EROSION & SEDIMENTATION CONTROL DETAILS.

**VILLANOVA UNIVERSITY**  
PROPOSED WEST END ZONE BUILDING  
800 EAST LANCASTER AVENUE  
VILLANOVA, PENNSYLVANIA 19085  
RADNOR TOWNSHIP, DELAWARE COUNTY

**SOIL EROSION CONTROL NOTES AND GENERAL NOTES**

DATE: 10/29/14 REVISION: PRELIM/FINAL APPROVAL

SHEET TITLE: SOIL EROSION CONTROL NOTES AND GENERAL NOTES

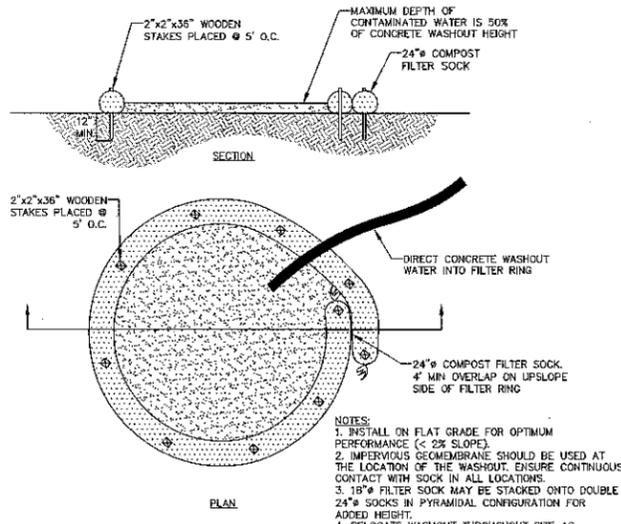
DRAWN BY: BJD CHECKED BY: KRM SHEET NO.:

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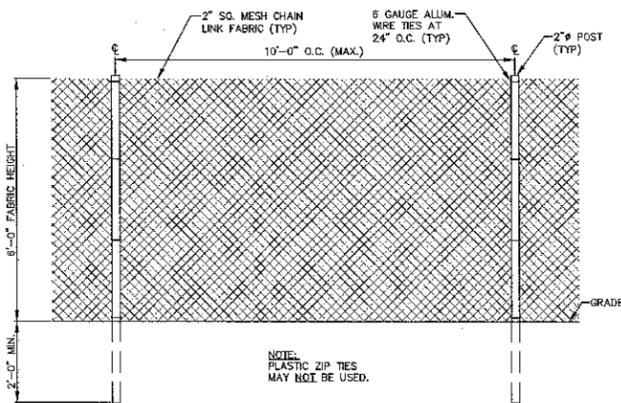
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SHEET NO. 9 OF 13

PROJECT NO. 0300.014 DATE: OCTOBER 29, 2014

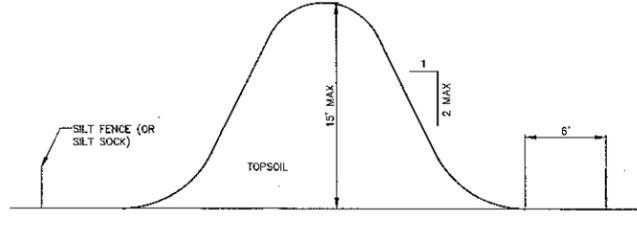


**1 CONCRETE WASHOUT DETAIL**  
SCALE: NOT TO SCALE



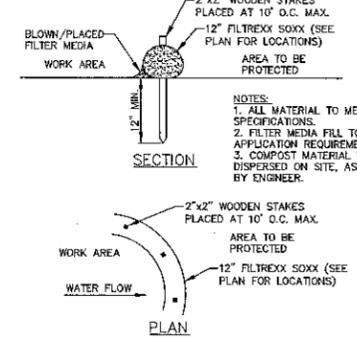
**5 TREE PROTECTION BARRIER FENCING DETAIL**  
SCALE: 1/2" = 1'-0"

(LOCATION SHOWN THUS ON PLAN)  
NOTES:  
1. PROTECTION BARRIERS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE WORK AT THE SITE.  
2. ADDITIONAL WARNING SIGNS SHOULD ALSO BE PLACED ON THE FENCING AND IN APPROPRIATE AREAS NEAR THE WORK ZONE.  
3. TREE PROTECTION FENCE SHALL BE INSPECTED BY THE OWNER OR CONTRACTOR AT THE END OF EVERY DAY FOR THE DURATION OF THE PROJECT. THE FENCE SHALL BE REPAIRED WHERE NECESSARY.



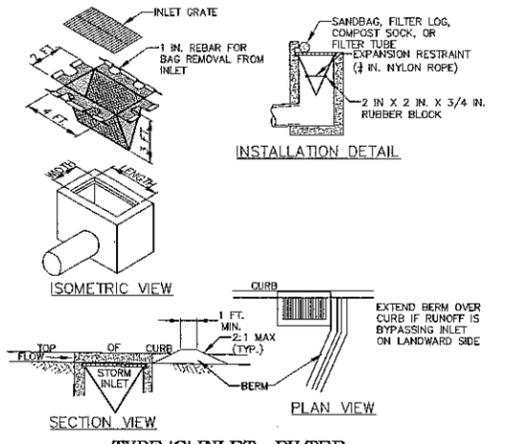
**2 TYPICAL SOIL STOCKPILE CROSS SECTION**  
SCALE: NOT TO SCALE

NOTES:  
1. SILT FENCE OR SILT SOCK MUST COMPLETELY ENCLOSE STOCKPILES.  
2. TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE OR USED AS FILL.  
3. TOPSOIL SHALL BE REMOVED FROM THE AREAS OF CONSTRUCTION AND STORED SEPARATELY.  
4. THE TOPSOIL SHALL BE STABILIZED TO MINIMIZE EROSION DURING STORAGE.  
5. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE UNIFORMLY REDISTRIBUTED ON THE SITE.



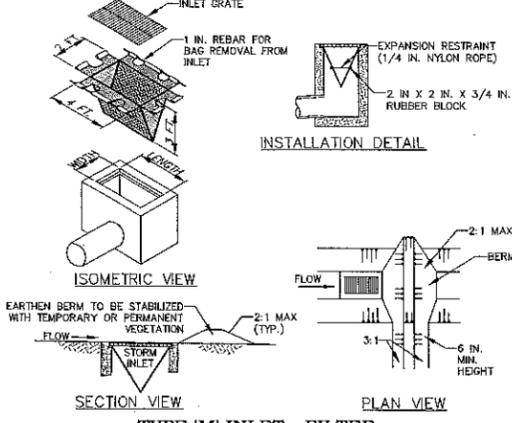
**6 SILT SOCK DETAIL**  
SCALE: NOT TO SCALE

**SILT SOCK NOTES:**  
1. The Silt Sock is to be laid on top of the ground along the down-slope areas and along side-slope areas as required to prevent or reduce erosion.  
2. The Silt Sock can either be topped or bolted at the ends to create a continuous line of defense.  
3. Socks placed on earth slopes should be anchored with stakes driven through the center of the sock at intervals recommended by the manufacturer. Where socks are placed on paved surfaces, heavy concrete blocks should be used immediately down slope of the socks to help hold the sock in place.  
4. Traffic shall not be permitted to cross Silt Socks. If the Silt Sock is deformed due to being driven over or dragged, then it is to be re-contoured by hand if applicable. If not, the silt sock shall be repaired (see repair notes below).  
5. If the Silt Sock rolls due to hydraulic force, then it is to be repositioned and stakes.  
6. If the Silt Sock loses ground contact, then fill in the depressions and back-grout with chips from damaged section.  
7. If sediment accumulates to half of the sock height, then remove the sediment by hand. It may be necessary to install a second row of sock positioned on top of or up slope of the original sock.  
8. If holes, rips or tears develop in the sock, then small holes or narrow rips shorter than 12 inches may be stitched closed using plastic zip ties. Tears longer than 12 inches require the sock to be replaced. Repairs or replacement shall occur within 24 hours of inspection.  
9. If a pinch or localized diameter reduction of more than half of the original diameter develops in the sock, then a new section of sock is to be installed upslope of the damaged section.  
10. Silt Socks shall be inspected weekly and after each runoff event.  
11. Biodegradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.  
12. Silt Socks shall be removed upon stabilization of the area tributary to the sock.  
13. LOCATION SHOWN THUS ON PLAN C1.3.



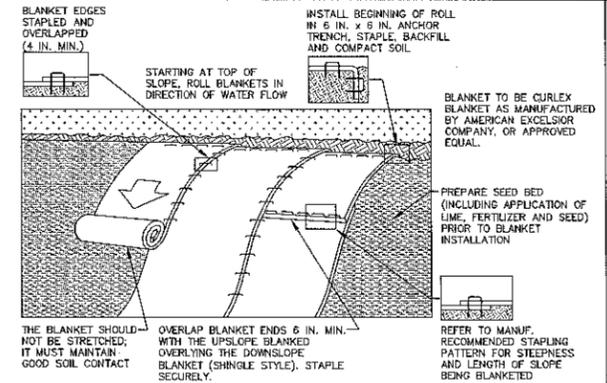
**3 TYPE 'C' INLET - FILTER BAG PROTECTION DETAIL**  
SCALE: NOT TO SCALE

NOTES:  
MAXIMUM DRAINAGE AREA = 1/2 ACRE.  
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.  
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.  
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.  
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.  
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



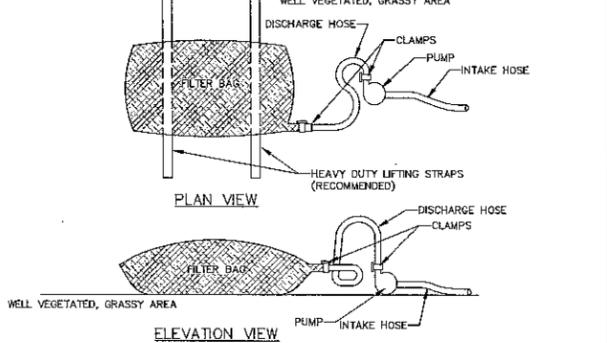
**7 TYPE 'M' INLET - FILTER BAG PROTECTION DETAIL**  
SCALE: NOT TO SCALE

NOTES:  
MAXIMUM DRAINAGE AREA = 1/2 ACRE.  
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.  
ROLLED EARTHEN BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.  
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.  
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.  
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



**4 EROSION CONTROL BLANKET INSTALLATION DETAIL**  
SCALE: NOT TO SCALE

NOTES:  
SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.  
PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.  
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.  
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.  
THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.  
BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.  
LOCATION SHOWN THUS ON PLAN C1.3.



**8 PUMPED WATER FILTER BAG DETAIL**  
SCALE: NOT TO SCALE

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4894	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4633	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOCS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.  
BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.  
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.  
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.  
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.  
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

NOTE:  
SEE C3.0 FOR EROSION & SEDIMENTATION CONTROL NOTES, CONSTRUCTION SEQUENCE AND PROJECT GENERAL NOTES.

**Associated Engineers Consultants Incorporated**  
488 Down Park Drive, Suite 113, Wayne Pennsylvania 19387 | Tel: 610.688.3280 | Fax: 610.688.4284  
www.aecinc.com

Civil | Structural | HVAC | Plumbing | Electrical | Fire Protection

SEAL

PROJECT

**VILLANOVA UNIVERSITY**  
PROPOSED WEST END ZONE BUILDING  
800 EAST LANCASTER AVENUE  
VILLANOVA, PENNSYLVANIA 19085  
RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/29/14	PRELIM/FINAL APPROVAL

SHEET TITLE

**SOIL EROSION CONTROL SECTIONS AND DETAILS**

DRAWN BY: BJD  
CHECKED BY: KRM

SHEET NO.

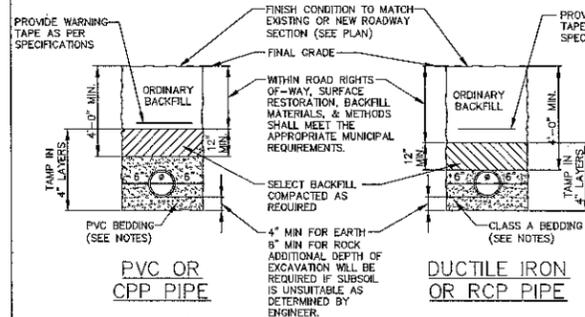
**C3.1**

SHEET NO. 10 OF 13

PROJECT NO. 0300.014  
DATE: OCTOBER 29, 2014

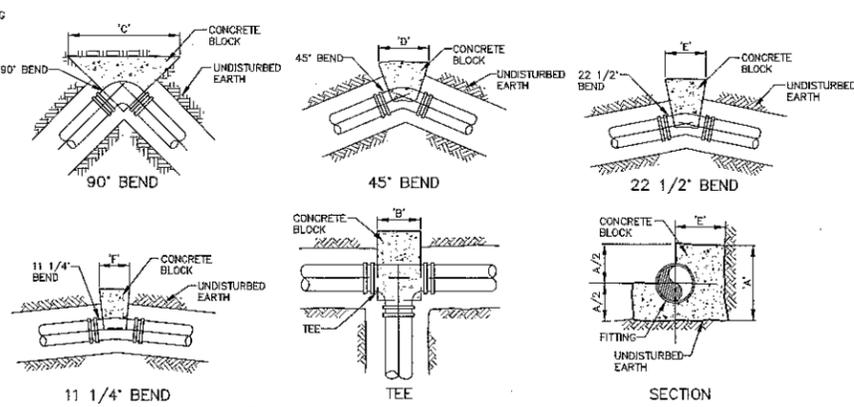






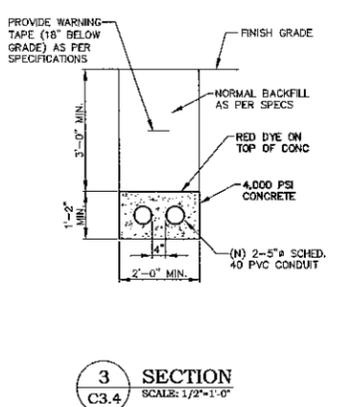
**1 TYPICAL TRENCH DETAILS**  
C3.4 SCALE: NOT TO SCALE

- NOTES:  
 1. ALL BACKFILL MATERIAL IS SUBJECT TO AUTHORITY APPROVAL.  
 2. CLASS A BEDDING: APPROVED NATIVE SOIL, COARSE SAND, GRAVEL OR CRUSHED STONE, HAVING A MAXIMUM STONE SIZE OF 3/4 INCH.  
 3. SELECT BACKFILL: CLEAN DRY EARTH WITH A MAXIMUM STONE SIZE OF 2 INCHES.  
 4. ORDINARY BACKFILL: CLEAN DRY EARTH WITH A MAXIMUM STONE SIZE OF 6 INCHES.  
 5. PVC BEDDING SHALL BE PENNDOT 2A MODIFIED STONE FOR TRENCHES ABOVE THE GROUNDWATER TABLE AND PENNDOT 2B STONE FOR TRENCHES BELOW THE WATER TABLE.

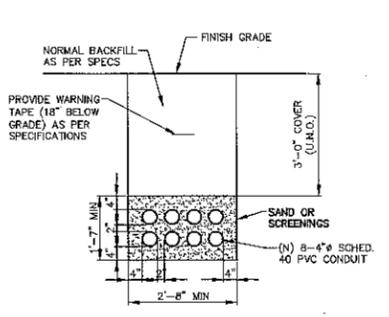


**2 THRUST BLOCKING SYSTEM**  
C3.4 SCALE: NOT TO SCALE

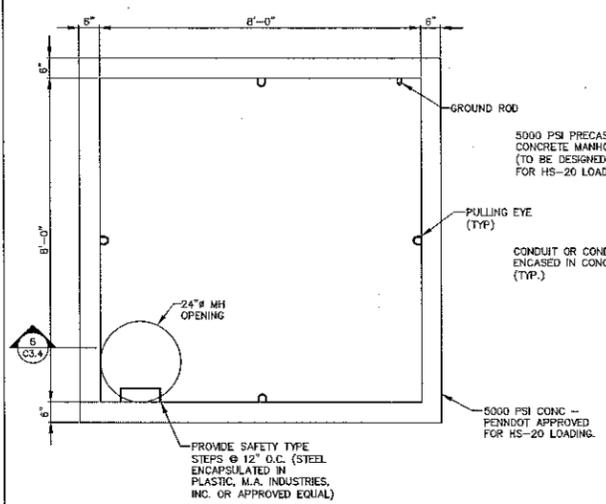
PIPE SIZE	REACTION BACKING DIMENSION					
	A	B	C	D	E	F
6"	1'-3"	2'-2"	3'-4"	1'-10"	1'-0"	1'-0"
4"	1'-0"	2'-0"	3'-2"	1'-8"	1'-0"	1'-0"
3"	1'-0"	2'-0"	3'-0"	1'-8"	1'-0"	1'-0"



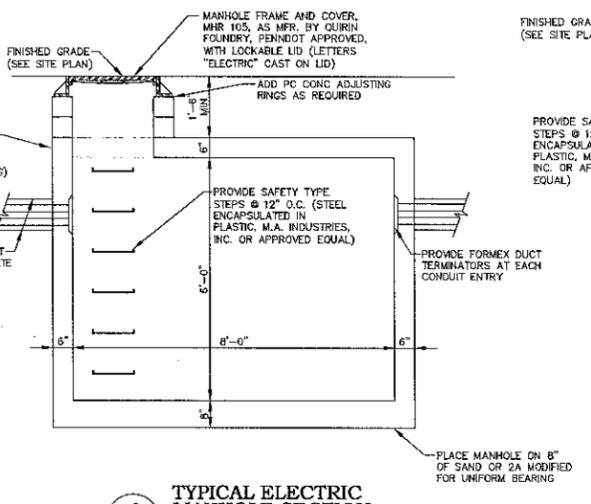
**3 SECTION**  
C3.4 SCALE: 1/2" = 1'-0"



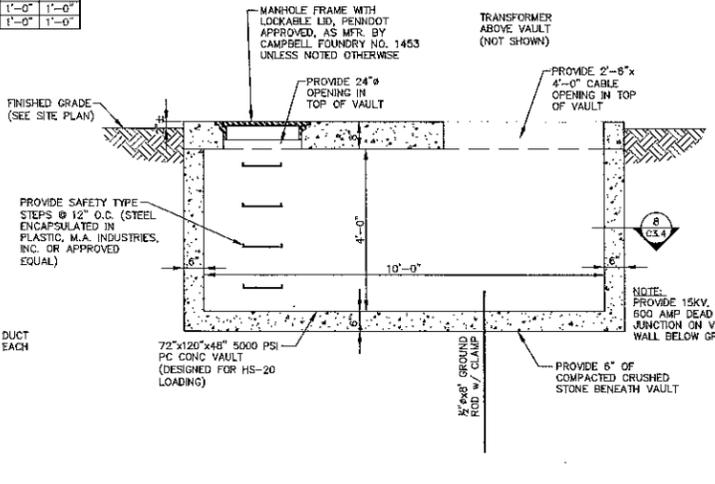
**4 SECTION THRU ELECTRICAL DUCT BANK**  
C3.4 SCALE: 1/2" = 1'-0"



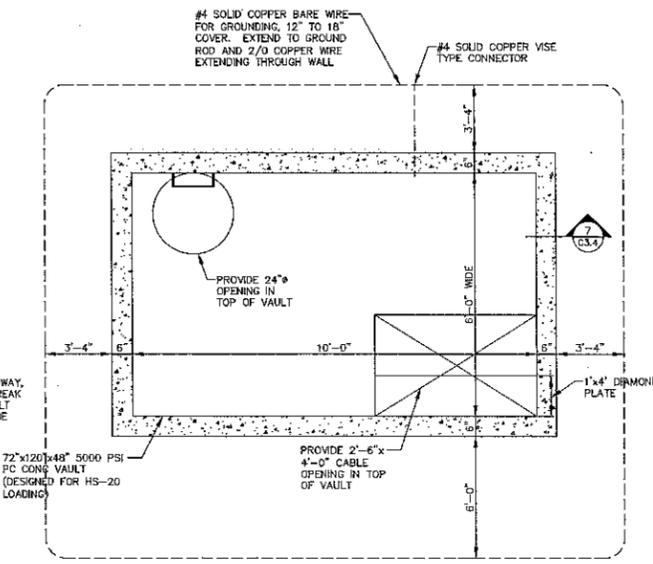
**5 TYPICAL ELECTRIC MANHOLE PLAN DETAIL**  
C3.4 SCALE: 1/2" = 1'-0"  
SUBMIT SHOP DRAWINGS FOR APPROVAL



**6 TYPICAL ELECTRIC MANHOLE SECTION**  
C3.4 SCALE: 1/2" = 1'-0"



**7 VAULT MOUNTED TRANSFORMER SIDE ELEVATION**  
C3.4 SCALE: 1/2" = 1'-0"



**8 VAULT MOUNTED TRANSFORMER TOP VIEW**  
C3.4 SCALE: 1/2" = 1'-0"



PROJECT  
**VILLANOVA UNIVERSITY**  
 PROPOSED WEST END ZONE BUILDING  
 800 EAST LANCASTER AVENUE  
 VILLANOVA, PENNSYLVANIA 19085  
 RADNOR TOWNSHIP, DELAWARE COUNTY

DATE	REVISION
10/28/14	PRELIM/FINAL APPROVAL

SHEET TITLE  
**SITE UTILITIES SECTIONS AND DETAILS**

DRAWN BY: BJD  
 CHECKED BY: KRM

SHEET NO.  
**C3.4**  
 SHEET NO. 13 OF 13  
 PROJECT NO. 0300.014  
 DATE: OCTOBER 29, 2014

# APPLICATION FOR GRADING PERMIT

RADNOR TOWNSHIP ENGINEERING DEPARTMENT

*The undersigned hereby makes application for Grading Permit under Chapter 175 and any amendments thereof.*

LOCATION: 206 Upland Way Wayne 48097  
 WHAT ARE YOU BUILDING: Demo Inground Pool  
 OWNER OF PROPERTY: Mark + Karyl Megaw  
 OWNER ADDRESS: 206 Upland Way, Wayne

TOWNSHIP USE ONLY	
PERMIT NO. _____	
SUBMISSION DATE _____	
SHADE TREE DATE _____	
REVISION DATES _____	
FINAL APPROVAL DATE: _____	
APPROVED BY: _____	

Zoning Officer Approval: \_\_\_\_\_

**Permit Void: If work not started in six (6) months.**

**Five (5) copies of site plan to be submitted with application. \* Plans must be folded and no larger than 24" x 34" \***  
**TWELVE (12) COPIES IF PLAN NEEDS TO BE REIVEWD BY SHADE TREE**

PREPARED BY: Mark Patillon DATE: 11/6/14 REGISTERED SURVEYOR: \_\_\_\_\_ REGISTERED ENGINEER: \_\_\_\_\_

DO PLANS SHOW ALL ITEMS LISTED ON PAGE 2? Yes GROSS LOT AREA: \_\_\_\_\_ SQ. FT.

COVER TYPE	EXISTING SQUARE FEET		REMOVED SQUARE FEET	ADDED SQUARE FEET	TOTAL SQUARE FEET	
BUILDINGS	2160	EXISTING % OF LOT	- 0	+ /	= 2160	TOTAL NEW % OF LOT
WALKS	240		- 240 S.F	+ /	= 0	
PATIOS	0		- 0	+ 0	= 0	
DRIVES	650		- 0	+ /	= 650	
DECKS	320		- 0	+ /	= 320	
OTHER <u>Pool</u>	512		- 512 S.F	+ /	= 0	
<b>TOTAL</b>	<b>3882</b>	<b>27 %</b>	<b>752 S.F</b>	<b>+ 0</b>	<b>3130</b>	<b>27 %</b>

**Ground Water Recharge and Storm Water Calculations**

- No credit for removal of impervious.
- Calculations are based on the total added impervious not the net.

↑ 500 to 1499 sq. ft. Ground Water Recharge Required  
 1500 sq. ft. and over Storm Water Management Required  
 (For additional information see Ordinance 05-11)

**Check Zoning District Applicable**

R-1	R-2	R-3	R-4	R-5 <input type="checkbox"/>	R-5 <input type="checkbox"/>	R-6	R-1A	CO <input type="checkbox"/>	C-1	C-2	C-3	PI	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Semi/ 2 Family	Detach	Multi Dwelling	<input type="checkbox"/>	<input type="checkbox"/>	(2 + 3 stories)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22%	30%	35%	40%	40%		36%	70%	30%	50%	60%	70%	65%	45%

Estimated cubic yards of dirt involved (Total cut and fill) ~120 yds Will this fill be taken off site  Yes  No

Number of trees to be removed (over 6" in diameter) 0 Is property in the Historical District?  Yes  No

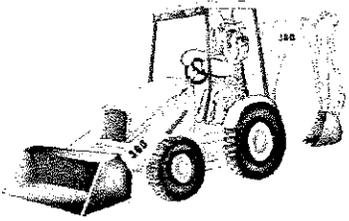
Permit Fees:

Minor Permit Review	\$75.00
First 50 cubic yards cut and fill	\$150.00
51- 1,000 cubic yards cut and fill	Add \$200.00
Each additional 1,000 cubic yards or portion thereof	Add \$200.00
Permit requiring ground water recharge	\$200.00
Permit requiring storm water management	\$500.00

Signature of Owner: [Signature]  
 Date: 11/17/14  
 Applicant: 360 DEMOLITION  
 Relation to Owner: CONTRACTOR  
 Phone Number: 610-476-3894 x2  
 Fax Number: N/A  
 Email: 360Excavating@comcast.net

Received from Applicant \$ \_\_\_\_\_

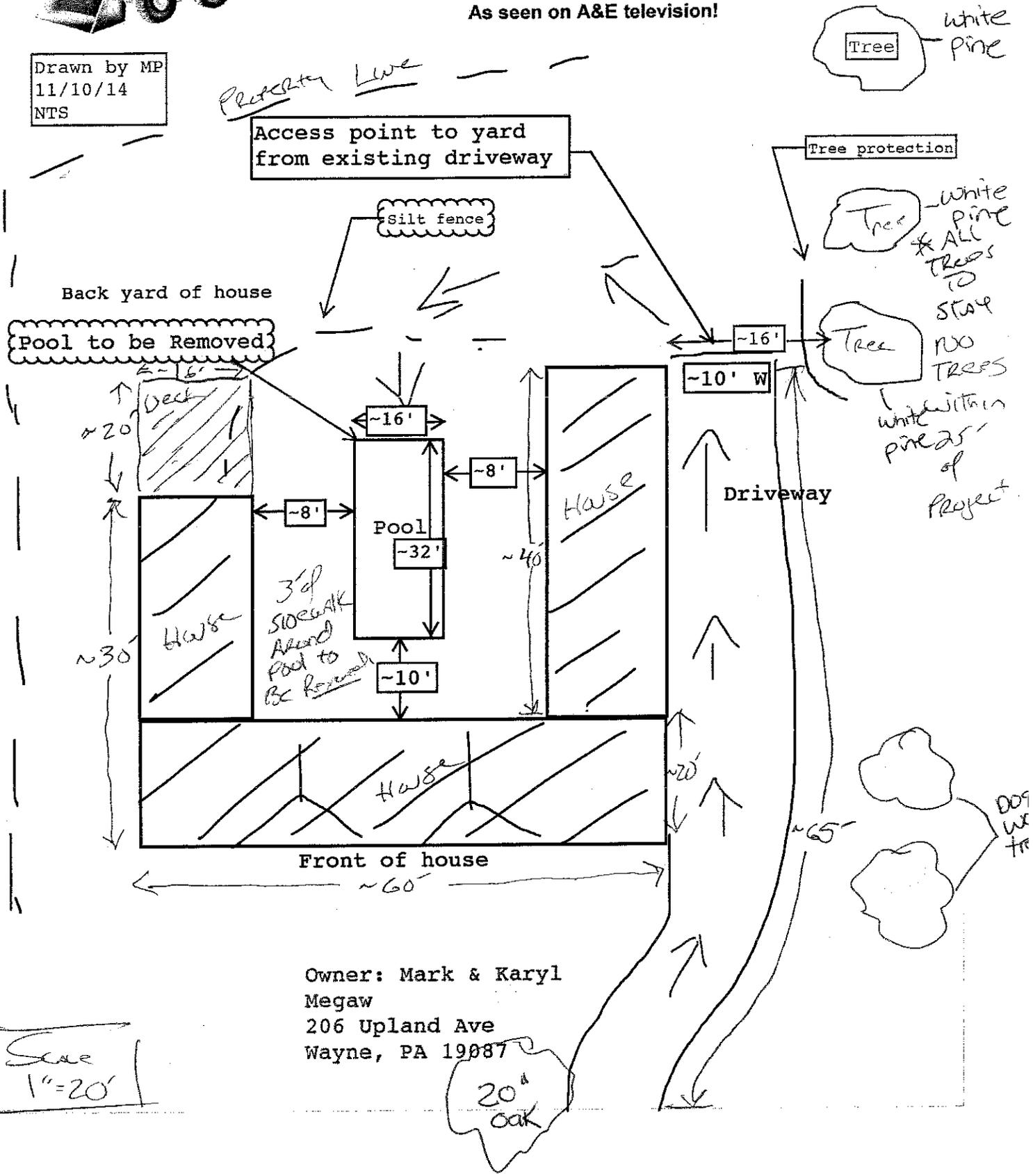
3/19/14



# 360 EXCAVATING & DEMOLITION Inc.

181 Possum Hollow Rd. Ste. E Pottstown, PA 19464  
610-476-3894 -- [www.360Excavating.com](http://www.360Excavating.com)  
PA LICENSE NO: PA027505 - DE LICENSE NO: 2011120312  
As seen on A&E television!

Drawn by MP  
11/10/14  
NTS



Owner: Mark & Karyl  
Megaw  
206 Upland Ave  
Wayne, PA 19087

Scale  
1" = 20'

11-12 9/7/14 Sun

AS SEEN ON A&E TELEVISION'S... "THE DRILL TEAM"

# 360 POOL DEMOLITION

A DIVISION OF 360 CONSTRUCTION INC.

181 Possum Hollow Rd., Ste E, Pottstown, PA 19464

610-476-3894 or dial \*\*POOLDEMO www.360Excavating.com



E-check

<b>CUSTOMER:</b> Mark & Karyl-Leigh Megaw	<b>JOB NAME or PO#:</b>
<b>ADDRESS:</b> 206 Upland Way Wayne, PA 19087	<b>POCS:</b>
	<b>DATE:</b> Sept 7, 2014 Sun
	<b>PHONE:</b> 610-393-2629
	<b>PHONE-C:</b>
<b>LOCATION OF WORK:</b> Radnor Township	<b>EMAIL:</b> Markmegaw@aol.com
Proposal is good for 30 days unless written below.	<b>PA Lic No.:</b> PA027505, <b>DE Lic No.:</b> 2011120312

**TYPE OF POOL:**  Above Ground  In-Ground Liner  In-Ground Gunite/Shotcrete  
**PERMIT:**  Customer to apply for permit  360 to apply for permit (Cost + \$200 added to 2<sup>nd</sup> 1/3 payment)  
**SIZE:** ~32 ft Long X ~16 ft Wide X ~3 ft Deep Shallow X ~12 ft Deep Deepest = 3584  
**MECHANICALS:**  Filter  Pump  Heater Gas/Propane  Spa Pump 132.74  
**ACCESS:**  Standard  Must Remove Fence  Must Re-install Fence  Tight  
**TO EMPTY WATER:**  Customer  360 (\$300)

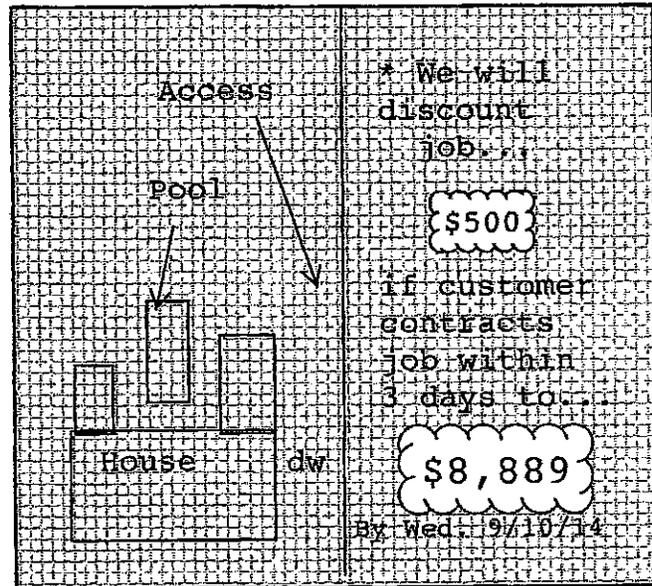
### DESCRIPTION OF WORK:

1. Disconnect all mechanicals, electric, pump, etc.
2. Jackhammer top apron, top 24 inches of the 36 sides, & entire bottom into approximately 8 inch by 8 inch pieces. (Liner pools we remove the liner, frame, then jackhammer the entire bottom, & top apron)
3. Remove any exposed metal/ rebar.
4. Backfill with clean fill.
5. Compact with machine approximately each 6 to 12 inches of clean fill.
6. Grade, seed, apply straw. If too cold to seed, customer to hold \$200 until spring.

**OPTIONS:**  ADD SCREENED TOP SOIL  
Up to 16 cu yds., ADD \$900  
 ADD Starter Fertilizer ADD \$95 N/C

**PRICE:** \$9,389 \*\$8,889

Payment Schedule:  Option#1- 1/3 upon the acceptance, 1/3 upon the completion of the 1st day of work, 1/3 upon day of straw.  
 Option#2- \$500 Down, then 1/3 Upon Delivery of Equipment, 1/3 upon completion of 1<sup>st</sup> day of work, 1/3 upon day of straw.



I hereby accept this proposal, and acknowledge that I have read, fully understand, and agree to the terms and work agreement located on both sides of this proposal. I further state that I am the owner of the property where the work is occurring, or legal authorized agent of the owner, and authorize the above work.

Customer Signature (SEAL): [Signature] Date: 9/10/2014

*customer shall be an additional insured*



ALL LOCATIONS OF EXISTING UTILITIES, SHOWN ON THIS PLAN, HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES.

ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE THE START OF ANY WORK.

AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.



LOCATION MAP  
SCALE: 1" = 2,000'

**GENERAL NOTES:**

1. THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED ON THE PREMISES IN THE AREA INDICATED ON JULY 27, 2014 AND DEPICTS CONDITIONS ON THAT DATE.
2. THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO CONSTRUCTION.
3. THE VERTICAL DATUM SHOWN ON THIS PLAN IS PER NOTE 4.
4. BOUNDARY AND BENCHMARK INFORMATION TAKEN FROM A PLAN ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY OF 352 CHAMOUNIX ROAD" PREPARED BY MOMENE SURVEY GROUP, INC. DATED APRIL 20, 2000, PROJECT # 00-033.

PLAN MADE AT THE REQUEST OF:  
LAMBERT/RYAN



LINTYPE LEGEND	
	PROPERTY LINE
	ROW LINE
	BUILDING SETBACK
	FENCE LINE
	OVERHEAD ELECTRIC
	ELECTRIC LINE
	GAS LINE
	TELECOM LINE
	WATER LINE
	SANITARY LINE
	EXISTING STORM PIPES
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR

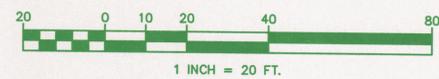
Serial Number: \_\_\_\_\_

**CALL BEFORE YOU DIG!**

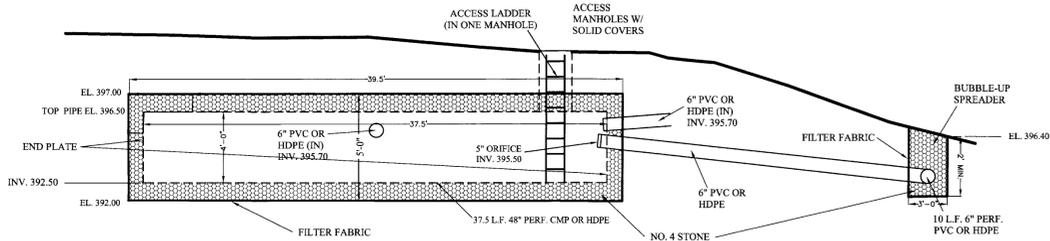
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL

Call System, Inc.  
1-800-242-1776

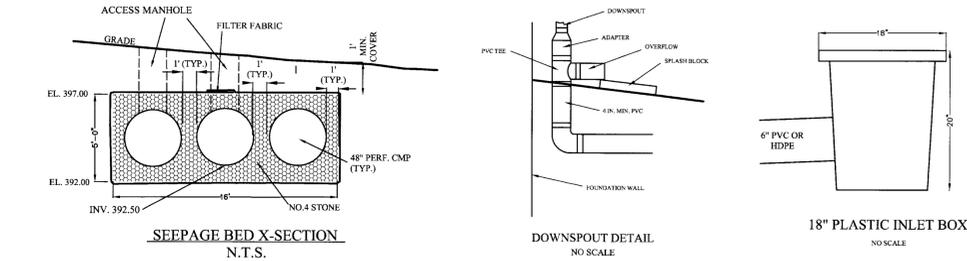
COPYRIGHT: MOMENE SURVEY GROUP, INC. LAND SURVEYORS EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND ALL OTHER PROPRIETARY RIGHTS IN THESE PLANS, ALL DRAWINGS, SPECIFICATIONS, AND CORRECTED DRAWINGS AND SHALL REMAIN THE PROPERTY OF MOMENE SURVEY GROUP, INC. THEY ARE TO BE USED ONLY WITHIN THE PROJECT TO WHICH THEY ARE REFERRED AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF MOMENE SURVEY GROUP, INC. ANY REUSE, WITHOUT WRITTEN PERMISSION, OF ANY PART OF THESE PLANS OR DRAWINGS BY ANY OTHER PARTY SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL REMEDY TO MOMENE SURVEY GROUP, INC. THE USER SHALL FURTHER INDEMNIFY AND HOLD HARMLESS MOMENE SURVEY GROUP, INC. FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM SUCH REUSE.



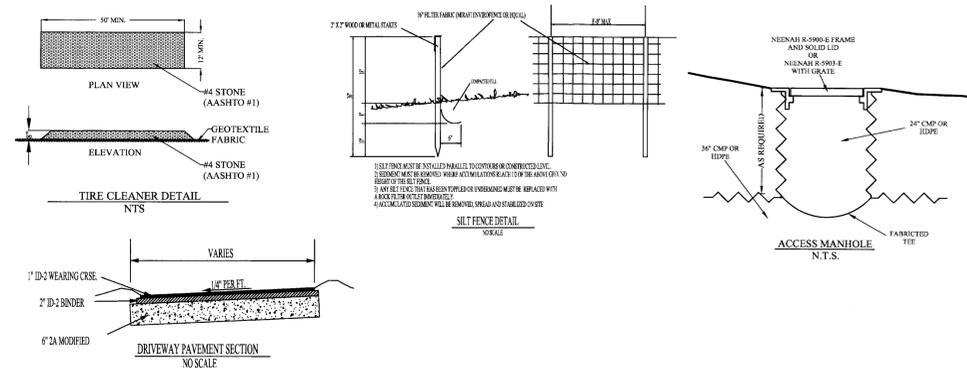
	PARTIAL TOPOGRAPHIC SURVEY	
	<b>MOMENE SURVEY GROUP, INC.</b> PROFESSIONAL LAND SURVEYORS 924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008	
	LAMBERT/RYAN 352 CHAMOUNIX ROAD RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA	DATE: JULY 30, 2014 SHEET NO. 1 OF 1 SCALE: 1" = 20' FILE NO.: 13-262
	ONE-CALL: _____ DRAWN BY: P.C.C. CHECKED BY: _____	OWNER/APPLICANT



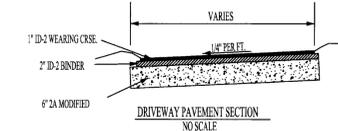
SEEPAGE BED LONGITUDINAL SECTION  
N.T.S.



SEEPAGE BED X-SECTION  
N.T.S.



TIRE CLEANER DETAIL  
N.T.S.



DRIVEWAY PAVEMENT SECTION  
N.T.S.

CONSTRUCTION STAGING

EROSION AND SEDIMENT CONTROLS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE MAY BEGIN. ONLY LIMITED DISTURBANCE WILL BE PERMITTED FOR THE CONSTRUCTION OF THE SEDIMENT CONTROL FACILITIES. CONSTRUCTION PROCEDURES AND STAGING MUST BE ADHERED TO CAREFULLY TO MINIMIZE THE TIME THAT SOIL IS EXPOSED TO EROSION. CONSTRUCTION IS TO BE STAGED AS FOLLOWS:

1. PLACE SEDIMENT CONTROL BARRIERS IMMEDIATELY DOWNHILL OF EARTHMOVING ACTIVITIES.
2. CLEAR AND GRUB CONSTRUCTION AREA, REMOVING THE MINIMUM AMOUNT OF VEGETATION NECESSARY FOR CONSTRUCTION.
3. STRIP AND STOCKPILE TOPSOIL FROM CONSTRUCTION AREA.
4. THE TOPSOIL STOCKPILE SHALL BE TEMPORARILY SEDDED WITH ANNUAL RYE GRASS AT A RATE OF 4 LBS. PER 1000 SQ. FT.
5. REMOVE EXISTING PORCH AND GREENHOUSE.
6. EXCAVATE FOR FOUNDATIONS.
7. CONSTRUCT BUILDING.
8. INSTALL PIPING AND UTILITIES.
9. GRADE AND STONE NEW DRIVEWAY.
10. PAVE NEW DRIVEWAY. REMOVE EXISTING DRIVEWAY.
11. CONSTRUCT SEEPAGE BED.
12. SPREAD TOPSOIL AND FINISH GRADE.
13. SEED AND MULCH DISTURBED AREAS IN ACCORDANCE WITH PADOT FORMULA B.
14. REMOVE EROSION AND SEDIMENTATION CONTROLS AND STABILIZE ANY REMAINING DISTURBED AREAS.

SEEDING SPECIFICATIONS

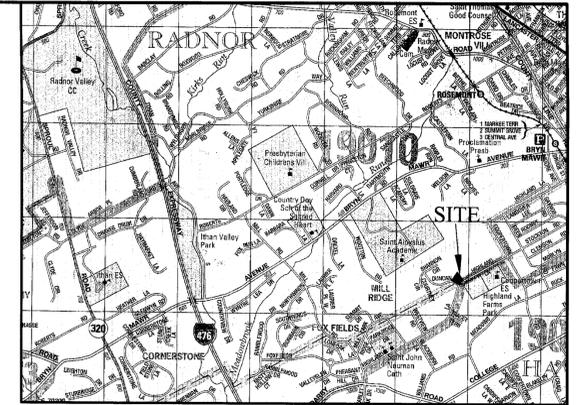
PERMANENT SEEDING	
60% KENTUCKY BLUEGRASS	
30% RED FESCUE	
10% PERENNIAL RYE GRASS	260 LB./AC.
FERTILIZER 19-26-20	1000 LB./AC.
LIME	2 TONS/AC.
MULCH HAY OR STRAW	3 TONS/AC.
TEMPORARY SEEDING ANNUAL RYEGRASS	40 LB./AC.
FERTILIZER 5-5-5	1000 LB./AC.
MULCH HAY OR STRAW	3 TONS/AC.

LEGEND

- EXIST. CONTOUR
- PROP. CONTOUR
- EXIST. TREE TO BE REMOVED
- SILT FENCE
- TREE PROTECTION FENCE
- UTILITIES
- PROP. STORM DRAINS
- CONSTRUCTION ENTRANCE TIRE CLEANER
- PROPERTY LINES

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL LEGAL AND SAFETY REQUIREMENTS GOVERNING THE WORK SHOWN.
2. THE CONTRACTOR MUST VERIFY THE LOCATIONS AND DEPTHS OF ALL UNDERGROUND FACILITIES BEFORE THE START OF WORK.
3. GEOTEXTILE FILTER FABRIC SEDIMENT CONTROL BARRIERS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
4. DISTURBED AREAS THAT WILL REMAIN EXPOSED FOR MORE THAN 20 DAYS SHALL BE MULCHED AND SEEDED.
5. ALL ROOF DRAINS ARE TO BE TIED TO BASIN.
6. ALL TREES WITHIN 10 FEET OF THE PROPERTY LINE HAVE BEEN LOCATED.
7. ALL TREE ROOTS DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE CUT CLEANLY.



LOCATION MAP  
1" = 2000'

LOT AREA:  
33,963 S.F.

ZONING REGULATIONS

R-1 ZONING DISTRICT	
LOT AREA	1 ACRE MIN.
LOT WIDTH	120 FT. MIN.
BLDG. AREA	15% MAX.
FRONT YARD	60 FT. MIN.
SIDE YARD	25 FT. MIN., 60 FT. AGG.
REAR YARD	40 FT. MIN.
IMPERVIOUS COVER BLDG. HEIGHT	22% MAX. 35 FT. MAX.

IMPERVIOUS COVER/ BUILDING AREA

EXISTING	
HOUSE	1074 S.F.
SHED	168 S.F.
DRIVEWAY	1028 S.F.
WALKS	147 S.F.

IMPERVIOUS COVER:	2417 S.F. (7.12%)
BLDG. AREA TOTAL:	1242 S.F. (3.66%)

IMPERVIOUS COVER/ BUILDING AREA

EXISTING	
HOUSE	3754 S.F.
DRIVEWAY	1933 S.F.
WALKS	437 S.F.
PATIO	444 S.F.

IMPERVIOUS COVER:	6707 S.F. (19.75%)
BLDG. AREA TOTAL:	3754 S.F. (11.05%)

NOTE: THE SEEPAGE BED/RETENTION BASIN WAS DESIGNED FOR 750 S.F. OF FUTURE IMPERVIOUS. ALL FUTURE IMPERVIOUS COVER SHALL HAVE RUNOFF PIPED DIRECTLY TO THE SEEPAGE BED AND WILL REQUIRE A GRADING PERMIT.

SOILS:  
GE2 - GLENELG CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED - HYDROLOGIC GROUP B

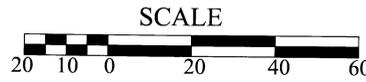
NOTE:  
0 TREES IS TO BE REMOVED

APPLICANT:  
MATTHEW MCGEEVER  
127 E. MINER ST.  
WEST CHESTER, PA 19382

NOTES:  
PHYSICAL FEATURES FROM FIELD SURVEY BY RWK ENGINEERING SERVICES, INC., OCT. 2014

I, \_\_\_\_\_ THE APPLICANT, DO HEREBY ACKNOWLEDGE THAT ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE RADNOR TOWNSHIP.

DATE



SITE PLAN

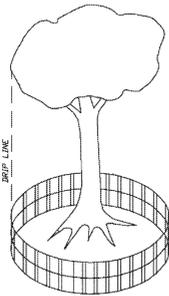
I, ROBERT K. WAGER, P.E., ON THIS DATE, HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

DATE: 11/14/14



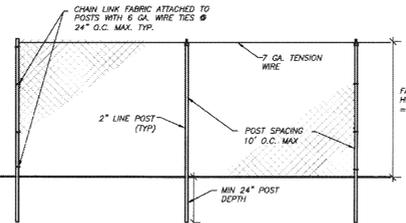
SHEET 1 OF 2

REVISIONS		ROBERT K. WAGER, P.E. 1610 PELHAM AVENUE HAVERTOWN, PA 19083 (610) 642-0961	
RWK ENGINEERING SERVICES		GRADING PLAN 350 HIGHLAND LANE RADNOR TOWNSHIP	
DELAWARE COUNTY	PENNSYLVANIA	DATE: 11/14/14	SCALE: 1"=20'-0"
		DRAWN BY: RWK	PROJ. NO.: 14072



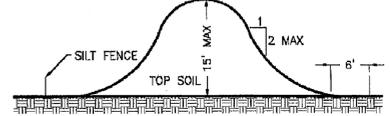
**TREE PROTECTION**

NTS  
 ALL WOODY VEGETATION TO BE RETAINED WITHIN 25 FEET OF A BUILDING OR OTHER STRUCTURE SHALL BE PROTECTED FROM EROSION DAMAGE BY CONSTRUCTION ACTIVITIES. PROTECTION SHALL BE PROVIDED FROM EROSION DAMAGE BY CONSTRUCTION ACTIVITIES. PROTECTION SHALL BE PROVIDED FROM EROSION DAMAGE BY CONSTRUCTION ACTIVITIES. PROTECTION SHALL BE PROVIDED FROM EROSION DAMAGE BY CONSTRUCTION ACTIVITIES.



1. PROTECTION BARRIERS SHALL BE 6 FEET HIGH, CONSTRUCTED OF 2" CHAIN LINK MESH FABRIC.
2. FABRIC SHALL BE SECURED TO 2" POSTS WITH 6 GA. ALUMINUM WIRE TIES AT 24" O.C.
3. POSTS SHALL BE A MINIMUM OF 2 FEET IN THE GROUND AND SPACED 10 FEET ON CENTER MAX.
4. PLASTIC ZIP-TIES MAY NOT BE USED TO SECURE FABRIC TO POSTS.

**TREE PROTECTION BARRIER FENCING**

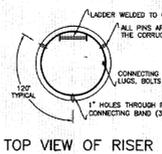


**TYPICAL SOIL STOCKPILE CROSS SECTION**

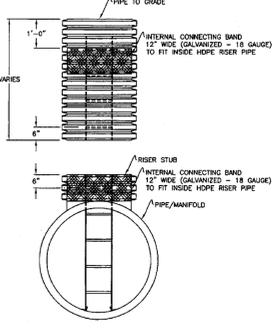
NOTE: SILT FENCE MUST COMPLETELY ENCLOSE STOCKPILES  
 NOTE: TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE OR USED AS FILL. TOPSOIL SHALL BE REMOVED FROM THE AREAS OF CONSTRUCTION AND STORED SEPARATELY. THE TOPSOIL SHALL BE STABILIZED TO MINIMIZE EROSION DURING STORAGE. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE UNIFORMLY REDISTRIBUTED ON THE SITE.

1. Vehicles and equipment may not enter public roads without having the tires cleaned or washed.
2. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter.
3. The operator shall assure that the approved erosion and sediment control plan is properly and completely implemented.
4. Until the site achieves final stabilization, the operator shall assure that the best management practices are implemented, operated, and maintained properly and completely. Maintenance shall include inspections of all best management practice facilities. The operator shall maintain and make available to local Conservation District complete, written inspection logs of all those inspections. All maintenance work, including cleaning, repair, replacement, regrading, and rehabilitation shall be performed immediately.
5. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate potential for accelerated erosion and/or sediment pollution.
6. Before initiating any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the local Conservation District.
7. The operator shall assure that an erosion and sediment control plan has been prepared, approved by the local Conservation District, and is being implemented and maintained for all soil and/or rock spoil and borrow areas, regardless of their locations.
8. 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.
9. The operator is advised to become thoroughly familiar with the provisions of the Appendix 64, Erosion Control Rules and Regulations, Title 25, Part 1, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article III, Water Resources, Chapter 102, Erosion Control.
10. A copy of the approved erosion and sediment control plan must be available at the project site at all times.
11. The E&S control plan mapping must display a PA ONE CALL SYSTEM INCORPORATED symbol including the site identification number. (This is a numbered symbol not a note.)
12. Erosion and sediment BMP's must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMP's.
13. After final site stabilization has been achieved, temporary erosion and sediment BMP controls must be removed. Areas disturbed during removal of the BMP's must be stabilized immediately.
14. At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and the local Conservation District to an on-site 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 1-800-242-1776 for buried utilities locations.
15. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
16. Immediately after earth disturbance activities cease, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be redistributed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
17. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

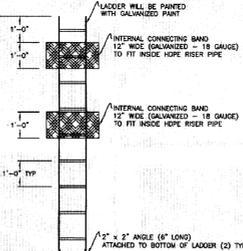
- Temporary Stabilization & Permanent Stabilization**
18. Hay or straw mulch must be applied at 3.0 tons per acre.
  19. Mulch with mulch control netting or erosion control blankets must be installed on all slopes 3:1 and steeper.
  20. Straw mulch shall be applied in long strands, not chopped or finely broken.
  21. Until the site is stabilized, all erosion and sediment BMP's must be maintained properly. Maintenance must include inspections of all erosion and sediment control BMP's after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseedling, and renetting, must be performed immediately. If erosion and sediment control BMP's fail to perform as expected, replacement BMP's, or modifications of those installed will be required.
  22. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
  23. The operator shall remove from the site, recycle, or dispose of all building materials and waste in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.



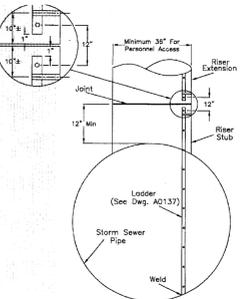
TOP VIEW OF RISER



LADDER EXTENSION DETAIL

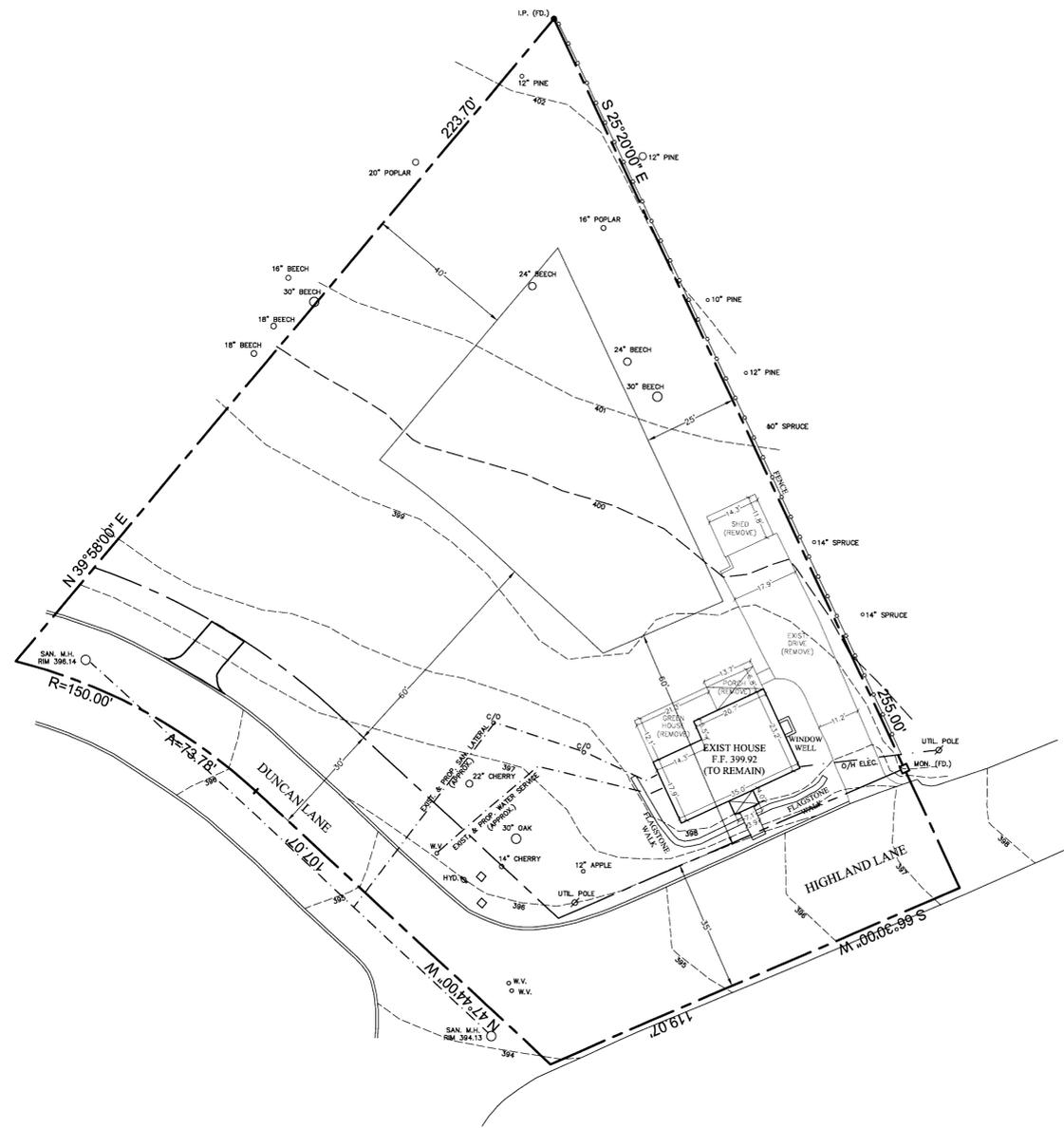


LADDER DETAIL



- NOTES:
1. Use riser manhole when pipe is equal to or larger than the riser.
  2. Refer to Lorie Drawing No. A0137 for details of typical manhole ladder.
  3. If cover over pipe is shallow, a riser extension may not be necessary.
  4. If riser will be subjected to vehicular load, shearing in top of pipe may require reinforcement.
  5. Refer to Lorie Drawing No. A0148 for manhole cover detail intended to keep vertical loads off riser.

1. 3/4" x 3/4" rung are to be welded into 7/8" holes in the riser.
2. Standoff to be welded to riser w/ riser wall to local run of spacing from pipe wall.
3. Maximum spacing of standoffs shall not exceed 36".
4. Ladder shall not be installed in riser w/ diameter less than 36".
5. Detail at bottom of ladder will vary with type of manhole.
6. Maximum length of ladder shall be 19'-10".
7. Standard finish: Galvanized point.



**SITE PLAN**



REVISIONS		ROBERT K. WAGER, P.E. 1610 PELHAM AVENUE HAVERTOWN, PA 19083 (610) 642-0961	
<b>ARKW</b> ENGINEERING SERVICES		DEMOLITION PLAN & DETAILS 350 HIGHLAND LANE RADNOR TOWNSHIP PENNSYLVANIA	
DATE: 11/14/14	SCALE: 1"=20'-0"	DRAWN BY: RKW	PROJ. NO.: 14072





**DLHowell**  
Civil Engineering &  
Land Planning  
www.DLHowell.com

D.L. Howell & Assoc., Inc.  
1250 Wrights Lane  
West Chester, PA 19380  
Phone: (610) 918-9002  
Fax: (610) 918-9003

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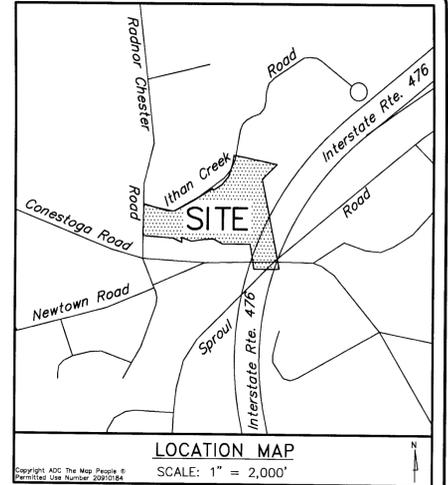
**GENERAL NOTES:**

1. THE PURPOSE OF THE PLAN IS TO OBTAIN APPROVAL FOR GRADING AND SOIL & EROSION CONTROL PERMITS TO DEVELOP LOT 1 WHICH IS PART OF THE PREVIOUSLY APPROVED "SCARDINO" SUBDIVISION PLANS.
2. SITE CONTRACTOR(S) SHALL REFER TO THE APPROVED SUBDIVISION & LAND DEVELOPMENT PLANS FOR ADDITIONAL NOTES, DETAILS AND SPECIFICATIONS GOVERNING THE DEVELOPMENT OF THIS PARCEL. REFERENCE IS HEREBY MADE TO THE APPROVED SUBDIVISION PLANS, KNOWN AS "SCARDINO" SUBDIVISION & LAND DEVELOPMENT PLANS, PREPARED BY CMC ENGINEERING, DATED 05/07/2007 AND LAST REVISED 08/31/2007.
3. BOUNDARY AND TOPOGRAPHICAL INFORMATION TAKEN FROM APPROVED SUBDIVISION PLANS, KNOWN AS "SCARDINO" SUBDIVISION & LAND DEVELOPMENT PLANS, PREPARED BY CMC ENGINEERING, DATED 05/07/2007 AND LAST REVISED 08/31/2007. VERTICAL DATUM: NGVD 29.
4. PENNDOT RIGHT-OF-WAY INFORMATION OBTAINED FROM PLAN OF RECORD, ENTITLED "DRAINAGE RE-ESTABLISHING LIMITED ACCESS HIGHWAY AND AUTHORIZING CONDEMNATION OF RIGHT-OF-WAY OF LEG. ROUTE 1010 SECTION C-1 R/W", DATED NOVEMBER 11, 1981.
5. WETLAND LOCATION ESTABLISHED BY T&M ASSOCIATES.
6. FEMA FLOODPLAIN INFORMATION TAKEN FROM FEMA FLOOD INSURANCE RATE MAPS, DELAWARE COUNTY MAPS 42045C00030 DATED SEPTEMBER 30, 1993.
7. CALCULATED FLOODPLAIN INFORMATION AS SHOWN PERFORMED BY CMC ENGINEERING IN JULY 2007.
8. A RIPARIAN BUFFER OF 35 FEET MINIMUM IS REQUIRED, ADJACENT TO THE STREAM BANK, IN ACCORDANCE WITH RADNOR TOWNSHIP ZONING ORDINANCE.
9. THE PROPOSED SANITARY SEWER LINE SHALL BE OFFERED FOR DEDICATION TO RADNOR TOWNSHIP.
10. ACCESS EASEMENTS FROM THE STREET AND AROUND THE STORMWATER SYSTEMS ARE HEREBY GRANTED TO RADNOR TOWNSHIP FOR INSPECTION OF THE INDIVIDUAL ON-LOT SYSTEMS. EACH SYSTEM IS TO BE MAINTAINED BY THE PROPERTY OWNER.
11. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.
12. PROPOSED BUILDING FOUNDATION CORNERS SHALL BE STAKED BY A SURVEYOR TO ENSURE CONSTRUCTION WITHIN THE BUILDING SETBACK LINES.
13. REPRESENTATIVES OF RADNOR TOWNSHIP AND/OR OTHER GOVERNMENTAL AUTHORITIES SHALL HAVE PERMISSION TO GAIN ACCESS TO THE STORMWATER FACILITIES THROUGH A BLANKET EASEMENT OVER EACH PROPERTY TO PERFORM INSPECTIONS, MAINTENANCE AND REPAIRS OF THE BASIN, AS NECESSARY.
14. LOTS CONTAINING ON-LOT STORMWATER MANAGEMENT STRUCTURES SHALL BE DEED RESTRICTED FROM CLEARING, REMOVING OR ALTERING ANY OF THESE STRUCTURES. INDIVIDUAL LOT OWNERS SHALL PROVIDE FOR THE MAINTENANCE AND PROTECTION OF THESE STRUCTURES. THE DEED FOR EACH LOT WILL CONTAIN A COVENANT BINDING ON THE GRANTEE AND ALL SUCCESSORS IN INTEREST DESIGNATING THE RESPONSIBILITY FOR MAINTENANCE OF THE ON-LOT FACILITIES.
15. INDIVIDUAL ON-LOT STORMWATER DEVICES SHALL NOT BE REMOVED, ALTERED OR RELOCATED BY THE LANDOWNER. IN THE EVENT OF THE FAILURE OF THE LANDOWNER TO COMPLY WITH THESE CONDITIONS AND RESTRICTIONS, THE TOWNSHIP SHALL HAVE THE AUTHORITY TO RESTORE SAID STORMWATER MANAGEMENT FACILITIES TO THEIR ORIGINAL STATE AND THE COSTS THEREOF SHALL BE ASSESSED TO THE LANDOWNER. THE TOWNSHIP, BEFORE IT MAY EXERCISE THIS RIGHT, SHALL NOTIFY THE LANDOWNER BY CERTIFIED MAIL OF ITS INTENTION TO DO SO. THE NOTICE SHALL SET FORTH IN WHAT MANNER THE OWNER HAS ALTERED THE STORMWATER MANAGEMENT FACILITIES, AND IF THE OWNER FAILS TO CORRECT THE ALTERATION LISTED IN THE NOTICE FROM THE TOWNSHIP, THEN AND ONLY THEN THE TOWNSHIP MAY EXERCISE THIS RIGHT.

NO.	REV.	DATE	DESCRIPTION
8			
7			
6			
5			
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1			

**DEMOLITION/GRADING PERMIT PLAN**  
LOT 1  
CLIENT: GROGAN INVESTMENT PROPERTIES, L.P.  
PROJECT: SCARDINO SUBDIVISION - LOT 1  
LOCATION: 200 ITHAN CREEK ROAD  
RADNOR TWP., DELAWARE COUNTY, PA.

DATE: 11/19/2014  
SCALE: 1" = 30'  
DRAWN BY: RBV  
CHECKED BY: DWG  
PROJECT NO.: 2764  
CAD FILE: 2764 PR.dwg  
PLOTTED: 11/19/2014  
DRAWING NO.: C01.1  
SHEET 1 OF 2



**GENERAL NOTES:**

1. THE PURPOSE OF THE PLAN IS TO OBTAIN APPROVAL FOR GRADING AND SOIL & EROSION CONTROL PERMITS TO DEVELOP LOT 1 WHICH IS PART OF THE PREVIOUSLY APPROVED "SCARDINO" SUBDIVISION PLANS.
2. SITE CONTRACTOR(S) SHALL REFER TO THE APPROVED SUBDIVISION & LAND DEVELOPMENT PLANS FOR ADDITIONAL NOTES, DETAILS AND SPECIFICATIONS GOVERNING THE DEVELOPMENT OF THIS PARCEL. REFERENCE IS HEREBY MADE TO THE APPROVED SUBDIVISION PLANS, KNOWN AS "SCARDINO" SUBDIVISION & LAND DEVELOPMENT PLANS, PREPARED BY CMC ENGINEERING, DATED 05/07/2007 AND LAST REVISED 08/31/2007.
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12. PROPOSED BUILDING FOUNDATION CORNERS SHALL BE STAKED BY A SURVEYOR TO ENSURE CONSTRUCTION WITHIN THE BUILDING SETBACK LINES.
13. REPRESENTATIVES OF RADNOR TOWNSHIP AND/OR OTHER GOVERNMENTAL AUTHORITIES SHALL HAVE PERMISSION TO GAIN ACCESS TO THE STORMWATER FACILITIES THROUGH A BLANKET EASEMENT OVER EACH PROPERTY TO PERFORM INSPECTIONS, MAINTENANCE AND REPAIRS OF THE BASIN, AS NECESSARY.
14. LOTS CONTAINING ON-LOT STORMWATER MANAGEMENT STRUCTURES SHALL BE DEED RESTRICTED FROM CLEARING, REMOVING OR ALTERING ANY OF THESE STRUCTURES. INDIVIDUAL LOT OWNERS SHALL PROVIDE FOR THE MAINTENANCE AND PROTECTION OF THESE STRUCTURES. THE DEED FOR EACH LOT WILL CONTAIN A COVENANT BINDING ON THE GRANTEE AND ALL SUCCESSORS IN INTEREST DESIGNATING THE RESPONSIBILITY FOR MAINTENANCE OF THE ON-LOT FACILITIES.
15. INDIVIDUAL ON-LOT STORMWATER DEVICES SHALL NOT BE REMOVED, ALTERED OR RELOCATED BY THE LANDOWNER. IN THE EVENT OF THE FAILURE OF THE LANDOWNER TO COMPLY WITH THESE CONDITIONS AND RESTRICTIONS, THE TOWNSHIP SHALL HAVE THE AUTHORITY TO RESTORE SAID STORMWATER MANAGEMENT FACILITIES TO THEIR ORIGINAL STATE AND THE COSTS THEREOF SHALL BE ASSESSED TO THE LANDOWNER. THE TOWNSHIP, BEFORE IT MAY EXERCISE THIS RIGHT, SHALL NOTIFY THE LANDOWNER BY CERTIFIED MAIL OF ITS INTENTION TO DO SO. THE NOTICE SHALL SET FORTH IN WHAT MANNER THE OWNER HAS ALTERED THE STORMWATER MANAGEMENT FACILITIES, AND IF THE OWNER FAILS TO CORRECT THE ALTERATION LISTED IN THE NOTICE FROM THE TOWNSHIP, THEN AND ONLY THEN THE TOWNSHIP MAY EXERCISE THIS RIGHT.

**INDIVIDUAL ON-LOT STAGING SEQUENCE:**

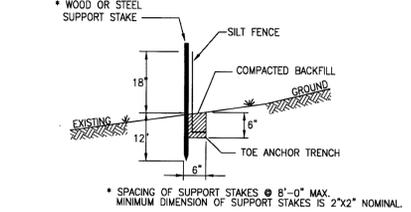
1. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE AT DRIVEWAY.
2. INSTALL THE TEMPORARY SILT FENCE AS SHOWN ON THE PLANS. MAINTAIN TEMPORARY CONTROL MEASURES UNTIL PERMANENT COVER IS ESTABLISHED. THE CONTRACTOR WILL INSTALL THESE SYSTEMS IN CONFORMANCE WITH THE PLAN DETAILS AND MANUFACTURER'S SPECIFICATIONS.
3. SKIMMERS EXISTING IMPROVEMENTS & CLEAR AND GRUB AREA REQUIRED FOR DRIVEWAYS, BUILDINGS, AND UTILITIES.
4. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED LOCATION OF THE INFILTRATION BED TO MINIMIZE COMPACTION OF THE SOIL.
5. ROUGH GRADE BUILDING LOTS AND DRIVEWAYS. EXCAVATE BUILDING FOUNDATIONS AND BEGIN BUILDING CONSTRUCTION. INSTALL ON-LOT INFILTRATION BED. PREVENT FLOW FROM ENTERING THE BED UNTIL COMPLETE STABILIZATION.
6. INSTALL UTILITIES ASSOCIATED WITH BUILDINGS. ONCE UTILITIES HAVE BEEN PLACED FINE DRIVEWAY AND STABILIZE. PLACE STONE BASE COURSE ON DRIVEWAYS.
7. PROVIDE SIX (6) INCHES OF TOPSOIL ON ALL DISTURBED AREAS. SEED AND MULCH ALL DISTURBED AREAS WITH PERMANENT SEED MIXTURE SPECIFICATIONS. ALL TOPSOIL PLACEMENT, SEEDING, SOIL SUPPLEMENTS AND/OR MULCHING SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS FOR EROSION AND SEDIMENT POLLUTION CONTROL IN PENNSYLVANIA.
8. PAVE DRIVEWAY WITH WEARING COURSE IN ACCORDANCE WITH PAVING SPECIFICATIONS ON THE PLANS.
9. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WILL BE STABILIZED. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND THERE ARE NO FUTURE SIGNS OF EROSION EVENT AND UPON FINAL APPROVAL BY THE DELAWARE COUNTY SOIL CONSERVATION DISTRICT CONNECT ROOF DRAINS AND ALL STORMWATER CONVEYANCE STRUCTURES TO INFILTRATION BEDS.

I HEREBY ACKNOWLEDGE THAT ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY, AND THAT A REVERSE EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE TOWNSHIP FOR A DETERMINATION OF ADEQUACY.

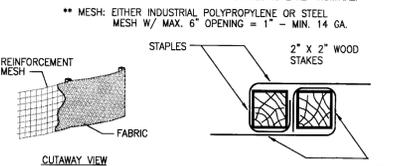
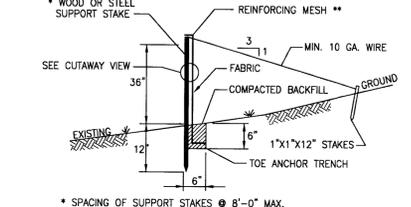
(SIGN) GROGAN INVESTMENT PROPERTIES, L.P. (PRINT) (DATE)

**CERTIFICATE OF CONFORMANCE - P.E.**  
I, [Signature], ON THIS DATE 11-19-2014, HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

**A. STANDARD SECTION 18" MAX. FENCE HEIGHT**



**B. REINFORCED SECTION 30" MAX. FENCE HEIGHT**



- INSTALLATION:**
1. A TRENCH WILL BE PLOWED OR OTHERWISE EXCAVATED TO THE REQUIRED DEPTH (6" WIDE X 6" DEEP) WITH LITTLE, IF ANY, DISTURBANCE TO THE DOWNSLOPE SIDE OF THE TRENCH. THE BOTTOM OF THE TRENCH AND THE FENCE TOP WILL BE PLACED ON A LEVEL GRADE. WHEN IT IS NECESSARY TO CROSS SMALL DEPRESSIONS, THE TRENCH BOTTOM AND FENCE TOP EDGE MAY DEVIATE SLIGHTLY FROM THE LEVEL GRADE. GRADES IN SUCH SECTIONS WILL NOT EXCEED ONE PERCENT (1%), NOR WILL THE DEVIATION EXCEED FOR MORE THAN 25 FEET.
  2. SILT FENCING MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. ENDS OF FENCING MUST BE EXTENDED 8 FEET, TRAVELING UPDRAPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCING SECTION.
  3. SUPPORT STAKES WILL BE DRIVEN TO THE REQUIRED DEPTH (12 INCHES) BELOW THE EXISTING GROUND SURFACE, AT SPECIFIED INTERVALS.
  4. STRETCH AND FASTEN FABRIC TO THE UPSLOPE SIDE OF THE SUPPORT STAKES (IF A REINFORCED SECTION, FASTEN REINFORCEMENT MESH PRIOR TO FASTENING THE FABRIC).
  5. WHERE ENDS OF FABRIC COME TOGETHER, THEY WILL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEWAGE BYPASS.
  6. THE TOE ANCHOR WILL BE BACKFILLED AND COMPACTED TO A DENSITY EQUAL TO THE SURROUNDING SOILS.
  7. IF CONSTRUCTING A REINFORCED SECTION, ATTACH GUY WIRES TO SUPPORT STAKES. PROVISIONS SHOULD BE MADE FOR EASY LOOSENING AND REMOVAL OF THE GUY WIRES TO ALLOW FOR ACCESS TO PERFORM MAINTENANCE WORK.
- MAINTENANCE:**
1. THE FENCE SHOULD BE INSPECTED AFTER EVERY PRECIPITATION EVENT. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
  2. SEWAGE MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
  3. ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR WILL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.
  4. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER FABRIC FENCE DUE TO WEATHERING.
  5. ANY SILT FENCE SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

**SILT FENCE DETAILS**  
NO SCALE

**IMPERVIOUS TABULATION**

DWELLING	2,129 S.F.
DRIVE	1,520 S.F.
WALKS	120 S.F.
PORCH/PATIOS	112 S.F.
DECK	192 S.F.
OTHER	0 S.F.
<b>TOTAL PROPOSED=</b>	<b>4,073 S.F.</b>

**LANDSCAPING TABLE FROM APPROVED SUBDIVISION PLANS**

CODE	BOTANICAL NAME	COMMON NAME	MAX. SPREAD	MAX. HEIGHT
2	QP	QUERCUS PHELLOS	45'-60'	55'-75'
2	NS	NYSSA SYLVATICA	30'-45'	40'-70'
3	AR	ACER RUBRUM	30'-70'	50'-70'

- \* MEASURED 6" ABOVE GROUND
- \*\* EXPECTED HEIGHT AT MATURITY TO BE NO LESS THAN 40'.
- NOTE: TREES MAY BE SUBSTITUTED IF APPROVED BY MUNICIPALITY.

**TREE REPLACEMENT FORMULA**

6-18" DBH REMOVED = 1 REPLACEMENT TREE
19-29" DBH REMOVED = 3 REPLACEMENT TREE
30"+ DBH REMOVED = 6 REPLACEMENT TREE

- NOTES:**
1. TREES MAY BE SUBSTITUTED IF APPROVED BY MUNICIPALITY.
  2. REPLACEMENT TREES MUST HAVE MINIMUM CALIPER OF 2" AND BE BALLED & BURLAP (B&B) OR IF EVERGREEN MINIMUM SIZE WILL BE 6'-8'.
  3. ALL EXISTING TREES THAT MAY POSSIBLY BE IMPACTED DURING CONSTRUCTION ACTIVITIES SHALL HAVE REPLACEMENT TREES PLANTED AT A RATIO CONSISTENT WITH THAT OF TREES TO BE REMOVED.

**TREES TO BE REMOVED**

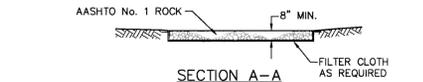
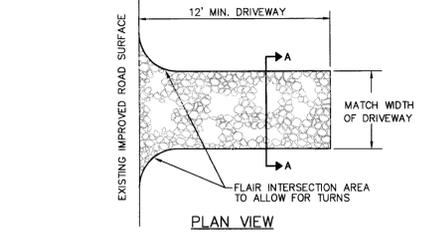
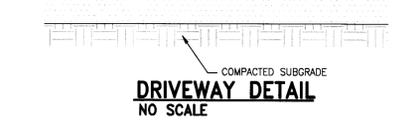
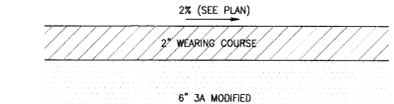
6" PINE	18" WILLOW
6" PINE	8" MAPLE
6" PINE	5" OAK
6" PINE	= 7 REPLACEMENT TREES

**SOILS CLASSIFICATIONS**

GB2 GLENGLE CHANNERY Silt LOM, 3 to 8 PERCENT SLOPES, MODERATELY ERODED  
WA WORTHAM, 0 TO 3 PERCENT SLOPES

**ZONING SCHEDULE- ZONE R1**  
(LOT AVERAGING BASED ON SECTION 280.110)  
RESIDENTIAL ZONING DISTRICT

REQUIRED	LOT 1
LOT AREA (EXCLUDING R/W)	43,560 SF. 1 ACRE
- 100% 1-476 R/W	95,938.74 SF. 2.20 ACS.
- 75% FLOODPLAIN	51,028.95 SF.
- 75% WETLANDS	303.68 SF.
- 75% OF 20% SLOPE	1,582.12 SF.
LOT AREA (EFFECTIVE)	43,560 SF. 1 ACRE
MINIMUM LOT WIDTH AT STREET LINE	120 FT.
MINIMUM LOT DEPTH	384.52 FT.
MAXIMUM BUILDING AREA	187.28 FT.
MAXIMUM BUILDING HEIGHT	15'
MAXIMUM IMPERVIOUS AREA	9.47 %
IMPERVIOUS AREA	4.073 SF.



**DESIGN:**

1. ROCK CONSTRUCTION ENTRANCES WILL BE CONSTRUCTED TO THE MINIMUM WIDTH LENGTH AND THICKNESS DIMENSIONS SHOWN ABOVE.
2. ROCK WILL BE AASHTO NO. 1 AS SPECIFIED IN SECTION 703.2 OF PA DOT PUBLICATION 408.
3. FOR INSTALLATION ON CLAYEY OR POORLY DRAINED SOILS, A GEOTEXTILE FABRIC UNDERLAYMENT, OF A TYPE RECOMMENDED FOR SUCH APPLICATIONS BY THE MANUFACTURER, WILL BE USED.

**CONSTRUCTION:**

CONSTRUCTION WILL BE TO THE DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS.

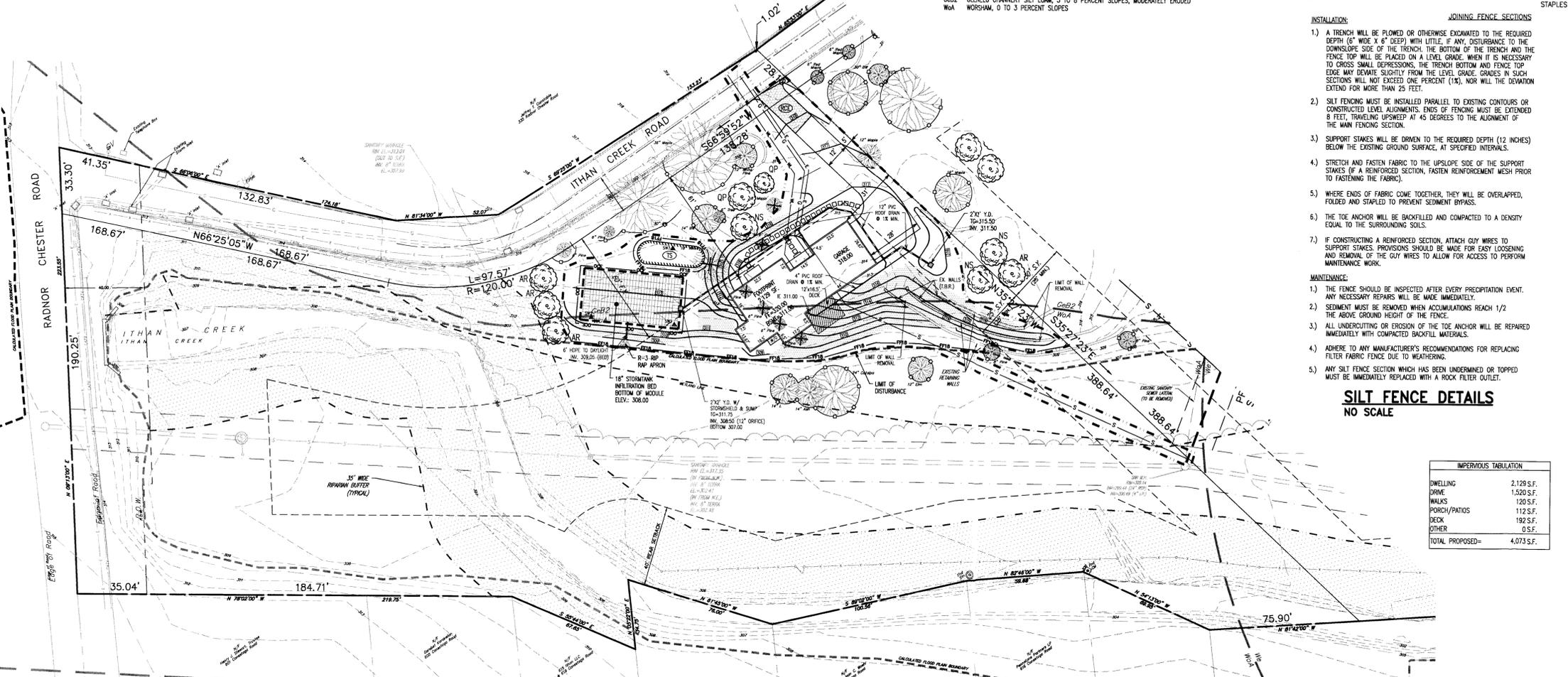
**MAINTENANCE:**

THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS, WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER IS NOT PERMITTED.

**STABILIZED CONSTRUCTION ENTRANCE**  
NO SCALE

CONSTRUCTION WILL BE TO THE DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS.

**STABILIZED CONSTRUCTION ENTRANCE**  
NO SCALE



**LEGEND**

EX. PROPERTY LINE	EX. TELE. LINE	PROP. SEEPAGE BED
PROP. PROPERTY LINE	PROP. TELE. LINE	EX. SANITARY SEWER LINE
EX. RIGHT-OF-WAY	EX. ELEC. LINE	PROP. SAN. SEWER LINE
PROP. RIGHT-OF-WAY	EX. UTILITY POLE	PROP. SAN. SEWER LATERAL
EX. MANHOLE	EX. GUY ANCHOR	PROP. SANITARY MH. ID.
PROP. MONUMENT	EX. FENCE	EX. WATER LINE
EX. CONCRETE	EX. MAIL BOX	PROP. WATER LINE
PROP. IRON PIPE	EX. SIGN	PROP. WATER LATERAL
EX. DISTURBED	PROP. SIGN	PROP. FIRE WATER LINE
PROP. EASEMENT	EX. HYDRANT	EX. WATER VALVE
EX. METALNAIL	EX. STORM SEWER LINE	PROP. WATER VALVE
242 EXISTING CONTOUR	PROP. STORM SEWER LINE	EX. HYDRANT
X 123.00 EXISTING SPOT ELEV.	PROP. STORM INLET	EX. MANHOLE
X 123.000 NEW SPOT ELEV.	PROP. STORM INLET ID	PROP. MANHOLE

**GRADING PERMIT PLAN**  
SCALE: 1" = 30'



**EROSION CONTROL LEGEND**

FF18	18" SILT FENCE	TS	TOPSOIL STOCKPILE
FF30	30" SILT FENCE	RCE	STABILIZED ROCK CONSTRUCTION ENTRANCE
SSF	SUPER SILT FENCE	IP	INLET PROTECTION
---	LIMIT OF DISTURBANCE	IC	EROSION CONTROL BLANKET

**STORMWATER MANAGEMENT NOTE:**

THE STORMWATER GENERATED BY THE IMPROVEMENTS BEING PROPOSED ON THIS LOT ARE BEING CONTROLLED BY AN ON-LOT BED. (SEE STORMWATER MANAGEMENT REPORT, FOR "SCARDINO SUBDIVISION", PREPARED BY CMC ENGINEERING, DATED 05/07/2007, LAST REVISED 08/31/2007). THE STORMWATER BED HAS BEEN DESIGNED ASSUMING THE IMPERVIOUS COVERAGE AS SHOWN ON THE PLAN (4,073 SF) PLUS AN ADDITIONAL 1,200 SF OF FUTURE IMPERVIOUS. FUTURE IMPERVIOUS WILL BE DIRECTED TO THE STORMWATER MANAGEMENT FACILITY OR HAVE ADDITIONAL STORMWATER MANAGEMENT PROVISIONS PROVIDED AT THAT TIME, AS REQUIRED BY THE TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

**APPLICANT/RECORD OWNER:**  
GROGAN INVESTMENT PROPERTIES, L.P.  
1595 PAOLI PIKE  
WEST CHESTER, PA 19380

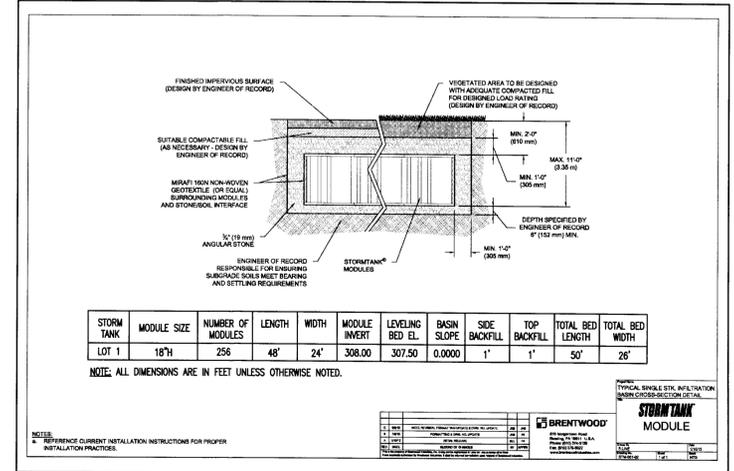
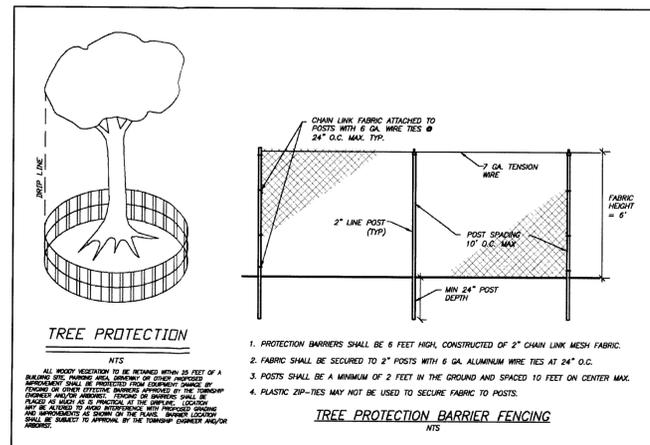
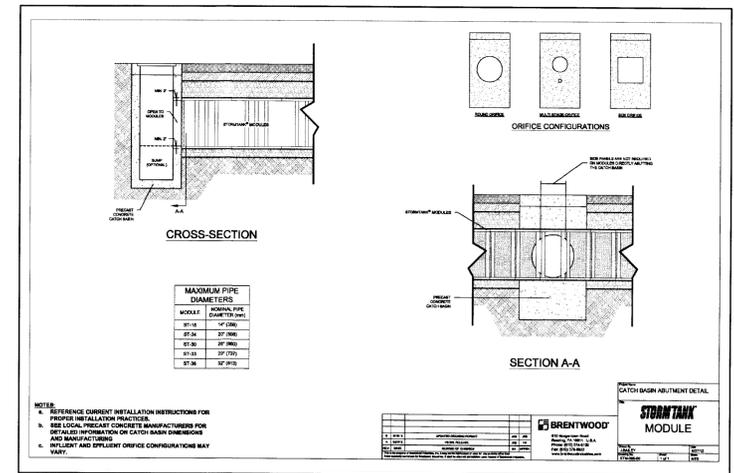
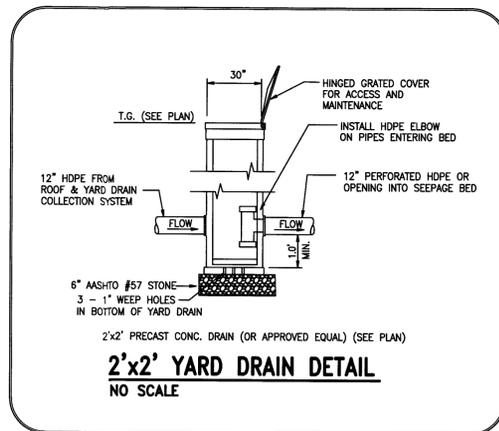
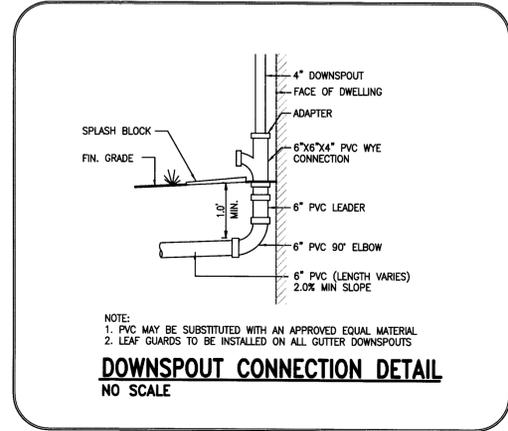
**OPERATION AND MAINTENANCE:**

ON-LOT STORMWATER MANAGEMENT BMP'S SHALL NOT BE REMOVED, ALTERED OR RELOCATED BY THE LANDOWNER. IN THE EVENT OF THE FAILURE OF THE LANDOWNER TO COMPLY WITH THESE CONDITIONS AND RESTRICTIONS, THE TOWNSHIP SHALL HAVE THE AUTHORITY TO RESTORE SAID STORMWATER MANAGEMENT FACILITIES TO THEIR ORIGINAL STATE AND THE COSTS THEREOF SHALL BE ASSESSED TO THE LANDOWNER. THE TOWNSHIP, BEFORE IT MAY EXERCISE THIS RIGHT, SHALL NOTIFY THE LANDOWNER BY CERTIFIED MAIL OF ITS INTENTION TO DO SO. THE NOTICE SHALL SET FORTH IN WHAT MANNER THE OWNER HAS ALTERED THE STORMWATER MANAGEMENT FACILITIES, AND IF THE OWNER FAILS TO CORRECT THE ALTERATION LISTED IN THE NOTICE FROM THE TOWNSHIP, THEN AND ONLY THEN THE TOWNSHIP MAY EXERCISE THIS RIGHT.



D.L. Howell & Assoc., Inc.

1250 Wrights Lane  
West Chester, PA 19380  
Phone: (610) 918-9002  
Fax: (610) 918-9003

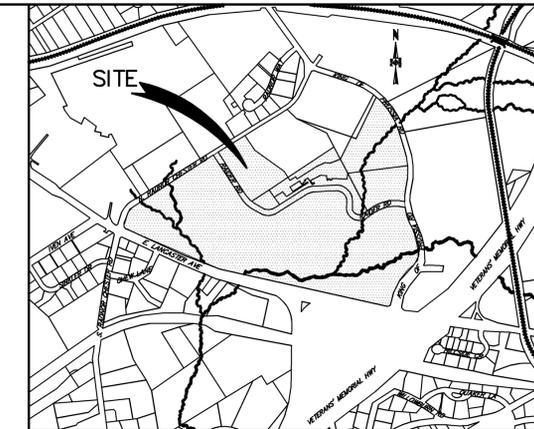


**GRADING PERMIT PLAN DETAILS**

CLIENT: GROGAN INVESTMENT PROPERTIES, L.P.  
PROJECT: SCARDINO SUBDIVISION - LOT 1  
LOCATION: 200 ITHAN CREEK ROAD  
RADNOR TWP., DELAWARE COUNTY, PA.

DATE:	11/19/2014
SCALE:	AS NOTED
DRAWN BY:	RBV
CHECKED BY:	DWG
PROJECT NO.:	2764
CAD FILE:	2764 PR.dwg
PLOTTED:	11/19/2014
DRAWING NO.:	C01.2
SHEET:	2 of 2

REV.	DATE	DESCRIPTION
8		
7		
6		
5		
4		
3		
2		



**ZONING INFORMATION**

- ZONING DISTRICT: "PLU" - PUBLIC LAND USE, PER ZONING, CHAPTER 280, TOWNSHIP OF RADNOR, ARTICLE XVII.
- EXISTING USE: PUBLIC SCHOOL
- AREA, HEIGHT AND DIMENSIONAL REQUIREMENTS (PER CHAPTER 280-88):

CRITERIA	REQUIREMENT	PROPOSED
A. MINIMUM LOT AREA	N/A	69.22 AC
B. MINIMUM LOT WIDTH	N/A	±1490 FT
C. MAXIMUM BUILDING AREA	30%	7.0%
D. MINIMUM LANDSCAPE AREA	55%	81.0%
E. MINIMUM BUILDING SETBACK		
FRONT YARD	120 FT	120 FT
SIDE YARD	200 FT	68 FT*
REAR YARD	200 FT	68 FT*
F. MAXIMUM BUILDING HEIGHT	38 FT	< 38 FT
G. PARKING SETBACK		
FRONT YARD	20 FT	80 FT
SIDE YARD	10 FT	14 FT

\* EXISTING NON-CONFORMING

**SITE AREA TABLE \*\***

GROSS TRACT AREA:	73.4729 AC.
RIGHT-OF-WAY AREA:	4.2510 AC.
NET TRACT AREA:	69.2220 AC.

\*\* BASED ON FINAL LAND DEVELOPMENT PLANS FOR RADNOR HIGH SCHOOL, ADDITIONS AND RENOVATIONS PREPARED BY HRG, INC. DATED 11/6/1996

**PARKING DATA**

EXISTING:	441 CAR PARKING SPACES 61 BUS PARKING SPACES
PROPOSED:	427 CAR PARKING SPACES 61 BUS PARKING SPACES

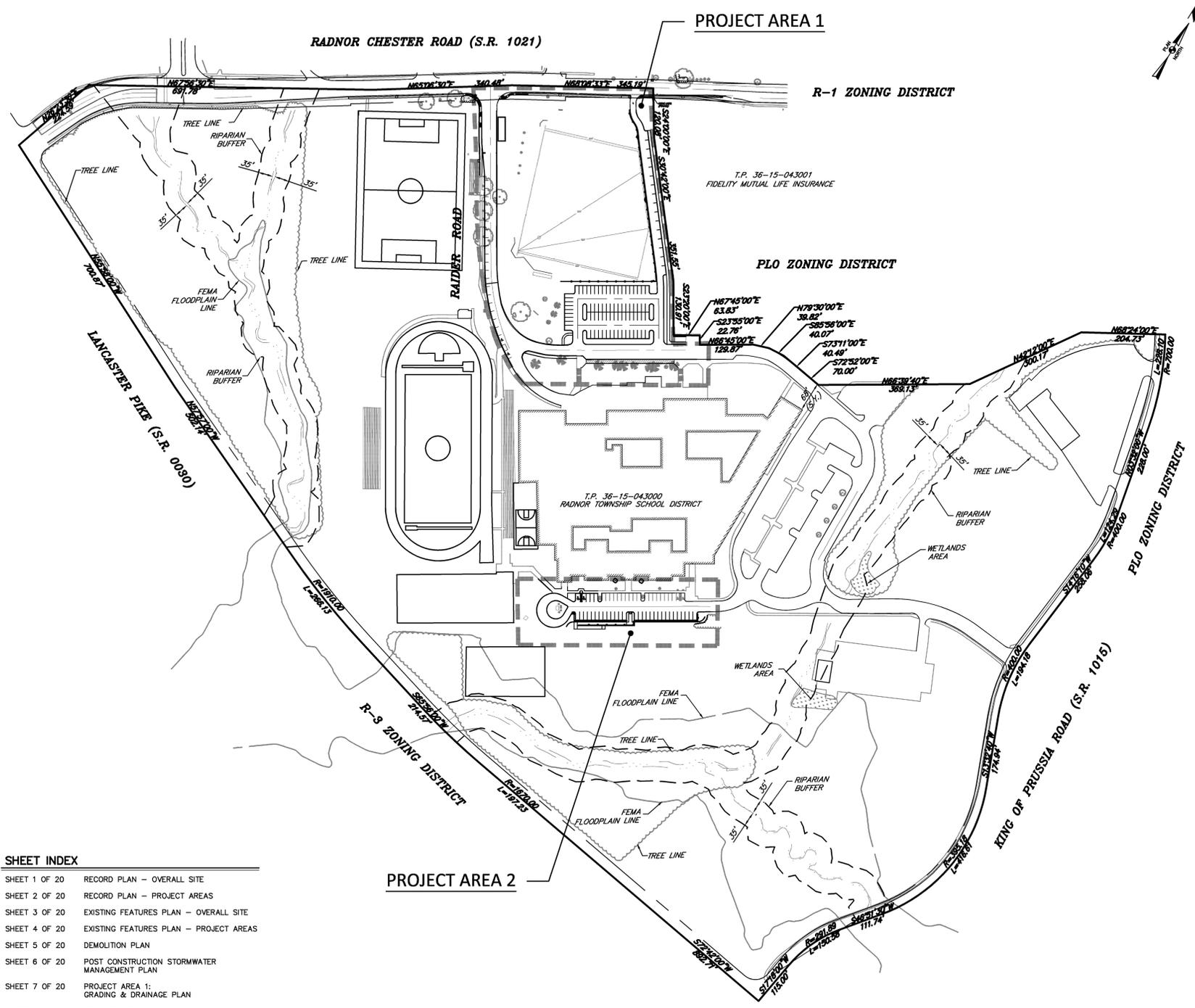
NOTE: PUBLIC SCHOOL USE NOT DEFINED IN ZONING SECTION 280-103. OFF-STREET PARKING.

**IMPERVIOUS AREA TABULATION**

BUILDING:	210,514 SF (4.83 AC)
SIDEWALKS & PAVEMENT:	364,307 SF (8.36 AC)
NET TRACT AREA:	69.22 AC
MAXIMUM BUILDING AREA:	7.0%
FIELDS & LANDSCAPED AREAS:	2,440,492 SF (56.02 AC)
MINIMUM LANDSCAPE AREA:	81.0%

**GENERAL NOTES**

- THE EXISTING FEATURES OF PROJECT AREAS ARE BASED ON A FIELD SURVEY PERFORMED BY GILMORE & ASSOCIATES INC. IN OCTOBER OF 2013 AND APRIL OF 2014. THE BALANCE OF SITE FEATURES ARE BASED ON PLANS OF REFERENCE.
- DESIGNATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THESE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.
- ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO THE START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121.
- VERTICAL DATUM IS NAVD88 AND WAS ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE TOPCON TOPSURV GPS BASE STATION NETWORK.
- HORIZONTAL DATUM IS BASED ON 1983 STATE PLANE COORDINATE SYSTEM ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM (GPS), WITH OBSERVATIONS REFERENCED TO THE TOPCON TOPSURV GPS BASE STATION NETWORK.
- SITE BENCHMARKS ARE AS FOLLOWS:  
NORTHEAST CORNER EXISTING 'M' INLET: ELEVATION = 350.29  
WATER VALVE: ELEVATION = 355.88
- RIGHT-OF-WAY AS SHOWN ALONG SCHOOL DISTRICT SITE TAKEN FROM THE FOLLOWING PLANS:  
- FINAL LAND DEVELOPMENT PLANS OF RADNOR HIGH SCHOOL ADDITIONS & RENOVATIONS RADNOR TOWNSHIP, DELAWARE COUNTY, PA. PREPARED BY HERBERT, ROWLAND, & GRUBIC, INC. DATED NOVEMBER 11, 1996.  
- RADNOR HIGH SCHOOL TOPOGRAPHIC SURVEY PREPARED FOR THE VITETTA GROUP RADNOR TOWNSHIP, DELAWARE COUNTY, PA. BY ROBERT E. BLUE CONSULTING ENGINEERS, P.C. DATED 11-12-93. (NOTE: NOTE NUMBER 6 ON THE ROBERT E. BLUE PLAN STATES THAT THE RIGHT-OF-WAY INFORMATION WAS TAKEN FROM A LIST OF THE RIGHT-OF-WAY WIDTHS PREPARED BY RADNOR TOWNSHIP DEPARTMENT OF PUBLIC WORKS.)
- RIGHT-OF-WAY AS SHOWN NORTHEAST OF SCHOOL DISTRICT SITE TAKEN FROM THE FOLLOWING PLANS:  
- PENNDOT: LEGISLATIVE ROUTE 20341-SECTION 2-SHEET 4 OF 5.
- THE BOUNDARY AND METES AND BOUNDS AS SHOWN TAKEN FROM PLAN ENTITLED "OVERALL BOUNDARY AND CAMPUS PLAN" PREPARED BY HRG INC. (HERBERT, ROWLAND & GRUBIC INC.), DATED NOVEMBER 11, 1996. METES AND BOUNDS ROTATION TO PA STATE PLANE COORDINATE GRID IS 8 DEGREES 48 MINUTES 48 SECONDS CLOCKWISE.
- FEMA FLOODPLAIN SHOWN PER FLOOD INSURANCE MAP NUMBER 42045C0036F, DATED 11/18/09. THE FLOODPLAIN AREA IS IDENTIFIED AS ZONE-A, NO BASE FLOOD ELEVATIONS DETERMINED.
- IMPROVEMENTS SHOWN TO RADNOR-CHESTER ROAD AND RAIDER ROAD INTERSECTION ARE PART OF PENNDOT HIGHWAY OCCUPANCY PERMIT APPLICATION NO. 70948, PREPARED BY TRAFFIC PLANNING AND DESIGN, AND IS NOT PART OF THIS PLAN SET.



**SHEET INDEX**

SHEET 1 OF 20	RECORD PLAN - OVERALL SITE
SHEET 2 OF 20	RECORD PLAN - PROJECT AREAS
SHEET 3 OF 20	EXISTING FEATURES PLAN - OVERALL SITE
SHEET 4 OF 20	EXISTING FEATURES PLAN - PROJECT AREAS
SHEET 5 OF 20	DEMOLITION PLAN
SHEET 6 OF 20	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
SHEET 7 OF 20	PROJECT AREA 1: GRADING & DRAINAGE PLAN
SHEET 8 OF 20	PROJECT AREA 2: GRADING & DRAINAGE PLAN
SHEET 9 OF 20	EROSION AND SEDIMENT CONTROL PLAN
SHEET 10 OF 20	EROSION AND SEDIMENT CONTROL PLAN
SHEET 11 OF 20	UG-1 STORMWATER DETAILS
SHEET 12 OF 20	UG-2 STORMWATER DETAILS
SHEET 13 OF 20	PROJECT AREA 1: LANDSCAPING PLAN
SHEET 14 OF 20	PROJECT AREA 2: LANDSCAPING PLAN
SHEET 15 OF 20	PROJECT AREA 1: LIGHTING PLAN
SHEET 16 OF 20	PROJECT AREA 2: LIGHTING PLAN
SHEET 17 OF 20	CONSTRUCTION DETAILS
SHEET 18 OF 20	CONSTRUCTION DETAILS
SHEET 19 OF 20	EROSION AND SEDIMENT CONTROL DETAILS
SHEET 20 OF 20	TRUCK TURNING PLAN

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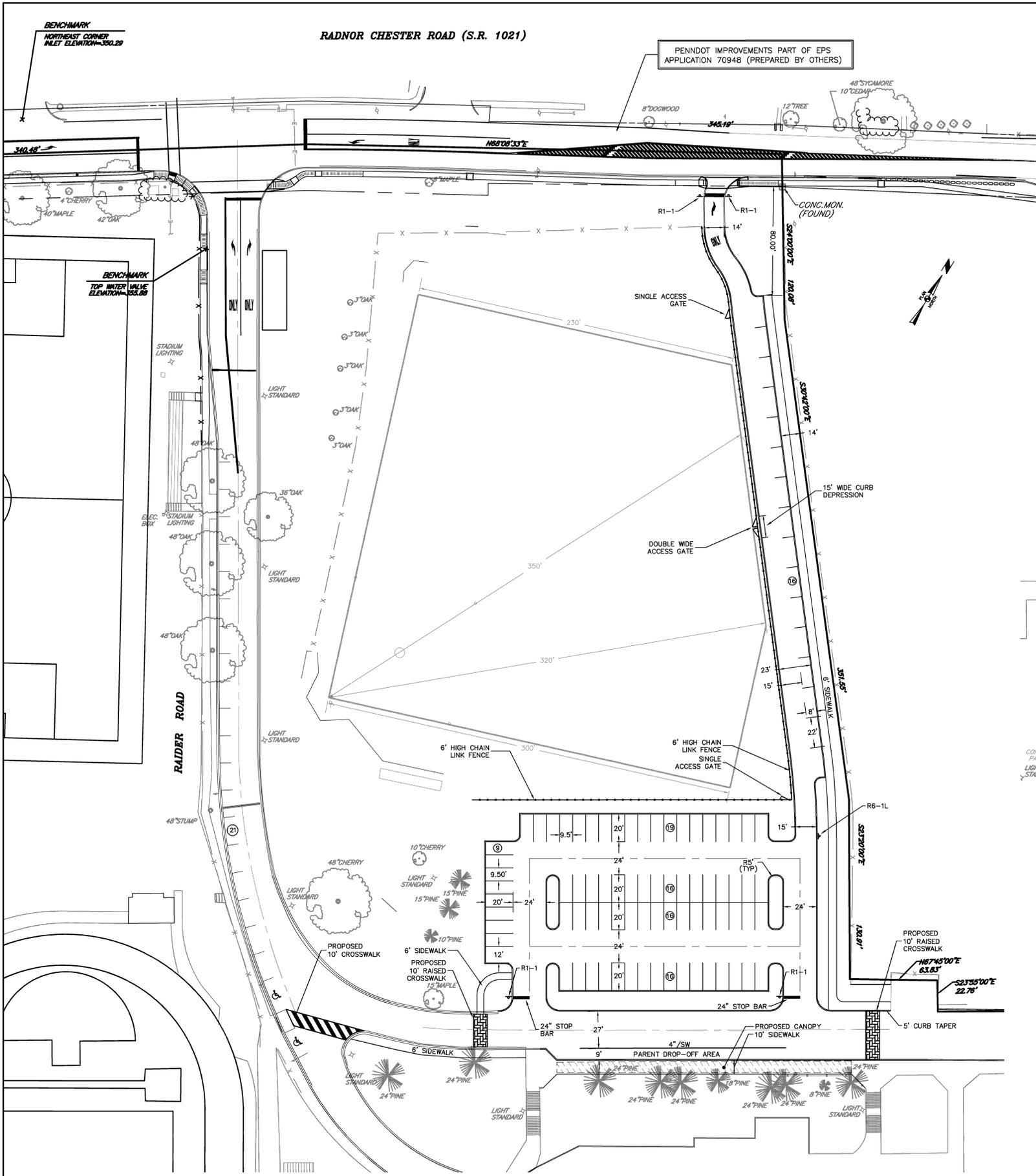
LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121. GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

PENNSYLVANIA ONE CALL SYSTEM, INC.  
825 Irwin Run Road  
West Mifflin, Pennsylvania  
15122 - 1078

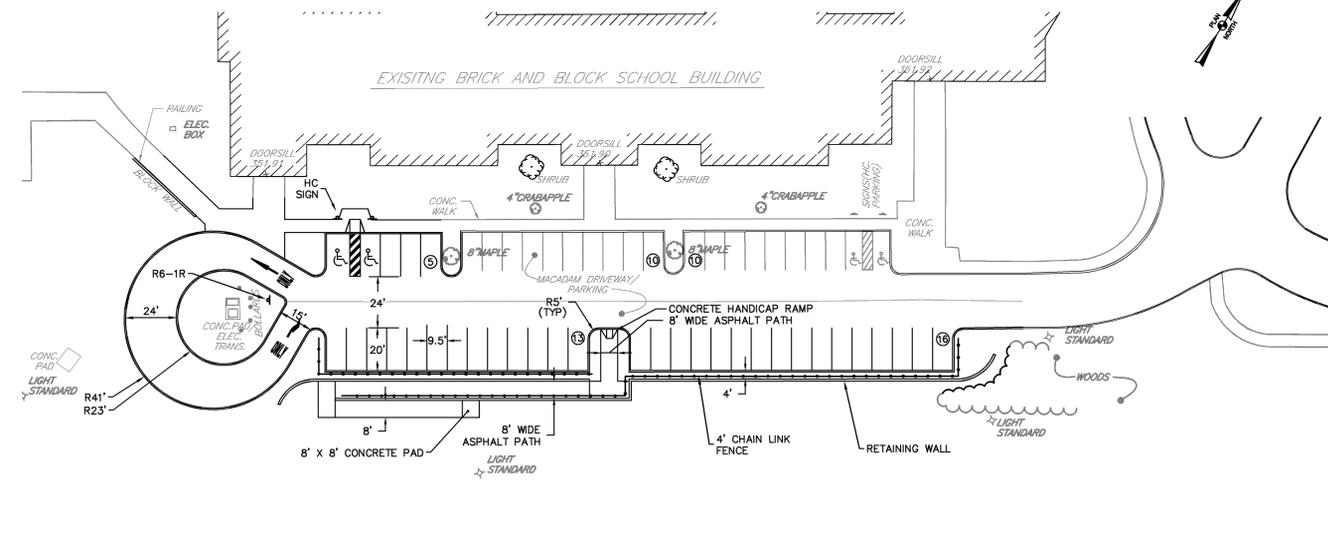
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA CALL 1-800-242-1776  
NON-MEMBERS MUST BE CONTACTED DIRECTLY  
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
SERIAL #20132730667,  
20132730689, 20132730706

OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	
DATE: 11/25/2014	SCALE: 1"=150'	<p align="center"><b>RECORD PLAN OVERALL SITE RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b></p> <p align="center"><b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING &amp; CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</p>		
		DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH
JOB NO.: 2013-09007				SHEET NO.: 1 OF 20



**LEGEND**

- - - 2 FT CONTOURS
- - - 10 FT CONTOURS
- PROPERTY LINE
- - - LEGAL RIGHT OF WAY
- - - STREAM CHANNEL
- - - EXISTING TREE LINE
- - - RIPARIAN BUFFER (35')
- - - FLOODPLAIN
- ⊕ EXISTING UTILITY POLE
- INLET / STORMWATER PIPE
- ⊕ EXISTING SIGN
- ⊕ EXISTING SPOT ELEVATION
- - - EXISTING FENCE LINE
- ⊕ PROPOSED SIGN
- - - PROPOSED FENCE LINE



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**PROJECT AREA 1**

**PROJECT AREA 2**

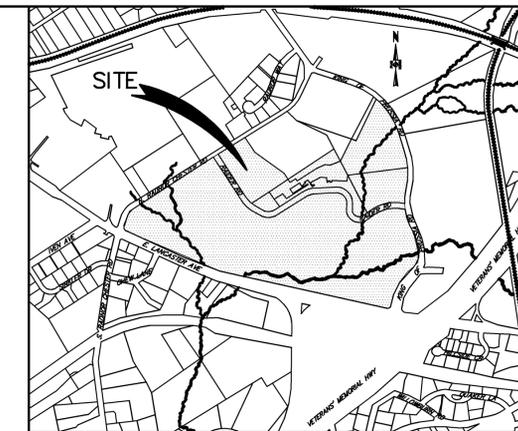
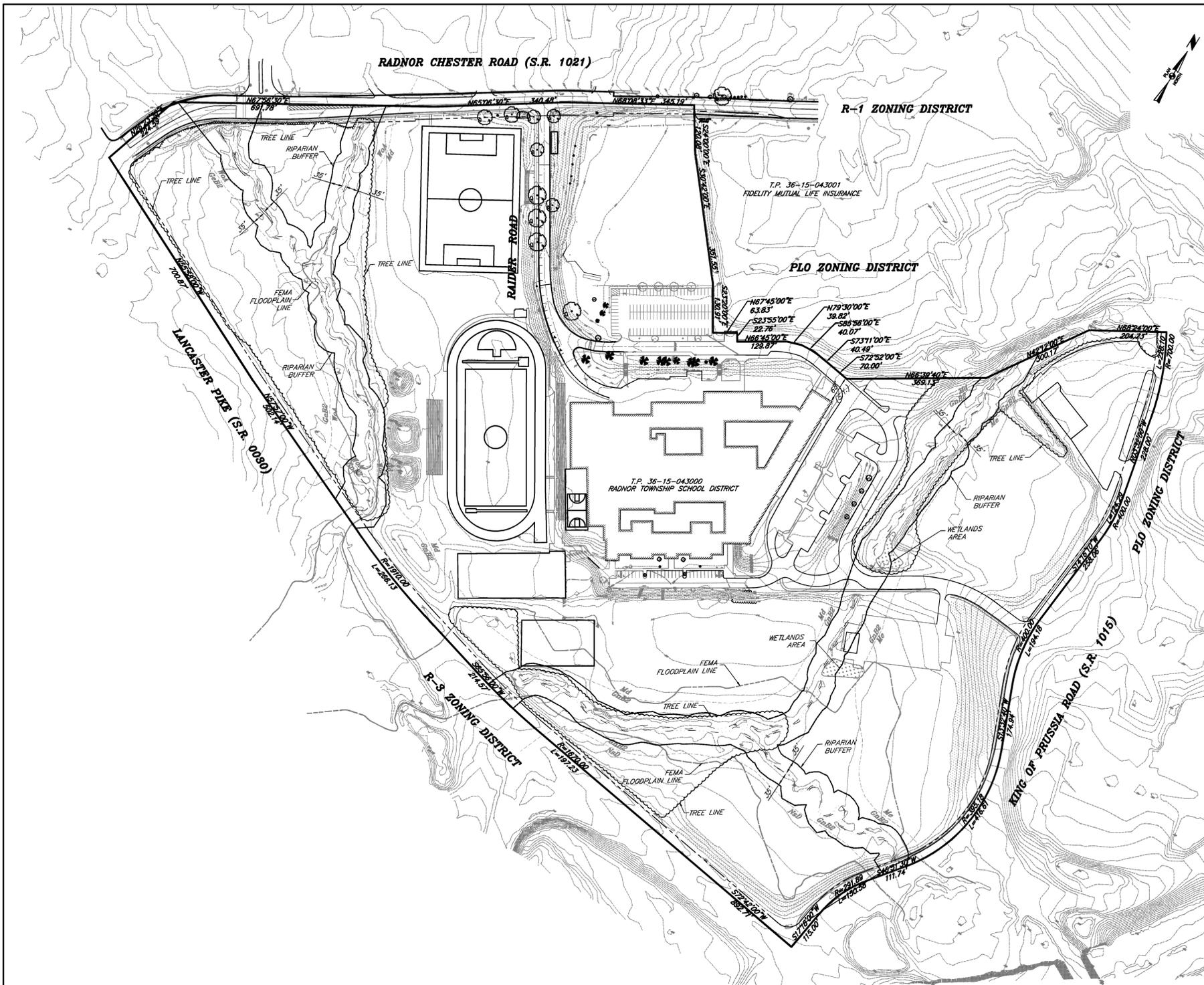
GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

PENNSYLVANIA ONE CALL SYSTEM, INC.  
 925 Irish Run Road  
 West Mifflin, Pennsylvania  
 15122 - 1078

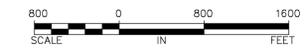
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776  
 NON-MEMBERS MUST BE CONTACTED DIRECTLY  
 PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
 SERIAL #20132730667,  
 20132730689, 20132730706

OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19087-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	<p align="center"><b>RECORD PLAN PROJECT AREAS RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b></p> <p align="center"><b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING &amp; CONSULTING SERVICES</p> <p>85 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</p>
DATE: 11/25/2014	SCALE: 1"=40'			
<p align="center"><b>G &amp; A</b></p>		DESIGNED BY: TMH	DRAWN BY: SMM	
JOB NO.: 2013-09007				SHEET NO.: 2 OF 20

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LOCATION MAP



**LEGEND**

	EXISTING 2 FT CONTOURS
	EXISTING 10 FT CONTOURS
	PROPERTY LINE
	LEGAL RIGHT OF WAY
	STREAM CHANNEL
	EXISTING TREE LINE
	RIPARIAN BUFFER (35')
	FLOODPLAIN
	EXISTING UTILITY POLE
	INLET / STORMWATER PIPE
	EXISTING SIGN
	EXISTING SPOT ELEVATION
	EXISTING FENCE LINE
	SOILS BOUNDARY LINE
	SOILS TYPE SYMBOL
	G & A SOIL TEST PIT LOCATION
	STEEP SLOPES 14% AND GREATER
	EXISTING WETLAND AREA

- GENERAL NOTES**
- THE EXISTING FEATURES AS SHOWN ARE BASED ON A FIELD SURVEY PERFORMED BY GILMORE & ASSOCIATES INC. IN OCTOBER OF 2013 AND APRIL OF 2014.
  - DESIGNATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN PREPARATION OF THESE DRAWINGS. THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THESE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.
  - ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO THE START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121.
  - VERTICAL DATUM IS NAVD88 AND WAS ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE TOPCON TOPSURV GPS BASE STATION NETWORK.
  - HORIZONTAL DATUM IS BASED ON 1983 STATE PLANE COORDINATE SYSTEM ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM (GPS), WITH OBSERVATIONS REFERENCED TO THE TOPCON TOPSURV GPS BASE STATION NETWORK.
  - SITE BENCHMARKS ARE AS FOLLOWS:  
NORTHEAST CORNER EXISTING "M" INLET: ELEVATION = 350.29  
WATER VALVE: ELEVATION = 355.88
  - RIGHT-OF-WAY AS SHOWN ALONG SCHOOL DISTRICT SITE TAKEN FROM THE FOLLOWING PLANS:  
- FINAL LAND DEVELOPMENT PLANS OF RADNOR HIGH SCHOOL ADDITIONS & RENOVATIONS RADNOR TOWNSHIP, DELAWARE COUNTY, PA. PREPARED BY HERBERT, ROWLAND, & GRUBIC, INC. DATED NOVEMBER 11, 1996.  
- RADNOR HIGH SCHOOL TOPOGRAPHIC SURVEY PREPARED FOR THE VITETTA GROUP RADNOR TOWNSHIP, DELAWARE COUNTY, PA. BY ROBERT E. BLUE CONSULTING ENGINEERS, P.C. DATED 11-12-93. (NOTE: NOTE NUMBER 6 ON THE ROBERT E. BLUE PLAN STATES THAT THE RIGHT-OF-WAY INFORMATION WAS TAKEN FROM A LIST OF THE RIGHT-OF-WAY WIDTHS PREPARED BY RADNOR TOWNSHIP DEPARTMENT OF PUBLIC WORKS.)
  - RIGHT-OF-WAY AS SHOWN NORTHEAST OF SCHOOL DISTRICT SITE TAKEN FROM THE FOLLOWING PLANS:  
- PENNDOT: LEGISLATIVE ROUTE 20341-SECTION 2-SHEET 4 OF 5.
  - THE BOUNDARY AND METES AND BOUNDS AS SHOWN TAKEN FROM PLAN ENTITLED "OVERALL BOUNDARY AND CAMPUS PLAN" PREPARED BY HRG INC. (HERBERT, ROWLAND & GRUBIC INC.) DATED NOVEMBER 11, 1996. METES AND BOUNDS ROTATION TO PA. STATE PLANE COORDINATE GRID IS 8 DEGREES 48 MINUTES 48 SECONDS CLOCKWISE.
  - FEMA FLOODPLAIN SHOWN PER FLOOD INSURANCE MAP NUMBER 42045C0036F, DATED 11/18/09. THE FLOODPLAIN AREA IS IDENTIFIED AS ZONE-A. NO BASE FLOOD ELEVATIONS DETERMINED.

**SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS BASED ON USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY**

SYMBOL	MAPPING UNITS	SLOPE	LAND CAPBLTY	HYDRIC SOIL	HYDRO. GROUP	DEPTH TO BEDROCK	DEPTH TO WATER TABLE	LIMITATIONS FOR CONSTRUCTION	RESOLUTION OF LIMITATIONS
GeB2	GLENVILLE SILT LOAM	3-8%	2e	NO	B	>78"	>78"	NOT LIMITED	
GnB2	GLENVILLE SILT LOAM	3-8%	2e	NO	C	80"	21"	SOMEWHAT LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.
Md	MADE LAND, GABBRO AND DIABASE MATERIALS	-	6e	YES	C	>78"	>78"	NOT RATED	
Me	MADE LAND, SCHIST AND GNEISS MATERIALS	-	7s	NO	B	65"	60"	SOMEWHAT LIMITED: SHRINK SWELL POTENTIAL	COMPACTION AS PER PLAN SPECIFICATIONS
NsD	NESHAMINY VERY STONY SILT LOAM	8-25%	7s	NO	B	65"	>78"	VERY LIMITED: SLOPE	MINIMIZE SLOPE DISTURBANCE AND STABILIZE IMMEDIATELY.
WoA	WORSHAM SILT LOAM	0-3%	5w	YES	D	>78"	3"	VERY LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.

**RESOLUTIONS:**  
 WINTER GRADING: AVOID GRADING IN WINTER. IF GRADING IS NECESSARY, STABILIZE IMMEDIATELY.  
 DWELLING WITH BASEMENTS & SUBDIVISION STREETS: HAVE BYPASS PUMPS AVAILABLE DURING CONSTRUCTION.  
 IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PUMP THE ENCOUNTERED WATER TO THE CLOSEST SEDIMENT TRAP/BASIN.

ONLY THOSE PLANS INCORPORATING THE RAISED PROFESSIONAL SEAL SHOULD BE CONSIDERED OFFICIAL AND RELIED UPON BY USER. THIS PLAN IS PREPARED SPECIFICALLY FOR THE CLIENT AND PROJECT DESIGNATED HEREON. MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE CONSENT OF GILMORE & ASSOCIATES, INC. IS PROHIBITED. © COPYRIGHT 2014 GILMORE & ASSOCIATES, INC. ALL RIGHTS RESERVED.

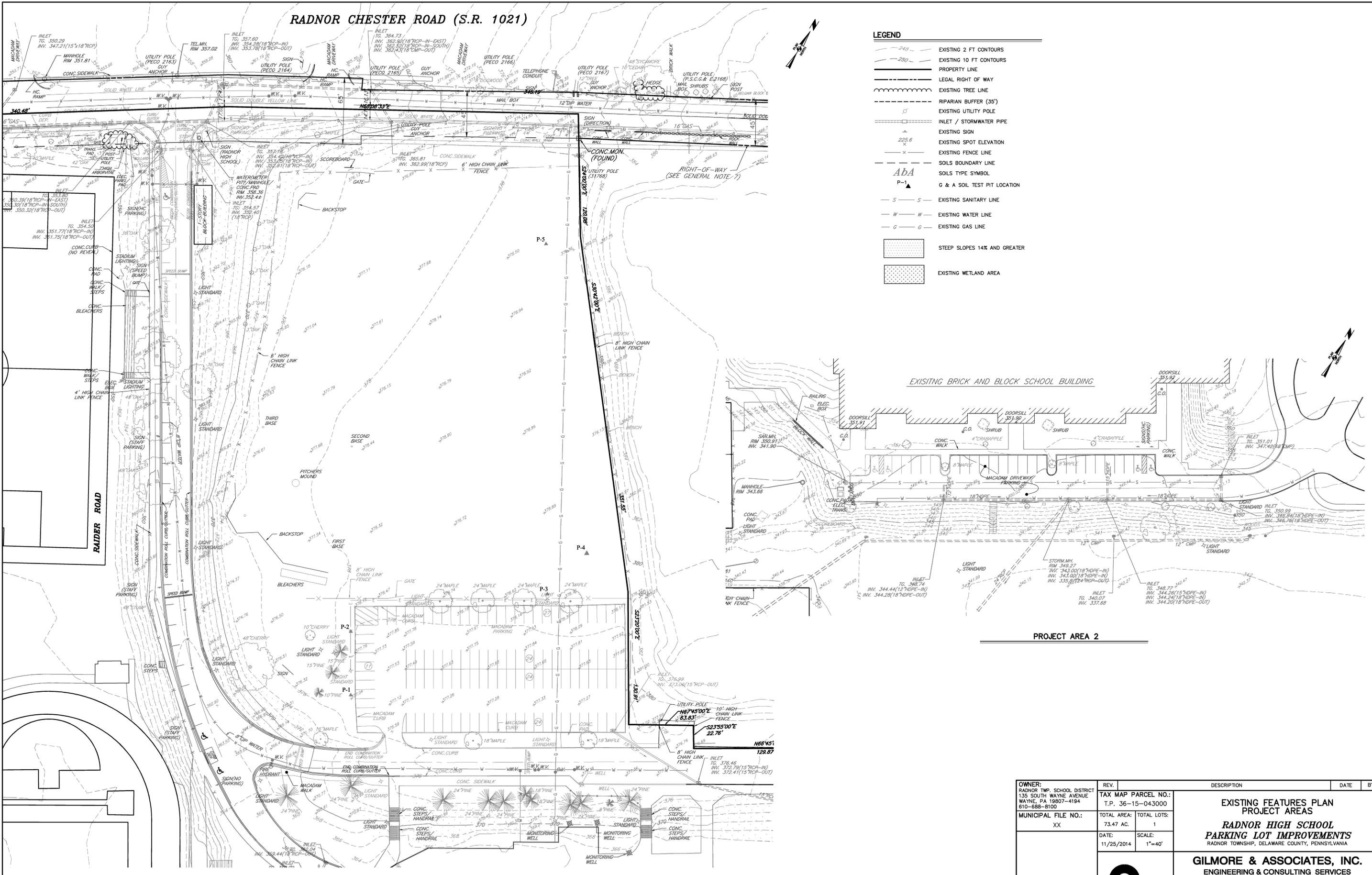
<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>EXISTING FEATURES PLAN OVERALL SITE RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA</b>		
<b>DATE:</b> 11/25/2014	<b>SCALE:</b> 1"=150'			
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com		<b>JOB NO.:</b> 2013-09007		
		<b>SHEET NO.:</b> 3 OF 20		



DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH
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# RADNOR CHESTER ROAD (S.R. 1021)

LEGEND	
	EXISTING 2 FT CONTOURS
	EXISTING 10 FT CONTOURS
	PROPERTY LINE
	LEGAL RIGHT OF WAY
	EXISTING TREE LINE
	RIPARIAN BUFFER (35')
	EXISTING UTILITY POLE
	INLET / STORMWATER PIPE
	EXISTING SIGN
	EXISTING SPOT ELEVATION
	EXISTING FENCE LINE
	SOILS BOUNDARY LINE
	SOILS TYPE SYMBOL
	G & A SOIL TEST PIT LOCATION
	EXISTING SANITARY LINE
	EXISTING WATER LINE
	EXISTING GAS LINE
	STEEP SLOPES 14% AND GREATER
	EXISTING WETLAND AREA



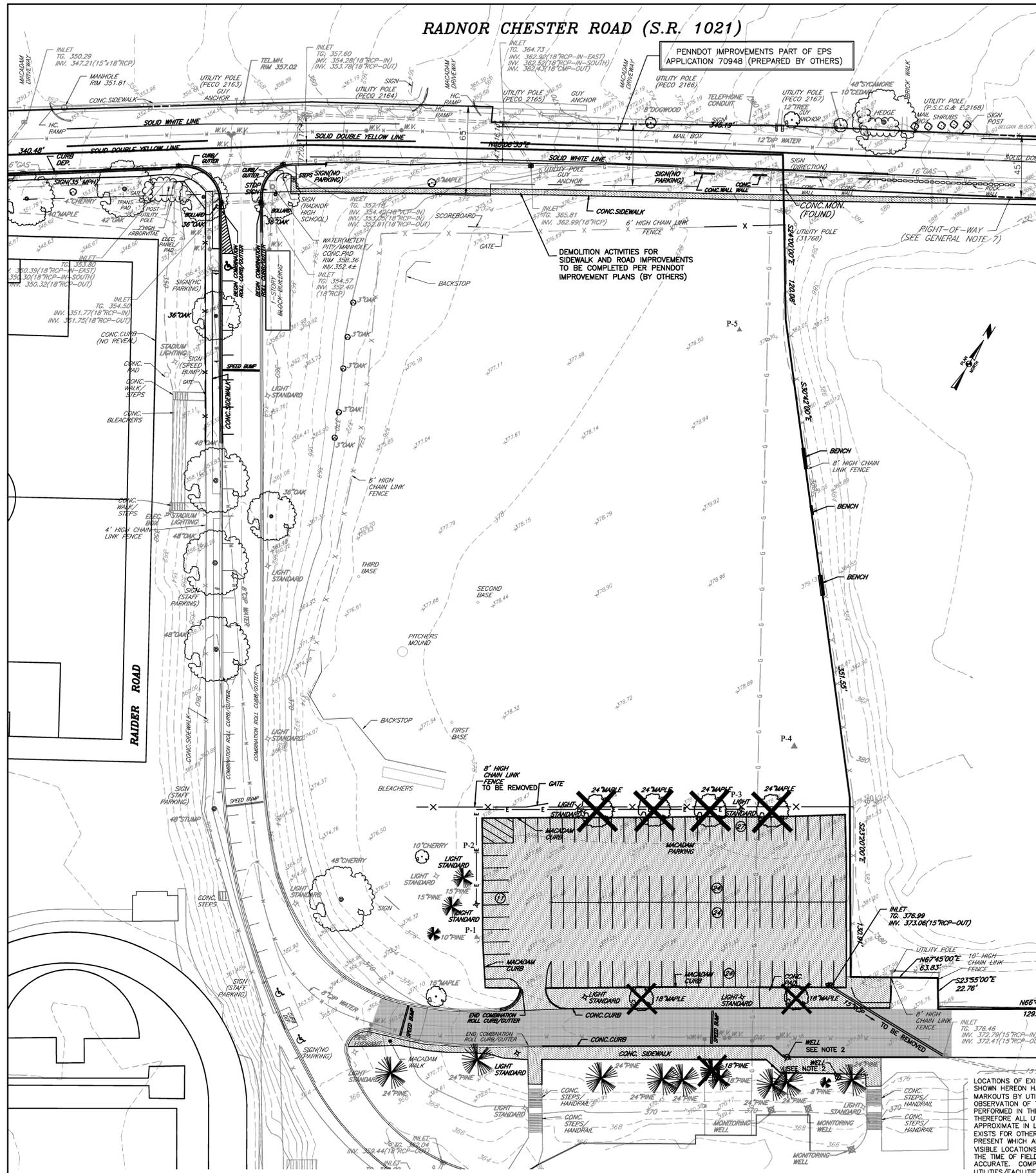
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OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	<b>EXISTING FEATURES PLAN PROJECT AREAS</b>  <b>RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
DATE: 11/25/2014	TOTAL AREA: 73.47 AC.			
SCALE: 1"=40'		<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES <small>85 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</small>		
		JOB NO.: 2013-09007 SHEET NO.: 4 OF 20		
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH		

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# RADNOR CHESTER ROAD (S.R. 1021)

PENNDOT IMPROVEMENTS PART OF EPS APPLICATION 70948 (PREPARED BY OTHERS)



PROJECT AREA 1

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## DEMOLITION NOTES

- SCOREBOARD TO BE REMOVED, STORED, AND RELOCATED BY OWNER.
- NOTED MONITORING WELLS TO BE ABANDONED AND CAPPED BELOW PROPOSED GRADE.

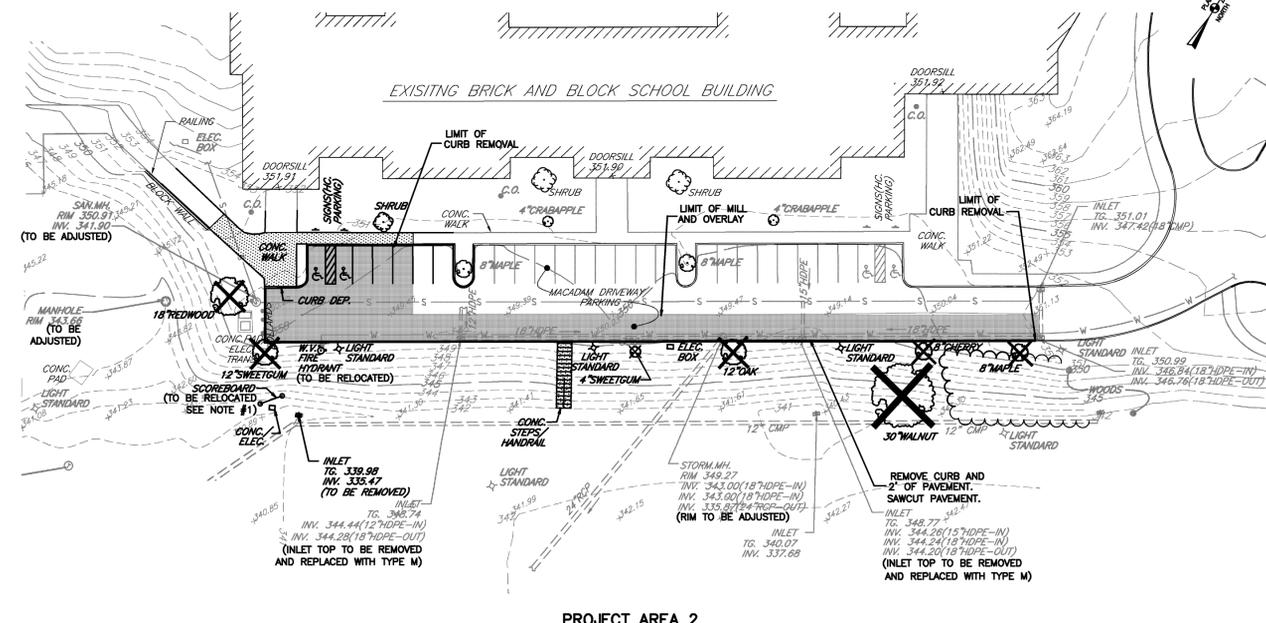
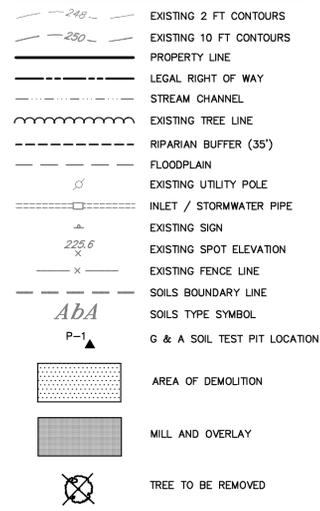
## RECYCLING OR DISPOSAL METHODS

- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 280.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
- EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE. MATERIALS SLATED FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENTAL AGENCY CURRENT REGULATIONS. DEBRIS SHALL NOT BE PERMITTED TO ACCUMULATE ON THE JOB-SITE. DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING DEMOLITION, BY WETTING DOWN, AS REQUIRED, ON-SITE BURNING OF MATERIALS WILL NOT BE PERMITTED. AT THE COMPLETION OF WORK, THE ENTIRE AREA INVOLVED WILL BE CLEAN AND LEFT IN A NEAT CONDITION, FREE OF RUBBISH. RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.
- SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED OF UP-SLOPE OF THE CONTROL FACILITY.

## RESPONSIBILITIES FOR FILL MATERIALS

- THE OPERATOR MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ANY NECESSARY FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH PADEP'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258-2182-773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEWEP.STATE.PA.US.
- CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSED, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DRESSED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM THE WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).
- CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN PADEP'S POLICY "MANAGEMENT OF FILL".
- ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE PADEP 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. A COPY OF FORM FP-001 CAN BE FOUND AT WWW.DEWEP.STATE.PA.US.
- ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREEN, 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 SUBJECT TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF PADEP'S POLICY "MANAGEMENT OF FILL".
- FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE MUNICIPAL OR RESIDUAL WASTE REGULATIONS IN 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.
- ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SIPPING, EROSION OR EXCESS SATURATION.

## LEGEND



PROJECT AREA 2

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS. THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES, INC.

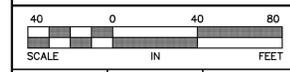
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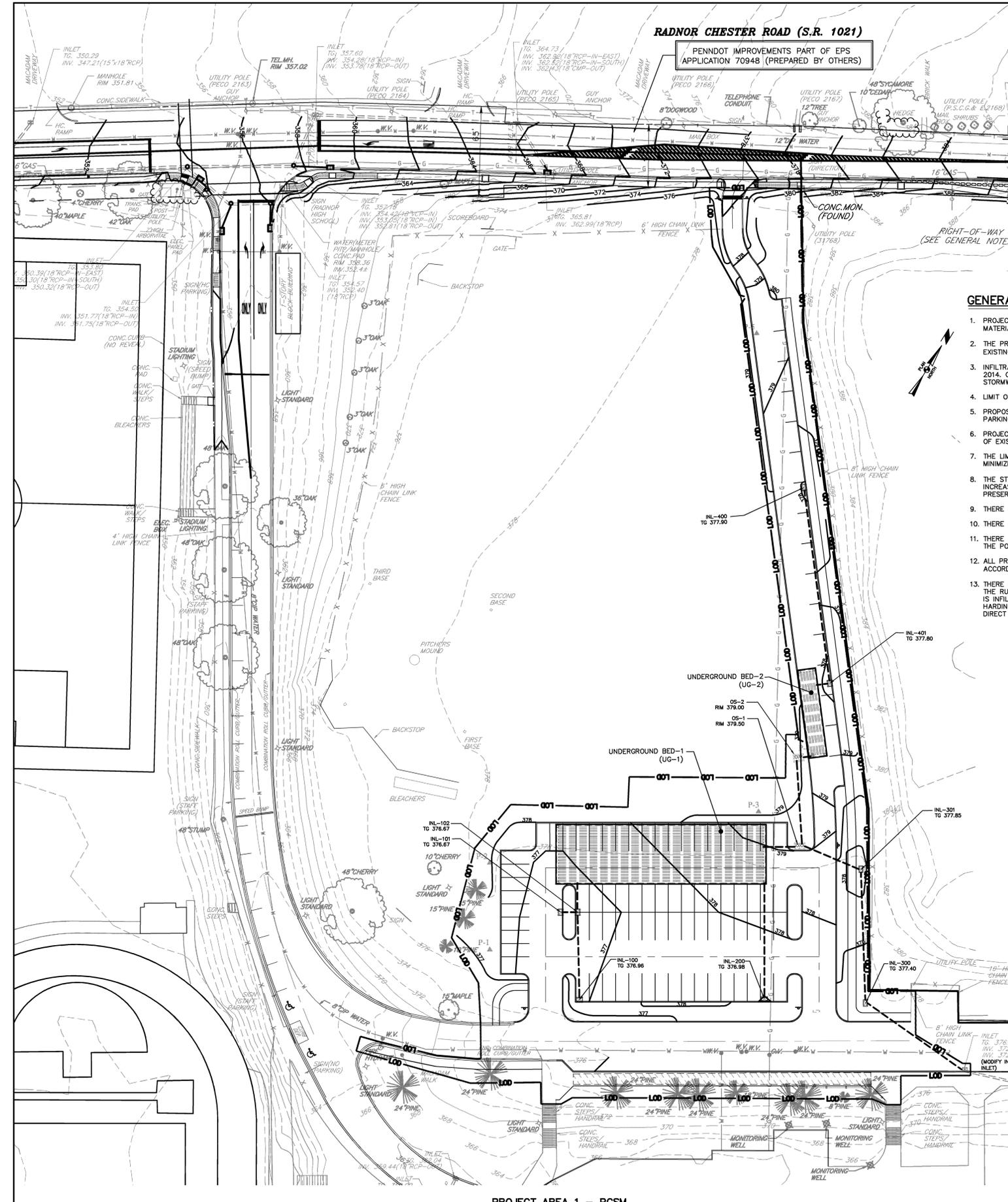


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ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121.

OWNER:	REV.	DESCRIPTION	DATE	BY
RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19087-4194 610-688-8100				
MUNICIPAL FILE NO.:	XX	TAX MAP PARCEL NO.:	T.P. 36-15-043000	
		TOTAL AREA:	73.47 AC.	TOTAL LOTS:
		DATE:	11/25/2014	SCALE:
				1"=40'
<b>DEMOLITION PLAN</b>				
<b>RADNOR HIGH SCHOOL</b>				
<b>PARKING LOT IMPROVEMENTS</b>				
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA				
<b>GILMORE &amp; ASSOCIATES, INC.</b>				
ENGINEERING & CONSULTING SERVICES				
65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
JOB NO.:				2013-09007
SHEET NO.:				5 OF 20
DESIGNED BY:	TMH	DRAWN BY:	SMM	CHECKED BY:
				TMH





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**RADNOR CHESTER ROAD (S.R. 1021)**  
 PENNDOT IMPROVEMENTS PART OF EPS APPLICATION 70948 (PREPARED BY OTHERS)

**SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS BASED ON USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY**

SYMBOL	MAPPING UNITS	SLOPE	LAND CAPBLTY	HYDRIC SOIL	HYDRO. GROUP	DEPTH TO BEDROCK	DEPTH TO WATER TABLE	LIMITATIONS FOR CONSTRUCTION	RESOLUTION OF LIMITATIONS
GeB2	GLENVILLE SILT LOAM	3-8%	2e	NO	B	>78"	>78"	NOT LIMITED	
GnB2	GLENVILLE SILT LOAM	3-8%	2e	NO	C	80"	21"	SOMEWHAT LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.
Md	MADE LAND, GABBRO AND DIABASE MATERIALS	-	6e	YES	C	>78"	>78"	NOT RATED	
Me	MADE LAND, SCHIST AND GNEISS MATERIALS	-	7a	NO	B	65"	60"	SOMEWHAT LIMITED: SHRINK SWELL POTENTIAL	COMPACTION AS PER PLAN SPECIFICATIONS
NsD	NESHAMINY VERY STONY SILT LOAM	8-25%	7a	NO	B	65"	>78"	VERY LIMITED: SLOPE	MINIMIZE SOLE DISTURBANCE AND STABILIZE IMMEDIATELY.
WoA	WORSHAM SILT LOAM	0-3%	5w	YES	D	>78"	3"	VERY LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.

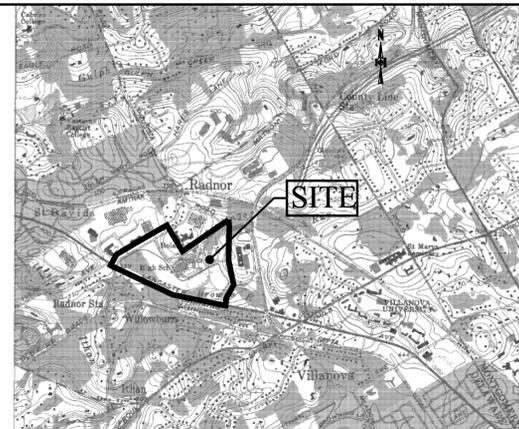
**RESOLUTIONS:**  
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 DWELLING WITH BASEMENTS & SUBDIVISION STREETS: HAVE BYPASS PUMPS AVAILABLE DURING CONSTRUCTION.  
 IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PUMP THE ENCOUNTERED WATER TO THE CLOSEST SEDIMENT TRAP/BASIN.

**GENERAL NOTES**

- PROJECT AREA DESIGNATED AS MADE LAND (M<sub>d</sub>) GABBRO AND DIABASE MATERIALS PER USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY.
- THE PROJECT'S RECEIVING WATERCOURSE IS HARDINGS RUN, AND THE CHAPTER 93 EXISTING AND DESIGNATED USE IS COLD WATER FISH (CWF).
- INFILTRATION TESTING WAS COMPLETED BY GILMORE AND ASSOCIATES IN OCTOBER 2014. COMPLETE INFILTRATION REPORT PROVIDED IN POST CONSTRUCTION STORMWATER MANAGEMENT REPORT.
- LIMIT OF DISTURBANCE IS EQUIVALENT TO NPDES PERMIT BOUNDARY.
- PROPOSED IMPEROUS SURFACE ARE LIMITED TO PROVIDE SUFFICIENT ACCESS AND PARKING IMPROVEMENTS FOR THE HIGH SCHOOL CAMPUS.
- PROJECT AREA IMPROVEMENTS WERE CONFIGURED TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES, VEGETATION, AND NATURAL RESOURCES.
- THE LIMITS OF DISTURBANCE AREA, LIMIT OF CLEARING, AND SOIL COMPACTION IS MINIMIZED TO ONLY THE AREAS IMPACTED BY THE PROPOSED IMPROVEMENTS.
- THE STORMWATER MANAGEMENT FACILITIES (UG-1 & UG-2) WILL MANAGE THE INCREASE IN THE RATE OF STORMWATER RUNOFF AND VOLUME RUNOFF, AND PRESERVE THE INTEGRITY OF THE STREAM CHANNELS OF THE RECEIVING STREAMS.
- THERE ARE NO KNOWN AREAS OF HQ OR EV WATERSHEDS ON THIS PROPERTY.
- THERE ARE NO WETLANDS IN THE NPDES PERMIT BOUNDARY.
- THERE ARE NO KNOWN GEOLOGICAL FORMATIONS OR SOIL CONDITIONS THAT HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES.
- ALL PROJECT WASTE FOR DEMOLITION ACTIVITIES TO BE DISPOSED OF IN ACCORDANCE WITH MATERIAL RECYCLING/ DISPOSAL REQUIREMENTS.
- THERE IS NO ANTICIPATED POTENTIAL THERMAL IMPACT TO THE STORM RUNOFF. THE RUNOFF IS DIRECTED TO AN SUBSURFACE INFILTRATION SYSTEM. THE RUNOFF IS INFILTRATED AND THE LARGER STORMS ARE CONVEYED AND DISCHARGED TO HARDINGS RUN. THE OUTFALL IS IN A WOODED AREA LIMITING IMPACTS FROM DIRECT SUNLIGHT.

**SEQUENCE OF CONSTRUCTION FOR UG-1 & UG-2**

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE PROVIDED ON THE EROSION AND SEDIMENT CONTROL PLANS. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED, UNLESS NOTED OTHERWISE.
- AT LEAST 7 DAYS PRIOR TO START OF WORK OR EARTH DISTURBANCE ACTIVITIES, A PRECONSTRUCTION MEETING SHALL BE HELD INCLUDING THE OWNER, SITE CONTRACTOR, TOWNSHIP ENGINEER, DELAWARE COUNTY CONSERVATION DISTRICT, AND THE PLAN DESIGNER.
- DURING THE FOLLOWING CRITICAL STAGES OF CONSTRUCTION A LICENSED PROFESSIONAL OR DESIGNEE MUST BE PRESENT ON SITE TO WITNESS AND OBSERVE THE INSTALLATION OF UNDERGROUND BED-1 (UG-1) AND UNDERGROUND BED-2 (UG-2).
- INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON EROSION AND SEDIMENT CONTROL PLAN.
  - BEGIN EXCAVATION AND STOCKPILE MATERIALS IN NOTED AREAS.
  - INSTALL ORANGE CONSTRUCTION FENCE AROUND THE FOOTPRINT OF UNDERGROUND BED TO LIMIT COMPACTION OF SUBGRADE FROM HEAVY EQUIPMENT AND MACHINERY.
  - PREPARE BED BOTTOM AND INSTALL GEOTEXTILE. LIMIT SOIL AND DEBRIS FOR ENTERING INSIDE THE GEOTEXTILE.
  - INSTALL 4" PIPE BEDDING AS SHOWN ON PCSM DETAIL PLANS.
  - INSTALL PIPES, MANIFOLD, ASSOCIATED CONNECTION POINTS, AND STORM RUNS. INSTALL INLET PROTECTION ON ALL NEW INLETS TO LIMIT SEDIMENT OR DEBRIS FROM ENTERING THE UNDERGROUND BED.
  - BACKFILL OVER PIPE SYSTEM IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
  - WRAP GEOTEXTILE OVER INFILTRATION BED AND OVERLAP FABRIC A MINIMUM OF 18" ON ALL SIDES.
  - BACKFILL TO PAVEMENT SURFACE AND MAINTAIN ORANGE CONSTRUCTION UNTIL THE START OF THE PAVING OPERATIONS.

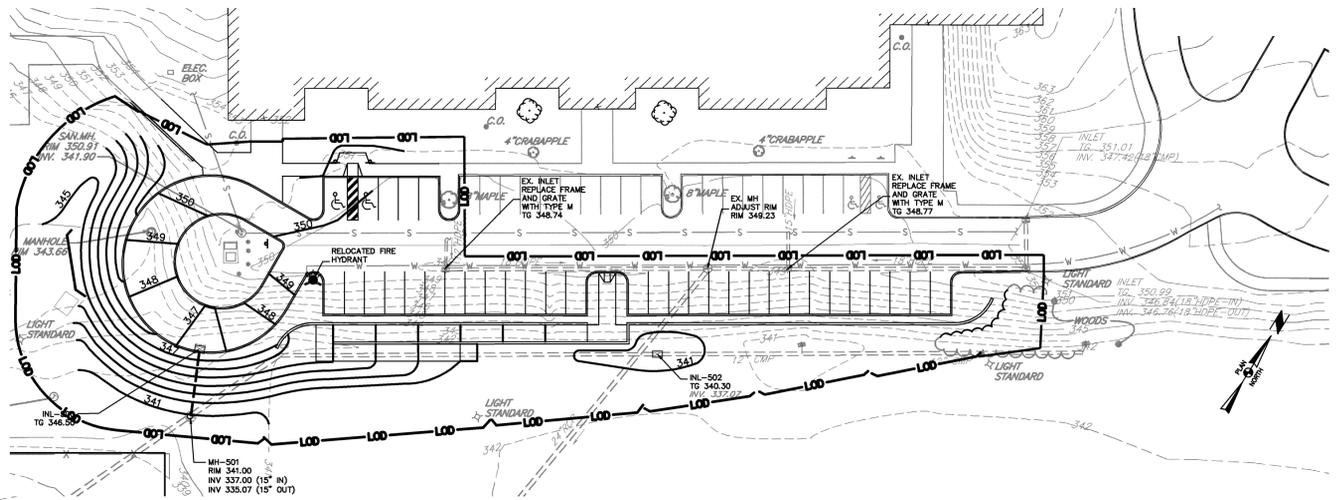


**USGS LOCATION MAP**



**MATERIAL RECYCLING/DISPOSAL REQUIREMENTS:**

- 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 DEP'S SOLID WASTE MANAGEMENT REGULATIONS, AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.
- THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
- THE FOLLOWING MATERIALS ARE ANTICIPATED TO BE CONSTRUCTION WASTES: ASPHALT PAVING, CONCRETE PAVING/SPOLLS, STEEL/IRON PIPING, AND PLASTIC PIPING.



**PROJECT AREA 2 - PCSM**

**POST CONSTRUCTION STORMWATER MANAGEMENT NOTES**

- THE CURRENT OR FUTURE OWNERS OF RECORD OF TAX PARCEL 36-15-043000 SHALL BE THE RESPONSIBLE PARTY FOR MAINTAINING THE POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: UNDERGROUND INFILTRATION BEDS 1 AND 2.
- MAINTENANCE OF THE UNDERGROUND INFILTRATION BED SHALL INCLUDE THE FOLLOWING:
  - THE OUTLET STRUCTURES OS-1 AND OS-2 SHALL BE INSPECTED AT LEAST 2 TIMES PER YEAR AND ACCUMULATED DEBRIS OR TRASH SHALL BE REMOVED.
  - CLEAN OUTS AND MANHOLES SHALL BE INSPECTED AT LEAST ANNUALLY AND ACCUMULATED DEBRIS SHALL BE REMOVED BY FLUSHING DEBRIS TO OUTLET STRUCTURE.

<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19087-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>TOTAL AREA:</b> 73.47 AC.	<b>TOTAL LOTS:</b> 1	<b>DATE:</b> 11/25/2014
<b>SCALE:</b> 1"=40'		<p><b>POST CONSTRUCTION STORMWATER MANAGEMENT PLAN</b>  <b>RADNOR HIGH SCHOOL</b>  <b>PARKING LOT IMPROVEMENTS</b>          RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA</p> <p><b>GILMORE &amp; ASSOCIATES, INC.</b>          ENGINEERING &amp; CONSULTING SERVICES  <small>65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</small></p>		
<b>SCALE:</b> 1"=40'	<b>SCALE:</b> 1"=40'	<b>SCALE:</b> 1"=40'	<b>SCALE:</b> 1"=40'	<b>SCALE:</b> 1"=40'
<b>DESIGNED BY:</b> TMH	<b>DRAWN BY:</b> SMM	<b>CHECKED BY:</b> TMH	<b>JOB NO.:</b> 2013-09007	<b>SHEET NO.:</b> 6 OF 20

**RADNOR CHESTER ROAD (S.R. 1021)**

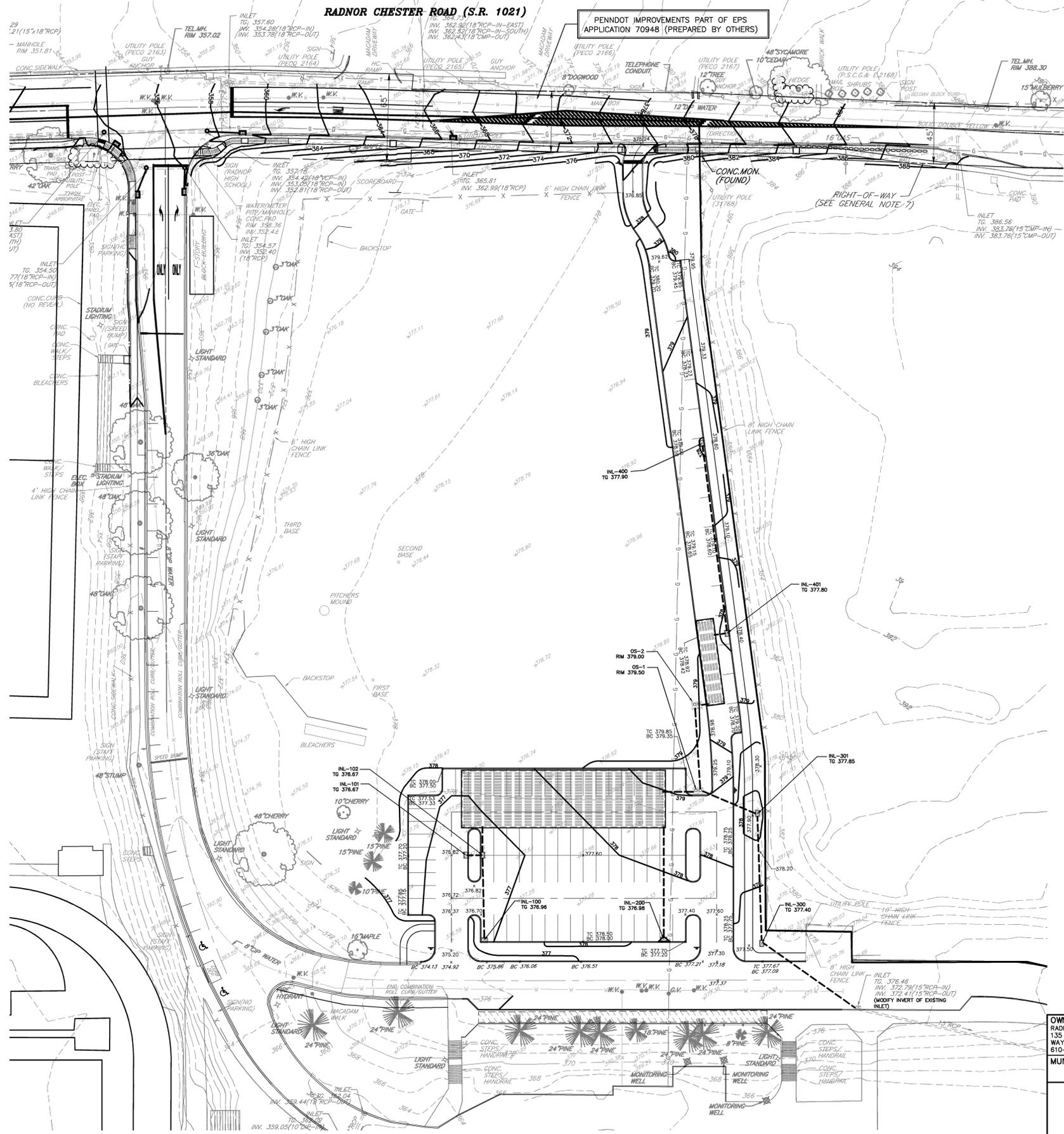
PENNDOT IMPROVEMENTS PART OF EPS  
APPLICATION 70948 (PREPARED BY OTHERS)



**LEGEND**

	EXISTING 2 FT CONTOURS
	EXISTING 10 FT CONTOURS
	PROPERTY LINE
	LEGAL RIGHT OF WAY
	STREAM CHANNEL
	EXISTING TREE LINE
	RIPARIAN BUFFER (35')
	FLOODPLAIN
	EXISTING UTILITY POLE
	INLET / STORMWATER PIPE
	EXISTING SIGN
	EXISTING SPOT ELEVATION
	EXISTING FENCE LINE
	SOILS BOUNDARY LINE
	SOILS TYPE SYMBOL

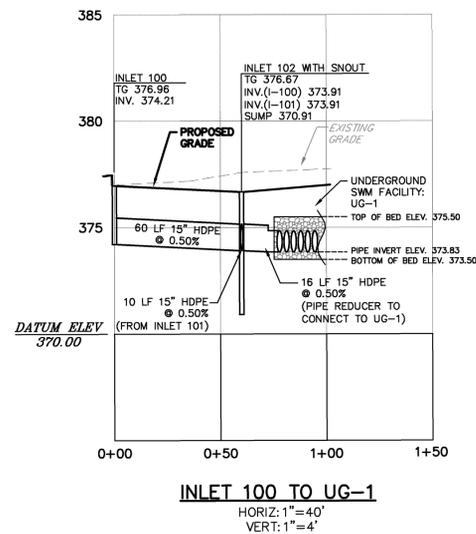
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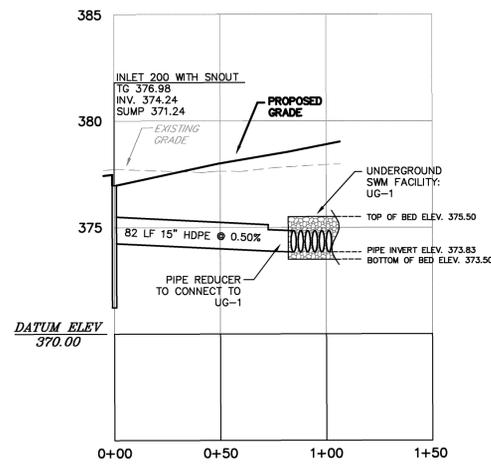
OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY	
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	<p align="center"><b>PROJECT AREA 1: GRADING &amp; DRAINAGE PLAN RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b></p> <p align="center"><b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING &amp; CONSULTING SERVICES <small>65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</small></p>			
DATE: 11/25/2014	TOTAL AREA: 73.47 AC.				TOTAL LOTS: 1
SCALE: 1"=40'					
		JOB NO.: 2013-09007 SHEET NO.: 7 OF 20			
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH			

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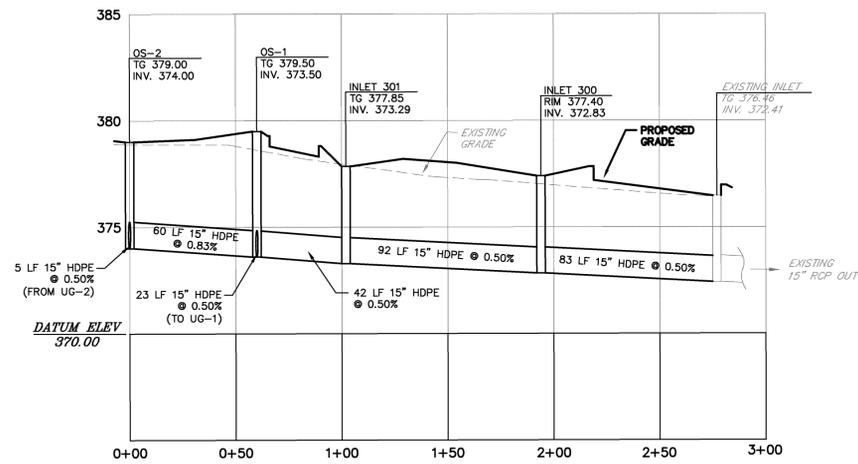
**INLET 100 TO UG-1**

HORIZ: 1"=40'  
VERT: 1"=4'



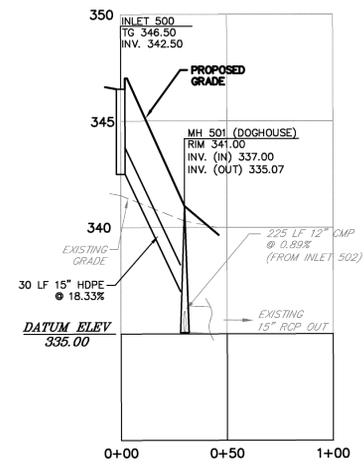
**INLET 200 TO UG-1**

HORIZ: 1"=40'  
VERT: 1"=4'



**OS-2 TO EXISTING INLET**

HORIZ: 1"=40'  
VERT: 1"=4'



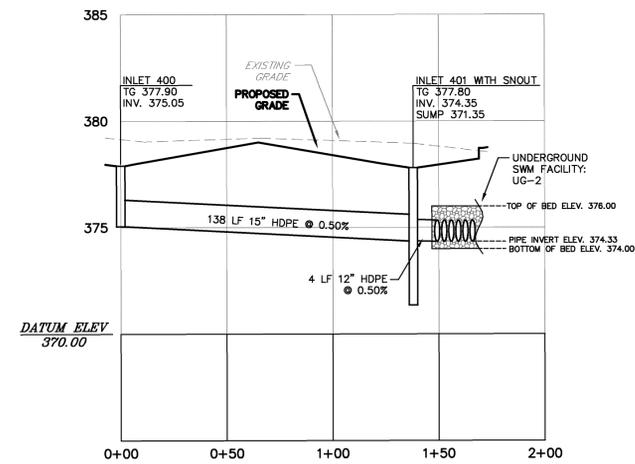
**INLET 500 TO MH-501**

HORIZ: 1"=40'  
VERT: 1"=4'

**LEGEND**

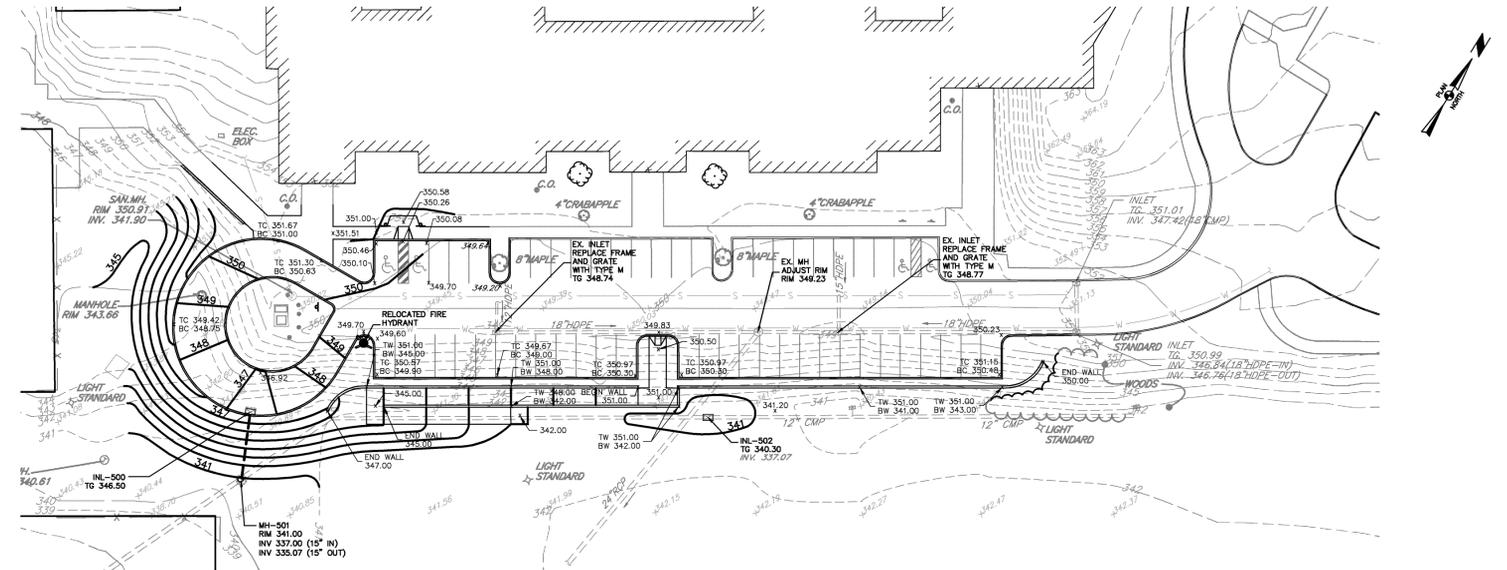
	EXISTING 2 FT CONTOURS
	EXISTING 10 FT CONTOURS
	PROPERTY LINE
	LEGAL RIGHT OF WAY
	STREAM CHANNEL
	EXISTING TREE LINE
	RIPARIAN BUFFER (35')
	FLOODPLAIN
	EXISTING UTILITY POLE
	INLET / STORMWATER PIPE
	EXISTING SIGN
	EXISTING SPOT ELEVATION
	EXISTING FENCE LINE
	SOILS BOUNDARY LINE
	SOILS TYPE SYMBOL

*AbA*



**INLET 400 TO UG-2**

HORIZ: 1"=40'  
VERT: 1"=4'



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OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	<b>PROJECT AREA 2: GRADING &amp; DRAINAGE PLAN RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
DATE: 11/25/2014	TOTAL AREA: 73.47 AC.			
SCALE: 1"=40'		<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com		
		<b>8 OF 20</b>		



JOB NO.: 2013-09007  
SHEET NO.: 8 OF 20  
DESIGNED BY: TMH  
DRAWN BY: SMM  
CHECKED BY: TMH

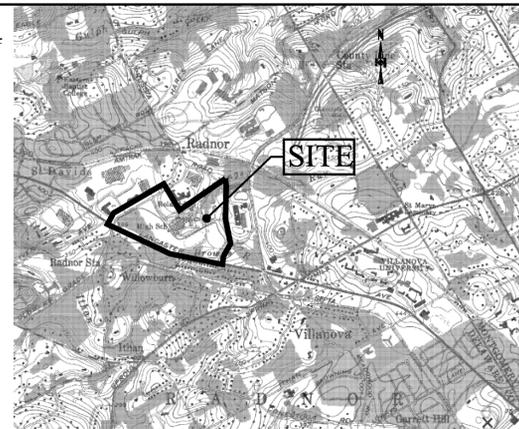
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**RADNOR CHESTER ROAD (S.R. 1021)**

PENNDOT IMPROVEMENTS PART OF EPS APPLICATION 70948 (PREPARED BY OTHERS)

**GENERAL NOTES**

- PROJECT AREA DESIGNATED AS MADE LAND (M<sub>d</sub>) GABBRO AND DIABASE MATERIALS PER USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY.
- THE PROJECT'S RECEIVING WATERCOURSE IS HARDINGS RUN, AND THE CHAPTER 93 EXISTING AND DESIGNATED USE IS COLD WATER FISH (CWF).
- INFILTRATION TESTING WAS COMPLETED BY GILMORE AND ASSOCIATES IN OCTOBER 2014. COMPLETE INFILTRATION REPORT PROVIDED IN POST CONSTRUCTION STORMWATER MANAGEMENT REPORT.
- LIMIT OF DISTURBANCE IS EQUIVALENT TO NPDES PERMIT BOUNDARY.
- PROJECT AREA IMPROVEMENTS WERE CONFIGURED TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES, VEGETATION, AND NATURAL RESOURCES.
- THE LIMITS OF DISTURBANCE AREA, LIMIT OF CLEARING, AND SOIL COMPACTION IS MINIMIZED TO ONLY THE AREAS IMPACTED BY THE PROPOSED IMPROVEMENTS.
- THE CONSTRUCTION SEQUENCE AND LIMITED IMPROVEMENT AREA MINIMIZES THE EXTENT AND DURATION OF EARTH DISTURBANCE ACTIVITIES.
- THE STORMWATER MANAGEMENT FACILITIES (UG-1 & UG-2) WILL MANAGE THE INCREASE IN THE RATE OF STORMWATER RUNOFF AND VOLUME RUNOFF, AND PRESERVE THE INTEGRITY OF THE STREAM CHANNELS OF THE RECEIVING STREAMS.
- THERE ARE NO KNOWN AREAS OF HQ OR EV WATERSHEDS ON THIS PROPERTY.
- THERE ARE NO WETLANDS IN THE NPDES PERMIT BOUNDARY.
- THERE ARE NO KNOWN GEOLOGICAL FORMATIONS OR SOIL CONDITIONS THAT HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES.
- ALL PROJECT WASTE FOR DEMOLITION ACTIVITIES TO BE DISPOSED OF IN ACCORDANCE WITH MATERIAL RECYCLING/ DISPOSAL REQUIREMENTS.
- THERE IS NO ANTICIPATED POTENTIAL THERMAL IMPACT TO THE STORM RUNOFF. THE RUNOFF IS DIRECTED TO AN SUBSURFACE INFILTRATION SYSTEM. THE RUNOFF IS INFILTRATED AND THE LARGER STORMS ARE CONVEYED AND DISCHARGED TO HARDINGS RUN. THE OUTFALL IS IN A WOODED AREA LIMITING IMPACTS FROM DIRECT SUNLIGHT.



**USGS LOCATION MAP**

2000 0 2000 4000  
SCALE IN FEET

**SEQUENCE OF CONSTRUCTION**

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED, UNLESS NOTED OTHERWISE. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.

AT LEAST 7 DAYS PRIOR TO START OF WORK OR EARTH DISTURBANCE ACTIVITIES, A PRECONSTRUCTION MEETING SHALL BE HELD INCLUDING THE OWNER, SITE CONTRACTOR, TOWNSHIP ENGINEER, DELAWARE COUNTY CONSERVATION DISTRICT, AND THE PLAN DESIGNER.

**PROJECT AREA 1**

- INSTALL ROCK CONSTRUCTION ENTRANCE AND ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN.
- BEGIN DEMOLITION ACTIVITIES AS SHOWN ON DEMOLITION PLAN FOR PROJECT AREA 1.
- INSTALL ORANGE CONSTRUCTION FENCE AROUND UG-1 AND UG-2, TO PROTECT FROM HEAVY EQUIPMENT AND COMPACTION OF SUBGRADE.
- INSTALL UG-1 AND UG-2, ALL STORM PIPE RUNS, AND INLET STRUCTURES (OS-1 AND OS-2) ASSOCIATED WITH PROJECT AREA 1. INSTALL INLET PROTECTION ON ALL NEW INLETS.
- ROUGH GRADE SITE.
- INSTALL CURBING AND SITE LIGHTING.
- FINE GRADE SITE AND PREPARE PARKING LOT AND ACCESS DRIVE FOR FINAL PAVING.
- STABILIZE SITE WITH PERMANENT VEGETATION, PER LANDSCAPING PLAN.
- INSTALL LANDSCAPING, SIGNAGE PARKING LOT STRIPPING.
- AFTER SITE HAS BEEN STABILIZED, ALL TEMPORARY E&S MEASURES SHALL BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF BMP'S SHALL BE STABILIZED IMMEDIATELY.

**PROJECT AREA 2**

- INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN.
- BEGIN DEMOLITION ACTIVITIES AS SHOWN ON DEMOLITION PLAN FOR PROJECT AREA 2.
- INSTALL ORANGE CONSTRUCTION FENCE AROUND ELECTRIC TRANSFORMER AND CONCRETE PAD TO PROTECT FROM DAMAGE.
- BEGIN CONSTRUCTION OF RETAINING WALL AND RAMP.
- INSTALL EROSION AND SEDIMENT CONTROL MATTING ON ALL SLOPE 3:1.
- ROUGH GRADE PARKING LOT AND LOOP DRIVE.
- RELOCATE FIRE HYDRANT AND ADJUST UTILITY MANHOLE RIM ELEVATION AS SHOWN ON PLAN.
- INSTALL ALL STORM STRUCTURES AND PIPE RUNS AS SHOWN ON PLAN.
- INSTALL CURBING AND SITE LIGHTING.
- FINE GRADE SITE AND PREPARE PARKING LOT AND LOOP DRIVE FOR FINAL PAVING.
- STABILIZE SITE WITH PERMANENT VEGETATION, PER LANDSCAPING PLAN.
- INSTALL LANDSCAPING, SIGNAGE PARKING LOT STRIPPING.
- AFTER SITE HAS BEEN STABILIZED, ALL TEMPORARY E&S MEASURES SHALL BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF BMP'S SHALL BE STABILIZED IMMEDIATELY.

ALL ACCUMULATED SEDIMENTS SHALL BE DISPOSED OF IN APPROVED UPLAND AREAS. STABILIZATION SHALL BE CONSIDERED THE PLACEMENT OF BASE COURSE IN PAVED AREAS OR BY 75% OR MORE VEGETATION, UNIFORM COVERAGE, IN LAWN AREAS OR BY OTHER PERMANENT MEANS WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

**SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS BASED ON USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY**

SYMBOL	MAPPING UNITS	SLOPE	LAND CAPBLTY	HYDRO. SOIL	HYDRO. GROUP	DEPTH TO		LIMITATIONS FOR CONSTRUCTION	RESOLUTION OF LIMITATIONS
						BEDROCK	WATER TABLE		
<i>GcB2</i>	GLENVILLE SILT LOAM	3-8%	2e	NO	B	>78"	>78"	NOT LIMITED	
<i>GnB2</i>	GLENVILLE SILT LOAM	3-8%	2e	NO	C	80"	21"	SOMEWHAT LIMITED: DEPTH TO SATURATED ZONE.	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.
<i>Md</i>	MADE LAND, GABBRO AND DIABASE MATERIALS	-	6e	YES	C	>78"	>78"	NOT RATED	
<i>Me</i>	MADE LAND, SCHIST AND GNEISS MATERIALS	-	7e	NO	B	65"	60"	SOMEWHAT LIMITED: SHRINK SWELL POTENTIAL.	COMPACTION AS PER PLAN SPECIFICATIONS
<i>NsD</i>	NESHAMINY VERY STONY SILT LOAM	8-25%	7e	NO	B	65"	>78"	VERY LIMITED: SLOPE	MINIMIZE SLOPE DISTURBANCE AND STABILIZE IMMEDIATELY.
<i>WoA</i>	WORSHAM SILT LOAM	0-3%	5w	YES	D	>78"	3"	VERY LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.

**RESOLUTIONS:**  
WINTER GRADING: AVOID GRADING IN WINTER. IF GRADING IS NECESSARY, STABILIZE IMMEDIATELY.  
DWELLING WITH BASEMENTS & SUBDIVISION STREETS: HAVE BYPASS PUMPS AVAILABLE DURING CONSTRUCTION.  
IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PUMP THE ENCOUNTERED WATER TO THE CLOSEST SEDIMENT TRAP/BASIN.

**EROSION & SEDIMENT CONTROL NOTES**

- VEHICLES AND EQUIPMENT MAY ENTER AND EXIT FROM RADNOR CHESTER RD. OR KING OF PRUSSIA RD TO RAIDER RD TO ACCESS PROJECT AREAS.
- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE OPERATOR SHALL ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED, OPERATED, AND MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BEST MANAGEMENT PRACTICE FACILITIES. THE OPERATOR SHALL MAINTAIN AND MAKE AVAILABLE TO LOCAL CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE LOCAL CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
- THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE LOCAL CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
- 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.
- THE OPERATOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
- EROSION AND SEDIMENT BMP'S MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE EARTH DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMP'S.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.
- AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARED, AND THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE 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 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RAINY EVENT.
- THE NPDES BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE FOR THE SITE, AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL OFF-SITE FACILITIES SUCH AS: UTILITIES AND ROADWAY IMPROVEMENTS.
- THE PROJECT'S RECEIVING WATERCOURSE IS HARDINGS RUN, AND THE CHAPTER 93 CLASSIFICATION IS COLD WATER FISH.
- PERMITTEES AND CO-PERMITTEES ARE RESPONSIBLE FOR ENSURING THAT A LICENSED PROFESSIONAL HAS OVERSIGHT RESPONSIBILITIES FOR THE DESIGN AND PROPER INSTALLATION OF BMP'S IDENTIFIED IN THE PCSM PLAN PRIOR TO THE SUBMISSION OF THE NOTICE OF TERMINATION FOR THIS PERMIT. THE LICENSED PROFESSIONAL SHALL CERTIFY THAT THE BMP'S IDENTIFIED IN THE PLAN HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLAN. THE INSTALLATION SCHEDULE OF THE BMP'S AND MAINTENANCE REQUIREMENTS CONTAINED WITHIN THE APPROVED PCSM PLAN MUST BE FOLLOWED; AND FAILURE TO COMPLY WITH THE INSTALLATION SCHEDULE IS A VIOLATION OF THIS PERMIT, THE CLEAN STREAMS LAW, AND THE CLEAN WATER ACT.
- PROJECT AREA DESIGNATED AS MADE LAND (M<sub>d</sub>) GABBRO AND DIABASE MATERIALS PER USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY.

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS. THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

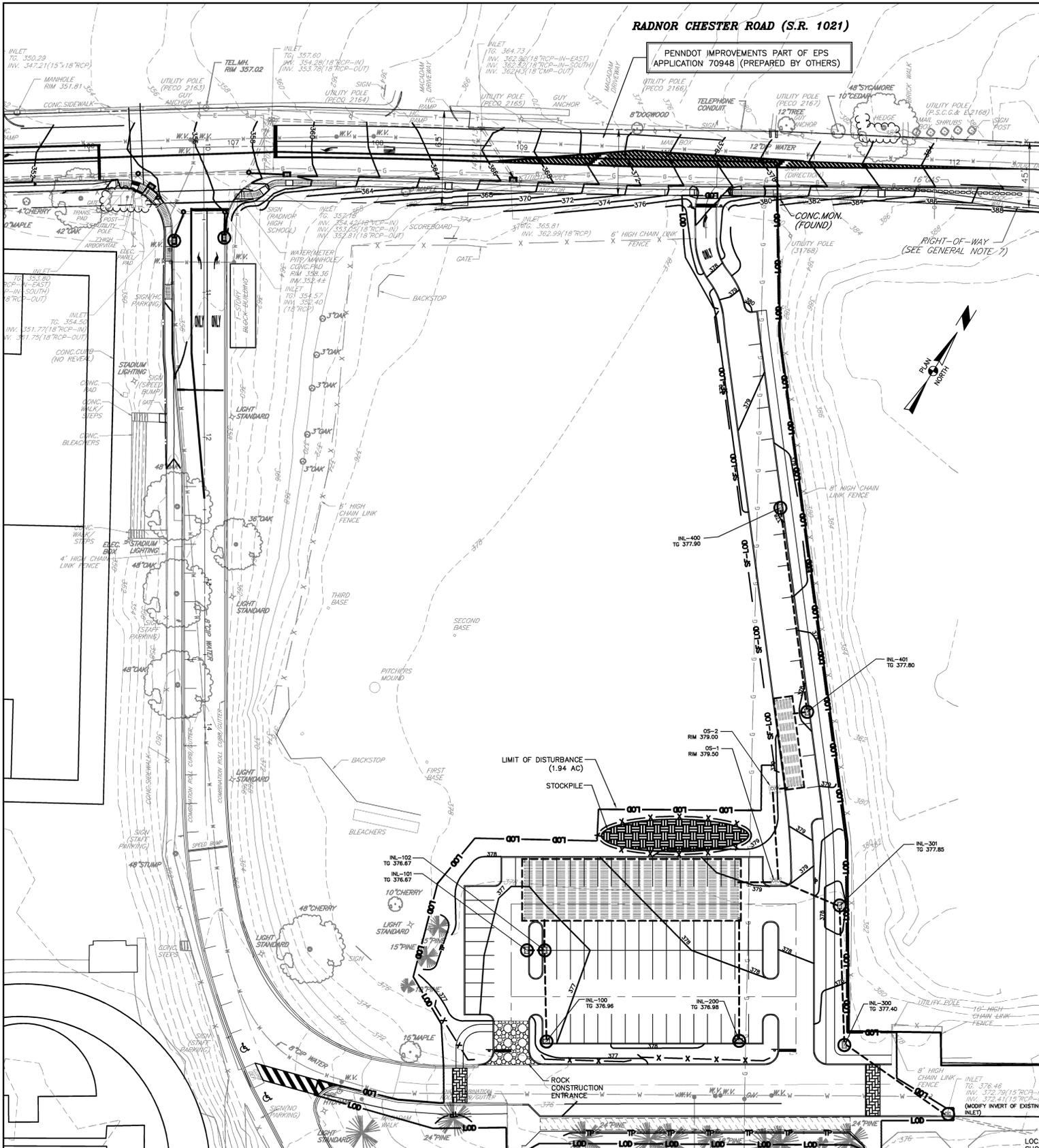
ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 2008, PENNSYLVANIA ACT 121. GILMORE & ASSOCIATES INC. HAS OBTAINED PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

PENNSYLVANIA ONE CALL SYSTEM, INC.  
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15122 - 1078



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NON-MEMBERS MUST BE CONTACTED DIRECTLY  
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
SERIAL #20132730667,  
20132730689, 20132730706

<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19087-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>TOTAL AREA:</b> 73.47 AC.	<b>TOTAL LOTS:</b> 1	<b>EROSION &amp; SEDIMENT CONTROL PLAN</b>
<b>DATE:</b> 11/25/2014	<b>SCALE:</b> 1"=40'	<b>RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
<b>SCALE</b> 40 0 40 80 IN FEET		<b>JOB NO.:</b> 2013-09007		
<b>DESIGNED BY:</b> TMH	<b>DRAWN BY:</b> SMM	<b>CHECKED BY:</b> TMH	<b>SHEET NO.:</b> 9 OF 20	



**LEGEND**

- EXISTING 2 FT CONTOURS
- EXISTING 10 FT CONTOURS
- PROPERTY LINE
- LEGAL RIGHT OF WAY
- STREAM CHANNEL
- EXISTING TREE LINE
- RIPARIAN BUFFER (35')
- FLOODPLAIN
- EXISTING UTILITY POLE
- INLET / STORMWATER PIPE
- EXISTING SIGN
- EXISTING SPOT ELEVATION
- EXISTING FENCE LINE
- SOILS BOUNDARY LINE
- SOILS TYPE SYMBOL
- G & A SOIL TEST PIT LOCATION
- TEMPORARY STONE TIRE CLEANING AREA
- PROPOSED INLET PROTECTION
- TP-TP
- X-X
- LOD
- SF-LOD
- LOD/SSF
- TREE PROTECTION
- SILT FENCE
- LIMIT OF DISTURBANCE
- SILT FENCE / LIMIT OF DISTURBANCE
- LIMIT OF DISTURBANCE / SUPER SILT FENCE
- EROSION AND SEDIMENT CONTROL BLANKETING
- NAG SC250 OR APPROVED EQUAL

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**MONITORING, INSPECTION, AND REPORTING REQUIREMENTS**

**VISUAL INSPECTIONS**

THE PERMITTEE / CO-PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RUNOFF EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOTICE OF TERMINATION BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT AND CONDUCTED BY QUALIFIED PERSONNEL. TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT E&S BMPs AND PCSM BMPs ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AT A MINIMUM:

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.

**NONCOMPLIANCE REPORTING**

WHERE E&S, PCSM OR PFC BMPs ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE / CO-PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;
2. THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;
3. STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENT OF THE NONCOMPLIANCE; AND
4. THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

**MAINTENANCE OF FACILITIES:**

1. SILT FENCE SHOULD BE INSPECTED AND MAINTAINED ON A DAILY BASIS.
2. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADE, RESEEDING, REMULCHING, AND RENITTING MUST BE PERFORMED IMMEDIATELY. IF E&S CONTROL BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS OF INSTALLED MEASURES WILL BE REQUIRED.
3. SHOULD THE TREE PROTECTION FENCING BE DISTURBED AT ANY POINT, IT SHALL BE REPLACED IMMEDIATELY.
4. SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.
5. THE CONTRACTOR SHALL HAVE AVAILABLE WATER TRUCKS OR OTHER MEANS OF CONTROLLING EXCESSIVE DUST AND AIRBORNE DEBRIS.
6. ALL AREAS OF CONCENTRATED SURFACE DRAINAGE SHALL BE SEEDED AND MULCHED, AND PROTECTED WITH TEMPORARY TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN JES10 (OR EQUAL). IF AREAS ARE TO BE SODED, TURF REINFORCEMENT IS NOT REQUIRED.
7. SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEDED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY.
8. THE ABOVE PROCEDURE SHALL BE REPEATED AFTER EACH SIZABLE STORM UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT. AT MONTHLY INTERVALS THEREAFTER, INSPECTIONS AND NECESSARY ACTION WILL BE TAKEN TO TRAIL THAT IS REMOVED FROM ANY OF THE CONTROL DEVICES SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL AREA. SILT THAT HAS ACCUMULATED SHALL BE REMOVED AND ALLOWED TO DRY AND USED AS FILL WHEREVER REQUIRED ON THE SITE.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE MEASURES TO ADDRESS SAID CIRCUMSTANCES.

**MATERIAL RECYCLING/DISPOSAL REQUIREMENTS:**

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 DEP'S SOLID WASTE MANAGEMENT REGULATIONS, AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.
2. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
3. THE FOLLOWING MATERIALS ARE ANTICIPATED TO BE CONSTRUCTION WASTE: ASPHALT PAVING, CONCRETE PAVING/SPOILS, STEEL/IRON PIPING, AND PLASTIC PIPING.

**CLEAN FILL REQUIREMENTS:** IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE CONTRACTOR.

CLEAN FILL IS DEFINED AS: 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 IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE). CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS AS NOTED IN TABLES FP-1A AND FP-1B FOUND IN THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S POLICY "MANAGEMENT OF FILL".

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.

ENVIRONMENTAL DUE DILIGENCE: THE LANDOWNER/APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC 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 SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S POLICY "MANAGEMENT OF FILL".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTER 287 RESIDUAL WASTE MANAGEMENT OR CHAPTER 271 MUNICIPAL WASTE MANAGEMENT, WHICH ARE APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM.

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**REDUCTION, LOSS, OR FAILURE OF THE BMPs**

UPON REDUCTION, LOSS, OR FAILURE OF THE BMPs, THE PERMITTEE / CO-PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPs OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPs OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPs.

**TERMINATION OF COVERAGE**

NOTE: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO-PERMITTEE OF THE FACILITY MUST SUBMIT A NOTICE OF TERMINATION (N.O.T.) FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION I.C, SIGNATORY REQUIREMENTS. THIS PERMIT, ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE N.O.T. MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGMENT OF THE N.O.T., THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPs AND PCSM BMPs ON THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

**COMPLETION CERTIFICATE AND FINAL PLANS**

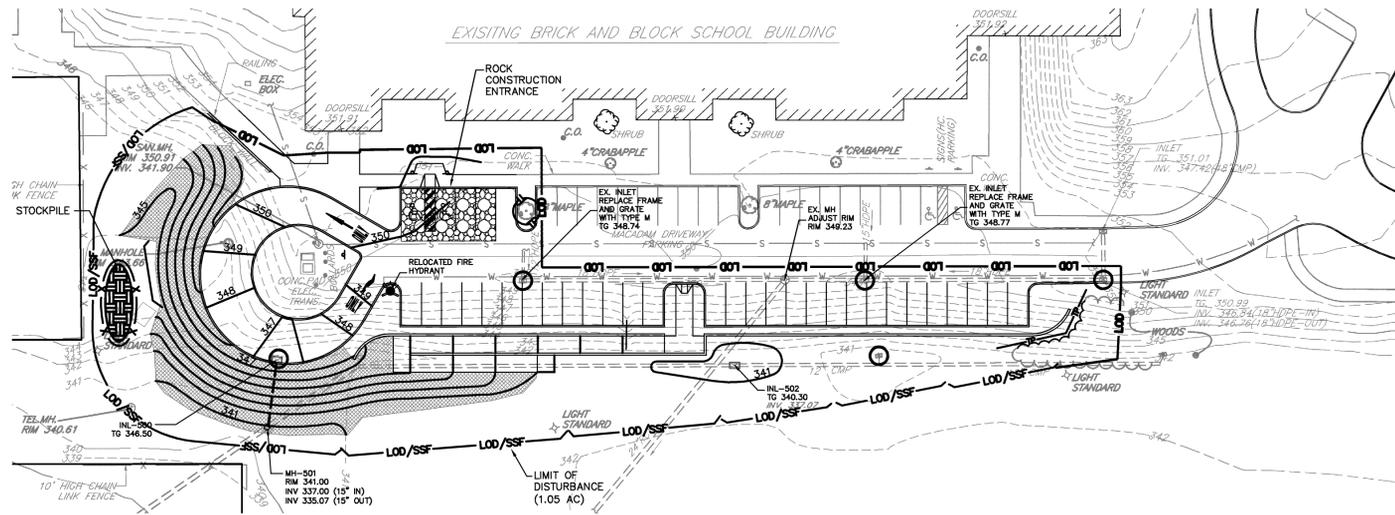
WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE N.O.T. IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

**SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS BASED ON USDA-NRCS WEB SOIL SURVEY OF DELAWARE COUNTY**

SYMBOL	MAPPING UNITS	SLOPE	LAND CAPBLTY	HYDRIC SOIL	HYDRO. GROUP	DEPTH TO WATER TABLE		LIMITATIONS FOR CONSTRUCTION	RESOLUTION OF LIMITATIONS
						BEDROCK	WATER TABLE		
GeB2	GLENVILLE SILT LOAM	3-8%	2e	NO	B	>78"	>78"	NOT LIMITED	
GnB2	GLENVILLE SILT LOAM	3-8%	2e	NO	C	80"	21"	SOMEWHAT LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.
Md	MADE LAND, GABBRO AND DIABASE MATERIALS	-	6e	YES	C	>78"	>78"	NOT RATED	
Me	MADE LAND, SCHIST AND GNEISS MATERIALS	-	7a	NO	B	65"	60"	SOMEWHAT LIMITED: SHRINK SWELL POTENTIAL	COMPACTION AS PER PLAN SPECIFICATIONS
NsD	NESHAMINY VERY STONY SILT LOAM	8-25%	7a	NO	B	65"	>78"	VERY LIMITED: SLOPE	MINIMIZE SLOPE DISTURBANCE AND STABILIZE IMMEDIATELY.
WoA	WORSHAM SILT LOAM	0-3%	5w	YES	D	>78"	3"	VERY LIMITED: DEPTH TO SATURATED ZONE	HAVE BYPASS PUMP(S) & FILTER BAG(S) AVAILABLE. SEE DETAIL.

**RESOLUTIONS:**

WINTER GRADING: AVOID GRADING IN WINTER. IF GRADING IS NECESSARY, STABILIZE IMMEDIATELY. DWELLING WITH BASEMENTS & SUBDIVISION STREETS: HAVE BYPASS PUMPS AVAILABLE DURING CONSTRUCTION. IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PUMP THE ENCOUNTERED WATER TO THE CLOSEST SEDIMENT TRAP/BASIN.



**LEGEND**

- - - - - EXISTING 2 FT CONTOURS
- - - - - EXISTING 10 FT CONTOURS
- ===== PROPERTY LINE
- ===== LEGAL RIGHT OF WAY
- ===== STREAM CHANNEL
- ===== EXISTING TREE LINE
- ===== RIPARIAN BUFFER (35')
- ===== FLOODPLAIN
- ===== EXISTING UTILITY POLE
- ===== INLET / STORMWATER PIPE
- ===== EXISTING SIGN
- ===== EXISTING SPOT ELEVATION
- ===== EXISTING FENCE LINE
- ===== SOILS BOUNDARY LINE
- ===== SOILS TYPE SYMBOL
- ▲ G & A SOIL TEST PIT LOCATION
- ===== TEMPORARY STONE TIRE CLEANING AREA
- ===== PROPOSED INLET PROTECTION
- ===== TREE PROTECTION
- ===== SILT FENCE
- ===== LIMIT OF DISTURBANCE
- ===== LIMIT OF DISTURBANCE / SUPER SILT FENCE
- ===== EROSION AND SEDIMENT CONTROL BLANKETING
- ===== H&S 250 OR APPROVED EQUAL

**EROSION & SEDIMENT CONTROL MEASURES:**

- INLET PROTECTION** IS PROPOSED AT EACH OF THE EXISTING STORM SEWER INLETS WITHIN THE VICINITY OF THIS PROJECT.
- FILTER FENCES** ARE PROPOSED FOR THIS PROJECT TO PREVENT SEDIMENT LADEN STORMWATER RUNOFF FROM LEAVING THE VICINITY OF THE PROJECT AREA.
- SOIL STOCKPILES** ARE TO BE USED LINEARLY ALONG THE UP-SLOPE SIDE OF ALL UTILITY TRENCHES. STOCKPILES ARE TO BE REUSED TO BRING THE DISTURBED AREAS BACK TO GRADE.
- TREE PROTECTION FENCING** IS PROPOSED FOR THIS PROJECT TO PRESERVE TREES IN THE VICINITY OF THE IMPROVEMENTS.
- ROCK CONSTRUCTION ENTRANCE** IS PROPOSED FOR THIS PROJECT TO HELP PREVENT SEDIMENT AND DEBRIS FROM LEAVING THE SITE AREA.

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKINGS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS. THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

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PA LAW REQUIRES THREE WORKING DAYS NOTICE UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH

SERIAL #20132730667, 20132730689, 20132730706

SCALE: 1"=40'

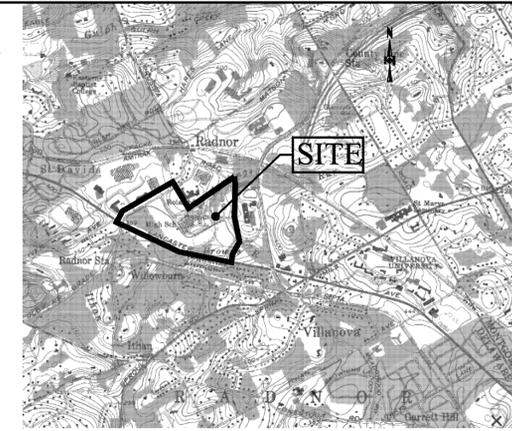
DESIGNED BY: TMH, DRAWN BY: SHM, CHECKED BY: TMH

JOB NO.: 2013-09007, SHEET NO.: 10 OF 20

**102.4(B)(4) - E&S PLAN PLANNING & DESIGN INFORMATION**

THE EROSION & SEDIMENTATION CONTROL PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE STANDARDS AND CRITERIA OF PA-DEP'S EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MARCH 2012 VERSION) AND THE DELAWARE COUNTY CONSERVATION DISTRICT (DCCD). EROSION CONTROL METHODS CONSIST OF TEMPORARY SEEDING AND PROTECTIVE MATTING OF UTILITY TRENCHES AND TEMPORARY SEEDING OF DISTURBED AREAS. SEDIMENT CONTROL METHODS CONSIST OF INSTALLING STORM SEWER INLET PROTECTION AND A TIRE-CLEANING AREA AT THE CONSTRUCTION ENTRANCE TO THE SITE. FILTER FABRIC FENCE, COMPOST SOCKS, AND OTHER CONTROL MEASURES ARE ALSO USED TO PRESERVE THE QUALITY OF DOWNSTREAM WATERS DURING THE CONSTRUCTION PROCESS. THE STAGING OF EARTH MOVING ACTIVITIES IS DESCRIBED UNDER THE CONSTRUCTION SEQUENCE.

- THE PLAN MINIMIZES THE EXTENT AND DURATION TO OF EARTH DISTURBANCE TO THE MAXIMUM EXTENT POSSIBLE, INCLUDING LIMITING DISTURBANCE AREA TO ONLY AS REQUIRED FOR THE PROPOSED IMPERVIOUS SURFACE REMOVAL, UTILITY TRENCHING, AND ADDING TRENCHING NOTES AND SPECIFICATIONS ON THE EROSION AND SEDIMENT CONTROL PLAN REQUIRING TRENCHES TO BE BACKFILLED AND STABILIZED AS SOON AS POSSIBLE.
- THE EXISTING STORM SEWER INLETS AND DRAINS HAVE BEEN PROTECTED WITH INLET PROTECTION AND THE UTILITY TRENCHES AS PROPOSED TO BE MATTED TO FURTHER PROTECT THE EXISTING STORM SEWER FROM SEDIMENTATION. NO NATURAL DRAINAGE FEATURES OR EXISTING CAMPUS STRUCTURAL BMPs ARE LOCATED WITHIN THE PROJECT SITE.
- THE PLAN MINIMIZES SOIL COMPACTION BY WORKING IN AREAS THAT HAVE BEEN PREVIOUSLY GRADED AND DEVELOPED. MUCH OF THE WORK IS LIMITED TO THE AREA REQUIRED FOR THE CONCRETE REMOVAL AND INSTALLATION OF NEW CURBING, TRENCHING AND ACCESS TO THE TRENCHING/WORK AREA. EXISTING CAMPUS DRIVEWAYS ARE ALSO USED FOR ACCESS.
- THE EROSION AND SEDIMENT CONTROL PLAN MINIMIZES THE INCREASE OF STORMWATER RUNOFF BY LIMITING THE WORK AREA TO WHAT IS REQUIRED FOR THE CONCRETE PAVEMENT REMOVAL AND INSTALLATION OF NEW CURBING, UTILITY TRENCHING WORK, THEREBY DECREASING SOIL COMPACTION AND NOT INCREASING STORMWATER RUNOFF.



**USGS LOCATION MAP**

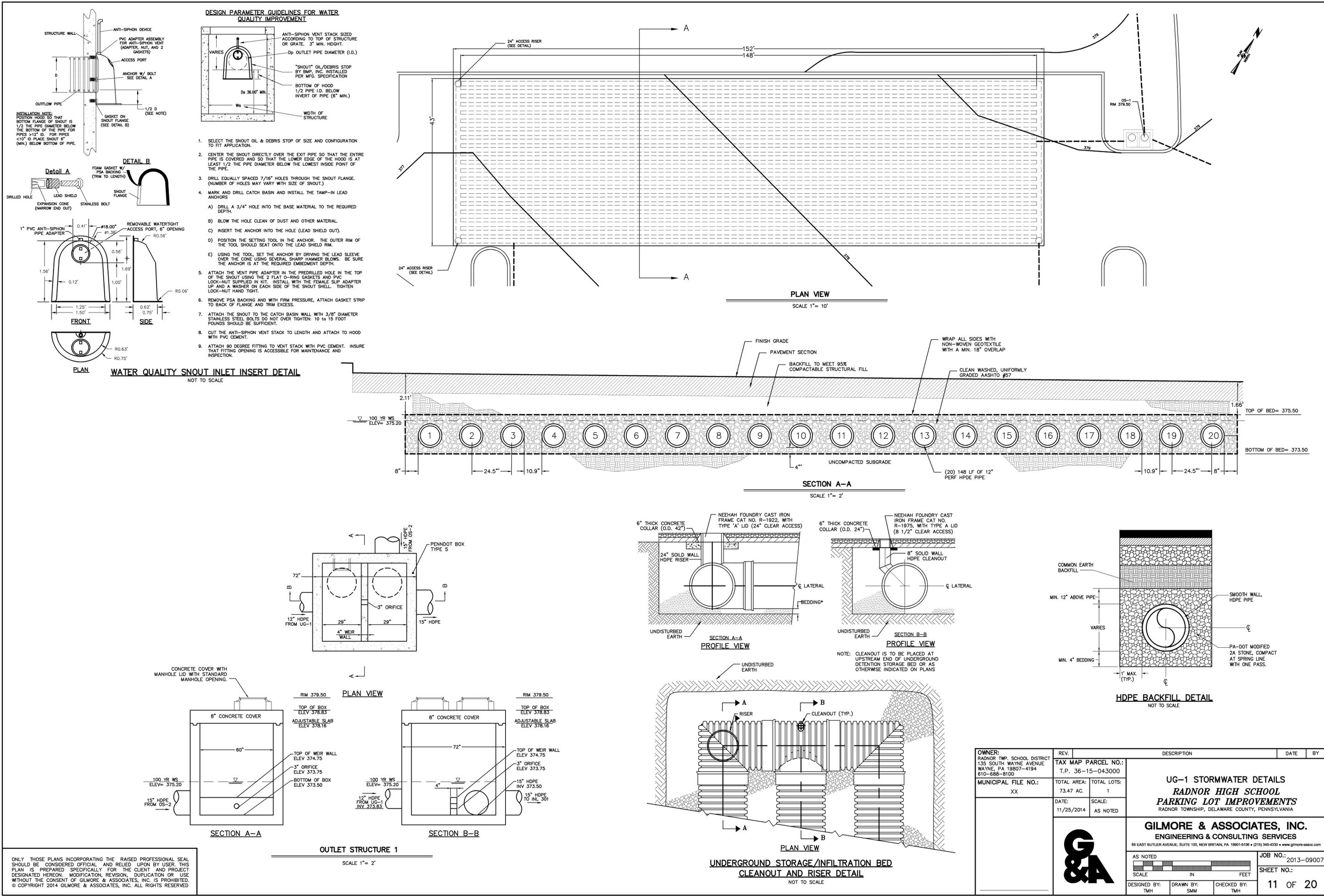
SCALE: 1"=4000'

**GENERAL EROSION & SEDIMENT CONTROL NOTES**

THE CONTRACTOR SHALL ASSURE THAT AN APPROVED EROSION & SEDIMENT CONTROL PLAN IS BEING IMPLEMENTED AND MAINTAINED FOR ALL OFFSITE BORROW OR SPOIL SITES.

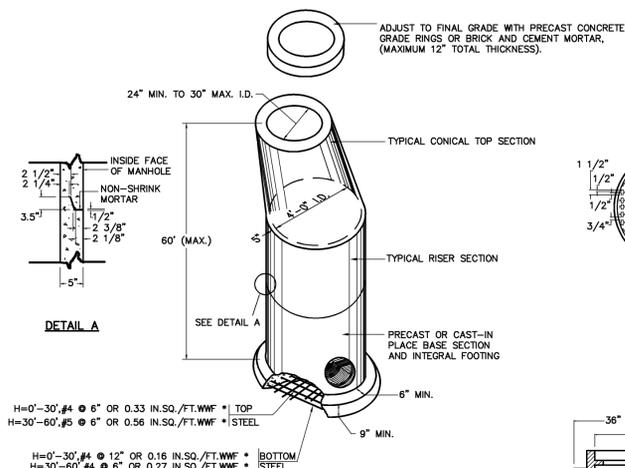
1. ALL FILL MATERIALS TO BE USED ON THIS SITE SHALL BE CLEAN FILL UNLESS OTHERWISE APPROVED BY THE MUNICIPALITY AND THE CONSERVATION DISTRICT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM DUE DILIGENCE IN DETERMINING THAT FILL IS CLEAN.
2. INVESTIGATIVE TECHNIQUES SHALL INCLUDE, BUT ARE NOT LIMITED 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.
3. FOR PROJECTS THAT REQUIRE NPDES PERMIT, LANDOWNER OR HIS DESIGNATED REPRESENTATIVE SHALL MAINTAIN, AND MAKE AVAILABLE TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT, COMPLETE, WRITTEN INSPECTION LOGS OF THE INSPECTION AND MAINTENANCE OF ALL EROSION-SEDIMENT CONTROL BMPs.
4. SEEDING, MULCHING AND FERTILIZING SHALL BE IN ACCORDANCE WITH THE SEEDING AND MULCHING SCHEDULE NOTED UNDER TEMPORARY AND PERMANENT STABILIZATION.
5. ANY SEDIMENT OR MUD THAT IS TRACKED ONTO THE PUBLIC ROADWAYS MUST BE CLEANED OFF IMMEDIATELY BY BROOMING AND/OR SHOVELING TO THE SATISFACTION OF THE TOWNSHIP AT THE EXPENSE OF THE DEVELOPER AND/OR RESPONSIBLE CONTRACTOR. USE OF A BACKHOE BUCKET TO SCRAPE ROADWAY SURFACE IS PROHIBITED. EXCESS SAND AND/OR SEDIMENT IS CAUSING SLICK OR HAZARDOUS CONDITIONS, ROADWAY SURFACE SHALL BE PRESSURE WASHED TO REMOVE THE CONDITION. ALL SEDIMENT LADEN WATER MUST BE FILTERED IN A MANNER SATISFACTORY TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT BEFORE ENTERING STORM SEWERS AND/OR DRAINAGE CHANNELS.
6. NO SEDIMENT OR SEDIMENT LADEN WATER MUST BE ALLOWED TO LEAVE THE SITE WITHOUT FIRST BEING FILTERED TO THE SATISFACTION OF MONTGOMERY COUNTY CONSERVATION DISTRICT. ANY PUMPED WATER MUST BE DIRECTED TO A FILTER BAG DEVICE DISCHARGING OVER NON-DISTURBED AREAS.
7. THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON THIS PLAN HAVE BEEN PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THE DELAWARE COUNTY CONSERVATION DISTRICT. GILMORE AND ASSOCIATES DOES NOT TAKE ANY RESPONSIBILITY IN OBSERVING AND CERTIFYING THE CONSTRUCTION OF THESE FACILITIES UNLESS REQUESTED SPECIFICALLY BY THE OWNER AND/OR CONTRACTOR. THEREFORE GILMORE AND ASSOCIATES DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGES AS A RESULT OF IMPROPER CONSTRUCTION AND/OR MAINTENANCE OF FACILITIES DURING CONSTRUCTION.
8. THE APPLICANT AND HIS DESIGNATED REPRESENTATIVE ARE RESPONSIBLE FOR INSURING THAT A LICENSED PROFESSIONAL HAS OVERSIGHT RESPONSIBILITIES FOR THE DESIGN AND PROPER INSTALLATION OF STORMWATER BMPs IDENTIFIED IN THESE PLANS (IF ANY) PRIOR TO SUBMISSION OF A NOTICE OF TERMINATION FOR THE PROJECT. THE LICENSED PROFESSIONAL SHALL CERTIFY THAT THE STORMWATER BMPs IDENTIFIED IN THE PLAN HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLAN.
9. THE INSTALLATION SCHEDULE AND MAINTENANCE REQUIREMENTS FOR ANY AND ALL IDENTIFIED STORMWATER MANAGEMENT BMPs INCLUDED IN THESE PLANS MUST BE FOLLOWED. FAILURE TO COMPLY WITH PLAN SPECIFICATIONS IS A VIOLATION OF THE CLEAN STREAM LAW AND CLEAN WATER ACT.
10. ACCUMULATED SEDIMENTS REMOVED FROM ANY AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES. REPLACED SOILS SHALL BE SEEDED AND MULCHED IMMEDIATELY.
11. UPON COMPLETION OR ANY TEMPORARY CESSATION LONGER THAN 4 DAYS OF THE EARTH DISTURBANCE ACTIVITY, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (E&S MANUAL), COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION NO. 363-2134-008, MARCH 2012, AS AMENDED AND UPDATED. EROSION AND SEDIMENT CONTROL BMPs SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED AND PCSM BMPs ARE OPERATIONAL.
12. CONTRACTOR SHALL FOLLOW THE PROCEDURES OUTLINED BY THE APPROVED EROSION & SEDIMENT CONTROL PLAN AND THE SEQUENCE OF CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE TOWNSHIP ENGINEER AND THE DELAWARE COUNTY CONSERVATION DISTRICT.

<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19087-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>TOTAL AREA:</b> 73.47 AC.	<b>TOTAL LOTS:</b> 1	<b>EROSION &amp; SEDIMENT CONTROL PLAN</b> <b>RADNOR HIGH SCHOOL</b> <b>PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA
<b>DATE:</b> 11/25/2014	<b>SCALE:</b> 1"=40'	<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-associ.com		
				<b>JOB NO.:</b> 2013-09007
DESIGNED BY: TMH		DRAWN BY: SHM		<b>SHEET NO.:</b> 10 OF 20
		CHECKED BY: TMH		



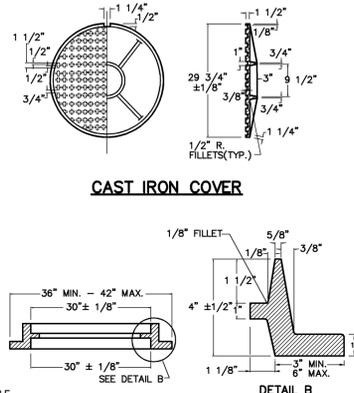
OWNER:	REV.	DESCRIPTION	DATE	BY
RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	
MUNICIPAL FILE NO.: XX	DATE: 11/25/2014	SCALE: AS NOTED		
<b>UG-1 STORMWATER DETAILS RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b>				
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
AS NOTED			JOB NO.: 2013-09007	
SCALE: _____ IN FEET			SHEET NO.: 11 OF 20	
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH		

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**NOTES:**  
 PRECAST MANHOLES, MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, MAY BE SUBSTITUTED FOR STANDARD CAST-IN-PLACE MANHOLE.  
 REFER TO "COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF HIGHWAY DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION", PAGE RC-39, SHEET 3 OF 5, LATEST ISSUE, FOR NOTES AND SPECIFICATIONS REGARDING PRECAST MANHOLE CONSTRUCTION.  
 \* PROVIDE WELDED WIRE FABRIC MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 709.3.  
 MANHOLE STEPS SHALL BE PROVIDED IN ANY CASE WHERE THE STRUCTURE IS 5 FEET OR GREATER IN DEPTH.

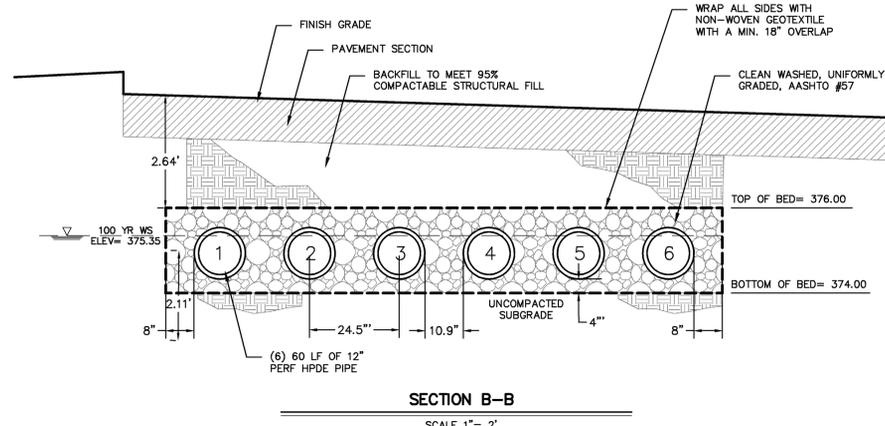
**PRECAST STORMWATER MANHOLE**  
 NOT TO SCALE



**CAST IRON COVER**

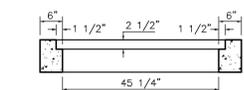


**CAST IRON FRAME**  
 (ALL ROUNDS AND FILLETS TO BE 1/4" R. UNLESS OTHERWISE NOTED.)

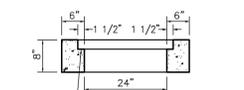


**SECTION B-B**

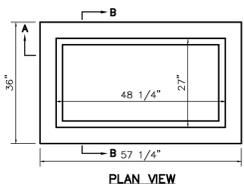
SCALE 1" = 2'



**SECTION A-A**



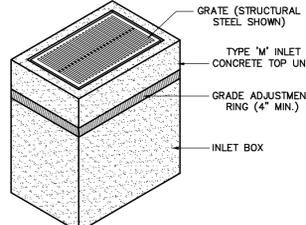
**SECTION B-B**



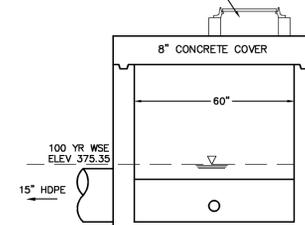
**PLAN VIEW**

**NOTE:**  
 REFER TO "COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF HIGHWAY DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION", PAGE RC-34, SHEETS 1 and 2 of 9, LATEST ISSUE, FOR NOTES AND SPECIFICATIONS REGARDING PRECAST INLET CONSTRUCTION.

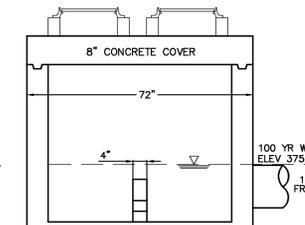
**TYPE 'M' INLET DETAIL**  
 NOT TO SCALE



GRATE (STRUCTURAL STEEL SHOWN)  
 TYPE 'M' INLET CONCRETE TOP UNIT  
 GRADE ADJUSTMENT RING (4" MIN.)  
 INLET BOX

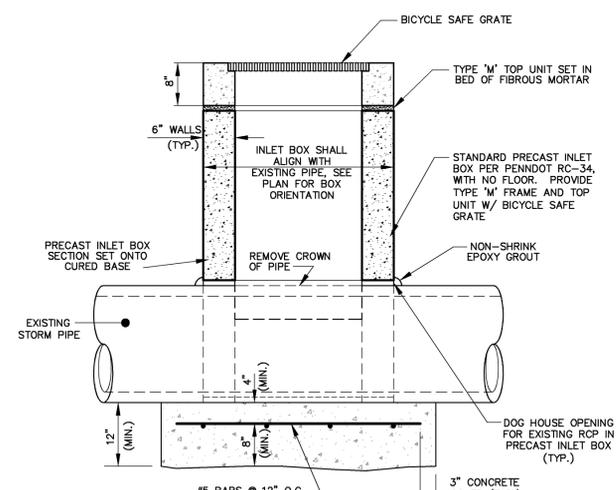


**SECTION A-A**

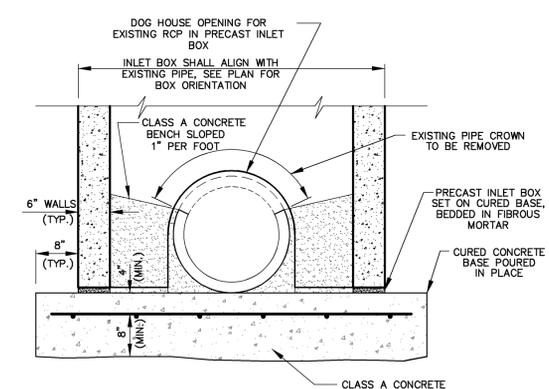


**SECTION B-B**

**OUTLET STRUCTURE 2**  
 SCALE 1" = 2'

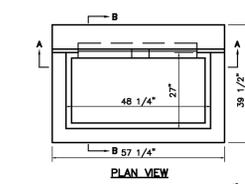


**DOGHOUSE INLET ON EXISTING STORM PIPE**  
 NOT TO SCALE

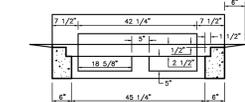


**CONSTRUCTION SEQUENCE**

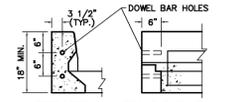
1. EXCAVATE AREA OF INLET BASE AROUND EXISTING PIPE.
2. PLACE BASE REINFORCING AND POUR BASE. ALLOW TO CURE FOR 24 HOURS.
3. REMOVE CROWN OF PIPE.
4. PLACE PRECAST DOGHOUSE INLET ON CAST-IN-PLACE BASE. BED INLET BOX IN FIBROUS MORTAR.
5. GROUT ALL OPENINGS OF INLET BOX WITH NON-SHRINK GROUT.
6. POUR CONCRETE BENCH IN INLET BOX.
7. INSTALL TOP UNIT AND GRATE.
8. PARGE JOINT BETWEEN INLET BOX AND TOP UNIT.
9. BACKFILL AND RESTORE DISTURBED AREAS.



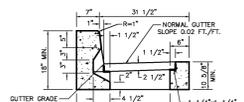
**PLAN VIEW**



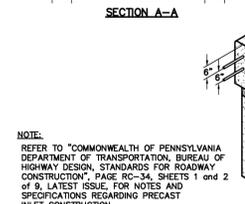
**SECTION A-A**



**SIDE VIEW**

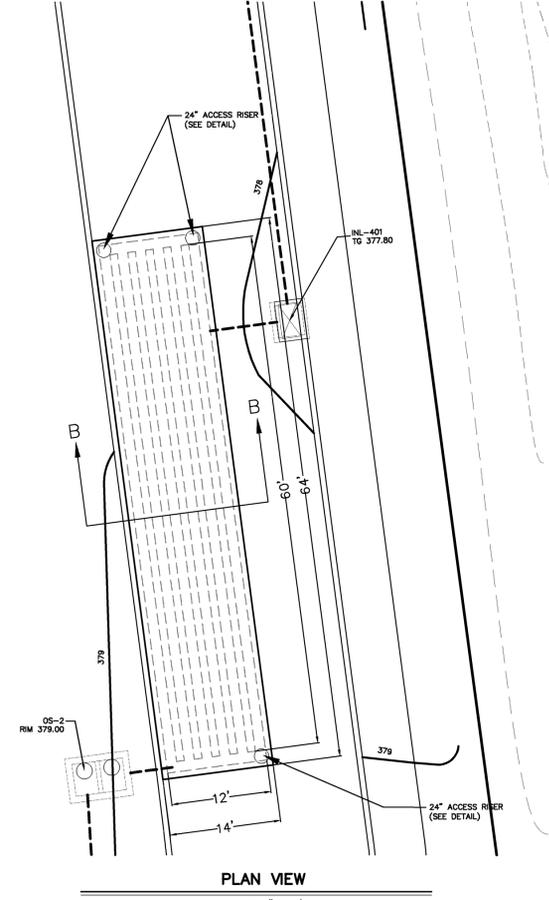


**FRONT ELEVATION**



GRATE (STRUCTURAL STEEL SHOWN - SEE DETAIL, THIS SHEET)  
 TYPE 'C' INLET CONCRETE TOP UNIT  
 GRADE ADJUSTMENT RING (4" MIN.)  
 INLET BOX

**TYPE 'C' INLET DETAIL**  
 NOT TO SCALE



**PLAN VIEW**

SCALE 1" = 10'

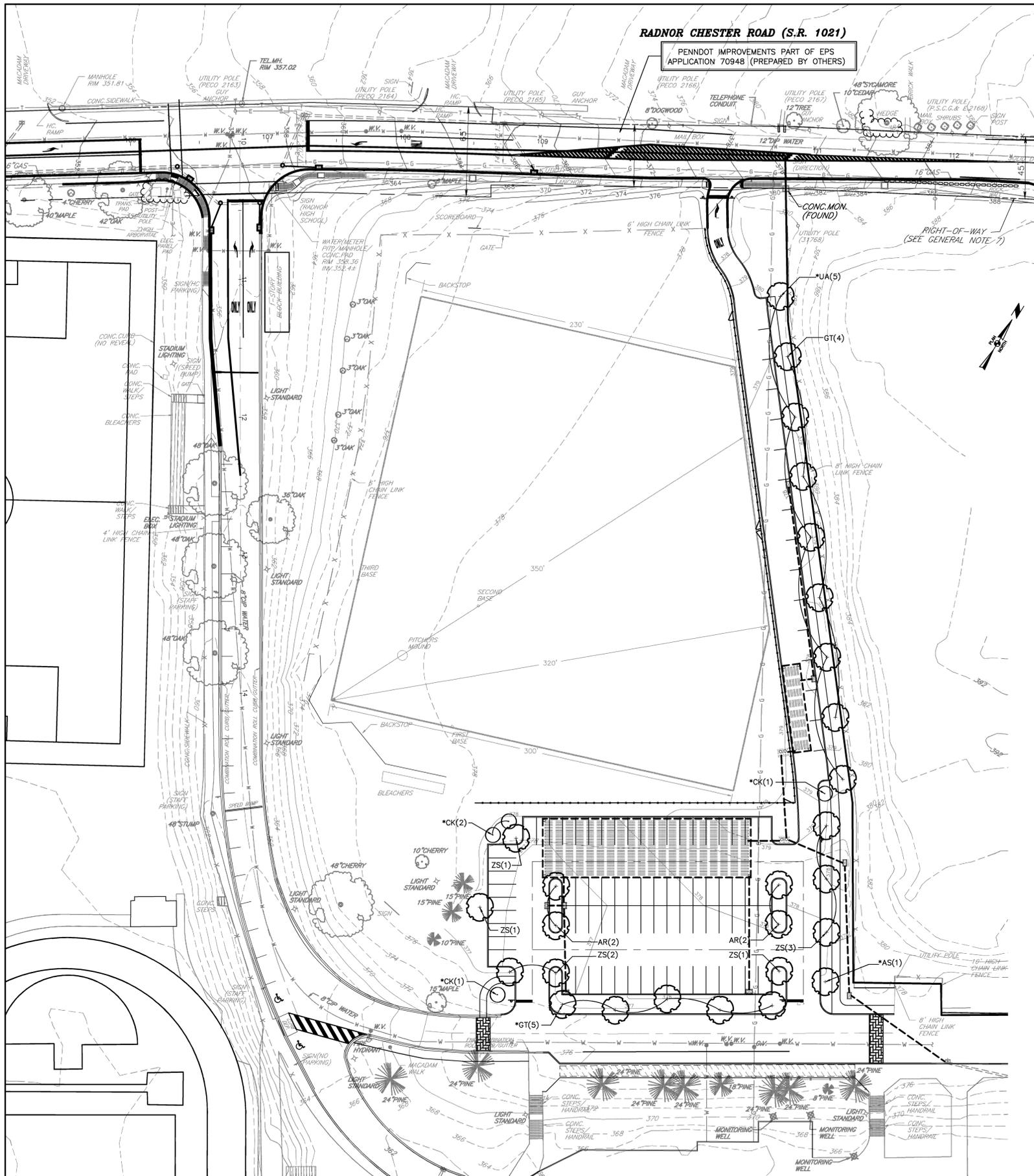
OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	
DATE: 11/25/2014	SCALE: AS NOTED	<b>UG-2 STORMWATER DETAILS</b> <b>RADNOR HIGH SCHOOL</b> <b>PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
AS NOTED		JOB NO.: 2013-09007		
SCALE IN FEET		SHEET NO.:		
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH	12 OF 20	

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**RADNOR CHESTER ROAD (S.R. 1021)**

PENNDOT IMPROVEMENTS PART OF EPS APPLICATION 70948 (PREPARED BY OTHERS)



**PLANT SCHEDULE**

KEY	SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	REMARKS
<b>PARKING AREA TREES</b>						
<b>CANOPY TREES</b>						
AR		4	2.5" CAL. MIN.	ACER RUBRUM 'FRANKSRED'	RED SUNSET RED MAPLE	B & B
GT		4	2.5" CAL. MIN.	GLEDITSIA TRICANTHOS 'F. INERMIS' PNI 2835	SHADEMASTER THORNLESS HONEYLOCUST	B & B
ZS		8	2.5" CAL. MIN.	ZELKOVA SERRATA GREEN VASE	GREEN VASE ZELKOVA	B & B
<b>REPLACEMENT TREES</b>						
<b>CANOPY TREES</b>						
*AS		1	2.5" CAL. MIN.	ACER SACCHARUM 'LEGACY'	LEGACY SUGAR MAPLE	B & B
*GT		5	2.5" CAL. MIN.	GLEDITSIA TRICANTHOS 'F. INERMIS' PNI 2835	SHADEMASTER THORNLESS HONEYLOCUST	B & B
*UA		5	2.5" CAL. MIN.	ULMUS AMERICANA 'VALLEY FORGE'	VALLEY FORGE AMERICAN ELM	B & B
<b>FLOWERING TREES</b>						
*CK		4	2.5" CAL. MIN.	CORNUS KOUSA	KOUSA DOGWOOD	B & B

**LANDSCAPE COMPLIANCE CALCULATIONS**

THE FOLLOWING CHART REPRESENTS THE MINIMUM QUANTITIES OF REQUIRED PLANT MATERIAL ACCORDING TO THE TOWNSHIP OF RADNOR ZONING AND SUBDIVISION AND LAND DEVELOPMENT ORDINANCES, AND TO DEMONSTRATE COMPLIANCE WITH THE SAME.

REPLACEMENT TREES	TOTAL # TREES REM.	REPLACEMENT REQUIRED	PROPOSED
TREE REPLACEMENT FORMULA			
6" TO 18" DBH REMOVED = 1 REPLACEMENT TREE	3	3	3
19" TO 29" DBH REMOVED = 3 REPLACEMENT TREES, (2 BEING LARGE CANOPY)	4	12	12
30" DBH OR GREATER REMOVED = 6 REPLACEMENT TREES, (4 BEING LARGE CANOPY)	0	0	0
	<b>TOTAL</b>	<b>15</b>	<b>15</b>

**PARKING PLANTINGS REQUIREMENT**

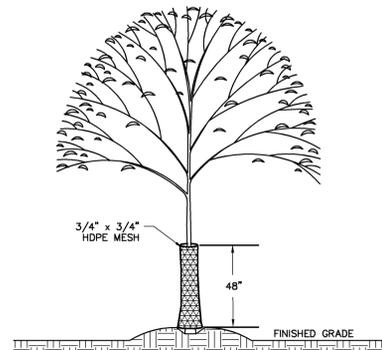
REQUIREMENT	SINGLE BAY PARKING SPACES	DOUBLE BAY PARKING SPACES	REQUIRED	EXISTING	PROPOSED	TOTAL
ONE TREE FOR EVERY FIVE PARKING SPACES IN SINGLE BAYS AND ONE TREE FOR EVERY 10 PARKING SPACES IN DOUBLE BAYS.	60	32	16	2	14	16

**GENERAL LANDSCAPING NOTES**

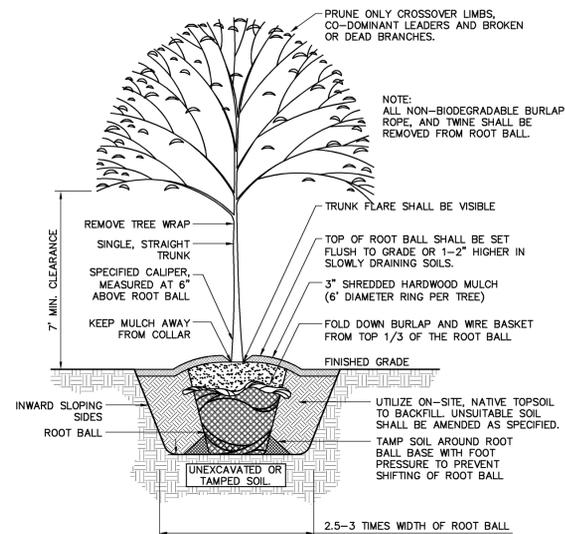
- PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED INCLUDING ALL LABOR, MATERIALS, PLANTS EQUIPMENT, INCIDENTALS AND CLEAN UP.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.
- PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, WELL DEVELOPED BRANCHES, BE DENSELY FOLIATED, HAVE VIGOROUS ROOT SYSTEMS, AND BE FREE OF DEFECTS AND INJURIES.
- ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE HEALTH OF THE PLANT MATERIAL SHALL BE REPORTED TO THE CONSULTING ENGINEERS PRIOR TO INSTALLATION OF PLANT MATERIAL.
- ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISIONS SHALL BE MADE FOR A GUARANTEE OF AT LEAST EIGHTEEN (18) MONTHS AFTER DEDICATION OF IMPROVEMENTS FOR TREES AND SHRUBS. REPLACEMENT SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
- INSOFAR AS IT IS PRACTICABLE, PLANT MATERIALS SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE (3) DAY PERIOD AFTER DELIVERY.
- QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-2004) AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (ANLA), APPROVED MAY 12, 2004, OR LATEST EDITION.
- ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK FILLING PROGRESSES. NOTHING BUT SUITABLE TOPSOIL, FREE OF DRY SOD, STIFF CLAY, LITTER, ETC. SHALL BE USED FOR PLANTING.
- PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE.
- SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH A LEVEL THAT AFTER SETTLEMENT, A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANT IN THE CENTER OF THE PLANTING PIT.
- EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE NATURAL CHARACTER OF THE PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS, ONLY PRUNE BROKEN, POORLY SHAPED OR DAMAGED BRANCHES FROM THE TREE TO BE PLANTED.
- LANDSCAPING CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLACEMENT OF LANDSCAPE MATERIAL. CONTRACTOR SHALL NOT PLACE LANDSCAPING MATERIAL ON TOP OF UTILITY PIPING.
- PLAN QUANTITIES SUPERSEDE PLANT LIST.
- THE LANDSCAPE PLAN IS INTENDED FOR LANDSCAPE PURPOSES ONLY.
- ALL PLANTINGS SHALL BE MAINTAINED PERMANENTLY. ANY PLANT MATERIAL WHICH DOES NOT SURVIVE SHALL BE REPLACED IN SIX (6) MONTHS.
- NO PLANTINGS OR STRUCTURES SHALL BE PLACED WITHIN UTILITY EASEMENTS OR WITHIN 10' OF THE WATER MAIN OR SANITARY SEWER MAIN.

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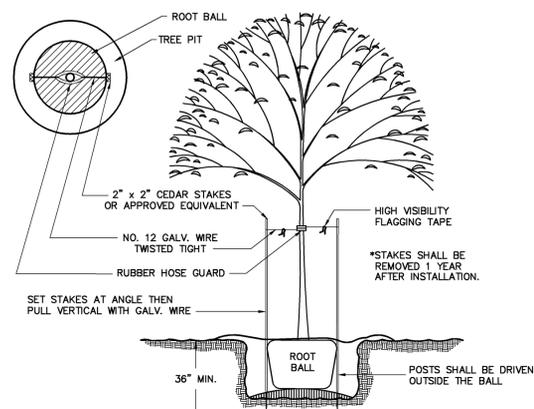
OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	<b>PROJECT AREA 1: LANDSCAPE PLANTING PLAN RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
DATE: 11/25/2014	TOTAL AREA: 73.47 AC.			
SCALE: 1"=40'	<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 85 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com			JOB NO.: 2013-09007
				SHEET NO.: 13 OF 20
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH		



**TREE BARK PROTECTION**  
NOT TO SCALE



**TREE PLANTING DETAIL**  
NOT TO SCALE

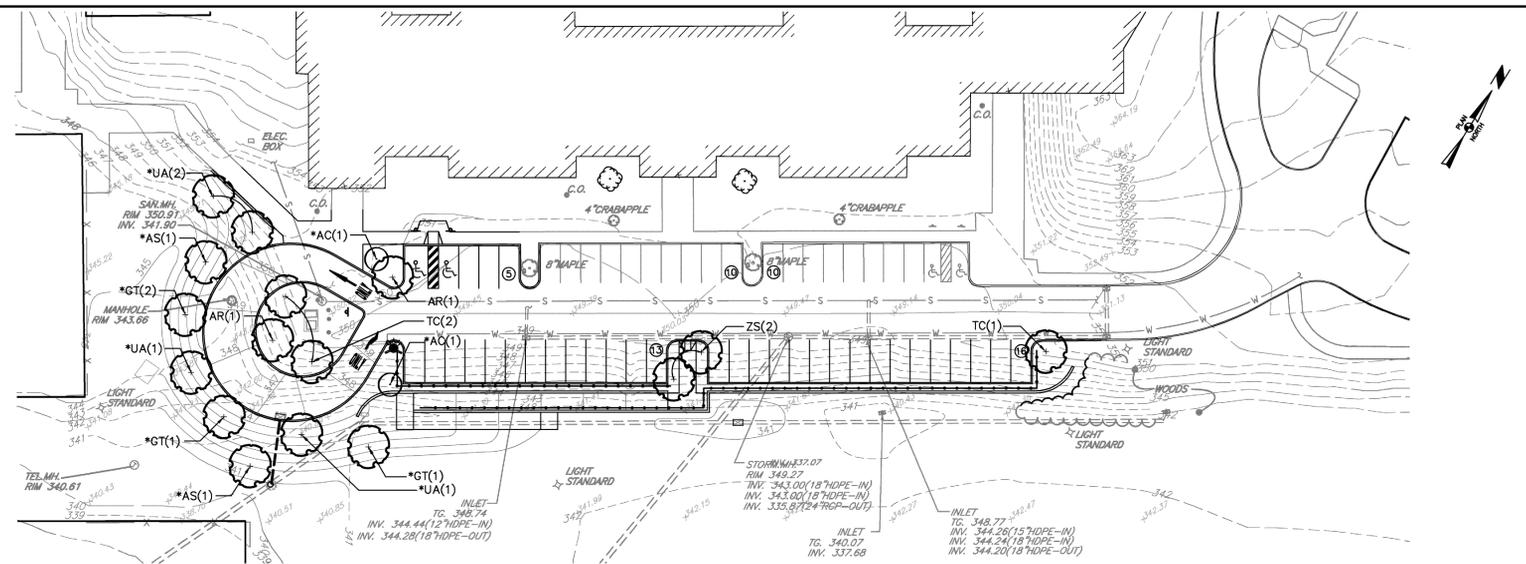


DECIDUOUS TREES 1-1/2\"/>

TREE STAKING & GUYING SHALL NOT BE IMPLEMENTED UNLESS SITE CONDITIONS SUCH AS WET/UNSTABLE SOILS, EXCESSIVE WIND, AND STEEP SLOPES (3:1 OR GREATER) EXIST. STAKING SHALL NOT BE INSTALLED WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT RESPONSIBLE FOR THE PREPARATION OF THESE PLANS. ALL STAKES SHALL BE PAINTED ORANGE, AND ALL WIRES SHALL BE FLAGGED WITH HIGH-VISIBILITY FLAGGING TAPE.

STAKES AND WIRING SHALL BE REMOVED AFTER ONE (1) FULL GROWING SEASON. WHEN REMOVED, STAKES SHALL BE DRIVEN BELOW GROUND LEVEL OR REMOVED FROM THE SITE ENTIRELY.

**TYPE 2 BRACING**  
NOT TO SCALE



**PLANT SCHEDULE**

KEY	SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	REMARKS
<b>PARKING AREA TREES</b>						
CANOPY TREES						
AR		2	2.5\"/>			
TC		3	2.5\"/>			
ZS		2	2.5\"/>			
<b>REPLACEMENT TREES</b>						
CANOPY TREES						
*AS		2	2.5\"/>			
*GT		2	2.5\"/>			
*UA		3	2.5\"/>			
FLOWERING TREES						
*AC		2	2.5\"/>			

NOTES:  
\* REPLACEMENT TREES.

**LANDSCAPE COMPLIANCE CALCULATIONS**

THE FOLLOWING CHART REPRESENTS THE MINIMUM QUANTITIES OF REQUIRED PLANT MATERIAL ACCORDING TO THE TOWNSHIP OF RADNOR ZONING AND SUBDIVISION AND LAND DEVELOPMENT ORDINANCES, AND TO DEMONSTRATE COMPLIANCE WITH THE SAME.

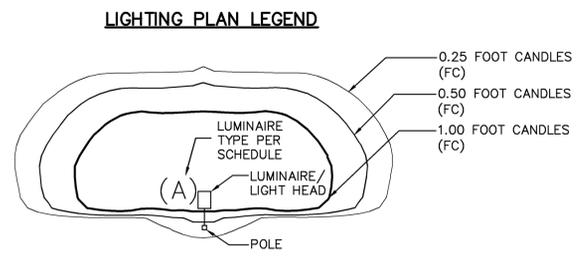
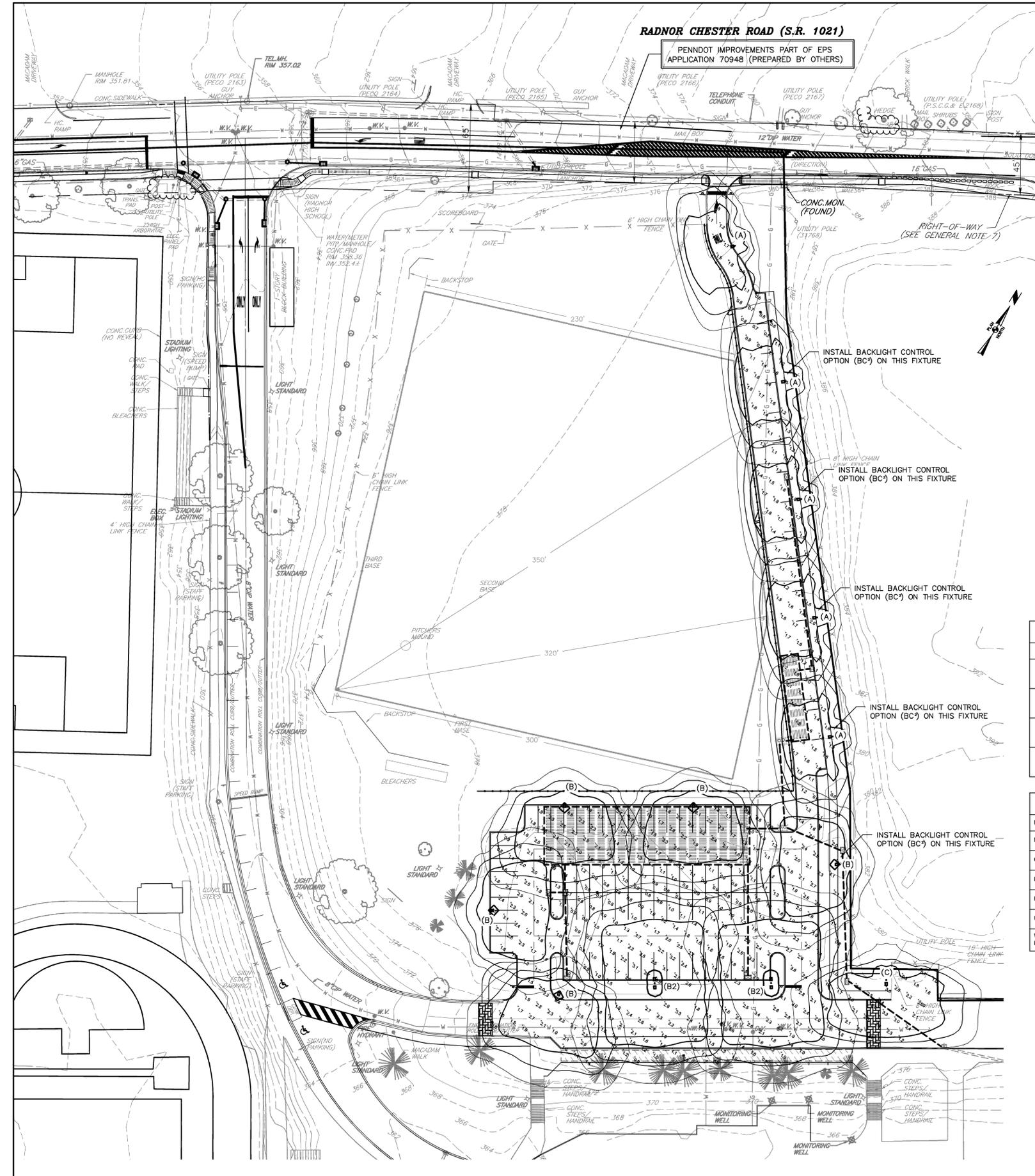
REPLACEMENT TREES	TOTAL # TREES REM.	REPLACEMENT REQUIRED	PROPOSED
TREE REPLACEMENT FORMULA 6\"/>			
19\"/>			
30\"/>			
<b>TOTAL</b>	<b>11</b>	<b>11</b>	<b>11</b>

**PARKING PLANTINGS REQUIREMENT**

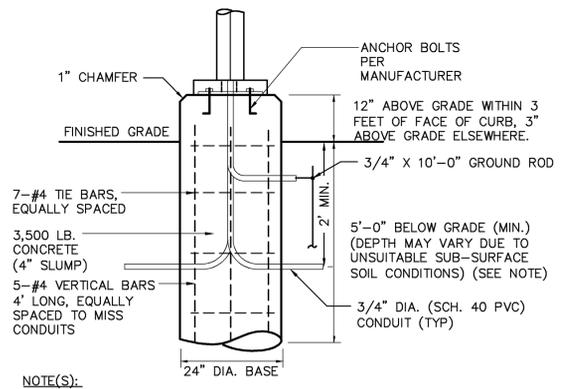
REQUIREMENT	SINGLE BAY PARKING SPACES	DOUBLE BAY PARKING SPACES	REQUIRED	EXISTING	PROPOSED	TOTAL
ONE TREE FOR EVERY FIVE PARKING SPACES IN SINGLE BAYS AND ONE TREE FOR EVERY 10 PARKING SPACES IN DOUBLE BAYS.	34	0	7	0	7	7

<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>PROJECT AREA 2:</b> <b>LANDSCAPE PLANTING PLAN</b> <b>RADNOR HIGH SCHOOL</b> <b>PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
<b>DATE:</b> 11/25/2014	<b>SCALE:</b> 1"=40'			
		<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES <small>65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</small>		
<b>DESIGNED BY:</b> TMH	<b>DRAWN BY:</b> SMM	<b>CHECKED BY:</b> TMH	<b>JOB NO.:</b> 2013-09007 <b>SHEET NO.:</b> 14 OF 20	

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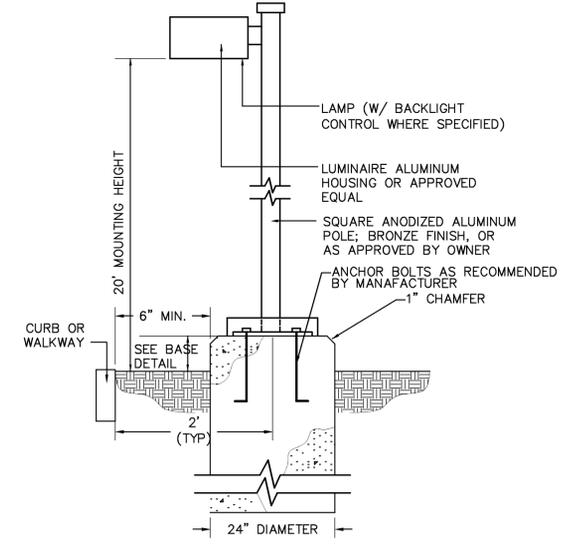


1.8  
FOOT CANDLE CALCULATION GRID POINT FOOT CANDLE LEVEL AT GRID POINT



NOTE(S):  
1. 3" OF CONCRETE COVER SHALL BE PROVIDED OVER ALL REINFORCEMENT BARS.  
2. COORDINATE ELECTRICAL CONDUIT AND GROUNDING WITH ELECTRICAL DRAWINGS

POLE BASE AND REINFORCEMENT DETAIL  
NOT TO SCALE



SITE LIGHTING DETAIL  
NOT TO SCALE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
□	A	5	RM-30LU-5K-3	MEDIUM ROADWAY, 30 LED, 5100K, TYPE 3, 700mA	30- NICHIA 5K LEDS	RM-30LU-5K-3IES	Absolute	0.95	71.4
□	B	5	RL-60LU-5K-4	LARGE ROADWAY, 60 LED, 5100K, TYPE 4, 700mA	60- NICHIA 5K LEDS	RL-60LU-5K-4IES	Absolute	0.95	141.8
□	B2	2	RL-60LU-5K-4	LARGE ROADWAY, 60 LED, 5100K, TYPE 4, 700mA	60- NICHIA 5K LEDS	RL-60LU-5K-4IES	Absolute	0.95	283.6
□	C	1	RL-60LU-5K-3	LARGE ROADWAY, 60 LED, 5100K, TYPE 3, 700mA	60- NICHIA 5K LEDS	RL-60LU-5K-3IES	Absolute	0.95	142.1

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
MAIN DRIVE	+	2.2 fc	6.4 fc	0.8 fc	8.0:1	2.8:1
ONE WAY DRIVE	+	1.3 fc	1.8 fc	0.5 fc	3.6:1	2.6:1
PARKING LOT (3 SPACE)	+	1.6 fc	2.8 fc	0.7 fc	4.0:1	2.3:1
PARKING LOT (LARGE)	+	1.7 fc	8.6 fc	0.7 fc	12.3:1	2.4:1
UNLOADING ZONE	+	1.3 fc	2.0 fc	0.8 fc	2.5:1	1.6:1
WALKWAY (ONE WAY DRIVE)	+	1.7 fc	4.7 fc	0.6 fc	7.8:1	2.8:1

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OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	<b>PROJECT AREA 1: LIGHTING PLAN RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA
DATE: 11/25/2014	SCALE: 1"=40'	<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com		
				JOB NO.: 2013-09007
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH	SHEET NO.: 15 OF 20	

G:\LANDEV\2013\10309007\DESIGN\1014 - (PROJ AREA 1&2) LIGHTING.dwg, 11/25/2014, 2:35:12 PM, Gilmore & Associates, Inc. - New Britain, Pa.

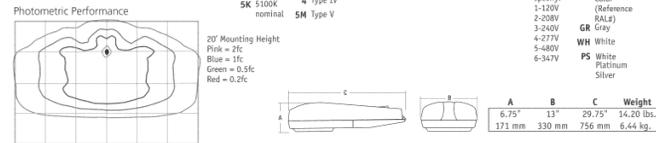
ORDERING INFORMATION

RM LED RM30 Roadway LED

Series Number	Equivalency MH	HPS	Delivered Lumens	Number of LEDs	System Watts	Lumens Per Watt	CCT	Driver/Current
RM-30LU-5K	100w	70w	3658	30	35	111	3000K	10250mA
RM-30LU-4K	150w	100w	5844	30	70	83	4200K	24700mA
RM-30LU-5K	175w	100w	6867	30	70	98	5100K	24700mA

RM - 30L - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES	NUMBER OF LEDS	VOLTAGE	CCT	IES DISTRIBUTION	DRIVE CURRENT	PHOTOCONTROL RECEPTACLE	OPTIONS	FINISH
RM	Cut-off, top mounted driver	30L 30 LEDs	U 120-277V	3K 3000K nominal	2 Type II	BLANK (71w)	2 None	BK Black
			5 480V F 347V	4K 4200K nominal	3 Type III	035 350 mA (35w)	3 Yes	BZ Bronze
				5K 5100K nominal	4 Type IV			CC Custom Color (Reference RAL)
				5M Type V				CR Gray
								GR White
								WH White
								PS White Platinum Silver

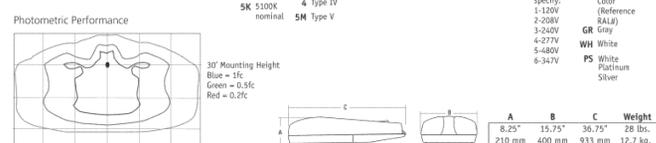


RL LED RL60 Roadway LED

Series Number	Equivalency MH	HPS	Delivered Lumens	Number of LEDs	System Watts	Lumens Per Watt	CCT	Driver/Current
RL-60LU-3K	175w	150w	8833	60	141	141	3000K	48700mA
RL-60LU-4K	320w	200w	11044	60	141	141	4200K	48700mA
RL-60LU-5K	320w	250w	11759	60	141	85	5100K	48700mA

RL - 60L - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES	NUMBER OF LEDS	VOLTAGE	CCT	IES DISTRIBUTION	DRIVE CURRENT	PHOTOCONTROL RECEPTACLE	OPTIONS	FINISH
RL	Cut-off, top mounted driver	60L 60 LEDs	U 120-277V	3K 3000K nominal	2 Type II	BLANK (141w)	2 None	BK Black
			5 480V F 347V	4K 4200K nominal	3 Type III		3 Yes	BZ Bronze
				5K 5100K nominal	4 Type IV			CC Custom Color (Reference RAL)
				5M Type V				CR Gray
								GR White
								WH White
								PS White Platinum Silver



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Mounting Brackets  
Square Steel Pole Mounting Brackets

The ARM and RA brackets are made from 2 3/8" OD steel tubing and are designed to mount on square steel poles (SSS Series). Units are offered in gray or dark bronze powder paint finishes to match our RM/RL roadway series. Brackets are the #8 drilling pattern on Hubbell / Spaulding poles. Mounting hardware for these poles is included.

Catalog Number	Length (ft)	OD	Finish	EPA	Weight lbs. (kg)
ARM-16-1	21"	2 3/8"	Gray	0.18	8 (3.7)
ARM-16-3	48"	2 3/8"	Bronze	1.0	16 (7.3)
RA-4P-M51	48"	2 3/8"	Gray	1.0	16 (7.3)
RA-6P-M51	72"	2 3/8"	Bronze	1.2	20 (9.1)
RA-6P-M53	72"	2 3/8"	Gray	1.2	20 (9.1)



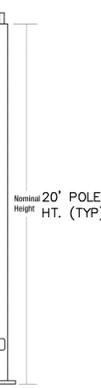
SSS SERIES POLES  
SQUARE STRAIGHT STEEL

Cat. #	Job	Type	Approvals

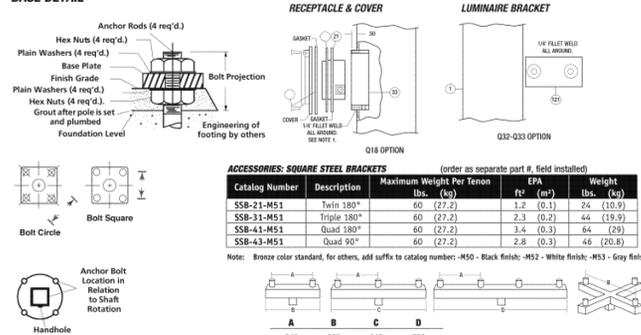


**APPLICATIONS**  
• Lighting installations for top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

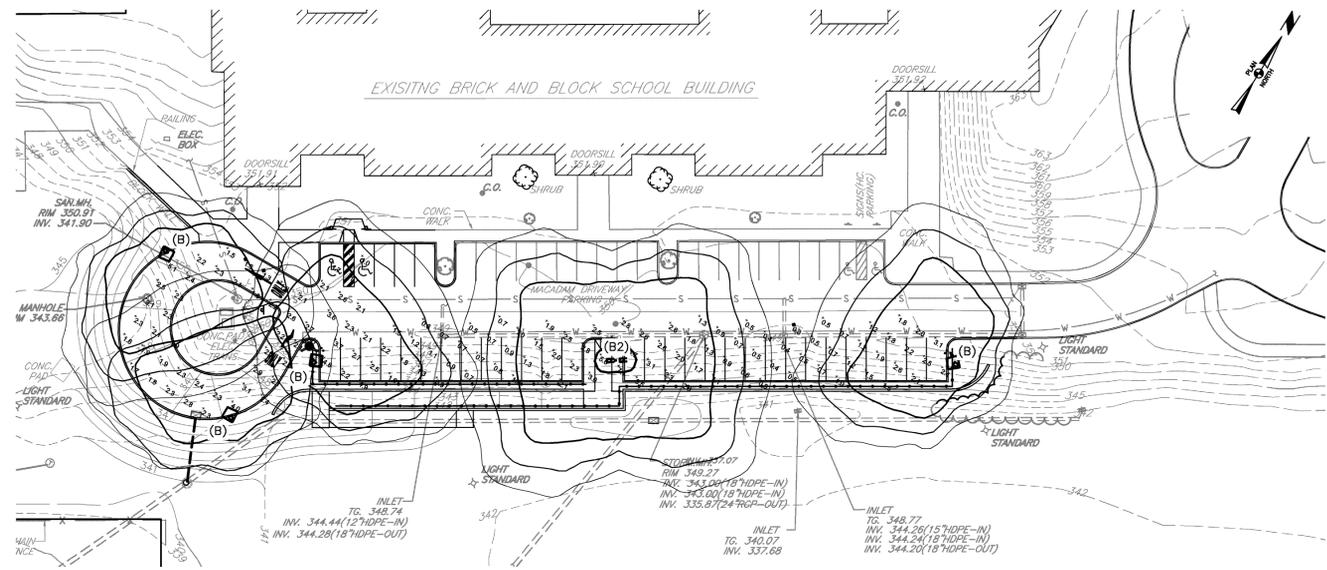
- FEATURES**
- **SHAFT:** One-piece straight steel with square cross section, flat sides and minimum 0.36" radius on all corners. Minimum yield of 46,000 psi (ASTM-A500, Grade B). Longitudinal weld seam to appear flush with shaft side wall. Steel base plate with axial bolt circle slots welded flush to pole shaft having minimum yield of 36,000 psi (ATM-A36)
  - **BASE COVER:** Two-piece square aluminum base cover includes standard
  - **HAND HOLE:** Rectangular steel-reinforced hand hole (2.5" x 4.5"). Pole grounding lug located behind gasketed cover
  - **ANCHOR BOLTS:** Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (modified ASTM-A36). Galvanized hardware with two washers/nuts per bolt for leveling metal or exceed bolt strength
  - **FINISH:** Durable Lektrocoat™ TGIC thermoset polyester powder coat paint finish with nominal 3.0 mil thickness. Zinc-rich powder primer applied over "white metal" steel substrate cleaned via mechanical shot blast method. Decorative finish coat available in seven standard colors. Custom colors available. RAL number preferable. Internal protective coating available. Lektrocoat™ meets or exceeds the following standards:
    - Exterior Durability: up to five years Florida exposure with 10% or less gloss reduction
    - ASTM B-117: 1000 hour salt spray test
    - ASTM D-2247: 1000 hour salt spray test
    - ASTM D-2794: 1000 hour salt spray test
    - ASTM D-522: 1000 hour salt spray test
    - ASTM 3359B: 1000 hour salt spray test



BASE DETAIL



HUBBELL OUTDOOR LIGHTING SHEET # SSSPOLESOUT-SPEC011



**LUMINAIRE SCHEDULE**

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
[Symbol]	B	4	RL-60LU-5K-4	LARGE ROADWAY, 60 LED, 5100K, TYPE 4, 700mA	60- NICHIA 5K LEDS	RL-60LU-5K-4.IES	Absolute	0.95	141.8
[Symbol]	B2	1	RL-60LU-5K-4	LARGE ROADWAY, 60 LED, 5100K, TYPE 4, 700mA	60- NICHIA 5K LEDS	RL-60LU-5K-4.IES	Absolute	0.95	283.6

**STATISTICS**

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
DRIVEWAY LOOP	+	2.3 fc	5.1 fc	1.3 fc	3.8:1	1.8:1
PARKING LOT (SMALL)	+	1.7 fc	7.1 fc	0.3 fc	23.7:1	5.7:1

ORDERING INFORMATION

Catalog Number	Pole Ht.	Nominal Shaft	Wind Load Rating	Wall Thk.	Bolt Circle	Bolt Circle	Bolt Sq.	Base Plate	Anchor Bolt	Bolt Proj.	Pole Wt.				
SSS-10-40-1-XX-XX	10.0	4	30	28.5	22	11	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	91	
SSS-10-50-1-XX-XX	10.0	5	60	46	36	28	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	106	
SSS-12-40-1-XX-XX	12.0	4	28	21	15	12	175	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	104	
SSS-12-50-1-XX-XX	12.0	5	45	33	25	20	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	122	
SSS-14-40-1-XX-XX	14.0	4	23	17	12.5	9.5	6	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	118
SSS-14-50-1-XX-XX	14.0	4	34.5	25.5	20	15	9.5	179	11"	8.5-12"	6-8.4"	11 x 1"	75 x 30 x 3"	4"	158
SSS-14-60-1-XX-XX	14.0	5	38	28.5	21.5	16.5	10.5	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	138
SSS-16-40-1-XX-XX	16.0	4	19.5	14	10.5	7.5	4	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	128
SSS-16-50-1-XX-XX	16.0	4	29.5	21.5	16	12	8	179	11"	8.5-12"	6-8.4"	11 x 1"	75 x 30 x 3"	4"	176
SSS-16-60-1-XX-XX	16.0	4	32	23.5	17.5	13.5	8	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	153
SSS-18-40-1-XX-XX	18.0	4	16.5	11.5	8.5	6	3	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	214
SSS-18-50-1-XX-XX	18.0	4	25.5	18	13.5	10.5	6	179	11"	8.5-12"	6-8.4"	11 x 1"	75 x 30 x 3"	4"	201
SSS-18-60-1-XX-XX	18.0	5	27.5	20	14	11	6	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	175
SSS-20-40-1-XX-XX	20.0	4	13.5	9.5	6.5	4.5	1.8	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	160
SSS-20-50-1-XX-XX	20.0	4	22	16	11.5	8.5	4.5	179	11"	8.5-12"	6-8.4"	11 x 1"	75 x 30 x 3"	4"	173
SSS-20-60-1-XX-XX	20.0	5	29.5	17	12	9	4.5	119	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	191
SSS-20-70-1-XX-XX	20.0	5	36.5	27	20	15.5	9	179	11"	10-13.5"	7.1-9.5"	12 x 1"	75 x 30 x 3"	4"	266
SSS-20-80-1-XX-XX	20.0	6	51	38	28.5	22	14.5	179	12"	11-13.5"	7.8-9.5"	12 x 1"	1 x 36 x 4"	4"	312
SSS-25-40-1-XX-XX	25.0	4	8.5	5	3	1.5	NR	119	11"	8-11"	5.6-7.8"	10.25 x 0.75"	75 x 30 x 3"	4"	238
SSS-25-50-1-XX-XX	25.0	4	14.5	10	6.5	4.5	1.4	179	11"	8.5-12"	6-8.4"	11 x 1"	75 x 30 x 3"	4"	266
SSS-25-60-1-XX-XX	25.0	5	15	10.5	6.5	4	NR	119	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	231
SSS-25-70-1-XX-XX	25.0	5	25	18	12.5	8.5	4	179	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	324
SSS-25-80-1-XX-XX	25.0	5	36.5	26	19	14	8	290	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	457
SSS-25-90-1-XX-XX	25.0	6	38.5	28	20.5	15	8	179	12"	11-13.5"	7.8-9.5"	12 x 1"	1 x 36 x 4"	4"	404
SSS-27-40-1-XX-XX	27.0	4	9.4	4.2	2.2	1.2	NR	119	11"	8.5 x 12"	6-8.4"	11 x 1"	1 x 36 x 4"	4"	290
SSS-30-40-1-XX-XX	30.0	4	6.5	4.5	2.5	1.5	NR	179	11"	8.5 x 12"	6-8.4"	11 x 1"	1 x 36 x 4"	4"	313
SSS-30-50-1-XX-XX	30.0	5	7.5	5.5	2.5	NR	NR	119	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	274
SSS-30-60-1-XX-XX	30.0	5	18	12	8	4.5	NR	179	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	398
SSS-30-70-1-XX-XX	30.0	5	22	16	13	8	3.8	290	11"	10-13.5"	7.1-9.5"	12 x 1"	1 x 36 x 4"	4"	537
SSS-30-80-1-XX-XX	30.0	6	30	20	14	9	3.4	179	12"	11-13.5"	7.8-9.5"	12 x 1"	1 x 36 x 4"	4"	467
SSS-30-90-1-XX-XX	30.0	6	42	30	22	16	8	250	12"	11-13.5"	7.8-9.5"	12 x 1"	1.25 x 42 x 6"	4"	630
SSS-35-60-1-XX-XX	35.0	6	20.5	13	8	4.5	NR	179	12"	11-13.5"	7.8-9.5"	12 x 1"	1 x 36 x 4"	4"	538
SSS-35-80-1-XX-XX	35.0	6	26	18	12	7.5	3.4	290	12"	11-13.5"	7.8-9.5"	12 x 1"	1.25 x 42 x 6"	4"	729
SSS-40-60-1-XX-XX	40.0	12.2	6	11	8	3.5	NR	179	12"	11-13.5"	7.8-9.5"	12 x 1"	1 x 36 x 4"	4"	614
SSS-40-80-1-XX-XX	40.0	12.2	6	14	10.5	5.5	2.5	NR	12"	11-13.5"	7.8-9.5"	12 x 1"	1.25 x 42 x 6"	4"	802



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

HUBBELL Outdoor Lighting • 701 Millennium Blvd • Greenville, SC 29607 • Phone: 864-678-1000  
For more information visit our web site: [www.hubbelloutdoor.com](http://www.hubbelloutdoor.com)

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**OWNER:** RADNOR TWP. SCHOOL DISTRICT  
135 SOUTH WAYNE AVENUE  
WAYNE, PA 19387-4194  
610-688-8100

**TAX MAP PARCEL NO.:** T.P. 36-15-043000

**MUNICIPAL FILE NO.:** XX

**DATE:** 11/25/2014

**SCALE:** 1"=40'

**DESCRIPTION:** PROJECT AREA 2: LIGHTING PLAN  
RADNOR HIGH SCHOOL  
PARKING LOT IMPROVEMENTS  
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

**GILMORE & ASSOCIATES, INC.**  
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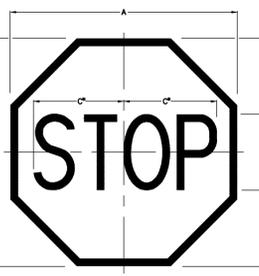
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IN FEET

**JOB NO.:** 2013-09007  
**SHEET NO. OF 20**  
16 OF 20

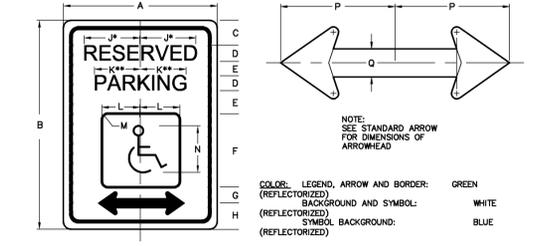
**DESIGNED BY:** TMH **DRAWN BY:** SMM **CHECKED BY:** TMH

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SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.	
24 x 24	24	8	10	10	10	10	10	10	10	10	10	10	10	10	10	B5-24
30 x 30	30	10	12	12	12	12	12	12	12	12	12	12	12	12	12	B1-30
36 x 36	36	12	15	15	15	15	15	15	15	15	15	15	15	15	15	B1-36
48 x 48	48	16	20	20	20	20	20	20	20	20	20	20	20	20	20	B1-48

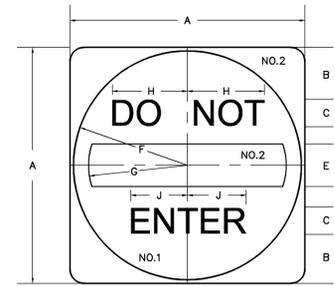


**STOP SIGN (R1-1)**  
NOT TO SCALE



SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
300 x 450	50	50	25	150	40	60	128	109	759	10	100	95	20	10	B5-300450
(12' x 18')	(2)	(2)	(1)	(6)	(1.6)	(2.4)	(4.3)	(3)	(0.4)	(4)	(3.8)	(0.8)	(0.4)	(0.4)	(95-1218)

**RESERVED PARKING SIGN (R7-8)**  
NOT TO SCALE



SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
750 x 750	165	1000	47	126	365	310	251	199	83	750	10	10	10	B5-750750	
(30' x 30')	(6.6)	(40)	(1.9)	(5)	(14.6)	(12.4)	(9.9)	(7.9)	(3)	(30)	(0.4)	(0.4)	(0.4)	(95-1218)	

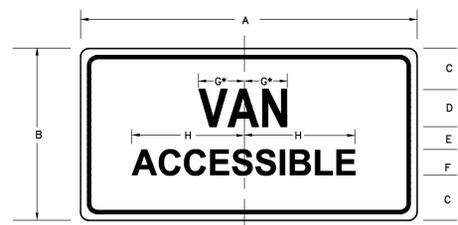
**DO NOT ENTER SIGN (R5-1)**  
NOT TO SCALE



(A) JUSTIFICATION. THE VERTICAL ONE-WAY SIGNS (R6-2L) & (R6-2R) SHALL BE AUTHORIZED FOR USE ONLY WHEN LATERAL SPACE IS LIMITED, IN LIEU OF THE HORIZONTAL ONE-WAY SIGNS (R6-1L) & (R6-1R) AND FOR OVERHEAD INSTALLATIONS.  
(B) SIZE. THE STANDARD SIZE OF THE R6-2L & R6-2R SIGN SHALL BE 600mm BY 750mm (24"x30"), BUT THE MINIMUM SIZE SHALL BE 750mm BY 900mm (30"x36") WHEN MOUNTED OVERHEAD.

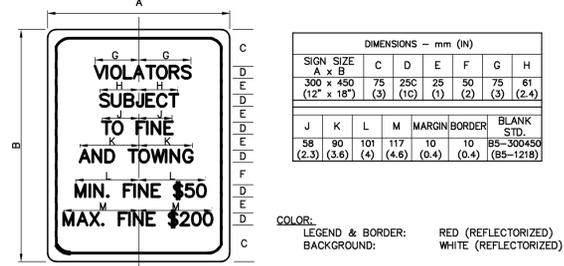
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
450 x 600	65	1250	35	115	135	156	170	145	55	10	15	10	10	B5-600450	
(18" x 24")	(2.6)	(50)	(1.4)	(4.6)	(5.4)	(6.2)	(6.8)	(5.8)	(2.2)	(0.4)	(0.6)	(0.4)	(0.4)	(95-2418)	

**VERTICAL ONE-WAY SIGN, LEFT (R6-2L)**  
NOT TO SCALE



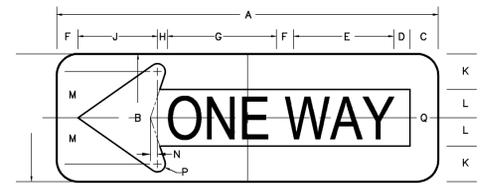
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
300 x 450	35	400	15	250	54	102	10	10	10	10	10	10	10	B5-300150	
(12' x 6')	(1.4)	(16.0)	(0.6)	(10)	(2.1)	(4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(95-1218)	

**VAN ACCESSIBLE SIGN (R7-8B)**  
NOT TO SCALE



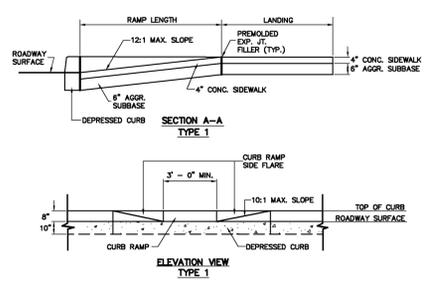
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
300 x 450	75	250	25	50	75	61	10	10	10	10	10	10	10	B5-300450	
(12' x 18')	(3)	(10)	(1)	(2)	(3)	(2.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(95-1218)	

**RESERVED PARKING PENALTIES SIGN (R7-8F)**  
NOT TO SCALE

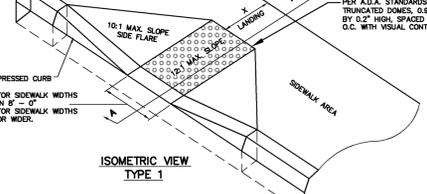


SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	BORDER	BLANK STD.
900 x 300	75	30	268*	50	232*	12	183	85	65	104	14	18	1000	10	B5-900300
(36" x 12')	(3)	(1.2)	(10.6)	(2.2)	(9.1)	(0.5)	(7.2)	(3.4)	(2.6)	(4.2)	(0.6)	(0.7)	(40)	(0.4)	(95-3612)

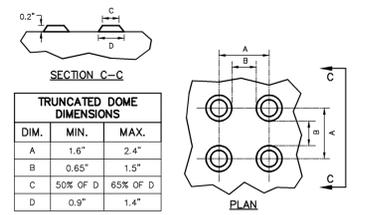
**ONE WAY SIGN (R6-1L)**  
NOT TO SCALE



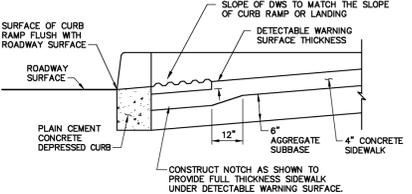
**HANDICAP CURB RAMP (PENN.D.O.T TYPE 1)**  
NOT TO SCALE



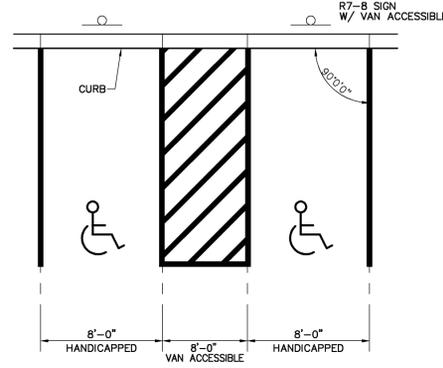
**HANDICAP CURB RAMP (PENN.D.O.T TYPE 1)**  
NOT TO SCALE



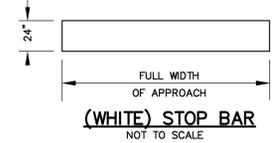
**TRUNCATED DOME DIMENSIONS**



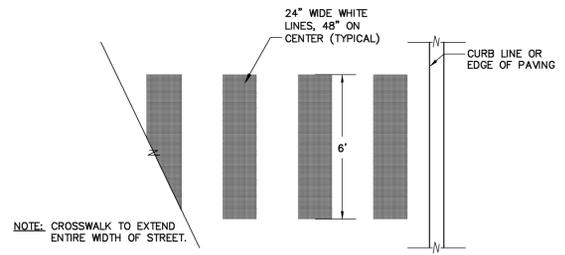
**DETECTABLE WARNING SURFACE EMBEDDING**  
NOT TO SCALE



**HANDICAP PARKING DETAIL**  
NOT TO SCALE



**(WHITE) STOP BAR**  
NOT TO SCALE

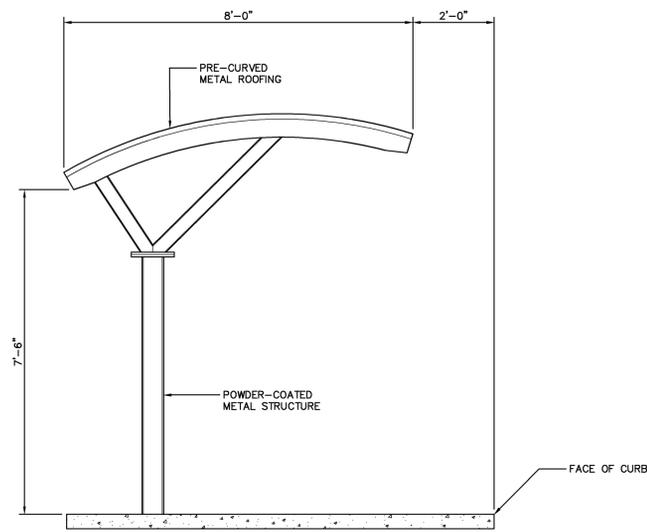


**CROSSWALK DETAIL**  
NOT TO SCALE

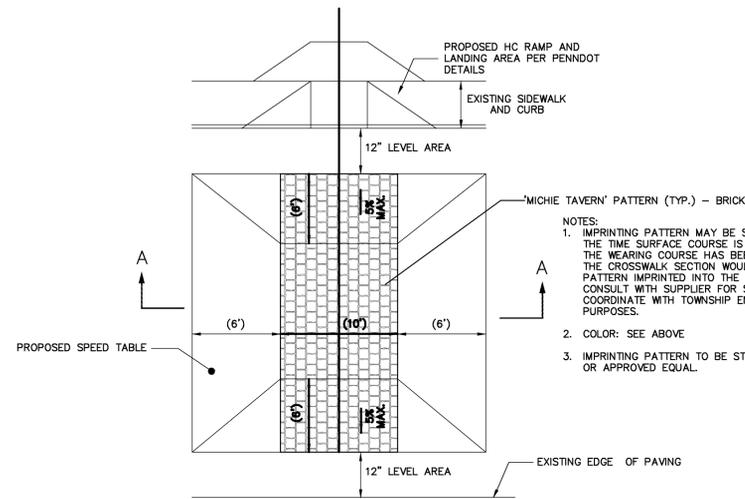
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OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	
<b>CONSTRUCTION DETAILS (1)</b>				
<b>RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b>				
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
DATE: 11/25/2014	SCALE: AS NOTED	JOB NO.: 2013-09007		
AS NOTED		SHEET NO.:		
DESIGNED BY: TMH		DRAWN BY: SMM		CHECKED BY: TMH
				17 OF 20

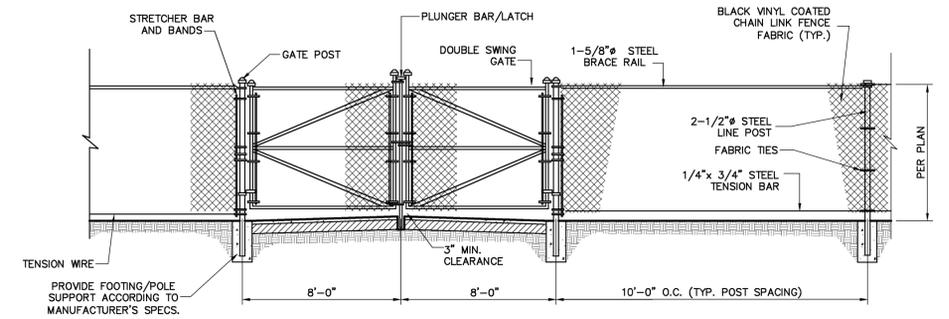




**STEEL CANOPY ELEVATION DETAIL**  
NOT TO SCALE

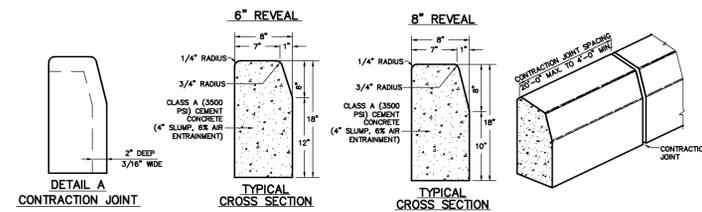


**RAISED PEDESTRAIN CROSSWALK**  
NOT TO SCALE

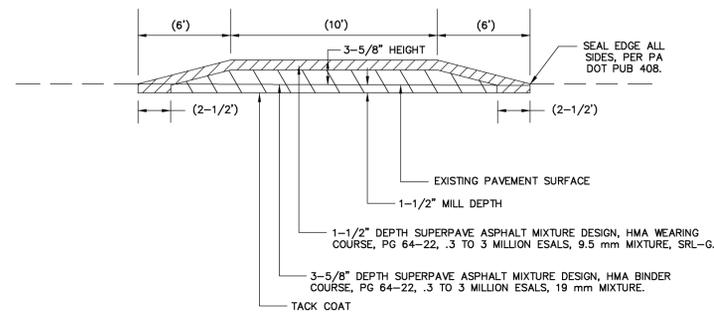


**TYPICAL 4' AND 6' CHAIN LINK FENCE WITH SWING GATE**  
NOT TO SCALE

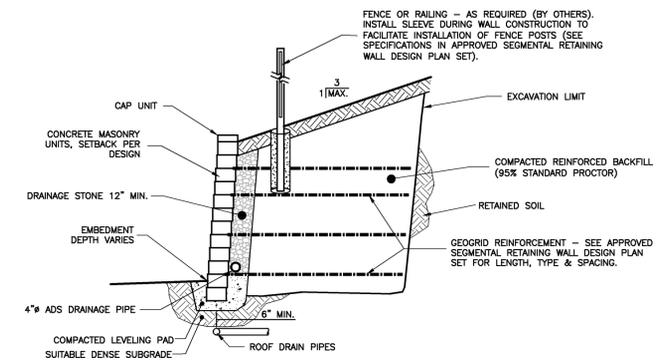
NOTES: ALL MATERIALS, DIMENSIONS, ETC. ARE SUGGESTED AND MAY BE ADJUSTED PER A PARTICULAR FENCE MANUFACTURER'S SPECIFICATIONS.  
ANY GATE PROVIDED FOR THIS FENCING SHALL BE SELF-CLOSING AND SELF-LATCHING.



**PLAIN CEMENT CONCRETE CURB**  
NOT TO SCALE

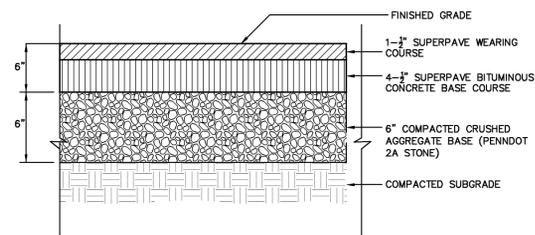


**RAISED PEDESTRAIN CROSSWALK SECTION A-A**  
NOT TO SCALE

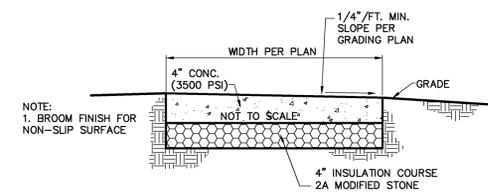


NOTE: THE CONTRACTOR SHALL SUBMIT RETAINING WALL DESIGN PLANS FOR APPROVAL PRIOR TO CONSTRUCTION OF ANY RETAINING WALLS. DESIGN PLANS SHALL BE PREPARED BY GILMORE & ASSOCIATES INC. OR OTHER QUALIFIED PROFESSIONAL ENGINEER.  
TYPICAL SEGMENTAL RETAINING WALL SECTION IS PROVIDED TO SHOW VARIOUS CONSTRUCTION ELEMENTS ASSOCIATED WITH THE RETAINING WALLS.  
WALL CONSTRUCTION MUST ALSO UTILIZE THE GRADES, DIMENSIONS AND COMPONENTS SHOWN ON THE WALL PROFILES INCLUDED IN THE APPROVED SEGMENTAL RETAINING WALL DESIGN PLAN SET.

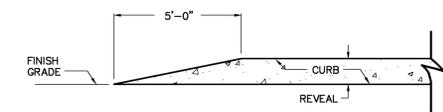
**TYPICAL SEGMENTAL RETAINING WALL CROSS-SECTION**  
NOT TO SCALE



**DRIVE & FULL-DEPTH PARKING LOT TYPICAL PAVING DETAIL**  
NOT TO SCALE



**SIDEWALK DETAIL**  
NOT TO SCALE



**CURB TAPER DETAIL**  
NOT TO SCALE

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OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	<b>CONSTRUCTION DETAILS (2)</b> <b>RADNOR HIGH SCHOOL</b> <b>PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA
DATE: 11/25/2014	SCALE: AS NOTED	<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES <small>65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com</small>		
		AS NOTED	JOB NO.: 2013-09007	
		SHEET NO.:		18 OF 20
DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH		

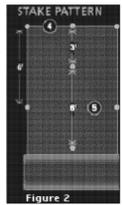
G:\LANDDEV\2013\1\201309007\DESIGN\1015.dwg, 11/25/2014, 2:37:45 PM, Gilmore & Associates, Inc. - New Britain, Pa.

**INSTALLATION INSTRUCTIONS:**

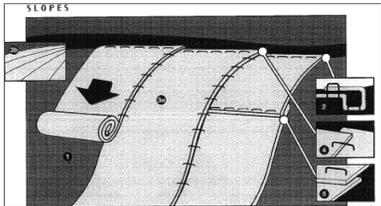
ADDITIONAL ITEMS NEEDED FOR INSTALLATION:  
 GRASS SEED  
 FERTILIZER  
 RUBBER MALET  
 SCISSORS OR SHEARS  
 SAFETY GLASSES/GOOGLES

CAUTION: ALWAYS WEAR EYE AND HAND PROTECTION DURING INSTALLATION OF BOSTAKES.

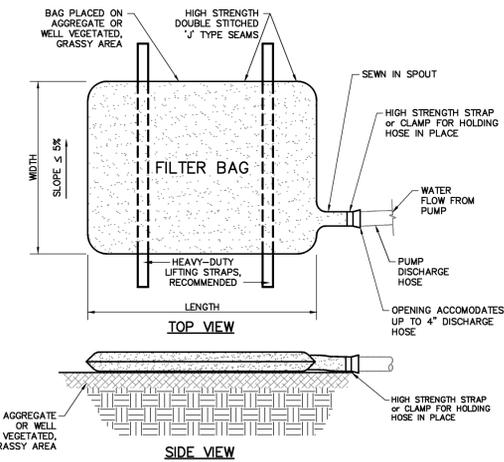
1. PREPARE THE AREA TO BE PROTECTED BY RAKING THE SOIL TO A DEPTH OF 1-2 INCHES AND REMOVING LARGE DIRT CLODS, STICKS AND OTHER OBSTRUCTIONS. APPLY SEED AND FERTILIZER AND LIGHTLY RAKE INTO THE SOIL. (NOTE: THIS PRODUCT DOES NOT INCLUDE SEED OR FERTILIZER. FOR SEEDING AND FERTILIZING SEE THE SEEDING & MULCHING SCHEDULE.)
2. STARTING AT THE TOP OF SLOPE, ANCHOR THE BLANKET IN A 6"x6" TRENCH WITH A ROW OF BIODEGRADABLE PLASTIC BOSTAKES. A RUBBER MALET IS RECOMMENDED FOR DRIVING THE BOSTAKES INTO THE GROUND. CAUTION BOSTAKES MAY SHATTER IF BROKEN THEREFORE ALWAYS WEAR EYE AND HAND PROTECTION DURING INSTALLATION. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL OUT BLANKET (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. SECURE BLANKET WITH BOSTAKES IN APPROPRIATE PATTERN PER STAPLING PATTERN, FIGURE 2. IF APPLICABLE USE DOT SYSTEM PROVIDED ON FABRIC BY MANUFACTURER. BE SURE TO SMOOTH OUT ANY WRINKLES OR FOLDS IN MATERIAL AS WORK PROGRESSES.
4. EDGES OF PARALLEL BLANKETS SHALL OVERLAP A MINIMUM OF 6" AND BE STAKED AT 12' INTERVALS.
5. CONSECUTIVE BLANKETS ALONG SLOPE SHALL OVERLAP, SINGLE STYLE, WITH A MINIMUM OF 6" OVERLAP. STAKE THROUGH OVERLAP AREA AT 12' INTERVALS.
6. IMMEDIATELY FOLLOWING INSTALLATION, GENTLY WATER ENTIRE AREA THOROUGHLY WETTING BOTH THE BLANKET AND UNDERLYING SOIL. FOR BEST RESULTS, KEEP SOIL MOIST FOR THE FIRST 30 TO 60 DAYS OR UNTIL UNIFORM GRASS ESTABLISHMENT IS ACHIEVED.



**NORTH AMERICAN GREEN SLOPE INSTALLATION**  
 NOT TO SCALE



CONTRACTOR SHALL USE NORTH AMERICAN GREEN (OR EQUAL) EROSION CONTROL FABRICS WITH THE MANUFACTURER'S RECOMMENDED STAPLE PATTERN. CLASS OF FABRIC SHALL BE AS NOTED ELSEWHERE IN THE PLANS.

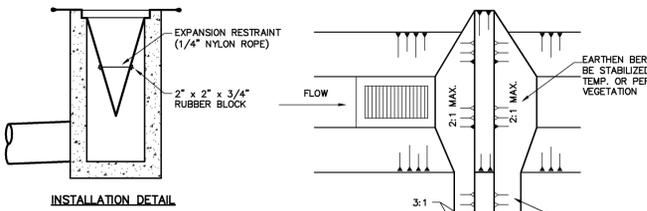


**FILTER BAG TO BE USED WHEN/IF WATER PONDS IN EXCAVATIONS.**

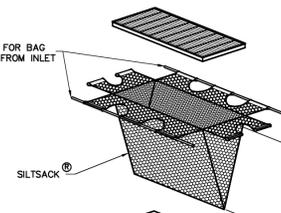
1. LOW VOLUME FILTER BAGS SHALL BE MADE OF NON-WOVEN GEOTEXTILE WHICH RETAINS ALL SEDIMENT PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES MEETING THE FOLLOWING STANDARDS:  

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. 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 ZONE
2. PLACE FILTER BAGS ON STABLE OR WELL-VEGETATED AREAS WHICH ARE FLATTER THAN 5% SLOPE AND SHALL DISCHARGE ONTO STABLE, EROSION RESISTANT GROUND. WHERE THIS IS NOT POSSIBLE, GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED.
3. PUMP DISCHARGE HOSE SHALL BE INSERTED INTO BAG IN MANNER SPECIFIED BY MANUFACTURER AND SECURELY CLAMPED INTO FILTER BAG. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
4. LIMIT PUMPING TO 750 GPM OR 1/2 THE MANUFACTURER'S MAXIMUM PUMPING RATE, WHICHEVER IS LESS. PUMP INTAKE SHALL BE FLOATING AND SCREENED.
5. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL PROBLEM IS CORRECTED.
6. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY IS REQUIRED FOR DISPOSAL PURPOSES. WHEN SEDIMENT FILLS 1/2 THE VOLUME OF A FILTER BAG, IMMEDIATELY REMOVE THAT BAG FROM SERVICE AND REPLACE WITH NEW BAG IMMEDIATELY. PROPERLY DISPOSE OF SPENT BAGS WITH THEIR SEDIMENTS.
7. THE DISCHARGE FROM THE FILTER BAG SHOULD NOT PASS THROUGH A DISTURBED AREA OR CAUSE AN EROSION PROBLEM DOWN SLOPE.

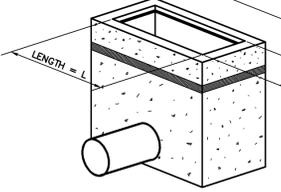
**SEDIMENT FILTER BAG FOR PUMPED WATER**  
 NOT TO SCALE



INSTALLATION DETAIL



PLAN VIEW

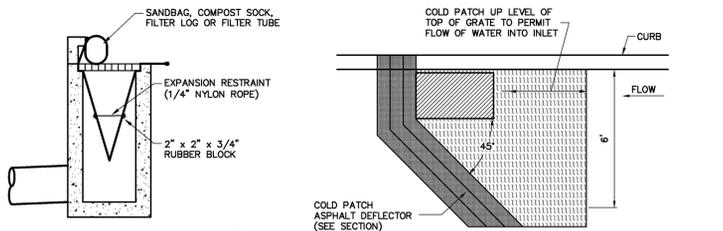


ISOMETRIC VIEW

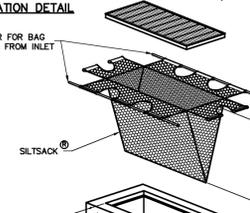
**SILTSACK TYPE 'M' INLET PROTECTION DETAIL**  
 NOT TO SCALE

**MAINTENANCE:**

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
3. EARTHEN BERM SHALL BE INSTALLED & MAINTAINED IN LIEU OF ASPHALT BERMS UNTIL ROADWAY IS STONED. 6" MINIMUM HEIGHT ASPHALT BERM TO BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
4. FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LB, BURST STRENGTH OF 200 PSI, AND TRAPEZOIDAL TEAR STRENGTH OF 50 LB. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A #40 SIEVE.
5. BAGS SHALL BE EMPTIED & RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
6. DAMAGED OR CLOGGED BAGS SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.



INSTALLATION DETAIL



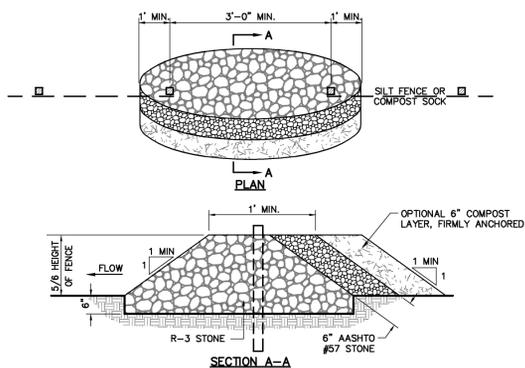
ISOMETRIC VIEW

**SILTSACK TYPE 'C' INLET PROTECTION DETAIL**  
 NOT TO SCALE

**ASPHALT DEFLECTOR SECTION**

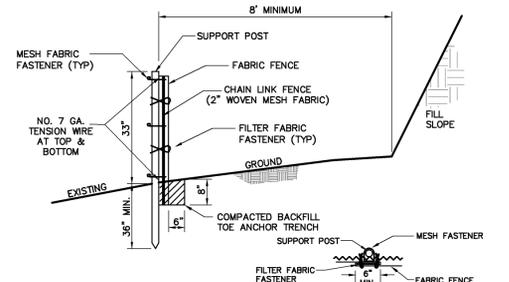
**MAINTENANCE:**

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. EARTHEN BERM SHALL BE INSTALLED & MAINTAINED IN LIEU OF ASPHALT BERMS UNTIL ROADWAY IS STONED. 6" MINIMUM HEIGHT ASPHALT BERM TO BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
4. FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LB, BURST STRENGTH OF 200 PSI, AND TRAPEZOIDAL TEAR STRENGTH OF 50 LB. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A #40 SIEVE.
5. BAGS SHALL BE EMPTIED & RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
6. DAMAGED OR CLOGGED BAGS SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.



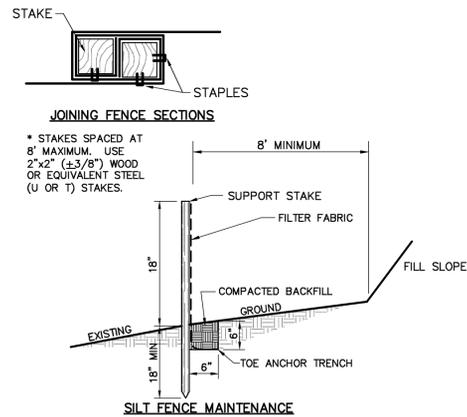
**ROCK FILTER OUTLET DETAIL**  
 NOT TO SCALE

- NOTES:**
1. ROCK FILTER OUTLETS TO BE PROVIDED AT ALL EXISTING OR PROPOSED LOW POINTS AND ALL AREAS OF CONCENTRATED FLOWS.
  2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLETS.
  3. COMPOST LAYER IS REQUIRED IN ALL HQ AND EV WATERSHEDS.



**SUPER-SILT FENCE (33" HIGH) DETAIL**  
 NOT TO SCALE

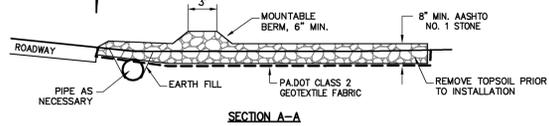
1. POSTS SPACED @ 10' MAX. USE 2-1/2" DIA. HEAVY DUTY GALVANIZED OR ALUMINUM POSTS. POSTS SHALL BE INSTALLED USING POSTHOLE DRILL.
2. CHAIN LINK SHALL BE GALVANIZED NO. 11.3 GAGE STEEL WIRE WITH 2-1/4" OPENING. NO. 11 GAGE ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM-A-491, OR GALVANIZED NO. 9 GAGE STEEL WIRE TOP & BOTTOM WITH GALVANIZED NO. 11 GAGE STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP & BOTTOM OF CHAIN LINK FENCE OR ATTACHED WITH HOG RINGS AT 5' MAX. CENTERS.
3. CHAIN LINK TO POST FASTENERS SPACED @ 14" MAX. USE NO. 9 GAGE ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO CHAIN LINK FASTENERS SPACED @ 24" MAX. ON CENTER.
4. FILTER FABRIC MUST BE PLACED AT LEVEL GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45° TO THE MAIN BARRIER ALIGNMENT.
5. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
6. ANY SECTION OF FILTER FABRIC FENCE WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED IMMEDIATELY WITH A ROCK FILTER OUTLET. SEE DETAIL.



**SILT FENCE MAINTENANCE**

1. FILTER FABRIC FENCE MUST BE PLACED AT LEVEL GRADE. BOTH ENDS MUST EXTEND AT LEAST 8 FEET UP-SLOPE AT 45° TO MAIN BARRIER.
2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
3. ANY SECTION OF FILTER FABRIC FENCE WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED IMMEDIATELY WITH A ROCK FILTER OUTLET. SEE DETAIL.
4. FENCE(S) SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

**STANDARD SILT FENCE (18" HIGH) DETAIL**  
 NOT TO SCALE



MOUNTABLE BERM SHOULD BE USED WHEREVER OPTIONAL CULVERT PIPE IS USED. PIPE TO BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.  
 ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.  
 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 SWEERING THE DEPOSITS INTO ROADWAY DITCHES, SEWER, CULVERTS OR OTHER DRAINAGEWAYS IS NOT ACCEPTABLE.

**ROCK CONSTRUCTION ENTRANCE**  
 NOT TO SCALE

**SEEDING AND MULCHING SCHEDULE**

1. SITE PREPARATION, STABILIZATION AND MAINTENANCE SHALL BE PERFORMED IN ACCORDANCE WITH PENN STATE UNIVERSITY'S "THE AGRONOMY GUIDE" AND PENNDOT FORM 40B SPECIFICATIONS' MOST RECENT ADDITION.  
 TEMPORARY SEEDING SPECIFICATION FORMULA E - ANNUAL RYE GRASS  
 PERMANENT SEEDING SPECIFICATION FORMULA B -  
 50% KENTUCKY BLUEGRASS MIXTURE  
 30% PENNLAWN RED FESCUE  
 20% PERENNIAL RYEGRASS MIXTURE  
 STEEP SLOPE SEEDING SPECIFICATION FORMULA W -  
 70% TALL FESCUE  
 20% BIRDSFOOT TREFLOID MIXTURE  
 10% REDTOP  
 SEEDING RATE FOR THE ABOVE MIXTURES:  
 10 LBS/1,000 SY FOR TEMPORARY SEEDING  
 21 LBS/1,000 SY FOR PERMANENT SEEDING  
 11 LBS/1,000 SY FOR STEEP SLOPE SEEDING (SEE NOTE 5)
2. HAY OR STRAW MULCH SHALL BE APPLIED AT THE RATES OF AT LEAST 3.0 TONS PER ACRE AND SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 OR STEEPER.
3. PULVERIZED AGRICULTURAL LIMESTONE AND COMMERCIAL FERTILIZER SHALL BE APPLIED TO ALL DISTURBED AREAS WHICH ARE TO BE SEEDDED EXCEPT FOR TEMPORARY SEED AREAS ARE THE FOLLOWING RATES:  
 PULVERIZED AGRICULTURAL LIMESTONE - 90 LBS/1,000 SF  
 10-20-20 ANALYSIS COMMERCIAL FERTILIZER - 20 LBS/1,000 SF

**NOTE:** APPLICATION OF LIME AND FERTILIZER FOR TEMPORARY SEEDING IS UNNECESSARY AND ONLY SERVES TO CONTRIBUTE TO AN OVERABUNDANCE OF NUTRIENT POLLUTION IN THE WATERSHED.

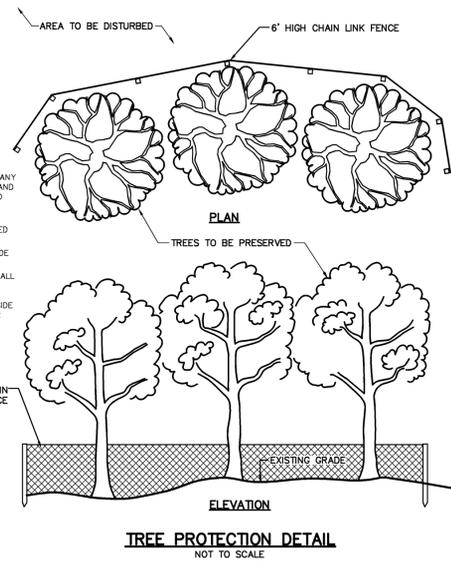
4. PERMANENT SEEDING SHALL TAKE PLACE FROM MARCH 15 TO JUNE 1 OR FROM AUGUST 1 TO OCTOBER 15. IF COMPLETED AT IN OTHER SEASONS, AREAS SHALL RECEIVE TEMPORARY SEEDING AND 3.0 TONS PER ACRE MULCH.
5. STEEP SLOPE AREAS SHALL BE PROTECTED FROM EROSION BY ONE OF THE FOLLOWING METHODS. MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED FOR PARTICULAR METHOD AND SPECIFIC SITE CONDITIONS.  
 FLEXIBLE GROWTH MEDIUM: SHALL BE HYDRAULICALLY APPLIED COMBINATION OF SEED, MULCH, AND EROSION PROTECTION MATERIAL SIMILAR TO "FLEXITERRA" BY ACF OR EQUAL BY OTHER MANUFACTURER.  
 EROSION CONTROL MATTING: SHALL BE TEMPORARY MATTING SIMILAR TO SC350 BY NORTH AMERICAN GREEN OR EQUAL BY OTHER MANUFACTURER.

**TYPICAL UTILITY TRENCHING NOTES**

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION, AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM WORK CREWS FOR CLEARING-GRUBBING AND SITE RESTORATION-STABILIZATION OPERATIONS.
3. PLACE FILTER FENCE OR COMPOST SOCK DOWN-SLOPE OF THE PROPOSED TRENCHING ACTIVITIES. PLACE EXCAVATED MATERIALS ON THE UP-SLOPE SIDE OF THE TRENCH.
4. TOPSOIL SHALL BE REMOVED AND STOCKPILED SEPARATELY FROM BACKFILL SOILS. TOPSOIL SHALL BE REPLACED UPON FINAL GRADING FOR STABILIZATION.
5. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
6. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
7. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND STABILIZED IMMEDIATELY IN ACCORDANCE WITH "SEEDING & MULCHING SCHEDULE".
8. REMOVE FILTER FENCE AND OTHER ESC MEASURES AFTER AREA IS STABILIZED. ANY AREAS DISTURBED DURING THE REMOVAL OF ESC MEASURES SHALL BE RESTABILIZED IMMEDIATELY.

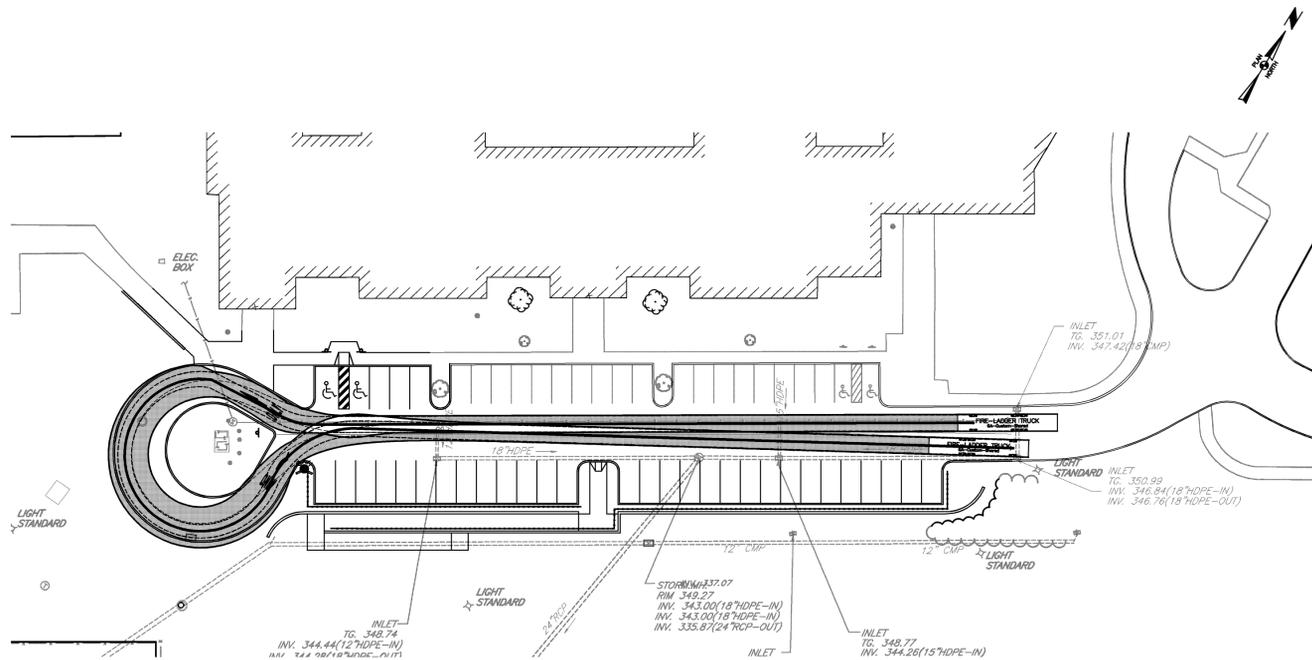
**TREE PROTECTION NOTES**

1. TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PRESERVED DURING AND AFTER CONSTRUCTION TO THE EXTENT NOTED ON THE PLANS. PROTECTION SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION.
2. BOARDS, FENCING, ETC. SHALL NOT BE NAILED TO ANY TREES OR SHRUBS.
3. ROOTS SHALL NOT BE CUT IN AN AREA INSIDE THE ORB-LINE OF THE TREE BRANCHES.
4. TREE LIMB REMOVAL, WHERE NECESSARY, SHALL BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A CERTIFIED ARBORIST. PRUNING CUTS SHOULD BE MADE JUST OUTSIDE THE BRANCH COLLAR. THE BRANCH COLLAR SHOULD NOT BE DAMAGED OR REMOVED. IF THE TRUNK COLLAR HAS GROWN OUT ON A DEAD LIMB TO BE REMOVED, MAKE THE CUT JUST BEYOND THE COLLAR. DO NOT APPLY WOUND DRESSINGS.

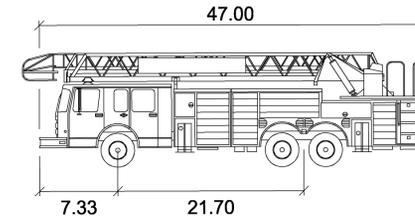


**TREE PROTECTION DETAIL**  
 NOT TO SCALE

<b>OWNER:</b> RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	<b>REV.</b>	<b>DESCRIPTION</b>	<b>DATE</b>	<b>BY</b>
<b>MUNICIPAL FILE NO.:</b> XX	<b>TAX MAP PARCEL NO.:</b> T.P. 36-15-043000	<b>TOTAL AREA:</b> 73.47 AC.	<b>TOTAL LOTS:</b> 1	<b>EROSION &amp; SEDIMENT CONTROL DETAILS</b>
<b>DATE:</b> 11/25/2014	<b>SCALE:</b> AS NOTED	<b>RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA		
<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com				
<b>AS NOTED</b>		<b>JOB NO.:</b> 2013-09007		
<b>SCALE</b> IN FEET		<b>SHEET NO.:</b>		
<b>DESIGNED BY:</b> TMH	<b>DRAWN BY:</b> SMM	<b>CHECKED BY:</b> TMH	<b>19 OF 20</b>	

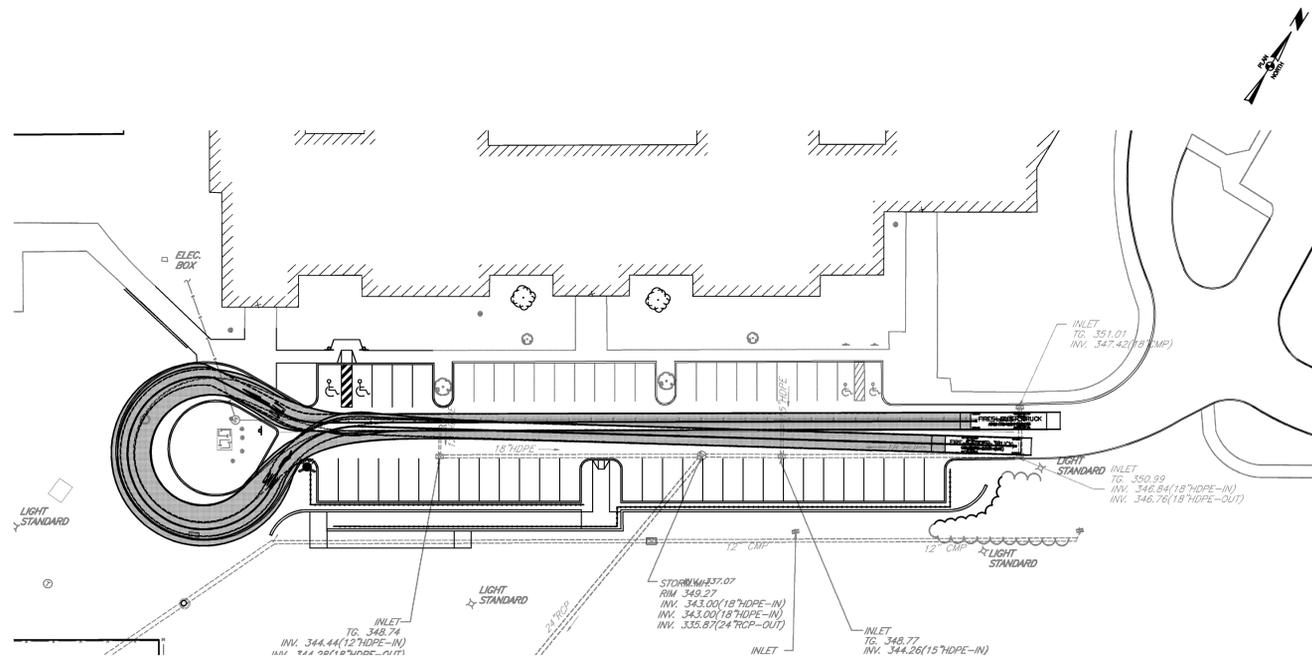


**FIRE TRUCK TURNING TEMPLATE**

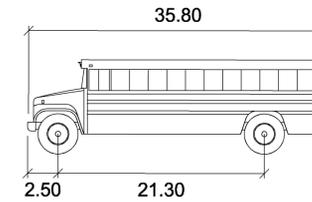


**FIRE-LADDER TRUCK**

	feet
Width	: 8.00
Track	: 7.50
Lock to Lock Time	: 6.0
Steering Angle	: 45.0



**SCHOOL BUS TURNING TEMPLATE**



**S-BUS-36**

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 37.6

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GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

PENNSYLVANIA ONE CALL SYSTEM, INC.  
 925 Irish Run Road  
 West Mifflin, Pennsylvania  
 15122 - 1078

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776  
 NON-MEMBERS MUST BE CONTACTED DIRECTLY  
 PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
 SERIAL #20132730667, 20132730689, 20132730706

OWNER: RADNOR TWP. SCHOOL DISTRICT 135 SOUTH WAYNE AVENUE WAYNE, PA 19387-4194 610-688-8100	REV.	DESCRIPTION	DATE	BY
MUNICIPAL FILE NO.: XX	TAX MAP PARCEL NO.: T.P. 36-15-043000	TOTAL AREA: 73.47 AC.	TOTAL LOTS: 1	<b>TRUCK TURNING PLAN RADNOR HIGH SCHOOL PARKING LOT IMPROVEMENTS</b> RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA
DATE: 11/25/2014	SCALE: 1"=40'	<b>GILMORE &amp; ASSOCIATES, INC.</b> ENGINEERING & CONSULTING SERVICES 85 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA. 19001-6106 • (215) 345-4330 • www.gilmore-assoc.com		
				JOB NO.: 2013-09007
		DESIGNED BY: TMH	DRAWN BY: SMM	CHECKED BY: TMH

G:\LANDDEV\2013\1\201309007\DESIGN\1006-(T-1).dwg, 11/25/2014, 2:10:28 PM, Gilmore & Associates, Inc. - New Britain, Pa.



**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Roy Chain

Address 242 Lowry's Lane

Tree (Type, species, size, diameter at breast height)  
OAK Tree 39" in Diameter

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_

Hazardous Dead OAK tree located Front  
Yard By Left Corner of House Approx 20ft  
from Porch. TREE IS Dropping large Limbs  
& Needs to be removed.

Certified arborist's name, address and # Chaz's Tree Service  
409 Medina Line Rd  
Broomall Pa. 484-684-2923

Pictures attached X Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Shade Tree Commission removal recommended **yes / no**

*The General Powers and Duties of the Shade Tree Commission section of the Ordinance (126.5 B) stipulates: In case of immediate necessity for the protection of life or property. Any shade or street tree described in this ordinance may be removed without first obtaining a permit, after inspection by a member(s) of the Shade Tree Commission or its designee.*

314026

NAME <i>Roy Choin</i>		SHIP TO	
ADDRESS <i>242 Lowry's Lane</i>		ADDRESS <i>484-576-0856</i>	
CITY, STATE, ZIP <i>Rosemead</i>		CITY, STATE, ZIP	

ORDER NUMBER	DEPARTMENT	SALESPERSON	WHEN SHIP	TERMS	HOW SHIP	DATE <i>/ /</i>
--------------	------------	-------------	-----------	-------	----------	--------------------

QUANTITY	DESCRIPTION	PRICE	AMOUNT
①	Removal of Dead OAK Tree located front of House. Remove all Debris leaving cut wood behind for home owner to split into firewood. Flush cut trunk to ground level. Complete clean up of work area.		
	<i>TOTAL</i>	<i>\$900</i>	
	<i>Thank you Charles Hunt</i>		
	<i>* will need to get permit from city before removal.</i>		
	<i>Please call to schedule/confirm</i>		

BUYER:

KEEP THIS SLIP FOR REFERENCE









**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident James Maulc

Address 219 Comrie Rd

Tree (Type, species, size, diameter at breast height) Poplar Trees one  
30" and one 40

Certified arborist's narrative report (attach separate sheet if required)  
40" Has Root Decay and Has Heavy lean  
client wants 30" removed, and trees replaced with six trees  
Mr Hosbuck and I had a meeting at the  
site

Certified arborist's name, address and # Robert Bescome  
Box 567 Newtown SE Pa 19073

Pictures attached \_\_\_\_\_ Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

**Shade Tree Commission removal recommended yes / no**

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610 971 0450



**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Loretta Dwyer 610 999 9011

Address 297 Upper Gulph Rd., Radnor

Tree (Type, species, size, diameter at breast height) ① approx 38"  
② approx 39"

Certified arborist's narrative report (attach separate sheet if required)

① - Oak on pine tree was struck by lightning and needs to be removed.

② - Oak in back yard has been dying and shedding large branches, should be removed.

Certified arborist's name, address and # Glenn E. RIGGS JR. PD0258A  
Po Box 3 BRYN MAWR, Pa. 19010  
610 - 656 - 5223

Pictures attached \_\_\_\_\_ Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

**Shade Tree Commission removal recommended yes / no**

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**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Nick Horvath

Address 105 Fairfax Rd, Bryn Mawr, Pa 19010

Tree (Type, species, size, diameter at breast height) Oak Tree  
48 inches

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_

Certified arborist's name, address and # \_\_\_\_\_

Pictures attached \_\_\_\_\_ Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

**Shade Tree Commission removal recommended yes / no**

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**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident John Surbeck

Address 448 S. Ethan Ave. Villanova, PA 19085

Tree (Type, species, size, diameter at breast height) Oak, Large,  
APPROX 40" DBH

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_  
This tree is adjacent to the driveway and house. It  
has suffered storm damage in the past in the crown.  
It currently has decay and large, dead limbs and  
the customer is afraid of failure onto the house

Certified arborist's name, address and # Thomas McCarthy  
152 Montgomery Ave.  
Bala Cynwyd, PA 19004

*Tmccarthy@Bartlett.com*

Pictures attached ✓emailed Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Shade Tree Commission removal recommended **yes / no**

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**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident James Averill

Address 245 Ashwood Road, Villanova

Tree (Type, species, size, diameter at breast height) 31" Twin-trunked Ash; 20" Ash; 32" double-trunked Ash

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_

See attached sheet

Certified arborist's name, address and # James B. Ward, PD#53

Pictures attached yes Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

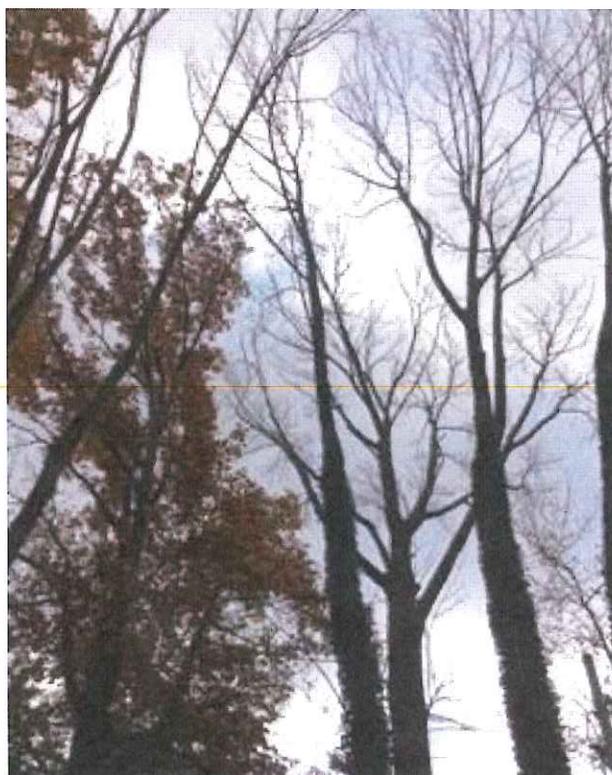
**Shade Tree Commission removal recommended yes / no**

*The General Powers and Duties of the Shade Tree Commission section of the Ordinance (126.5 B) stipulates: In case of immediate necessity for the protection of life or property. Any shade or street tree described in this ordinance may be removed without first obtaining a permit, after inspection by a member(s) of the Shade Tree Commission or its designee.*

James Averill, 245 Ashwood Road, Villanova



31" Twin-Trunked Ash tree



20" Ash tree

32" double-trunked Ash



Member:  
· International Society of  
Arboriculture  
· Tree Care industry  
Association  
· American Society of  
Consulting Arborists

**JOHN B. WARD and CO., INC.**  
**Arborists Providing Fine Tree Care**

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P.O. Box 280 • Bryn Mawr, PA 19010  
(610) 525-1562 • (610) 293-9430



James Averill  
245 Ashwood Rd  
Villanova, PA 19085

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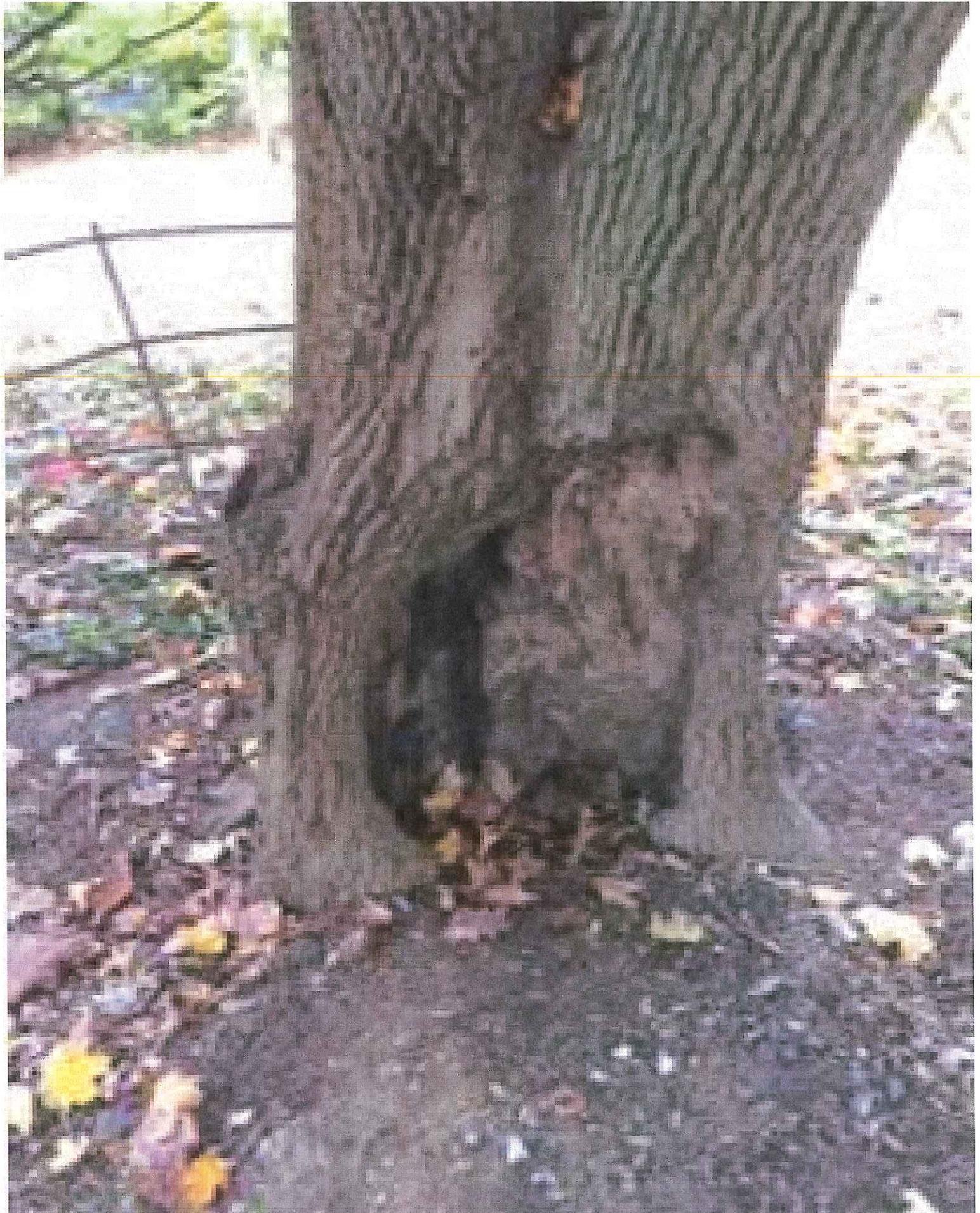
Hazard Tree Report -

31" diameter Twin-trunked Ash – large vertical crack along trunk at ground level. Large decayed area present – recommend removal

20" diameter Ash tree – 80% dead top – recommend removal

32" diameter double-trunked Ash tree – large cavity at base. Severe decay – recommend removal









**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Valley Forge Military Academy

Address Eisenhower Hall - front of Building - orange ribbon attached

Tree (Type, species, size, diameter at breast height) Red Oak 42" height-110.

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_

Tree is 80% dead at top

Certified arborist's name, address and # John Donnelly, 2415 Clover Lane,  
Harver Town, Pa. 19083 PD 10079A

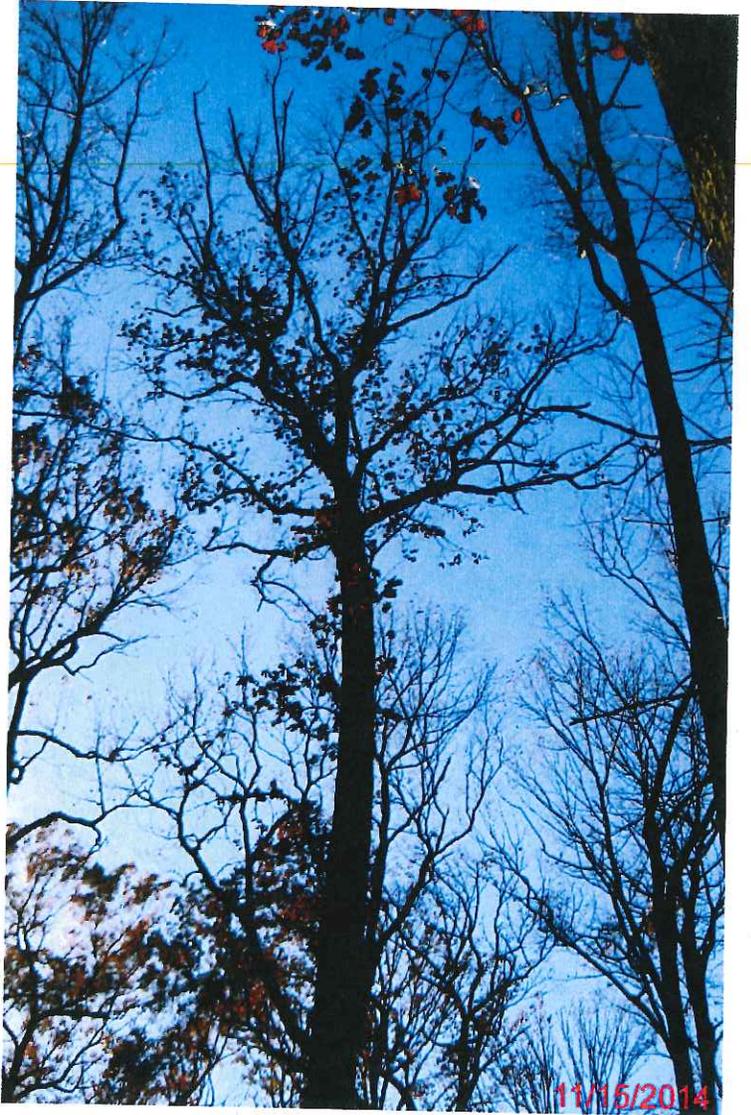
Pictures attached X

Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

Shade Tree Commission removal recommended yes / no

*The General Powers and Duties of the Shade Tree Commission section of the Ordinance (126.5 B) stipulates: In case of immediate necessity for the protection of life or property. Any shade or street tree described in this ordinance may be removed without first obtaining a permit, after inspection by a member(s) of the Shade Tree Commission or its designee.*





**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Vally Forge military Academy.

Address Eisenhower Hill - Front of Building - orange ribbon attached.

Tree (Type, species, size, diameter at breast height) White pine, 95', 42"

Certified arborist's narrative report: (attach separate sheet if required)

Tree has been dead - Two years. Tree has orange ribbon around base of tree

Certified arborist's name, address and # John Donnelly, 2418 Clover Lane, Harcortown Pa. 19053 # PD-0049A - PD0079A

Pictures attached  Plot plan drawing attached

Township arborist's report (attach separate sheet if required)

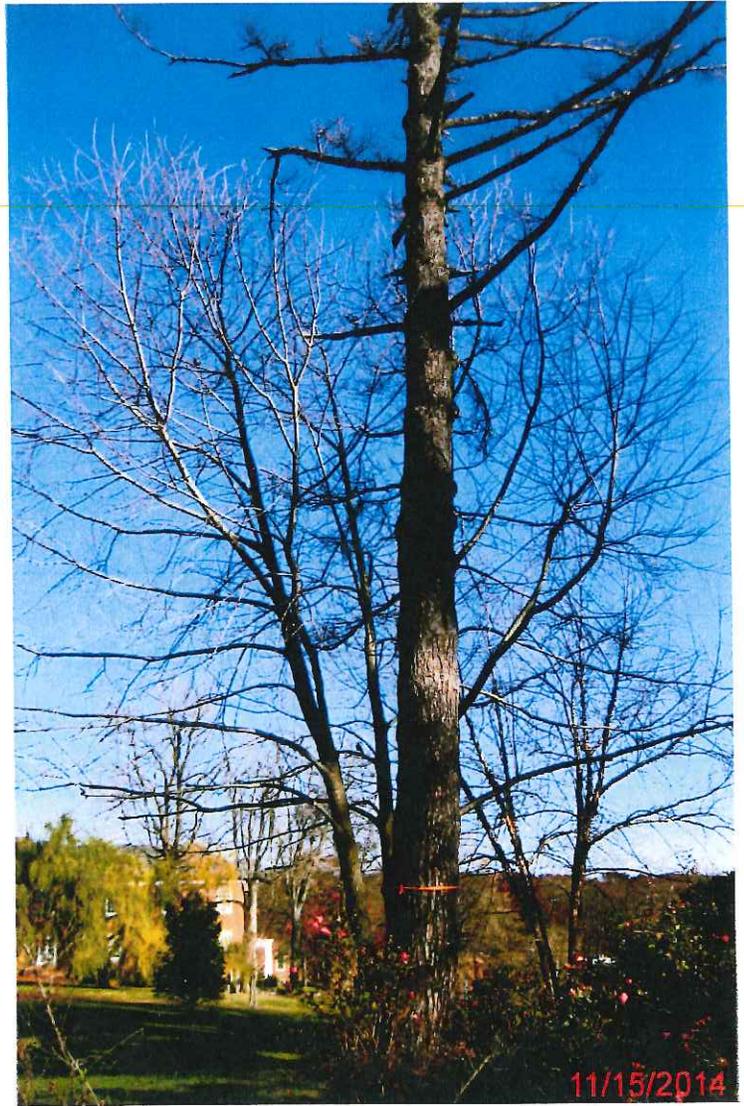
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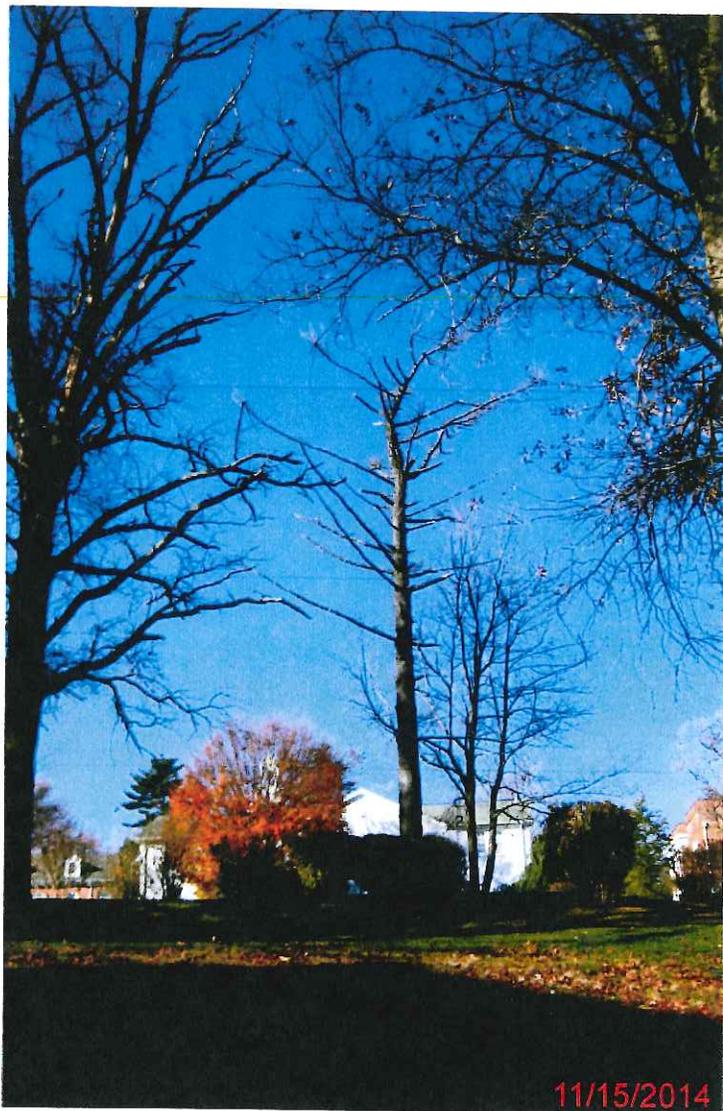
\_\_\_\_\_

\_\_\_\_\_

Shade Tree Commission removal recommended yes / no

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**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Valley Forge Military Academy.

Address \_\_\_\_\_

Tree (Type, species, size, diameter at breast height) white oak, 36" height = 75'

Certified arborist's narrative report (attach separate sheet if required) \_\_\_\_\_

Tree has been dead for two years, tree was orange ribbon around base of tree.

Certified arborist's name, address and # John Donnelly, 2418 Clover Lane, Harrisburg, Pa. 17053 # AD-0079A

Pictures attached  Plot plan drawing attached \_\_\_\_\_

Township arborist's report (attach separate sheet if required) \_\_\_\_\_

**Shade Tree Commission removal recommended yes / no**

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