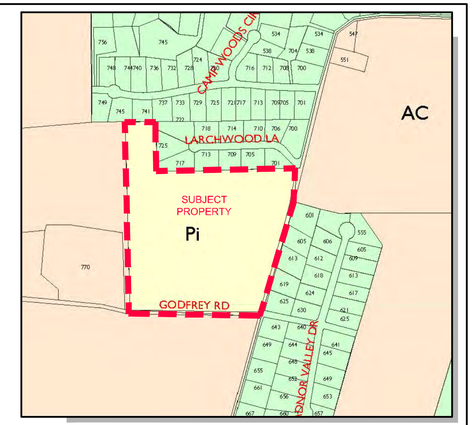

LOCATION MAP
SCALE: 1" = 600'

FINAL LAND DEVELOPMENT PLAN FOR ACADEMY OF NOTRE DAME *de* NAMUR

RADNOR TOWNSHIP | DELAWARE COUNTY | PENNSYLVANIA

OWNER/APPLICANT:
ACADEMY OF NOTRE DAME de NAMUR
560 SPROUL ROAD
VILLANOVA, PA 19085-1220
(610) 687-0650

SHEET INDEX:

SHEET 01 – ILLUSTRATIVE SITE PLAN
SHEET 02 – RECORD PLAN
SHEET 03 – SOIL, VEGETATION, & WATER RESOURCES MAP
SHEET 04 – EXISTING CONDITIONS / REMOVALS PLAN
SHEET 05 – GRADING & UTILITY PLAN
SHEET 06 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
SHEET 07 – POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
SHEET 08 – EROSION AND SEDIMENTATION CONTROL PLAN
SHEET 09 – EROSION AND SEDIMENTATION CONTROL PLAN
SHEET 10 – EROSION AND SEDIMENTATION CONTROL DETAILS
SHEET 11 – EROSION AND SEDIMENTATION CONTROL DETAILS
SHEET 12 – PCSM DETAILS
SHEET 13 – PCSM DETAILS

ACADEMY *of* NOTRE DAME *de* NAMUR
INSPIRING YOUNG WOMEN

Serial Number: 20160541517

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

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M:\PROJECTS\2015\15372\MAP\DRAWINGS\15372

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.

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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.

REV.	DATE	COMMENTS
1	10/04/17	PER TWP ENG

ILLUSTRATIVE SITE PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER
PE020326E

FINAL LAND DEVELOPMENT PLAN

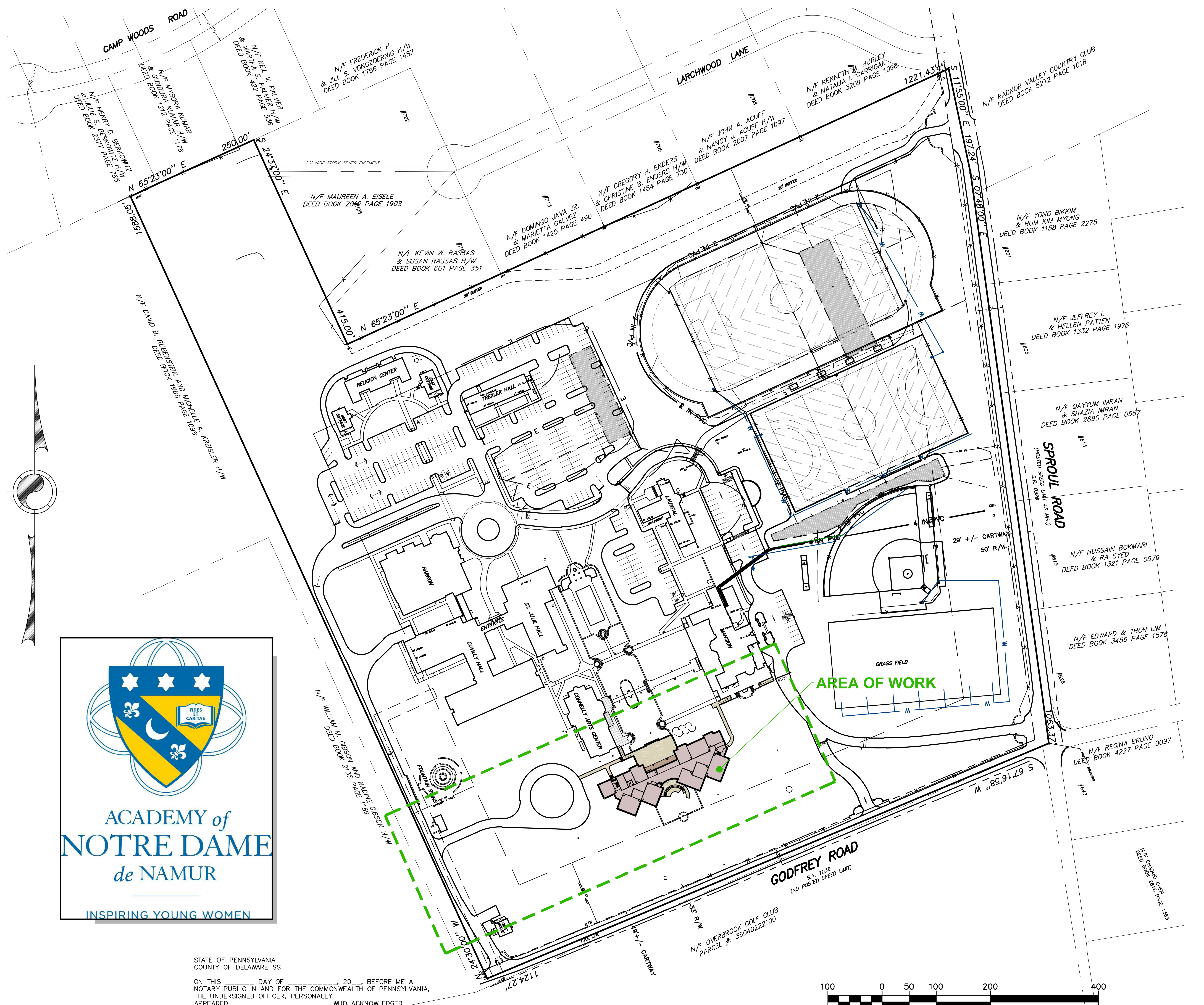
ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE-CALL:	20160541517
DRAWN BY:	BDM
CHECKED BY:	KRM

OWNER/APPLICANT
ADADEMY OF NOTRE DAME
560 SPROUL ROAD
VILLANOVA, PA 19085-1220

SHEET 1 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 80'



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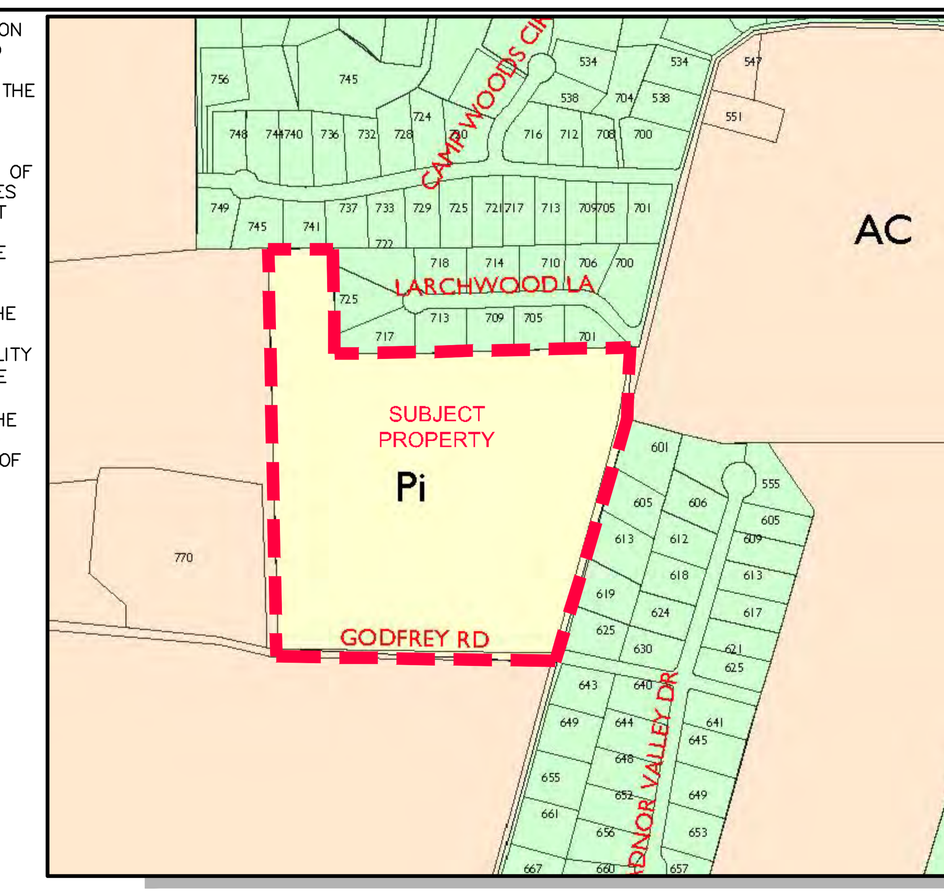

LOCATION MAP
SCALE: 1" = 600'

TOTAL AREA:(TO THE TITLE LINE)
38.143 ACRES/1,661,497 S.F.

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS	83,110 SF (5.0%)
DRIVES/PARKING	208,524 SF
WALLS	3,399 SF
WALKS, PATIOS, ETC.	59,873 SF
TRACK	60,136 SF
TOTAL	415,042 SF (25.0%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	97,932 SF (5.9%)
DRIVES/PARKING	219,533 SF
WALLS	3,126 SF
WALKS, PATIOS, ETC.	66,086 SF
TRACK	60,136 SF
TOTAL	446,813 SF (26.9%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

GENERAL NOTES

1. OWNER/APPLICANT:
   NOTRE DAME de NAMUR INC.
   560 SPROUL ROAD
   VILLANOVA, PA 19085-1220
   PHONE: 610-687-0650
2. TAX MAP PARCEL: 36-37-086-001
3. TAX FOLIO NUMBER: 36040264800
4. GROSS TRACT AREA: 1,661,497 S.F., 38.143 ACRES
5. SOURCE OF TITLE: DEED BOOK 2369, PAGE 796
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14. PUBLIC DOMESTIC WATER SERVICE PROVIDED BY AQUA PENNSYLVANIA.
15. THE SITE IS SERVED BY PUBLIC SEWERS.
16. THE INTENT OF THIS PLAN SET IS TO SHOW THE CONSTRUCTION OF A NEW SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS BUILDING AND RELATED SITE IMPROVEMENTS.
17. THE STORMWATER MANAGEMENT IMPROVEMENTS SHOWN INCLUDE CONTROL OF THE PREVIOUSLY INSTALLED CONNELLY FINE ARTS BUILDING PATIO REPLACEMENT.

WAIVERS REQUESTED:

§ 255-20.B.(5): REQUEST TO NOT PROVIDE A TRANSPORTATION IMPACT STUDY.
§ 255-27: B(3)(d) AND C(1): REQUEST TO NOT PROVIDE ADDITIONAL IMPROVEMENTS OR RIGHT-OF-WAY ALONG GODFREY ROAD (S.R. 1036).

EXISTING REQUIRED PARKING SPACES:

AREA USE DESCRIPTION	AREA USE QUANTITY	REQUIRED PARKING
OFFICE (NET SF)	7,604 SF	39 SPACES (1 SP PER 200 SF)
LARGEST ASSEMBLY AREA	6,148 SF	154 SPACES (1 SP PER 40 SF)
UNSPECIFIED AREA	12,652 SF	43 SPACES (1 SP PER 300 SF)

TOTAL REQUIRED 236 SPACES
TOTAL PROVIDED 310 SPACES
SURPLUS 74 SPACES

PROPOSED REQUIRED PARKING SPACES:

AREA USE DESCRIPTION	AREA USE QUANTITY	REQUIRED PARKING
OFFICE (NET SF)	9,474 SF	48 SPACES (1 SP PER 200 SF)
LARGEST ASSEMBLY AREA	7,448 SF	187 SPACES (1 SP PER 40 SF)
UNSPECIFIED AREA	14,552 SF	49 SPACES (1 SP PER 300 SF)

TOTAL REQUIRED 284 SPACES
TOTAL PROVIDED 310 SPACES
SURPLUS 26 SPACES

LINETYPE LEGEND:

ADJOINER LINE
EXISTING PROPERTY LINE
EXISTING RIGHT OF WAY
EXISTING BUILDING SETBACK
EXISTING FENCE
PROPOSED BUILDING AREA
PROPOSED IMPERVIOUS AREA

SYMBOL LEGEND:

SURVEY MONUMENT
SURVEY MARKER

STATE OF PENNSYLVANIA
COUNTY OF DELAWARE SS

ON THIS _______ DAY OF ____________, 20__, BEFORE ME A NOTARY PUBLIC IN AND FOR THE COMMONWEALTH OF PENNSYLVANIA, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED________________________, WHO ACKNOWLEDGED HIMSELF/HERSELF TO BE THE _________________ OF THE ACADEMY OF NOTRE DAME DENAMUR AND THE OWNER OF THE PROPERTY SHOWN ON THIS PLAN AND THE LAND DEVELOPMENT PLAN THEREOF WAS MADE AT HIS/HER DIRECTION AND THAT HE/SHE ACKNOWLEDGES THE SAME TO BE HIS/HER ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN.

____
(SIGNATURE)

____
NOTARY PUBLIC OR OTHER OFFICER

MY COMMISSION EXPIRES:__________________________________

ZONING DATA – PI (PLANNED INSTITUTIONAL DISTRICT):

ITEM	REQUIREMENT	EXISTING	PROPOSED
LOT AREA	10 ACRES MINIMUM	38.143 ACRES (GROSS) 1,612,673 SF 37.022 ACRES (NET) OF R/W AND & REGULATED STEEP SLOPES	38.143 ACRES (GROSS) 1,612,673 SF 37.022 ACRES (NET) OF R/W AND REGULATED STEEP SLOPES
LOT WIDTH	300' MIN	1,243' ALONG SPROUL ROAD, 1,139' ALONG GODFREY ROAD	1,243' ALONG SPROUL ROAD, 1,139' ALONG GODFREY ROAD
BUILDING AREA	MAX 30%	83,110 SF (5.0%)	97,932 SF (5.9%)
REQUIRED GREEN AREA	NOT LESS THAN 55% OF NET AREA	1,179,205 SF (73.1%)	1,147,434 SF (71.2%)
BUILDING HEIGHT	38 FEET MAX	38' MAX	<38' (STEM BUILDING)
FRONT YARD	120' MIN FOR BUILDINGS	170'	170'
	60' MIN FOR PARKING, VEHICULAR ACCESS**	177'	177'
SIDE YARD	MIN 125' FOR CATEGORY 1 USES	50'	50'
	MIN 200' FOR CATEGORY 2 USES	70'	70'
REAR YARD	MIN 125' FOR CATEGORY 1 USES	116'	116'
	MIN 200' FOR CATEGORY 2 USES	108'	108'

** WITH THE EXCEPTION OF APPROVED ACCESS ROADS

Serial Number: 20160541517

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1-800-242-1776

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M:\PROJECTS\2015\15372\MAI\DRAWINGS\15372

REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

RECORD PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL KEVIN R. MOMENEE ENGINEER PE020326E

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE-CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 2 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" =100'

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SOURCE OF TITLE
ACADEMY OF NOTRE DAME
560 SPROUL RD
VILLANOVA PA 19085-1220
PARCEL #: 36040264800
PIN #: 36-37-086:001
DEED BOOK-PAGE: 4027-0810

GENERAL NOTES
1. OWNER/APPLICANT:
   NOTRE DAME DE NAMUR INC.
   560 SPROUL ROAD
   VILLANOVA, PA 19085-1220
   PHONE: 610-687-0650
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3. TAX FOLIO NUMBER: 36040264800
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LINETYPE LEGEND:
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- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- 378 EXISTING 1' MINOR CONTOUR
- 380 EXISTING 5' MAJOR CONTOUR
- TO BE REMOVED
- EXISTING SLOPES 14-20%
- EXISTING SLOPES 20%+

SYMBOL LEGEND:
- SURVEY MONUMENT
- SURVEY MARKER
- LIGHT
- UTILITY POLE
- EXISTING TREE
- TREE TO BE REMOVED

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	EROD.	GROUP	HYDRO SOIL LIMITATIONS
GeB Glenelg Channery Slt Loam	3-8	6.6+	4.17	Moderate	B	Moderate

Serial Number: 20160541517

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SOIL, VEGETATION & WATER RESOURCES MAP

FILE NO.: 15-372

MOMENEE, INC.
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ENGINEERING | PLANNING | SURVEYING

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

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ADADEMY OF NOTRE DAME
560 SPROUL ROAD
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REGISTERED PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER
PE020326E

SHEET 3 OF 13
DATE: AUGUST 31, 2016
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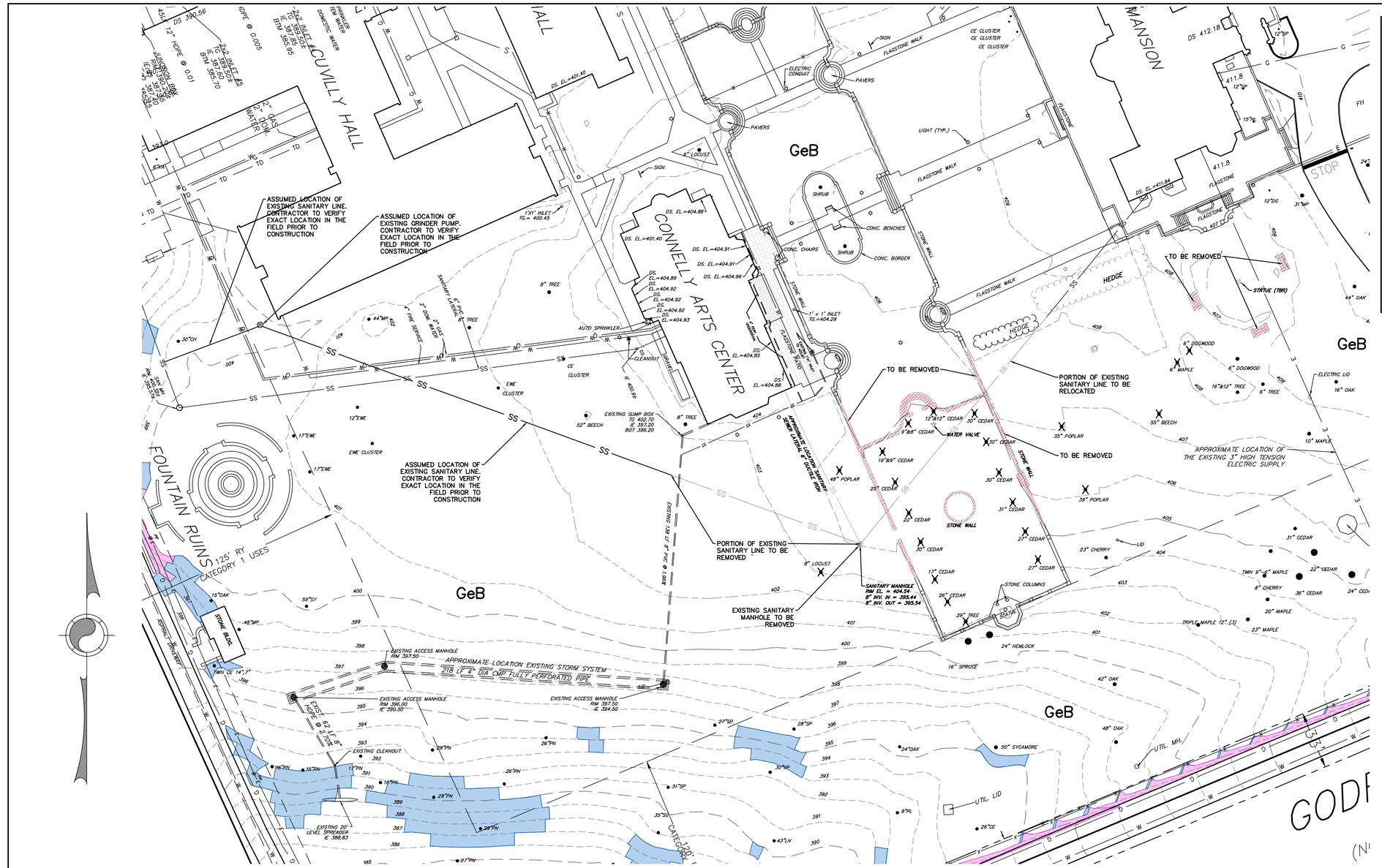

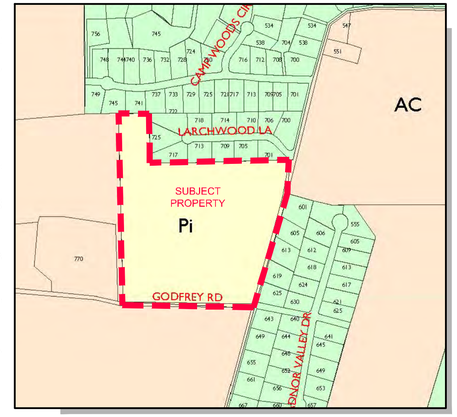

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SCALE: 1" = 600'

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- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- TO BE REMOVED
- EXISTING SLOPES 14–20%
- EXISTING SLOPES 20%+

SYMBOL LEGEND:
- SURVEY MONUMENT
- SURVEY MARKER
- LIGHT
- UTILITY POLE
- EXISTING TREE
- TREE TO BE REMOVED

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	EROD.	GROUP	HYDRO SOIL LIMITATIONS
GeB Glenelg Channery Silt Loam	3–8	6.6+	4.17	Moderate	B	Moderate

30 0 15 30 60 120
1 INCH = 30 FT.

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.

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N:\PROJECTS\2015\15372\MAP\DRAWINGS\15372

REV.	DATE	COMMENTS
1	10/06/17	PER TWP ENG

EXISTING CONDITIONS / REMOVALS PLAN

FILE NO.: 15–372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER PE020326E

FINAL LAND DEVELOPMENT PLAN

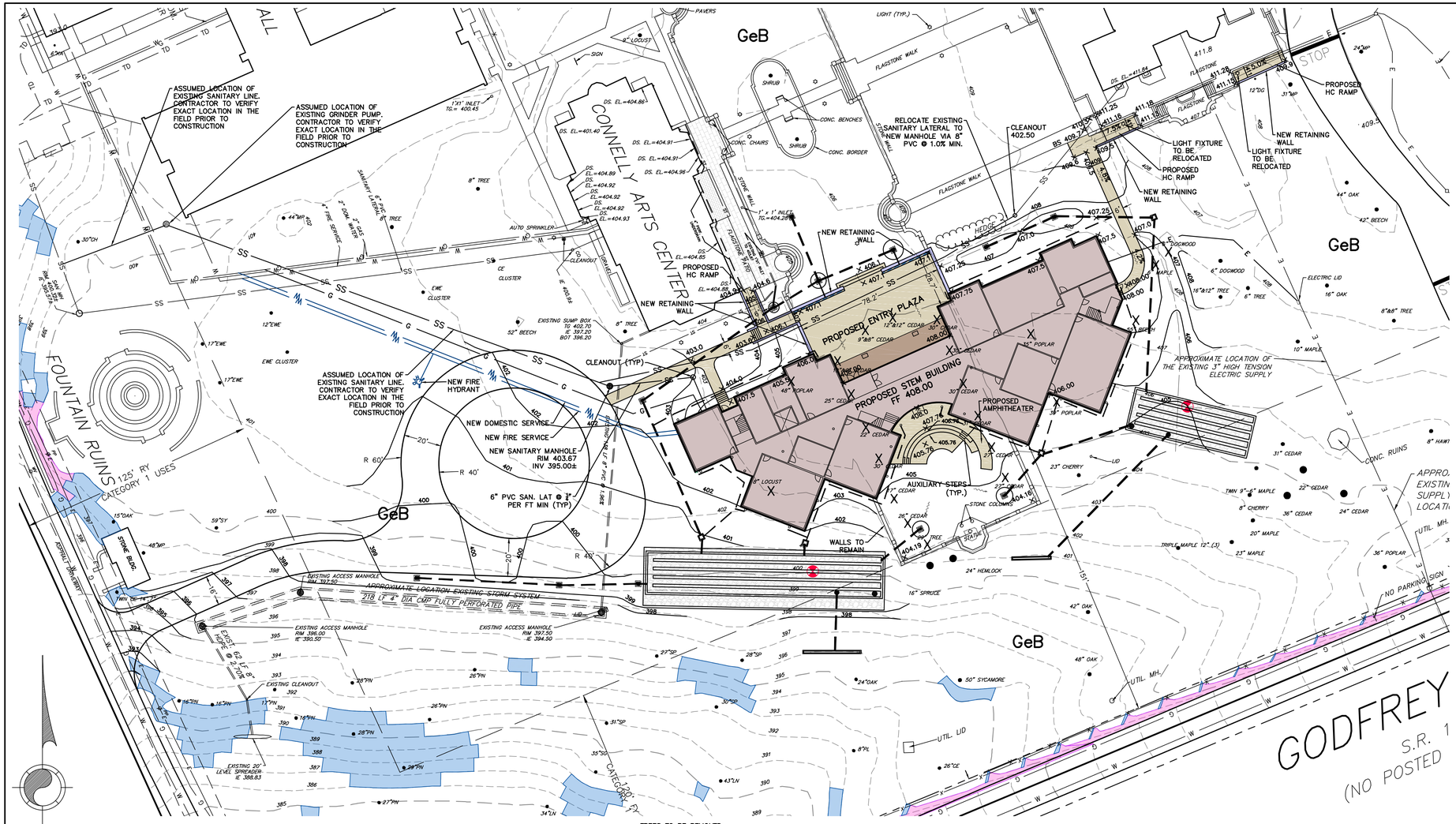
ACADEMY OF NOTRE DAME - STEM BUILDING

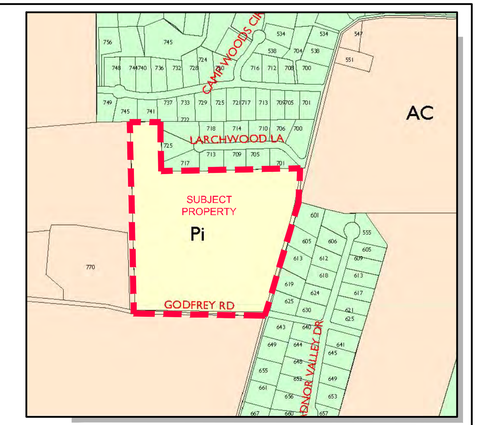
RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE–CALL:	20160541517
DRAWN BY:	BDM
CHECKED BY:	KRM

OWNER/APPLICANT
ADADEMY OF NOTRE DAME
560 SPROUL ROAD
VILLANOVA, PA 19085–1220

SHEET 4 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 30'





LOCATION MAP
SCALE: 1" = 600'

SOURCE OF TITLE
ACADEMY OF NOTRE DAME
560 SPROUL RD
VILLANOVA PA 19085-1220
PARCEL #: 36040264800
PIN #: 36-37-086:001
DEED BOOK-PAGE: 4027-0810

GENERAL NOTES:
1. VERTICAL DATUM: U.S.G.S. BENCHMARK KV1909 "RADNOR 1961", ELEVATION 394.82.
2. WETLANDS MAPPING FROM NATIONAL WETLANDS INVENTORY MAP. NO WETLANDS ARE LOCATED WITHIN THE AREA OF THE PROPOSED WORK.
3. THIS SITE IS NOT LOCATED WITHIN THE FEMA 100-YR FLOODPLAIN ZONE.
4. PUBLIC DOMESTIC WATER SERVICE PROVIDED BY AQUA PENNSYLVANIA.
5. THE SITE IS SERVED BY PUBLIC SEWERS.
6. THE REFERENCED SURVEY(S), AND THIS PLAN, WERE COMPLETED WITHOUT THE AVAILABILITY OF A CURRENT TITLE REPORT AND SUBJECT TO ANY FACTS THAT MAY BE DISCLOSED IN A FULL AND ACCURATE TITLE REPORT.
7. THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.
9. THE PA ONE-CALL NUMBER FOR THIS SITE IS 20160541517.
10. SOIL DATA RETRIEVED VIA THE WEB SOIL SURVEY PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE AVAILABLE ONLINE AT http://websoilsurvey.nrcs.usda.gov/.

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS	83,110 SF (5.0%)
DRIVES/PARKING	208,524 SF
WALLS	3,390 SF
WALKS, PATIOS, ETC.	59,873 SF
TRACK	60,136 SF
TOTAL	415,042 SF (25.0%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

IMPERVIOUS COVERAGE TO BE REMOVED:

WALLS	581 SF
WALKS, PATIOS, ETC.	223 SF
TOTAL	804 SF

IMPERVIOUS COVERAGE TO BE ADDED:

BUILDINGS	14,822 SF
DRIVES/PARKING	11,009 SF
WALLS	308 SF
WALKS, PATIOS, ETC.	6,436 SF
TRACK	60,136 SF
TOTAL	32,575 SF

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	97,932 SF (5.9%)
DRIVES/PARKING	219,533 SF
WALLS	3,126 SF
WALKS, PATIOS, ETC.	66,086 SF
TRACK	60,136 SF
TOTAL	446,813 SF (26.9%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

30 0 15 30 60 120

1 INCH = 30 FT.

LINETYPE LEGEND:
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- PROPOSED BUILDING AREA
- PROPOSED IMPERVIOUS AREA

SYMBOL LEGEND:
- SURVEY MONUMENT
- SURVEY MARKER
- PERC TEST
- LIGHT
- UTILITY POLE
- EXISTING TREE
- TREE TO BE REMOVED
- 405.5 PROPOSED SPOT ELEVATION

TREES TO BE REMOVED:

1–6" MAPLE	19"&9" CEDAR	4–30" CEDAR
1–6" DOGWOOD	1–22" CEDAR	1–31" CEDAR
1–8" LOCUST	1–25" CEDAR	1–35" POPLAR
8"&9" CEDAR	1–26" CEDAR	1–39" POPLAR
12"&12" CEDAR	2–27" CEDAR	1–48" POPLAR
1–17" CEDAR	1–29" TREE	1–55" BEECH

TREE REPLACEMENT FORMULA:

6 – 18 INCH DBH REMOVED	=	1 REPLACEMENT TREE
19 – 29 INCH DBH REMOVED	=	3 REPLACEMENT TREES, 2 BEING LARGE CANOPY TREES
30 INCH DBH & GREATER REMOVED	=	6 REPLACEMENT TREES, 4 BEING LARGE CANOPY TREES

TOTAL TREES BEING REMOVED:

6 – 18 INCH DBH	=	9
19 – 29 INCH DBH	=	7
30 INCH DBH & GREATER	=	9
TOTAL	=	25

REPLACEMENT TREES REQUIRED = 84, 50 BEING LARGE CANOPY TREES

NOTE: SHOULD ANY ADDITIONAL TREES BE REMOVED, ADDITIONAL REPLACEMENT TREES SHALL BE PROVIDED IN ACCORDANCE WITH THE RADNOR TOWNSHIP ORDINANCE No. 2012-05.

TREE REPLACEMENT NOTES:
1) REPLACEMENT TREES WILL BE SELECTED FROM THE LIST OF TOWNSHIP APPROVED TREES PRIOR TO THE ISSUANCE OF A GRADING PERMIT.
2) TREES TO BE PLANTED OUTSIDE OF REQUIRED SITE LINE.

CARE OF EXISTING TREES:

1. TREE PROTECTION FENCING SHALL BE INSTALLED TO PROTECT ALL EXISTING TREES FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION FENCING FOR THE DURATION OF PROJECT.
2. SELECTIVELY PRUNE EXISTING TREES AT THE EDGE OF ALL TREE PROTECTION ZONES, AND OTHER EXISTING TREES AFFECTED BY CONSTRUCTION, UNDER LANDSCAPE ARCHITECT'S DIRECTION. REMOVE SUCKER SHOOTS, DEAD, RUBBING AND DAMAGED BRANCHES.
3. ANY EXCAVATION NEAR ADJACENT ROOT SYSTEMS WILL REQUIRE ROOT PRUNING OF AFFECTED TREE(S).
4. FERTILIZE PRUNED EXISTING TREES WITH 3 TO 4 LBS. OF LIQUID FERTILIZER PER 1,000 SQUARE FEET OF DRIP AREA, OR, 5 GALLONS OF LIQUID FERTILIZER PER CALIPER INCH OF TRUNK DIAMETER.
5. FERTILIZE IN EARLY SPRING BEFORE GROWTH BEGINS.
6. FERTILIZE BEGINNING 2' FROM TRUNK AT INTERVALS 2' TO 3' ON CENTER IN A GRID-LIKE PATTERN TO A DEPTH OF 6-18" WITHIN THE DRIPLINE AND BEYOND WHERE POSSIBLE. INJECTION FERTILIZATION METHOD SHALL BE ACCEPTABLE SUBJECT TO LANDSCAPE ARCHITECT'S APPROVAL.

NOTES:

1.) THE STORMWATER MANAGEMENT FACILITIES ARE DESIGNED FOR THE NEW AND/OR REPLACEMENT IMPERVIOUS COVER ON SITE PLUS AN ADDITIONAL 1,000 SF FOR POSSIBLE FUTURE DEVELOPMENT. IF THIS IS CONSTRUCTED IN THE FUTURE, 500 SF MAY BE DIRECTED TO PCSM #1 AND 500 SF MAY BE DIRECTED TO PCSM #2. IN ADDITION, THE STORMWATER FACILITIES WERE DESIGNED TO ACCOUNT FOR 1,668 SF OF IMPERVIOUS COVER FROM THE CONNELLY CENTER PATIO.

2.) THE MAINTENANCE OF THE ON-SITE STORMWATER MANAGEMENT FACILITIES IS THE RESPONSIBILITY OF THE OWNER.

3.) THE TOWNSHIP ENGINEER'S OFFICE SHALL BE NOTIFIED 48 HOURS PRIOR TO THE CONSTRUCTION OF THE SEEPAGE BED AND PRIOR TO THE START OF EARTHMOVING ACTIVITIES.

4.) ON-SITE TREES ARE TO BE SAVED AND PRESERVED WHEREVER POSSIBLE.

5.) ALL WOODY VEGETATION TO BE RETAINED WITHIN TWENTY-FIVE FEET OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT THE DRIPLINES.

6.) GRADE CHANGES AROUND THE DRIPLINES OF TREES TO BE RETAINED SHALL BE MINIMIZED. TREATMENT OF THE TREES PRIOR TO CONSTRUCTION TO PROTECT THE ROOT SYSTEM SHALL BE PERFORMED.

7.) ALL DISTURBED ROOTS MUST BE CUT AS CLEANLY AS POSSIBLE. THE TRENCH MUST BE BACKFILLED AS QUICKLY AS POSSIBLE, AVOIDING COMPACTION. TREE LIMBS MUST BE CUT BACK IN PROPORTION TO THE ROOT AREA LOSS.

8.) ON-SITE TREES TO BE SAVED SHALL BE PREPARED FOR CONSTRUCTION BY APPROPRIATE FERTILIZATION AND PROTECTED BY APPROPRIATE FENCING. ALL TREES ARE TO BE DEEP ROOT FERTILIZED USING 16-32-16 SLOW RELEASE, WATER DISPERSABLE @ 15 LBS. PER 100 GALLON OR EQUAL.

9.) A GENERAL EASEMENT IS HEREBY CREATED OVER THE STORMWATER MANAGEMENT SYSTEM THAT PERMITS INGRESS AND EGRESS BY RADNOR TOWNSHIP.

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	EROD.	GROUP	HYDRO SOIL LIMITATIONS
GeB Glenelg Chanery Silt Loam	3–8	6.6+	4.17	Moderate	B	Moderate

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.

Serial Number: 20160541517
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

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M:\PROJECTS\2015\15372\MA\DRAWINGS\15372

REV.	DATE	COMMENTS
1.	01/04/17	PER TWP ENG

GRADING & UTILITY PLAN — FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

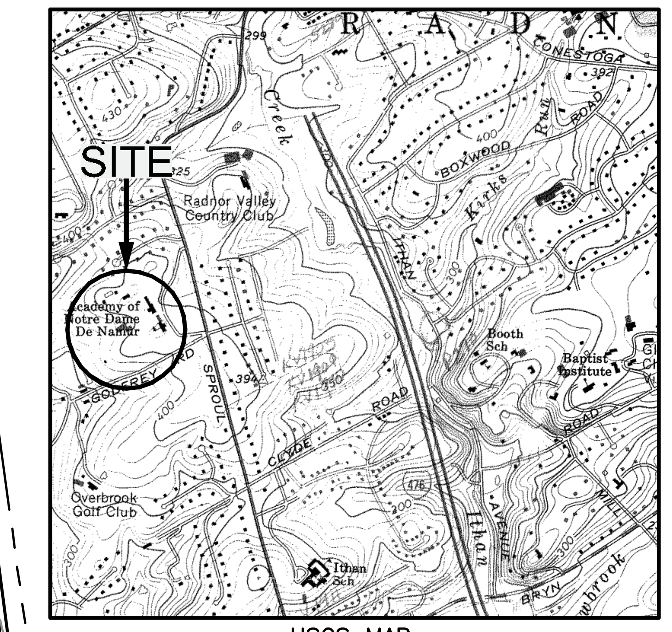
REGISTERED PROFESSIONAL ENGINEER KEVIN R. MOMENEE PE020326E

ONE-CALL:	20160541517	OWNER/APPLICANT ACADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 5 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 30'

80 0 40 80 160 320

1 INCH = 80 FT.



USGS MAP

SOILS MAP

LOCATION MAP
SCALE: 1" = 2,000'

PCSM REPORTING AND RECORD KEEPING:
THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

FINAL CERTIFICATION:
THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS:
"I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A 4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

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

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

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPs AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER 102.7(b)(5) RELATING TO PERMIT TERMINATION.

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

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

SYMBOL LEGEND:

- SURVEY MONUMENT
- SURVEY MARKER
- PERC TEST
- LIGHT
- 405.5 PROPOSED SPOT ELEVATION
- UTILITY POLE
- EXISTING TREE
- TREE TO BE REMOVED

LINETYPE LEGEND:

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- 378 EXISTING 1' MINOR CONTOUR
- 380 EXISTING 5' MAJOR CONTOUR
- 380 PROPOSED CONTOUR
- PROPOSED STORM PIPE
- LIMITS OF DISTURBANCE
- SEDIMENT TRAP DRAINAGE AREA
- NPDES PERMIT BOUNDARY
- EDGE OF WOODLANDS
- PROPOSED BUILDING AREA
- PROPOSED IMPERVIOUS AREA
- UNDISTURBED AREAS
- SLOPES 14%-20%
- SLOPES > 20%

GENERAL PCSM NOTES:

1. THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPS. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPS TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPS, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

2. THE NPDES BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE OF THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL. OFF-SITE UTILITIES SUCH AS: UTILITIES AND ROADWAYS.

3. CHAPTER 93 STREAM CLASSIFICATION: CWF, MF
RECEIVING WATER: MILES RUN TO DARBY CREEK

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

5. THE RESPONSIBLE PARTY SHALL UTILIZE PROPER HANDLING AND/OR DISPOSAL OF ALL MATERIALS WHICH COULD CAUSE POLLUTION.

6. WHERE POTENTIAL THERMAL IMPACTS TO SURFACE WATERS EXISTS, APPROPRIATE MEASURES SHALL BE TAKEN TO AVOID/MINIMIZE/OR MITIGATE THESE IMPACTS INCLUDING BUT NOT LIMITED TO MINIMIZING IMPERVIOUS, MINIMIZING THE EXTENT AND DURATION OF SITE DISTURBANCE, PROTECTING EXISTING SHADE TREES, INSTALLING NEW PLANTINGS AS SOON AS FEASIBLE, MAXIMIZING VEGETATED SWALES, MINIMIZING DENUDED AND CONCRETE CHANNELS AND MAXIMIZING DETENTION FACILITY AREAS WHILE MINIMIZING POOL DEPTHS.

WORKSHEET 10 – WATER QUALITY COMPLIANCE FOR NITRATE:

- NS BMP 5.6.1 – MINIMIZE TOTAL DISTURBED AREA – TOTAL SITE DISTURBANCE IS LIMITED TO 2.09 ACRES OUT OF THE TOTAL 38.14 ACRE PROPERTY.
- STRUCTURAL BMP 6.4.3 – SUBSURFACE INFILTRATION BED – TWO SUBSURFACE INFILTRATION BEDS WILL BE INSTALLED IN ORDER TO PROVIDE TEMPORARY STORAGE AND INFILTRATION OF STORMWATER RUNOFF.
- NS BMP 5.4.1– PROTECT SENSITIVE/SPECIAL VALUE FEATURES – FEATURES INCLUDING WOODLANDS AND NATURALLY OCCURRING STEEP SLOPES ARE TO BE PROTECTED.
- NS BMP 5.4.3 – PROTECT/UTILIZE NATURAL DRAINAGE FEATURES – THE EXISTING NATURAL DRAINAGE FEATURES WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. THE NATURAL DRAINAGE PATHS WILL BE MAINTAINED THROUGHOUT CONSTRUCTION.

RECYCLING OR DISPOSAL OF MATERIALS:

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

PCSM WASTE IS LIMITED TO THE SEDIMENT THAT COLLECTS IN INLET SUMPS AND/OR SWM SYSTEMS. THESE STRUCTURES SHALL BE CLEANED OUT IN ACCORDANCE WITH THE PROVIDED OPERATION AND MAINTENANCE REQUIREMENTS OF THOSE STRUCTURES AND DISPOSED OF PROPERLY.

IN THE EVENT A POLLUTION INCIDENT OCCURS WHICH CAUSES OR THREATENS TO CAUSE SURFACE OR GROUNDWATER POLLUTION, THE OWNER SHALL:
(1) PROMPTLY NOTIFY THE DEPARTMENT BY TELEPHONE OF THE LOCATION AND NATURE OF THE DANGER,
(2) NOTIFY ALL KNOWN DOWNSTREAM USERS OF THE WATER,
(3) IMMEDIATELY TAKE ALL NECESSARY STEPS TO PREVENT INJURY TO PROPERTY AND DOWNSTREAM USERS, AND PROTECT WATERS FROM POLLUTION OR DANGER OF POLLUTION,
(4) REMOVE ANY CONTAMINATION FROM AFFECTED GROUND OR SURFACE WATER TO THE EXTENT REQUIRED BY THE DEPARTMENT.

PROTECTED NATURAL / SENSITIVE RESOURCES:

	EXISTING	PROTECTED
WATERBODIES	0 ACRES	0 ACRES
FLOODPLAINS	0 ACRES	0 ACRES
WETLANDS	0 ACRES	0 ACRES
WOODLANDS	2.06 ACRES	2.06 ACRES
STEEP SLOPES 15%–25%	0.69 ACRES	0.69 ACRES
STEEP SLOPES OVER 25%	0.30 ACRES	0.30 ACRES
TOTAL	3.05 ACRES	3.05 ACRES

TOTAL PROTECTED AREA = 3.05 ACRES
AREA OF MINIMUM DISTURBANCE = 33.00 ACRES
TOTAL PROTECTED AREA = 36.05 ACRES

OWNER / APPLICANT:
ACADEMY OF NOTRE DAME
560 SPROUL ROAD
VILLANOVA, PA 19085

GENERAL PCSM PLANNING AND DESIGN:

STRUCTURAL AND/OR NONSTRUCTURAL BMPs SHALL BE UTILIZED TO PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF; THESE SHALL INCLUDE BUT ARE NOT LIMITED TO SUBSURFACE PCSM INFILTRATION SYSTEMS 1-2, MINIMIZING TOTAL DISTURBED AREAS, MINIMIZING THE IMPERVIOUS COVER ON SITE, AND PRESERVING THE EXISTING NATURAL RESOURCES.

THE COMBINATION OF THESE FACILITIES AND PRACTICES ARE USED TO MEET THE REGULATORY STANDARD FOR STORMWATER MANAGEMENT, CONTROL GUIDANCE-1 AND LOCAL MUNICIPAL ORDINANCES. REFER TO THE POST CONSTRUCTION STORMWWATER MANAGEMENT REPORT FOR MORE DETAILS AND CALCULATIONS.

DISCHARGE FROM THE STRUCTURAL BMPs ARE CONVEYED TO THE EXISTING UNNAMED TRIBUTARY WHICH MAINTAINS EXISTING DRAINAGE PATTERNS WITH REDUCTIONS IN OVERALL SITE RUNOFF.

BY IMPLEMENTING THESE MEASURES THE FOLLOWING CRITERIA HAVE BEEN ATTAINED:

- THE PCSM PLAN PRESERVES THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM.
- THE PCSM PLAN PREVENTS AN INCREASE IN THE RATE OF STORMWATER RUNOFF – THE PROPOSED STORMWATER FACILITIES REDUCE THE RATE OF STORMWATER RUNOFF FROM THE 2-YR THROUGH THE 100-YR STORM EVENTS.
- THE PCSM PLAN MINIMIZES ANY INCREASE IN STORMWATER RUNOFF VOLUME – THE STORMWATER FACILITIES ARE DESIGNED TO REDUCE THE POST CONSTRUCTION RUNOFF FOR THE 2-YR STORM EVENT UTILIZING BMPS FOR A 24-HOUR STORM; WITH ALL OF THE EXISTING NON-FORESTED PERVIOUS AREA CONSIDERED AS MEADOW AND 20% OF THE EXISTING IMPERVIOUS SURFACES CONSIDERED AS MEADOW.
- THE PCSM PLAN MINIMIZES IMPERVIOUS AREA – THE OVERALL IMPERVIOUS COVER IS MINIMIZED ON SITE BY LIMITING THE TOTAL INCREASE IN IMPERVIOUS COVER ON SITE TO 1.9% OF THE LOT AREA.
- THE PCSM PLAN MAXIMIZES THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION – THE SITE CURRENTLY DRAINS UNCONTROLLED TO THE SOUTHWESTERN PORTION OF THE SITE TO THE CHANNEL ALONG THE NORTHERN SIDE OF GODFREY ROAD. THE RUNOFF FROM THE PROPOSED IMPROVEMENTS IS COLLECTED, MANAGED AND THE SYSTEMS DISCHARGE TO THE SAME LOCATION IN ORDER TO MAINTAIN THE EXISTING DRAINAGE PATTERNS. THE PROPOSED STORMWATER FACILITIES ARE LOCATED WITHIN THE AREAS OF DISTURBANCE NECESSARY FOR CONSTRUCTION IN ORDER TO FURTHER PROTECT THE EXISTING VEGETATION ON SITE.
- THE PCSM PLAN MINIMIZES LAND CLEARING AND GRADING – THE PLAN MINIMIZES THE AMOUNT OF GRADING TO THE EXTENT FEASIBLE. THE PROPOSED STORMWATER FACILITIES, UTILITIES AND E&S CONTROLS WERE ALSO LOCATED WITHIN THE AREA OF PROPOSED IMPROVEMENTS TO THE EXTENT POSSIBLE. TOTAL SITE DISTURBANCE IS LIMITED TO 2.09 ACRES OUT OF THE 38.14 ACRES TOTAL LOT AREA.
- THE PCSM PLAN MINIMIZES SOIL COMPACTION – THE CONTRACTOR SHALL MINIMIZE COMPACTION DURING CONSTRUCTION. THE TYPE OF EQUIPMENT USED DURING CONSTRUCTION SHALL NOT CAUSE UNDUE COMPACTION AND TRAFFIC OVER DISTURBED AREAS SHALL BE KEPT AT A MINIMUM.
- THE PCSM UTILIZES OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF – THESE INCLUDE THE SUBSURFACE INFILTRATION SYSTEMS AND THE MAINTENANCE OF EXISTING DRAINAGE PATTERNS. THE OVERALL RATE AND VOLUME OF RUNOFF IS REDUCED ON SITE; WITH ALL OF THE EXISTING NON-FORESTED PERVIOUS AREA CONSIDERED AS MEADOW AND 20% OF THE EXISTING IMPERVIOUS SURFACES CONSIDERED AS MEADOW. OTHER BMPS INCLUDE THE INSTALLATION OF NEW LANDSCAPING AND LEVEL SPREADERS.

NOTES:
1) THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPS. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPS TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPS, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

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

THE NOTICE OF TERMINATION MUST INCLUDE:
(1) THE FACILITY NAME, ADDRESS AND LOCATION
(2) THE OPERATOR NAME AND ADDRESS
(3) THE PERMIT NUMBER
(4) THE REASON FOR PERMIT TERMINATION
(5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND
WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPs IN ACCORDANCE WITH 102.8(m)(2).

PRIOR TO ACCEPTING THE NOT, THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION

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.

Serial Number: 20160541517

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

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RESOLUTION TO SOIL LIMITATIONS:
BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

SPECIFIC GEOLOGIC AND SOIL CONDITIONS:
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	ERODIBILITY	GROUP	HYDRO SOIL LIMITATIONS	LOAD BEARING CAPACITY	GRAVEL SOURCE	TOPSOIL SOURCE	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LAWNS
GeB Glenelg Channery Silt Loam	3–8	6.6+	4.17	Moderate	B	Moderate	Not Limited	Poor	Poor	Somewhat Limited	Very Limited	Somewhat Limited	Not Limited	Somewhat Limited

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL ENGINEER
KEVIN R. MOMENEE
PE020326E

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

ONE-CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 6 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 80'

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.

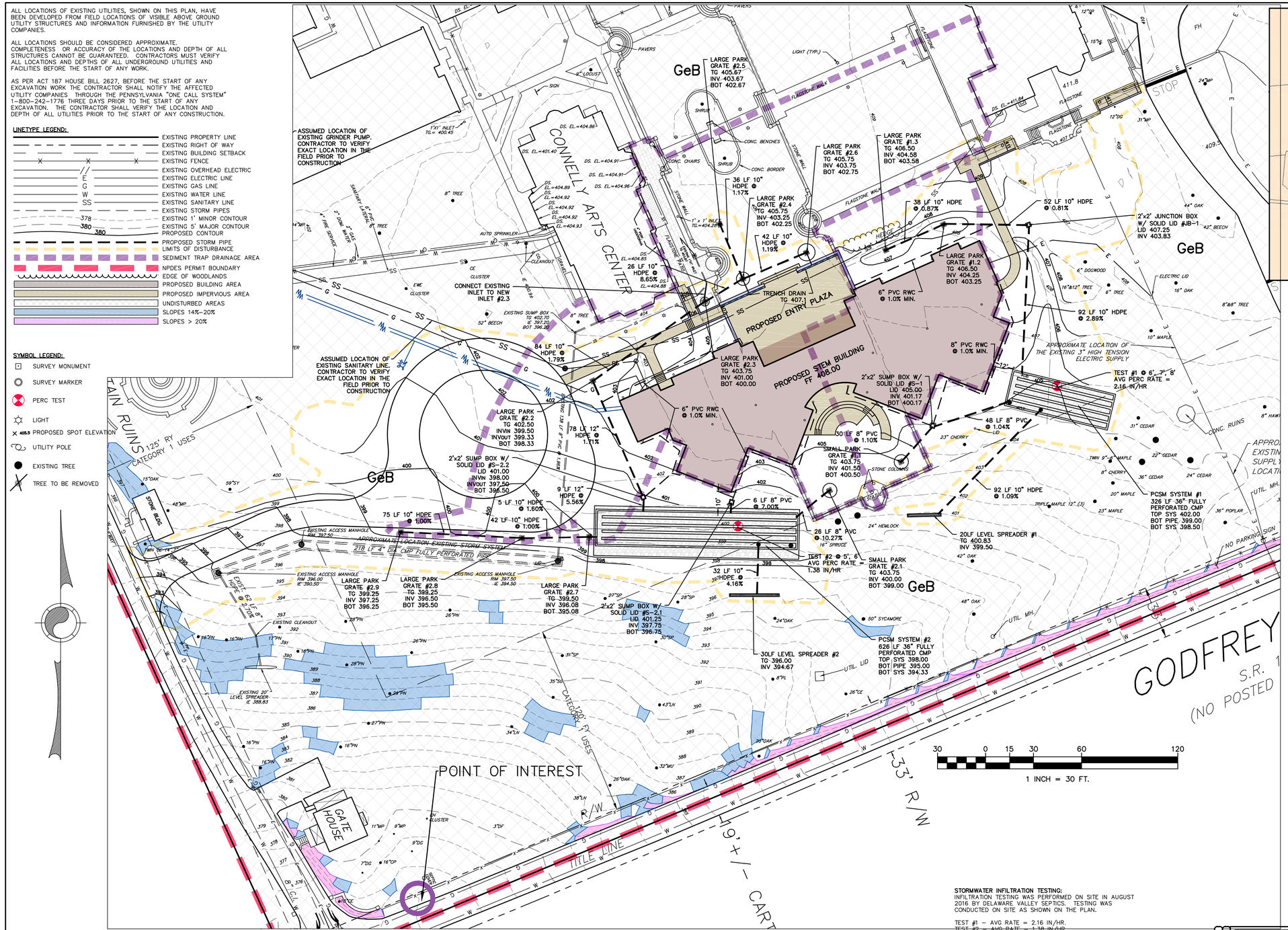
AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES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

LINETYPE LEGEND:

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- LIMITS OF DISTURBANCE
- SEDIMENT TRAP DRAINAGE AREA
- NPDES PERMIT BOUNDARY
- EDGE OF WOODLANDS
- PROPOSED BUILDING AREA
- PROPOSED IMPERVIOUS AREA
- UNDISTURBED AREAS
- SLOPES 14%-20%
- SLOPES > 20%

SYMBOL LEGEND:

- SURVEY MONUMENT
- SURVEY MARKER
- PERC TEST
- LIGHT
- 405.5 PROPOSED SPOT ELEVATION
- UTILITY POLE
- EXISTING TREE
- TREE TO BE REMOVED



LOCATION MAP
SCALE: 1" = 600'

SOURCE OF TITLE
ACADEMY OF NOTRE DAME
560 SPROUL RD
VILLANOVA PA 19085-1220
PARCEL #: 36040264800
PIN #: 36-37-086:001
DEED BOOK-PAGE: 4027-0810

GENERAL NOTES:

1. VERTICAL DATUM: U.S.G.S. BENCHMARK KV1909 "RADNOR 1961", ELEVATION 394.82.
2. WETLANDS MAPPING FROM NATIONAL WETLANDS INVENTORY MAP. NO WETLANDS ARE LOCATED WITHIN THE AREA OF THE PROPOSED WORK.
3. THIS SITE IS NOT LOCATED WITHIN THE FEMA 100-YR FLOODPLAIN ZONE.
4. PUBLIC DOMESTIC WATER SERVICE PROVIDED BY AQUA PENNSYLVANIA.
5. THE SITE IS SERVED BY PUBLIC SEWERS.
6. THE REFERENCED SURVEY(S), AND THIS PLAN, WERE COMPLETED WITHOUT THE AVAILABILITY OF A CURRENT TITLE REPORT AND SUBJECT TO ANY FACTS THAT MAY BE DISCLOSED IN A FULL AND ACCURATE TITLE REPORT.
7. THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.
9. THE PA ONE-CALL NUMBER FOR THIS SITE IS 20160541517.
10. SOIL DATA RETRIEVED VIA THE WEB SOIL SURVEY PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE AVAILABLE ONLINE AT http://websoilsurvey.nrcs.usda.gov/.

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS	83,110 SF (5.0%)
DRIVES/PARKING	208,524 SF
WALLS	3,399 SF
WALKS, PATIOS, ETC.	59,873 SF
TRACK	60,136 SF
TOTAL	415,042 SF (25.0%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	97,932 SF (5.9%)
DRIVES/PARKING	219,533 SF
WALLS	3,126 SF
WALKS, PATIOS, ETC.	66,086 SF
TRACK	60,136 SF
TOTAL	446,813 SF (26.9%)
ARTIFICIAL TURF FIELDS	156,795 SF (9.4%)
SOFTBALL INFIELD MIX	18,426 SF (1.1%)
GRASSPAVE	1,664 SF (0.1%)

OPERATION AND MAINTENANCE NOTES:

1. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE PCSM INFILTRATION SYSTEMS 1-2 AND OTHER DRAINAGE FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.
2. THE PROPERTY OWNER SHALL NOT ALTER OR REMOVE THE STORMWATER FACILITIES ON THE SITE.
3. GENERAL OBJECTIVES OF MAINTENANCE ARE TO PREVENT CLOGGING OF THE INLETS, OUTLETS, PREVENT STANDING WATER, AND PREVENT THE GROWTH OF WEEDS AND NOXIOUS PLANTS.
4. REGULAR INSPECTIONS SHOULD BE MADE OF INFILTRATION FACILITIES ESPECIALLY DURING WET WEATHER TO ENSURE THAT THE FACILITY IS MAINTAINING DESIRABLE RETENTION TIMES.
5. ANNUALLY ASSESS THE VARIOUS SPECIES OF THE PLANT COVER. IT MAY BE NECESSARY TO SUPPLEMENT AND/OR REMOVE VARIOUS SPECIES DUE TO THEIR GROWING PATTERNS.
6. AFTER ANY STORM RAINFALL EVENT OF A 2-YR OR GREATER MAGNITUDE, THE INFILTRATION BED AND ASSOCIATED OUTLET WORKS SHOULD BE INSPECTED. ANY DAMAGE OR BLOCKAGE TO THE OUTLET STRUCTURES SHOULD BE REPAIRED OR REMOVED IMMEDIATELY. ANY ERODED AREAS SHOULD BE TOPSOILED AND PERMANENTLY SEEDED AND MULCHED.

STORMWATER INFILTRATION TESTING:
INFILTRATION TESTING WAS PERFORMED ON SITE IN AUGUST 2016 BY DELAWARE VALLEY SEPTICS. TESTING WAS CONDUCTED ON SITE AS SHOWN ON THE PLAN.

TEST #1 - AVG RATE = 2.16 IN/HR.
~~TEST #2 - AVG RATE = 1.38 IN/HR.~~

Serial Number: 20160541517

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M:\PROJECTS\2015\15372\MAP\DRAWINGS\15372

RESOLUTION TO SOIL LIMITATIONS:
BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

SPECIFIC GEOLOGIC AND SOIL CONDITIONS:
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

WORKSHEET 5B SUMMARY

PROPOSED BMP	INFILTRATION RATE (IN/HR)	SAFETY FACTOR	DESIGN INFILTRATION RATE (IN/HR)	DEWATERING TIME (HR)	TOTAL DRAINAGE AREA (SF)	IMPERVIOUS DRAINAGE AREA (SF)	BMP SURFACE AREA (SF)	TOTAL DRAINAGE AREA LOADING RATIO	IMPERVIOUS AREA LOADING RATIO	WATER SURFACE ELEVATION @ 2-YR STORM	BOT OF INFILTRATION BMP	ELEV. @ INFILTRATION TEST	2-YR TRIBUTORY VOLUME (CF)	VOLUME TO BE INFILTRATED (CF)
BMP 6.4.3 BMP Infiltration System 1	2.16	2.0	1.08	31	15243	9773	1564	10:1	6:1	400.34	398.50	398.50	2689	2689
BMP 6.4.3 BMP Infiltration System 2	1.38	2.0	0.69	54	47382	22597	3968	12:1	6:1	396.73	394.33	394.00	6696	5791

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	ERODIBILITY	GROUP	HYDRO SOIL LIMITATIONS	LOAD BEARING CAPACITY	GRAVEL SOURCE	TOPSOIL SOURCE	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LAWNS
GeB Glenelg Channery Silt Loam	3-8	6.6+	4.17	Moderate	B	Moderate	Not Limited	Poor	Poor	Somewhat Limited	Very Limited	Somewhat Limited	Not Limited	Somewhat Limited

REV.	DATE	COMMENTS
1	01/04/17	PER TWP. ENG

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

FINAL LAND DEVELOPMENT PLAN

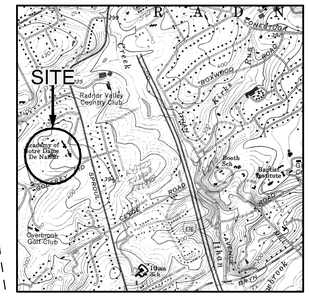
ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

REGISTERED PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER
PE020326E

ONE-CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 7 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 30'



USGS MAP

SOILS MAP

LOCATION MAP
SCALE: 1" = 2,000'

NOTES:

1. THE NPDES BOUNDARY IS EQUAL TO THE PROPERTY BOUNDARY OF THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL. OFF-SITE UTILITIES SUCH AS: UTILITIES AND ROADWAYS.

2. CHAPTER 93 STREAM CLASSIFICATION: CWF, MF
RECEIVING WATER: MILES RUN TO DARBY CREEK

3. ANY AREA DISTURBED ON SLOPING LANDS GREATER THAN 15% AND WHERE TREES HAVE BEEN REMOVED SHALL BE IMMEDIATELY STABILIZED WITH JUTE NETTING OR AN EROSION CONTROL BLANKET.

4. THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPS. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPS TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPS, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

5. WHERE POTENTIAL THERMAL IMPACTS TO SURFACE WATERS EXIST, APPROPRIATE MEASURES SHALL BE TAKEN TO AVOID/MINIMIZE/OR MITIGATE THESE IMPACTS INCLUDING BUT NOT LIMITED TO MINIMIZING IMPERVIOUS, MINIMIZING THE EXTENT AND DURATION OF SITE DISTURBANCE, PROTECTING EXISTING SHADE TREES, INSTALLING NEW PLANTINGS AS SOON AS FEASIBLE, MAXIMIZING VEGETATED SWALES, MINIMIZING DENUDED AND CONCRETE CHANNELS AND MAXIMIZING DETENTION FACILITY AREAS WHILE MINIMIZING POOL DEPTHS.

TREE PROTECTION NOTES:

1. ALL WOODY VEGETATION TO BE RETAINED WITHIN TWENTY-FIVE (25) FEET OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT THE DRIPLINES. THE FINAL LOCATION MUST BE APPROVED BY THE TOWNSHIP ARBORIST PRIOR TO THE ISSUANCE OF PERMITS. THE LOCATION OF THE DRIPLINES AND FENCING SHALL BE FIELD ADJUSTED IN ORDER TO MINIMIZE IMPACT TO EXISTING TREES.
2. NO IMPERVIOUS COVER SHALL BE PERMITTED WITHIN THE DRIPLINES OF TREES TO REMAIN. THE TOWNSHIP ARBORIST MUST APPROVE THE LOCATION AND EXTENT OF THE PAVING IF TREES ARE TO REMAIN.
3. GRADE CHANGES AROUND THE DRIPLINES OF TREES TO BE RETAINED SHALL BE MINIMIZED. TREATMENT OF THE TREES PRIOR TO CONSTRUCTION TO PROTECT THE ROOT SYSTEM SHALL BE PERFORMED. THE TOWNSHIP ARBORIST MUST APPROVE THE PROCEDURE.
4. IF TRENCHES FOR UTILITIES 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. TREE LIMBS MUST BE CUT BACK IN PROPORTION TO THE ROOT AREA LOSS.
5. ON-SITE TREES TO BE SAVED SHALL BE PREPARED FOR CONSTRUCTION BY APPROPRIATE CROWN AND DEEP ROOTING FERTILIZATION AND PROTECTED BY APPROPRIATE FENCING PRIOR TO THE ISSUANCE OF AN EROSION CONTROL OR MINOR GRADING PERMIT. ALL TREES ARE TO BE DEEP ROOT FERTILIZED USING 16-32-16 SLOW RELEASE, WATER DISPERSABLE @ 15 LBS. PER 100 GALLON OR EQUAL. THE TOWNSHIP ARBORIST SHALL APPROVE THE PROCEDURE.
6. SOIL WITHIN THE DRIPLINE OF TREES DISTURBED BY CONSTRUCTION SHALL BE AERATED AT THE END OF CONSTRUCTION ACTIVITIES.
7. ALL TREES IN THE RIGHT-OF-WAY SHALL BE TRIMMED. IF DEAD OR DISEASED, TREES SHALL BE REMOVED AND REPLACED. NEW STREET TREES SHALL BE PLANTED AS REQUIRED BY THE TOWNSHIP.
8. SHOULD ANY TREES NOT SCHEDULED OR PERMITTED TO BE REMOVED BY IRREPARABLE DAMAGED DURING CONSTRUCTION ACTIVITIES 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 101-9A(2).

GENERAL E&S PLANNING AND DESIGN:

THE EROSION AND SEDIMENTATION CONTROL PLAN IS DESIGNED IN ORDER TO DEMONSTRATE THAT THE FOLLOWING CRITERIA HAVE BEEN ATTAINED:

- E&S PLAN MINIMIZES EXTENT AND DURATION OF EARTH DISTURBANCE – THE CONSTRUCTION TIMING & SEQUENCE WAS DEVELOPED TO EFFECTIVELY STAGE CONSTRUCTION IN A MANNER TO LIMIT SITE DISTURBANCE, MINIMIZE THE DURATION OF EARTH DISTURBANCE, AND PROTECT EXISTING SITE FEATURES. TOTAL SITE DISTURBANCE IS LIMITED TO 2.09 ACRES OF THE TOTAL 38 ACRE SITE.
- E&S PLAN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION – THE SITE CURRENTLY DRAINS UNCONTROLLED INTO THE EXISTING ROADSIDE CHANNEL ALONG THE NORTHERN SIDE OF GODFREY ROAD. COMMON FACILITIES SUCH AS APPROPRIATELY SIZED SILT FENCE AND OTHER TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ARE SCHEDULED TO BE INSTALLED PRIOR TO CONSTRUCTION. THESE FACILITIES WILL MAINTAIN THE EXISTING DRAINAGE PATTERNS AND DRAIN INTO THE MILES RUN. TREE PROTECTION FENCING IS PROPOSED TO BE INSTALLED AROUND THE EXISTING VEGETATION TO REMAIN TO PROTECT THE EXISTING VEGETATION OUTSIDE THE PROPOSED WORK AREAS.
- E&S PLAN MINIMIZES SOIL COMPACTION – THE TYPE OF EQUIPMENT USED DURING CONSTRUCTION SHALL NOT CAUSE UNDUE COMPACTION AND TRAFFIC OVER DISTURBED AREAS SHALL BE KEPT AT A MINIMUM IN ORDER TO MINIMIZE SOIL COMPACTION.
- E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF – STRUCTURAL AND/OR NONSTRUCTURAL BMPs SHALL BE UTILIZED TO PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF; THESE SHALL INCLUDE BUT ARE NOT LIMITED TO THE INSTALLATION OF APPROPRIATELY SIZED SILT FENCE, EROSION CONTROL BLANKET, AND MINIMIZING THE OVERALL IMPERVIOUS SURFACES TO LESS THAN THE EXTENT ALLOWABLE PER THE ZONING ORDINANCE.

LINETYPE LEGEND:

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- LIMITS OF DISTURBANCE
- SEDIMENT TRAP DRAINAGE AREA
- NPDES PERMIT BOUNDARY
- EDGE OF WOODLANDS
- PROPOSED BUILDING AREA
- PROPOSED IMPERVIOUS AREA
- UNDISTURBED AREAS
- SLOPES 14%-20%
- SLOPES > 20%
- SILT FENCE AND #
- TREE PROTECTION BARRIER FENCING
- ORANGE CONSTRUCTION FENCING
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- INLET PROTECTION

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.

Serial Number: 20160541517

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

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RESOLUTION TO SOIL LIMITATIONS:
BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

SPECIFIC GEOLOGIC AND SOIL CONDITIONS:
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

EROSION AND SEDIMENTATION CONTROL PLAN

DISTURBED AREA 91,000 SF± (2.09 AC)

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	ERODIBILITY	GROUP	HYDRO SOIL LIMITATIONS	LOAD BEARING CAPACITY	GRAVEL SOURCE	TOPSOIL SOURCE	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LAWNS
GeB Glenelg Channery Silt Loam	3-8	6.6+	4.17	Moderate	B	Moderate	Not Limited	Poor	Poor	Somewhat Limited	Very Limited	Somewhat Limited	Not Limited	Somewhat Limited

REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

EROSION & SEDIMENTATION CONTROL PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

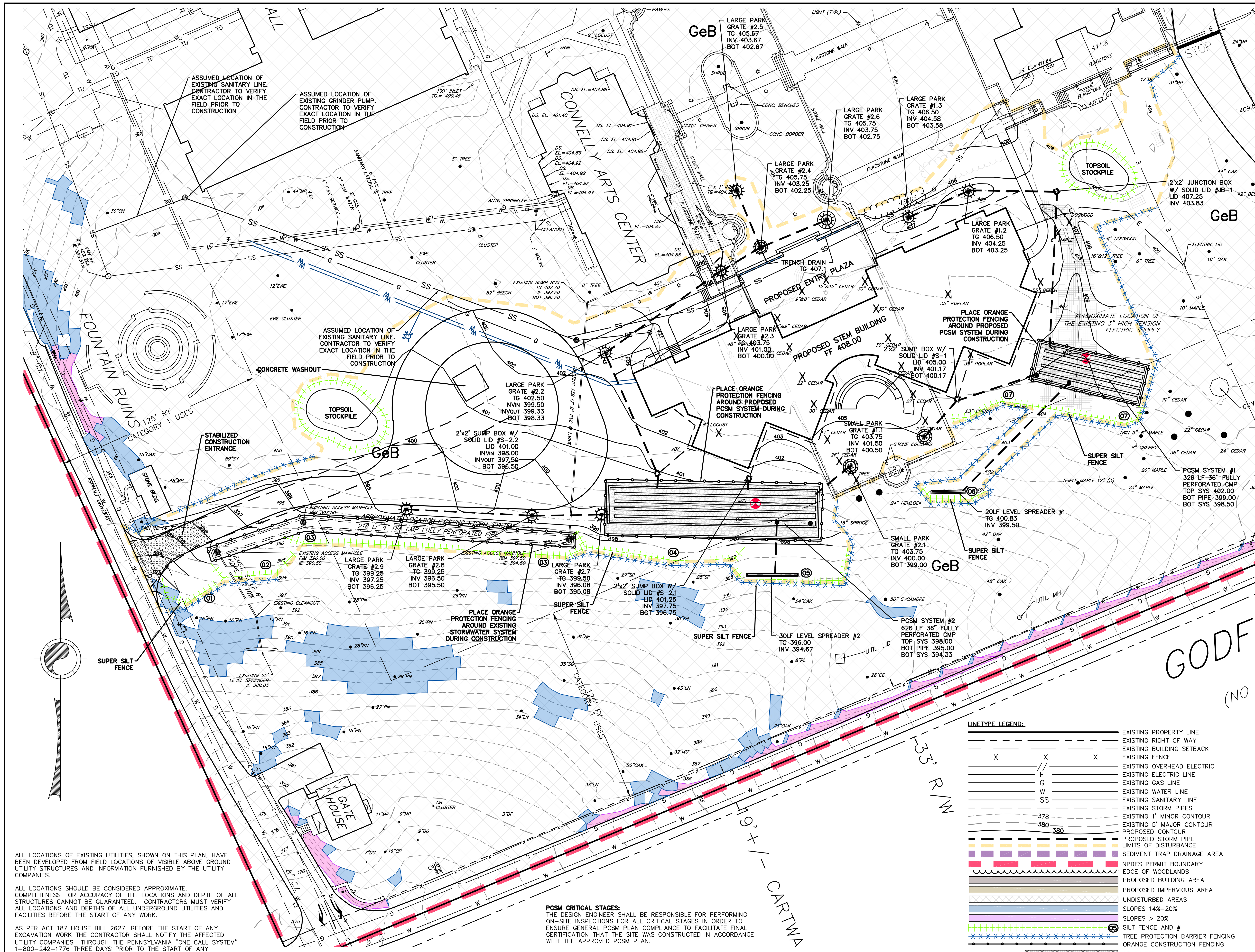
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

ONE-CALL:	20160541517
DRAWN BY:	BDM
CHECKED BY:	KRM

OWNER/APPLICANT
ADADEMY OF NOTRE DAME
560 SPROUL ROAD
VILLANOVA, PA 19085-1220

REGISTERED PROFESSIONAL ENGINEER
KEVIN R. MOMENEE
PE020326E

SHEET 8 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 80'



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Serial Number: 20160541517

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.
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M:\PROJECTS\2015\15372\MAI\DRAWINGS\15372

RESOLUTION TO SOIL LIMITATIONS:
BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

SPECIFIC GEOLOGIC AND SOIL CONDITIONS:
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

PCSM CRITICAL STAGES:
THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR PERFORMING ON-SITE INSPECTIONS FOR ALL CRITICAL STAGES IN ORDER TO ENSURE GENERAL PCSM PLAN COMPLIANCE TO FACILITATE FINAL CERTIFICATION THAT THE SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN.

CRITICAL STAGES:

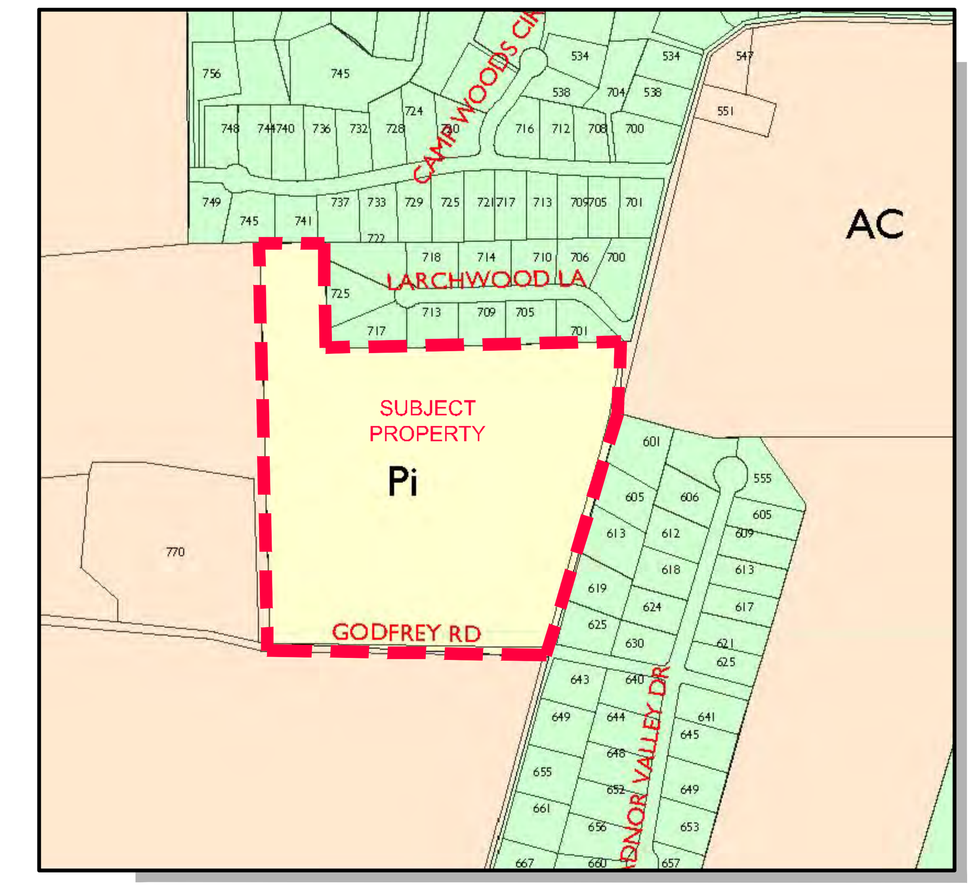
- INSTALLATION OF TEMPORARY E&S CONTROL DEVICES
- SITE GRADING PRIOR TO THE INSTALLATION OF THE SLOPE STABILIZATION
- INSTALLATION OF PCSM SYSTEM #1
- INSTALLATION OF PCSM SYSTEM #2
- REMOVAL OF TEMPORARY E&S CONTROL DEVICES

THE SITE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THESE STAGES.

SOILS INFORMATION

NAME	% SLOPE	DEPTH TO S. H. WATER	DEPTH TO BEDROCK	ERODIBILITY	GROUP	HYDRO SOIL LIMITATIONS	LOAD BEARING CAPACITY	GRAVEL SOURCE	TOPSOIL SOURCE	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LAWNS
GeB Glenelg Channery Silt Loam	3-8	6.6+	4.17	Moderate	B	Moderate	Not Limited	Poor	Poor	Somewhat Limited	Very Limited	Somewhat Limited	Not Limited	Somewhat Limited

30 0 15 30 60 120
1 INCH = 30 FT.



LOCATION MAP
SCALE: 1" = 600'

CONSTRUCTION TIMING & SEQUENCE:

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. Deviation from that sequence must be approved in writing from the local conservation district or by the department prior to implementation.

At least 7 days before starting any earth disturbance activities, including the clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the county conservation district for an on-site pre-construction meeting.

1. Construction begins. Anticipated date: September 2017
2. Install the stabilized construction entrance off western site driveway as shown on the plans. This entrance must be utilized by all construction vehicles entering/exiting the site.
3. Install tree protection fencing as indicated on plan. Tree protection fencing must be in place and approved prior to any disturbance. The limits of disturbance shall be staked out and clearly marked in the field. All disturbance shall be contained to the delineated limit of construction. Install orange construction fencing around the existing and proposed PCSM system areas as shown.
4. Install silt fence as indicated on plan. Silt fence shall be installed up-slope of construction fencing. Note: additional sediment barriers shall be installed downgrade of any disturbance areas as needed throughout the entire project.
5. Prior to earth disturbance, notify the Township Engineer that construction is going to begin.
6. Begin to demolish and remove from site the portions of the existing walls, walks, and other designated impervious areas as shown on the plans. All construction debris shall be removed from the site and disposed of in an approved manner.
7. Clear and grub the areas as necessary within the limits of disturbance of existing vegetation. Strip topsoil and stockpile suitable material for future use. Unsuitable material shall be disposed of properly. Surround stockpile with silt fence. Temporarily seed all stockpiled topsoil.
8. Install the construction staging area.
9. Rough grade the site. Any graded or disturbed area must be temporarily seeded if no further earth moving is anticipated immediately. Excess material shall be moved to the fill area noted on the plans.
10. Install the new sanitary manhole and reconfigure the existing sanitary lines as shown on the plans.
11. Excavate for and begin to construct the foundations for the new building. Upon completion of foundation walls and first floor framing, backfill foundations and rough grade around building.
12. Continue with building construction. In conjunction with the building construction, begin construction of the amphitheater.
13. Stabilize and install temporary ground cover vegetation on graded areas that remain undisturbed during building construction. Any graded or disturbed areas must be temporarily seeded if no further earth moving is anticipated immediately. Upon completion or temporary cessation of the earth disturbance activity that will exceed 4 days, or any stage thereof, the project site shall be immediately stabilized with the appropriate temporary or permanent stabilization.
14. Inspect sediment barriers frequently, especially after heavy storms. Replace and repair sediment barriers as necessary.
15. Install stone base course for new driveway access. Install underground utilities as necessary.
16. Install roof rainwater collection system, inlets, sump boxes, junction box, and the associated conveyance piping as shown on the plans. Install inlet protection on the inlets. All inlets shall be completely sealed off until the contributory area to the inlets are permanently stabilized.
17. **CRITICAL STAGE** (the site's engineer or designee shall be on site to inspect the installation of the PCSM facilities) – Upon final stabilization of the respective contributory areas, excavate for and install the PCSM System #1 and PCSM System #2. Excavate to the bottom of the permanent system, as indicated on the plans. Install geotextile fabric, pipe bedding and pipe system as indicated on the plans. Installation of the stone shall be checked by the design or site engineer prior to installation to ensure that it is clean washed stone. In the event that sediment enters or clogs the system appropriate measures shall be taken (i.e. cleaning the soil/sediment from the fabric, stone, bed, etc. And or replacement of the fabric and stone). If groundwater or bedrock is found during the excavation of the pipe system, the engineer shall be consulted to determine the necessary measures that should be taken. The bottom of the system shall be undisturbed or uncompacted subgrade. Connect PCSM System #1 to the level spreader #1, and connect PCSM System #2 to the level spreader #2. Unblock all inlets and connect inlets to the systems as shown on the plans.

a. All bed bottoms shall be level after grading.
b. Prior to infiltration bed grading and placement of geotextile, up-gradient areas shall be sufficiently stabilized to prevent the washing of sediment into the recharge areas. It is the contractor's responsibility to prevent the deposition of sediment or sediment-laden waters into the infiltration structures after final grading.
c. If bedrock is encountered at any time during excavation of the infiltration bed, excavation is to be discontinued in the affected area and the owner and engineer notified at once.
d. Place geotextile in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile shall overlap a minimum of two feet. Secure fabric at least four (4) feet outside of bed and take steps necessary to prevent any sediment from entering trench.
e. Aggregate shall be clean with a wash loss of no more than 0.5 percent. Installation of the stone should be checked by the design or site engineer prior to installation into the infiltration bmp to ensure that it is clean washed stone. Aggregate that does not meet this criterion will be removed at no extra cost to the owner and the beds restored to the owner's satisfaction.
f. Following placement of bed aggregate, the geotextile shall be folded overtop the bed, with appropriate fabric overlap, to protect from sediment washout along bed edges. Topsoil (or appropriate material specified by particular design) will be used to fill above the bed to the specified height.

18. Until the site is stabilized all erosion and sedimentation controls must be maintained properly. Maintenance must include inspections of all erosion and sedimentation controls after each runoff event and on a weekly basis. All preventative and remedial maintenance work; including clean out, repair, replacement, regrading, reseeding, remulching, and renetting, must be performed immediately.
19. Remove excavated materials not required for final construction from site and dispose of them in an approved manner.
20. Remove any accumulated surplus storage materials and staging area and rough grade areas of removals.
21. Install top courses on new driveway areas.
22. Spread stockpiled topsoil around and all disturbed areas. Seed all graded areas to re-establish vegetation. Stabilized slopes in excess of 4:1 with sod or netting and mulch
23. Remove construction fencing and spread stockpile topsoil over remaining disturbed areas. Seed all graded areas to re-establish vegetation. All slopes in excess of 4:1 shall be stabilized immediately. Remove inlet protection from inlets. Note: consultation with the county conservation district is required prior to removal of any temporary E&S controls.
24. Install landscape materials and hardscape materials.
25. Upon the re-establishment of vegetation on all denuded areas, remove all sediment barriers.
26. Stabilize and seed any areas disturbed by the removal of sediment barriers.
27. Construction finished. Anticipated date: December 2018.
28. Complete Notice of Termination and submit to the Delaware County Conservation District upon the completion of the entirety of the project.

LINETYPE LEGEND:

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING BUILDING SETBACK
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SANITARY LINE
- EXISTING STORM PIPES
- EXISTING 1' MINOR CONTOUR
- EXISTING 5' MAJOR CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- LIMITS OF DISTURBANCE
- SEDIMENT TRAP DRAINAGE AREA
- NPDES PERMIT BOUNDARY
- EDGE OF WOODLANDS
- PROPOSED BUILDING AREA
- PROPOSED IMPERVIOUS AREA
- UNDISTURBED AREAS
- SLOPES 14%-20%
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- ORANGE CONSTRUCTION FENCING
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- EROSION CONTROL BLANKET
- INLET PROTECTION

REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

EROSION & SEDIMENTATION CONTROL PLAN

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL KEVIN R. MOMENEE ENGINEER PE020326E

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE-CALL:	20160541517	OWNER/APPLICANT
DRAWN BY:	BDM	ADADEMY OF NOTRE DAME 560 SPROUL ROAD
CHECKED BY:	KRM	VILLANOVA, PA 19085-1220

SHEET 9 OF 13
DATE: AUGUST 31, 2016
SCALE: 1" = 30'

EROSION AND SEDIMENT CONTROL NOTES:

RECEIVING WATER: MILES RUN TO DARBY CREEK
CHAPTER 93 CLASSIFICATION: CWF, MF

01. ALL SLOPES 3:1 OR STEEPER WILL UTILIZE ECB (NORTH AMERICAN GREEN OR EQUAL).

02. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

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

WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION ON SEDIMENT POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:

A. THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND ANY POLLUTION EVENTS.
B. ALL STEPS TAKEN TO, REDUCE, ELIMINATE AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE.
C. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

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

03. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE MONTGOMERY COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. IMMEDIATELY UPON DISCOVERING UNFORSEEN 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.

04. ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NONDISTURBED AREAS.

05. THE CONTRACTOR 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.

06. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE MONTGOMERY COUNTY CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATION.

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

08. NEWLY GRADED SLOPES TWENTY FIVE PERCENT (25%) OR GREATER SHALL BE IMMEDIATELY SODDED OR STABILIZED WITH EROSION CONTROL NETTING.

09. UPON COMPLETION OR TEMPORARY CESSATION OF ANY EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY PHASE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.

10. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF/AND OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOODCHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.

11. THE CONTRACTOR SHALL, BY SCHEDULING THE CONSTRUCTION, UTILIZE NEW PLANTINGS AND PROPERLY INSTALL EROSION CONTROL FENCING, HAY BALES AND OTHER EROSION CONTROL MEASURES TO MINIMIZE EROSION DAMAGE.

12. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE SEEDED AND MULCHED IMMEDIATELY.

13. A ROUTINE "END-OF-DAY-CHECK" SHALL BE MADE DURING CONSTRUCTION TO MAKE SURE THAT ALL CONTROL MEASURES ARE WORKING PROPERLY. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL DESIGN, IMPLEMENT, AND MAINTAIN CONTROL MEASURES WHICH PREVENT ACCELERATED EROSION AND SEDIMENTATION. THERE SHALL BE NO ADVERSE DISCHARGE OF THE SEDIMENT OR OTHER SOLID MATERIALS FROM THE SITE AS THE RESULT OF STORM WATER RUNOFF.

14. TEMPORARY EROSION CONTROL MEASURES MAY BE REMOVED ONLY AFTER THE CONSTRUCTION AREA AND CONTAINED SILT IS STABILIZED AND THE LAWN AREA ESTABLISHED.

15. ALL PERSONS ENTERING ACTIVE TANKS, MANHOLES, INLETS, ETC. MUST COMPLY WITH OSHA REQUIREMENTS FOR ENTRY INTO CONFINED SPACES.

16. WHERE DRAINAGE SWALES ARE WITHIN 20' OF A BASEMENT, WATERPROOFING SHALL BE APPLIED TO THE BASEMENT.

17. ON-SITE TREES TO BE SAVED SHALL BE PREPARED FOR CONSTRUCTION BY APPROPRIATE FERTILIZATION AND PROTECTED BY APPROPRIATE FENCING.

18. THE PERMITTEE MUST DEVELOP, AND HAVE APPROVED BY THE DISTRICT, A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN FOR EACH SPOIL, BORROW, OR OTHER WORK AREA NOT DETAILED IN THE PERMITTED PLAN, WHETHER LOCATED WITHIN OR OUTSIDE OF THE CONSTRUCTION LIMITS.

19. GRADING EQUIPMENT SHALL NOT BE ALLOWED TO CROSS PERMANENT OR INTERMITTENT STREAMS PRIOR TO OBTAINING THE APPROPRIATE PERMITS.

20. NO EXCAVATIONS OR FILLS THAT ENCROACH ON NATURAL WATERCOURSES, FLOOD HAZARD AREAS, CONSTRUCTED CHANNELS, OR WETLANDS SHALL OCCUR WITHOUT THE NECESSARY STATE AND/OR FEDERAL PERMITS.

21. STORMWATER MANAGEMENT RECHARGE FACILITIES SHALL BE FENCED OFF DURING CONSTRUCTION.

22. CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

23. TO PROTECT ADJACENT PROPERTIES, ALL AREAS REQUIRING INTERIM STABILIZATION MUST BE ADDRESSED IMMEDIATELY FOLLOWING COMPLETION OF DISTURBANCE.

24. FORDING OF LIVE OR INTERMITTENT STREAMS OR TRAVEL IN THEIR BEDS BY MECHANIZED EQUIPMENT IS NOT PERMITTED; BRIDGES OR CULVERTS SHALL BE USED WHEN CROSSING STREAMS IS NECESSARY.

25. ALL WOODY VEGETATION TO BE RETAINED WITHIN 25 FT OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT THE DRIPLINES. THE FINAL LOCATION MUST BE APPROVED BY THE TOWNSHIP ARBORIST PRIOR TO THE ISSUANCE OF PERMITS. THE LOCATION OF THE DRIPLINES AND FENCING SHALL BE FIELD ADJUSTED IN ORDER TO MINIMIZE IMPACT TO EXISTING TREES.

26. SHOULD ANY TREES NOT SCHEDULED OR PERMITTED TO BE REMOVED BE IRREPARABLE DAMAGED DURING CONSTRUCTION AND DIE WITHIN (18) MONTHS OF THE CONCLUSION OF CONSTRUCTION ACTIVITIES, THOSE TREES WILL BE REQUIRED TO BE REPLACED.

27. IF THE CONTRACTOR CAN NOT BALANCE THE CUT AND FILL SOIL VOLUMES THAN AN ADDITIONAL PLAN FOR EACH SPOIL AREA WILL BE SUBMITTED TO THE CHESTER COUNTY CONSERVATION DISTRICT FOR APPROVAL.

28. TEMPORARILY SEED ALL STOCKPILED TOPSOIL. IMMEDIATELY TEMPORARILY SEED ALL TEMPORARY E & S CONTROL AREAS.

29. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION SHALL BE DOCUMENTED. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

30. EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH.

31. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

32. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

33. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PRE-VENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL, AT A RATE OF 3 TONS PER ACRE.

34. PERMANENT VEGETATION TO BE SEEDED ON ALL EXPOSED AREAS IMMEDIATELY AFTER FINAL GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED. MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.

35. ALL WORK WILL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE COUNTY, AND THE TOWNSHIP.

36. THE DRIVEWAY/PARKING AREA SUBBASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO PREVENT SUBGRADE EROSION, AND TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUBBASE SHALL BE INSTALLED WITHIN 15 DAYS OF THE PRELIMINARY GRADING.

37. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR SUITABLE EQUIVALENT, AT A RATE OF 3 TONS PER ACRE.

38. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E. SLOPES GREATER THAN 3:1).

39. A STABILIZED CONSTRUCTION ENTRANCE PAD OF 1.5" TO 2" SIZE CLEAN STONE WILL BE PLACED AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE. DIMENSIONS: LENGTH - NOT LESS THAN 50 FT. EXCEPT ON SINGLE RESIDENCE LOT WHERE 30 FT. MINIMUM WOULD APPLY, WIDTH - 10 FT. MINIMUM , BUT NOT LESS THAN THE FULL WIDTH OF THE ENTRANCE OR EXIT DRIVES, DEPTH - NOT LESS THAN 6". FILTER CLOTH IS REQUIRED PRIOR TO STONE PLACEMENT EXCEPT ON SINGLE RESIDENCE LOTS.

40. ANY CHANGES TO THE EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT OFFICE FOR RE- REVIEW. THE REVISED PLANS MUST MEET ALL CURRENT STATE EROSION AND SEDIMENT POLLUTION CONTROL REQUIREMENTS, AS WELL AS ALL DISTRICT REQUIREMENTS.

41. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OF OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIC RATES. DISTURBED AREAS WHICH AREA NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1-YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH AREA AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1-YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

42. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

43. IN CONJUNCTION WITH EARTHMOVING ACTIVITY, INSTALL THE DESIGNED CONSERVATION MEASURES IN ACCORDANCE WITH SUBMITTED PLANS AND SPECIFICATIONS.
A) INSTALL SEDIMENT BARRIERS AS CLOSE TO CONTOURS AS POSSIBLE. BARRIERS WILL BE CHECKED PERIODICALLY. DAMAGED BARRIERS ARE TO BE REPLACED AND SEDIMENT WHICH IS COLLECTED BY THE BARRIER WILL BE REMOVED AND SPREAD AND STABILIZED WITH VEGETATION ELSEWHERE ON THE SITE.
B) SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE HIGHER THAN ONE FOOT ABOVE EXISTING GRADE. SEE DETAILS FOR SEDIMENT BARRIER TYPE AND INSTALLATION PROCEDURES.
C) DURING CONSTRUCTION, ALL SEDIMENT TRAPPED AT BARRIERS SHALL BE CLEANED OUT AFTER EACH EROSION PRODUCING STORM.

44. ON-SITE GRADING DURING CONSTRUCTION SHALL BE LIMITED AND RESTRICTED TO ONLY THAT IMMEDIATE AREA REQUIRED FOR THE CONSTRUCTION PROCEDURE.

45. TOPSOIL TAKEN FROM CONSTRUCTION AREAS SHALL BE SEEDED WITH VEGETATIVE COVER AND STOCKPILED FOR RE-USE IN FINISH GRADING.

46. GRADED AREAS ARE TO BE TEMPORARILY SEEDED AND MULCHED FOLLOWING EARTHMOVING PROCEDURES.

47. INSPECT SEDIMENT CONTROLS FREQUENTLY, ESPECIALLY AFTER HEAVY STORMS. REPLACE AND REPAIR SEDIMENT CONTROLS AS NECESSARY.

48. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OFF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS.

49. SEDIMENT TRACKED ONTO ANY ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY, OR AS NEEDED OR AS DIRECTED BY THE DCCD OR MUNICIPALITY AND DISPOSED AS A MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROAD SIDE DITCH, STORM SEWER OR SURFACE WATER.

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GENERAL NOTES - MAINTENANCE DURING CONSTRUCTION:

1. AREAS THAT CONTAIN SOD SHALL BE CHECKED VERY CAREFULLY TO ENSURE THAT JOINTS BETWEEN THE SOD STRIPS ARE TIGHT AND SECURE. WHERE JOINT SEPARATION IS IN EVIDENCE, A CAREFUL INSPECTION OF EACH JOINT SHALL BE MADE TO DETERMINE WHETHER UNDERMINING OF THE STRIPS IS OCCURRING. IF IT IS, THE STRIPS SHALL BE ROLLED UP, THE SUBSURFACE SHALL BE FILLED AND GRADED AS REQUIRED, AND THE SOD STRIPS SHALL BE RE-LAID WITH TIGHT JOINTS AND PEGGING.

2. SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY.

3. 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 CLEANING WILL BE DONE.

4. AFTER SLOPES AND SWALES ARE ESTABLISHED, WEEKLY INSPECTIONS SHALL BE MADE TO DETERMINE THE DURABILITY OF THE STABILIZATION MEASURES. AN INSPECTION OF ALL FACILITIES WILL BE MADE AFTER EVERY STORM TO DETERMINE THEIR RESISTANCE TO DRIVING RAIN.

STABILIZATION NOTES:

1. THE PERMITTEE(S) SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROLS AND RELATED ITEMS INCLUDED WITHIN ON THESE PLANS UNTIL THE SITE IS PERMANENTLY STABILIZED.

2. STORMWATER RUNOFF FROM UNSTABILIZED AREAS DURING THE CONSTRUCTION PROCESS IS TO BE RESTRICTED FROM ENTERING THE INFILTRATION BED IN ACCORDANCE WITH MEASURES OUTLINED THROUGHOUT THE NOTES SHOWN ON THE PLANS.

UTILITY LINE TRENCH EXCAVATION NOTES:

A. 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.

B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.

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

D. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.

E. 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.

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

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 APPLICANT.

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 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 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 *"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 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.PACODE.COM.

MAINTENANCE OF TEMPORARY SEDIMENTATION CONTROL:

A ROUTINE "END OF DAY CHECK" SHALL BE MADE DURING CONSTRUCTION TO MAKE SURE THAT ALL CONTROL MEASURES ARE WORKING PROPERLY. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL PREVENT ACCELERATED EROSION AND SEDIMENTATION. THERE SHALL BE NO ADVERSE DISCHARGE OF THE SEDIMENT OR OTHER SOLID MATERIALS FROM THE SITE AS A RESULT OF STORMWATER RUNOFF.

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROL AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY.

1. STABILIZED CONSTRUCTION ENTRANCE: THE STABILIZED CONSTRUCTION ENTRANCES ARE TO BE CONSTRUCTED PER THE DETAIL. THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS 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.
2. SILT FENCE: SILT FENCE SHALL BE INSTALLED PER THE DETAIL. SEDIMENT SHALL BE REMOVED FROM SILT FENCES WHEN IT REACHES 1/2 THE FENCE HEIGHT OR AS DIRECTED BY THE CONSERVATION DISTRICT OR TOWNSHIP ENGINEER. SILT FENCING WHICH HAS BEEN UNDERMINED OR TOPPED WILL BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY.
3. ROCK FILTER OUTLETS: ROCK FILTER OUTLETS SHALL BE INSTALLED PER THE DETAIL. SEDIMENT SHALL BE REMOVED FROM BEHIND ROCK FILTER OUTLET AFTER EACH STORM EVENT. WHEN STONE BECOMES CLOGGED WITH SEDIMENT, THE ROCK FILTER OUTLET SHALL BE REPLACED WITH CLEAN STONE.
4. INLET PROTECTION: INLET PROTECTION SHALL BE CONSTRUCTED PER THE DETAIL AND CLEANED AFTER EACH STORM EVENT OR AS DIRECTED BY THE CONSERVATION DISTRICT OR TOWNSHIP ENGINEER.
5. SWALES: ALL SWALES MUST BE TEMPORARY LINED WITH CURLEX TO ALLOW VEGETATION TO ESTABLISH. IF VEGETATION CAN NOT GROW THEN THAT AREA MUST BE SODDED.
6. SEDIMENT DISPOSAL: SILT REMOVED FROM TEMPORARY SEDIMENT CONTROL STRUCTURES SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS LOCATED OUTSIDE OF FLOOD PLAINS, WETLANDS, STEEP SLOPES AND DRAINAGE SWALES.
7. DUST CONTROL: DUST AND OTHER PARTICLES SHALL BE KEPT WITHIN TOLERABLE LIMITS BY USING WATER. APPLICATION SHALL BE AS NEEDED OR AS DIRECTED BY THE TOWNSHIP ENGINEER OR THE CONSERVATION DISTRICT. USE OF CALCIUM CHLORIDE OR OTHER SIMILAR APPROVED AGENTS SHALL BE LIMITED TO ONLY THOSE PARTICULAR SITUATIONS IN WHICH PERIODIC CLEANING AND/OR WETTING IS NOT FEASIBLE DUE TO CONDITIONS CAUSED BY WEATHER, TRAFFIC, ETC.
8. AIR POLLUTION: BURNING OF TREES, STUMPS, CUTTINGS, AND OTHER PERISHABLE MATERIALS WILL NOT BE PERMITTED UNLESS SPECIFICALLY ALLOWED BY THE MUNICIPALITY. THE PROVISIONS OF THE PENNSYLVANIA AIR POLLUTION CONTROL ACT, JANUARY 8, 1990, AS AMENDED TO DATE, WILL GOVERN AND AREA A PART OF THIS PLAN BY REFERENCE.

PERMANENT STABILIZATION NOTE:

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. ROADWAYS AND PARKING AREAS SHOULD AT LEAST HAVE A CLEAN SUBBASE IN PLACE.

MONITORING, INSPECTION, AND REPORTING REQUIREMENTS:

VISUAL INSPECTIONS
THE PERMITTEE AND CO_PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT 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 THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE 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 PPC BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND 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 RECURRENCE OF THE NONCOMPLIANCE; AND
(4) THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

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

TERMINATION OF COVERAGE
NOTE: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPS IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO_PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPS AND PCSM BMPS ON 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 NOT 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.

RECYCLING OR DISPOSAL OF MATERIALS:

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

CONSTRUCTION/DEMOLITION WASTE —SOLID WASTE RESULTING FROM THE CONSTRUCTION OR DEMOLITION OF BUILDINGS AND OTHER STRUCTURES, INCLUDING, BUT NOT LIMITED TO, WOOD, PLASTER, METALS, ASPHALTIC SUBSTANCES, BRICKS, BLOCK AND UNSEGREGATED CONCRETE. THE TERM DOES NOT INCLUDE THE FOLLOWING IF THEY ARE SEPARATE FROM OTHER WASTE AND ARE USED AS CLEAN FILL:

(I) UNCONTAMINATED SOIL, ROCK, STONE, GRAVEL, BRICK AND BLOCK, CONCRETE AND USED ASPHALT; AND

(II) WASTE FROM LAND CLEARING, GRUBBING AND EXCAVATION, INCLUDING TREES, BRUSH, STUMPS AND VEGETATIVE MATERIAL.

MANAGEMENT OF CONSTRUCTION AND DEMOLITION WASTE

SALVAGING - BY DEFINITION, MATERIALS SALVAGED FOR USE IN THEIR INTENDED FUNCTION ARE NOT WASTES. EXAMPLES INCLUDE: BATHROOM FIXTURES, CEILING PANELS, DOORS, FLOORING, LIGHTING FIXTURES, WINDOWS, ETC.

SOURCE SEPARATED RECYCLABLE MATERIALS ARE ALSO NOT WASTES. FOR CONSTRUCTION, RENOVATION AND DEMOLITION ACTIVITIES THIS INCLUDES: CARDBOARD, GLASS, METALS, PAPER AND PLASTICS.

ALL CONCRETE TRUCKS SHALL UTILIZE THE CONCRETE WASHOUT AREA AS INDICATED ON THE EROSION & SEDIMENT CONTROL PLAN FOR CLEANING OUT TRUCKS. ACCUMULATED MATERIAL SHALL BE DISPOSED OF PROPERLY IN ACCORDANCE WITH THE REGULATIONS NOTED ABOVE.

IN THE EVENT A POLLUTION INCIDENT OCCURS WHICH CAUSES OR THREATENS TO CAUSE SURFACE OR GROUNDWATER POLLUTION, THE OWNER SHALL:
(1) PROMPTLY NOTIFY THE DEPARTMENT BY TELEPHONE OF THE LOCATION AND NATURE OF THE DANGER,
(2) NOTIFY ALL KNOWN DOWNSTREAM USERS OF THE WATER,
(3) IMMEDIATELY TAKE ALL NECESSARY STEPS TO PREVENT INJURY TO PROPERTY AND DOWNSTREAM USERS, AND PROTECT WATERS FROM POLLUTION OR DANGER OF POLLUTION,
(4) REMOVE ANY CONTAMINATION FROM AFFECTED GROUND OR SURFACE WATER TO THE EXTENT REQUIRED BY THE DEPARTMENT.

HYDROSEEDING SPECIFICATIONS:

DEFINITION: STABILIZING SEDIMENT PRODUCING AND SEVERELY ERODED AREAS BY ESTABLISHING PERMANENT GRASS COVER.

PURPOSE: TO PROVIDE PERMANENT VEGETATIVE COVER TO CONTROL RAPID RUN-OFF AND EROSION.

PROCEDURE: SURFACE TO BE HYDRO-SEEDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER MATTER HARMFUL TO UNIFORM GERMINATES. A WATER-SLURRY MIXTURE COMPOSED OF THE BELOW MENTIONED "MATERIALS" SHALL BE SPRAYED UNIFORMLY OVER THE AREAS TO BE HYDRO-SEEEDED.

MATERIALS:

PERMANENT SEEDING

NAME	DESCRIPTION	APPLICATION RATE (PER ACRE)
1) SEED MIXTURE % BY WEIGHT	60% PENNSTAR KENTUCKY BLUEGRASS	260 LBS
	30% PENNLAWN RED RESCUE	
	10% PENNFINE PERRENIAL RYEGRASS	
2) COMMERCIAL FERTILIZER	10/20/2020	1,000 LBS
3) LIME	GROUND AGRICULTURAL LIMESTONE (MAY BE APPLIED SEPARATELY)	2 TONS
4) MULCH	HAY OR STRAW	3 TONS
5) SOIL STABILIZER	TERRA TACK OR EQUIVALENT	20 LBS

TEMPORARY SEEDING

1) SEED	ANNUAL RYEGRASS (95% PURE)	40 LBS
2) COMMERCIAL FERTILIZER	5-5-5	1,000 LBS
3) LIME	GROUND AGRICULTURAL LIMESTONE (MAY BE APPLIED SEPARATELY)	1 TON
4) MULCH	HAY OR STRAW	3 TONS

SOILS NOTES:

SITE PREPARATION

THE PROPOSED DEVELOPMENT SHOULD INCLUDE THE COMPLETE REMOVAL OF ALL REMNANT FOUNDATIONS, FLOOR SLABS, CONCRETE PADS, PAVEMENTS AND UTILITIES LOCATED WITHIN AND TEN FEET BEYOND THE PERIMETER OF THE PROPOSED BUILDINGS FOOTPRINTS. THE REMAINDER OF THESE STRUCTURES MAY GENERALLY REMAIN IN PLACE IF REMOVED TO A MINIMUM DEPTH OF TWO FEET BELOW FINAL GRADES, PROVIDING THEIR LOCATION DOES NOT CONFLICT WITH OTHER CONSTRUCTION SUCH AS UTILITY INSTALLATION. ACTIVE UTILITIES THAT ARE PRESENT ON SITE SHOULD BE RELOCATED TO AREAS OUTSIDE OF THE PROPOSED BUILDING AREA.
BACKFILL OF ALL DEMOLITION AND UTILITY RELOCATION AREAS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FILL AND COMPACTION CRITERIA SECTION THAT FOLLOWS. THE BACKFILL MATERIAL SHOULD BE INSPECTED AND TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OF RECORD.
PRIOR TO THE PLACEMENT OF ANY REQUIRED FILL, AREAS EXTENDING A MINIMUM OF TEN (10) FEET BEYOND THE PROPOSED CONSTRUCTION SHOULD BE STRIPPED OF ALL TOPSOIL, ROOT MAT, ASPHALT, CONCRETE, STONE, AND OTHER DELETERIOUS MATERIALS. FOLLOWING REMOVAL OF THE SURFACE MATERIALS AND PRIOR TO STRUCTURAL FILL PLACEMENT TO THE PROPOSED GRADES, ALL AREAS SHOULD BE PROOF-ROLLED AND COMPACTED. IT IS RECOMMENDED THAT A STEEL DRUM ROLLER HAVING A MINIMUM STATIC WEIGHT OF TEN (10) TONS BE UTILIZED FOR THIS PURPOSE. PROOF-ROLLING AND COMPACTION PROCEDURES ARE NECESSARY TO COMPACT AND VERIFY THE INTEGRITY OF THE UPPER ZONES OF THE SOILS. ANY LOOSE OR UNSTABLE AREAS ENCOUNTERED DURING PROOF-ROLLING, WHICH ARE THE RESULT OF EXCESSIVE MOISTURE WITHIN THE SOIL MATRIX, CAN BE AERATED AND DRIED IN-PLACE. FOLLOWING ADEQUATE DRYING TIME, THESE SOILS CAN BE DENSIFIED IN-PLACE. ALTERNATELY, ANY LOOSE OR SOFT ZONES OF SOIL CAN BE REMOVED AND REPLACED WITH STRUCTURAL FILL AS OUTLINED IN THE FILL AND COMPACTION SECTIONS BELOW
DUE TO THE FINED-GRAINED NATURE OF THE EXISTING RESIDUAL SOILS, REPEATED CONSTRUCTION TRAFFIC ACROSS THE SITE WILL LEAD TO INSTABILITIES. CONSTRUCTION TRAFFIC SHOULD BE LIMITED ACROSS THE SITE. IT IS RECOMMENDED THAT ALL CONSTRUCTION AREAS, INCLUDING THOSE WHICH WERE EXCAVATED TO ACHIEVE THE PLANNED SUBGRADE ELEVATION, BE PROOF-ROLLED IMMEDIATELY PRIOR TO THE PLACEMENT OF THE SUBBASE STONE AND AGAIN BEFORE THE CONCRETE SLAB OR THE ASPHALT PAVEMENT SECTION. THIS WILL ALLOW FOR SOFT AND WEAK AREAS TO BE OBSERVED AND REMEDIATED, IF REQUIRED.

FILL CRITERIA

FILL MATERIAL, WHICH SUPPORTS FOUNDATIONS, FLOOR SLABS, AND PAVEMENTS, AS WELL AS MATERIAL USED FOR RETAINING WALL BACKFILL AND TO CONSTRUCT BASIN BERMS, IS CONSIDERED STRUCTURAL FILL.
FOLLOWING SITE PREPARATION MEASURES, STRUCTURAL FILL REQUIRED TO ELEVATE THE BUILDING PADS AND PAVEMENT AREAS MAY BE PLACED. IT IS ANTICIPATED THAT EXCAVATIONS TO ACHIEVE THE PROPOSED BUILDING AND SITE GRADES WILL MAKE AVAILABLE THE RESIDUAL SOILS, WEATHERED ROCK, AND POSSIBLY THE BEDROCK FOR USE AS STRUCTURAL FILL. OTHER FILL WILL HAVE TO BE IMPORTED.
THE ADDITION OF WATER MAY BE REQUIRED TO ACHIEVE OPTIMUM MOISTURE CONTENT. EXCAVATED ROCK MAY ALSO BE UTILIZED AS STRUCTURAL FILL PROVIDED IT IS PROCESSED TO LESS THAN 4 INCHES IN SIZE, AND MIXED WITH THE SUITABLE RESIDUAL SOILS TO PROVIDE A WELL-GRADED STRUCTURAL FILL.
SOILS EXCAVATED AT THE SITE SHOULD BE MAINTAINED BY THE CONTRACTOR. IN ORDER TO MINIMIZE PROBLEMS WITH STOCKPILED SOILS BECOMING TOO WET FOR USE AS STRUCTURAL FILL, THE SOILS EXCAVATED AND STOCKPILED SHOULD BE GRADED TO SHED WATER AND ROLLED WITH A SMOOTH DRUM ROLLER. DURING PERIODS OF WET SITE CONDITIONS, TRAVEL UPON THE BUILDING PADS AND WITHIN THE ROADWAYS SHOULD BE LIMITED TO MINIMIZE DISTURBANCES WHICH WILL LEAD TO INSTABILITIES.
ANY STRUCTURAL OR LOAD BEARING SOIL WHICH IS IMPORTED TO THE SITE (IF REQUIRED) SHOULD MEET THE FOLLOWING CRITERIA: 1) FREE OF ORGANIC MATTER, ASH, CINDERS, AND DEMOLITION DEBRIS, 2) PARTICLE SIZE DISTRIBUTION THAT IS WELL GRADED, 3) PLASTICITY INDEX LESS THAN 10, AND 4) LESS THAN 15 PERCENT BY WEIGHT ROCK FRAGMENTS LARGER THAN 3", LESS THAN 30 PERCENT BY WEIGHT LARGER THAN 3/4" AND LESS THAN 30 PERCENT BY WEIGHT SMALLER THAN THE NO. 200 SIEVE.

THE ABOVE CRITERIA ARE PROVIDED AS A GENERAL GUIDELINE FOR SOIL MATERIALS IMPORTED TO THE SITE. SOIL MATERIALS, AVAILABLE FOR USE AS A STRUCTURAL FILL, SHOULD BE SUBMITTED TO A GEOTECHNICAL ENGINEER FOR EVALUATION PRIOR TO IMPORTATION TO THE SITE.

COMPACTION CRITERIA

STRUCTURAL FILL SHOULD GENERALLY BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE THICKNESS AND COMPACTED WITH A SHEEPSFOOT OR SMOOTH DRUM VIBRATORY ROLLER WITH A MINIMUM STATIC WEIGHT OF 10 TONS. USE OF A SHEEPSFOOT ROLLER WILL AID IN CRUSHING EXCAVATED WEATHERED ROCK MATERIAL FOR USE AS STRUCTURAL FILL. THE FILL SHOULD BE PLACED IN HORIZONTAL LIFTS OF SIX (6) INCHES LOOSE THICKNESS WHERE COMPACTION BY HAND-OPERATED EQUIPMENT IS NECESSARY. THE OPTIMUM LIFT THICKNESS AND NUMBER OF REPETITIONS NECESSARY TO ACHIEVE THE REQUIRED PERCENTAGE COMPACTION VALUES SHOULD BE DETERMINED IN THE FIELD WITH TEST PASSES OF THE CHOSEN COMPACTION EQUIPMENT. THE FILL MATERIAL SHOULD BE PLACED AT, OR DEVIATE NOMINALLY FROM, THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH ASTM STANDARD D698 AND COMPACTED TO A MINIMUM PERCENTAGE OF THE MAXIMUM DRY DENSITY AS INDICATED IN THE FOLLOWING TABLE.

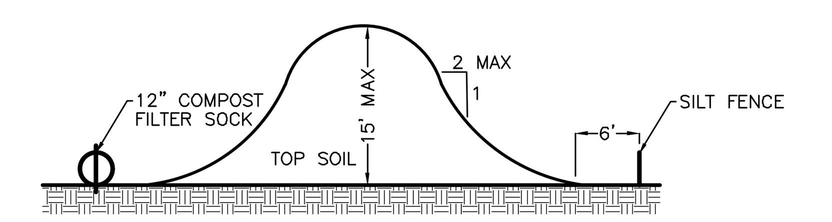
FILL AREA	PERCENT OF MAXIMUM DRY DENSITY AS PER ASTM STANDARD D 698
PAVEMENTS, SLAB-ON-GRADE AND FOUNDATION BEARING AREAS	98
WALKWAYS, AND BASIN BERMS	95
NON-STRUCTURAL	92

PLACING TOPSOIL OR TOPSOIL MIXTURE:

PREPARATION OF AREAS TO BE TOPSOILED
GRADE THE AREAS TO BE COVERED BY TOPSOIL. USING ACCEPTABLE METHODS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE PLACING THE TOPSOIL. REMOVE STONES AND OTHER FOREIGN MATERIAL 2 INCHES OR LARGER IN DIMENSION. REMOVE AND SATISFACTORILY DISPOSE OF UNSUITABLE AND SURPLUS MATERIAL.

PLACING AND SPREADING TOPSOIL
PLACE TOPSOIL ON THE PREPARED AREAS AND, UNLESS OTHERWISE INDICATED, SPREAD AND COMPACT TO A 4-INCH UNIFORM DEPTH ± 1 1/2 INCHES. COMPACT WITH A ROLLER WEIGHING NOT OVER 120 POUNDS PER FOOT WIDTH OF ROLLER OR BY OTHER ACCEPTABLE METHODS, AS DIRECTED. REMOVE OVERDEPTH TOPSOIL, UNLESS OTHERWISE AGREED UPON IN WRITING. DO NOT PLACE TOPSOIL IN A WET OR FROZEN CONDITION.

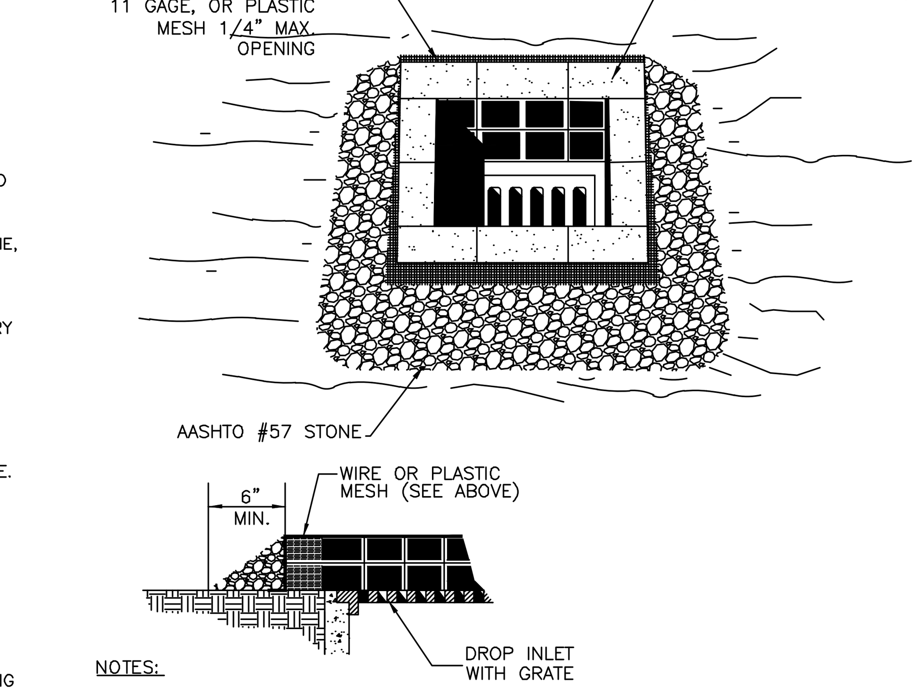
SEEDING SPECIFICATIONS:
WHERE DENUDED AREAS ARE DESIRED TO BE LAWN:
1. PERFORM ALL CULTURAL OPERATION AT RIGHT ANGLES TO THE SLOPE.
2. APPLY LIME ACCORDING TO TEST OR AT THE RATE OF 25 LBS. OF GROUND LIMESTONE PER 1,000 SQ. FT.
3. APPLY FERTILIZER ACCORDING TO SOIL TEST OR WORK IN DEEPLY 20 LBS. OF 0-20-20 OR EQUIVALENT PER 1,000 SQ. FT. AND AT THE TIME OF SEEDING, WORK INTO THE SURFACE 10 LBS. OF 10-10-10 OR EQUIVALENT PER 1,000 SQ. FT. OR OTHER APPROVED MIXTURE.
4. SMOOTH AND FIRM SEEDED PRIOR TO SEEDING.
5. SEED USING A MIXTURE OF 60% PENNSTAR KENTUCKY BLUEGRASS, 30% PENNLAWN RED FESCUE AND 10% PENNFINE PERENNIAL RYEGRASS AT THE RATE OF FIVE (5) POUNDS PER 1,000 SQ. FT. OR OTHER APPROVED MIXTURE.
6. COVER GRASS AND LEGUME SEEDS WITH 1/4" OF SOIL WITH SOIL EQUIPMENT, MULCH (RATE OF 3 TONS PER ACRE).
7. MOW AS REQUIRED.
8. WHERE SLOPES EXCEED 25% JUTE NETTING OR OTHER APPROVED (EQUAL) SLOPE STABILIZATION MEASURES SHALL BE UTILIZED. IN ADDITION, THE SEEDING SPECIFICATIONS FOR STEEP SLOPES SHALL BE INCREASED TO INCLUDE 3 LBS/1,000 SQ. FT. OF ANNUAL RYEGRASS FOR RAPID VEGETAL ESTABLISHMENT.



TYPICAL SOIL STOCKPILE CROSS SECTION
N.T.S.

NOTE: SILT FENCE OR COMPOST FILTER SOCK MUST COMPLETELY ENCIRCLE 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.



NOTES:

MAXIMUM DRAINAGE AREA =1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET 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 TO REMAIN PERMANENTLY.

TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

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

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

CHANNEL STONE & CONCRETE BLOCK INLET PROTECTION

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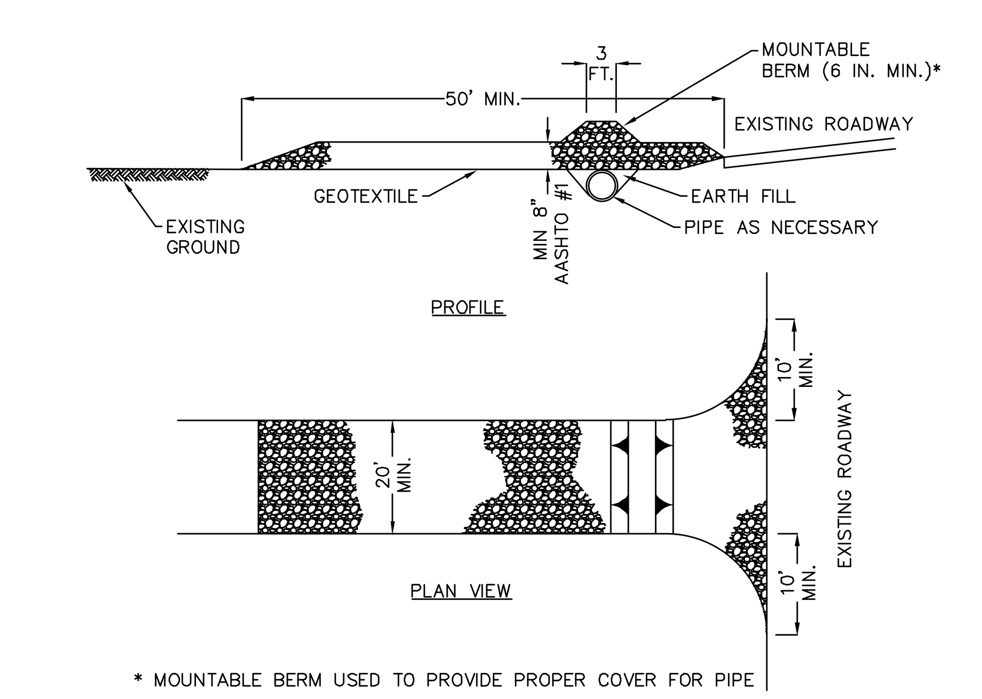

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: 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. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

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REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

EROSION & SEDIMENTATION CONTROL DETAILS

FILE NO.: 15-372

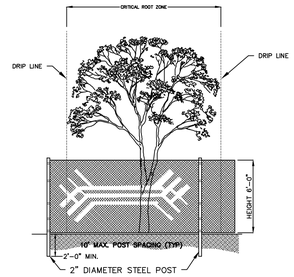
MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

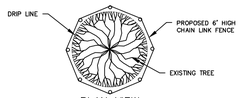
REGISTERED PROFESSIONAL KEVIN R. MOMENEE ENGINEER PE020326E

FINAL LAND DEVELOPMENT PLAN
ACADEMY OF NOTRE DAME - STEM BUILDING
RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE-CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 10 OF 13
DATE: AUGUST 31, 2016
SCALE: AS NOTED





PLAN VIEW
NTS

TREE PROTECTION SPECIFICATIONS

I. A 4" LAYER OF COARSE MULCH OR WOODCHIPS IS TO BE PLACED BENEATH THE DRIPLINE OF THE PROTECTED TREES. MULCH IS TO BE KEPT 12" FROM THE TRUNK.

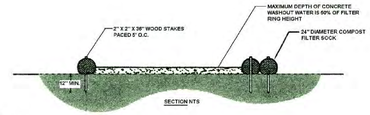
II. A PROTECTIVE BARRIER OF 6' CHAIN LINK FENCING SHALL BE INSTALLED AROUND THE DRIPLINE OF PROTECTED TREE(S). THE FENCING CAN BE MOVED WITHIN THE DRIPLINE IF AUTHORIZED BY THE CONSULTING ARBORIST BUT NOT CLOSER THAN 2' INTO THE GROUND. FENCE POSTS SHALL BE 2.0" IN DIAMETER AND ARE TO BE DRIVEN 2' INTO THE GROUND. THE DISTANCE BETWEEN POSTS SHALL NOT BE MORE THAN 10'. THIS ENCLOSED AREA IS THE TREE PROTECTION ZONE (TPZ).

III. MOVABLE BARRIERS OF CHAIN LINK FENCING SECURED TO CEMENT BLOCKS CAN BE SUBSTITUTED FOR "FIXED" FENCING IF THE CONSULTING ARBORIST AGREE THAT THE FENCING WILL HAVE TO BE MOVED TO ACCOMMODATE CERTAIN PHASES OF CONSTRUCTION. THE BUILDER MAY NOT MOVE THE FENCE WITHOUT AUTHORIZATION FROM THE CONSULTING ARBORIST.

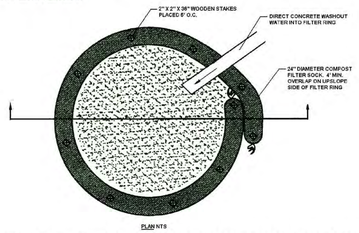
IV. WHERE THE CONSULTING ARBORIST HAS DETERMINED THAT TREE PROTECTION FENCING WILL INTERFERE WITH THE SAFETY OF WORK CREWS, TREE WRAP MAY BE USED AS AN ALTERNATIVE FORM OF TREE PROTECTION. WOODEN SLATS AT LEAST ONE INCH THICK ARE TO BE BOUND SECURELY, EDGE TO EDGE, AROUND THE TRUNK. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE OUTSIDE OF THE WOODEN SLATS. MAJOR SCAFFOLD LIMBS MAY REQUIRE PROTECTION AS DETERMINED BY THE CONSULTING ARBORIST. STRAW WADDLE MAY ALSO BE USED AS A TRUNK WRAP BY COILING THE WADDLE AROUND THE TRUNK UP TO A MINIMUM HEIGHT OF SIX FEET FROM GRADE. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE STRAW WADDLE.

DO NOT:
A. ALLOW RUNOFF OF SPILLAGE DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
B. STORE MATERIALS, STOCKPILE SOIL, OR PARK OR DRIVE VEHICLES WITHIN THE TREE PROTECTION ZONE.
C. CUT, BREAK SKIN, OR BRUISE ROOTS, BRANCHES, OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
D. ALLOW FIRES UNDER AND ADJACENT TO TREES.
E. DISCHARGE EXHAUST INTO FOLIAGE.
F. SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
G. TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIPLINE OR PROTECTION ZONE OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
H. APPLY SOIL STERILANTS UNDER PAVEMENT NEAR EXISTING TREES.

TREE PROTECTION DETAIL
NTS

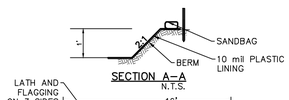


NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 10" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

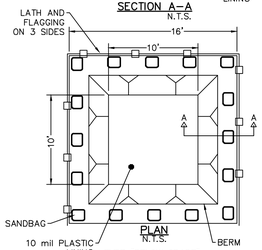


A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

CONCRETE WASHOUT DETAIL
N.T.S.



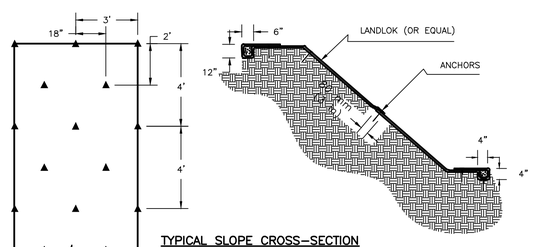
SECTION A–A
N.T.S.



PLAN
N.T.S.

TYPE "BELOW GRADE"

10'X10' CONCRETE WASHOUT
N.T.S.



TYPICAL SLOPE CROSS–SECTION
NTS

NOTES:
1. INSTALL LANDLOK TURF REINFORCEMENT MATS (OR EQUAL) AND SOIL FILL (OPTIONAL). FOR THE SITE GRADING AREAS WHERE THE SLOPES ARE UP TO 3:1 USE LANDLOK S1 OR EQUAL. FOR THE TEMPORARY BASIN THAT HAS SLOPES UP TO 2:1, USE LANDLOK C2 OR EQUAL.
2. PREPARE SOIL BEFORE INSTALLING MATS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED, UNLESS USING BLANKET THAT IS PRESEEDED (THEN FOLLOW MANUFACTURERS SPECIFICATIONS).
3. BEGIN AT TOP OF SLOPE BY ANCHORING T.R.M. IN TRENCH AS INDICATED IN THE DETAIL, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
4. ROLL THE T.R.M.'s EITHER DOWN VERTICALLY OR HORIZONTALLY ACROSS THE SLOPE.
5. THE EDGES OF PARALLEL T.R.M.'s MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
6. WHEN T.R.M.'s MUST BE SPLICED DOWN THE SLOPE, PLACE T.R.M. END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
7. U-SHAPED WIRE STAPLES, METAL GEOTEXTILE PINS, TRIANGULAR WOODEN OR PLASTIC STAKES CAN BE USED TO ANCHOR T.R.M.'s TO FINISHED GRADE.

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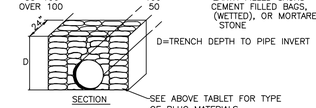
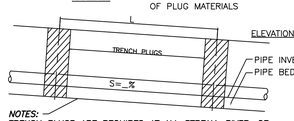
M:\PROJECTS\2015\15372\MAI\DRAWINGS\15372

REQUIRED SPACING (L) AND MATERIALS FOR TRENCH PLUGS

TRENCH SLOPE (%)	L (FEET)	PLUG MATERIAL
0–5	500	NONE
5–15	300	EARTH FILLED SACKS
15–25	200	EARTH FILLED SACKS
25–35	100	EARTH FILLED SACKS
35–100	100	EARTH FILLED SACKS
OVER 100	50	CEMENT FILLED BAGS, (WETTED), OR MORTARED STONE





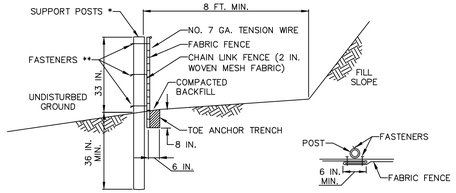
NOTES:-
TRENCH PLUGS ARE REQUIRED AT ALL STREAM, RIVER, OR WATER–BODY CROSSINGS REGARDLESS OF TRENCH SLOPE. OTHERWISE NOT REQUIRED.
TOPSOIL MAY NOT BE USED TO FILL SACKS.

CONSTRUCTION OF TRENCH PLUGS
N.T.S.

UTILITY LINE TRENCH EXCAVATIONS:

THE FOLLOWING SPECIFICATIONS AND DETAILS MUST BE FOLLOWED FOR ALL UTILITY TRENCHES WHICH HAVE THE POTENTIAL TO CONVEY SEDIMENT LADEN WATER TO SITE BOUNDARIES OR WATER WAYS WITHOUT FIRST PASSING THROUGH SEDIMENT REMOVAL FACILITIES.

1. CONSTRUCTION REQUIREMENTS
A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
C. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH
D. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
E. TRENCH PLUGS WILL BE SPACED IN ACCORDANCE WITH TABLE 4.11 AND BE CONSTRUCTED OF THE MATERIALS AND TO THE DETAILS SHOWN IN FIGURE 4.21.
1. AT ALL CROSSINGS OF WATERS OF THE COMMONWEALTH, TRENCH PLUGS WILL BE INSTALLED AT THE BANKS AFTER TRENCH EXCAVATION. THE PLUGS MAY BE TEMPORARILY REMOVED WHEN PLACING THE PIPE, BUT THEN REPLACED.
2. CONSTRUCTION OF THE CROSSING WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION M.
F. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, IN ACCORDANCE WITH ITEM B.5 OF SECTION M,BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
G. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
H. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.
2. EXCEPTIONS – IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED. IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 2 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
2C. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
2F. IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED AND THE AREA SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.



SECTION VIEW

JOINING FENCE SECTIONS

* POSTS SPACED AT 10 FT. MAX. USE 2–1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

** CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO SHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42 IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2–1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM–A–491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN–LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.

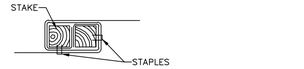
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

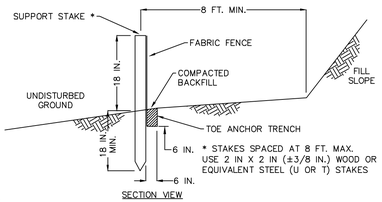
FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-10
SUPER SILT FENCE
NOT TO SCALE

FENCE #	LOCATION	SLOPE %	SLOPE LENGTH ABOVE FENCE (FT)
1	WESTERN YARD	5.2	175
2	WESTERN YARD	3.0	275
3	WESTERN YARD	3.3	340
4	PCSM #2	4.9	150
5	SPREADER #2	5.0	100
6	SPREADER #1	4.8	240
7	PCSM #1	2.8	180



JOINING FENCE SECTIONS



SECTION VIEW

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.

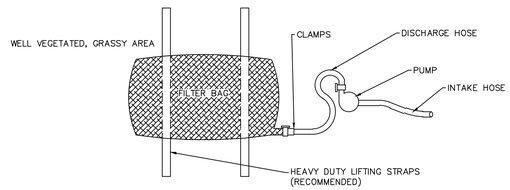
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

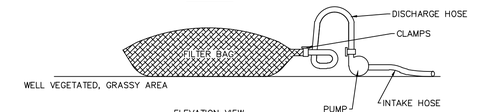
ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4–6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4–7
STANDARD SILT FENCE (18" HIGH)
NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

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–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

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.

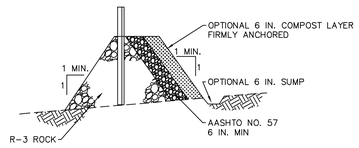
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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.

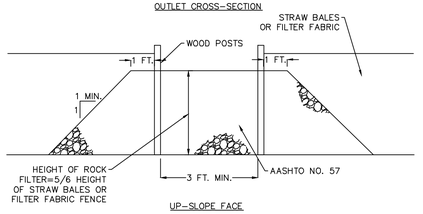
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

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

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



OUTLET CROSS–SECTION



UP–SLOPE FACE

NOTES:

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

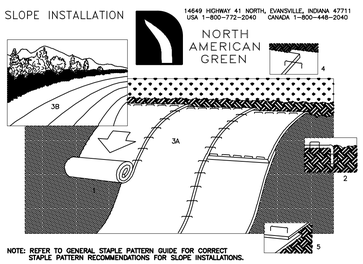
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4–6
ROCK FILTER OUTLET
NOT TO SCALE

SLOPE INSTALLATION

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47711
USA 1–800–772–2040 CANADA 1–800–448–2040

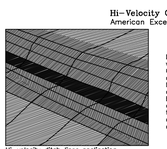
NORTH AMERICAN GREEN



NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

Hi–Velocity Curlex Blankets
American Excelsior Company



Hi–velocity ditch liner application.

Designed to control erosion in areas of high–velocity water runoff, the Excelsior Hi–Velocity Curlex Blanket is a machine–produced mat of curled wood excelsior of 80% six inch or longer fiber length, with consistent thickness and fiber evenly distributed over its entire area. Each side is covered with black, extra heavy–duty extruded plastic mesh netting designed to last for years and reinforce the root system after the excelsior mat has decomposed. They are smolder–resistant–no chemical additives.

INSTALLATION INSTRUCTIONS
This blanket is designed to withstand high–velocity water movements in ditches and on slopes. In ditches, unroll blanket in direction of water flow. When using two blankets side by side in a ditch, do not put the seems in the center of the ditch. Offset 6" to 1 foot. On slopes, start blanket 3 feet over crest of slope or dig anchor ditches if specified. Blankets may be installed horizontally or vertically, whichever is easier.

STAPLING INSTRUCTIONS FOR AMCO Hi–VELOCITY CURLEX BLANKETS
Use wire staples, .091" in diameter or greater, "U" shaped with legs 8" long or longer and 1" to 2" crown. Size and gauge of staples used will vary with soil types. Use four staples across at the start of each roll and continue to staple along the length of the roll at 2 ft. intervals. When blankets are placed along–side of each other, staple so as to catch the edge of each roll. In addition to stapling the edges of the blanket at the appropriate intervals (see drawing), place staples in the center of the blanket halfway between the outer staples.

Hi–Velocity Curlex Blankets are recommended for the following water velocities:	
SOIL TYPES	VELOCITY/FEET PER SECOND
Clay,clay loam, silty clay	11 FPS
Clay,silty clay, sandy clay loam	9.8 FPS
Fine sandy loam silty loam	8.6 FPS

These figures are based on ditch lining at over 28 grade up to 13% on slope protection, the determining factor would be the velocity of water above and shearing effect of water velocity.

CHANNEL STABILIZATION
N.T.S.

REV.	DATE	COMMENTS
1	10/04/17	PER TWP ENG

EROSION & SEDIMENTATION CONTROL DETAILS

FILE NO.: 15–372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

FINAL LAND DEVELOPMENT PLAN

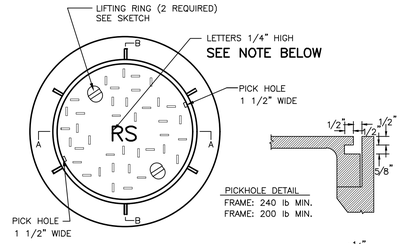
ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE–CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085–1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

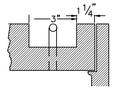
COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER
PE020326E

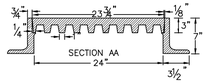
SHEET 11 OF 13
DATE: AUGUST 31, 2016
SCALE: AS NOTED



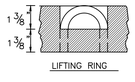
PICKHOLE DETAIL
FRAME: 240 lb MIN.
FRAME: 200 lb MIN.

SECTION BB





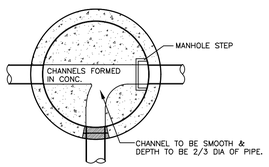
SECTION AA

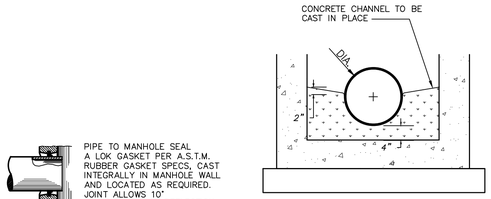


LIFTING RING

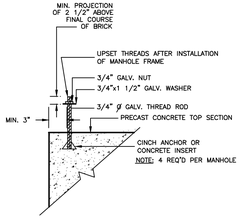
MANHOLE FRAME AND COVER

N.T.S.





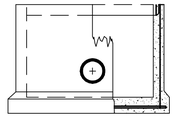
PARTIAL SECTION A–A



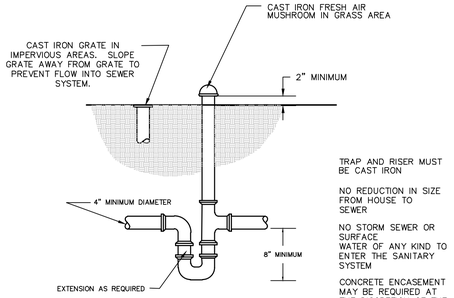
ANCHOR BOLT DETAIL FOR PRE–CAST MANHOLE

N.T.S.

PIPE TO MANHOLE SEAL
A LOK GASKET PER A.S.T.M. RUBBER GASKET SPECS, CAST INTEGRALLY IN MANHOLE WALL AND LOCATED AS REQUIRED. JOINT ALLOWS 10° OMNIDIRECTIONAL DEFLECTION.



MANHOLE DESIGN SPECIFICATIONS CONFORMS TO: PRECAST REINFORCED CONCRETE MANHOLE SECTIONS: A.S.T.M. DESIGNATION C478, LATEST REVISION. DESIGNED TO MEET RESILIENT CONNECTORS REQUIREMENTS OF A.S.T.M. C–923.



TRAP AND RISER MUST BE CAST IRON

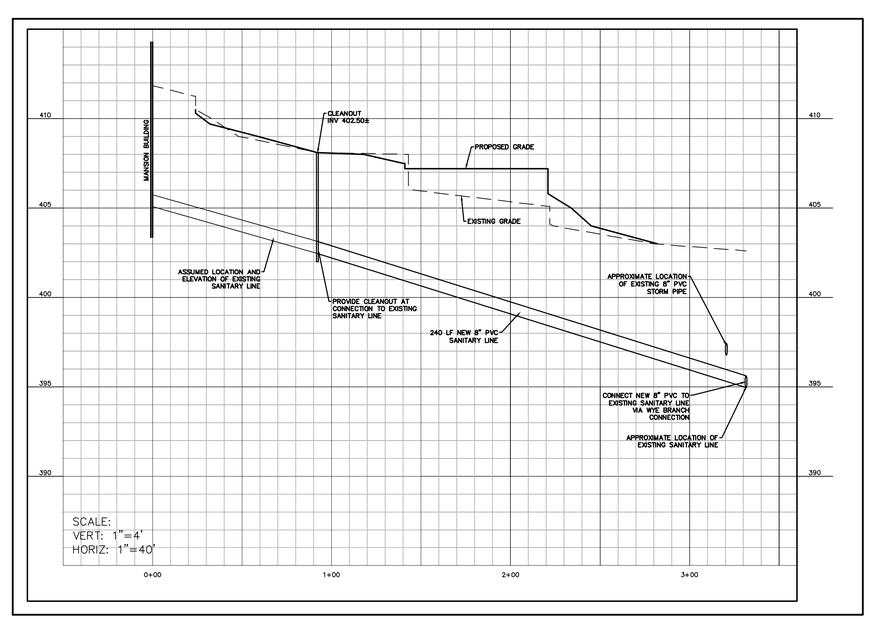
NO REDUCTION IN SIZE FROM HOUSE TO SEWER

NO STORM SEWER OR SURFACE WATER OF ANY KIND TO ENTER THE SANITARY SYSTEM

CONCRETE ENCASEMENT MAY BE REQUIRED AT THE DISCRETION OF THE TOWNSHIP ENGINEER

SANITARY SEWER LATERAL TRAP

N.T.S.

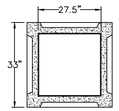


SANITARY SEWER PROFILE FROM MANSION BUILDING

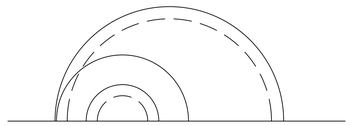
LETTERING NOTE:
ALL NEW SANITARY MANHOLE LIDS TO BE LABELED "RS"

STANDARD MANHOLE: NEENAH FOUNDRY COMPANY, TYPE N FRAMED. MANHOLE FRAME AND COVER – CATALOG NUMBER R–1788–A1, SOLID FRAME, HEAVY DUTY. FURNISH WITH FOUR 7/8 INCH ANCHOR HOLES ON 27–15/16 INCH DIAMETER BOLT CIRCLE.

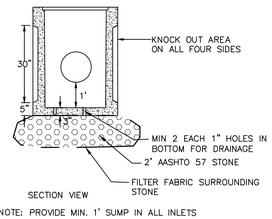
WATERTIGHT MANHOLE: NEENAH FOUNDRY COMPANY, CATALOG NUMBER R–1916–D, SOLID FRAME, HEAVY DUTY. FURNISH WITH FOUR 7/8 INCH ANCHOR HOLES ON 27–15/16 INCH DIAMETER BOLT CIRCLE. ALL MANHOLES NOT LOCATED IN PAVED AREAS ARE TO BE EQUIPTED WITH WATERTIGHT FRAMES AND COVERS



PLAN VIEW



HALF PLAN OF TOP



SECTION VIEW

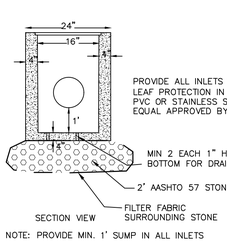
NOTE: PROVIDE MIN. 1' SUMP IN ALL INLETS

2' x 2' SUMP BOX

(NON–TRAFFIC BEARING)

SUMP BOX

Manufactured by
MODERN CONCRETE SEPTIC TANK CO.
or other NPCA certified plant



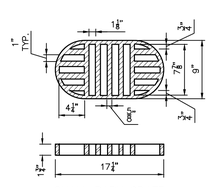
SECTION VIEW

NOTE: PROVIDE MIN. 1' SUMP IN ALL INLETS

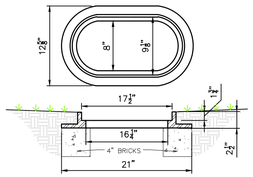
SMALL PARK GRATE BOX

(NON–TRAFFIC BEARING)

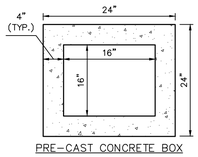
Manufactured by
MODERN CONCRETE SEPTIC TANK CO.
or other NPCA certified plant



SMALL PARK GRATE



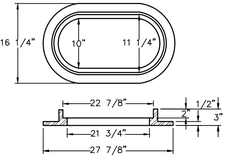
SMALL PARK FRAME

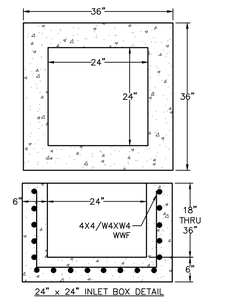


PRE–CAST CONCRETE BOX

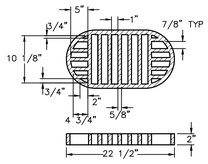
SMALL PARK GRATE DETAIL

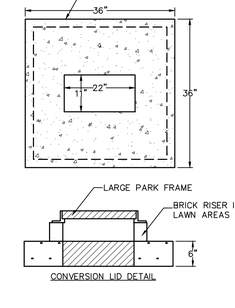
N.T.S.





24" x 24" INLET BOX DETAIL



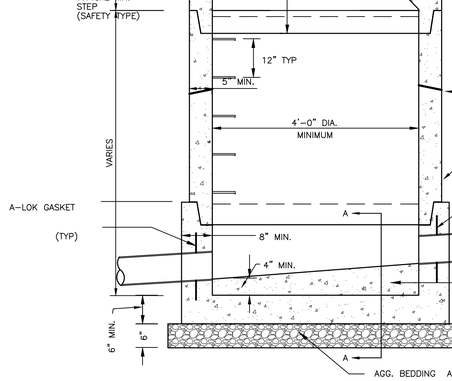


CONVERSION LID DETAIL

NOTE: PRECAST CONCRETE 24' X 24" BOX AND CONVERSION LID SUPPLIED BY: CONTINENTAL CONCRETE PRODUCTS, INC. POTTSTOWN, PA, PHONE:(610)327–3700, FAX:(610)327–9488.

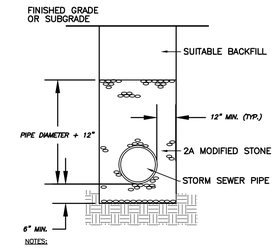
SPECIFICATIONS:
–GRAY IRON MEETS OR EXCEEDS ASTM A48 CLASS 30 B
–MINIMUM CONCRETE STRENGTH 3750 PSI @28 DAYS (PENNDOT CLASS AA)
–1 1/2" MINIMUM CONCRETE COVER (ALL REINFORCEMENT)
–STEEL REINFORCEMENT MEETS ASTM A615 (0.12 IN^2/FT EACH WAY)
–MATERIAL AND WORKSMANSHIP IN ACCORDANCE WITH PENNDOT PUB. 408
–LOCATION OF PIPE OPENINGS AS REQUIRED

INLET BOX W/ CONVERSION LID AND LARGE PARK FRAME & GRATE



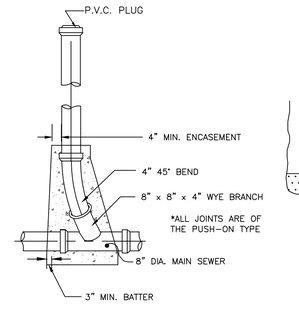
NOTE:
PRECAST MANHOLE SECTIONS & BASES SHALL BE USED IN LIEU OF BRICK, UNLESS SPECIFICALLY NOTED. OUTSIDE OF MANHOLE TO BE COATED WITH TWO COATS OF BITUMINOUS RESIN.

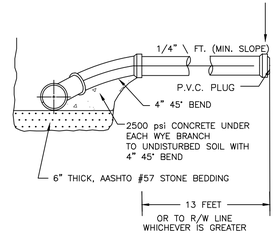
PRECAST CONCRETE MANHOLE
(SANITARY SEWER)
N.T.S.



NOTES:
ALL BACKFILL MATERIAL, INCLUDING 2A MODIFIED, SHALL BE MECHANICALLY TAMPED IN 6" LIFTS.
USE AASHTO #8 STONE FOR PVC PIPE TRENCH AROUND PIPE

TYPICAL STORM SEWER TRENCH CONSTRUCTION
NOT TO SCALE





WYE BRANCH CONNECTION

N.T.S.

SANITARY LATERAL NOTES

- WYE CONNECTIONS AND LATERAL STUBS ARE TO BE INSTALLED AS PART OF THE SEWER MAIN CONSTRUCTION.
- LATERALS ARE TO BE EXTENDED A MINIMUM OF 10–FEET INTO THE AS MEASUED FROM THE R/W LINE OR ADJACENT LOT LINE.
- LATERALS ARE TO BE CAPPED FOR FUTURE CONNECTION BY LOT DEVELOPER AND ENDS OF LATERAL SHALL BE MARKED WITH A 2X4 STAKE.
- CLEANOUTS ARE TO BE PROVIDED AT ALL BENDS ON SANITARY LATERALS.
- THERE SHALL BE A MINIMUM DISTANCE OF 5–FEET BETWEEN LATERALS AND BETWEEN LATERALS AND MANHOLES.

SANITARY SEWER NOTES:

1. THE CONTRACTOR IS TO VERIFY THE EXISTING SANITARY LINES BEFORE CONSTRUCTION.
2. EXFILTRATION TESTS TO BE PERFORMED ON ALL 8" SANITARY SEWER LINES IN ACCORDANCE WITH PA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
3. CONSTRUCTION IN ACCORDANCE WITH TOWNSHIP STANDARDS AND SPECIFICATIONS.

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REV.	DATE	COMMENTS
1	10/04/17	PER TWP ENG

PCSM DETAILS

FILE NO.: 15–372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL
KEVIN R. MOMENEE
ENGINEER
PE020326E

FINAL LAND DEVELOPMENT PLAN

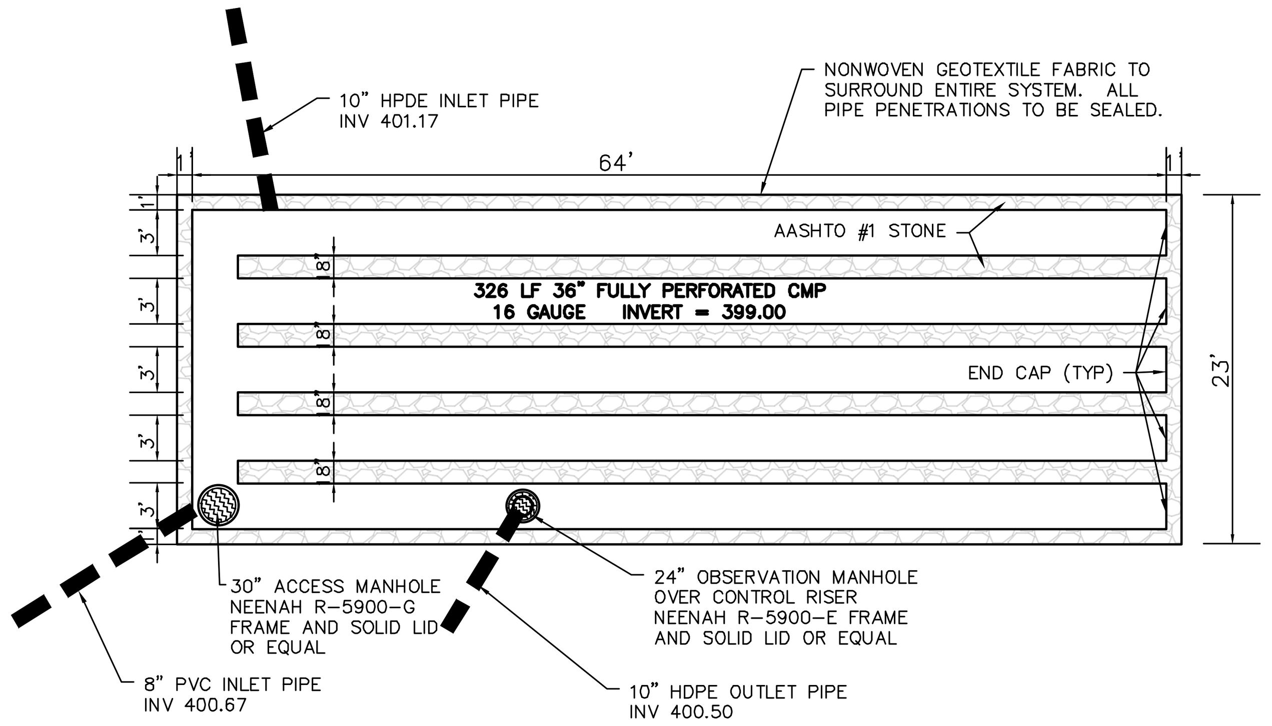
ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

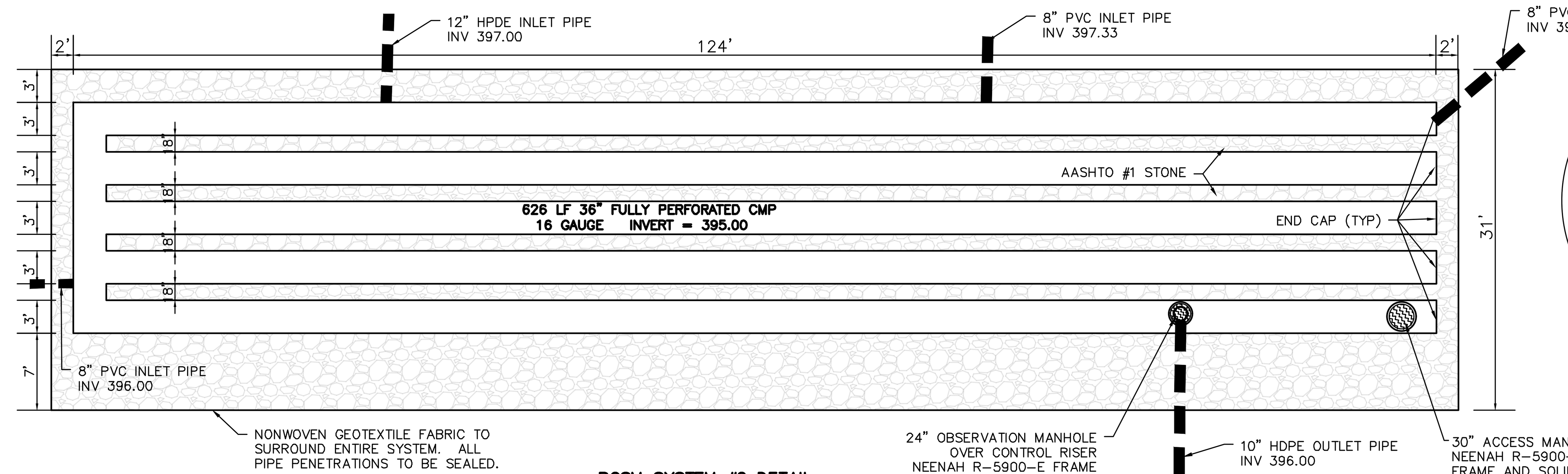
ONE–CALL:	20160541517
DRAWN BY:	BDM
CHECKED BY:	KRM

OWNER/APPLICANT
ADADEMY OF NOTRE DAME
560 SPROUL ROAD
VILLANOVA, PA 19085–1220

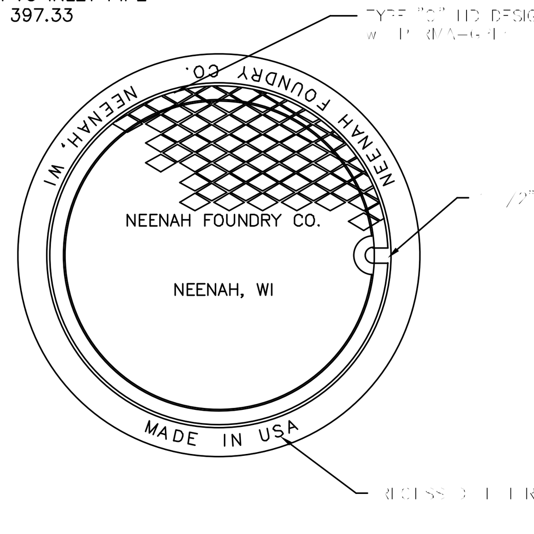
SHEET 12 OF 13
DATE: AUGUST 31, 2016
SCALE: AS NOTED

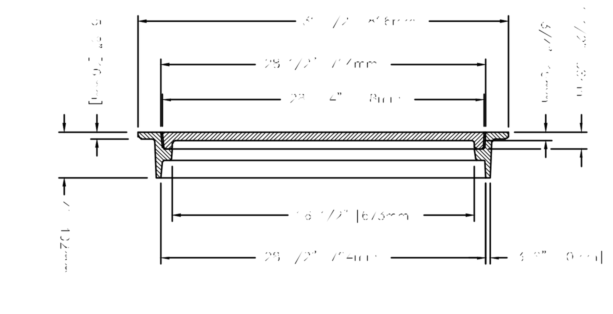


PCSM SYSTEM #1 DETAIL
326 LF 36" FULLY PERFORATED CMP
1.0' OF STONE ON EITHER SIDE OF SYSTEM
0.5' OF STONE BENEATH SYSTEM
N.T.S.

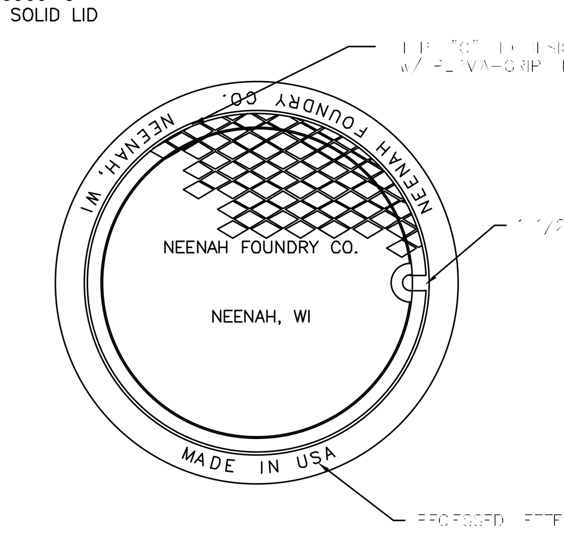


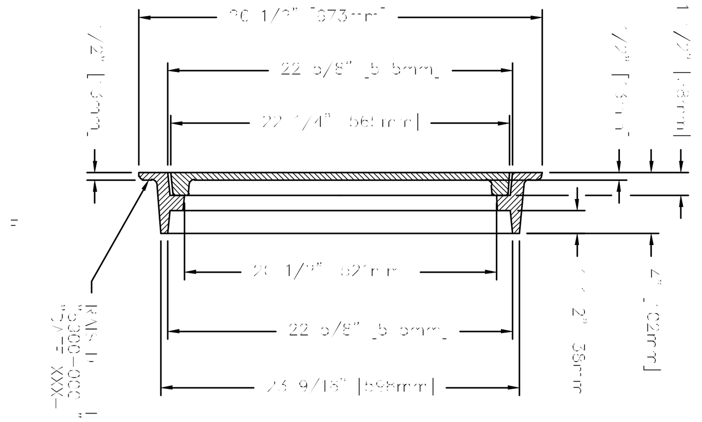
PCSM SYSTEM #2 DETAIL
626 LF 36" FULLY PERFORATED CMP
1.0' OF STONE ON EITHER SIDE OF SYSTEM
8" OF STONE BENEATH SYSTEM
N.T.S.





30" ACCESS MANHOLE

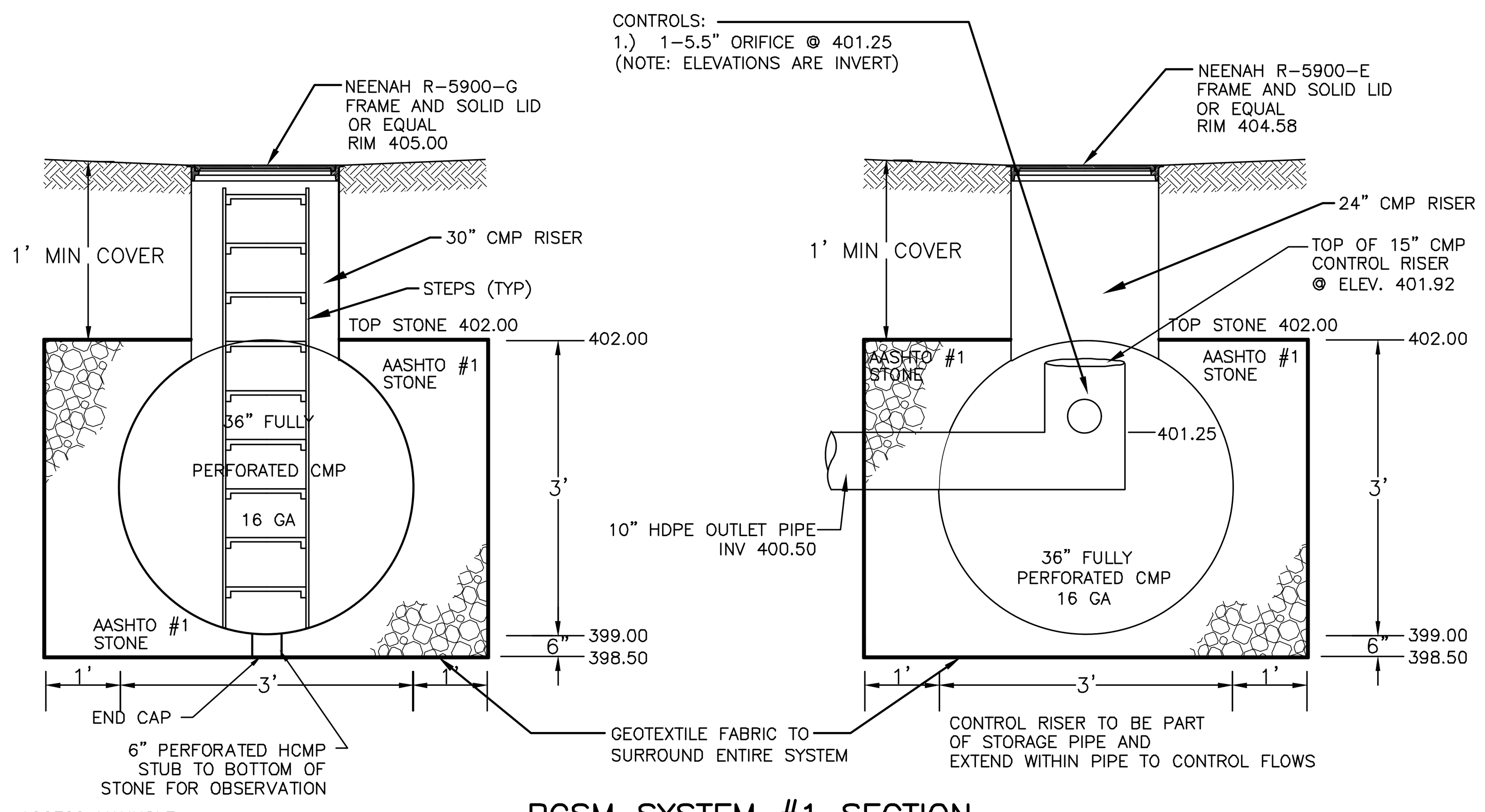




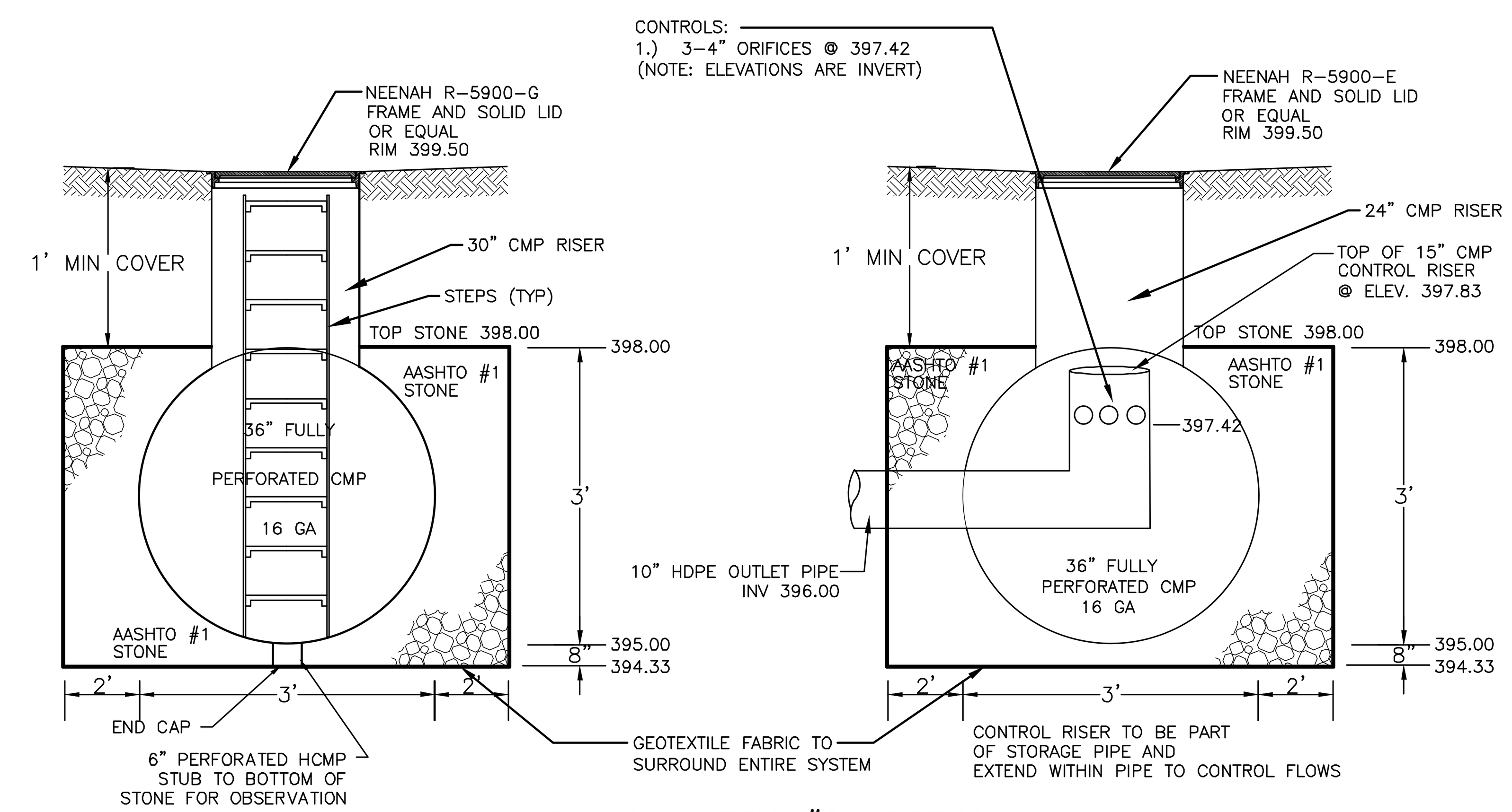
24" MANHOLE OVER RISER

NEENAH
FOUNDRY COMPANY

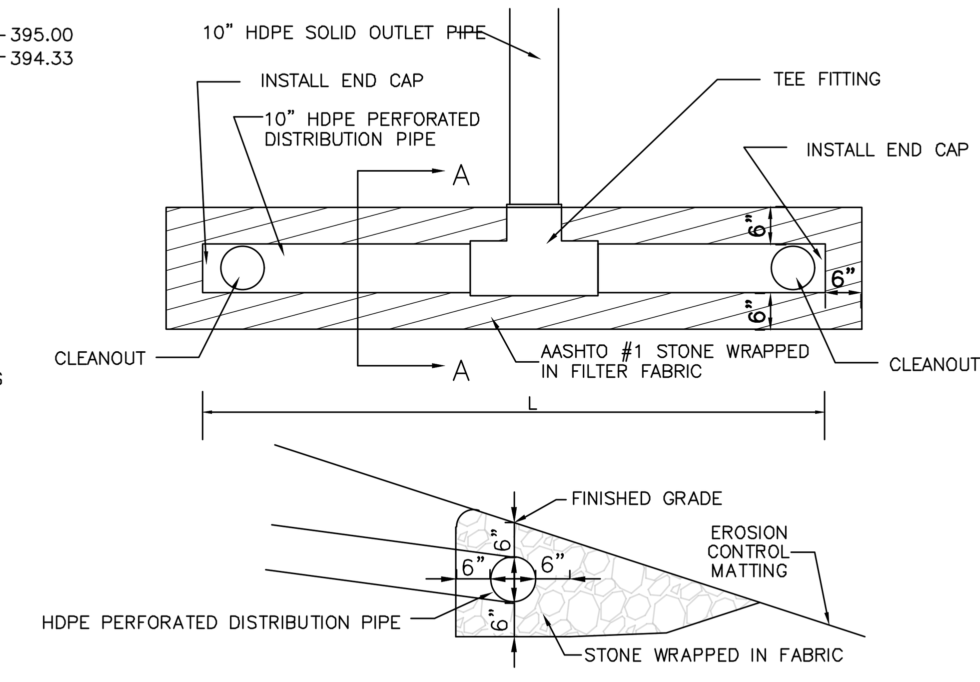
STORMWATER MANHOLE DETAILS
N.T.S.



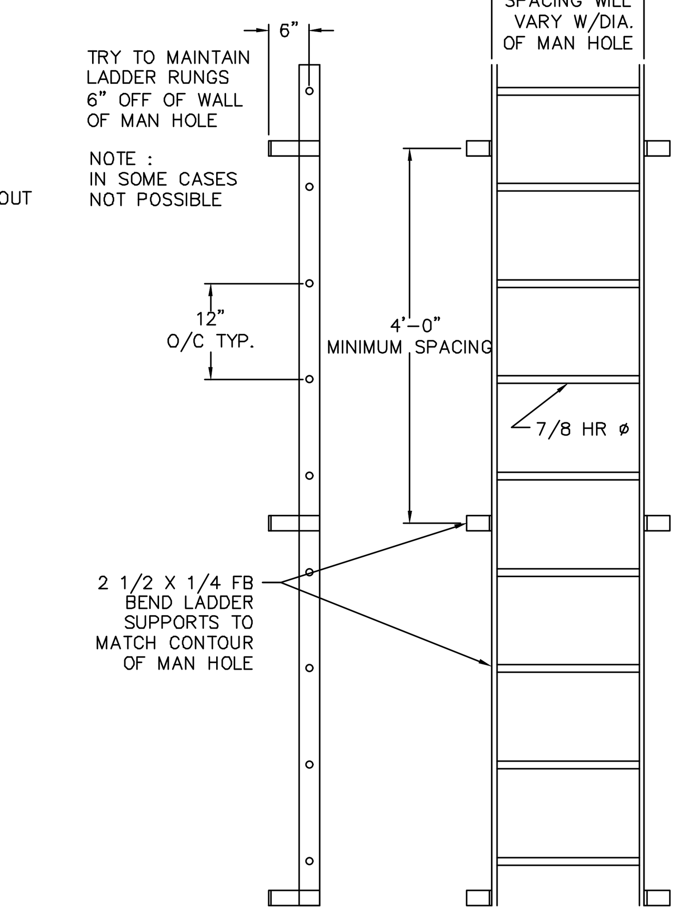
PCSM SYSTEM #1 SECTION



PCSM SYSTEM #2 SECTION



LEVEL SPREADER DETAIL
N.T.S.



STORMWATER RISER ACCESS LADDER
N.T.S.

CONSTRUCTION NOTES:

1. GEOTEXTILE FABRIC SHALL BE CLEAN NON-WOVEN GEOTEXTILE (PERMEABLE FILTER FABRIC) CLASS 1 AND SHALL BE IN ACCORDANCE WITH PADOT SPECIFICATION FROM 40B. THE TYPE AND/OR THICKNESS SHALL BE DUPONT TYPAR #3401, AMOCO PROPEX #4545 OR APPROVED EQUAL OR AS OTHERWISE INDICATED ON THE PLAN.
2. ALL STONE USED FOR THE CONSTRUCTION OF THE INFILTRATION BMP SHALL BE UNIFORMLY GRADED, CLEAN, AND WASHED CRUSHED STONE AGGREGATE MEETING PENNDOT/AASHTO #1 SPECIFICATIONS.
3. ALL PERSONS ENTERING ACTIVE TANKS, MANHOLES, INLETS, ETC. MUST COMPLY WITH OSHA REQUIREMENTS FOR ENTRY INTO CONFINED SPACES.
4. RAIN WATER CONDUCTORS ARE TO COLLECT ALL ROOF RUNOFF AND CONVEY IT TO THE APPROPRIATE STORMWATER MANAGEMENT FACILITY.
5. CLEANOUTS ARE REQUIRED AT ALL CHANGES IN DIRECTION OF THE ROOF DRAINS AND SANITARY SEWER LATERALS.
6. ALL SEEPAGE BEDS SHALL BE INSTALLED WITH A MINIMUM SEPARATION DISTANCE OF 10 FEET FROM ALL BASEMENT WALLS.
7. ALL CMP AND HCMP SHALL BE ALUMINUM OR ALUMINIZED STEEL.
8. ALL HDPE PIPE SHALL BE SMOOTH INTERIOR FLOW.
9. ALL PVC PIPE SHALL BE SDR 35.
10. THE RISER CONNECTIONS IN THE STORMWATER MANAGEMENT SYSTEM SHALL BE WATERTIGHT. REFER TO DETAILS.
11. WHERE DRAINAGE SWALES ARE WITHIN 20' OF A BASEMENT, WATERPROOFING SHALL BE APPLIED TO THE BASEMENT.
12. PERFORATIONS FOR 36" CMP SHALL SATISFY AASHTO DESIGNATION M36/M 36M-90 FOR CLASS 2 PERFORATIONS. THE PERFORATIONS SHALL BE CIRCULAR HOLES WITH NOMINAL DIAMETERS OF 5/16 TO 3/8 INCH. THE PERFORATIONS SHALL BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE. THE PERFORATIONS SHALL PROVIDE AN OPENING AREA OF NOT LESS THAN 3.3 SQ. IN. PER SQ. FT. OF PIPE SURFACE BASED ON NOMINAL DIAMETER AND LENGTH OF PIPE. 30 PERFORATIONS, 3/8 INCH DIAMETER, PER SQUARE FOOT OR 566 PERFORATIONS PER LINEAR FOOT SATISFIES THIS REQUIREMENT.

CONSTRUCTION SPECIFICATIONS FOR STORMWATER MANAGEMENT SYSTEMS

1. ALTER AND REFINE THE GRADES AS NECESSARY TO BRING SUBGRADE TO REQUIRED GRADES AND SECTIONS AS SHOWN IN THE DRAWINGS.
2. THE TYPE OF EQUIPMENT USED IN SUBGRADE PREPARATION CONSTRUCTION SHALL NOT CAUSE UNDUE SUBGRADE COMPACTION. TRAFFIC OVER SUBGRADE SHALL BE KEPT AT A MINIMUM.
3. INSTALL POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC WHICH MEETS PADOT CLASS 1 SPECIFICATIONS (I.E., DUPONT TYPAR #3401, AMOCO PROPEX #4545, OR APPROVED EQUAL) ON BOTTOM OF BED AREAS AND TACK UP SIDES OF EXCAVATION. WHERE EDGES OF ROLLS OVERLAP, THEY SHALL DO SO BY AT LEAST EIGHTEEN INCHES. ADEQUATE FABRIC SHALL BE LEFT ON THE ROLLS (NOT CUT FROM SIDE INSTALLATION) TO FACILITATE OVERTOPPING THE SYSTEM AT COMPLETION OF INSTALLATION.
4. ALL STONE FOR THE CONSTRUCTION OF THE INFILTRATION BMP SHALL BE UNIFORMLY GRADED AND CLEAN, WASHED, AGGREGATE. THE STONE SHALL MEET PENNDOT/AASHTO #1 SPECIFICATIONS. STONE TO BE CHECKED BY THE DESIGN OR SITE ENGINEER PRIOR TO INSTALLATION.
5. STONE BASE COURSE SHALL BE LAID OVER A DRY SUBGRADE TO A DEPTH SHOWN IN DRAWINGS. DO NOT ROLL OR COMPACT THE STONE BASE COURSE. KEEP THE BASE COURSE CLEAN FROM DEBRIS, CLAY AND ERODING SOIL. INSTALL TANKS AND PIPE AS SHOWN AND BACKFILL WITH STONE.
6. COVER SYSTEM WITH REMAINING FABRIC, ALLOWING OPENINGS FOR ACCESS COVERS.
7. SYSTEM TO BE TOTALLY ENCLOSED IN THE NON-WOVEN GEOTEXTILE FABRIC.
8. INFILTRATION BMP FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (i.e. CLEANING THE SOIL/SEDIMENT FROM FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
9. THE BOTTOM OF ALL INFILTRATION BMP'S SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.
10. INFLOW AND OUTFLOW POINTS INTO THE INDIVIDUAL ON-LOT SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES OR DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESES SYSTEMS. ALL DOWNSPOUTS AND OVERFLOW PIPES SHOULD BE KEPT IN GOOD WORKING ORDER.
12. EXCAVATION FOR THE INFILTRATION FACILITY SHALL BE PERFORMED WITH EQUIPMENT THAT WILL NOT COMPACT THE BOTTOM OF THE SEEPAGE BED OR LIKE FACILITY.
13. THE BOTTOM OF THE BED AND/OR TRENCH SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF AGGREGATE.

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FILL NOTES:

1. 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 PERMITTEE.

2. 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).

3. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL 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".

4. 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.

5. 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 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".

6. 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.PACODE.COM.

INFILTRATION BMP NOTES:

1. INFILTRATION BMP FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE PCSM INFILTRATION SYSTEMS #1-2, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED, ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.

2. ALL STONE FOR THE CONSTRUCTION OF THE INFILTRATION BMP SHOULD BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.

3. THE BOTTOM OF ALL INFILTRATION BMPs SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.

4. INFLOW AND OUTFLOW POINTS INTO THE INDIVIDUAL ON-LOT SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES AND DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESE SYSTEMS. ALL DOWNSPOUTS AND OVERFLOW PIPES SHOULD BE KEPT IN GOOD WORKING ORDER.

5. PRIOR TO THE PLACEMENT OF STONE IN THE PCSM INFILTRATION SYSTEMS 1-2, THE CONTRACTOR SHALL MAKE A TEST PIT 2 FEET BELOW THE BED BOTTOM TO ENSURE THAT BEDROCK AND/OR GROUNDWATER ARE NOT PRESENT IN THIS ZONE. IN THE EVENT THAT FROUNDWATER AND/OR BEDROCK ARE WITHIN 2 FEET OF BED BOTTOM, THE BED SHALL BE RELOCATED AND REDESIGNED BEFORE CONSTRUCTION MAY CONTINUE.

6. AFTER THE PCSM INFILTRATION SYSTEMS 1-2 ARE COMPLETELY INSTALLED, ALL HEAVY CONSTRUCTION EQUIPMENT SHALL BE RESTRICTED FROM THE INFILTRATION BEDS TO ELIMINATE IMPACTS WHICH MAY COMPROMISE IT. IN THE EVENT ANY IMPACTS COMPROMISE THE FUNCTIONALITY OF THE BMP INFILTRATION SYSTEMS, IT MUST BE IMMEDIATELY REPAIRED OR REPLACED TO DESIGN SPECIFICATIONS.

7. ALL BMP INFILTRATION SYSTEMS SHALL BE LOCATED A MINIMUM OF 10' FROM A BASEMENT WALL.

8. THE PROJECT ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE INITIATION OF ANY E&S OR PCSM CRITICAL STAGE OF CONSTRUCTION AS NOTED ON THE EROSION & SEDIMENTATION CONTROL PLAN AND POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. CRITICAL STAGES INCLUDE THOSE LISTED ON THIS SHEET OF THESE PLANS AND MORE GENERALLY THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS "AS DEEMED APPROPRIATE BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT." THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR PERFORMING ON-SITE INSPECTIONS FOR ALL CRITICAL STAGES IN ORDER TO ENSURE GENERAL PCSM PLAN COMPLIANCE TO FACILITATE FINAL CERTIFICATION THAT THE SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN.

STORMWATER MANAGEMENT FACILITY MAINTENANCE PLAN

THE STORMWATER MANAGEMENT SYSTEMS ON THIS LOT CONSISTS OF TWO SUBSURFACE DETENTION/RECHARGE BASINS. THE BASINS ARE COMPRISED OF FULLY PERFORATED CORRUGATED METAL PIPE WITHIN A STONE BED SURROUNDED BY FILTER FABRIC. AN INTERNAL CONTROL RISER ALLOWS CONTROLLED DISCHARGE OF FLOWS FROM THE SYSTEMS. WATER RUNOFF IS DIRECTED TO THE INFILTRATION BEDS VIA A ROOF RAINWATER COLLECTION SYSTEM, SERIES OF INLETS, AND PIPING WHICH CAPTURE AND COLLECT RUNOFF FROM THE NEW ROOF AREAS, AMPHITHEATER, ENTRY PLAZA, WALKS, AND SOME OTHER AREAS ON THE PROPERTY. THE INLETS ARE PROVIDED WITH A ONE FOOT SUMP BELOW THE INLET AND OUTLET PIPES SO THAT DEBRIS CAN BE COLLECTED PRIOR TO FLOWING INTO THE SUBSURFACE INFILTRATION BEDS.

THE SYSTEMS ARE DESIGNED TO PROMOTE GROUNDWATER RECHARGE. A CONTROL STRUCTURE WITHIN THE SYSTEMS DISCHARGE TO PROPOSED LEVEL SPREADERS WHERE THE RUNOFF MAY BE DISSIPATED TO GRADE IN AN UN-CONCENTRATED MANNER. AN ACCESS MANHOLE WITH A LADDER IS PROVIDED AT THE CONTROL STRUCTURE TO FACILITATE ACCESS AND MAINTENANCE OF THE SYSTEM.

THE RESPONSIBILITY FOR THE CONTINUED OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITIES ON THIS LOT IS THAT OF THE PROPERTY OWNER.

MAINTENANCE OF THE FACILITIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1. THE OWNER, OCCUPANT, TENANT OR OTHER USER OF THE PROPERTY SHALL NOT IMPEDE THE FLOW OF WATER DRAINING TO THE STORMWATER MANAGEMENT BASIN.

2. ALL ROOF DOWNSPOUTS, INLETS, CURB OPENINGS AND OTHER WATER WAYS SHALL BE KEPT OPEN AND OPERATION TO PASS THE FLOW OF WATER TO THE BASIN AS INTENDED.

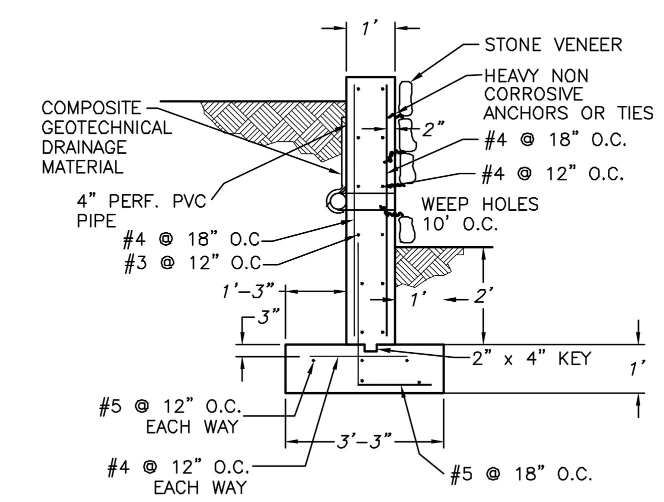
3. GRASS AND LANDSCAPING IN THE VICINITY OF ALL INLETS SHALL BE KEPT TRIM AND FREE FROM DEBRIS ACCUMULATION, AND DOWNSPOUTS AND INLETS SHALL BE KEPT FREE OF OBSTRUCTIONS THAT COULD BLOCK THE FREE FLOW OF WATER TO AND WITHIN THEM.

4. INLET SUMPS SHALL BE CLEANED OF ACCUMULATED DEBRIS BEFORE ANY DEBRIS CAN BE DISCHARGED INTO THE SYSTEMS. INLET STRUCTURES SHALL BE INSPECTED AT LEAST MONTHLY TO INSURE THAT THEY ARE CLEAN AND REMAIN OPERATIONAL.

5. SUBSURFACE PIPES SHALL BE INSPECTED ON AN ANNUAL BASIS TO INSURE THAT THEY ARE CLEAN AND OPERATIONAL. ANY ACCUMULATED DEBRIS AND SILT SHALL BE REMOVED IN A TIMELY MANER. THE SUBSURFACE PIPES SHALL BE KEPT FREE OF OBSTRUCTIONS THAT COULD BLOCK THE FREE FLOW OF WATER WITHIN THEM

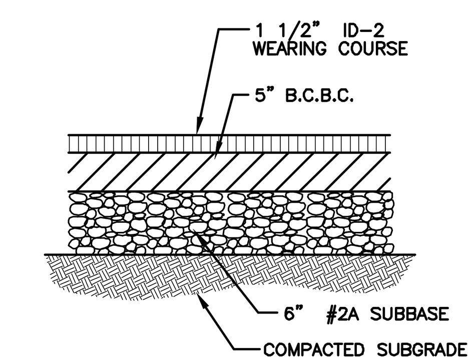
6. PROMPT REMEDIAL MEASURES ARE TO BE TAKEN IN THE EVENT OF ANY BLOCKAGE OR MALFUNCTION OF THE SYSTEM.

THE OWNER, OCCUPANT, TENANT OR OTHER USER OF THE PROPERTY SHALL NOT TAKE ANY MEASURES TO DISRUPT OR IN ANY WAY IMPAIR THE EFFECTIVENESS OF THE BASIN OR ITS CONTROLS. THIS INCLUDES ALTERATION OF GRADES IN ANY MANNER THAT WOULD DIVERT RUNOFF AWAY FROM INLET COLLECTION POINTS.

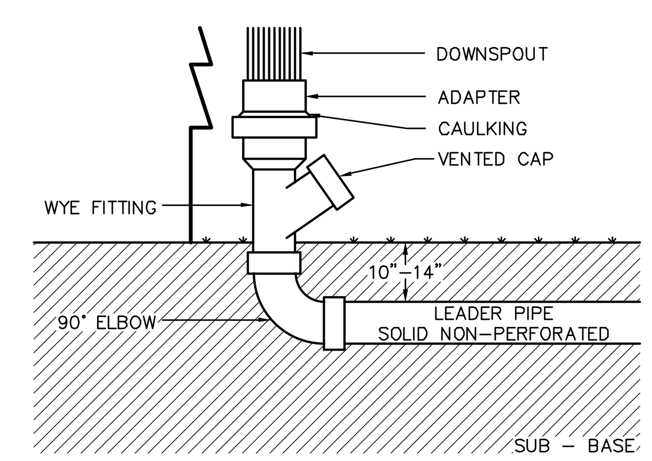


TYPICAL SITE RETAINING WALL OR EQUAL
N.T.S.

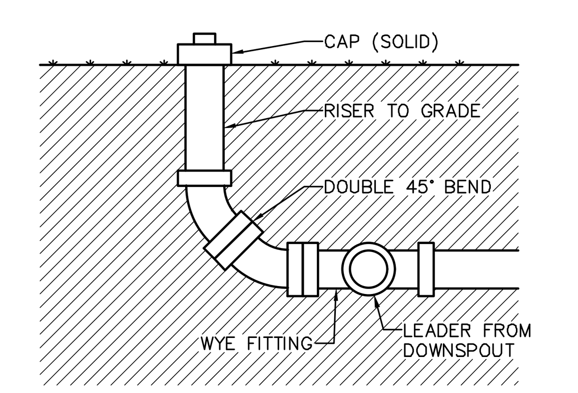
NOTES:
1. **RETAINING WALLS TO BE A MAXIMUM OF 4' REVEAL.**
2. **RAILINGS SHALL BE INSTALLED IF REQUIRED.**



EMERGENCY ACCESS PAVEMENT CROSS-SECTION
N.T.S.



DOWNSPOUT DETAIL
N.T.S.



TERMINAL CLEANOUT (TYPICAL)
N.T.S.

LEVEL SPREADER TABLE

LEVEL SPREADER #	LENGTH "L"	DISTRIBUTION PIPE
SPREADER 1	20'	10" HDPE
SPREADER 2	30'	10" HDPE

PIPE PERFORATIONS
REQUIRED 3.31 SQ. IN/SQ. FT

FOR 10"dia. DISTRIBUTION PIPE
C10" = 2*Pi*r = 2(Pi).4167 = 2.62 FT

FOR 1 LF OF PIPE
A10" = 2.62 SQ. FT
AREA OF HOLES = 3.31*2.62 = 8.67 SQ. IN

FOR 3/4"dia. HOLES
A3/4" = 0.442 SQ. IN
NO. HOLES NEEDED =8.67/0.442 = 20 HOLES

USE 5-3/4" dia. HOLES SPACED EQUALLY AROUND THE CIRCUMFERENCE @ 3"o.c. PER LENTGH OF PIPE STARTING @ 1.5" FROM EITHER END OF PIPE.

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REV.	DATE	COMMENTS
1	01/04/17	PER TWP ENG

PCSM DETAILS

FILE NO.: 15-372

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

REGISTERED PROFESSIONAL ENGINEER
KEVIN R. MOMENEE
PE020326E

FINAL LAND DEVELOPMENT PLAN

ACADEMY OF NOTRE DAME - STEM BUILDING

RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

ONE-CALL:	20160541517	OWNER/APPLICANT ADADEMY OF NOTRE DAME 560 SPROUL ROAD VILLANOVA, PA 19085-1220
DRAWN BY:	BDM	
CHECKED BY:	KRM	

SHEET 13 OF 13
DATE: AUGUST 31, 2016
SCALE: AS NOTED

Serial Number: 2016-011-1937

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

THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

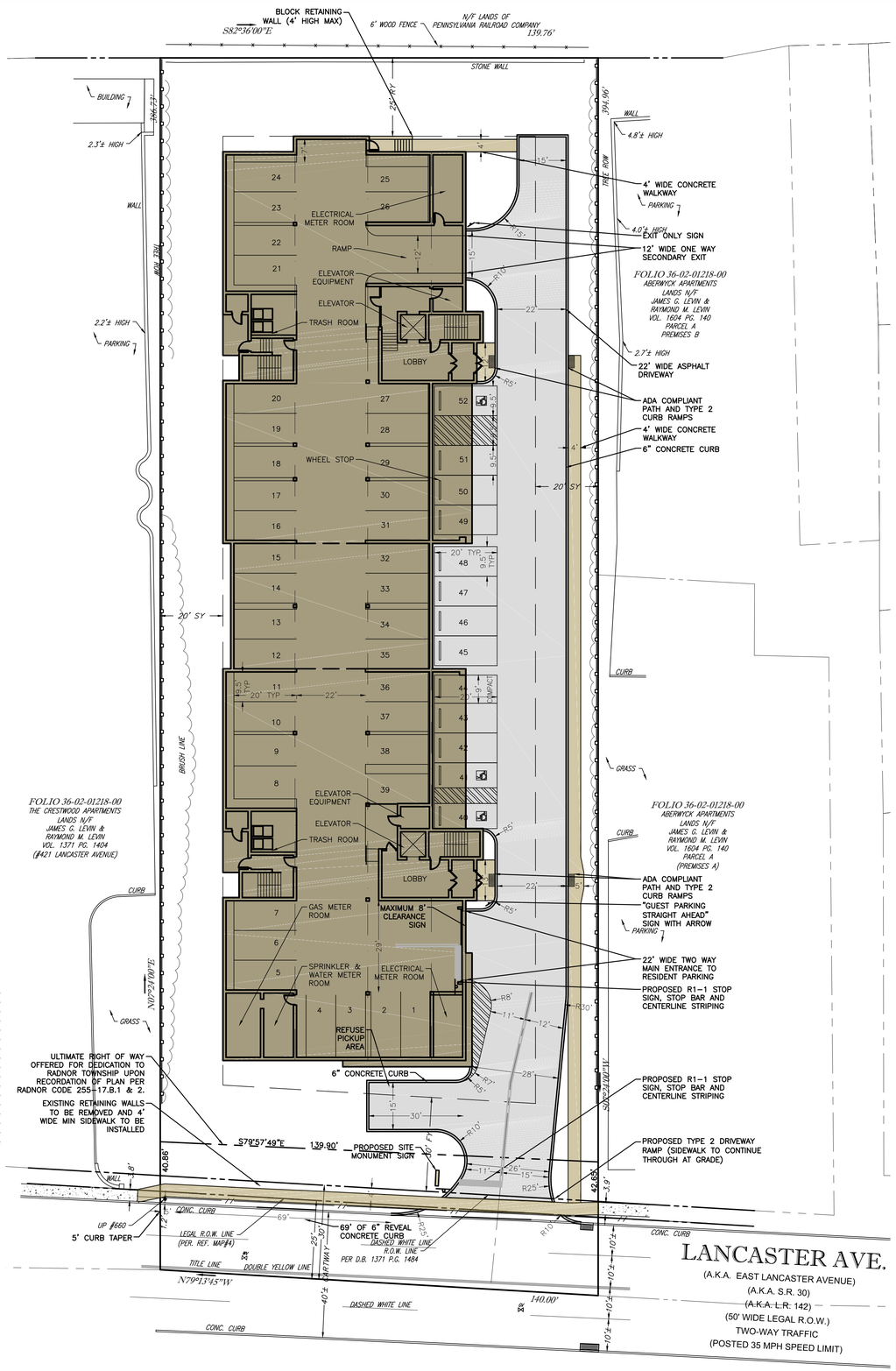
UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

- 124 / 125 — EXISTING CONTOUR
- × 123.45 — EXISTING SPOT ELEVATION
- × TC 123.45 — EXIST. TOP OF CURB ELEVATION
- × G 122.95 — EXIST. GUTTER ELEVATION
- × TW 123.45 — EXIST. TOP OF WALL ELEVATION
- × BW 122.95 — EXIST. BOTTOM OF WALL ELEVATION
- × FF 123.45 — EXIST. FINISHED FLOOR ELEVATION
- WV — WATER VALVE
- UNKNOWN VALVE
- GV — GAS VALVE
- GM — GAS METER
- OHW — OVERHEAD WIRES
- G — APPROX. LOC. UNDERGROUND GAS LINE
- T — APPROX. LOC. UNDERGROUND TEL. LINE
- W — APPROX. LOC. UNDERGROUND WATER LINE
- UP — UTILITY POLE
- UPLP — UTILITY POLE/LIGHT POLE
- SIGN
- MAIL BOX
- A.G. — ABOVE GROUND
- U.G. — UNDER GROUND
- D.C. — DEPRESSED CURB
- E.O.P. — EDGE OF PAVEMENT
- L.S.A. — LANDSCAPED AREA
- RRT. WALL — RAILROAD TIE WALL
- (TYP.) — TYPICAL
- WMH — WATER MANHOLE
- CB — CATCH BASIN OR INLET
- 10 — PARKING SPACE COUNT
- DEPRESSED CURB
- (TRACT I) — DEED DESIGNATION
- 1.0' — OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
- S.Y.L. — SOLID YELLOW LINE
- D.Y.L. — DOUBLE YELLOW LINE
- HT. — HEIGHT
- DA.W.L. — DASHED WHITE LINE
- BLDG. — BUILDING
- EL. — ELEVATION
- PROPOSED BUILDING
- PROPOSED PAVING
- PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE

PLAN SHEET LIST:

		DATE:
SHEET	1: ILLUSTRATIVE SITE PLAN	01/06/17
SHEET	2: RECORD PLAN (SHEET 1 OF 1 FOR RECORDING)	01/06/17
SHEET	3: EXISTING CONDITIONS / DEMOLITION PLAN	01/06/17
SHEET	4: VICINITY PLAN	01/06/17
SHEET	5: GRADING AND UTILITY PLAN	01/06/17
SHEET	6: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	01/06/17
SHEET	7: POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS	01/06/17
SHEET	8: LOW VOLUME HIGHWAY OCCUPANCY PERMIT PLAN	01/06/17
SHEET	9: PAVEMENT SIGNAGE AND MARKING PLAN	01/06/17
SHEET	10: MANEUVERABILITY PLAN	01/06/17
SHEET	11: EROSION AND SEDIMENTATION CONTROL PLAN	01/06/17
SHEET	12: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS	01/06/17
SHEET	13: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS	01/06/17
SHEET	14: CONSTRUCTION DETAILS	01/06/17
SHEET	LP-1: LANDSCAPE PLAN	01/06/17
SHEET	LP-2: LANDSCAPE NOTES AND DETAILS	01/06/17
SHEET	LI-1: LIGHTING PLAN	01/06/17



ZONING DATA R-6 (RESIDENCE DISTRICT):

	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2 ACRES	*1.25 AC	*1.25 AC
MINIMUM LOT AREA PER UNIT	2,100 SF	NA	2,292 SF
MAXIMUM BUILDING COVERAGE	70.0%	14.5%	41.1%
MINIMUM FRONT YARD	30.0 FT	63.5 FT	37.8 FT
MINIMUM SIDE YARD	20.0 FT	17.3 FT	20.0 FT
MINIMUM REAR YARD	25.0 FT	6.7 FT	25.0 FT
MAXIMUM IMPERVIOUS COVERAGE	70.0%	47.4%	63.7%
MAXIMUM BUILDING HEIGHT	40.0 FT	37.0± FT	39.4 FT
MAXIMUM BUILDING LENGTH	160.0 FT	81.2 FT	130.0 FT
MINIMUM PARKING	2.25/UNIT	NA	2.36/UNIT

NOTES:
1. * EXISTING NON-CONFORMITY
2. LOT AREA PER UNIT BASED ON CONSOLIDATED LOT AREA.
3. IMPERVIOUS PERCENTAGES BASED ON CONSOLIDATED SITE AREA.
4. FOR MORE DETAILED INFORMATION REFER TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

EXISTING LOT DATA:

TAX FOLIO NUMBER:	36-02-01219-00
TAX MAP NUMBER:	36-13-384:000
SITE AREA:	34,770 SF (0.7982 AC)
LOT AREA:	31,171 SF (0.7156 AC)
TAX FOLIO NUMBER:	36-02-01219-01
TAX MAP NUMBER:	36-13-384:001
SITE AREA:	19,852 SF (0.4557 AC)
LOT AREA:	19,252 SF (0.4420 AC)

CONSOLIDATED LOT DATA:

SITE AREA:	54,622 SF (1.2539 AC)
LOT AREA:	50,423 SF (1.1576 AC)

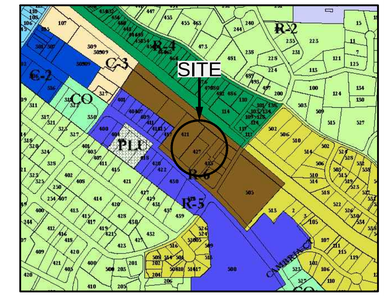
EXISTING IMPERVIOUS COVERAGE:

BUILDINGS & PORCHES	7,915 SF (14.5%)
WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	22,445 SF (41.1%)
WALKS	1,407 SF
DRIVES	10,725 SF
OTHER	206 SF
TOTAL	34,783 SF (63.7%)

GENERAL NOTES:
1. THESE PLANS ARE BASED ON THE NOTED REFERENCES AND THE INTENT OF THESE PLANS IS TO ILLUSTRATE A 22 UNIT MULTI-FAMILY DEVELOPMENT AS PERMITTED BY THE RADNOR TOWNSHIP R-6 ZONING DISTRICT. THE UNITS WILL BE A MIX OF 2 AND 3 BEDROOM UNITS.
2. THE MAJORITY OF THE EXISTING FEATURES WILL BE REMOVED AS SHOWN ON THE DEMOLITION PLAN.
3. THIS PROJECT WILL BE DEVELOPED AS A CONDOMINIUM.
4. TRASH AND SNOW REMOVAL WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION. COMMON DUMPSTER AREAS ARE SHOWN ON THE PLAN. A MASTECADDY OR SIMILAR PRODUCT WILL BE USED TO WHEEL THE DUMPSTERS OUT OF THE GARAGE TO THE DESIGNATED REFUSE PICKUP AREA.
5. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT FACILITIES WILL BE THE OBLIGATION OF THE HOME OWNERS ASSOCIATION.
6. THE PROPERTY SHALL BE GRADED SO THAT RUNOFF FROM THE MAJORITY OF THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO AND COLLECTED BY A SERIES OF INLETS AND PIPES AS SHOWN ON THE PLAN AND CONVEYED TO THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM WHICH WILL PROVIDE THE TOWNSHIP AND DEP REQUIRED RATE AND VOLUME CONTROLS. THE COLLECTED RUNOFF WILL BE OVER-CONTROLLED BY THE STORMWATER FACILITIES TO COMPENSATE FOR THE RUNOFF FROM THE REMAINING SITE AREAS THAT ARE UNCONTROLLED. OVERFLOW FROM THE PROPOSED STORMWATER MANAGEMENT FACILITIES WILL BE PIPED TO EXISTING STORM SEWER FACILITIES LOCATED IN LANCASTER AVENUE.
7. THE DEVELOPMENT WILL BE SERVICED BY A NEW GRAVITY SEWER LATERAL WHICH WILL CONNECT TO THE EXISTING SEWER MAIN IN LANCASTER AVENUE.
8. THE DEVELOPMENT WILL BE SERVICED BY NEW WATER LATERAL WHICH WILL CONNECT TO EXISTING WATER MAIN IN LANCASTER AVENUE.
9. ALL PROPOSED UTILITY LINES SHALL BE UNDERGROUND WHERE FEASIBLE.
10. LIGHTING WILL BE PROVIDED FOR THE PROPOSED PARKING AND PEDESTRIAN WALKWAYS IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-105.E. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
11. THE PROPOSED MONUMENT SIGN SHALL BE INSTALLED IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-121.C.
12. LANDSCAPING WILL BE PROVIDED IN ACCORDANCE WITH THE TOWNSHIP CODES. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
13. TYPICAL EROSION AND SEDIMENTATION CONTROLS ARE PROPOSED FOR THE CONSTRUCTION OF THIS PROPERTY INCLUDING A STABILIZED CONSTRUCTION ENTRANCE, FILTER SOCKS, SILT FENCE, INLET PROTECTION, TOPSOIL STOCKPILES SURROUNDED BY SILT FENCE AND EROSION CONTROL MATTING, ETC. AS WELL AS OTHER TYPICAL EROSION CONTROL MEASURES INCLUDING LIMITING SITE DISTURBANCE, IMMEDIATE STABILIZATION, ETC.
14. THE PROJECT'S RECEIVING WATERCOURSE IS ITHAN CREEK WHICH IS PART OF THE DARBY CREEK WATERSHED AND THE CHAPTER 93 CLASSIFICATION IS CWF, MF.
15. A LOW VOLUME HIGHWAY OCCUPANCY PERMIT SHALL BE OBTAINED FROM THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FOR ANY WORK PROPOSED WITHIN THE STATE RIGHT OF WAY.
16. AS REQUIRED BY PENNDOT, DURING CONSTRUCTION, PEDESTRIAN ACCESSIBLE ROUTES MUST BE MAINTAINED OR TEMPORARY FACILITIES PROVIDED FOR ALL EXISTING PEDESTRIAN ROUTES ALONG LANCASTER AVENUE (SR 30.)
17. THE APPLICANT SHALL PAY A FEE IN LIEU OF PROVIDING PARK AND RECREATION LAND IN ACCORDANCE WITH 255-43.1.
18. PROPOSED WALKWAYS SLOPES SHALL NOT EXCEED 5%.



LOCATION MAP
SCALE: 1" = 600'

REFERENCE PLANS:
1. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR RADNOR FAMILY PRACTICE BY CONTROL POINT ASSOCIATES, INC., CHALFONT, PA, DATED MAY 2, 2014 AND LAST REVISED MAY 14, 2014. FILE NO. CP14056
2. ZONING MAP OBTAINED ELECTRONICALLY FROM THE RADNOR TOWNSHIP WEBSITE.
3. LIDAR TOPOGRAPHY AND OTHER GIS OBTAINED ELECTRONICALLY FROM SHAPE FILES DISTRIBUTED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION. FILES WERE OBTAINED VIA WWW.PASDA.PSU.EDU.
4. AERIAL PHOTOGRAPH "PA_X24_Y082" & "PA_X25_Y082" PROVIDED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION AND AERIAL PHOTOMETRY ACCESSED ELECTRONICALLY AT MAPS.GOOGLE.COM.
5. SOILS INFORMATION VIA THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY (WEBSOILSURVEY.SC.EGOV.USDA.GOV.)

REFERENCE PLAN #1 NOTES:
1. PROPERTY KNOWN AS FOLIO 36-02-01219-00 & 36-02-01219-01, BLOCK 61 AS IDENTIFIED ON THE TAX MAPS OF DELAWARE COUNTY, RADNOR TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
2. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
3. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON PA DOT BENCHMARK F101 REPUTED TO BE NAVD 1988 ELEVATION 343.57
8. UNDERGROUND STORM SEWER AND SANITARY SEWER PIPES ARE DRAWN GRAPHICALLY ON THIS SURVEY APPROXIMATE. UNDERGROUND STORM AND SANITARY PIPES SHOULD BE VERIFIED INDEPENDENTLY AS TO THEIR LOCATION, SIZE AND TYPE AND SHOULD BE CONSIDERED BY THE CONTRACTOR OR DESIGN CONSULTANT PRIOR TO CONSTRUCTION.
9. THESE UNDERGROUND UTILITY COMPANIES DID NOT RESPOND TO PA ONE CALL REQUEST: ELECTRIC, GAS, AND TELEPHONE.

REFERENCE PLAN #1 REFERENCES:
1. MAP #015 OF THE OFFICIAL TAX MAPS OF THE RADNOR TOWNSHIP,DELAWARE COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 675.0 FT 0.166 MI." SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA." PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:
WALKER FAMILY PROPERTIES, LLP
427 EAST LANCASTER AVENUE
WAYNE, PA 19087

EQUITABLE OWNER:
427 LANCASTER AVE, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST THEREIN WHETHER OR NOT THE PROJECT IS PURSUED IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND OTHER RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, OR CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS AGAINST ALL DAMAGES, LIABILITIES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS WITHOUT WRITTEN VERIFICATION, COMPLETION OR ADAPTATION BY ENGINEER; AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

SEAL:

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — CHRISTOPHER C. YOHN — ENGINEER — PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP
COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: ILLUSTRATIVE SITE PLAN

PREPARED FOR: EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY: YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 1 OF 14

Serial Number: 2016-011-1937

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

THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

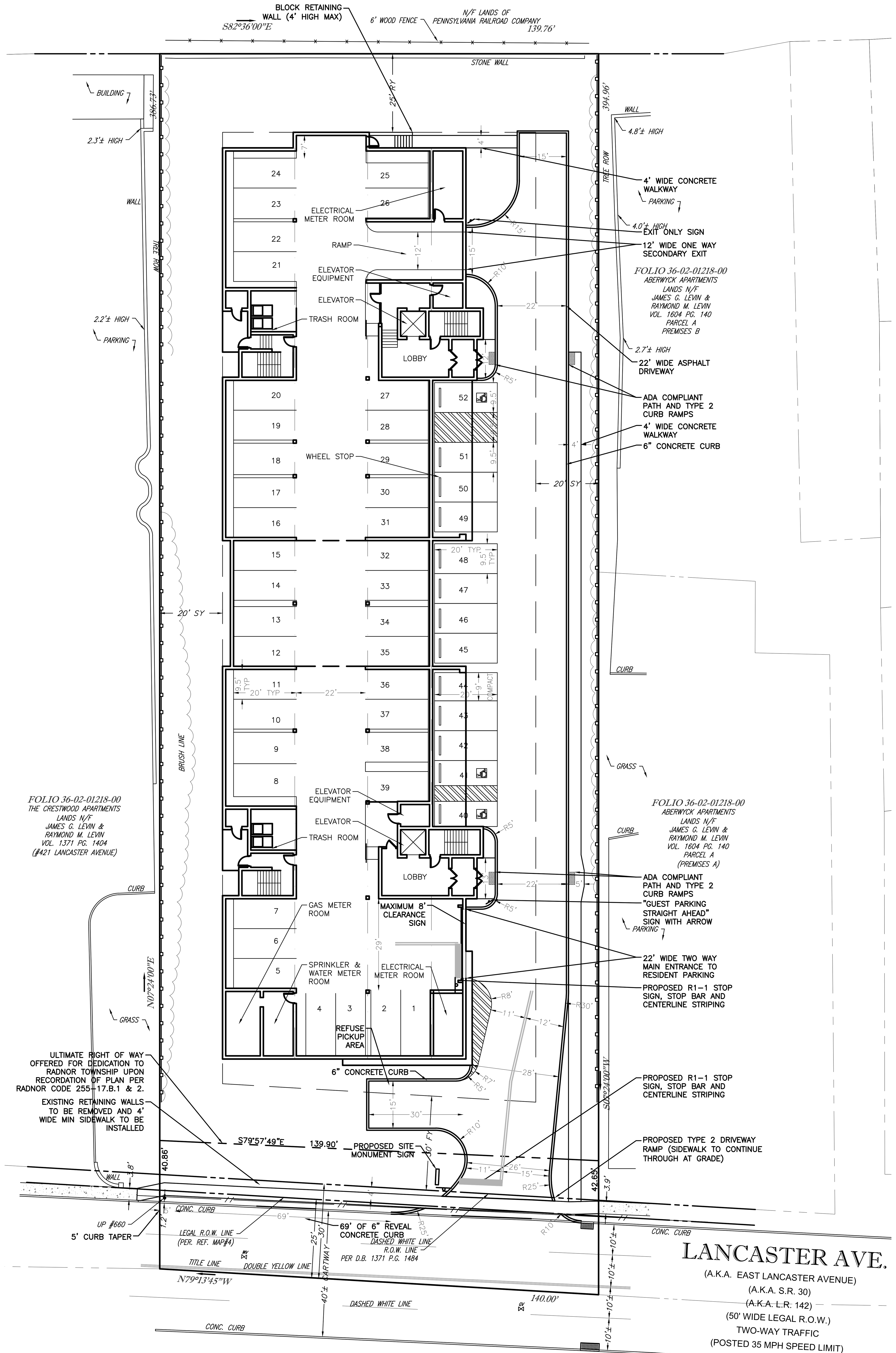
UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

124 / 125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXIST. TOP OF CURB ELEVATION
× G 122.95	EXIST. GUTTER ELEVATION
× TW 123.45	EXIST. TOP OF WALL ELEVATION
× BW 122.95	EXIST. BOTTOM OF WALL ELEVATION
× FF 123.45	EXIST. FINISHED FLOOR ELEVATION
WV	WATER VALVE
VALVE	UNKNOWN VALVE
GV	GAS VALVE
GM	GAS METER
—//—	OVERHEAD WIRES
— G —	APPROX. LOC. UNDERGROUND GAS LINE
— T —	APPROX. LOC. UNDERGROUND TEL. LINE
— W —	APPROX. LOC. UNDERGROUND WATER LINE
UP #	UTILITY POLE
UPLP #	UTILITY POLE/LIGHT POLE
	SIGN
	MAIL BOX
A.G.	ABOVE GROUND
U.G.	UNDER GROUND
D.C.	DEPRESSED CURB
E.O.P.	EDGE OF PAVEMENT
L.S.A.	LANDSCAPED AREA
RRT WALL	RAILROAD TIE WALL
(TYP.)	TYPICAL
(W) WMH	WATER MANHOLE
CB	CATCH BASIN OR INLET
10	PARKING SPACE COUNT
	DEPRESSED CURB
(TRACT I)	DEED DESIGNATION
1.0'	OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
S.Y.L.	SOLID YELLOW LINE
D.Y.L.	DOUBLE YELLOW LINE
HT.	HEIGHT
DA.W.L.	DASHED WHITE LINE
BLDG.	BUILDING
EL.	ELEVATION
	PROPOSED RIGHT-OF-WAY
	PROPOSED FENCE

PLAN SHEET LIST:

PLAN SHEET LIST:	DATE:
SHEET 1: ILLUSTRATIVE SITE PLAN	01/06/17
SHEET 2: RECORD PLAN (SHEET 1 OF 1 FOR RECORDING)	01/06/17
SHEET 3: EXISTING CONDITIONS / DEMOLITION PLAN	01/06/17
SHEET 4: VICINITY PLAN	01/06/17
SHEET 5: GRADING AND UTILITY PLAN	01/06/17
SHEET 6: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	01/06/17
SHEET 7: POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS	01/06/17
SHEET 8: LOW VOLUME HIGHWAY OCCUPANCY PERMIT PLAN	01/06/17
SHEET 9: PAVEMENT SIGNAGE AND MARKING PLAN	01/06/17
SHEET 10: MANEUVERABILITY PLAN	01/06/17
SHEET 11: EROSION AND SEDIMENTATION CONTROL PLAN	01/06/17
SHEET 12: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS	01/06/17
SHEET 13: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS	01/06/17
SHEET 14: CONSTRUCTION DETAILS	01/06/17
SHEET LP-1: LANDSCAPE PLAN	01/06/17
SHEET LP-2: LANDSCAPE NOTES AND DETAILS	01/06/17
SHEET LI-1: LIGHTING PLAN	01/06/17



ZONING DATA R-6 (RESIDENCE DISTRICT):

ZONING DATA R-6 (RESIDENCE DISTRICT):	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2 ACRES	*1.25 AC	*1.25 AC
MINIMUM LOT AREA PER UNIT	2,100 SF	NA	2,292 SF
MAXIMUM BUILDING COVERAGE	70.0%	14.5%	41.1%
MINIMUM FRONT YARD	30.0 FT	63.5 FT	37.8 FT
MINIMUM SIDE YARD	20.0 FT	17.3 FT	20.0 FT
MINIMUM REAR YARD	25.0 FT	6.7 FT	25.0 FT
MAXIMUM IMPERVIOUS COVERAGE	70.0%	47.4%	63.7%
MAXIMUM BUILDING HEIGHT	40.0 FT	37.0± FT	39.4 FT
MAXIMUM BUILDING LENGTH	160.0 FT	81.2 FT	130.0 FT
MINIMUM PARKING	2.25/UNIT	NA	2.36/UNIT

NOTES:
1. * EXISTING NON-CONFORMITY
2. LOT AREA PER UNIT BASED ON CONSOLIDATED LOT AREA.
3. IMPERVIOUS PERCENTAGES BASED ON CONSOLIDATED SITE AREA.
4. FOR MORE DETAILED INFORMATION REFER TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

EXISTING LOT DATA:

TAX FOLIO NUMBER:	36-02-01219-00
TAX MAP NUMBER:	36-13-384:000
SITE AREA:	34,770 SF (0.7982 AC)
LOT AREA:	31,171 SF (0.7156 AC)
TAX FOLIO NUMBER:	36-02-01219-01
TAX MAP NUMBER:	36-13-384:001
SITE AREA:	19,852 SF (0.4557 AC)
LOT AREA:	19,252 SF (0.4420 AC)

CONSOLIDATED LOT DATA:

SITE AREA:	54,622 SF (1.2539 AC)
LOT AREA:	50,423 SF (1.1576 AC)

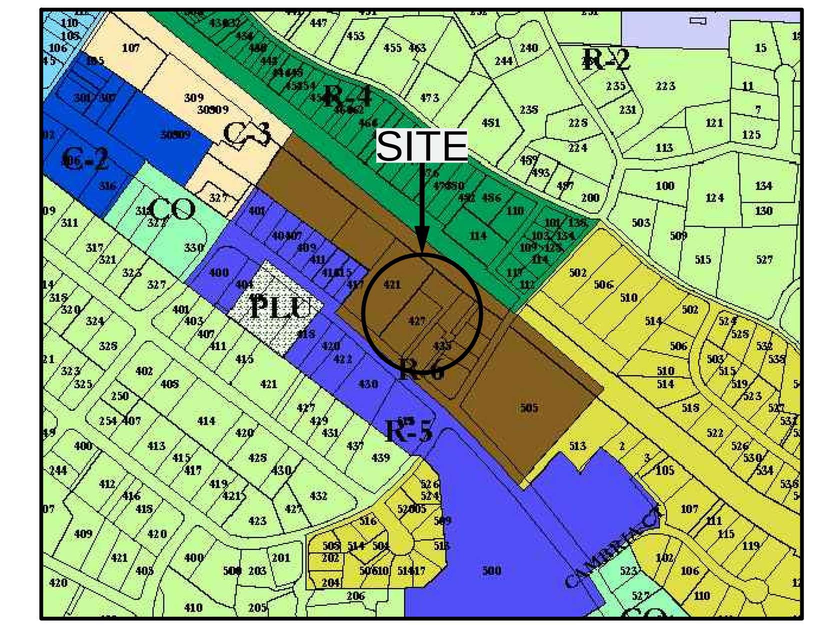
EXISTING IMPERVIOUS COVERAGE:

BUILDINGS & PORCHES	7,915 SF (14.5%)
WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	22,445 SF (41.1%)
WALKS	1,407 SF
DRIVES	10,725 SF
OTHER	206 SF
TOTAL	34,783 SF (63.7%)

GENERAL NOTES:
1. THESE PLANS ARE BASED ON THE NOTED REFERENCES AND THE INTENT OF THESE PLANS IS TO ILLUSTRATE A 22 UNIT MULTI-FAMILY DEVELOPMENT AS PERMITTED BY THE RADNOR TOWNSHIP R-6 ZONING DISTRICT. THE UNITS WILL BE A MIX OF 2 AND 3 BEDROOM UNITS.
2. THE MAJORITY OF THE EXISTING FEATURES WILL BE REMOVED AS SHOWN ON THE DEMOLITION PLAN.
3. THIS PROJECT WILL BE DEVELOPED AS A CONDOMINIUM.
4. TRASH AND SNOW REMOVAL WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION. COMMON DUMPSTER AREAS ARE SHOWN ON THE PLAN. A WASTECADDY OR SIMILAR PRODUCT WILL BE USED TO WHEEL THE DUMPSTERS OUT OF THE GARAGE TO THE DESIGNATED REFUSE PICKUP AREA.
5. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT FACILITIES WILL BE THE OBLIGATION OF THE HOME OWNERS ASSOCIATION.
6. THE PROPERTY SHALL BE GRADED SO THAT RUNOFF FROM THE MAJORITY OF THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO AND COLLECTED BY A SERIES OF INLETS AND PIPES AS SHOWN ON THE PLAN AND CONVEYED TO THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM WHICH WILL PROVIDE THE TOWNSHIP AND DEP REQUIRED RATE AND VOLUME CONTROLS. THE COLLECTED RUNOFF WILL BE OVER-CONTROLLED BY THE STORMWATER FACILITIES TO COMPENSATE FOR THE RUNOFF FROM THE REMAINING SITE AREAS THAT ARE UNCONTROLLED. OVERFLOW FROM THE PROPOSED STORMWATER MANAGEMENT FACILITIES WILL BE PIPED TO EXISTING STORM SEWER FACILITIES LOCATED IN LANCASTER AVENUE.
7. THE DEVELOPMENT WILL BE SERVICED BY A NEW GRAVITY SEWER LATERAL WHICH WILL CONNECT TO THE EXISTING SEWER MAIN IN LANCASTER AVENUE.
8. THE DEVELOPMENT WILL BE SERVICED BY NEW WATER LATERAL WHICH WILL CONNECT TO EXISTING WATER MAIN IN LANCASTER AVENUE.
9. ALL PROPOSED UTILITY LINES SHALL BE UNDERGROUND WHERE FEASIBLE.
10. LIGHTING WILL BE PROVIDED FOR THE PROPOSED PARKING AND PEDESTRIAN WALKWAYS IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-105.E. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
11. THE PROPOSED MONUMENT SIGN SHALL BE INSTALLED IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-121.C.
12. LANDSCAPING WILL BE PROVIDED IN ACCORDANCE WITH THE TOWNSHIP CODES. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
13. TYPICAL EROSION AND SEDIMENTATION CONTROLS ARE PROPOSED FOR THE CONSTRUCTION OF THIS PROPERTY INCLUDING A STABILIZED CONSTRUCTION ENTRANCE, FILTER SOCKS, SILT FENCE, INLET PROTECTION, TOPSOIL STOCKPILES SURROUNDED BY SILT FENCE AND EROSION CONTROL MATTING, ETC. AS WELL AS OTHER TYPICAL EROSION CONTROL MEASURES INCLUDING LIMITING SITE DISTURBANCE, IMMEDIATE STABILIZATION, ETC.
14. THE PROJECT'S RECEIVING WATERCOURSE IS ITHAN CREEK WHICH IS PART OF THE DARBY CREEK WATERSHED AND THE CHAPTER 93 CLASSIFICATION IS CWF, MF.
15. A LOW VOLUME HIGHWAY OCCUPANCY PERMIT SHALL BE OBTAINED FROM THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FOR ANY WORK PROPOSED WITHIN THE STATE RIGHT OF WAY.
16. AS REQUIRED BY PENNDOT, DURING CONSTRUCTION, PEDESTRIAN ACCESSIBLE ROUTES MUST BE MAINTAINED OR TEMPORARY FACILITIES PROVIDED FOR ALL EXISTING PEDESTRIAN ROUTES ALONG LANCASTER AVENUE (SR 30.)
17. THE APPLICANT SHALL PAY A FEE IN LIEU OF PROVIDING PARK AND RECREATION LAND IN ACCORDANCE WITH 255-43.1.
18. PROPOSED WALKWAYS SLOPES SHALL NOT EXCEED 5%.



LOCATION MAP
SCALE: 1" = 600'

REFERENCE PLANS:
1. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR RADNOR FAMILY PRACTICE BY CONTROL POINT ASSOCIATES, INC., CHALFONT, PA, DATED MAY 2, 2014 AND LAST REVISED MAY 14, 2014. FILE NO. CP14056
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3. LIDAR TOPOGRAPHY AND OTHER GIS OBTAINED ELECTRONICALLY FROM SHAPE FILES DISTRIBUTED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION. FILES WERE OBTAINED VIA WWW.PASDA.PSU.EDU.
4. AERIAL PHOTOGRAPH "PA_X24_Y082" & "PA_X25_Y082" PROVIDED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION AND AERIAL PHOTOMETRY ACCESSED ELECTRONICALLY AT MAPS.GOOGLE.COM.
5. SOILS INFORMATION VIA THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY (WEBSOILSURVEY.SC.EGOV.USDA.GOV.)

REFERENCE PLAN #1 NOTES:
1. PROPERTY KNOWN AS FOLIO 36-02-01219-00 & 36-02-01219-01, BLOCK 61 AS IDENTIFIED ON THE TAX MAPS OF DELAWARE COUNTY, RADNOR TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
2. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
3. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON PA DOT BENCHMARK F101 REPUTED TO BE NAVD 1988 ELEVATION 343.57
8. UNDERGROUND STORM SEWER AND SANITARY SEWER PIPES ARE DRAWN GRAPHICALLY ON THIS SURVEY APPROXIMATE. UNDERGROUND STORM AND SANITARY PIPES SHOULD BE VERIFIED INDEPENDENTLY AS TO THEIR LOCATION, SIZE AND TYPE AND SHOULD BE CONSIDERED BY THE CONTRACTOR OR DESIGN CONSULTANT PRIOR TO CONSTRUCTION.
9. THESE UNDERGROUND UTILITY COMPANIES DID NOT RESPOND TO PA ONE CALL REQUEST: ELECTRIC, GAS, AND TELEPHONE.

REFERENCE PLAN #1 REFERENCES:
1. MAP #015 OF THE OFFICIAL TAX MAPS OF THE RADNOR TOWNSHIP,DELAWARE COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 875.0 FT 0.166 MI," SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA," PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:
WALKER FAMILY PROPERTIES, LLP
427 EAST LANCASTER AVENUE
WAYNE, PA 19087

EQUITABLE OWNER:
427 LANCASTER AVE, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF ____________________

ON THIS THE ___ DAY OF ____________________, 20___, BEFORE ME, THE UNDERSIGNED PERSONALLY APPEARED DAVID SCOTT BREHMAN, MEMBER OF 427 E. LANCASTER, LLC, WHO BEING DULY SWORN ACCORDING TO LAW DEPOSES AND SAYS THAT 427 E. LANCASTER, LLC IS THE EQUITABLE OWNER OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE LAND DEVELOPMENT PLAN WAS MADE AT HIS DISCRETION AS SUCH MEMBER AND THAT HE ACKNOWLEDGES THE SAME TO BE THE ACT AND PLAN OF 427 E. LANCASTER, LLC AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

427 E. LANCASTER, LLC

BY: ____________________
NAME: DAVID SCOTT BREHMAN
TITLE: MEMBER

WITNESS MY HAND AND SEAL THE DAY AND YEAR AFORESAID.

____
NOTARY SIGNATURE

____
MY COMMISSION EXPIRES:

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST (INCLUDING THE COPYRIGHT AND THE RIGHT OF REUSE) IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND FOR RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT, ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER; AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER C. YOHN — PE073703

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP
COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: RECORD PLAN (SHEET 1 OF 1 FOR RECORDING)

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
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44 PAPER MILL ROAD
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DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
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COLLEGEVILLE, PA 19426
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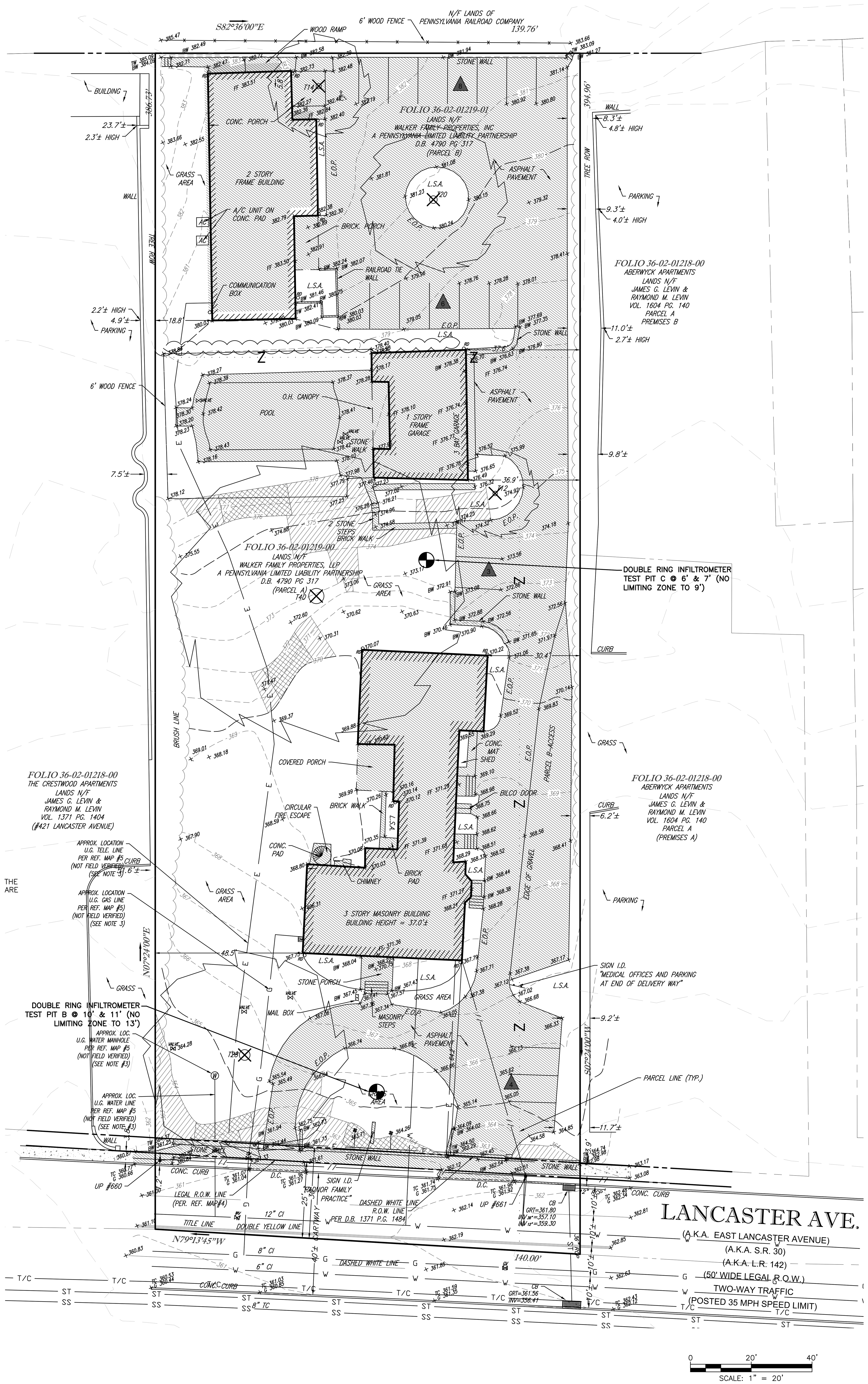
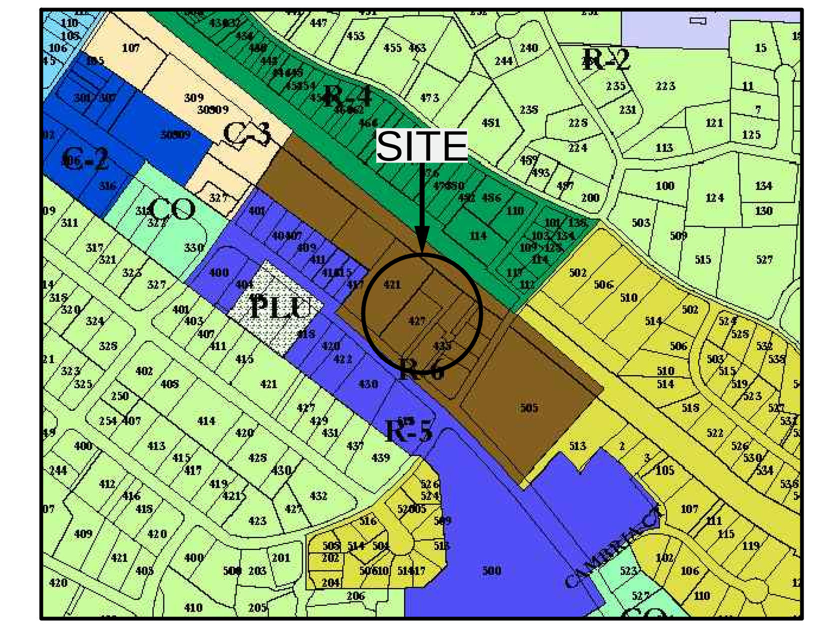
	SLOPES 20% AND GREATER (DO NOT MEET TO THE TOWNSHIP DEFINITION OF A STEEP SLOPE AND ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY)





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5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON PA DOT BENCHMARK F101 REPUTED TO BE NAVD 1988 ELEVATION 343.57
8. UNDERGROUND STORM SEWER AND SANITARY SEWER PIPES ARE DRAWN GRAPHICALLY ON THIS SURVEY APPROXIMATE. UNDERGROUND STORM AND SANITARY PIPES SHOULD BE VERIFIED INDEPENDENTLY AS TO THEIR LOCATION, SIZE AND TYPE AND SHOULD BE CONSIDERED BY THE CONTRACTOR OR DESIGN CONSULTANT PRIOR TO CONSTRUCTION.
9. THESE UNDERGROUND UTILITY COMPANIES DID NOT RESPOND TO PA ONE CALL REQUEST: ELECTRIC, GAS, AND TELEPHONE.

REFERENCE PLAN #1 REFERENCES:
1. MAP #015 OF THE OFFICIAL TAX MAPS OF THE RADNOR TOWNSHIP,DELAWARE COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 875.0 FT 0.166 MI," SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA," PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:
WALKER FAMILY PROPERTIES, LLP
427 EAST LANCASTER AVENUE
WAYNE, PA 19087

EXISTING LOT DATA:

TAX FOLIO NUMBER:	36-02-01219-00
TAX MAP NUMBER:	36-13-384:000
SITE AREA:	34,770 SF (0.7982 AC)
LOT AREA:	31,171 SF (0.7156 AC)
TAX FOLIO NUMBER:	36-02-01219-01
TAX MAP NUMBER:	36-13-384:001
SITE AREA:	19,852 SF (0.4557 AC)
LOT AREA:	19,252 SF (0.4420 AC)

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS & PORCHES	7,915 SF (14.5%)
WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST (INCLUDING THE COPYRIGHT AND THE RIGHT OF REUSE) IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND FOR RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT, ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER; AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP | COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: EXISTING CONDITIONS / DEMOLITION PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

Serial Number: 2016-011-1937

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

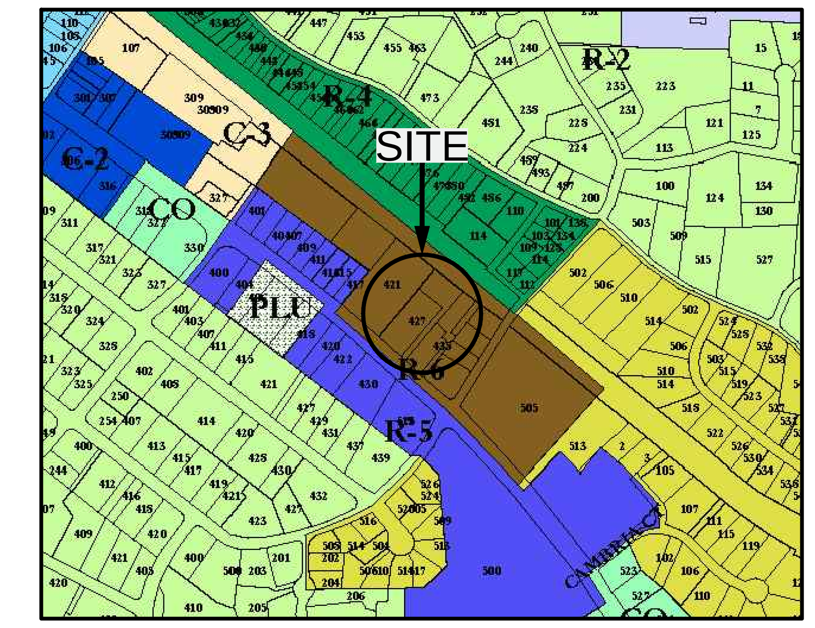
THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.

SERIAL NUMBER(S): 20141072620

UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

124 / 125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXIST. TOP OF CURB ELEVATION
× G 122.95	EXIST. GUTTER ELEVATION
× TW 123.45	EXIST. TOP OF WALL ELEVATION
× BW 122.95	EXIST. BOTTOM OF WALL ELEVATION
× FF 123.45	EXIST. FINISHED FLOOR ELEVATION
WV	WATER VALVE
VALVE	UNKNOWN VALVE
GV	GAS VALVE
GM	GAS METER
—//—	OVERHEAD WIRES
— G —	APPROX. LOC. UNDERGROUND GAS LINE
— T —	APPROX. LOC. UNDERGROUND TEL. LINE
— W —	APPROX. LOC. UNDERGROUND WATER LINE
UP #	UTILITY POLE
UPLP #	UTILITY POLE/LIGHT POLE
	SIGN
	MAIL BOX
A.G.	ABOVE GROUND
U.G.	UNDER GROUND
D.C.	DEPRESSED CURB
E.O.P.	EDGE OF PAVEMENT
L.S.A.	LANDSCAPED AREA
RRT WALL	RAILROAD TIE WALL
(TYP.)	TYPICAL
W WMH	WATER MANHOLE
CB	CATCH BASIN OR INLET
10	PARKING SPACE COUNT
	DEPRESSED CURB
(TRACT I)	DEED DESIGNATION
1.0'	OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
S.Y.L.	SOLID YELLOW LINE
D.Y.L.	DOUBLE YELLOW LINE
HT.	HEIGHT
DA.W.L.	DASHED WHITE LINE
BLDG.	BUILDING
EL.	ELEVATION



LOCATION MAP
SCALE: 1" = 600'

REFERENCE PLANS:

1. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR RADNOR FAMILY PRACTICE BY CONTROL POINT ASSOCIATES, INC., CHALFONT, PA, DATED MAY 2, 2014 AND LAST REVISED MAY 14, 2014. FILE NO. CP14056
2. ZONING MAP OBTAINED ELECTRONICALLY FROM THE RADNOR TOWNSHIP WEBSITE.
3. LIDAR TOPOGRAPHY AND OTHER GIS OBTAINED ELECTRONICALLY FROM SHAPE FILES DISTRIBUTED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION. FILES WERE OBTAINED VIA WWW.PASDA.PSU.EDU.
4. AERIAL PHOTOGRAPH "PA_X24_Y082" & "PA_X25_Y082" PROVIDED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION AND AERIAL PHOTOMETRY ACCESSED ELECTRONICALLY AT MAPS.GOOGLE.COM.
5. SOILS INFORMATION VIA THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY (WEBSOILSURVEY.SC.EGOV.USDA.GOV.)

REFERENCE PLAN #1 NOTES:

1. PROPERTY KNOWN AS FOLIO 36-02-01219-00 & 36-02-01219-01, BLOCK 61 AS IDENTIFIED ON THE TAX MAPS OF DELAWARE COUNTY, RADNOR TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
2. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
3. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
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2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 875.0 FT 0.166 MI," SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA," PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:
WALKER FAMILY PROPERTIES, LLP
427 EAST LANCASTER AVENUE
WAYNE, PA 19087

EXISTING LOT DATA:

TAX FOLIO NUMBER:	36-02-01219-00
TAX MAP NUMBER:	36-13-384:000
SITE AREA:	34,770 SF (0.7982 AC)
LOT AREA:	31,171 SF (0.7156 AC)
TAX FOLIO NUMBER:	36-02-01219-01
TAX MAP NUMBER:	36-13-384:001
SITE AREA:	19,852 SF (0.4557 AC)
LOT AREA:	19,252 SF (0.4420 AC)

EXISTING IMPERVIOUS COVERAGE:

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WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	ERODIBILITY INDEX	HYDROLOGIC GROUP	AGRICULTURAL CAPABILITY CLASS	DRAINAGE	LOAD BEARING CAPACITY	DEPTH TO SH WATER	DEPTH TO BEDROCK	GRAVEL SOURCE	SAND SOURCE	ROADFILL SOURCE	TOPSOIL SOURCE	LOCAL ROADS AND STREETS	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LIGHT INDUSTRIAL	SEWAGE LAGOONS	ON-SITE SEPTIC	LAWNS
Md	MADE LAND GABBRO AND DIABASE MATERIALS	NOT RATED	NOT RATED	C	6E	WELL DRAINED	NOT RATED	6.6+	6.6+	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED

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SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073703

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP

COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: VICINITY PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 60'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

Serial Number: 2016-011-1937

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

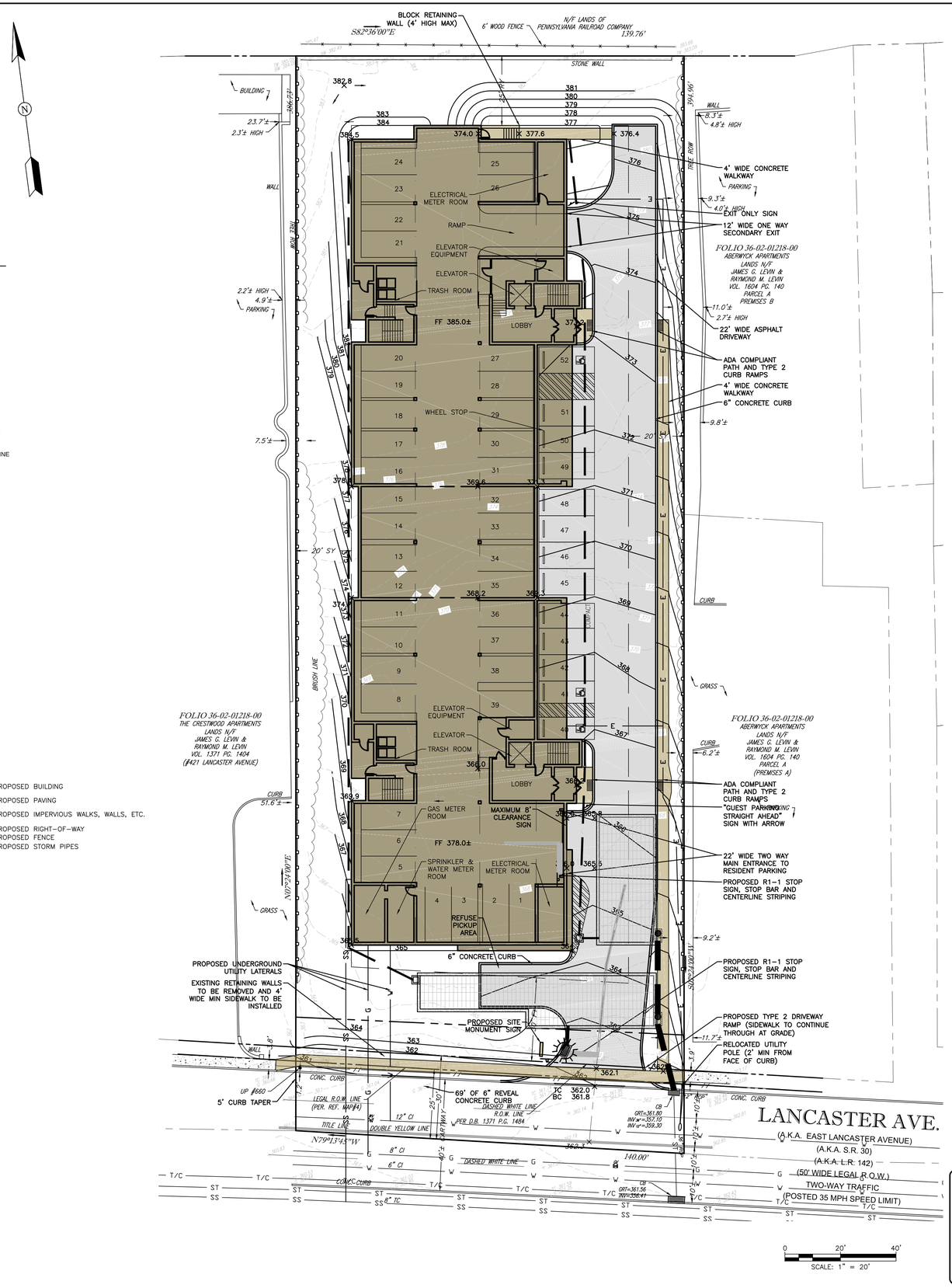
THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

- 124 / 125 — EXISTING CONTOUR
- × 123.45 — EXISTING SPOT ELEVATION
- × TC 123.45 — EXIST. TOP OF CURB ELEVATION
- × G 122.95 — EXIST. GUTTER ELEVATION
- × TW 123.45 — EXIST. TOP OF WALL ELEVATION
- × BW 122.95 — EXIST. BOTTOM OF WALL ELEVATION
- × FF 123.45 — EXIST. FINISHED FLOOR ELEVATION
- WV — WATER VALVE
- UV — UNKNOWN VALVE
- GV — GAS VALVE
- GM — GAS METER
- // — OVERHEAD WIRES
- G — APPROX. LOC. UNDERGROUND GAS LINE
- T — APPROX. LOC. UNDERGROUND TEL. LINE
- W — APPROX. LOC. UNDERGROUND WATER LINE
- UP — UTILITY POLE
- UPLP — UTILITY POLE/LIGHT POLE
- SIGN
- MAIL BOX
- A.G. — ABOVE GROUND
- U.G. — UNDER GROUND
- D.C. — DEPRESSED CURB
- E.O.P. — EDGE OF PAVEMENT
- L.S.A. — LANDSCAPED AREA
- RRT. WALL — RAILROAD TIE WALL
- (TYP.) — TYPICAL
- WMH — WATER MANHOLE
- CB — CATCH BASIN OR INLET
- 20 / 10 — PARKING SPACE COUNT
- DEPRESSED CURB
- (TRACT I) — DEED DESIGNATION
- 1.0' — OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
- S.Y.L. — SOLID YELLOW LINE
- D.Y.L. — DOUBLE YELLOW LINE
- HT. — HEIGHT
- DA.W.L. — DASHED WHITE LINE
- BLDG. — BUILDING
- EL. — ELEVATION

- PROPOSED BUILDING
- PROPOSED PAVING
- PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- PROPOSED STORM PIPES



ZONING DATA R-6 (RESIDENCE DISTRICT):

	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2 ACRES	*1.25 AC	*1.25 AC
MINIMUM LOT AREA PER UNIT	2,100 SF	NA	2,292 SF
MAXIMUM BUILDING COVERAGE	70.0%	14.5%	41.1%
MINIMUM FRONT YARD	30.0 FT	63.5 FT	37.8 FT
MINIMUM SIDE YARD	20.0 FT	17.3 FT	20.0 FT
MINIMUM REAR YARD	25.0 FT	6.7 FT	25.0 FT
MAXIMUM IMPERVIOUS COVERAGE	70.0%	47.4%	63.7%
MAXIMUM BUILDING HEIGHT	40.0 FT	37.0± FT	39.4 FT
MAXIMUM BUILDING LENGTH	160.0 FT	81.2 FT	130.0 FT
MINIMUM PARKING	2.25/UNIT	NA	2.36/UNIT

NOTES:
1. * EXISTING NON-CONFORMITY
2. LOT AREA PER UNIT BASED ON CONSOLIDATED LOT AREA.
3. IMPERVIOUS PERCENTAGES BASED ON CONSOLIDATED SITE AREA.
4. FOR MORE DETAILED INFORMATION REFER TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

EXISTING LOT DATA:
TAX FOLIO NUMBER: 36-02-01219-00
TAX MAP NUMBER: 36-13-384:000
SITE AREA: 34,770 SF (0.7982 AC)
LOT AREA: 31,171 SF (0.7156 AC)

TAX FOLIO NUMBER: 36-02-01219-01
TAX MAP NUMBER: 36-13-384:001
SITE AREA: 19,852 SF (0.4557 AC)
LOT AREA: 19,252 SF (0.4420 AC)

CONSOLIDATED LOT DATA:
SITE AREA: 54,622 SF (1.2539 AC)
LOT AREA: 50,423 SF (1.1576 AC)

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS & PORCHES	7,915 SF (14.5%)
WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	22,445 SF (41.1%)
WALKS	1,407 SF
DRIVES	10,725 SF
OTHER	206 SF
TOTAL	34,783 SF (63.7%)

GENERAL NOTES:
1. THESE PLANS ARE BASED ON THE NOTED REFERENCES AND THE INTENT OF THESE PLANS IS TO ILLUSTRATE A 22 UNIT MULTI-FAMILY DEVELOPMENT AS PERMITTED BY THE RADNOR TOWNSHIP R-6 ZONING DISTRICT. THE UNITS WILL BE A MIX OF 2 AND 3 BEDROOM UNITS.
2. THE MAJORITY OF THE EXISTING FEATURES WILL BE REMOVED AS SHOWN ON THE DEMOLITION PLAN.
3. THIS PROJECT WILL BE DEVELOPED AS A CONDOMINIUM.
4. TRASH AND SNOW REMOVAL WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION. COMMON DUMPSTER AREAS ARE SHOWN ON THE PLAN. A WASTEZADDY OR SIMILAR PRODUCT WILL BE USED TO WHEEL THE DUMPSTERS OUT OF THE GARAGE TO THE DESIGNATED REFUSE PICKUP AREA.
5. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT FACILITIES WILL BE THE OBLIGATION OF THE HOME OWNERS ASSOCIATION.
6. THE PROPERTY SHALL BE GRADED SO THAT RUNOFF FROM THE MAJORITY OF THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO AND COLLECTED BY A SERIES OF INLETS AND PIPES AS SHOWN ON THE PLAN AND CONVEYED TO THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM WHICH WILL PROVIDE THE TOWNSHIP AND DEP REQUIRED RATE AND VOLUME CONTROLS. THE COLLECTED RUNOFF WILL BE OVER-CONTROLLED BY THE STORMWATER FACILITIES TO COMPENSATE FOR THE RUNOFF FROM THE REMAINING SITE AREAS THAT ARE UNCONTROLLED. OVERFLOW FROM THE PROPOSED STORMWATER MANAGEMENT FACILITIES WILL BE PIPED TO EXISTING STORM SEWER FACILITIES LOCATED IN LANCASTER AVENUE.
7. THE DEVELOPMENT WILL BE SERVICED BY A NEW GRAVITY SEWER LATERAL WHICH WILL CONNECT TO THE EXISTING SEWER MAIN IN LANCASTER AVENUE.
8. THE DEVELOPMENT WILL BE SERVICED BY NEW WATER LATERAL WHICH WILL CONNECT TO EXISTING WATER MAIN IN LANCASTER AVENUE.
9. ALL PROPOSED UTILITY LINES SHALL BE UNDERGROUND WHERE FEASIBLE.
10. LIGHTING WILL BE PROVIDED FOR THE PROPOSED PARKING AND PEDESTRIAN WALKWAYS IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-105.E. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
11. THE PROPOSED MONUMENT SIGN SHALL BE INSTALLED IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-121.C.
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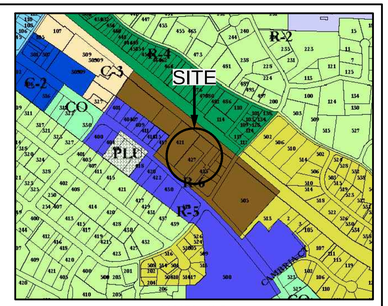
17. THE APPLICANT SHALL PAY A FEE IN LIEU OF PROVIDING PARK AND RECREATION LAND IN ACCORDANCE WITH 255-43.1.
18. PROPOSED WALKWAYS SLOPES SHALL NOT EXCEED 5%.

AVERAGE BUILDING GRADE CALCULATIONS:
FRONT

ELEV	ELEV	AVERAGE	LENGTH	PRODUCT
364.70	365.50	365.10	81.5	29755.65
365.50	369.90	367.70	52.0	19120.40
369.90	370.20	370.05	18.3	6771.92
370.20	371.00	370.60	19.9	7374.94
371.00	374.70	372.85	45.1	16815.54
374.70	369.30	372.00	66.9	24886.80
369.30	369.10	369.20	10.6	3913.52
369.10	367.70	368.40	34.8	12820.32
368.20	366.20	367.20	31.7	11640.24
366.20	366.20	366.20	15.0	5493.00
366.20	366.50	366.35	6.8	2491.18
366.00	366.00	366.00	13.4	4904.40
366.00	364.70	365.35	38.3	13992.91
TOTAL:			434.3	159980.8
AVERAGE GRADE:				368.36
ROOF ELEVATION:				407.75
BUILDING HEIGHT:				39.39

BACK

ELEV	ELEV	AVERAGE	LENGTH	PRODUCT
371.10	371.30	371.20	12.6	4677.12
371.30	378.40	374.85	66.9	25077.47
378.40	383.00	380.70	52.0	19796.40
383.00	383.20	383.10	18.3	7010.73
383.20	384.50	383.85	65.0	24950.25
384.50	384.00	384.25	27.5	10566.88
384.00	378.00	381.00	24.2	9220.20
374.00	374.00	374.00	13.1	4899.40
374.00	377.60	375.80	5.5	2066.90
377.60	377.20	377.40	17.1	6453.54
377.20	375.50	376.35	25.3	9521.66
375.00	374.30	374.65	15.0	5619.75
374.80	373.20	374.00	26.3	9836.20
373.20	373.20	373.20	15.0	5598.00
373.00	371.10	372.05	52.5	19532.63
TOTAL:			436.3	164827.1
AVERAGE GRADE:				377.78
ROOF ELEVATION:				414.76
BUILDING HEIGHT:				36.98



LOCATION MAP
SCALE: 1" = 600'

REFERENCE PLANS:
1. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR RADNOR FAMILY PRACTICE BY CONTROL POINT ASSOCIATES, INC., CHALFONT, PA, DATED MAY 2, 2014 AND LAST REVISED MAY 14, 2014. FILE NO. CP14056
2. ZONING MAP OBTAINED ELECTRONICALLY FROM THE RADNOR TOWNSHIP WEBSITE.
3. LIDAR TOPOGRAPHY AND OTHER GIS OBTAINED ELECTRONICALLY FROM SHAPE FILES DISTRIBUTED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION. FILES WERE OBTAINED VIA WWW.PASDA.PSU.EDU.
4. AERIAL PHOTOGRAPH "PA_X24_Y082" & "PA_X25_Y082" PROVIDED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION AND AERIAL PHOTOMETRY ACCESSED ELECTRONICALLY AT MAPS.GOOGLE.COM.
5. SOILS INFORMATION VIA THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY (WEBSOILSURVEY.SC.EGOV.USDA.GOV.)

REFERENCE PLAN #1 NOTES:
1. PROPERTY KNOWN AS FOLIO 36-02-01219-00 & 36-02-01219-01, BLOCK 61 AS IDENTIFIED ON THE TAX MAPS OF DELAWARE COUNTY, RADNOR TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
2. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
3. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON PA DOT BENCHMARK F101 REPUTED TO BE NAVD 1988 ELEVATION 343.57
8. UNDERGROUND STORM SEWER AND SANITARY SEWER PIPES ARE DRAWN GRAPHICALLY ON THIS SURVEY APPROXIMATE. UNDERGROUND STORM AND SANITARY PIPES SHOULD BE VERIFIED INDEPENDENTLY AS TO THEIR LOCATION, SIZE AND TYPE AND SHOULD BE CONSIDERED BY THE CONTRACTOR OR DESIGN CONSULTANT PRIOR TO CONSTRUCTION.
9. THESE UNDERGROUND UTILITY COMPANIES DID NOT RESPOND TO PA ONE CALL REQUEST: ELECTRIC, GAS, AND TELEPHONE.

REFERENCE PLAN #1 REFERENCES:
1. MAP #015 OF THE OFFICIAL TAX MAPS OF THE RADNOR TOWNSHIP,DELAWARE COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 675.0 FT 0.166 MI." SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA," PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:
WALKER FAMILY PROPERTIES, LLP
427 EAST LANCASTER AVENUE
WAYNE, PA 19087

EQUITABLE OWNER:
427 LANCASTER AVE, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST THEREIN WHETHER OR NOT THE PROJECT IS REUSED IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND OTHER RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT, OR ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS AGAINST ALL CLAIMS, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS BY OWNER OR PERSONS OTHER THAN ENGINEER (OR PERSONS FOR WHOM ENGINEER IS LEGALLY LIABLE); (4) OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073203

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP
COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: GRADING AND UTILITY PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 5 OF 14

Serial Number: 2016-011-1937

CALL BEFORE YOU DIG!

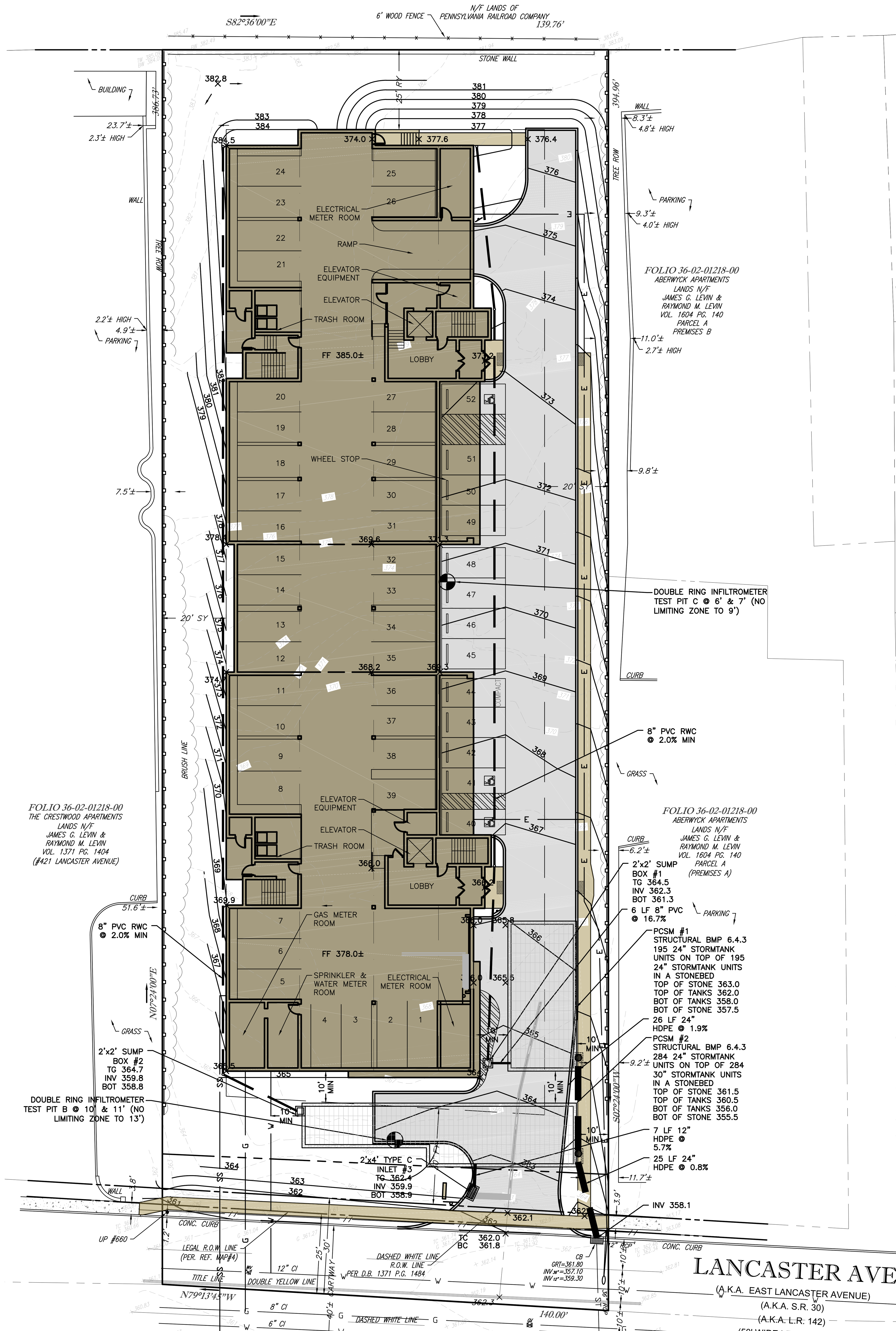
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc.
1-800-242-1776

THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

Symbol	Description
124 / 125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXIST. TOP OF CURB ELEVATION
× G 122.95	EXIST. GUTTER ELEVATION
× TW 123.45	EXIST. TOP OF WALL ELEVATION
× BW 122.95	EXIST. BOTTOM OF WALL ELEVATION
× FF 123.45	EXIST. FINISHED FLOOR ELEVATION
WV	WATER VALVE
VALVE	UNKNOWN VALVE
GV	GAS VALVE
GM	GAS METER
//	OVERHEAD WIRES
G	APPROX. LOC. UNDERGROUND GAS LINE
T	APPROX. LOC. UNDERGROUND TEL. LINE
W	APPROX. LOC. UNDERGROUND WATER LINE
UP #	UTILITY POLE
UPLP #	UTILITY POLE/LIGHT POLE
	SIGN
	MAIL BOX
A.G.	ABOVE GROUND
U.G.	UNDER GROUND
D.C.	DEPRESSED CURB
E.O.P.	EDGE OF PAVEMENT
L.S.A.	LANDSCAPED AREA
RRT WALL	RAILROAD TIE WALL
(TYP.)	TYPICAL
WMH	WATER MANHOLE
CB	CATCH BASIN OR INLET
10	PARKING SPACE COUNT
	DEPRESSED CURB
(TRACT I)	DEED DESIGNATION
1.0'	OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
S.Y.L.	SOLID YELLOW LINE
D.Y.L.	DOUBLE YELLOW LINE
HT.	HEIGHT
DA.W.L.	DASHED WHITE LINE
BLDG.	BUILDING
EL.	ELEVATION
	PROPOSED BUILDING
	PROPOSED PAVING
	PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
	PROPOSED RIGHT-OF-WAY
	PROPOSED FENCE
	PROPOSED STORM PIPES



SOILS INFORMATION																						
SYMBOL	NAME	%SLOPE	ERODIBILITY INDEX	HYDROLOGIC GROUP	AGRICULTURAL CAPABILITY CLASS	DRAINAGE	LOAD BEARING CAPACITY	DEPTH TO SH WATER	DEPTH TO BEDROCK	GRAVEL SOURCE	SAND SOURCE	ROADFILL SOURCE	TOPSOIL SOURCE	LOCAL ROADS AND STREETS	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LIGHT INDUSTRIAL	SEWAGE LAGOONS	ON-SITE SEPTIC	LAWNS
Md	MADE LAND GABBRO AND DIABASE MATERIALS	NOT RATED	NOT RATED	C	6E	WELL DRAINED	NOT RATED	6.6+	6.6+	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED

NOTES: BASED ON THE INFORMATION IN THE SOILS REPORT AND INFILTRATION TEST REPORT, IF THE PROPOSED GRADING AND POST CONSTRUCTION STORMWATER MANAGEMENT ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL OR GEOLOGIC LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

EXISTING LOT DATA:

TAX FOLIO NUMBER:	36-02-01219-00
TAX MAP NUMBER:	36-13-384:000
SITE AREA:	34,770 SF (0.7982 AC)
LOT AREA:	31,171 SF (0.7156 AC)
TAX FOLIO NUMBER:	36-02-01219-01
TAX MAP NUMBER:	36-13-384:001
SITE AREA:	19,852 SF (0.4557 AC)
LOT AREA:	19,252 SF (0.4420 AC)

CONSOLIDATED LOT DATA:

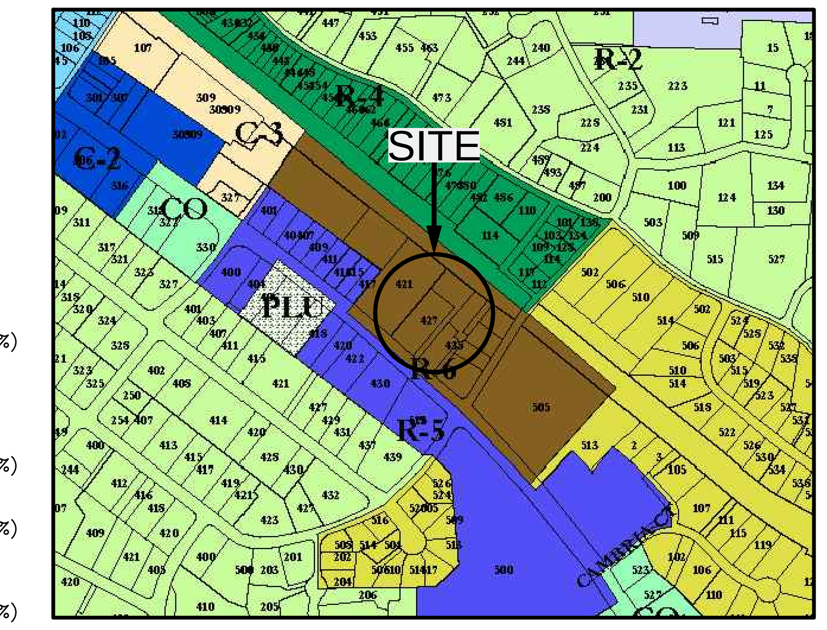
SITE AREA:	54,622 SF (1.2539 AC)
LOT AREA:	50,423 SF (1.1576 AC)

EXISTING IMPERVIOUS COVERAGE:

BUILDINGS & PORCHES	7,915 SF (14.5%)
WALKS	726 SF
PATIOS	969 SF
ASPHALT DRIVES	14,168 SF
GRAVEL DRIVES	1,506 SF
OTHER	343 SF
TOTAL	25,627 SF (46.9%)

PROPOSED IMPERVIOUS COVERAGE:

BUILDINGS	22,445 SF (41.1%)
WALKS	1,407 SF
DRIVES	10,725 SF
OTHER	206 SF
TOTAL	34,783 SF (63.7%)



LOCATION MAP
SCALE: 1" = 600'

GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE NOTED REFERENCES AND THE INTENT OF THESE PLANS IS TO ILLUSTRATE A 22 UNIT MULTI-FAMILY DEVELOPMENT AS PERMITTED BY THE RADNOR TOWNSHIP R-6 ZONING DISTRICT. THE UNITS WILL BE A MIX OF 2 AND 3 BEDROOM UNITS.
2. THE MAJORITY OF THE EXISTING FEATURES WILL BE REMOVED AS SHOWN ON THE DEMOLITION PLAN.
3. THIS PROJECT WILL BE DEVELOPED AS A CONDOMINIUM.
4. TRASH AND SNOW REMOVAL WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION. COMMON DUMPSTER AREAS ARE SHOWN ON THE PLAN. A WASTECADDY OR SIMILAR PRODUCT WILL BE USED TO WHEEL THE DUMPSTERS OUT OF THE GARAGE TO THE DESIGNATED REFUSE PICKUP AREA.
5. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT FACILITIES WILL BE THE OBLIGATION OF THE HOME OWNERS ASSOCIATION.
6. THE PROPERTY SHALL BE GRADED SO THAT RUNOFF FROM THE MAJORITY OF THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO AND COLLECTED BY A SERIES OF INLETS AND PIPES AS SHOWN ON THE PLAN AND CONVEYED TO THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM WHICH WILL PROVIDE THE TOWNSHIP AND DEP REQUIRED RATE AND VOLUME CONTROLS. THE COLLECTED RUNOFF WILL BE OVER-CONTROLLED BY THE STORMWATER FACILITIES TO COMPENSATE FOR THE RUNOFF FROM THE REMAINING SITE AREAS THAT ARE UNCONTROLLED. OVERFLOW FROM THE PROPOSED STORMWATER MANAGEMENT FACILITIES WILL BE PIPED TO EXISTING STORM SEWER FACILITIES LOCATED IN LANCASTER AVENUE.
7. THE DEVELOPMENT WILL BE SERVICED BY A NEW GRAVITY SEWER LATERAL WHICH WILL CONNECT TO THE EXISTING SEWER MAIN IN LANCASTER AVENUE.
8. THE DEVELOPMENT WILL BE SERVICED BY NEW WATER LATERAL WHICH WILL CONNECT TO EXISTING WATER MAIN IN LANCASTER AVENUE.
9. ALL PROPOSED UTILITY LINES SHALL BE UNDERGROUND WHERE FEASIBLE.
10. LIGHTING WILL BE PROVIDED FOR THE PROPOSED PARKING AND PEDESTRIAN WALKWAYS IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-105.E. ADDITIONAL INFORMATION IS INCLUDED ON PLANS PREPARED BY GLACKIN THOMAS PANZAK.
11. THE PROPOSED MONUMENT SIGN SHALL BE INSTALLED IN ACCORDANCE WITH TOWNSHIP CODES INCLUDING 280-121.C.
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14. THE PROJECT'S RECEIVING WATERCOURSE IS ITHAN CREEK WHICH IS PART OF THE DARBY CREEK WATERSHED AND THE CHAPTER 93 CLASSIFICATION IS CWF, MF.
15. A LOW VOLUME HIGHWAY OCCUPANCY PERMIT SHALL BE OBTAINED FROM THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FOR ANY WORK PROPOSED WITHIN THE STATE RIGHT OF WAY.
16. AS REQUIRED BY PENNDOT, DURING CONSTRUCTION, PEDESTRIAN ACCESSIBLE ROUTES MUST BE MAINTAINED OR TEMPORARY FACILITIES PROVIDED FOR ALL EXISTING PEDESTRIAN ROUTES ALONG LANCASTER AVENUE (SR 30.)
17. THE APPLICANT SHALL PAY A FEE IN LIEU OF PROVIDING PARK AND RECREATION LAND IN ACCORDANCE WITH 255-43.1.
18. PROPOSED WALKWAYS SLOPES SHALL NOT EXCEED 5%.

STORMWATER MANAGEMENT OPERATION AND MAINTENANCE PROCEDURES:

A. THE RESPONSIBILITY FOR THE INSTALLATION, MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT SYSTEM AND OTHER ASSOCIATED FACILITIES DURING CONSTRUCTION SHALL BE THE OBLIGATION OF THE CONTRACTOR.
B. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT SYSTEM AND OTHER ASSOCIATED FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.
C. THE PERMITTED STORMWATER CONTROLS AND BMP'S ARE FIXTURES OF THE PROPERTY THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP.
D. ANY MATERIAL THAT IS REMOVED IN THE PROCESS OF MAINTAINING THE STORMWATER MANAGEMENT CONTROLS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET DEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

1. THE RECHARGE FACILITY MUST BE INSPECTED FOR ROUTINE MAINTENANCE A MINIMUM OF TWO TIMES A YEAR, ONCE IN THE EARLY SPRING AND ONCE IN THE FALL AFTER THE MAJORITY OF THE LEAVES HAVE FALLEN.
2. VISUAL OBSERVATIONS OF THE GROUND SURFACE TO DETECT PONDING OF WATER OR GROUND SETTLEMENTS THAT WOULD PREVENT RUNOFF FROM ENTERING INLETS AS DESIGNED MUST BE MADE. THE DRAINAGE AREAS DESIGNED FOR THE SYSTEM MUST BE MAINTAINED. ADJUSTMENTS TO THE GRADING OR INLETS MUST BE MADE TO ENSURE THAT THE SYSTEM IS FUNCTIONING AS DESIGNED. SMALL SINKHOLES CAN BE REPAIRED EASILY BY FILLING WITH TOPSOIL AND MAY BE THE RESULT OF SETTLEMENT OF THE SOIL. LARGER SINKHOLES OR SINKHOLES THAT REAPPEAR IN THE SAME LOCATION MAY INDICATE A BREACH IN THE GEOTEXTILE LINER, INLET BOX STRUCTURE, PIPE CONNECTION OR A BREAK IN A STORM CONVEYANCE LINE. THESE TYPES OF SINKHOLES MUST BE EXCAVATED AND THE FAILURE IDENTIFIED AND REPAIRED IMMEDIATELY IN ORDER TO PREVENT SOIL FROM ENTERING THE SEEPAGE BED AND CLOGGING IT OR REDUCING THE CAPACITY OF THE BMP FOR RECHARGE OF RUNOFF.
3. ALL SEDIMENT TRAPS AND INLETS MUST BE VISUALLY INSPECTED SEVERAL TIMES A YEAR FOR ACCUMULATED SOIL AND DEBRIS. INLET GRATES MUST BE KEPT FREE OF LEAVES, STICKS, MULCH, AND OTHER LAWN DEBRIS OR TRASH THAT WOULD PREVENT INFLOW OF RUNOFF. SUMPS IN SEDIMENT TRAPS OR INLET BOTTOMS MUST HAVE ACCUMULATED SEDIMENT REMOVED TO ENSURE DESIGN CAPACITY SUFFICIENT TO TRAP SEDIMENT AND DEBRIS FROM ENTERING ANY SEEPAGE BED. ANY WEEP HOLES IN THE BOTTOM OF THE INLETS OR SEDIMENT TRAP SHOULD BE CLEARED TO ALLOW WATER TO SEEP OUT.
4. ONCE A YEAR, THE SEEPAGE BED MUST BE INSPECTED TO DETERMINE OF IT IS DRAINING WITHIN THE REQUIRED TIME PERIOD (USUALLY TWENTY -FOUR HOURS.) THE INSPECTION PORT SHALL BE OPENED AT LEAST TWENTY-FOUR HOURS FOLLOWING A STORM AND THE LEVEL OF WATER IN THE BED NOTED. VENTED CLEAN-OUTS MUST BE CHECKED TO ENSURE OPENINGS ARE CLEAR. ADJUSTMENTS TO THE CLEAN-OUTS MUST BE MADE IF SOIL OR OTHER LAWN DEBRIS IS OBSERVED TO BE ENTERING THE SYSTEM. IF IT IS DETERMINED THAT THE SYSTEM WILL NOT RECHARGE THE STORMWATER RUNOFF AS DESIGNED, THE SYSTEM WILL NEED TO BE MODIFIED OR REPLACED. THE TOWNSHIP SHALL BE CONTACTED FOR APPROVAL OF ANY MODIFICATION OR REPLACEMENT OF THE SYSTEM.
5. ANY CLEAN-OUT, INLET OR LEVEL SPREADER THAT HAS BEEN DAMAGED BY LAWN EQUIPMENT MUST BE REPAIRED OR REPLACED. CLEAN-OUTS THAT BECOME BURIED SHOULD BE RAISED TO GRADE. THE CONFIGURATION MUST NOT ALLOW SOIL OR OTHER DEBRIS TO CLOG THE COLLECTION PIPE. ALL COLLECTION PIPES MUST BE CHECKED ANNUALLY TO ENSURE THEY ARE FLOWING FREELY. IF THE COLLECTION PIPES BECOME CLOGGED, JET CLEANING MUST BE PERFORMED AT THE CLEANOUT-OUTS. ADDITIONAL PROTECTION MUST BE MADE AT THE SEDIMENT TRAP DURING JET CLEANING TO ENSURE THAT DEBRIS IS NOT TRANSMITTED TO THE SEEPAGE BED.
6. THE LEVEL SPREADER, OUTLET PIPE OR CONNECTION OF THE OUTLET OF THE BMP MUST BE CHECKED TO ENSURE THAT IT IS PERMITTING FREE FLOW OF WATER OUT OF THE BMP. ACCUMULATED DEBRIS, SEDIMENT OR LEAVES SHALL BE REMOVED FROM ANY LEVEL/BUBBLE-UP SPREADER. RIPRAP ENERGY DISSIPATERS AT THE TERMINATION OF THE BMP OUTLET PIPE SHALL BE CHECK. STONE SHALL BE REPLACED WITH EQUAL OR LARGER SIZE STONE IF THE DISSIPATER IS OBSERVED TO BE INEFFECTIVE. ENDWALLS AND FLARED PIPE ENDS SHALL BE INSPECTED AND REPAIRED AS REQUIRED.
7. SMALL TREES THAT BEGIN TO GROW IN THE VICINITY OF SEEPAGE BEDS OR STRUCTURES MUST BE REMOVED TO ENSURE THAT THE ROOTS DO NOT PUNCTURE THE FILTER FABRIC OF THE SEEPAGE BED OR DAMAGE ANY STORMWATER COLLECTION/CONVEYANCE STRUCTURE.
8. ROOF GUTTER SYSTEMS THAT ARE INTEGRAL WITH THE SEEPAGE BED MUST BE FUNCTIONAL. REPAIRS TO GUTTERS THAT BECOME SEPARATED, SAG OR OTHERWISE DO NOT FUNCTION AS DESIGNED MUST BE MADE.
9. PREVENTATIVE MAINTENANCE WOULD INCLUDE REMOVAL OF LEAVES FROM GUTTER SYSTEMS AND LAWN AREAS AS SOON AS POSSIBLE TO AVOID CONTAMINATION OF CLOGGING OF THE SYSTEM. LOCATING LANDSCAPE-MULCHED AREAS AWAY FROM CONCENTRATED RUNOFF AREAS OR SWALES THAT COULD WASH MULCH INTO INLET OR LEVEL SPREADER IS RECOMMENDED.
10. VEGETATED SWALES SHALL BE INSPECTED FOR EROSION AND POOLS OF STANDING WATER AND CORRECTED ANNUALLY AND AFTER EVERY MAJOR STORM EVENT. MOW AND TRIM VEGETATION REGULARLY AND INSPECT AND REMOVE LITTER PRIOR TO MOWING.

REFERENCE PLANS:

1. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED FOR RADNOR FAMILY PRACTICE BY CONTROL POINT ASSOCIATES, INC., CHALFONT, PA, DATED MAY 2, 2014 AND LAST REVISED MAY 14, 2014. FILE NO. CP14056
2. ZONING MAP OBTAINED ELECTRONICALLY FROM THE RADNOR TOWNSHIP WEBSITE.
3. LIDAR TOPOGRAPHY AND OTHER GIS OBTAINED ELECTRONICALLY FROM SHAPE FILES DISTRIBUTED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION. FILES WERE OBTAINED VIA WWW.PASDA.PSU.EDU.
4. AERIAL PHOTOGRAPH "PA_X24_Y082" & "PA_X25_Y082" PROVIDED BY DELAWARE VALLEY REGIONAL PLANNING COMMISSION AND AERIAL PHOTOMETRY ACCESSED ELECTRONICALLY AT MAPS.GOOGLE.COM.
5. SOILS INFORMATION VIA THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY (WEBSOILSURVEY.SC.EGOV.USDA.GOV.)

REFERENCE PLAN #1 NOTES:

1. PROPERTY KNOWN AS FOLIO 36-02-01219-00 & 36-02-01219-01, BLOCK 61 AS IDENTIFIED ON THE TAX MAPS OF DELAWARE COUNTY, RADNOR TOWNSHIP, COMMONWEALTH OF PENNSYLVANIA.
2. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
3. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
5. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. MAP NUMBER 42045C0017F AND 42045C0036F. MAP REVISED NOVEMBER 18, 2009
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON PA DOT BENCHMARK F101 REPUTED TO BE NAVD 1988 ELEVATION 343.57
8. UNDERGROUND STORM SEWER AND SANITARY SEWER PIPES ARE DRAWN GRAPHICALLY ON THIS SURVEY APPROXIMATE. UNDERGROUND STORM AND SANITARY PIPES SHOULD BE VERIFIED INDEPENDENTLY AS TO THEIR LOCATION, SIZE AND TYPE AND SHOULD BE CONSIDERED BY THE CONTRACTOR OR DESIGN CONSULTANT PRIOR TO CONSTRUCTION.
9. THESE UNDERGROUND UTILITY COMPANIES DID NOT RESPOND TO PA ONE CALL REQUEST: ELECTRIC, GAS, AND TELEPHONE.

REFERENCE PLAN #1 REFERENCES:

1. MAP #015 OF THE OFFICIAL TAX MAPS OF THE RADNOR TOWNSHIP,DELAWARE COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 36 OF 250", COMMUNITY-PANEL NUMBER 420428 0036 F, MAP REVISED: NOV 18, 2009.
3. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PENNSYLVANIA, DELAWARE COUNTY, PANEL 17 OF 250", COMMUNITY-PANEL NUMBER 420428 0017 F, MAP REVISED: NOV 18, 2009.
4. MAP ENTITLED "COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF HIGHWAYS, DRAWING FOR CONSTRUCTION AND CONDEMNATION OF RIGHT OF WAY ROUTE NO. 142 SECTION NO. 1 IN DELAWARE COUNTY; FROM STA. 2882+35 TO STA. 2891+10, LENGTH 875.0 FT 0.166 MI," SHEETS 1-3.
5. MAP ENTITLED "AS BUILT SURVEY MADE FOR J. GORDON AND LOIS T. LONGENECKER, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA," PREPARED BY YERKS ASSOCIATES, INC.,. DATE MARCH 28, 2002.PLAN D-36-13 384.

RECORD OWNER:	EQUITABLE OWNER:
WALKER FAMILY PROPERTIES, LLP	427 LANCASTER AVE, LLC
427 EAST LANCASTER AVENUE	44 PAPER MILL ROAD
WAYNE, PA 19087	NEWTOWN SQUARE, PA 19073

ZONING DATA R-6 (RESIDENCE DISTRICT):	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	2 ACRES	*1.25 AC	*1.25 AC
MINIMUM LOT AREA PER UNIT	2,100 SF	NA	2,292 SF
MAXIMUM BUILDING COVERAGE	70.0%	14.5%	41.1%
MINIMUM FRONT YARD	30.0 FT	63.5 FT	37.8 FT
MINIMUM SIDE YARD	20.0 FT	17.3 FT	20.0 FT
MINIMUM REAR YARD	25.0 FT	6.7 FT	25.0 FT
MAXIMUM IMPERVIOUS COVERAGE	70.0%	47.4%	63.7%
MAXIMUM BUILDING HEIGHT	40.0 FT	37.0± FT	39.4 FT
MAXIMUM BUILDING LENGTH	160.0 FT	81.2 FT	130.0 FT
MINIMUM PARKING	2.25/UNIT	NA	2.36/UNIT

NOTES:

1. * EXISTING NON-CONFORMITY
2. LOT AREA PER UNIT BASED ON CONSOLIDATED LOT AREA.
3. IMPERVIOUS PERCENTAGES BASED ON CONSOLIDATED SITE AREA.
4. FOR MORE DETAILED INFORMATION REFER TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

I HEREBY CERTIFY, THAT TO THE BEST OF MY KNOWLEDGE, THE DRAINAGE PLAN MEETS ALL DESIGN REQUIREMENTS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

CHRISTOPHER C. YOHN, P.E., CPESC — DATE

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SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL CHRISTOPHER C. YOHN ENGINEER PE073703

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

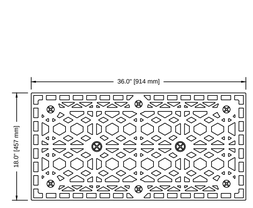
PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP — COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PREPARED FOR: EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY: YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC



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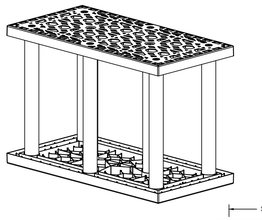
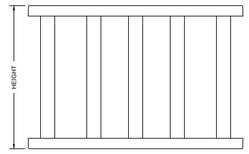


ISOMETRIC VIEW



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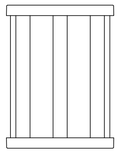
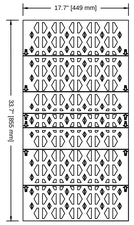
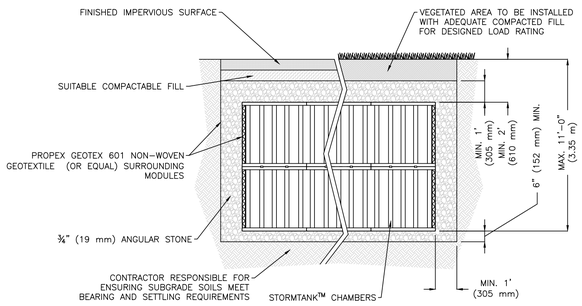


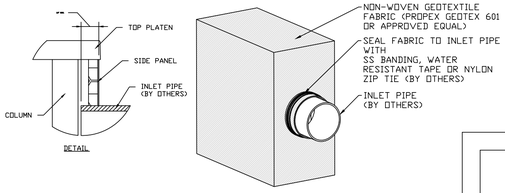
SIDE



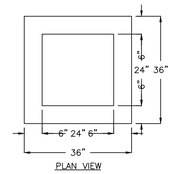
SIDE PANEL

NOTES:
1. SIDE PANELS TO BE INSTALLED ALONG SYSTEM PERIMETER, UNLESS OTHERWISE SPECIFIED.
2. ALL HEIGHTS TO BE CUT FROM A 36" (914 mm) SIDE PANEL AT PRE-SCRIBED LOCATIONS, EXCEPT 33" (838 mm) SIDE PANEL.

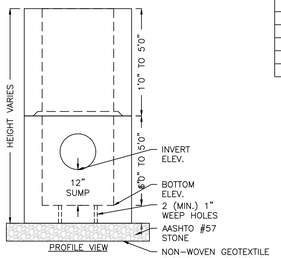




CONNECTION DETAIL
NOT TO SCALE



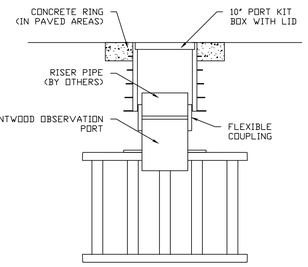
PLAN VIEW



PROFILE VIEW

NOTES / SPECIFICATIONS:
1. SECTIONS MADE IN 6" INCREMENTS
2. CONCRETE STRENGTH: 4000 PSI MIN @ 28 DAYS
3. STRUCTURE CONFORMS TO ASTM C913-02
4. DESIGN: HS-25 TRAFFIC LOADING

2'x2' INLET / SUMP BOX
NOT TO SCALE



OBSERVATION PORT DETAIL
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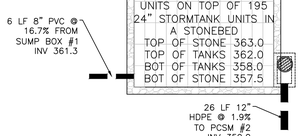
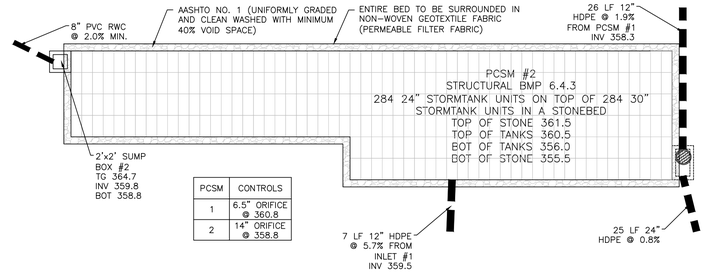
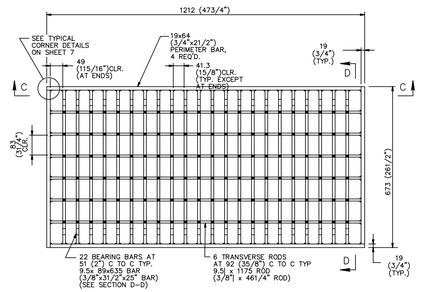


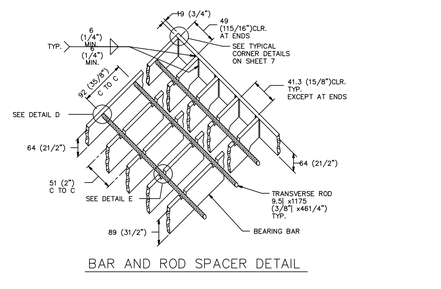


PCSM	CONTROLS
1	6.5" ORIFICE @ 360.8
2	14" ORIFICE @ 358.8

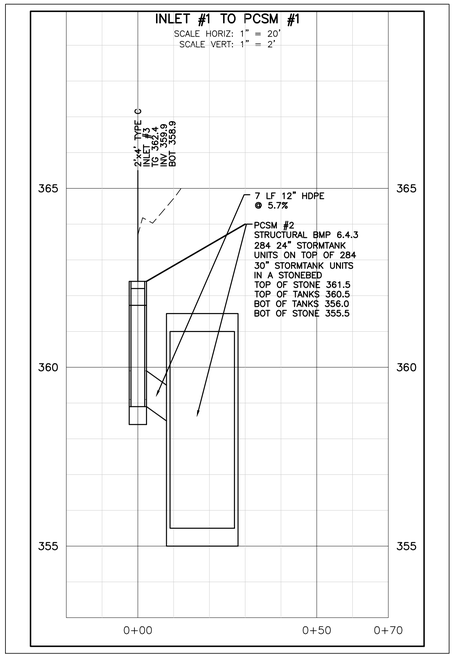
PIPE PERFORATION SPECIFICATIONS			
PIPE SIZE	MINIMUM PERFORATION DIAMETER	MINIMUM OPENING AREA	HOLES PER LINEAR FOOT
6"	5/16"	3.31 SQ. IN.	12
8"	5/16"	3.31 SQ. IN.	16
10"	5/16"	3.31 SQ. IN.	20
12"	5/16"	3.31 SQ. IN.	24
15"	5/16"	3.31 SQ. IN.	29
18"	5/16"	3.31 SQ. IN.	35
24"	5/16"	3.31 SQ. IN.	47
30"	5/16"	3.31 SQ. IN.	59
36"	5/16"	3.31 SQ. IN.	71
48"	5/16"	3.31 SQ. IN.	94
60"	5/16"	3.31 SQ. IN.	118
72"	5/16"	3.31 SQ. IN.	141

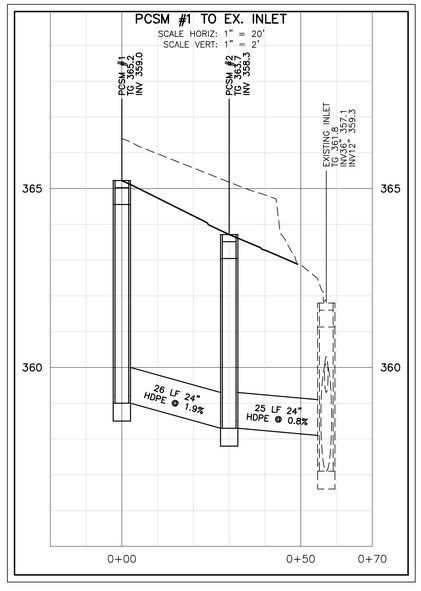
UNDERGROUND STORMWATER MANAGEMENT INSTALLATION:
1. THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.
2. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE 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.
3. SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL/SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, IT SHALL BE CLEANED FROM THE FABRIC, STONE, BED, ETC. AND/OR THE FABRIC AND STONE SHALL BE REPLACED.
4. 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.
5. CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE WITH MINIMUM 40% VOID SPACE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.
6. APPROVED SOIL MEDIA SHOULD BE PLACED OVER INFILTRATION BED IN MAXIMUM 6-INCH LIFTS.

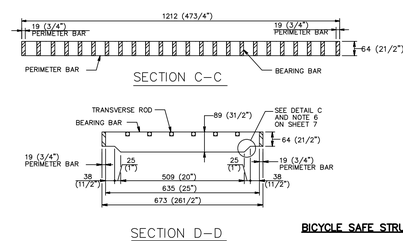




BAR AND ROD SPACER DETAIL

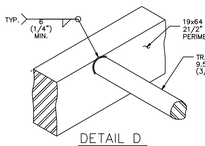




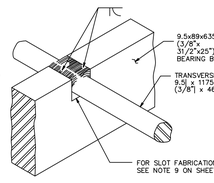


SECTION C-C

SECTION D-D



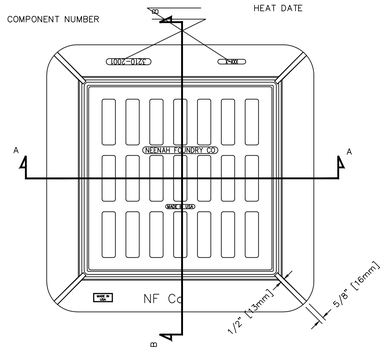
DETAIL D

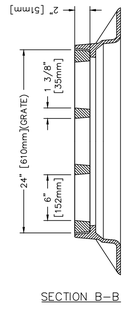


DETAIL E

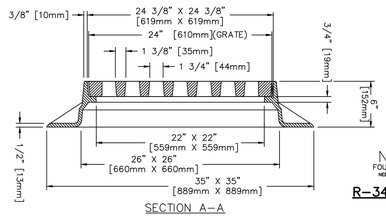
NOTES
1. FOR ADDITIONAL NOTES, SEE SHEET 1.
2. FOR STRUCTURAL STEEL GRATE NOTES, SEE SHEET 7.

BICYCLE SAFE STRUCTURAL STEEL GRATE DETAIL
NOT TO SCALE





SECTION B-B

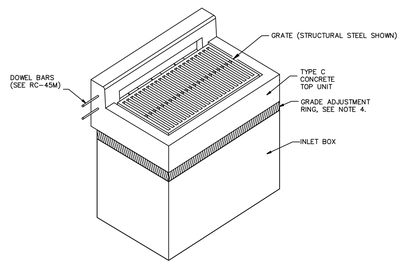


SECTION A-A

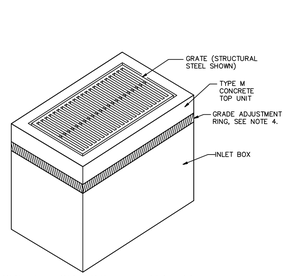
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B

NEENAH FOUNDRY COMPANY NEENAH WISCONSIN 54956

R-3433 FRAME & GRATE
NOT TO SCALE



CONCRETE TOP UNIT - TYPE C



CONCRETE TOP UNIT - TYPE M

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP | COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: POST CONSTRUCTION STORMWATER MANAGEMENT NOTES AND DETAILS

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST (INCLUDING THE COPYRIGHT AND THE RIGHT OF REUSE) IN SUCH INSTRUMENTS WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND FOR ACCOMPLISHING ANY PURPOSE RELATED TO THE PROJECT, PROVIDED THAT FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY ADAPTATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR ENGINEER'S OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER; AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

SEAL: COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — CHRISTOPHER C. YOHN — ENGINEER — PE073703

PREPARED FOR: EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE: JANUARY 6, 2017
SCALE: NO SCALE
ONE CALL NUMBER: 2016-011-1937
DRAWN BY: CCY
PROJECT NUMBER: 15-031

PREPARED BY: YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 7 OF 14

Serial Number: 2016-011-1937

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

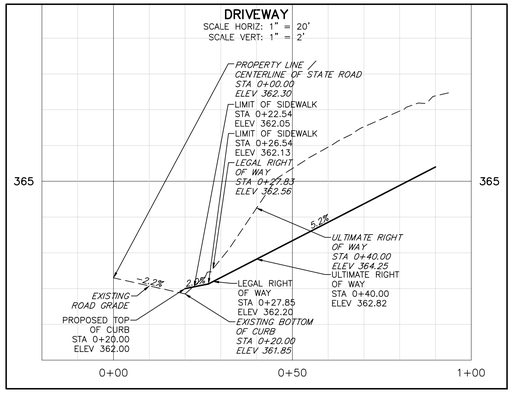
THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

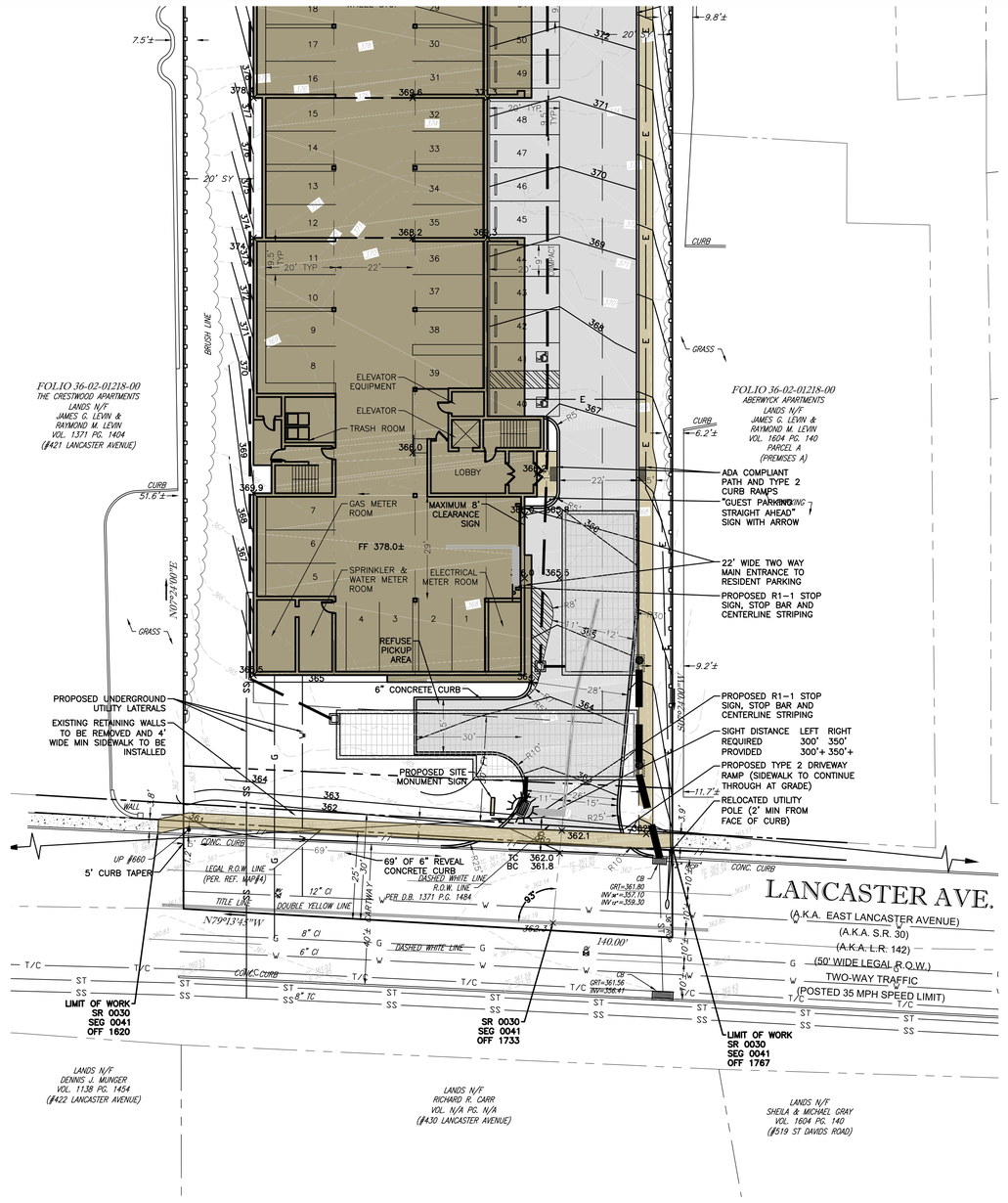
UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

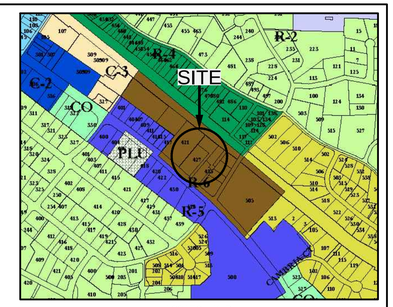
LEGEND

124 / 125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXIST. TOP OF CURB ELEVATION
× G 122.95	EXIST. GUTTER ELEVATION
× TW 123.45	EXIST. TOP OF WALL ELEVATION
× BW 122.95	EXIST. BOTTOM OF WALL ELEVATION
× FF 123.45	EXIST. FINISHED FLOOR ELEVATION
WV / VALVE	WATER VALVE
UV	UNKNOWN VALVE
GV	GAS VALVE
GM	GAS METER
-//-	OVERHEAD WIRES
G	APPROX. LOC. UNDERGROUND GAS LINE
T	APPROX. LOC. UNDERGROUND TEL. LINE
W	APPROX. LOC. UNDERGROUND WATER LINE
UP	UTILITY POLE
UPLP	UTILITY POLE/LIGHT POLE
	SIGN
	MAIL BOX
A.G.	ABOVE GROUND
U.G.	UNDER GROUND
D.C.	DEPRESSED CURB
E.O.P.	EDGE OF PAVEMENT
L.S.A.	LANDSCAPED AREA
RRT WALL	RAILROAD TIE WALL
(TYP.)	TYPICAL
WMH	WATER MANHOLE
CB	CATCH BASIN OR INLET
10	PARKING SPACE COUNT
	DEPRESSED CURB
(TRACT I)	DEED DESIGNATION
1.0'	OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
S.Y.L.	SOLID YELLOW LINE
D.Y.L.	DOUBLE YELLOW LINE
HT.	HEIGHT
DA.W.L.	DASHED WHITE LINE
BLDG.	BUILDING
EL.	ELEVATION

	PROPOSED BUILDING
	PROPOSED PAVING
	PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
	PROPOSED RIGHT-OF-WAY
	PROPOSED FENCE
	PROPOSED STORM PIPES







LOCATION MAP
SCALE: 1" = 600'

PENNDOT NOTES:

1. THE LOCATION OF ALL UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ALL UTILITY SERVICES WITHIN THE LIMITS OF WORK ARE TO BE LOCATED, THE USER TO BE NOTIFIED, AND MEASURES TAKEN TO PROTECT LINES IN ACCORDANCE WITH PENNSYLVANIA ACT 121. THE CONTRACTOR SHALL CONTACT PA ONE CALL AT 1-800-242-1776 FOR INFORMATION ON THE UTILITIES APPROXIMATELY ONE WEEK BEFORE PROCEEDING WITH ANY EXCAVATION.
2. MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE FIGURE PATA 402 & 502 IN PENNDOT PUBLICATION 213, "WORK ZONE TRAFFIC CONTROL GUIDELINES", (67 PA CODE, CHAPTER 212) JUNE 2014, OR MOST CURRENT REVISION.
3. NO TRAFFIC RESTRICTIONS OR LANE CLOSURES ARE PERMITTED ON LEGAL HOLIDAYS AND/OR BETWEEN THE HOURS OF 6:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ANY DEBRIS AND FLUSH OUT ALL EXISTING AND PROPOSED STORM DRAINAGE FACILITIES WITHIN THE PROJECT LIMITS AT THE COMPLETION OF CONSTRUCTION.
5. ALL PROPOSED PAVEMENT MARKINGS MUST BE HOT THERMOPLASTIC ON BITUMINOUS PAVEMENT, INCLUDING LONG AND SHORT LINES AND PAVEMENT MARKING LEGENDS. ALL PROPOSED PAVEMENT MARKINGS MUST BE EPOXY ON CONCRETE PAVEMENT, INCLUDING LONG AND SHORT LINES AND PAVEMENT MARKING LEGENDS.
6. NO UNSUITABLE MATERIAL IS TO BE USED IN ANY PORTION OF THE ROADWAY CONSTRUCTION. REMOVE ANY SUBGRADE THAT CANNOT BE PROPERLY COMPACTED AND TREAT AS UNSUITABLE MATERIAL. ANY MATERIAL WITH A CBR VALUE OF FIVE (5) OR LESS IS CLASSIFIED AS UNSUITABLE. UNDERCUTTING AND/OR SUBGRADE STABILIZATION MAY BE REQUIRED TO OBTAIN A CBR VALUE GREATER THAN FIVE (5).
7. ALL WORK PERFORMED WITHIN THE STATE LEGAL RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH PENNDOT PUBLICATIONS.
8. THE CONTRACTOR MUST CONTACT THE CHESTER COUNTY PERMIT INSPECTOR BEFORE COMMENCING WORK.
9. THE CONTRACTOR MUST NOTIFY THE DISTRICT PRESS OFFICE AT 610-205-6800 ABOUT THE CONSTRUCTION PROJECT 2 WEEKS PRIOR TO THE START OF THE JOB.
10. THE CONTRACTOR MUST COMPLY WITH ALL US DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS AS REVISED 1995. (OSHA 2226) ALL CONSTRUCION METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH PENNDOT SPECIFICATION PUBLICATION 408/2011, LATEST REVISION, AND SHALL MEET OR EXCEED THE MUNICIPALITY'S STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SIGHT DISTANCE NOTE:

ALL SIGHT DISTANCE OBSTRUCTIONS (INCLUDING BUT NOT LIMITED TO EMBANKMENTS AND VEGETATION SHALL BE REMOVED BY THE DEVELOPER (PERMITTEE) TO PROVIDE A MINIMUM OF 300' OF CONTINUOUS SIGHT DISTANCE TO THE LEFT AND A MINIMUM OF 350' OF CONTINUOUS SIGHT DISTANCE TO THE RIGHT FOR A DRIVER EXISTING THE PROPOSED INTERSECTION ONTO THE THROUGH HIGHWAY. THE DRIVER MUST BE CONSIDERED TO BE POSITIONED 10 FEET FROM THE NEAR EDGE OF THE CLOSEST HIGHWAY THROUGH TRAVEL LANE (FROM THE CURB LINE IF CURING IS PRESENT) AT AN EYE HEIGHT OF 3'-6" ABOVE THE PAVED SURFACE. THE POINT SIGHTED BY THE EXISTING DRIVER SHALL ALSO BE 3'-6" ABOVE THE PAVED SURFACE LOCATED IN THE CENTER OF THE CLOSEST HIGHWAY TRAVEL LANE DESIGNATED FOR USE BY THE APPROACHING TRAFFIC. THE CONTINUOUS SIGHT DISTANCE SHALL BE MAINTAINED BY THE PERMITTEE.

NEAREST INTERSECTIONS:

SIDE OF DRIVEWAY	SIDE OF STREET	SEG/OFFSET	NAME
LEFT	SOUTH	0050/0000	SAINT DAVIDS ROAD
LEFT	NORTH	0051/0000	CHAMINOUX ROAD
RIGHT	SOUTH	0040/0906	PEMBROKE AVENUE
RIGHT	NORTH	0041/0911	PEMBROKE AVENUE

NEAREST DRIVEWAYS:

SIDE OF DRIVEWAY	SIDE OF STREET	SEG/OFFSET
LEFT	SOUTH	0040/1910±
LEFT	NORTH	0041/1802±
RIGHT	SOUTH	0040/1610±
RIGHT	NORTH	0041/1600±

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

1. A WORK ZONE TURN ON HEADLIGHTS SIGN, R22-1, SIZED 48 X 36 SHALL BE INSTALLED 250' TO 1000' BEFORE THE FIRST SIGN AS SPECIFIED BY PUBLICATION 213 (SMALLER SPACING ON LOW SPEED ROADS, GREATER ON HIGH SPEED ROADS).
2. AN ACTIVE WORK ZONE WHEN FLASHING SIGN, W21-19, SIZED 36 OR 48 SQUARE SIZES (SAME SIZE AS OTHER WARNING SIGNS), SHALL BE INSTALLED AS CLOSE TO PRACTICAL TO THE BEGINNING OF THE ACTIVE WORK ZONE, AND BE PLACED IN ADVANCE OF ANY FLAG PERSON. A WHITE FLASHING LIGHT MUST BE ATTACHED TO THE W21-19 SIGN.
3. AN END ACTIVE WORK ZONE SIGN, W21-20, SIZED 36 OR 48 SQUARE SIZES (SAME SIZE AS OTHER WARNING SIGNS), SHALL BE PLACED IMMEDIATELY AT THE END OF THE ACTIVE WORK ZONE. THIS IS NOT REQUIRED IF AN END ROAD WORK SIGN (G20-2) IS USED AT THE SAME LOCATION.

PATA 502 (Old PATA 25) - Notes

1. Refer to PATA 007 for installing advance warning signs for freeways and expressways.

Signs

W20-1 W21-5 W21-5BR W21-5BL G20-2

Sign Spacing Chart

Condition	Distance A Feet	B Feet	C Feet	F Feet
Freeways & Expressways	1000	1640	2640	5280

When multiple distance plaques are used on advance warning signs, they shall all be of the same series type.
Example: either all "AHEAD" or XXX FEET.

Taper Length Formulas

S	L
40 MPH or less	$L = \frac{WS^2}{60}$
45 MPH or more	L = WS

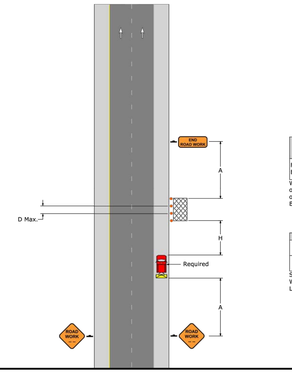
S = Regulatory Speed Limit
W = Width of Offset
L = Length

Distance and Spacing Quick Reference Chart

Speed MPH	W Feet	L Feet	1/2L Feet	1/3L Feet	Min. Channelizing Devices Per Taper Type (Length) L Feet	1/2L Feet	1/3L Feet	50' Feet	D Feet	E Feet	H Feet
40	12	320	160	110	9	6	6	6	80	305	150
45	12	540	270	180	13	7	6	6	90	360	150
50	12	600	300	200	13	7	6	6	100	425	250
55	12	660	330	220	13	7	6	6	110	495	250
60	12	720	360	240	13	7	6	6	120	570	250
65	12	780	390	260	13	7	6	6	130	645	250
70	12	840	420	280	13	7	6	6	140	730	250

Note: Channelizing devices used in taper shall be equally spaced at ½ D Max.

PATA 501 (Old PATA 24)
Work Space Beyond Shoulder



PATA 402 (Old PATA 18) - Notes

1. For left lane closures, the Left Lane Closed (W20-5L) sign shall be used instead of the Right Lane Closed (W20-5R) sign and the Left Lane Ends (W4-2L) sign shall be used instead of the Right Lane Ends (W4-2R) sign.

2. Refer to PATA 007 for installing advance warning signs for freeways and expressways.

3. Refer to PATA 012 for arrow panel sizing.

Signs

W20-1 W20-5R W20-5L W4-2R W4-2L

Sign Spacing Chart

Condition	Distance A Feet	B Feet	C Feet	F Feet
Freeways & Expressways	1000	1640	2640	5280

When multiple distance plaques are used on advance warning signs, they shall all be of the same series type.
Example: either all "AHEAD" or XXX FEET.

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40 MPH or less	$L = \frac{WS^2}{60}$
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S = Regulatory Speed Limit
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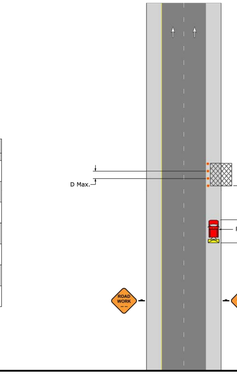
40	12	320	160	110	9	6	6	6	80	305	150
45	12	540	270	180	13	7	6	6	90	360	150
50	12	600	300	200	13	7	6	6	100	425	250
55	12	660	330	220	13	7	6	6	110	495	250
60	12	720	360	240	13	7	6	6	120	570	250
65	12	780	390	260	13	7	6	6	130	645	250
70	12	840	420	280	13	7	6	6	140	730	250

Note: Channelizing devices used in taper shall be equally spaced at ½ D Max.

PATA 401 (Old PATA 5)
Work Space On Or Beyond The Shoulder (No Roadway Encroachment)



SCALE: 1" = 20'

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

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SEAL:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073203

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP | COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: LOW VOLUME HIGHWAY OCCUPANCY PERMIT PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 8 OF 14

Serial Number: 2016-011-1937

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LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

- 124 / 125 — EXISTING CONTOUR
- × 123.45 — EXISTING SPOT ELEVATION
- × TC 123.45 — EXIST. TOP OF CURB ELEVATION
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- × BW 122.95 — EXIST. BOTTOM OF WALL ELEVATION
- × FF 123.45 — EXIST. FINISHED FLOOR ELEVATION
- WV — WATER VALVE
- VALVE — UNKNOWN VALVE
- GV — GAS VALVE
- GM — GAS METER
- -//- — OVERHEAD WIRES
- G — APPROX. LOC. UNDERGROUND GAS LINE
- T — APPROX. LOC. UNDERGROUND TEL. LINE
- W — APPROX. LOC. UNDERGROUND WATER LINE
- UP — UTILITY POLE
- UPLP — UTILITY POLE/LIGHT POLE
- SIGN
- MAIL BOX
- A.G. — ABOVE GROUND
- U.G. — UNDER GROUND
- D.C. — DEPRESSED CURB
- E.O.P. — EDGE OF PAVEMENT
- L.S.A. — LANDSCAPED AREA
- RRT. WALL — RAILROAD TIE WALL
- (TYP.) — TYPICAL
- WMH — WATER MANHOLE
- CB — CATCH BASIN OR INLET
- 10 — PARKING SPACE COUNT
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- S.Y.L. — SOLID YELLOW LINE
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- BLDG. — BUILDING
- EL. — ELEVATION

- PROPOSED BUILDING
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- PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
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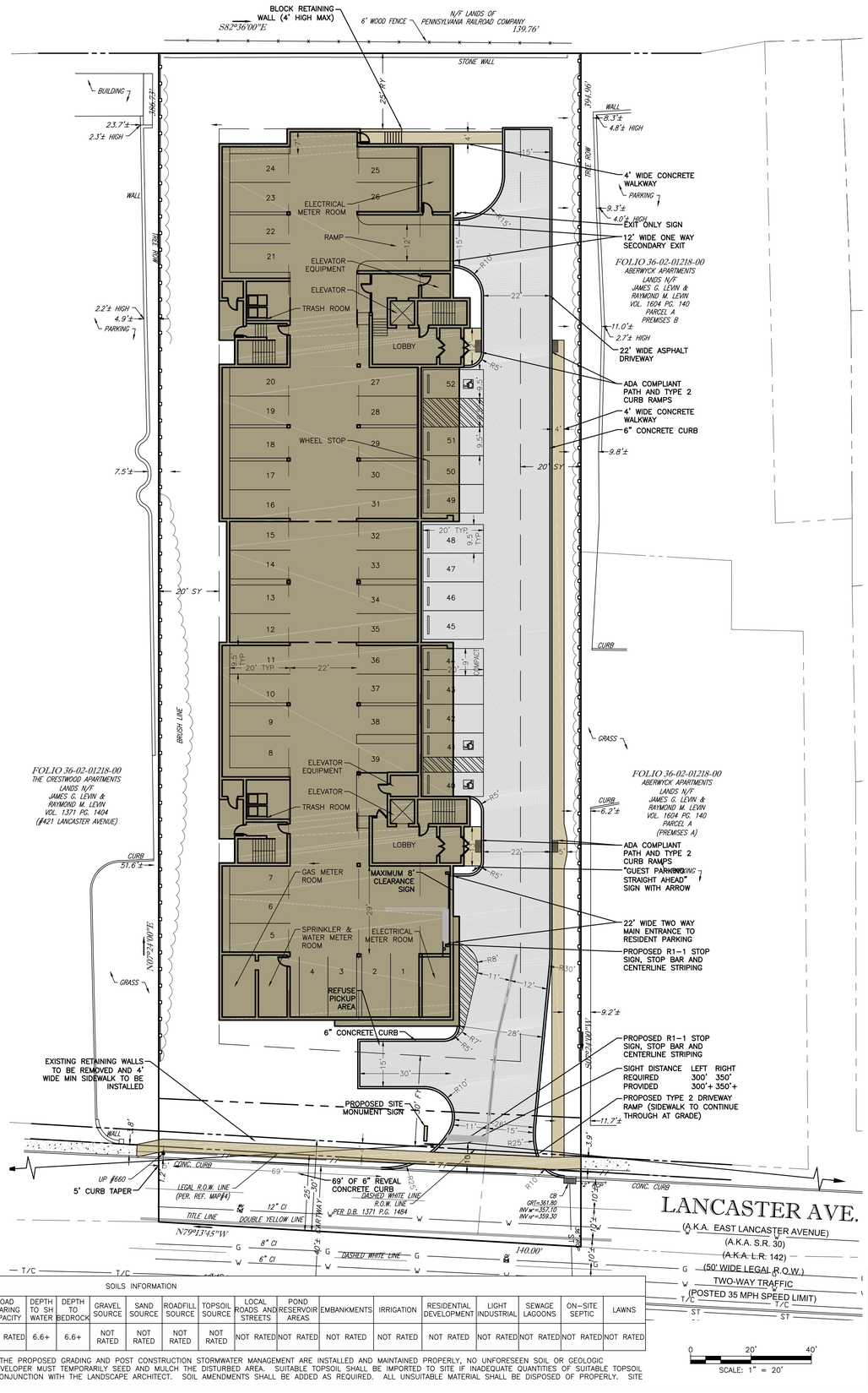
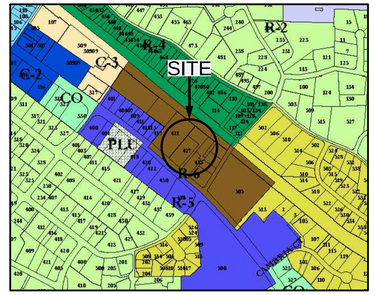
- PROPOSED FENCE





LOCATION MAP
SCALE: 1" = 600'

SOILS INFORMATION																					
SYMBOL	NAME	%SLOPE	ERODIBILITY INDEX	HYDROLOGIC GROUP	AGRICULTURAL CAPABILITY CLASS	DRAINAGE	LOAD BEARING CAPACITY	DEPTH TO SH WATER	DEPTH TO BEDROCK	GRAVEL SOURCE	SAND SOURCE	ROADFILL SOURCE	TOPSOIL SOURCE	LOCAL ROADS AND STREETS	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LIGHT INDUSTRIAL	SEWAGE LAGOONS	ON-SITE SEPTIC	LAWNS
Md	MADE LAND GABBRO AND DIABASE MATERIALS	NOT RATED	NOT RATED	C	6E	WELL DRAINED	NOT RATED	6.6+	6.6+	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED

NOTES: BASED ON THE INFORMATION IN THE SOILS REPORT AND INFILTRATION TEST REPORT, IF THE PROPOSED GRADING AND POST CONSTRUCTION STORMWATER MANAGEMENT ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL OR GEOLOGIC LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST THEREIN WHETHER OR NOT THE WORK FOR WHICH THEY ARE MADE IS EXECUTED. ENGINEER SHALL BE DEEMED THE AUTHOR OF SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL HAVE A LIMITED LICENSE TO USE THE DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND FOR COMPLETION OF THE PROJECT BY OTHERS, PROVIDED OWNER PERFORMS ITS OBLIGATIONS AND PAYS ENGINEER FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (1) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT, ON ANY OTHER PROJECT, OR FOR ANY USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS OR ADAPTATION BY ENGINEER, (2) ANY SUCH USE OR REUSE, OR ANY MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS, (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS AGAINST ALL CLAIMS, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM ANY USE, REUSE, OR MODIFICATION OF THE DOCUMENTS WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION OF ENGINEER, AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

SEAL:

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — CHRISTOPHER C. YOHN — ENGINEER — PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP

COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: PAVEMENT SIGNAGE AND MARKING PLAN

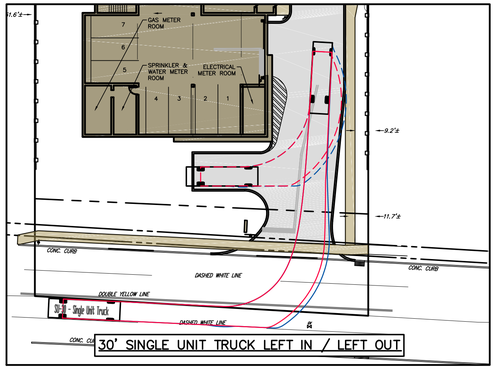
PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE: JANUARY 6, 2017
SCALE: 1" = 20'
ONE CALL NUMBER: 2016-011-1937
DRAWN BY: CCY
PROJECT NUMBER: 15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 9 OF 14



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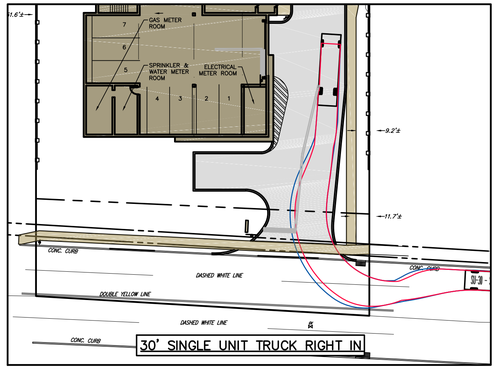

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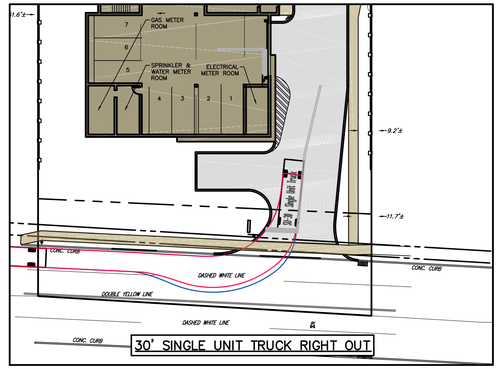

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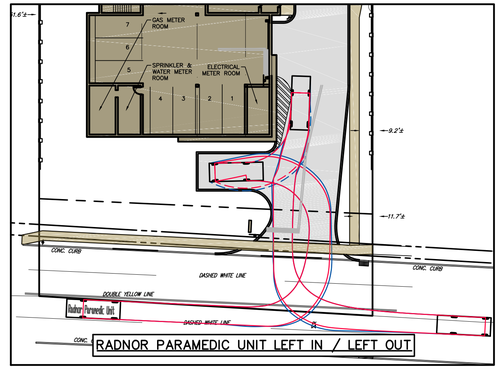

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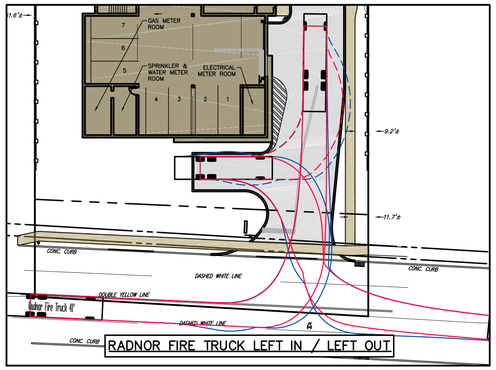

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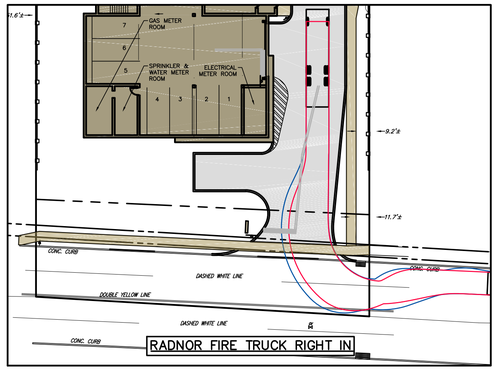

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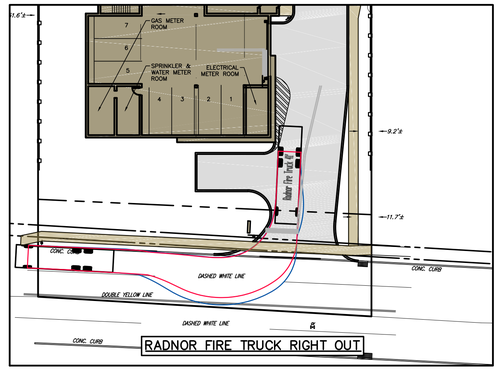

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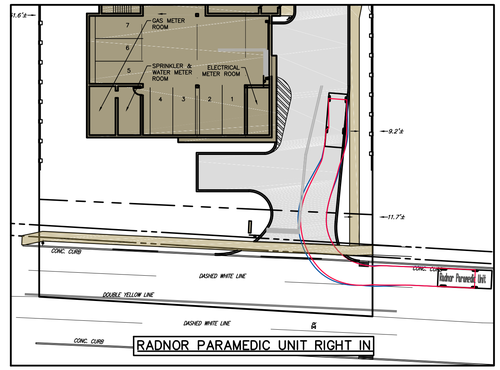

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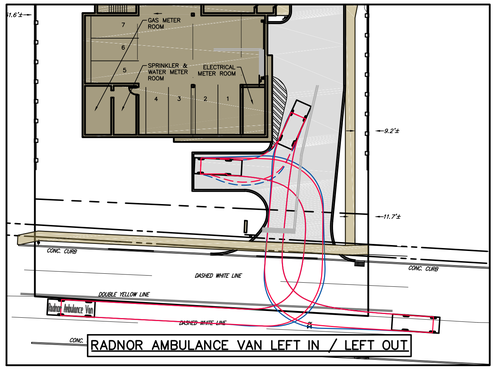

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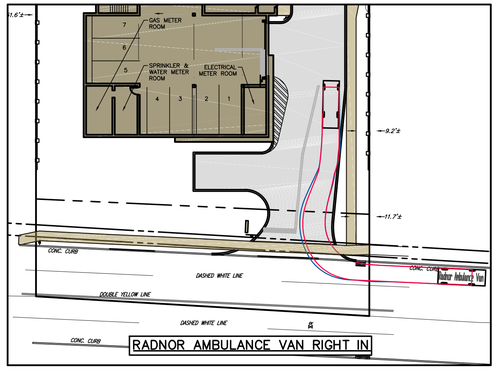

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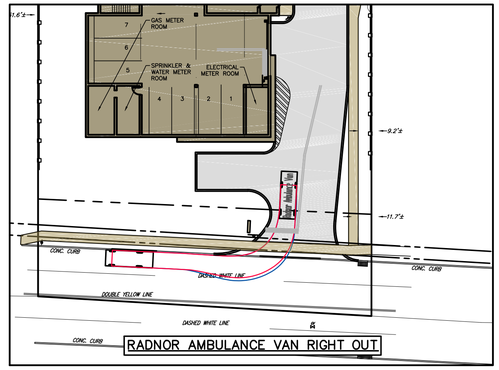

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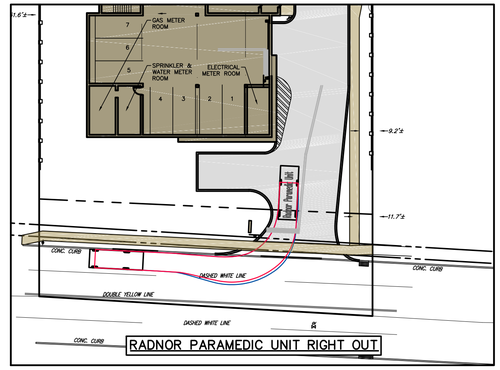

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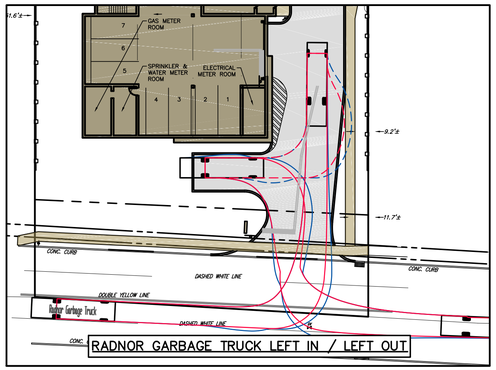

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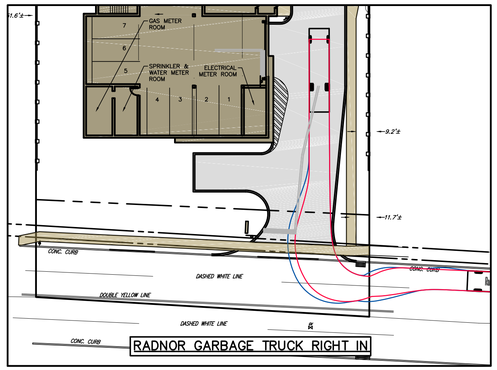

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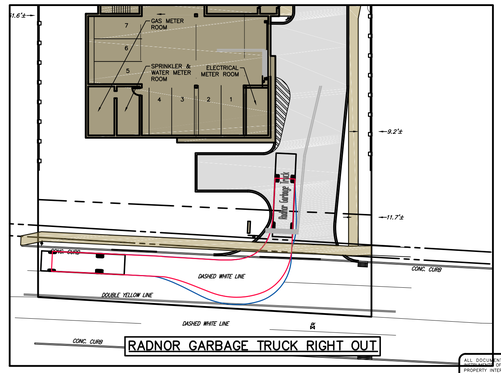

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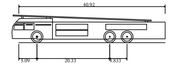
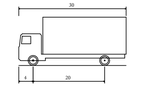


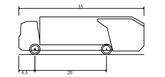
Radnor Fire Truck 41'

Overall Length	40.920ft
Overall Width	9.500ft
Overall Body Height	7.733ft
Min Body Ground Clearance	0.983ft
Track Width	9.500ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°



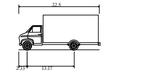
SU-30 - Single Unit Truck

Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°



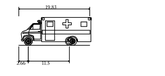
Radnor Garbage Truck

Overall Length	35.000ft
Overall Width	8.375ft
Overall Body Height	10.546ft
Min Body Ground Clearance	1.000ft
Track Width	8.375ft
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	33.330ft



Radnor Paramedic Unit

Overall Length	22.500ft
Overall Width	7.670ft
Overall Body Height	9.715ft
Min Body Ground Clearance	0.438ft
Track Width	7.670ft
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	30.830ft



Radnor Ambulance Van

Overall Length	19.830ft
Overall Width	6.670ft
Overall Body Height	7.780ft
Min Body Ground Clearance	0.523ft
Track Width	6.670ft
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	27.170ft

0 30' 60'

SCALE: 1" = 30'

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REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

SEAL:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP | COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: MANEUVERABILITY PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 30'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 10 OF 14

Serial Number: 2016-011-1937

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

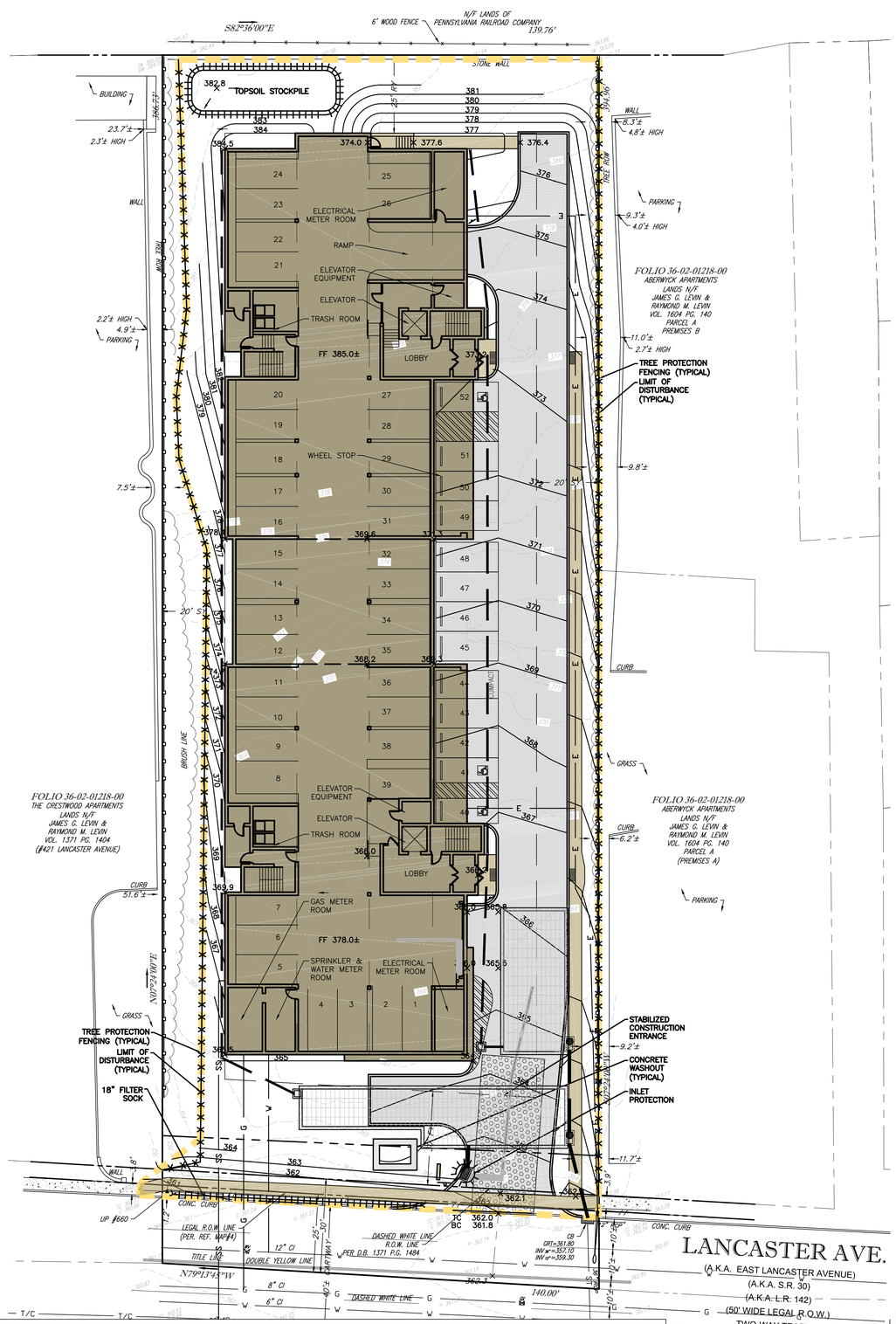
THE FOLLOWING COMPANIES WERE NOTIFIED BY PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 20141072620

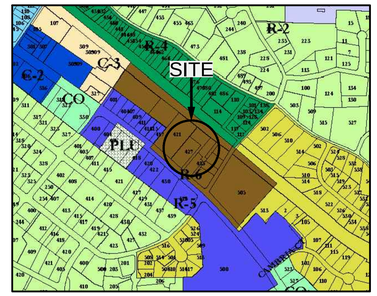
UTILITY COMPANY	PHONE NUMBER
AT & T	215-233-3474
PECO	215 841-4000
ZAYO BANDWIDTH	1-800-390-6094
AQUA PENNSYLVANIA, INC.	610-525-1400
LEVEL 3	720-888-0165
VERIZON	215-571-7050
COMCAST CABLE	888 240-8321
MCI	610 265-4448
RADNOR TOWNSHIP	610 688-5600

LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXIST. TOP OF CURB ELEVATION
- EXIST. GUTTER ELEVATION
- EXIST. TOP OF WALL ELEVATION
- EXIST. BOTTOM OF WALL ELEVATION
- EXIST. FINISHED FLOOR ELEVATION
- WATER VALVE
- UNKNOWN VALVE
- GAS VALVE
- GAS METER
- OVERHEAD WIRES
- APPROX. LOC. UNDERGROUND GAS LINE
- APPROX. LOC. UNDERGROUND TEL. LINE
- APPROX. LOC. UNDERGROUND WATER LINE
- UTILITY POLE
- UTILITY POLE/LIGHT POLE
- SIGN
- MAIL BOX
- ABOVE GROUND
- UNDER GROUND
- DEPRESSED CURB
- EDGE OF PAVEMENT
- LANDSCAPED AREA
- RAILROAD TIE WALL
- TYPICAL
- WATER MANHOLE
- CATCH BASIN OR INLET
- PARKING SPACE COUNT
- DEPRESSED CURB
- DEED DESIGNATION
- OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
- SOLID YELLOW LINE
- DOUBLE YELLOW LINE
- HEIGHT
- DASHED WHITE LINE
- BUILDING
- ELEVATION

- PROPOSED BUILDING
- PROPOSED PAVING
- PROPOSED IMPERVIOUS WALKS, WALLS, ETC.
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- PROPOSED STORM PIPES
- TREE PROTECTION FENCING
- SILT SOCK
- LIMIT OF DISTURBANCE





LOCATION MAP
SCALE: 1" = 600'

DISTURBED AREA: 47,700± SF (1.1 AC)

CONSTRUCTION TIMING AND SEQUENCE NOTES:

1. THE TOWNSHIP ENGINEER SHALL BE NOTIFIED FOLLOWING THE INSTALLATION OF PROTECTIVE BARRIERS AND 48 HOURS PRIOR TO THE START OF EARTHMOVING ACTIVITIES AS WELL AS 48 HOURS PRIOR TO THE INSTALLATION OF THE STORMWATER MANAGEMENT SYSTEM AND ASSOCIATED FACILITIES.
2. 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.

CONSTRUCTION TIMING AND SEQUENCE:

1. ANTICIPATED START OF CONSTRUCTION: MARCH 2017.
2. INSTALL THE TREE PROTECTION FENCING, COMPOST FILTER SOCKS #1-5 AND NOTIFY TOWNSHIP FOR APPROVAL AND 48 HOURS PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
3. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE PLAN PREPARER AND A REPRESENTATIVE FROM THE DELAWARE CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
4. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES. ALL CONSTRUCTION VEHICLES SHALL UTILIZE THESE ENTRANCES TO EXIT THE SITE.
5. UPON COMPLETION OF THE FILTER SOCKS, CONSTRUCTION ENTRANCES AND TREE PROTECTION, CLEAR AND GRUB THE SITE WITHIN THE LIMITS OF DISTURBANCE. STRIP TOPSOIL AND STOCKPILE FOR FUTURE USE. SURROUND STOCKPILE WITH SILT FENCE AND IMMEDIATELY STABILIZE. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
6. BEGIN REMOVAL OF ALL FEATURES DESIGNATED TO BE REMOVED.
7. CONCURRENT WITH REMOVALS, ROUGH GRADE THE SITE. ANY WATER PUMPED FROM WORK AREAS SHALL BE TREATED FOR SEDIMENT REMOVAL PRIOR TO DISCHARGING TO A SURFACE WATER THROUGH THE USE OF A PUMPED WATER FILTER BAG OR OTHER APPROVED DEVICE.
8. INSTALL THE SITES UTILITIES, RETAINING WALLS AND THE STONE BASE FOR THE DRIVEWAY AND PARKING AREAS.
9. CONCURRENT WITH UTILITIES AND DRIVEWAY STONE, BEGIN BUILDING CONSTRUCTION.
10. ONCE THE ROOF IS COMPLETE, INSTALL RAINWATER CONDUCTOR PIPING, INLETS, SUMP BOXES, TRENCH DRAIN, STORMWATER MANAGEMENT SYSTEMS (CRITICAL STAGE) AND ASSOCIATED PIPING. INSTALL INLET PROTECTION IMMEDIATELY. NOTIFY THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF THE STORMWATER MANAGEMENT SYSTEMS AND ASSOCIATED FACILITIES.
11. FINAL GRADE THE SITE AND INSTALL THE WALKWAYS AND FINAL PAVING.
12. SPREAD TOPSOIL, SEED AND IMMEDIATELY STABILIZE.
13. UPON SITE STABILIZATION, REMOVE THE TEMPORARY BMPS AND ACTIVATE THE PERMANENT STORMWATER MANAGEMENT SYSTEMS. THE STORMWATER MANAGEMENT SYSTEMS SHALL NOT RECEIVE RUNOFF WITHOUT THE PRIOR APPROVAL FROM THE TOWNSHIP ENGINEER AND UNTIL THE ENTIRE DRAINAGE AREA CONTRIBUTORY HAS ACHIEVED FINAL STABILIZATION.
14. REMOVE THE EROSION AND SEDIMENTATION CONTROLS AND IMMEDIATELY STABILIZE DENUDED AREAS.
15. ANTICIPATED END OF CONSTRUCTION: NOVEMBER 2018.

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	ERODIBILITY INDEX	HYDROLOGIC GROUP	AGRICULTURAL CAPABILITY CLASS	DRAINAGE	LOAD BEARING CAPACITY	DEPTH TO SH WATER	DEPTH TO BEDROCK	GRAVEL SOURCE	SAND SOURCE	ROADFILL SOURCE	TOPSOIL SOURCE	LOCAL ROADS AND STREETS	POND RESERVOIR AREAS	EMBANKMENTS	IRRIGATION	RESIDENTIAL DEVELOPMENT	LIGHT INDUSTRIAL	SEWAGE LAGOONS	ON-SITE SEPTIC	LAWNS
Md	MADE LAND GABBRO AND DIABASE MATERIALS	NOT RATED	NOT RATED	C	6E	WELL DRAINED	NOT RATED	6.6+	6.6+	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED

NOTES: BASED ON THE INFORMATION IN THE SOILS REPORT AND INFILTRATION TEST REPORT, IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL OR GEOLOGIC LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF SERVICE, AND ENGINEER RETAINS AN OWNERSHIP AND PROPERTY INTEREST (INCLUDING THE COPYRIGHT AND THE RIGHT OF REUSE) IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER SHALL BE PERMITTED A LIMITED LICENSE TO USE THE DOCUMENTS PREPARED BY ENGINEER SOLELY FOR PURPOSES OF THE RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF FULL PAYMENT FOR ALL SERVICES RELATING TO PREPARATION OF THE DOCUMENTS AND SUBJECT TO THE FOLLOWING LIMITATIONS: (A) OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, (B) OWNER SHALL NOT USE OR PERMIT OTHERS ON EXTENSIONS OF THE PROJECT, ON ANY OTHER PROJECT, OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER, (C) ANY REUSE OR ANY ALTERATION OR MODIFICATION OF THE DOCUMENTS, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, SHALL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS, AND (D) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ITS OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM THE USE, REUSE, ALTERATION, MODIFICATION OF THE DOCUMENTS PREPARED BY ENGINEER WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER, AND (A) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

SEAL:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073203

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP

COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: EROSION AND SEDIMENTATION CONTROL PLAN

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	1" = 20'
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
YOHN ENGINEERING, LLC
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YOHN Engineering, LLC

SHEET: 11 OF 14

STANDARD E&S PLAN NOTES:

1. STOCKPILE HEIGHTS MUST NOT EXCEED 15 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
2. THE OPERATOR SHALL ASSURE 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 DELAWARE CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
4. 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.
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 DELAWARE CONSERVATION DISTRICT.
6. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE DELAWARE 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. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE PROPOSED DEVELOPMENT FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE BMP'S.
11. EROSION AND SEDIMENT BMP'S MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS 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 SEDIMENT CONTROL PLAN PREPARER, AND THE DELAWARE 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 ON 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.
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 WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
17. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
18. SOD OR MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.
19. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
20. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY, IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
21. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
22. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET DEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
23. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
24. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE DELAWARE CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
26. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
27. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.
28. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
29. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
30. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
31. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
32. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
33. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
34. CONCRETE WASH WATER SHALL BE HANDLED IN ACCORDANCE WITH THE E&S BMP MANUAL REGULATIONS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
35. 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.
36. THE RUNOFF CROSSING TO THE ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE MANAGED SO THAT THE WATER QUALITY / QUANTITY IMPACT IS MINIMIZED TO THE ADJACENT PROPERTIES. ADDITIONAL DIVERSION BERMS, STONED CONSTRUCTION STAGING AREAS, AND INLETS/PIPING SHALL BE PROVIDED AS NECESSARY / DIRECTED IN ORDER TO ENSURE ACCEPTABLE CONDITIONS DURING THE CONSTRUCTION PHASE.
37. ALL TOPSOIL SHALL REMAIN ONSITE UNLESS OTHERWISE DIRECTED BY THE OWNER.

CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE NOTES:

1. IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFF SITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT. IF ALL CUT AND FILL MATERIALS WILL BE USED ON THE SITE, A CLEAN FILL DETERMINATION IS NOT REQUIRED BY THE OPERATOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF REGULATED SUBSTANCE OCCURRED ON SITE.
2. APPLICANTS AND/OR OPERATORS MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT THE FILL MATERIAL ASSOCIATED WITH THE PROJECT QUALIFIES AS CLEAN FILL. ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL," DOCUMENT NUMBER 258-2182-773 A COPY OF THIS POLICY IS AVAILABLE ONLINE AS WWW. DEPWEB.STATE.PA.US
3. 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).
4. 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 THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".
5. 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.
6. 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 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 DEPARTMENT'S POLICY "MANAGEMENT OF FILL".
7. 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.

TOPSOIL APPLICATION:

1. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
2. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM - 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
3. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

TURFGRASS ESTABLISHMENT:

SOIL TESTING

1. A SOIL TEST TO DETERMINE LIME AND FERILIZER REQUIREMENTS PROVIDES THE BEST GUIDE FOR PROPER TURFGRASS ESTABLISHMENT.

ROUGH-GRADING

1. REMOVE ALL DEBRIS, INCLUDING LARGE STONES.
2. TILL SOIL AND BRING AREA TO ROUGH-GRADE PRIOR TO LIMING OR FERTILIZATION.
3. WHERE TOPSOIL IS TO BE REPLACED OR BROUGHT IN, FIRST ROUGH-GRADE THE AREA TO THE CONTOUR OF THE FINISHED GRADE TO FACILITATE UNIFORM DISTRIBUTION OF TOPSOIL.

LIMING

1. WHERE A TEST HAS BEEN MADE, BROADCAST AND WORK INTO A 4 TO 6-INCH SOIL DEPTH TO MEET THE REQUIREMENT SHOWN BY THE TEST.
2. WHERE LIME REQUIREMENT EXCEEDS 200 LBS. PER 1,000 SF, APPLY ONE HALF THE TOTAL REQUIREMENT, TILL, APPLY THE REMAINING ONE HALF, AND RETILL.
3. WHERE A TEST IS NOT AVAILABLE, BROADCAST AND WORK INTO A 4 TO 6-INCH SOIL DEPTH A MINIMUM OF 100 LBS. PER 1,000 SF.

BASIC FERTILIZATION

1. WHERE A TEST HAS BEEN MADE, BROADCAST THE RECOMMENDED FERTILIZER AND WORK INTO THE SOIL TO A 4 TO 6-INCH DEPTH.
2. WHERE A TEST HAS NOT BEEN MADE, BROADCAST AND WORK INTO THE SOIL TO A 4 TO 6-INCH DEPTH 25 TO 35 LBS. OF 0-46-0 FERTILIZER OR EQUIVALENT PER 1,000 SF.

SOIL AMENDMENTS

1. WHERE A TEST INDICATES THE SOIL HAS A LOW ORGANIC MATTER CONTENT, WORK THE RECOMMENDED ORGANIC MATTER INTO THE SOIL TO A 2 TO 4-INCH DEPTH BEFORE APPLYING THE STARTER FERTILIZER.
2. REED SEDGE PEAT, MOSS PEAT, OR A COMBINATION OF THE TWO MATERIALS IS RECOMMENDED AS A SOURCE OF ORGANIC MATTER.

TILLAGE

1. TILL SEEDBED TO A 4 TO 6-INCH DEPTH MAKING SURE THE LIMESTONE (IF REQUIRED), AMENDMENTS (IF REQUIRED) AND THE BASIC FERTILIZER ARE UNIFORMLY MIXED THROUGHOUT THE SOIL PROFILE. POCKETS OF LIMESTONE, AMENDMENTS OR FERTILIZER MUST BE AVOIDED.

FINISH-GRADING

1. RAKE AREA TO FINISH-GRADE PRIOR TO SEEDING. LIGHT ROLLING WILL INDICATE ANY LOW SPOTS OR OTHER IRREGULARITIES OF THE AREA.

STARTER FERTILIZATION

1. IMMEDIATELY PRIOR TO SEEDING, BROADCAST AND WORK INTO THE TOP INCH OF SOIL 40 LBS. OF A 10-5-5, 10-6-4 OR 25 LBS. OF A 16-8-8 FERTILIZER OR THE EQUIVALENT PER 1,000 SF. THE FERTILIZER MUST BE TURF GRADE, HAVING AN APPROXIMATE 2-1-1 RATIO AND CONTAINING 35 PERCENT OR MORE OF THE TOTAL NITROGEN AS WATER INSOLUBLE OR CONTROLLED RELEASE NITROGEN.

SEEDING

1. LATE SUMMER TO EARLY FALL IS THE BEST TIME FOR SEEDING PERMANENT TURFGRASS.
2. SOW RECOMMENDED SEED MIXTURE ADAPTED TO USE AND CLIMATIC CONDITIONS OF THE AREA.
3. DIVIDE TOTAL SEED QUANTITY INTO TWO EQUAL LOTS, SOWING ONE LOT IN ONE DIRECTION AND THE SECOND LOT AT RIGHT ANGLES TO THE FIRST WITH A MECHANICAL SEEDER OR SPREADER.

COVER SEED

1. RAKE LIGHTLY OR DRAG AREA TO COVER SEED NO DEEPER THAN ¼ IN.

SEED-SOIL CONTACT

1. ROLL LIGHTLY TO FIRM SOIL AROUND SEED.

MULCHING

1. MULCH SEEDED AREA WITH CLEAN STRAW OR MARSH HAY AT 3.0 TONS PER ACRE. LIGHT MULCHES (SOME SOIL SHOWING THROUGH MULCH) MAY BE LEFT ON THE AREA TO DECOMPOSE. HEAVY MULCHES (COMPLETE SOIL COVERAGE) SHOULD BE REMOVED FROM THE AREA WITHIN A FEW DAYS AFTER SEED GERMINATION.

PERMANENT SEED MIXTURES		
SPECIES	% OF MIXTURE	SEED RATE
SUNNY AREAS AND WELL-DRAINED SOILS		
KENTUCKY BLUEGRASS	100%	2-3 LB/1,000 SF
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	80-90% 10-20%	3-4 LB/1,000 SF
KENTUCKY BLUEGRASS FINE FESCUES PERENNIAL RYEGRASS	40-60% 30-40% 10-20%	3-4 LB/1,000 SF
TURF-TYPE TALL FESCUE	100%	6-8 LB/1,000 SF
TURF-TYPE PERENNIAL RYEGRASS	100%	4-5 LB/1,000 SF
PARTIALLY SHADED AREAS		
FINE FESCUES KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	40-50% 40-50% 10-20%	4 LB/1,000 SF
FINE FESCUES	100%	4-5 LB/1,000 SF
TURF-TYPE TALL FESCUE	100%	6-8 LB/1,000 SF
HEAVY SHADE, WELL-DRAINED SOILS		
FINE FESCUES	100%	4-5 LB/1,000 SF
HEAVY SHADE, POORLY-DRAINED SOILS		
ROUGH BLUEGRASS	100%	2-3 LB/1,000 SF

TEMPORARY SEED MIXTURE		
SPECIES	% OF MIXTURE	SEED RATE
ANNUAL OR ITALIAN RYEGRASS	100%	4-5 LB/1,000 SF

SEED MIXTURE NOTES:

1. SEEDING AND TURFGRASS INFORMATION TAKEN FROM THE PENN STATE COLLEGE OF AGRICULTURAL SCIENCES. FOR ADDITIONAL INFORMATION REFER TO HTTP://PLANTSCIENCE.PSU.EDU/RESEARCH/CENTERS/TURF.
2. THE PERCENTAGE OF WEED SEEDS SHOULD NOT EXCEED 1.0% BY WEIGHT IN THE CONTAINER. GOOD QUALITY GRASS SEED USUALLY CONTAINS NO MORE THAN 0.5% WEED SEEDS.
3. SEEDS OR SEED MIXTURES CONTAINING TIMOTHY, MEADOW FESCUE, ORCHARDGRASS, TALL OATGRASS, ANNUAL RYEGRASS OR CLOVER ARE GENERALLY NOT SUGGESTED FOR TURFGRASS USE.
4. ALL SEEDING RATES IN THIS PUBLICATION ARE IN POUNDS PER 1000 SQUARE FEET. IF CONVERTING TO AN ACRE BASIS, MULTIPLY BY 43.
5. IT IS SUGGESTED THAT 3-5 VARIETIES OF KENTUCKY BLUEGRASS BE USED IN THE BLEND OR MIXTURE.
6. WHEREVER SEED AND MULCH IS APPLIED BY HYDROSEEDING METHODS, THE SEED AND MULCH SHOULD BE APPLIED IN SEPARATE APPLICATIONS WITH THE SEED BEING APPLIED FIRST AND THE MULCH SPRAYED ON TOP OF THE SEED.
7. IN CRITICAL AREAS (E.G. ADJACENT TO OR WITHIN 50 FEET OF STREAMS, PONDS, OR WETLANDS) A PROTECTIVE BLANKET SHOULD BE PROVIDED FOR ALL SEEDED AREAS.

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.)			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

COMPOSTING - Compost has been shown to be an effective means of temporary stabilization for some areas that are to be vegetated. In addition to holding soil particles in place while vegetation becomes established, it has the added benefits of providing filtering of water infiltrating the soil, increased retention of soil moisture, and providing some plant nutrients.

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

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SEAL:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087

MUNICIPALITY: RADNOR TOWNSHIP | COUNTY: DELAWARE COUNTY

PLAN SET: FINAL PLANS

SHEET NAME: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	NO SCALE
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
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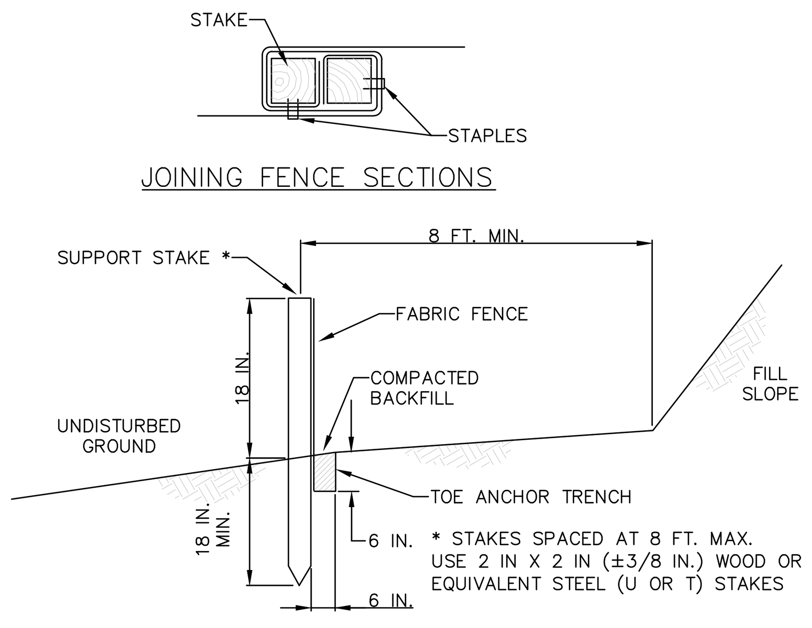
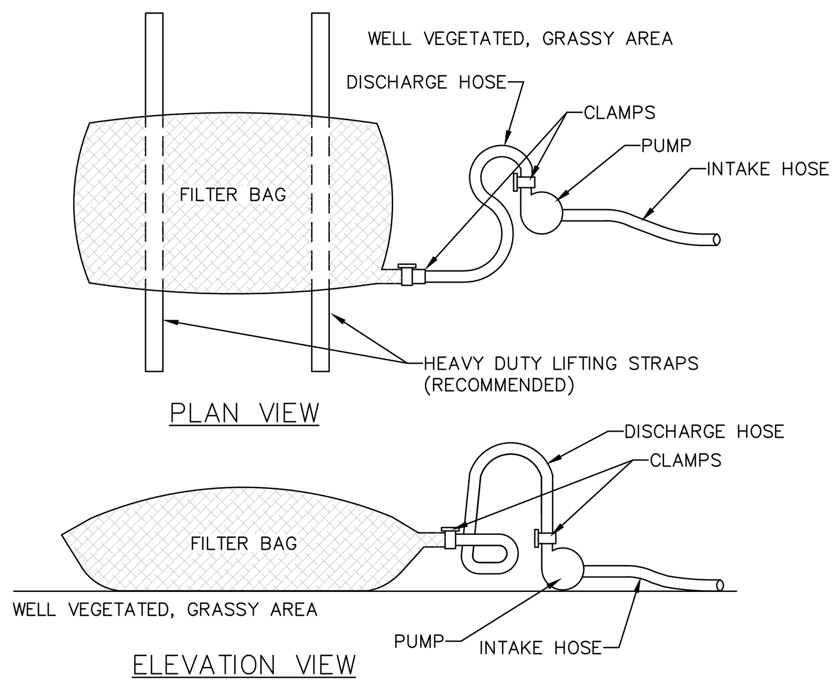
SHEET: 12 OF 14



NOTES:
1. FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.
2. FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.
3. SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
5. ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).
6. FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)

NOT TO SCALE



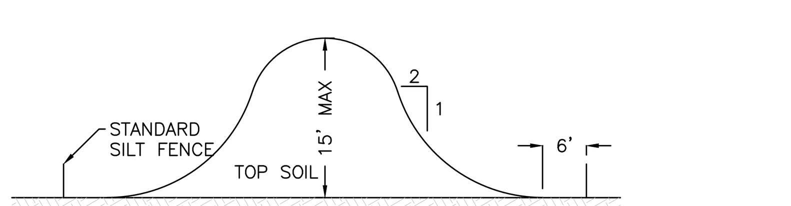
NOTES:
1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

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

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY 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.
3. 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.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

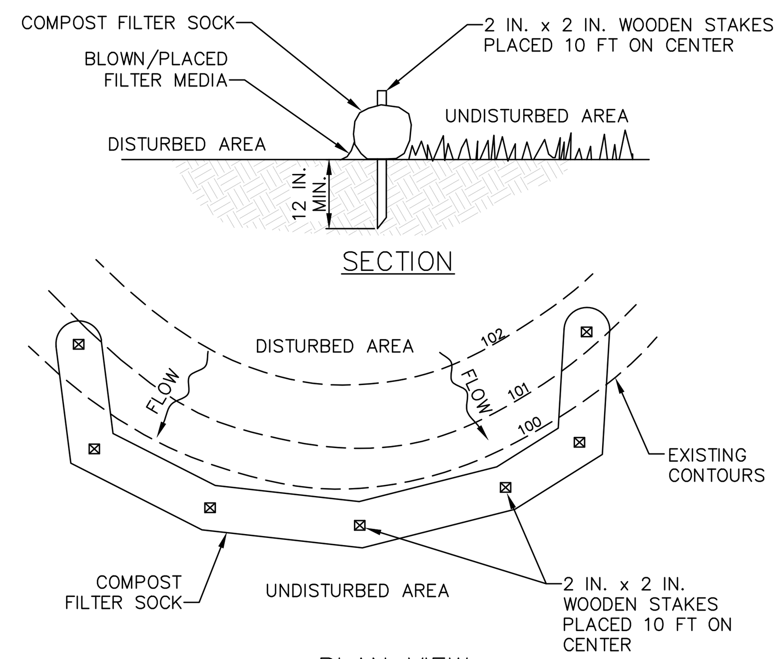
NOT TO SCALE



NOTES:
1. SILT FENCE MUST COMPLETELY ENCIRCLE 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. TOPSOIL SHALL BE STABILIZED TO MINIMIZE EROSION DURING STORAGE.
5. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE UNIFORMLY REDISTRIBUTED ON THE SITE.

TYPICAL SOIL STOCKPILE CROSS SECTION

NOT TO SCALE

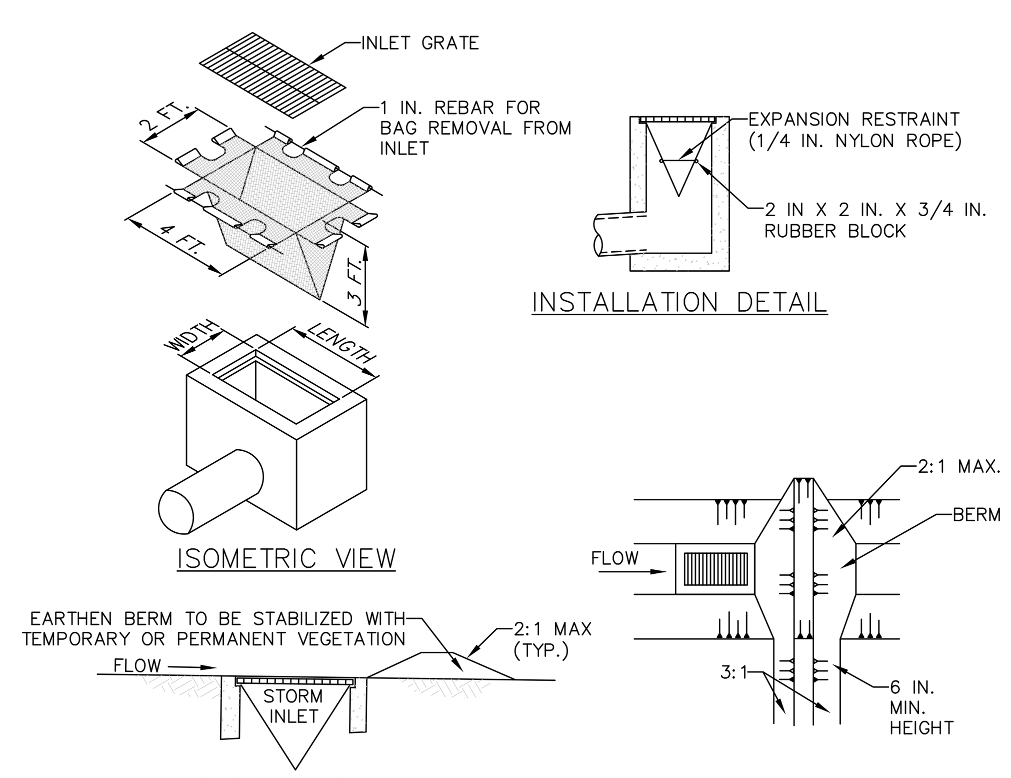


NOTES:
1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

#	LENGTH	SLOPE	SIZE
1	360	6	24

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

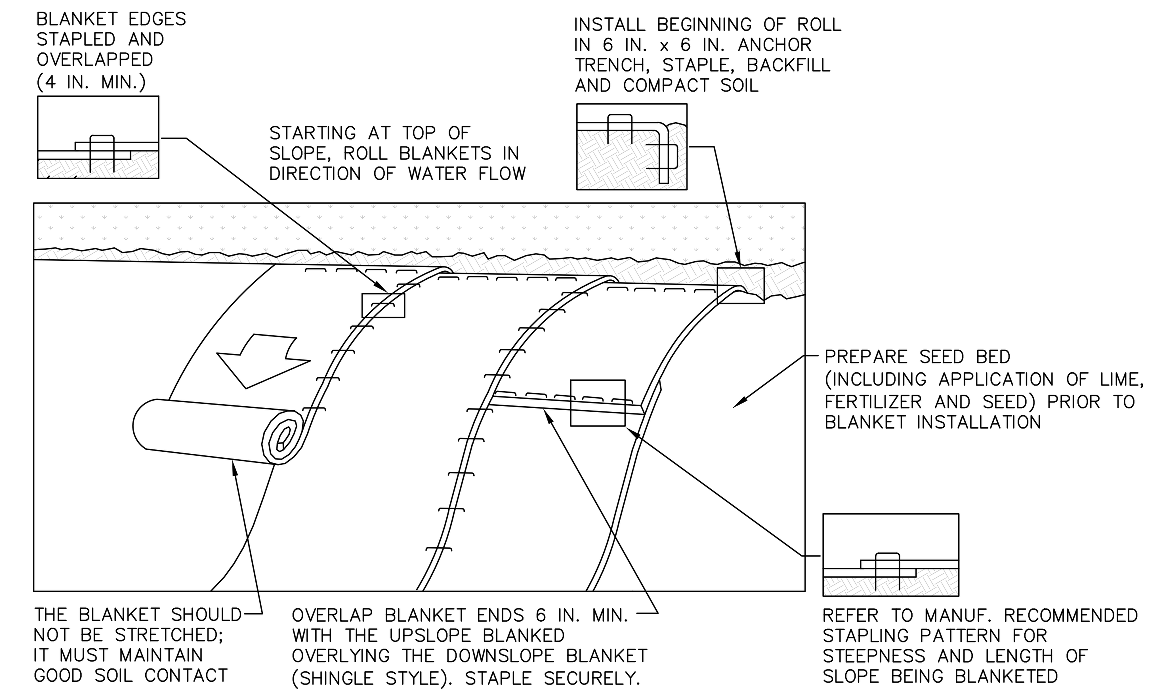
NOT TO SCALE



NOTES:
1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. ROLLED EARTHEN BERM IN 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.
4. 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.
5. 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.
6. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION – TYPE M INLET

NOT TO SCALE

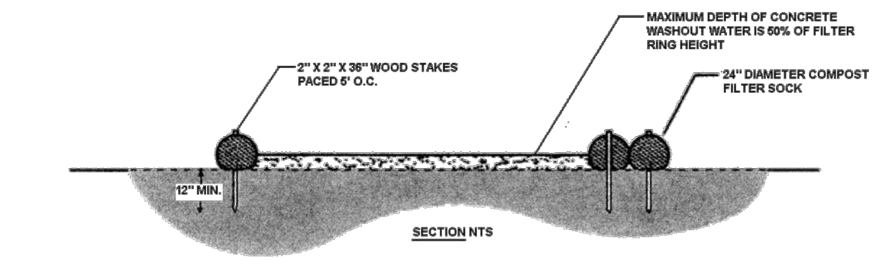


NOTES:
1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD 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.
5. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

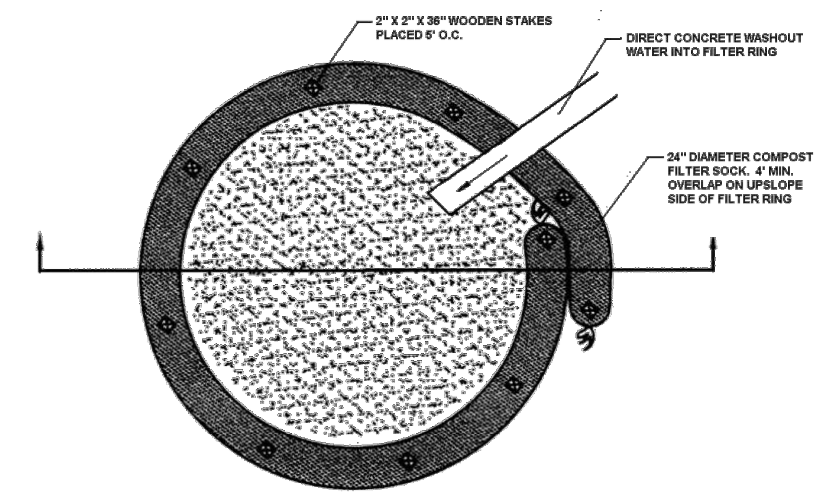
STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

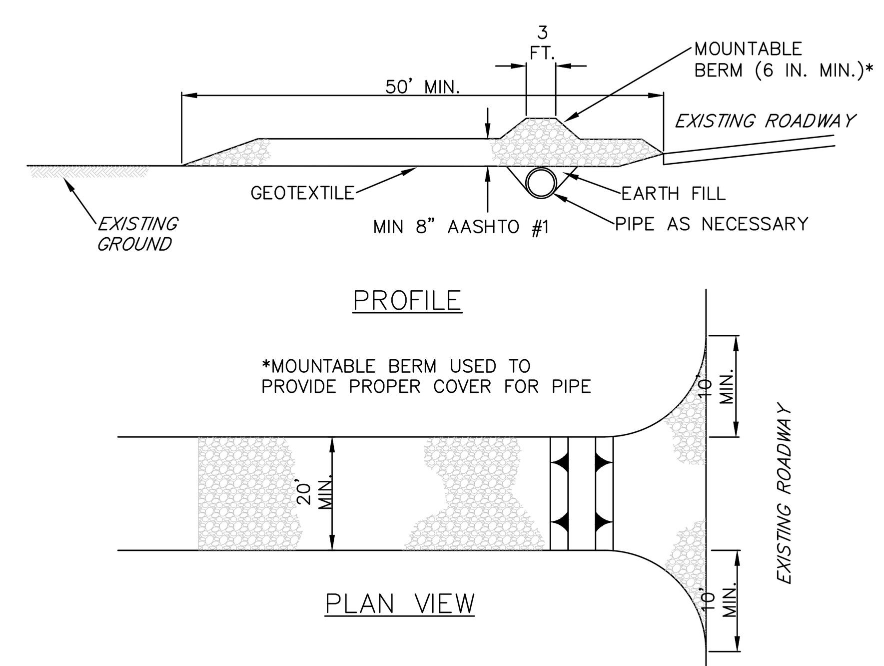
Typical Compost Sock Washout Installation



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



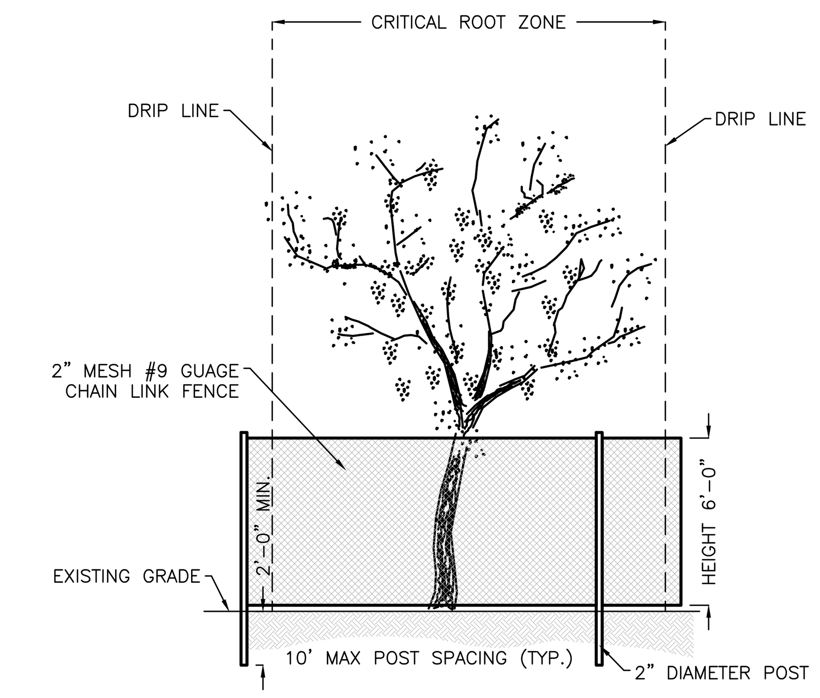
A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx



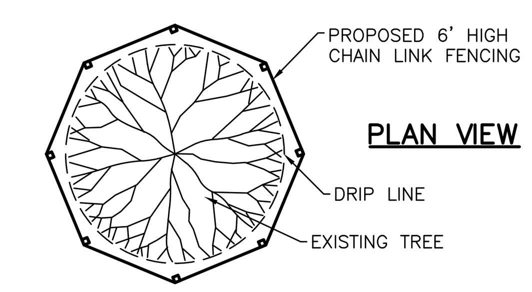
NOTES:
1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: 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. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



DO NOT:
A. ALLOW RUN OFF OF SPILLAGE OF DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
B. STORE MATERIALS, STOCKPILE SOIL, OR PARK OR DRIVE VEHICLES WITHIN THE TPZ.
C. CUT, BREAK, SKIN, OR BRUISE ROOTS, BRANCHES OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
D. ALLOW FIRES UNDER AND ADJACENT TO TREES.
E. DISCHARGE EXHAUST INTO FOLIAGE.
F. SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
G. TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIPLINE OR TPZ OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
H. APPLY SOIL STERILANTS UNDER PAVEMENT NEAR EXISTING TREES.



TREE PROTECTION SPECIFICATIONS:
I. A 4" LAYER OF COARSE MULCH OR WOODCHIPS IS TO BE PLACED BENEATH THE DRIPLINE OF THE PROTECTED TREES. MULCH IS TO BE KEPT 12" FROM THE TRUNK.
II. A PROTECTIVE BARRIER OF 6' CHAIN LINK FENCING SHALL BE INSTALLED AROUND THE DRIPLINE OF PROTECTED TREE(S). THE FENCING CAN BE MOVED WITHIN THE DRIPLINE IF AUTHORIZED BY THE CONSULTING ARBORIST BUT NOT CLOSER THAN 2' FROM THE TRUNK OF ANY TREE. FENCE POSTS SHALL BE 2.0" IN DIAMETER AND ARE TO BE DRIVEN 2' INTO THE GROUND. THE DISTANCE BETWEEN POSTS SHALL NOT BE MORE THAN 10'. THIS ENCLOSED AREA IS THE TREE PROTECTION ZONE (TPZ).
III. MOVABLE BARRIERS OF CHAIN LINK FENCING SECURED TO CEMENT BLOCKS CAN BE SUBSTITUTED FOR "FIXED" FENCING IF THE CONSULTING ARBORIST AGREES THAT THE FENCING WILL HAVE TO BE MOVED TO ACCOMMODATE CERTAIN PHASES OF CONSTRUCTION. THE BUILDER MAY NOT MOVE THE FENCE WITHOUT AUTHORIZATION FROM THE CONSULTING ARBORIST.
IV. WHERE THE CONSULTING ARBORIST HAS DETERMINED THAT TREE PROTECTION FENCING WILL INTERFERE WITH THE SAFETY OF WORK CREWS, TREE WRAP MAY BE USED AS AN ALTERNATIVE FORM OF TREE PROTECTION. WOODEN SLATS AT LEAST ONE INCH THICK ARE TO BE BOUND SECURELY, EDGE TO EDGE, AROUND THE TRUNK. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE OUTSIDE OF THE WOODEN SLATS. MAJOR SCAFFOLD LIMBS MAY REQUIRE PROTECTION AS DETERMINED BY THE CONSULTING ARBORIST. STRAW WADDLE MAY ALSO BE USED AS A TRUNK WRAP BY COILING THE WADDLE AROUND THE TRUNK UP TO A MINIMUM HEIGHT OF SIX FEET FROM GRADE. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE STRAW WADDLE.

TREE PROTECTION DETAIL

NOT TO SCALE

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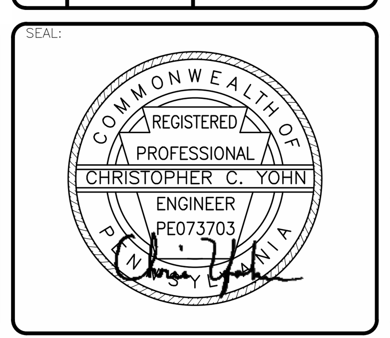

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP
COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE:	JANUARY 6, 2017
SCALE:	NO SCALE
ONE CALL NUMBER:	2016-011-1937
DRAWN BY:	CCY
PROJECT NUMBER:	15-031

PREPARED BY:
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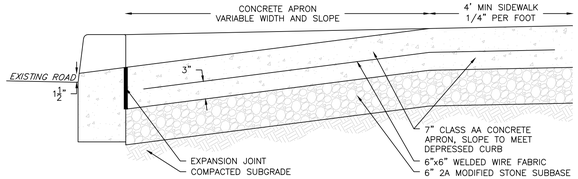
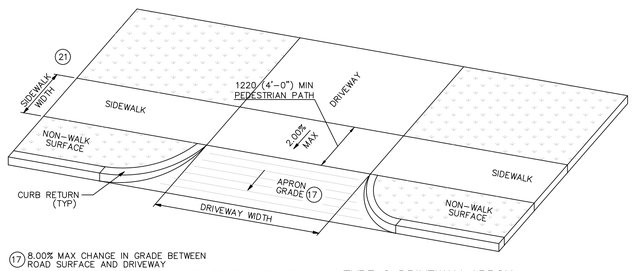
YOHN Engineering, LLC

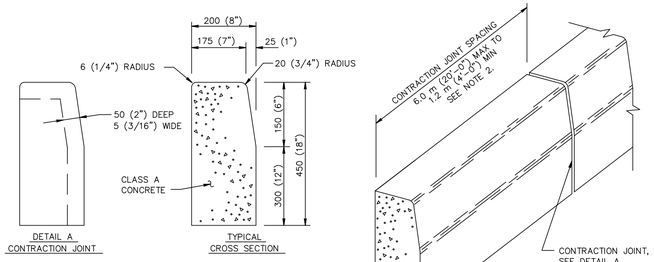


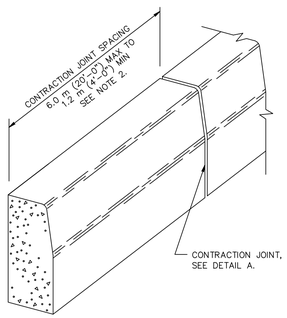
CONCRETE APRON CROSS SECTION
NOT TO SCALE

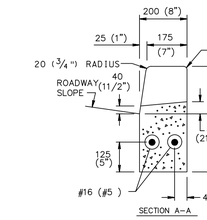


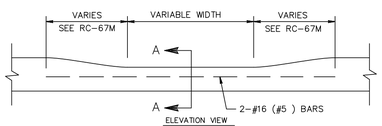
(17) 8.00% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY
(21) MINIMUM SIDEWALK WIDTH 1525 (5'-0"). SIDEWALK WIDTH MAY BE REDUCED TO 1220 (4'-0"), WHEN PASSING AREAS 1525 X 1525 (5'-0" X 5'-0") ARE PROVIDED EVERY 61 METERS (200').

TYPE 2 DRIVEWAY APRON
NOT TO SCALE

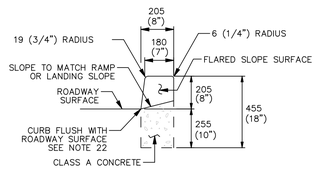




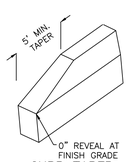




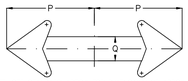
PLAIN CEMENT CONCRETE CURB
NOT TO SCALE



DEPRESSED CURB FOR CURB RAMPS
NOT TO SCALE



CURB TAPER
NOT TO SCALE



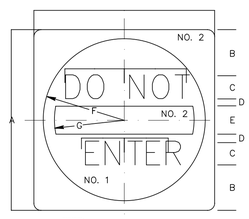
NOTE: SEE STANDARD ARROW FOR DIMENSIONS OF ARROWHEAD

COLORS:
LEGEND, ARROW AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND AND SYMBOL: RED (REFLECTORIZED)
SYMBOL BACKGROUND: BLUE (REFLECTORIZED)

* REDUCE SPACING 50%
** REDUCE SPACING 33%

R7-8 RESERVED PARKING SIGN
NOT TO SCALE

SIGN SIZE AxB	DIMENSIONS (IN)													MARGIN	BORDER	BLANK STD.
	C	D	E	F	G	H	J	K	L	M	N	P	Q			
12"x18"	2	2C	1	6	1.6	2.4	4.9	4.3	3	0.4	4	3.8	0.8	0.4	0.4	B5-1218

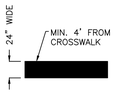


COLORS:
LEGEND, BACKGROUND: WHITE (REFLECTORIZED)
RED (REFLECTORIZED)

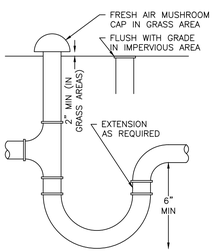
R5-1 DO NOT ENTER SIGN
NOT TO SCALE

SIGN SIZE AxA	DIMENSIONS								MARGIN	BORDER
	B	C	D	E	F	G	H	J		
30"x30"	6.5	3.9D	1.9	5.0	14.4	12.2	9.9	7.8	0.6	0.8

NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CEMENT CONCRETE GUTTER AND SECTION 641 FOR PLAIN CEMENT CONCRETE CURB GUTTER.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 20 (3/4") THICK PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
4. SEE RC-50M FOR PLAIN CEMENT CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURES.
5. WHERE CURBS ARE INSTALLED ADJACENT TO PARKING LANES A 150 (6") HIGH CURB CAN BE UTILIZED WITH APPROVAL FROM THE LOCAL MUNICIPALITY.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. CUSTOMARY UNITS IN ( ) PARENTHESES.

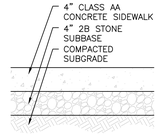


STOP BAR DETAIL
NOT TO SCALE

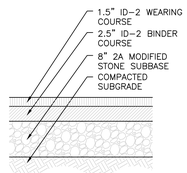


NOTES:
1. NO REDUCTION IN SIZE FROM HOUSE TO SEWER.
2. NO STORM SEWER OR SURFACE WATER OF ANY NATURE SHALL BE PERMITTED TO ENTER THE SANITARY SYSTEM.
3. CONCRETE ENCASEMENT MAY BE REQUIRED AT THE DIRECTION OF THE TOWNSHIP.

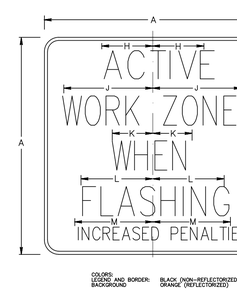
SEWER VENT AND TRAP DETAIL
NOT TO SCALE



SIDEWALK CROSS SECTION
NOT TO SCALE



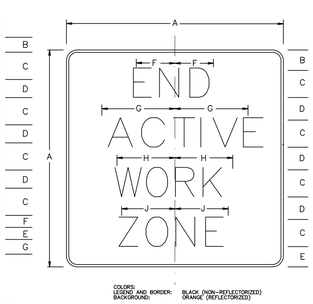
ONSITE DRIVEWAY SECTION
NOT TO SCALE



COLORS:
LEGEND AND BORDER: BLACK (NON-REFLECTORIZED)
BACKGROUND: ORANGE (REFLECTORIZED)

W21-19 ACTIVE WORK ZONE WHEN FLASHING SIGN
NOT TO SCALE

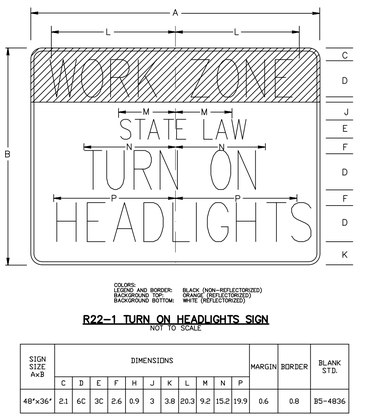
SIGN SIZE AxA	DIMENSIONS													MARGIN	BORDER
	B	C	D	E	F	G	H	J	K	L	M				
36"x36"	2.5	4.5C	3	2C	2	2	2.5	8.3	14.5	6.5	11.6	12.7		0.6	0.8
48"x48"	3	6C	3.5	3C	3	4	11.2	19.3	8.7	15.5	19.1			0.8	1.0



COLORS:
LEGEND AND BORDER: BLACK (NON-REFLECTORIZED)
BACKGROUND: ORANGE (REFLECTORIZED)

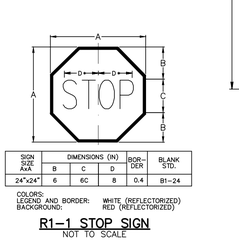
W21-20 END ACTIVE WORK ZONE SIGN
NOT TO SCALE

SIGN SIZE AxA	DIMENSIONS													MARGIN	BORDER
	B	C	D	E	F	G	H	J	K	L	M				
36"x36"	3.5	5E	3	3.5	7	13.2	10.5	9.6						0.6	0.8
48"x48"	4.5	6E	5	4.5	8.4	16	12.6	11.6						0.6	0.8



COLORS:
LEGEND AND BORDER: BLACK (NON-REFLECTORIZED)
BACKGROUND TOP: ORANGE (REFLECTORIZED)
BACKGROUND BOTTOM: WHITE (REFLECTORIZED)

R22-1 TURN ON HEADLIGHTS SIGN
NOT TO SCALE

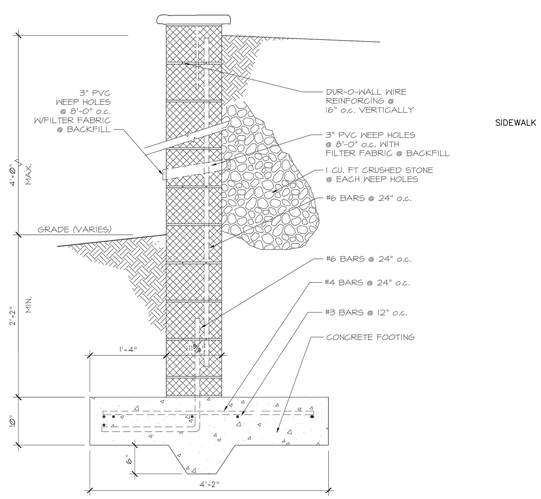


SIGN SIZE AxA	DIMENSIONS (IN)			BOR-DER	BLANK STD.
	B	C	D		
24"x24"	6	6C	8	0.4	B1-24

COLORS:
LEGEND AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND: RED (REFLECTORIZED)

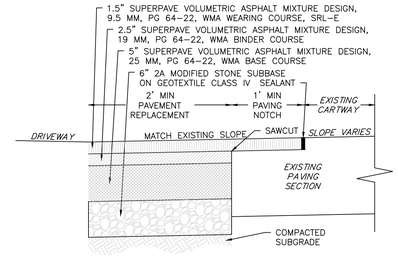
R1-1 STOP SIGN
NOT TO SCALE

SIGN SIZE AxB	DIMENSIONS											MARGIN	BORDER	BLANK STD.
	C	D	E	F	H	J	K	L	M	N	P			
48"x36"	2.1	6C	3C	2.6	0.9	3	3.8	20.3	9.2	15.2	19.9	0.6	0.8	B5-4836



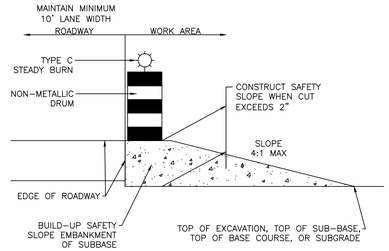
BLOCK RETAINING WALL DETAIL
NOT TO SCALE

NOTES:
1. MAXIMUM RETAINED HEIGHT IS 4'.
2. STAGGER VERTICAL JOINTS.
5. DRAINAGE STONE SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED.



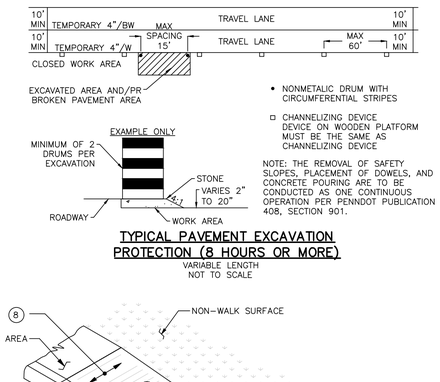
NOTE: PROVIDE PROPOSED PAVEMENT DEPTHS OR MATCH EXISTING, WHICHEVER IS GREATER

PAVEMENT SECTION WITHIN PENNDOT RIGHT OF WAY
NOT TO SCALE



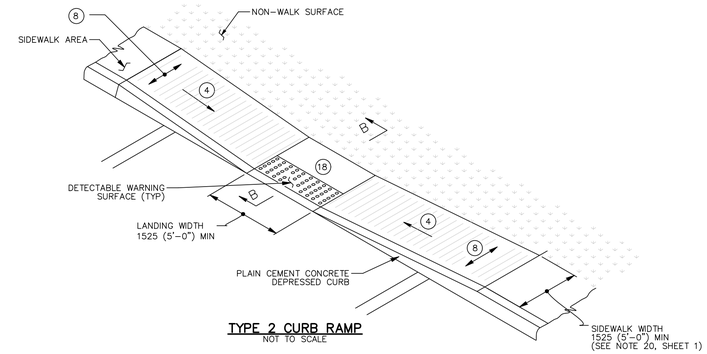
NOTE:
SAFETY BUILD-UP MUST BE USED ANY PLACE WHERE OPEN EXCAVATION ALONG ACTIVE ROADWAYS RESULTS IN A DROPOFF GREATER THAN 2"

SAFETY SLOPE DETAIL
NOT TO SCALE



NOTE: THE REMOVAL OF SAFETY SLOPES, PLACEMENT OF DOWELS, AND CONCRETE POURING ARE TO BE CONDUCTED AS ONE CONTINUOUS OPERATION PER PENNDOT PUBLICATION 408, SECTION 901.

TYPICAL PAVEMENT EXCAVATION PROTECTION (8 HOURS OR MORE)
VARIABLE LENGTH
NOT TO SCALE



TYPE 2 CURB RAMP
NOT TO SCALE

CONSTRUCTION NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE OWNER AND ENGINEER.
2. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RADNOR TOWNSHIP STANDARDS.
4. ALL EXCAVATIONS AND PEOPLE ENTERING EXCAVATIONS OR OTHER BELOW GRADE STRUCTURES SHALL COMPLY WITH OSHA REQUIREMENTS.
5. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION.
6. ANY SCALED DIMENSION FROM THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION WITHOUT CONFIRMATION BY YOHN ENGINEERING, LLC.
7. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT PLANNED FOR REPAIR OR REMOVAL THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
8. ALL PVC STORMWATER PIPES SHALL BE SDR 35 ASTM D 3034 SCHEDULE 40 ASTM F 1488 OR GREATER. WHEN USING PVC SEWER PIPE, PIPE MUST BE LAID ON A BED OF NOT LESS THAN SIX INCHES (6") AND COVERED BY NOT LESS THAN EIGHTH INCHES (8") OF CRUSHED STONE THREE QUARTERS OF AN INCH (3/4") OR SMALLER.
9. ALL HDPE STORMWATER PIPES SHALL BE SMOOTHLINE INTERIOR.
10. ALL HCMP SHALL BE ALUMINUM OR ALUMINIZED STEEL.
11. ALL STORMWATER FITTINGS SHALL BE WATERTIGHT.
12. GEOTEXTILE FABRIC (PERMEABLE FILTER FABRIC) SHALL BE CLASS 1 NON-WOVEN AND SHALL COMPLY WITH PENNDOT SPECIFICATIONS.
13. STONE WITHIN THE STORMWATER MANAGEMENT SYSTEM SHALL BE CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE WITH MINIMUM 40% VOID SPACE.
14. BASEMENT WALLS WITHIN 20' OF SWALES SHALL BE WATERPROOFED.
15. ALL YARD DRAINS SHALL BE GRADED IN A 6" MINIMUM SUMP CONDITION.
16. ALL YARD DRAINS AND SUMP BOXES SHALL INCLUDE A 12" MINIMUM SUMP BELOW THE LOWEST INVERT ELEVATION.
17. CLEANOUTS ARE REQUIRED AT ALL CHANGES IN SLOPE OR DIRECTION.
18. ALL RAINWATER CONDUCTOR (RWC) PIPING SHALL BE DIRECTED TO UNDERGROUND STORMWATER MANAGEMENT SYSTEM.
19. PIPE PERFORATIONS SHALL BE NOT LESS THAN 5/16 INCH IN DIAMETER AND PROVIDE AN OPENING AREA NOT LESS THAN 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE.
20. IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE SECTION 1804.3 SITE GRADING, THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN FIVE (5%) PERCENT FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A FIVE (5%) PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF TWO (2%) PERCENT WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF TWO (2%) PERCENT AWAY FROM THE BUILDING.
21. THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS, COBBLES AND BOULDERS OR WITH A CONTROLLED LOW-STRENGTH MATERIAL (CLSM). THE BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPPROOFING MATERIAL.
22. THE PROCEDURE USED TO ESTABLISH THE FINAL GROUND LEVEL ADJACENT TO THE FOUNDATION SHALL ACCOUNT FOR ADDITIONAL SETTLEMENT OF THE BACKFILL.
23. THE ARCHITECTURAL PLANS MUST BE COORDINATED WITH AND MUST COMPLY WITH THE GRADING PROPOSED WITH THIS APPLICATION.
24. STAIRS AND RAILINGS (IF REQUIRED) SHALL BE IN ACCORDANCE WITH THE RADNOR TOWNSHIP STANDARDS.
25. SEEPAGE BEDS SHALL NOT RECEIVE RUNOFF WITHOUT THE PRIOR APPROVAL FROM THE TOWNSHIP ENGINEER AND UNTIL THE ENTIRE DRAINAGE AREA CONTRIBUTORY TO THE INFILTRATION BMP HAS ACHIEVED FINAL STABILIZATION.
26. SIDEWALK AND CURB SHALL BE REPAIRED /REPLACED AT THE DIRECTION OF THE TOWNSHIP.
27. ALL SEEPAGE BEDS MUST CONTAIN A SEDIMENT TRAP ACCESSIBLE FOR MAINTENANCE.

REV	DATE	COMMENTS
1	01/06/17	FINAL PLANS

ALL DOCUMENTS PREPARED OR FURNISHED BY ENGINEER ARE INSTRUMENTS OF ENGINEER'S SERVICE IN RESPECT OF THE PROPERTY INTEREST (INCLUDING THE COPYRIGHT AND THE RIGHT OF REUSE) IN SUCH DOCUMENTS, WHETHER OR NOT THE PROJECT IS COMPLETED. OWNER AND CONTRACTOR MAY USE SUCH DOCUMENTS ON THE PROJECT, EXTENSIONS OF THE PROJECT, AND FOR RELATED USES OF THE OWNER, SUBJECT TO RECEIPT BY ENGINEER OF PAYMENT DUE PURSUANT TO THE SERVICES AGREEMENT. THE FOLLOWING LIMITATIONS APPLY: OWNER ACKNOWLEDGES THAT SUCH DOCUMENTS ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE ON THE PROJECT UNLESS COMPLETED BY ENGINEER, OR FOR USE OR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT OR FOR ANY OTHER USE OR PURPOSE, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY ENGINEER; (2) ANY SUCH USE OR REUSE, OR ANY ADAPTATION BY ENGINEER, WITHOUT WRITTEN VERIFICATION, COMPLETION, OR ADAPTATION BY ENGINEER, AS APPROPRIATE FOR THE SPECIFIC PURPOSE INTENDED, WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER OR TO ENGINEER'S OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS; (3) OWNER SHALL INDEMNIFY AND HOLD HARMLESS ENGINEER AND ENGINEER'S OFFICERS, DIRECTORS, MEMBERS, PARTNERS, AGENTS, EMPLOYEES, AND CONSULTANTS FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING THEREFROM; AND (4) SUCH LIMITED LICENSE TO OWNER SHALL NOT CREATE ANY RIGHTS IN THIRD PARTIES.

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHRISTOPHER C. YOHN
ENGINEER
PE073703

PROJECT: PROPOSED MULTI-FAMILY RESIDENTIAL DEVELOPMENT
PROJECT ADDRESS: 427 EAST LANCASTER AVENUE, WAYNE, PA 19087
MUNICIPALITY: RADNOR TOWNSHIP
COUNTY: DELAWARE COUNTY
PLAN SET: FINAL PLANS
SHEET NAME: CONSTRUCTION DETAILS

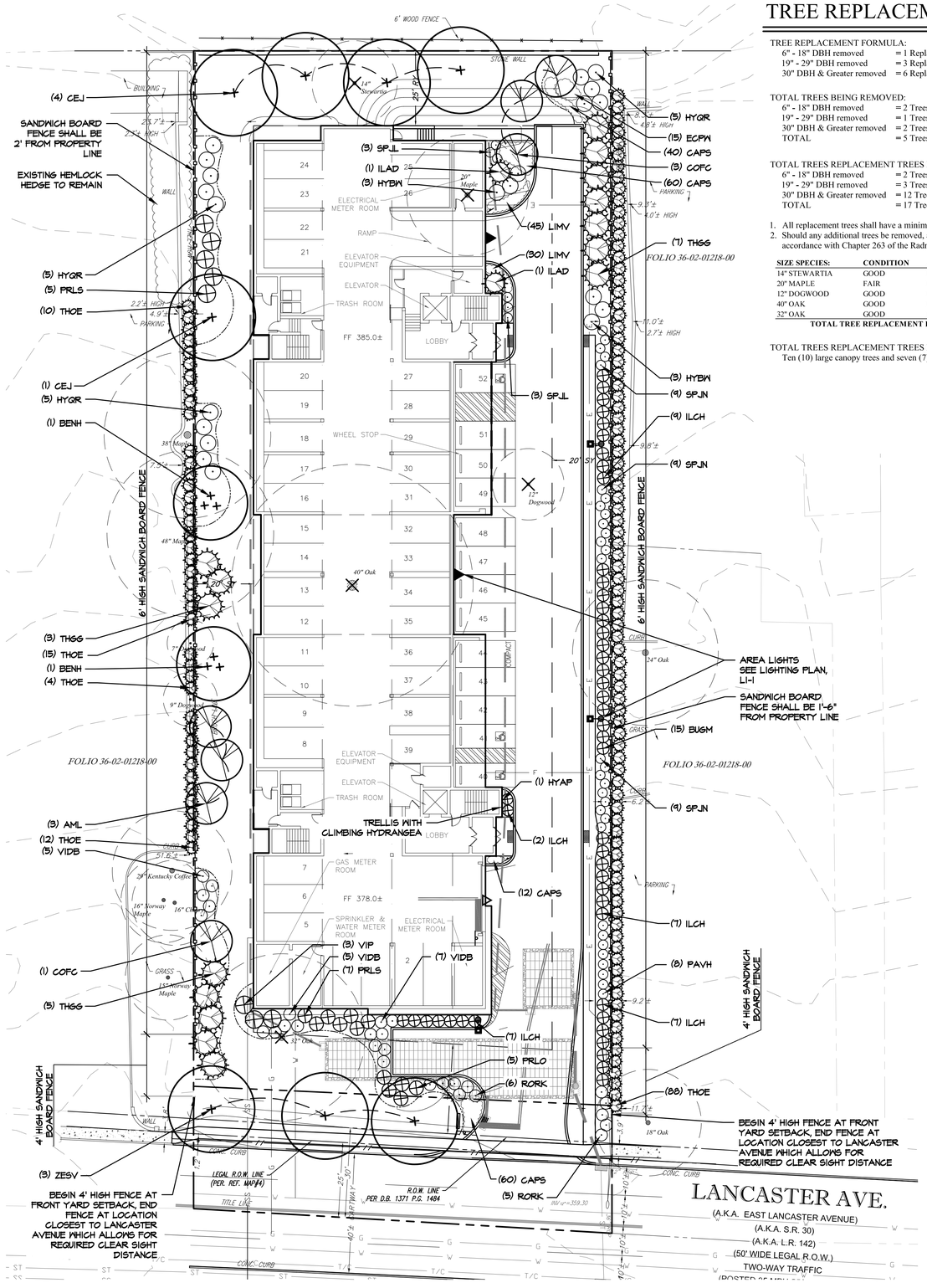
PREPARED FOR:
EQUITABLE OWNER/APPLICANT
427 E. LANCASTER, LLC
44 PAPER MILL ROAD
NEWTOWN SQUARE, PA 19073

DATE: JANUARY 6, 2017
SCALE: NO SCALE
ONE CALL NUMBER: 2016-011-1937
DRAWN BY: CCY
PROJECT NUMBER: 15-031

PREPARED BY:
YOHN ENGINEERING, LLC
555 SECOND AVENUE, SUITE G-110
COLLEGEVILLE, PA 19426
610-489-4580
WWW.YOHNENGINEERING.COM

YOHN Engineering, LLC

SHEET: 14 OF 14



TREE REPLACEMENT - SECTION 263-4.B.

TREE REPLACEMENT FORMULA:

6" - 18" DBH removed	= 1 Replacement Tree
19" - 29" DBH removed	= 3 Replacement Trees, 2 being large canopy trees
30" DBH & Greater removed	= 6 Replacement Trees, 4 being large canopy trees

TOTAL TREES BEING REMOVED:

6" - 18" DBH removed	= 2 Trees (x in poor condition or dead)
19" - 29" DBH removed	= 1 Trees (x in poor condition or dead)
30" DBH & Greater removed	= 2 Trees (x in poor condition or dead)
TOTAL	= 5 Trees (x in poor condition or dead)

TOTAL TREES REPLACEMENT TREES REQUIRED:

6" - 18" DBH removed	= 2 Trees
19" - 29" DBH removed	= 3 Trees, 2 being large canopy trees
30" DBH & Greater removed	= 12 Trees, 8 being large canopy trees
TOTAL	= 17 Trees, 10 being large canopy trees

1. All replacement trees shall have a minimum DBH of 2"-2.5".
2. Should any additional trees be removed, additional replacement trees shall be provided in accordance with Chapter 263 of the Radnor Township Code.

SIZE SPECIES:	CONDITION	ACTION	REPLACEMENT
14" STEWARTIA	GOOD	REMOVE	1
20" MAPLE	FAIR	REMOVE	3
12" DOGWOOD	GOOD	REMOVE	1
40" OAK	GOOD	REMOVE	6
32" OAK	GOOD	REMOVE	6
TOTAL TREE REPLACEMENT REQUIRED			17

TOTAL TREES REPLACEMENT TREES PROVIDED:
Ten (10) large canopy trees and seven (7) understory trees have been provided.

GENERAL NOTES:

1. Base information including topography, grading, utilities, building and existing vegetation location prepared by Yohn Engineering, LLC, January, 2017.
2. Location of existing trees on adjacent properties are approximate based upon field observations conducted by Glackin Thomas Panzak, Inc., January 2016.
3. This plan is for landscaping purposes only.
4. The Landscape Architect's seal applies only to the landscape portion of this plan.
5. See Sheet LP-2 for Planting Details and Planting and Maintenance Notes.
6. All plant material is to be field adjusted as necessary to address existing site conditions, proposed unit landscaping, and to ensure that clear sight triangles and clear sight lines are maintained.
7. Proposed shade trees shall not be planted over the top of any sewer or water laterals, mains or services. Sewer and water laterals, mains and services are shown on Landscape Plans for reference only. See engineer's plans for location of all utilities.
8. Shade and evergreen trees shall be planted fifteen (15) feet from overhead utility lines or light standards. Utilities are shown on Landscape Plans for reference only. See engineer's plans for location of all utilities.
9. No planting shall be installed closer than five (5) feet to any property line.
10. All plantings shall be permanently maintained.
11. All trees shall be pruned as necessary to maintain required light levels.
12. Final location of all plant material proposed for adjacent properties shall be determined in the field in order to address existing conditions.
13. Existing scrub vegetation and stumps to be removed by owner.

LEGEND:

- EXISTING VEGETATION
- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- PROPOSED GROUND COVERS / PERENNIALS
- EXISTING TREE TO BE REMOVED
- SANDWICH BOARD FENCE

LANDSCAPE COMPLIANCE:

SECTION	CATEGORY	REQUIRED				PROVIDED			
		Shade Trees	Flowering Trees	Evergreen Trees	Shrubs	Shade Trees	Flowering Trees	Evergreen Trees	Shrubs
255-29.B.	PARKING FACILITY LANDSCAPE (1) 2.5" cal. per 5 Spaces of Single Bay Parking	3	--	--	--	3	--	--	--
255-38.B.	STREET TREES (1) 2.5" cal. tree spaced at 30' o.c. Applied to 140 LF	5	--	--	--	3	--	--	--
255-42	BUFFER SCREENS CLASS B - Lancaster Ave. (Arterial Road Classification) Option of (1) Evergreen Tree per 15 LF and (1) Evergreen Shrub per 8 LF applied to 115 LF*	--	--	8	15	--	--	8	15
	TOTALS:	8	--	8	15	6[1]	--	8	15
	ADDITIONAL PLANT MATERIAL:					4	--	138	134
	TOTAL PROVIDED:					10	--	146	149

NOTE:
1. See Waiver Request.

WAIVER REQUEST:

SALDO 255-38.B. STREET TREES - A partial waiver is requested to provide three (3) of the five (5) required street trees due to conflicts with underground utilities.

PLANT LIST:

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
DECIDUOUS TREES					
AML	3	Amelanchier laevis	Allegheny Serviceberry	2"-2.5" cal.	B&B
BENH	2	Betula nigra 'Heritage'	Heritage River Birch	12'-14' ht.	B&B , Multi-stem
CEJ	5	Cercidiphyllum japonicum	Katsura Tree	2"-2.5" cal.	B&B
COFC	4	Cornus florida 'Cherokee Princess'	Cherokee Princess Dogwood	2"-2.5" cal.	B&B
ZESV	3	Zelkova serrata 'Village Green'	Village Green Zelkova	2"-2.5" cal.	B&B
EVERGREEN TREES					
ILAD	2	Ilex aquipernyi 'Dragon Lady'	Dragon Lady Holly	8'-10' ht.	Cont.
THOE	129	Thuja occidentalis 'Emerald Green'	Emerald Green Arborvitae	3' ht.	Cont.
THGG	15	Thuja plicata 'Green Giant'	Green Giant Arborvitae	8'-10' ht.	B&B
SHRUBS					
BUGM	15	Buxus x 'Green Mountain'	Green Mountain Boxwood	24"-30" ht.	Cont.
HYBW	6	Hydrangea 'Blue Wave"	Blue Wave Hydrangea	24"-30" ht.	Cont.
HYQR	15	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oakleaf Hydrangea	24"-30" ht.	Cont.
ILCH	32	Ilex crenata 'Helleri'	Helleri Japanese Holly	24"-30" ht.	Cont.
PRLO	5	Prunus laurocerasus 'Otto Luyken'	Otto Luyken Cherry Laurel	24"-30" ht.	Cont.
PRLS	12	Prunus laurocerasus 'Schipkaensis'	Skip Laurel	24"-30" ht.	Cont.
RORK	11	Rosa 'Red Knockout'	Red Knockout Rose	24"-30" ht.	Cont.
SPJL	6	Spiraea japonica 'Little Princess'	Little Princess Spiraea	24"-30" ht.	Cont.
SPJN	27	Spiraea japonica 'Neon Flash'	Neon Flash Spirea	24"-30" ht.	Cont.
VIDB	17	Viburnum dentatum 'Blue Muffin'	Blue Muffin Arrowwood Viburnum	24"-30" ht.	Cont.
VIP	3	Viburnum x pragense	Prague Viburnum	24"-30" ht.	Cont.
PERENNIALS & GROUNDCOVERS					
CAPS	172	Carex pensylvancia	Pennsylvania Sedge	2 qt.	Cont. 12" o.c.
ECPW	15	Echinacea purpurea 'White Swan'	White Coneflower	1 gal.	Cont. 18" o.c.
LIMV	75	Liriope muscari 'Variegata'	Variegated Lilyturf	2 qt.	Cont. 12" o.c.
PAVH	8	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	3 gal.	Cont.
VINES					
HYAP	1	Hydrangea anomala v. petiolaris	Climbing Hydrangea	3 gal.	Cont. , On Trellis

NOTE:
1. Where there is a discrepancy between the plant list and plan, the plan shall prevail.

0 10 20 40 60 FEET
SCALE: 1" = 20'

NORTH

GLACKIN THOMAS PANZAK
LAND PLANNING
LANDSCAPE ARCHITECTURE

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Lisa L. Thomas LA000775 E

FINAL LANDSCAPE PLAN - PCSM

427 Lancaster Avenue

RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 16-001
DATE: 2/22/16 (sa)
REV.: 3/4/16 (sa)
3/7/16 (sa)
9/30/16 (jr)
1/6/17 (gs)

SHEET:
LP-1

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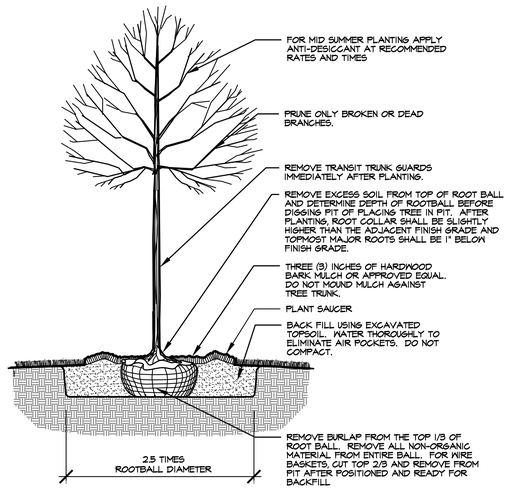
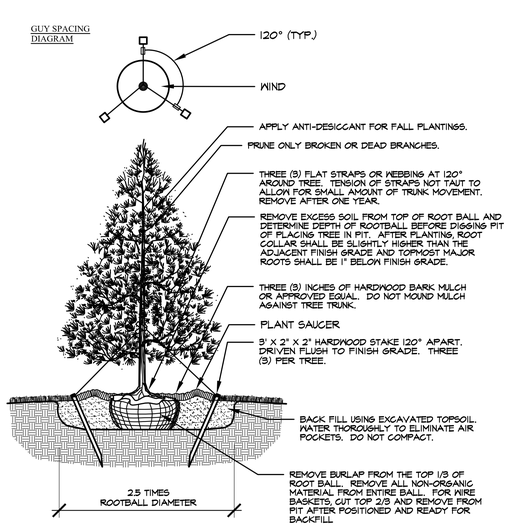


NOTES:
1. TREES WITH POOR QUALITY ROOT BALLS OR ROOT BALLS THAT HAVE BEEN CRACKED OR DAMAGED SHALL BE REJECTED.
2. TREES WITH CENTRAL LEADER BROKEN OR DEAD SHALL BE REJECTED
3. TREES THAT DO NOT DISPLAY THE TYPICAL CHARACTERISTICS FOR THEIR SPECIES SHALL BE REJECTED.

1 DECIDUOUS TREE DETAIL

NTS

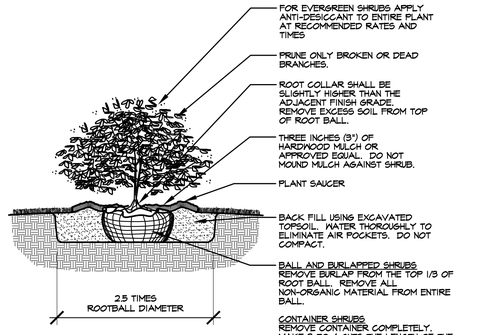
NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.



2 EVERGREEN TREE DETAIL

NTS

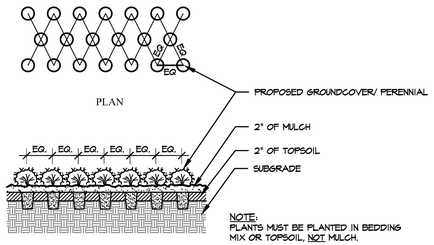
NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.



3 SHRUB DETAIL

NTS

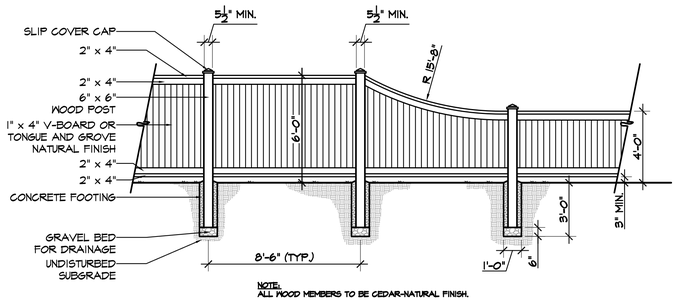
NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.



4 PLANTING DETAIL

NTS

NOTE:
PLANTS MUST BE PLANTED IN BEDDING MIX OR TOPSOIL NOT MULCH



5 SANDWICH BOARD FENCE

SCALE: ¼" = 1'-0"

PLANTING NOTES:

1. The contractor shall furnish and plant all plants shown on the drawings, as specified, and in quantities indicated on the plant list.
2. All plants shall be nursery grown and freshly dug.
3. All plants shall be in accordance with The American Standard for Nursery Stock, latest edition.
4. All plants shall be hardy under climatic conditions similar to those in the locality of the project.
5. Fall Digging Hazard: Any species listed below, if included on the plant list, must not be dug in the fall (October through December) because of risk to the tree's survival. Special exceptions may be granted if the owner is notified in writing and an extended warranty on these plants is agreed upon prior to digging. The following varieties should not be dug in fall: Betula, Carpinus, Celtis, Cercidiphyllum, Crataegus, Cryptomeria, Fagus, Halesia, Ilex (tree form varieties), Liquidambar, Liriodendron, Nyssa, Ostrya, Prunus, Pyrus, Quercus (except Quercus palustris), Salix weeping varieties, and Tilia tomentosa. Digging for Malus and Zelkova varieties should be avoided in fall only when in leaf.
6. All plants shall be typical of their species or variety and shall have a normal habit or growth. They shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be certified by appropriate State and Federal authorities to be free of disease and insect pests, eggs or larvae. They shall have healthy, well-developed root systems.
7. Trees with central leader broken or dead shall be rejected
8. Plants that do not display typical characteristics for their species shall be rejected.
9. Substitutions: When plants of a specified kind or size are not available within a reasonable distance, substitutions may be made upon written request by the contractor, if approved by the owner and/or municipal authority.
10. Measurement: Dimensions of trees and shrubs shall conform to The American Standard for Nursery Stock, latest edition.
11. Size: All plants shall conform to the measurement specified on the plant list, unless authorized in writing by the Township landscape architect and the owner.
12. Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
13. Plants with poor quality root balls or root balls that have been cracked or damaged shall be rejected.
14. Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
15. Conditions detrimental to plants: The contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. The contractor shall state the conditions and submit a proposal for correcting the conditions, including any change in cost, for review and acceptance by the project representative.
16. The owner or the owner's representative shall be notified prior to beginning planting operations.
17. All planting shall be at the locations indicated on the drawings. The contractor shall be responsible for planting at the correct grades, alignment, and to the indicated layout of the planting beds.
18. Layout of planting: The contractor shall lay out with identifiable stakes the location of all planting beds as indicated on drawing. The layout of planting shall be approved by the project representative prior to any excavation of plant pits or plant beds.
19. Minor adjustments to plant locations may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.
20. Planting soil shall be excavated native soil from the planting pit. Planting soil shall be thoroughly mixed, with all rocks, clods and roots removed.
21. Plants with broken root balls or excessive damage to the crown shall be replaced prior to planting.
22. If needed, trees shall be staked and guyed according to accepted industry practice.
23. Each tree and shrub shall be pruned in accordance with The American Nursery and Landscape Association Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed.
24. Mulch: Immediately after planting operations are completed, all trees and shrub planting pits shall be covered with a 3" (three inch) layer of double shredded hardwood bark mulch, or other material approved by the owner or the owner's representative. A granular pre-emergent weed control shall be spread prior to mulching. The limit of this mulch for deciduous trees and single evergreen trees shall be the area of the pit. For shrub and perennial beds and for evergreen tree clusters, a continuous, mulched bed shall be created.
25. Trees in leaf, including evergreens, when planted shall be treated with anti-desiccant such as Wilt-Pruf® if planted during the months of June through September, November, and December.
26. Weed control: All planting areas shall be free from weeds prior to the beginning of planting operation. Contact herbicide sprays should only be used as required and all manufacturer's specifications followed.
27. Guarantee: All plant material shall be guaranteed by the contractor for twenty four (24) months from the date of installation. The owner shall be responsible for maintenance unless otherwise agreed with contractor. It shall be the contractor's responsibility to monitor the project during the guarantee and notify the owner if problems develop with the plant material. Any material that is 25 % dead or more shall be considered dead and must be replaced at no charge. A tree shall be considered dead when the main leader has died back, or there is 25% of the crown dead.
28. All debris resulting from landscape contracting operations shall be cleaned up and removed from the site on a weekly basis.
29. Watering: Landscape contractor is responsible for watering sufficiently at the time of planting and until the job is completed, accepted and turned over to the owner.

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LANDSCAPE ARCHITECTURE

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PENNSYLVANIA
LISA L. THOMAS
CERTIFICATE
LA000775E
REGISTERED LANDSCAPE ARCHITECT

Lisa L. Thomas LA000775 E

FINAL LANDSCAPE NOTES & DETAILS - PCSM

427 Lancaster Avenue

RADNOR TOWNSHIP,DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 16-001
DATE: 2/22/16 (sa)
REV.: 3/4/16 (sa)
3/7/16 (sa)
9/30/16 (jr)
1/6/17 (gs)

SHEET:

LP-2

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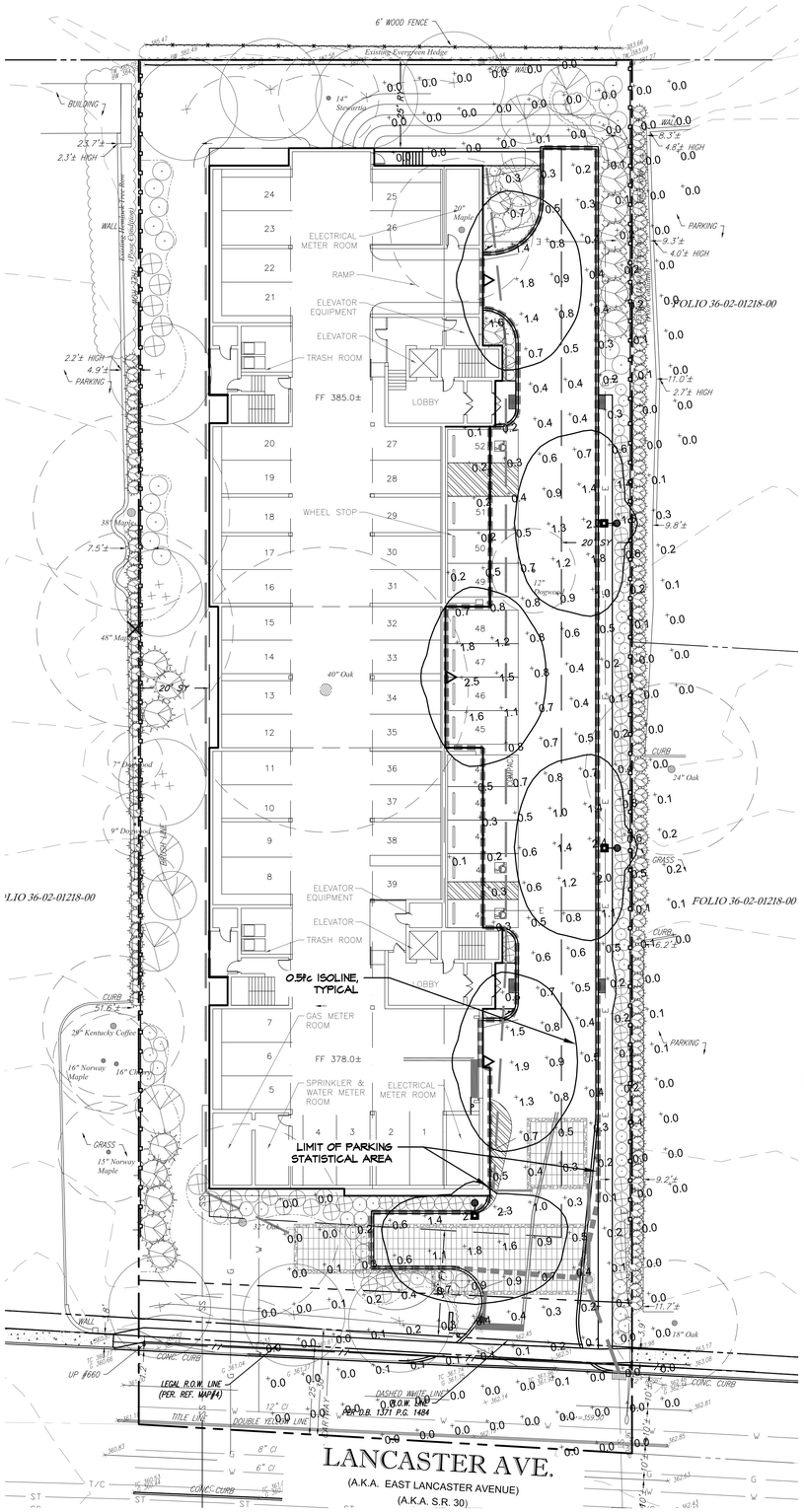


LIGHTING LEGEND:

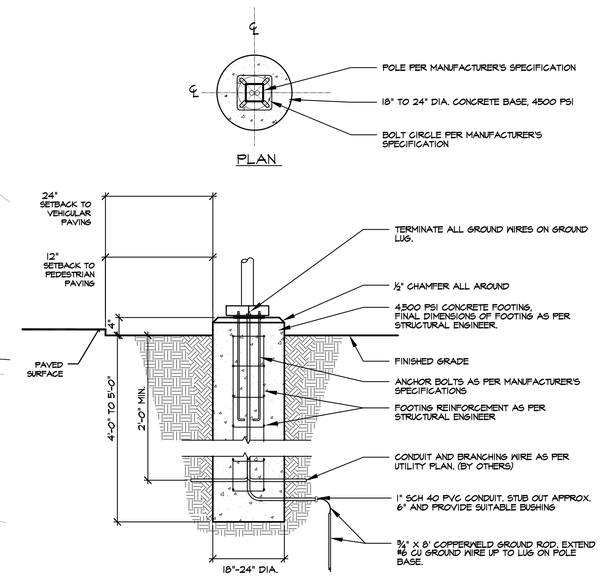
SYM.	LIGHT TYPE	QTY.	MFR.	MODEL #	REMARKS
	AREA LIGHT 'A'	3	Philips Lumec	Domus Small DOS-35W32LED3K-T-LE4F-xxx-HS-DBC	Pole mounted, 14' mounting ht., Type IV distribution with Houseside Shield, 35 watt 32LED, 3K Color Temperature, photocell control by individual circuit. Finish: Black. Pole: Lumec, DAR3V-14-BKTX; 3" Round, Aluminum pole, 14' ht. Finish: Black, With DBC-1A-BKTX bracket.
	AREA LIGHT 'B'	3	Philips Gardco	121 LED Sconce 121-16L-530-WW-G3-4-xxx	Wall mounted, 12' +/- mounting ht. (to be coordinated with architectural elevations), Type IV distribution, 28 watt 16 LED, 3K Color Temperature, 530mA Drive Current, photocell control by individual circuit. Finish: Black.

Notes:

1. Final footing design is to be based on manufacturer's wind loading requirements and local soil conditions at time of installation.
2. Contractor to verify line voltage prior to ordering fixture. "xxx" in the model number indicates voltage.
3. Contractor to verify pole drilling pattern prior to ordering pole.
4. Cut poles as necessary to achieve specified mounting height.
5. Final footing design shall be developed and approved by a licensed engineer. See footing detail for additional information.

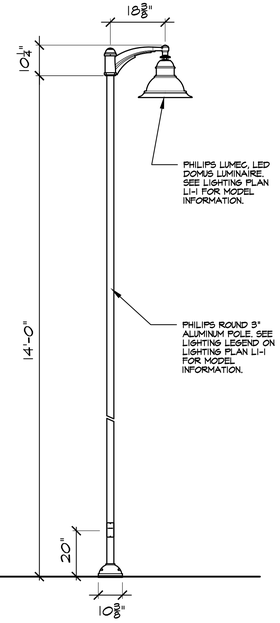
GENERAL NOTES:

1. Base information including topography, grading, utilities, building and existing vegetation location prepared by Yohn Engineering, LLC, January, 2017.
2. Location of existing trees on adjacent properties are approximate based upon field observations conducted by Glackin Thomas Panzak, Inc., January 2016.
3. This plan is for lighting purposes only.
4. The Landscape Architect's seal applies only to the lighting portion of this plan.
5. See Sheet LP-2 for Planting Details and Planting and Maintenance Notes.
6. All trees shall be pruned as necessary to maintain required light levels.



NOTES:
1. THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY.
2. CONTRACTOR SHALL ENSURE DESIGN IS PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS, AND SITE SPECIFIC SOIL PARAMETERS.
   A. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING ASIDE FROM THE LIGHT FIXTURE INCLUDING (BUT NOT LIMITED TO) CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.
   B. SOME SITE LOCATIONS AND/OR CONDITIONS MAY REQUIRE VIBRATION DAMPENING MEASURE AS DETERMINED BY A STRUCTURAL ENGINEER.
   C. ACTUAL DIAMETER AND DEPTH OF FOOTING SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.
3. ALL REBAR SHALL BE MAINTAINED AT A 3" MIN. CLEARANCE FROM SURFACES.
4. FIXTURE MUST BE GROUNDED IN ACCORDANCE WITH LOCAL CODES AND/OR THE NATIONAL ELECTRICAL CODE. FAILURE TO DO SO MAY RESULT IN SERIOUS PERSONAL INJURY.
5. POLES SHOULD NEVER BE ERECTED WITHOUT THE LUMINAIRE INSTALLED. WARRANTY IS VOIDED IF THE POLE IS ERECTED WITHOUT THE LUMINAIRE. THE WARRANTY IS VOIDED IF THE POLE IS NOT GROUTED UNDER THE ENTIRE BASE AFTER INSTALLATION.

1 LIGHT POLE FOOTING
N.T.S.

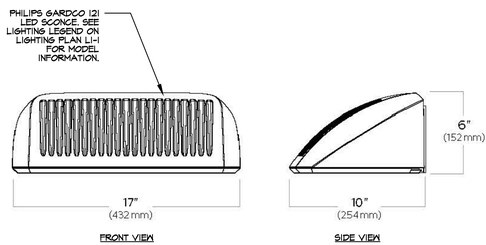


2 POLE MOUNTED LIGHT
N.T.S.

STATISTICAL AREA SUMMARY -

Calculation Area	Avg	Max	Min	Max/Min	Avg/Min
Parking Area	0.9	2.4	0.2	12.0:1	4.5:1

1. Light levels are expressed in footcandles (fc).
2. The point by point illuminance calculation was prepared using Visual Professional Edition, 2012 Acuity Brands Lighting Inc.
3. A light loss factor of 0.85 was used for all LED Area lights to simulate a 3K color temperature.
4. The point by point illuminance calculation was prepared using the following ies files:
   - 121-16L-530NW-G3-4.IES
   - DOS-35W32LED4K-T-LE4F-HS.IES
5. The light levels shown beyond the proposed improvement areas illustrate compliance with the light trespass regulations. The statistical area summary is based on light levels within the paved parking lot areas only.



3 WALL MOUNTED LIGHT
N.T.S.

LEGEND:

- EXISTING VEGETATION
- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- PROPOSED GROUND COVERS / PERENNIALS
- EXISTING TREE TO BE REMOVED
- SANDWICH BOARD FENCE

LIGHTING NOTES:

1. Lighting to be installed to meet all appropriate national and local codes.
2. All light fixtures to be approved by Owner or Owner's representative.
3. Fixtures shall be located a min. of 2' behind back of curb.
4. All circuits to be installed by a licensed electrician.
5. All cable to be run in conduit unless approved in writing by the owner.
6. Contractor to provide sufficient nighttime adjustment to all lighting to satisfy Township requirements and Owner or Owner's representative. Fixture on/off control by circuit.
7. All lighting to be installed according to manufactures recommendations.
8. All electrical conduits shall be sch 40 pvc and all bends shall be "sweep" type for pulling wire. Conduit to extend beyond edge of hardscape element by 12" min. Conduit to be temporarily capped and location staked prior to backfilling.
9. While extending conduits under existing structures the contractor shall be responsible for damage to existing structures such as, but not limited to, paving, irrigation, pool piping, masonry piers and underground drainage pipe etc.
10. All switching control device type and locations to be approved by Owner or Owner's representative.
11. All lighting fixtures to be controlled by automatic switches (i.e.- time clocks, photo-cells, etc.).
12. All final light locations to be approved by Owner or Owner's representative.
13. All final light locations to be field adjusted, "aimed" as necessary so as to avoid shining of light into windows and doors.
    Contractor to arrange a pre-construction meeting with the owner and owners representatives including masons, and other individuals familiar with any underground facilities. As-built drawing should be requested of all such facilities.
14. Contractor shall spray paint trench layout prior to commencement. Owner or Owner's representative shall approve layout.
15. Electrical contractor to prepare a plan of all as-built underground electric runs.
16. Project electrical engineer to provide power plan.
17. In the event that the contractor proposes light fixture substitutions, requests must be received by the Landscape Architect for review (14) fourteen days prior to bid date. Failure to submit within that deadline renders all substitution requests void, and originally specified fixture(s) will be supplied. The contractor shall submit the following:
    A. Township required copies of all mandatory submittals for both the originally specified fixture(s) and the proposed substitution(s).
    B. Contractor's written certification that the proposed substitution(s) conforms to all requirements of the contract documents in every respect and is appropriate for the applications indicated in the documents.
    C. Contractor's written statement indicating the effect of the substitution(s) on the construction schedule compared to the schedule with the originally specified fixture(s).
    D. Contractor-net unit price for the originally specified fixture(s) and for the proposed substitute fixture(s).
    E. One sample of the proposed substitution fixture(s) with specified lamps and cord and plug connection for 277 volt operation.
    F. Contractor's written certification that any alterations that may result from the proposed lighting fixture substitution(s) will be designed and constructed at the contractor's expense.
    G. Reimbursement to the landscape Architect for all time associated with review of fixture substitutions(s). Payment shall be made in advance of the review, based on the Landscape Architect's hourly rates for the personal involved in the review.
    H. Contractor's written waiver of rights to additional payment and/or time that may become necessary should the proposed substitution(s) fail to perform in a manner that is equivalent to the originally specified fixture(s).
19. The Township reserves the right to conduct a post-installation nighttime inspection to verify compliance with the Township lighting standards. If the inspection reveals a non-conformance to Township standards, the Township shall direct corrective action, which shall be executed by the property owner at no expense to the Township.Remedial action must be completed within thirty (30) days of notification from the Township.
20. Lighting fixtures and equipment shall be maintained so as to continuously meet Township requirements.

0 10 20 40 60 FEET
SCALE: 1" = 20'

NORTH

GLACKIN THOMAS PANZAK
LAND PLANNING
LANDSCAPE ARCHITECTURE

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Lisa L. Thomas LA000775 E

FINAL LIGHTING PLAN & DETAILS - PCSM

427 Lancaster Avenue

RADNOR TOWNSHIP,DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 16-001
DATE: 9/30/16 (sa)
REV.: 1/6/17 (gs)

SHEET:
LI-1

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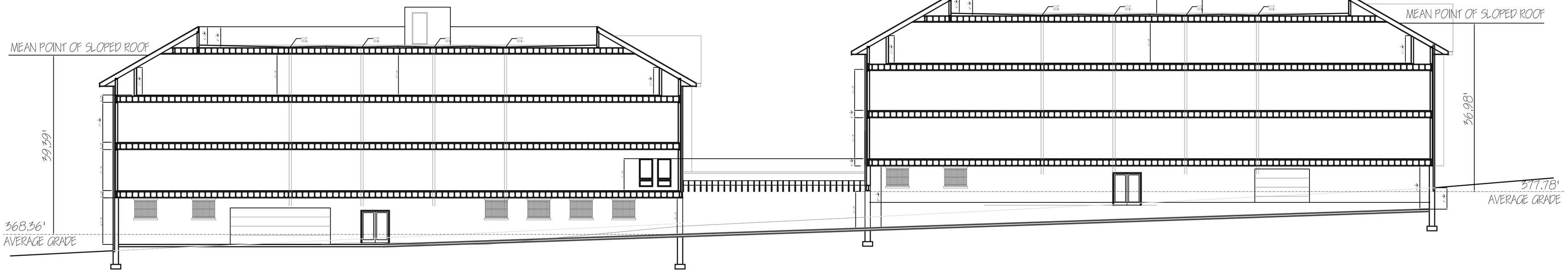

BUILDING SECTION

FRAME FLOORS WITH 14" TJI'S SERIES 560
AT 16" O.C. - AS PER SARA - 6/26/15

SOUND CONTROL THROUGH FLOORS:
3/4" 'MAXXON' ACOUSTI-MAT 3 ON 3/4" PLYWOOD FLOOR DECK
REINFORCEMENT AND 1 1/2" 'MAXXON' UNDERLAYMENT
FINISHED FLOOR ENGINEERED WOOD OR TILE.

10" BATT INSULATION BETWEEN FLOOR JOISTS

CEILING BELOW FLOOR ASSEMBLY: (2) LAYERS 5/8" G.W.B.
SUSPENDED FROM FLOOR JOISTS WITH WAVE CLIPS

JTA ASSOCIATES, INC.
ARCHITECTS AND SPACEPLANNERS
EAGLE VILLAGE
503 WEST LANCASTER AVENUE, WAYNE, PA. 19087
PHONE (610) 687-0800 FAX (610) 687-8717

WAYNE CONDOMINIUMS
427 E. LANCASTER AVE.
WAYNE, PA 19087

BUILDING SECTION

REVISIONS

NO.	DATE	DESCRIPTION

DATE: SEP. 30, 2016
SCALE:
PROJECT NO.:
ISSUE DATE:

A-3