

# VMA RAMSA

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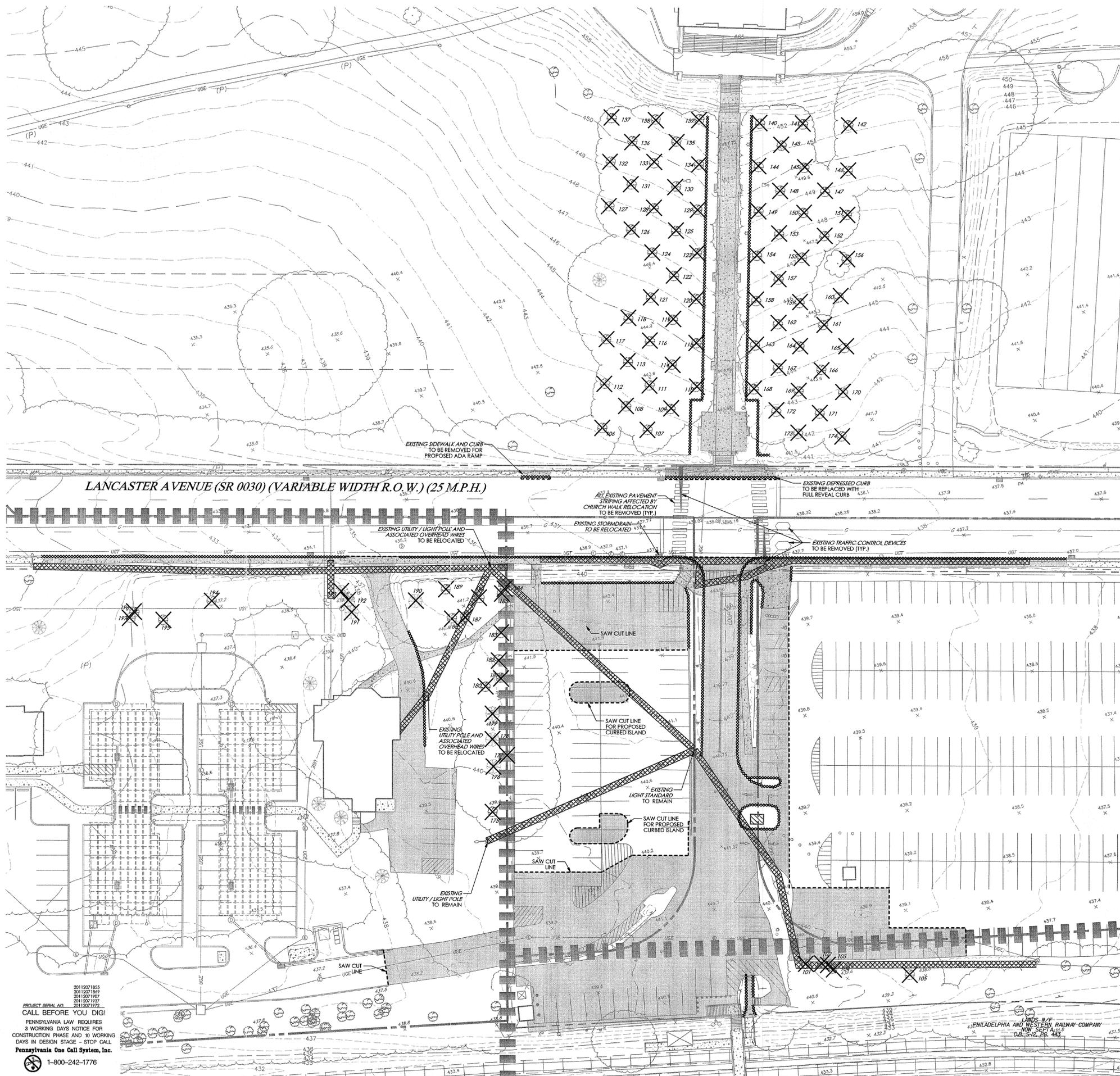
## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
Date March 13, 2015  
Title Existing Features /  
Demolition Plan  
Scale 1" = 30'  
Drawn By DCH

# C1.1

Sheet No. 2 of 20

Contractor to verify all dimensions in field and inform  
Architect of any discrepancies before starting work.



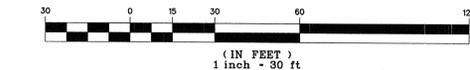
### EXISTING TREE REMOVAL CHART

NUMBER	TYPE	SIZE (IN)	NUMBER	TYPE	SIZE (IN)
101	CHR	6	150	CHR	8
102	CHR	6	151	CHR	8
103	MAP	6	152	CHR	8
104	ASH	36	153	CHR	8
105	MAP	18	154	CHR	10
106	CHR	12	155	CHR	8
107	CHR	12	156	CHR	8
108	CHR	10	157	CHR	10
109	CHR	10	158	CHR	8
110	CHR	8	159	CHR	6
111	CHR	10	160	CHR	6
112	CHR	10	161	CHR	8
113	CHR	10	162	CHR	8
114	CHR	10	163	CHR	10
115	CHR	10	164	CHR	4
116	CHR	10	165	CHR	4
117	CHR	12	166	CHR	4
118	CHR	10	167	CHR	8
119	CHR	10	168	CHR	10
120	CHR	10	169	CHR	6
121	CHR	12	170	CHR	2
122	CHR	10	171	CHR	8
123	CHR	10	172	CHR	10
124	CHR	10	173	CHR	10
125	CHR	8	174	CHR	8
126	CHR	12	175	MAP	12
127	CHR	8	176	PIN	15
128	CHR	6	177	MAP	14
129	CHR	10	178	PIN	30
130	CHR	12	179	PIN	14
131	CHR	12	180	BOX	8
132	CHR	8	181	OAK	20
133	CHR	8	182	OAK	36
134	CHR	10	183	MAP	15
135	CHR	12	184	MAP	15
136	CHR	10	185	MAP	10
137	CHR	10	186	BOW	6
138	CHR	12	187	TREE	10
139	CHR	12	188	MUL	12
140	CHR	10	189	DOG	6
141	CHR	10	190	PIN	18
142	CHR	6	191	PIN	16
143	CHR	12	192	PIN	30
144	CHR	10	193	PIN	20
145	CHR	6	194	CHR	15
146	CHR	8	195	MAP	32
147	CHR	8	196	MAP	24
148	CHR	8	197	MAP	24
149	CHR	10			

### LEGEND

- ZONING LINE
- PROPERTY LINE
- BUILDING SETBACK LINE
- PARKING SETBACK LINE
- LEGAL RIGHT-OF-WAY LINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING SIGN
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING RAILROAD TRACKS
- EXISTING WETLANDS
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING STORM SEWER WITH MANHOLE
- EXISTING STORM INLET
- EXISTING WATER SERVICE WITH MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC SERVICE WITH MANHOLE
- EXISTING ELECTRIC METER
- EXISTING TRANSFORMER
- EXISTING CABLE SERVICE WITH CABLE BOX
- EXISTING UNDERGROUND TELEPHONE SERVICE WITH MANHOLE
- EXISTING TELEPHONE METER
- EXISTING LIGHT STANDARDS
- EXISTING TRAFFIC SIGNAL MAST ARM
- SOILS BOUNDARY LINE
- EXISTING CURB, RETAINING WALL OR FENCE TO BE REMOVED
- EXISTING BUILDING / STRUCTURE TO BE REMOVED
- EXISTING IMPERVIOUS AREA TO BE REMOVED
- EXISTING UTILITY TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- AREAS TO BE CONSTRUCTED UNDER A SEPARATE TOWNSHIP APPLICATION

### GRAPHIC SCALE



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**CAMPUS-WIDE ZONING DATA**

CLASSIFICATION:	REQUIRED	EXISTING	PROPOSED
PLANNED INSTITUTIONAL DISTRICT (PI)			
BUILDING AREA	30% MAX.	13.0% (29.26 ACRES) (a)	14.3% (32.25 ACRES) (b)
TOTAL IMPERVIOUS COVERAGE	45% MAX.	37.6% (84.60 ACRES) (a)	36.4% (81.85 ACRES) (c)

- NOTES:**
- g. DATA OBTAINED FROM LAST CAMPUS DEVELOPMENT APPROVAL SHOWN ON A PLAN ENTITLED "VILLANOVA UNIVERSITY WEST CAMPUS, PROPOSED SOCCER FIELD RECONSTRUCTION", PLAN DATED OCTOBER 4, 2013, LAST REVISED MAY 6, 2014, PREPARED BY ASSOCIATED ENGINEERING CONSULTANTS INCORPORATED (AEC).
  - b. DORMITORY BUILDING 1 1.05 ACRES  
DORMITORY BUILDING 2 1.17 ACRES  
PERFORMING ARTS CENTER 40.77 ACRES  
TOTAL 2.99 ACRES (PROPOSED BUILDING AREA)  
EXISTING BUILDING AREA 29.26 ACRES  
PROPOSED BUILDING AREA 42.92 ACRES  
TOTAL 32.25 ACRES
  - c. EXISTING IMPERVIOUS 84.60 ACRES  
CICD REDUCTION -2.65 ACRES  
BRIDGE & VISITOR LOT REDUX -0.10 ACRES  
TOTAL 81.85 ACRES

**CAMPUS PARKING ANALYSIS**

**EXISTING REQUIRED PARKING SPACES**

AREA USE DESCRIPTION	AREA USE QUANTITY	REQUIRED PARKING
DORMITORY	4,322 BEDS	1,441
OFFICE (NET SF)	365,851 SF	1,303
RETAIL	6,250 SF (4)	44
RESTAURANT	-	44
LARGEST ASSEMBLY AREA	3,778 FIXED SEATS	945
GYMNASIUM / LIBRARY	42,432 SF	283
LARGEST ASSEMBLY AREA	13,722 SF	344
UNSPECIFIED AREA	30,929 SF	104
<b>TOTAL SPACES</b>	<b>4,464 SPACES</b>	<b>4,464 SPACES</b>
<b>PARKING AVAILABILITY</b>	<b>5,130 SPACES</b>	
<b>SURPLUS</b>	<b>666 SPACES</b>	

**PROPOSED REQUIRED PARKING SPACES**

AREA USE DESCRIPTION	AREA USE QUANTITY	REQUIRED PARKING
DORMITORY	5,480 BEDS (1)	1,820
OFFICE (NET SF)	368,091 SF (2)	1,311
RETAIL	12,371 SF (3)	76
RESTAURANT	85 SEATS (4)	39
LARGEST ASSEMBLY AREA	4,178 FIXED SEATS (5)	1,045
GYMNASIUM / LIBRARY	42,432 SF	283
LARGEST ASSEMBLY AREA	13,722 SF	344
UNSPECIFIED AREA	37,179 SF (6)	124
<b>TOTAL SPACES</b>	<b>5,042 SPACES</b>	<b>5,042 SPACES</b>
<b>PARKING AVAILABILITY</b>	<b>5,130 SPACES</b>	
<b>SURPLUS</b>	<b>88 SPACES</b>	

**PROPOSED PARKING TABULATION**

AREA USE DESCRIPTION	EXISTING	PROPOSED
MAIN LOT	1,126	52
PIKE LOT	577	1,289
VISITOR LOT	80	48
W. LANCASTER LOT	79	240
ST. AUGUSTINE CENTER	271	494
UNAFFECTED CAMPUS SPACES	2997	2997
<b>TOTAL</b>	<b>5,130 SPACES</b>	<b>5,130 SPACES</b>

- (1) 1,138 BEDS PROPOSED WITHIN DORMITORIES 1A-2C
- (2) 2,240 SF OFFICE PROPOSED WITHIN THE PERFORMING ARTS CENTER
- (3) 9,360 SF BOOKSTORE, 120,000 SF CONVENIENCE STORE, 125 SF RETAIL WITHIN THE PERFORMING ARTS CENTER & 27 EMPLOYEES
- (4) 85 SEATS & 20 EMPLOYEES WITHIN PROPOSED BISTRO
- (5) 400 SEAT THEATER WITHIN THE PERFORMING ARTS CENTER
- (6) CONVERSION OF EXISTING BOOKSTORE TO UNSPECIFIED AREA

**ZONING DATA**

**COMPREHENSIVE INTEGRATED COLLEGE DEVELOPMENT DISTRICT (CICD)**

CLASSIFICATION:	REQUIRED	PROPOSED
MINIMUM CAMPUS AREA	75 ACRES	225 ACRES (PI ZONING DISTRICT) 15 ACRES (CO ZONING DISTRICT) 240 ACRES (TOTAL CAMPUS) 13.81 GROSS ACRES 11.71 NET ACRES
MINIMUM/MAXIMUM CICD AREA	>10 / <15 ACRES	180' / 171'
MAXIMUM BUILDING LENGTH	180'	171'
MINIMUM BUILDING SEPARATION		
BETWEEN BUILDING AND BUILDING	45'	45'
BETWEEN BUILDING AND PARKING STRUCTURE	30'	30'
MAXIMUM BUILDING HEIGHT		
ACADEMIC AND PERFORMANCE FACILITIES	50'	<50'
FLY LOT	45'	<45'
HOUSING AND SOCIAL FACILITIES	45'	<45'
PARKING STRUCTURE	38'	<38'
MAXIMUM BUILDING COVERAGE - TOTAL (INCLUDES PARKING STRUCTURE)	30%	35.5%*
MAXIMUM BUILDING COVERAGE - INDIVIDUAL		
RESIDENCE HALL 2 (1.17 ACRES)	10%	7.6%
RESIDENCE HALL 1 (1.05 ACRES)	10%	8.5%
PERFORMING ARTS CENTER (0.77 ACRES)	10%	5.6%
MAXIMUM RETAIL SQUARE FOOTAGE		
MINIMUM FACILITY SETBACK FROM SINGLE FAMILY RESIDENTIAL USE	10'	10'
MINIMUM ELEVATOR/STAIR TOWER ON PARKING STRUCTURE SETBACK	50'	41.4'
MAXIMUM LENGTH OF ELEVATOR/STAIR TOWER PROJECTION	5'	5'
MINIMUM LOADING AREA SETBACK	50'	82.5'
RIPARIAN BUFFER SETBACK	825**	69%
MAXIMUM IMPERVIOUS AREA	5% OF GSF	2.9% OF GSF ***

- \* BUILDING COVERAGE EXCEEDING 30% SHALL REQUIRE TWO SQUARE FEET OF OPEN SPACE DEDICATION PER ONE SQUARE FOOT OVER 30%. 33.10% EXCEEDING COVERAGE REQUIRES 66,212 SF OPEN SPACE DEDICATION. (87,120 SF PROVIDED) (REFER TO THIS SHEET FOR LOCATION OF PRESERVATION AREA)
- \*\* PROPOSED IMPERVIOUS CONDITIONS MUST BE A MINIMUM 10% REDUCTION FROM EXISTING IMPERVIOUS AREA 92% EXISTING IMPERVIOUS COVERAGE - 10% = 82%
- \*\*\*  $5,101 \text{ SF} [2A] + 9,369 \text{ SF} [2B] + 125 \text{ SF} [2C] = 14,595 \text{ SF} = 2.9\% \text{ OF GSF}$   
 $194,558 \text{ SF (BUILDING 1)} + 223,376 \text{ SF (BUILDING 2)} + 79,400 \text{ SF (PAC)} = 497,334 \text{ SF}$

**SETBACK CHART**

PERFORMANCE AND SOCIAL FACILITIES	ARTERIAL STREETS		MINOR COLLECTORS		RAILROAD RIGHTS-OF-WAY	
	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED
HOUSING FACILITIES	35'	38.2'	30'	30'	50'	332'
PARKING STRUCTURES	120'	169.5'	20'	21'	30'	61.6'
SURFACE PARKING LOTS	40'	237.7'	40'	103'	5'	12'
RETAIL SUBORDINATE USES	35'	39'	30'	30'	50'	234.4'

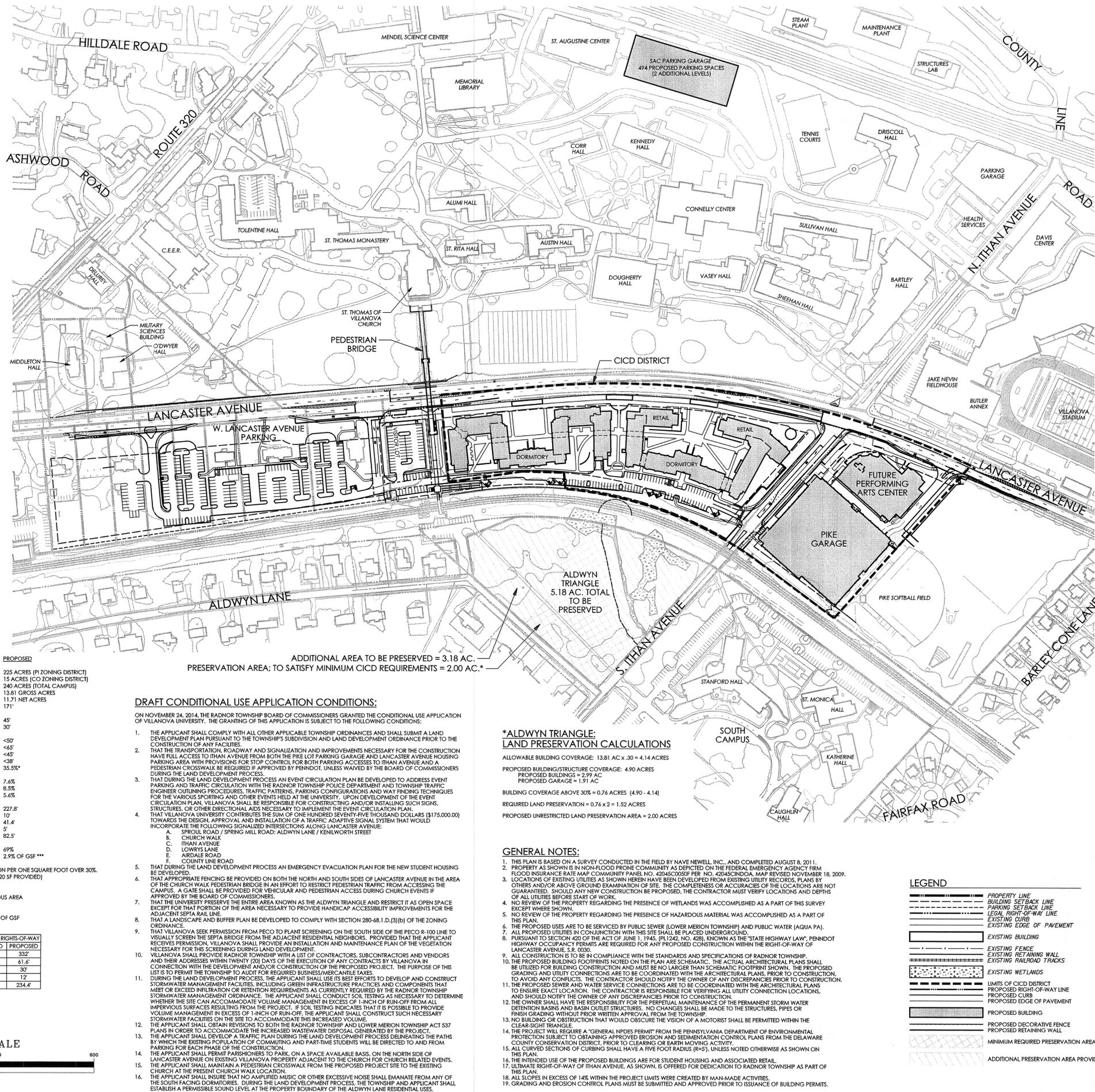
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**GRAPHIC SCALE**



**DRAFT CONDITIONAL USE APPLICATION CONDITIONS:**

ON NOVEMBER 24, 2014, THE RADNOR TOWNSHIP BOARD OF COMMISSIONERS GRANTED THE CONDITIONAL USE APPLICATION OF VILLANOVA UNIVERSITY. THE GRANTING OF THIS APPLICATION IS SUBJECT TO THE FOLLOWING CONDITIONS:

- THE APPLICANT SHALL COMPLY WITH ALL OTHER APPLICABLE TOWNSHIP ORDINANCES AND SHALL SUBMIT A LAND DEVELOPMENT PLAN PURSUANT TO THE TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE PRIOR TO THE CONSTRUCTION OF ANY FACILITIES.
- THAT THE TRANSPORTATION, ROADWAY AND SIGNALIZATION AND IMPROVEMENTS NECESSARY FOR THE CONSTRUCTION HAVE FULL ACCESS TO ITHAN AVENUE FROM BOTH THE PIKE LOT PARKING GARAGE AND LANCASTER AVENUE HOUSING PARKING AREA WITH PROVISIONS FOR STOP CONTROL FOR BOTH PARKING ACCESS TO ITHAN AVENUE AND A PEDESTRIAN CROSSWALK BE REQUIRED IF APPROVED BY PENNDOT, UNLESS WAIVED BY THE BOARD OF COMMISSIONERS DURING THE LAND DEVELOPMENT PROCESS.
- THAT DURING THE LAND DEVELOPMENT PROCESS AN EVENT CIRCULATION PLAN BE DEVELOPED TO ADDRESS EVENT PARKING AND TRAFFIC CIRCULATION WITH THE RADNOR TOWNSHIP POLICE DEPARTMENT AND TOWNSHIP TRAFFIC ENGINEER OUTLINING PROCEDURES, TRAFFIC PATTERNS, PARKING CONFIGURATIONS AND WAY FINDING TECHNIQUES FOR THE VARIOUS SPORTING AND OTHER EVENTS HELD AT THE UNIVERSITY. UPON DEVELOPMENT OF THE EVENT CIRCULATION PLAN, VILLANOVA SHALL BE RESPONSIBLE FOR CONSTRUCTING AND/OR INSTALLING SUCH SIGNS, STRUCTURES, OR OTHER DIRECTIONAL AIDS NECESSARY TO IMPLEMENT THE EVENT CIRCULATION PLAN.
- THAT VILLANOVA UNIVERSITY CONTRIBUTE THE SUM OF ONE HUNDRED SEVENTY-FIVE THOUSAND DOLLARS (\$175,000.00) TOWARDS THE DESIGN, APPROVAL AND INSTALLATION OF A TRAFFIC ADAPTIVE SIGNAL SYSTEM THAT WOULD INCORPORATE THE FOLLOWING SIGNALIZED INTERSECTIONS ALONG LANCASTER AVENUE:
  - A. SPROUL ROAD / SPRING MILL ROAD; ALDWYN LANE / KENILWORTH STREET
  - B. CHURCH WALK
  - C. ITHAN AVENUE
  - D. LOWRYS LANE
  - E. AIRDALE ROAD
- THAT DURING THE LAND DEVELOPMENT PROCESS AN EMERGENCY EVACUATION PLAN FOR THE NEW STUDENT HOUSING BE DEVELOPED.
- THAT APPROPRIATE FENCING BE PROVIDED ON BOTH THE NORTH AND SOUTH SIDES OF LANCASTER AVENUE IN THE AREA OF THE CHURCH WALK AND PEDESTRIAN BRIDGE IN AN EFFORT TO RESTRICT PEDESTRIAN TRAFFIC FROM ACCESSING THE CAMPUS. A GATE SHALL BE PROVIDED FOR VEHICULAR AND PEDESTRIAN ACCESS DURING CHURCH EVENTS IF APPROVED BY THE BOARD OF COMMISSIONERS.
- THAT THE UNIVERSITY PRESERVE THE ENTIRE AREA KNOWN AS THE ALDWYN TRIANGLE AND RESTRICT IT AS OPEN SPACE EXCEPT FOR THAT PORTION OF THE AREA NECESSARY TO PROVIDE HANDICAP ACCESSIBILITY IMPROVEMENTS FOR THE ADJACENT SEPTA RAIL LINE.
- THAT A LANDSCAPE AND BUFFER PLAN BE DEVELOPED TO COMPLY WITH SECTION 280-68.1.D.(3)(b) OF THE ZONING ORDINANCE.
- THAT VILLANOVA SEEK PERMISSION FROM PECO TO PLANT SCREENING ON THE SOUTH SIDE OF THE PECO R-100 LINE TO VISUALLY SCREEN THE SEPTA BRIDGE FROM THE ADJACENT RESIDENTIAL NEIGHBORS. PROVIDED THAT THE APPLICANT RECEIVES PERMISSION, VILLANOVA SHALL PROVIDE AN INSTALLATION AND MAINTENANCE PLAN OF THE VEGETATION NECESSARY FOR THIS SCREENING DURING LAND DEVELOPMENT.
- VILLANOVA SHALL PROVIDE RADNOR TOWNSHIP WITH A LIST OF CONTRACTORS, SUBCONTRACTORS AND VENDORS AND THEIR ADDRESSES WITHIN TWENTY (20) DAYS OF THE EXECUTION OF ANY CONTRACTS BY VILLANOVA IN CONNECTION WITH THE DEVELOPMENT AND/OR CONSTRUCTION OF THE PROPOSED PROJECT. THE PURPOSE OF THIS LIST IS TO PERMIT THE TOWNSHIP TO AUDIT FOR REQUIRED BUSINESS/MERCANTILE TAXES.
- DURING THE LAND DEVELOPMENT PROCESS, THE APPLICANT SHALL USE ITS BEST EFFORTS TO DEVELOP AND CONSTRUCT STORMWATER MANAGEMENT FACILITIES, INCLUDING GREEN INFRASTRUCTURE PRACTICES AND COMPONENTS THAT MEET OR EXCEED INFILTRATION OR RETENTION REQUIREMENTS AS CURRENTLY REQUIRED BY THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE. THE APPLICANT SHALL CONDUCT SOIL TESTING AS NECESSARY TO DETERMINE WHETHER THE SITE CAN ACCOMMODATE VOLUME MANAGEMENT IN EXCESS OF 1/4 INCH OF RUN-OFF FROM ALL IMPERVIOUS SURFACES RESULTING FROM THE PROJECT. IF SOIL TESTING INDICATES THAT IT IS POSSIBLE TO PROVIDE VOLUME MANAGEMENT IN EXCESS OF 1/4 INCH OF RUN-OFF, THE APPLICANT SHALL CONSTRUCT SUCH NECESSARY STORMWATER FACILITIES ON THE SITE TO ACCOMMODATE THIS INCREASED VOLUME.
- THE APPLICANT SHALL NOTIFY BOTH THE RADNOR TOWNSHIP AND LOWER MERION TOWNSHIP ACT 537 PLANS IN ORDER TO ACCOMMODATE THE INCREASED WASTEWATER DISPOSAL GENERATED BY THE PROJECT.
- THE APPLICANT SHALL DEVELOP A TRAFFIC PLAN DURING THE LAND DEVELOPMENT PROCESS DELINEATING THE PATHS BY WHICH THE EXISTING POPULATION OF COMMUTING AND PART-TIME STUDENTS WILL BE DIRECTED TO AND FROM PARKING FOR EACH PHASE OF THE CONSTRUCTION.
- THE APPLICANT SHALL PERMIT PARISHIONERS TO PARK ON A SPACE AVAILABLE BASIS, ON THE NORTH SIDE OF LANCASTER AVENUE ON EXISTING VILLANOVA PROPERTY ADJACENT TO THE CHURCH FOR CHURCH RELATED EVENTS. THE APPLICANT SHALL MAINTAIN A PEDESTRIAN CROSSWALK FROM THE PROPOSED PROJECT SITE TO THE EXISTING CHURCH AT THE PRESENT CHURCH WALK LOCATION.
- THE APPLICANT SHALL INSURE THAT NO AMPLIFIED MUSIC OR OTHER EXCESSIVE NOISE SHALL EMANATE FROM ANY OF THE SOUTH FACING DORMITORIES. DURING THE LAND DEVELOPMENT PROCESS, THE TOWNSHIP AND APPLICANT SHALL ESTABLISH A PERMISSIBLE SOUND LEVEL AT THE PROPERTY BOUNDARY OF THE ALDWYN LANE RESIDENTIAL USES.

**\*ALDWYN TRIANGLE: LAND PRESERVATION CALCULATIONS**

ALLOWABLE BUILDING COVERAGE: 13.81 AC x .30 = 4.14 ACRES  
PROPOSED BUILDING = 2.99 AC  
PROPOSED GARAGE = 1.91 AC  
BUILDING COVERAGE ABOVE 30% = 0.76 ACRES (4.90 - 4.14)  
REQUIRED LAND PRESERVATION = 0.76 x 2 = 1.52 ACRES  
PROPOSED UNRESTRICTED LAND PRESERVATION AREA = 2.00 ACRES

**GENERAL NOTES:**

- THIS PLAN IS BASED ON A SURVEY CONDUCTED IN THE FIELD BY NAVE NEWELL, INC. AND COMPLETED AUGUST 8, 2011.
- PROPERTY AS SHOWN IN NON-FLOOD PRONE COMMUNITY AS DEPICTED ON THE FEDERAL EMERGENCY AGENCY FIRM FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 42045C0050R PER NO. 42045C00DA, MAP REVISED NOVEMBER 18, 2009.
- LOCATIONS OF EXISTING UTILITIES AS SHOWN HEREIN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS. PLANS BY OTHERS AND/OR ABOVE GROUND EXAMINATION OF SITE. THE COMPLETENESS OR ACCURACIES OF THE LOCATIONS ARE NOT GUARANTEED. SHOULD ANY NEW CONSTRUCTION BE PROPOSED, THE CONTRACTOR MUST VERIFY LOCATIONS AND DEPTHS OF ALL UTILITIES BEFORE START OF WORK.
- NO REVIEW OF THE PROPERTY REGARDING THE PRESENCE OF WETLANDS WAS ACCOMPLISHED AS A PART OF THIS SURVEY EXCEPT WHERE SHOWN.
- NO REVIEW OF THE PROPERTY REGARDING THE PRESENCE OF HAZARDOUS MATERIAL WAS ACCOMPLISHED AS A PART OF THIS PLAN.
- THE PROPOSED USES ARE TO BE SERVICED BY PUBLIC SEWER (LOWER MERION TOWNSHIP) AND PUBLIC WATER (AQUA PA).
- ALL PROPOSED UTILITIES IN CONJUNCTION WITH THIS SITE SHALL BE PLACED UNDERGROUND.
- PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945, (PL1242, NO. 428), KNOWN AS THE STATE HIGHWAY LAW, PENNDOT HIGHWAY OCCUPANCY PERMITS ARE REQUIRED FOR ANY PROPOSED CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF LANCASTER AVENUE, S.R. 1030.
- ALL CONSTRUCTION IS TO BE IN COMPLIANCE WITH THE STANDARDS AND SPECIFICATIONS OF RADNOR TOWNSHIP.
- THE PROPOSED BUILDING FOOTPRINTS NOTED ON THE PLAN ARE SCHEMATIC. THE ACTUAL ARCHITECTURAL PLANS SHALL BE UTILIZED FOR BUILDING CONSTRUCTION AND MUST BE NO LARGER THAN SCHEMATIC FOOTPRINT SHOWN. THE PROPOSED GRADING AND UTILITY CONNECTIONS ARE TO BE COORDINATED WITH THE ARCHITECTURAL PLANS, PRIOR TO CONSTRUCTION.
- TO AVOID ANY CONFLICTS, THE CONTRACTOR SHOULD NOTIFY THE OWNER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. TO ENSURE EXACT LOCATION, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITY CONNECTION LOCATIONS, AND SHOULD NOTIFY THE OWNER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- THE OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT STORM WATER DETENTION BASINS AND BASIN OUTLET STRUCTURES. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP.
- NO BUILDING OR OBSTRUCTION THAT WOULD OBSCURE THE VISION OF A MOTORIST SHALL BE PERMITTED WITHIN THE CLEAR-SIGHT TRIANGLE.
- THE PROJECT WILL REQUIRE A "GENERAL NPDES PERMIT" FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUBJECT TO OBTAINING APPROVED EROSION AND SEDIMENTATION CONTROL PLANS FROM THE DELAWARE COUNTY CONSERVATION DISTRICT, PRIOR TO CLEARING OR EARTH MOVING ACTIVITY.
- ALL CURVED SECTIONS OF CURBING SHALL HAVE A FIVE FOOT RADII (R=5'), UNLESS NOTED OTHERWISE AS SHOWN ON THIS PLAN.
- THE INTENDED USE OF THE PROPOSED BUILDINGS ARE FOR STUDENT HOUSING AND ASSOCIATED RETAIL.
- ULTIMATE RIGHT-OF-WAY OF ITHAN AVENUE, AS SHOWN, IS OFFERED FOR DEDICATION TO RADNOR TOWNSHIP AS PART OF THIS PLAN.
- ALL SURFACES IN EXCESS OF 14% WITHIN THE PROJECT LIMITS WERE CREATED BY MAN-MADE ACTIVITIES.
- GRADING AND EROSION CONTROL PLANS MUST BE SUBMITTED AND APPROVED PRIOR TO ISSUANCE OF BUILDING PERMITS.

**LEGEND**

- PROPERTY LINE
- BUILDING SETBACK LINE
- PARKING SETBACK LINE
- LEGAL RIGHT-OF-WAY LINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING RAILROAD TRACKS
- EXISTING WETLANDS
- LIMITS OF CICD DISTRICT
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED DECORATIVE FENCE
- PROPOSED RETAINING WALL
- MINIMUM REQUIRED PRESERVATION AREA
- ADDITIONAL PRESERVATION AREA PROVIDED

Villanova University  
Church Walk and Bridge  
Lancaster and Ithan Avenues  
Villanova PA 19085



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**PRELIM. LAND DEVELOPMENT SUBMISSION**

Revision  
Date March 13, 2015  
Title Composite Site Plan

Scale 1" = 150'  
Drawn By MMB

**C2.0**

Sheet No. 3 of 20

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.

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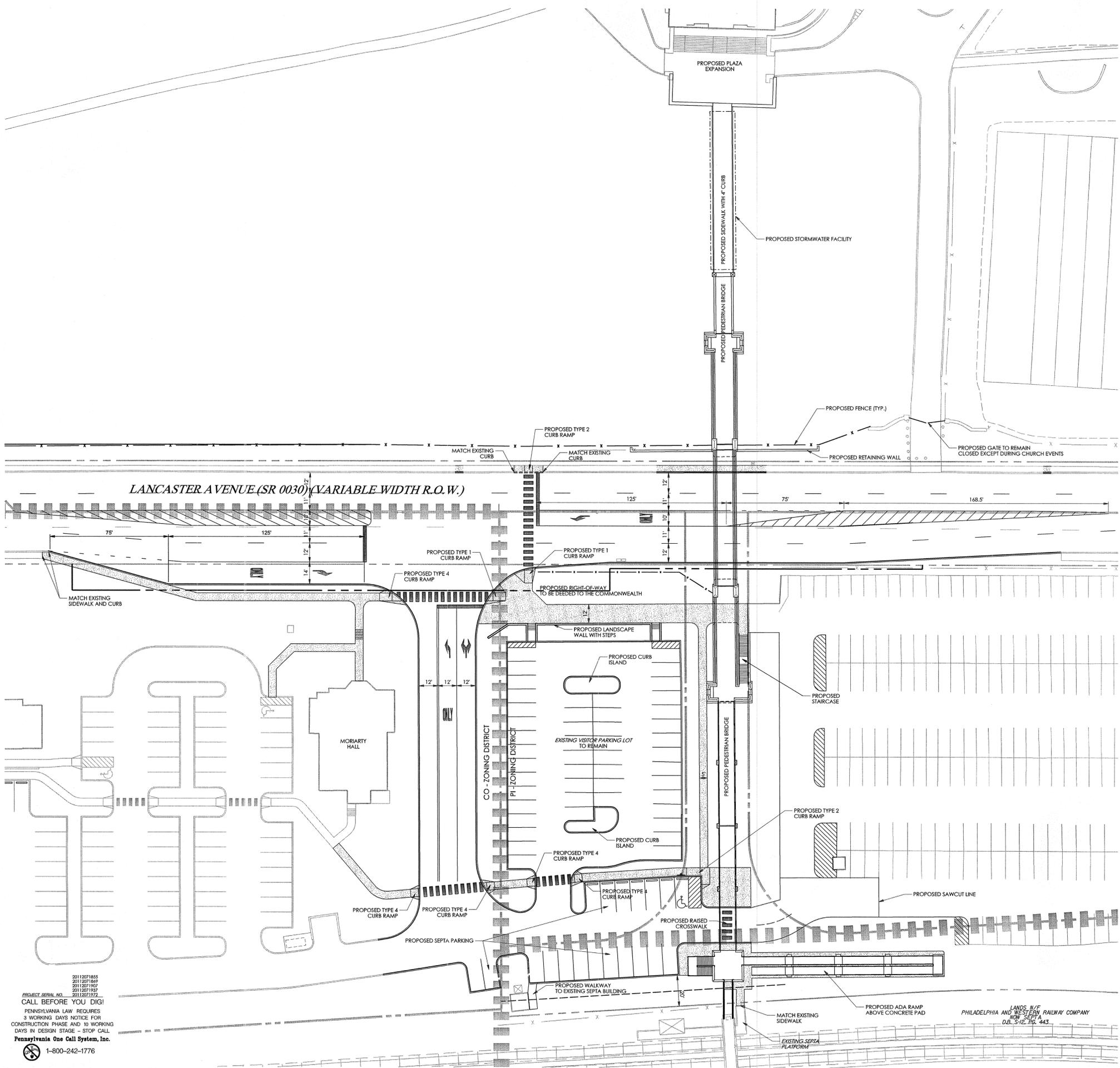
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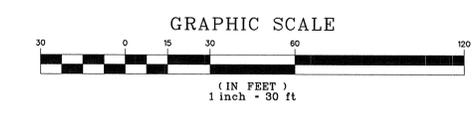
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## LEGEND

- PROPERTY LINE
- - - LEGAL RIGHT-OF-WAY LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING TREE
- EXISTING RAILROAD TRACKS
- EXISTING WETLANDS
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING STORM SEWER WITH MANHOLE
- EXISTING STORM INLET
- EXISTING WATER SERVICE WITH MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC SERVICE WITH MANHOLE
- EXISTING ELECTRIC METER
- EXISTING TRANSFORMER
- EXISTING CABLE SERVICE WITH CABLE BOX
- EXISTING UNDERGROUND TELEPHONE SERVICE WITH MANHOLE
- EXISTING TELEPHONE METER
- EXISTING LIGHT STANDARDS
- EXISTING TRAFFIC SIGNAL MAST ARM
- SOILS BOUNDARY LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK OR PAD
- PROPOSED DECORATIVE FENCE
- PROPOSED RETAINING WALL
- PROPOSED SIGN
- PROPOSED ADA PARKING SPACE
- PROPOSED DUMPSTER ENCLOSURE WITH DUMPSTER, RECYCLING BINS, SCREEN WALLS AND SCREEN GATE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED TOP OF WALL
- PROPOSED BOTTOM OF WALL
- PROPOSED TOP OF CURB
- PROPOSED BOTTOM OF CURB
- PROPOSED FLUSHED CURB
- PROPOSED SANITARY MAIN
- PROPOSED SANITARY LATERAL
- PROPOSED STORM PIPE
- PROPOSED INLET / YARD DRAIN
- PROPOSED UNDERDRAIN / ROOF DRAIN
- PROPOSED FIRE SERVICE
- PROPOSED WATER SERVICE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND TELECOM
- PROPOSED GAS LINE



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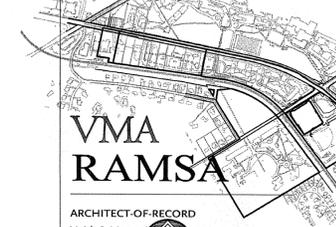
## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
 Date March 13, 2015  
 Title Site Plan  
 Scale 1" = 30'  
 Drawn By DWN

# C2.1

Sheet No. 4 of 20

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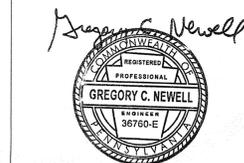
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## PRELIM. LAND DEVELOPMENT SUBMISSION

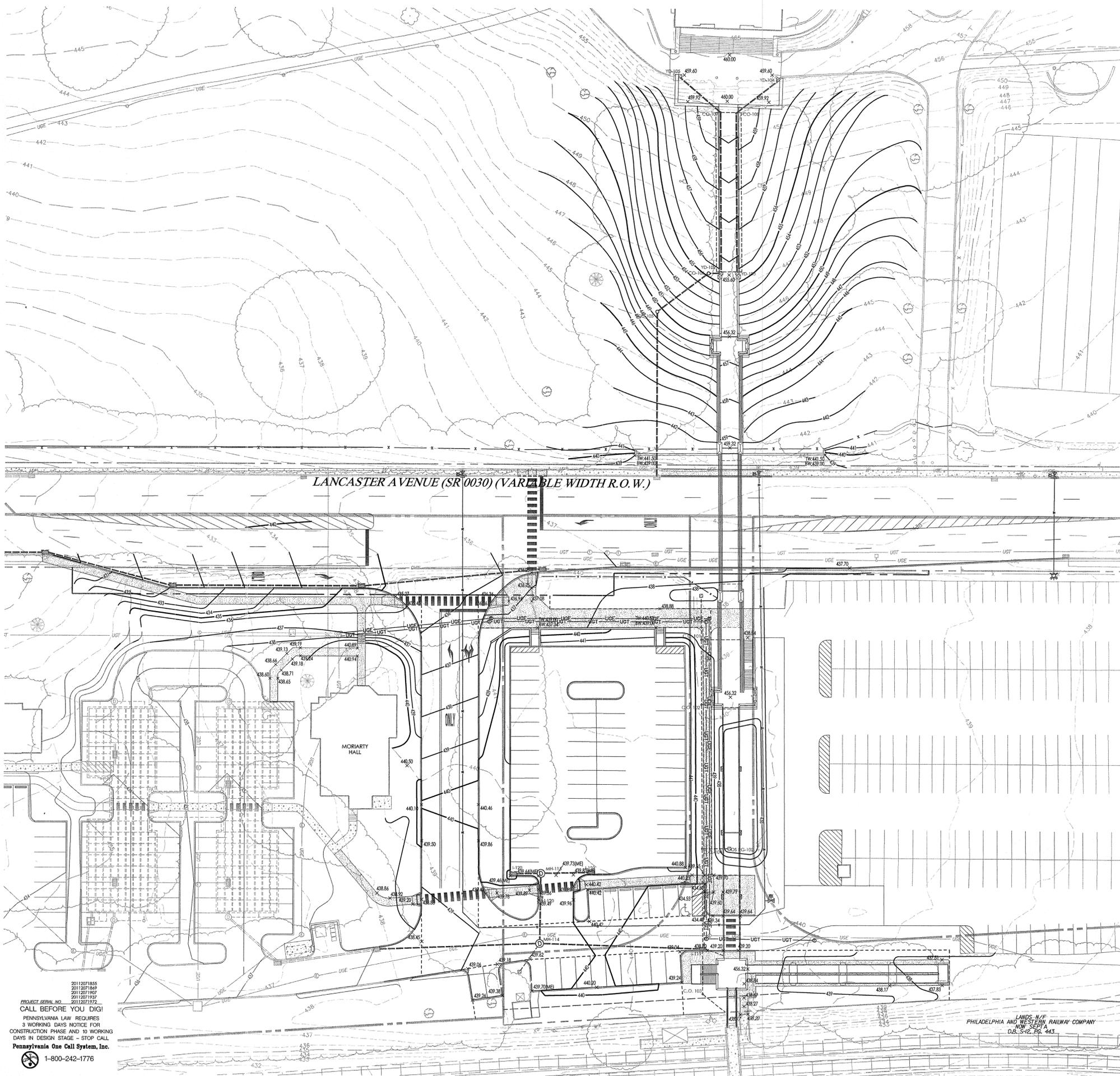
Revision  
 Date March 13, 2015  
 Title Grading Plan

Scale 1" = 30'  
 Drawn By DWN

# C3.1

Sheet No. 5 of 20

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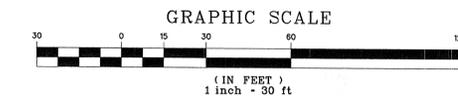
LANCASTER AVENUE (SR 0030) (VARIABLE WIDTH R.O.W.)

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### LEGEND

- PROPERTY LINE
- - - LEGAL RIGHT-OF-WAY LINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING RETAINING WALL
- EXISTING SIGN
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING RAILROAD TRACKS
- EXISTING WETLANDS
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- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND TELECOM
- PROPOSED GAS LINE



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## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
Date March 13, 2015  
Title Utility Plan

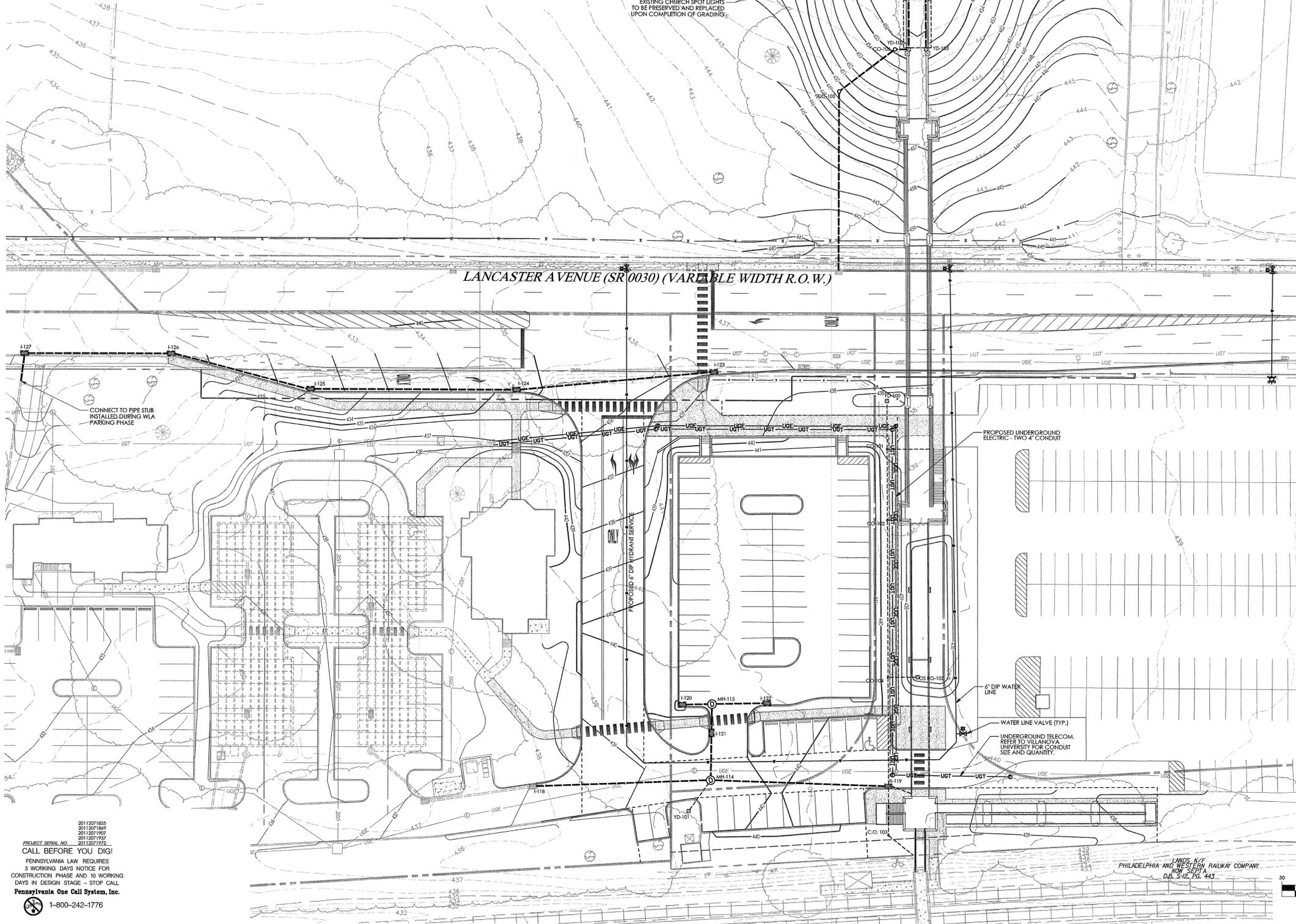
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Sheet No. 6 of 20

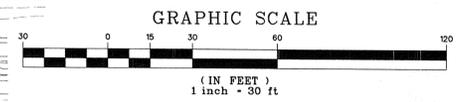
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Start Node	Stop Node	Length (Unfilled) (ft)	Diameter (in)	Slope (ft/ft)	Material	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)
OS RG-102	C.O. 104	16	12	0.005	Comugated HDPE (Smooth Interior)	436.00	435.92	440.00	440.20
YD-100	C.O. 101	30	12	0.006	Comugated HDPE (Smooth Interior)	436.60	436.42	438.60	440.00
CO-101	C.O. 102	40	12	0.010	Comugated HDPE (Smooth Interior)	436.42	436.02	440.00	440.00
CO-102	C.O. 104	90	12	0.009	Comugated HDPE (Smooth Interior)	435.82	435.02	440.00	440.20
CO-104	I-119	62	12	0.012	Comugated HDPE (Smooth Interior)	434.82	434.08	440.20	438.90
CO-103	I-119	26	12	0.012	Comugated HDPE (Smooth Interior)	436.50	436.20	440.00	439.90
I-119	MH-114	99	18	0.010	Comugated HDPE (Smooth Interior)	433.88	432.88	438.90	439.95
I-120	MH-115	13	18	0.020	Comugated HDPE (Smooth Interior)	435.00	434.74	439.44	439.70
I-122	MH-115	27	18	0.010	Comugated HDPE (Smooth Interior)	435.00	434.74	439.83	439.70
MH-115	I-121	12	18	0.012	Comugated HDPE (Smooth Interior)	434.54	434.40	439.70	439.49
I-121	MH-114	23	18	0.010	Comugated HDPE (Smooth Interior)	434.20	433.98	439.49	439.95
YD-101	MH-114	18	12	0.020	Comugated HDPE (Smooth Interior)	436.50	436.14	439.50	439.95
MH-114	I-118	99	18	0.009	Comugated HDPE (Smooth Interior)	432.68	431.78	439.95	438.00
I-118	I-117	59	18	0.010	Comugated HDPE (Smooth Interior)	431.58	431.00	438.00	437.17
I-123	I-124	111	18	0.027	Concrete	432.84	429.88	434.34	434.50
I-124	I-125	115	18	0.017	Concrete	428.68	426.70	434.50	432.00
I-125	I-126	79	18	0.023	Concrete	426.50	424.70	432.00	429.40
I-126	I-127	83	18	0.014	Concrete	424.50	423.30	429.40	427.00
YD-105	CO-107	32	12	0.020	Comugated HDPE (Smooth Interior)	454.60	453.94	459.40	459.80
CO-107	YD-102	100	12	0.000	Comugated HDPE (PERFORATED)	447.00	447.00	459.80	455.40
YD-102	CO-106	4	12	0.000	Comugated HDPE (Smooth Interior)	447.00	447.00	455.40	455.25
CO-106	CO-105	39	12	0.089	Comugated HDPE (Smooth Interior)	449.00	445.50	455.25	449.50
CO-105	EX-100	103	12	0.020	Comugated HDPE (PERFORATED)	454.60	453.94	459.40	459.80
YD-104	CO-108	31	12	0.020	Comugated HDPE (Smooth Interior)	445.50	445.50	449.50	EXISTING ROAD
CO-108	YD-103	100	12	0.000	Comugated HDPE (Smooth Interior)	447.00	447.00	459.80	455.40



### LEGEND

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- LEGAL RIGHT-OF-WAY LINE
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- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING FENCE
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- PROPOSED FIRE SERVICE
- PROPOSED WATER SERVICE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND TELECOM
- PROPOSED GAS LINE
- AREAS TO BE CONSTRUCTED UNDER A SEPARATE TOWNSHIP APPLICATION



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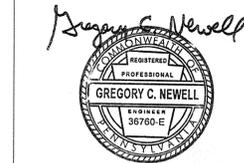
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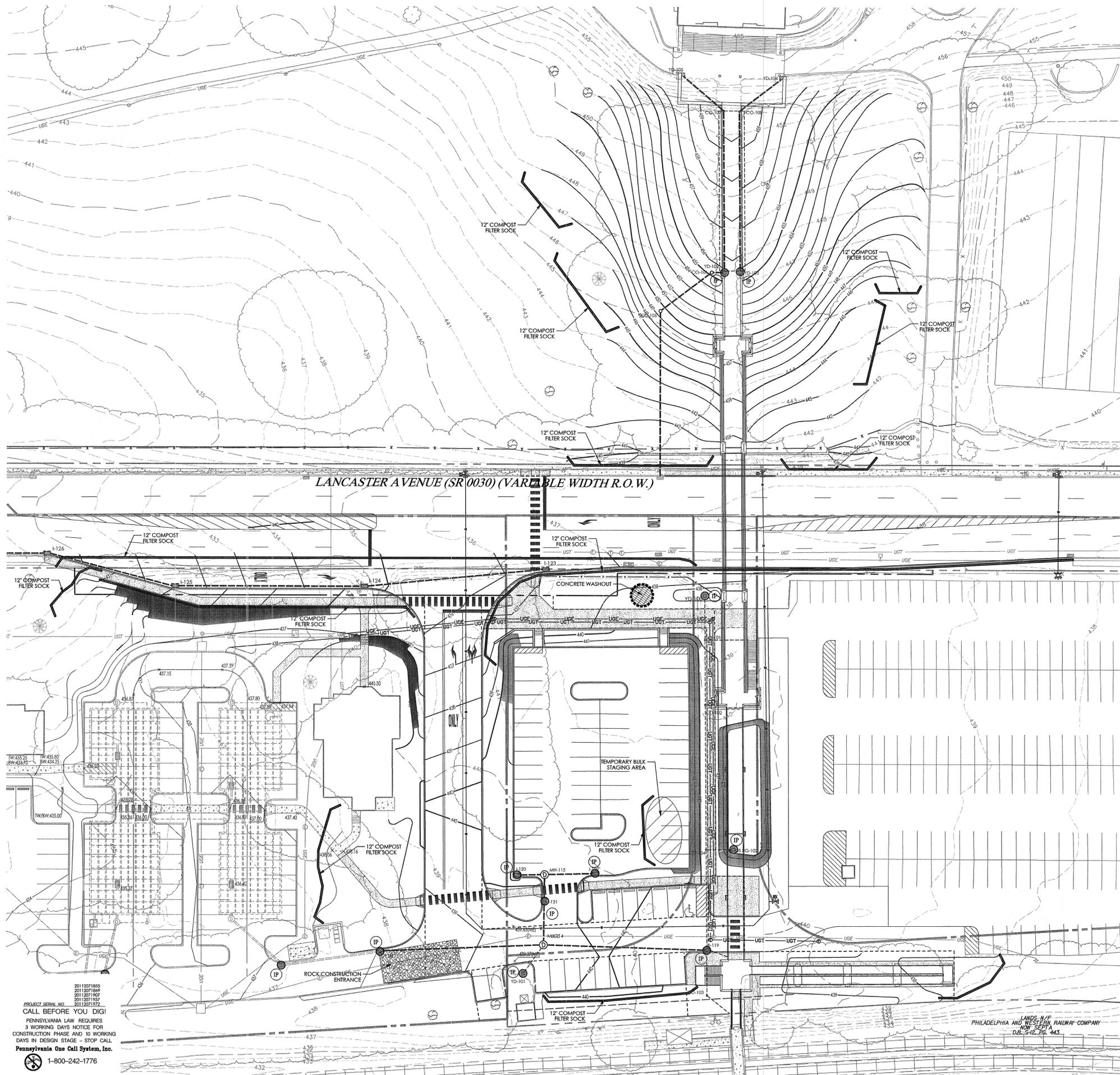
## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
Date March 13, 2015  
Title Erosion & Sedimentation  
Control Plan  
Scale 1" = 30'  
Drawn By DWN

# C5.1

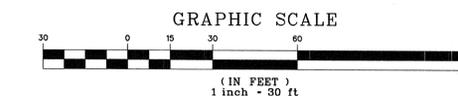
Sheet No. 8 of 20

Contractor to verify all dimensions in field and inform  
Architect of any discrepancies before starting work.



### LEGEND

- PROPERTY LINE
- LEGAL RIGHT-OF-WAY LINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING TREE
- EXISTING RAILROAD TRACKS
- EXISTING WETLANDS
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING STORM SEWER WITH MANHOLE
- EXISTING STORM INLET
- EXISTING WATER SERVICE WITH MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING OVERHEAD WIRE
- EXISTING UNDERGROUND ELECTRIC SERVICE WITH MANHOLE
- EXISTING ELECTRIC METER
- EXISTING TRANSFORMER
- EXISTING CABLE SERVICE WITH CABLE BOX
- EXISTING UNDERGROUND TELEPHONE SERVICE WITH MANHOLE
- EXISTING TELEPHONE METER
- EXISTING LIGHT STANDARDS
- EXISTING TRAFFIC SIGNAL MAST ARM
- SOILS BOUNDARY LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK OR PAD
- PROPOSED DECORATIVE FENCE
- PROPOSED RETAINING WALL
- PROPOSED SIGN
- PROPOSED ADA PARKING SPACE
- PROPOSED DUMPSTER ENCLOSURE WITH DUMPSTER, RECYCLING BINS, SCREEN WALLS AND SCREEN GATE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED SANITARY MAIN
- PROPOSED SANITARY LATERAL
- PROPOSED STORM PIPE
- PROPOSED INLET / YARD DRAIN
- PROPOSED FIRE SERVICE
- PROPOSED WATER SERVICE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UNDERGROUND TELECOM
- PROPOSED GAS LINE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED COMPOST FILTER SOCK
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY BULK STAGING AREA
- EROSION CONTROL BLANKET, NAG 575
- AREAS TO BE CONSTRUCTED UNDER A SEPARATE TOWNSHIP APPLICATION
- CONCRETE WASHOUT



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**GENERAL CONSERVATION NOTES AND SPECIFICATIONS**

INTENT OF CONSERVATION PROGRAM: THE INTENT OF THIS PROGRAM IS TO PREVENT ACCELERATED EROSION OF THE EXPOSED SITE SOILS DURING THE CONSTRUCTION AND PERMANENT LIFE PERIODS OF THE DEVELOPMENT. THE PROGRAM REQUIRES RETENTION OF ALL SEDIMENTS ON THE CONSTRUCTION SITE TO MINIMIZE THE IMPACT OF DEVELOPMENT ON EXISTING STREAMS AND ADJACENT PROPERTY OWNERS. THESE OBJECTIVES WILL BE ACHIEVED BY MINIMIZING THE EXPOSURE TIME OF POTENTIALLY ERODIBLE SOILS TO RAINFALL AND INSTALLATION OF THE TEMPORARY CONSTRUCTION. THE INTENT OF THIS PROGRAM SHOULD BE UNDERSTOOD AND IMPLEMENTED THROUGHOUT THE ENTIRE DEVELOPMENT. THE VARIOUS CONSTRUCTION TRADES SHOULD BE APPRAISED OF THIS PROGRAM AND DIRECTED TO PREVENT UNDUE DISTURBANCE OF PREPARED AND PROTECTED SURFACES.

SURFACE STABILIZATION CRITERIA: ALL DENUDED SOIL SURFACES, INCLUDING SOIL STOCKPILES, ARE SUBJECT TO EROSION AND SHALL BE STABILIZED EITHER TEMPORARILY OR PERMANENTLY, IMMEDIATELY DURING NON-GERMINATION PERIODS. MULCH MUST BE APPLIED AT RECOMMENDED RATES. CRUSHED STONE ON PAYMENT SURFACES IS CONSIDERED ADEQUATE PROTECTION. ALL DISTURBED ZONES AND VEGETATED REGIONS SHALL BE STABILIZED, PREFERABLY WITH A PERMANENT TREATMENT AS FOLLOWS:

**SEEDING & MULCHING SPECIFICATIONS**

LIVE SEED PERCENTAGE SHALL BE 85% OR GREATER

**TEMPORARY:** SEEDING SHALL BE COMMON RYE GRASS APPLIED AT 45 LBS. PER ACRE. LIMING TO BE APPLIED AT 1 TON/ACRE. 50-60 POUNDS OF FERTILIZER TO BE APPLIED AT 1000 LBS/ACRE. HAY OR STRAW MULCH TO BE APPLIED AT 3 TONS/ACRE

**PERMANENT:** SEEDING SHALL BE 15% KENTUCKY BLUEGRASS, 35% KENTUCKY 31 FESCUE, 20% CHERNOMYS FESCUE, 15% PERENNIAL RYE GRASS, AND 10% RECLEANED REDTOP AT A RATE OF 60 LBS. PER ACRE. LIMING TO BE APPLIED AT 3 TONS/ACRE, 10-20-30 FERTILIZER TO BE APPLIED AT 1000 LBS/ACRE. HAY OR STRAW MULCH TO BE APPLIED AT 3 TONS/ACRE.

THE NON-GERMINATING PERIODS ARE BETWEEN 6/15 THROUGH 8/15 AND 9/30 THROUGH 4/15. AREAS DISTURBED DURING THESE PERIODS MUST BE LIMED, FERTILIZED, SEEDED AND MULCHED IMMEDIATELY FOLLOWING EACH OF THESE PERIODS. TOPSOIL TAKEN FROM CONSTRUCTION AREAS SHALL BE SEEDED WITH VEGETATED COVER AND STOCKPILED UNTIL FINISH GRADING. THERE IS TO BE NO EARTH DISTURBANCE OR VEGETATIVE CLEARING IN AREAS OUTSIDE OF THE DELINEATED AREAS TO BE DISTURBED.

**MAINTENANCE PROGRAM FOR TEMPORARY SEDIMENTATION CONTROLS STRUCTURES**

MAINTENANCE OF ALL TEMPORARY SEDIMENTATION CONTROL STRUCTURES SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND AS STATED BELOW:

1. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF THE EFFECTIVE HEIGHT OF COMPOST FILTER SOCKS.
2. SEDIMENT MUST BE REMOVED FROM STOCK FILTERS WHEN COLLECTED SEDIMENT BEGINS TO AFFECT THE FILTER'S FUNCTION.
3. INLET PROTECTION FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT. BAGS MUST 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.
4. SEDIMENT REMOVED FROM THE FACILITIES MAY BE REINCORPORATED INTO THE SITE'S EARTHWORK AS FILL OR TAKEN TO A SAFE, APPROVED LOCATION. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY.

**MAINTENANCE OF TEMPORARY SEDIMENTATION CONTROL STRUCTURES**

MAINTENANCE OF ALL TEMPORARY SEDIMENTATION CONTROL STRUCTURES SHALL BE IN ACCORDANCE WITH THESE PLANS AND THE EROSION AND CONTROL NARRATIVE. INSPECTION AND MAINTENANCE OF ALL FACILITIES SHALL BE MADE AFTER EACH RAIN STORM EVENT AND ON A WEEKLY BASIS.

**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. AREAS OF SEDIMENT DISPOSAL SHALL BE CONSIDERED C.V.A. SILT AND SEDIMENT CATEGORIZED AS CONTAMINATED SHALL BE DISPOSED OF PER THE SOIL MANAGEMENT NOTES.

**DUST CONTROL:**

DUST AND OTHER PARTICULATES 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.

**CRITICAL VEGETATION AREAS (C.V.A.):**

CRITICAL VEGETATION AREAS ARE TO BE GRADED, HYDROSEDED AND MULCHED WITHIN 10 DAYS OF THE BEGINNING OF EXCAVATION. IN GENERAL, CRITICAL VEGETATION AREAS ARE DEFINED AS CUT SLOPES STEEPER THAN 3:1, ALL FILL SLOPES STEEPER THAN 4:1 AND IN ALL DRAINAGE SWALES.

**OTHER BMPs:**

1. SEDIMENT SHALL BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.

**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 UTILIZE PADEF FORM 3150-PH-BIWE0083 DATED FEBRUARY 2012 AND BE KEPT ON SITE AT ALL TIMES AND INCLUDE AT A MINIMUM:

1. A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS
2. THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION

**NON-COMPLIANCE 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 INSPECTION. NON-COMPLIANCE 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 THAT MAY THREATEN POLLUTION.
2. THE PERIOD OF NON-COMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
3. STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENT OF THE NON-COMPLIANCE, AND
4. THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NON-COMPLIANCE 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**

NOT: 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 ACKNOWLEDGMENT FROM THE DEPARTMENT, 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.

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES**

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL (E&S) PLAN. A COPY OF THE APPROVED E&S PLAN (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED E&S PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. 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 E&S PLAN PREPARE, THE PCSM PLAN PREPARE, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OBTAINMENT OF THE PCSM PLAN AND REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING. AT LEAST 3 DAYS PRIOR TO ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AREAS PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
4. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
5. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE REVEGETATED. EACH STOCKPILE SHALL BE STORED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. 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 DELAWARE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
11. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 29 PA. CODE 2801 ET SEQ. 271.1, AND 2021 ET. SEQ. NO BUILDING MATERIALS OR WASTES FROM CONSTRUCTION SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
12. ALL OFF-SITE WASTES, MATERIALS OR WASTES OR UNUSED MATERIALS SHALL BE STORED IN THE MANNER DESCRIBED IN THE DISTRICT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
13. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE OBTAINED BY THE PERMITTEE OR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
14. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER ANY DISTURBED SURFACE.
15. VEHICLES AND EQUIPMENT MAY NEITHER ENTER NOR EXIT DIRECTLY FROM THE PROJECT SITE ONTO WEST LANCASTER AVENUE.
16. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL EROSION AND SEDIMENTATION INSPECTIONS, AND THE DATE, TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST. ALL EROSION AND SEDIMENTATION INSPECTIONS, INCLUDING CLEARING AND GRUBBING, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS TO THOSE INSTALLED WILL BE NEEDED. REPAIRS ARE TO BE MADE IMMEDIATELY TO AVOID POLLUTION AND SEDIMENT POLLUTION. THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:
  - A. THE LOCATION AND SEVERITY OF THE BMPs FAILURE AND ANY POLLUTION EVENTS.
  - B. ALL STEPS TAKEN TO REDUCE, ELIMINATE AND PREVENT RECURRENT OF THE NON-COMPLIANCE.
  - C. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
17. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED. AREAS DISTURBED DURING THEIR REMOVAL OF THE BMPs MUST BE STABILIZED IMMEDIATELY. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE SITE IMMEDIATELY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELLED, OR SWEEP INTO ANY ROADWAY, SURFACE SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. AREAS WHICH ARE TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SURFACE 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.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDING AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETTED ACCORDING TO THE STANDARDS OF THIS PLAN. EROSION CONTROL BLANKET IS REQUIRED TO STABILIZE ALL SLOPES 3:1 AND GREATER. ALL EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S75 OR APPROVED EQUAL. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL OF CONSTRUCTION OF THE E&S BMPs.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN CASE OF RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING IMPOSED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR OR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE DEVELOPER TO ELIMINATE ALL SUCH PROBLEMS. THE DELAWARE COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED BY THE DEVELOPER OF ANY AND ALL CHANGES OR MODIFICATIONS TO THE CONTROL PLAN.
34. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISION OF APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 26, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION SUB PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE II, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
35. THE PROPOSED CONSERVATION MEASURES MUST BE IN COMPLIANCE WITH PADEF CHAPTER 102 REGULATIONS. THE PROJECT'S NEAREST SURFACE WATER IS VALLEY RUN. THE CHAPTER 93 CLASSIFICATION IS C/W/NE - COLD WATER FISHES / MIGRATORY FISHES WATERWAY.
36. UPON THE INSTALLATION OR STABILIZATION OF ALL PERMITTEE SEDIMENT CONTROL BMPs AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.
38. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
39. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE INERT SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREGGED 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, FILL 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-1g AND FP-1b FOUND IN THE DEPARTMENT'S POLICY MANAGEMENT PLAN. 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 BEING FILLED. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS ON THE DEPARTMENT'S WEBSITE. ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: VISUAL INSPECTIONS, REVISIONS INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVISIONS TO THE PLAN, ENVIRONMENTAL QUESTIONNAIRES, ENVIRONMENTAL 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 PROPERTY MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY MANAGEMENT OF FILL.

GENERAL NOTES FOR UTILITY CONSTRUCTION

1. EXCAVATED MATERIAL SHOULD BE STAGED ON THE UPSTREAM SIDE OF A TRENCH.
2. THE DAILY EXTENT OF TRENCHING SHOULD NOT EXCEED WHAT CAN BE BACKFILLED AND STABILIZED IN ONE WORKING DAY.
3. 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.
4. WORK CREWS AND EQUIPMENT FROM TRENCHING, PLACEMENT OF PIPE, AND BACKFILLING WILL BE SELF-CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
7. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.

**ANTICIPATED E&S BMP RELATED CONSTRUCTION WASTES AND DISPOSAL PROCEDURES**

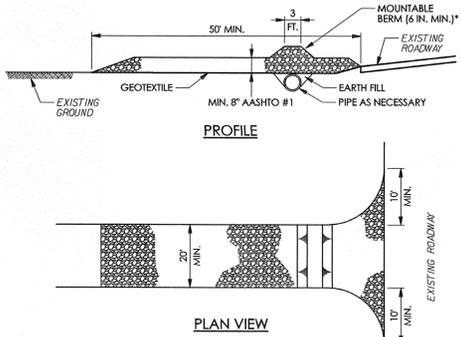
**SEDIMENT**

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. SILT AND SEDIMENT CATEGORIZED AS CONTAMINATED SHALL BE DISPOSED OF PER THE SOIL MANAGEMENT NOTES.

**TRASH & LITTER**

TRASH AND LITTER SHALL BE REMOVED FROM EROSION AND SEDIMENTATION CONTROL BMPs AND DISPOSED OF IN AN APPROPRIATE RECYCLE BIN. CONCRETE WASHWATER SHALL BE DISPOSED OF IN THE LOCATION SHOWN ON-SITE. ONCE WASHWATER IS REMOVED THE HARDENED CONCRETE SHALL BE DISPOSED OF OFF-SITE IN AN APPROVED MANNER.

NOTE: ANY APPLICABLE MATERIAL SHALL BE RECYCLED IN ACCORDANCE TO THE APPROPRIATE REGULATIONS.



\* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

**NOTES:**

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

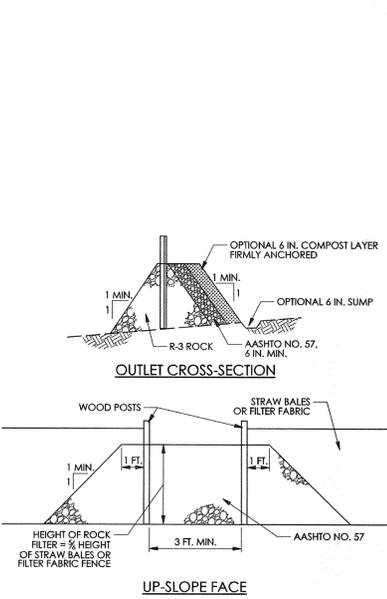
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

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 UNTIL CONDITIONS ARE FAVORABLE TO INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES. SEWERS, DRAINAGE, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**STANDARD CONSTRUCTION DETAIL #3-1  
ROCK CONSTRUCTION ENTRANCE**

NOT TO SCALE



**NOTES:**

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UP-SLOPE FACE IN HG 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

**STANDARD CONSTRUCTION DETAIL #3-16  
PUMPED WATER FILTER BAG**

NOT TO SCALE

**NOTES:**

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 Lb/in
GRAB TENSILE	ASTM D-4437	205 LB
PUNCTURE	ASTM D-4437	205 LB
MULLEN BURST	ASTM D-3786	300 PSI
UV RESISTANCE	ASTM D-4353	80% SEVE
ACQ % RETAINED	ASTM D-4353	80% SEVE

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 FILTER 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-POLLUTIVE MATERIAL SHALL 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 HG 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 INTAKE BAGS 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.

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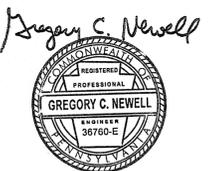
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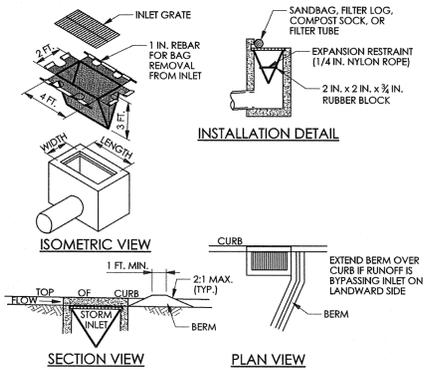




PRELIM. LAND DEVELOPMENT  
SUBMISSION

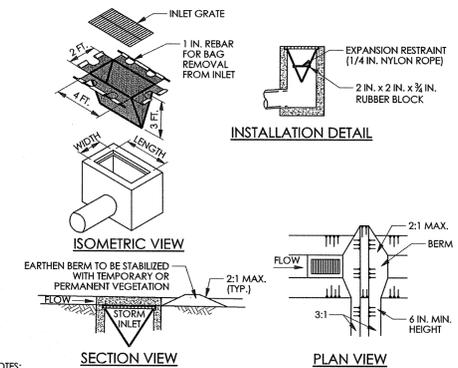
Revision  
Date March 13, 2015  
Title Erosion & Sedimentation  
Control Detail Sheet  
Scale N.T.S.  
Drawn By DWN

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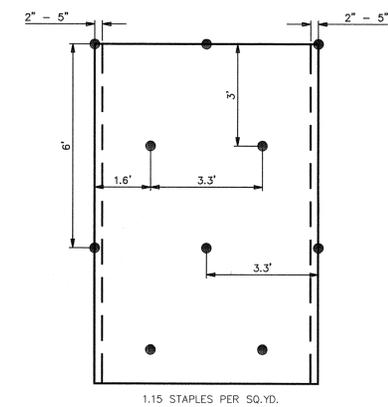
**NOTES:**  
MAXIMUM DRAINAGE AREA = 1/2 ACRE.  
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.  
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY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

**STANDARD CONSTRUCTION DETAIL #4-15**  
**FILTER BAG INLET PROTECTION - TYPE C INLET**  
NOT TO SCALE



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

**STANDARD CONSTRUCTION DETAIL #4-16**  
**FILTER BAG INLET PROTECTION - TYPE M INLET**  
NOT TO SCALE



**EROSION CONTROL BLANKET STAPLE PATTERN**  
NOT TO SCALE

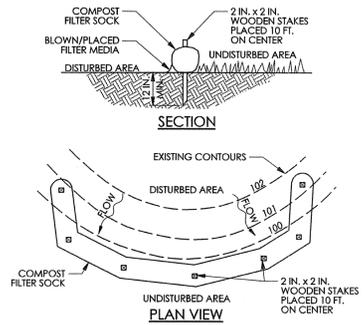
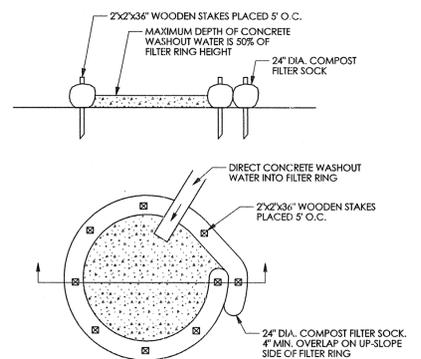
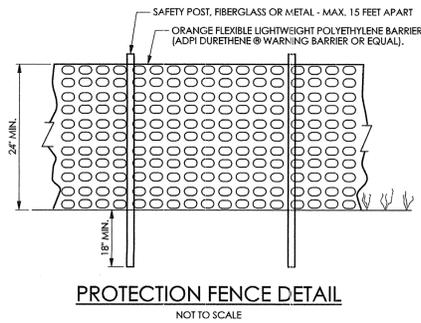


TABLE 4.2 - COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	1.50 - 25.00 (MILLIGRAMS PER GRAM) MAXIMUM

**COMPOST FILTER SOCK MIX SPECIFICATIONS**

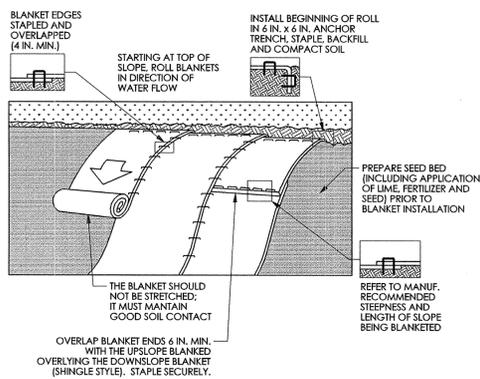
**NOTES:**  
SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.  
COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET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

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



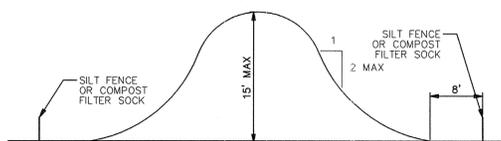
**NOTES:**  
1. A SUITABLE IMPERVIOUS GEO-MEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.  
2. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.  
3. 18" DIAMETER FILTER SOCKS MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.  
4. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.

**CONTROLLED NON-DISCHARGE**  
**CONCRETE WASHOUT**  
NOT TO SCALE

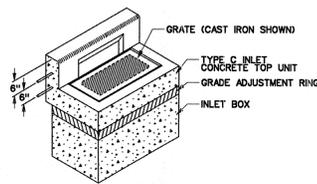


**NOTES:**  
SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.  
PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.  
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLOUDS, STICKS, AND GRASS.  
BLANKET SHALL HAVE GOOD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

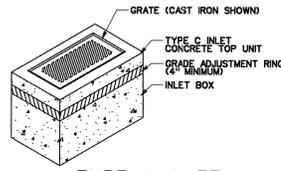
**STANDARD CONSTRUCTION DETAIL #11-1**  
**EROSION CONTROL BLANKET INSTALLATION**  
NOT TO SCALE



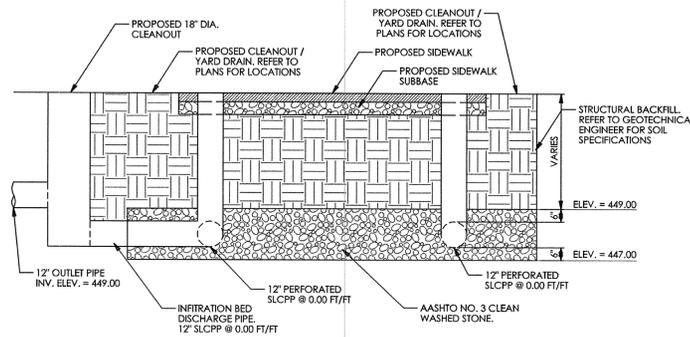
**NOTES:**  
SILT FENCE MUST COMPLETELY ENCLOSE STOCKPILE.  
TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE OR USED AS FILL. TOPSOIL SHALL BE REMOVED FROM THE AREAS OF CONSTRUCTION AND STORED SEPARATELY. THE TOPSOIL SHALL BE STABILIZED TO MINIMIZE EROSION DURING STORAGE. UPON COMPLETION OF CONSTRUCTION,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



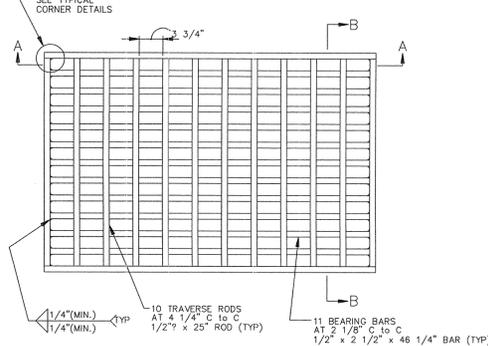
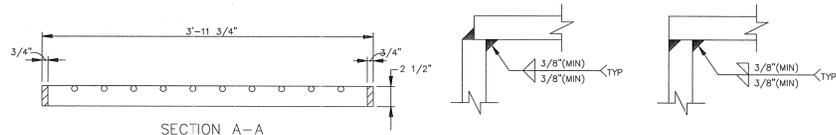
**TYPE C INLET**  
N.T.S. (SEE PENN. D.O.T. RC-34)



**TYPE M INLET**  
N.T.S. (SEE PENN. D.O.T. RC-34)

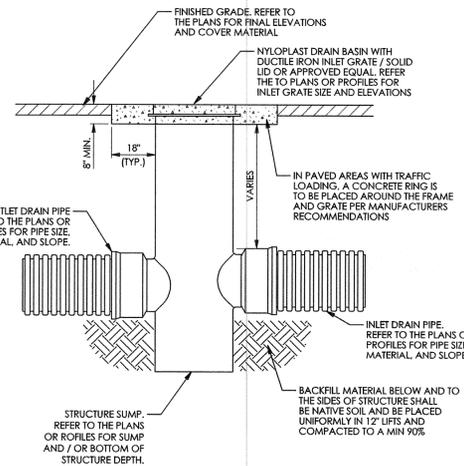


**INFILTRATION TRENCH DETAIL**  
N.T.S.



**BICYCLE SAFE GRATE**  
N.T.S.

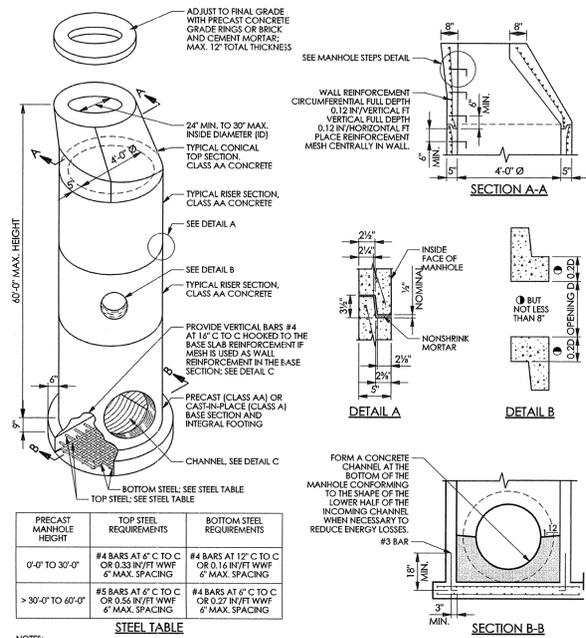
**NOTE:**  
STEEL GRATE TO BE USED IN ROADWAY SUMP AND YARD INLETS ONLY. ALL OTHER INLETS ARE TO HAVE CAST IRON VANE GRATES.



- NOTES:**
- SURFACE DRAINAGE INLETS SHALL INCLUDE THE DRAIN BASIN SIZE AND TYPE AS INDICATED ON THE DRAWINGS. THE DUCTILE IRON GRATES FOR EACH OF THESE FITTINGS ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SURFACE DRAINAGE INLET AND SHALL BE FURNISHED BY THE SAME MANUFACTURER. THE SURFACE DRAINAGE INLETS SHALL BE AS MANUFACTURED BY NYLOPLAST, A DIVISION OF ADVANCED DRAINAGE SYSTEMS, INC., OR PRIOR APPROVED EQUAL.
  - REFER TO MANUFACTURER'S MATERIAL AND PRODUCT INSTALLATION SPECIFICATIONS FOR ALL BASIN, GRATE, AND BACKFILL MATERIAL SPECIFICATIONS.
  - ALL PIPING JOINTS ON SITE ARE TO BE WATER TIGHT.

**NYLOPLAST DRAIN BASIN / CLEANOUT**

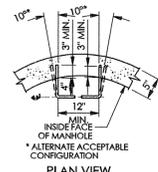
N.T.S.



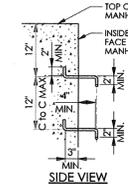
PRECAST MANHOLE HEIGHT	TOP STEEL REQUIREMENTS	BOTTOM STEEL REQUIREMENTS
0'-0" TO 3'-0"	#4 BARS AT 6" C TO C OR 0.33 IN/FT WWF 6" MAX. SPACING	#4 BARS AT 12" C TO C OR 0.18 IN/FT WWF 6" MAX. SPACING
> 3'-0" TO 6'-0"	#5 BARS AT 6" C TO C OR 0.56 IN/FT WWF 6" MAX. SPACING	#4 BARS AT 6" C TO C OR 0.27 IN/FT WWF 6" MAX. SPACING

- NOTES:**
- CAST-IN-PLACE MANHOLES, MEETING THE REQUIREMENTS OF PUB. 408, SEC. 714, AND PENNDOT RC-39A, MAY BE SUBSTITUTED FOR PRECAST MANHOLES.
  - PROVIDE WELDED WIRE FABRIC MEETING THE REQUIREMENTS OF PUB. 408, SEC. 709.3.
  - PROVIDE 12" MINIMUM HORIZONTAL CLEARANCE BETWEEN OPENINGS LOCATED AT THE SAME DEPTH. LOCATE PIPES NOT AT THE SAME DEPTH VERTICALLY AT LEAST ONE HALF THE MAXIMUM OPENING DIAMETER APART.
  - ALL PRECAST REINFORCED CONCRETE CIRCULAR MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478M.

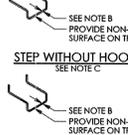
**STANDARD PRECAST MANHOLE**  
FOR PIPES 30" INSIDE DIAMETER AND LESS.  
N.T.S. (SEE PENNDOT RC-39A)



**PLAN VIEW**



**SIDE VIEW**



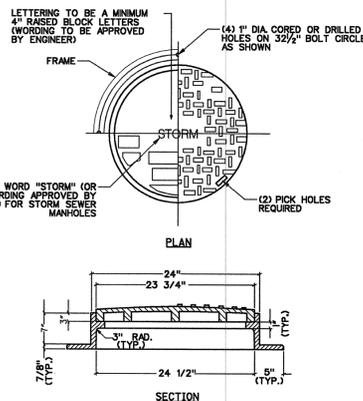
**STEP WITHOUT HOOKS**



**STEP WITH HOOKS**

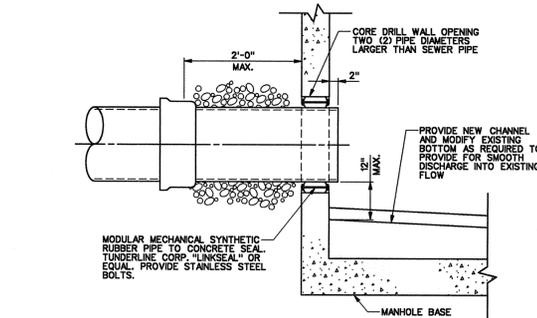
- MANHOLE STEPS NOTES:**
- PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 602.2(C). ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.
  - PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MINIMUM 3/2" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.
  - MECHANICAL ANCHOR REQUIRED FOR INSTALLATION OF STEPS WITHOUT HOOKS.

**TYPICAL STEP CONFIGURATION - MANHOLE STEPS**  
SEE NOTE A

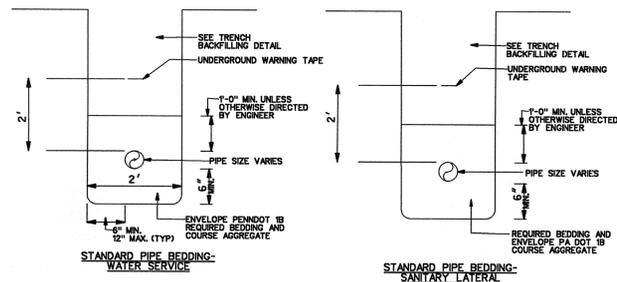


**HEAVY DUTY CAST IRON MANHOLE FRAME AND SELF-SEALING COVER**

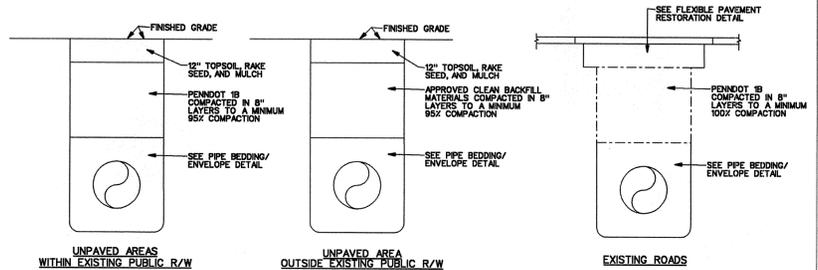
N.T.S.



**PIPE CONNECTION TO AN EXISTING MANHOLE**  
N.T.S.



**PIPE BEDDING/ENVELOPE DETAIL**  
N.T.S.



- NOTES:**
- TRENCH COMPACTION TO BE TESTED, AT THE CONTRACTOR'S EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408.
  - CLEAN FILL MUST BE APPROVED BY THE CITY'S ENGINEER PRIOR TO PLACEMENT IN THE TRENCH.
  - AREAS AROUND MANHOLES AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE CITY'S ENGINEER.

**TRENCH BACKFILL**  
N.T.S.

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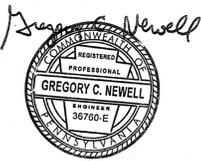
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**PRELIM. LAND DEVELOPMENT  
SUBMISSION**

Revision  
Date March 13, 2015  
Title Construction Detail Sheet  
Scale N.T.S.  
Drawn By MMB

**C6.1**

Sheet No. 11 of 20

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.

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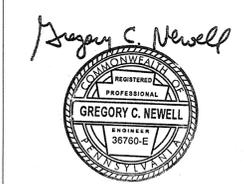
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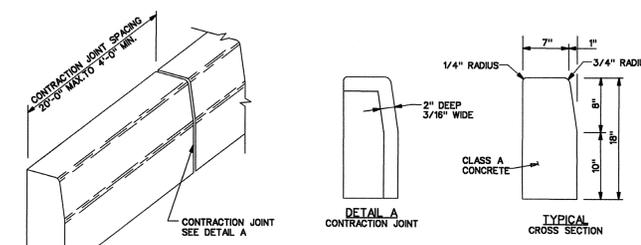


## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
 Date March 13, 2015  
 Title Construction Detail Sheet  
 Scale N.T.S.  
 Drawn By MMB

# C6.2

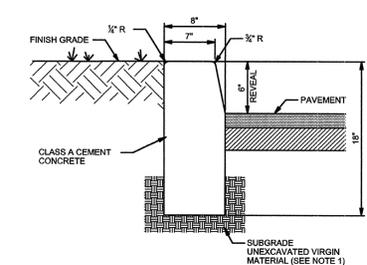
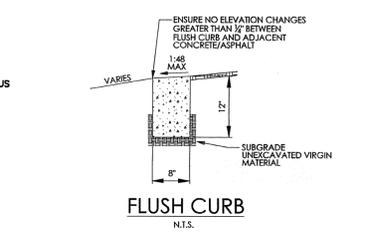
Sheet No. 12 of 20  
 Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.



- NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 830 FOR PLAN CONCRETE CURB AND DEPRESSED CURB, SECTION 840 FOR PLAN CONCRETE CURB AND FOR PLAN CONCRETE CURB GUTTER.
  2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
  3. PLACE 3/4" WASH PREMOULDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. FILLER MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
  4. SEE RC-80 FOR PLAN CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURES.

### PLAIN CONCRETE CURB LANCASTER AVENUE EXPANSION

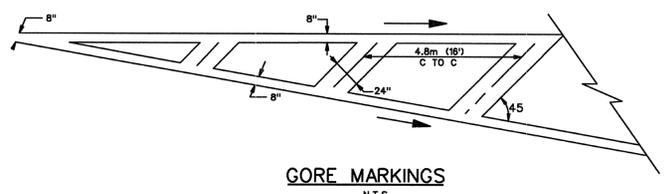
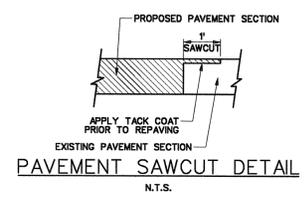
N.T.S. - REFER TO PENNDOT PUB. 72, RC-64 FOR NOTES AND DETAILS.



- NOTES:
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH 1/2" CLEAN CRUSHED STONE. ALL SUBGRADES SHALL BE APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO POURING.
  2. EXPANSION JOINTS SHALL BE PROVIDED AT EQUAL DISTANCES OF NOT MORE THAN 20' AND AT ALL STORM SEWER INLETS. JOINTS SHALL BE FILLED WITH PREFORMED EXPANSION JOINT FILLER 1/2" THICK, CONFORMING TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. CONTRACTION JOINTS SHALL BE PROVIDED EVERY 10'. THE JOINT SHALL BE RECESSED 1/2" FROM THE TOP AND FRONT OF THE CONCRETE CURB.
  3. CURB SHALL BE TEMPORARILY BACKFILLED TO FINISHED GRADE WITH SOIL BEHIND AND STONE ON THE ROAD SIDE AS SOON AS IT HAS ATTAINED SUFFICIENT SUPPORTING STRENGTH OR WITHIN 24 HOURS OF POURING (WHICHEVER IS LESS).
  4. WHEN NEW CURB IS INSTALLED ALONG AN EXISTING PAVED AREA, THE EXISTING PAVEMENT SHALL BE CUT 2 FEET IN FRONT OF THE NEW CURB FACE IN A STRAIGHT LINE AT A 45 DEGREE ANGLE WITH A CUTTING WHEEL OR PNEUMATIC HAMMER. THE NEW PAVEMENT SHALL BE TACKED AND BUTTED TO THE EXISTING PAVEMENT, IN ACCORDANCE WITH PAVEMENT WIDENING DETAIL.
  5. THE GENERAL CONTRACTOR OR OWNER IS RESPONSIBLE FOR MAINTAINING ALL CURB UNTIL FORMALLY ACCEPTED BY THE TOWNSHIP. ALL CURB THAT IS BROKEN, CRACKED, OR OUT OF ALIGNMENT SHALL BE REPLACED PRIOR TO FINAL PAVING AND/OR ACCEPTANCE. CURB REPLACEMENT SHALL BE FROM EXPANSION JOINT TO EXPANSION JOINT ONLY.

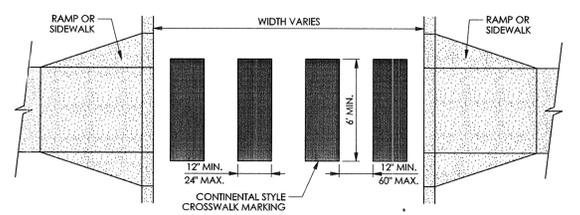
### ONSITE CONCRETE CURB

N.T.S.



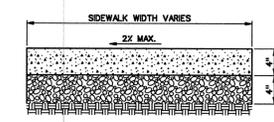
### GORE MARKINGS

N.T.S.



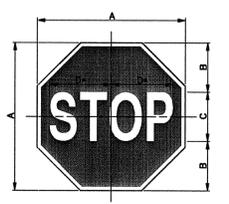
### CROSSWALK DETAIL

N.T.S.



### TYPICAL SIDEWALK DETAIL

N.T.S.



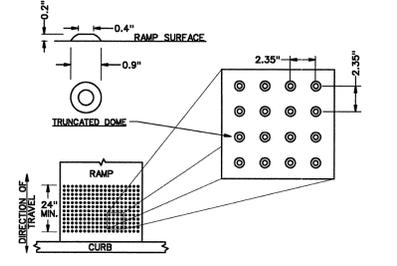
COLOR: LEGEND AND BORDER - WHITE (REFLECTORIZED) BACKGROUND - RED (REFLECTORIZED)

SIGN SIZE	DIMENSIONS (IN)	DOOR	BLANK	
A x B	A x B	C	DER. STO	
24 x 24	8	10	0.6	B1-24
30 x 30	10	12.6	0.8	B1-30
36 x 36	12	15	0.8	B1-36
48 x 48	16	20	1.2	B1-48

\* Reduce spacing 40%

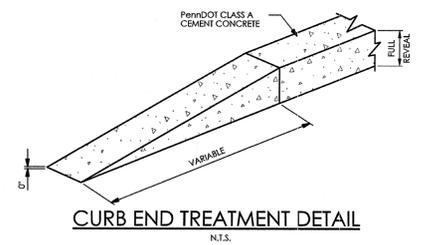
### STOP SIGN (R1-1)

N.T.S. (REFER TO PENNDOT PUB. 236)



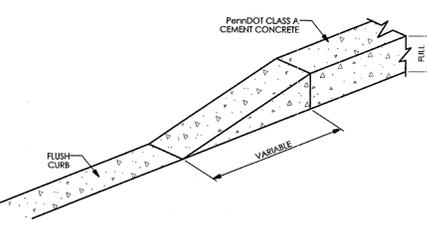
### DETECTABLE WARNING SURFACE FOR ACCESSIBLE ROUTES

N.T.S.



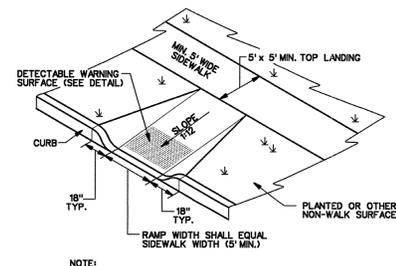
### CURB END TREATMENT DETAIL

N.T.S.



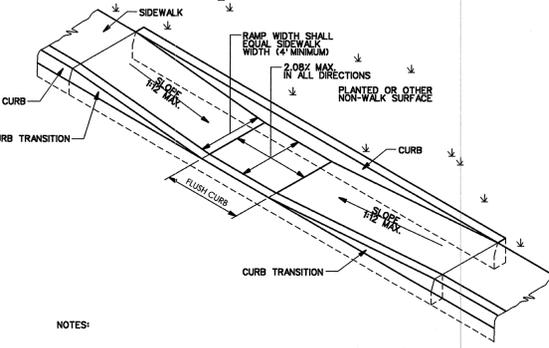
### CURB TRANSITION DETAIL

N.T.S.



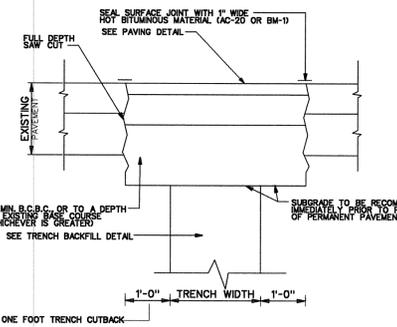
### PA TYPE-4 HANDICAP RAMP DETAIL

N.T.S.



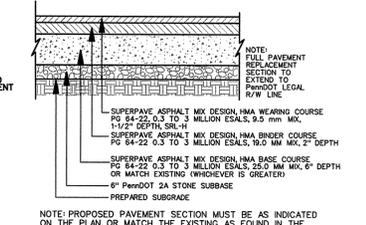
### PA TYPE-2 HANDICAP RAMP DETAIL

N.T.S.



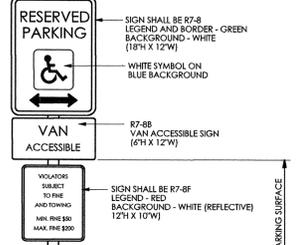
### FLEXIBLE PAVEMENT RESTORATION

N.T.S.



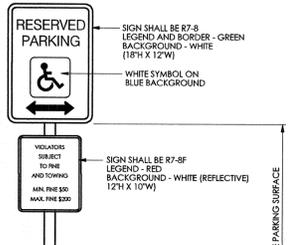
### FULL PAVEMENT REPLACEMENT SUPERPAVE PAVEMENT SECTION

N.T.S.



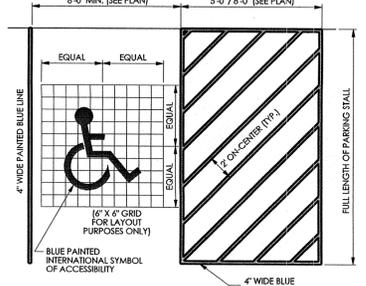
### VAN ACCESSIBLE PARKING SIGN

N.T.S.



### ACCESSIBLE PARKING SIGN

N.T.S.



### ADA PARKING STALL STRIPING

N.T.S.



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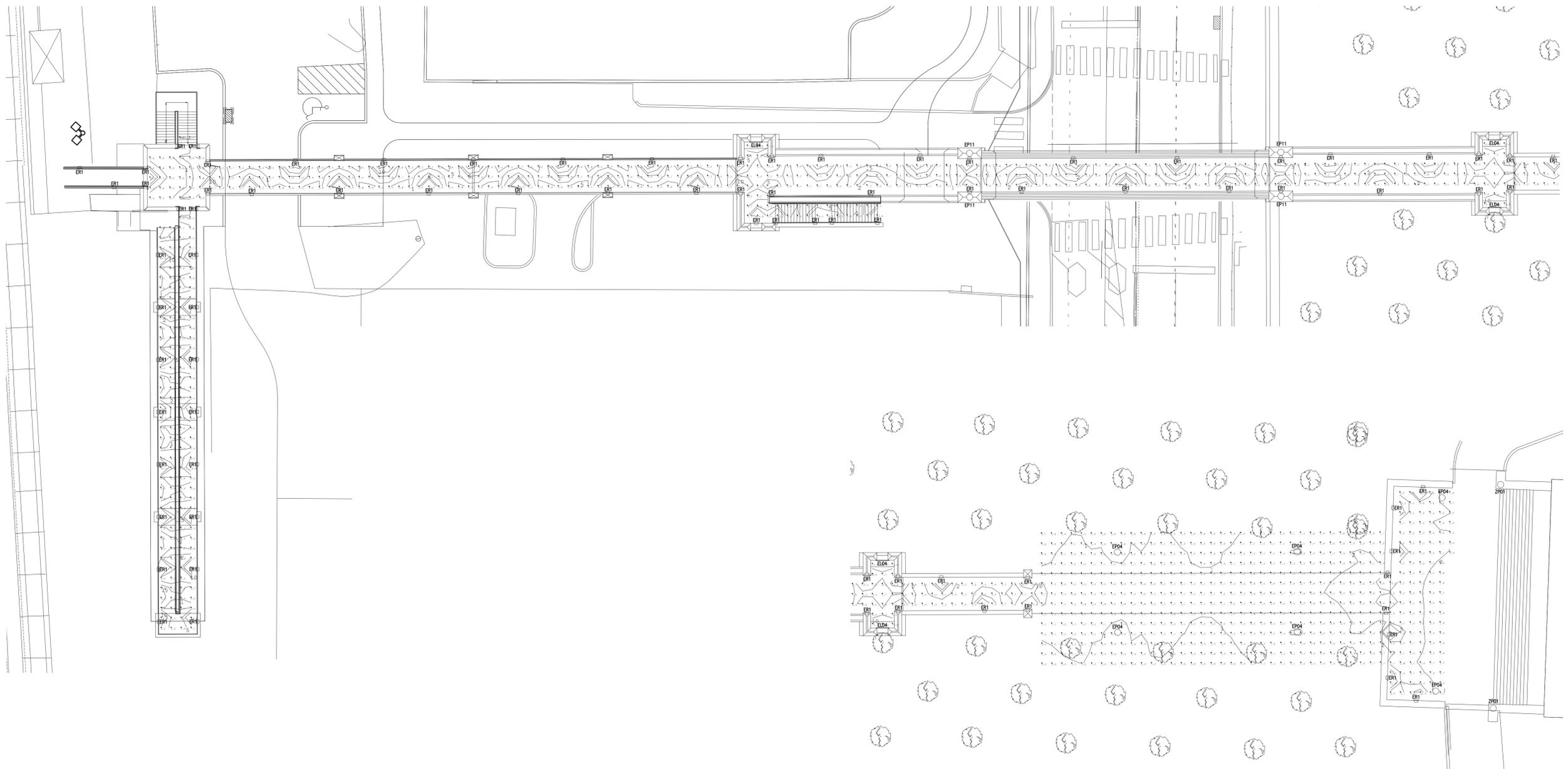
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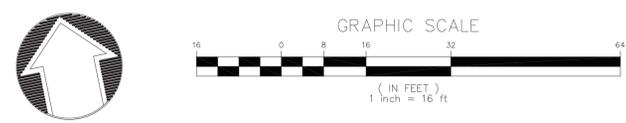
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Please note: existing church facade flood lights to be removed during construction and re-installed after construction is completed.

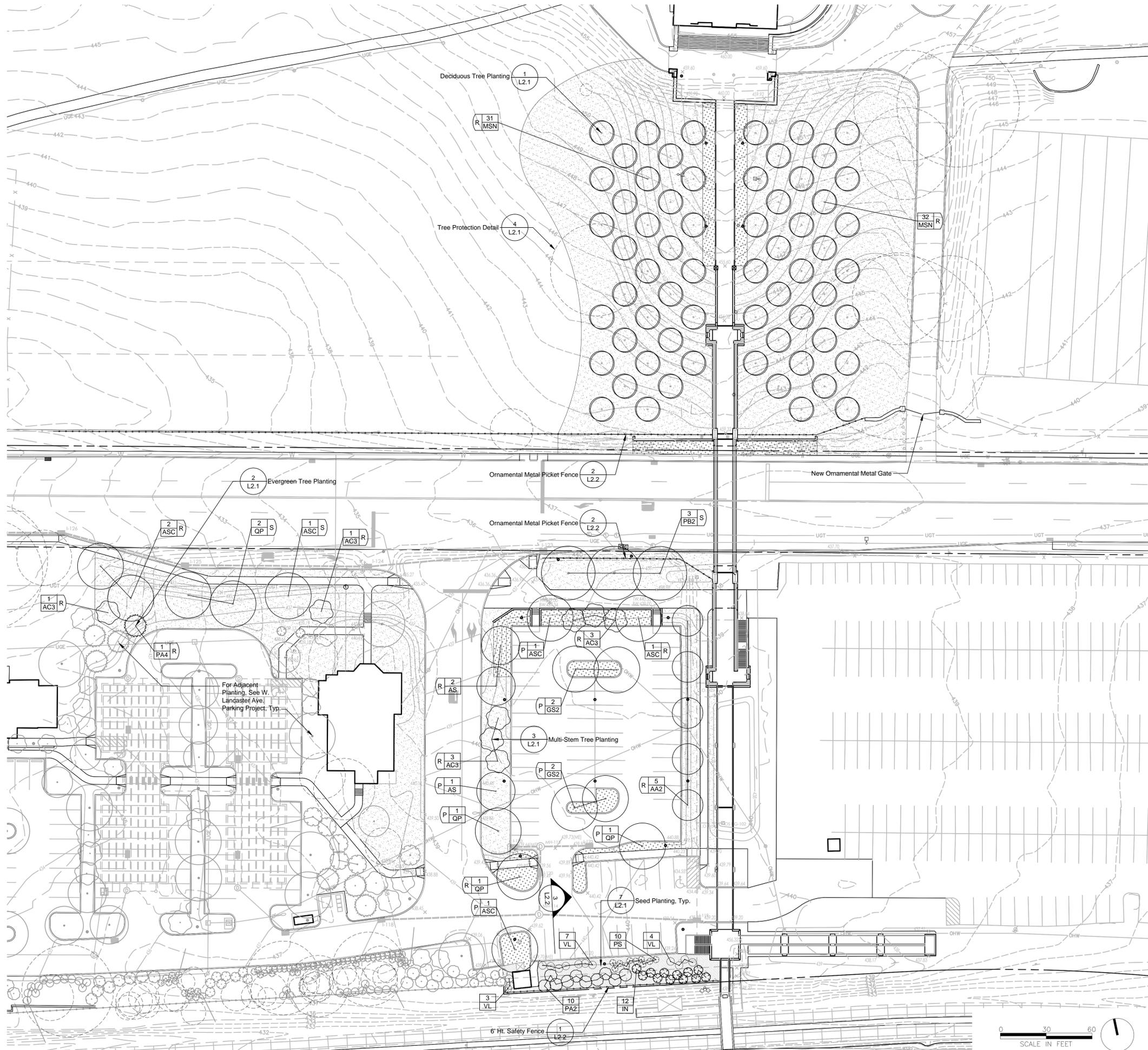


PRELIM. LAND DEVELOPMENT  
 SUBMISSION - NOT FOR  
 CONSTRUCTION  
 Revision  
 Date March 13, 2015  
 Title Site Lighting Plan  
 Bridge level  
 Scale 1" = 16'  
 Drawn By JO/JL



**C7.2**





- Legend**
- 2  
AS S Street Trees
  - 2  
AS R Replacement Trees
  - 2  
AS P Parking Lot Trees
  - Lawn
  - Planting Beds
  - "No Mow" Seed Mix
  - Pole Light: See Lighting Plans and Details
  - Fence

**Notes:**  
 1. See Site Plans for all proposed paving information.

Villanova University  
 Church Walk and Bridge  
 Lancaster and Ithan Avenues  
 Villanova PA 19085

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Joseph Sikora  
 P.A.L.A. # LA002630

PRELIM. LAND DEVELOPMENT  
 SUBMISSION

Revision  
 Date March 13, 2015  
 Title Planting Plan  
 Scale 1" = 30'-0"  
 Drawn By RM

# L1.0

Sheet No. 16 of 20

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.



For Adjacent Planting in the Aldwyn Triangle, See Lancaster Avenue Housing Project, Typ.

- Legend**
- 2  
AS S Street Trees
  - 2  
AS R Replacement Trees
  - 2  
AS P Parking Lot Trees
  - Lawn
  - Planting Beds
  - "No Mow" Seed Mix
  - Pole Light; See Lighting Plans and Details
  - Fence

- Notes:**
1. See Site Plans for all proposed paving information.

Note: Minimize disturbance to existing groundcover; repair as required after tree planting.

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Joseph Sikora  
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PRELIM. LAND DEVELOPMENT  
SUBMISSION

Revision	
Date	March 13, 2015
Title	Planting Plan at Aldwyn Triangle
Scale	1" = 30'-0"
Drawn By	RM

# L1.1

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.



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## PRELIM. LAND DEVELOPMENT SUBMISSION

Revision  
Date March 13, 2015  
Title Planting Schedule  
and Tabulations  
Scale As Indicated  
Drawn By RM

# L2.0

Sheet No. 18 of 20

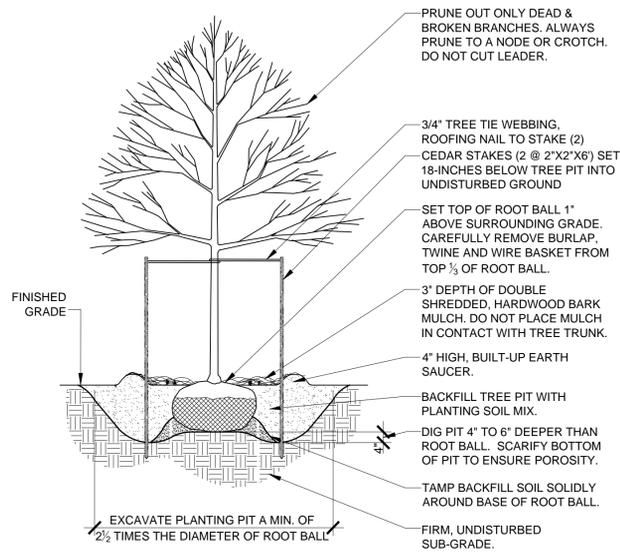
Contractor to verify all dimensions in field and inform  
Architect of any discrepancies before starting work.

TREE REQUIREMENT TABLE		
	REQUIRED	PROPOSED
<b>STREET TREES</b>		
LANCASTER AVENUE (South Side Only) = 164' FT. SECTION 255-38.B. - INTERVALS OF NOT MORE THAN 30 FEET	164/30' = 5 TREES	5 TREES
<b>BUFFER SCREENS</b>		
SOUTHERN PROPERTY LINE ADJACENT TO R-100 TRAIN RIGHT OF WAY SECTION 255-42 CLASS 'B' BUFFER SCREEN OPTION SELECTED: (1) EVERGREEN PER 15 FEET (INFORMALLY ARRANGED) PLUS; (1) EVERGREEN SHRUB PER 8 FEET (INFORMALLY ARRANGED)	142/15' = 9 EVERGREEN TREES 142/8' = 18 EVERGREEN SHRUBS	22 EVERGREEN TREES 24 EVERGREEN SHRUBS
<b>REPLACEMENT TREES</b>		
6 TO 18 INCH DBH REMOVED = (1) REPLACEMENT TREE 19 TO 29 INCH DBH REMOVED = (3) REPLACEMENT TREES** 30 INCH DBH OR GREATER REMOVED = (6) REPLACEMENT TREES***	(84) REMOVALS @ 6 TO 18 INCH = 84 REPLACEMENTS (4) REMOVALS @ 19 TO 29 INCH = (4) x 3 = 12 REPLACEMENTS (5) REMOVALS @ 30 INCH+ = (5) x 6 = 30 REPLACEMENTS TOTAL REPLACEMENT TREES REQUIRED = 126 TREES	LARGE CANOPY TREES = 45 TREES ORNAMENTAL TREES = 83 TREES EVERGREEN TREES = 1 TREES TOTAL TREES PROPOSED = 129 TREES (INCLUDES 27 LARGE CANOPY TREES AND 5 ORNAMENTAL TREES AT ALDWIN TRIANGLE - SEE SHEET L1.1 FOR LOCATIONS; 7 LARGE CANOPY TREES AND 7 ORNAMENTAL TREES AT PIKE GARAGE - SEE PIKE FIELD GARAGE PROJECT FOR LOCATIONS)
<b>PARKING LOT</b>		
SECTION 255-29.B. - (1) ONE TREE FOR EVERY FIVE PARKING SPACES IN SINGLE BAYS AND ONE TREE FOR EVERY TEN PARKING SPACES IN DOUBLE BAYS	19 SINGLE BAY SPACES/ 5 = 3.8 TREES 48 DOUBLE BAY SPACES/ 10 = 4.8 TREES TOTAL PARKING LOT TREES REQUIRED = 9 TREES	9 TREES
** TWO BEING LARGE CANOPY TREES *** FOUR BEING LARGE CANOPY TREES		

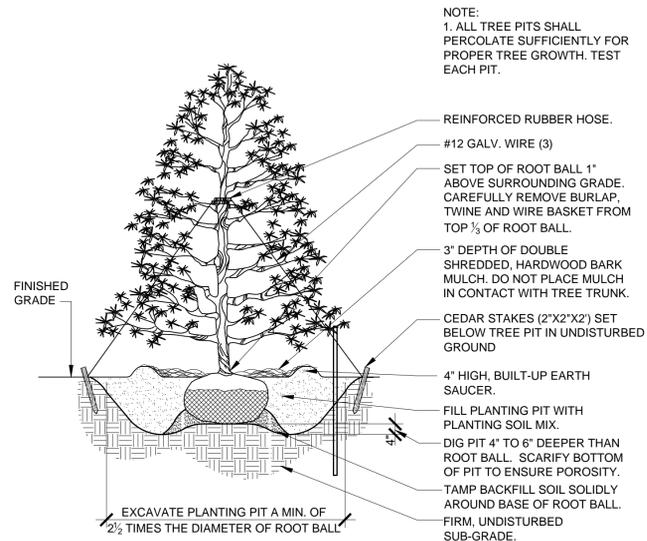
### NOTES:

1. QUANTITY, AND ARRANGEMENT OF PLANT MATERIAL WITHIN BUFFER SCREEN WILL PRODUCE A VISUAL SCREEN NOT TO BE SEEN THROUGH AND PROVIDE IMMEDIATE VISUAL SCREENING TO THE ABUTTING PROPERTY OR DISTRICT AS PER SECTION 280-71.A. OF THE TOWNSHIP ZONING ORDINANCE.

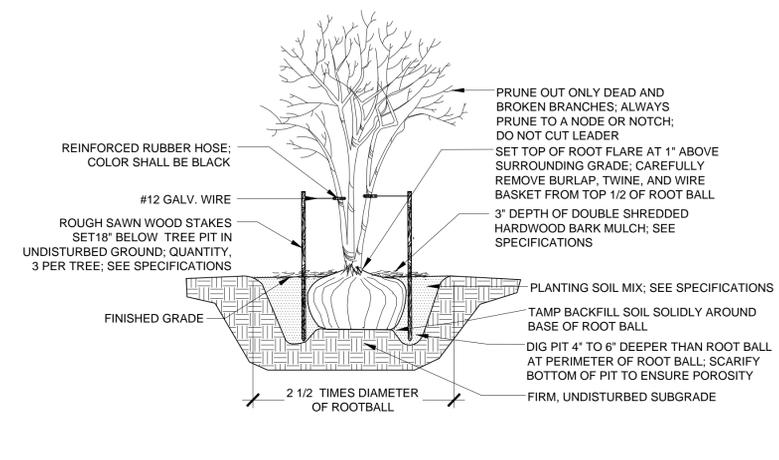
PLANT SCHEDULE							
CANOPY TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	REMARKS
AA2	5	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE	B & B	2 1/2" - 3"		MATCHED SPECIMENS
AS	7	ACER RUBRUM 'SOMERSET'	SOMERSET RED MAPLE	B & B	2" - 2 1/2"		
ASC	7	ACER SACCHARUM 'COMMEMORATION'	COMMEMORATION SUGAR MAPLE	B & B	2"-2-1/2"		
GS2	4	GLEDITSIA TRIACANTHOS 'SKYLINE'	SKYLINE HONEY LOCUST	B & B	2 1/2" - 3"		MATCHED SPECIMENS; FULL HEAD
LR	3	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' TM	ROUND-LOBED SWEET GUM	B & B	2 1/2" - 3"		MATCHED SPECIMENS; FULL HEAD
NS	5	NYSSA SYLVATICA	SOUR GUM	B & B	2" - 2 1/2"		SPECIMEN QUALITY
PB2	3	PLATANUS X ACERIFOLIA 'BLOODGOOD'	LONDON PLANE TREE	B & B	2 1/2" - 3"		MATCHED; SPECIMEN QUALITY
QA	6	QUERCUS ALBA	WHITE OAK	B & B	2"-2-1/2"		SPECIMEN QUALITY
QP	8	QUERCUS PHELLOS	WILLOW OAK	B & B	2"-2-1/2"		
TD3	5	TAXODIUM DISTICHUM	BALD CYPRESS	B & B	2" - 2 1/2"		
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	REMARKS
IN	12	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	B & B		8'-10' HT.	SPECIMENS; FULL TO GROUND; 6' MAX. O.C. SPACING IN BUFFER
PA2	10	PICEA ABIES	NORWAY SPRUCE	B & B		8'-10' HT.	SPECIMENS; FULL TO GROUND; 8' MAX. O.C. SPACING
PA4	1	PICEA ORIENTALIS 'AUREA'	SPRUCE	B & B		8'-10' HT.	
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	REMARKS
AC3	11	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY MULTI-TRUNK	B & B		8'-10' HT.	FULL SPECIMENS; MIN. 5 STEMS
CP	2	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	B & B	2" - 2 1/2"		
MSN	63	MALUS X 'SNOWDRIFT'	SNOWDRIFT CRAB APPLE	B & B	2" - 2 1/2"		
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE		REMARKS
PS	10	PRUNUS LAUROCERASUS 'SCHIPKAENSIS'	SCHIPKA LAUREL	B & B	3' - 4' HT.		DENSE, FULL PLANTS; 4' MAX. O.C. SPACING
VL	14	VIBURNUM RHYTIDOPHYLLUM	LEATHERLEAF VIBURNUM	B & B	5'-6' HT.		DENSE, FULL PLANTS; 5' MAX. O.C. SPACING



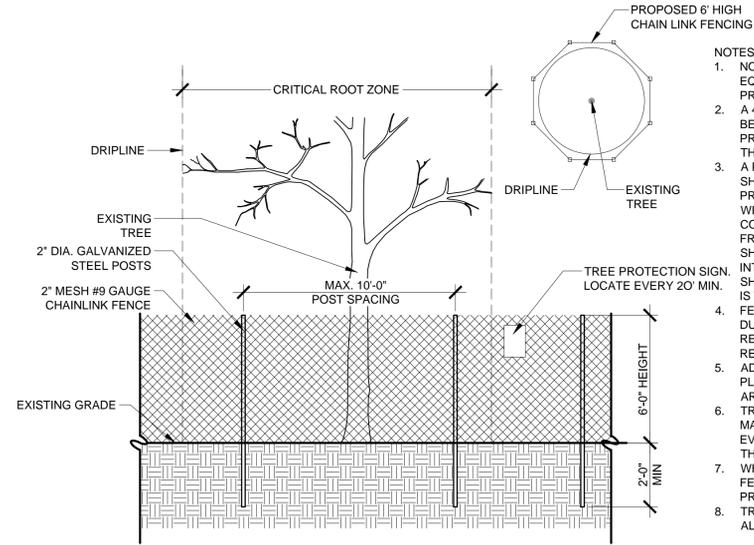
**1** Deciduous Tree Planting  
L2.1 N.T.S.



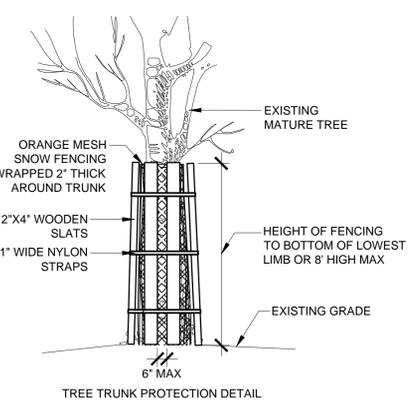
**2** Evergreen Tree Planting  
L2.1 N.T.S.



**3** Multi-Stem Tree Planting  
L2.1 Scale: 0 1' 2' 4' Scale: 1/2"=1'-0"

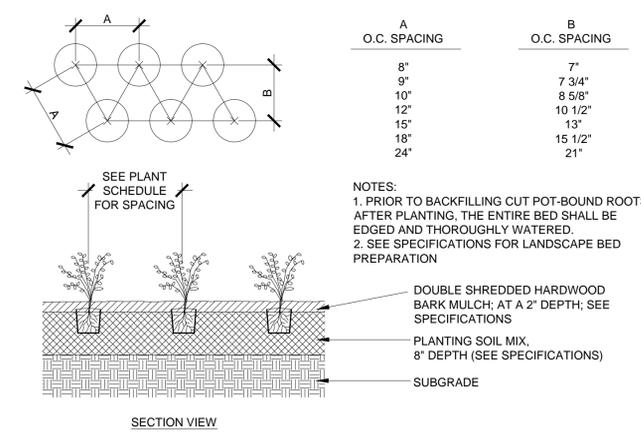


- NOTES:
1. NO STORAGE OF MATERIALS OR OPERATION OF EQUIPMENT SHALL BE PERMITTED WITHIN TREE PROTECTION FENCING.
  2. A 4" LAYER OF COARSE MULCH OR WOODCHIPS IS TO BE PLACED BENEATH THE DRIPLINE OF THE PROTECTED TREES. MULCH IS TO BE KEPT 12" FROM THE TRUNK.
  3. A PROTECTIVE BARRIER OF 6' CHAIN LINK FENCING SHALL BE INSTALLED AROUND THE DRIPLINE OF THE 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 (TPVZ).
  4. FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE WORK AT THE SITE OR UNTIL REMOVAL IS APPROVED BY OWNERS REPRESENTATIVE.
  5. ADDITIONAL WARNING SIGNS SHOULD ALSO BE PLACED ON THE FENCING AND IN APPROPRIATE AREAS NEAR THE WORK ZONE.
  6. TREE PROTECTION FENCE SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR AT THE END OF EVERY DAY FOR THE DURATION OF THE PROJECT. THE FENCE SHALL BE REPAIRED WHERE NECESSARY.
  7. WHERE FENCE MUST BE LOCATED WITHIN FIVE(S) FEET OF EXISTING TREE TRUNK, THE TRUNK PROTECTION DETAIL SHALL ALSO BE USED.
  8. TREE PROTECTION MEASURES SHALL COMPLY WITH ALL TOWNSHIP REGULATIONS AND ORDINANCES.

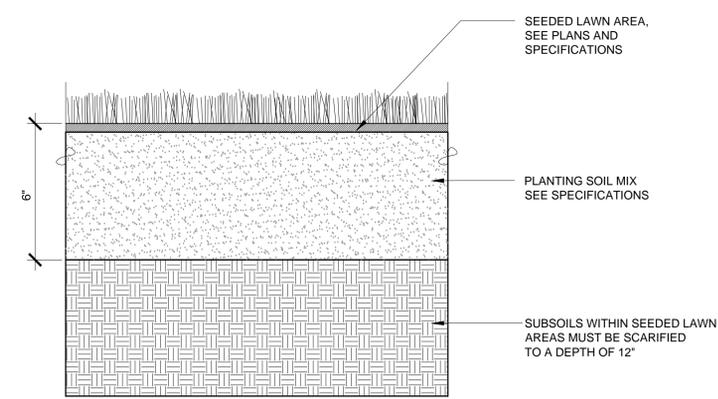


**5** Shrub Planting  
L2.1 Scale: 0 1' 2' 4' Scale: 1/2"=1'-0"

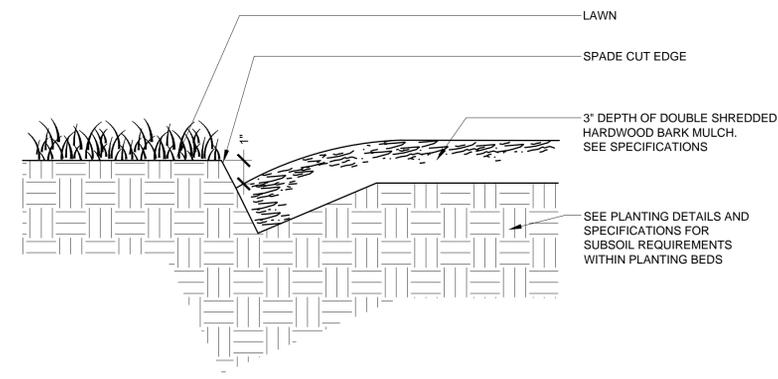
**4** Tree Protection Detail  
L2.1 Scale: 0 2' 4' 8' Scale: 1/4"=1'-0"



**6** Groundcover Planting  
L2.1 N.T.S.



**7** Seed Planting  
L2.1 N.T.S.



**8** Spade Edge  
L2.1 N.T.S.



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PRELIM. LAND DEVELOPMENT  
SUBMISSION

Revision  
Date March 13, 2015  
Title Landscape Details

Scale As Indicated  
Drawn By DF

**L2.1**

Sheet No. 19 of 20

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.

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## PRELIM. LAND DEVELOPMENT SUBMISSION

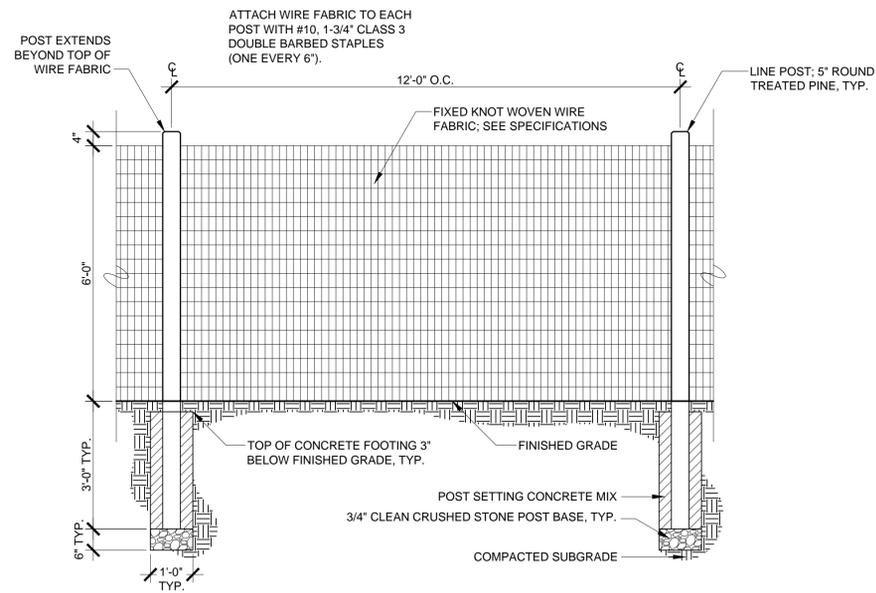
Revision  
 Date March 13, 2015  
 Title Landscape Details

Scale As Indicated  
 Drawn By RM

# L2.2

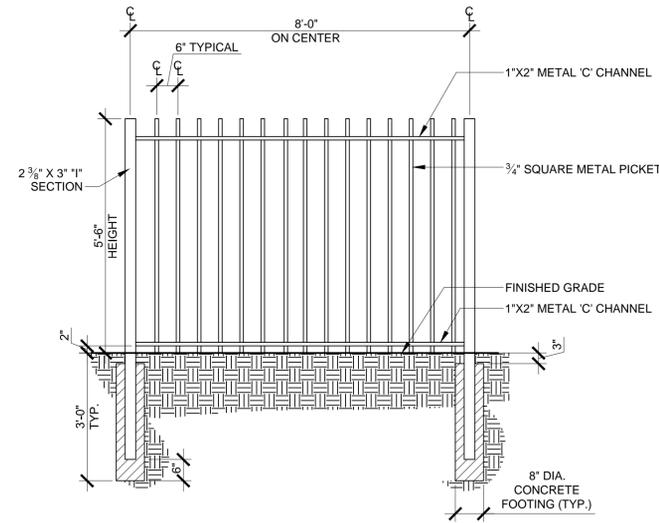
Sheet No. 20 of 20

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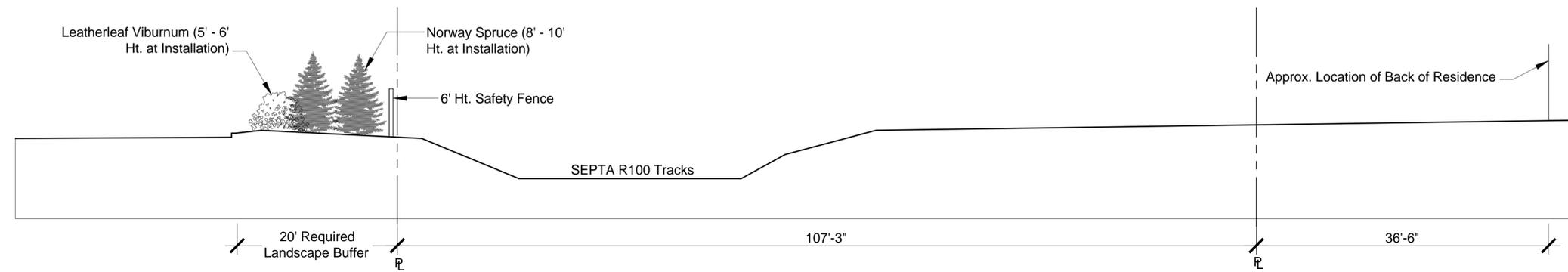
**1** 6' Ht. Safety Fence

L2.2 Scale: 0 1' 2' 4' Scale: 1/2"=1'-0"



**2** Ornamental Metal Picket Fence

L2.2 Scale: 0 1' 2' 4' Scale: 1/2"=1'-0"



**3** Section 01

L2.2 Scale: 0 4' 8' 16' Scale: 1/8"=1'-0"