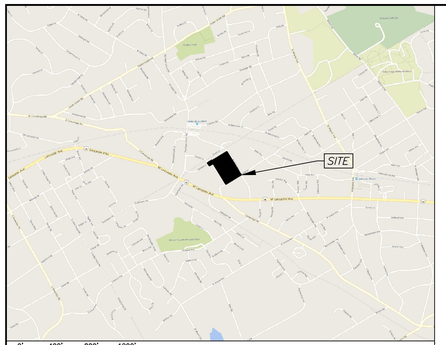
208 & 228 STRAFFORD AVENUE
18 FORREST LANE

CONDITIONAL USE AND
PRELIMINARY LAND DEVELOPMENT PLAN SET



0' 400' 800' 1200'
Map Scale: 1" = 800'-0"
LOCATION MAP

ADJOINING PROPERTIES (LANDS N/F)

1. VILLAGE ASSOCIATES, 503 W LANCASTER AVE, 36-11-316
2. HAMILTON S MATTHEWS V JR & MIRABELLO FRACIS J & ETAL, 22 FORREST LANE, 36-11-339
3. HAMILTON S MATTHEWS V JR & MIRABELLO FRACIS J & ETAL, 142 FAIRFIELD LANE, 36-11-338
4. OCONNOR CONSTANCE M & IZZO PETER J, 11 FAIRFIELD LANE, 36-11-337
5. SCHUDA JOSEPH M & FRANCES E, 14 FORREST LANE, 36-11-341
6. CHAWLA GAGAN & CHAWLA SANNU, 21 GRANT LANE, 36-11-342
7. JOHNSTON ALFRED J III & JOHNSTON GLORIA ROMEIKA, 17 GRANT LANE, 36-11-343
8. MORRISSEY CAREN E, MORRISSEY WILLIAM L JR, 13 GRANT LANE, 36-11-344
9. SCHERI STEVEN W & MEGAN G, 9 GRANT LANE, 36-11-345
10. MAHONEY JOHN J III & MARY ANN, 5 GRANT LANE, 36-11-346
11. THE TRUSTEES REVOCABLE TRUST C/O HAMILTON REVOCABLE TRUST, 235 STRAFFORD AVE, 36-11-353
12. GRAY JEREMY P & CONTRERAS TERESA PAOLA ZARATE, 231 STRAFFORD AVE, 36-11-352
13. BROOKS JOHN W & KATHRYN R, 227 STRAFFORD AVENUE, 36-11-351
14. THOMASON ROBERT I & THOMASON TRAUDI, 211 STRAFFORD AVENUE, 36-11-350
15. HAMILTON DORRANCE H ETAL TRSTEES REVOCABLE TRUST, 205 STRAFFORD AVE, 36-11-349:001
16. SATTERFIELD DAVID & MORRISSEY MARY ANNE, 207 STRAFFORD AVE, 36-11-349:002
17. ANUJEET & TARA SAREEN, 205 STRAFFORD AVE, 36-11-349
18. ALAN J SILVER, 201 STRAFFORD AVE, 36-11-349:003
19. FUCHS JR JOHN O C/O THE STRAFFORD OFFICE BLDG, 125 0175 STRAFFORD AVE, 36-12-263
20. FUCHS O JOHN, 200 EAGLE RD, 36-11-314

MAP SHOWING FEATURES WITHIN 300' OF PROPERTY LINE

GRAPHIC SCALE 1"=200'
200 0 200 400 600

DRAWING SCHEDULE

1. COVER SHEET
2. EXISTING CONDITIONS PLAN
3. DEMOLITION PLAN
4. RECORD PLAN
5. POST CONSTRUCTION STORMWATER PLAN
6. DURING CONSTRUCTION E&S
7. PCSM DETAILS
8. CONSTRUCTION DETAILS
9. E&S DETAILS
10. PROFILES
11. PROFILES
12. LP-1 LANDSCAPE PLAN
13. LP-2 LANDSCAPE DETAILS
14. LI-1 LIGHTING PLANS
15. LI-2 LIGHTING DETAILS

CIVIL ENGINEER:
SITE ENGINEERING CONCEPTS, LLC

ATTN: ROBERT M. LAMBERT, P.E.
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: (610) 240-0450
E: RLAMBERT@SITE-ENGINEERS.COM

LANDSCAPE ARCHITECT:
GLACKIN THOMAS PANZAK, INC.

ATTN: BERNARD S. PANZAK, RLA
PAOLI EXECUTIVE GREEN 1, SUITE 300
PAOLI, PA 19301
P: (610) 408-9011
E: BPANZAK@GLACKINPLAN.COM

APPLICANT/OWNER:
THE TRUSTEES OF THE DORRANCE HAMILTON 3/15/1996 REVOCABLE AGREEMENT OF TRUST

ATTN: CHARLES HOUDER
551 W LANCASTER AVE, SUITE 307
HAVERFORD, PA 19041
P: (610) 389-0305
E: DCH@HAVERFORDPROPERTIES.COM

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID J. SANDERS
ENGINEER
PE057436

DAVID J. SANDERS, P.E.
PE057436

NUM.	DATE	REVISION

PLAN PREPARED BY:
SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:
HAMILTON ESTATE

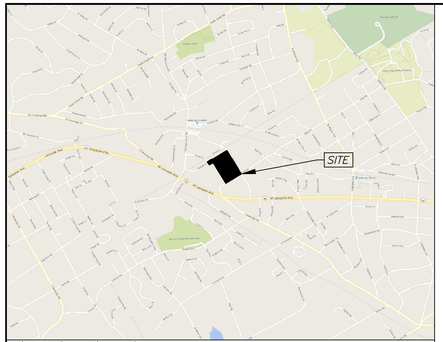
208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

DATE: AUGUST 27, 2020

COVER SHEET

SHEET 1 of 15

SCALE: 1" = 200'



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LOCATION MAP

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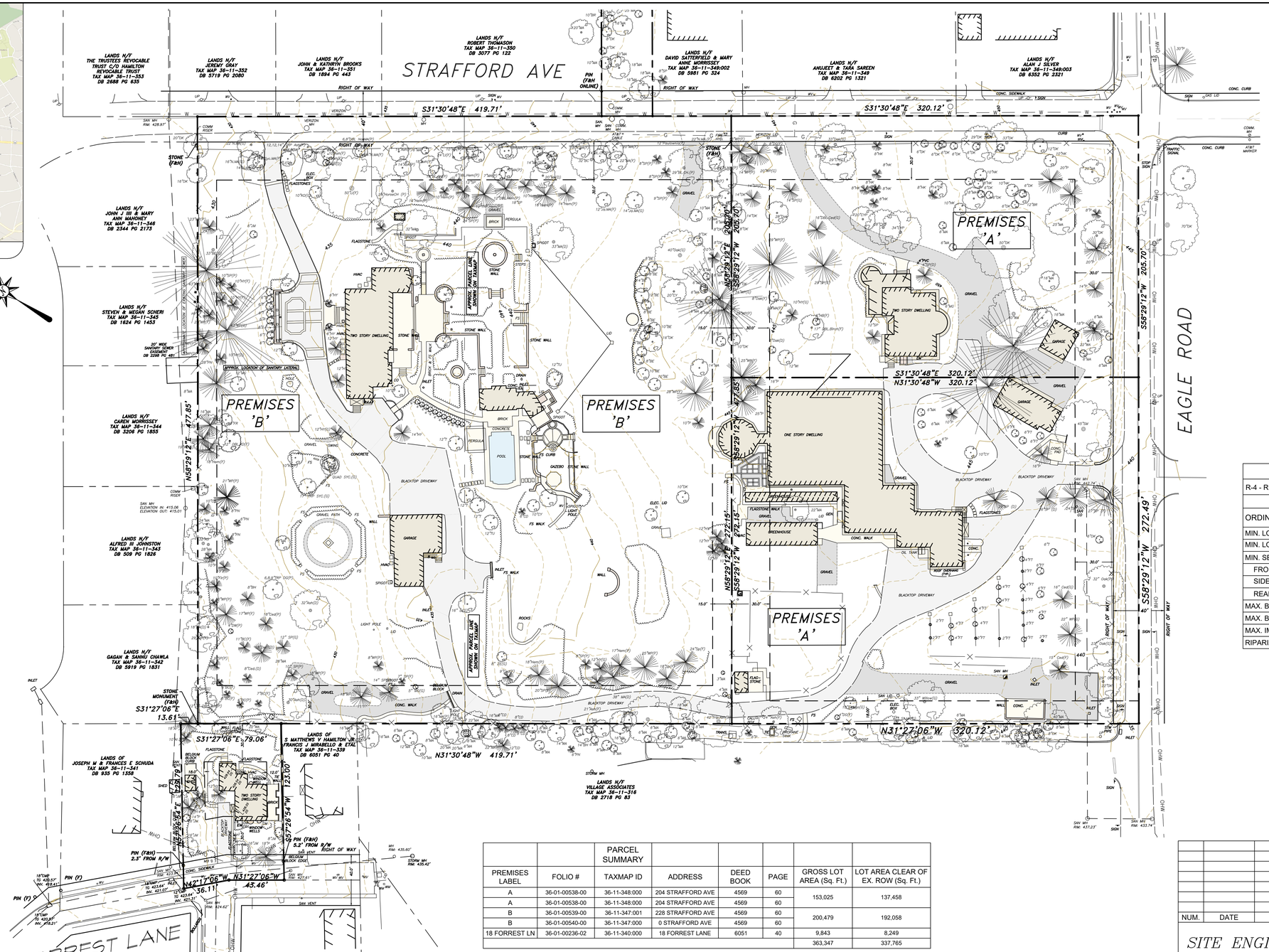
DESIGN S/N: 20190750324 & 20190750325

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!



GENERAL NOTES

1. BEARINGS SHOWN ARE BASED ON A MERIDIAN ESTABLISHED USING PA STATE PLANE COORDINATES. MERIDIAN DIFFERS FROM THE RECORDED DEED BY 6'35'48".
2. CONTOURS PLOTTED FROM FIELD RUN SURVEY. GPS CONTROL PERFORMED ONSITE TO ESTABLISH BENCHMARK. DATUM NAD83/NAVD88.
3. THIS SURVEY WAS PREFORMED WITH THE BENEFIT OF A CURRENT TITLE REPORT.
4. THIS SURVEY IS NOT TO BE USED FOR TREE REMOVAL ALONG PROPERTY LINES. TREE LOCATIONS ARE APPROXIMATE. FOR TREE REMOVAL PURPOSES, PROPERTY LINES MUST BE FIELD MARKED WITH STAKES SET TO ESTABLISH EXACT TREE OWNERSHIP.
5. THERE IS NO IDENTIFIABLE FEMA FLOOD PLAIN AREAS WITHIN THE PROJECT SITE AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 420428 0017F OF THE FLOOD INSURANCE RATE MAP AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE TOWNSHIP OF RADNOR, PENNSYLVANIA.
6. EXISTING SUBSURFACE UTILITY INFORMATION INDICATED IS BASED UPON VISUAL FIELD INSPECTION BY JEFFERY P. TURNER, PLS. SUCH INFORMATION CONCERNING THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF SUBSURFACE UTILITIES IS APPROXIMATE IN NATURE AND HAS BEEN OBTAINED AS A SUPPLEMENT TO THE SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UTILITY SIZE, LOCATION, DEPTH, QUANTITY, ETC. AS SHOWN EXISTS BETWEEN EXPLORED LOCATIONS. ACCORDINGLY, UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF ALL UTILITIES BEFORE EXCAVATION. THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO ANY CONSTRUCTION. NO GUARANTEE IS MADE THAT UNDERGROUND UTILITIES ARE ACCURATELY OR COMPLETELY SHOWN HEREON.
8. PLANS REFERENCED: LOT LINE CHANGE PLAN PREPARED BY YERKES ASSOCIATES, INC. FOR MRS. S.M.V HAMILTON DATED JULY 21, 2001.

ZONING SUMMARY

R-4 - RESIDENTIAL DISTRICT

ORDINANCE ITEM	REQUIREMENT
MIN. LOT AREA	7,000 SF
MIN. LOT WIDTH @ BLDG	55 FT
MIN. SETBACKS	
FRONT	30 FT
SIDE (INDIVIDUAL/AGGREGATE)	12 FT / 30 FT
REAR	30 FT
MAX. BUILDING HEIGHT	35 FT
MAX. BUILDING COVERAGE	30%
MAX. IMPERVIOUS COVERAGE	40%
RIPARIAN BUFFER SETBACK	25 FT

PARCEL SUMMARY

PREMISES LABEL	FOLIO #	TAXMAP ID	ADDRESS	DEED BOOK	PAGE	GROSS LOT AREA (Sq. Ft.)	LOT AREA CLEAR OF EX. ROW (Sq. Ft.)
A	36-01-00538-00	36-11-348:000	204 STRAFFORD AVE	4569	60	153,025	137,458
A	36-01-00538-00	36-11-348:000	204 STRAFFORD AVE	4569	60		
B	36-01-00539-00	36-11-347:001	228 STRAFFORD AVE	4569	60	200,479	192,058
B	36-01-00540-00	36-11-347:000	0 STRAFFORD AVE	4569	60		
18 FORREST LN	36-01-00236-02	36-11-340:000	18 FORREST LANE	6051	40	9,843	8,249
						363,347	337,765

PLAN LEGEND

- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
- ST — STORM SEWER PIPING
- S — SANITARY SEWER PIPING
- G — GAS MAIN
- W — WATER MAIN / SERVICE
- OHW — OVERHEAD WIRE
- T — UNDERGROUND TELEPHONE
- EDGE OF PAVEMENT
- X — FENCE LINE

- EXISTING BUILDINGS
- EXISTING ASPHALT
- EXISTING WALKWAY
- EXISTING WALL

GRAPHIC SCALE 1"=40'
40 0 40 80 120

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID J. SANDERS PE057436

DAVID J. SANDERS, P.E.
PE057436

NUM.	DATE	REVISION

PLAN PREPARED BY:
SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:
HAMILTON ESTATE

208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087

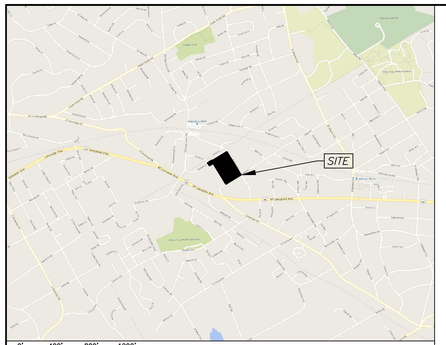
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

EXISTING CONDITIONS PLAN

DATE: AUGUST 27, 2020

SHEET 2 of 15

SCALE: 1" = 40'



LOCATION MAP

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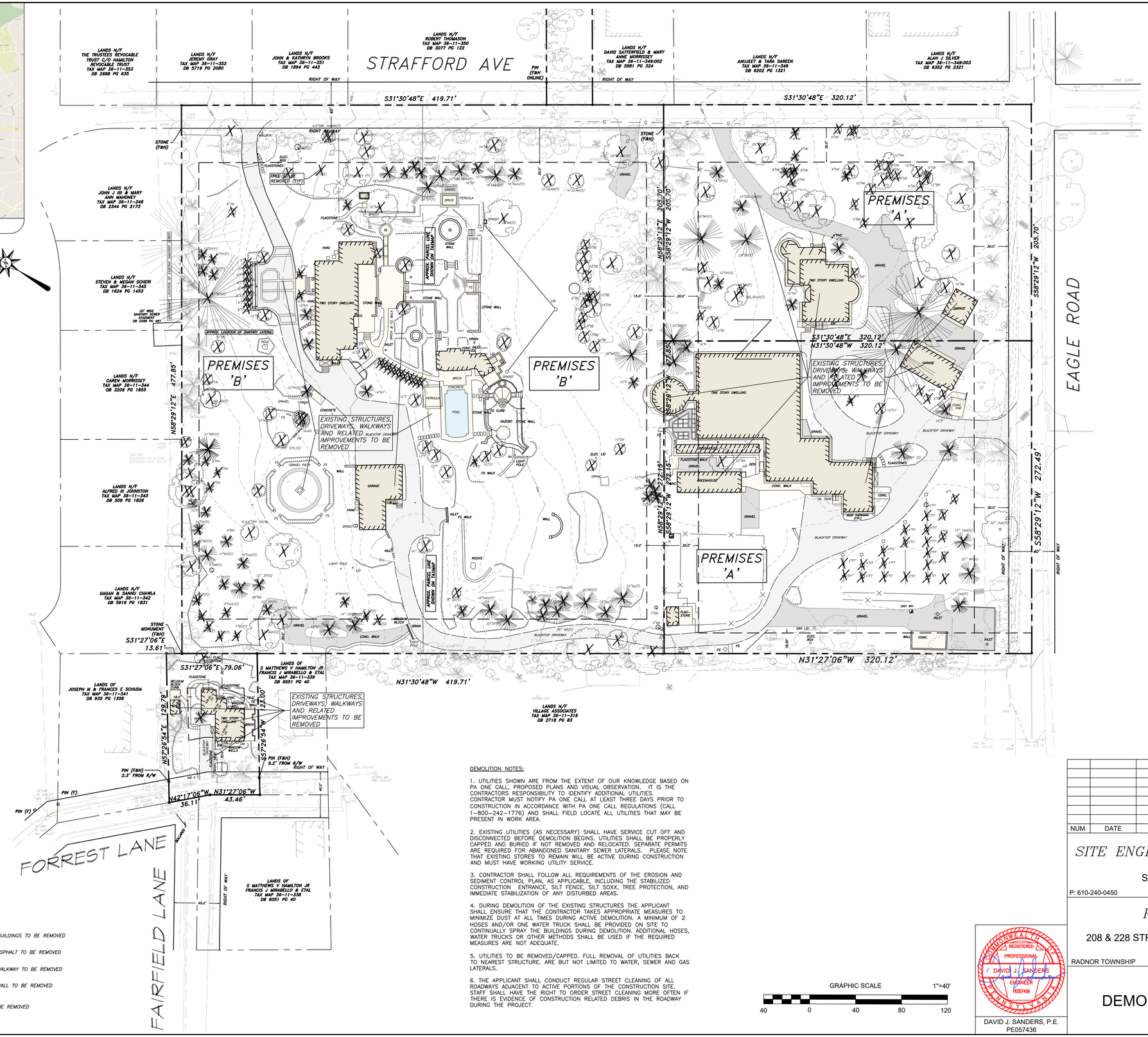
PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!



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- EDGE OF PAVEMENT
- X — FENCE LINE
- EXISTING BUILDINGS TO BE REMOVED
- EXISTING ASPHALT TO BE REMOVED
- EXISTING WALKWAY TO BE REMOVED
- EXISTING WALL TO BE REMOVED
- X — TREE TO BE REMOVED

DEMOLITION NOTES:

1. UTILITIES SHOWN ARE FROM THE EXTENT OF OUR KNOWLEDGE BASED ON PA ONE CALL, PROPOSED PLANS AND VISUAL OBSERVATION. IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY ADDITIONAL UTILITIES. CONTRACTOR MUST NOTIFY PA ONE CALL AT LEAST THREE DAYS PRIOR TO CONSTRUCTION IN ACCORDANCE WITH PA ONE CALL REGULATIONS (CALL 1-800-242-1776) AND SHALL FIELD LOCATE ALL UTILITIES THAT MAY BE PRESENT IN WORK AREA.

2. EXISTING UTILITIES (AS NECESSARY) SHALL HAVE SERVICE CUT OFF AND DISCONNECTED BEFORE DEMOLITION BEGINS. UTILITIES SHALL BE PROPERLY CAPPED AND BURIED IF NOT REMOVED AND RELOCATED. SEPARATE PERMITS ARE REQUIRED FOR ABANDONED SANITARY SEWER LATERALS. PLEASE NOTE THAT EXISTING STORES TO REMAIN WILL BE ACTIVE DURING CONSTRUCTION AND MUST HAVE WORKING UTILITY SERVICE.

3. CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF THE EROSION AND SEDIMENT CONTROL PLAN, AS APPLICABLE, INCLUDING THE STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SILT SOXX, TREE PROTECTION, AND IMMEDIATE STABILIZATION OF ANY DISTURBED AREAS.

4. DURING DEMOLITION OF THE EXISTING STRUCTURES THE APPLICANT SHALL ENSURE THAT THE CONTRACTOR TAKES APPROPRIATE MEASURES TO MINIMIZE DUST AT ALL TIMES DURING ACTIVE DEMOLITION. A MINIMUM OF 2 HOSES AND/OR ONE WATER TRUCK SHALL BE PROVIDED ON SITE TO CONTINUALLY SPRAY THE BUILDINGS DURING DEMOLITION. ADDITIONAL HOSES, WATER TRUCKS OR OTHER METHODS SHALL BE USED IF THE REQUIRED MEASURES ARE NOT ADEQUATE.

5. UTILITIES TO BE REMOVED/CAPPED. FULL REMOVAL OF UTILITIES BACK TO NEAREST STRUCTURE. ARE BUT NOT LIMITED TO WATER, SEWER AND GAS LATERALS.

6. THE APPLICANT SHALL CONDUCT REGULAR STREET CLEANING OF ALL ROADWAYS ADJACENT TO ACTIVE PORTIONS OF THE CONSTRUCTION SITE. STAFF SHALL HAVE THE RIGHT TO ORDER STREET CLEANING MORE OFTEN IF THERE IS EVIDENCE OF CONSTRUCTION RELATED DEBRIS IN THE ROADWAY DURING THE PROJECT.

GRAPHIC SCALE 1"=40'

40 0 40 80 120

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID J. SANDERS PE057436

DAVID J. SANDERS, P.E.
PE057436

NUM.	DATE	REVISION

PLAN PREPARED BY:

SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:

HAMILTON ESTATE

208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087

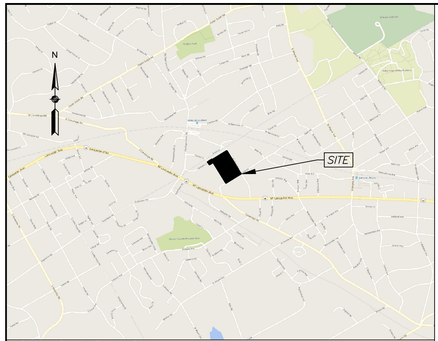
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

DEMOLITION PLAN

DATE: AUGUST 27, 2020

SHEET 3 of 15

SCALE: 1" = 40'



0' 400' 800' 1200'
Map Scale: 1" = 800'-0"

LOCATION MAP

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DESIGN S/N: 20190750324 & 20190750325

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

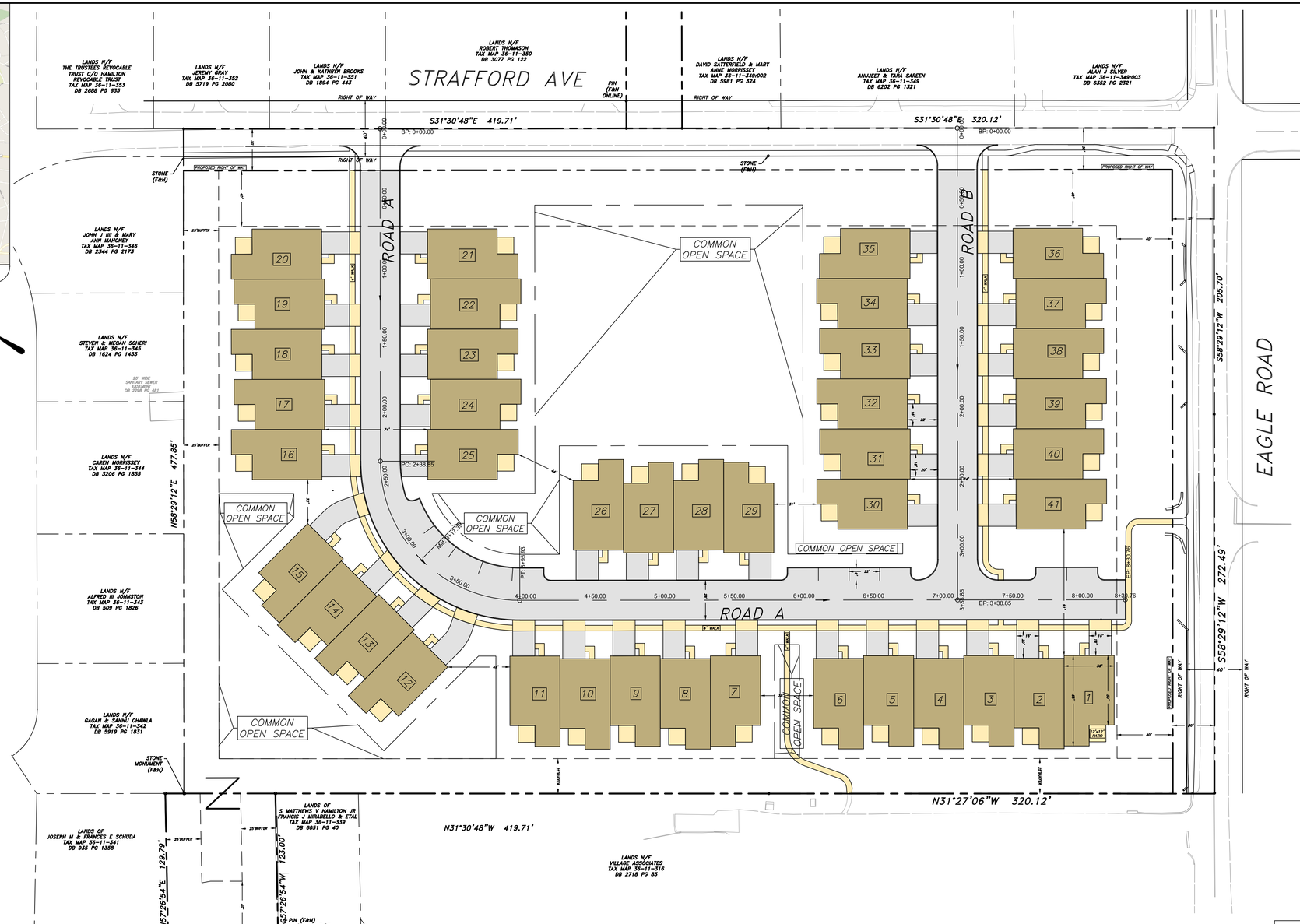
ZONING SUMMARY

R-4 RESIDENTIAL DISTRICT - PROPOSED DENSITY MODIFICATION DEVELOPMENT (TOWNHOUSES)

ORDINANCE ITEM	REQUIREMENT	EXISTING	PROPOSED
MIN NET TRACT AREA SIZE	–	N/A	7.754 ACRES
MIN RESIDENTIAL BUFFER	–	N/A	26 FT
MIN. SETBACKS			
FROM ROW	40 FT	N/A	46 FT
FROM PROPERTY LINE	25 FT	N/A	42 FT
MAX UNITS PER BUILDING	8		6
MIN SIDE TO SIDE DISTANCE	20 FT		21 FT
MAX. DENSITY	5.5 DU/ACRE	N/A	41
MAX. BUILDING COVERAGE	35%	7.6%	25.1%
MAX. IMPERVIOUS COVERAGE	45%	23.9%	43.6%
MIN. OPEN SPACE	15%	15%	15%

IMPERVIOUS SUMMARY (SQ. FT.)

NET LOT AREA	337,765			
	EXISTING	TO BE REMOVED	TO BE ADDED	PROPOSED
BUILDINGS	25,600	25,600	84,870	84,870
ASPHALT	27,676	27,676	47,427	47,427
WALKS/CONC.	9,634	9,634	14,845	14,845
OTHER IMPERVIOUS	17,877	17,877	0	0
TOTAL BUILDING COVERAGE	25,600	25,600	84,870	84,870
TOTAL BUILDING PERCENTAGE	7.6%			25.1%
TOTAL IMPERVIOUS COVERAGE	80,787	80,787	147,142	147,142
TOTAL IMPERVIOUS PERCENTAGE	23.9%			43.6%
IMPERVIOUS REMAINING FOR FUTURE DEVELOPMENT				4,652



GENERAL NOTES

1. THE TOWNHOUSE DEVELOPMENT SHALL BE CONSTRUCTED OWNED AND OPERATED UNDER SINGLE OWNERSHIP, OR UNDER THE PENNSYLVANIA UNIT PROPERTY ACT, OR SIMILAR STATUE SUCH AS THE PLANNED COMMUNITY ACT.
2. THE DEVELOPMENT WILL BE SERVED BY SANITARY SEWERS AND PUBLIC WATER SUPPLY.
3. EACH TOWNHOUSE SHALL HAVE AT LEAST TWO FLOORS IN COMPLIANCE WITH APPLICABLE HEIGHT LIMITS AND SHALL BE OCCUPIED AS A SINGLE-FAMILY DWELLING.
4. NO MORE THAN TWO CONTIGUOUS TOWNHOUSES IN ANY GROUP MAYBE CONSTRUCTED IN LINE AND EACH TOWNHOUSE SHALL HAVE AT LEAST ONE PLAN ELEMENT ON ANY FLOOR WHICH PROJECTS OR RECEDES WITHIN THE WALL PLANE OF THE FACADE A MINIMUM DIMENSION OF TWO FEET.
5. THE DEVELOPMENT WILL BE SERVICED BY PECO ELECTRIC.

PROPERTY OWNER

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF DELAWARE

ON THE _____ DAY OF _____ 20 _____, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, THE UNDERSIGNED OFFICER PERSONALLY APPEARED, _____ WHO ACKNOWLEDGED HIM/HERSELF TO BE THE _____ OF _____, OWNER OF THE PROPERTIES PROPOSED TO BE DEVELOPED IN THE SUBJECT PLAN, BEING AUTHORIZED TO DO SO, ACKNOWLEDGED THIS PLAN TO BE THE OFFICIAL PLAN OF THE PROPERTIES SHOWN THEREON, SITUATED IN THE TOWNSHIP OF RADNOR, DELAWARE COUNTY, PENNSYLVANIA, AND DESCRIBED THAT THIS PLAN IS MADE WITH THE OWNER'S FREE CONSENT AND INTENDED TO BE RECORDED ACCORDING TO LAW.

WITNESS MY HAND AND NOTARIAL SEAL THE DAY AND YEAR AFORESAID.

_____
NOTARY

_____
OWNER

RADNOR TOWNSHIP:

THIS IS TO CERTIFY THE BOARD OF SUPERVISORS HAS APPROVED THIS LAND DEVELOPMENT PLAN FOR STRAFFORD AVENUE AND EAGLE ROAD , ON THE _____ DAY OF _____, 20_____, FOR RECORDING AT THE RECORDER OF DEEDS OF DELAWARE COUNTY, MEDIA, PENNSYLVANIA, OFFERS OF DEDICATION HAVE BEEN ACCEPTED/REJECTED, BONDS, FUNDS OR SECURITIES IN ESCROW HAVE BEEN FILED WITH THE TOWNSHIP AND ACCEPTED TO COVER ALL IMPROVEMENTS SHOWN ON THE PLAN AND REQUIRED UNDER THE SUBDIVISION/LAND DEVELOPMENT AGREEMENT.

APPROVED THE __ DAY OF _____ 20___

BOARD OF SUPERVISORS SIGNED THIS ___ DAY OF _____, 20___.

_____
CHAIRMAN

_____
MEMBER

_____
TOWNSHIP ENGINEER

ATTEST: _____
MANAGER

DELAWARE COUNTY PLANNING COMMISSION:

REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION THIS __ DAY OF _____, 20___.

_____
SECRETARY

RECORDER OF DEEDS

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF DELAWARE COUNTY AT MEDIA CHESTER, PENNSYLVANIA IN THE

PLAN BOOK _____ PAGE _____ ON THE ____ DAY OF _____, 20___

_____
RECORDER OF DEEDS

ZONING SUMMARY

R-4 Residential District - Proposed Density Modification Development (Townhouses Article XIX)

Ordinance Item	Requirement	Proposed
Min. Net Tract Area Size: *	5 Acres	7.754 Acres
Min. Common Open Space	15%	(53,685 SF) 15.9%
Max. Building Coverage	35%	25.1%
Max. Impervious Coverage	45%	43.6%
Min. Buffer (along residential districts)	25 Ft.	26 Ft.
Min. Building Setback	40 Ft. from ROW	42 Ft.
	25 Ft. from property line	27 Ft.
Max. Units per building	8	6
Min. Seperation	20 Ft.	31 Ft.
Max. Density	5.5 DU/Acre	41

* Section 280-92.B-Tract Area, for the purpose of this article, shall consist of all that total area proposed for development, but shall exclude all portions of the tract subject and servient to easements and legal rights-of-way to which the dominant portion of the tract is not afforded access and use directly from the interior road system of the dominant tract.
Section 280-92.C-In computing maximum gross density, there shall be excluded from the determination of tract size 1/2 of all land situate in the floodplain and 1/2 of all land situate on slopes over 22%

PLAN LEGEND

BOLD LINES: PROPOSED
FADED LINES: EXISTING

- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
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- EDGE OF PAVEMENT
- X — FENCE LINE

- PROPOSED BUILDINGS
- PROPOSED ASPHALT
- PROPOSED WALKWAY

GRAPHIC SCALE 1"=40'
40 0 40 80 120

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID J. SANDERS ENGINEER PE057436

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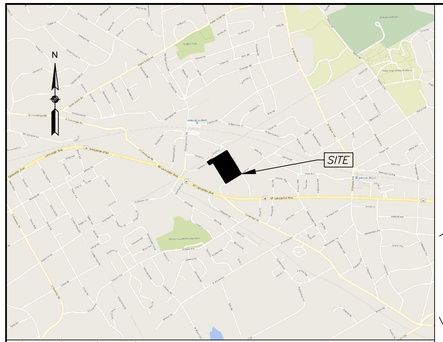
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

RECORD PLAN

DATE: AUGUST 27, 2020

SHEET 4 of 15

SCALE: 1" = 40'



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PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

SOIL DATA

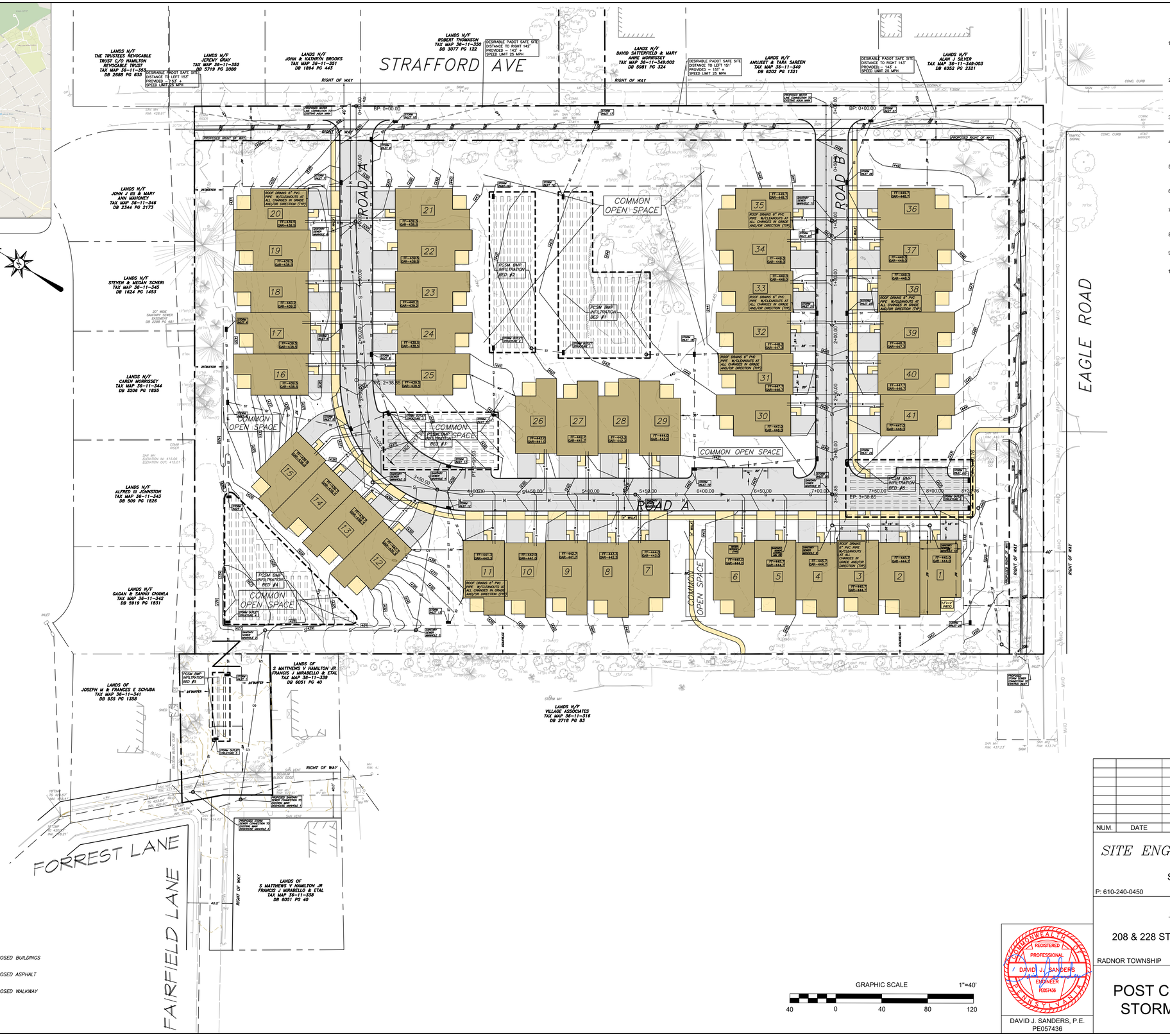
ENTIRE PROJECT AREA COMPOSED OF UrmB SOILS ACCORDING TO THE PENN STATE SOIL MAP WEBSITE.

UrmB – URBAN LAND-GLENELG COMPLEX
0 TO 8 PERCENT SLOPES
DEPTH TO SEASONAL HIGH WATER TABLE: MORE THAN 80"
DEPTH TO BEDROCK: 60" TO 120"
HYDROLOGICAL CLASSIFICATION TYPE B

TABLE E.1 LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS
(ABSENCE OF AN X DOES NOT MEAN "NO POTENTIAL LIMITATION")

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHT-IY AREAS	PROBLE FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	CORROSIVE TO UNPROTECTED STEEL	COW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK-SWELL POTENTIAL	SINKHOLES	PONDING	WETNESS
URBAN					X					X				

SOIL RESOLUTIONS
HIGH WATER TABLE–THE GEOTECHNICAL REPORT INDICATED THAT THERE WAS NO GROUNDWATER ENCOUNTERED AT THE EXCAVATION DEPTHS. IF GROUND WATER IS ENCOUNTERED WATERTIGHT STORM WATER PIPES AND CLAY CHECK DAMS USED IN SANITARY SEWER TRENCHING.
FROST PROTECTION–AVOID WINTER GRADING



PROJECT NOTES

1. SHOULD ANY TREES NOT SCHEDULED OR PERMITTED TO BE REMOVED BE IRREPARABLY DAMAGED DURING CONSTRUCTION AND DIE WITHIN EIGHTEEN (18) MONTHS OF THE CONCLUSION OF CONSTRUCTION ACTIVITIES, THOSE TREES WILL BE REQUIRED TO BE REPLACED.
2. GRADING AND EARTHMOVING OPERATIONS SHALL BE MINIMIZED DURING THE PERIOD NOVEMBER 15 TO APRIL 1 WHEN RE-VEGETATION OF EXPOSED GROUND SURFACE IS DIFFICULT. MULCH, STRAW, STONE AND/OR SOD SHALL BE USED TO STABILIZE ALL AREAS DENUDED DURING THIS TIME PERIOD.
3. ROOFDRAIN COLLECTION PIPING SHALL BE 6" PVC @ 0.02 FT/FT MIN. CLEANOUTS SHALL BE PROVIDED AT ALL CHANGES IN GRADE AN/OR DIRECTION.
4. THE MAXIMUM TIME OF EXPOSURE FOR BARE SOIL AREAS SHALL BE TWENTY (20) DAYS BEFORE STABILIZATION MEASURES ARE IMPLEMENTED.
5. ROUTINE END-OF-DAY CHECKS AND FOLLOWING STORMS SHALL BE REQUIRED DURING THE CONSTRUCTION TO ENSURE THE MEASURES ARE WORKING PROPERLY.
6. NEWLY GRADED SLOPES OF OVER 25% MUST BE STABILIZED WITH SOD OR JUTE NETTING AND SEED.
7. UTILITY LINES PER ONE CALL INFORMATION HAVE BEEN SHOWN, CONTRACTOR MUST VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. GAS, ELECTRIC, WATER OR ANY OTHER UTILITY TO BE ABANDONED SHALL BE PROPERLY SEALED/REMOVED.
9. HIGH DURABILITY PAVEMENT MARKING MATERIAL SHALL BE USED FOR ALL PAVEMENT STRIPPING.
10. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE SEEPAGE BED AND STORM PIPING SHALL BE THE OBLIGATION OF THE HOMEOWNERS' ASSOCIATION.

PLAN LEGEND

- SUPPLEMENTAL CONTOUR (2' INTERVAL)
- INDEX CONTOUR (10' INTERVAL)
- ST — EXISTING STORM SEWER PIPING
- S — EXISTING SANITARY SEWER PIPING
- G — EXISTING GAS MAIN
- W — EXISTING WATER MAIN / SERVICE
- T — EXISTING UNDERGROUND TELEPHONE
- EXISTING EDGE OF WOODS
- EXISTING EDGE OF PAVEMENT
- EXISTING CURB
- X — EXISTING FENCE LINE
- EXISTING STORMWATER INLET
- PROPERTY LINE
- BUILDING SETBACK LINE
- 392 — PROPOSED CONTOUR
- ST — ST — PROPOSED STORM WATER
- PROPOSED CURB
- PROPOSED STORMWATER INLET

HALF TONE EXISTING
FULL TONE PROPOSED

- PROPOSED BUILDINGS
- PROPOSED ASPHALT
- PROPOSED WALKWAY

GRAPHIC SCALE 1"=40'
40 0 40 80 120

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID J. SANDERS PE057436

DAVID J. SANDERS, P.E.
PE057436

NUM.	DATE	REVISION

PLAN PREPARED BY:

SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:

HAMILTON ESTATE

208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087

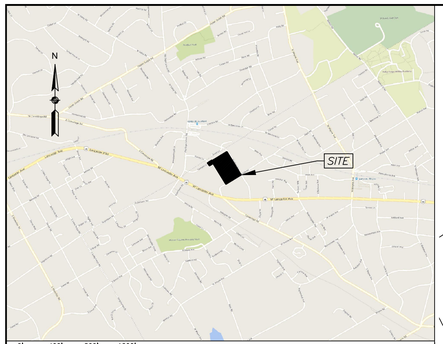
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

POST CONSTRUCTION STORMWATER PLAN

DATE: AUGUST 27, 2020

SHEET 5 of 15

SCALE: 1" = 40'



LOCATION MAP

NOTE: THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES CANNOT BE GUARANTEED. ALL UTILITIES DEPICTED ON THIS PLAN HAVE BEEN DEVELOPED FROM ABOVE GROUND OBSERVATIONS AND/OR EXISTING RECORDS. CONTRACTOR MUST VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. PENNSYLVANIA STATE LAW REQUIRES NOTIFICATION TO 1-800-242-1776 3-10 BUSINESS DAYS PRIOR TO ANY EXCAVATION.

DESIGN S/N: 20190750324 & 20190750325

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
STOP-CALL BEFORE YOU DIG!

SOIL DATA

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UrmB – URBAN LAND-GLENELG COMPLEX
0 TO 8 PERCENT SLOPES
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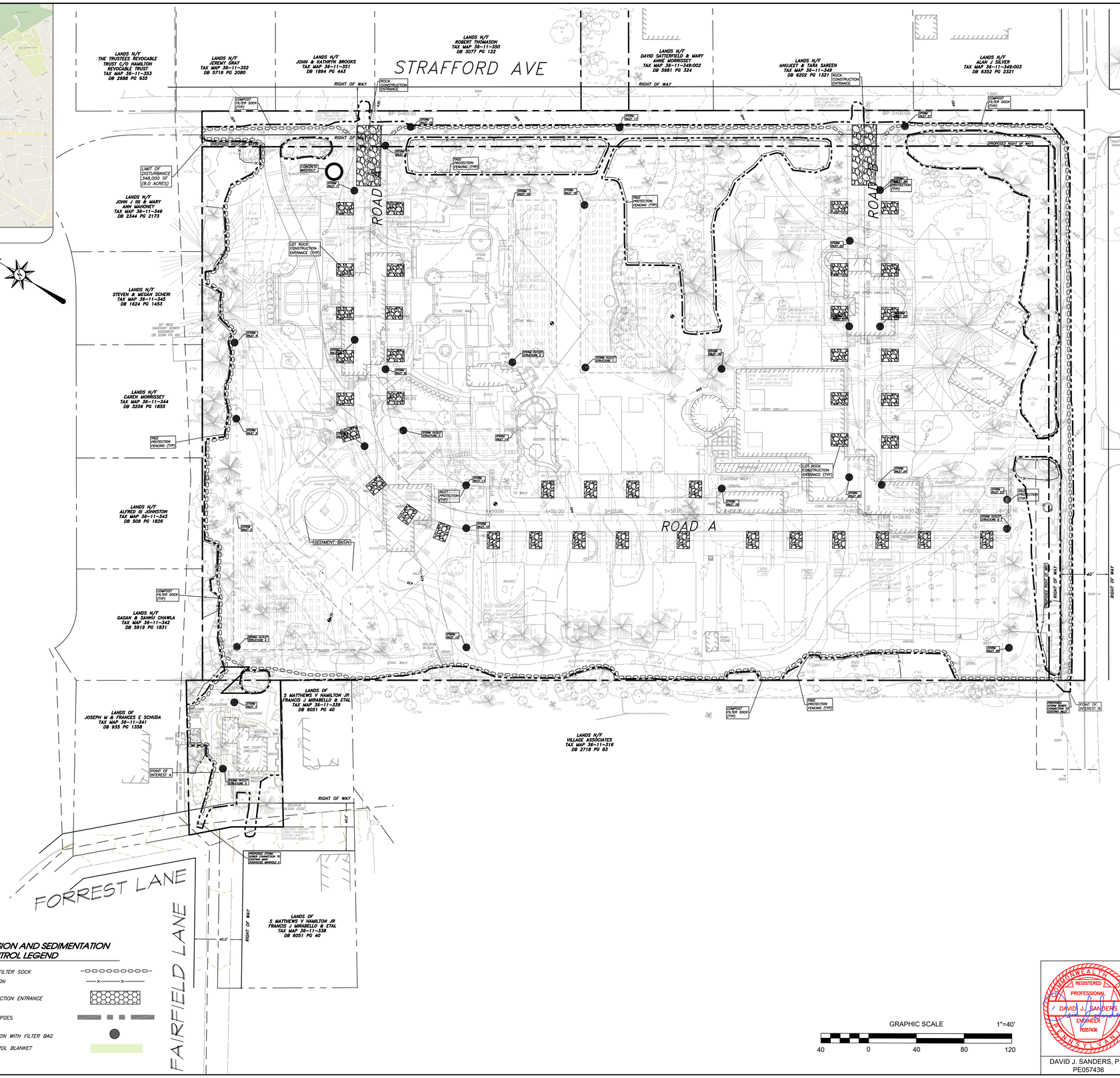
SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	GROUND-WATER POLLUTION	FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	CORROSIVE TO UNPROTECTED COPPER	SLOW PERCOLATION	PIPING	FROST ACTION	SHRINK-SWELL	POTENTIAL SINKHOLES	PONDING	WETNESS
URBAN					X				X				

SOIL RESOLUTIONS
HIGH WATER TABLE–THE GEOTECHNICAL REPORT INDICATED THAT THERE WAS NO GROUNDWATER ENCOUNTERED AT THE EXCAVATION DEPTHS. IF GROUND WATER IS ENCOUNTERED WATERTIGHT STORM WATER PIPES AND CLAY CHECK DAMS USED IN SANITARY SEWER TRENCHING.
FROST PROTECTION–AVOID WINTER GRADING



CONSTRUCTION STAGING

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

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES INCLUDING BUT NOT LIMITED TO: THE LANDOWNER AND ALL APPROPRIATE MUNICIPAL OFFICIALS FOR AN ON-SITE PRE-CONSTRUCTION MEETING.

NOTE: ALL MATERIALS ASSOCIATED WITH SEDIMENT REMOVAL MUST BE ON-SITE PRIOR TO EARTH DISTURBANCE.

STAGE 1. INSTALL TREE PROTECTION FENCING, SILT FENCE, INLET PROTECTION AND ROCK CONSTRUCTION ENTRANCE. ONCE INSTALLATION OF THESE ITEMS ARE COMPLETE, THE TOWNSHIP ENGINEER SHALL BE NOTIFIED PRIOR TO ANY DEMOLITION OR OTHER EARTH DISTURBANCE.

STAGE 2. ONCE AUTHORIZATION FROM THE TOWNSHIP ENGINEER IS GIVEN, STRIP TOPSOIL TOPSOIL STOCKPILES ARE TO BE LIMITED TO 35 FEET WITH A MAXIMUM SIDE SLOPE OF 2:1. IMMEDIATELY STABILIZE STOCKPILE.

STAGE 3. CONSTRUCT UTILITY MAINS.

STAGE 4. CONSTRUCT ROAD

STAGE 5. EXCAVATE FOR BUILDING CONSTRUCTION.

STAGE 6. CONSTRUCT BUILDING.

STAGE 7. NOTIFY TOWNSHIP ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF THE INFILTRATION BASIN.

STAGE 8. CRITICAL STAGE – INSTALL INFILTRATION BASIN, COLLECTION AND CONVEYANCE SYSTEM. INSTALL INLET PROTECTION ON NEW INLETS, MUST REMAIN UNTIL AREA STABILIZED. SEEPAGE BED SHALL NOT RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTORY AREA HAS BEEN STABILIZED.

STAGE 9. CONSTRUCT WALK IMPROVEMENTS.

STAGE 10. SPREAD TOPSOIL, FINE GRADE, STABILIZE.

STAGE 11. UPON THE COMPLETION OF GRADING IN ANY AREA, IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE PERMANENT SEED MIXTURE. MULCH AT 3 TONS PER ACRE, AND LIME AS PRESCRIBED.

STAGE 12. REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES ONCE TRIBUTARY AREAS ARE FULLY STABILIZED. IMMEDIATELY STABILIZE ANY REMAINING DISTURBED AREAS AND AREAS DISTURBED BY THE REMOVAL OF EROSION CONTROL FACILITIES WITH THE PERMANENT SEED MIXTURE, MULCH AT 3 TONS/ACRE, AND LIME AS PRESCRIBED.

PLAN LEGEND

- SUPPLEMENTAL CONTOUR (2' INTERVAL)
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- PROPERTY LINE
- BUILDING SETBACK LINE
- 392 — PROPOSED CONTOUR
- ST — PROPOSED STORM WATER
- PROPOSED CURB
- PROPOSED STORMWATER INLET

EROSION AND SEDIMENTATION CONTROL LEGEND

- 24" COMPOST FILTER SOCK
- TREE PROTECTION
- ROCK CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE/NPDES BOUNDARY
- INLET PROTECTION WITH FILTER BAG
- EROSION CONTROL BLANKET

GRAPHIC SCALE 1"=40'
40 0 40 80 120

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID J. SANDERS
ENGINEER
PE057436

DAVID J. SANDERS, P.E.
PE057436

NUM.	DATE	REVISION

PLAN PREPARED BY:

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PLAN PREPARED FOR:

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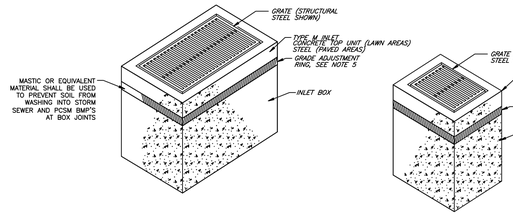
208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

EROSION AND SEDIMENTATION CONTROL PLAN

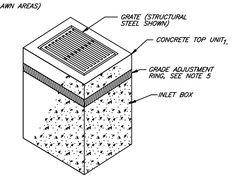
DATE: AUGUST 27, 2020

SHEET 6 of 15

SCALE: 1" = 40'



TYPE M INLET



2'X2' INLET

INLETS

NOTES

CONSTRUCTION REQUIREMENTS

A. CONSTRUCT IN ACCORDANCE WITH: PENNDOT PUBLICATION 408 SPECIFICATIONS, SECTIONS 605, 606, 714; AND AS MODIFIED HEREIN.

B. MINIMUM CONCRETE CLASS:
CAST-IN-PLACE CLASS A
PRECAST CLASS AA

C. PROVIDE STEEL REINFORCEMENT IN ACCORDANCE WITH SEC. 709. PROVIDE MINIMUM YIELD STRENGTH OF 60,000 P.S.I.

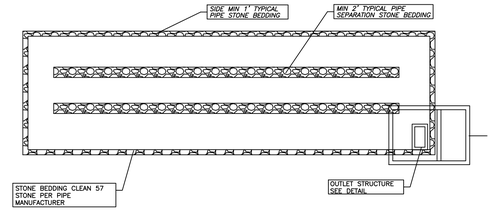
D. CLEAR COVER FOR STEEL:
WALLS: CAST-IN PLACE 2" / PRECAST 1"
FOOTINGS: CAST-IN PLACE 3" (BOTTOM BARS) / 2" (SIDE COVER)
PRECAST 2" (TOP BARS) / 1" (BOTTOM BARS) / 1" (SIDE COVER)
SLABS: CAST-IN PLACE 2" (TOP & BOTTOM BARS)

2. THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET ASSEMBLY IS THE CONTRACTOR'S RESPONSIBILITY.

3. USE PRECAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED. (REHABILITATION PROJECTS)

4. FOR WALL REINFORCEMENT, BOTH DIRECTIONS, USE 0.12 IN.^{2}/FT.^{2} MIN. EACH WAY, EACH FACE.

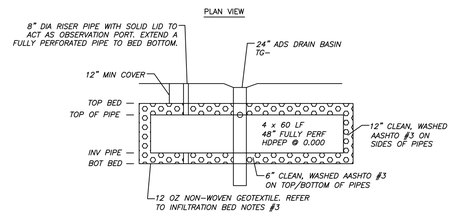
5. FOR FOOTING REINFORCEMENT, TOP AND BOTTOM, USE #4 BARS AT 12" CENTERS EACH WAY OR 0.20 IN.^{2}/FT.^{2} W.W.F.(6" MAX.SPACING).



STORMWATER PIPE STORAGE NOTES

1. BEDS 1-6 48" PIPE STORAGES SHALL BE FULLY PERFORATED HDPE.
2. ALL CONVEYANCE PIPING SHALL BE SOLID HDPE WITH WATERTIGHT JOINTS.
3. 6" STONE BEDDING BELOW PIPE
4. 6" STONE COVERAGE ABOVE PIPE.

PIPE STORAGE DETAIL



STORMWATER INFILTRATION BED DETAIL

PIPE STORAGE CONSTRUCTION SEQUENCE
1. EXCAVATE AREA TO PROPOSED UNCOMPACTED SUBGRADE.
2. PLACE LINER PER MANUFACTURER SPECIFICATIONS ON ALL SIDES OF BED.
3. CAREFULLY PLACE STONE BEDDING TO NOT DAMAGE LINER.
4. CONSTRUCT PIPE SYSTEM AND OUTLET STRUCTURES.
5. PLACE REMAINING STONE AROUND PIPES.
6. PLACE TOP PORTION OF LINER.

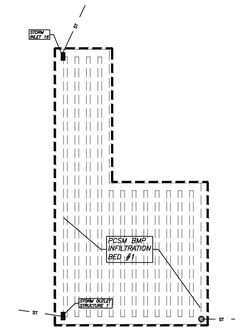
SHORT TERM/ROUTINE MAINTENANCE OF PIPE STORAGE:

1. MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HRS AFTER EVERY MAJOR STORM EVENT (>1 INCH RAINFALL DEPTH).
2. KEEPING ALL DEBRIS, INCLUDING GRASS CLIPPINGS, LEAVES, AND MOTOR OIL CLEAR OF INLET AND OUTLET STRUCTURES.
3. REMOVING ANY ACCUMULATED DEBRIS.
4. IF STORM WATER FACILITIES DO NOT DRAIN WITHIN 48 HOURS AFTER THE LAST STORM EVENT, THEY SHALL BE INSPECTED AND THEN FIXED OR REPLACED AS DETERMINED NECESSARY.

LONGTERM/NON-ROUTINE MAINTENANCE OF PIPE STORAGE:

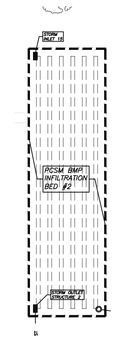
– INSECTS AND/OR ODOR BECOME PROBLEMS
– STANDING WATER LASTING LONGER THAN 72 HRS
– VISIBLE SIGNS OF SEDIMENT ACCUMULATION

1. CLEAR INLETS/PIPES/STONE/PAVING OF DEBRIS, VACUUM, RECONSTRUCT AS NECESSARY.
2. REMOVE ACCUMULATED SEDIMENT/POLLUTANTS.
4. RECONSTRUCT.
5. PROVIDE FOR COMPLETION OF A WRITTEN REPORT DOCUMENTATION EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITY.
6. CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER SIGNIFICANT STORM EVENTS.
7. IF STORM WATER FACILITIES DO NOT DRAIN AFTER STORM EVENTS, THEY SHALL BE INSPECTED AND THEN FIXED OR REPLACED AS DETERMINED NECESSARY. IN THE EVENT THE PIPE STORAGE FAILS THE SYSTEM WILL NEED TO BE COMPLETELY REMOVED AND REPLACED.



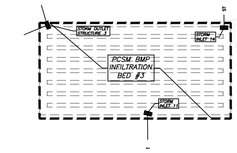
INFILTRATION BED #1 DETAIL

1,464 LF 48" HDPE
18,396 CF VOLUME



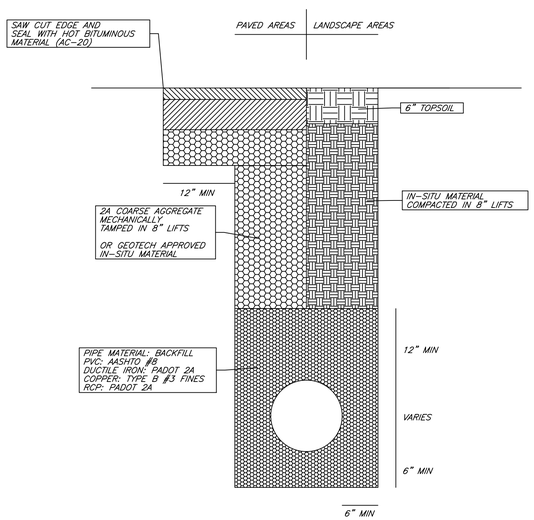
INFILTRATION BED #2 DETAIL

1,060 LF 48" HDPE
13,320 CF VOLUME

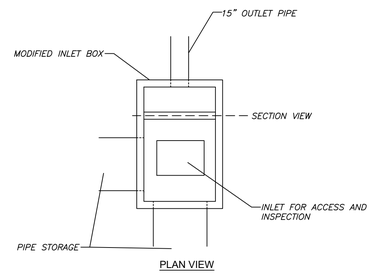


INFILTRATION BED #3 DETAIL

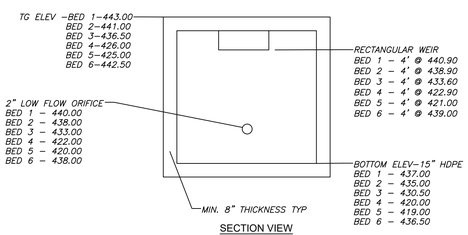
892 LF 48" HDPE
11,208 CF VOLUME



TYPICAL UTILITY TRENCH

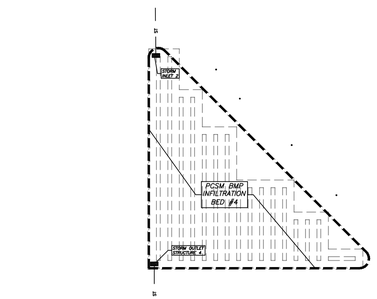


PLAN VIEW



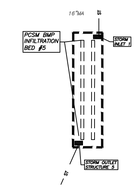
SECTION VIEW

OUTLET STRUCTURE DETAIL



INFILTRATION BED #4 DETAIL

1,323 LF 48" HDPE
16,624 CF VOLUME



INFILTRATION BED #5 DETAIL

210 LF 48" HDPE
1,980 CF VOLUME

1. SCARIFY BOTTOM AND SIDES OF BASIN, TAKING CARE NOT TO COMPACT SOIL.

2. PIPE MUST HAVE PERFORATIONS NO LESS THAN 5/16" DIAMETER AND PROVIDE AN OPEN AREA OF NOT LESS THAN 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE.
THE FOLLOWING FORMULA DETERMINES THE # OF HOLES/LINEAR FOOT OF PIPE:
[13.24 * (DIA OF PIPE IN FEET)] / [HOLE SIZE IN INCHES] ^2 , SO FOR A 8" DIA PIPE THERE MUST BE AT LEAST 90 HOLES / LINEAR FOOT

3. ENTIRE BED, SIDES TOP AND BOTTOM, SHALL BE WRAPPED IN SYNTHETIC INDUSTRIES NON-WOVEN #1201 OR ENGINEER APPROVED EQUAL. PROVIDE A MINIMUM 1' OVERLAP AT ALL SEAMS AND JOINTS. WHERE PROTRUSIONS OR PENETRATIONS OCCUR, GEOTEXTILE SHALL BE PERMANENTLY AFFIXED TO OBJECT.

4. CARE SHOULD BE TAKEN IN THE PLACING OF STONE ATOP THE GEOTEXTILE SO AS TO AVOID TEARING OR RIPPING OF THE FABRIC. STONE SHOULD NOT BE DUMPED UNTIL A 6" LAYER OF STONE IS IN PLACE.

5. PIPES CONNECTING INTO BEDS AT POINTS OTHER THAN DRAIN BASINS SHALL HAVE A STUB CONNECTION.

INFILTRATION BED NOTES

1. SCARIFY BOTTOM AND SIDES OF BASIN, TAKING CARE NOT TO COMPACT SOIL.

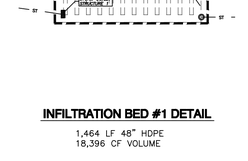
2. PIPE MUST HAVE PERFORATIONS NO LESS THAN 5/16" DIAMETER AND PROVIDE AN OPEN AREA OF NOT LESS THAN 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE.
THE FOLLOWING FORMULA DETERMINES THE # OF HOLES/LINEAR FOOT OF PIPE:
[13.24 * (DIA OF PIPE IN FEET)] / [HOLE SIZE IN INCHES] ^2 , SO FOR A 72" DIA PIPE THERE MUST BE AT LEAST 814 HOLES / LINEAR FOOT

3. ENTIRE BED, SIDES TOP AND BOTTOM, SHALL BE WRAPPED IN SYNTHETIC INDUSTRIES NON-WOVEN #1201 OR ENGINEER APPROVED EQUAL. PROVIDE A MINIMUM 1' OVERLAP AT ALL SEAMS AND JOINTS. WHERE PROTRUSIONS OR PENETRATIONS OCCUR, GEOTEXTILE SHALL BE PERMANENTLY AFFIXED TO OBJECT.

4. CARE SHOULD BE TAKEN IN THE PLACING OF STONE ATOP THE GEOTEXTILE SO AS TO AVOID TEARING OR RIPPING OF THE FABRIC. STONE SHOULD NOT BE DUMPED UNTIL A 6" LAYER OF STONE IS IN PLACE.

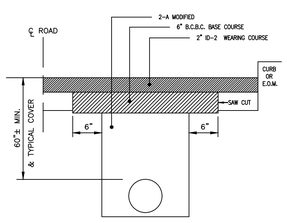
5. PIPES CONNECTING INTO BEDS AT POINTS OTHER THAN DRAIN BASINS SHALL HAVE A STUB CONNECTION.

6. ALL CMP SHALL BE ALUMINIZED STEEL.

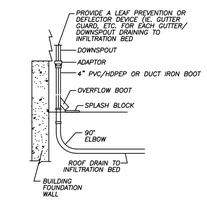


INFILTRATION BED #6 DETAIL

972 LF 48" HDPE
12,216 CF VOLUME



FLEXIBLE PAVEMENT RESTORATION



PROVIDE OVERFLOW PIPE AT DOWNSPOUTS DRAINING TO INFILTRATION BED

NUM.	DATE	REVISION

PLAN PREPARED BY:

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PLAN PREPARED FOR:

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WAYNE, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID J. SANDERS
ENGINEER
PE057436

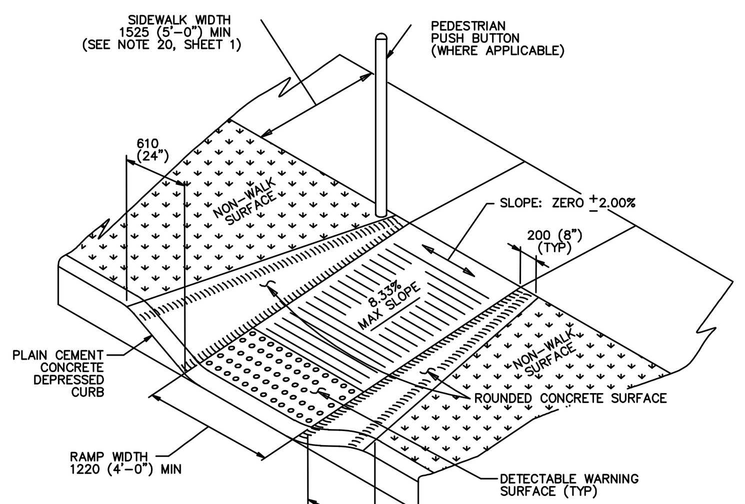
DAVID J. SANDERS, P.E.
PE057436

POST CONSTRUCTION STORMWATER DETAILS

DATE: AUGUST 27, 2020

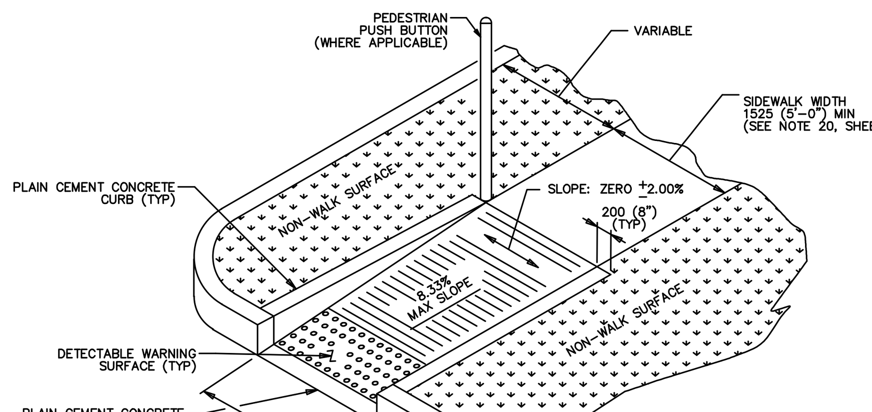
SHEET 7 of 15

NO SCALE



ALTERNATE

TYPE 4A
CURB RAMP
(PERPENDICULAR)



(5) CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN THE SIDEWALK WIDTH IS GREATER THAN OR EQUAL TO 1220 (4'-0").

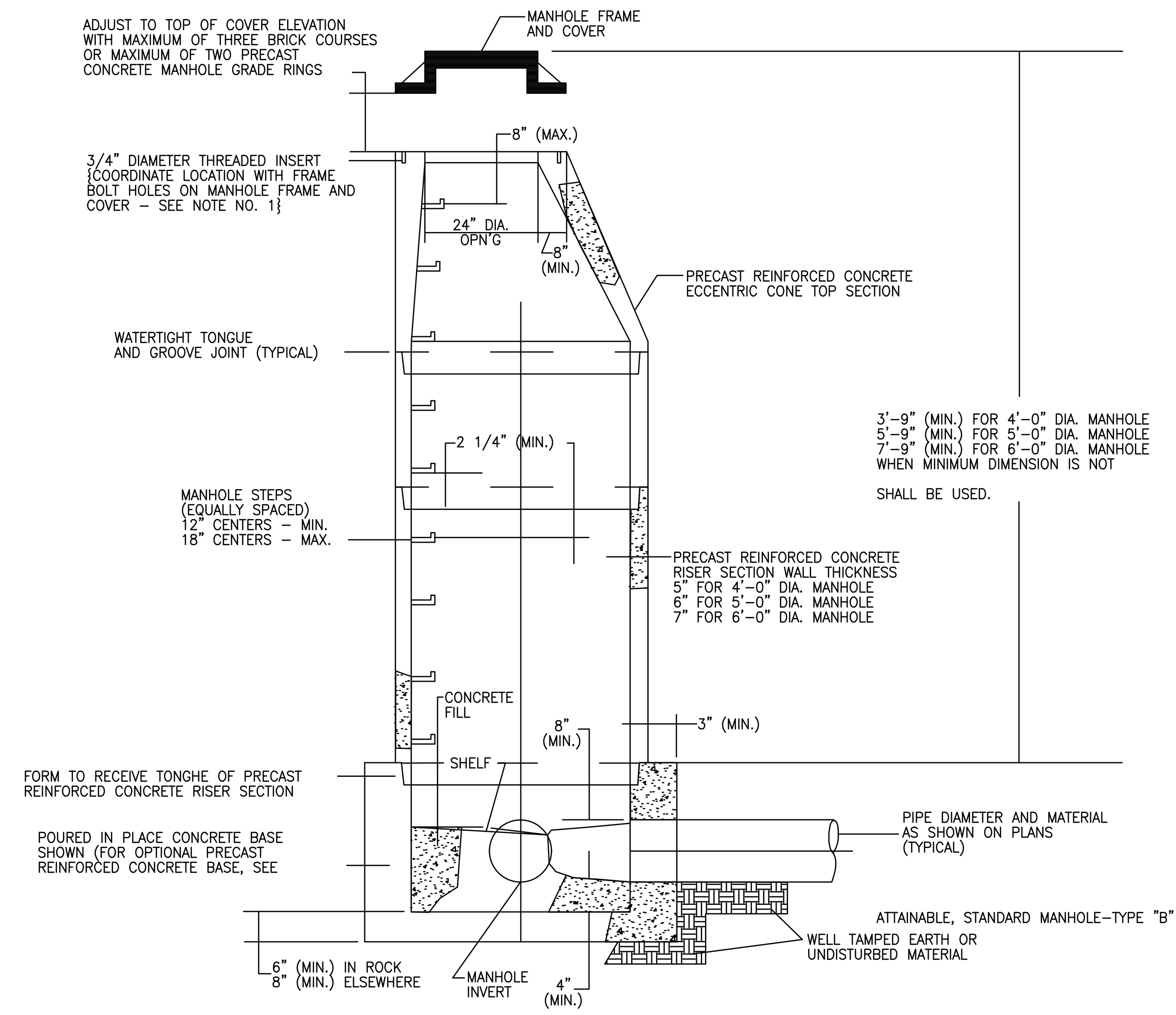
TYPE 4
CURB RAMP
(PARALLEL)

ADA HANDICAP ACCESSIBLE RAMPS

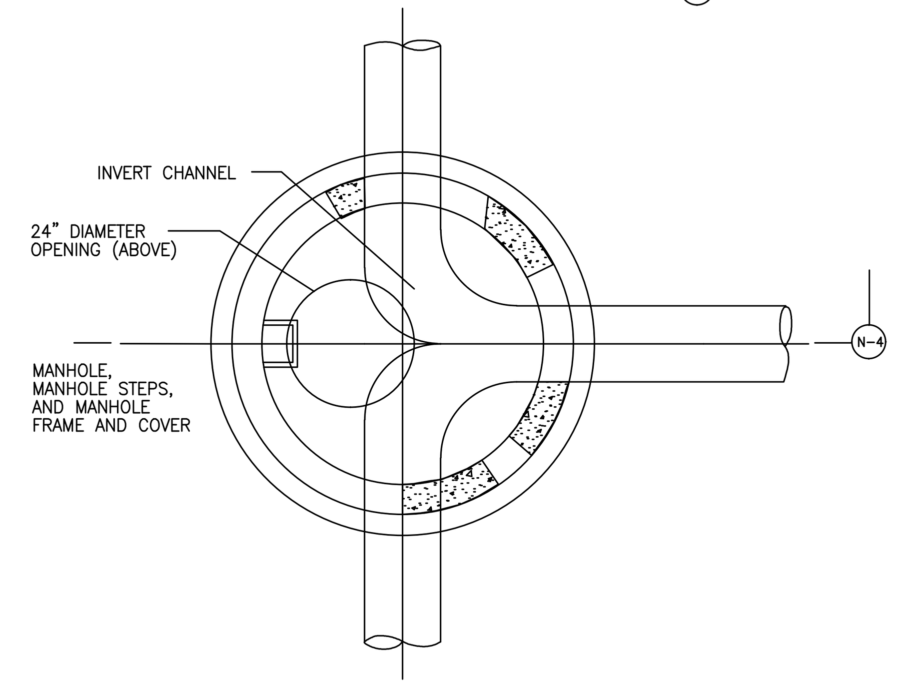
NOTES

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676 AND 694.
2. PROVIDE EXPANSION JOINT MATERIAL 13 (1/2") THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF
3. CONSTRUCT DIAGONAL CURB RAMPS WITH A 1220 (4'-0") CLEARSPACE OUTSIDE OF TRAVEL LANES AT THE BOTTOM OF THE RAMP. IF DIAGONAL CURB RAMPS ARE PROVIDED AT MARKED CROSSINGS, THE 1220 (4'-0") CLEAR SPACE IS LOCATED WITHIN THE MARKINGS AND OUTSIDE OF THE TRAVEL LANES.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON
8. IT MAY BE NECESSARY TO LIMIT THE RUN OF A PARALLEL OR PERPENDICULAR CURB RAMP IN ORDER TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB. RAMP LENGTH NOT TO EXCEED 4500 (15'-0"), ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT POSSIBLE.
9.
10. THE DETAILS DEPICT PEDESTRIAN PUSH BUTTON POLES TO ILLUSTRATE THE PREFERRED PLACEMENT OF PEDESTRIAN PUSH BUTTONS. PEDESTRIAN PUSH BUTTONS ARE TO BE INSTALLED WHERE APPLICABLE.
11. CONSTRUCT BUILT-UP CURB RAMP OF BITUMINOUS MATERIAL AS INDICATED,
12. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. US CUSTOMARY UNITS IN () PARENTHESIS.
13. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.
14. PROVIDE DETECTABLE WARNING SURFACES (DWS) 610 (24") MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
15. FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR ACCESSIBLE ROUTE.
16. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.
17. THE IMMEDIATE ADJOINING SURFACE AT THE BOTTOM AND TOP OF CURB RAMPS IS NOT TO EXCEED ROADWAY PROFILE SLOPE WHEN LOCATED ADJACENT TO THE ROADWAY. IN AREAS WHERE THE ADJOINING SURFACE IS NOT ADJACENT TO THE ROADWAY, THE LONGITUDINAL SLOPE IS NOT TO EXCEED 5.00%. FOR ALL LOCATIONS DO NOT EXCEED 2.00% CROSSLOPE. FOR LOCATIONS THAT REQUIRE A TURNING MANEUVER, THE MAXIMUM SLOPE IS 2.00% IN ALL DIRECTIONS. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. SEE SHEET 8 FOR DETAILS.
18. THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
19. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 150 (6") CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 1800 (6-0") FOR A 12:1 (1:12) SLOPE.
20. SIDEWALK WIDTH MAY BE REDUCED TO 1220 (4'-0"), WHEN PASSING AREAS 1525 X 1525 (5'-0" X 5'-0") ARE PROVIDED EVERY 61 METERS (200').
21. THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
22. DEPRESSED CURB FOR CURB RAMPS MUST BE FLUSH TO ADJACENT ROADWAY. EDGE OF ROAD ELEVATIONS AT THE FLOW LINE SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING.

INLETS



CROSS SECTION (N-4)



PLAN BELOW

ECCENTRIC CONE TOP SECTION

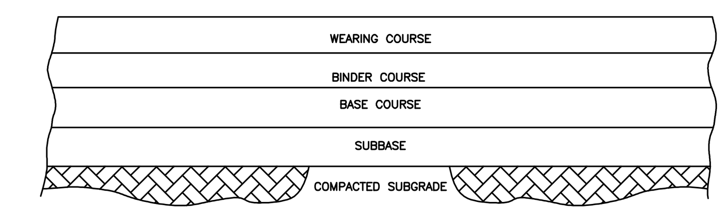
PRE-CAST MANHOLE

STANDARD MANHOLE – TYPE "A" NOTES

1. MANHOLE FRAME TO BE BOLTED IN PLACE WITH TWO 3/4" DIA. BOLTS AND FLAT WASHERS.
2. FOR PIPE CONNECTION TO CONCRETE BASE, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
3. ORIENTATION OF PIPES SHOWN FOR ILLUSTRATION PURPOSES ONLY. FOR ACTUAL LOCATIONS, SEE PLANS.
4. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT THE RATE OF 1" PER FOOT (MINIMUM).
5. THE DEPTH OF THE INVERT CHANNEL SHALL BE NOT LESS THAN 3/4 OF THE DIAMETER OF THE PIPE.
6. FOR MANHOLES HAVING 5'-6" OR 5'-8" DIAMETER BASE, REDUCTION IN DIAMETER TO 4'-0" SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL (WHERE DEPTH IS SUFFICIENT).
7. FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
8. FINISHED GRADE SHALL BE FLUSH WITH TOP OF COVER ON MANHOLE FRAME AND COVER, UNLESS OTHERWISE NOTED.

SANITARY SEWER NOTES

1. CONNECTIONS TO EXISTING MANHOLES SHOULD BE MADE BY CORING THE REQUIRED OPENING SO AS TO PREVENT CRACKING AND SPALLING CONCRETE. MAKE OPENINGS OF SUFFICIENT SIZE TO ACCOMMODATE A LINK-SEAL SEGMENTED MECHANICAL SEAL AND THE PROPOSED PIPE. A NEW CHANNEL SHALL BE FORMED IN THE MANHOLE TO ACCOMMODATE THE NEW PIPE.



REQUIRED BITUMINOUS PAVEMENT SECTION

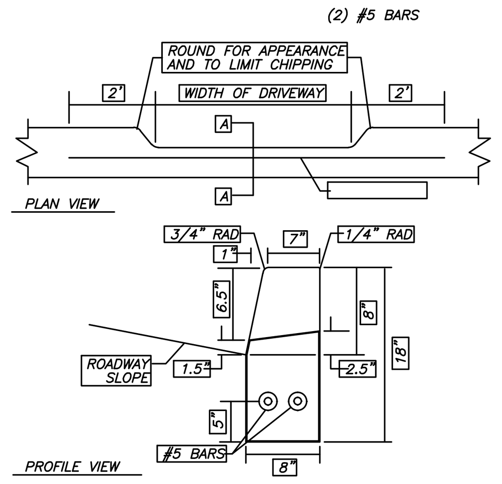
N.T.S.

	LOCATION	
DEPTH	STREET	INDIVIDUAL DRIVEWAYS
WEARING:	2"	2"
BINDER:	2" (ID-2 OR FB-1)	NONE
SUBBASE:	8" PA 4A 2" SCREENINGS -VIBRATORY COMPACTED TO FILL VOIDS	8"

BITUMINOUS PAVEMENT SPECIFICATIONS, ALL SECTIONS, APPLICABLE

WEARING COURSE	SUPERPAVE, ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 3 TO <10 MILLION ESALS, 9.5 MM MUX, SRL-H
BINDER COURSE	SUPERPAVE, ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 10 TO <30 MILLION ESALS, 25.0 MM MUX, SRL-H

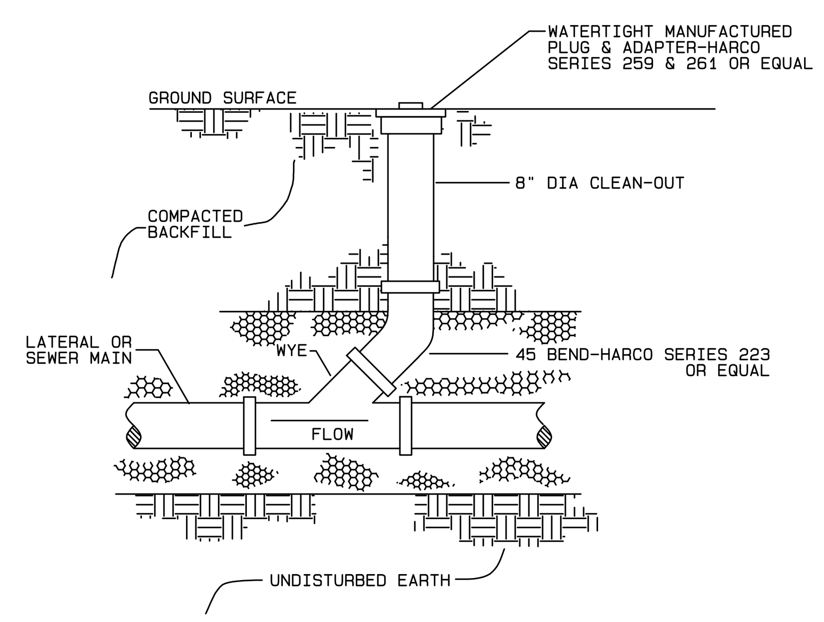
NOTE: CONSTRUCT COURSE AGGREGATE SUBBASE AND BITUMINOUS PAVEMENT IN ACCORDANCE WITH APPLICABLE SECTIONS OF PADOT PUB. 408.



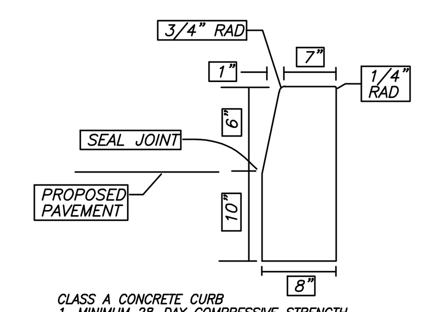
NOTE:
PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PENNDOT PUBLICATION 72M, STANDARDS FOR ROADWAY CONSTRUCTION, RC-64M AND PADOT PUBLICATION 408, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB.

DEPRESSED CURB FOR DRIVES

Not To Scale



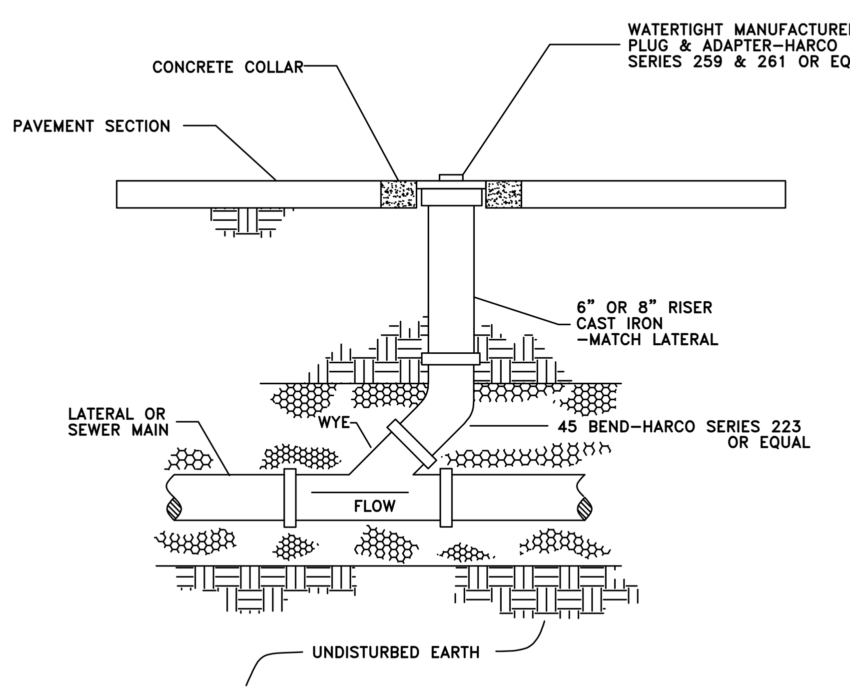
CLEANOUT - LANDSCAPE AREA



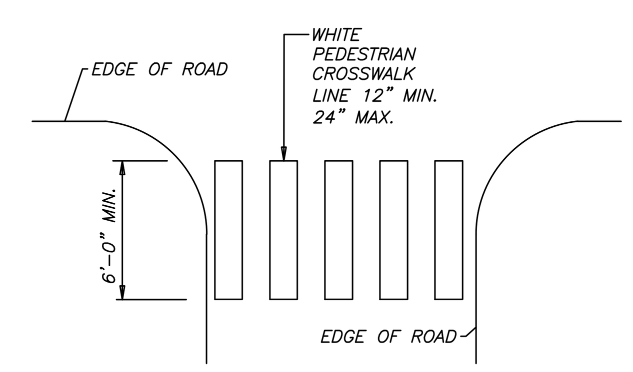
CLASS A CONCRETE CURB
1. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI
2. CONTAIN 6% AIR-ENTRAINMENT BY VOLUME

TYPICAL CURB DETAIL

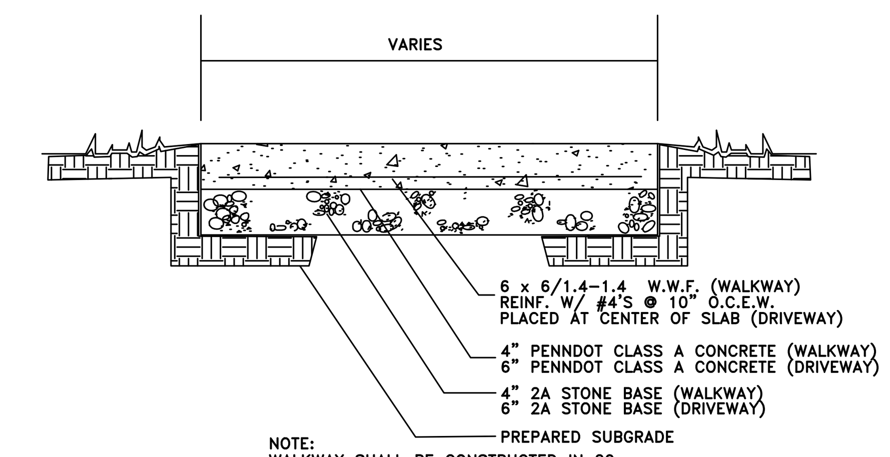
Not To Scale



CLEANOUT - PAVED AREA



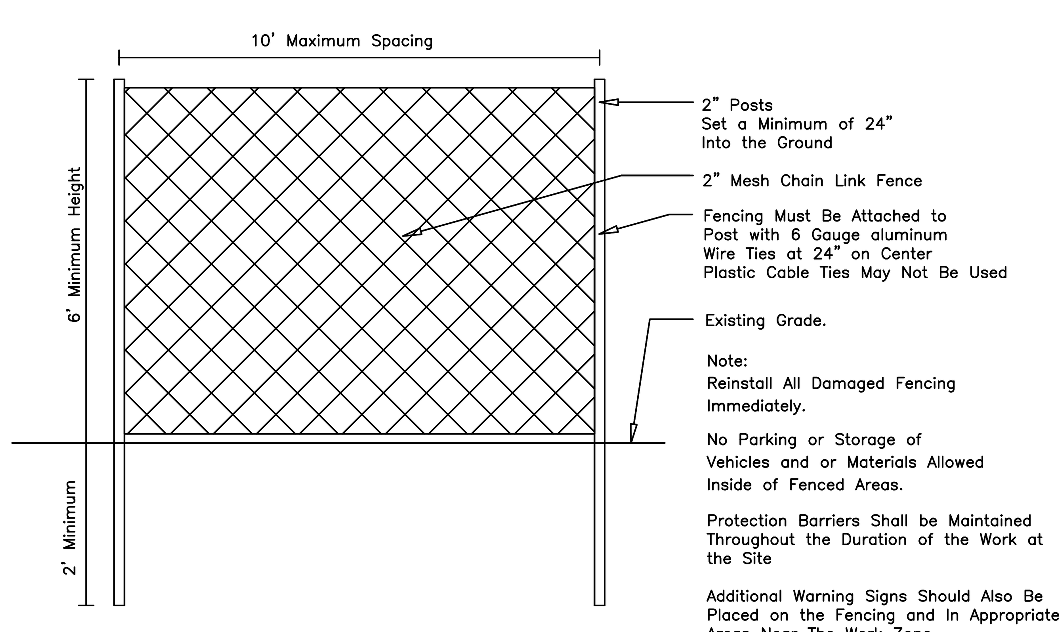
CROSSWALK DETAIL



NOTE:
WALKWAY SHALL BE CONSTRUCTED IN 20 FOOT SECTIONS WHICH SHALL BE SEPARATED BY 1/4" THICK FELT IMPREGNATED WITH BITUMINOUS MATERIAL. FELT TO BE INSTALLED BETWEEN SECTIONS AND AT ALL STRUCTURES. WALK TO BE SCORED EVERY 4 FEET. CUT REINFORCEMENT BETWEEN SECTIONS.

DRIVEWAY CONSTRUCTION MUST CONFORM TO TREDYFFRIN TOWNSHIP STANDARDS.

CONCRETE PAVEMENT (WALKWAY AND DRIVEWAY)



Note:
Reinstall All Damaged Fencing Immediately.

No Parking or Storage of Vehicles and or Materials Allowed Inside of Fenced Areas.

Protection Barriers Shall be Maintained Throughout the Duration of the Work at the Site

Additional Warning Signs Should Also Be Placed on the Fencing and In Appropriate Areas Near The Work Zone

PROTECTIVE TREE PRESERVATION FENCE DETAIL

NUM.	DATE	REVISION

PLAN PREPARED BY:

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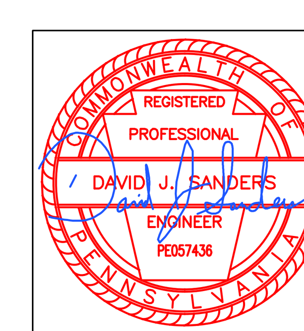


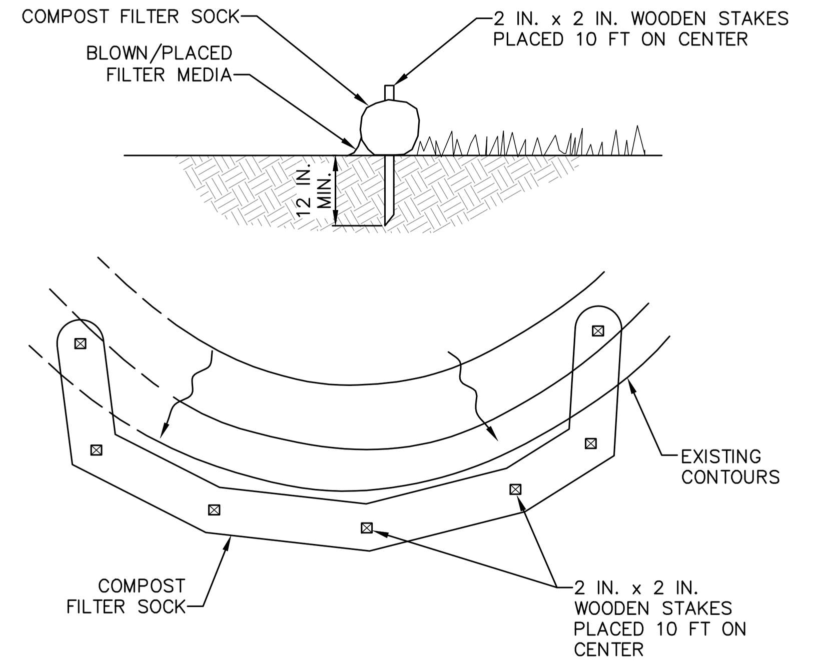
DAVID J. SANDERS, P.E.
PE057436

CONSTRUCTION DETAILS

DATE: AUGUST 27, 2020

SHEET
8 of 15

NO SCALE



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.

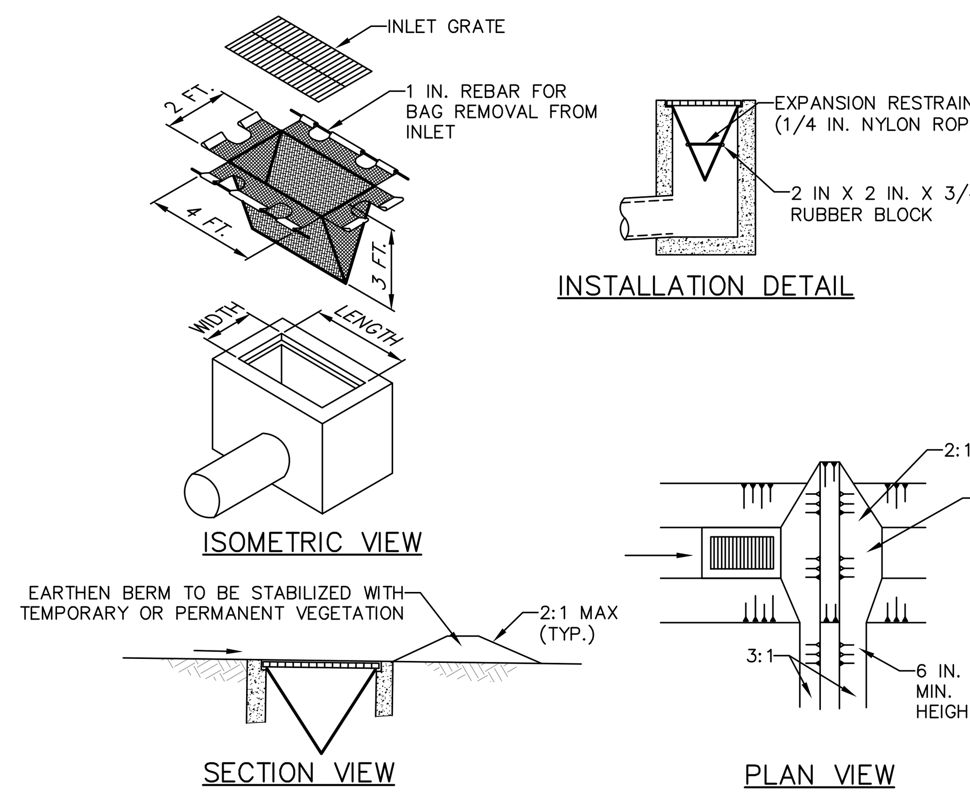
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

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.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

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.

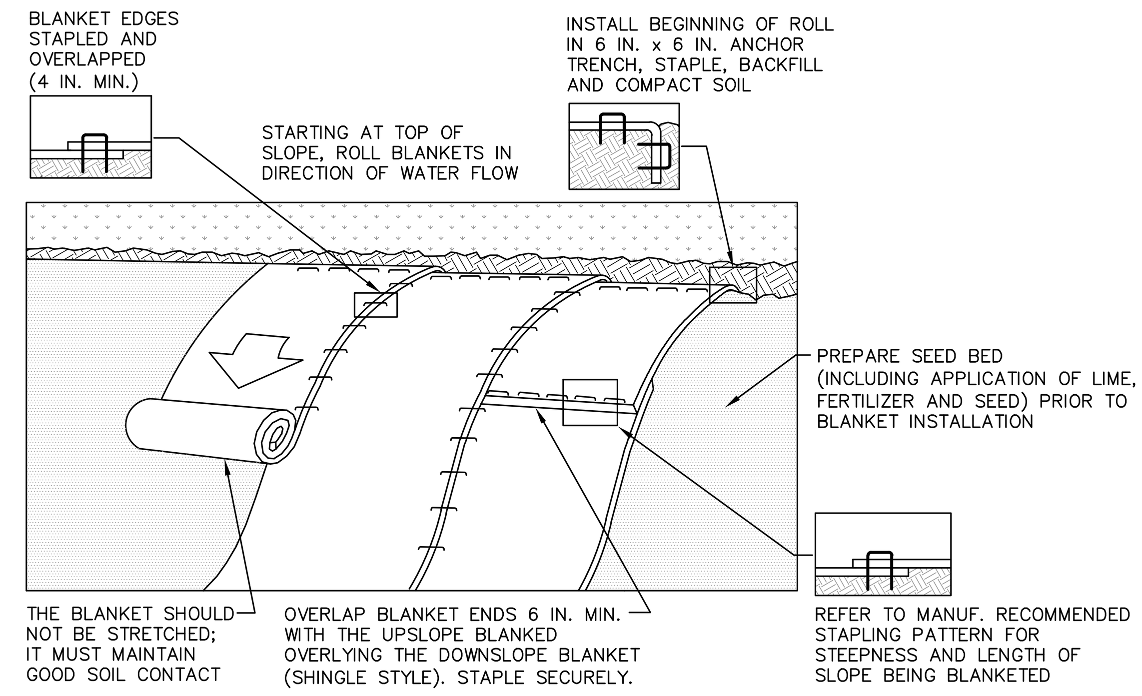
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

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



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

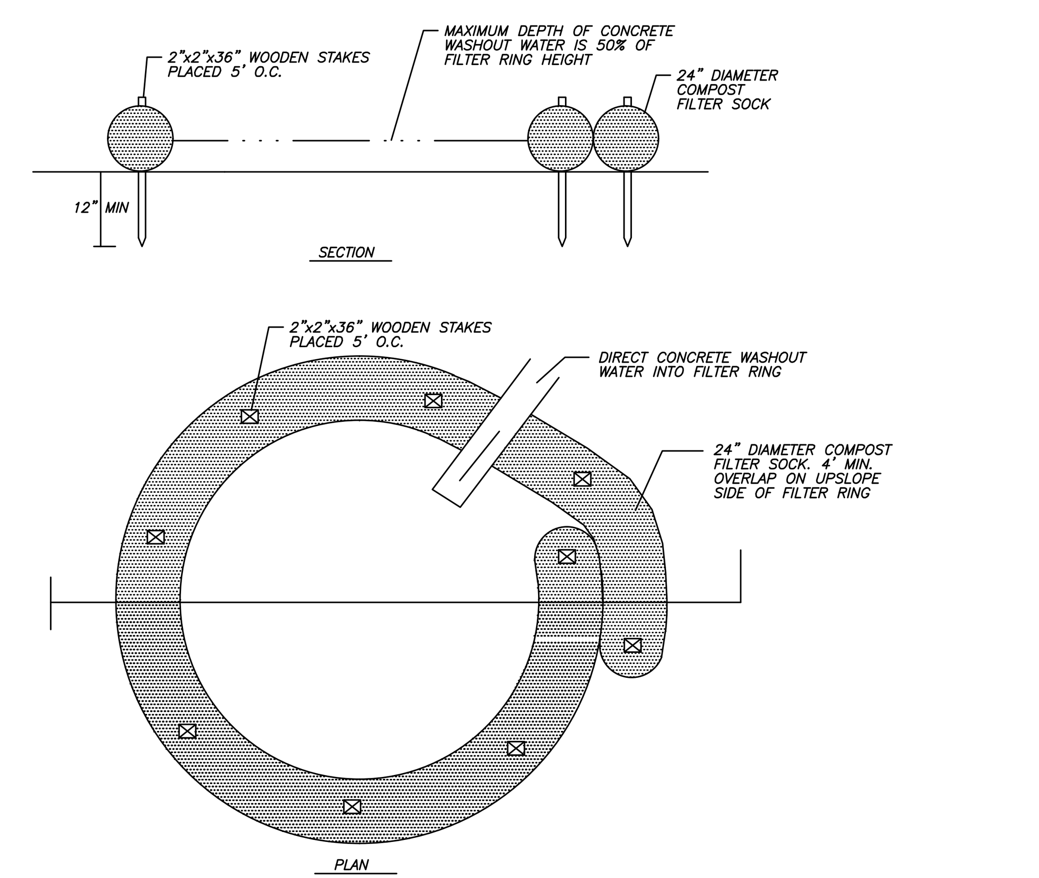
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE



INSTALLATION NOTES:
1. *A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS. CARE SHOULD BE TAKEN TO ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS*
2. *INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE*
3. *18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.*
4. *FOR MORE INFORMATION CONTACT: WEBSITE http://www.filtrexx.com*

GENERAL NOTES:
1. *FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ONSITE, A SUITABLE WASHOUT FACILITY MUST BE PROVIDED FOR CLEANING OF CHUTES, MIXERS, AND HOPPERS FOR THE DELIVERY VEHICLES UNLESS ALL DELIVERY VEHICLES WILL BE CLEANED OFFSITE.*
2. *UNDER NO CIRCUMSTANCES MAY WASH WATER BE ALLOWED TO ENTER ANY SURFACE WATERS.*
3. *WASHOUT FACILITIES MUST BE MORE THAN 50 FEET FROM STORM DRAINS, OPEN DITCHES, AND SURFACE WATERS.*
4. *NOTIFICATION MUST BE PROVIDED TO DRIVERS SO THEY ARE AWARE OF THE WASHOUT FACILITIES.*

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

CONCRETE WASHOUT DETAIL (USING COMPOST SOCK)

EROSION AND SEDIMENTATION CONTROL NOTES

1. EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

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

3. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY WITHOUT TRAVERSING A ROCK CONSTRUCTION ENTRANCE.

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

5. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT TRAP FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE BMP'S.

6. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.

7. ALL SLOPES 4:1 OR STEEPER MUST UTILIZE EROSION CONTROL BLANKET (ECB) AND SEED OR SOD FOR STABILIZATION

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

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

10. WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION AND SEDIMENT POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:
   A. THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND ANY POLLUTION EVENTS
   B. ALL STEPS TAKEN TO REDUCE, ELIMINATE AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE.
   C. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

11. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE MONTGOMERY COUNTY CONSERVATION DISTRICT THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

12. ALL PUMPING OF SEDIMENT-LADEN WATER, OR POTENTIALLY SEDIMENT LADEN WATER, SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREA

13. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

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

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

16. THE NPDES BOUNDARY IS EQUAL TO THE OUTER PERIMETER BOUNDARY OF THE SITE, AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL, INCLUDING OFF-SITE FACILITIES SUCH AS UTILITIES AND ROADWAY IMPROVEMENTS.

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

18. TOPSOIL REMOVED BY GRADING OPERATIONS SHALL BE REDISTRIBUTED AND STABILIZED AS QUICKLY AS POSSIBLE FOLLOWING THE COMPLETION OF THE PROJECT PHASE

19. RUNOFF CROSSING TO THE ADJACENT PROPERTY DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE MANAGED SO THAT THE WATER QUALITY/QUANTITY IMPACT IS MINIMIZED TO THE ADJACENT PROPERTY. DIVERSION BERMS, STONED STAGING AREAS, AND INLETS/PIPING SHALL BE PROVIDED AS NEEDED TO INSURE ACCEPTABLE CONDITIONS DURING CONSTRUCTION.

20. SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN LANDSCAPE AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

21. GRADING AND EARTHMOVING OPERATIONS SHALL BE MINIMIZED DURING THE PERIOD FROM NOVEMBER 15 TO APRIL 1 WHEN RE-VEGETATION OF EXPOSED GROUND SURFACE IS DIFFICULT. MULCH, STRAW, STONE AND/OR SOD SHALL BE USED TO STABILIZE ALL AREAS DENUDED DURING THIS TIME PERIOD.

UTILITY LINE TRENCH EXCAVATION NOTES

A. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF-CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
C. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
D. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
E. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
F. ON THE DATE FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.

CLEAN FILL NOTES

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH BRYN MAWR COLLEGE.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

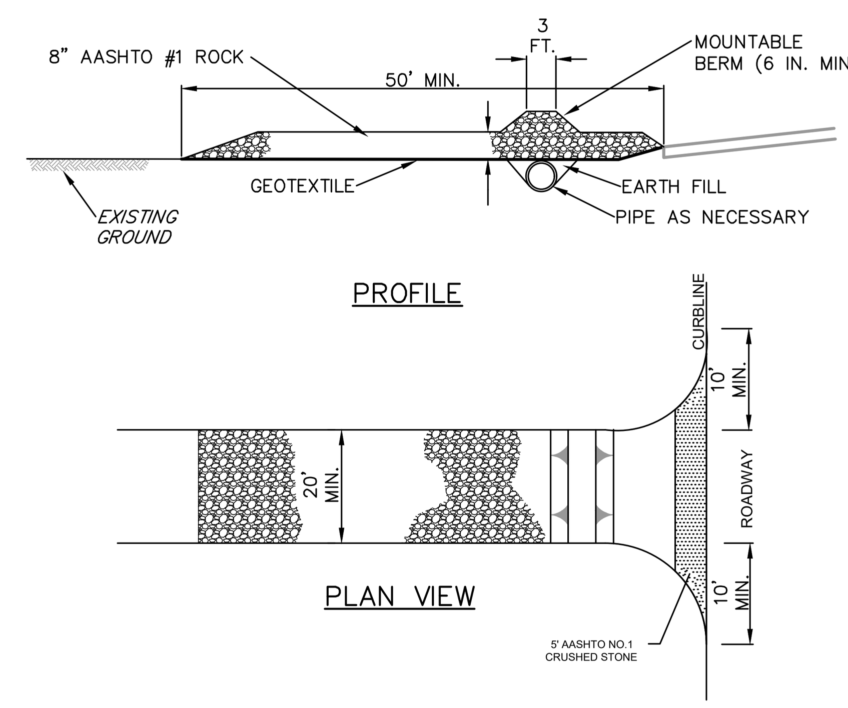
ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

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

APPENDIX C – STANDARD E&S PLAN NOTES

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (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 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 preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site preconstruction meeting.
3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
4. 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.
5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
6. 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 maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.
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. 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 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
11. All off-site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.
14. Vehicles and equipment may neither enter directly nor exit directly from lots onto
15. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
16. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
17. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each workday and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
18. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
19. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches -6 to 12 inches on compacted soils - prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.
20. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
22. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.
23. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
24. Fill shall not be placed on saturated or frozen surfaces.
25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
26. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
27. 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, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
28. 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.
29. 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.
30. 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/conversion of the E&S BMPs.
31. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.
32. 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.
33. 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 instituted 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 criminal penalties for each violation.



NOTES:

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

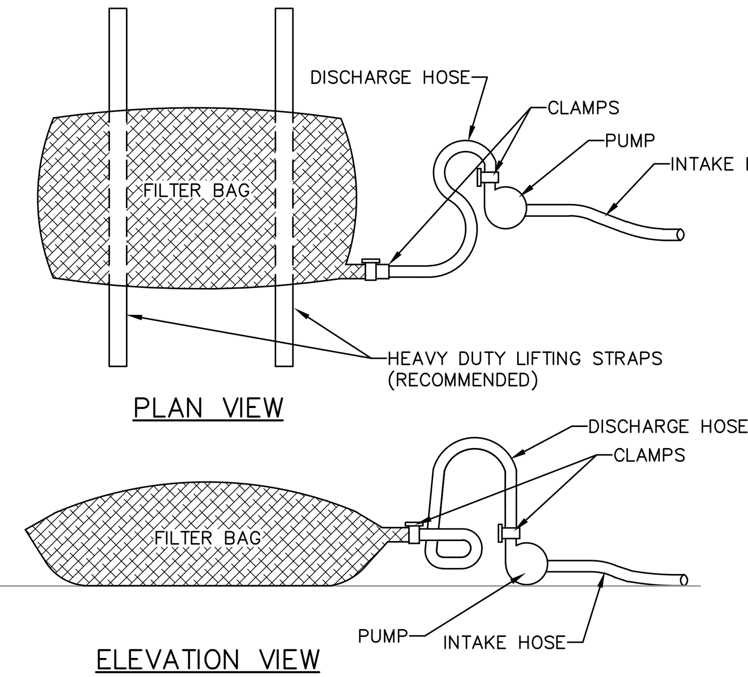
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

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

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

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:

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

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

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

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

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

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

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE

SEEDING AND MULCHING SPECIFICATIONS

TEMPORARY-CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION. TOPSOIL SHALL BE REPLACED IF NEEDED, REFER TO E&S NOTES FOR REQUIREMENTS.

- SEEDING SHALL BE COMMON RYE GRASS APPLIED AT 45 LBS. PER ACRE
- LIMING TO BE APPLIED AT 1 TON/ACRE
- 5-5-5 FERTILIZER TO BE APPLIED AT 1000 LBS/ACRE
- HAY OR STRAW MULCH TO BE APPLIED AT 3 TONS/ACRE

PERMANENT

- TOPSOIL REPLACEMENT
- SEEDING SHALL BE 15% KENTUCKY BLUEGRASS, 35% KENTUCKY 31 FESCUE, 25% CHEWINGS FESCUE, 15% PERENNIAL RYE GRASS AND 10% RECLEANED REDTOP AT A RATE OF 5 LBS PER 1000 SF
- LIMING TO BE APPLIED AT 3 TONS PER ACRE
- 10-20-20 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 JUNE 15 THRU AUGUST 15 AND SEPTEMBER 30 THRU APRIL 15. AREAS DISTURBED DURING THESE PERIODS MUST BE LIMED, FERTILIZED, SEEDED AND MULCHED IMMEDIATELY.

EROSION CONTROL MAINTENANCE PROGRAM

TEMPORARY

TEMPORARY EROSION CONTROL FACILITIES MAINTENANCE WILL CONSIST OF INSPECTION, CLEANING, REPAIR/REPLACEMENT OF THE ON-SITE EROSION CONTROL FACILITIES THAT ARE SHOWN ON THESE EROSION AND SEDIMENTATION CONTROL PLANS. ALL EROSION AND SEDIMENTATION CONTROL FACILITIES WILL BE CHECKED BY THE CONTRACTOR'S SITE PROJECT MANAGER ON A WEEKLY BASIS AND AFTER EACH STORM EVENT. ALL SEDIMENT MATERIAL COLLECTED BY THE CONTROL FACILITIES WILL BE CLEARED AND REDISTRIBUTE ON-SITE. ANY FACILITIES FOUND TO BE DAMAGED OR MALFUNCTIONING SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

NUM.	DATE	REVISION

PLAN PREPARED BY:
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P.O. BOX 1992
SOUTHEASTERN, PA 19399
P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:
HAMILTON ESTATE
208 & 228 STRAFFORD AVE AND 18 FORREST LANE
WAYNE, PA 19087
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

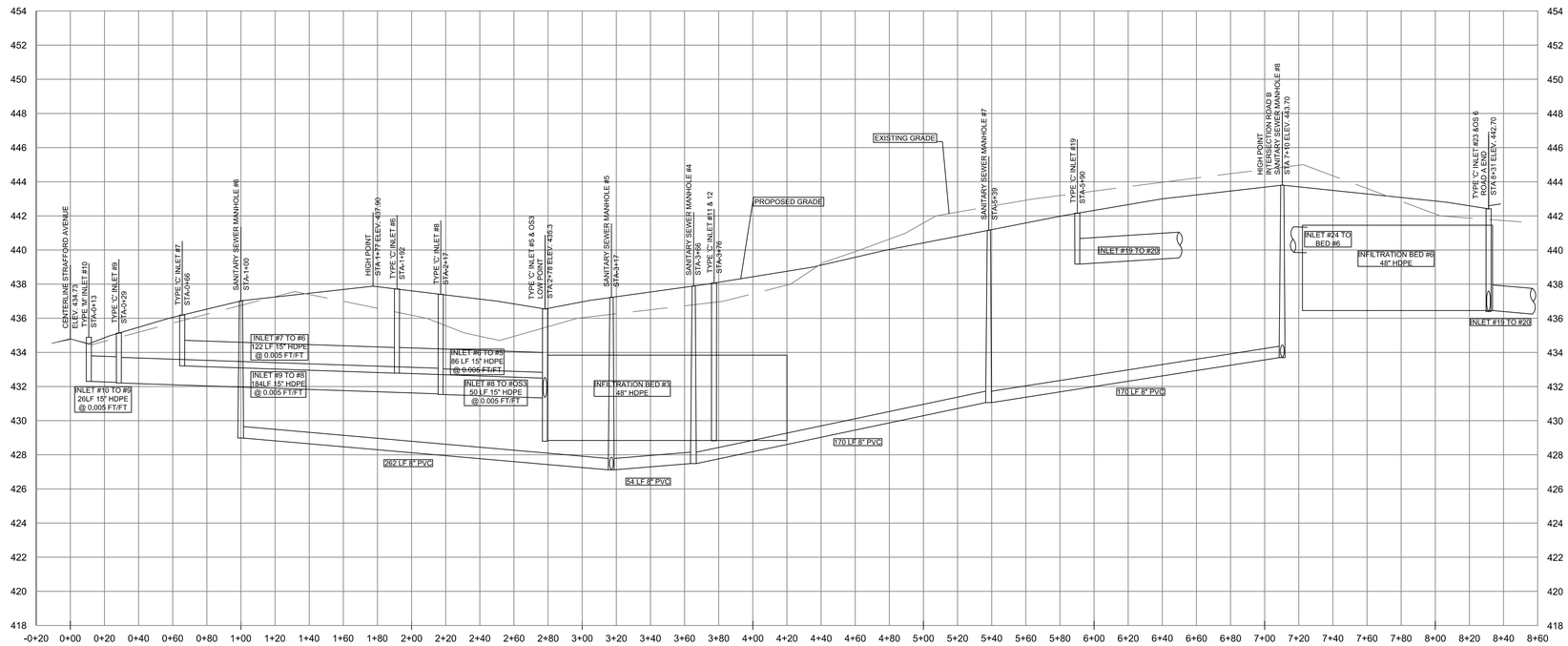
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID J. SANDERS ENGINEER PE057436

DAVID J. SANDERS, P.E.
PE057436

EROSION AND SEDIMENTATION CONTROL DETAILS

DATE: AUGUST 27, 2020

NO SCALE



ROAD A PROFILE

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PLAN PREPARED BY:

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID J. SANDERS
ENGINEER
PE057436

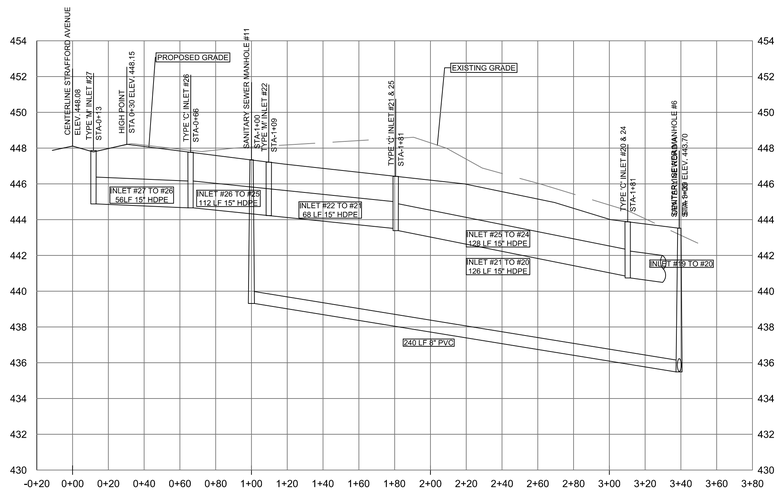
DAVID J. SANDERS, P.E.
PE057436

PROFILES

DATE: AUGUST 27, 2020

SHEET
10 of 15

SCALE: 1" = 40'



ROAD B PROFILE

NUM.	DATE	REVISION

PLAN PREPARED BY:

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PLAN PREPARED FOR:

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DAVID J. SANDERS
ENGINEER
PE057436

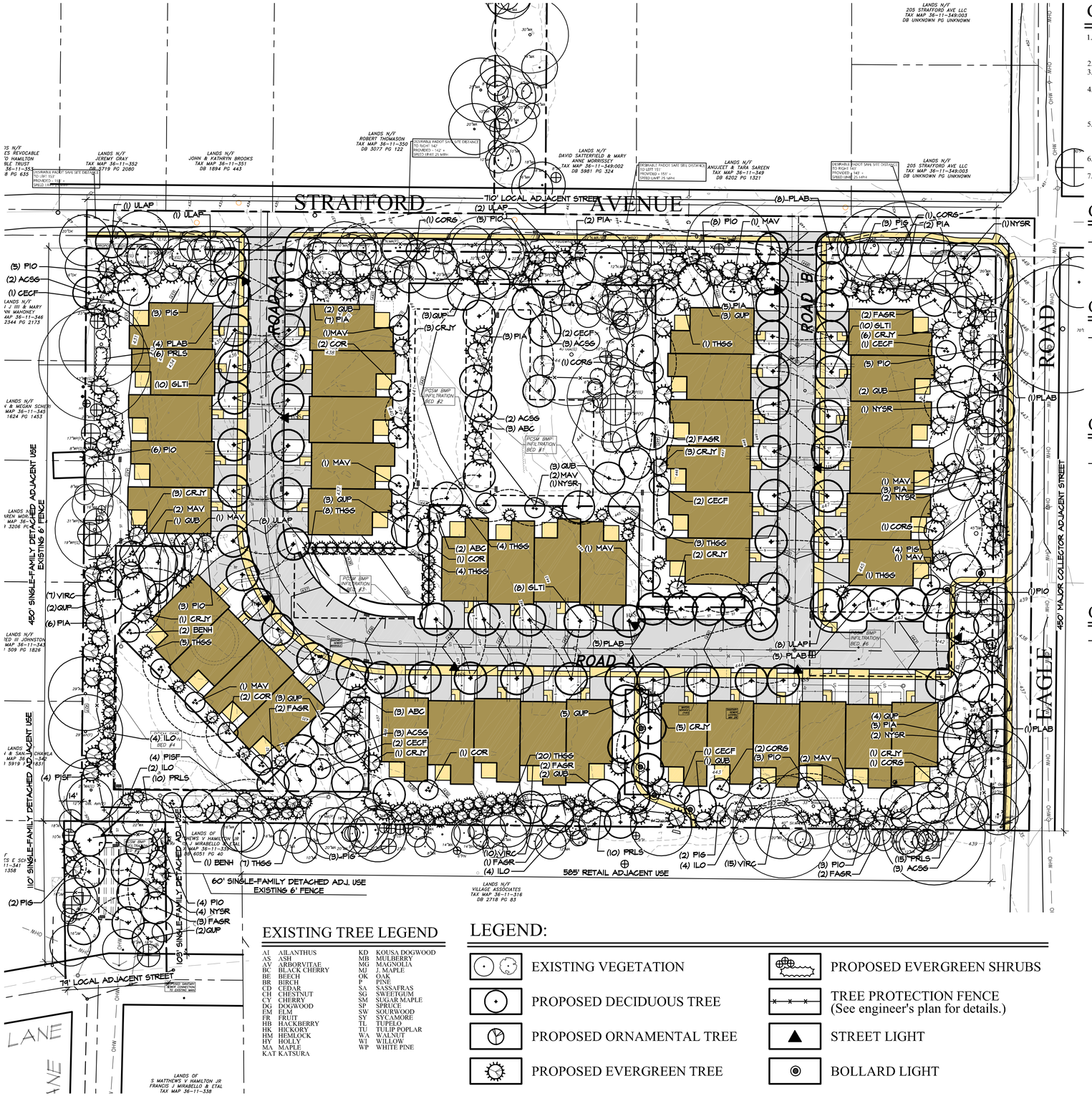
DAVID J. SANDERS, P.E.
PE057436

DATE: AUGUST 27, 2020

PROFILES

SHEET
11 of 15

SCALE: 1" = 40'



GENERAL NOTES:

1. Base information including topography, grading, utilities, building and existing vegetation location prepared by Site Engineering Concepts, Inc. November 2019
2. This plan is for landscaping purposes only.
3. The Landscape Architect's seal applies only to the landscape portion of this plan.
4. All plant material is to be field adjusted as necessary to address existing site conditions, proposed unit landscaping, and to ensure that clear sight triangles and clear sight lines are maintained.
5. Proposed shade trees shall not be planted over the top of any sewer or water laterals, mains or services. Sewer and water laterals, mains and services are shown on Landscape Plans for reference only. See engineers plans for location of all utilities.
6. Utilities are shown on Landscape Plans for reference only. See engineers plans for location of all utilities.
7. All trees shall be pruned as necessary to maintain required light levels.

COMPLIANCE WITH SECTION 255-38 Subsection B

SHADE TREES	REQUIRED	EXISTING TO REMAIN	PROPOSED
Existing local street length: 789'			
1 Street tree required at intervals not less than 30' on 1 side	27	28	0
Proposed road length 2,149':			
1 Street tree required at intervals not less than 30' on both sides	71	0	71 (6 shown along trails)

COMPLIANCE WITH SECTION 255-42 (Tables 1 and 2)

BUFFER SCREENS	LENGTH	REQUIRED	EXISTING TO REMAIN	PROVIDED
Buffer screen class 'A' required between proposed Planned Cluster Development use and Major Collector Street.	450'	11 canopy trees 15 evergreen trees	8 canopy trees 6 evergreen trees	3 canopy trees 9 evergreen trees
Buffer screen class 'B' required between proposed Planned Cluster Development use and existing Retail use.	585'	39 evergreen trees 73 evergreen shrubs	0 0	39 evergreen trees 73 evergreen shrubs

COMPLIANCE WITH SECTION 263-4

TREE REPLACEMENT	# TREES REMOVED	REPLACEMENTS REQUIRED	REPLACEMENTS PROVIDED
1 Replacement tree required for every 6"-18" DBH tree removed	156	156	156
3 Replacement trees required for every 19"-29" DBH tree removed (2) being large canopy trees	24	72 total (48 canopy)	72 total (48 canopy)
6 Replacement trees required for every 30"+ DBH tree removed (4) being large canopy trees	6	36 total (24 canopy)	36 total (24 canopy)
	187	264 total (72 to be canopy trees)	264 total (72 to be canopy trees)

Notes:
Replacement trees for hazardous and dead trees are not provided.

COMPLIANCE WITH SECTION 280-91-G

BUFFER	REQUIRED	PROVIDED
Density Modification development requires a 25' buffer along all residentially zoned districts	25' buffer	25' buffer

PLANT LIST:

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
DECIDUOUS TREES					
ACSG	13	Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	2"-2.5" cal.	B&B
BENH	3	Betula nigra 'Heritage'	Heritage River Birch	2"-2.5" cal.	B&B
CECF	9	Cercis canadensis 'Forest Pansy'	Forest Pansy Redbud	2"-2.5" cal.	B&B
COR	6	Cornus 'Rutcan'	Constellation Flowering Dogwood	2"-2.5" cal.	B&B
CORG	7	Cornus 'Rutgan'	Stellar Pink Flowering Dogwood	2"-2.5" cal.	B&B
FAGR	14	Fagus grandfolia	American Beech	2"-2.5" cal.	B&B
GLTI	28	Gleditsia triacanthos v. inermis 'Shademaster'	Shademaster Honeylocust	2"-2.5" cal.	B&B
MAV	14	Magnolia virginiana	Sweet Bay Magnolia	2"-2.5" cal.	B&B
NYSR	11	Nyssa sylvatica 'Red Rage'	Red Rage Black Gum	2"-2.5" cal.	B&B
PLAB	24	Platanus x acerifolia 'Bloodgood'	Bloodgood London Planetree	2"-2.5" cal.	B&B
QUB	11	Quercus bicolor	Swamp White Oak	2"-2.5" cal.	B&B
QUP	25	Quercus phellos	Willow Oak	2"-2.5" cal.	B&B
ULAP	20	Ulmus americana 'Princeton'	Princeton Elm	2"-2.5" cal.	B&B
EVERGREEN TREES					
ABC	8	Abies concolor	White Fir	8'-10' ht.	B&B
CRJY	25	Cryptomeria japonica 'Yoshino'	Yoshino Cryptomeria	8'-10' ht.	B&B
ILO	14	Ilex opaca	American Holly	8'-10' ht.	B&B
PIA	33	Picea abies	Norway Spruce	8'-10' ht.	B&B
PIG	17	Picea glauca	White Spruce	8'-10' ht.	B&B
PIO	43	Picea orientalis	Oriental Spruce	8'-10' ht.	B&B
PISF	8	Pinus strobus 'Fastigiata'	Columnar White Pine	8'-10' ht.	B&B
THGG	53	Thuja plicata 'Green Giant'	Green Giant Arborvitae	8'-10' ht.	B&B
SHRUBS					
PRLS	41	Prunus laurocerasus 'Schipkaensis'	Skip Laurel	24"-30" ht.	Cont.
VIRC	32	Viburnum rhytidophyllum 'Cree'	Cree Leatherleaf Viburnum	24"-30" ht.	Cont.

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

EXISTING TREE LEGEND

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

LEGEND:

- EXISTING VEGETATION
- PROPOSED DECIDUOUS TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN TREE
- PROPOSED EVERGREEN SHRUBS
- TREE PROTECTION FENCE (See engineer's plan for details.)
- STREET LIGHT
- BOLLARD LIGHT

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0 20 40 80 120 FEET
SCALE: 1" = 40'

NORTH

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Bernard S. Panzak, Jr. LA000918 E

LANDSCAPE PLAN
Hamilton Property
208 & 228 STRAFFORD AVE. & 18 FORREST LANE
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 19-033
DATE: 08/27/2020 (jr)
REV.:

SHEET:
LP-1

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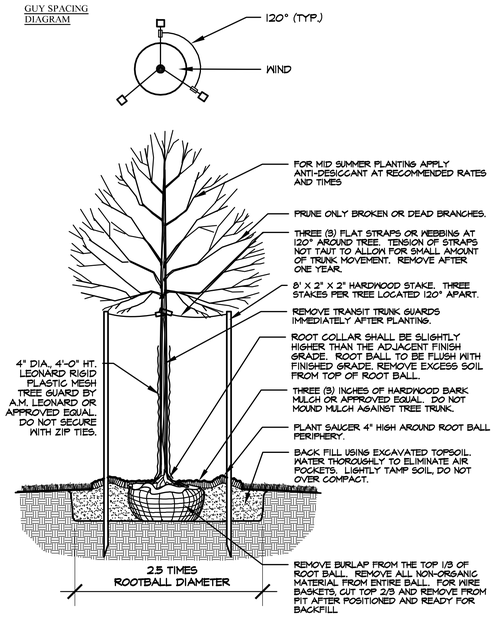
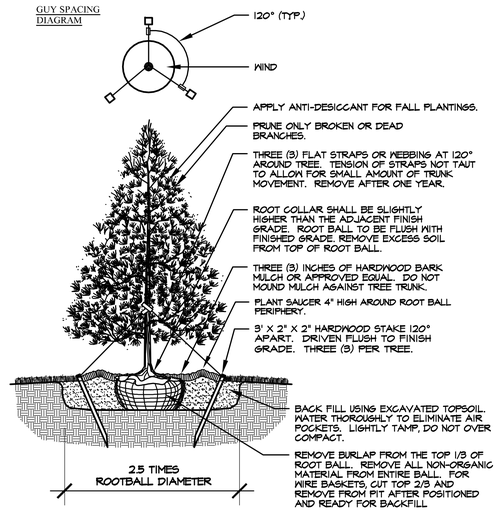


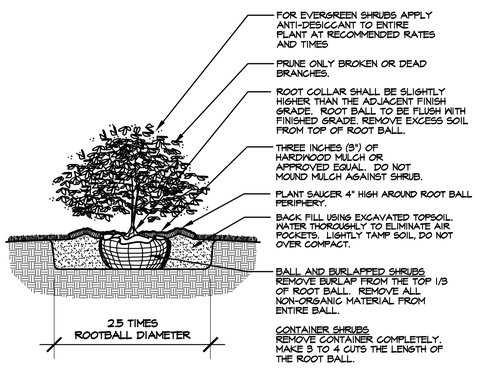
NOTES:
1. Trees with poor quality root balls or root balls that have been cracked or damaged shall be rejected.
2. Trees with central leader broken or dead shall be rejected
3. Trees that do not display the typical characteristics for their species shall be rejected.
4. Flood planting pit with water twice within 24 hours of planting.

1 DECIDUOUS TREE WITH STAKES DETAIL
NTS



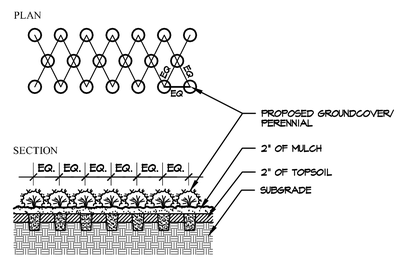
NOTES:
1. Trees with poor quality root balls or root balls that have been cracked or damaged shall be rejected.
2. Trees with central leader broken or dead shall be rejected
3. Trees that do not display the typical characteristics for their species shall be rejected.
4. The owner shall be responsible for contacting the contractor, who shall right and secure any tree that leans out of plumb.
5. Flood planting pit with water twice within 24 hours of planting.

2 EVERGREEN TREE WITH STAKES DETAIL
NTS



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

3 SHRUB DETAIL
NTS



NOTES:
1. Plants must be planted in bedding mix or topsoil not mulch.
2. See planting list for groundcover species, size, and spacing dimension.

4 PLANTING DETAIL
NTS

PLANTING NOTES:

1. The contractor shall furnish and install all plants shown on the drawings, as specified, and in quantities indicated on the plant list.
2. All plants shall be nursery grown and freshly dug.
3. All plants shall be in accordance with The American Standard for Nursery Stock, latest edition.
4. All plants shall be hardy under climatic conditions similar to those in the locality of the project.
5. Fall Digging Hazard: Any species listed below, if included on the plant list, must not be dug in the fall (October through December) because of risk to the tree's survival. Special exceptions may be granted if the owner is notified in writing and an extended warranty on these plants is agreed upon prior to digging. The following varieties should not be dug in fall: Betula, Carpinus, Celtis, Cercidiphyllum, Crataegus, Cryptomeria, Fagus, Halesia, Ilex (tree form varieties), Liquidambar, Liriodendron, Nyssa, Ostrya, Prunus, Pyrus, Quercus (except Quercus palustris), Salix weeping varieties, and Tilia tomentosa. Digging for Malus and Zelkova varieties should be avoided in fall only when in leaf.
6. All plants shall be typical of their species or variety and shall have a normal habit or growth. They shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be certified by appropriate State and Federal authorities to be free of disease and insect pests, eggs or larvae. They shall have healthy, well-developed root systems.
7. Plants that do not display typical characteristics for their species shall be rejected.
8. Substitutions: When plants of a specified kind or size are not available within a reasonable distance, substitutions may be made upon written request by the contractor, if approved by the owner and/or municipal authority.
9. Measurement: Dimensions of trees and shrubs shall conform to The American Standard for Nursery Stock, latest edition.
10. Size: All plants shall conform to the measurement specified on the plant list, unless authorized in writing by the Township Arborist and the owner.
11. Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
12. Trees with central leader broken or dead shall be rejected
13. Plants with broken root balls or excessive damage to the crown shall be replaced prior to planting.
14. Plants with poor quality root balls or root balls that have been cracked or damaged shall be rejected.
15. Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
16. Conditions detrimental to plants: The contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. The contractor shall state the conditions and submit a proposal for correcting the conditions, including any change in cost, for review and acceptance by the project representative.
17. The owner or the owner's representative shall be notified prior to beginning planting operations.
18. All planting shall be at the locations indicated on the drawings. The contractor shall be responsible for planting at the correct grades, alignment, and to the indicated layout of the planting beds.
19. Layout of planting: The contractor shall lay out with identifiable stakes the location of all planting beds as indicated on drawing. The layout of planting shall be approved by the project representative prior to any excavation of plant pits or plant beds.
20. Minor adjustments to plant locations may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.
21. Install plant materials after final grades are established and prior to to planting of lawns unless otherwise acceptable to the owner.
22. Do not install plants when ambient temperatures may drop below 35°F or above 90°F.
23. Do not install plants when wind velocity exceeds 30 mph.
24. Planting shall be done within the following dates - trees, shrubs, groundcover, and perennials shall be planted September 1 through December 1, or April 15 to May 31, and only when local climatic and soil conditions favor satisfactory planting operations. Planting may be done beyond these limits only if requested in writing and approved by the Landscape Architect.
25. Planting operations to commence only when preceding work within the area has been completed. Proceed with and complete planting as rapidly as portions of the site become available, working within seasonal limitations.
26. Planting soil shall be excavated native soil from the planting pit. Planting soil shall be thoroughly mixed, with all rocks, clods and roots removed.
27. All trees shall be staked and guyed according to accepted industry practice, and as noted on the planting details.
28. Each tree and shrub shall be pruned in accordance with The American Nursery and Landscape Association Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed.
29. Mulch: Immediately after planting operations are completed, all trees and shrub planting pits shall be covered with a 3" (three inch) layer of double shredded hardwood bark mulch, or other material approved by the owner or the owner's representative. A granular pre-emergent weed control shall be spread prior to mulching. The limit of this mulch for deciduous trees and single evergreen trees shall be the area of the pit. For shrub and perennial beds and for evergreen tree clusters, a continuous, mulched bed shall be created.
30. Trees in leaf, including evergreens, when planted shall be treated with anti-desiccant such as Wilt-Pruf® if planted during the months of June through September, November, and December.
31. Weed control: All planting areas shall be free from weeds prior to the beginning of planting operation. Contact herbicide sprays should only be used as required and all manufacturer's specifications followed.
32. Guarantee: All plant material shall be guaranteed by the contractor for twelve (12) months from the date of installation. The owner shall be responsible for maintenance unless otherwise agreed with contractor. It shall be the contractor's responsibility to monitor the project during the guarantee and notify the owner if problems develop with the plant material. Any material that is 25 % dead or more shall be considered dead and must be replaced at no charge. A tree shall be considered dead when the main leader has died back, or there is 25% of the crown dead.
33. All debris resulting from landscape contracting operations shall be cleaned up and removed from the site on a weekly basis.
34. Watering: Landscape contractor is responsible for watering sufficiently at the time of planting and until the job is completed, accepted and turned over to the owner.

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Hamilton Property
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PROJECT #: 19-033
DATE: 08/27/2020 (jr)
REV.:

SHEET:
LP-2

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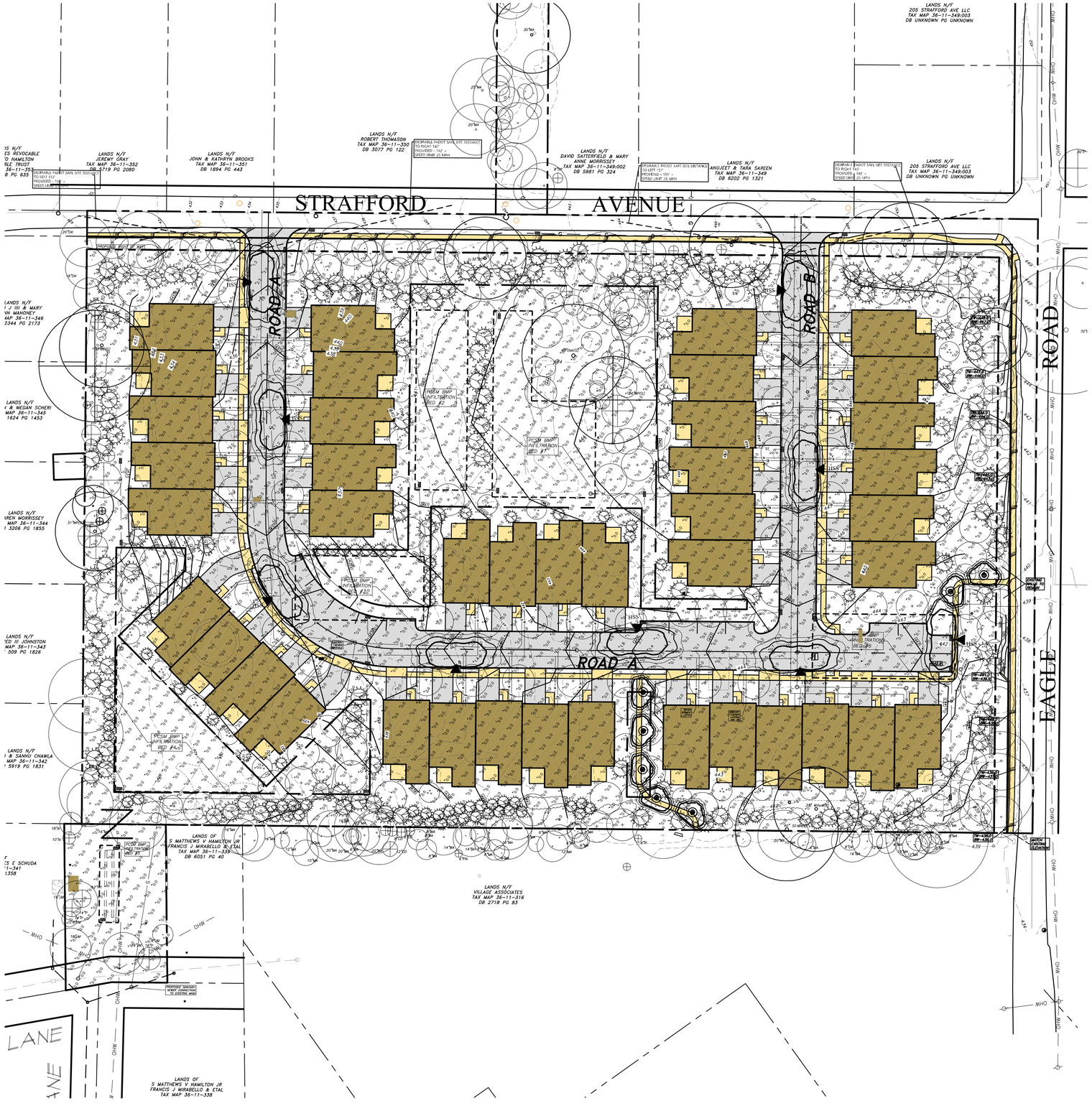


GENERAL NOTES:

1. Base information including topography, grading, utilities, building and existing vegetation location prepared by Site Engineering Concepts, Inc. November 2019
2. This plan is for lighting purposes only.
3. The Landscape Architect's seal applies only to the lighting portion of this plan.

LIGHTING NOTES:

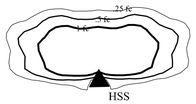
1. Lighting to be installed to meet all appropriate national and local codes.
2. All light fixtures to be approved by Owner or Owner's representative.
3. All circuits to be installed by a licensed electrician.
4. All cable to be run in conduit unless approved in writing by the owner.
5. Contractor to provide sufficient nighttime adjustment to all lighting to satisfy Township requirements and Owner or Owner's representative. Fixture on/off control by circuit.
6. All lighting to be installed according to manufactures recommendations.
7. All electrical conduits shall be sch 40 pvc and all bends shall be "sweep" type for pulling wire. Conduit to extend beyond edge of hardscape element by 12" min. Conduit to be temporarily capped and location staked prior to backfilling.
8. While extending conduits under existing structures the contractor shall be responsible for damage to existing structures such as, but not limited to, paving, irrigation, pool piping, masonry piers and underground drainage pipe etc.
9. All lighting fixtures to be controlled by photo-cells.
10. All final light locations to be approved by Owner or Owner's representative.
11. All final light locations to be field adjusted, "aimed" as necessary so as to avoid shining of light into windows and doors.
    Contractor to arrange a pre-construction meeting with the owner and owners representatives including masons, and other individuals familiar with any underground facilities.
    As-built drawing should be requested of all such facilities.
12. Contractor shall spray paint trench layout prior to commencement. Owner or Owner's representative shall approve layout.
13. Electrical contractor to prepare a plan of all as-built underground electric runs.
14. Project electrical engineer to provide power plan, and ComCheck calculations as required.
15. In the event that the contractor proposes light fixture substitutions, requests must be received by the Landscape Architect for review (14) fourteen days prior to bid date. Failure to submit within that deadline renders all substitution requests void, and originally specified fixture(s) will be supplied. The contractor shall submit the following:
    A. Township required copies of all mandatory submittals for both the originally specified fixture(s) and the proposed substitution(s).
    B. Contractor's written certification that the proposed substitution(s) conforms to all requirements of the contract documents in every respect and is appropriate for the applications indicated in the documents.
    C. Contractor's written statement indicating the effect of the substitution(s) on the construction schedule compared to the schedule with the originally specified fixture(s).
    D. Contractor-net unit price for the originally specified fixture(s) and for the proposed substitute fixture(s).
    E. One sample of the proposed substitution fixture(s) with specified lamps and cord and plug connection for 277 volt operation.
    F. Contractor's written certification that any alterations that may result from the proposed lighting fixture substitution(s) will be designed and constructed at the contractor's expense.
    G. Reimbursement to the landscape Architect for all time associated with review of fixture substitutions(s). Payment shall be made in advance of the review, based on the Landscape Architect's hourly rates for the personal involved in the review.
    H. Contractor's written waiver of rights to additional payment and/or time that may become necessary should the proposed substitution(s) fail to perform in a manner that is equivalent to the originally specified fixture(s).
16. Post-approval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to the Township for review and approval.

LIGHTING LEGEND:

SYM.	LIGHT TYPE	QTY.	MFG.	MODEL #	REMARKS
▲	STREET LIGHT	9	AAL	PROV2-36L-325-3K7-3-BL-HS	AAL Providence Medium, LED, Type III Optics, 3K color temperature, photocell control by circuit, 14' height, mounted on 4" AAL POLE MODEL #DB6, Fixture and Pole Finish: Black
◉	BOLLARD LIGHT	7	AAL	PROB-Y3-3030-BL-RD	AAL Providence Bollard, LED, Type III Optics, 3K color temperature, photocell control by circuit, Round Shaft 5" Diameter, Finish: Black

ISO FOOTCANDLE DIAGRAM :

SITE LIGHT:



BOLLARD LIGHT:

Typical footcandle distribution values are indicated in diagram. The same values, 0.25 fc, 0.50 fc and 1.00 fc, are indicated on all proposed light fixtures.

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LIGHTING PLAN
Hamilton Property
208 & 228 STRAFFORD AVE. & 18 FORREST LANE
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 19-033
DATE: 08/27/2020 (jr)
REV.:

SHEET:
LI-1

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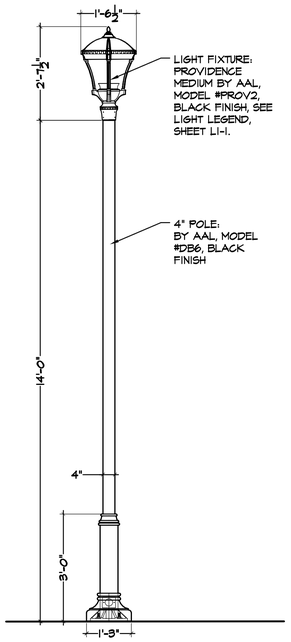
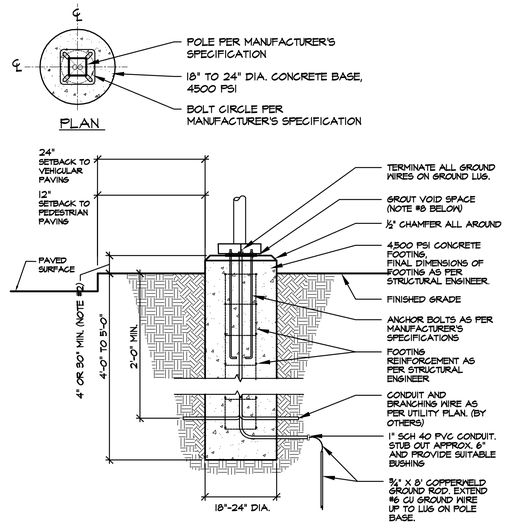
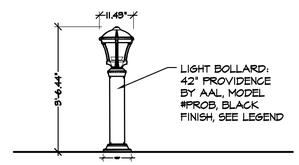


1 STREET LIGHT DETAIL
Scale: 1/2"=1'-0"

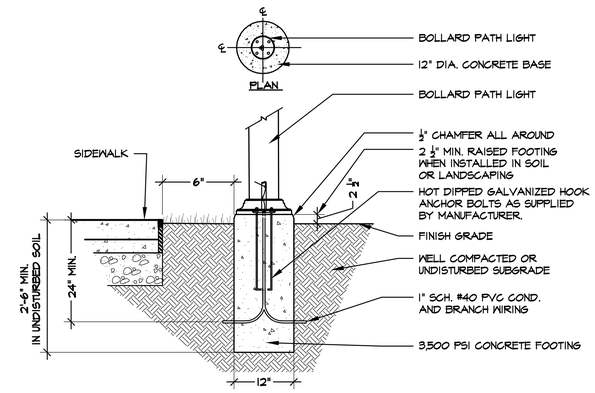


NOTES:
1. THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY.
2. A SONOTUBE FOOTING SHALL EXTEND 30" ABOVE FINISHED GRADE WHERE LIGHT POLES ARE TO BE DIRECTLY ADJACENT TO A PARKING SPACE.
3. CONTRACTOR SHALL ENSURE DESIGN IS PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS AND SITE SPECIFIC SOIL PARAMETERS.
   A. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING ASIDE FROM THE LIGHT FIXTURE INCLUDING (BUT NOT LIMITED TO) CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.
   B. SOME SITE LOCATIONS AND/OR CONDITIONS MAY REQUIRE VIBRATION DAMPENING MEASURES AS DETERMINED BY A STRUCTURAL ENGINEER.
4. ACTUAL DIAMETER AND DEPTH OF FOOTING SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.
5. ALL REBAR SHALL BE MAINTAINED AT A 3" MIN. CLEARANCE FROM SURFACES.
6. FIXTURE MUST BE GROUNDED IN ACCORDANCE WITH LOCAL CODES OR THE NATIONAL ELECTRICAL CODE. FAILURE TO DO SO MAY RESULT IN SERIOUS PERSONAL INJURY.
7. POLES SHOULD NEVER BE ERECTED WITHOUT THE LUMINAIRE INSTALLED. WARRANTY IS VOIDED IF THE POLE IS ERECTED WITHOUT THE LUMINAIRE.
8. THE WARRANTY IS VOIDED IF THE POLE IS NOT GROUTED UNDER THE ENTIRE BASE AFTER INSTALLATION.

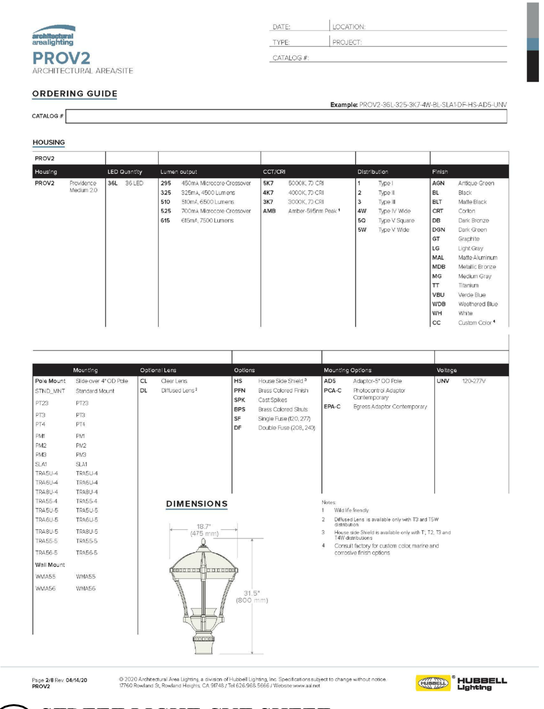
2 TYPICAL LIGHT POLE FOOTING DETAIL
Scale: 1/2"=1'-0"



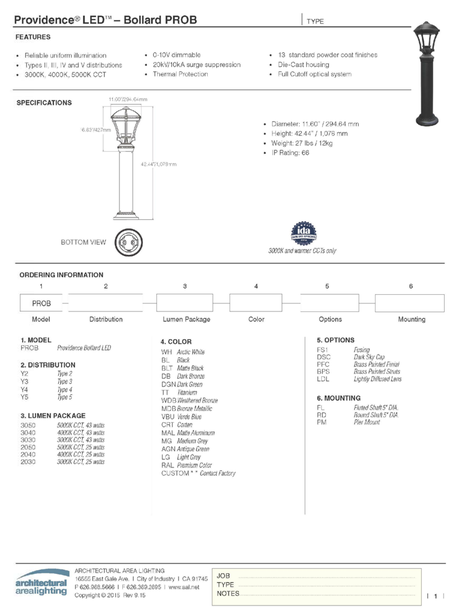
3 BOLLARD LIGHT DETAIL
Scale: 1/2"=1'-0"



4 BOLLARD FOOTING DETAIL
Scale: 1"=1'-0"



5 STREET LIGHT CUT SHEET
NTS



6 BOLLARD LIGHT CUT SHEET
NTS

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208 & 228 STRAFFORD AVE. & 18 FORREST LANE
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

PROJECT #: 19-033
DATE: 08/27/2020 (jr)
REV.:

SHEET:
LI-2

Serial Number:

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