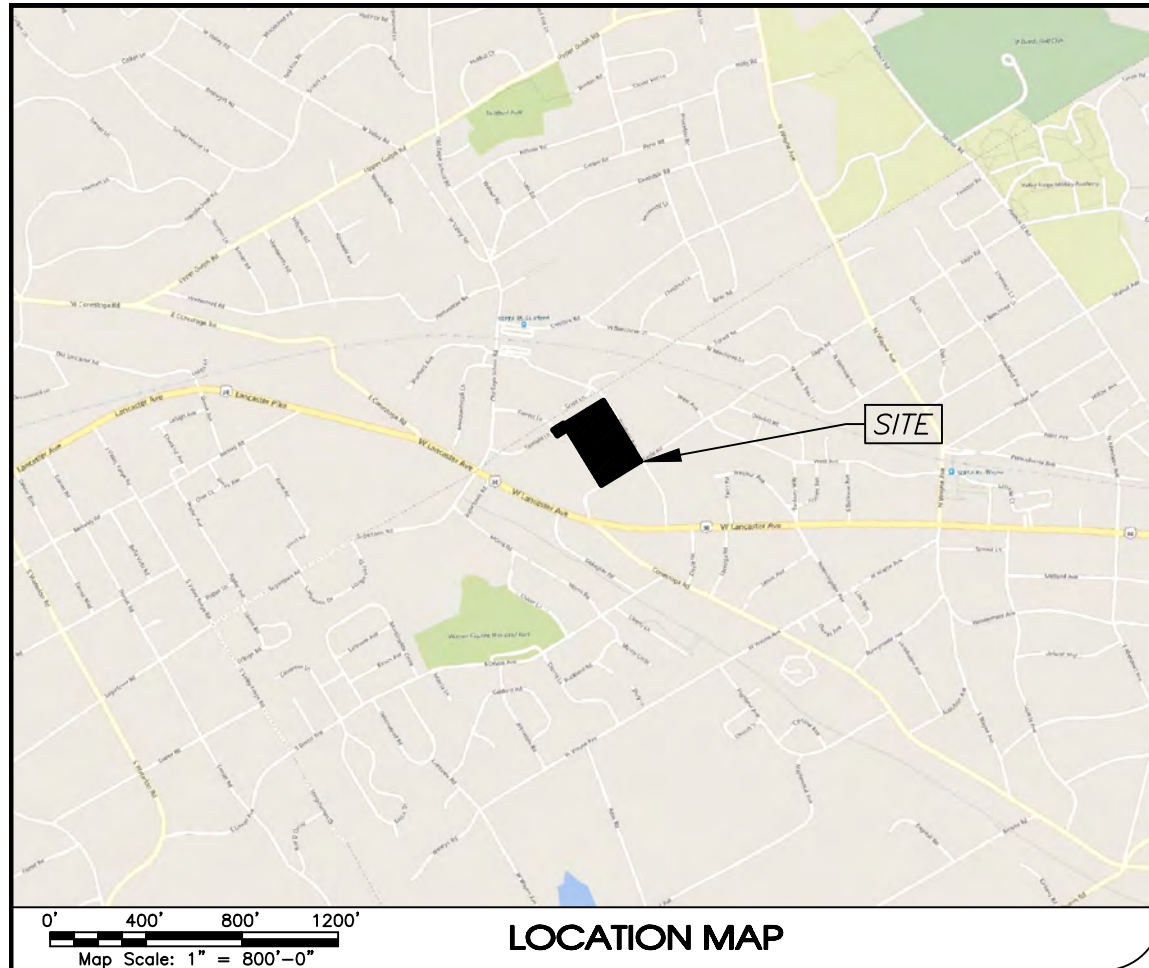


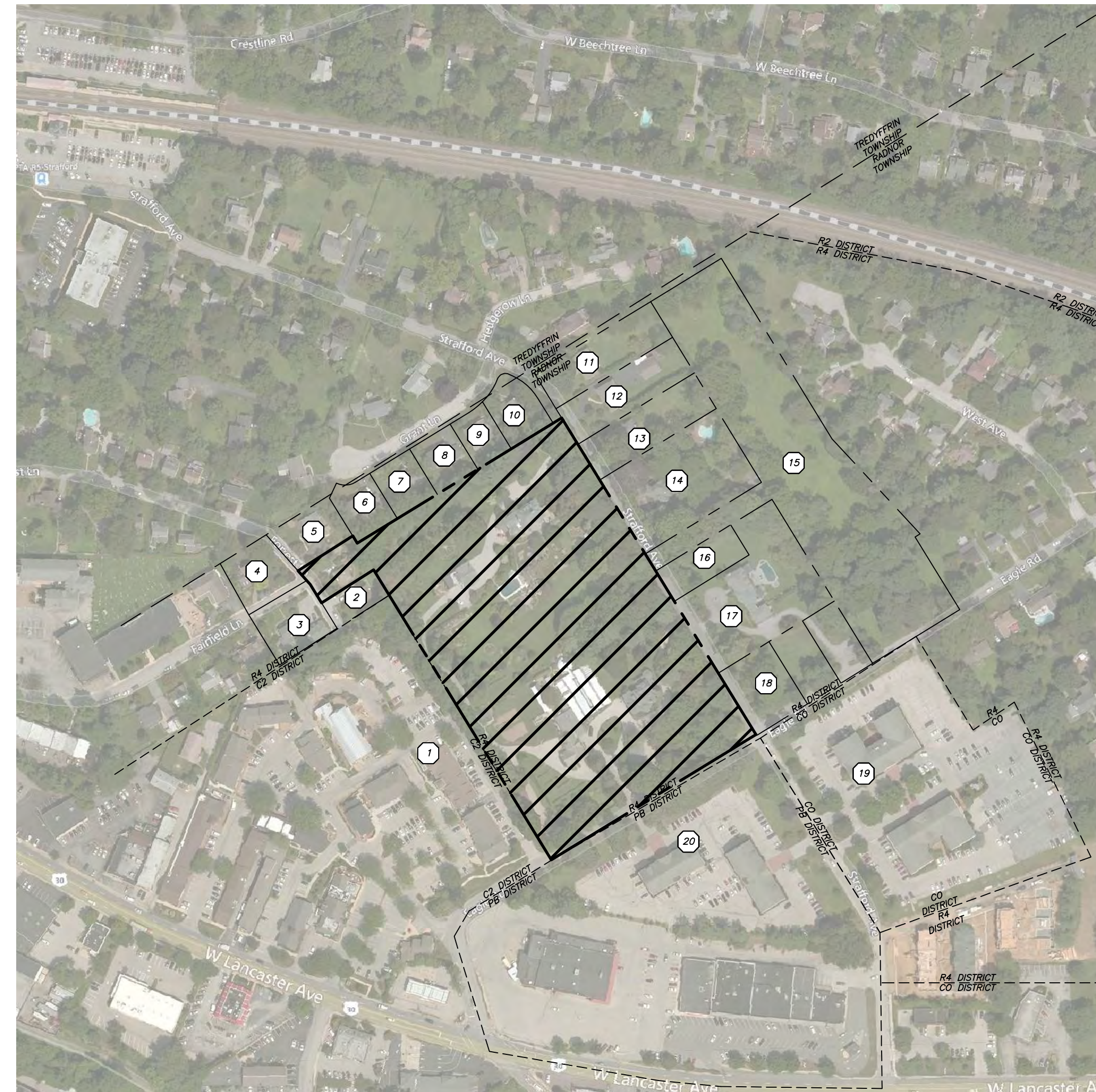
# 208 & 228 STRAFFORD AVENUE 18 FORREST LANE

## CONDITIONAL USE AND PRELIMINARY LAND DEVELOPMENT PLAN SET

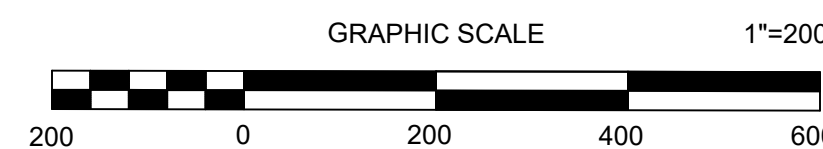


ADJOINING PROPERTIES (LANDS N/E)

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 TRSTEEES  
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



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

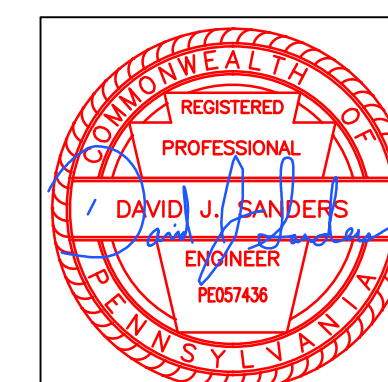
ATTN: ROBERT M. LAMBERT, P.E.  
P.O. BOX 1992  
SOUTHEASTERN, PA 19399  
P: (610) 240-0450  
E: RLAMBERT@SITE-ENGINEERS.COM

**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: BPAZAK@GLACKINPLAN.COM

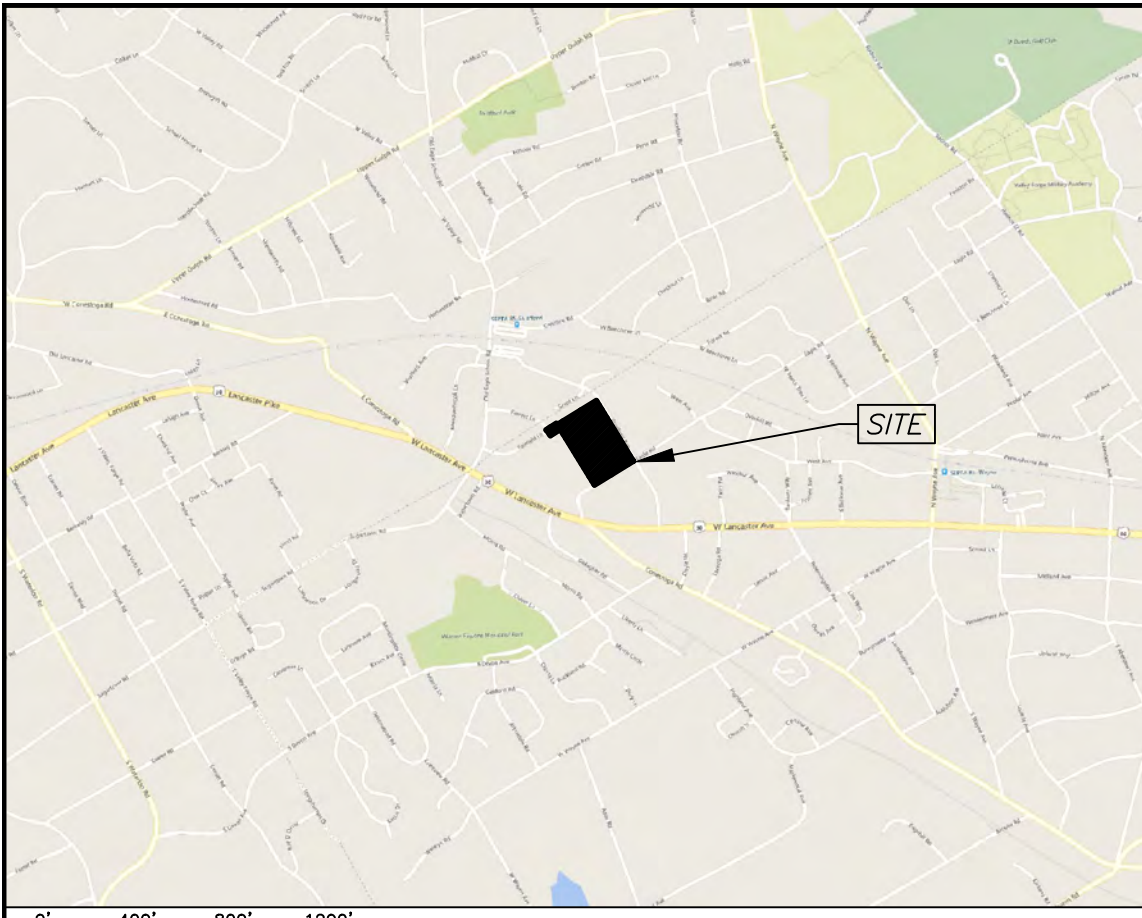
**APPLICANT/OWNER:**  
THE TRUSTEES OF THE DORRANCE HAMILTON  
3/15/1996 REVOCABLE AGREEMENT OF TRUST

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



DAVID J. SANDERS, P.E.  
PE057436

NUM.	DATE	REVISION
PLAN PREPARED BY: <b>SITE ENGINEERING CONCEPTS, LLC</b> P.O. BOX 1992 SOUTHEASTERN, PA 19399 P: 610-240-0450    F: 610-240-0451    E: INFO@SITE-ENGINEERS.COM		
PLAN PREPARED FOR: <b>HAMILTON ESTATE</b> 208 & 228 STRAFFORD AVE AND 18 FORREST LANE WAYNE, PA 19087 RADNOR TOWNSHIP    DELAWARE COUNTY    PENNSYLVANIA DATE: AUGUST 27, 2020		
<b>COVER SHEET</b>		<b>SHEET 1 of 15</b>
SCALE: 1" = 200'		



LOCATION MAP

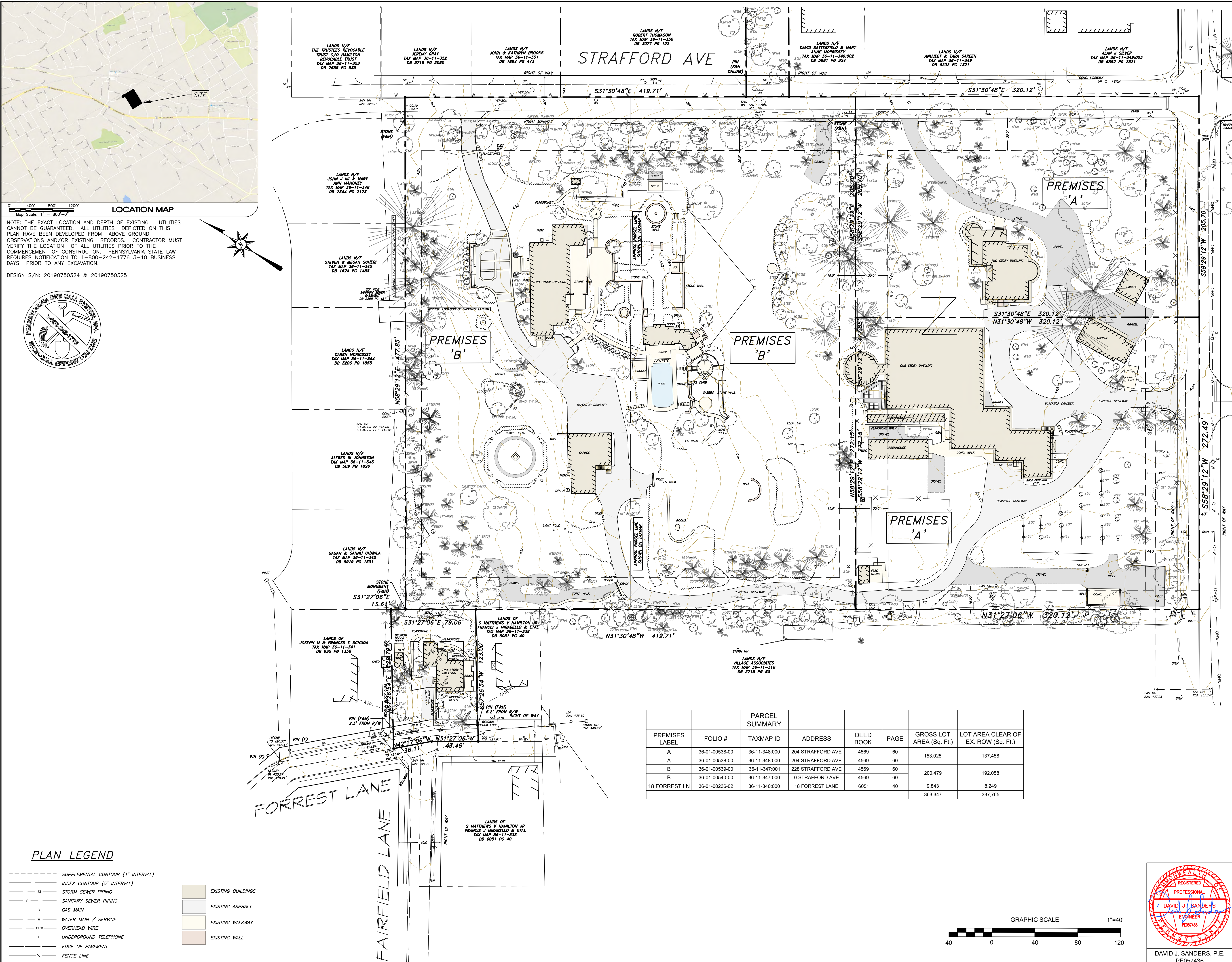
NOTE: THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES CANNOT BE GUARANTEED. ALL UTILITIES DEPICTED ON THIS PLAN HAVE BEEN DEVELOPED FROM ABOVE GROUND OBSERVATIONS AND/OR EXISTING RECORDS. CONTRACTOR MUST VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. PENNSYLVANIA STATE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

DESIGN S/N: 20190750324 & 20190750325



**PLAN LEGEND**

--- SUPPLEMENTAL CONTOUR (1' INTERVAL)	EXISTING BUILDINGS
- - - INDEX CONTOUR (5' INTERVAL)	EXISTING ASPHALT
--- ST --- STORM SEWER PIPING	EXISTING WALKWAY
--- S --- SANITARY SEWER PIPING	EXISTING WALL
--- G --- GAS MAIN	
--- W --- WATER MAIN / SERVICE	
--- OW --- OVERHEAD WIRE	
--- T --- UNDERGROUND TELEPHONE	
--- E --- EDGE OF PAVEMENT	
--- X --- FENCE LINE	



- GENERAL NOTES**
- BEARINGS SHOWN ARE BASED ON A MERIDIAN ESTABLISHED USING PA STATE PLANE COORDINATES. MERIDIAN DIFFERS FROM THE RECORDED DEED BY 6'35"48".
  - CONTOURS PLOTTED FROM FIELD RUN SURVEY. GPS CONTROL PERFORMED ON SITE TO ESTABLISH BENCHMARK. DATUM NAD83/NAV88.
  - THIS SURVEY WAS PERFORMED WITH THE BENEFIT OF A CURRENT TITLE REPORT.
  - 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.
  - THERE IS NO IDENTIFIABLE FEMA FLOOD PLAN 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.
  - 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.
  - PLANS REFERENCED: LOT LINE CHANGE PLAN PREPARED BY YERKES ASSOCIATES, INC. FOR MRS. S.M.V HAMILTON DATED JULY 21, 2001.

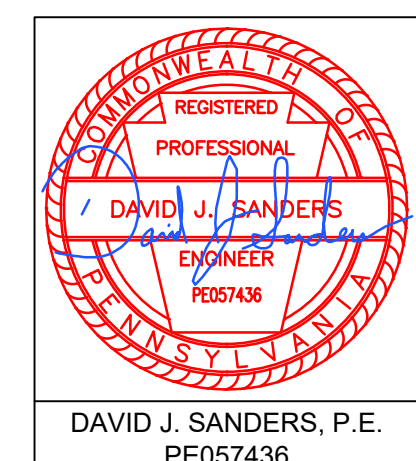
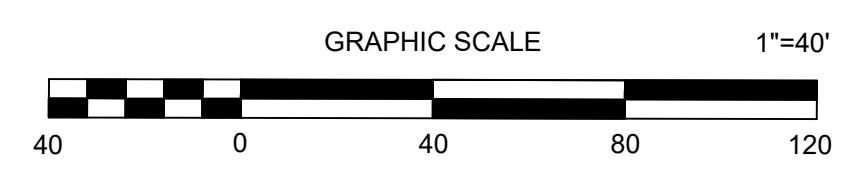
**ZONING SUMMARY**

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	153,025	137,458
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	9,843	8,249
18 FORREST LN	36-01-00236-02	36-11-340-000	18 FORREST LANE	6051	40	363,347	337,765



NUM.	DATE	REVISION

PLAN PREPARED BY:  
**SITE ENGINEERING CONCEPTS, LLC**  
P.O. BOX 1992  
SOUTHEASTON, PA 19399

P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:  
**HAMILTON ESTATE**

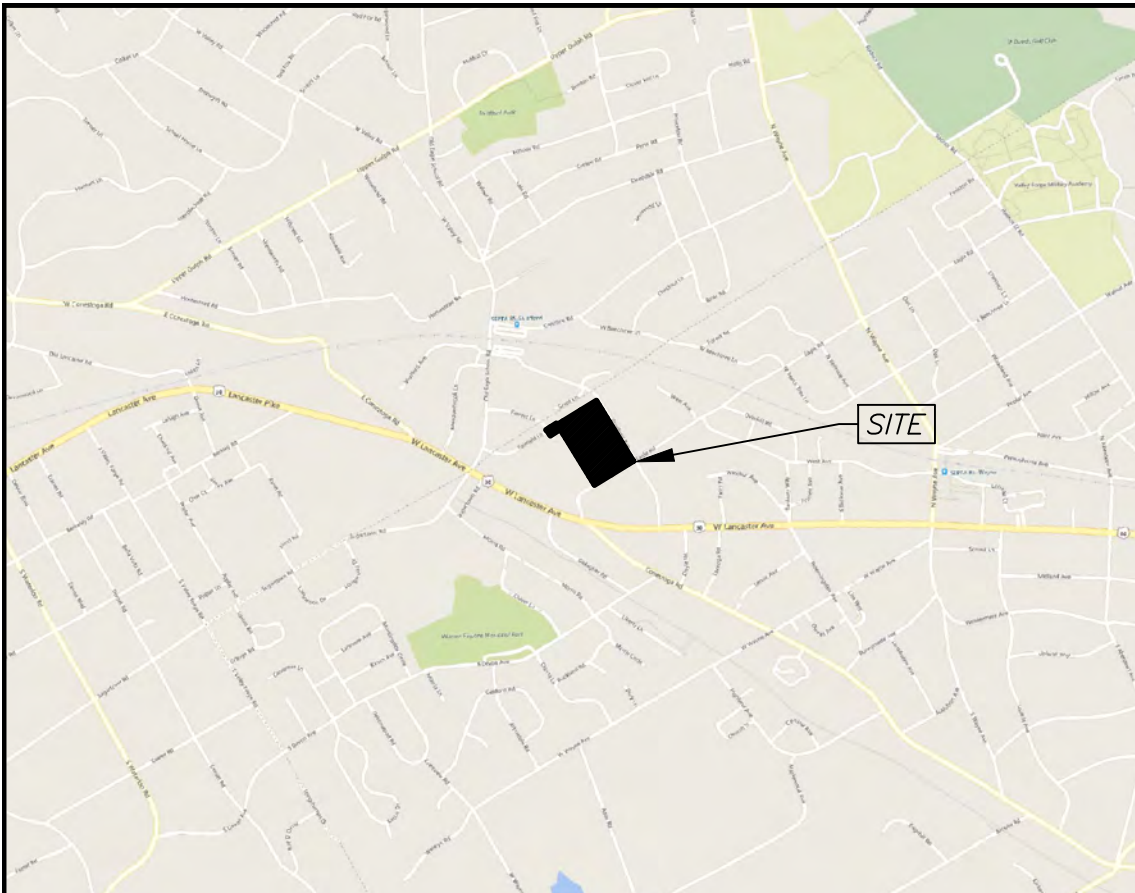
208 & 228 STRAFFORD AVE AND 18 FORREST LANE  
WAYNE, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
DATE: AUGUST 27, 2020

**EXISTING CONDITIONS PLAN**

**SHEET 2 of 15**

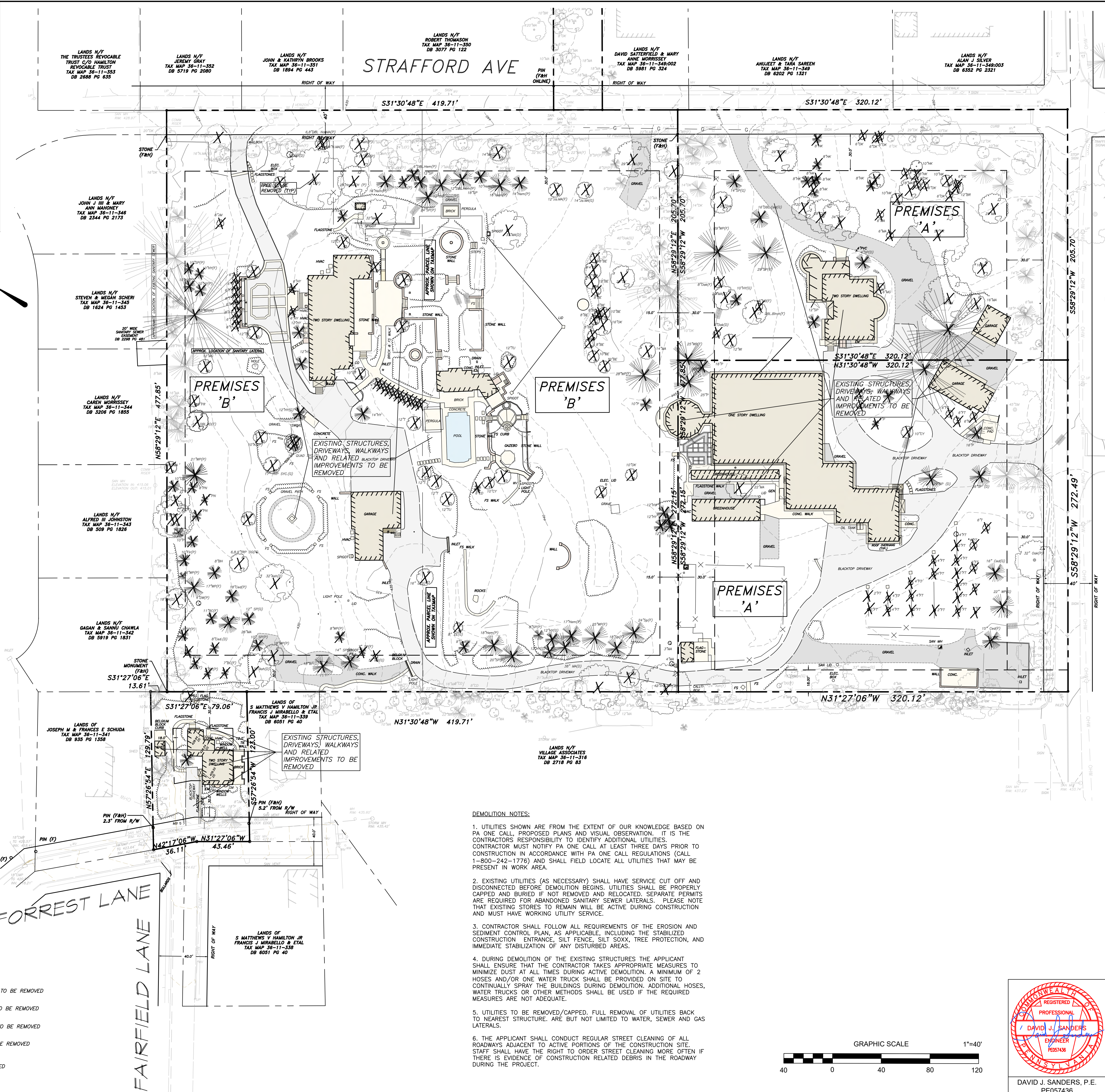
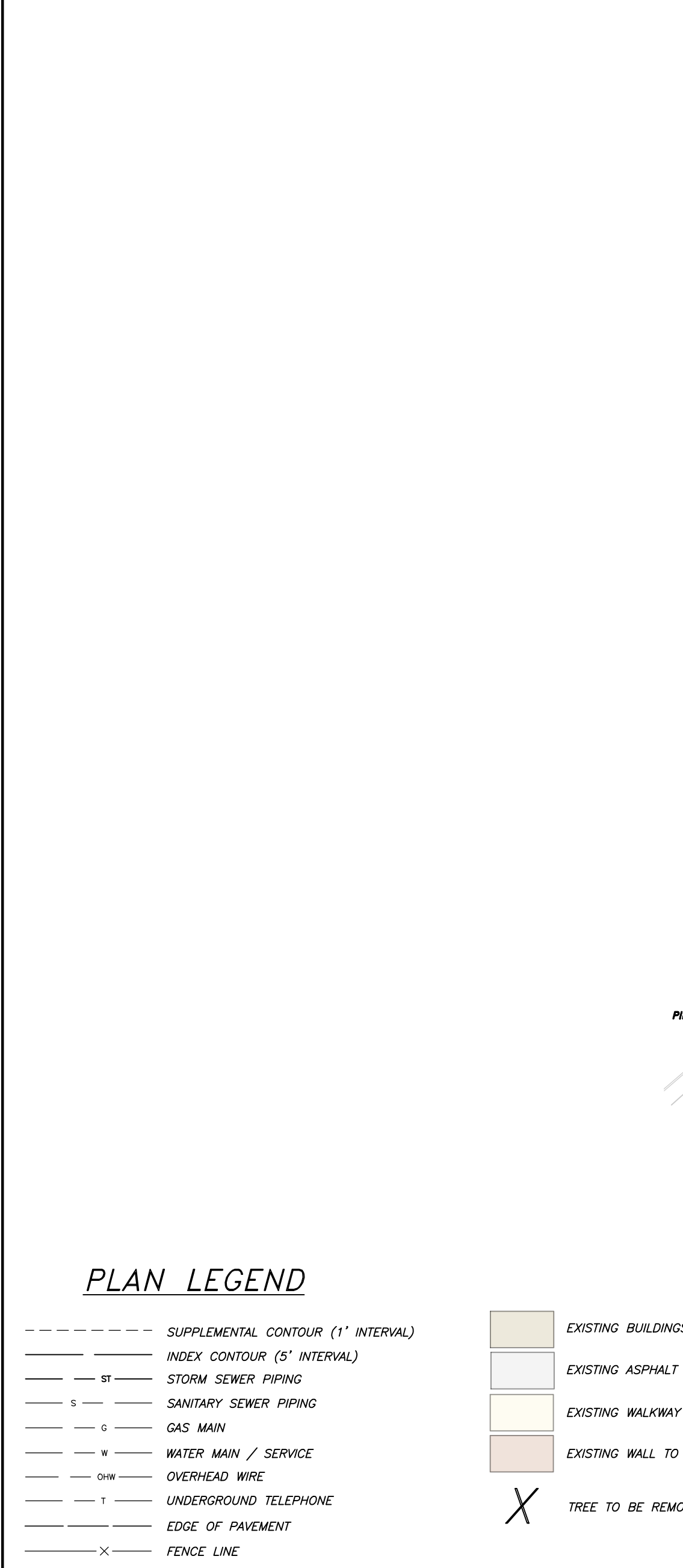
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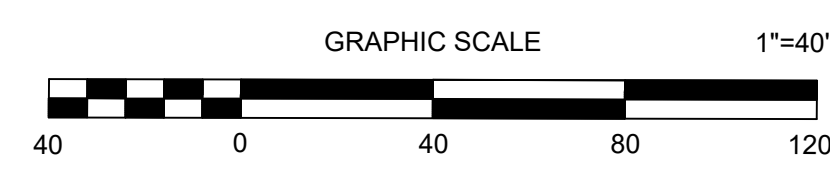
LOCATION MAP  
Map Scale: 1" = 800'-0"

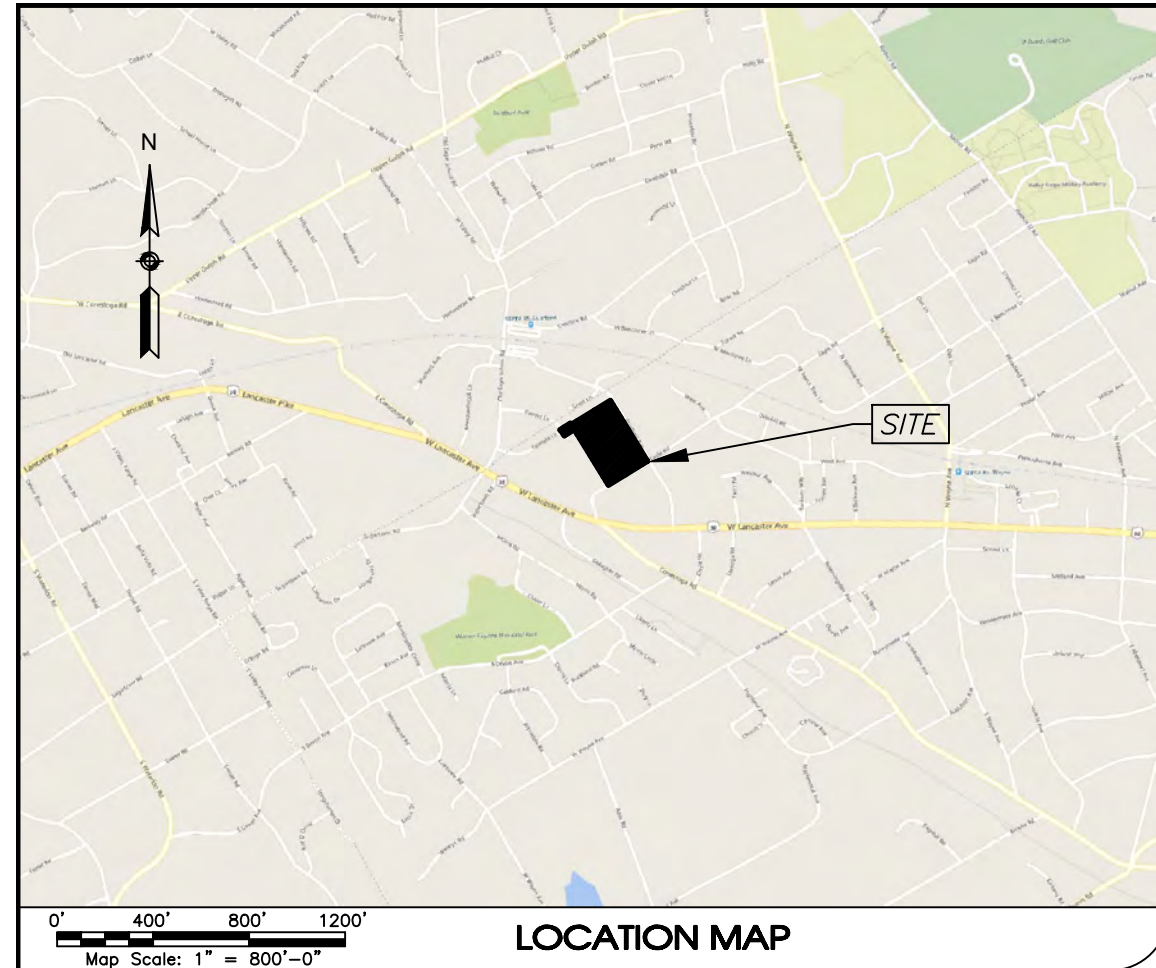
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DESIGN S/N: 20190750324 & 20190750325



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PLAN PREPARED BY:		
SITE ENGINEERING CONCEPTS, LLC		
P.O. BOX 1992		
SOUTHEASTON, 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		
DEMOLITION PLAN		SHEET 3 of 15
DAVID J. SANDERS, P.E. PE057436		SCALE: 1" = 40'





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



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

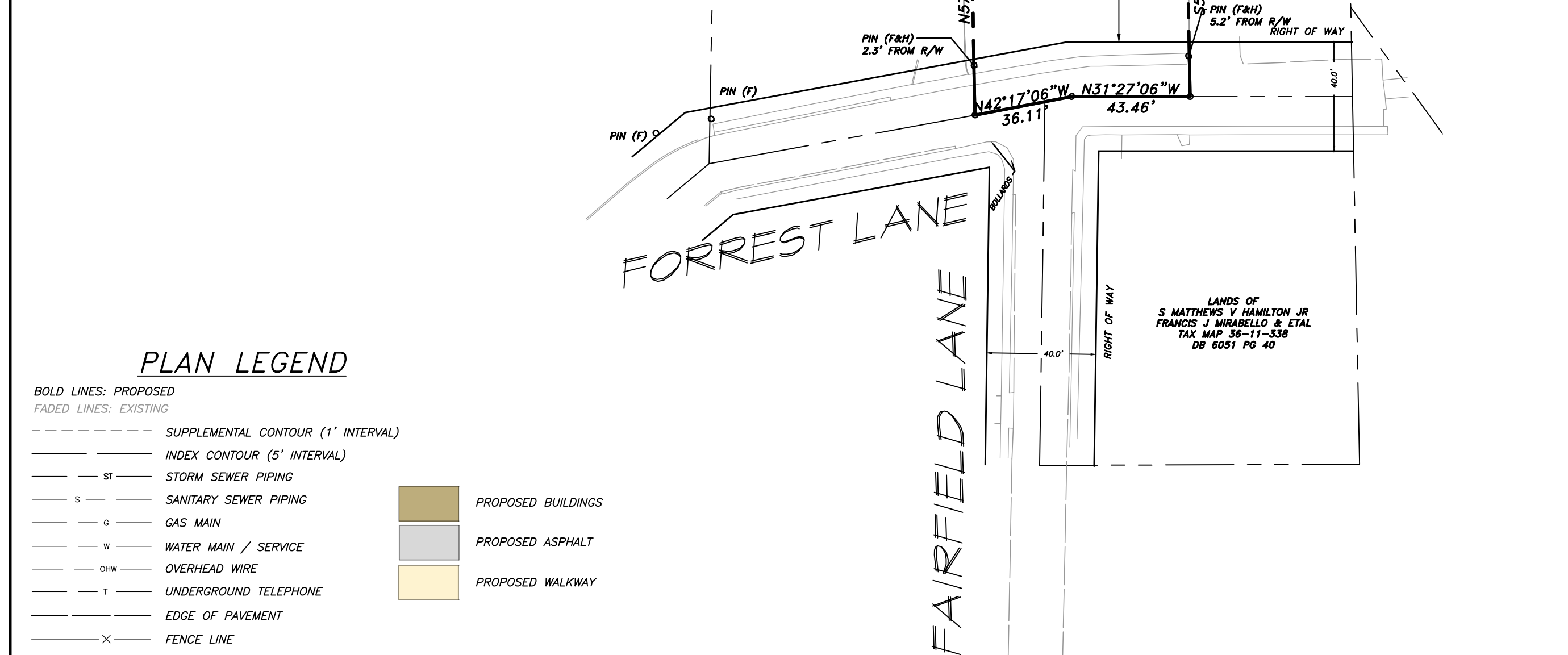
ORDINANCE ITEM	REQUIREMENT	EXISTING	PROPOSED
MIN NET TRACT AREA SIZE	-	N/A	7.754 ACRES
MIN RESIDENTIAL BUFFER	-	N/A	26 FT
MIN. SETBACKS			
FROM ROW	40 FT	N/A	46 FT
FROM PROPERTY LINE	25 FT	N/A	42 FT
MAX UNITS PER BUILDING	8		6
MIN SIDE TO SIDE DISTANCE	20 FT		21 FT
MAX DENSITY	5.5 DU/ACRE	N/A	41
MAX. 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	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				4,852

**PLAN LEGEND**

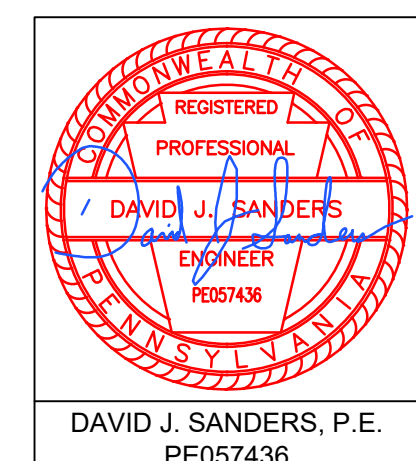
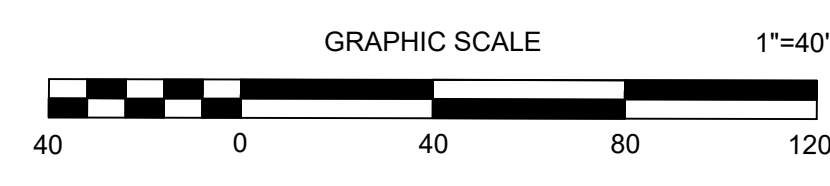
- BOLD LINES: PROPOSED
- FADED LINES: EXISTING
- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
- ST --- STORM SEWER PIPING
- S --- SANITARY SEWER PIPING
- G --- GAS MAIN
- W --- WATER MAIN / SERVICE
- OW --- OVERHEAD WIRE
- T --- UNDERGROUND TELEPHONE
- E --- EDGE OF PAVEMENT
- X --- FENCE LINE
- PROPOSED BUILDINGS
- PROPOSED ASPHALT
- PROPOSED WALKWAY



**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. Separation	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%



DAVID J. SANDERS, P.E.  
PE057436

**GENERAL NOTES**

1. THE TOWNHOUSE DEVELOPMENT SHALL BE CONSTRUCTED OWNED AND OPERATED UNDER SINGLE OWNERSHIP, OR UNDER THE PENNSYLVANIA UNIT PROPERTY ACT, OR SIMILAR STATUTE 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 RECESSES 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, \_\_\_\_\_ OF \_\_\_\_\_ COUNTY, PENNSYLVANIA, WHO ACKNOWLEDGED HIM/HERSELF TO BE THE \_\_\_\_\_ 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 \_\_\_\_\_

NUM.	DATE	REVISION

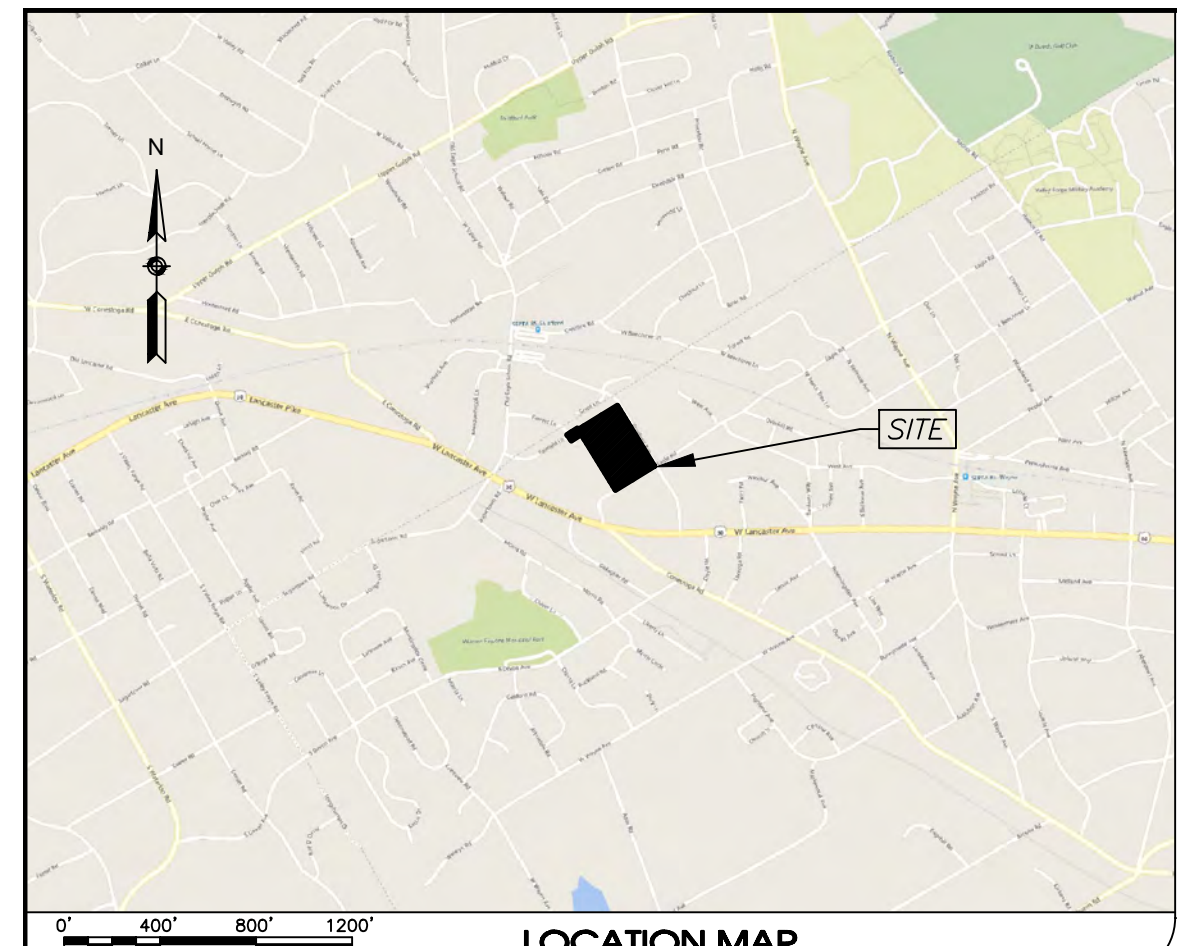
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P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

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

**RECORD PLAN**  
**SHEET 4 of 15**  
SCALE: 1" = 40'



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



**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: 80" TO 120"  
 HYDROLOGICAL CLASSIFICATION TYPE B

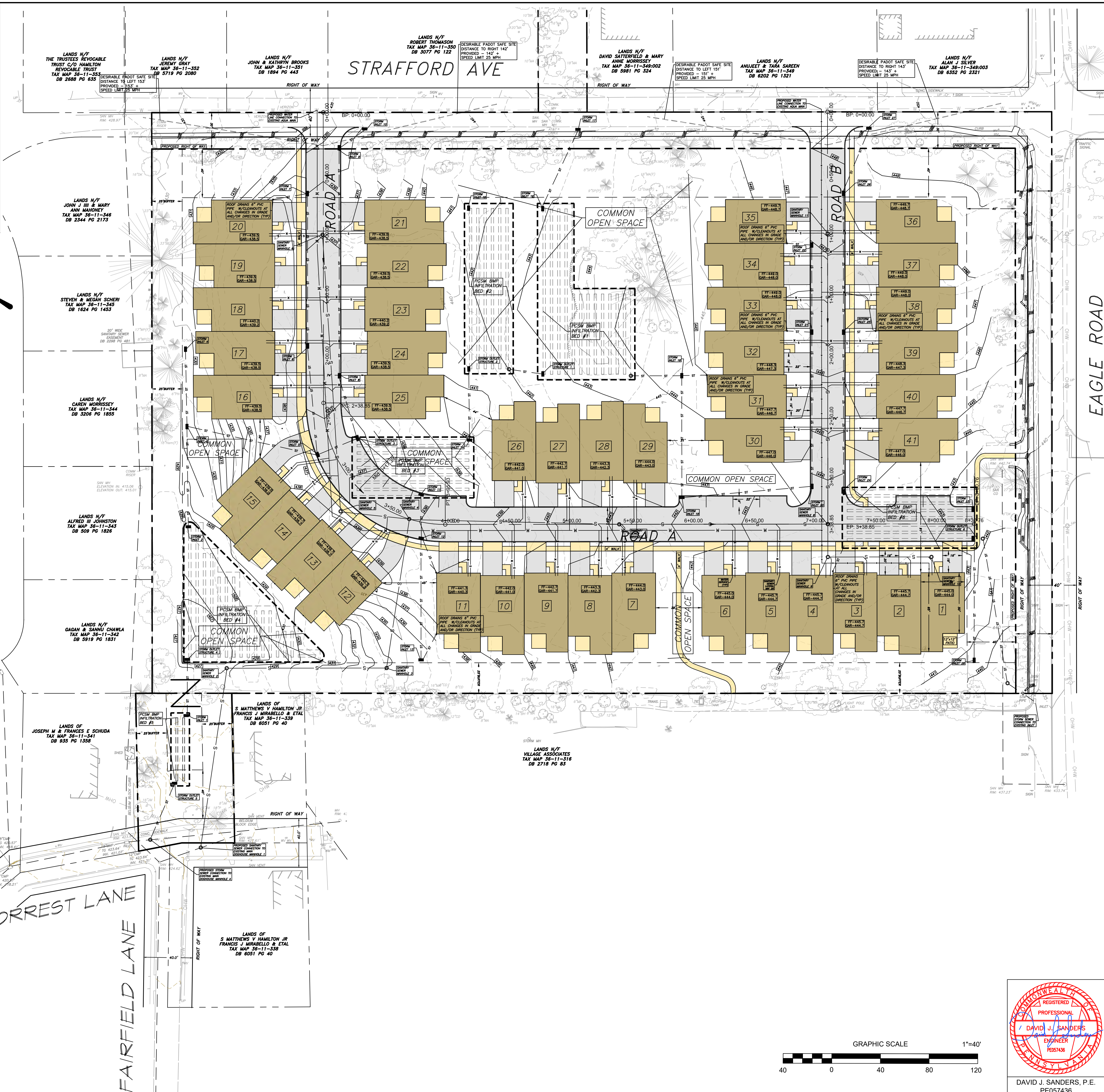
TABLE E.1 LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS (ABSENCE OF AN X DOES NOT MEAN "NO POTENTIAL LIMITATION")

SOIL NAME	CUTBANKS CAVE	CONCRETE TO CONCRETE	CONCRETE TO STEEL	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	CONCRETE/STEEL	CONCRETE/STEEL	POOR SOURCE OF	LOOSE SOIL	POSSIBLE	POTENTIAL	WEARINESS
URBAN											

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

**PLAN LEGEND**

---	SUPPLEMENTAL CONTOUR (2' INTERVAL)		PROPOSED BUILDINGS
---	INDEX CONTOUR (10' INTERVAL)		PROPOSED ASPHALT
---	EXISTING STORM SEWER PIPING		PROPOSED WALKWAY
---	EXISTING SANITARY SEWER PIPING		
---	EXISTING GAS MAIN		
---	EXISTING WATER MAIN / SERVICE		
---	EXISTING UNDERGROUND TELEPHONE		
---	EXISTING EDGE OF WOODS		
---	EXISTING EDGE OF PAVEMENT		
---	EXISTING CURB		
---	EXISTING FENCE LINE		
---	EXISTING STORMWATER INLET		
---	PROPERTY LINE		
---	BUILDING SETBACK LINE		
---	PROPOSED CONTOUR		
---	PROPOSED STORM WATER		
---	PROPOSED CURB		
---	PROPOSED STORMWATER INLET		



**PROJECT NOTES**

- 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.
- GRADING AND EARTH-MOVING 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 SOG SHALL BE USED TO STABILIZE ALL AREAS DENuded DURING THIS TIME PERIOD.
- ROOF DRAIN COLLECTION PIPING SHALL BE 6" PVC @ 0.02 FT/FT MIN. CLEANOUTS SHALL BE PROVIDED AT ALL CHANGES IN GRADE AND/OR DIRECTION.
- THE MAXIMUM TIME OF EXPOSURE FOR BARE SOIL AREAS SHALL BE TWENTY (20) DAYS BEFORE STABILIZATION MEASURES ARE IMPLEMENTED.
- ROUTINE END-OF-DAY CHECKS AND FOLLOWING STORMS SHALL BE REQUIRED DURING THE CONSTRUCTION TO ENSURE THE MEASURES ARE WORKING PROPERLY.
- NEWLY GRADED SLOPES OF OVER 25% MUST BE STABILIZED WITH SOG OR JUTE NETTING AND SEED.
- UTILITY LINES PER ONE CALL INFORMATION HAVE BEEN SHOWN. CONTRACTOR MUST VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- GAS, ELECTRIC, WATER OR ANY OTHER UTILITY TO BE ABANDONED SHALL BE PROPERLY SEALED/REMOVED.
- HIGH DURABILITY PAVEMENT MARKING MATERIAL SHALL BE USED FOR ALL PAVEMENT STRIPPING.
- THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE SEWAGE BED AND STORM PIPING SHALL BE THE OBLIGATION OF THE HOMEOWNERS ASSOCIATION.

NUM.	DATE	REVISION

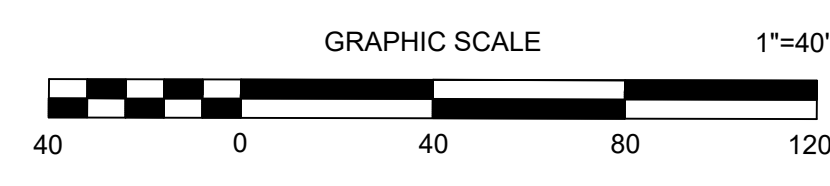
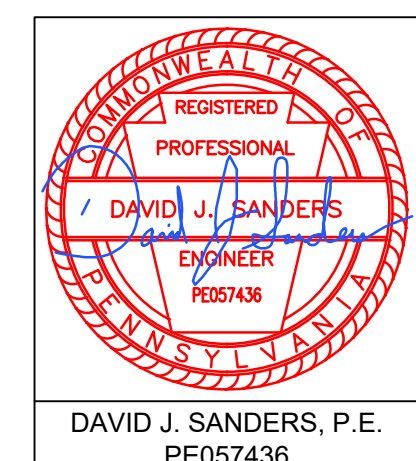
PLAN PREPARED BY:  
**SITE ENGINEERING CONCEPTS, LLC**  
 P.O. BOX 1992  
 SOUTHEASTERN, PA 19399  
 P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

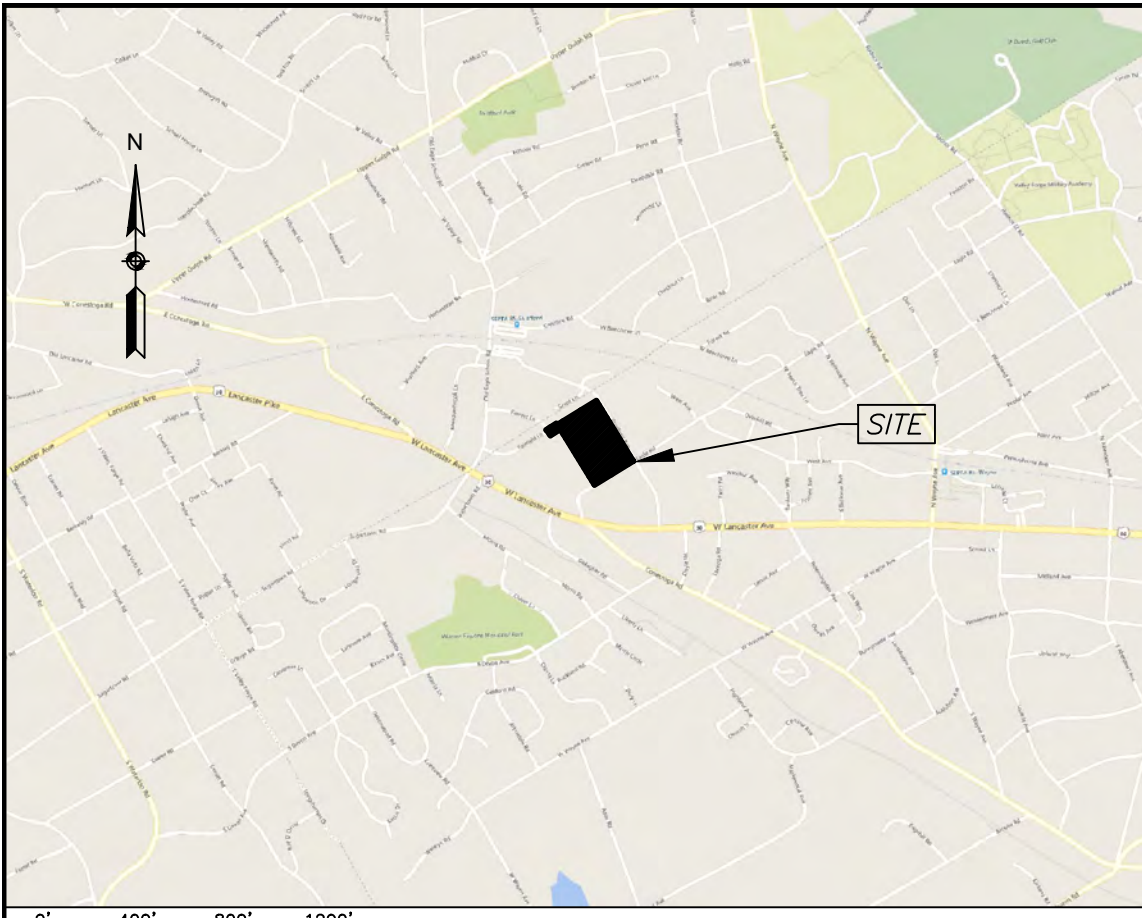
PLAN PREPARED FOR:  
**HAMILTON ESTATE**  
 208 & 228 STRAFFORD AVE AND 18 FORREST LANE  
 WAYNE, PA 19087  
 RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
 DATE: AUGUST 27, 2020

**POST CONSTRUCTION STORMWATER PLAN**

**SHEET 5 of 15**

SCALE: 1" = 40'





**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



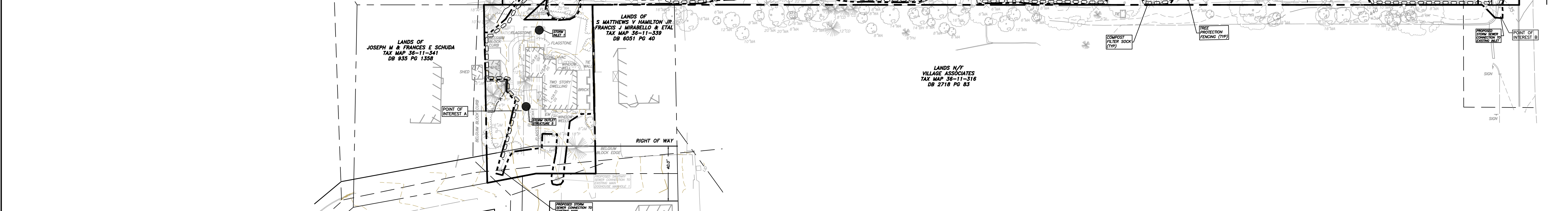
**SOIL DATA**  
 ENTIRE PROJECT AREA COMPOSED OF UrmB SOILS ACCORDING TO THE PENN STATE SOIL MAP WEBSITE.  
 UrmB - URBAN LAND-GLENELG COMPLEX  
 0 TO 8 PERCENT SLOPES  
 DEPTH TO SEASONAL HIGH WATER TABLE: MORE THAN 80"  
 DEPTH TO BEDROCK: 60" TO 120"  
 HYDROLOGICAL CLASSIFICATION TYPE B

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	CONCRETE TO CONCRETE	DEEP TO SATURATED	DEPTH TO SEASONAL HIGH WATER TABLE	WORKSABLE	CONCRETE/STEEL	SLOW PERCOLATION	POOR SOURCE OF	TOPSOIL	POTENTIAL	SHRINK SWELL	POTENTIAL	SLURRIES	WEARNESS
URBAN					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 WATER TIGHT STORM WATER PIPES AND CLAY CHECK DAMS USED IN SANITARY SEWER TRENCHING.  
 FROST PROTECTION-AVOID WINTER GRADING

- PLAN LEGEND**
- SUPPLEMENTAL CONTOUR (2' INTERVAL)
  - INDEX CONTOUR (10' INTERVAL)
  - ST --- EXISTING STORM SEWER PIPING
  - EXISTING SANITARY SEWER PIPING
  - EXISTING GAS MAIN
  - EXISTING WATER MAIN / SERVICE
  - EXISTING UNDERGROUND TELEPHONE
  - EXISTING EDGE OF WOODS
  - EXISTING EDGE OF PAVEMENT
  - EXISTING CURB
  - X --- EXISTING FENCE LINE
  - PROPERTY LINE
  - BUILDING SETBACK LINE
  - PROPOSED CONTOUR
  - 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



**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.

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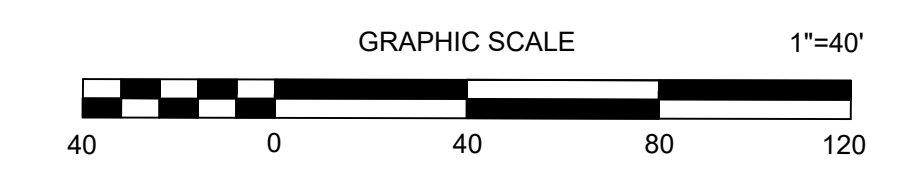
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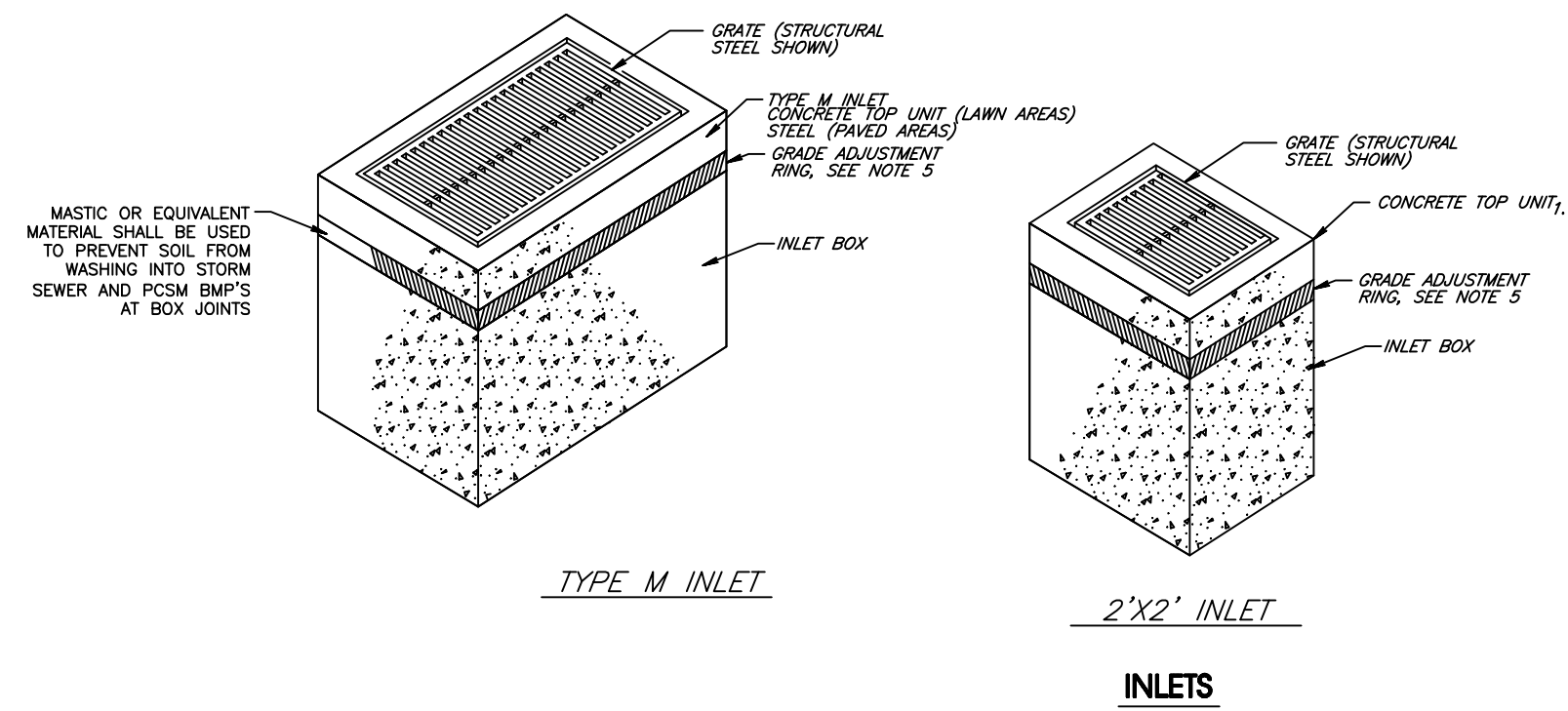
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 RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
 DATE: AUGUST 27, 2020

**EROSION AND SEDIMENTATION CONTROL PLAN**

DAVID J. SANDERS, P.E.  
 PE057436

**SHEET 6 of 15**  
 SCALE: 1" = 40'





**NOTES**

**CONSTRUCTION REQUIREMENTS**

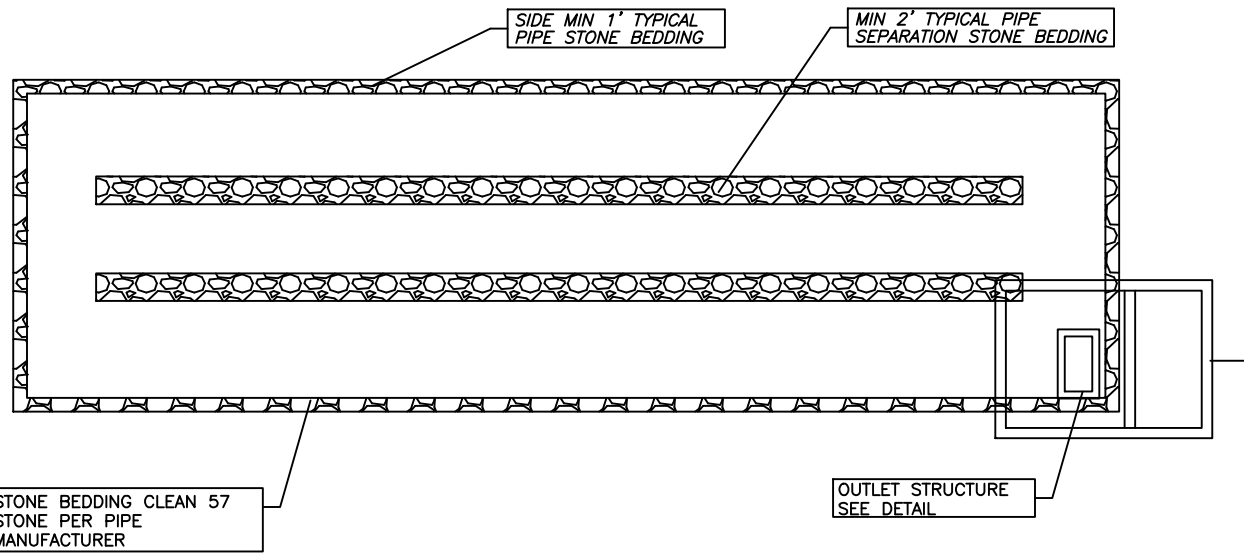
- CONSTRUCT IN ACCORDANCE WITH: PENNSYLVANIA PAVEMENT SPECIFICATIONS, SECTIONS 805, 806, 714, AND AS MODIFIED HEREIN.
- MINIMUM CONCRETE CLASS: CAST-IN-PLACE CLASS A PRECAST
- PROVIDE STEEL REINFORCEMENT IN ACCORDANCE WITH SEC. 709. PROVIDE MINIMUM YIELD STRENGTH OF 60,000 P.S.I.
- CLEAR COVER FOR STEEL:
  - WALLS: CAST-IN PLACE 2" PRECAST
  - FOOTINGS: CAST-IN PLACE 2" (TOP BARS) 2" (SIDE COVER) 2" (BOTTOM BARS) 2" (SIDE COVER) 2" (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/DIA MIN. EACH WAY, EACH FACE.

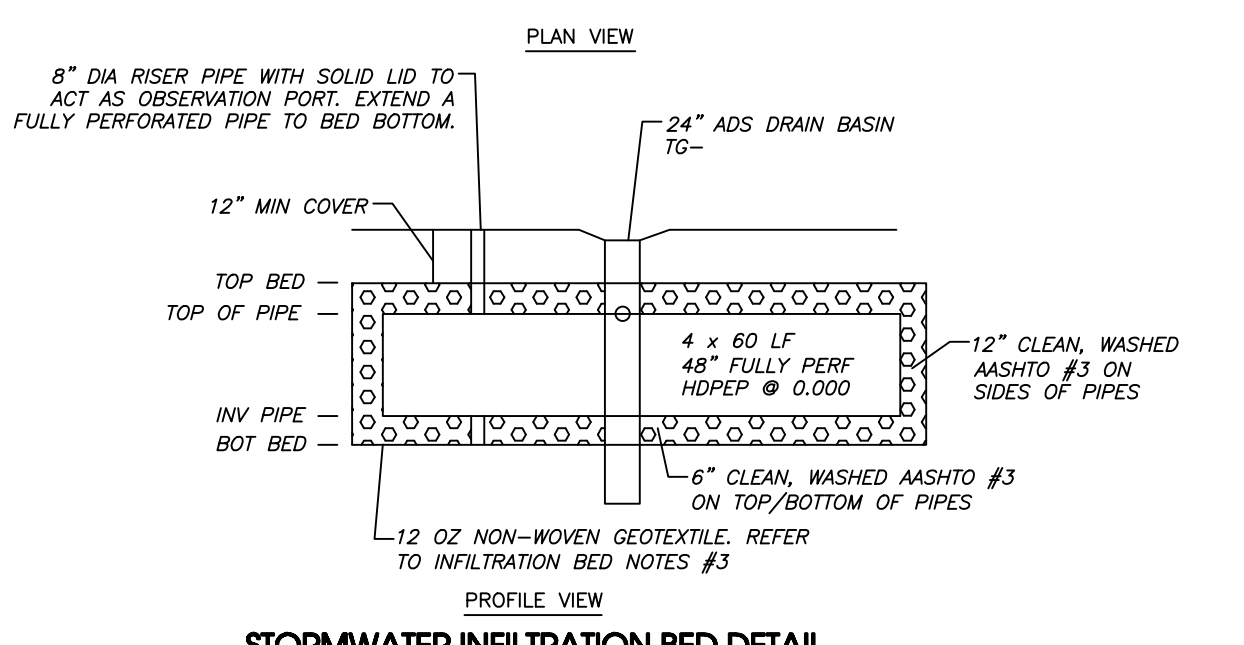
5. FOR FOOTING REINFORCEMENT, TOP AND BOTTOM, USE #4 BARS AT 12" CENTERS EACH WAY OR 0.20 IN./FT. W.W.F. (6" MAX.SPACING).



**STORMWATER PIPE STORAGE NOTES**

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

**PIPE STORAGE DETAIL**



**STORMWATER INFILTRATION BED DETAIL**

**PIPE STORAGE CONSTRUCTION SEQUENCE**

- EXCAVATE AREA TO PROPOSED UNCOMPACTED SUBGRADE.
- PLACE LINER PER MANUFACTURER SPECIFICATIONS ON ALL SIDES OF BED.
- CAREFULLY PLACE STONE BEDDING TO NOT DAMAGE LINER.
- CONSTRUCT PIPE SYSTEM AND OUTLET STRUCTURES.
- PLACE REMAINING STONE AROUND PIPES.
- PLACE TOP PORTION OF LINER.

**SHORT TERM/ROUTINE MAINTENANCE OF PIPE STORAGE:**

- MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HRS AFTER EVERY MAJOR STORM EVENT (>1 INCH RAINFALL DEPTH).
- KEEPING ALL DEBRIS, INCLUDING GRASS CLIPPINGS, LEAVES, AND MOTOR OIL CLEAR OF INLET AND OUTLET STRUCTURES.
- REMOVING ANY ACCUMULATED DEBRIS.
- 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

- CLEAR INLETS/PIPES/STONE/PAVING OF DEBRIS, VACUUM, RECONSTRUCT AS NECESSARY.
- REMOVE ACCUMULATED SEDIMENT/POLLUTANTS.
- RECONSTRUCT.
- PROVIDE FOR COMPLETION OF A WRITTEN REPORT DOCUMENTATION EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITY.
- CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER SIGNIFICANT STORM EVENTS.
- 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.

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 6" DIA PIPE THERE MUST BE AT LEAST 90 HOLES / LINEAR FOOT.

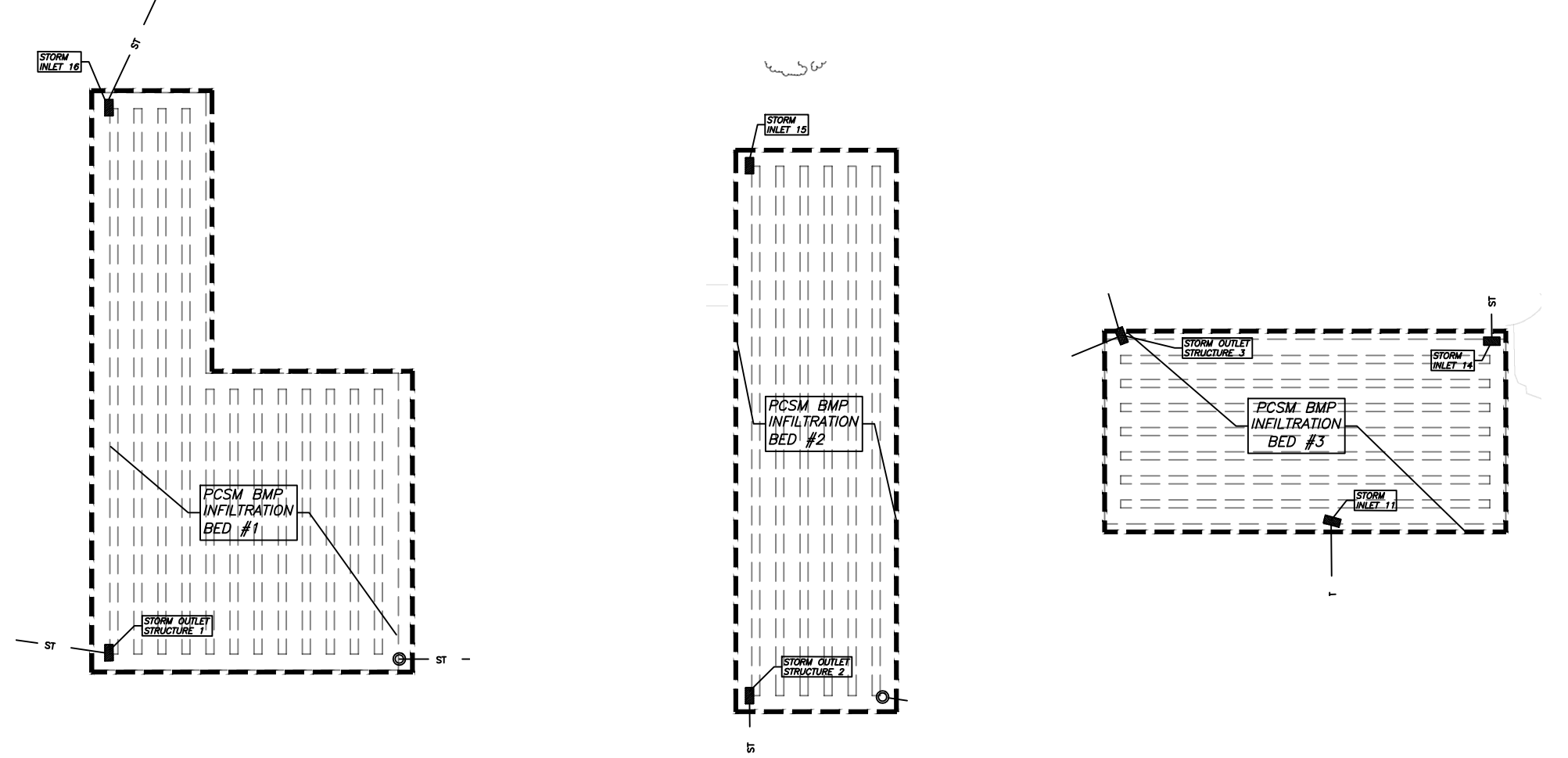
3. ENTIRE BED, SIDES TOP AND BOTTOM, SHALL BE WRAPPED IN SYNTHETIC INDUSTRIES NON-WOVEN #1201 OR ENGINEER APPROVED EQUAL. PROVIDE A MINIMUM 1' OVERLAP AT ALL SEAMS AND JOINTS. WHERE PROTRUSIONS OR PENETRATIONS OCCUR, GEOTEXTILE SHALL BE PERMANENTLY AFFIXED TO OBJECT.

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**

- SCARIFY BOTTOM AND SIDES OF BASIN, TAKING CARE NOT TO COMPACT SOIL.
- 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.
- 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.
- 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.
- PIPES CONNECTING INTO BEDS AT POINTS OTHER THAN DRAIN BASINS SHALL HAVE A STUB CONNECTION.
- ALL CMP SHALL BE ALUMINIZED STEEL.



**INFILTRATION BED #1 DETAIL**

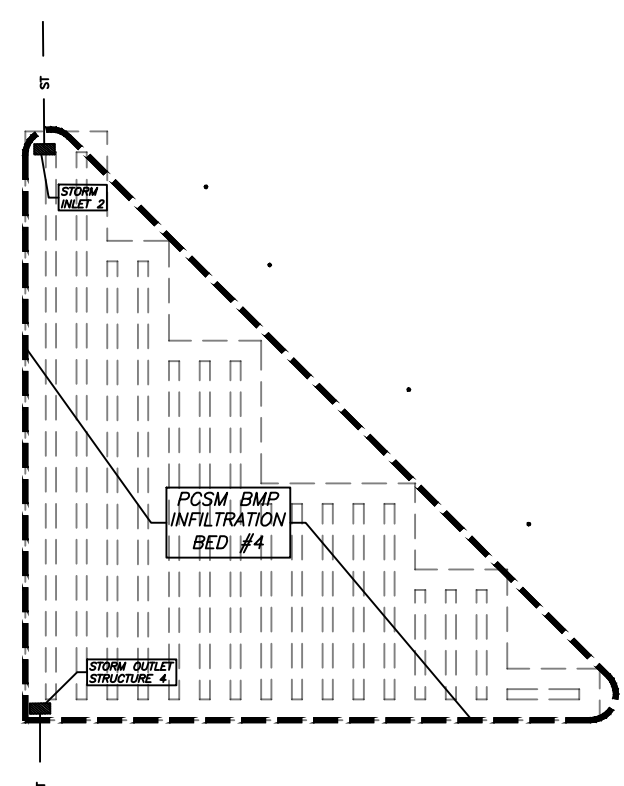
1,464 LF 48" HDPE  
18,396 CF VOLUME

**INFILTRATION BED #2 DETAIL**

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

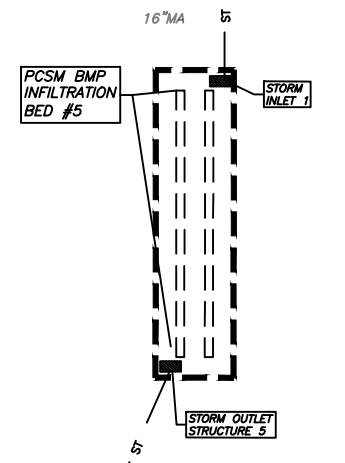
**INFILTRATION BED #3 DETAIL**

892 LF 48" HDPE  
11,208 CF VOLUME



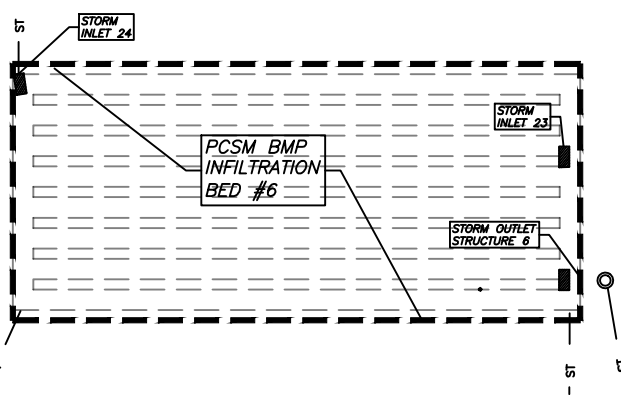
**INFILTRATION BED #4 DETAIL**

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



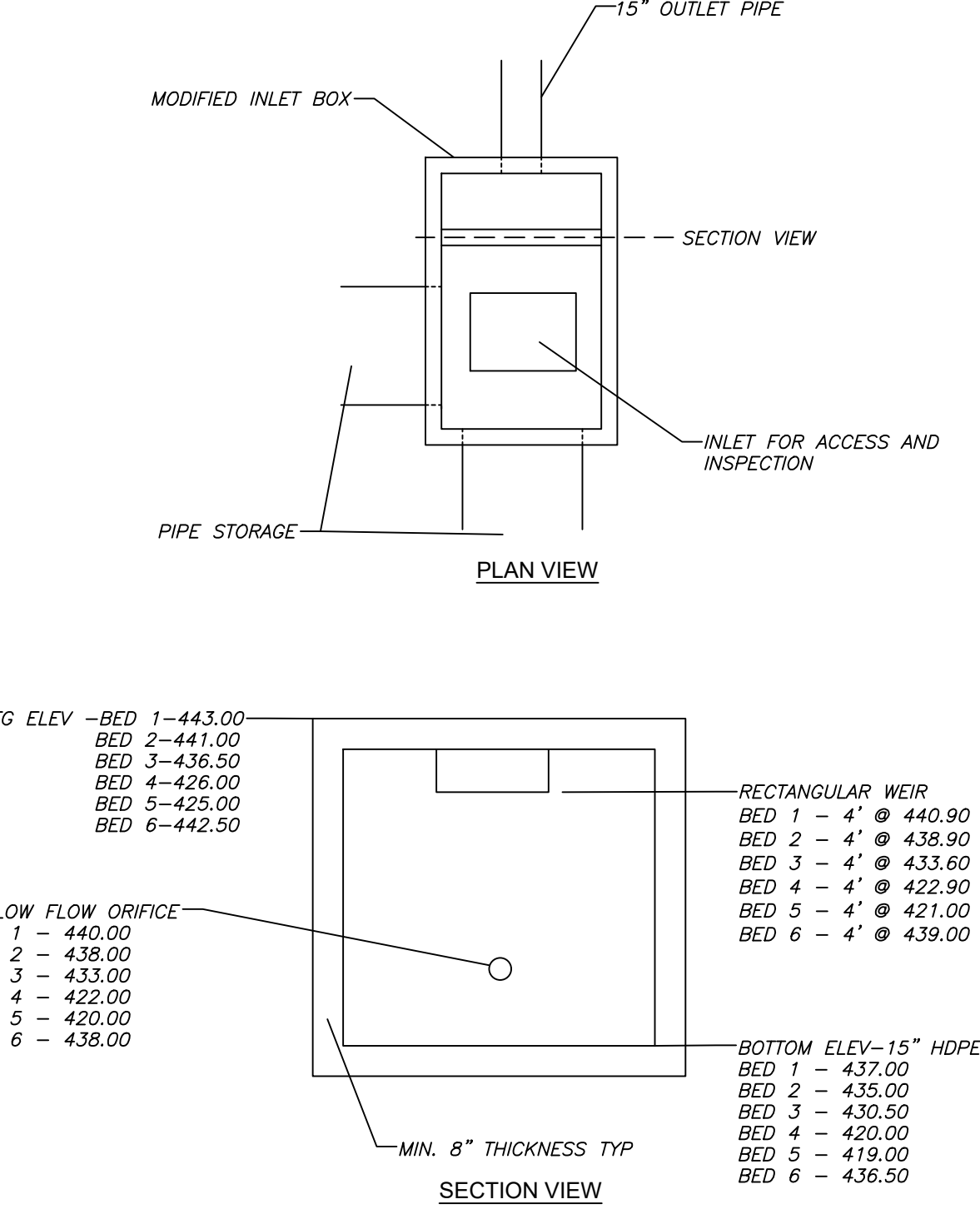
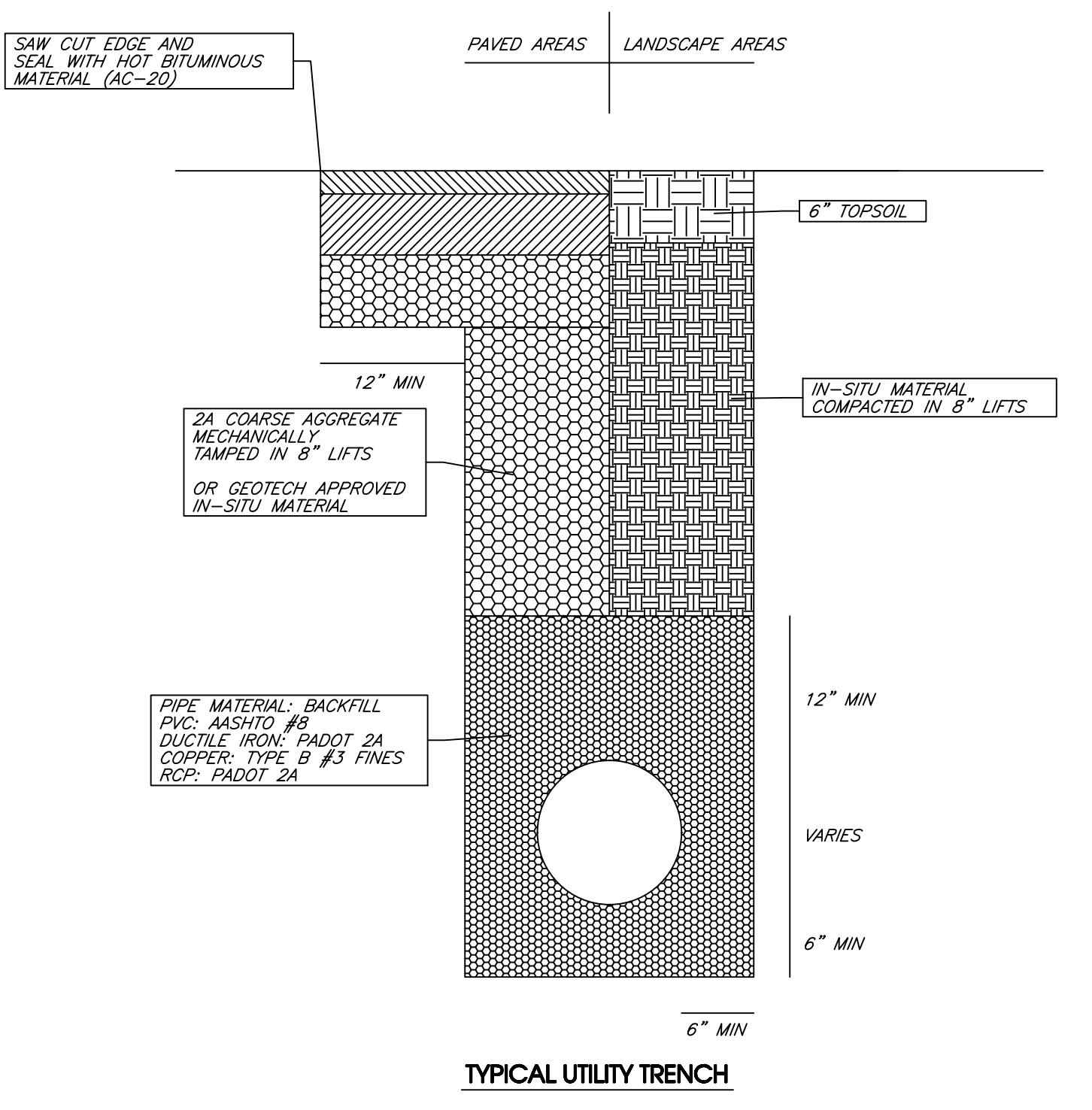
**INFILTRATION BED #5 DETAIL**

210 LF 48" HDPE  
1,980 CF VOLUME

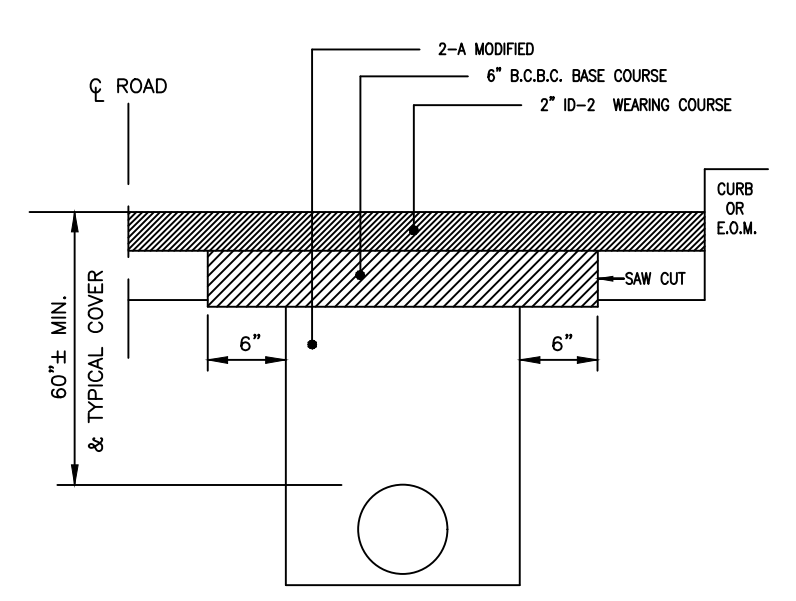


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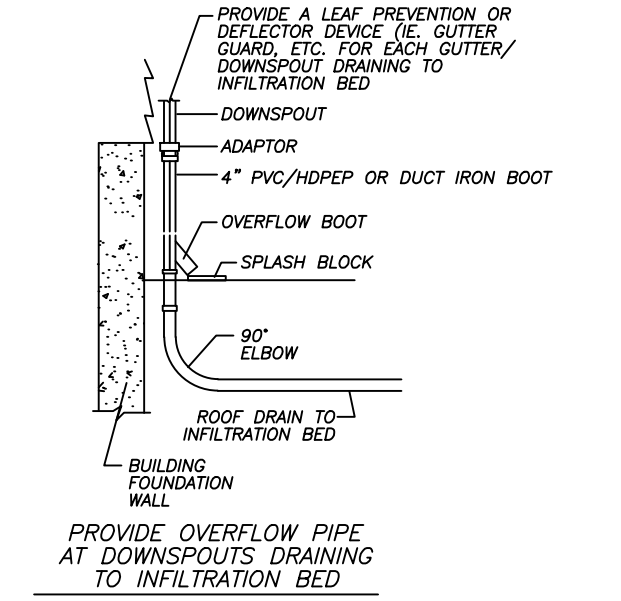
972 LF 48" HDPE  
12,216 CF VOLUME



**OUTLET STRUCTURE DETAIL**



**FLEXIBLE PAVEMENT RESTORATION**



NUM.	DATE	REVISION

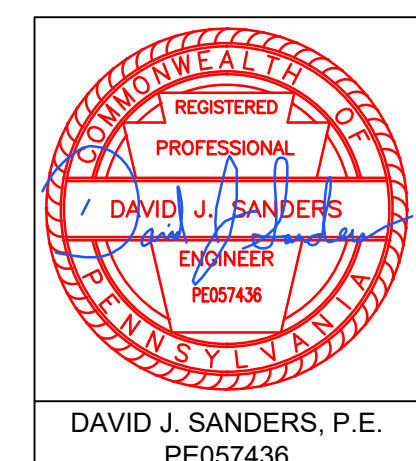
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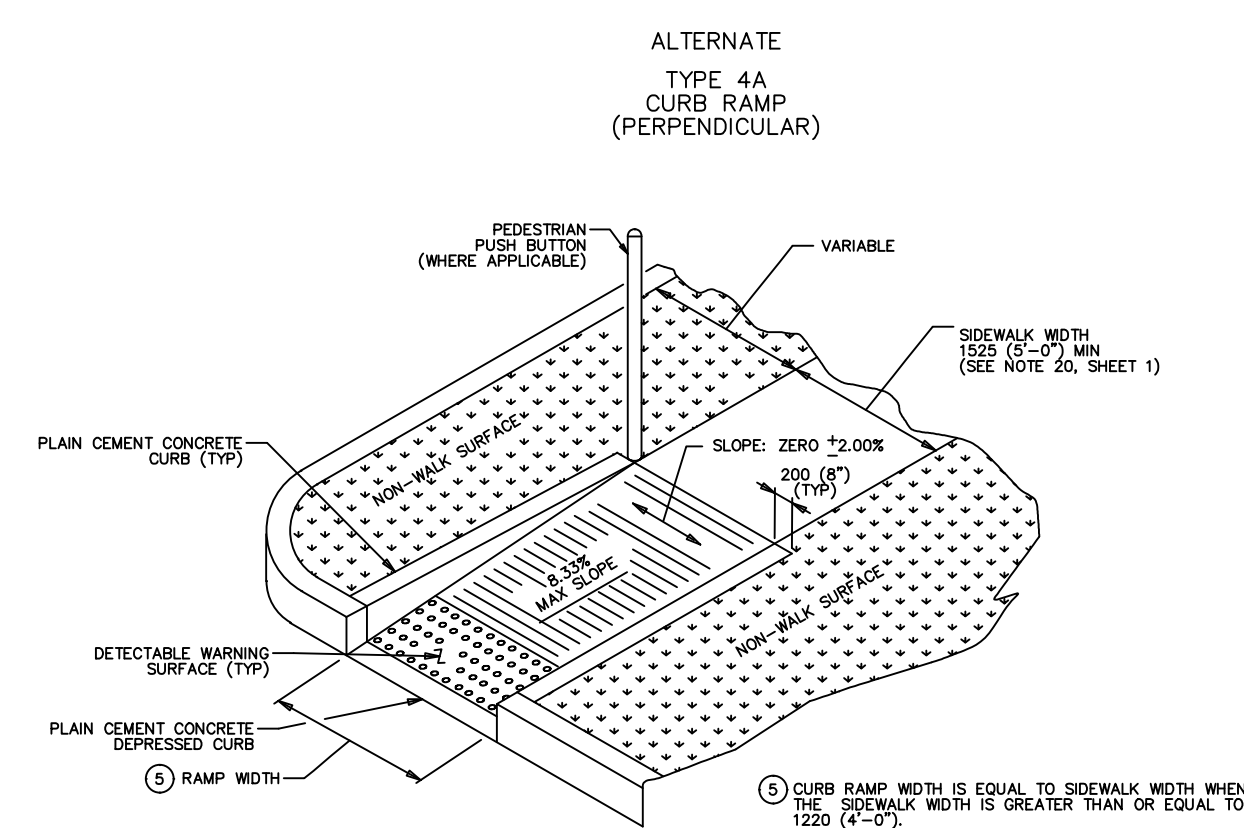
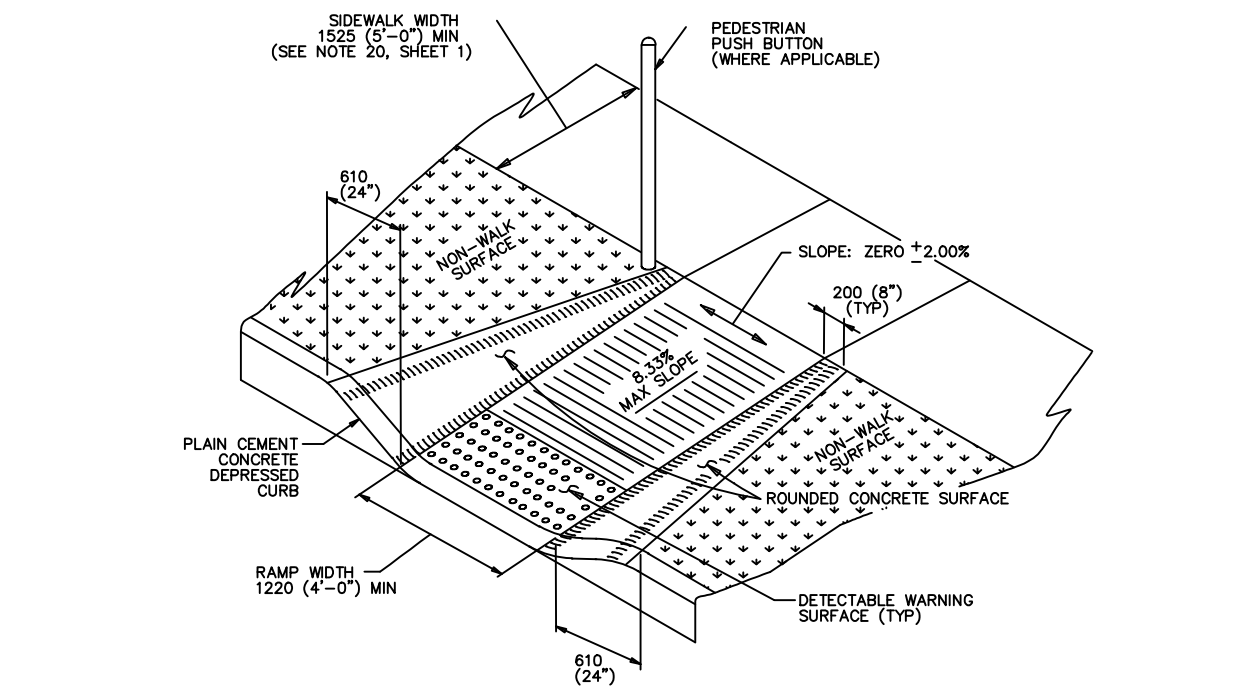
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
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**POST CONSTRUCTION STORMWATER DETAILS**

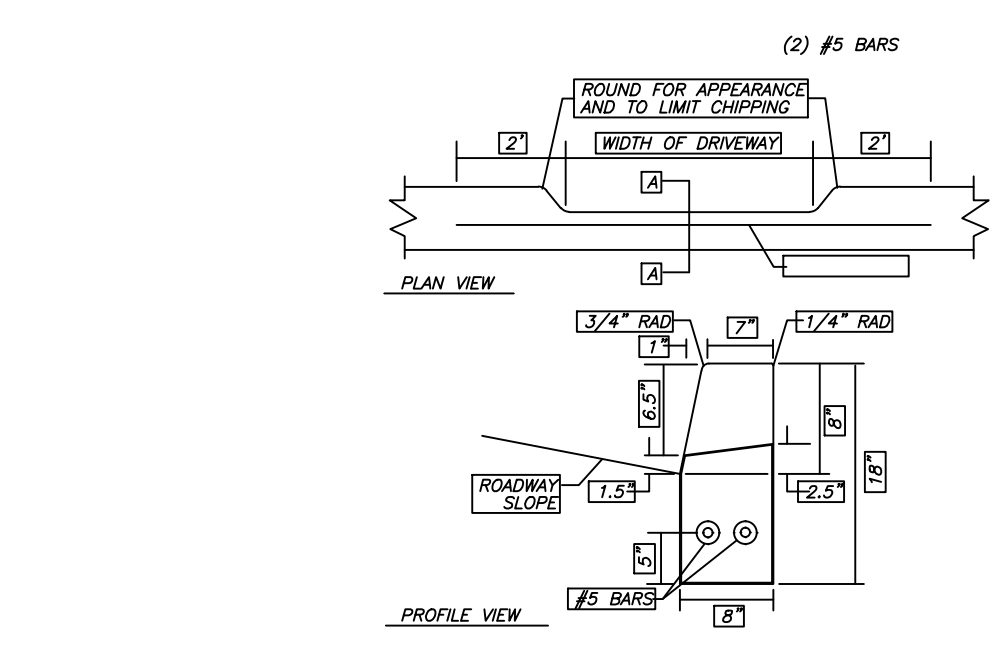
**SHEET 7 of 15**  
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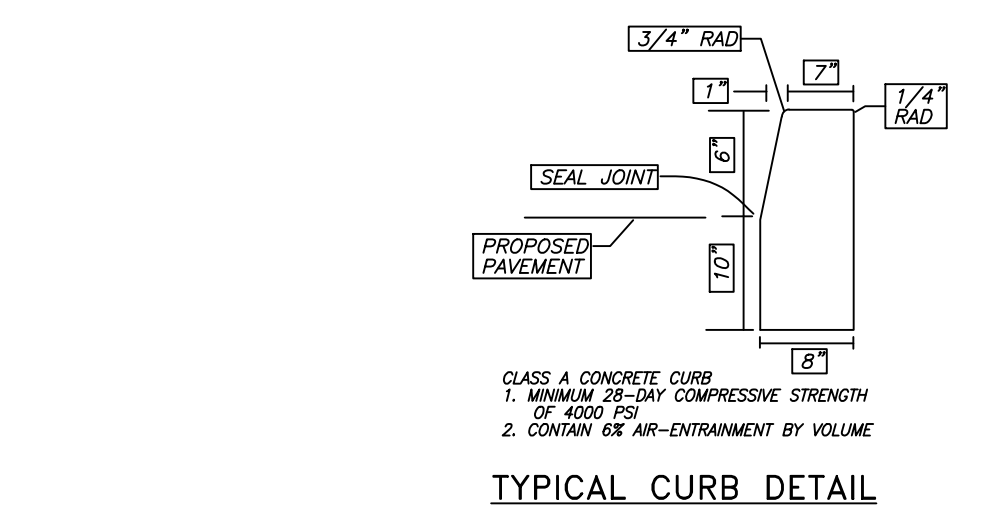
DAVID J. SANDERS, P.E.  
PE057436



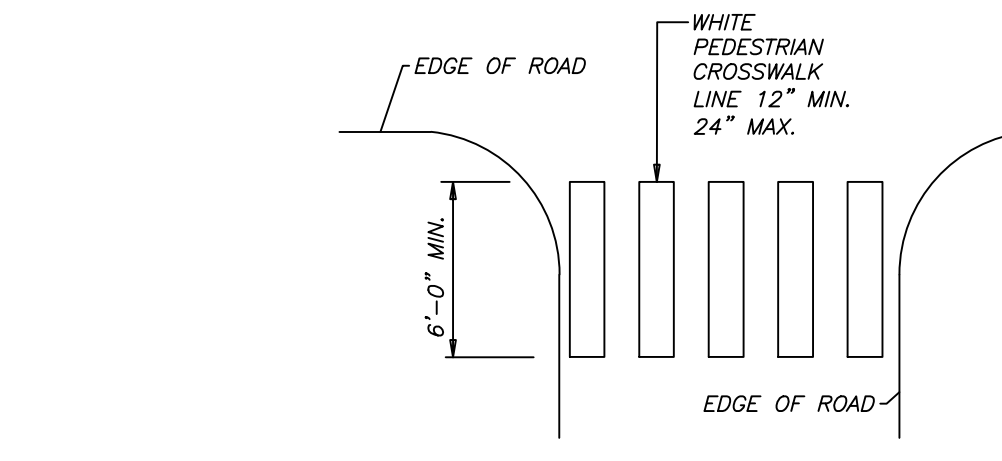
**ADA HANDICAP ACCESSIBLE RAMPS**



**DEPRESSURE CURB FOR DRIVES**  
Not To Scale

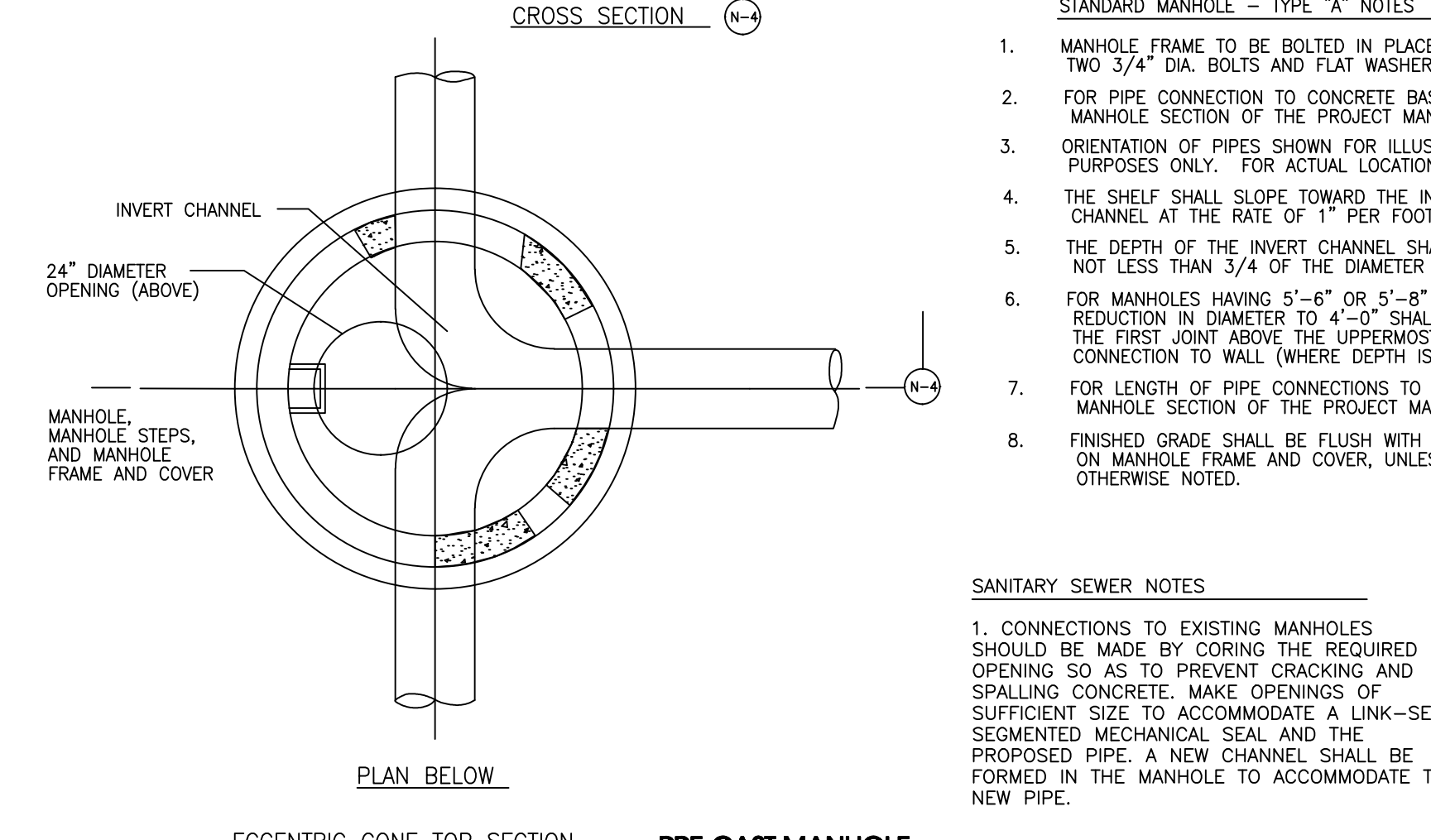
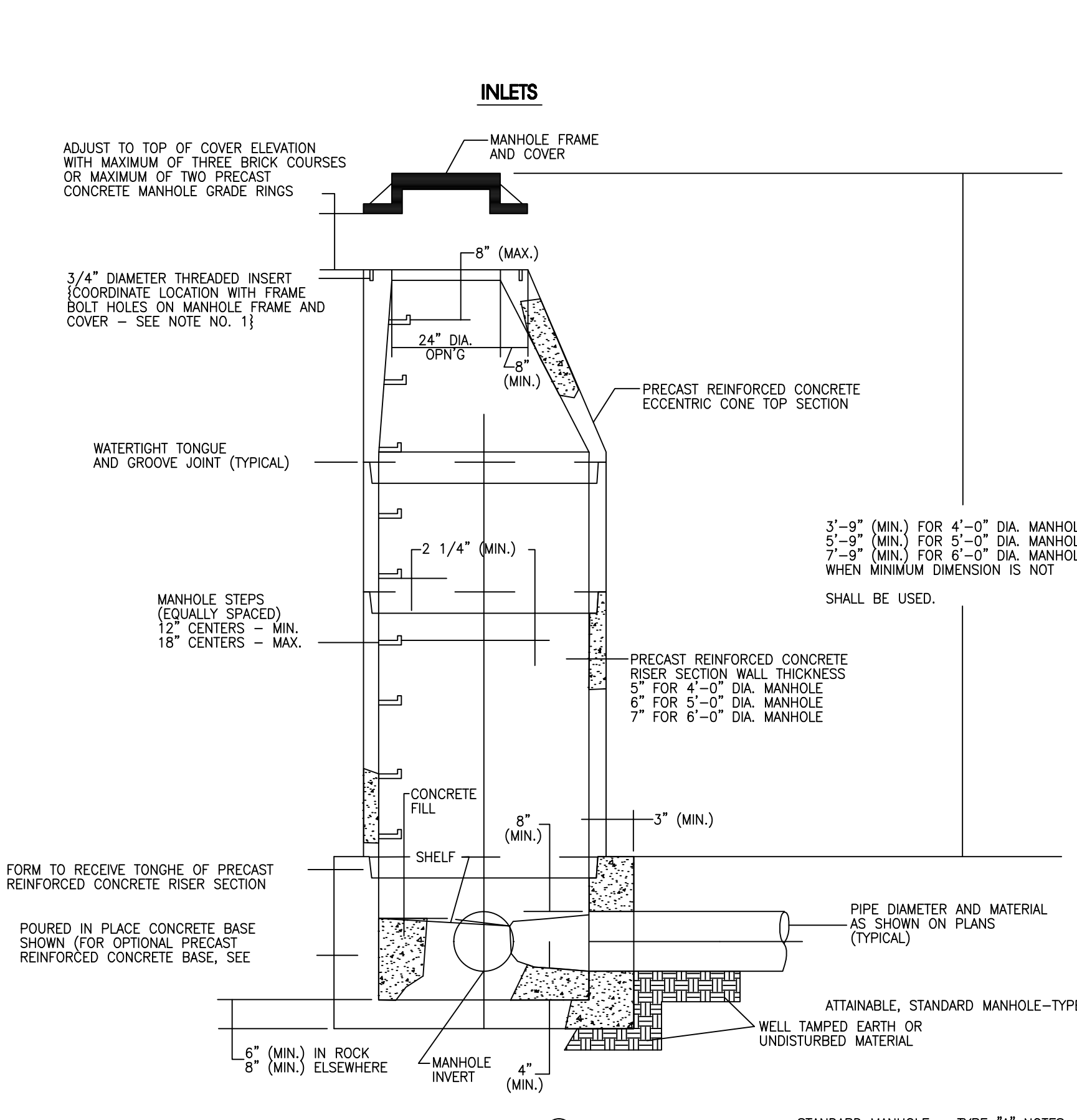


**TYPICAL CURB DETAIL**  
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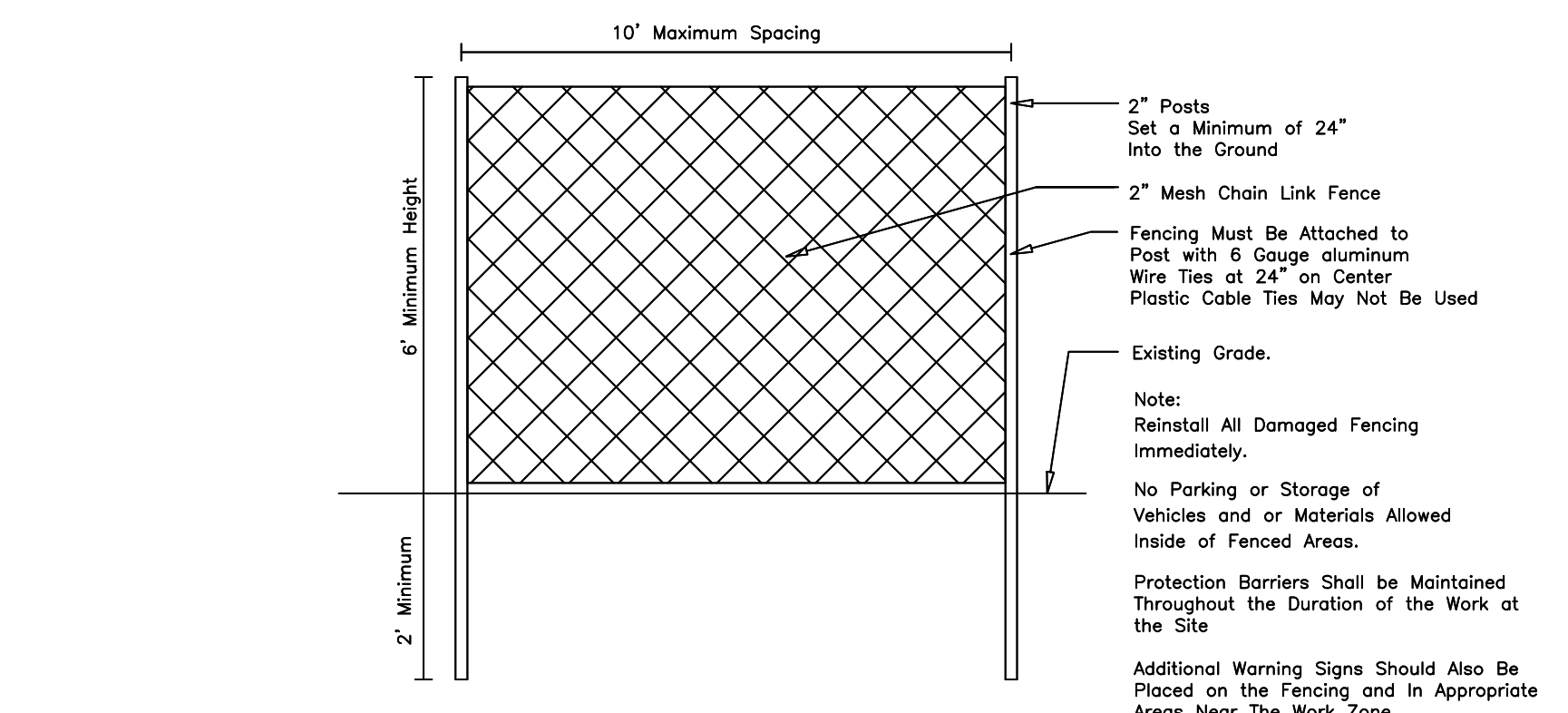


**CROSSWALK DETAIL**

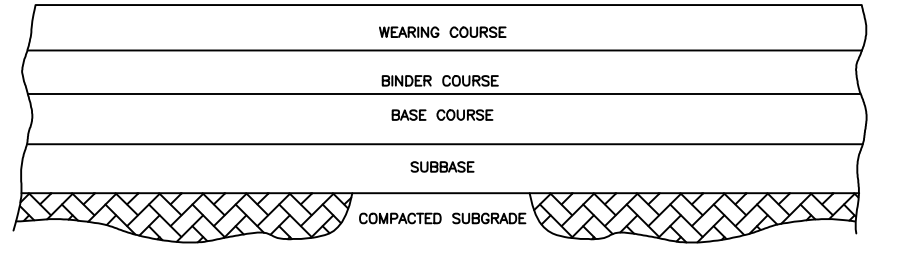
- NOTES**
- PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION NOS. SECTIONS 206, 408, 430, 676 AND 694.
  - PROVIDE EXPANSION JOINT MATERIAL 13 (1/2)" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF.
  - CONSTRUCT DIAGONAL CURB RAMPS WITH A 1220 (4'-0") CLEARSPACE OUTSIDE OF TRAVEL LINES AT THE BOTTOM OF THE RAMP. IF DIAGONAL CURB RAMPS ARE PROVIDED AT MARKED CROSSWALKS, THE 1220 (4'-0") CLEARSPACE IS LOCATED WITHIN THE MARKINGS AND OUTSIDE OF THE TRAVEL LANES.
  - PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COURSE BRUSHING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
  - MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD.
  - CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON ACCESSIBLE ROUTE.
  - IT MAY BE NECESSARY TO LIMIT THE RUN OF A PARALLEL OR PERPENDICULAR CURB RAMP IN ORDER TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVELING THE HEIGHT OF CURB. RAMP LENGTH NOT TO EXCEED 4000 (13'-7"). ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT POSSIBLE.
  - 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.
  - CONSTRUCT BUILT-UP CURB RAMP OF BITUMINOUS MATERIAL AS INDICATED.
  - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. US CUSTOMARY UNITS IN ( ) PARENTHESES.
  - ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.
  - PROVIDE DETECTABLE WARNING SURFACES (DWS) 610 (24") MINIMUM ON 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-OR-DARK OR DARK-OR-LIGHT FOR THE FULL WIDTH OF RAMP.
  - FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR ACCESSIBLE ROUTE.
  - FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAXIMUM SLOPES ALLOWED. SLOPES SHALL NOT BE ADJUSTED AND WILL BE RECONSTRUCTED.
  - 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. AREAS WHERE THE ADJOINING SURFACE IS NOT ADJACENT TO THE ROADWAY, THE 2.00% CROSS SLOPE IS NOT TO EXCEED FOR TURNING MANUEVER. THE MAXIMUM SLOPE IS 2.00% IN ALL LOCATIONS IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF FLOOR. SEE SHEET 8 FOR DETAILS.
  - THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
  - 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 1500 (5'-0") FOR A 12% (1:8) SLOPE).
  - SIDEWALK WIDTH MAY BE REDUCED TO 1220 (4'-0"), WHEN PASSING AREAS 1525 X 1525 (5'-0" X 5'-0") ARE PROVIDED EVERY 15 METERS (50 FEET).
  - SIDEWALK WIDTH 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 OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE.
  - DEPRESSURE CURB FOR CURB RAMPS MUST BE FLUSH TO ADJACENT ROADWAY. TOP OF ROAD ELEVATIONS AT THE FLUM LINE SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE AND PREVENT POONDING.



**PRE-CAST MANHOLE**



**PROTECTIVE TREE PRESERVATION FENCE DETAIL**



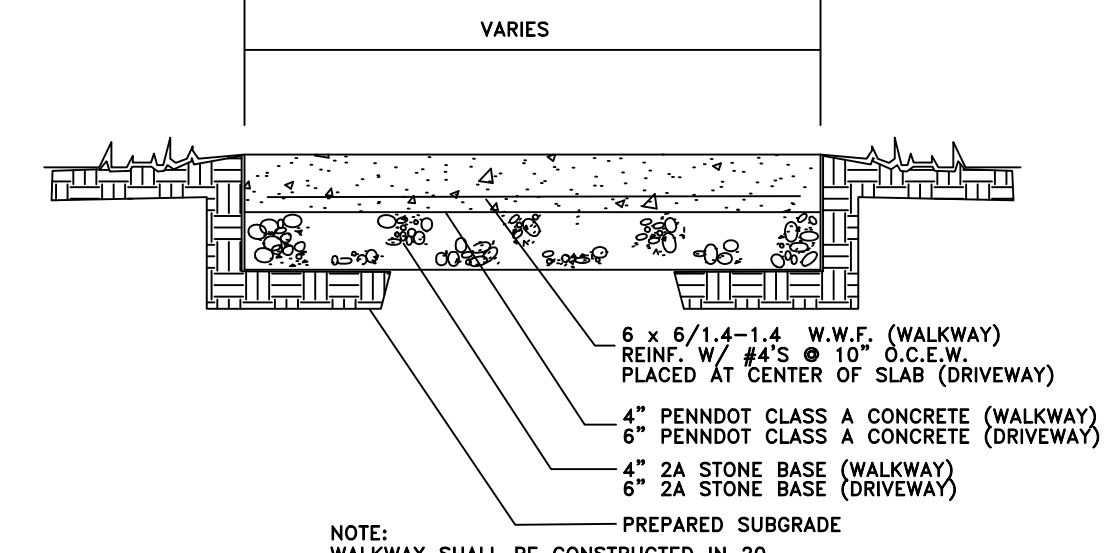
**REQUIRED BITUMINOUS PAVEMENT SECTION**  
N.T.S.

DEPTH	LOCATION	
	STREET	INDIVIDUAL DRIVEWAYS
WEARING:	2"	2"
BINDER:	2" (D-2 OR FB-1)	NONE
SUBBASE:	8" RA 4A 2" SCREENING -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 MIX, SRL-H
BINDER COURSE	SUPERPAVE, ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 10 TO <30 MILLION ESALS, 25.0 MM MIX, SRL-H

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



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 TREDIFFRIN TOWNSHIP STANDARDS.

**CONCRETE PAVEMENT (WALKWAY AND DRIVEWAY)**

- SANITARY SEWER NOTES**
- 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.

NUM.	DATE	REVISION

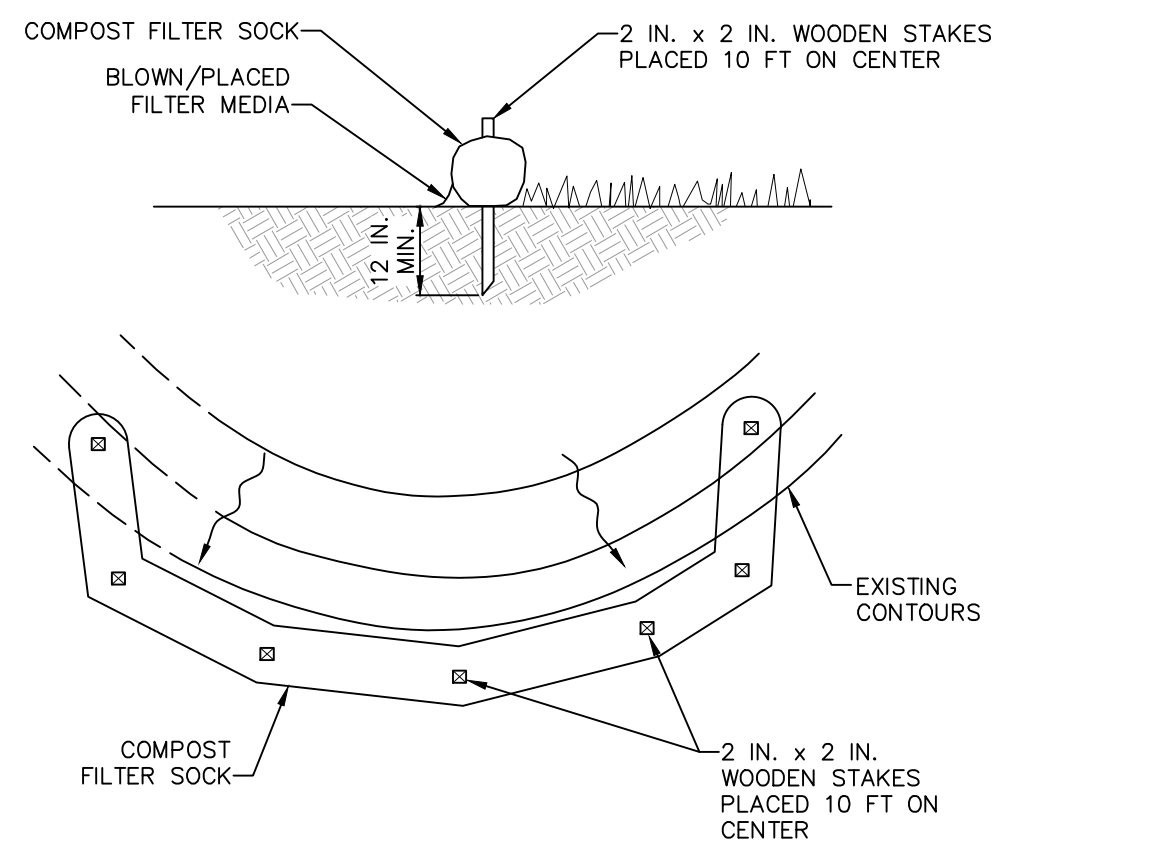
PLAN PREPARED BY:  
**SITE ENGINEERING CONCEPTS, LLC**  
P.O. BOX 1992  
SOUTHEASTERN, PA 19399  
P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

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

**CONSTRUCTION DETAILS**  
SHEET 8 of 15  
NO SCALE

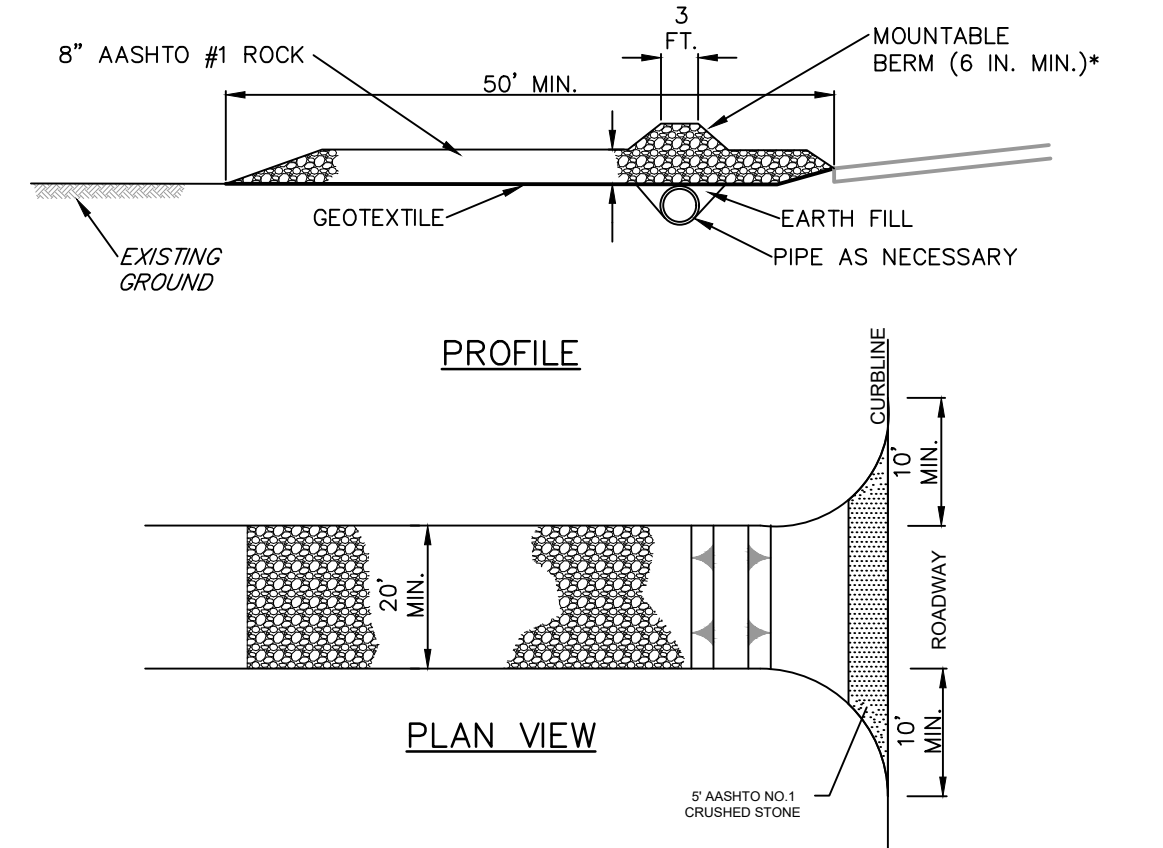
DAVID J. SANDERS, P.E.  
PE057436





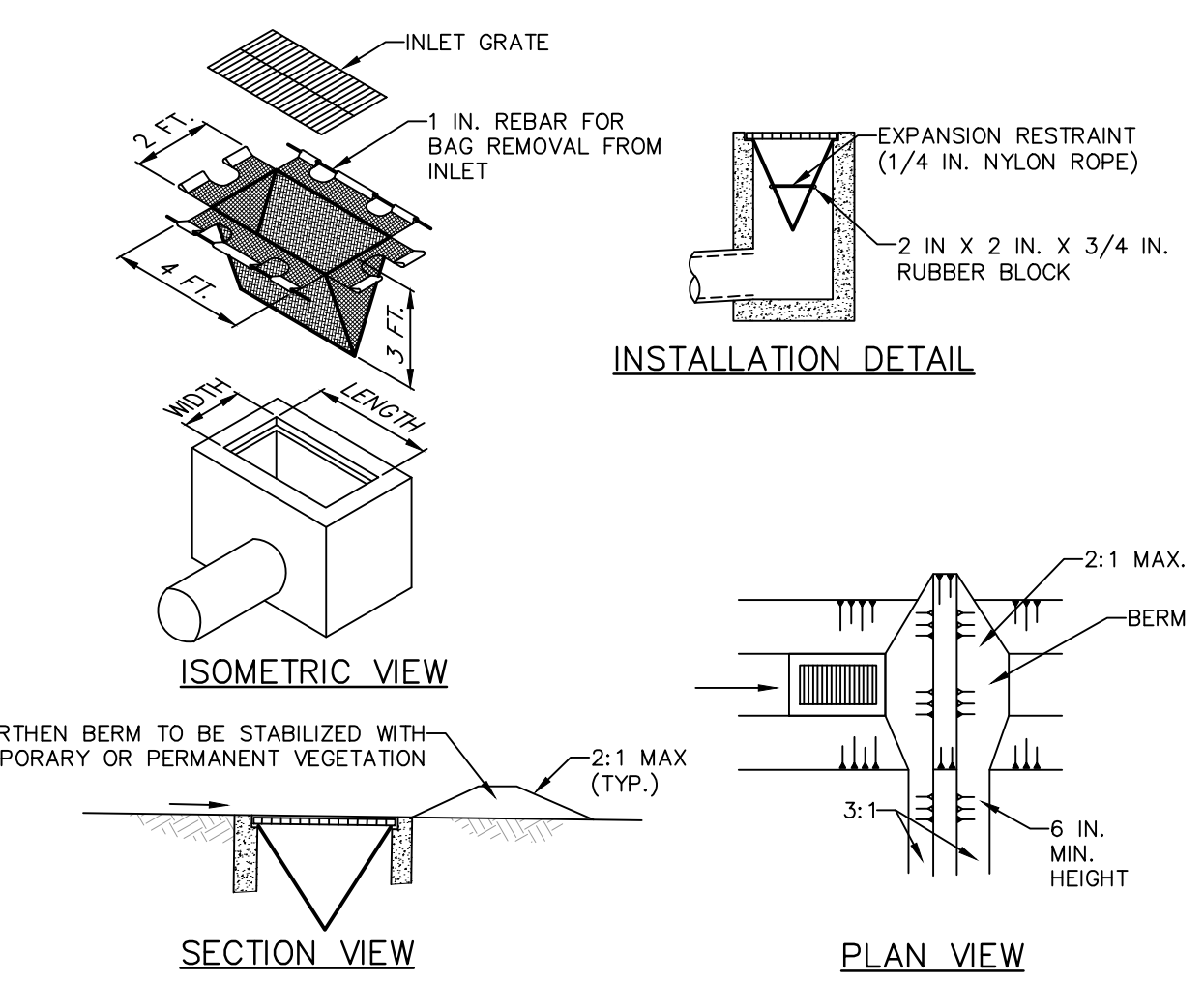
- NOTES:
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET 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



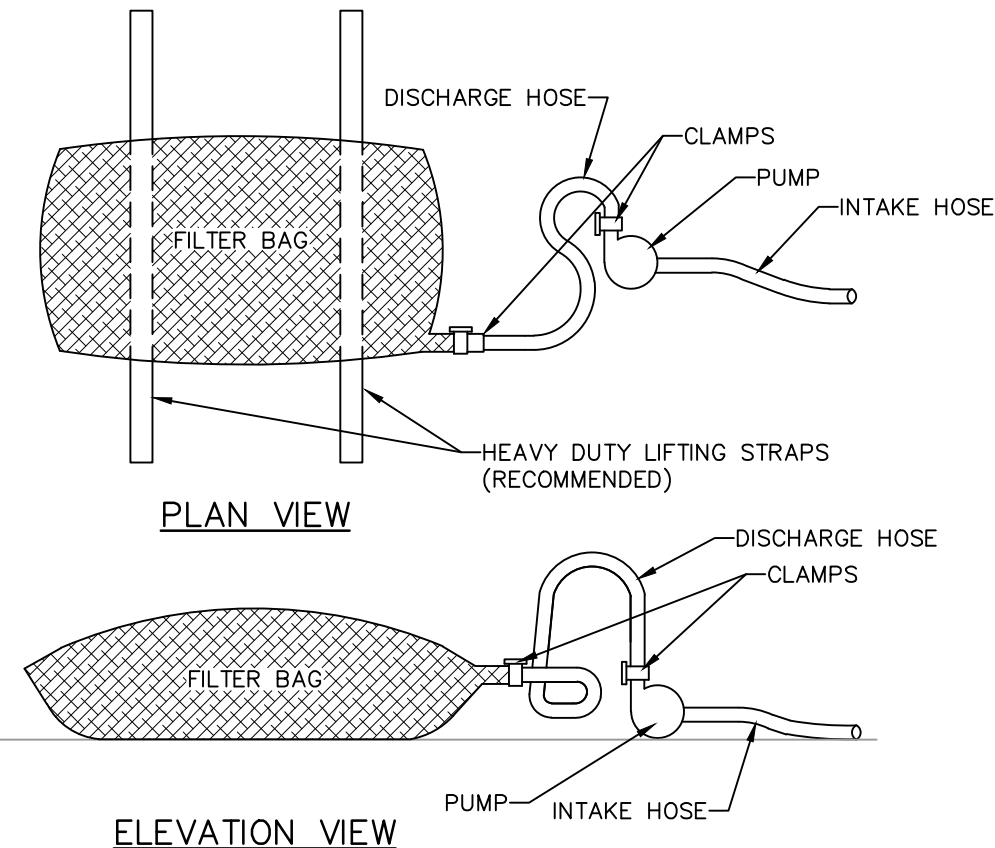
- NOTES:
- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT 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 ALLEVATED 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:
- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
- ROLLED EARTHEN BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS LIVED. 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



- INSTALLATION NOTES:
- A SUITABLE IMPERVIOUS GEOTEXTILE 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 GEOTEXTILE AT ALL LOCATIONS.
  - INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
  - 1 1/2" DIAMETER FILTER SOCK MAY BE STOCKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
  - FOR MORE INFORMATION CONTACT: <http://www.totex.com>
- GENERAL NOTES:
- FOR ANY PROJECT ON WHICH CONCRETE WILL BE POURED OR OTHERWISE FORMED ON-SITE, A SUITABLE WASHOUT FACILITY SHOULD BE PROVIDED FOR CEMENT WASTES AND HOPPERS FOR THE DELIVERY VEHICLES. ALL DELIVERY VEHICLES WILL BE CLEANED OFF-SITE.
  - CONCRETE WASTES SHALL BE ALLOWED TO DRAIN TO SURFACE WATERS.
  - WASHOUT FACILITIES MUST BE MORE THAN 50 FEET FROM STORM DRAINS, OPEN DITCHES, AND SURFACE WATER.
  - NOTIFICATION MUST BE PROVIDED TO DRIVERS SO THEY ARE AWARE OF THE WASHOUT FACILITIES.
- MAINTENANCE NOTES:
- CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
  - ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
  - PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

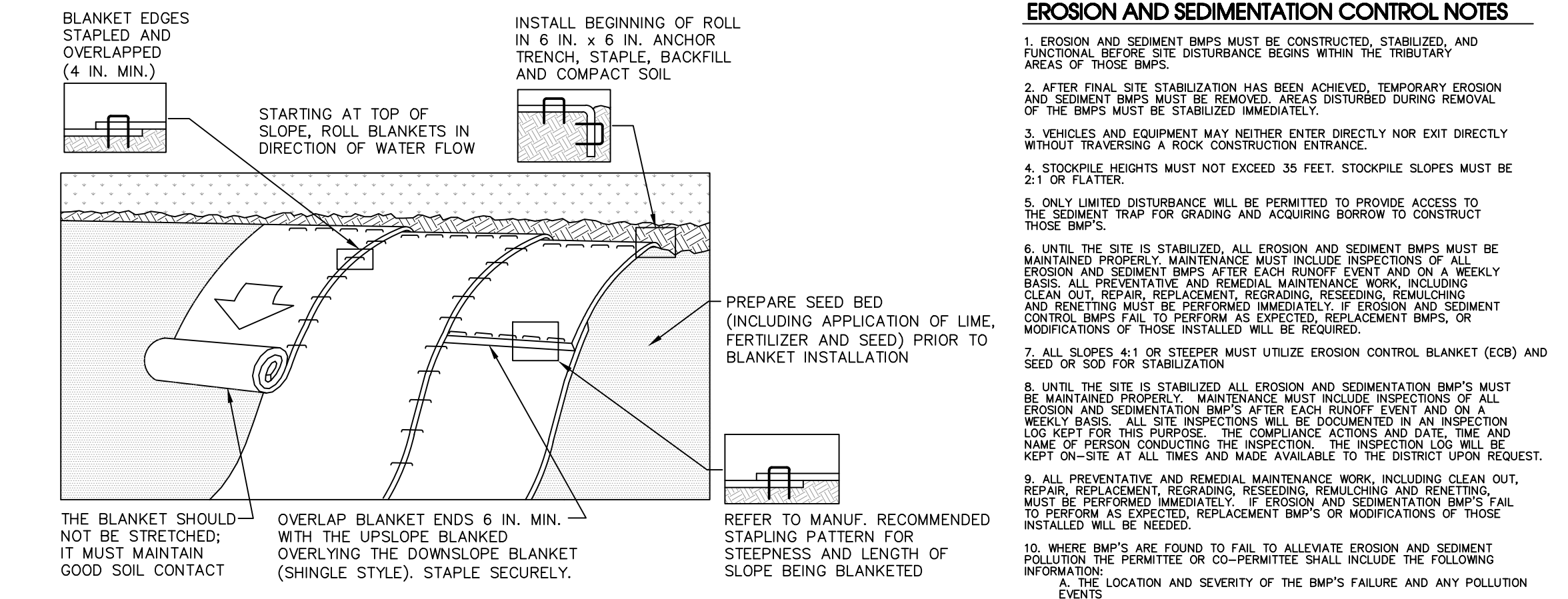
**CONCRETE WASHOUT DETAIL (USING COMPOST SOCK)**

- 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% CHEWINKS FESCUE, 15% PERENIAL 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**

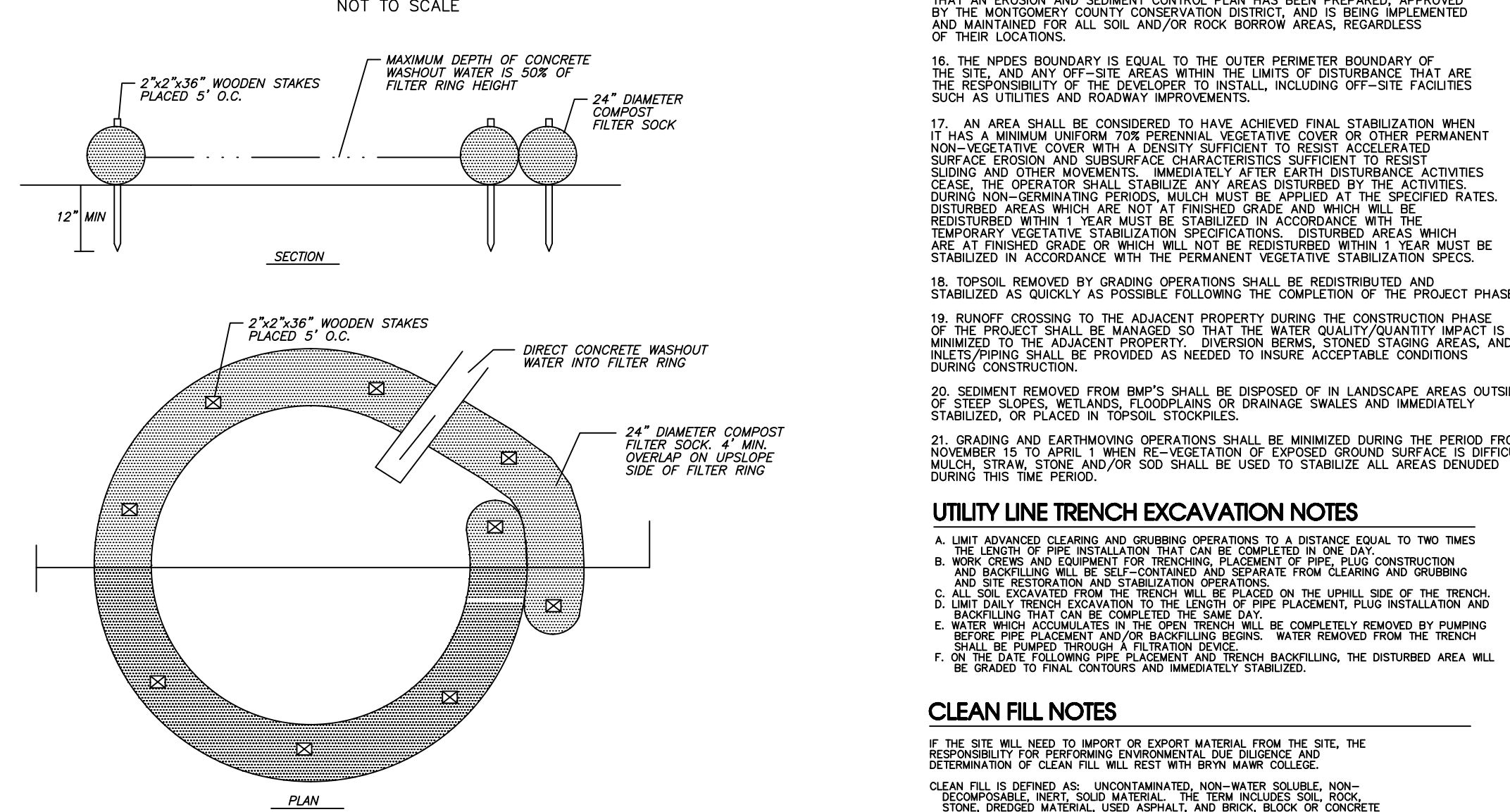
TEMPORARY

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 CLEANED AND REDISTRIBUTE ON-SITE. ANY FACILITIES FOUND TO BE DAMAGED OR MALFUNCTIONING SHALL BE REPAIRED OR REPLACED IMMEDIATELY.



- NOTES:
- SEEDS 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 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



- UTILITY LINE TRENCH EXCAVATION NOTES
- LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF THE EXCAVATION THAT CAN BE COMPLETED IN ONE YEAR. CONSTRUCTION AND BACKFILLING WILL BE SELF-CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE REVISION AND STABILIZATION OPERATIONS.
  - ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPSLOPE SIDE OF THE TRENCH. ONLY DIRT TRENCH LOCATIONS TO THE LENGTH OF PIPE PLACEMENT, PLUS INSTALLATION AND BACKFILLING SHALL BE PLACED ON THE DOWNSLOPE SIDE OF THE TRENCH.
  - WATER MUDS ACCUMULATED IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE BACKFILLING. EXCESSIVE WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
  - ON THE DATE FOLLOWING PIPE PLACEMENT AND BACKFILLING, THE DISTURBED AREA WILL BE GRADDED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
- IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE APPLICANT.
- CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-RECYCLED, NON-FLAMMABLE, NON-TOXIC, NON-COMBUSTIBLE, NON-SCORCHING, NON-SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USE ASPHALT, AND BLOCKS OF CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM ASPHALT AND IS IDENTIFIED AS SUCH ON THE ITEM SPECIFICATIONS LIST. THIS LIST DOES NOT INCLUDE OTHERS AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MULED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).
- CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE SHALL BE QUALIFIED AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL IS 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 SHALL BE RESPONSIBLE FOR OBTAINING THE RESULTS OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FPD-001 MUST BE RETURNED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FPD-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.
- ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE IN ORDER TO OBTAIN A PERMIT FOR CONSTRUCTION AND TO DETERMINE THE QUALITY OF 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 RECORDS, PROPERTY MAPS, ENVIRONMENTAL IMPACT STATEMENTS, ENVIRONMENTAL ASSESSMENTS OF ADJACENT ANALYTICAL TESTING. ENVIRONMENTAL DUE DILIGENCE SHALL BE PERFORMED BY THE APPLICANT. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND REVIEW OF THE PAST AND PRESENT RECORDS INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IT MUST BE TESTED TO DETERMINE WHETHER AS A RESULT OF SUCH SPILL OR RELEASE IT IS UNQUALIFIED AS CLEAN FILL. ANALYTICAL TESTING SHOULD BE PERFORMED BY THE APPLICANT. ANALYTICAL TESTING SHOULD BE PERFORMED BY THE APPLICANT.
- FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REQUIRING LIME. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S REGULATIONS ON RESIDUAL WASTE REGULATIONS CHAPTERS 287 AND 287A. CONTACT THE DEPARTMENT'S RESIDUAL WASTE MANAGEMENT DIVISION FOR APPLICABLE WASTE REGULATIONS AVAILABLE ON-LINE AT [WWW.PAEGC.COM](http://WWW.PAEGC.COM).

**EROSION AND SEDIMENTATION CONTROL NOTES**

- EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITH THE TRIBUTARY AREAS OF THOSE BMPs.
- 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.
- VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXCEED WITHOUT TRAVELING A ROCK CONSTRUCTION ENTRANCE.
- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT TRAP FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THESE BMPs.
- 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, RESEEDING, REGRUBBING, RESETTING, REGRADING, REPAIRING, AND REPLACEMENT OF EROSION AND SEDIMENT CONTROL BMPs SHALL BE PERFORMED AS EXPECTED. REPLACEMENT BMPs OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- ALL SLOPES 4:1 OR STEEPER MUST UTILIZE EROSION CONTROL BLANKET (ECB) AND SEED OR SOG FOR STABILIZATION.
- UNTIL THE SITE IS STABILIZED ALL EROSION AND SEDIMENTATION BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, RESEEDING, REGRUBBING, RESETTING, REGRADING, REPAIRING, AND REPLACEMENT OF EROSION AND SEDIMENTATION BMPs SHALL BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMPs FAIL TO PERFORM AS EXPECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT AND MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, RESEEDING, REGRUBBING, RESETTING, REGRADING, REPAIRING, AND REPLACEMENT OF EROSION AND SEDIMENTATION BMPs SHALL BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMPs FAIL TO PERFORM AS EXPECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT AND MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- WHERE BMPs ARE FOUND TO FAIL TO ALLEVATE EROSION AND SEDIMENT POLLUTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACEMENT AND MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH AFFECT THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL FACILITIES, THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE MONTGOMERY COUNTY CONSERVATION DISTRICT. THE EROSION AND SEDIMENTATION CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED IMMEDIATELY UPON BEGINNING CONSTRUCTION OF THE PROJECT. ANY REVISIONS TO THE APPROVED EROSION AND/or SEDIMENT CONTROL PLAN, INCLUDING THE ADDITION, DELETION, OR MODIFICATION OF ANY EROSION AND/or SEDIMENTATION CONTROL FACILITIES, SHALL BE 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.
- THE NPDES BOUNDARY IS EQUAL TO THE OUTER PERIMETER BOUNDARY OF THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF THE PERIMETER THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL, INCLUDING OFF-SITE FACILITIES AS APPLICABLE TO THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN.
- 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 THE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES DURING NON-GERMINATING PERIODS. MULCH MUST BE APPLIED TO THE DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REQUIRING WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE SPECIFIED RATES.
- TOPSOIL REMOVED BY GRADING OPERATIONS SHALL BE REDISTRIBUTED AND STABILIZED AS QUICKLY AS POSSIBLE FOLLOWING THE COMPLETION OF THE PROJECT PHASE.
- RUNOFF CROSSING TO THE ADJACENT PROPERTY DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE MANAGED SO THAT THE WATER QUALITY OF RECEIVING WATER IS MINIMIZED TO THE ADJACENT PROPERTY. DIVERSION BERMS, STONED STAGING AREAS, AND INLET/PILING SHALL BE PROVIDED AS NEEDED TO INSURE ACCEPTABLE CONDITIONS DURING CONSTRUCTION.
- SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN A LANDSCAPE AREA OUTSIDE OF THE PROJECT SITE. FILLS SHALL BE PLACED IN COMPACTED LAYERS AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
- GRADING AND EARTHMOVING OPERATIONS SHALL BE MINIMIZED DURING THE PERIOD FROM NOVEMBER 15 TO APRIL 15 WHEN BARE VEGETATION EXPOSED GROUND SURFACE IS DEFOLIATED. MULCH, STRAW, STONE AND/OR SOG SHALL BE USED TO STABILIZE ALL AREAS DENuded DURING CONSTRUCTION.
- SEEPS OR SPRINGS encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
- 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 surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
- 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.
- Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.
- E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.
- 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.
- 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.
- 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.
- 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.

**APPENDIX C - STANDARD E&S PLAN NOTES**

- 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.
- 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.
- 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.
- 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.
- Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
- 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.
- All off-site waste and borrow areas must 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.
- Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan map(s) in the amount necessary to complete the final grading of all exposed areas that are to be stabilized. Stockpiles 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.
- 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.
- 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.
- 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.
- 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.
- All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.
- Vehicles and equipment may neither enter directly nor exit directly from lots onto the plan.
- 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, reseeded, replacement BMPs, or modifications of those installed will be required.
- A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date the deficiencies were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
- 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 into any roadside ditch, storm sewer, or surface water.
- All sediment removed from BMPs shall be disposed of in the manner described in the plan drawings.
- 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 outcrops shall have a minimum of 2 inches of topsoil.
- 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.
- Fills shall be placed in compacted layers not to exceed 9 inches in thickness.
- 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.
- Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
- Fill shall not be placed on saturated or frozen surfaces.
- Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
- 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 surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
- 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.
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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:

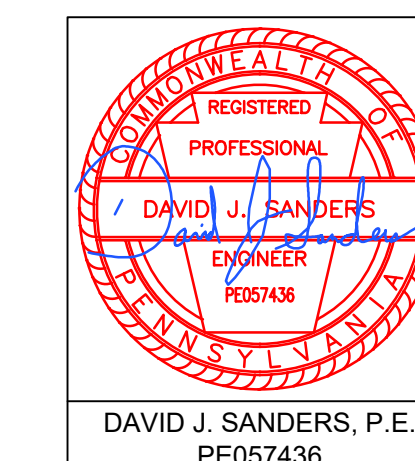
**HAMILTON ESTATE**

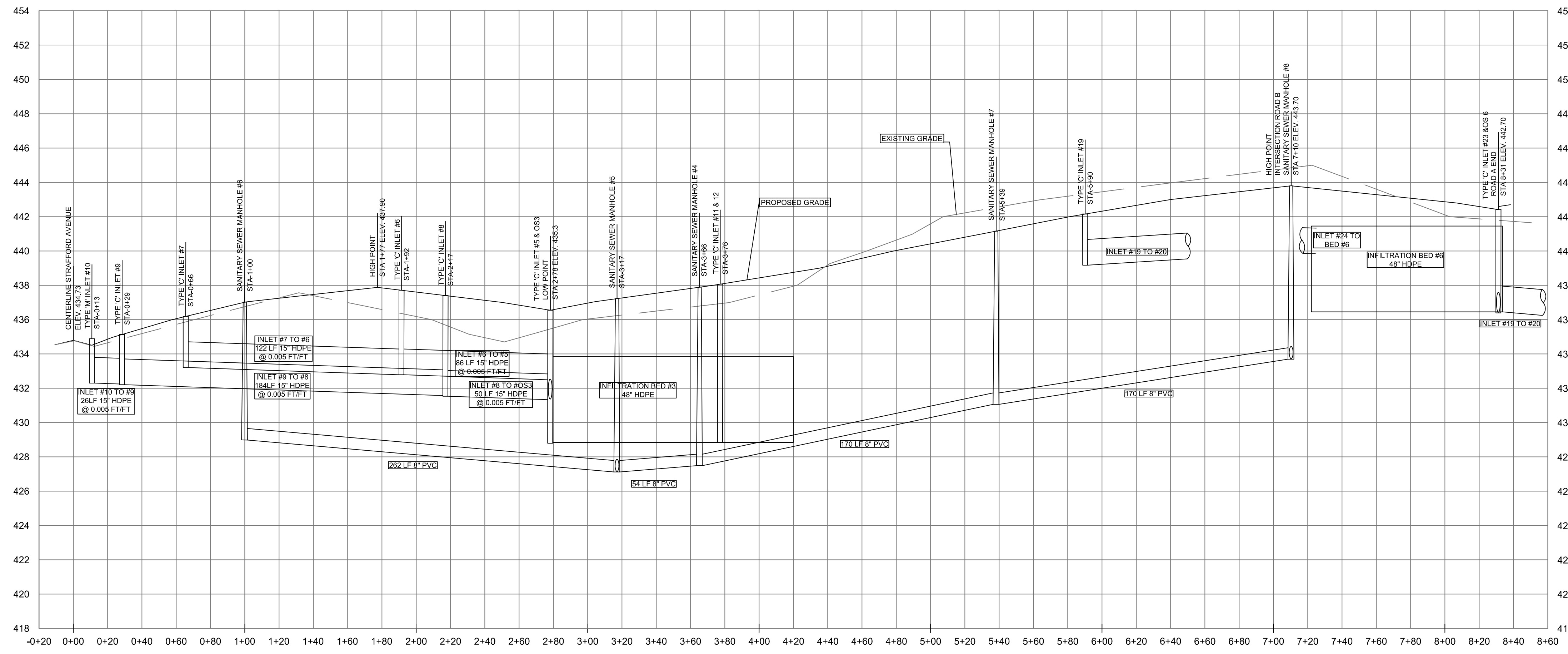
208 & 228 STRAFFORD AVE AND 18 FORREST LANE  
WAYNE, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

**EROSION AND SEDIMENTATION CONTROL DETAILS**

SHEET 9 of 15  
NO SCALE





ROAD A PROFILE

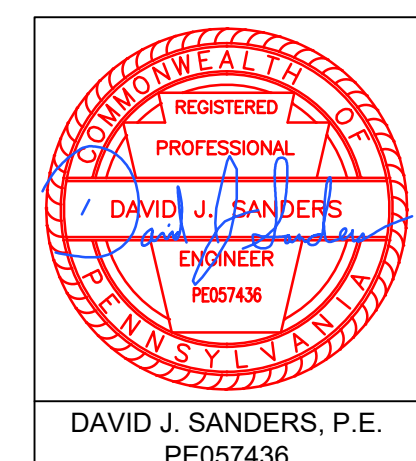
NUM.	DATE	REVISION

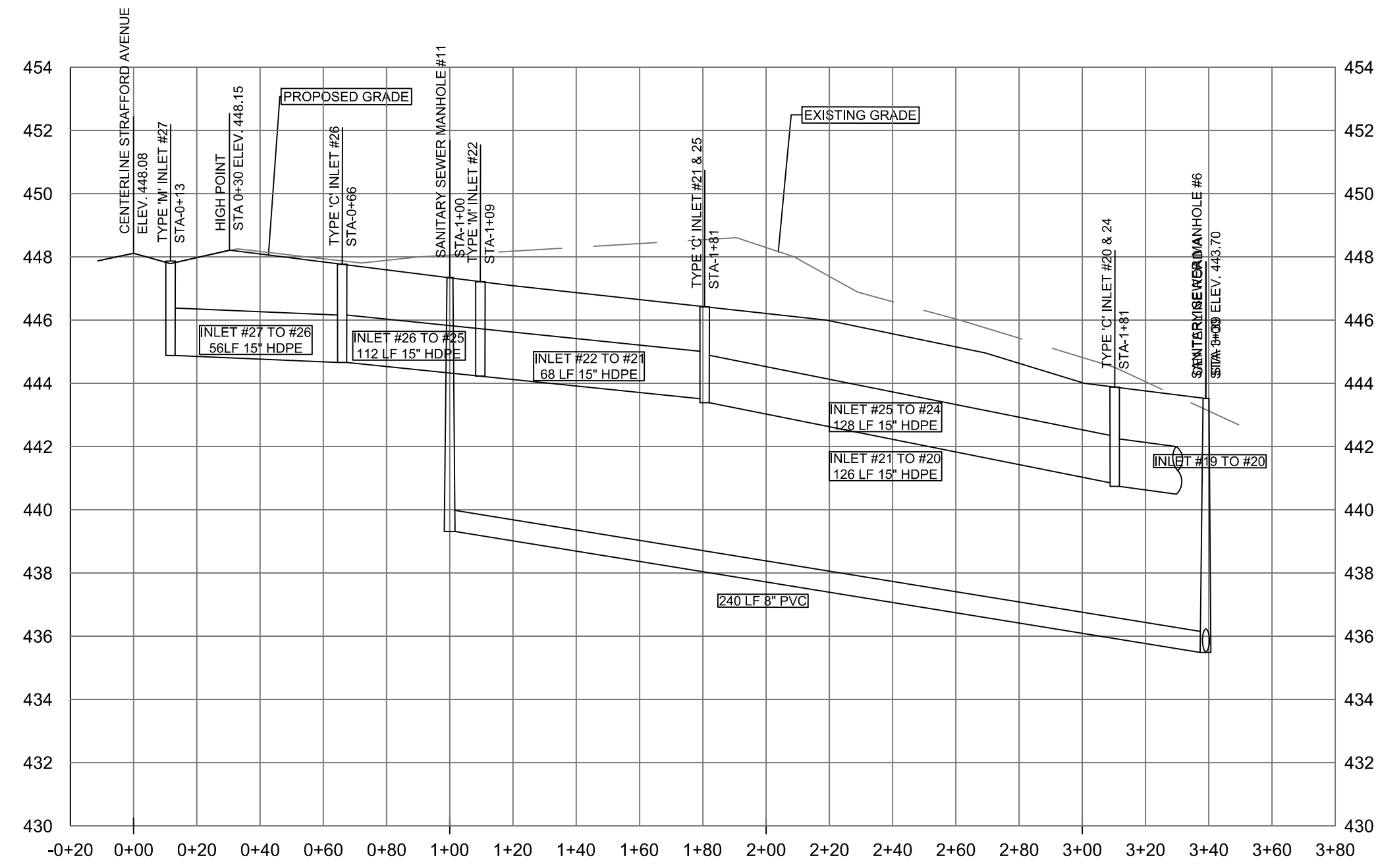
PLAN PREPARED BY:  
**SITE ENGINEERING CONCEPTS, LLC**  
 P.O. BOX 1992  
 SOUTHEASTERN, PA 19399  
 P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

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

**PROFILES**

**SHEET**  
10 of 15  
SCALE: 1" = 40'



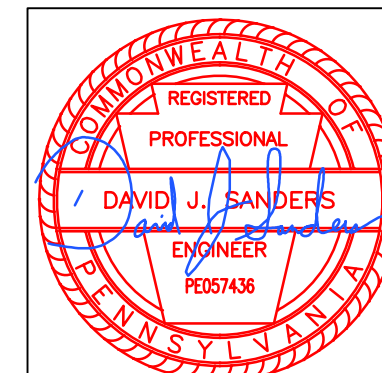


**ROAD B PROFILE**

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



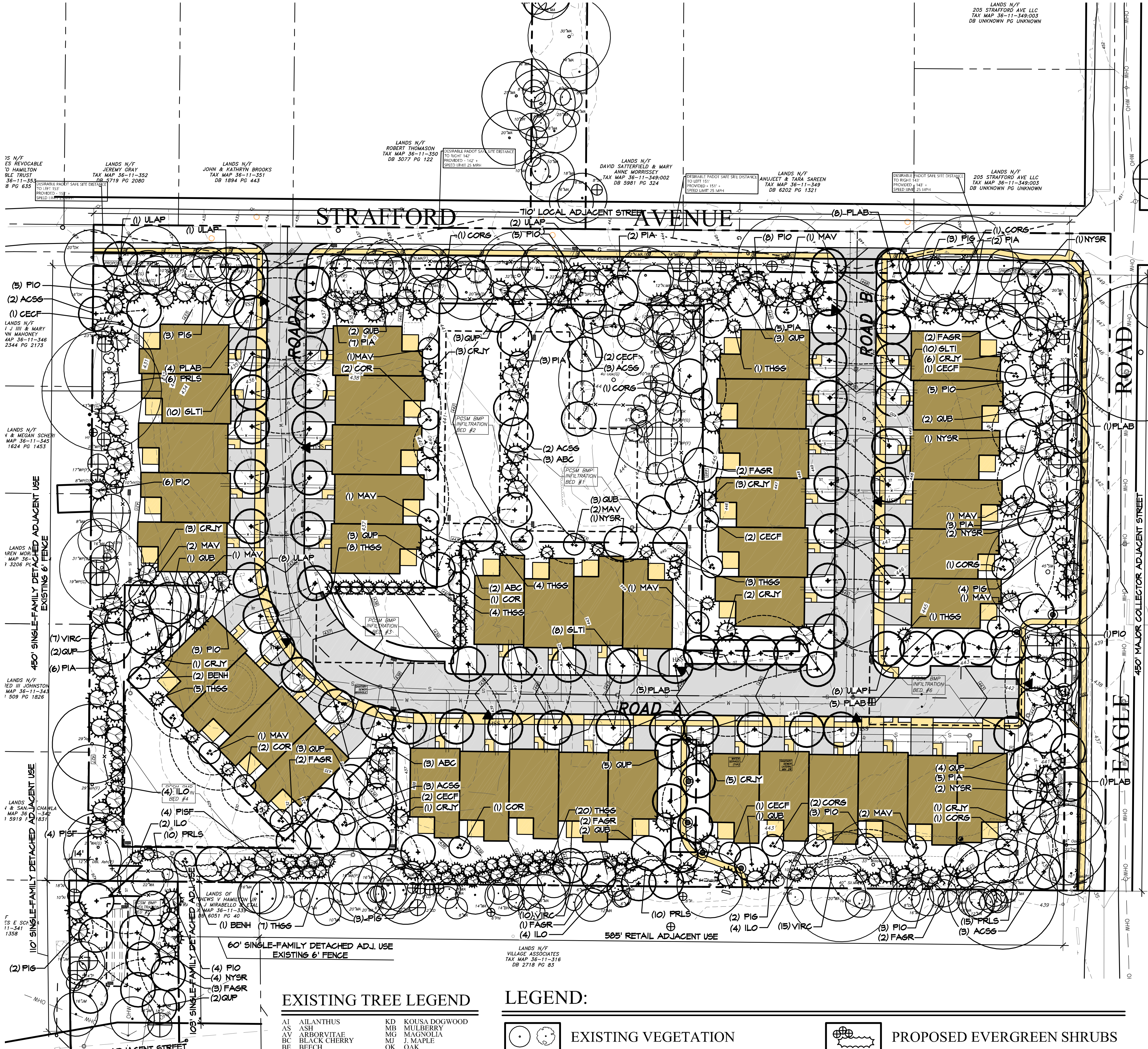
DAVID J. SANDERS, P.E.  
PE057436

**PROFILES**

**SHEET**  
**11 of 15**

SCALE: 1" = 40'

DATE: AUGUST 27, 2020



**EXISTING TREE LEGEND**

AL ALLANTHUS	KD KOUSA DOGWOOD
AS ASH	MB MULBERRY
AV ARBORVITAE	MG MAGNOLIA
BC BLACK CHERRY	ME 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 EVERGREEN SHRUBS
	PROPOSED DECIDUOUS TREE		TREE PROTECTION FENCE (See engineer's plan for details.)
	PROPOSED ORNAMENTAL TREE		STREET LIGHT
	PROPOSED EVERGREEN TREE		BOLLARD LIGHT

**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**

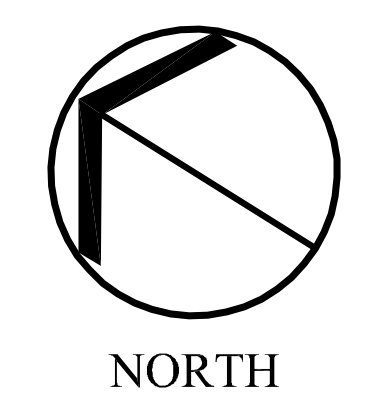
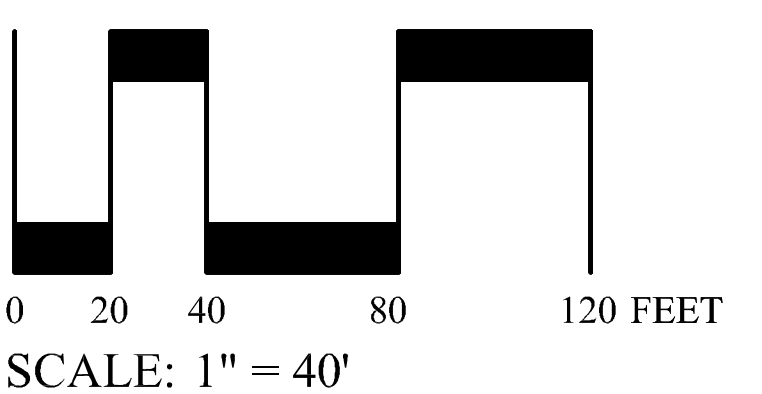
BUFFER	REQUIRED	PROVIDED
Density Modification development requires a 25' buffer along all residentially zoned districts	25' buffer	25' buffer

**PLANT LIST:**

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
<b>DECIDUOUS TREES</b>					
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 'Rutcan'	Stellar Pink Flowering Dogwood	2"-2.5" cal.	B&B
FAGR	14	Fagus grandifolia	American Beech	2"-2.5" cal.	B&B
GLTI	28	Gleditsia triacanthos v. inermis 'Shademaster'	Shademaster Honeylocust	2"-2.5" cal.	B&B
MAY	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
<b>EVERGREEN TREES</b>					
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
PISE	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
<b>SHRUBS</b>					
PRLS	41	Prunus laurocerasus 'Schipkaensis'	Skip Laurel	24"-30" ht.	Cont.
VIRC	32	Viburnum rhytidophyllum 'Cree'	Cree Leatherleaf Viburnum	24"-30" ht.	Cont.

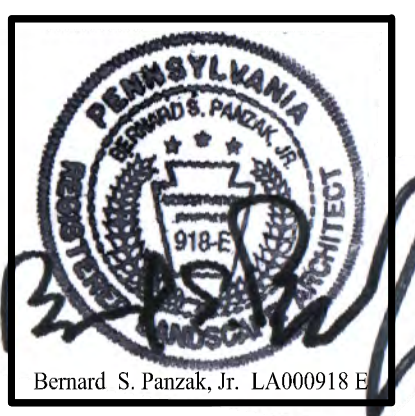
NOTE:  
1. Where there is a discrepancy between the plant list and plan, the plan shall prevail.

Serial Number:  
**CALL BEFORE YOU DIG!**  
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE STOP CALL  
Pennsylvania One Call System, Inc.  
1-800-242-1776



**GLACKIN THOMAS PANZAK**  
LAND PLANNING  
LANDSCAPE ARCHITECTURE

Glackin Thomas Panzak, Inc.  
Paoli Executive Green I Suite 300  
41 Leopard Road  
Paoli, Pennsylvania 19301  
610.408.9011  
Fax: 610.408.9477  
E-mail: plans@glackinplan.com

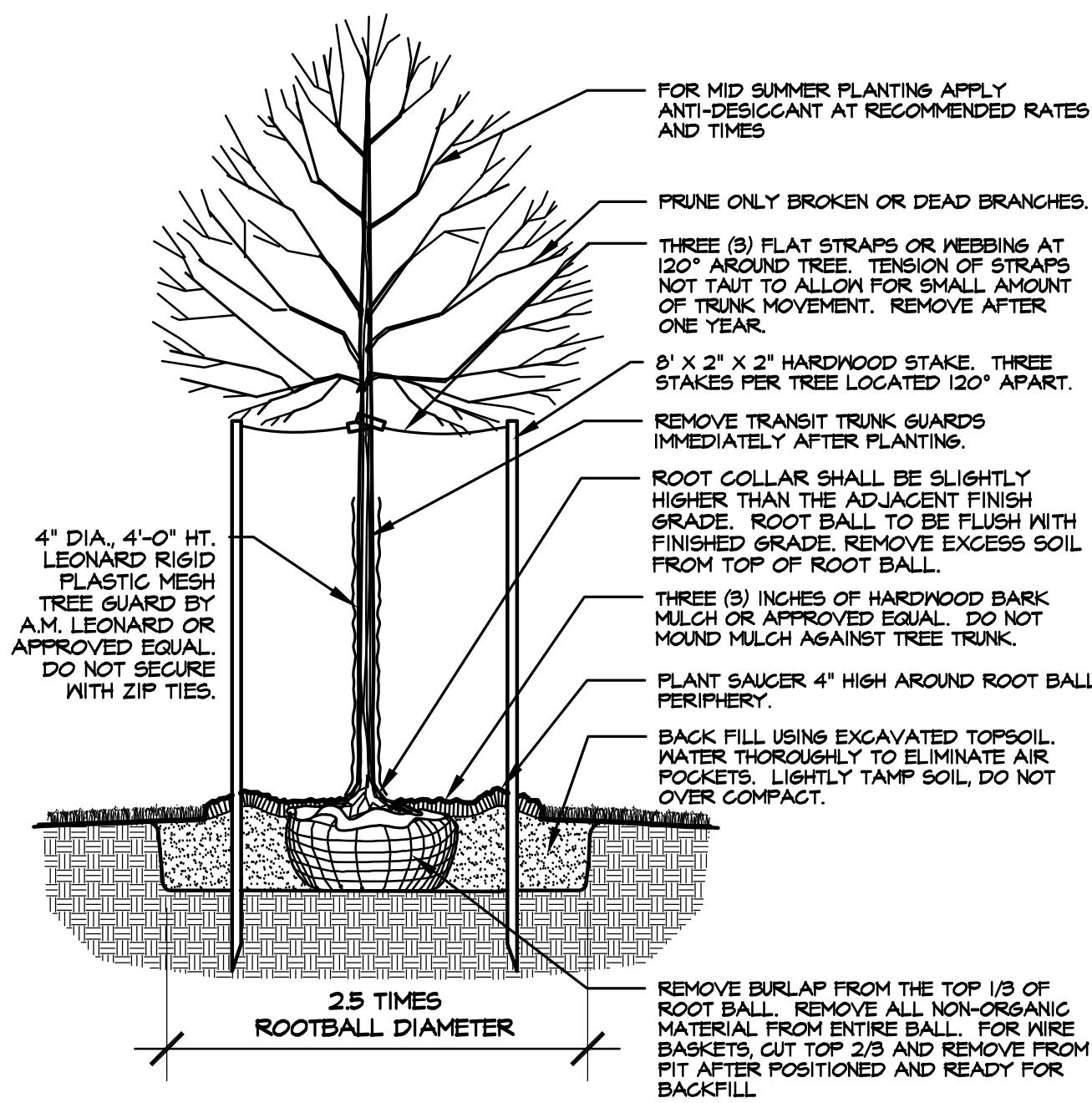
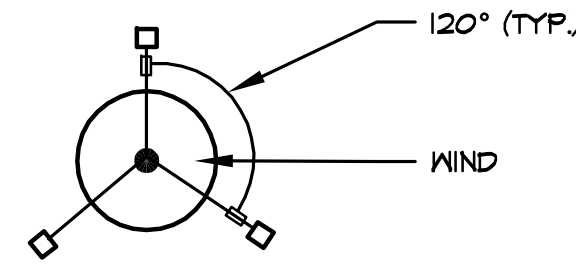


LANDSCAPE PLAN  
**Hamilton Property**  
208 & 228 STRAFFORD AVE. & 18 FORREST LANE  
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA

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

SHEET:  
**LP-1**

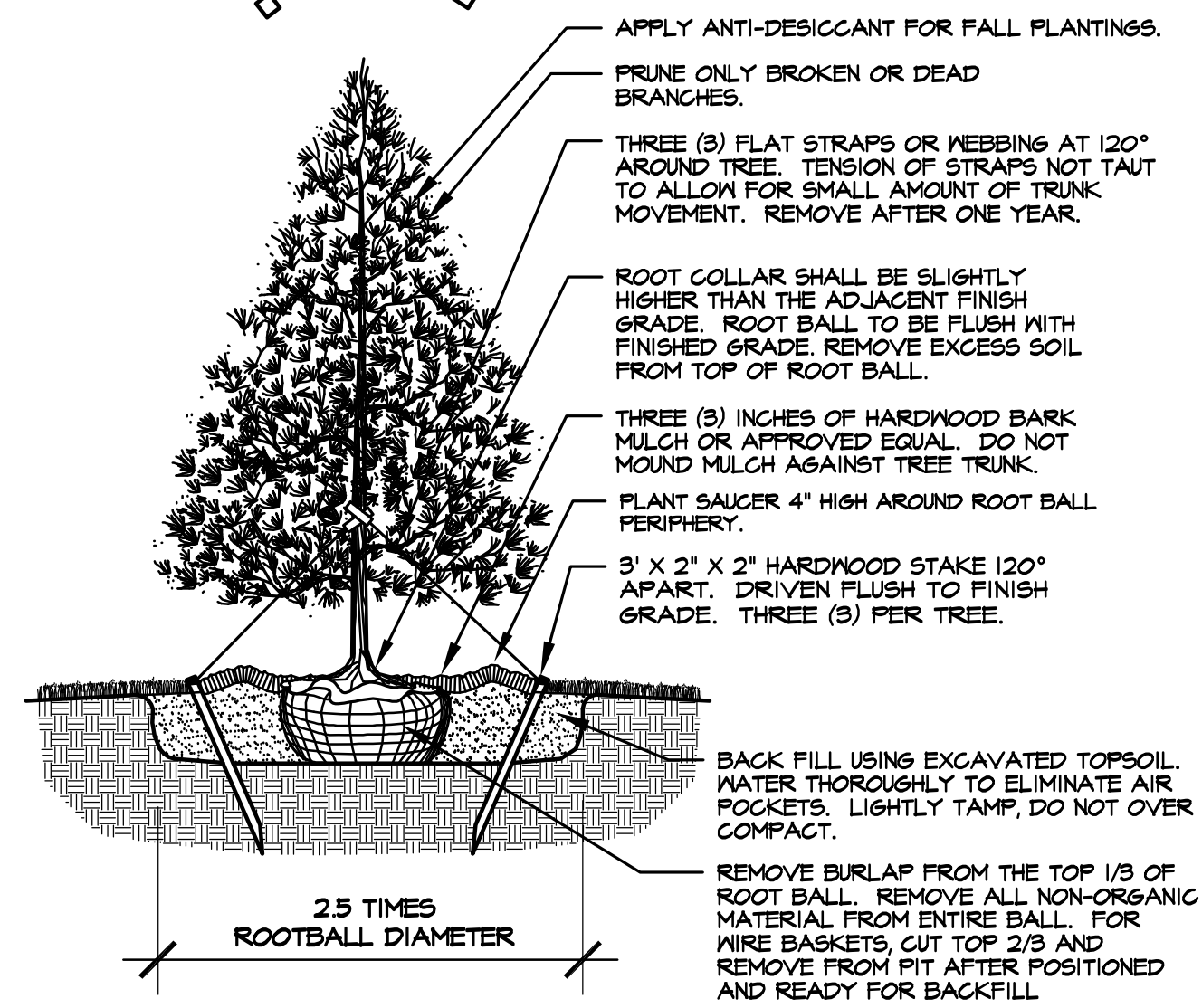
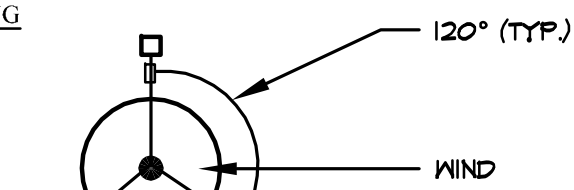
GUY SPACING DIAGRAM



- 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.

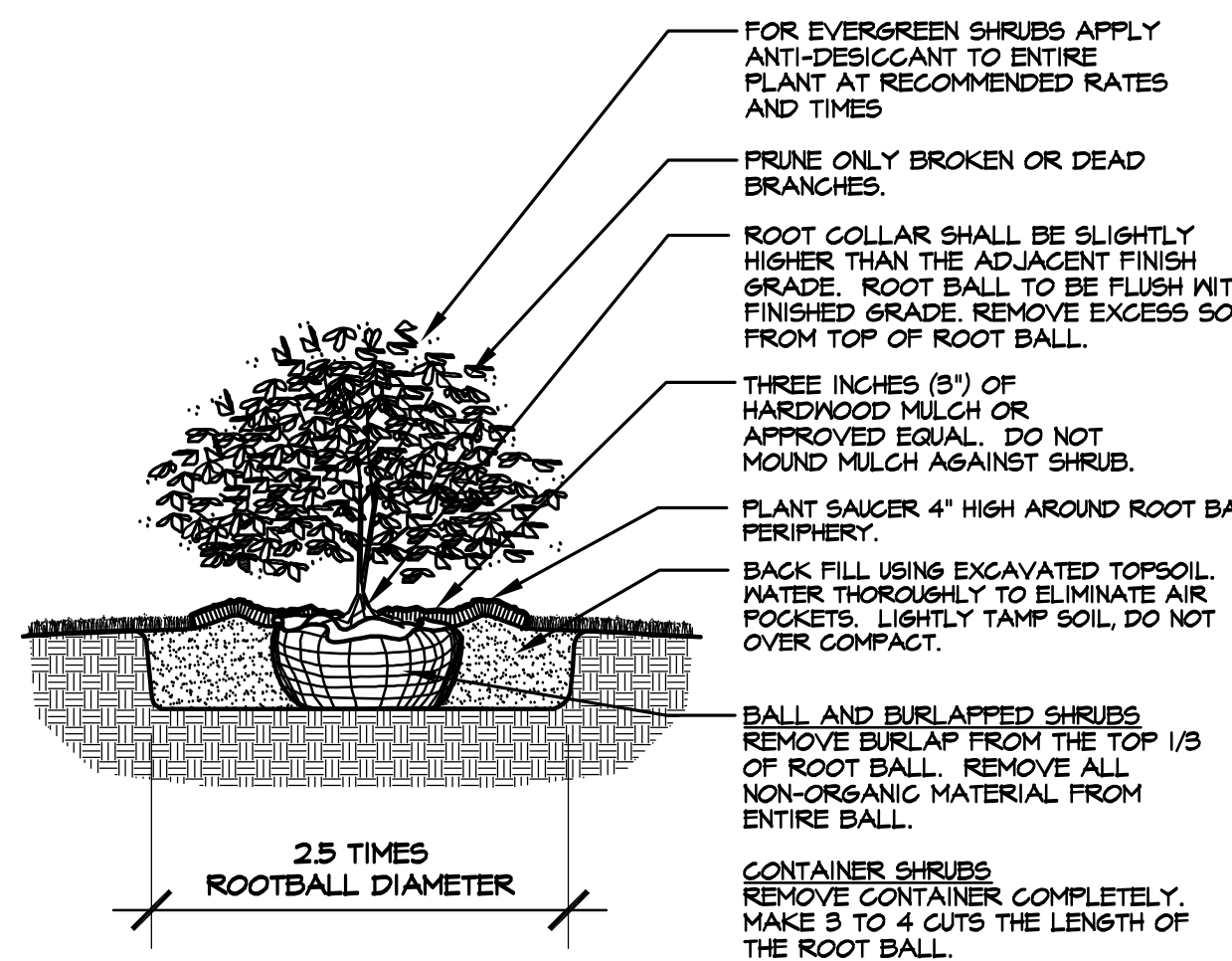
1 DECIDUOUS TREE WITH STAKES DETAIL  
NTS

GUY SPACING DIAGRAM



- 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.

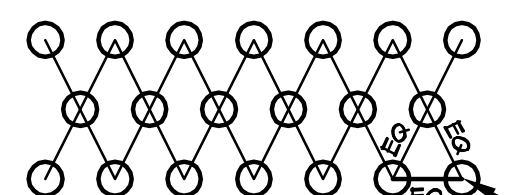
2 EVERGREEN TREE WITH STAKES DETAIL  
NTS



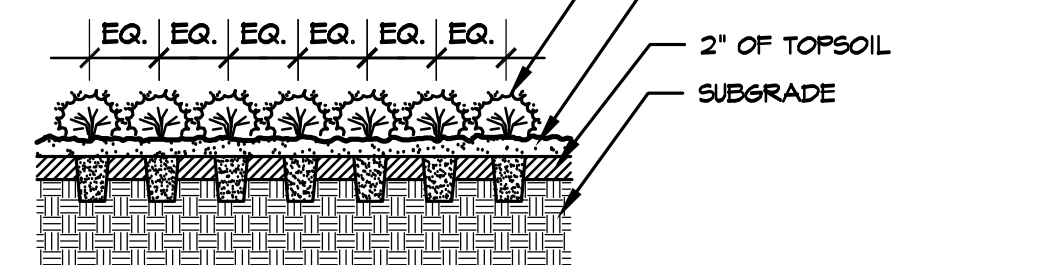
NOTE: FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

3 SHRUB DETAIL  
NTS

PLAN



SECTION



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

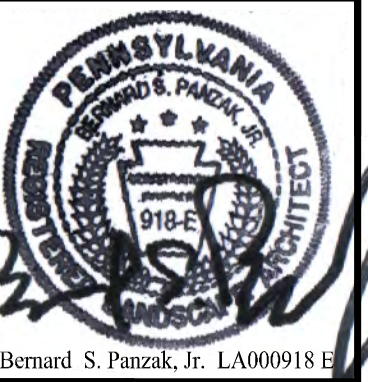
4 PLANTING DETAIL  
NTS

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 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 Wil-Truff® 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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LAND PLANNING  
LANDSCAPE  
ARCHITECTURE

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

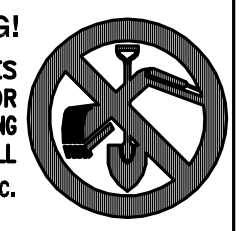
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DATE: 08/27/2020 (jr)  
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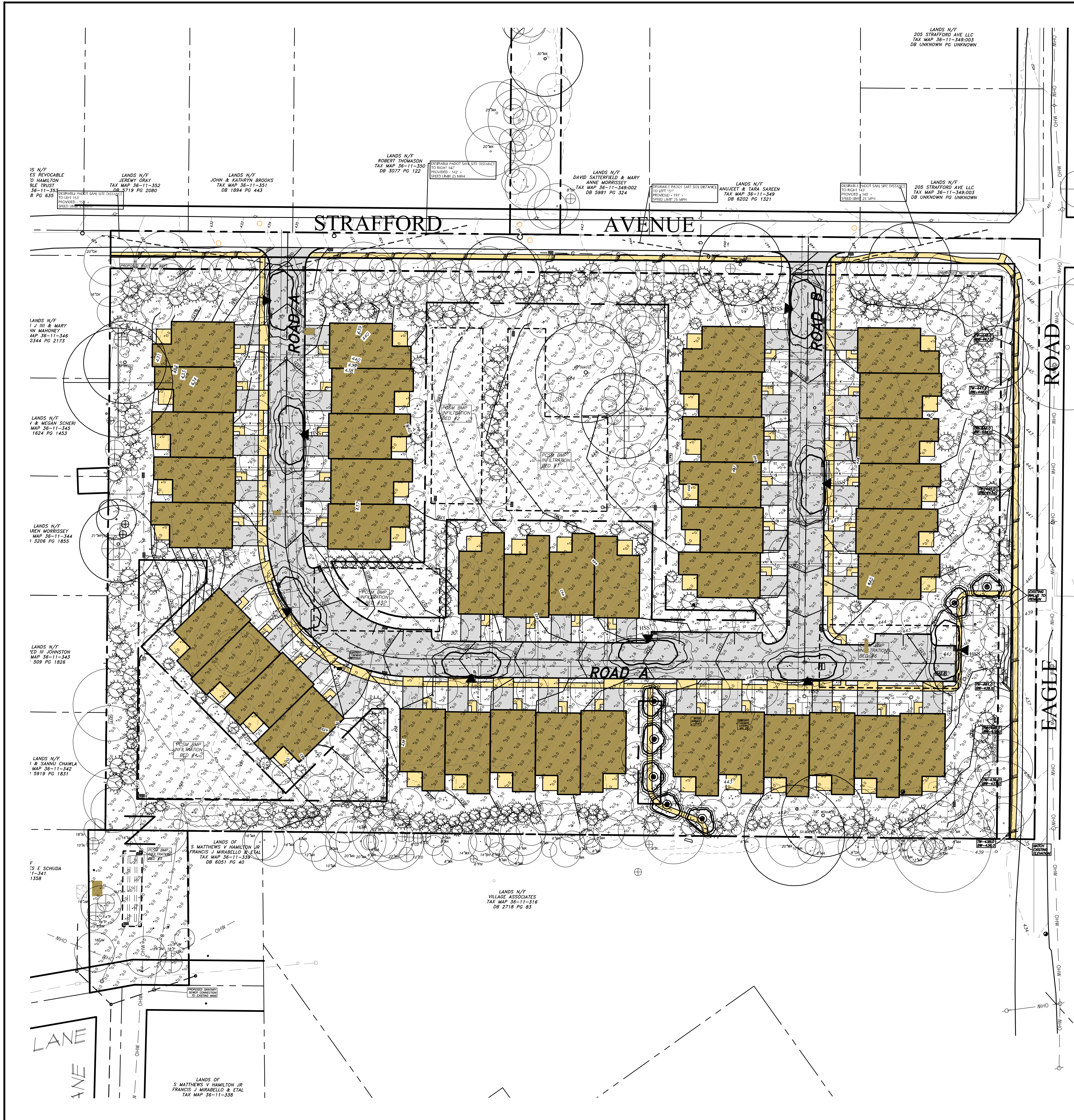
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3 WORKING DAYS NOTICE FOR  
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**GENERAL NOTES:**

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.

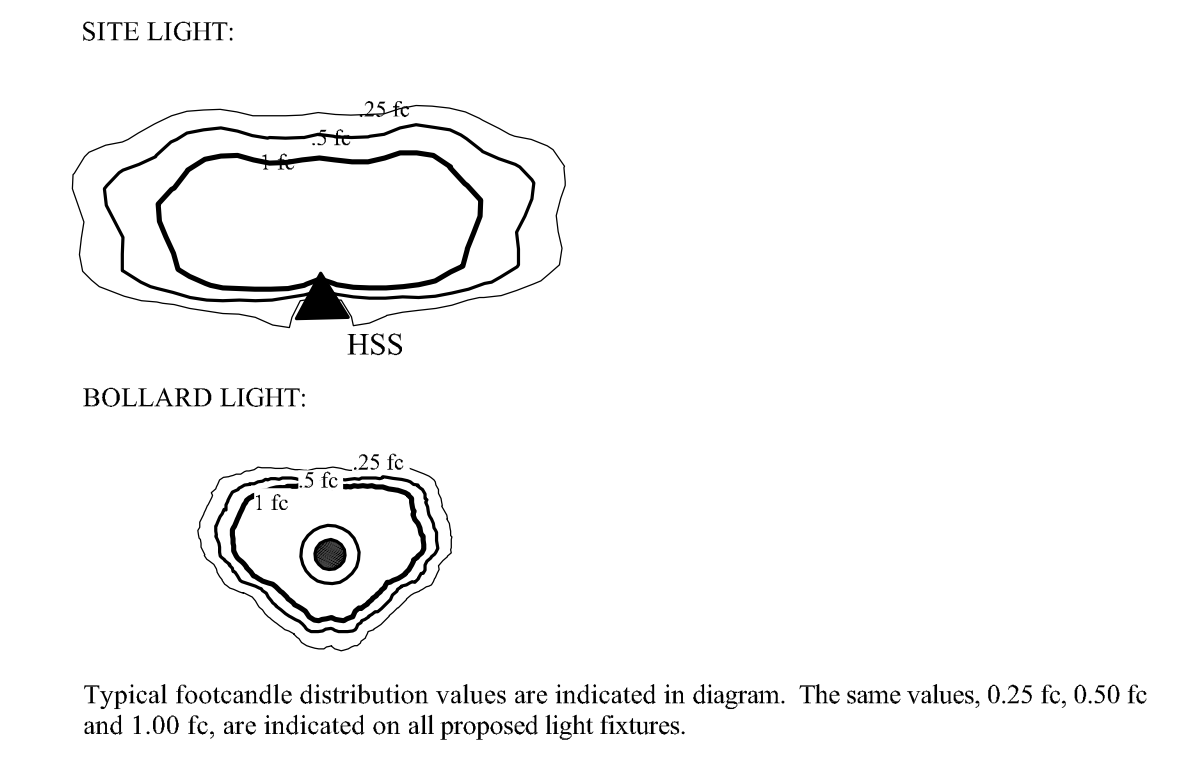
**LIGHTING NOTES:**

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 manufacturer's 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 substitution(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.

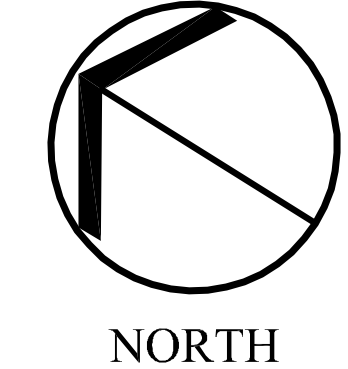
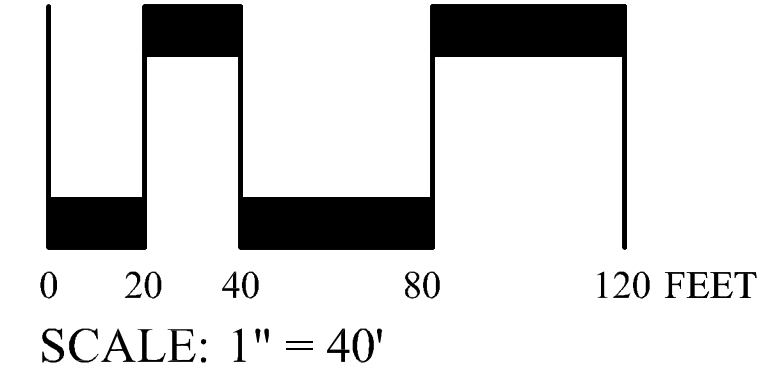
**LIGHTING LEGEND:**

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 :**

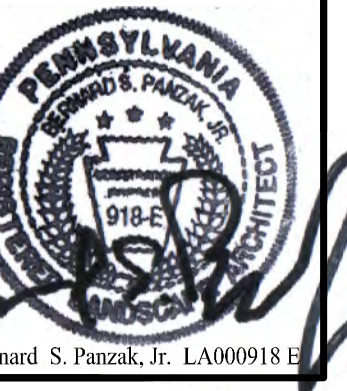


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