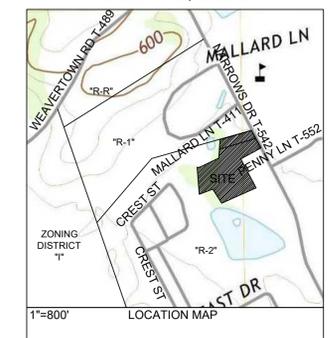


FINAL SUBDIVISION & LAND DEVELOPMENT PLAN

FOR STANLEY MARTIN - 275 NARROWS DRIVE N. LEBANON TOWNSHIP, LEBANON COUNTY, PA

JULY 18, 2023



GENERAL NOTES:

◆ BENCHMARK: SANITARY SEWER MANHOLE LOCATED NORTHEAST OF THE PROPERTY ON NARROWS DRIVE.

ELEVATION: 539.85
VERTICAL DATUM: NAVD 83
HORIZONTAL DATUM: NAD83 - COR 96

- MATTHEW & HOCKLEY ASSOCIATES PERFORMED THE SURVEY ON MARCH 20, 2023.
- UNDERGROUND UTILITIES ARE SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. EXCAVATION OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE. CHRISLAND ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE, OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS ARE CORRECT AND ACCURATE. CHRISLAND ENGINEERING ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- THE FLOODPLAIN SHOWN HEREON IS SHOWN IN ACCORDANCE WITH THE FLOOD INSURANCE RATE MAP FOR LEBANON COUNTY, PENNSYLVANIA (ALL JURISDICTIONS), PANEL 258 OF 380, MAP NUMBER 42075C0257E, EFFECTIVE DATE JULY 8, 2020.
- THE WETLAND BOUNDARY AS SHOWN WAS DETERMINED BY A WETLAND STUDY CONDUCTED BY VORTEX ENVIRONMENTAL.
- ANY REVISION TO THESE PLANS AFTER THE DATE OF PLAN PREPARATION OR LATEST REVISION DATE SHALL NOT BE THE RESPONSIBILITY OF CHRISLAND ENGINEERING.
- NO ONE SHALL SCALE FROM THESE PLANS FOR CONSTRUCTION PURPOSES.
- THE INFORMATION SHOWN ON THIS DRAWING MAY HAVE ALSO BEEN PROVIDED BY DIGITAL FILE. AFTER A DIGITAL FILE IS RELEASED FROM CHRISLAND ENGINEERING THE VIEWER IS THEREFORE CAUTIONED TO COMPARE ANY SUBSEQUENT REPRODUCTIONS OF THIS DATA WITH THE ORIGINAL HARD COPY SEALED PLAN.
- ALL SITE DEVELOPMENT SHALL BE DONE IN ACCORDANCE WITH FEDERAL, STATE, COUNTY, AND TOWNSHIP STANDARDS AND REQUIREMENTS.
- CHRISLAND ENGINEERING HAS NOT PERFORMED ANY SUBSURFACE INVESTIGATIONS, GEOLOGICAL STUDIES, SOUNDINGS OR EVALUATIONS OF THE SUBSURFACE CONDITIONS PRESENT THROUGHOUT THE SITE. NUMEROUS UNKNOWN GEOLOGICAL SITE CONDITIONS AND THE UTILIZATION OF NUMEROUS CONSTRUCTION PRACTICES MEAN THAT CHRISLAND ENGINEERING CANNOT CONSIDER EVERY POTENTIAL GEOLOGICAL IMPACT CAUSED BY CONSTRUCTION ON ANY PORTION OF THE SITE WHICH IS THE SUBJECT OF THIS PLAN.
- IT IS THE RESPONSIBILITY OF THE LANDOWNER, LAND PURCHASER, OR PROSPECTIVE BUYER OF ANY PORTION OF THE SITE DEPICTED ON THIS PLAN TO PERFORM THEIR OWN INDIVIDUAL EVALUATION OF THE GEOLOGY OF THIS SITE TO ASCERTAIN THE GEOLOGICAL FORMATION(S) WHICH UNDERLIES IT, AND THE IMPACT WHICH THOSE FORMATION(S) MAY HAVE UPON THEIR LAND OR ANY CONSTRUCTION PROPOSED THEREON, INCLUDING THE ABILITY TO CONSTRUCT THE REQUIRED STORM WATER MANAGEMENT FACILITIES AND OTHER SITE WORK IN ACCORDANCE WITH THE APPROVED SUBDIVISION PLAN.
- CHRISLAND ENGINEERING SHALL NOT BE RESPONSIBLE FOR THE COST OF ANY ROCK REMOVAL, SINKHOLES, SOLUTION CHANNELS OR ROCK FRACTURES, OR FOR THE CONSTRUCTION, ENGINEERING, PERMITTING AND INSPECTION COST IMPACT WHICH ANY OF THESE GEOLOGICAL FEATURES MAY HAVE UPON THE LAND OWNER.
- MATERIALS AND DETAILS SPECIFIED ON THE APPROVED PLAN SHALL NOT BE ALTERED DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL BY THE LEBANON COUNTY PLANNING DEPARTMENT.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS ON SITE PRIOR TO THE START OF CONSTRUCTION. UNDERGROUND UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. EXCAVATION OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE. CHRISLAND ENGINEERING DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION INFORMATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS IS CORRECT AND ACCURATE. CHRISLAND ENGINEERING ASSUMES NO LIABILITY FOR ANY DAMAGE INCURRED AS A RESULT OF UNDERGROUND UTILITIES OMITTED OR INACCURATELY SHOWN.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. DAMAGE TO ANY UTILITY SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, UTILITY COMPANY OR AUTHORITY, AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS FROM THE MUNICIPALITY, COUNTY, STATE OR AUTHORITY RELATIVE TO CONSTRUCTION SHOWN ON THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AND RECORD DRAWINGS AS MAY BE REQUIRED BY THE MUNICIPALITY AND/OR THE VARIOUS AUTHORITIES RELATIVE TO THE CONSTRUCTION SHOWN ON THESE PLANS.
- ALL PROPOSED SIGNS SHALL BE IN ACCORDANCE WITH THE NORTH LEBANON TOWNSHIP ZONING ORDINANCE.
- THE PROPOSED SITE IS LOCATED WITHIN THE "NORTH LEBANON TOWNSHIP RESIDUAL" STORMWATER MANAGEMENT DISTRICT.
- ALL APPLICABLE CORNER MARKERS SHALL BE SET UPON APPROVAL OF THE FINAL SUBDIVISION PLAN. RESETTLE OF CORNER MARKERS AFTER CONSTRUCTION OF THE DWELLINGS AND BUILDINGS SHOWN HEREON SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR LOT OWNER.
- ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.
- CLEAR SIGHT TRIANGLES SHALL BE KEPT CLEAR OF ANY OBSTRUCTIONS WITH A HEIGHT GREATER THAN 30 INCHES.
- ALL PLAN SHEETS, INCLUDING THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT AND EROSION AND SEDIMENT POLLUTION CONTROL REPORT ARE PART OF THIS PLAN AND ARE ENFORCEABLE AS IF THEY APPEARED IN TOTAL HEREIN.
- THE DEVELOPER SHALL BE FINANCIALLY RESPONSIBLE FOR ANY ATTORNEY FEES WHEN THE ATTORNEY IS ENGAGED ON BEHALF OF THE TOWNSHIP AUTHORITY RELATING TO THE REVIEW OF THE SUBDIVISION PLANS OR LAND DEVELOPMENT PLANS THAT ARE SUBMITTED TO THE TOWNSHIP AUTHORITY. PAYMENT OF ALL INVOICES IS DUE AND PAYABLE WITHIN 30 DAYS OF RECEIPT BUT IN ALL CASES PRIOR TO PLAN APPROVAL BY THE BOARD OF SUPERVISORS. ANY QUESTIONS ON INVOICES MUST BE REPORTED TO THE TOWNSHIP AUTHORITY IN WRITING WITHIN 10 DAYS OF RECEIPT OF THE BILL.
- A DRIVEWAY PERMIT WILL BE REQUIRED FROM THE TOWNSHIP.
- A STREET CUT PERMIT WILL BE REQUIRED FROM THE TOWNSHIP.

NORTH LEBANON TOWNSHIP
722 KIEMERLINGS ROAD
LEBANON, PA 17046
CONTACT - CHERI GRUMBINE
717-273-7132

VERIZON PENNSYLVANIA LLC
15 E MONTGOMERY AVE
PITTSBURGH, PA 15212
CONTACT - OFFICE PERSONNEL
877-502-2876

COMCAST CABLE LEBANON
C/O CLS LOCATING SERVICES INC
9045 RIVER ROAD, STE 300
INDIANAPOLIS, IN 46240
CONTACT - CLS PERSONNEL
317-575-7800

FIRSTENERGY CORP
76 S MAIN ST
AKRON, OH 44308-1890
CONTACT - OFFICE PERSONNEL
609-653-4766

UGI UTILITIES INC
1301 AIP DR
MIDDLETOWN, PA 17057-5987
CONTACT - JOANNE ARCHFIELD
jarchfield@ugi.com
717-255-1453

BUCKEYE PARTNERS
FIVE TEK PARK
9999 HAMILTON BLVD
BREINIGSVILLE, PA 18031
CONTACT - DAVE JONES
dajones@buckeye.com
610-904-4000

SERIAL NUMBER: 20231572067 (NORTH LEBANON TOWNSHIP) DATE: 06/06/2023



CHRISLAND ENGINEERING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. 287 OF 1974 AS AMENDED BY ACT 121 OF 2008 OF THE PENNSYLVANIA GENERAL ASSEMBLY, IT HAS PERFORMED THE FOLLOWING IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS:

- PURSUANT TO SECTION 4, CLAUSE (2) OF SAID ACT, CHRISLAND ENGINEERING, INC. REQUESTED THE LINE AND FACILITY INFORMATION PRESCRIBED BY SECTION 2, CLAUSE (4) FROM A ONE CALL SYSTEM NOT LESS THAN TEN NOR MORE THAN NINETY WORKING DAYS BEFORE FINAL DESIGN IS TO BE COMPLETED.
 - PURSUANT TO SECTION 4, CLAUSE (3) OF SAID ACT, CHRISLAND ENGINEERING, INC. SHOWN UPON THE DRAWING(S) THE POSITION AND TYPE OF EACH FACILITY OWNERS LINE, DERIVED PURSUANT TO THE REQUEST MADE AS REQUIRED BY SECTION 4, CLAUSE (2), AND THE NAME OF THE FACILITY OWNER AND THE FACILITY OWNERS DESIGNATED OFFICE ADDRESS AND THE TELEPHONE NUMBER AS SHOWN ON THE LIST REFERRED TO IN SECTION 3.
 - PURSUANT TO SECTION 4, CLAUSE (4) OF SAID ACT, CHRISLAND ENGINEERING, INC. MADE A REASONABLE EFFORT TO PREPARE THE CONSTRUCTION DRAWING(S) TO AVOID DAMAGE TO AND MINIMIZE INTERFERENCE WITH A FACILITY OWNERS FACILITIES IN THE CONSTRUCTION AREA BY MAINTAINING AN EIGHTEEN-INCH CLEARANCE OF THE FACILITY OWNERS FACILITIES WHERE POSSIBLE.
 - PURSUANT TO SECTION 4, CLAUSE (5) OF SAID ACT, CHRISLAND ENGINEERING, INC. SHALL BE DEEMED TO HAVE MET THE OBLIGATIONS OF CLAUSE (2) BY CALLING A ONE CALL SYSTEM AND SHOWING AS PROOF THE SERIAL NUMBER OF THE ONE CALL NOTICE ON THE DRAWING(S). LEBANON COUNTY ID NO. 20231572067
- AND CHRISLAND ENGINEERING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID REQUEST AND AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE, BUT CHRISLAND ENGINEERING, INC. IS REFLECTING SAID INFORMATION ON THESE DRAWINGS ONLY DUE TO THE REQUIREMENTS OF THE SAID ACT 187, DECEMBER 19, 1996.

EASEMENT NOTES:

- A STORMWATER MANAGEMENT CONVEYANCE EASEMENT SHALL BE LOCATED AROUND EACH CONVEYANCE FACILITY (I.E. SWALES, PIPES, ETC.) AND SHALL BE TWENTY (20) FEET IN WIDTH. THE EASEMENT SHALL EXTEND TEN (10) FEET FROM THE CENTERLINE OF THE CONVEYANCE FACILITY.
- A STORMWATER MANAGEMENT EASEMENTS SHALL BE LOCATED AROUND EACH STORMWATER MANAGEMENT FACILITY (I.E. DETENTION BASINS, INFILTRATION TRENCHES, RAIN GARDENS, ETC.) AND SHALL ENCOMPASS ALL COMPONENTS OF THE FACILITY.
- AN EASEMENT SHALL ENCOMPASS ALL WETLANDS AND OPEN STREAM CHANNELS. THE EASEMENT SHALL BE LOCATED TEN (10) FEET FROM THE CENTERLINE OF THE STREAM CHANNEL AND AT THE BOUNDARY OF ALL WETLANDS.
- THE GRANTOR, FOR ITSELF, ITS SUCCESSORS, AND ASSIGNS, AUTHORIZES THE BOROUGH AND ITS AUTHORIZED REPRESENTATIVES TO ENTER UPON THE PREMISES TO INSPECT THE FACILITIES LOCATED WITHIN THE EASEMENT.
- ALL FACILITIES LOCATED WITHIN THE ABOVE MENTIONED EASEMENTS SHALL BE SUBJECT TO THE PROVISIONS OF THE STORMWATER MAINTENANCE AND OWNERSHIP PROGRAM.

OWNER DATA		SITE DATA	
STANLEY MARTIN	275 NARROWS DRIVE	DEED BOOK/PAGE:	02152-5655
2370 S 5TH AVE	LEBANON, PA 17046	PARCEL NO.:	27-2350955-376888-000
LEBANON, PA 17042		SITE AREA:	5.53 ACRES (GROSS)
EMAIL: stanm1966@gmail.com		WATER:	PUBLIC
PH: (717) 507-3650		SEWER:	PUBLIC
PURPOSE OF PLAN NOTE		ZONING DATA	
THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE A SINGLE 0.8462 AC LOT (LOT #1) FROM THE EXISTING 5.33 AC PROPERTY (UP# 27-2350955-376888), AS WELL AS CONSTRUCT A NEW HOUSE, DRIVEWAY AND ASSOCIATED STORMWATER MANAGEMENT FACILITIES.		ZONING DISTRICT:	HIGH DENSITY RESIDENTIAL DISTRICT (R-2)
		REQUIRED	PROVIDED
MIN. LOT AREA:	9,000 SQ. FT.	MAX. LOT COVERAGE:	40%
MIN. LOT WIDTH:	85'	FRONT YARD:	30 FT
REAR YARD:	30 FT	REAR YARD:	30 FT
SIDE YARD:	10 FT	ACCESSORY BUILDINGS:	5 FT
MAX. BUILDING HEIGHT:	2 1/2 STORIES OR 35'	OFF-STREET PARKING:	TWO (2) SPACES PER DWELLING UNIT

BMP FACILITY LOCATION

FACILITY NAME	LATITUDE	LONGITUDE
RAIN GARDEN A	40°21'34.34" N	-76°22'41.36" W

SEWAGE DISPOSAL NOTE:

- SEWAGE DISPOSAL FOR THE PROPOSED LOT SHALL BE PROVIDED BY EXTENSION OF THE PUBLIC SEWAGE DISPOSAL SYSTEM. EXTENSION OF THE EXISTING SEWAGE DISPOSAL SYSTEM SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER/SUBDIVIDER/DEVELOPER, AS SHOWN HEREON. CONNECTION TO THE PUBLIC SEWAGE DISPOSAL SYSTEM IS REQUIRED.
- THE CONNECTION TO THE EXISTING SEWER SHALL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NORTH LEBANON TOWNSHIP MUNICIPAL AUTHORITY.

WATER SUPPLY NOTE:

WATER SERVICE SHALL BE PROVIDED VIA EXTENSION OF THE EXISTING PUBLIC WATER SYSTEM. CONNECTION TO THE PUBLIC WATER SYSTEM IS REQUIRED.

BUILDING CODE NOTE:

ALL RESIDENTIAL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE (UCC).

SHEET INDEX

SHEET	DESCRIPTION
SHEET 1 of 7	COVER SHEET
SHEET 2 of 7	EXISTING CONDITIONS PLAN
SHEET 3 of 7	SUBDIVISION & LAYOUT PLAN
SHEET 4 of 7	EASEMENT, GRADING & UTILITY PLAN
SHEET 5 of 7	PRE & POST DEVELOPMENT DRAINAGE PLAN
SHEET ES1 of 7	EROSION AND SEDIMENT POLLUTION CONTROL PLAN (E&SPC)
SHEET ES2 of 7	E&SPC NOTES & DETAILS

*TO BE RECORDED

E&SPC PLAN

THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN WAS APPROVED BY THE LEBANON COUNTY CONSERVATION DISTRICT VIA A LETTER DATED XX/2023. THE PLAN APPROVAL WILL EXPIRE DECEMBER X, 202X.

STORMWATER MANAGEMENT NOTES:

- ALL STORMWATER FACILITIES LOCATED IN PUBLIC STREET RIGHTS-OF-WAY SHALL BE DEDICATED TO THE MUNICIPALITY WITH JURISDICTION OVER THE RIGHT-OF-WAY. SPECIFICALLY, NORTH LEBANON TOWNSHIP WILL OWN AND MAINTAIN STORM WATER FACILITIES WITHIN THEIR RESPECTIVE STREET RIGHTS-OF-WAY.
- MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AND EASEMENTS NOT LOCATED WITHIN PUBLIC RIGHTS-OF-WAY, INCLUDING THE STORMWATER MANAGEMENT FACILITIES, SHALL BE THE RESPONSIBILITY OF THE CURRENT PROPERTY OWNER. OWNERSHIP AND MAINTENANCE RESPONSIBILITIES WILL TRANSFER TO SUBSEQUENT OWNERS WITH THE TRANSFER OF PROPERTY OWNERSHIP.
- DETENTION BASIN, SWALES AND OTHER STORMWATER MANAGEMENT FACILITIES SHALL BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH THE DESIGN AND KEPT FREE OF FILL AND OBSTRUCTIONS.
- ALL YARD INLETS SHALL BE SUMPED AT LEAST SIX (6) INCHES BELOW SURROUNDING GRADE TO CAPTURE TRIBUTARY RUNOFF AND PREVENT BYPASS FLOWS.
- NO ALTERATION TO ANY STORMWATER MANAGEMENT FACILITIES SHALL BE PERMITTED WITHIN EASEMENTS.
- NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN ANY EASEMENT WHICH COULD ADVERSELY AFFECT THE FUNCTION OF THE EASEMENT. NORTH LEBANON TOWNSHIP SHALL HAVE THE RIGHT TO:
 - ACCESS THE SITE TO INSPECT STORM WATER FACILITIES AT ANY TIME.
 - REQUIRE THE CURRENT LAND OWNER TAKE CORRECTIVE MEASURES AND ASSIGN THE LAND OWNER A REASONABLE PERIOD TO TAKE CORRECTIVE ACTION.
- AUTHORIZE MAINTENANCE TO BE DONE AND LIEN ALL COSTS OF WORK AGAINST THE PROPERTIES OF THE PRIVATE ENTITY RESPONSIBLE FOR MAINTENANCE.
- THE MAINTENANCE OF ALL STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES SHALL BE BY THE PROPERTY OWNER. MAINTENANCE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
 - REMOVAL OF SILT AND DEBRIS FROM ALL STORM WATER MANAGEMENT STRUCTURES.
 - PERIODIC REPLACEMENT OF SILT FENCE OR OTHER SIMILAR MEASURES.
 - ESTABLISHMENT OR RE-ESTABLISHMENT OF VEGETATION BY SEEDING AND MULCHING OR SODDING OF SCOURED AREAS OR AREAS WHERE VEGETATION HAS NOT BEEN SUCCESSFULLY ESTABLISHED.
 - INSTALLATION OF NECESSARY CONTROLS TO CORRECT UNFORESEEN PROBLEMS CAUSED BY STORM EVENTS.
- REMOVAL OF ALL TEMPORARY STORMWATER MANAGEMENT CONTROL FACILITIES UPON THE INSTALLATION OF PERMANENT STORMWATER FACILITIES AT THE COMPLETION OF THE DEVELOPMENT.
- REPAIR OF STRUCTURAL DAMAGE OR DETERIORATION OF ANY KIND, INCLUDING THAT CAUSED BY SINKHOLES OR OTHER EVENTS.
- ACCESS TO ALL STORMWATER MANAGEMENT FACILITIES, INCLUDING INLETS, MANHOLES, STORM PIPES, ENDWALLS, HEADWALLS, SWALES, AND BASINS SHALL BE PROVIDED VIA EASEMENTS TO REPRESENTATIVES OF NORTH LEBANON TOWNSHIP.
- STORMWATER MANAGEMENT FACILITIES (DETENTION FACILITIES, STORM DRAINAGE PIPES, INLETS AND ENDWALLS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NORTH LEBANON TOWNSHIP, LEBANON COUNTY CONSERVATION DISTRICT, LEBANON COUNTY, AND PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- ALL STORM SEWER JOINTS SHALL BE WATERTIGHT.
- ALL STORM SEWERS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PENNDOT PUB. 408 SPECIFICATIONS, PENNDOT PUB. 72, AND AS SHOWN ON THESE DRAWINGS.
- RUNOFF FROM THE PROPOSED IMPROVEMENTS SHALL BE DIRECTED TO THE STORM WATER MANAGEMENT FACILITIES.
- TOWNSHIP AND COUNTY OFFICIALS, AND THEIR AGENTS OR EMPLOYEES, HAVE THE RIGHT OF ACCESS FOR INSPECTION AND, IN CASES OF CONSTRUCTION DEFAULT, CONSTRUCTION OF THE STORM WATER MANAGEMENT FACILITIES. THE DEVELOPER/OWNER GRANTS THE TOWNSHIP THE RIGHT TO ACCESS TO ALL STORMWATER MANAGEMENT EASEMENTS ON THE SUBJECT TRACT VIA THE ACCESS DRIVES, DRIVEWAYS, PARKING AREAS, AND SIMILAR FEATURES WITHIN THE SITE.
- ACCESSORY BUILDINGS, STRUCTURES, FENCES, WALLS, HEDGES, AND POOLS SHALL NOT BE LOCATED WITHIN OR OBSTRUCT ANY STORMWATER MANAGEMENT FACILITY AND ASSOCIATED CONVEYANCE SYSTEMS.
- ALL DRAINAGE PIPES SHALL BE LAID TO A MINIMUM DEPTH OF EIGHTEEN (18) INCHES FROM FINISHED SUBGRADE TO THE CROWN OF THE PIPE IN PAVED OR STONE AREAS AND TWELVE (12) INCHES FROM FINISHED GRADE TO THE CROWN OF PIPE IN GRASSSED AREAS.
- NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER STORMWATER MANAGEMENT FACILITIES WHICH MAY WERE INSTALLED ON THE PROPERTY UNLESS A STORMWATER MANAGEMENT SITE PLAN HAS BEEN APPROVED BY NORTH LEBANON TOWNSHIP WHICH ALLOWS SUCH MODIFICATION, REMOVAL, FILL, LANDSCAPING OR ALTERATION. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING OR VEGETATION INTO A STORMWATER MANAGEMENT FACILITY OR WITHIN A DRAINAGE EASEMENT WHICH COULD LIMIT OR ALTER THE FUNCTIONING OF THE FACILITY OR EASEMENT IN ANY MANNER.
- PER LEBANON COUNTY STORMWATER MANAGEMENT ORDINANCE, THE PROJECT DEPICTED HEREIN IS LOCATED WITHIN THE "LEBANON COUNTY RESIDUAL" STORMWATER MANAGEMENT DISTRICT.
- THE TOWNSHIP, COUNTY ENGINEER, AND DESIGN ENGINEER SHALL BE CONTACTED REGARDING INSPECTION OF THE STORMWATER MANAGEMENT FACILITIES. INSPECTIONS SHALL BE REQUIRED DURING CONSTRUCTION AND AT COMPLETION OF THE FACILITIES. NO OCCUPANCY PERMIT SHALL BE ISSUED UNTIL THE STORMWATER MANAGEMENT FACILITIES HAVE BEEN INSTALLED AND APPROVED THROUGH INSPECTION BY THE TOWNSHIP.

RECORDER OF DEEDS
Recorded in the office for Recording of Deeds, in and for Lebanon County, Pennsylvania, in Subdivision Plan Book _____, Volume _____, Page _____. Witness my hand and seal of office this _____ day of _____ A.D., 20____.

_____, 20____
Recorder of Deeds

LEBANON COUNTY PLANNING DEPARTMENT

_____, 20____
Reviewed

NORTH LEBANON TOWNSHIP PLANNING COMMISSION REVIEW CERTIFICATE

Reviewed _____

NORTH LEBANON TOWNSHIP SUPERVISORS
The North Lebanon Township Board of Supervisors has reviewed and accepted this plan as submitted or as revised to the date of signatures affixed hereto. No other plan or plans shall be recognized. Acceptance includes all documentation including the comments or requirements of official reviewing individuals or agencies, acceptance is based on compliance with applicable ordinances, rules and regulations, and shall not be construed as a guarantee to any person or organization that the design of any part of the plan will function as anticipated under any or all conditions or situations. Additionally, that by review and/or acceptance of the plan, the Township expressly declines the assumption of liability for errors, omissions or mistakes in judgement in the design, engineering, construction, or expected function of the matters reviewed and/or accepted.

Reviewed and Accepted _____

Reviewed and Accepted _____

Reviewed and Accepted _____

PLAN CERTIFICATE (SURVEY)
I hereby certify that the plat shown and described hereon as well as all drawings bearing my seal are true and correct as to accuracy as required by the Lebanon County and North Lebanon Township Ordinances.

_____, 20____

PLAN CERTIFICATE (PLAN)
I hereby certify that, to the best of my knowledge, the plan shown and described hereon is true and correct to the accuracy required by the Lebanon County and North Lebanon Township Ordinances.

_____, 20____
Joshua T. Weaver, P.E.

CARBONATE GEOLOGY CERTIFICATION
I, Joshua T. Weaver, P.E., to the best of my knowledge, certify that the proposed stormwater management facilities (circle one) are underlain by carbonate geology.

_____, 20____
Joshua T. Weaver, P.E.

CERTIFICATE OF OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF LEBANON

On this, the _____ day of _____, 2023, before me, the undersigned officer, personally appeared Stanley A. Martin, who being duly sworn according to law, deposes and says that he is the owner of the property shown on this plan, that the plan thereof was made at their direction, that he acknowledges the same to be his act and plan, that he desires the same to be recorded, and that all streets and other property identified as proposed public property (excepting those areas labeled "NOT FOR DEDICATION") are hereby dedicated to the public use. He also hereby acknowledges that this proposed Subdivision/Land Development may be subject to the requirements of additional Township, State and Federal regulations.

Stanley A. Martin (Owner) _____

Notary _____

My Commission Expires _____, 20____

FINAL SUBDIVISION PLAN
FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

JULY 18, 2023

CHRISLAND ENGINEERING
17-934-6513
692 Cornwall Road, Lebanon, PA 17042
www.chrislandengineering.com

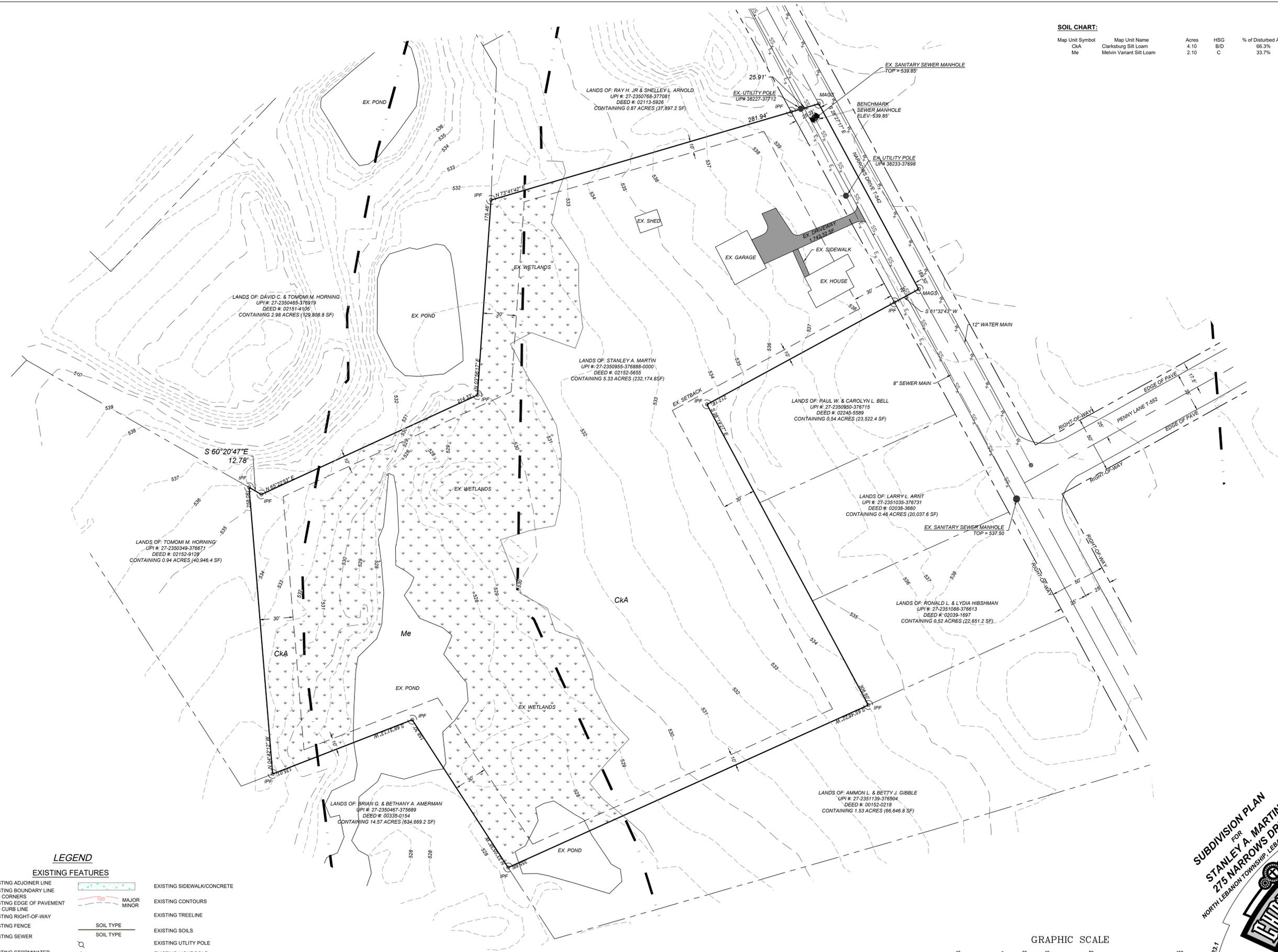
Cover Sheet
1 OF 7

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BY _____ DATE _____ REVISION _____

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
CkA	Clarksburg Silt Loam	4.10	B/D	66.3%	0" - 84"	No
Me	Melvin Variant Silt Loam	2.10	C	33.7%	0" - 60"	Yes



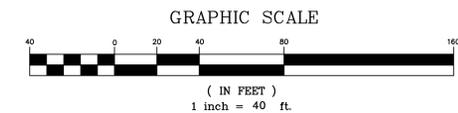
EXISTING CONDITIONS PLAN

1" = 40'

LEGEND

EXISTING FEATURES

- | | | | |
|--|---|--|----------------------------|
| | EXISTING ADJOINER LINE | | EXISTING CONTOURS |
| | EXISTING BOUNDARY LINE AND CORNERS | | EXISTING TREELINE |
| | EXISTING EDGE OF PAVEMENT AND CURB LINE | | EXISTING SOILS |
| | EXISTING RIGHT-OF-WAY | | EXISTING UTILITY POLE |
| | EXISTING FENCE | | EXISTING LIGHT POLE |
| | CLEAN OUT | | EXISTING OVERHEAD ELECTRIC |
| | MANHOLE | | |
| | RIP-RAP | | |
| | HEADWALL | | |
| | GATE VALVE | | |
| | FIRE HYDRANT | | |
| | GAS VALVE | | |
| | EXISTING SEWER | | |
| | EXISTING STORMWATER | | |
| | EXISTING WATERLINE | | |
| | EXISTING GASLINE | | |
| | EXISTING SIDEWALK/CONCRETE | | |
| | MAJOR MINOR | | |



SUBDIVISION PLAN
 FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
 NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

CRISTAL ENGINEERING
 17-934-6513
 892 Cornwall Road, Lebanon, PA 17042
 www.cristalengineering.com

MA 10.23.1
 JULY 18, 2023

Existing Conditions

2 OF 7

M:\Project Files\MA10 - Stanley Martin\275 Narrows Drive\DWG\Subdivision Plan - Narrows Drive.dwg 8/30/2023 11:27 AM

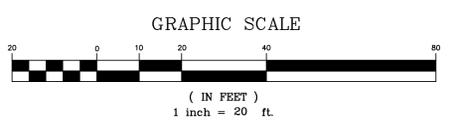
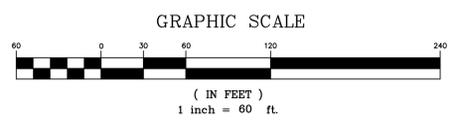
DATE BY REVISION



OVERALL SUBDIVISION PLAN
1" = 60'

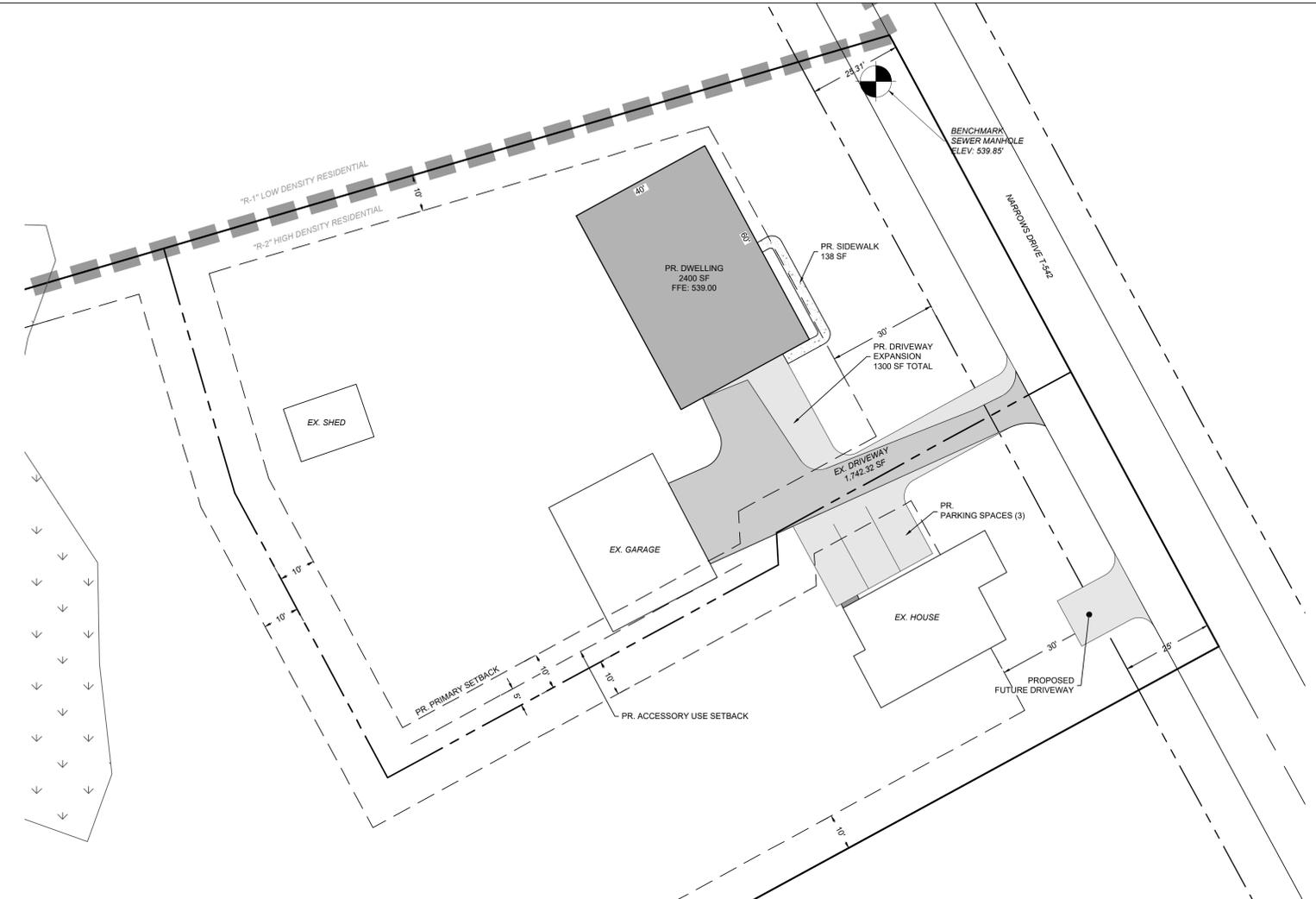
PRE-ANNEX			
SITE DATA ADDRESS:	LOT 9 701 LINDEN ST RICHLAND, PA 17087	LOT 7 701 LINDEN ST RICHLAND, PA 17087	LOT 6 701 LINDEN ST RICHLAND, PA 17087
PLAN BOOK:	2263-7767	2263-7779	2263-7779
PARCEL NUMBER:	17-2386404-376463	17-2385986-376529	17-2386172-376268
SITE AREA:	39.72 ACRES	4.77 ACRES	1.06 ACRES

POST-ANNEX			
SITE DATA	LOT 9	LOT 7	LOT 6
SITE AREA:	40.89 ACRES	4.66 ACRES	N/A

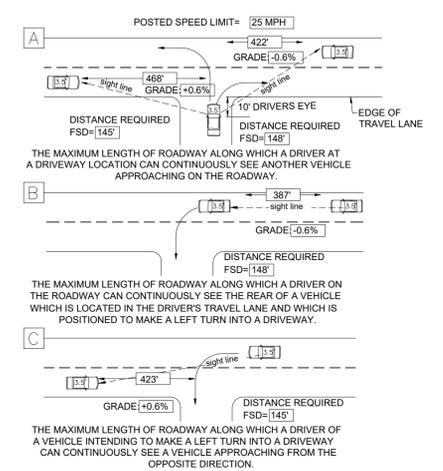


LEGEND

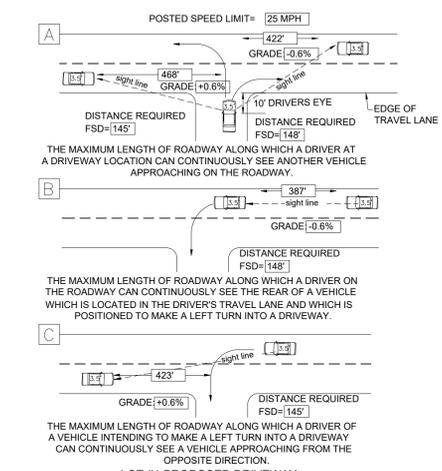
EXISTING FEATURES		PROPOSED FEATURES	
	EXISTING ADJOINER LINE		PROPOSED BUILDING SETBACK
	EXISTING BOUNDARY LINE AND CORNERS		PROPOSED BOUNDARY LINE AND CORNERS
	EXISTING EDGE OF PAVEMENT AND CURB LINE		PROPOSED EDGE OF PAVEMENT AND CURB LINE
	EXISTING RIGHT-OF-WAY		PROPOSED RIGHT-OF-WAY
	EXISTING FENCE		PROPOSED FENCE
	EXISTING SEWER		PROPOSED SEWER
	MANHOLE		CLEAN OUT
	RIP-RAP		MANHOLE
	EXISTING STORMWATER		INLET
	EXISTING WATERLINE		RIP-RAP
	GATE VALVE		MANHOLE
	FIRE HYDRANT		ENDWALL
	GAS VALVE		MANHOLE
	EXISTING SIDEWALK/CONCRETE		PROPOSED DOMESTIC WATERLINE
	EXISTING CONTOURS		PROPOSED FIRE HYDRANT
	EXISTING TREELINE		PROPOSED GAS VALVE
	EXISTING UTILITY POLE		PROPOSED CONCRETE/SIDEWALK
	EXISTING LIGHT POLE		PROPOSED MAJOR MINOR
	EXISTING OVERHEAD ELECTRIC		PROPOSED CONTOURS
	PROPOSED DRAINAGE EASEMENT		PROPOSED TREE LINE
			PROPOSED UTILITY POLE
			PROPOSED LIGHT POLE
			PROPOSED STANDARD PAVING



LAYOUT PLAN
1" = 20'



SIGHT DISTANCE NOTE
VEGETATION MAY NEED TO BE REMOVED AND/OR MAINTAINED ON THE PROPOSED LOT TO MAINTAIN ADEQUATE SIGHT DISTANCE. ALL VEGETATION SHALL BE REMOVED/MAINTAINED ON A REGULAR BASIS AND NOT LESS FREQUENT THAN TWICE PER YEAR.



SIGHT DISTANCE NOTE
VEGETATION MAY NEED TO BE REMOVED AND/OR MAINTAINED ON THE PROPOSED LOT TO MAINTAIN ADEQUATE SIGHT DISTANCE. ALL VEGETATION SHALL BE REMOVED/MAINTAINED ON A REGULAR BASIS AND NOT LESS FREQUENT THAN TWICE PER YEAR.

SUBDIVISION PLAN
FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

CRISTAL ENGINEERING
171-934-6513
www.cristalengineering.com

802 Cornwall Road, Lebanon, PA 17042

Subdivision & Layout Plan

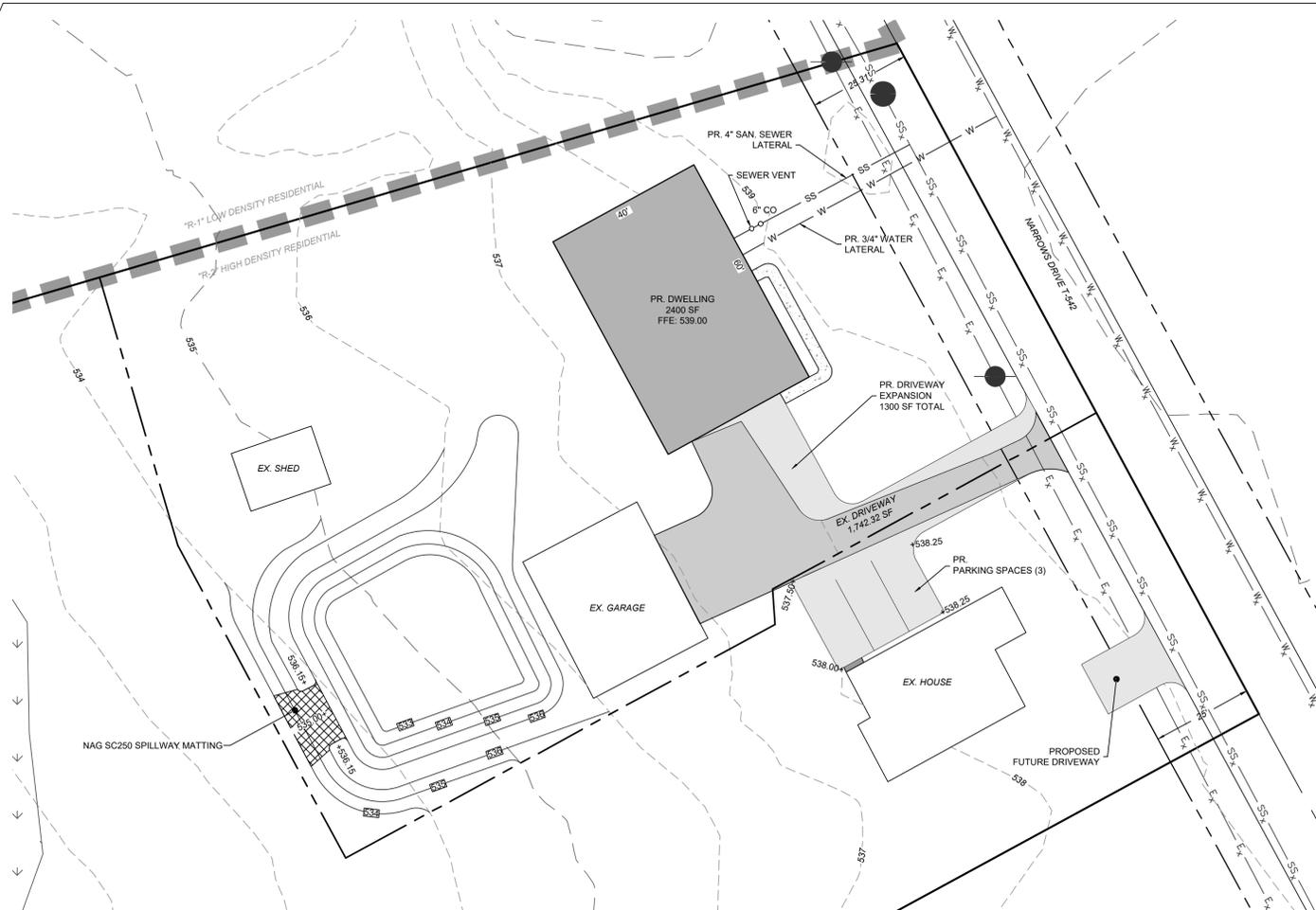
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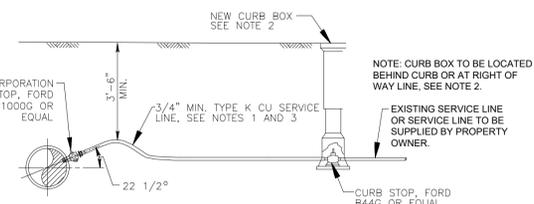
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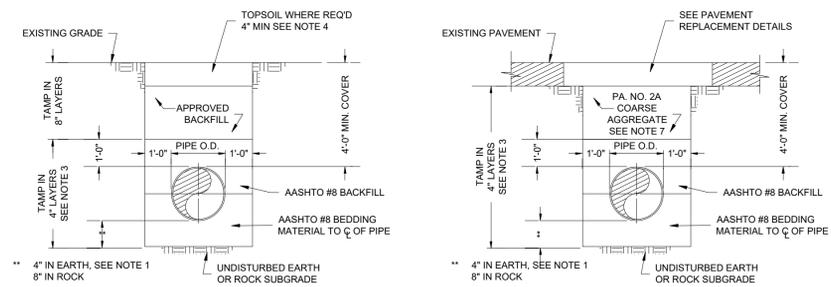


GRADING & UTILITY PLAN
1" = 20'

- NOTES**
1. REPLACE EXISTING WATER SERVICE LINES WITH MIN 3/4" CU. IF EXISTING SERVICE IS LARGER DIAMETER, REPLACE WITH SAME SIZE.
 2. CURB STOP LOCATION NO MORE THAN 1'-0" BEHIND CURB UNLESS WATER MAIN IS BEHIND CURB, THEN LOCATED AT EDGE OF PUBLIC R.O.W.
 3. NEW WATER LATERAL - FROM CORPORATION STOP TO CURB STOP, INCLUDING NEW CURB BOX.

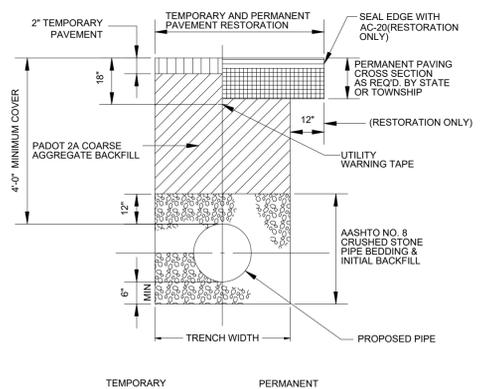


TYPICAL WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

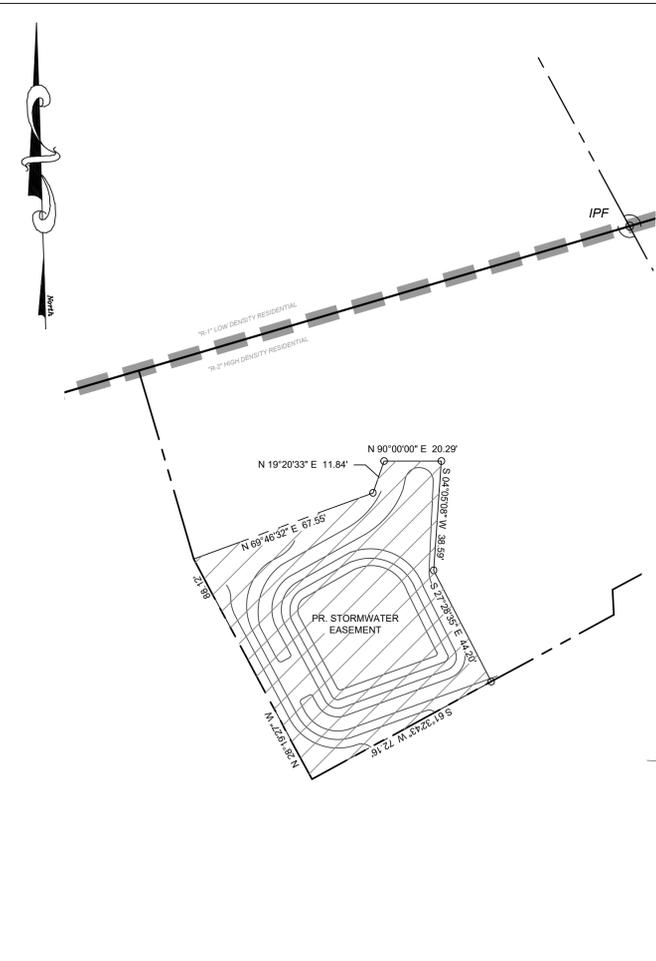


- TRENCH NOTES**
1. IF UNSUITABLE SUBSOIL IS ENCOUNTERED AT THE NORMAL TRENCH SUBGRADE, THE CONTRACTOR SHALL REMOVE IT TO THE DEPTH DIRECTED BY THE ENGINEER IN THE FIELD, AND BACKFILL W/ CLASS A BEDDING IN 4" LAYERS.
 2. BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO WATER MAIN INSTALLATION.
 3. IF VIBRATORY COMPACTION EQUIPMENT IS USED BACKFILL MAY BE IN 8" LAYERS.
 4. PROVIDE 4" OF TOPSOIL WHERE SEEDING IS REQUIRED. SEE NOTE 6 AT GRAVEL DRIVEWAYS.
 5. CONTRACTOR SHALL SHORE THE TRENCH IN ACCORDANCE WITH OSHA REGULATIONS.
 6. GRAVEL AND PAVED DRIVEWAYS TO BE RESTORED IN KIND.
 7. COMPACT BACKFILL IN TRENCHES INSIDE TOWNSHIP ROW PER TOWNSHIP REQUIREMENTS.
 8. ALL PAVING RESTORATION TO BE IN ACCORDANCE WITH NORTH LEBANON TOWNSHIP REQUIREMENTS.

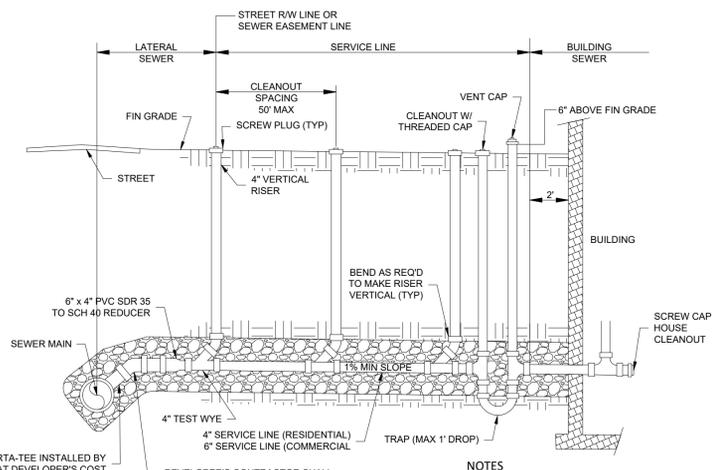
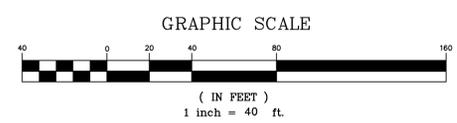
TYPICAL TRENCH DETAIL
NOT TO SCALE



TRENCH RESTORATION DETAIL
NOT TO SCALE



EASEMENT PLAN
1" = 40'

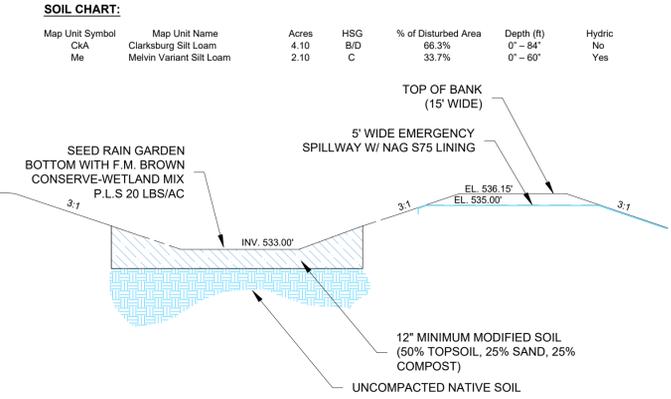


- NOTES**
1. PROVIDE 6" OF AASHTO NO. 8 (18) STONE BELOW PIPE 12" ABOVE PIPE (TYPICAL ENTIRE LENGTH OF LATERAL)
 2. MINIMUM SLOPE = 1% (1/8" PER FT)
 3. MINIMUM DEPTH OF COVER = 3 FT
 4. PIPE MATERIALS
LATERAL SEWER - PVC SDR 35
BUILDING SEWER - PVC SCH 40
 5. ALL RISERS SHALL BE SOLVENT WELD

SANITARY SERVICE LINE INSTALLATION DETAIL
NOT TO SCALE

LEGEND

EXISTING FEATURES		PROPOSED FEATURES	
EXISTING ADJOINER LINE	EXISTING BOUNDARY LINE AND CORNERS	PROPOSED BOUNDARY LINE AND CORNERS	PROPOSED BUILDING SETBACK
EXISTING EDGE OF PAVEMENT AND CURB LINE	EXISTING RIGHT-OF-WAY	PROPOSED EDGE OF PAVEMENT AND CURB LINE	PROPOSED RIGHT-OF-WAY
EXISTING FENCE	EXISTING SEWER	PROPOSED FENCE	PROPOSED SEWER
EXISTING SIDEWALK/CONCRETE	EXISTING CONTOURS	PROPOSED CONCRETE/SIDEWALK	PROPOSED STORMWATER
EXISTING TREELINE	EXISTING SOILS	PROPOSED TREELINE	PROPOSED UTILITY POLE
EXISTING SOILS	EXISTING UTILITY POLE	PROPOSED SOIL TYPE	PROPOSED LIGHT POLE
EXISTING STORMWATER	EXISTING WATERLINE	PROPOSED DOMESTIC WATERLINE	PROPOSED STANDARD PAVING
EXISTING OVERHEAD ELECTRIC	EXISTING GASLINE	PROPOSED GASLINE	
PROPOSED DRAINAGE EASEMENT			



RAIN GARDEN A
NOT TO SCALE

- NOTES:**
1. A KEY TRENCH (CUT OFF TRENCH) OF IMPERVIOUS MATERIAL SHALL BE PROVIDED UNDER ALL EMBANKMENTS THAT REQUIRE FILL MATERIAL. THE KEY TRENCH SHALL BE A MINIMUM OF EIGHT (8) FEET WIDE, TWO (2) FEET BELOW EXISTING GRADE AND HAVE SIDE SLOPES OF ONE (1) HORIZONTAL TO ONE (1) VERTICAL (1:1). THE CLAY CORE SHALL BE FOUR (4) FEET WIDE AT THE TOP AND BE ON (1) FOOT BELOW THE EMERGENCY SPILLWAY ELEVATION AND HAVE SIDE SLOPES OF ONE (1) HORIZONTAL TO ONE (1) VERTICAL (1:1). THE KEY TRENCH/CLAY CORE MUST BE CONSTRUCTED WITH SOILS SUITABLE FOR THIS APPLICATION (MLCL) AND FOUND TO BE ACCEPTABLE BY THE TOWNSHIP ENGINEER. PROPER COMPACTION TECHNIQUES ACCEPTABLE TO THE TOWNSHIP ENGINEER ARE TO BE UTILIZED DURING CONSTRUCTION.

SUBDIVISION PLAN
FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

LEBANON ENGINEERING
717-934-6513
692 Cornwall Road, Lebanon, PA 17042
www.cristofanidengineering.com
Easement, Grading & Utility Plan

JULY 18, 2023

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INFILTRATION BASINS / RAIN GARDENS

BIORETENTION IS A METHOD OF TREATING STORMWATER BY POOLING WATER ON THE SURFACE AND ALLOWING FILTERING AND SETTLING OF SUSPENDED SOLIDS AND SEDIMENT AT THE MULCH LAYER, PRIOR TO ENTERING THE PLANT/SOIL/MICROBE COMPLEX MEDIA FOR INFILTRATION AND POLLUTANT REMOVAL. BIORETENTION TECHNIQUES ARE USED TO ACCOMPLISH WATER QUALITY IMPROVEMENT AND WATER QUANTITY REDUCTION.

INFILTRATION BASINS ARE SHALLOW, IMPOUNDED AREAS DESIGNED TO TEMPORARILY STORE AND INFILTRATE STORMWATER RUNOFF. THE SIZE AND SHAPE CAN VARY FROM ONE LARGE BASIN TO MULTIPLE, SMALLER BASINS THROUGHOUT A SITE. IDEALLY, THE BASIN SHOULD AVOID DISTURBANCE OF EXISTING VEGETATION. IF DISTURBANCE IS UNAVOIDABLE, REPLANTING AND LANDSCAPING MAY BE NECESSARY AND SHOULD INTEGRATE THE EXISTING LANDSCAPE AS SUBTLY AS POSSIBLE AND COMPACTION OF THE SOIL MUST BE PREVENTED. INFILTRATION BASINS USE THE EXISTING SOIL MANTLE TO REDUCE THE VOLUME OF STORMWATER RUNOFF BY INFILTRATION AND EVAPOTRANSPIRATION. THE QUALITY OF THE RUNOFF IS ALSO IMPROVED BY THE NATURAL CLEANSING PROCESSES OF THE EXISTING SOIL MANTLE AND ALSO BY THE VEGETATION PLANTED IN THE BASINS.

CONSTRUCTION SEQUENCE

1. PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION.
2. IF POSSIBLE, INSTALL INFILTRATION BASIN DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES.
3. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4. IF NECESSARY, EXCAVATE INFILTRATION BASIN BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES.
6. SEED AND STABILIZE TOPSOIL. (VEGETATE IF APPROPRIATE WITH NATIVE PLANTINGS.)
7. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

MAINTENANCE ISSUES

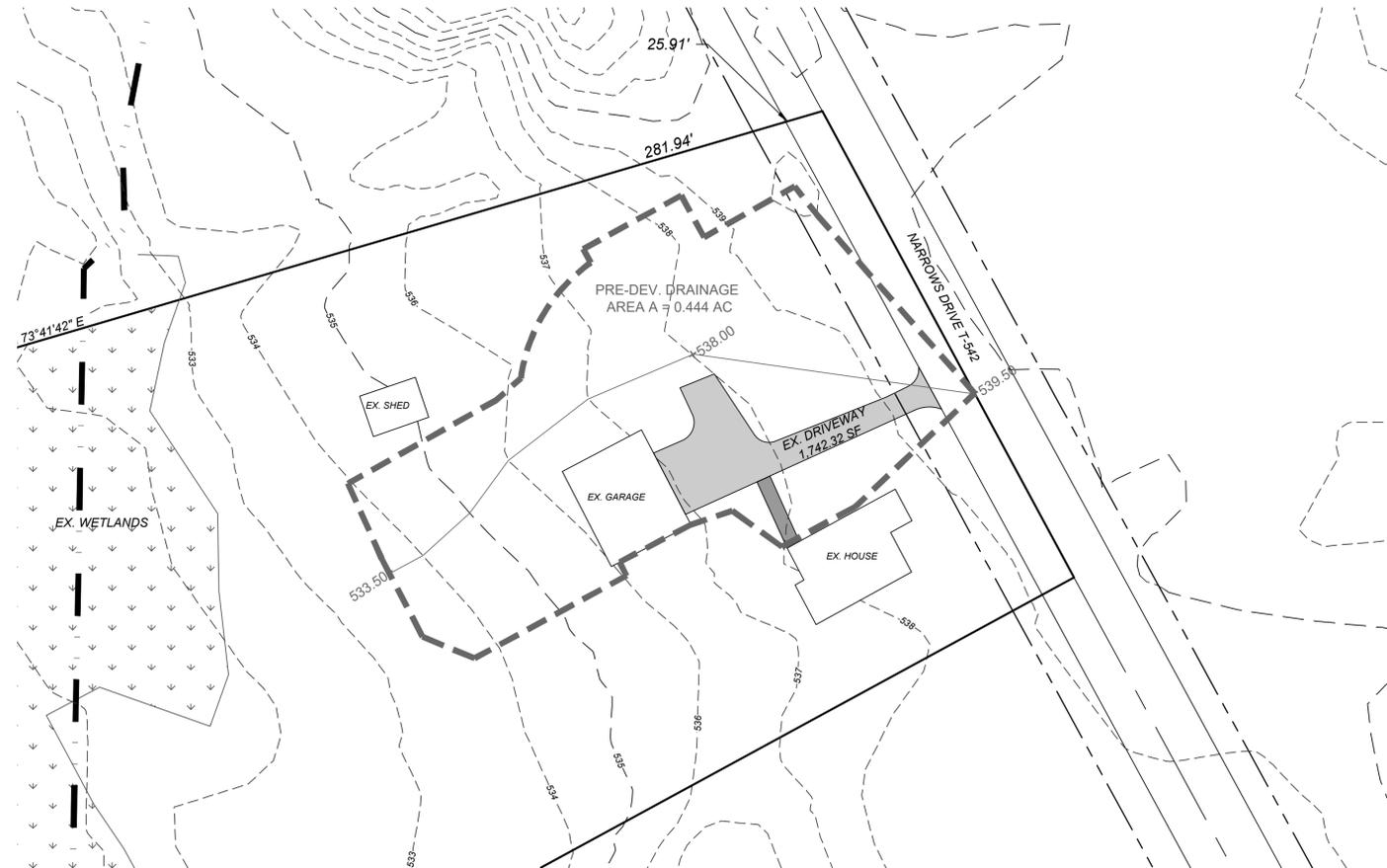
PROPERLY DESIGNED AND INSTALLED RETENTION AREAS REQUIRE SOME REGULAR MAINTENANCE:

MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH):

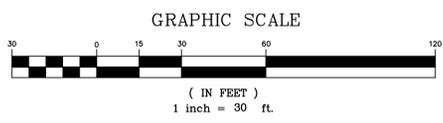
1. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION)
2. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED
3. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER RETENTION BASIN OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN RETENTION BASIN IS DRY TO AVOID RUTTING
4. INSPECT FOR LITTER; REMOVE PRIOR TO MOWING
5. INSPECT RETENTION BASIN INLET (CURB CUTS, PIPES, ETC.) AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED

MAINTENANCE ACTIVITIES TO BE DONE AS NEEDED:

1. RE-PLANT SPECIFIED GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. INSTALL NAG S75 MATTING IN AREAS WHERE INITIAL GRASS ESTABLISHMENT WAS NOT SUCCESSFUL.
2. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.
3. ROTOTILL AND REPLANT INFILTRATION BASIN/BIORETENTION IF DRAW DOWN TIME IS MORE THAN 72 HOURS.
4. WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDE ONLY WHEN ABSOLUTELY NECESSARY.



PRE-DEVELOPMENT DRAINAGE PLAN
1" = 30'

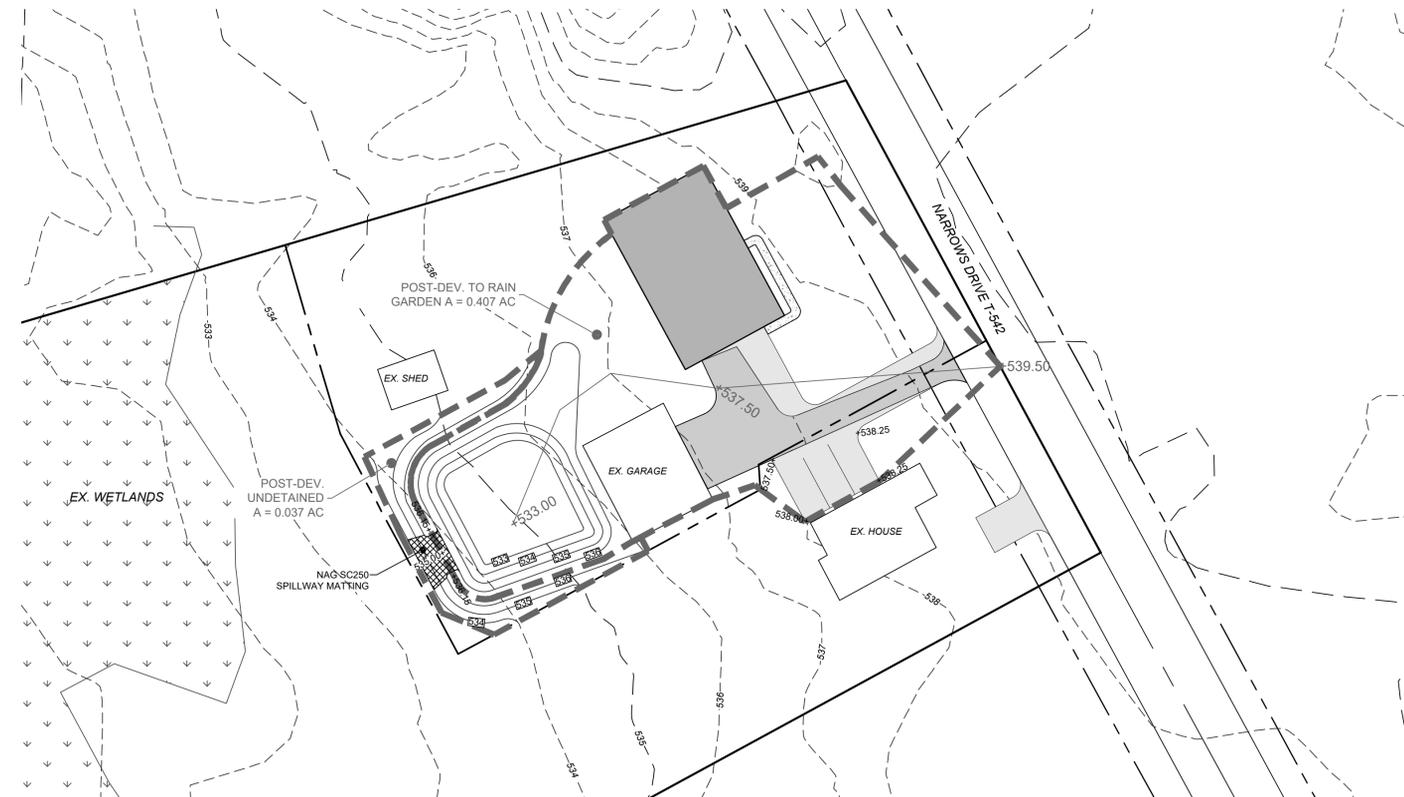


LEGEND

EXISTING FEATURES		PROPOSED FEATURES	
	EXISTING ADJOINER LINE		PROPOSED BUILDING SETBACK
	EXISTING BOUNDARY LINE AND CORNERS		PROPOSED BOUNDARY LINE AND CORNERS
	EXISTING EDGE OF PAVEMENT AND CURB LINE		PROPOSED EDGE OF PAVEMENT AND CURB LINE
	EXISTING RIGHT-OF-WAY		PROPOSED RIGHT-OF-WAY
	CLEAN OUT		PROPOSED FENCE
	MANHOLE		PROPOSED SEWER
	RIP-RAP		PROPOSED STORMWATER
	HEADWALL		PROPOSED STORMWATER
	GATE VALVE		PROPOSED GASLINE
	FIRE HYDRANT		PROPOSED UTILITY POLE
	GAS VALVE		PROPOSED LIGHT POLE
	EXISTING SIDEWALK/CONCRETE		PROPOSED STANDARD PAVING
	EXISTING CONTOURS		
	EXISTING TREELINE		
	EXISTING SOILS		
	EXISTING UTILITY POLE		
	EXISTING LIGHT POLE		
	EXISTING OVERHEAD ELECTRIC		
	PROPOSED DRAINAGE EASEMENT		

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
CkA	Clarksburg Silt Loam	4.10	B/D	66.3%	0" - 84"	No
Me	Melvin Variant Silt Loam	2.10	C	33.7%	0" - 60"	Yes



POST-DEVELOPMENT DRAINAGE PLAN
1" = 30'

SUBDIVISION PLAN
FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

MA 10.23.1

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171-934-6513
www.cristinengr.com

892 Cornwall Road, Lebanon, PA 17042
Pre & Post Development
Drainage Plan

JULY 18, 2023

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DATE: BY: REVISION:

EROSION AND SEDIMENT POLLUTION CONTROL NARRATIVE
Subdivision Plan for Stanley Martin - 275 Narrows Drive Lebanon, PA 17046

A. SITE LOCATION

The site is located on 275 Narrows Dr, Lebanon, PA 17046, North Lebanon Township, Lebanon County, PA (UP# 27-2350955-376888) (See USGS Map).

B. PROJECT DESCRIPTION

The purpose of the project is to subdivide a new lot off of the existing parcel as well as construct one single-family detached dwelling with driveway, utilities, & stormwater management facilities. The site is located in North Lebanon Township, Lebanon County, PA (See Site Plan). The disturbance area is 0.41 acres.

C. EXISTING SITE CONDITIONS & DOWNSTREAM DRAINAGE PATH

The deed acreage for 275 Narrows Drive is 5.33. The site currently contains a single-family dwelling, garage, impervious driveway, and fallowed field which is zoned R-1 Low Density Residential. Residential spread started in approximately 1950 and continues to be residential currently according to research done on Pennsylvania Imagery Navigator (PASDS). The site slopes southwest toward an unnamed lake within the Tulpehocken Creek Watershed. The Chapter 93 designation of the Tulpehocken Creek is Cold Water Fishes (CWF).

Non Attaining Streams Assessments
GNIS Name: Tulpehocken Creek
Assessed Use: Recreational
Attain Use: Impaired
Source Cause: Source Unknown - Pathogens
Attained: N

Non Attaining Streams Assessments
GNIS Name: Tulpehocken Creek
Assessed Use: Aquatic Life
Attain Use: Impaired
Source Cause: Agriculture - Siltation; Urban Runoff/Storm Sewers - Siltation
Attained: N

TMDL Streams Assessments
TMDL Name: Quappahilla Creek Watershed
Status Final: Y
Cause: Algae; Biochemical Oxygen Demand (BOD); Chlorophyll-A; Dissolved Oxygen; Eutrophication; Nutrients; Organic Enrichment; Phosphorus; Siltation; Total Suspended Solids (TSS); Turbidity

D. SOIL LIMITATIONS AND RESOLUTIONS

The following soils are found within or adjacent to the area disturbed by earth moving activities.

Map Symbol	Soil Name	% DA	Soil Group	Hydric
CKA	Clarksburg Silt Loam	63%	C	N
Me	Mevin Variant Silt Loam	37%	BD	Y

Few soil limitations exist for the proposed project. The Web Soil Survey indicates laws and landscaping establishment limitations classified as Somewhat limited for CKA due to dusty and depth to saturated zone. Limitations classified Me as Very limited due to flooding, depth to saturated zone, low exchange capacity, dusty, and ponding. This potential limitation should not be a problem since the project site is currently open lawn.

The Web Soil Survey indicated dwellings with basements limitations classified CKA as very limited due to depth to saturated zone and shrink-swell. Limitations classified Me as very limited due to flooding and depth to saturated zone and ponding.

The Soil Ruting Hazard limitation for both Me and CKA is classified as severe due to low strength. Standard construction practices will be utilized to avoid excessive rutting and erosion associated with rutting will be controlled with standard erosion and sediment pollution controls.

E. CALCULATIONS

Temporary and permanent erosion control facilities were designed in accordance with the standards established in the Erosion and Sediment Pollution Control Manual (PA DEP Bureau of Soil and Water Conservation, March 2012). Runoff calculations were performed using the Rational Method in accordance with PaDEP, Union Township, and Lebanon County regulations.

F. STAGING OF EARTHMOVING

All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. **Deviation from that sequence must be approved by the Lebanon County Conservation District or by the Department prior to implementation. Each step of the sequence shall be completed before proceeding to the next step, except where noted.**

Construction of the site improvements is expected to begin late spring of 2019. Construction will proceed in a timely manner in order to limit the potential for accelerated erosion and sedimentation. If the controls shown on the plan are incapable of addressing the erosion and sediment control problems on the lot, the owner/developer shall be responsible for adapting adequate alternative measures.

The construction sequence for development of the project shall be as follows:

- 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, and a representative from the Lebanon County Conservation District (717-277-5275) to an on-site preconstruction meeting.

Also, 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.

- Install stabilized construction entrance(s). The base course shall be AASHTO #1 installed at a minimum of 15-ft wide and 50-ft long.

- Install filter sock at topsoil stockpile and other areas as indicated on the attached plan. Filter sock is to be installed along the contour at a level grade.

Upon installation or stabilization of all perimeter sediment control BMPs, and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Department or authorized conservation district.

- Clear, grub, and strip areas as necessary to construct improvements. Excess topsoil shall be placed on the "Topsoil/Spill Stockpile" shown hereon. Immediately stabilize topsoil stockpile.

- Rough grade site for installation of driveway, dwelling, and stormwater management facilities. Take care to avoid unnecessary compaction of the rain garden bottom. Excavation shall take place from outside the limits of infiltration facilities. If compaction occurs, the rain garden bottom shall be scarified to loosen the soils.

- Backfill and bring site to necessary grade for installation of the addition. Place stone base for addition and driveway as soon as practicable. Construct or extend utilities as needed, and complete associated grading.

- Excavate for rain garden and install NAG SC250 ECM spillway matting as noted on the detail. Take care to avoid unnecessary compaction of the rain garden bottom. Excavation shall take place from outside the limits of the rain garden. If compaction occurs, the rain garden bottom shall be scarified to loosen the soils.

- Fine grade any remaining areas as shown on the grading plan. Spread 6-in of topsoil on freshly graded areas. Final passes during fine grading shall be made at right angles to the slopes. Prepare the remainder of the disturbed area for permanent stabilization. Seedbed shall be prepared in accordance with accepted practices. Seed mixture shall be applied in accordance with the manufacturer's rates and instructions.

- Mulch all remaining disturbed areas and seeded areas with hay or straw at a minimum rate of three (3) tons per acre (or mulch as a part of hydroseeding).

- Remove all temporary erosion and sediment controls once the site is completely stabilized (defined as a minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation in all areas tributary to the controls). All areas disturbed during this process shall be stabilized immediately through seeding and mulching.

- The operator shall remove from the site, recycle or dispose of all building materials and wastes in accordance with the Department's Solid Waste Management Regulations at 25 PA Code 260.1 et seq, 271.1 et seq, and 287.1 et seq. The contractor shall not illegally bury, dump, or discharge any building material or wastes on or off the site.

G. TEMPORARY CONTROL MEASURES

1. Topsoil Stockpile

- A stockpile shall be used to contain all stripped topsoil in a limited area in order to keep disturbance to a minimum.
- Stockpiles shall be stabilized immediately in accordance with the temporary seeding specification contained hereon.
- Stockpiles shall be located so that all swales can function as designed.
- Stockpile heights must not exceed 35 in height. Side slopes shall be 2:1 or flatter.

2. Filter Sock

- Filter sock shall be used to intercept sediment-laden runoff from small watersheds.
- Filter sock must be installed at level grade.
- Sediment must be removed when accumulations reach 1/2 the above ground height of sock.
- All areas of concentrated flow and at all areas where the filter sock has been undercut due to excessive flows, rock filters shall be installed (see Temporary Control Measures, Item 3.)

2. Rock Filter Outlets (Filter Sock Locations)

- A gravel berm shall be provided where shown on the plan and at all locations of concentrated flows or where failures in the silt fence occur due to excessive sedimentation or concentrated flows.
- Rock filters shall be constructed of AASHTO #67 and R-4 stone in accordance with the specified dimensions on the detail.
- Rock filters will be removed when clogged with sediment. The stone shall be washed free of all sediment or new stone shall be used to rebuild the filter.

3. Interim Stabilization

- Temporary seeding and mulching shall be applied where indicated to provide interim stabilization to exposed areas.
- Temporary seeding/mulching shall be as applied as specified on the Seeding Schedule contained on the E&SPC Plan.
- Any disturbed area on which activity has ceased and which will remain exposed must be stabilized immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas that are not at finished grade and will be re-disturbed within 1 year may be stabilized in accordance with the temporary seeding specification contained hereon. Disturbed areas that are at finished grade or will not be re-disturbed within 1 year must be stabilized in accordance with the permanent seeding specifications contained hereon.

4. Rock Construction Entrance

- A stabilized pad of crushed stone (AASHTO #1) shall be located where construction traffic will be entering and leaving the site. The rock construction entrance is used to eliminate the tracking of flowing of sediment onto the existing cartway.

H. PERMANENT CONTROL MEASURES

1. Permanent Grass or Legume Cover

- All disturbed areas that are not paved shall be permanently stabilized with grass to minimize erosion. All swales shall be permanently seeded as required in accordance with the seeding specification shown on the attached E&SPC Plan.
- Permanent grass cover shall be applied as specified in accordance with the Seeding Schedule and Notes contained on the attached E&SPC Plan.

2. Mulch

- Mulch shall be applied to all seeded areas to help establish a permanent grass cover and to prevent erosion on all areas permanently stabilized with seed.
- Mulch shall be applied at a rate of 3 tons per acre. Mulch shall be anchored with wood cellulose fiber at 750 lbs/acre.

- Sod shall be installed in areas where permanent stabilization with seed alone is difficult.
- Sod materials and installation shall meet the approval of the Lebanon County Conservation District.
- All permanent and temporary spillways are to be sodded to provide immediate erosion protection. Sod shall extend from the spillway to the top of the slope of the trap embankment.

I. MAINTENANCE

- The Applicant/ or His Designee shall be responsible for maintaining all facilities shown on this plan.
- Until the site is stabilized, all erosion and sedimentation must be maintained properly. Maintenance must include inspections of all erosion and sedimentation control after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean-out, repair, replacement, regrading, re-seeding, re-mulching, and re-netting, must be performed immediately.
- Stockpiles must be stabilized immediately.
- All sediment removed from sediment trapping devices shall be disposed within the site in a manner that will not cause erosion or sedimentation. All areas disturbed during this process will be mulched and permanently stabilized with seed.
- Any permanently seeded area that becomes eroded or disturbed shall have the topsoil replaced, the grass re-sown and mulch reapplied or, at the discretion of the owner, sod installed.
- Filter sock must be installed at level grade. Sediment must be removed when accumulations reach 1/2 the above ground height of the sock.
- Any sock section that has been undermined or topped must be immediately replaced with a rock filter outlet. See rock filter outlet detail.
- Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter.
- Any disturbed area on which activity has ceased and which will remain exposed must be stabilized immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas which are not at finished grade and which will be re-disturbed within one (1) year may be stabilized in accordance with temporary seeding specifications. Disturbed areas which are either at finished grade or will not be re-disturbed within one (1) year must be stabilized in accordance with permanent seeding specifications.
- After final site stabilization has been achieved (defined as a minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation in all areas tributary to the controls), temporary erosion and sedimentation controls must be removed. Areas disturbed during removal of the controls must be stabilized immediately.

J. FILL MATERIALS

If the site will need to have fill imported from an off-site location, the responsibility for performing environmental due diligence and the determination of clean fill will in most cases reside with the Operator. If the site will have excess fill that will need to be exported to an off-site location, the responsibility of clean fill determination and environmental due diligence rests on the applicant.

K. CLEAN FILL

Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block, or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized.

L. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE

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

M. ENVIRONMENTAL DUE DILIGENCE

Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits.

N. POTENTIAL POLLUTANT CAUSING MATERIALS

The site consists of Bedington soils which have the potential to erode when disturbed. Standard erosion controls such as rock construction entrances, filter socks, rock filters, and temporary and final seeding will be utilized to minimize the potential for erosion.

O. MINIMIZE THE EXTEND AND DURATION OF EARTH DISTURBANCE

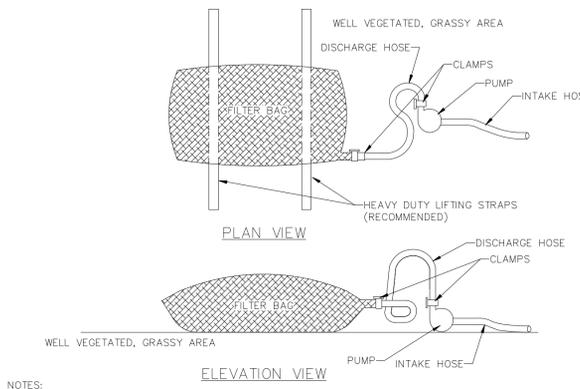
The construction sequence addresses the anticipated sequence of construction and provides provisions for interim stabilization and a periodic stabilization schedule to minimize the duration and extend of disturbance at any one time.

P. E&S PLAN MINIMIZES SOIL COMPACTION

The project will compact fill only as needed to provide the necessary structural stability. It is not anticipated there will be any unnecessary compaction by construction equipment since the project is limited in size and construction equipment will generally be concentrated in areas of proposed driveways immediately adjacent to the proposed structures. Topsoil will be placed in accordance with industry standards and will not be overly compacted. The topsoil placement and stabilization will be the last steps of the project with limited potential for unwarranted compaction.

Q. E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

A stormwater management system is proposed to reduce peak rates of runoff and the volume of runoff. Disturbed areas will be restored to meadow/grass conditions similar to pre-development conditions.



NOTES:

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

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

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

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

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

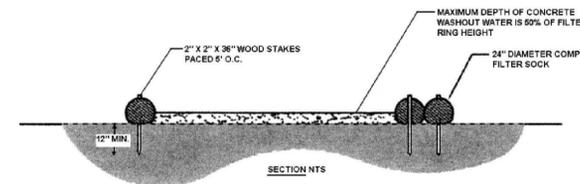
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

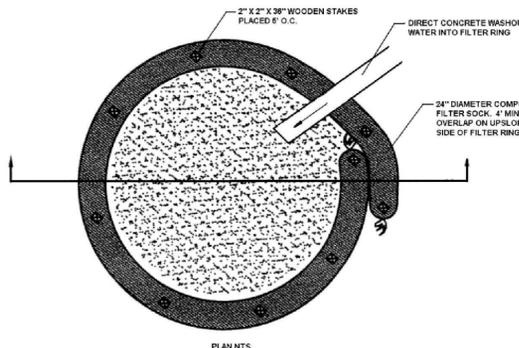
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

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

NOT TO SCALE



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

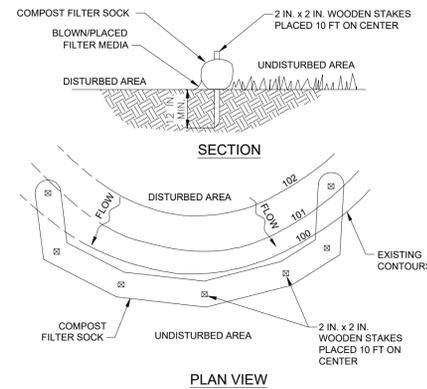


NOTE:

A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

TYPICAL COMPOST SOCK WASHOUT INSTALLATION

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

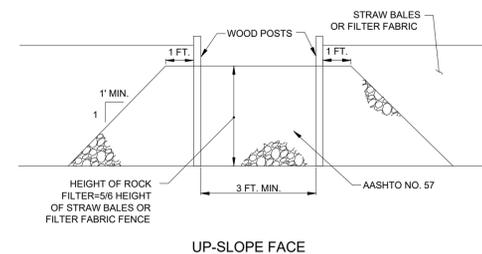
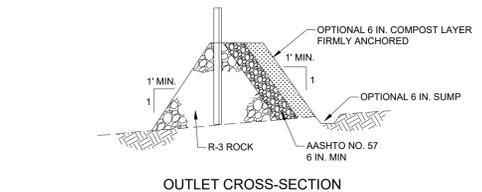
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

**STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK**

NOT TO SCALE



NOTES:

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

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

**STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET**

NOT TO SCALE

MA 10.23.1

SUBDIVISION PLAN
FOR
STANLEY A. MARTIN
275 NARROWS DRIVE
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

CRISTAL ENGINEERING
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Erosion & Sediment
Pollution Control Details

JULY 18, 2023

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