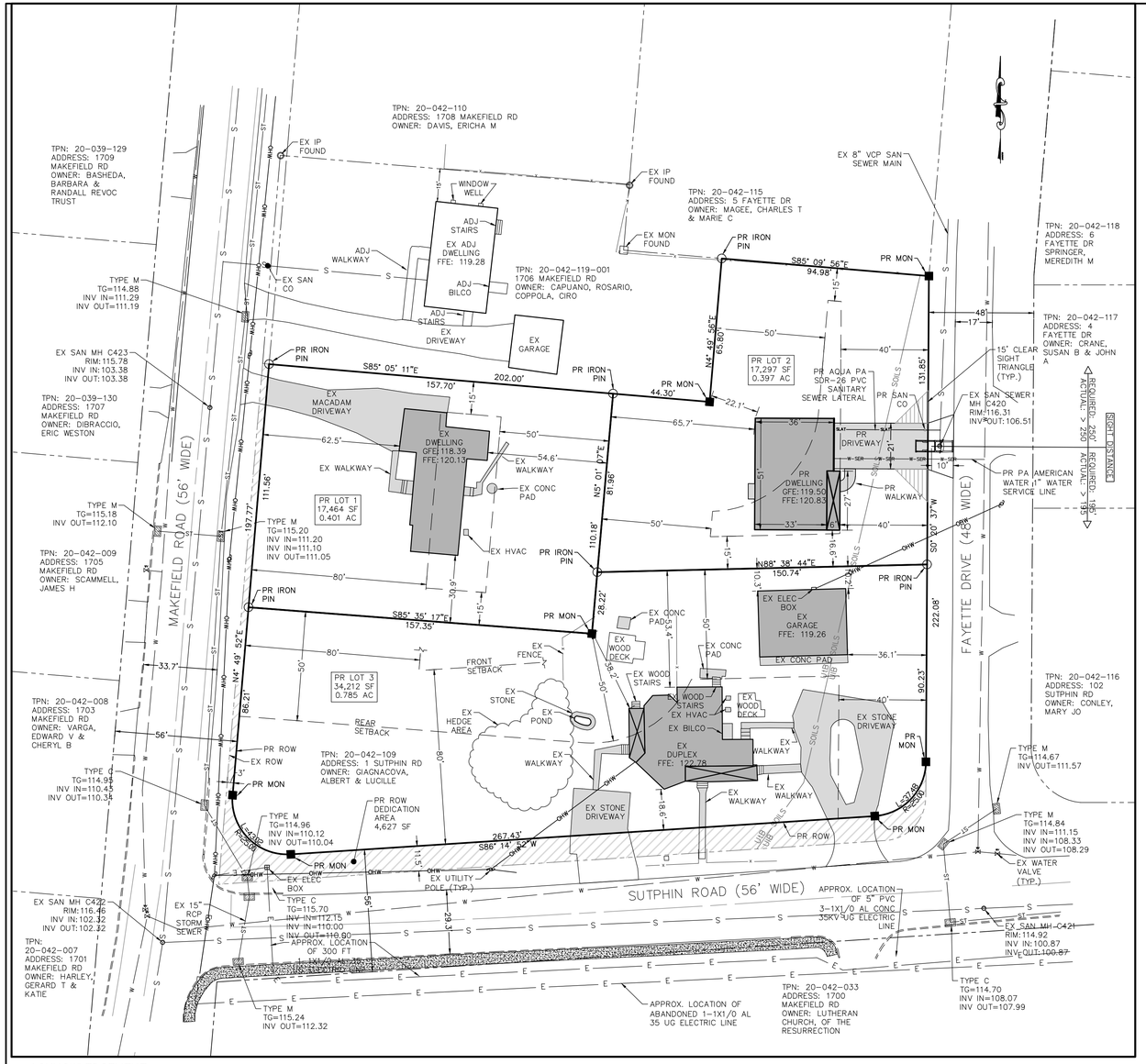


VARIANCES GRANTED 5-6-26

§200-22 – TO PERMIT A REAR YARD SETBACK OF 22.1 FT FOR LOT 2 WHERE 50 FT IS THE MINIMUM.

§200-22 – TO PERMIT A REAR YARD SETBACK OF 38.2 FT FOR LOT 3 WHERE 50 FT IS THE MINIMUM.

BUCKS COUNTY PLANNING COMMISSION NOTATION

BCPC NO. _____
PROCESSED AND REVIEWED. REPORT PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.
CERTIFIED THIS DATE _____

_____
EXECUTIVE DIRECTOR, BUCKS COUNTY PLANNING COMMISSION.

TOWNSHIP BOARD OF SUPERVISORS

APPROVED BY RESOLUTION OF THE SUPERVISORS OF LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, COMMONWEALTH OF PENNSYLVANIA AT A MEETING HELD ON THE _____ DAY OF _____, 20__.

_____

_____

_____

ENGINEERS CERTIFICATION

THESE RECORD PLANS HAVE BEEN COMPLETED AND CERTIFIED BY VINCENT W FIORAVANTI PE, 36598 E, AS REFLECTING CONSTRUCTED CONDITIONS WITH FIELD CHANGES INCORPORATED. RESPONSIBILITY FOR ACCURACY OF THE RECROD PLAN RESTS WITH THE ABOVE ENGINEER.

_____
VINCENT W. FIORAVANTI,

OWNERSHIP CERTIFICATION

TO ALL TO WHOM THESE PRESENTS MAY COME: KNOW YE THAT I (WE), _____ _____, HAVE LAID OUT UPON OUR LAND SITUATED IN THE TOWNSHIP OF LOWER MAKEFIELD, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA, CERTAIN LOTS ACCORDING TO THIS PLAN WHICH IS INTENDED TO BE FORTHWITH RECORDED. WITNESS OUR HAND AND SEAL THIS DAY OF _____ 20__.

_____ _____
OWNER

_____ _____
OWNER

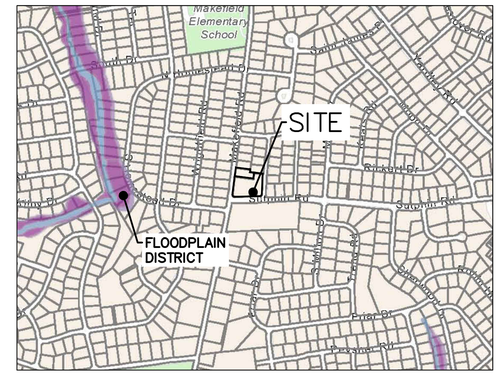
CERTIFICATION OF OWNERSHIP

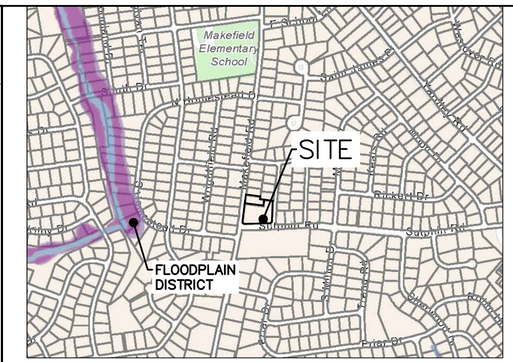
COMMONWEALTH OF PENNSYLVANIA
} SS:
COUNTY OF BUCKS

ON THIS_____DAY OF _____, 20__ AD BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, RESIDING IN BUCKS COUNTY, PERSONALLY APPEARED _____ _____, SATISFACTORILY PROVEN TO BE THE PERSONS WHOSE NAME(S) ARE SUBSCRIBED BELOW, AND ACKNOWLEDGE THAT THEY ARE THE REGISTERED OWNER OF THE DESIGNATED LAND; THAT ALL NECESSARY APPROVAL OF THE PLAN HAS BEEN OBTAINED AND IS ENDORSED THEREON, AND THAT THEY DESIRE THAT THE FOREGOING PLAN BE RECORDED ACCORDING TO LAW. WITNESS MY HAND AND NOTARIAL SEAL THE DAY AND YEAR AFORESAID. NOTARY PUBLIC BY

_____ _____
OWNER

_____ _____
NOTARY PUBLIC OUR COMMISSION EXPIRES:


Makefield Elementary School
SITE
FLOODPLAIN DISTRICT
Stephen Dr
Hunnestand Dr
Stephen Dr
Rickard Dr
Sutphin Rd
Sutphin Rd
Fayette Dr
Fayette Rd
Stephen Dr
Fayette Dr
Fayette Rd
Sutphin Rd
Sutphin Rd
Sutphin



LOCATION MAP
1" = 800'

GENERAL NOTES

1. PROJECT NARRATIVE:

   THIS PLAN DEPICTS THE EXISTING FEATURES OF THE SITE LOCATED AT 1 SUTPHIN ROAD IN YARDLEY, PA 19067. THE PARCEL IS PROPOSED TO BE SUBDIVIDED INTO THREE LOTS.

2. MUNICIPALITY: LOWER MAKEFIELD TOWNSHIP
   ZONING DISTRICT: R-2 – RESIDENTIAL MEDIUM-DENSITY DISTRICT
   PRINCIPAL USE: A(2) – DWELLING, SINGLE-FAMILY DETACHED.

ITEM	REQUIRED	EXISTING
MIN LOT AREA	16,500 SF	73,600 SF
LOT WIDTH @ FRONT BUILDING LINE	110 FT	524.6 FT
FRONT YARD	40 FT	76.9 FT
FRONT YARD COLLECTOR***	80 FT	30.1 FT*
SIDE YARD (EACH)	15 FT	N/A
REAR YARD	50 FT	15.0 FT*
ACCESS. BLDG SY/RY	10 FT	7.5 FT*
MAX BLDG HEIGHT	35 FT	< 35 FT
MAX ACCESS. BLDG HEIGHT	15 FT	< 15 FT
MAX IMP COVERAGE	18%	15.7 %

   * EXISTING NONCONFORMITY
   *** SUTPHIN ROAD AND MAKEFIELD ROAD SPECIAL SETBACK

3. IMPERVIOUS SUMMARY:
   MAX IMPERVIOUS = 73,600 SF * (0.18) = 13,248 SF

FEATURE	EXISTING
DWELLINGS	3,618.3 SF
GARAGES	1,214.0 SF
CHICKEN COOP	524.2 SF
SHEDS/BARN /OUTHOUSE	1,183.0 SF
DRIVEWAYS	4,207.7 SF
WALKWAYS	538.4 SF
CONC. PADS	243.9 SF
BILCO/HVACS	48.5 SF
TOTAL	11,578.0 SF
MAX ALLOWED	13,248.0 SF

4. OWNER:
   GIAGNACOVA, ALBERT & LUCILLE
   12 ST JAMES PL
   YARDLEY, PA 19067

5. TOPOGRAPHIC AND BOUNDARY DATA SHOWN ON THIS PLAN IS BASED UPON FIELD SURVEYS PERFORMED BY THIS OFFICE IN NOVEMBER 2024 USING THE PA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE). THE HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD-83), AND THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD-88).

6. TAX PARCEL NUMBER: 20-042-109

7. PA ONE CALL SN: 2025-002-0719

8. EXISTING SOILS ON SITE:
   UIB – URBAN LAND-DELAWARE COMPLEX
   KSAT: 2.00 TO 6.00 IN/HR
   DEPTH TO WATER TABLE: > 80 INCHES

   UtB – URBAN LAND-MATAPEAKE COMPLEX
   KSAT: 0.20 TO 2.00 IN/HR
   DEPTH TO WATER TABLE: > 80 INCHES

LEGEND

- FEMA FLOODPLAIN
- SOILS — SOILS
- STREAM
- WL — EXISTING WETLANDS
- EXISTING BUILDINGS
- EXISTING LEGAL ROW LINE
- EXISTING 1 FOOT CONTOUR
- EXISTING 5 FOOT CONTOUR
- EXISTING CURB
- EXISTING PAVED DRIVEWAY
- X — EXISTING FENCE
- EXISTING TREE MASS
- EXISTING TREES AND BUSHES TO REMAIN
- EXISTING EASEMENT
- EDGE OF EXISTING PAVED ROAD
- OHW — EXISTING POLES
- ST — EXISTING STORM SEWER
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- G — EXISTING GAS MAIN
- E — EXISTING ELECTRIC LINE
- EXISTING TREES AND BUSHES TO BE REMOVED

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

FIORAVANTI, INC.
CIVIL ENGINEERS & LAND SURVEYORS
618 STREET ROAD * SOUTHAMPTON, PA 18966
(215) 322 * 2143

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
VINCENT W. FIORAVANTI
ENGINEER
25398-E

REVISIONS		
NO.	DESCRIPTION	DATE
1	EE, INC. REVIEW DATED 9-19-25	9-30-25
2	HRG REVIEW DATED 11-20-25	1-12-26
3	REVISED LOTS	6-17-26
4	PENNONI REVIEW DATED 1-23-26	7-14-26

DATE: 6/4/2025	
SCALE: 1"=20'	
JOB # 2292	FB # ---
DRAWN: GMF	CHECKED: VWF

1 SUTPHIN ROAD SUBDIVISION
LOWER MAKEFIELD TOWNSHIP
PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

EXISTING FEATURES PLAN

LOCATION MAP

1" = 800'

GENERAL NOTES

1. PROJECT NARRATIVE:

   THIS PLAN DEPICTS THE PROPOSED SUBDIVISION AND LAND DEVELOPMENT OF AN EXISTING SITE LOCATED AT 1 SUTPHIN ROAD IN YARDLEY, PA 19067. THE EXISTING PARCEL IS PROPOSED TO BE SUBDIVIDED INTO THREE LOTS.

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ITEM	REQUIRED	EXISTING	PROPOSED
MIN LOT AREA	16,500 SF	73,600 SF	68,972 SF
LOT WIDTH @ FRONT BUILDING LINE	110 FT	524.6 FT	N/A
FRONT YARD	40 FT	76.9 FT	N/A
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SIDE YARD (EACH)	15 FT	N/A	N/A
REAR YARD	50 FT	15.0 FT*	N/A
ACCESS. BLDG SY/RY	10 FT	7.5 FT*	N/A
MAX BLDG HEIGHT	35 FT	< 35 FT	< 35 FT
MAX ACCESS. BLDG HEIGHT	15 FT	< 15 FT	< 15 FT
MAX IMP COVERAGE	18%	15.7%	17.3%

* EXISTING NONCONFORMITY
*** SUTPHIN ROAD AND MAKEFIELD ROAD SPECIAL SETBACK

ITEM	LOT 1	LOT 2	LOT 3	ROW DEDICATION
LOT AREA	17,464 SF	17,297 SF	34,212 SF	4,627 SF
LOT WIDTH @ FRONT BUILDING LINE	110.9 FT	136.2 FT	255.4 FT	
FRONT YARD	62.5 FT	40.0 FT	18.6 FT*	
SIDE YARD (EACH)	15.0 FT	16.6 FT	> 15 FT	
REAR YARD	54.6 FT	22.1 FT**	38.2 FT**	
ACCESS. BLDG SY/RY	N/A	N/A	10.2 FT	
MAX BLDG HEIGHT	< 35 FT	< 35 FT	< 35 FT	
MAX ACCESS. BLDG HEIGHT	N/A	N/A	< 15 FT	
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* EXISTING NONCONFORMITY
** VARIANCE GRANTED 5/6/2026

3. OWNER:
   GIAGNACOVA, ALBERT & LUCILLE
   12 ST JAMES PL
   YARDLEY, PA 19067

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LEGEND

- FEMA FLOODPLAIN
- SOILS — SOILS
- STREAM
- WL — EXISTING WETLANDS
- EXISTING BUILDINGS
- EXISTING LEGAL ROW LINE
- EXISTING 1 FOOT CONTOUR
- EXISTING 5 FOOT CONTOUR
- EXISTING CURB
- EXISTING PAVED DRIVEWAY
- X — EXISTING FENCE
- EXISTING TREE MASS
- EXISTING TREES AND BUSHES TO REMAIN
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- ST — EXISTING STORM SEWER
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- G — EXISTING GAS MAIN
- E — EXISTING ELECTRIC LINE
- 117 — PROPOSED CONTOUR LINE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

FIORAVANTI, INC.
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
VINCENT W. FIORAVANTI
ENGINEER
24398-E
PENNSYLVANIA

REVISIONS		
NO.	DESCRIPTION	DATE
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DATE: 6/4/2025	
SCALE: 1"=20'	
JOB # 2292	FB # ---
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1 SUTPHIN ROAD SUBDIVISION

LOWER MAKEFIELD TOWNSHIP

PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

GRADING PLAN

SHEET
3 OF 9

DELAWARE RIVER SOUTH STORMWATER VOLUME CALCULATIONS

VOLUME CONTROL
PROPOSED RECONSTRUCTED IMPERVIOUS SURFACE (FROM LOT 2) = 2,890.1 CF
VOLUME CONTROL = 2,890.1 CF (2/12) = 482 CF

NONSTRUCTURAL BMP: EVERGREEN TREE CREDIT
10 VOLUME CREDITS PER NEW EVERGREEN TREE
PROPOSED EVERGREEN TREES: 7
EVERGREEN TREE CREDITS: 70 CF

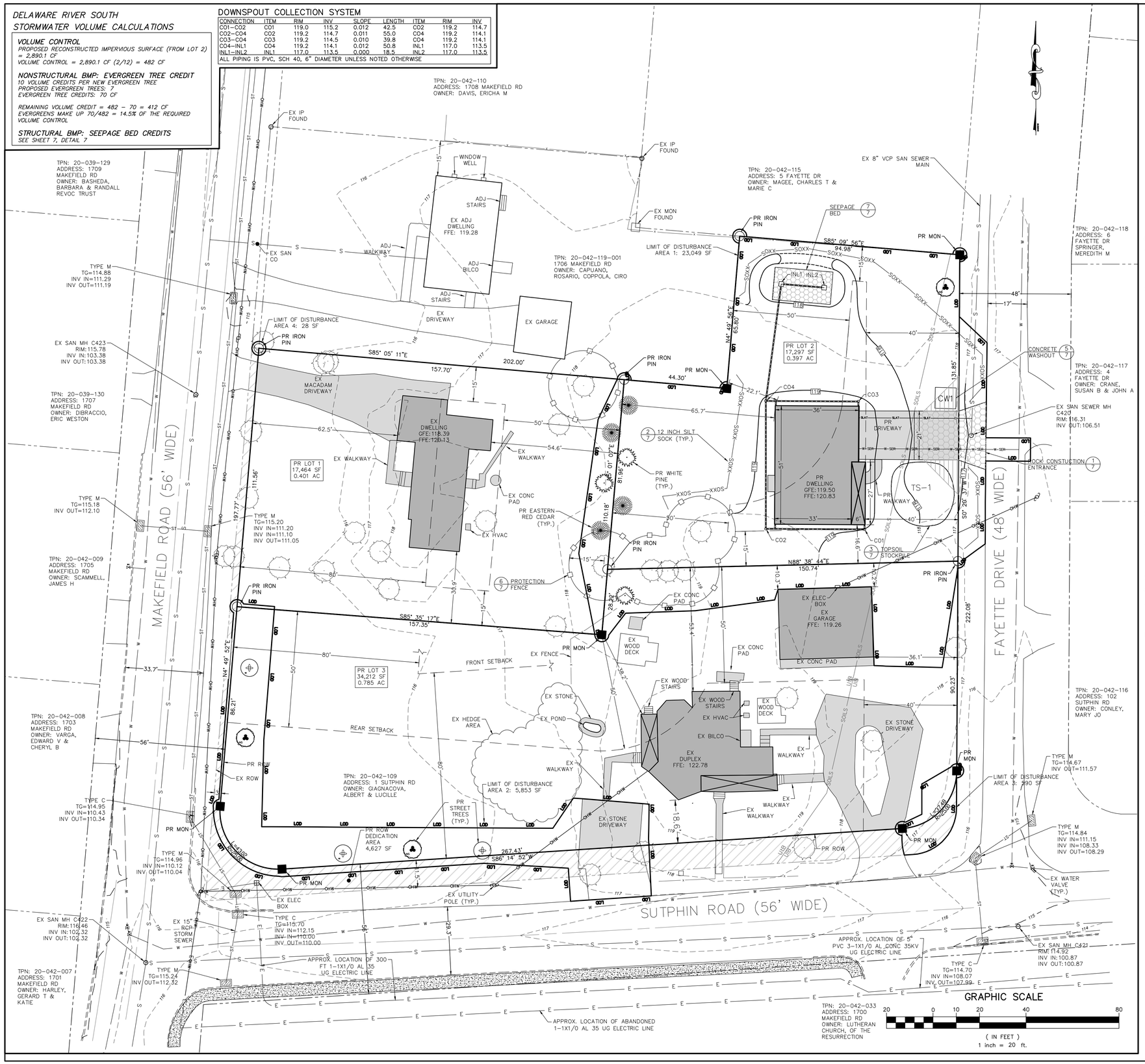
REMAINING VOLUME CREDIT = 482 – 70 = 412 CF
EVERGREENS MAKE UP 70/482 = 14.5% OF THE REQUIRED VOLUME CONTROL

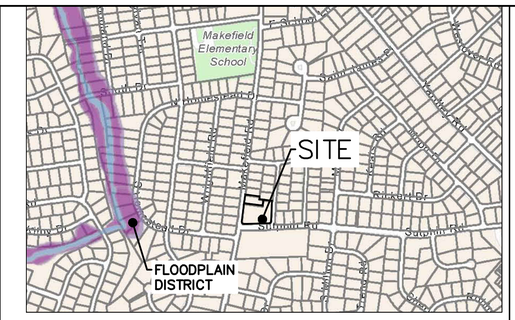
STRUCTURAL BMP: SEEPAGE BED CREDITS
SEE SHEET 7, DETAIL 7

DOWNSPOUT COLLECTION SYSTEM

CONNECTION	ITEM	RIM	INV	SLOPE	LENGTH	ITEM	RIM	INV
CO1–CO2	CO1	119.0	115.2	0.012	42.5	CO2	119.2	114.7
CO2–CO4	CO2	119.2	114.7	0.011	55.0	CO4	119.2	114.1
CO3–CO4	CO3	119.2	114.5	0.010	39.8	CO4	119.2	114.1
CO4–INL1	CO4	119.2	114.1	0.012	50.8	INL1	117.0	113.5
INL1–INL2	INL1	117.0	113.5	0.000	18.5	INL2	117.0	113.5

ALL PIPING IS PVC, SCH 40, 6" DIAMETER UNLESS NOTED OTHERWISE





LOCATION MAP
1" = 800'

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*** SUTPHIN ROAD AND MAKEFIELD ROAD SPECIAL SETBACK

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8. TOTAL LIMIT OF DISTURBANCE = 23,049 SF + 5,853 SF + 590 SF + 28 SF = 29,520 SF

LEGEND

- FEMA FLOODPLAIN
- SOILS
- STREAM
- EXISTING WETLANDS
- EXISTING BUILDINGS
- EXISTING LEGAL ROW LINE
- EXISTING 1 FOOT CONTOUR
- EXISTING 5 FOOT CONTOUR
- EXISTING CURB
- EXISTING PAVED DRIVEWAY
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- EXISTING POLES
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING ELECTRIC LINE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SILT SOX
- PROPOSED TREE PROTECTION FENCE
- PROPOSED TOPSOIL STOCKPILE
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED CONTOUR LINE
- PROPOSED TREES

FIORAVANTI, INC.
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
VINCENT W. FIORAVANTI
NO. 039814-E

REVISIONS		
NO.	DESCRIPTION	DATE
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2	HRG REVIEW DATED 11–20–25	1–12–26
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DATE: 6/4/2025
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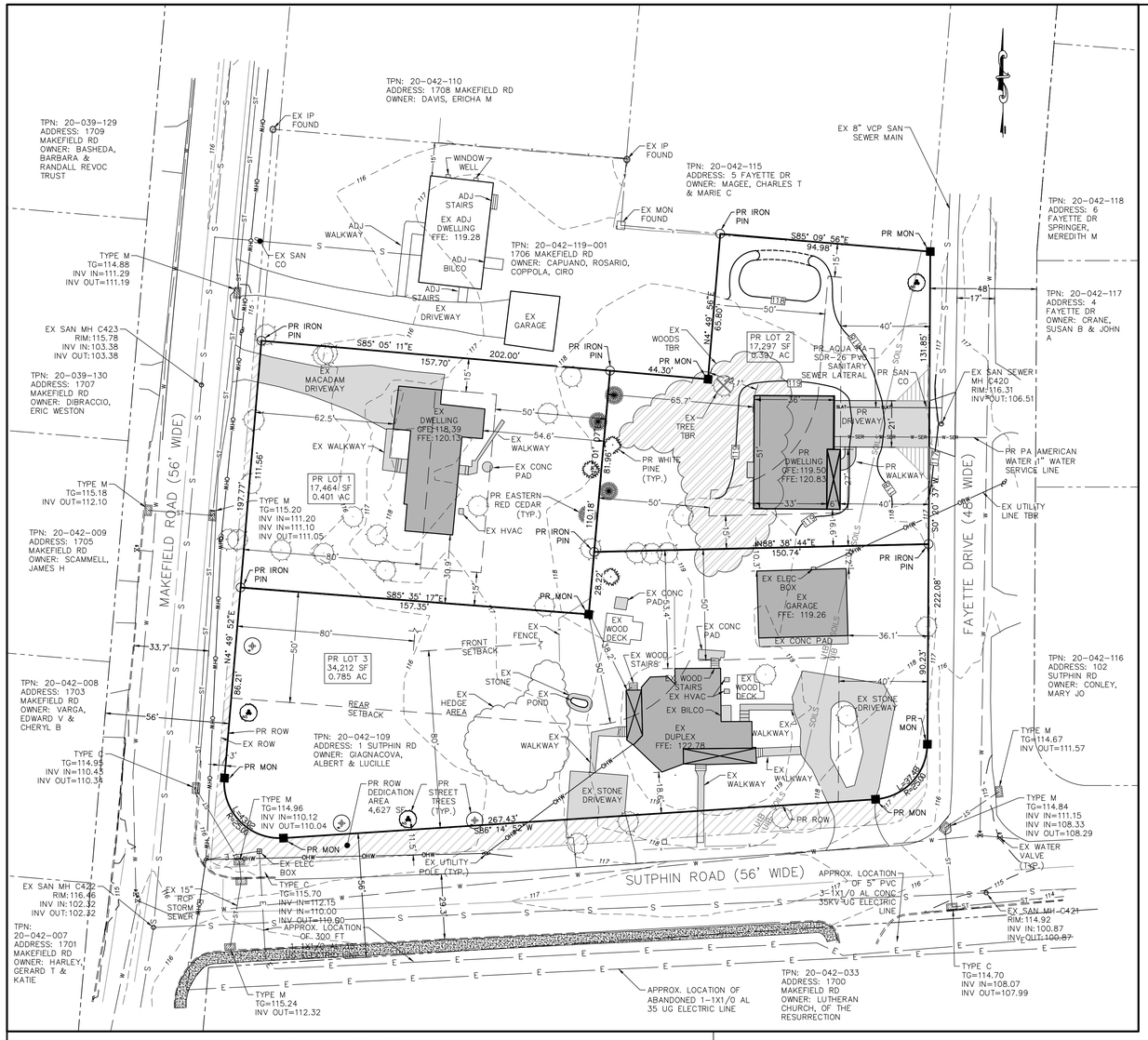
1 SUTPHIN ROAD SUBDIVISION
LOWER MAKEFIELD TOWNSHIP
PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

EROSION AND SEDIMENTATION CONTROL PLAN

SHEET 4 OF 9



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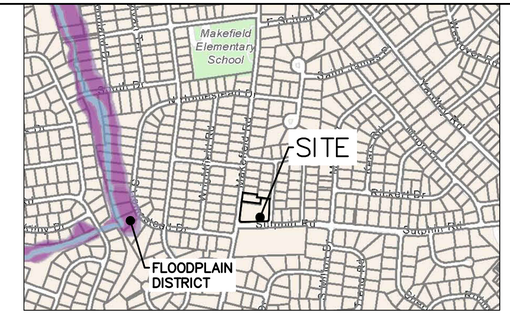
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING ELECTRIC LINE
- EXISTING TREES AND BUSHES TO BE REMOVED
- PROPOSED CONTOUR LINE
- PROPOSED TREES

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.


Makefield Elementary School
SITE
FLOODPLAIN DISTRICT
Richard Dr
Sutphin Rd
Makefield Rd
Yardley Newtown Rd
Stony Hill Rd
Stonehenge Dr
Stonehenge Ct
Stonehenge Rd
Stonehenge Cir
Stonehenge Way
Stonehenge Ln
Stonehenge Pl
Stonehenge Sq

Priority Note:

Prior t to the start of construction activities the Owner/Responsible Person (O/RP) for management of the construction site work shall be familiar with:

Pennsylvania Department of Environmental Protection Erosion and Sedimentation Pollution Control Manual,
Technical Guidance Number: 3663-2134-008
Dated: March 2012, latest edition

PAGE AND TABLE NUMBERS REFER TO THIS MANUAL.

I Standard E&S Plan Notes from the Pennsylvania Erosion and Sediment Pollution Control Manual, Appendix C

1 ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

2 SEE BCCD NOTE 1.

3 AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–2542–1776 FOR LOCATION OF EXISTING UNDERGROUND UTILITIES.

4 ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.

5 AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.

6 CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.

7 AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING.

8 TOPSOIL REQUIRE FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S)INTHE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST NOT EXCEED 2H:1V OR FLATTER.

9 SEE BCCD NOTE 7. THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT SHALL BE NOTIFIED.

10 SEE BCCD NOTE 14.

11 ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

12 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON THE SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

13 ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.

14 VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM LOTS (SPECIFY LOT NUMBERS) ONTO (SPECIFY ROAD NAMES).

15 SEE BCCD NOTE 6.

16 A LOG SHOWING THE DATES THAT THE E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND MADE AVAILABLE TO THE REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

17 SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

18 ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. SEE ALSO BCCD NOTE 12.

19 AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES –– 6 TO 12 INCHES ON COMPACTED SOILS –– PRIOR TO PLACEMENT OF THE TOP SOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.

20 ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

21 ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

22 FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.

23 FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.

24 FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

25 SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.

26 ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.

27 SEE BCCD NOTE 15.

28 PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.

29 E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THE ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

30 UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE O/RP SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO THE REMOVAL/CONVERSION OF THE E&S BMPS.

31 AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY THE GERMINATING SEASON.

32 UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE O/RP SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

33 FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TOP $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

I Appendix C – Optional E&S Plan Notes

USE THE FOLLOWING NOTES ONLY IF APPLICABLE.

1 CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.

2 ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.

3 UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS–SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.

4 CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER–EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.

5 SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.

6 SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.

7 ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY MANNER TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.

8 UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS–BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

9 EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.

10 FILL MATERIALS FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

I BCCD GENERAL NOTES

1 AT LEAST SEVEN DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, THE O/RP SHALL INVITE ALL CONTRACTORS INVOLVED IN THAT ACTIVITY, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER AND THE BCCD TO A PRE–CONSTRUCTION MEETING.

BUCKS COUNTY CONSERVATION DISTRICT (BCCD)
1456 FERRY ROAD, SUITE 704
DOYLESTOWN, PA 18901–5550
PH; 215–345–7577
FAX; 215–345–7584

ALSO, AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THAT ACTIVITY SHALL NOTIFY THE PENNSYLVANIA ONE–CALL SYSTEM INC. 1–800–242–1776 TO DETERMINE ANY UNDERGROUND UTILITIES LOCATIONS.

2 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.

3 THE OPERATOR/RESPONSIBLE PERSON (O/RP) SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.

4 THE OPERATOR/RESPONSIBLE PERSON (O/RP) SHALL ASSURE THAT AN EROSION AND SEDIMENTATION CONTROL PLAN HAS BEEN PREPARED AND APPROVED BY THE BUCKS COUNTY DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOILS AND/OR ROCK SPOIL AND BORROW AREAS REGARDLESS OF THEIR LOCATIONS.

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

6 UNTIL A SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING, REPAIR, REPLACEMENT, RE–GRADING, RE–SEEDING,M RE–MULCHING AND RE–NETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OR THOSE INSTALLED, WILL BE REQUIRED.

7 IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE O/RP SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

8 ALL PUMPING OF SEDIMENT–LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER UNDISTURBED AREAS.

9 STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET; STOCKPILE SLOPES MUST NOT EXCEED 2:1.

10 DISTURBED AREAS THAT AREA AT A FINISHED GRADE OR WHICH WILL NOT BE RE–DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

11 UPON THE INSTALLATION OF TEMPORARY SEDIMENT BASIN RISER(S), A QUALIFIED SITE REPRESENTATIVE SHALL CONDUCT AN IMMEDIATE INSPECTION OR THE RISER(S), WHEREUPON THE BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED, IN WRITING, THAT THE RISER IS SEALED (WATERTIGHT).

12 SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED ON–SITE IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.

13 AT STREAM CROSSINGS, A 50–FOOT BUFFER –SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOD DISTURBANCE AND EXCAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGED RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.

14 ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.)AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

15 WITHIN 72 HOURS AFTER EARTH DISTURBANCE ACTIVITY CEASES, THE O/RP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITY. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT A FINISHED GRADE AND WHICH WILL BE RE–DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS.

16 AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70 PERCENT VEGETATIVE OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

17 AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION. TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

18 MUD, SEDIMENT OR DEBRIS THAT IS TRACKED FROM THE SITE ONTO PUBLIC RIGHT OF WAY; SHALL BE IMMEDIATELY REMOVED BY MECHANICAL MEANS TO THE SATISFACTION OF THE TOWNSHIP AND/OR THE BUCKS COUNTY CONSERVATION DISTRICT. USE OF BACKHOE BUCKETS TO SCRAPE ROADWAY SURFACES SHALL BE PROHIBITED. IF CONDITIONS ARE DEEMED HAZARDOUS TO MOTOR VEHICLES, MUD SHALL BE PRESSURE WASHED FROM THE CARTWAY. ALL SEDIMENT LADEN WATER MUST BE FILTERED IN A MANOR SATISFACTORY TO THE TOWNSHIP AND/OR BUCKS COUNTY CONSERVATION DISTRICT PRIOR TO ENTERING SWALES, STORM SEWER, BASIN AND/OR WETLANDS. THE DEVELOPER SHALL BE RESPONSIBLE FOR ENFORCEMENT OF STREET CLEANING REQUIREMENTS BY SUBCONTRACTORS.

II. EROSION AND SEDIMENT CONTROL MEASURES

A. STABILIZED CONSTRUCTION ENTRANCE

1. WHERE CONSTRUCTION TRAFFIC WILL ENTER PAVED ROADS, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO PREVENT THE TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. SEE "STABILIZED CONSTRUCTION ENTRANCE" DETAIL.

B. SILT SOCK

1. SILT SOCK SHALL BE PROVIDED AS INDICATED ON THE DRAWINGS, ALONG THE LOWER PERIPHERY OF THE ACTIVE WORK AREA WHERE SEDIMENT LADEN WATER MAY BE EXPECTED TO FLOW ONTO INACTIVE AREAS. SEE "SILT SOCK" DETAIL.

2. SYNTHETIC SILT SOCK FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER, OR ETHYLENE YARN PRODUCED BY A REPUTABLE MANUFACTURER FOR THE SPECIFIC PURPOSE OF BEING USED AS A SILT SOCK MEDIA.

C. STOCKPILE

1. ALL STRIPPED TOPSOIL AND EXCAVATED EARTHEN MATERIAL TO BE USED WITHIN THE PROJECT SITE SHALL BE ROPERLY STOCKPILED. MATERIAL FOUND TO BE UNSUITABLE FOR SUBSEQUENT USE OR IN EXCESS OF THE QUALITY REQUIRED SHALL BE DISPOSED OFFSITE. THE LOCATION, METHOD OF DISPOSAL, AND MEANS OF TRANSPORT SHALL BE IN ACCORDANCE WITH STATE AND LOCAL LAWS.

2. IMMEDIATELY AFTER STOCKPILING OPERATIONS HAVE BEEN COMPLETED, THE STOCK PILE SHALL BE TEMPORARILY STABILIZED AS DESCRIBED IN THE "TEMPORARY STABILIZATION" SECTION OF THESE SPECIFICATIONS.

3. SILT SOCK SHALL BE PROVIDED AT THE BASE OF ALL OF THE STOCKPILES FOR ADDITIONAL PROTECTION. SEE "STOCKPILE CONTROL" DETAIL.

III. TEMPORARY STABILIZATION

A. SOIL AMENDMENT APPLICATION RATE EQUIVALENTS
TABLE 11.2, Pg 266

	Per Acre	Per 1000 s.f.	Notes
AGRICULTURAL LIME	1 ton	40 lb	Typically not required for
10–10–10 FERTILIZER	500 lb	12.5 lb	stockpiles

B. SEED MIX – TEMPORARY EROSION CONTROL COVER
ERNST SEED MIX: ERNMX–104 or equivalent: 50% LOLIUM MULTIFLORUM
50% LOLIUM PERENNE, GREEN SUPREME

SEED RATE: 50 lb per acre
MIX TYPE: DISTURBED SITES AND STEEP SLOPES
SPECIES LIST: 50% Annual Ryegrass Lolium multiflorum L.perenne var. italicum))
50% Perennial Ryegrass, 'Roadster' (turf type) (Lolium perenne, Roadster)

OTHER MIXES:
OPTIMUM SEEDING DATES ARE FEBRUARY 15 THRU MAY 1 OR AUGUST 15 THRU OCTOBER 15 FOR THE FOLLOWING SPECIES:

SPECIES	POUNDS	OPTIMUM SEED DEPTH PER ACRE (DOUBLE FOR SANDY SOIL)
ANNUAL RYEGRASS	40	0.5 INCH
PERENNIAL RYEGRASS	40	0.5 INCH
OATS	86	1.0 INCH
BARLEY	96	1.0 INCH

OPTIMUM SEEDING DATES ARE MAY 1 THRU AUGUST 15 FOR THE FOLLOWING SPECIES:

SPECIES	POUNDS PER ACRE	OPTIMUM SEED DEPTH (DOUBLE FOR SANDY SOIL)
PEARL MILLET	20	1.0 INCH
SUNDANGRASS	30	1.0 INCH
MILLET (GERMAN OR HUNGARIAN)	30	1.0 INCH
WEEPING LOVEGRASS	5	1.0 INCH

C. MULCHING

1. SEE PAGES 270 – 277 FOR MULCHING AND STABILIZATION METHODS.
TABLE 11.6, Pg 271 – MULCH APPLICATION RATES
TABLE 11.7, Pg 276 – Typical Polymer Stabilized Fiber Matrix Application Rates

2. MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE.

3. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:

A. MULCH MATERIALS SHALL BE UNSALTED HAY, OR SMALL GRAIN STRAW APPLIED AT A RATE OF 3 TONS PER ACRE. MULCH BLOWERS SHALL NOT GRIND OR CHOP MATERIAL.

B. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75% TO 95% OF THE SOIL SURFACE WILL BE COVERED

C. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF SLOPES AND COSTS.

(1) MULCH NETTINGS: STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE.
USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.

(2) LIQUID MULCH BINDERS: MAY BE USED TO ANCHOR HAY OR STRAW MULCHES. APPLICATIONS SHOULD BE HEAVIER AT EDGES.

(3) WHERE WIND CATCHES THE MULCH, IN VALLEYS AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

(4) WOOD–FIBER OR PAPER–FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES.

IV. FINAL GRADING AND SEEDING

A. GRADING STANDARDS

1. SEE E&S PLAN NOTES: 5, 19–24, AND 26.

2. SEE CHAPTER 16 – GRADING STANDARDS, Pg 325–326 FOR ADDITIONAL NOTES.

B. SOIL AMENDMENT APPLICATION RATE EQUIVALENTS
TABLE 11.2, Pg 266

	Per Acre	Per 1000 s.f.	Notes
AGRICULTURAL LIME	6 ton	240 lb	Or as per soil test; may not be required
10–10–10 FERTILIZER	1000 lb	25 lb	in agricultural fields.

V. MAINTENANCE

A. SITE MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS CAN BE FOUND AT THE FOLLOWING LOCATIONS:

1. SEE THE FOLLOWING E&S NOTES: 9, 13, 15–18, 29, AND 33.
2. SEE THE FOLLOWING BCCD NOTES: 5–8, 12, 15, AND 17–18.

VI. RECYCLING

A. RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES CAN BE FOUND AT THE FOLLOWING LOCATION:

1. SEE BCCD NOTE NUMBER 14.

VII. DUST CONTROL

A NUMBER OF METHODS CAN BE USED TO CONTROL DUST FROM A SITE. THE FOLLOWING IS A BRIEF LIST OF SOME CONTROL MEASURES AND THEIR DESIGN CRITERIA:

1. SPRINKLING/IRRIGATION – SPRINKLING THE GROUND SURFACE WITH WATER UNTIL IT IS MOIST IS AN EFFECTIVE DUST CONTROL METHOD FOR HAUL ROADS AND OTHER TRAFFIC ROUTES. THIS PRACTICE CAN BE APPLIED TO ALMOST ANY SITE.
2. VEGETATIVE COVER – IN AREAS NOT EXPECTED TO HANDLE VEHICLE TRAFFIC, VEGETATIVE COVER PROVIDES COVERAGE TO SURFACE SOILS AND SLOWS WIND VELOCITY AT THE GROUND SURFACE, THUS REDUCING THE POTENTIAL FOR DUST TO BECOME AIRBORNE.
3. MULCH – MULCHING CAN BE A QUICK AND EFFECTIVE MEANS OF DUST CONTROL FOR A RECENTLY DISTURBED AREA.
4. WIND BREAKS – BARRIERS THAT REDUCE WIND VELOCITY THROUGH A SITE AND THEREFOR REDUCE THE POSSIBILITY OF SUSPENDED PARTICLES. WIND BREAKS CAN BE TREES OR SHRUBS LEFT IN PLACE DURING SITE CLEARING OR CONSTRUCTED BARRIERS SUCH AS A WIND FENCE, SNOW FENCE, TARP CURTAIN, HAY BALE, CRATE WALL, OR SEDIMENT WALL.
5. STONE – STONE MAY BE AN EFFECTIVE DUST DETERRENT FOR CONSTRUCTION ROADS AND ENTRANCES OR AS A MULCH IN AREAS WHERE VEGETATION CANNOT BE ESTABLISHED.

Standard Notes Involving Earthwork:

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 and owner.

Clean Fill is defined as: Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use).

Clean Fill affected by a spill or release of a regulated substance:

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

Any person placing clean fill that has been affected by a spill or release of a regulated substance must use form FP-001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill. A copy of Form FP-001 can be found at the end of these instructions.

Environmental due diligence: The applicant must perform environmental due diligence to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: *Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits*. **Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of regulated substance.** If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy *"Management of Fill"*.

Fill material that does not qualify as clean fill is regulated fill. Regulated fill is waste and must be managed in accordance with the Department's municipal or residual waste regulations based on 25 Pa. Code Chapters 287 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable. These regulations are available on-line at www.pacode.com .

A FILL DETERMINATION:

1 If due diligence shows no evidence of a release of a regulated substance, the material may be managed as clean fill under this policy.

2 If due diligence shows evidence of a release, the material must be tested to determine if it qualifies as clean fill. testing must be performed in accordance with appendix a.

a) If testing reveals that the material contains concentrations of regulated substances that are below the residential limits in table fp-1a and b, the material may be managed as clean fill.

b) If testing reveals that the material contains concentrations of regulated substances that exceed the limits in table fp-1a and b, the material must be managed as regulated fill.

3 A person may not blend or mix materials to become clean fill. Materials that contain regulated substances that are intentionally released may not be managed under this policy.

B MANAGEMENT OF CLEAN FILL:

1 Use of material as clean fill does not require a permit under the solid waste management act and regulations, and it may be used in an unrestricted or unregulated manner under this act and its regulations. the use of materials as clean fill is still regulated under other environmental laws and regulations. a person using materials as clean fill under the policy is still subject to and must comply with all applicable requirements governing the placement or use of material as clean fill, such as Chapter 102 (Erosion and Sediment Control) and Chapter 105 (Dam Safety and Waterway Management).

2 Best management practices (BMP) must be followed prior to demolition activities to remove materials like lead-based paint surface, friable asbestos and hazardous materials such as mercury switches, PCB ballasts and fluorescent light bulbs from a building if the brick, block, or concrete is used as clean fill.

3 Clean fill may not contain any free liquids based on visual inspection, and shall not create public nuisances (for example objectionable odors) to users of the receiving property or adjacent properties.

CONSTRUCTION SEQUENCE

STEP	DESCRIPTION
1	AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE BUCKS COUNTY CONSERVATION DISTRICT TO AN ON–SITE MEETING.
2	PREPARE ALL CONSTRUCTION ACCESS PATHS.
3	INSTALL ALL 12 INCH DIAMETER SILT SOCK AS SHOWN ON THE PLAN.
4	DEMOLISH EXISTING BUILDINGS AND WOODS THAT ARE LABELED AS TO BE REMOVED AND REMOVE ALL DEBRIS FROM THE SITE. ALSO, REMOVE ALL PAVED SURFACES THAT ARE LABELED AS TO BE REMOVED (DRIVEWAYS)
5	INSTALL TEMPORARY SOIL STOCKPILE AREAS (TS).
6	FOR THE NEW DWELLING ON PROPOSED LOT 2, INSTALL WATER AND SEWER LATERALS AND SERVICE CONNECTIONS FROM MAIN LINES TO PROPOSED MARKED LOCATIONS AND STUB UP TO FINISHED GRADE.
7	STRIP TOPSOIL AND ROUGH GRADE SITE.
8	PERFORM CONSTRUCTION ON PROPOSED BUILDING, DRIVEWAY, AND WALKWAYS.
9	PERFORM CONSTRUCTION ON PROPOSED SEEPAGE BED. AFTER THE SEEPAGE BED HAS BEEN COMPLETED, INSTALL THE PIPE RUNS FROM THE SEEPAGE BED TO THE DOWNSPOUTS.
10	COMPLETE FINAL ROAD RESTORATION, SOIL RESTORATION, AND SITE STABILIZATION.
11	INSTALL STREET TREES AND TREES FOR BMP CREDIT AT LOCATIONS INDICATED.
12	EROSION CONTROLS CAN BE REMOVED, ONLY AFTER DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% VEGETATIVE 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. REMOVE SILT SOCK, AND EXCESS TOPSOIL.
13	FINE GRADE, TOPSOIL AND STABILIZE AFTER CONSTRUCTION IS COMPLETE. STABILIZED MEANS AT LEAST 70% UNIFORM VEGETATIVE OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING EROSION.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
VINCENT W. FIORAVANTI
ENGINEER
36598-E

REVISIONS

NO.	DESCRIPTION	DATE
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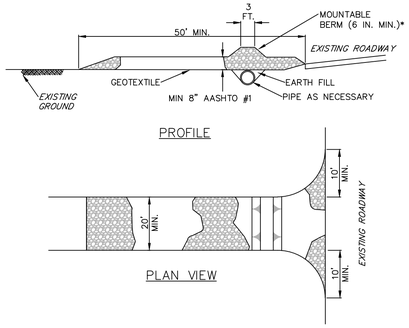
4	PENNONI REVIEW DATED 1–23–26	7–14–26

DATE: 6/4/2025
SCALE: N/A
JOB # 2292 FB # –––
DRAWN: GMF CHECKED: VWF

1 SUTPHIN ROAD SUBDIVISION
LOWER MAKEFIELD TOWNSHIP
PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

EROSION AND SEDIMENTATION CONTROL NOTES



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

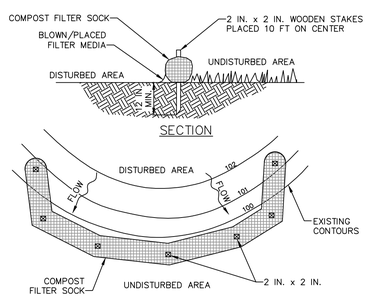
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

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

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

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

1 STANDARD CONSTRUCTION DETAIL #3–1
ROCK CONSTRUCTION ENTRANCE



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.

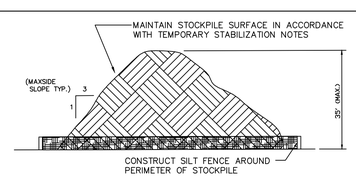
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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.

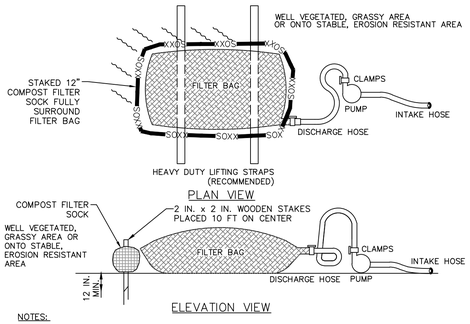
BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

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.

2 STANDARD CONSTRUCTION DETAIL #4–1
COMPOST FILTER SOCK



3 TEMPORARY STOCKPILE DETAIL



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.

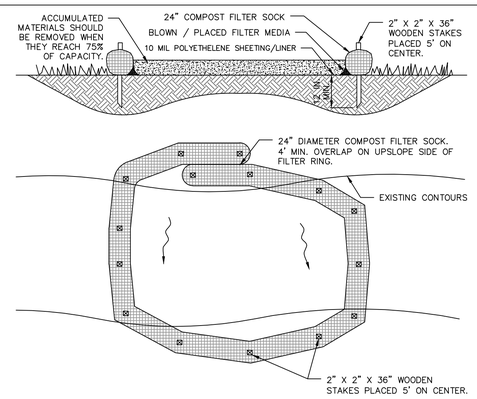
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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.

4 *Standard Construction Detail #3-16*
Pumped Water Filter Bag aka "Dirt Bag"
(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. 18 INCH DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24 INCH DIAMETER SOCKS IN A PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE. LOCATE WASHOUT AREAS AT LEAST 50 FEET FROM STORM DRAINS, OPEN DITCHES, WATER BODIES, STEEP SLOPES. WASHOUT AREAS MUST BE SIGNED AS NECESSARY TO ENSURE THAT CONCRETE TRUCK DRIVERS UTILIZE THE PROPER AREA.

AN IMPERVIOUS LINER, (10 MIL THICKNESS WITH NO HOLES OR TEARS) SHALL BE PLACED IN THE AREA UNDER THE COMPOST FILTER SOCK TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND.

MINIMUM CONTAINMENT VOLUME = 6 CUBIC FEET FOR EVERY 10 CUBIC YARDS OF CONCRETE POURED DURING CLEANOUT INTERVAL.

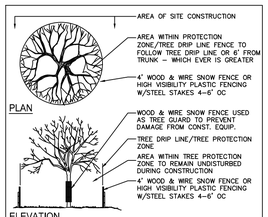
WASHOUT WASTES INTO THE PIT WHERE THEY CAN SET, BE BROKEN UP, AND THEN DISPOSED OF. BUILDINGF MATERIALS AND OTHER CONSTRUCTION SITE WASTES MUST BE PROPERLY MANAGED AND DISPOSED OF TO REDUCE POTENTIAL FOR POLLUTION TO SURFACE AND GROUND WATERS.

ALL 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.

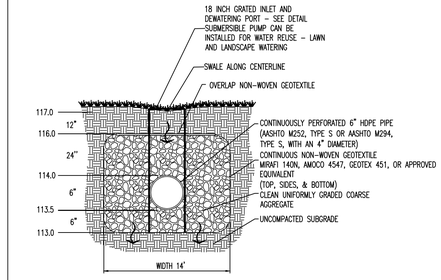
5 *Standard Construction Detail #3-18*
COMPOST FILTER SOCK WASHOUT
NOT TO SCALE



NOTE: FENCE TO BE USED FOR BOTH TREE PROTECTION AND SEPTIC SYSTEM INFILTRATION AREA PROTECTION

6 PROTECTION FENCE
DURING SITE CONSTRUCTION
NOT TO SCALE

PR LOT 2 SEEPAGE BED DETAIL



VOLUME CONTROL
PR LOT 2 RECONSTRUCTED IMPERVIOUS = 2,890.1 SF
CONTROL VOLUME = 2,890.1 X 2/12 = 482 CF
VOLUME CONTROLLED BY NONSTRUCTURAL BMPS: 70 CF
(SEE CALCULATION ON SHEET 4)

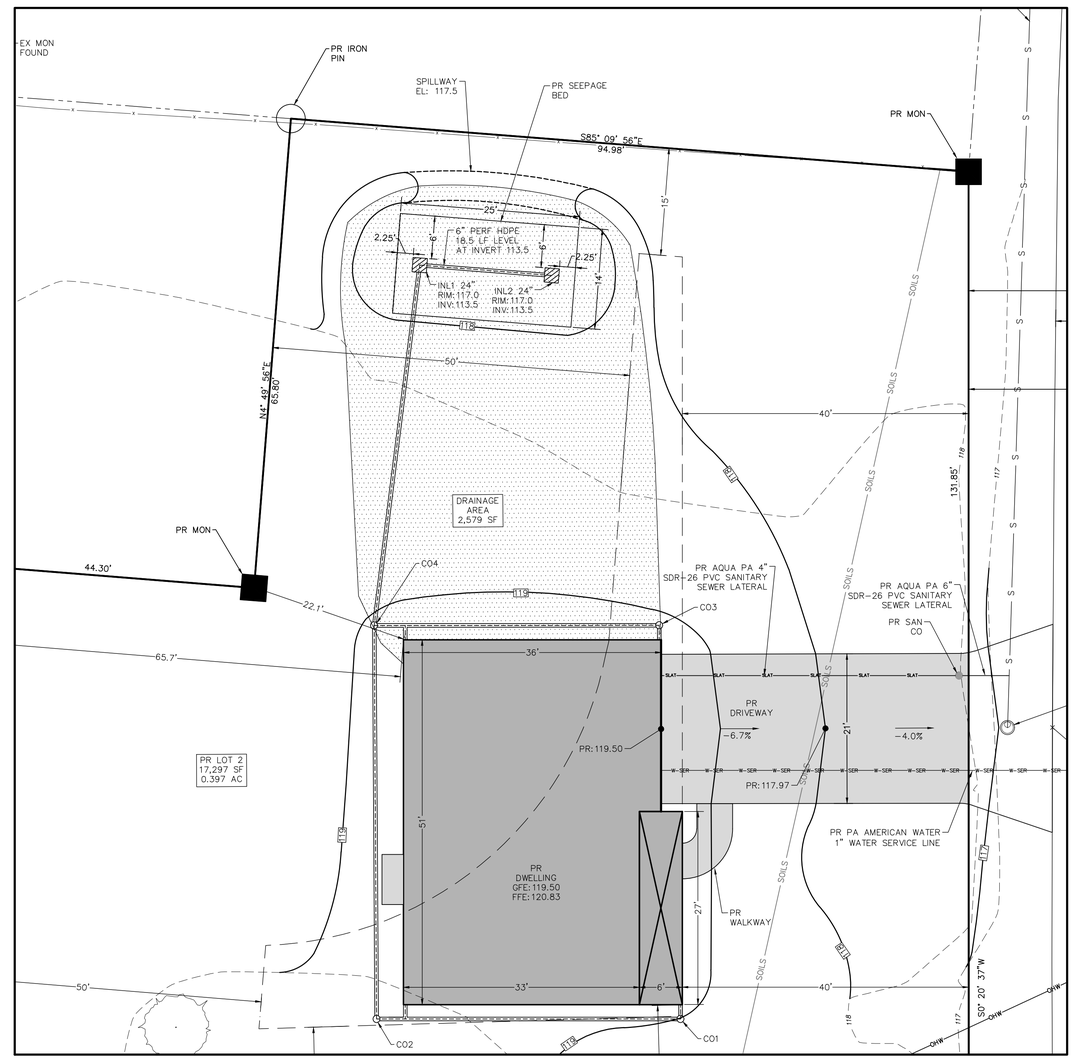
REMAINING VOLUME TO BE CONTROLLED BY STRUCTURAL BMP:
482 – 70 = 412 CF
VOLUME OF STONE REQUIRED TO CONTAIN CONTROL VOLUME (40% VOID RATIO): 412 CF/0.4 = 1,030 CF
ACTUAL SEEPAGE BED STONE VOLUME:
= 25' X 14' X 3' = 1,050 CF

DEWATERING TIME (SEEPAGE BED)
INFILTRATION RATE = 45.0 IN/HR
FACTOR OF SAFETY = 2
ADJUSTED RATE = 22.5 IN/HR
SURFACE AREA = 350 SF
VOLUME = 1,050 CF

VOLUMETRIC INFILTRATION RATE
= (350 SF)(22.5 IN/HR)(1/12)
= 656.25 CF/HR

TIME = 1,050 CF / 656.25 CF/HR
= 1.6 HRS

7 *Standard Construction Detail #1*
Cross Section A–A of Seepage Bed



8 *GRADING DETAIL & SEEPAGE BED PLAN VIEW*
1"=10'

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
VINCENT W. FIORAVANTI
ENGINEER
24398-E

REVISIONS

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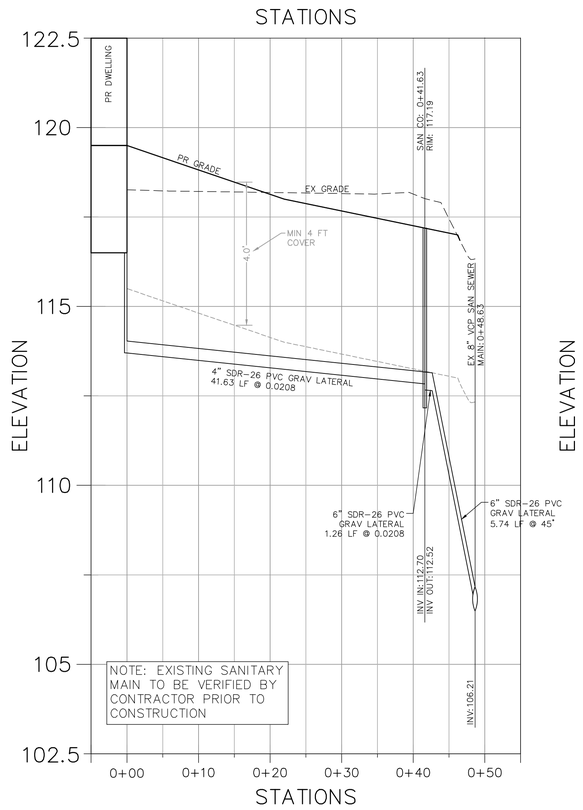
DATE: 6/4/2025
SCALE: N/A
JOB # 2292 FB # ---
DRAWN: GMF CHECKED: VWF

1 SUTPHIN ROAD SUBDIVISION
LOWER MAKEFIELD TOWNSHIP
PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

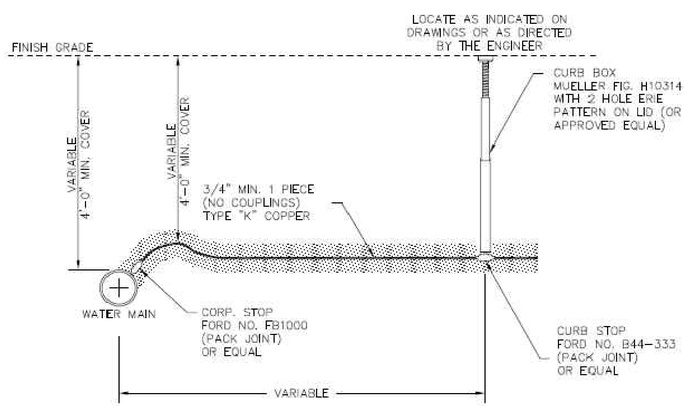
EROSION AND SEDIMENTATION CONTROL DETAILS

SHEET
7 OF 9



PROFILE: PR LOT 2 SANITARY SEWER LATERAL
STA: −0+05.00 TO STA: 0+55.00

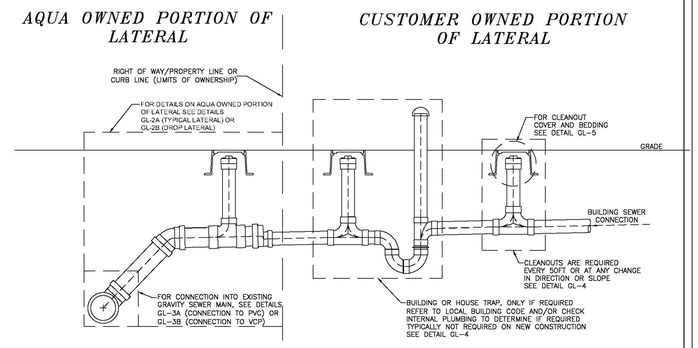
SCALE: 1" = 10'
VERTICAL EXAGGERATION: 5



SECTION

NOTE:
ALL COPPER SERVICES SHALL BE "BORED" UNDER ROADWAYS UNLESS OTHER METHODS ARE APPROVED BY THE ENGINEER IN WRITING.

WATER
SERVICE CONNECTION
N.T.S.



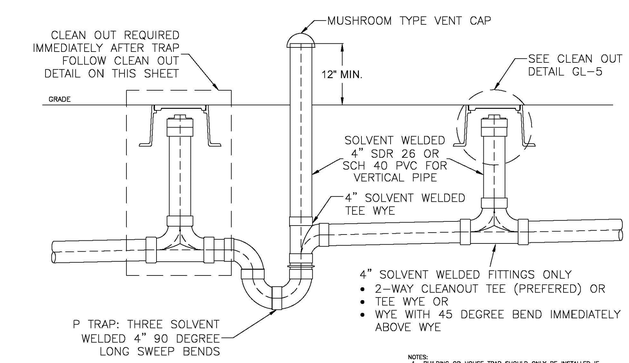
NOTES:
1. THE CUSTOMER OWNED PORTION OF THE LATERAL SHALL BE INSTALLED TO AQUA STANDARDS (PER AQUA PA WASTEWATER TARIFF SECTION D.8.b)
2. NEW CONNECTIONS TO THE SEWER SYSTEM SHALL BE MADE UNDER THE SUPERVISION, CONTROL, AND APPROVAL OF AQUA. ALL CONNECTIONS TO EXISTING SEWERS MAINS MUST BE MADE BY AQUA (PER AQUA PA WASTEWATER TARIFF SECTION D.8.c AND D.9)
3. EACH INDIVIDUAL CUSTOMER SHALL BE SERVED THROUGH A SEPARATE AQUA OWNED SERVICE LATERAL (PER AQUA PA WASTEWATER TARIFF SECTION D.7)
4. ONLY DOMESTIC WASTEWASTER SHALL BE DISCHARGED INTO THE SANITARY SEWER SYSTEM — SUMP PUMPS SHALL NOT BE CONNECTED TO THE SEWER SYSTEM (PER AQUA PA WASTEWATER TARIFF SECTION D.8.e)

NO.	DATE	REVISION	INTL.

AQUA PENNSYLVANIA WASTEWATER, INCORPORATED
762 W. LANCASTER AVENUE, BRYN MAWR, PA., 19010

GRAVITY LATERALS

DRAWN BY: | CHK'D BY: | DATE: | SCALE: NONE | GL-1



NOTES:
1. BUILDING OR HOUSE TRAP SHOULD ONLY BE INSTALLED IF REQUIRED. REFER TO LOCAL BUILDING CODE AND/OR CHECK INTERNAL PLUMBING TO DETERMINE IF REQUIRED. THEY ARE TYPICALLY NOT REQUIRED ON NEW CONSTRUCTION.

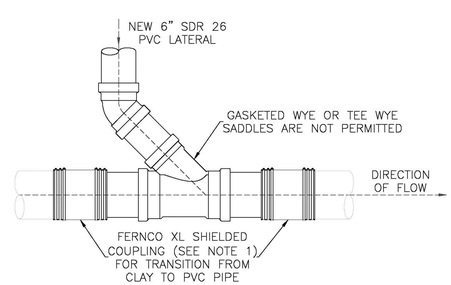
NO.	DATE	REVISION	INTL.

AQUA PENNSYLVANIA WASTEWATER, INCORPORATED
762 W. LANCASTER AVENUE, BRYN MAWR, PA., 19010

CUSTOMER SERVICE LINE DETAILS

DRAWN BY: | CHK'D BY: | DATE: | SCALE: NONE | GL-4

LATERAL CONNECTION INTO EXISTING CLAY GRAVITY MAIN



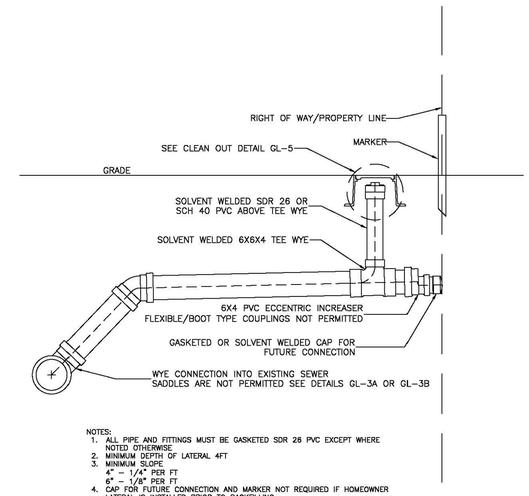
NOTES:
1. FERNCO XL COUPLING CLAY TO PVC MODEL NUMBERS
   8" 1002-882RC
   10" 1002-10102RC
   12" 1002-12122RC
2. NEW CONNECTIONS TO EXISTING SEWER MAIN MUST BE MADE BY AQUA OR AQUA'S CONTRACTOR
3. SADDLE CONNECTIONS TO SEWER MAIN ARE NOT PERMITTED
4. ALL NEW PIPE SHALL BE GASKETTED SDR 26 EXCEPT WHERE NOTED OTHERWISE

NO.	DATE	REVISION	INTL.

AQUA PENNSYLVANIA WASTEWATER, INC.
762 LANCASTER AVENUE, BRYN MAWR, PENNSYLVANIA, 19010

LATERAL CONNECTION INTO EXISTING VCP GRAVITY MAIN

Drawn By: SC | Ck'd By: MJB | Date: 04/27/22 | Scale: NONE | GL-3A



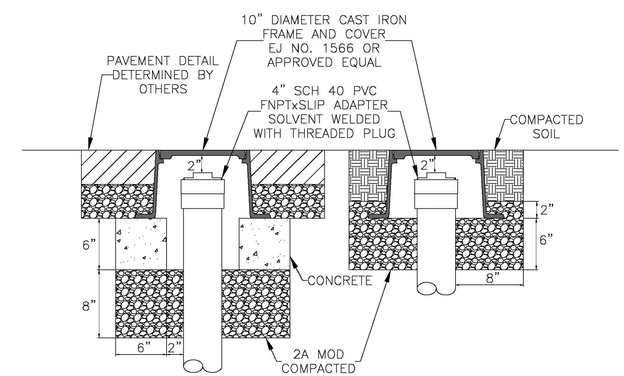
NOTES:
1. ALL PIPE AND FITTINGS MUST BE GASKETED SDR 26 PVC EXCEPT WHERE NOTED OTHERWISE
2. MINIMUM DEPTH OF LATERAL 4FT
3. MINIMUM SLOPE
   4" – 1/4" PER FT
   6" – 1/8" PER FT
4. CAP FOR FUTURE CONNECTION AND MARKER NOT REQUIRED IF HOMEOWNER LATERAL IS INSTALLED PRIOR TO BACKFILLING

NO.	DATE	REVISION	INTL.

AQUA PENNSYLVANIA WASTEWATER, INCORPORATED
762 W. LANCASTER AVENUE, BRYN MAWR, PA., 19010

TYPICAL CONNECTION

DRAWN BY: | CHK'D BY: | DATE: | SCALE: NONE | GL-2A



NO.	DATE	REVISION	INTL.

AQUA PENNSYLVANIA WASTEWATER, INCORPORATED
762 W. LANCASTER AVENUE, BRYN MAWR, PA., 19010

TYPICAL LATERAL CLEANOUT

DRAWN BY: | CHK'D BY: | DATE: | SCALE: NONE | GL-5

FIORAVANTI, INC.
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25398-E

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PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA,
19067, USA

SANITARY SEWER DETAILS AND PROFILES

GENERAL NOTES:

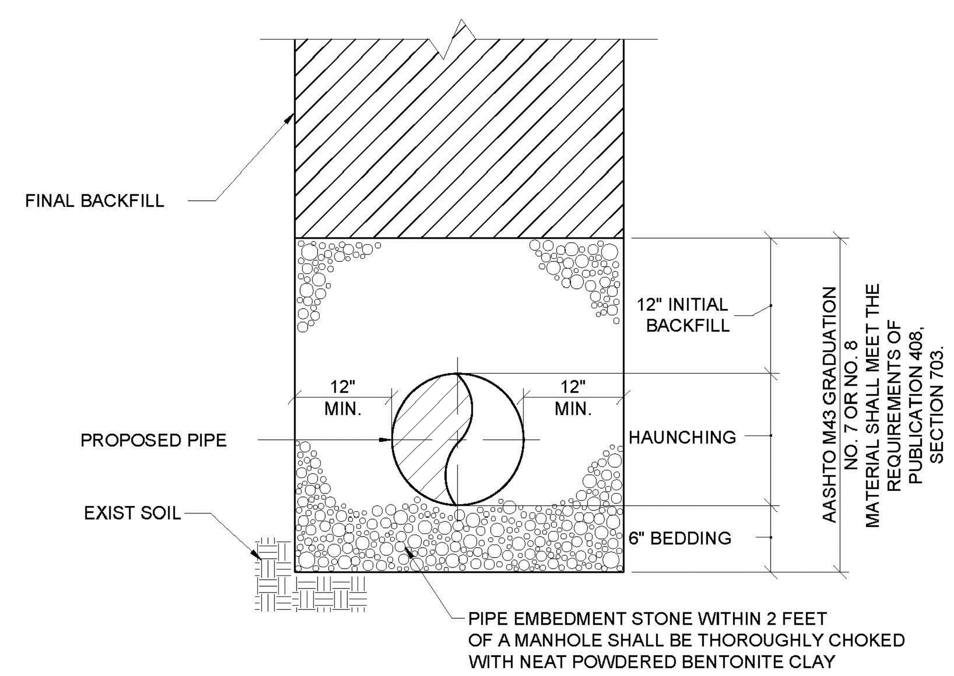
5. THE CONTRACTOR MUST NOTIFY AQUA THAT CONTRUCTION WILL BEGIN ON THE SANITARY SEWERS A MINIUMUM OF 48 HOURS IN ADVANCE.
5. ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO INSPECTION, TESTING, AND APPROVAL BY AQUA. THE CONTRACTOR IS RESPONSIBLE FOR TESTING ALL SANITARY SEWER CONSTRUCTION ACCORDING TO AQUA'S STANDARDS AND TESTING IS SUBJECT TO INSPECTION AND APPROVAL BY AQUA.
3. AQUA'S STANARDS AND REQUIREMENTS APPLY TO ALL LATERALS, SEWER MAINS, MANHOLES, AND OTHER SANITATARY SEWER STRUCTURES AND FACILITIES
5. REQUIREMENTS ARE SUBJECT CHANGE BY AQUA

GRAVITY MAIN NOTES:

1. PVC BELL AND SPIGOT SEWER PIPE / SDR 26 IF DEPTH OF COVER IS LESS THAN 18 FEET AT FINAL GRADE AND AT ALL TIMES DURING CONSTRUCTION.
2. CLASS 52 DUCTILE IRON PIPE WITH PROTECTO 401 COATING IF DEPTH OF COVER IS GREATER THAN OR EQUAL TO 18 FEET AT FINAL GRADE OR AT ANY POINT DURING CONTRUCTION.
3. SEWER MAINS MUST HAVE A MINIMUM OF 4 FT OF COVER AT FINAL GRADE.
3. GRAVITY SEWER MAINS MUST BE 8" NOMINAL SIZE OR LARGER.
4. MINIMUM SLOPE FOR GRAVITY MAINS:
   8" - 0.0050 FT/FT
   10" - 0.0028 FT/FT
   12" - 0.0022 FT/FT
5. SEWER MAINS SHOULD HAVE A 10 FT HORIZONTAL AND 18 INCH VERTICAL SEPARATION FROM WATER MAINS.
6. AT UTILITY CROSSINGS, SEWER MAINS SHOULD RUN UNDER OTHER UTILITIES WITH A MINIMUM SEPARTATION OF 18". IF AN 18" SEPARATION CANNOT BE ACHIEVED, THEN CONCRETE ENCASEMENTS ARE REQUIRED.
5. MANHOLES MUST BE LOCATED AT EVERY BEND OR CHANGE IN SLOPE.
6. MANHOLES SHOULD BE LOCATED A MAXIMUM OF 400 FT APART.
6. MINIMUM DIFFERENCE BETWEEN MANHOLE INVERTS IS 0.1 FT.
7. DROP MANHOLES ARE REQUIRES FOR 8" SEWER MAINS ENTERING 2 FT ABOVE INVERT OUT.

LOW PRESSURE:
1. HDPE OR PVC SDR 21
2. MINIMUM DIAMETER: 1 1/4 INCH

AQUA PENNSYLVANIA WASTEWATER, INC. AQUA 762 WEST LANCASTER AVE, BRYN MAWR, PA. 19010				SEWER MAIN NOTES	
				DATE: 7/2/2020	DRAWING NO. S-3B
PREPARED BY MAH	CHECKED BY RH	APPROVED BY BAK	PROJECT NO. 4111.89	SCALE: NONE	



TYPICAL EXCAVATION, BACKFILL & PIPE EMBEDMENT DETAIL

SCALE: NONE

AQUA PENNSYLVANIA WASTEWATER, INC. AQUA 762 WEST LANCASTER AVE, BRYN MAWR, PA. 19010				TYPICAL EXCAVATION, BACKFILL & PIPE EMBEDMENT DETAIL	
				DATE: 12/19/19	DRAWING NO. S-4
PREPARED BY MAH	CHECKED BY RH	APPROVED BY BAK	PROJECT NO. 4111.89	SCALE: NONE	

1. THE LOWER MAKEFIELD TOWNSHIP DIRECTOR OF PUBLIC WORKS MUST BE NOTIFIED 48 HOURS PRIOR TO ANY STREET OR RIGHT-OF-WAY OPENING REPAIR TO PROVIDE SUFFICIENT TIME TO SCHEDULE CONSTRUCTION OBSERVATION.

2. NO OPENING MAY BE MADE FOR MORE THAN 200 LINEAR FEET AT ONE TIME, UNLESS AUTHORIZED BY LOWER MAKEFIELD TOWNSHIP DIRECTOR OF PUBLIC WORKS.

3. THE EDGES OF THE EXISTING PAVEMENT SHALL BE NEATLY AND CLEANLY CUT TO STRAIGHT LINES. THE EDGES OF PAVEMENT SHALL BE CUT BACK FROM THE EDGES OF THE TRENCH AT A MINIMUM DISTANCE OF ONE (1) FOOT ON EACH SIDE.

4. ALL BACKFILLING FOR STREET OPENINGS ARE UNDER THE JURISDICTION OF THE DIRECTOR OF PUBLIC WORKS AND THE SCHEDULING OF RESTORATION SHALL BE AT HIS/HER DISCRETION.

5. FOR ALL TOWNSHIP ROADWAYS: THE CONTRACTOR SHALL BACKFILL THE STREET OPENING TRENCH WITH PENNDOT 2A AGGREGATE THOROUGHLY COMPACTED, PER THE APPROPRIATE PAVEMENT CROSS SECTION DETAILS FOR TOWNSHIP ROADWAYS.

6. MILL & OVERLAY: WHERE A TRENCH IS CUT LONGITUDINALLY IN TRAVEL LANE(S) OF ROADWAY, FULL WIDTH OF SAID TRAVEL LANE SHALL RECEIVE MILL AND OVERLAY OF WEARING COURSE. IF TRENCH LIES WITHIN CENTER OF ROADWAY, MILL AND OVERLAY OF WEARING COURSE FULL WIDTH OF ROADWAY. MILL & OVERLAY SHALL EXTEND 15 FEET BEFORE AND AFTER TRENCH, ADDITIONALLY:
- ALL TRENCH RESTORATION FOR ANY ROADWAY WHICH HAS BEEN RESURFACED WITHIN YEARS 1 THROUGH 3 SHALL INCLUDE MILL AND OVERLAY FOR FULL WIDTH OF ROADWAY CURB TO CURB AND INTERSECTION TO INTERSECTION. (THIS RESTORATION METHOD IS ONLY APPLICABLE WHEN PERMIT IS APPROVED UNDER SPECIAL CIRCUMSTANCES).
- ALL TRENCH RESTORATION FOR ANY ROADWAY WHICH HAS BEEN RESURFACED WITHIN YEARS 4 & 5 SHALL INCLUDE MILL AND OVERLAY FOR FULL WIDTH OF ROADWAY CURB TO CURB AND 15 FEET ON BOTH SIDES OF EXCAVATION. ALL JOINTS SHALL BE SEALED USING INFRARED PAVEMENT RESTORATION AS DETAILED BELOW. (THIS RESTORATION METHOD IS ONLY APPLICABLE WHEN PERMIT IS APPROVED UNDER SPECIAL CIRCUMSTANCES).
- WHERE WIDTH OF ROADWAY IS LESS THAN 25 FEET, FULL WIDTH OF ROADWAY SHALL RECEIVE MILL AND OVERLAY.
- FOR ALL ROADWAY AND UTILITY OPENINGS LESS THAN 250 SQUARE FEET, THE JOINTS FORMED BETWEEN THE EXISTING PAVEMENT AND THE NEW PAVEMENT SHALL BE SEALED USING INFRARED PAVEMENT RESTORATION AS DETAILED BELOW.
  INFRARED JOINT SEALING
  - SWEEP THE AREA CLEAN OF ALL DEBRIS.
  - MARK THE AREA TO BE RESTORED A MINIMUM OF 6" BEYOND THE JOINTS FORMED BETWEEN THE EXISTING PAVEMENT AND THE NEW PAVEMENT OR ANY OTHER PAVEMENT DAMAGE.
  - LOWER THE INFRARED HEATER TO THE AREA TO BE RESTORED, EVENLY RAISING THE TEMPERATURE TO SOFTEN THE ASPHALT TO A DEPTH OF 2-3", WITHOUT BURNING THE PAVEMENT.
  - SCARIFY THE PAVEMENT USING AN ASPHALT RAKE TO A DEPTH OF 2".
  - APPLY ASPHALT REJUVENATOR (CYCLOGEN OR APPROVED EQUAL).
  - ADD NEW HOT MIX ASPHALT AS NEEDED TO LEVEL THE REPAIR, RAKING THE AREA SMOOTH AND LEVEL.
  - COMPACT, ROLLING THE EDGES OF THE PATCH FIRST, USING A ROLLER WITH A SIZE OF AT LEAST 2400 LB/IN2.

7. WHERE THERE IS MORE THAN ONE LATERAL TRENCH WITHIN 100 FEET OF ROADWAY BY SAME PERMITTEE WITHIN 5 YEARS, THE ROADWAY SHALL RECEIVE A TRAVEL LANE MILL AND OVERLAY OF WEARING COURSE WHICH SHALL EXTEND 15 FEET BEFORE AND AFTER OPENINGS.

8. EXISTING ROADWAYS ALONG THE FRONTAGE OF NON-PAVED RIGHT-OF-WAY WORKS AREAS SHALL RECEIVE MILL AND OVERLAY OF WEARING COURSE IF ANY OF THE FOLLOWING CONDITIONS ARE NOTED AT THE CONCLUSION OF CONSTRUCTION ACTIVITIES:
- ALLIGATOR, SURFACE CRACKING, OR OTHER DETERIORATION.
- DIPS, DEPRESSIONS OF OTHER IRREGULARITIES CAUSING PONDING.
- POTHOLES OR OTHER SURFACE BREAKS.
- EXCESSIVE SURFACE SCARRING CAUSED BY CONTRACTOR'S EQUIPMENT (EX. BULLDOZER TRACKS).

9. THE CONTRACTOR SHALL PROTECT ITS OPENINGS TO PROVIDE FOR SAFETY OF THE TRAVELING PUBLIC, INCLUDING MOTORISTS, BICYCLISTS, AND PEDESTRIANS.

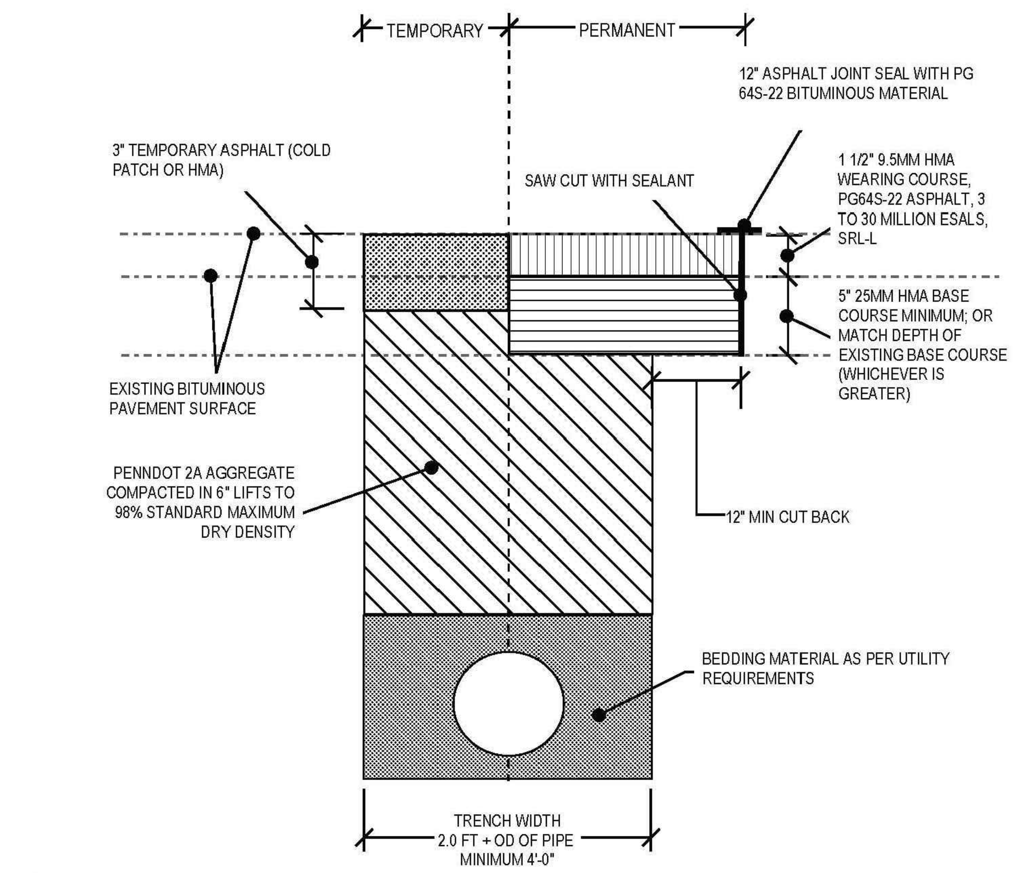
10. DISTURBED PORTIONS OF A PUBLIC SPACE, INCLUDING BUT NOT LIMITED TO SLOPES, APPURTENANCES, AND STRUCTURES SUCH AS GUIDERAIL, CURB, SIGNS, PAVEMENT MARKINGS, DRAINPIPES, DRIVEWAYS, AND VEGETATION, SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED BEFORE THE START OF WORK.

11. THE CONTRACTOR WHO PERFORMED THE STREET OPENING SHALL BE RESPONSIBLE FOR ITS MAINTENANCE FOR A PERIOD OF 18 MONTHS FROM THE LOWER MAKEFIELD TOWNSHIP DIRECTOR OF PUBLIC WORKS' APPROVAL AND ACCEPTANCE OF THE REPAIR.

12. INCLUDED DETAILS ARE NOT TO SCALE AND ARE NOT ALL INCLUSIVE OF EVERY SITUATION LISTED ABOVE.

ROADWAY OPENING RESTORATION STANDARDS

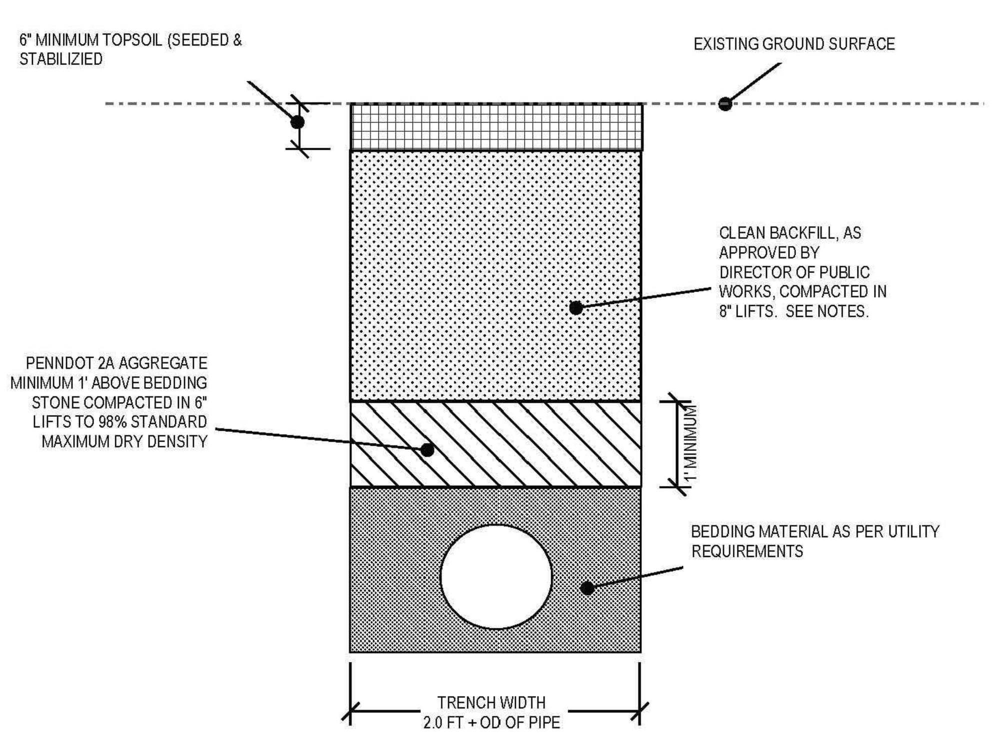
LOWER MAKEFIELD TOWNSHIP *DEPARTMENT of PUBLIC WORKS* 1100 EDGEWOOD ROAD, YARDLEY, PA 19067 - 267-274-1130	RIGHT-OF-WAY & ROADWAY OCCUPANCY DESIGN STANDARDS DATE: OCT 2022	DETAIL GC-01



NOTES:
1. ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE PENNDOT PUBLICATION 408 AND TOWNSHIP RESTORATION STANDARDS.
2. ADDITIONAL RESTORATION SUCH AS INFRADED JOINT SEALING MAY BE REQUIRED IN ACCORDANCE WITH PERMIT CONDITIONS.
3. TEMPORARY ASPHALT SHALL BE MAINTAINED BY CONTRACTOR UNTIL PERMANENT PAVING RESTORATION IS COMPLETED. TEMPORARY ASPHALT SHALL BE CHECKED AT LEAST ONCE A WEEK AND IMMEDIATELY FOLLOWING MAJOR RAIN, SNOW OR RUNOFF EVENTS. SETTLE, RUTS, DEPRESSIONS, ETC. IN TEMPORARY ASHPALT SHALL BE CORRECTED BY FILLING THE AREAS WITH ADDITIONAL COLD PATCH AND MECHANICALLY COMPACTING.
4. MINIMUM WIDTH OF ALL RESTORATIONS SHALL BE FOUR (4) FEET.
5. TRENCH SHALL BE TEMPORARILY RESTORED AND ALLOWED TO SETTLE 60 DAYS PRIOR TO PERMANENT RESTORATION. PERMANENT RESTORATION OF TRENCHES SHALL BE COMPLETED ONLY AFTER APPROVAL BY THE DIRECTOR OF PUBLIC WORKS. THIS REQUIREMENT MAY BE MODIFIED AS DEEMED NECESSARY.
6. NO EXCAVATION SHALL EXCEED 200 LINEAR FEET AT ONE TIME, UNLESS AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS.

RESTORATION DETAIL FOR TOWNSHIP PAVED ROADWAYS

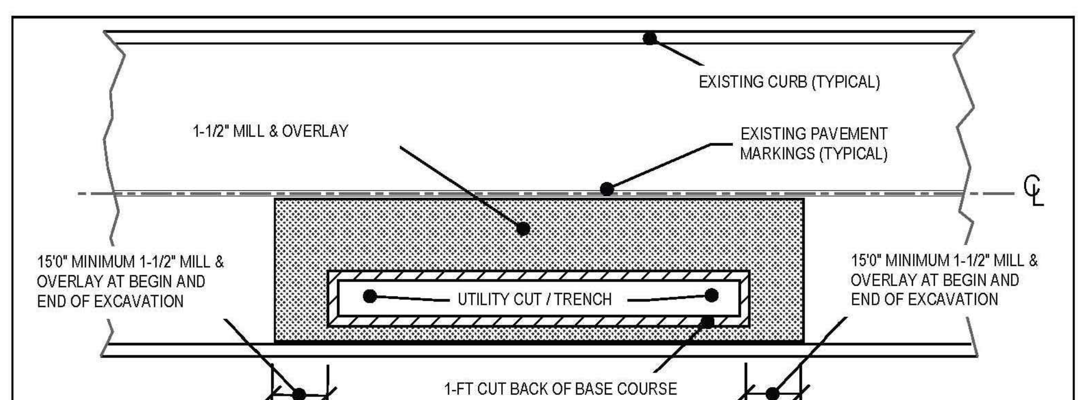
LOWER MAKEFIELD TOWNSHIP *DEPARTMENT of PUBLIC WORKS* 1100 EDGEWOOD ROAD, YARDLEY, PA 19067 - 267-274-1130	RIGHT-OF-WAY & ROADWAY OCCUPANCY DESIGN STANDARDS DATE: OCT 2022	DETAIL 10



NOTES:
1. IF EXCAVATION IS WITHIN THREE (3) FEET OF A PAVED SURFACE, ENTIRE EXCAVATION MUST BE BACKFILLED WITH PENNDOT 2A AGGREGATE AND COMPACTED IN 6" LIFTS TO 98% STANDAND MAXIMUM DRY DENSITY.
2. TOPSOIL SHALL BE SEEDED AND STABILIZED IN ACCORDANCE WITH PENNDOT PUB 408.
3. EXCAVATED MATERIAL CAN BE UTILIZED AS BACKFILL.

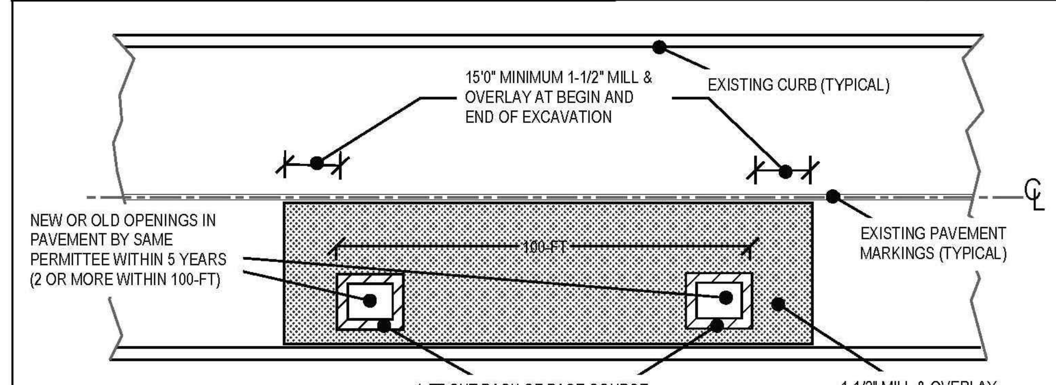
RESTORATION DETAIL FOR NON-PAVED RIGHT-OF-WAY AREAS

LOWER MAKEFIELD TOWNSHIP *DEPARTMENT of PUBLIC WORKS* 1100 EDGEWOOD ROAD, YARDLEY, PA 19067 - 267-274-1130	RIGHT-OF-WAY & ROADWAY OCCUPANCY DESIGN STANDARDS DATE: OCT 2022	DETAIL 11



NOTES:
1. REGARDLESS OF PAVEMENT AGE, MILL & OVERLAY 1-1/2" 15 FEET ON EITHER SIDE OF THE EXCAVATION.
2. ALL PAVEMENT MARKINGS THAT ARE COVERED OR REMOVED SHALL BE RETURNED TO THEIR FORMER LOCATION.
3. IF TRENCH LIES WITHIN CENTER LINE OF ROADWAY, MILL & OVERLAY 1-1/2" FULL WIDTH CURB TO CURB OF ROADWAY.
4. ADDITIONAL REQUIREMENTS MAY BE REQUIRED DEPENDING UPON AGE OF PAVEMENT.
5. ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE PENNDOT PUBLICATION 408 AND TOWNSHIP RESTORATION STANDARDS.

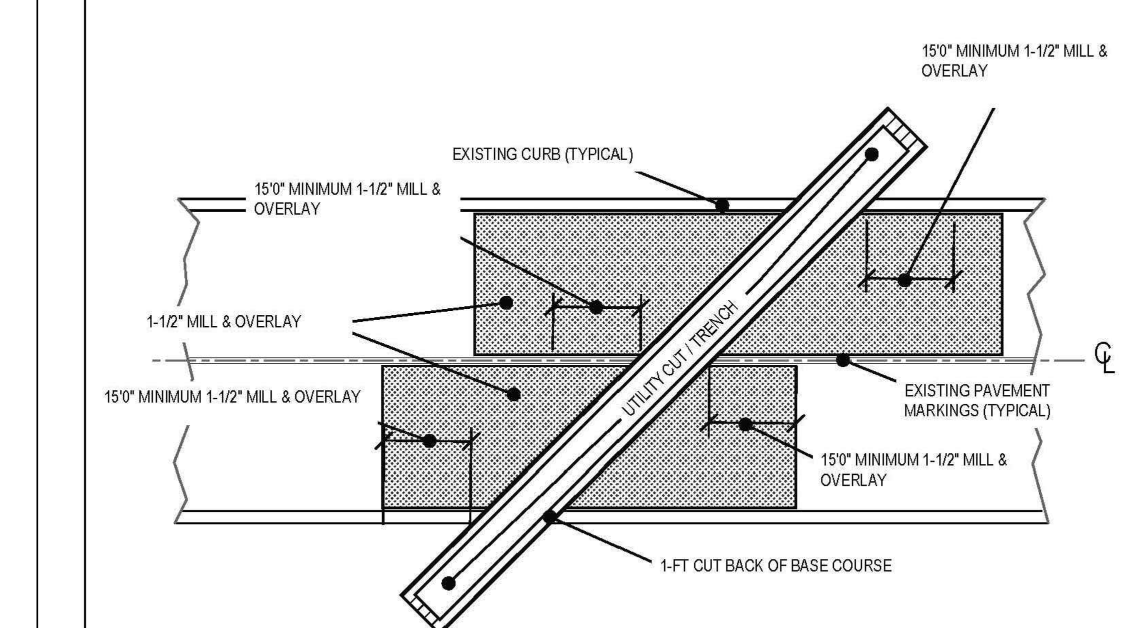
LONGITUDINAL OPENINGS



NOTES:
1. IF OPENINGS ARE BY SAME PERMITEE WITHIN 5 YEARS AND WITHIN 100-FT OF EACH OTHER REGARDLESS OF PAVEMENT AGE, MILL & OVERLAY 1-1/2" 15 FEET ON EITHER SIDE OF THE EXCAVATION.
2. ALL PAVEMENT MARKINGS THAT ARE COVERED OR REMOVED SHALL BE RETURNED TO THEIR FORMER LOCATION.
3. ADDITIONAL REQUIREMENTS MAY BE REQUIRED DEPENDING UPON AGE OF PAVEMENT, ROADWAY AGE BETWEEN 1-3 YEARS, AND BETWEEN 4-5 YEARS.
4. ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE PENNDOT PUBLICATION 408 AND TOWNSHIP RESTORATION STANDARDS.

MULTIPLE TRANSVERSE OPENINGS
(SPOT REPAIRS OR SERVICE CONNECTIONS)

LOWER MAKEFIELD TOWNSHIP *DEPARTMENT of PUBLIC WORKS* 1100 EDGEWOOD ROAD, YARDLEY, PA 19067 - 267-274-1130	RIGHT-OF-WAY & ROADWAY OCCUPANCY DESIGN STANDARDS DATE: OCT 2022	DETAIL 12



NOTES:
1. REGARDLESS OF PAVEMENT AGE, MILL & OVERLAY 1-1/2" 15 FEET ON EITHER SIDE OF THE EXCAVATION.
2. ALL PAVEMENT MARKINGS THAT ARE COVERED OR REMOVED SHALL BE RETURNED TO THEIR FORMER LOCATION.
3. IF TRENCH LIES WITHIN CENTER LINE OF ROADWAY, MILL & OVERLAY 1-1/2" FULL WIDTH CURB TO CURB OF ROADWAY.
4. ADDITIONAL REQUIREMENTS MAY BE REQUIRED DEPENDING UPON AGE OF PAVEMENT.
5. ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE PENNDOT PUBLICATION 408 AND TOWNSHIP RESTORATION STANDARDS.

ANGLED TRENCH CROSSINGS

LOWER MAKEFIELD TOWNSHIP *DEPARTMENT of PUBLIC WORKS* 1100 EDGEWOOD ROAD, YARDLEY, PA 19067 - 267-274-1130	RIGHT-OF-WAY & ROADWAY OCCUPANCY DESIGN STANDARDS DATE: OCT 2022	DETAIL 13

FIORAVANTI, INC.
CIVIL ENGINEERS & LAND SURVEYORS
618 STREET ROAD * SOUTHAMPTON, PA 18966
(215) 322 * 2143

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — VINCENT W. FIORAVANTI — 36598-E

REVISIONS

NO.	DESCRIPTION	DATE
1	EE, INC. REVIEW DATED 9-19-25	9-30-25
2	HRG REVIEW DATED 11-20-25	1-12-26
3	REVISED LOTS	6-17-26
4	PENNONI REVIEW DATED 1-23-26	7-14-26

DATE: 6/4/2025	
SCALE: N/A	
JOB # 2292	FB # ---
DRAWN: GMF	CHECKED: VWF

1 SUTPHIN ROAD SUBDIVISION
LOWER MAKEFIELD TOWNSHIP
PREPARED FOR:
GIAGNACOVA, ALBERT & LUCILLE
YARDLEY, PA, 19067, USA

SITE DETAILS

SHEET 9 OF 9