RECORD OWNER/SUBDIVIDER:
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SITE DATA

280 BUCHERT RD
GILBERTSVILLE, PA 19525
TAX PARCEL 32-00-06983-00-5
TAX MAP ID 32045 003

LOT AREAS

PARCEL	GROSS	NET*
EXISTING	346,787	346,787
LOT 1	43,959	43,959
LOT 2	97,228	81,039
LOT 3	111,232	90,765
LOT 4	44,908	44,908
LOT 5	49,454	49,454
PR EASEMENT	7,033	7,033

*NET LOT AREA EXCLUDES THE UTILITY EASEMENT AND THE FLAG LOT ACCESS STRIP.

ZONING R-1A RESIDENTIAL DISTRICT

REQUIREMENT	REQUIRED	PROPOSED				
		LOT 1	LOT 2	LOT 3	LOT 4	LOT 5
LOT AREA	43,560 SF	43,959 SF	81,039 SF	90,765 SF	44,908 SF	49,454 SF
LOT WIDTH	150'	150.02'	200.00'	285.74'	150.00'	455.18'
BUILDING SETBACK	50'	92.11'	148.64'	59.57'	90.96'	53.28'
REAR YARD	25'	161.16'	339.52'	403.93'	169.33'	70.32'
SIDE YARD	20'	39.77'	52.50'	37.21'	30.98'	99.43'
BUILDING HEIGHT	35'	<35'	<35'	<35'	<35'	<35'
BUILDING COVERAGE	10%	4.8%	2.3%	2.2%	4.5%	4.1%

SURVEY DATA

1. THE BOUNDARY INFORMATION SHOWN WAS TAKEN FROM A FIELD SURVEY PERFORMED BY MICHAEL C. DIPAOLO, PLS DATED AUGUST 2020. BEING LOT 2 OF THE KELLY MINOR SUBDIVISION
2. TOPOGRAPHY INFORMATION SHOWN WAS TAKEN FROM LIDAR AND A FIELD SURVEY PERFORMED BY MICHAEL B KELLY AUGUST 2020, AND JUNE 2021.
3. ELEVATIONS ARE BASED UPON STATE PLANE COORDINATES AND LIDAR.
4. BEARING BASE IS BASED UPON DEEDS OF RECORD.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN A APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. PENNSYLVANIA ONE CALL SYSTEM ACT 38 SERIAL NUMBER FOR THIS PROJECT IS 20211613280.
7. EXISTING RIGHT-OF-WAY FOR BUCHERT ROAD WAS TAKEN FROM INFORMATION PROVIDED BY PLANS OF RECORD.
8. REFERENCE PLANS: "TWIN PONDS" Plan Book A53, Page 74.
   "MANGO" Plan Book A42, Page 69
   "MANGO, Sect. II" Plan Book A45, Page 64
   "MEGA" Plan Book A28, Page 79
   "KELLY" Plan Book A54, Page 235
   PLANS TITLED "KELLY MINOR SUBDIVISION" PREPARED BY BOYER ENGINEERING, DATED 2020-09-04.
9. SITE FALLS IN ZONE (X) BASED ON FEMA MAP NUMBER 42091C0067G REVISED DATE: MARCH 2, 2016.
10. NO STEEP SLOPES EXIST ON SITE.

GENERAL NOTES

1. LOTS 1-5 TO BE SERVED BY PUBLIC SEWER AND WATER.
2. SHEET 1 OF 12 IS TO BE RECORDED.
3. ON APPROVAL OF THIS PLAN BY DOUGLASS TOWNSHIP, AND RECORDING OF THE PLAN WITH THE MONTGOMERY COUNTY RECORDER OF DEEDS, THE DEVELOPER SHALL PROVIDE A CERTIFIED COPY OF THE PLAN AND A COPY OF THE PLAN IN ELECTRONIC FORMAT TO DOUGLASS TOWNSHIP.
4. INTENDED USE: FIVE SINGLE FAMILY DWELLINGS.
5. THERE ARE NO WETLANDS OR HYDRIC SOILS LOCATED ON THIS PARCEL.
6. PROVIDE 1" WATER SERVICE TO LOTS 2 AND 3. LOTS 1, 4, AND 5 MAY BE ¾".
7. ALL PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND.
8. NO ADDITIONAL DEVELOPMENT RESTRICTIONS REGARDING THE UTILITIES ARE REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
9. BUYER ACKNOWLEDGES THAT THERE WILL BE AN EASEMENT ESTABLISHED GRANTING HUGH AND JUDITH KELLY AND ALL FUTURE OWNERS, HEIRS, AND ASSIGNS TO UTILIZE THE PORTION OF THE SUBJECT PROPERTY THAT IS ON THE NORTH AND EAST SIDE OF BUCHERT ROAD, THIS AREA CAN BE UTILIZED BY GRANTEES AS FUTURE DRIVEWAY OR ROAD ACCESS OR FOR ANY OTHER PURPOSE GRANTEE ELECTS.
10. EXISTING VEGETATION TO REMAIN SHALL BE PROTECTED BY ORANGE CONSTRUCTION FENCE.
11. REQUIRED PLANT MATERIAL SHALL BE MAINTAINED FOR THE LIFE OF THE PROJECT TO ACHIEVE THE REQUIRED VISUAL EFFECT OF THE BUFFER OR SCREEN. IT SHALL BE THE ULTIMATE RESPONSIBILITY OF THE SUCCESSIVE PROPERTY OWNERS TO INSURE THAT THE REQUIRED PLANTINGS ARE PROPERLY MAINTAINED, DEAD OR DISEASED PLANT MATERIAL SHALL BE REMOVED OR TREATED PROMPTLY BY THE PROPERTY OWNER AND REPLACED AT THE NEXT PLANTING SEASON.
12. ALL CLEAR SIGHT TRIANGLES ARE TO REMAIN CLEAR AND ARE THE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN PLANTINGS WITHIN THE TRIANGLES.
13. ANY TREE OR SHRUB THAT DIES WITHIN 18 MONTHS OF PLANTING SHALL BE REPLACED BY THE DEVELOPER. ANY TREE OR SHRUB THAT WITHIN 18 MONTHS OF PLANTING OR REPLANTING IS DEEMED, IN THE OPINION OF THE MUNICIPALITY, NOT TO HAVE SURVIVED OR NOT TO HAVE GROWN IN A MANNER CHARACTERISTIC OF ITS TYPE, SHALL BE REPLACED. SUBSTITUTIONS FOR CERTAIN SPECIES OF PLANTS MAY ONLY BE MADE ONLY WHEN APPROVED BY THE MUNICIPALITY.
14. INSPECTIONS, OPERATION, AND MAINTENANCE OF THE PROPOSED STORMWATER FACILITIES ARE THE RESPONSIBILITY OF THE PROPERTY OWNER. NO ALTERATIONS OR DEVIATIONS OF THESE FACILITIES ARE PERMITTED WITHOUT PRIOR TOWNSHIP WRITTEN APPROVAL.
15. THE TOWNSHIP AND THEIR REPRESENTATIVES SHALL BE GRANTED A "BLANKET EASEMENT" TO ACCESS STORMWATER FACILITIES FOR INSPECTION PURPOSES.
16. EXISTING TREES TO REMAIN SHALL BE USED TO COMPLY WITH THE ADDITIONAL PLANTINGS REQUIREMENTS OF SECTION 420-6.B.
17. THE PROPOSED SANITARY MAIN WILL BE DEDICATED TO BERKS-MONTGOMERY MUNICIPAL AUTHORITY. THE PROPOSED SEWER LATERALS, PUMPS, AND SERVICES SHALL BE OWNED AND MAINTAINED BY THE INDIVIDUAL LOT OWNERS.
18. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RULES, REGULATIONS, AND SPECIFICATIONS OF THE BERKS-MONTGOMERY MUNICIPAL AUTHORITY AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
19. ALL PROPOSED GRINDER PUMP STATIONS SHALL BE OWNED AND MAINTAINED BY THE INDIVIDUAL LOT OWNERS.
20. WHEREVER SANITARY SEWER LINES ARE PROPOSED OUTSIDE OF STREETS/MACADAM AREA, THE MANHOLE TOPS SHALL EXTEND A MINIMUM OF 18" ABOVE FINISHED GRADE AND/OR WATERTIGHT MANHOLE FRAMES AND COVERS SHALL BE INSTALLED.
21. THE FIRE HYDRANT SHALL BE FITTED WITH A 5" STORTZ CONNECTION ADAPTER ON THE STEAMER FITTING.
22. IF ANY HOME IS PLANNED WITH AN AUTOMATIC FIRE ALARM OR BURGLAR ALARM, A KNOX BOX SHALL BE INSTALLED PRIOR TO A USE AND OCCUPANCY PERMIT BEING USED.
23. WHENEVER THERE IS LESS THAN 18" OF VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER LINES, THE SANITARY SEWER LINE SHALL BE CONSTRUCTED OF C-900 PVC PIPE.

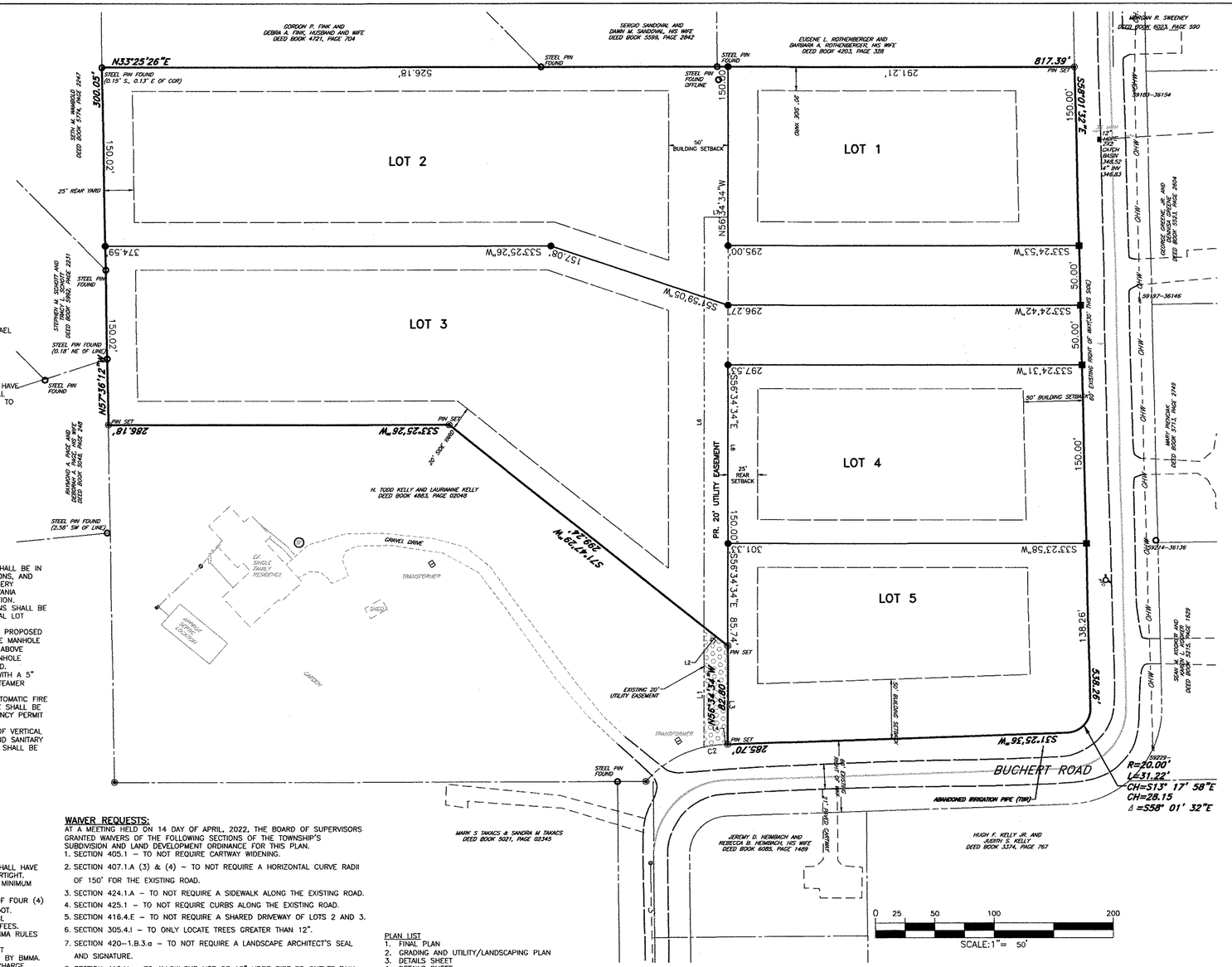
SANITARY NOTES

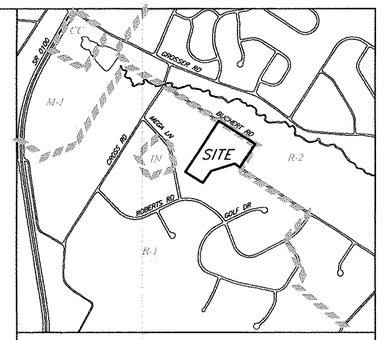
1. ALL SANITARY SEWER MANHOLES COVERS SHALL HAVE INSERTS EXCEPT WHERE COVERS ARE WATERTIGHT.
2. ALL SANITARY SEWER LINES SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET.
3. LATERALS SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET AND A MINIMUM SLOPE OF ¼" PER FOOT.
4. DEVELOPER IS RESPONSIBLE TO SECURE ALL NECESSARY PERMITS AND PAY APPLICABLE FEES.
5. ALL WORK TO BE IN ACCORDANCE WITH BMMA RULES AND REGULATIONS.
6. DEVELOPER SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND CONDITIONS SET FORTH BY BMMA.
7. BUILDING SEWERS AND GRINDER PUMP DISCHARGE SHALL BE TESTED IN ACCORDANCE WITH UCC AND PLUMBING CODE REQUIREMENTS.
8. A SEWAGE SERVICE/IMPROVEMENTS AGREEMENT BETWEEN THE DEVELOPER AND BMMA WILL NEED TO BE EXECUTED AND IN PLACE PRIOR TO CONSTRUCTION.
9. EASEMENT AGREEMENTS WILL ALSO NEE TO BE EXECUTED FOR SEWER LINES LOCATED WITHIN EXISTING AND PROPOSED EASEMENTS.

APPROVED AS NOTED
BMMA BOARD OF STANDARDS

GEORGE M. MOSER, AUTHORITY CHAIRMAN

DATE: _____





LOCATION MAP
SCALE: 1"=800'

LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. RIGHT-OF-WAY
- SETBACKS
- EX. SANITARY — S — S —
- EX. MONUMENTATION
- EX. UTILITY POLE & GUY WIRE
- EX. OVERHEAD WIRES — OHW —
- EX. FIRE HYDRANT (FHD)
- EX. SANITARY MANHOLE (S)
- EX. TREELINE
- EX. SOILS (GcA, PeB)
- PR. EDGE OF PAVING
- PR. BUILDING
- PR. WATER SERVICE — W — W — W — W —
- PR. SEWER LATERAL — L — L — L — L —
- PR. LOW PRESSURE SEWER — LPS —
- PR. SANITARY SEWER — S — S —
- PR. SEWER MANHOLE (S)
- PR. SEWER CLEANOUT
- PR. SEWER SHUTOFF
- PR. WATER VALVE
- PR. GRINDER PUMP (P)
- PR. PROPERTY CORNER (STEEL PIN)
- PR. PROPERTY CORNER (CONCRETE MON.)

WAIVER REQUESTS:
AT A MEETING HELD ON 14 DAY OF APRIL, 2022, THE BOARD OF SUPERVISORS GRANTED WAIVERS OF THE FOLLOWING SECTIONS OF THE TOWNSHIP'S SUBDIVISION AND LAND DEVELOPMENT ORDINANCE FOR THIS PLAN.
1. SECTION 405.1 – TO NOT REQUIRE CARTWAY WIDENING:
2. SECTION 407.1.A (3) & (4) – TO NOT REQUIRE A HORIZONTAL CURVE RADII OF 150' FOR THE EXISTING ROAD.
3. SECTION 424.1.A – TO NOT REQUIRE A SIDEWALK ALONG THE EXISTING ROAD.
4. SECTION 425.1 – TO NOT REQUIRE CURBS ALONG THE EXISTING ROAD.
5. SECTION 416.4.E – TO NOT REQUIRE A SHARED DRIVEWAY OF LOTS 2 AND 3.
6. SECTION 305.4.I – TO ONLY LOCATE TREES GREATER THAN 12".
7. SECTION 420-1.B.3.a – TO NOT REQUIRE A LANDSCAPE ARCHITECT'S SEAL AND SIGNATURE.
8. SECTION 410.M – TO ALLOW THE USE OF 12" HDPE PIPE TO OUTLET RAIN GARDENS.
9. SECTION 410.B – TO NOT REQUIRE A 2 FOOT EMERGENCY SPILLWAY.
10. SECTION 410.I.3 – TO ALLOW SIDE SLOPES OF 3:1 ON THE RAIN GARDENS.
11. SECTION 407.B – TO ALLOW AN ORIFICE LESS THAN 3" IN DIAMETER.

AT A MEETING HELD ON ___ DAY OF _____, 2023, THE BOARD OF SUPERVISORS GRANTED WAIVERS OF THE FOLLOWING SECTIONS OF THE TOWNSHIP'S ACT 167 ORDINANCE FOR THIS PLAN.
1. SECTION 405.A.1.a – TO NOT REQUIRE A TWO-FOOT SEPARATION OF THE LIMITING ZONE FOR RAIN GARDENS 3 AND 4.
2. SECTION 407 – TO NOT REQUIRE THE USE OF THE SCS METHOD FOR STREAM BANK EROSION.
3. SECTION 408 – TO NOT REQUIRE 50% RATE REDUCTION FOR THE 100-YR STORM.

PLAN LIST
1. FINAL PLAN
2. GRADING AND UTILITY/LANDSCAPING PLAN
3. DETAILS SHEET
4. DETAILS SHEET
5. SEWER UTILITY PROFILE SHEET
6. WATER UTILITY PROFILE SHEET
7. EXISTING FEATURES/ENVIRONMENTAL RESOURCES PLAN
8. EXISTING FEATURES/AERIAL PLAN
9. EROSION AND SEDIMENTATION CONTROL PLAN
10. EROSION AND SEDIMENTATION CONTROL PLAN
11. EROSION AND SEDIMENTATION CONTROL DETAILS
12. EROSION AND SEDIMENTATION CONTROL DETAILS
13. EROSION AND SEDIMENTATION CONTROL NARRATIVE
14. EROSION AND SEDIMENTATION CONTROL NARRATIVE
15. POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
16. POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
17. POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
18. POST CONSTRUCTION STORMWATER MANAGEMENT NARRATIVE
19. POST CONSTRUCTION STORMWATER MANAGEMENT SEQUENCE
20. PREDEVELOPED DRAINAGE PLAN – RATE
21. POSTDEVELOPED DRAINAGE PLAN – RATE
22. PREDEVELOPED DRAINAGE PLAN – VOLUME
23. POSTDEVELOPED DRAINAGE PLAN – VOLUME

EXISTING

LINE EASEMENT TABLE

Line #	Length	Direction
L1	100.89	N56° 34' 34"W
L2	25.51	N71° 47' 29"E
L3	82.80	S56° 34' 34"E
L4	3.21	S31° 25' 36"W

EXISTING

CURVE EASEMENT TABLE

Curve #	Length	Radius	Delta
C2	16.95	92.00	10.56

PROPOSED

EASEMENT LINE TABLE

Line #	Length	Direction
L5	25.51	S71° 47' 29"W
L6	343.74	N56° 34' 34"W
L7	20.00	N33° 25' 26"E
L8	359.58	S56° 34' 34"E

CERTIFICATION OF THE COUNTY RECORDER OF DEEDS AND THE COUNTY PLANNING COMMISSION
RECORDED IN THE OFFICE OF RECORDER OF DEEDS FOR MONTGOMERY COUNTY, AT NORRISTOWN, PENNSYLVANIA,
THIS _____ DAY OF _____, 20____.

BY: _____
RECORDER OF DEEDS

MCPC NO. 20-0208-001
PROCESSED AND REVIEWED. REPORT PREPARED BY MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.

CERTIFIED THIS DATE _____

FOR THE DIRECTOR
MONTGOMERY COUNTY PLANNING COMMISSION

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CERTIFICATION OF OWNERSHIP
COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY
ON THIS, THE ___ DAY OF _____, 20____, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, RESIDING IN _____ PERSONALLY APPEARED _____ AGENT FOR R.B. ASHLEY CUSTOMS, LLC, WHO ACKNOWLEDGE THEMSELVES TO BE THE OWNERS OF THE LAND SHOWN HEREON. ALL NECESSARY APPROVALS OF THIS PLAN HAVE BEEN OBTAINED AND ARE ENDORSED THEREON AND THAT WE DESIRE THIS PLAN TO BE DULY RECORDED

_____
NOTARY PUBLIC
MY COMMISSION EXPIRES _____

WE DO HEREBY CERTIFY THAT WE ARE THE SOLE REGISTERED OWNERS OF THE LAND HEREIN SUBDIVIDED AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE OF THE SAME AND THAT WE DO HEREBY ADOPT THIS PLAN AND DESIRE THE SAME TO BE RECORDED. WE DO FURTHER SAVE THE TOWNSHIP HARMLESS AND INDEMNIFY THE TOWNSHIP DOUGLASS AGAINST ANY LIABILITY OR LOSS RESULTING FROM THE SUBDIVISION OR DEVELOPMENT OF THIS PLAN FOR WHATEVER REASON PRESENT OR FUTURE.

_____ _____
OWNER OWNER

SURVEYOR'S CERTIFICATION
I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON, AS WELL AS ALL OTHER DRAWINGS WHICH ARE PART OF THE PLAN SET, ARE TRUE AND CORRECT BEARING MY SEAL, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE DOUGLASS TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, AND WERE PREPARED BY ME OR UNDER MY DIRECTION FOR WHICH I ACCEPT FULL RESPONSIBILITY, AND REPRESENTS A FIELD SURVEY PERFORMED BY ME OR UNDER MY DIRECTION. THE EXISTING PERIMETER MONUMENTS SHOWN HERON HAVE BEEN LOCATED AS PART OF THE SURVEY AND ALL OTHER PROPOSED PERIMETER MONUMENTS SHALL BE SET.

_____
MICHAEL DIPAOLO, PLS

_____
DATE

TOWNSHIP SUPERVISOR'S CERTIFICATION
THIS PLAN HAS BEEN APPROVED BY THE DOUGLASS TOWNSHIP BOARD OF SUPERVISORS THIS _____ DAY OF _____, 20____

_____
CHAIRMAN

_____
ATTESTED: SECRETARY

TOWNSHIP PLANNING AGENCY CERTIFICATION
THIS PLAN HAS BEEN APPROVED BY THE DOUGLASS TOWNSHIP PLANNING AGENCY THIS _____ DAY OF _____, 20____

_____
CHAIRMAN

_____
ATTESTED: SECRETARY

TOWNSHIP ENGINEER'S CERTIFICATION
REVIEWED THIS _____ DAY OF 20____ BY THE TOWNSHIP ENGINEER FOR DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PA.

_____
ENGINEERS SIGNATURE

CLIENT
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT
SUBDIVISION AND LAND DEVELOPMENT
FINAL PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

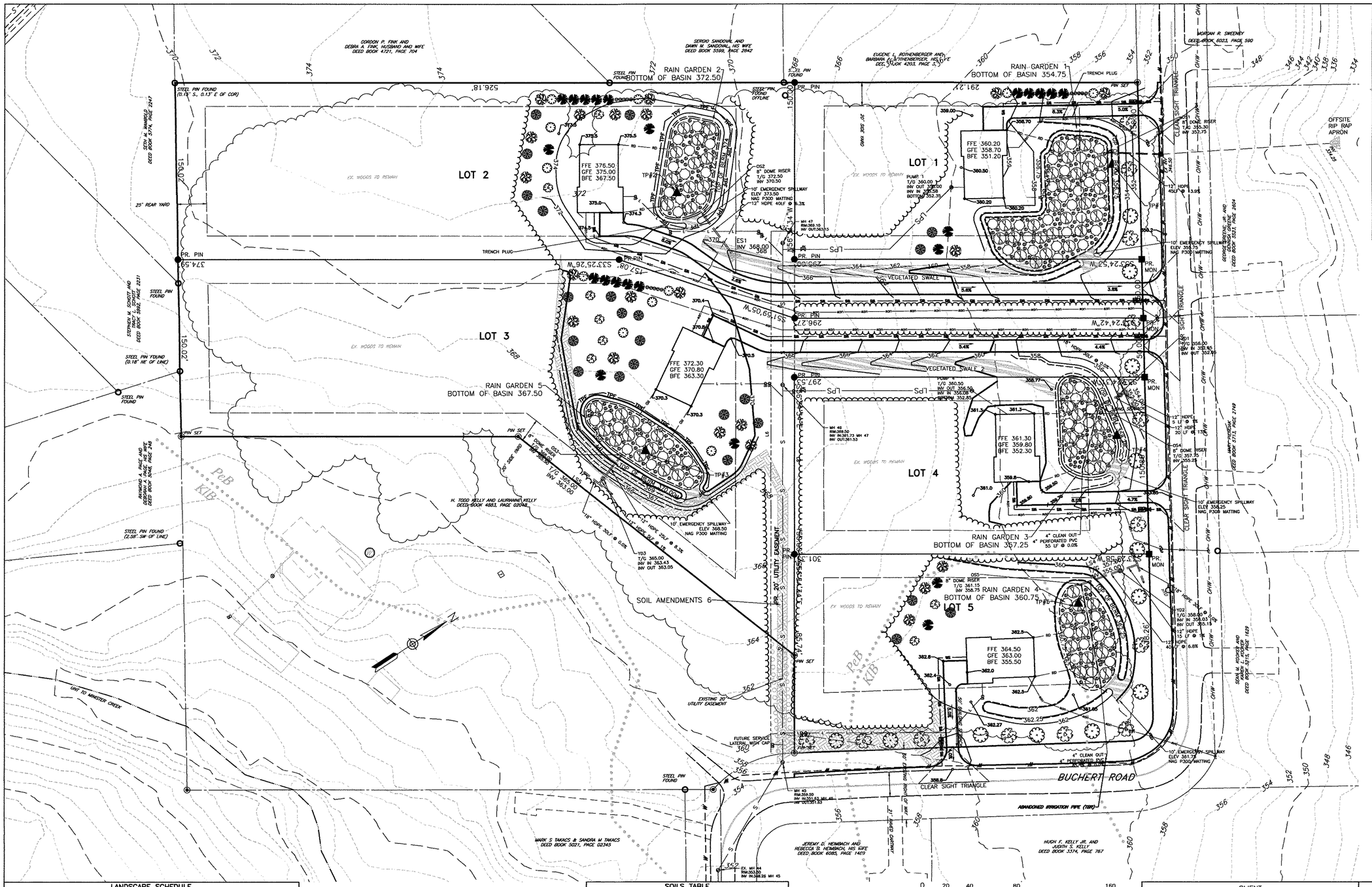
Boyer ENGINEERING LLC

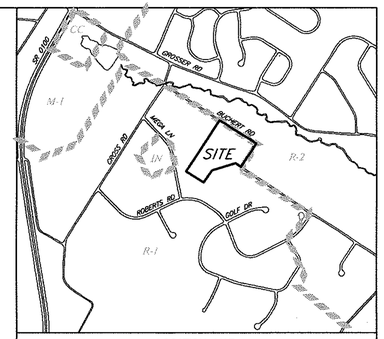
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2021-06-17	SCALE 1"=50'

PROJECT NO. 20-374A
DWG. NO. FP120374A
SHEET NO. 1 OF 23

P:\PROJECTS\20-374 Roberts - Kelly Lot\dwg\FP120374.dwg, 18-May-23 09:34:04





LOCATION MAP
SCALE: 1"=800'

LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. RIGHT-OF-WAY
- SETBACKS
- EX. SANITARY — S — S —
- EX. WATER LINE — W — W —
- EX. MONUMENTATION
- EX. UTILITY POLE & GUY WIRE
- EX. OVERHEAD WIRES — OHW —
- EX. SANITARY MANHOLE
- EX. FIRE HYDRANT (HYD)
- EX. TREELINE
- EX. SOILS (Gc, PeB)
- EX. CONTOURS 230 / 228
- PR. CONTOURS 230 / 228
- INFILTRATION TEST PIT (TP #)
- PR. EDGE OF PAVING
- PR. BUILDING
- PR. WATER SERVICE — WS — WS —
- PR. SEWER LATERAL — L — L —
- PR. FORCE MAIN — LPS —
- PR. SANITARY SEWER — S — S —
- PR. TREELINE
- PR. STORMWATER PIPE
- PR. SPILLWAY/CHANNEL LINING
- PR. RIP RAP
- PR. SEWER MANHOLE
- PR. SEWER CLEANOUT
- PR. SEWER SHUTOFF (CO)
- PR. WATER VALVE
- PR. TREES

TEST PITS		
TEST PIT #	LIMITING ZONE ELEVATION	LIMITING ZONE SEPARATION (FT)
1	351.25	2.00
2	368.83	2.17
3	364.00	2.00
4	354.17	1.08
5	357.75	1.00

LANDSCAPE SCHEDULE					
SYMBOL	NAME	QUANTITY	NATIVE	ROOT	SIZE
	RED MAPLE, ACER RUBRUM*	23	Y	B&B	MIN 2.5" CAL
	RED OAK, QUERCUS RUBRA*^	23	Y	B&B	MIN 2.5" CAL
	EASTERN WHITE PINE, PINUS STROBUS^	23	Y	B&B	MIN 2.5" CAL
	PIN OAK, QUERCUS PALUSTRIS^	23	Y	B&B	MIN 2.5" CAL
	RIVER BIRCH, BETULA NIGRA	23	Y	B&B	MIN 2.5" CAL
	INKBERRY HOLLY, ILEX GLABRA^	15	Y	HT	MIN 18"

*STREET TREES ^BUFFER TREES

RAIN GARDEN SCHEDULE							
SYMBOL	SPECIES	QUANTITY	SIZE	RG1	RG2	RG3	RG4	RG5
	EASTERN REDBUD, CERCIS CANADENSIS	68	MIN 2.5" CAL./B&B	24	11	10	11	12
	FLOWERING DOGWOOD, CORNUS FLORIDA	68	MIN 2.5" CAL./B&B	24	11	10	11	12
	INKBERRY HOLLY, ILEX GLABRA	319	MIN 18" HT	112	51	47	52	56

STREET TREE REQUIREMENTS:

1 TREE PER 35FT OF STREET FRONTAGE

855.18 FT STREET FRONTAGE

855.18 / 35 = 24.4 = 25 TREES REQUIRED

25 TREES PROVIDED

BUFFER TREE REQUIREMENTS:

BUFFER LENGTH = 300 FEET

BUFFER TREE REQUIREMENTS:

3 CANOPY TREES
6 UNDERSTORY TREES
2 EVERGREEN TREES

BUFFER TREES PROVIDED:

3 CANOPY TREES
6 UNDERSTORY TREES
2 EVERGREEN TREES

RAIN GARDEN PLANTING CALCULATIONS:
300 TREES PER ACRE OF BMP BOTTOM AREA
700 SHRUBS PER ACRE OF BMP BOTTOM AREA

TREE REPLACEMENT:

TREES REMOVED - 129 GREATER THAN 12"
TREES REMOVED - 11 GREATER THAN 18"

REPLACEMENT CALCULATIONS:

FOR TREES 18" OR GREATER
1 TREE FOR EACH 1" OF TREE REMOVED - 64 TREES

TOTAL TREES REQUIRED - 193
TOTAL TREES PROPOSED - 223

SOILS TABLE	
SYMBOL	NAME/DESC
PeB	PENN SILT LOAM, 3 TO 8 PERCENT SLOPES
KIB	KLINESVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENTS SLOPES

LANDSCAPING CERTIFICATION

I HEREBY CERTIFY THAT THE TREE SURVEY AND LANSCAPING PLAN SHOWN AND DESCRIBED HEREON HAVE BEEN COMPLETED PER REQUIREMENTS SET FORTH IN THE DOUGLASS TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

BRIAN D. BOYER, PE

DATE

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 3, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

GRADING AND UTILITY PLAN
LANDSCAPING PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

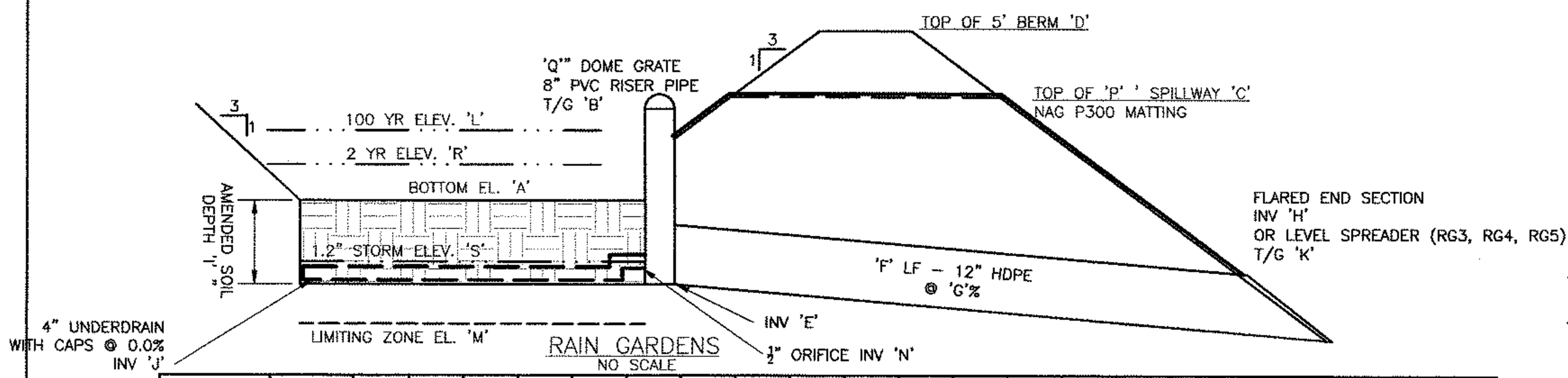
Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2020-09-04	SCALE 1"=40'

PROJECT NO. 20-374A
DWG. NO. GR120374A
SHEET NO. 2 OF 23

P:\PROJECTS\20-374A Robella - Kelly Lot\dwg\FP120374A.dwg, 18-May-23 09:34:07



RAIN GARDENS
NO SCALE

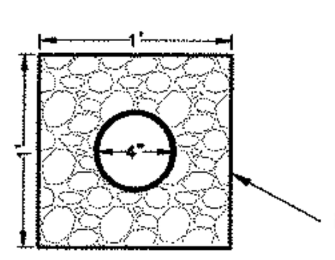
RAIN GARDEN	TEST PIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V
1	1	354.75	355.25	355.75	356.75	352.75	45	13.9	346.50	18	N/A	N/A	355.35	351.25	N/A	10	8	355.17	N/A	N/A	N/A	N/A
2	2	372.50	372.50	373.50	374.00	370.50	40	6.3	368.00	18	N/A	N/A	372.67	368.83	N/A	10	8	372.61	N/A	N/A	N/A	N/A
3	4	357.25	357.75	358.25	358.75	355.25	20	3.9	352.65	24	355.25	354.00	357.33	354.17	356.25	10	8	356.86	356.18	356.00	5	352.05
4	5	360.75	361.15	361.75	362.25	358.75	40	6.8	356.03	24	358.75	357.00	359.60	357.75	359.75	10	8	359.61	359.62	358.00	15	355.15
5	3	367.50	368.00	368.50	369.00	365.50	25	8.3	363.43	18	N/A	365.00	367.81	364.00	N/A	10	8	367.69	N/A	365.00	5	363.05

NOTES FOR RAIN GARDEN:

1. ALL BASIN EMBANKMENTS SHALL BE PLACED AT A MAXIMUM OF EIGHT (8") LIFTS TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM D-1557. PRIOR TO PROCEEDING TO THE NEXT LIFT, THE COMPACTION SHALL BE CHECKED BY THE TOWNSHIP ENGINEER. THE DEVELOPER'S CONTRACTOR SHALL OBTAIN THE SERVICES OF A QUALIFIED LABORATORY TECHNICIAN TO CONDUCT COMPACTION TESTS ON THE LEADING AND THE TRAILING EDGE OF THE THE BERM ALONG WITH THE TOP OF THE BERM. ALL TEST SHALL BE FURNISHED TO THE TOWNSHIP FOR REVIEW.
2. A CLAY CORE SHALL BE PROVIDED FOR THE BERM WITH A TOP ELEVATION AT THE PRINCIPAL SPILLWAY ELEVATION, MINIMUM TOP WIDTH OF 2' AND SIDE SLOPE OF 1:1.
3. A KEY TRENCH SHALL BE PROVIDED UNDER FILL EMBANKMENTS. THE KEY TRENCH SHALL BE A MINIMUM OF 8' WIDE, 2' BELOW EXISTING GRADE, WITH SIDE SLOPES OF 1:1.
4. ALL JOINTS SHALL BE WATERTIGHT.

MAINTENANCE:

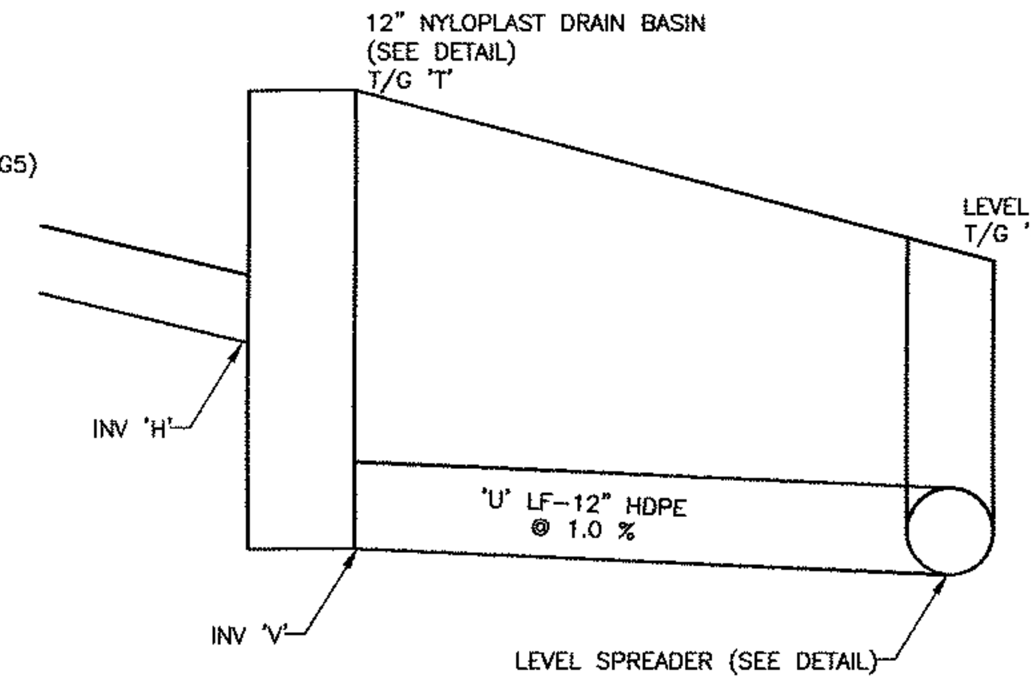
1. THE OVERLYING VEGETATION OF SUBSURFACE INFILTRATION FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS RE-VEGETATED AS SOON AS POSSIBLE.
2. VEHICULAR ACCESS ON SUBSURFACE INFILTRATION AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.

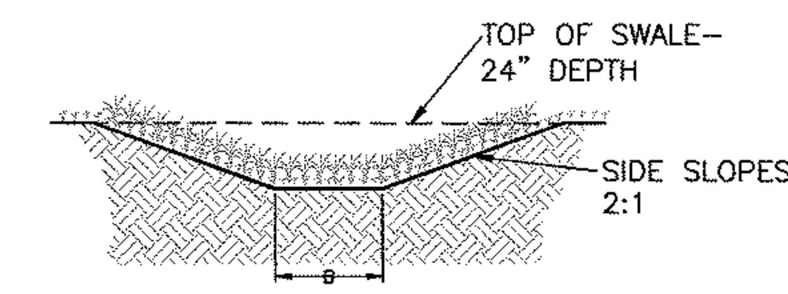


UNDERDRAIN DETAIL
NO SCALE

ORIFICE DETAIL
NO SCALE

LEVEL SPREADER SPECIFIC OUTLET

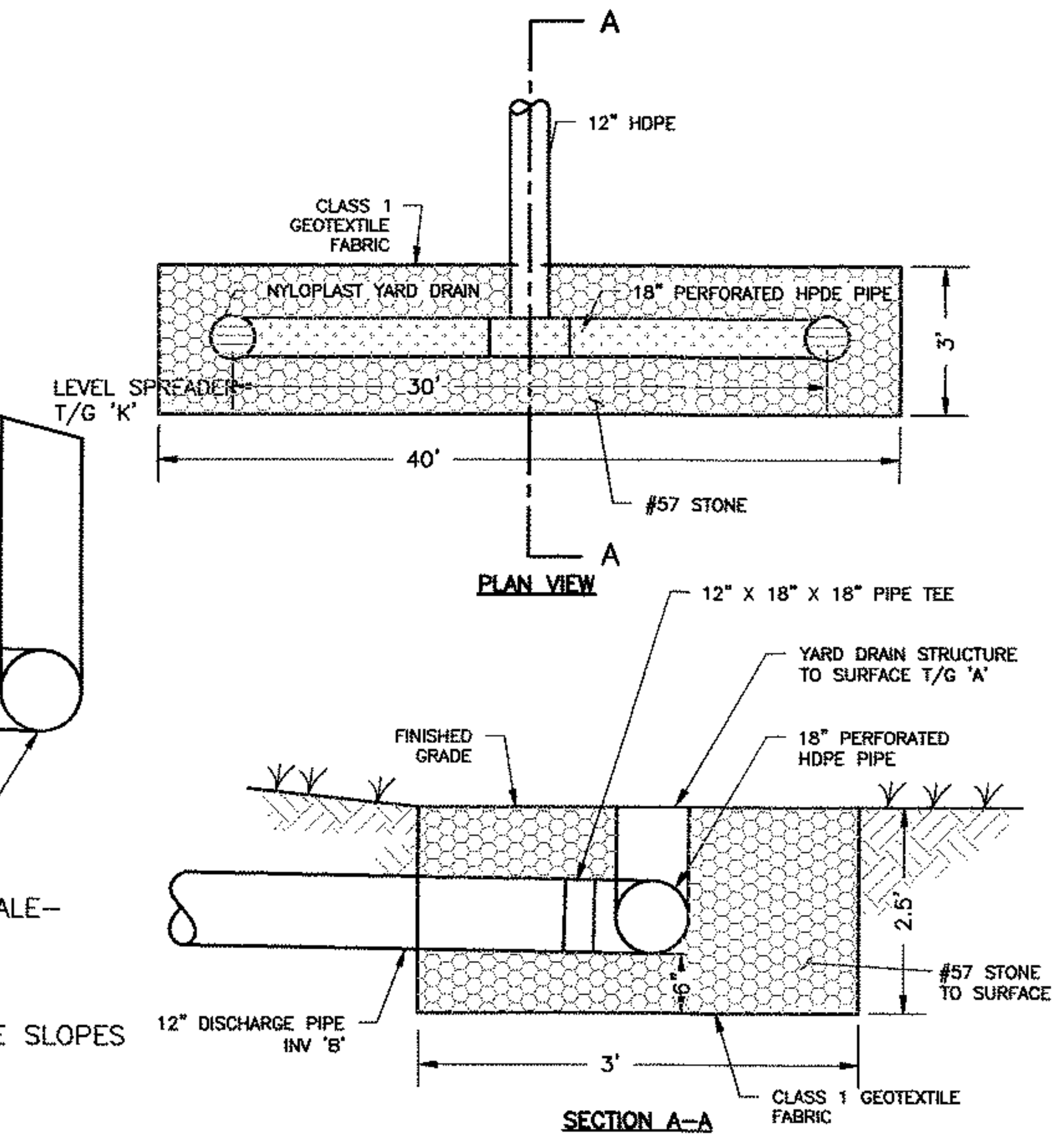




SEED SWALE AREA WITH ERNST SEED MIX ERNMX–183(OR EQUAL) AT 15#/AC AND OVERSEED WITH ANNUAL RYE AT 30#/AC

VEGETATED SWALE
CROSS SECTION
NO SCALE

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
1	N/A	2	2	10	2	2	N.A.G. S75
2	N/A	1.25	2	9.25	2	2	N.A.G. S75



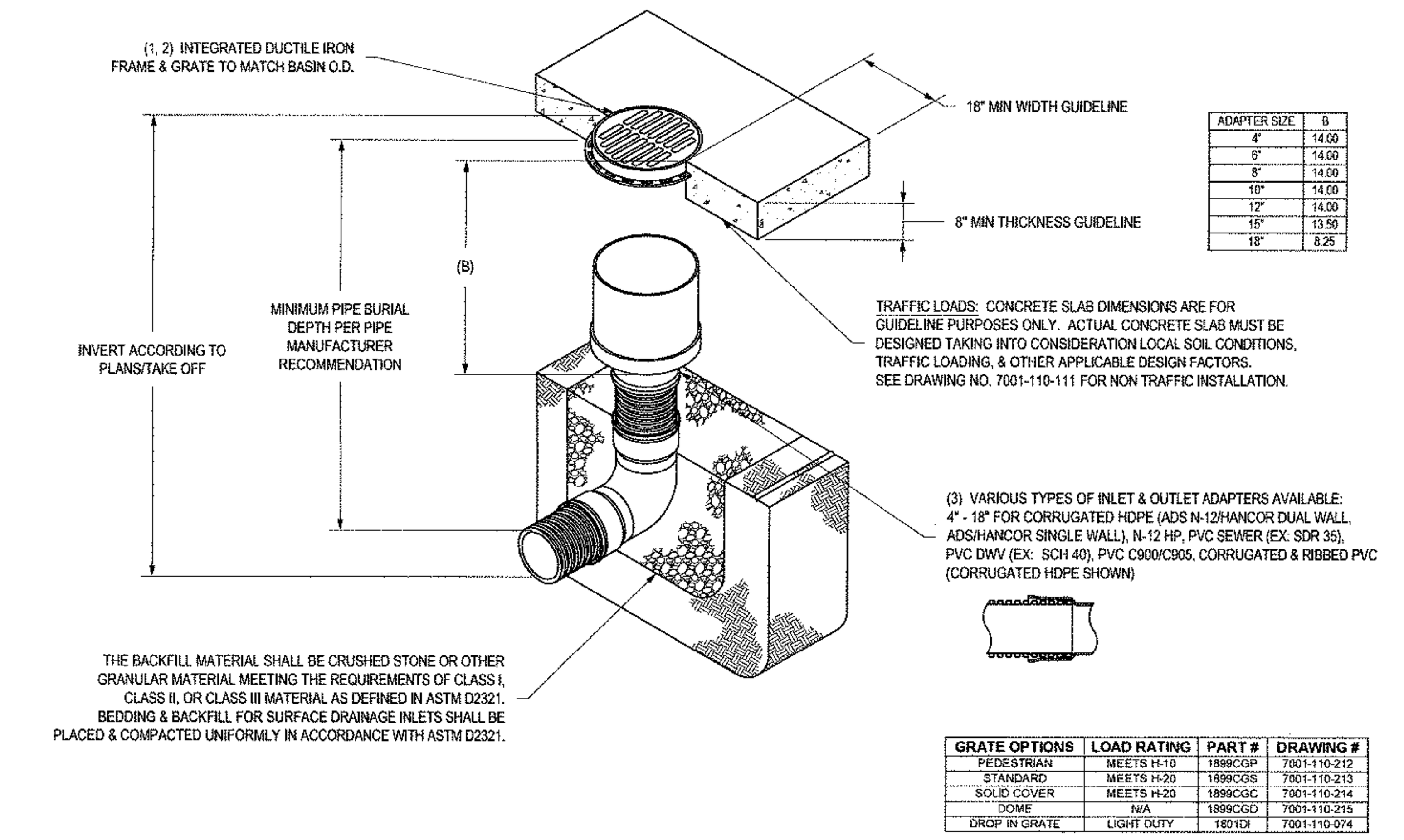
NOTES

1. SPREADER IS TO BE 30' IN LENGTH.
2. OUTFALL PIPE IS TO BE TERMINATED IN "TEE" COUPLING.
3. YARD DRAIN BASINS OR INLINE COUPLINGS SHALL BE USED WITH SURFACE GRATES AT EACH OF THE PERFORATED PIPE TO THE SURFACE.

BMP	A	B
RAIN GARDEN 3	354.00	352.00
RAIN GARDEN 4	357.00	355.00
RAIN GARDEN 5	365.00	363.00

LEVEL SPREADER DETAIL (LS3, LS4, LS5)
NO SCALE

NYLOPLAST 18" INLINE DRAIN: 2718AG _ _ X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1899CGP	7001-110-212
STANDARD	MEETS H-20	1899CGS	7001-110-213
SOLID COVER	MEETS H-20	1899CGC	7001-110-214
DOME	N/A	1899CGD	7001-110-215
DROP IN GRATE	LIGHT DUTY	180103	7001-110-374

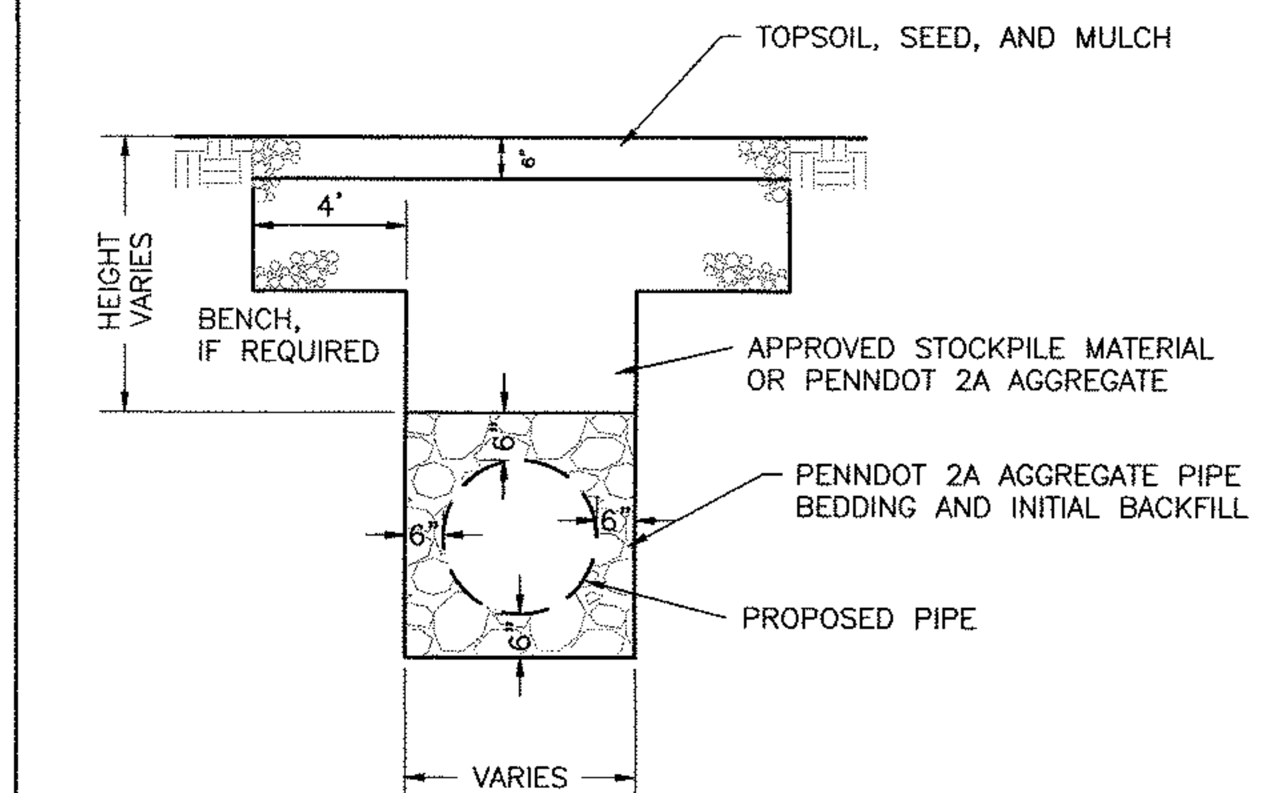
1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
4 - DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
5 - DIMENSIONS ARE IN INCHES
6 - SEE DRAWING NO. 7001-110-275 FOR ADS N-12 & HANCOR DUAL WALL BELL INFORMATION & DRAWING NO. 7001-110-364 FOR N-12 HP BELL INFORMATION.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST. ©2013 NYLOPLAST

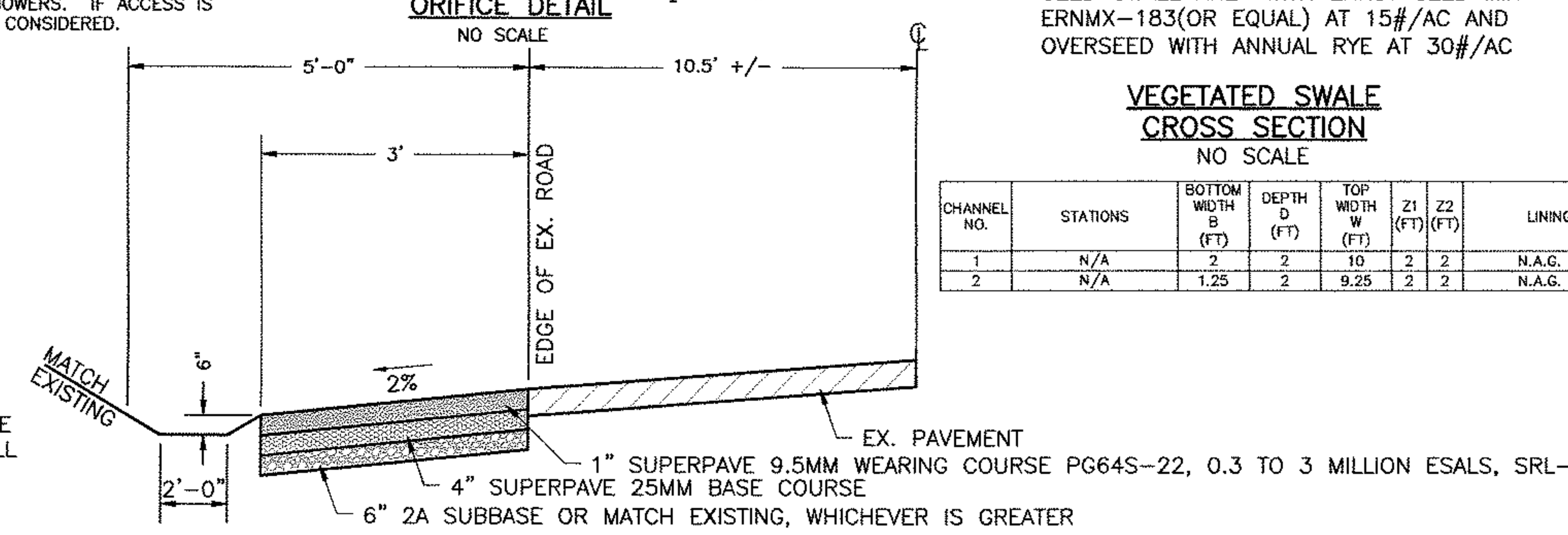
DRAWN BY EBC | MATERIAL | DATE 04-03-06 | REVISED BY NMH | PROJECT NO./NAME | DATE 03-15-16 | DWG SIZE A | SCALE 1:30 | SHEET 1 OF 1 | DWG NO. 7003-110-027 | REV E

Nyloplast — 3130 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com

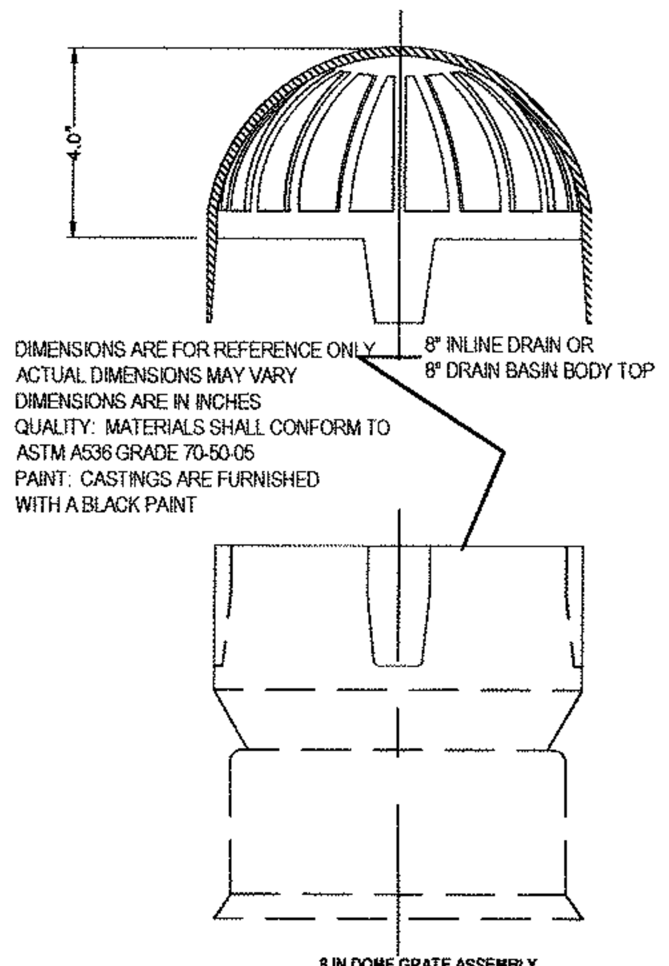
TITLE: 18 IN INLINE DRAIN QUICK SPEC INSTALLATION DETAIL



STORM SEWER TRENCH – TYP. BACKFILL DETAIL
NO SCALE

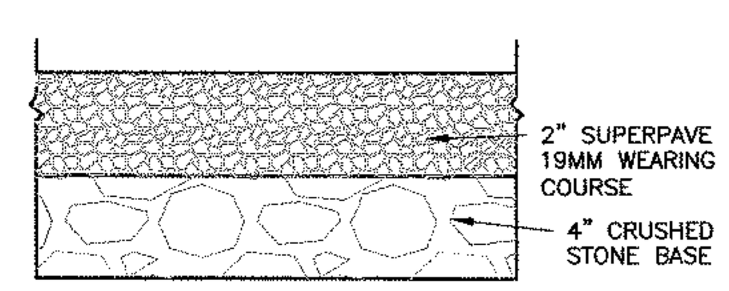


PROPOSED SHOULDER/SWALE DETAIL
NO SCALE



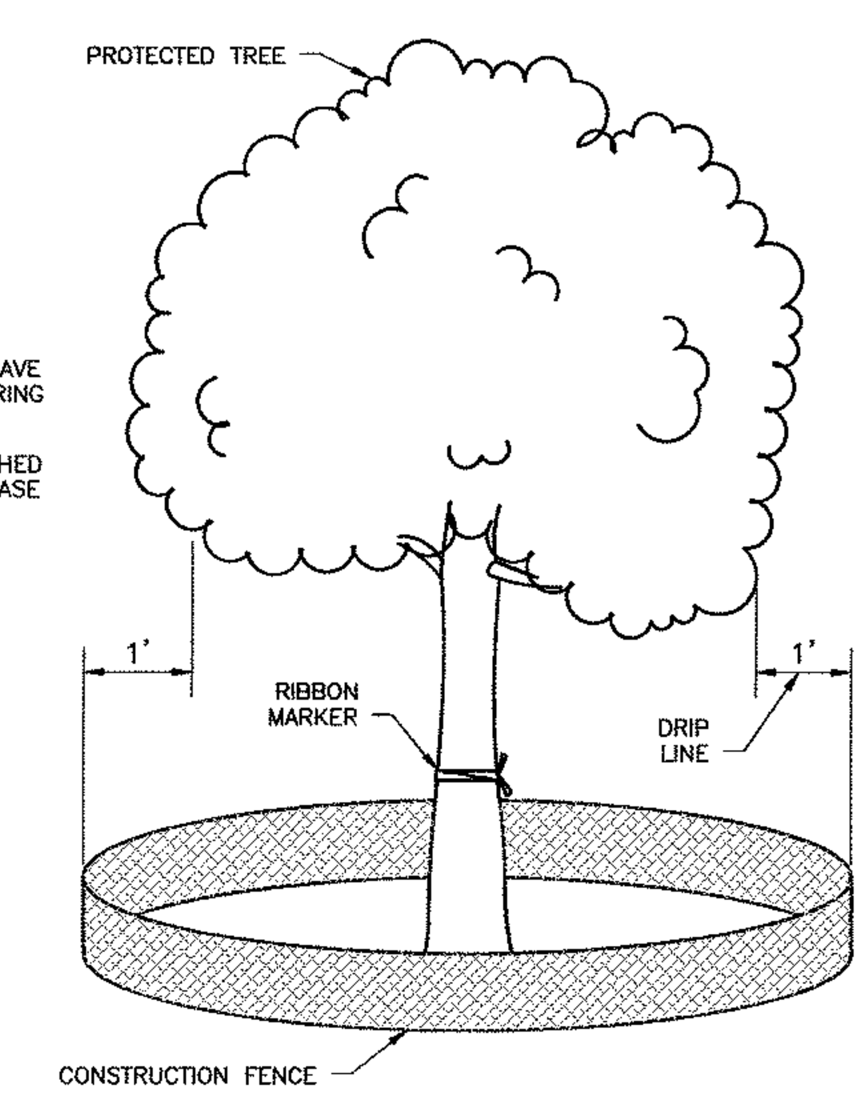
ADS NYLOPLAST 0899CGD

8" DOME GRATE
NO SCALE



NOTE: ALL PAVED SURFACES

TYPICAL DRIVEWAY PAVEMENT
SECTION DETAIL
NO SCALE



NOTES:

1. MARK TREE TO BE PROTECTED WITH RIBBON PRIOR TO CONSTRUCTION.
2. INSTALL CONSTRUCTION FENCE 1 FT OUTSIDE THE PERIMETER OF THE DRIP LINE OF THE MARKED TREES. (FOR TREE CLUSTERS INSTALL ALONG COMBIND PERIMETER.)
3. WHEN CONSTRUCTION IS COMPLETED, REMOVE FENCING.
4. ANY DAMAGE, DESTRUCTION OF FALLING OF A TREE SLATED FOR PROTECTION SHALL REQUIRE REPLACEMENT WITH A TREE OF SIMALAR CALIPER OR SUCH NUMBER OF TREES AS ARE REQUIRED TO EQUAL THE CIRCUMFERENCE OF THE AFFECTED TREE.

TREE PROTECTION DETAIL
NO SCALE

NOTES

1. PREPARE BEDDING: BEDDING MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE. PLACE A FEW INCHES OF BEDDING MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS MATERIAL TO GENERALLY MATCH THE END SECTION: EXCAVATE AN AREA IN THE BEDDING WHERE THE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL ALIGN TO PROPER GRADE IN THE FINISHED INSTALLATION.

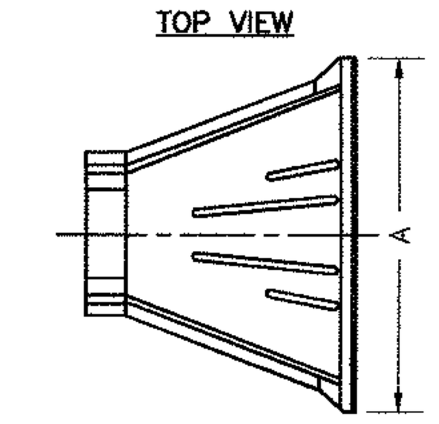
2. PLACE END SECTION ON PIPE: OPEN THE END SECTION COLLAR AND SEAT IT OVER THE LAST TWO PIPE CORRUGATIONS. ONCE THE END SECTION IS POSITIONED. CHECK TO MAKE SURE THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS ALIGNED TO THE PROPER GRADE.

3. SECURE THE END SECTION: SLIP THE STAINLESS STEEL ROD THROUGH THE PRE–DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO CORRUGATIONS AT THE END OF THE PIPE. PLACE A WASHER ON EITHER END OF THE ROD: PLACE A NUT ON EITHER END OF THE ROD AND HAND TIGHTEN WITH A WRENCH UNTIL THE COLLAR IS IGHT AROUND THE PIPE. O NOT OVER–TIGHTEN.

4. SECURE TOE TROUGH: TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW. IT IS RECOMMENDED THAT THE TOE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

5. FINISH BACKFILL: SHOVEL BACKFILL AROUND THE END SECTION IN 6–TO 9–INCH LAYERS EQUALLY ON BOTH SIDES. KNIFING IT IN TO ELIMINATE VOIDS. TAMP WITH A SMALL–FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING AND COMPACTING BACKFILL MATERIAL IN LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

TOP VIEW

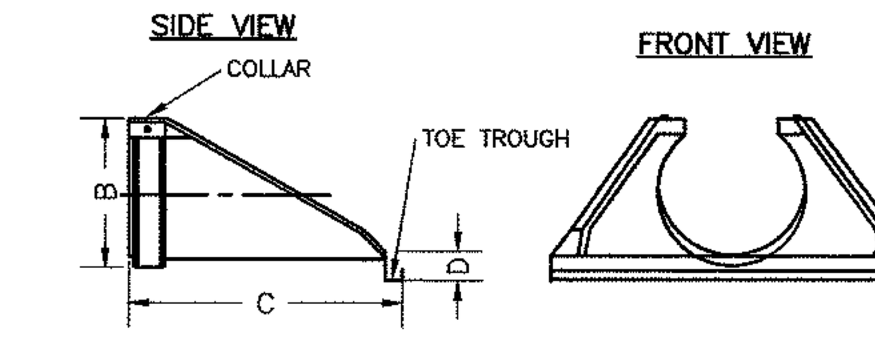


HDPE END SECTION PIPE DIAMETER, in.

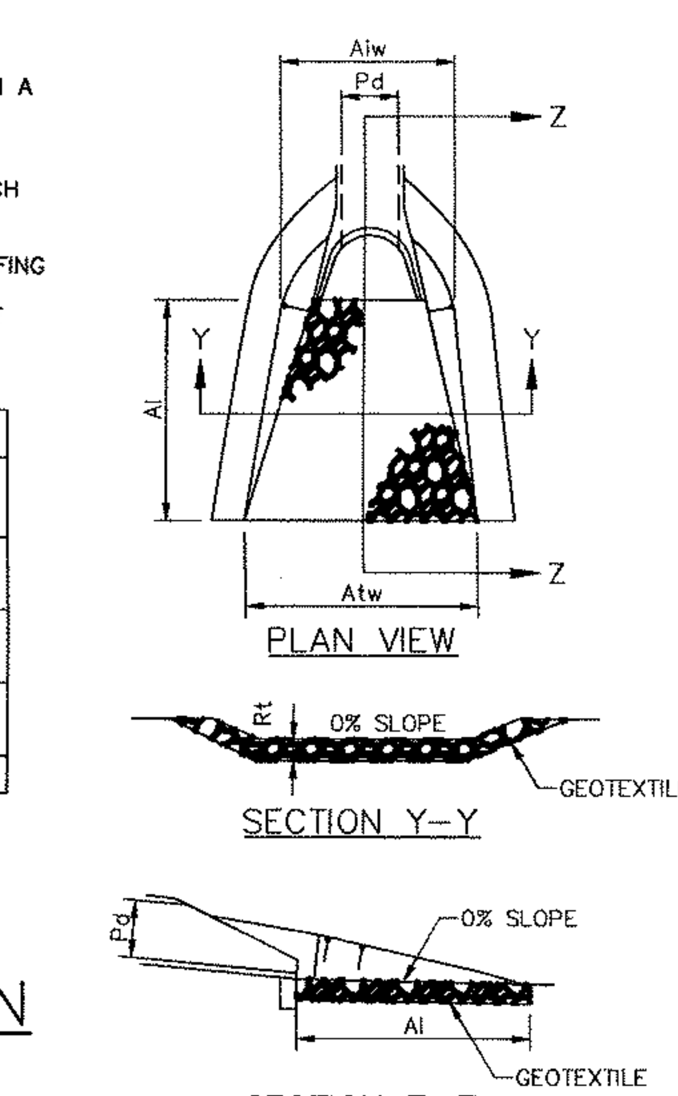
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59–1/2	88	88
B	14–1/2	19	22	28	36	43
C	33	34	43	48	63–1/2	66–1/2
D	6	6	6	6	6	6

SIDE VIEW

FRONT VIEW



FLARED END SECTION
NO SCALE

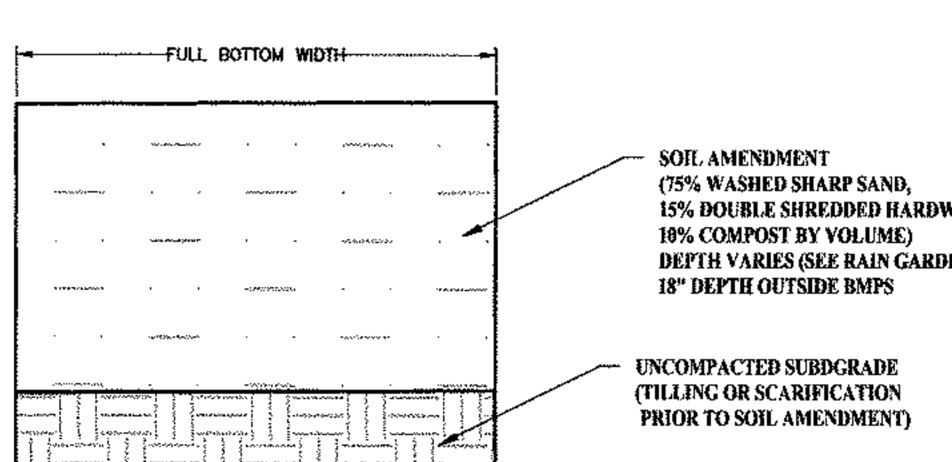


OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R–_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
ALL	12	4	18	8	3	11

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

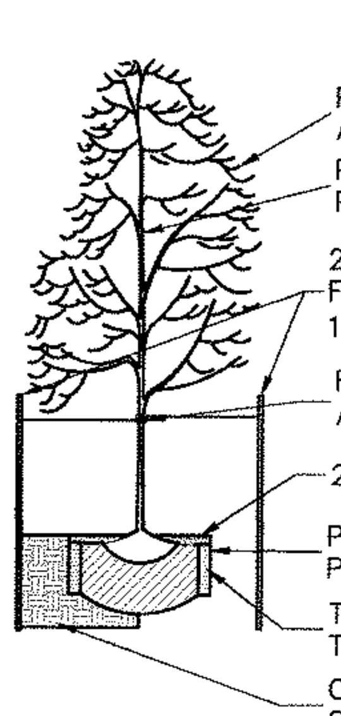
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.



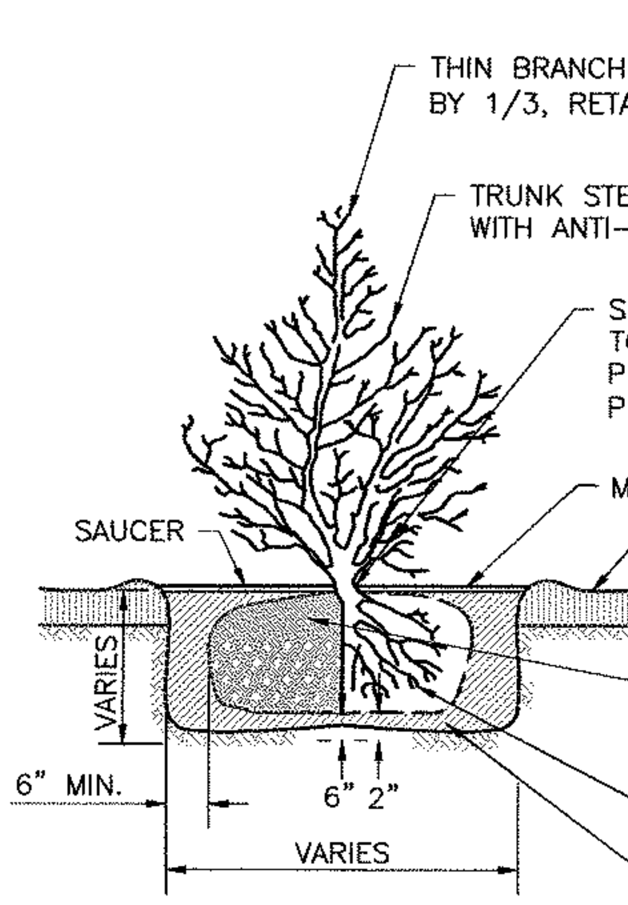
CONSTRUCTION NOTES:

1. SOIL AMENDMENT CAN CONSIST OF COMPOST, MULCH AND SAND.
2. AMENDED SOILS SHALL NOT BE PLACED ON SLOPES GREATER THAN 4:1
3. AMENDED SOILS SHALL NOT BE CONSTRUCTED WITHIN THE DRIP LINE OF EXISTING TREES.
4. PERMANENT PLANTING/SEEDING SHALL BE IMMEDIATELY INSTALLED ON THE SURFACE BY HAND TO MINIMIZE COMPACTION.

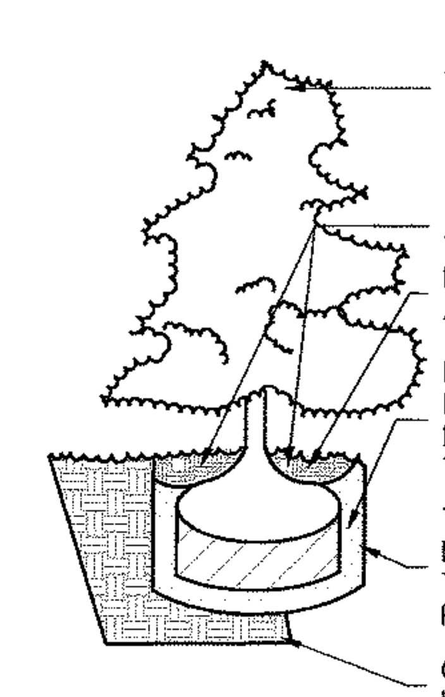
SOIL AMENDMENT
NO SCALE



DECIDUOUS TREE PLANTING DETIAL
NO SCALE



SHRUB PLANTING DETAIL
BALLED OR BARE SHRUB–NO SCALE



CONIFEROUS TREE PLANTING DETAIL
NO SCALE

Know what's below
Call Before You Dig!
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA!
CALL 1–800–242–1776
NON MEMBERS MUST BE CONTACTED DIRECTLY
PA LAW REQUIRES THREE WORKING DAYS NOTICE
TO UTILITIES BEFORE YOU EXCAVATE, DRILL,
BLAST OR DEMOLISH

SERIAL NO. 20211613280 (DOUGLASS TWP)

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023–05–18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023–05–03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023–03–07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023–03–02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023–01–20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022–12–09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022–09–22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022–07–29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022–06–30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022–05–24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022–03–03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022–02–01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021–12–11	SSR	BDB

SEAL

CLIENT
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

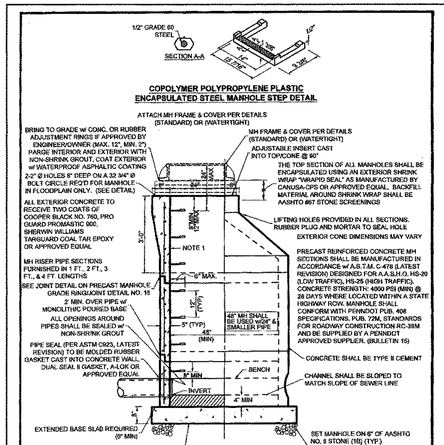
SUBJECT
DETAILS SHEET

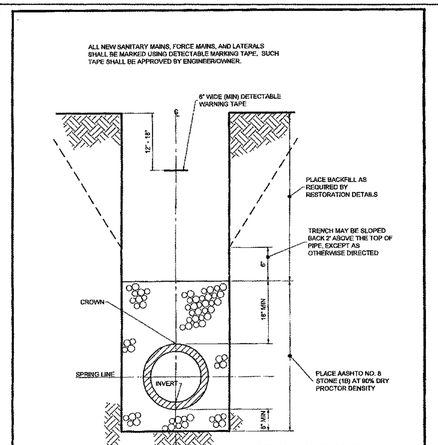
KELLY ACRES

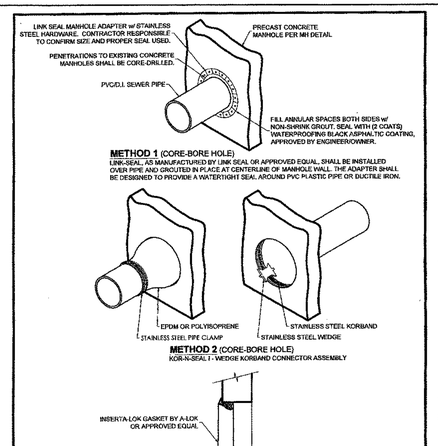
DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

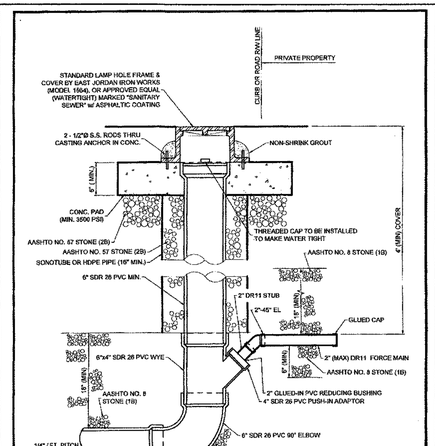
Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

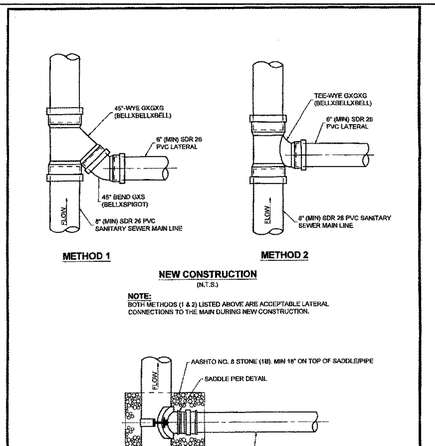
DESIGN BDB	CHKD. BY BDB	PROJECT NO. 20–374A
DRAWN BY WJD	CHKD. BY	DWG. NO. DE120374A
DATE 2020–09–04	SCALE NOT TO SCALE	SHEET NO. 3 OF 23

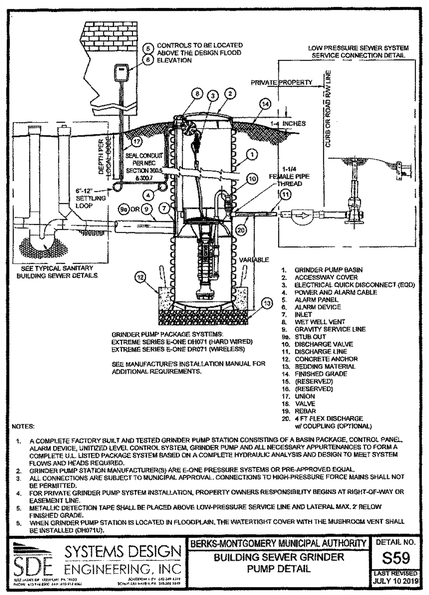


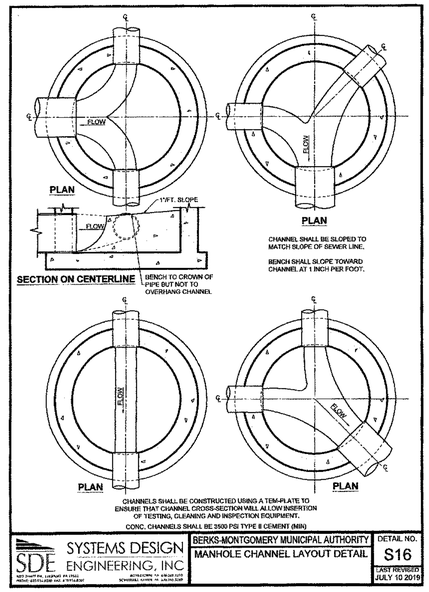


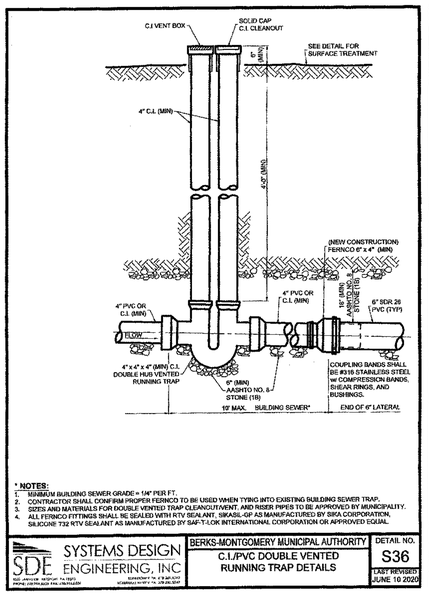


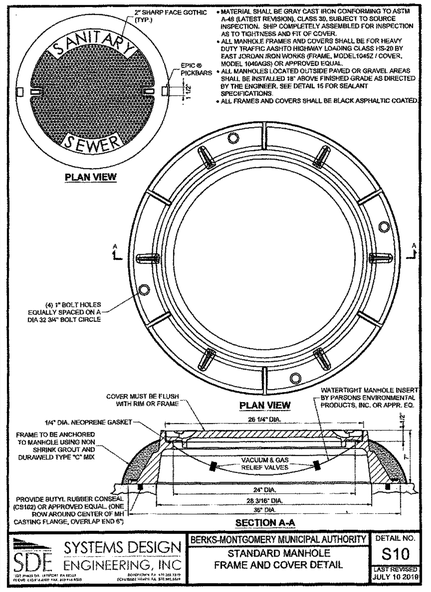


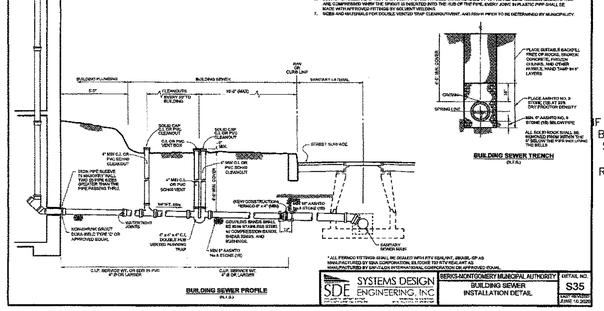












SECTION / ELEVATION
(N.T.S.)

NOTES:
1. ALL MANHOLES SHALL HAVE A FACTORY APPLIED CORROSION RESISTANT INTERIOR COATING. DURA-PLATE 100 OR APPROVED EQUAL APPROVED BY ENGINEER.
2. ALL OPENINGS AROUND PIPES SHALL BE SEALED WITH NON-SHRINK GROUT. MAINTAIN POSITIVE GRADE THROUGH MANHOLE.
3. ALL HARDWARE TO BE STAINLESS STEEL.
4. SEE DETAIL 15 FOR ADDITIONAL JOINT/SEALANT DETAILS.

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
PRECAST REINFORCED CONCRETE MANHOLE DETAIL
DETAIL NO. S1
LAST REVISED JULY 10 2019

NOTE:
AASHTO NO. 57 STONE (2B) TO BE USED AT THE DISCRETION OF THE MUNICIPALITY ENGINEER DUE TO WET OR MUDDY CONDITIONS

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
TYPICAL TRENCH BEDDING FOR GRAVITY/FORCE MAIN AND LATERAL DETAIL
DETAIL NO. S19
LAST REVISED JULY 10 2019

NOTE:
METHODS, 1, 2, & 3, LISTED ABOVE ARE ACCEPTABLE MANHOLE/PIPE ADAPTER INSTALLATIONS

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
EXISTING MANHOLE (CORE-BORE) WALL PIPE PENETRATION DETAIL
DETAIL NO. S18
LAST REVISED JULY 10 2019

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
GRINDER PUMP CONNECTION TO SANITARY MAIN DETAIL
DETAIL NO. S27
LAST REVISED JULY 10 2019

NEW CONSTRUCTION
(N.T.S.)

NOTE:
BOTH METHODS (1 & 2) LISTED ABOVE ARE ACCEPTABLE LATERAL CONNECTIONS TO THE MAIN DURING NEW CONSTRUCTION.

ADDING LATERAL TO EXISTING MAIN
(N.T.S.)

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
LATERAL CONNECTION TO SANITARY MAIN DETAIL
DETAIL NO. S30
LAST REVISED JULY 10 2019

1. GRINDER PUMP BASIN
2. ACCESSWAY COVER
3. ELECTRICAL QUICK DISCONNECT (EQD)
4. POWER AND ALARM CABLE
5. ALARM PANEL
6. ALARM DEVICE
7. INLET
8. WET WELL VENT
9. GRAVITY SERVICE LINE
9a. STUB OUT
10. DISCHARGE VALVE
11. DISCHARGE LINE
12. CONCRETE ANCHOR
13. BEDDING MATERIAL
14. FINISHED GRADE
15. (RESERVED)
16. (RESERVED)
17. UNION
18. VALVE
19. REBAR
20. 4 FT FLEX DISCHARGE w/ COUPLING (OPTIONAL)

GRINDER PUMP PACKAGE SYSTEMS:
EXTREME SERIES E-ONE DH071 (HARD WIRED)
EXTREME SERIES E-ONE DR071 (WIRELESS)

SEE MANUFACTURE'S INSTALLATION MANUAL FOR ADDITIONAL REQUIREMENTS.

NOTES:
1. A COMPLETE FACTORY BUILT AND TESTED GRINDER PUMP STATION CONSISTING OF A BASIN PACKAGE, CONTROL PANEL, ALARM DEVICE, UNITIZED LEVEL CONTROL SYSTEM, GRINDER PUMP AND ALL NECESSARY APPURTENANCES TO FORM A COMPLETE U.L. LISTED PACKAGE SYSTEM BASED ON A COMPLETE HYDRAULIC ANALYSIS AND DESIGN TO MEET SYSTEM FLOWS AND HEADS REQUIRED.
2. GRINDER PUMP STATION MANUFACTURER(S) ARE E-ONE PRESSURE SYSTEMS OR PRE-APPROVED EQUAL.
3. ALL CONNECTIONS ARE SUBJECT TO MUNICIPAL APPROVAL. CONNECTIONS TO HIGH-PRESSURE FORCE MAINS SHALL NOT BE PERMITTED.
4. FOR PRIVATE GRINDER PUMP SYSTEM INSTALLATION, PROPERTY OWNERS RESPONSIBILITY BEGINS AT RIGHT-OF-WAY OR EASEMENT LINE.
5. METALLIC DETECTION TAPE SHALL BE PLACED ABOVE LOW-PRESSURE SERVICE LINE AND LATERAL MAX. 2' BELOW FINISHED GRADE.
6. WHEN GRINDER PUMP STATION IS LOCATED IN FLOODPLAIN, THE WATERTIGHT COVER WITH THE MUSHROOM VENT SHALL BE INSTALLED (DH071U).

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
BUILDING SEWER GRINDER PUMP DETAIL
DETAIL NO. S59
LAST REVISED JULY 10 2019

CHANNELS SHALL BE CONSTRUCTED USING A TEM-PLATE TO ENSURE THAT CHANNEL CROSS-SECTION WILL ALLOW INSERTION OF TESTING, CLEANING AND INSPECTION EQUIPMENT.

CONC. CHANNELS SHALL BE 3500 PSI TYPE II CEMENT (MIN)

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
MANHOLE CHANNEL LAYOUT DETAIL
DETAIL NO. S16
LAST REVISED JULY 10 2019

*** NOTES:**
1. MINIMUM BUILDING SEWER GRADE = 1/4" PER FT.
2. CONTRACTOR SHALL CONFIRM PROPER FERNCO TO BE USED WHEN TYING INTO EXISTING BUILDING SEWER TRAP.
3. SIZES AND MATERIALS FOR DOUBLE VENTED TRAP CLEANOUT/VENT, AND RISER PIPES TO BE APPROVED BY MUNICIPALITY.
4. ALL FERNCO FITTINGS SHALL BE SEALED WITH RTV SEALANT, SIKASIL-GP AS MANUFACTURED BY SIKA CORPORATION, SILICONE 732 RTV SEALANT AS MANUFACTURED BY SAF-T-LOK INTERNATIONAL CORPORATION OR APPROVED EQUAL.

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
C.I./PVC DOUBLE VENTED RUNNING TRAP DETAILS
DETAIL NO. S36
LAST REVISED JUNE 10 2020

- MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO ASTM A-48 (LATEST REVISION), CLASS 30, SUBJECT TO SOURCE INSPECTION. SHIP COMPLETELY ASSEMBLED FOR INSPECTION AS TO TIGHTNESS AND FIT OF COVER.
- ALL MANHOLE FRAMES AND COVERS SHALL BE FOR HEAVY DUTY TRAFFIC AASHTO HIGHWAY LOADING CLASS HS-20 BY EAST JORDAN IRON WORKS (FRAME, MODEL1045Z / COVER, MODEL 1040AGS) OR APPROVED EQUAL.
- ALL MANHOLES LOCATED OUTSIDE PAVED OR GRAVEL AREAS SHALL BE INSTALLED 18" ABOVE FINISHED GRADE AS DIRECTED BY THE ENGINEER. SEE DETAIL 15 FOR SEALANT SPECIFICATIONS.
- ALL FRAMES AND COVERS SHALL BE BLACK ASPHALTIC COATED.

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
STANDARD MANHOLE FRAME AND COVER DETAIL
DETAIL NO. S10
LAST REVISED JULY 10 2019

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
PRECAST MANHOLE GRADE RING/JOINT DETAIL
DETAIL NO. S15
LAST REVISED JULY 10 2019

SYSTEMS DESIGN ENGINEERING, INC
BERKS-MONTGOMERY MUNICIPAL AUTHORITY
BUILDING SEWER INSTALLATION DETAIL
DETAIL NO. S35

ELEVATION
N.T.S

STANDARD SERVICE CONNECTION
¾" OR 1" DETAIL
NO SCALE

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT
UTILITY DETAILS SHEET

KELLY ACRES

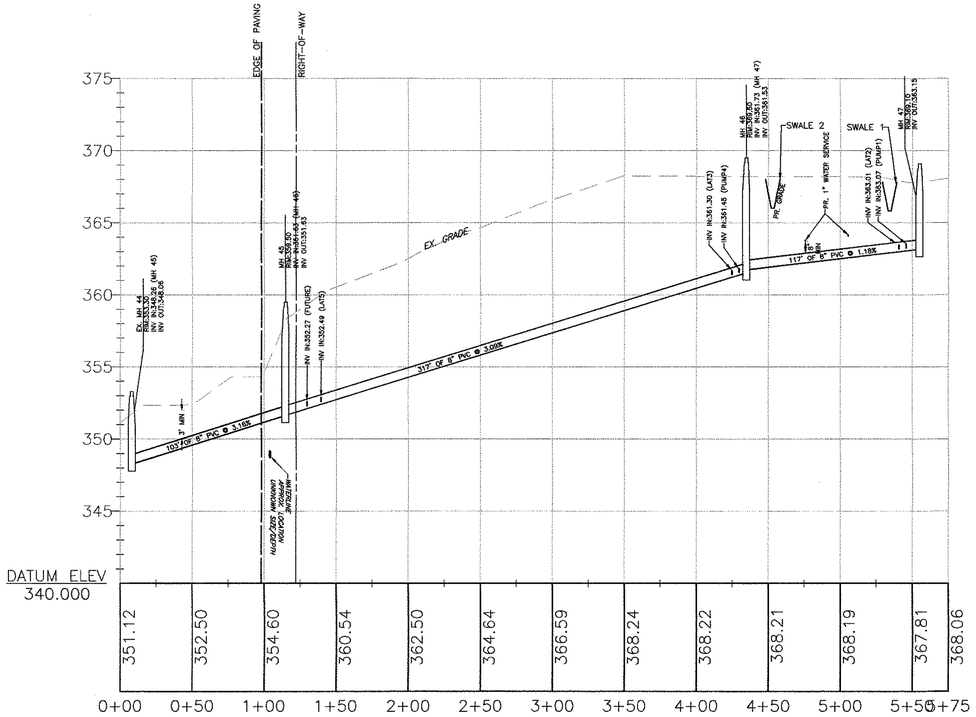
DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

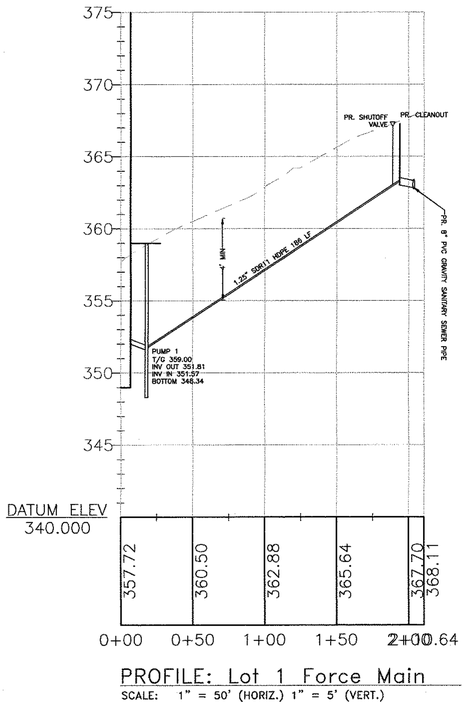
DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2020-09-04	SCALE 1" = 50'

PROJECT NO. 20-374A
DWG. NO. DE220374A
SHEET NO. 4 OF 23



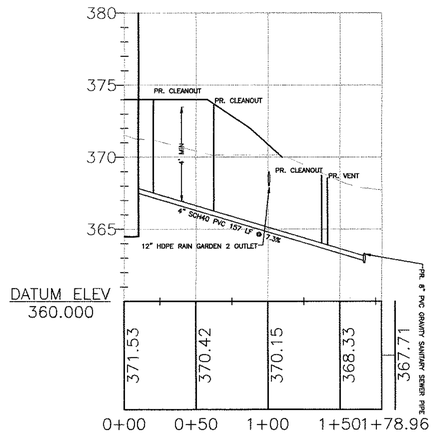
PROFILE: PR. SANITARY SEWER MAIN

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



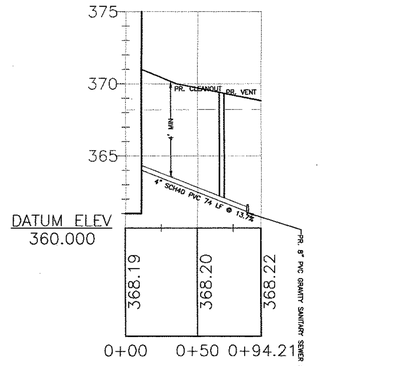
PROFILE: Lot 1 Force Main

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



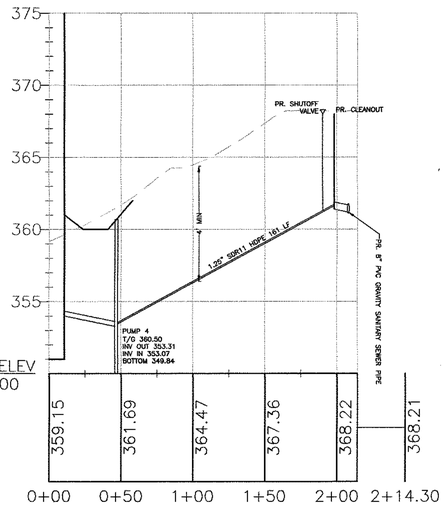
PROFILE: Lot 2 Lateral

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



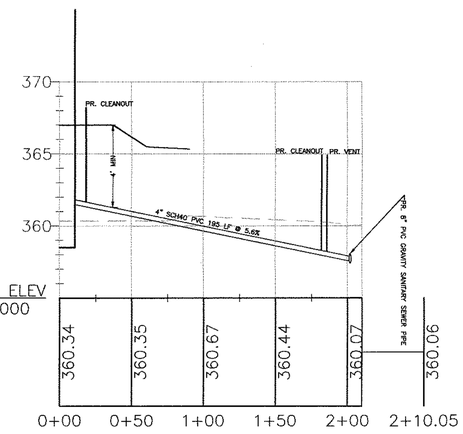
PROFILE: Lot 3 Lateral

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



PROFILE: Lot 4 Force Main

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



PROFILE: Lot 5 Lateral

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

0 25 50 100 200

SCALE:1" = 50'

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

SEWER PROFILE PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

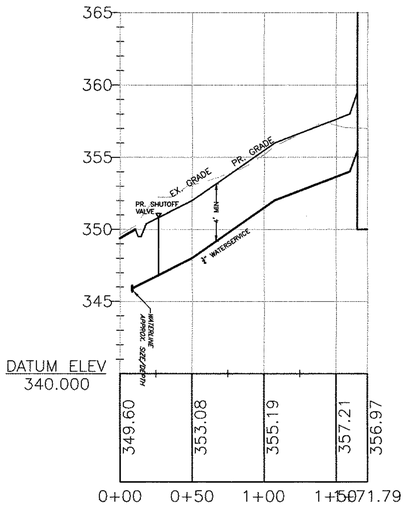
SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN	BDB	CHKD. BY	BDB
DRAWN BY	WJD	CHKD. BY	
DATE	2020-09-04	SCALE	1" = 50'

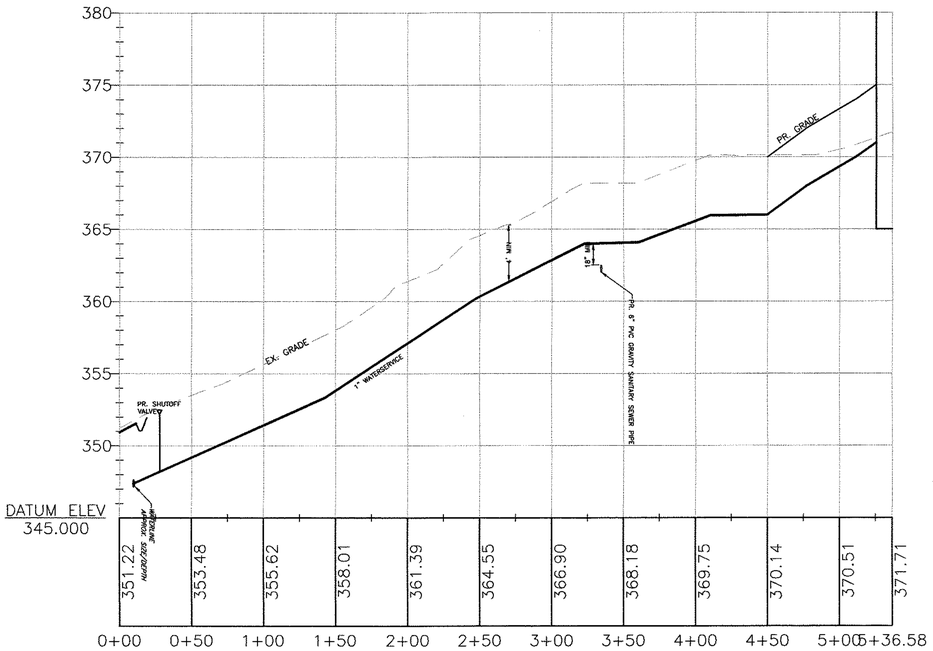
PROJECT NO. 20-374A
DWG. NO. PR120374A
SHEET NO. 5 OF 23

P:\PROJECTS\20-374 Rokita - Kelly Lot\Dwg\PR120374.dwg, 18-May-23 09:34:19



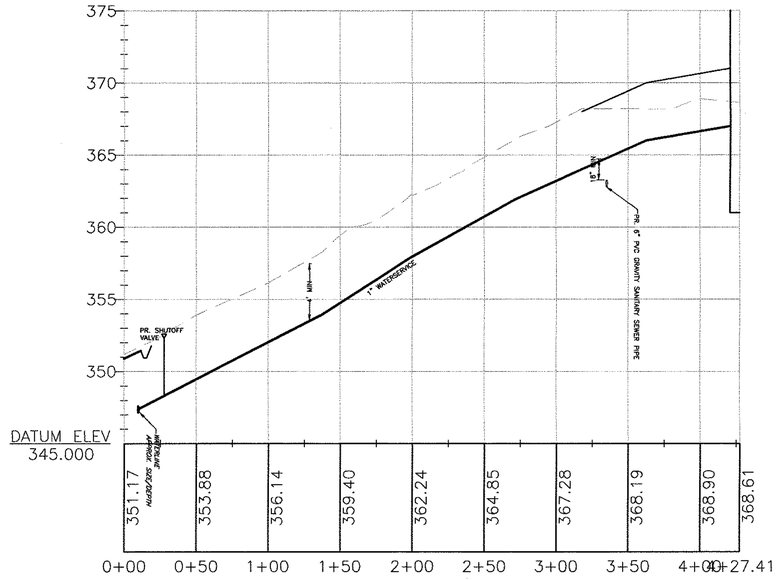
PROFILE: Lot 1 Water Service

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



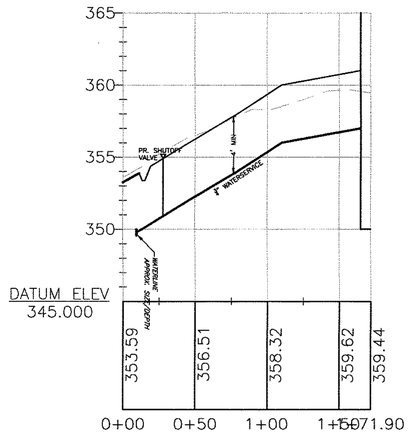
PROFILE: Lot 2 Water Service

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



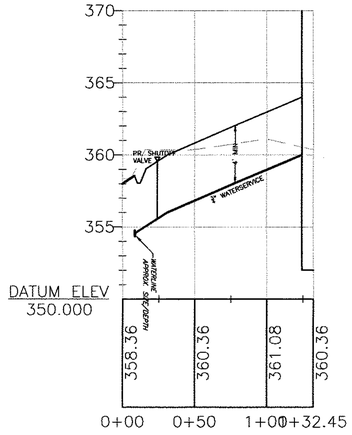
PROFILE: Lot 3 Water Service

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



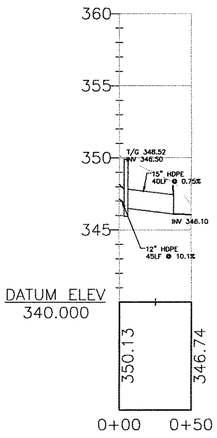
PROFILE: Lot 4 Water Service

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



PROFILE: Lot 5 Water Service

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



PROFILE: PR. STORM SEWER PIPE

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)

0 25 50 100 200

SCALE: 1" = 50'

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER PennA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

WATER PROFILE PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	PR220374A
DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: 1" = 50'
SHEET NO.	6 OF 23

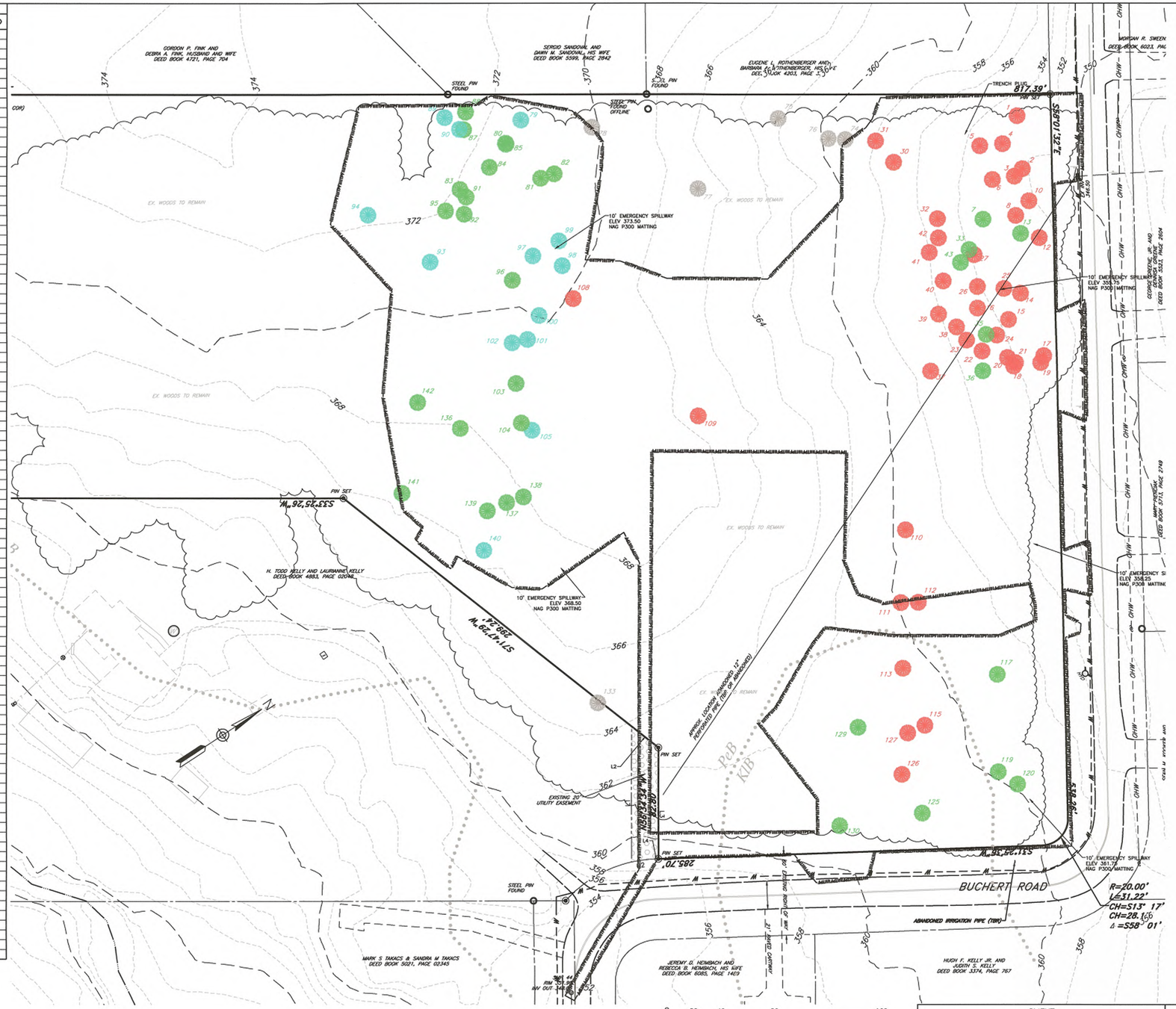
P:\PROJECTS\20-374A Rotelle - Kelly Lot\dwg\PT120374A.dwg, 18-May-23 09:34:22

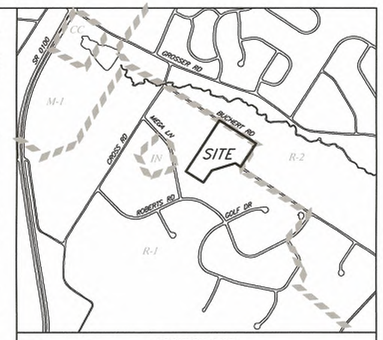
EXISTING TREE SCHEDULE

TREE#	COMMON NAME(SCIENTIFIC NAME)	DBH/ CONDITION	INVASIVE	NATIVE(PA)	TO BE REMOVED	REPLACED
1	LITTLE LEAF LINDEN(TILIA CORDATA)	14	NO	NO	YES	NO
2	LITTLE LEAF LINDEN(TILIA CORDATA)	14	NO	NO	YES	NO
3	LITTLE LEAF LINDEN(TILIA CORDATA)	16	NO	NO	YES	NO
4	LITTLE LEAF LINDEN(TILIA CORDATA)	16	NO	NO	YES	NO
5	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
6	LITTLE LEAF LINDEN(TILIA CORDATA)	14	NO	NO	YES	NO
7	TULIP POPLER(LIRIODENDRON TULIPIFERA)	16	NO	YES	YES	YES
8	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
10	LITTLE LEAF LINDEN(TILIA CORDATA)	17	NO	NO	YES	NO
12	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
13	SILVER MAPLE(ACER SACCHARINUM)	12	NO	YES	YES	YES
14	LITTLE LEAF LINDEN(TILIA CORDATA)	20	NO	NO	YES	NO
15	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
16	LITTLE LEAF LINDEN(TILIA CORDATA)	15	NO	NO	YES	NO
17	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
18	LITTLE LEAF LINDEN(TILIA CORDATA)	15	NO	NO	YES	NO
19	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
20	LITTLE LEAF LINDEN(TILIA CORDATA)	17	NO	NO	YES	NO
21	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
22	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
23	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
24	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
25	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
26	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
27	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
29	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
30	LITTLE LEAF LINDEN(TILIA CORDATA)	12	NO	NO	YES	NO
31	LITTLE LEAF LINDEN(TILIA CORDATA)	13	NO	NO	YES	NO
32	NORWAY MAPLE (ACER PLATANOIDES)	13	YES	NO	YES	NO
33	SILVER MAPLE(ACER SACCHARINUM)	16	NO	YES	YES	YES
35	SILVER MAPLE(ACER SACCHARINUM)	17	NO	YES	YES	YES
36	SILVER MAPLE(ACER SACCHARINUM)	12X14X12	NO	YES	YES	YES
37	NORWAY MAPLE (ACER PLATANOIDES)	14	YES	NO	YES	NO
38	NORWAY MAPLE (ACER PLATANOIDES)	12	YES	NO	YES	NO
39	NORWAY MAPLE (ACER PLATANOIDES)	14	YES	NO	YES	NO
40	NORWAY MAPLE (ACER PLATANOIDES)	17	YES	NO	YES	NO
41	NORWAY MAPLE (ACER PLATANOIDES)	12	YES	NO	YES	NO
43	NORWAY MAPLE (ACER PLATANOIDES)	14	YES	NO	YES	NO
74	SCOTCH PINE(PINUS SYLVESTRIS)	12	NO	NO	NO	YES
75	SCOTCH PINE(PINUS SYLVESTRIS)	13	NO	NO	NO	YES
76	BLACK CHERRY (PRUNUS SEROTINA)	12	NO	NO	NO	YES
77	NORWAY SPRUCE(PICEA ABIES)	16	NO	NO	NO	NO
78	EASTERN WHITE PINE(PINUS STROBUS)	23	NO	NO	NO	YES
79	EASTERN WHITE PINE(PINUS STROBUS)	20	NO	YES	YES	YES*
80	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
81	EASTERN WHITE PINE(PINUS STROBUS)	18	NO	YES	YES	YES*
82	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
83	EASTERN WHITE PINE(PINUS STROBUS)	13	NO	YES	YES	YES
84	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
85	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
87	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
88	EASTERN WHITE PINE(PINUS STROBUS)	17	NO	YES	YES	YES
89	EASTERN WHITE PINE(PINUS STROBUS)	18	NO	YES	YES	YES
90	EASTERN WHITE PINE(PINUS STROBUS)	18	NO	YES	YES	YES
91	EASTERN WHITE PINE(PINUS STROBUS)	17	NO	YES	YES	YES
92	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
93	EASTERN WHITE PINE(PINUS STROBUS)	18	NO	YES	YES	YES*
94	EASTERN WHITE PINE(PINUS STROBUS)	18	NO	YES	YES	YES*
95	EASTERN WHITE PINE(PINUS STROBUS)	16	NO	YES	YES	YES
96	EASTERN WHITE PINE(PINUS STROBUS)	16	NO	YES	YES	YES
97	EASTERN WHITE PINE(PINUS STROBUS)	20	NO	YES	YES	YES*
98	EASTERN WHITE PINE(PINUS STROBUS)	19	NO	YES	YES	YES*
99	EASTERN WHITE PINE(PINUS STROBUS)	20	NO	YES	YES	YES*
100	EASTERN WHITE PINE(PINUS STROBUS)	20	NO	YES	YES	YES*
101	EASTERN WHITE PINE(PINUS STROBUS)	19	NO	YES	YES	YES*
102	EASTERN WHITE PINE(PINUS STROBUS)	22	NO	YES	YES	YES*
103	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
104	EASTERN WHITE PINE(PINUS STROBUS)	15	NO	YES	YES	YES
105	EASTERN WHITE PINE(PINUS STROBUS)	19	NO	YES	YES	YES*
109	NORWAY SPRUCE(PICEA ABIES)	13	NO	NO	YES	NO
110	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	16	NO	NO	YES	NO
111	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	12	NO	NO	YES	NO
112	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	12	NO	NO	YES	NO
113	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	12	NO	NO	YES	NO
115	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	12	NO	NO	YES	NO
117	SILVER MAPLE(ACER SACCHARINUM)	16X6X6	NO	YES	YES	YES
119	PIN OAK(QUERCUS PALUSTRIS)	16	NO	YES	YES	YES
120	BLACK CHERRY (PRUNUS SEROTINA)	12X9X9	NO	YES	YES	YES
123	BLACK CHERRY (PRUNUS SEROTINA)	14(DYING)	NO	YES	YES	NO
124	GREEN ASH (FRAXINUM PENNSYLVANICA)	12(DYING)	NO	YES	YES	NO
125	BLACK CHERRY (PRUNUS SEROTINA)	11X13	NO	YES	YES	NO
126	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	12	NO	NO	YES	NO
127	KENTUCKY COFFEETREE(GYMNOCLADUS DIOICUS)	13	NO	NO	YES	NO
129	SILVER MAPLE(ACER SACCHARINUM)	12X10X13	NO	YES	YES	YES
130	EASTERN BLACK WALNUT(JUGLANS NIGRA)	12	NO	YES	YES	YES
131	EASTERN BLACK WALNUT(JUGLANS NIGRA)	11	NO	YES	YES	NO
133	SCOTCH PINE(PINUS SYLVESTRIS)	14	NO	NO	YES	NO
135	LITTLE LEAF LINDEN(TILIA CORDATA)	11	NO	NO	YES	NO
136	EASTERN WHITE PINE(PINUS STROBUS)	16	NO	YES	YES	YES
137	EASTERN WHITE PINE(PINUS STROBUS)	16	NO	YES	YES	YES
138	EASTERN WHITE PINE(PINUS STROBUS)	12	NO	YES	YES	YES
139	EASTERN WHITE PINE(PINUS STROBUS)	16	NO	YES	YES	YES
140	EASTERN WHITE PINE(PINUS STROBUS)	19	NO	YES	YES	YES
141	EASTERN WHITE PINE(PINUS STROBUS)	13	NO	YES	YES	YES
142	EASTERN WHITE PINE(PINUS STROBUS)	13	NO	YES	YES	YES

OMMITTED TREE NUMBERS REPRESENT TREES LESS THAN 12" IN DIAMETER AND ARE NOT SHOWN.

*TREES REPLACED AT A 2:1 RATIO.





LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. RIGHT-OF-WAY
- SETBACKS
- EX. SANITARY
- EX. WATER
- EX. MONUMENTATION
- EX. UTILITY POLE & GUY WIRE
- EX. OVERHEAD WIRES
- EX. SANITARY MANHOLE
- EX. FIRE HYDRANT
- EXISTING TREELINE
- EX. SOILS (Gc, PeB)
- STEEL PIN (5/8" DIA., 24" LONG)
- EX. EASEMENT
- EX. CONTOURS (230, 229)
- EX. WELL
- EX. TRANSFORMER
- EX. TREE TO REMAIN >12"
- EX. NATIVE TREE TO REPLACE (12"-18")
- EX. NATIVE TREE TO REPLACE (18"+)
- EX. TREE TO REMOVE >12"

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNDNI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNDNI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNDNI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EXISTING FEATURES/ENVIRONMENTAL RESOURCES PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	EX120374A
SHEET NO.	7 OF 23
DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2020-09-04	SCALE 1"=40'

P:\PROJECTS\20-374A Rotelle - Kelly Lot\dwg\P120374Aexp. 18-May-23 09:34:24

LOCATION MAP
SCALE: 1"=800'

LEGEND

EX. TRACT LINE	——— - ———
EX. BOUNDARY	———
EX. RIGHT-OF-WAY	——— - - ———
SETBACKS	— — — — —
EX. STORMWATER PIPE	— — — — — — —
EX. SANITARY	— —S— — — —S— — —
EX. WATER	— — — —W— — — —W—
EX. MONUMENTATION	⊡ ○
EX. UTILITY POLE & GUY WIRE	
EX. OVERHEAD WIRES	——— — — —OHW———
EX. SANITARY MANHOLE	Ⓢ
EX. FIRE HYDRANT	HYD
EXISTING TREELINE	︵︵︵︵
EX. SOILS	Gc • • • • • • • • • • • • PeB
STEEL PIN (5/8" DIA., 24" LONG)	◉
EX. EASEMENT	▨
EX. CONTOURS	230 229
EX. WELL	Ⓦ
EX. TRANSFORMER	⊡

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EXISTING FEATURES/ENVIRONMENTAL RESOURCES PLAN
AERIAL PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer
ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

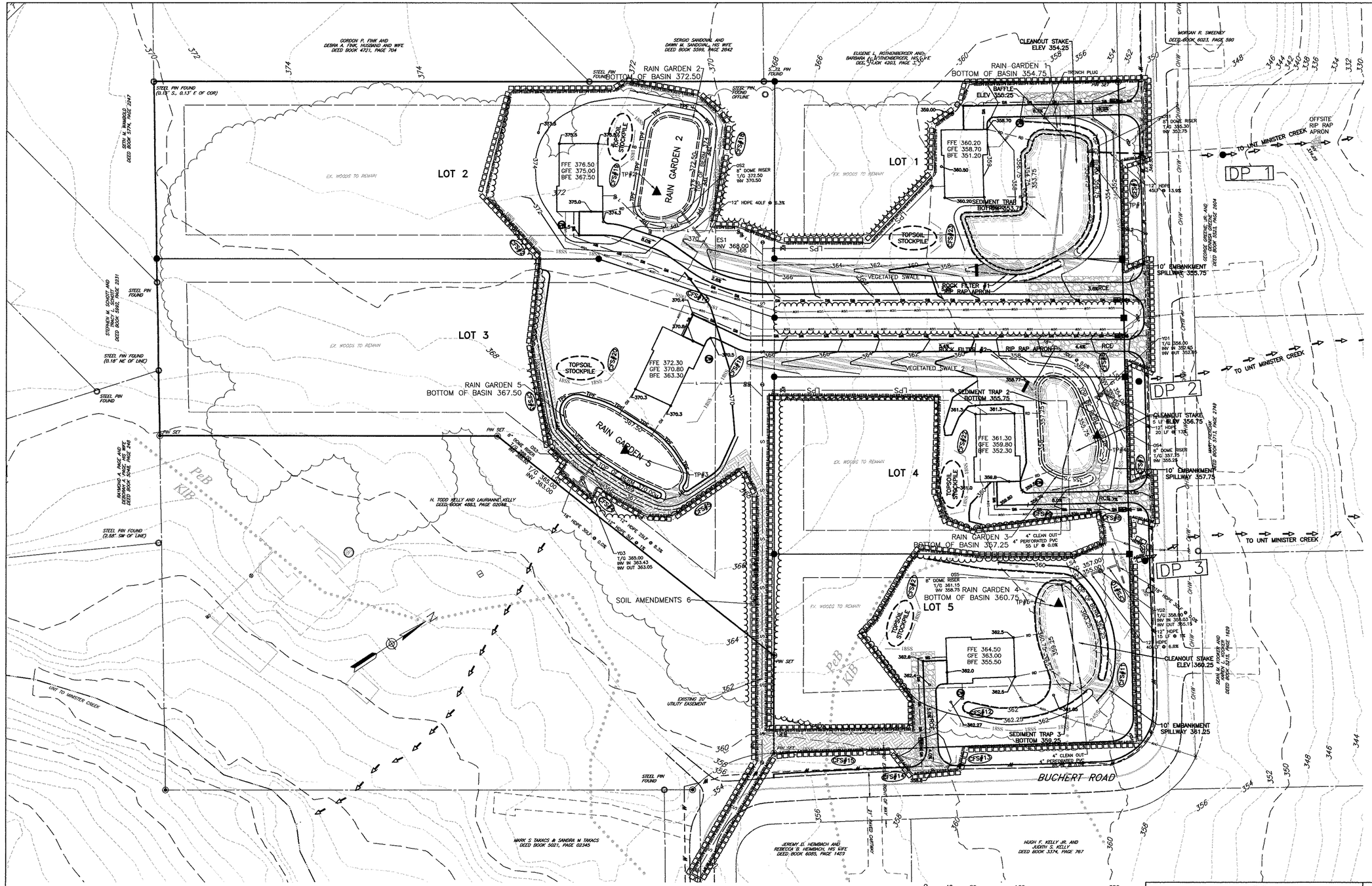
DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2020-09-04	SCALE 1"=40'

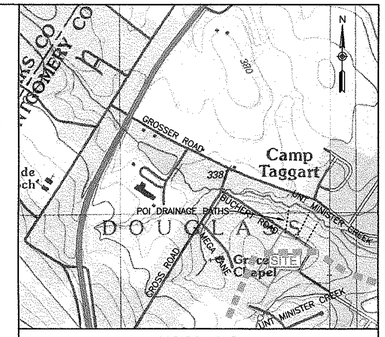
PROJECT NO.
20-374A

DWG. NO.
EX220374A

SHEET NO.
8 OF 23

P:\PROJECTS\20-374A Rotelle - Kelly Lot\dwg\FP120374A.dwg, 18-May-23 09:34:27





LOCATION MAP
SCALE: 1"=1000'

LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. RIGHT-OF-WAY
- SETBACKS
- EX. STORMWATER PIPE
- EX. SANITARY
- EX. WATERLINE
- EX. MONUMENTATION
- EX. UTILITY POLE & GUY WIRE
- EX. OVERHEAD WIRES
- EX. SANITARY MANHOLE
- EX. FIRE HYDRANT
- EX. TREELINE
- EX. SOILS (Gc, PeB)
- EX. CONTOURS
- PR. CONTOURS
- INFILTRATION TEST PIT
- PR. EDGE OF PAVING
- PR. BUILDING
- PR. WATER SERVICE
- PR. SEWER LATERAL
- PR. FORCE MAIN
- PR. SANITARY SEWER
- PR. STORMWATER PIPE
- PR. ROOF DRAINS
- PR. UNDERGROUND UTILITY
- PR. OVERHEAD UTILITY
- PR. TREELINE
- PR. SPILLWAY/CHANNEL LINING
- PR. RIP RAP
- PR. SEWER MANHOLE
- PR. SEWER CLEANOUT
- PR. SEWER SHUTOFF
- PR. WATER VALVE
- PR. TREES
- PR. COMPOST FILTER SOCK
- PR. PROTECTION FENCE
- PR. SEDIMENT TRAP BAFFLE
- PR. LIMIT OF DISTURBANCE
- NPDES BOUNDARY
- WATERSHED
- CONCRETE WASHOUT
- TOPSOIL STOCKPILE
- ROCK CONSTRUCTION ENTRANCE
- AMENDED SOILS

SOILS TABLE	
SYMBOL	NAME/DESC
PeB	PENN SILT LOAM, 3 TO 8 PERCENT SLOPES
KIB	KLINESVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENTS SLOPES

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EROSION AND SEDIMENTATION CONTROL PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

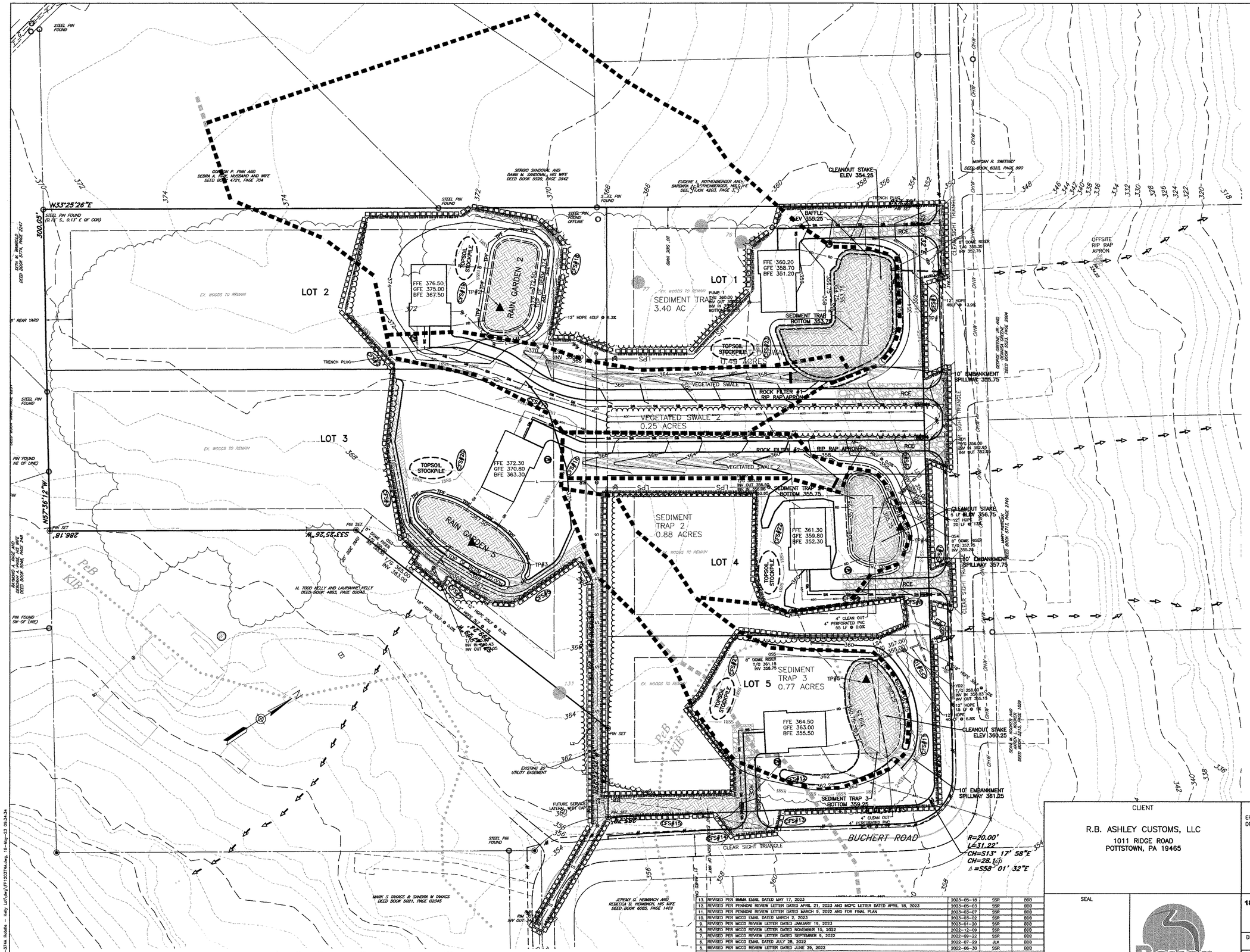
SEAL

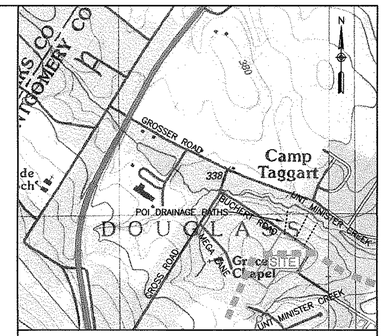
Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	ES120374A
SHEET NO.	9 OF 23
DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: 1"=40'

P:\PROJECTS\20-374A Kelly - Kelly Lot\Dwg\TP120374A.dwg, 18-May-23 09:34:30





LOCATION MAP
SCALE: 1"=1000'

LEGEND

EX. TRACT LINE	
EX. BOUNDARY	
EX. RIGHT-OF-WAY	
SETBACKS	
EX. STORMWATER PIPE	
EX. SANITARY	S
EX. WATERLINE	W
EX. MONUMENTATION	
EX. UTILITY POLE & GUY WIRE	
EX. OVERHEAD WIRES	OHW
EX. SANITARY MANHOLE	S
EX. FIRE HYDRANT	HYD
EX. TREELINE	
EX. SOILS	Gc, PeB
EX. CONTOURS	230, 228
PR. CONTOURS	230, 228
INFILTRATION TEST PIT	TP#
PR. EDGE OF PAVING	
PR. BUILDING	
PR. WATER SERVICE	WS
PR. SEWER LATERAL	L
PR. FORCE MAIN	LPS
PR. SANITARY SEWER	S
PR. STORMWATER PIPE	
PR. ROOF DRAINS	RD
PR. UNDERGROUND UTILITY	UGW
PR. OVERHEAD UTILITY	OHW
PR. TREELINE	
PR. SPILLWAY/CHANNEL LINING	
PR. RIP RAP	
PR. SEWER MANHOLE	
PR. SEWER CLEANOUT	
PR. SEWER SHUTOFF	CO
PR. WATER VALVE	
PR. TREES	
PR. COMPOST FILTER SOCK	18SS
PR. PROTECTION FENCE	TPF
PR. SEDIMENT TRAP BAFFLE	
PR. LIMIT OF DISTURBANCE	
NPDES BOUNDARY	
WATERSHED	
CONCRETE WASHOUT	CW
TOPSOIL STOCKPILE	TOPSOIL STOCKPILE
ROCK CONSTRUCTION ENTRANCE	TOPSOIL STOCKPILE
AMENDED SOILS	

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER EMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2023 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EROSION AND SEDIMENTATION CONTROL
DRAINAGE AREA PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

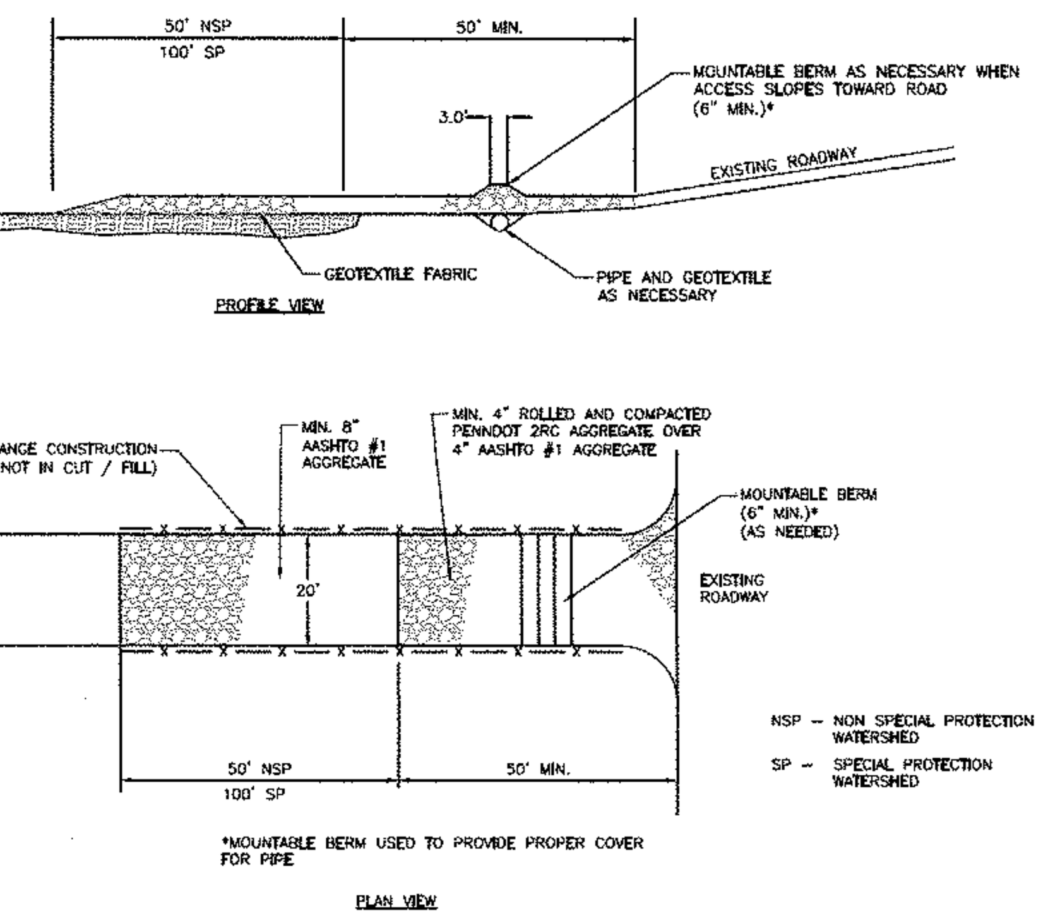
SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	ES220374A
DESIGN BDB	CHKD. BY BDB
DRAWN BY WJD	CHKD. BY
DATE 2020-09-04	SCALE 1"=40'
SHEET NO.	10 OF 23

P:\PROJECTS\20-374A Robbs - Kelly Lot\Dwg\PP\20374A.dwg, 18-May-23 09:34:24



NOTES:

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

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

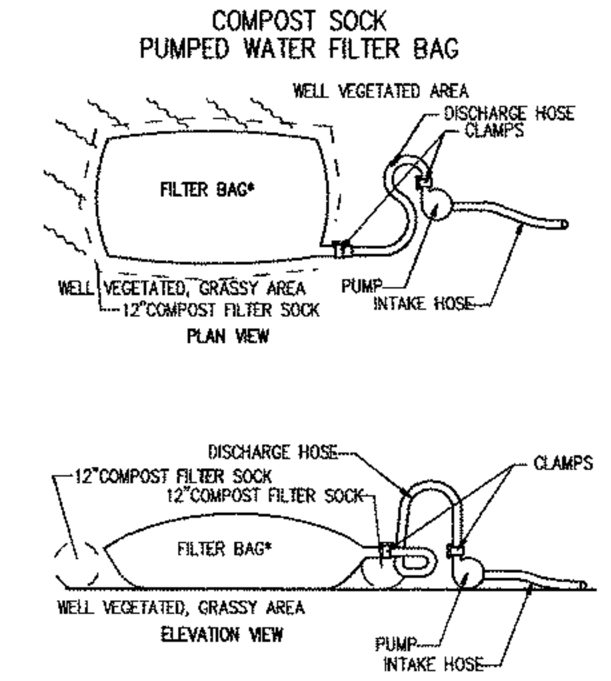
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

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

STANDARD CONSTRUCTION DETAIL #3-1
ALTERNATIVE ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

COMPOST SOCK
PUMPED WATER FILTER BAG



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.

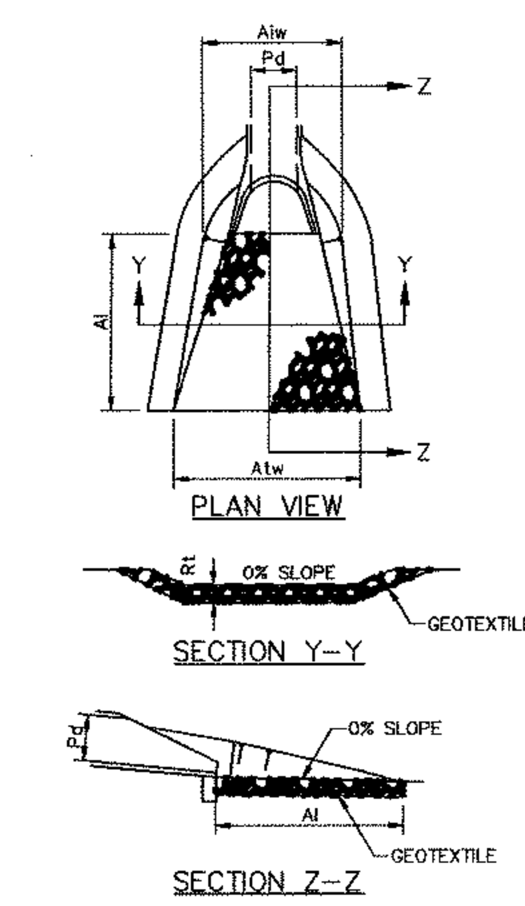
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R–_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
ES1	12	4	18	8	3	11
OFFSITE	12	4	18	8	3	11

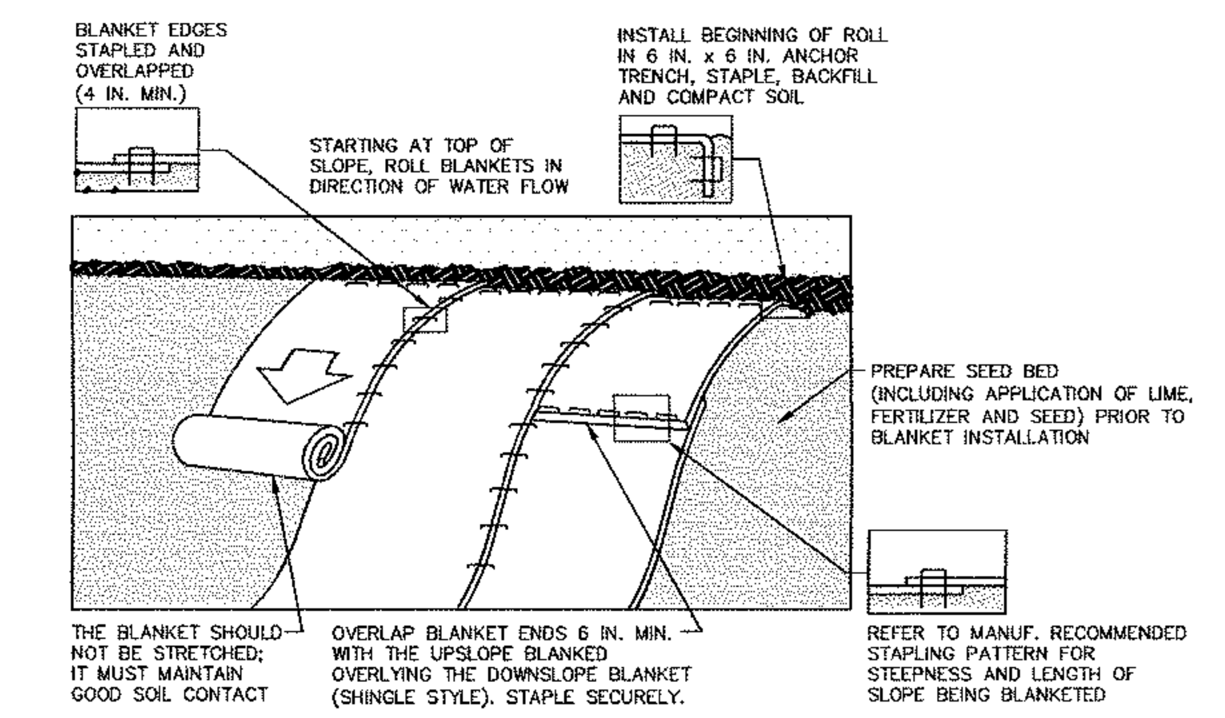
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET
WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE



NOTES:

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

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

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

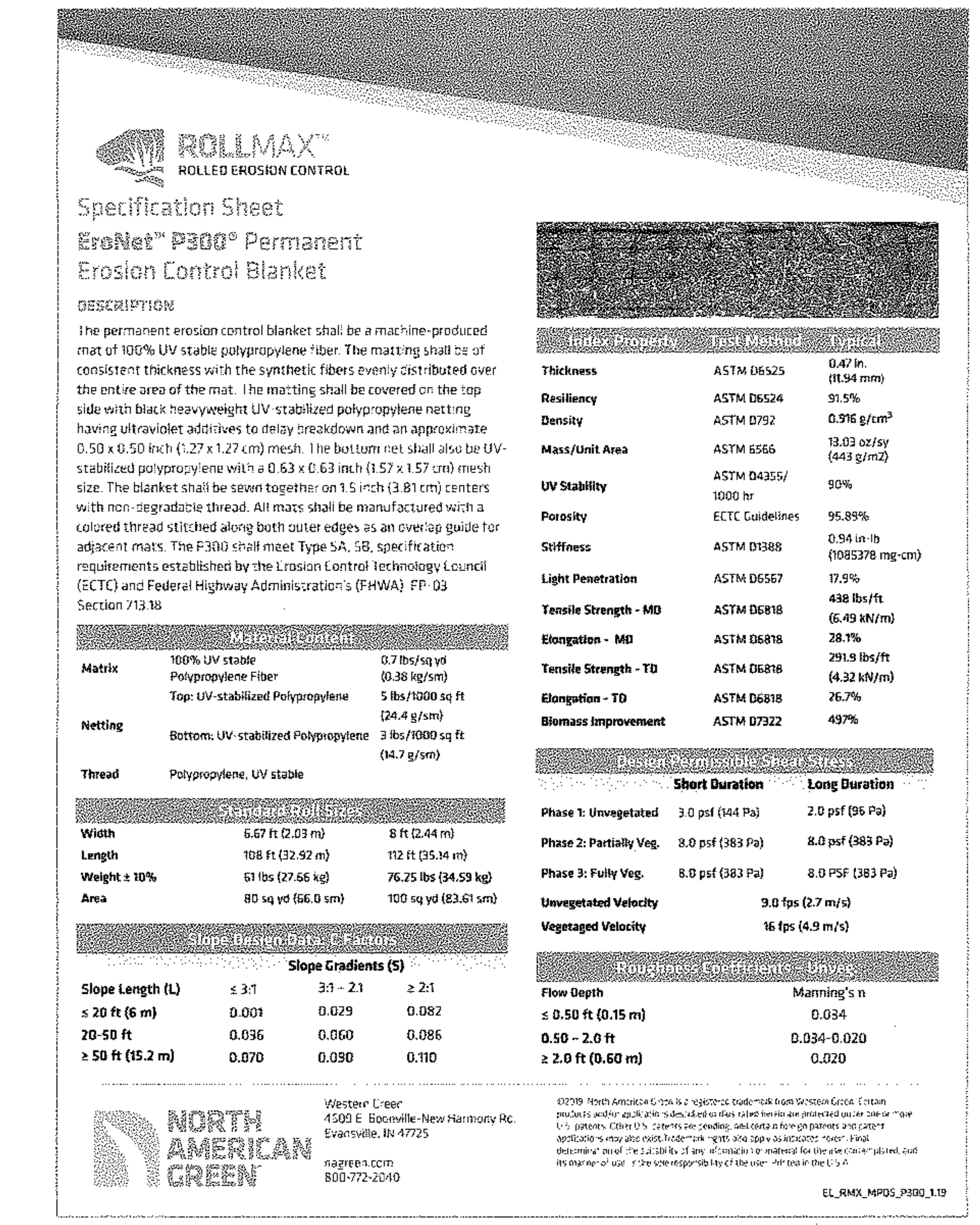
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

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

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

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE



ROLLMAX™ ROLLED EROSION CONTROL

Specification Sheet
EroNet™ P300® Permanent
Erosion Control Blanket

DESCRIPTION

The permanent erosion control blanket shall be a machine-produced mat of 100% UV stable polypropylene fiber. The matting shall be of consistent thickness with the synthetic fibers evenly distributed over the entire area of the mat. The matting shall be covered on the top side with black heavyweight UV-stabilized polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.50 x 0.50 inch (1.27 x 1.27 cm) mesh. The bottom net shall also be UV-stabilized polypropylene with a 0.63 x 0.63 inch (1.57 x 1.57 cm) mesh size. The blanket shall be sewn together on 1.5 inch (3.81 cm) centers with non-degradable thread. All mats shall be manufactured with a colored thread stitched along both outer edges as an overlap guide for adjacent mats. The P300 shall meet Type 5A, 5B, specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18

Material Content

Matrix	100% UV stable Polypropylene Fiber	0.7 lbs/sq yd (0.38 kg/sm)
Netting	Top: UV-stabilized Polypropylene	5 lbs/1000 sq ft (24.4 g/sm)
	Bottom: UV-stabilized Polypropylene	3 lbs/1000 sq ft (14.7 g/sm)
Thread	Polypropylene, UV stable	

Standard Roll Sizes

Width	6.67 ft (2.03 m)	8 ft (2.44 m)
Length	108 ft (32.92 m)	112 ft (35.14 m)
Weight ± 10%	61 lbs (27.66 kg)	76.25 lbs (34.59 kg)
Area	80 sq yd (66.0 sm)	100 sq yd (83.61 sm)

Slope Design Data: C Factors

Slope Length (L)	Slope Gradients (S) ≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.082
20-50 ft	0.036	0.060	0.086
≥ 50 ft (15.2 m)	0.070	0.090	0.110

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.47 in. (11.94 mm)
Resiliency	ASTM D6524	91.5%
Density	ASTM D792	0.916 g/cm³
Mass/Unit Area	ASTM 6566	13.03 oz/sy (443 g/m2)
UV Stability	ASTM D4355/ 1000 hr	90%
Porosity	ECTC Guidelines	95.89%
Stiffness	ASTM D1388	0.94 in-lb (1085378 mg-cm)
Light Penetration	ASTM D6567	17.9%
Tensile Strength - MD	ASTM D6818	438 lbs/ft (6.49 kN/m)
Elongation - MD	ASTM D6818	28.1%
Tensile Strength - TD	ASTM D6818	291.9 lbs/ft (4.32 kN/m)
Elongation - TD	ASTM D6818	26.7%
Biomass Improvement	ASTM D7322	497%

Design Permissible Shear Stress

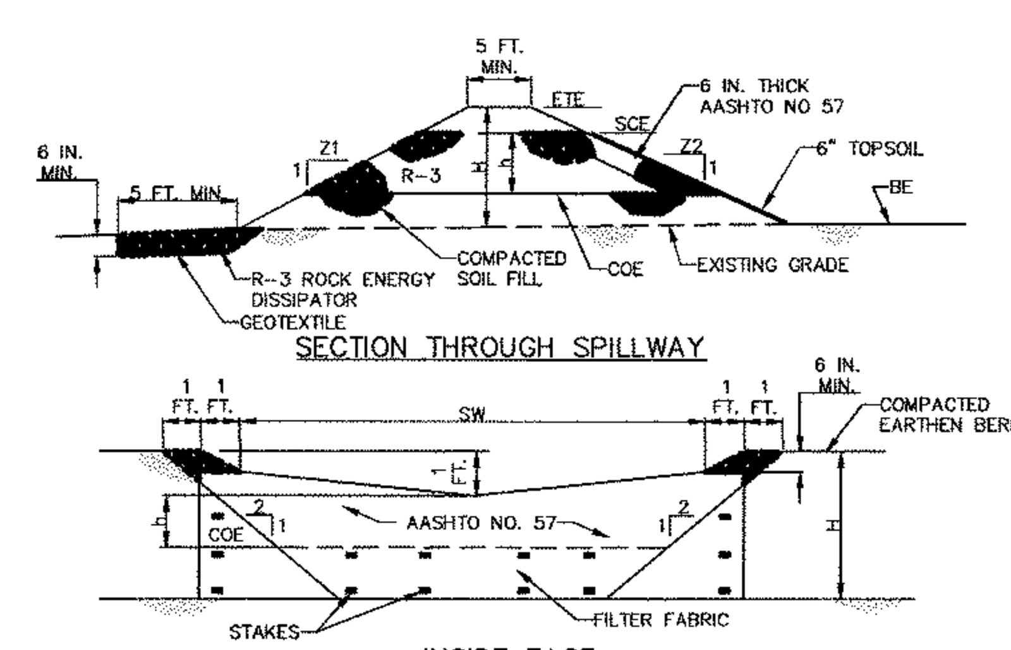
	Short Duration	Long Duration
Phase 1: Unvegetated	3.0 psf (144 Pa)	2.0 psf (96 Pa)
Phase 2: Partially Veg.	8.0 psf (383 Pa)	8.0 psf (383 Pa)
Phase 3: Fully Veg.	8.0 psf (383 Pa)	8.0 PSF (383 Pa)
Unvegetated Velocity	9.0 fps (2.7 m/s)	
Vegetaged Velocity	16 fps (4.9 m/s)	

Roughness Coefficients – Unveg.

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.034
0.50 – 2.0 ft	0.034-0.020
≥ 2.0 ft (0.60 m)	0.020

NORTH AMERICAN GREEN
Western Green
4509 E. Booneville-New Harmony Rd.
Evansville, IN 47725
nagreen.com
800-772-2040

EC_RMX_MPDS_P300_1.19



TRAP NO.	Z1 (FT)	Z2 (FT)	H (FT)	h (FT)	EMBANK. TOP ELEV. ETE (FT)	SPILLWAY CREST ELEV. SCE (FT)	CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)	SPILLWAY WIDTH SW (FT)
1	3	3	3	1	356.75	355.75	354.75	353.75	10
2	3	3	3	1	358.75	357.75	356.75	355.75	10
3	3	3	3	1	362.25	361.25	360.25	359.25	10

NOTES:

EMBANKMENT OUTLET SHALL BE COMPOSED ENTIRELY OF ROCK ABOVE CLEAN OUT ELEVATION (COE); MAIN BODY R–3 OR LARGER –– R–4 TO BE USED FOR DRAINAGE AREAS GREATER THAN 3.0 ACRES, INSIDE FACE AASHTO # 57 STONE OR SMALLER. A 6 IN. THICK LAYER OF COMPOST, COMPOST SOCK, OR CLEAN SAND SHALL BE INSTALLED ON TOP OF THE AASHTO #57 STONE AND SECURELY ANCHORED IN HQ WATERSHEDS. 24 IN. DIAMETER COMPOST SOCK(S) SHALL BE USED IN PLACE OF FILTER FABRIC AND AASHTO #57 STONE IN EV WATERSHEDS.

FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 9 IN.. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 6 IN.
UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

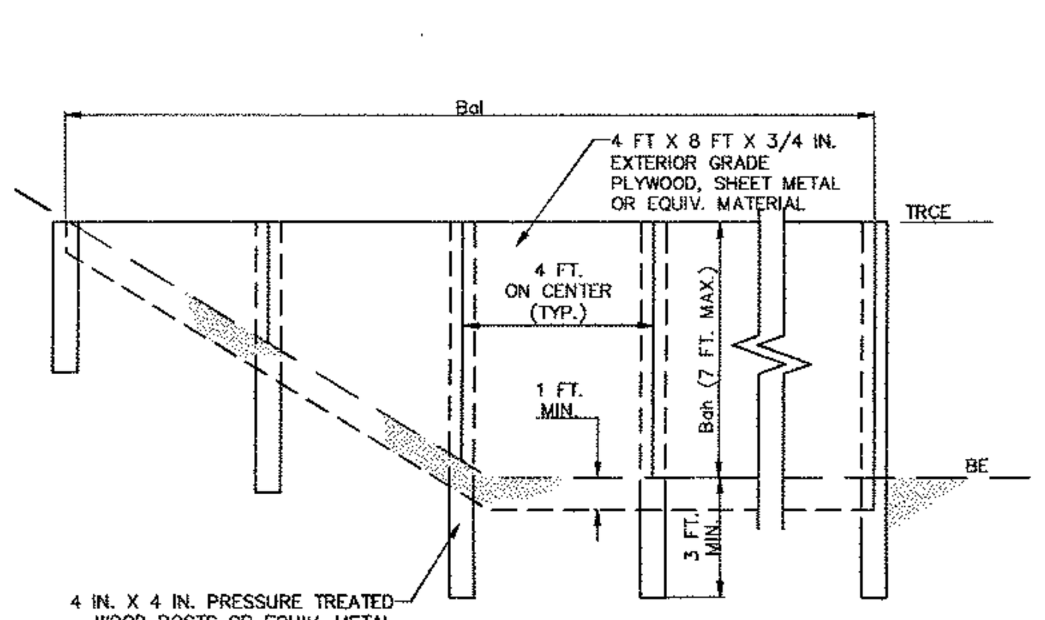
CHECK EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. CLOGGED OR DAMAGED SPILLWAYS AND/OR EMBANKMENTS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.

DISPLACED RIPRAP WITHIN THE SPILLWAY OR OUTLET PROTECTION SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. TO ASSIST IN REMOVING SEDIMENT, WHICH MAY BE SATURATED, A DEVICE SUCH AS IS SHOWN IN STANDARD CONSTRUCTION DETAIL #7–18 MAY BE USED TO DEWATER THE SEDIMENT PRIOR TO ITS REMOVAL.

STANDARD CONSTRUCTION DETAIL #8-1
EMBANKMENT SEDIMENT TRAP

NOT TO SCALE



BASIN OR TRAP NO.	BAFFLE LENGTH Bal (FT)	BAFFLE HEIGHT Bah (FT)	TEMPORARY RISER CREST ELEV. TRCE (FT)	BOTTOM ELEV BE (FT)
1	93	2	355.75	353.75

NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

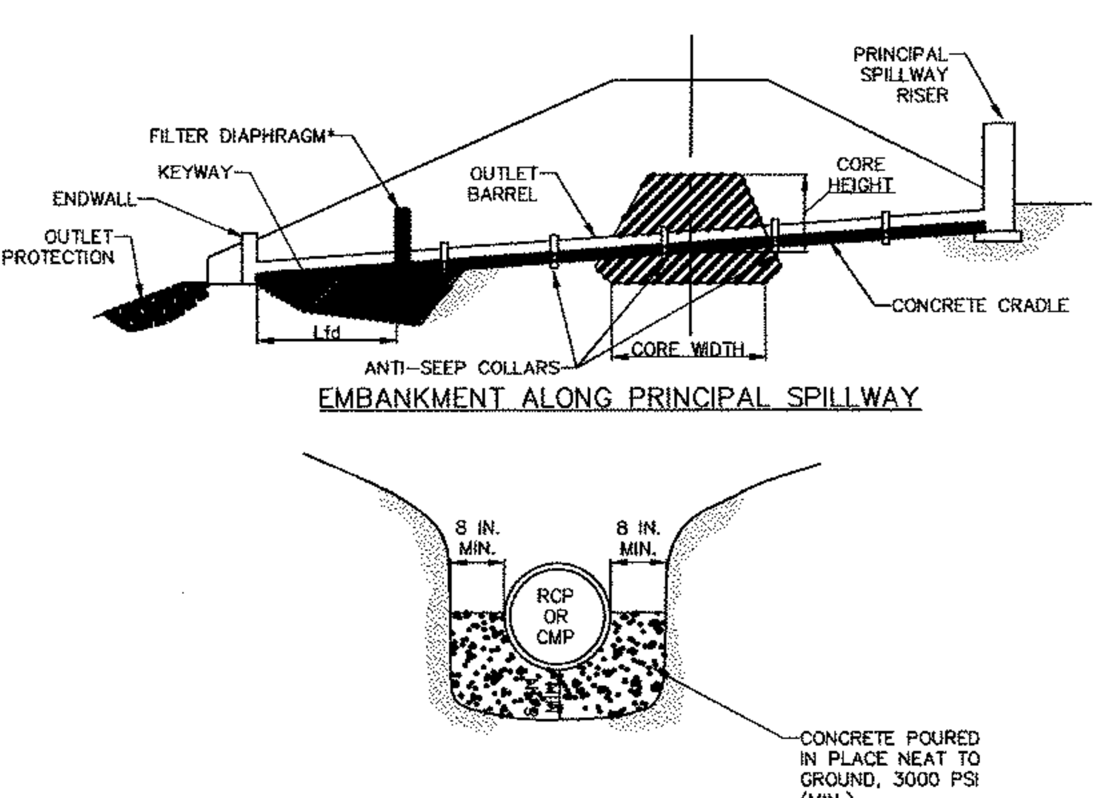
SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7-14
BAFFLE

NOT TO SCALE

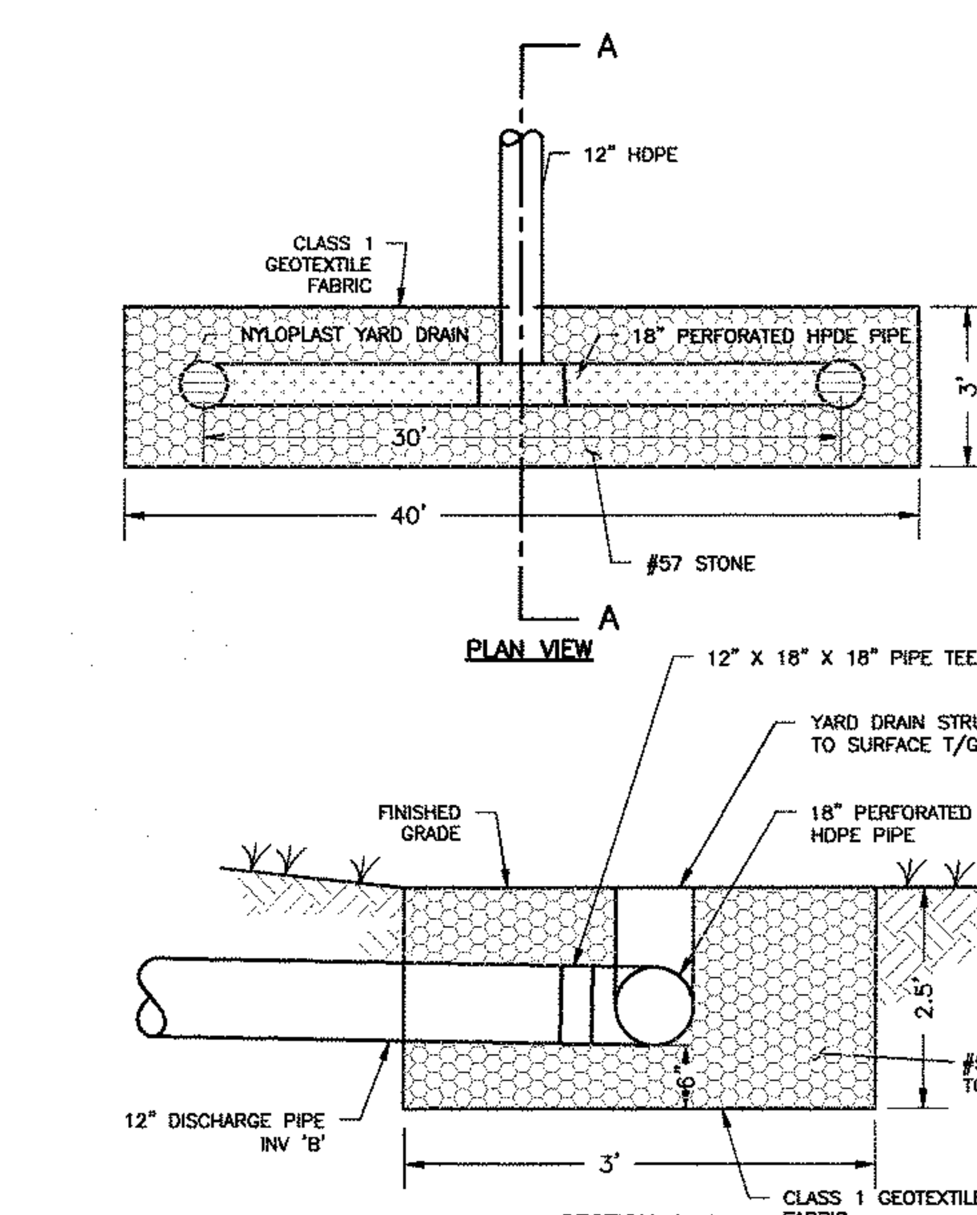


NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI–SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI–SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL #7-17
CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

NOT TO SCALE



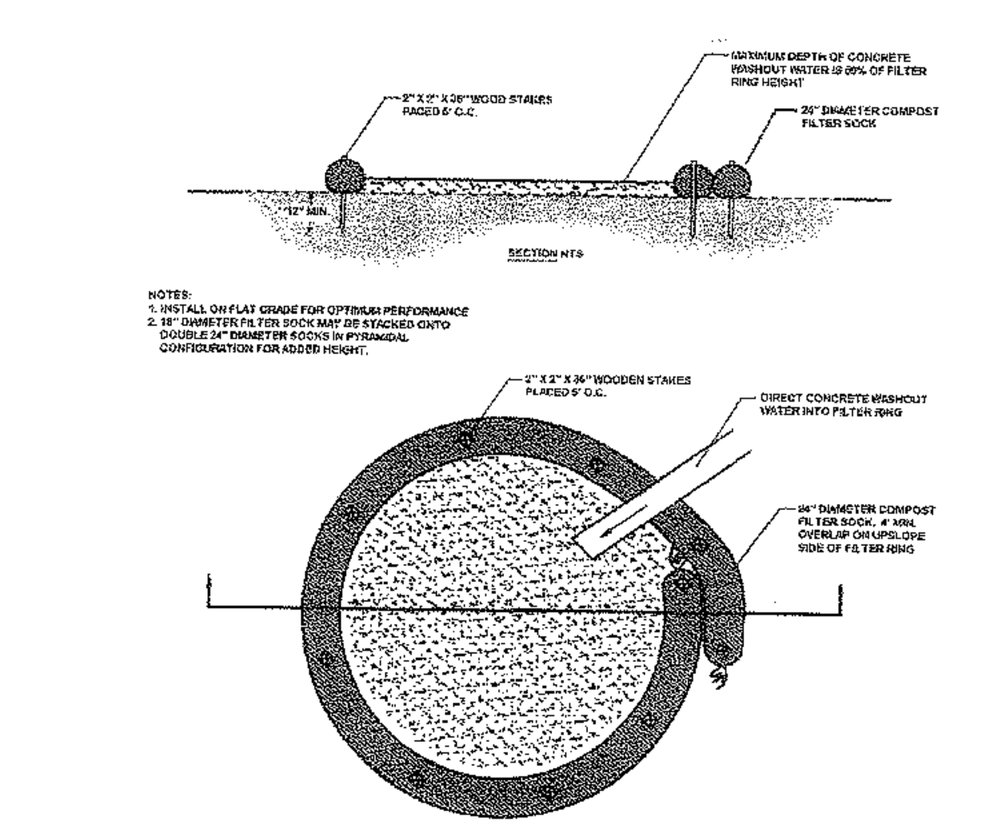
NOTES

1. SPREADER IS TO BE 30' IN LENGTH.
2. OUTFALL PIPE IS TO BE TERMINATED IN "TEE" COUPLING.
3. YARD DRAIN BASINS OR INLINE COUPLINGS SHALL BE USED WITH SURFACE GRATES AT EACH OF THE PERFORATED PIPE TO THE SURFACE.

BMP	A	B
RAIN GARDEN 3	354.00	352.00
RAIN GARDEN 4	357.00	355.00
RAIN GARDEN 5	365.00	363.00

LEVEL SPREADER DETAIL (LS3, LS4, LS5)

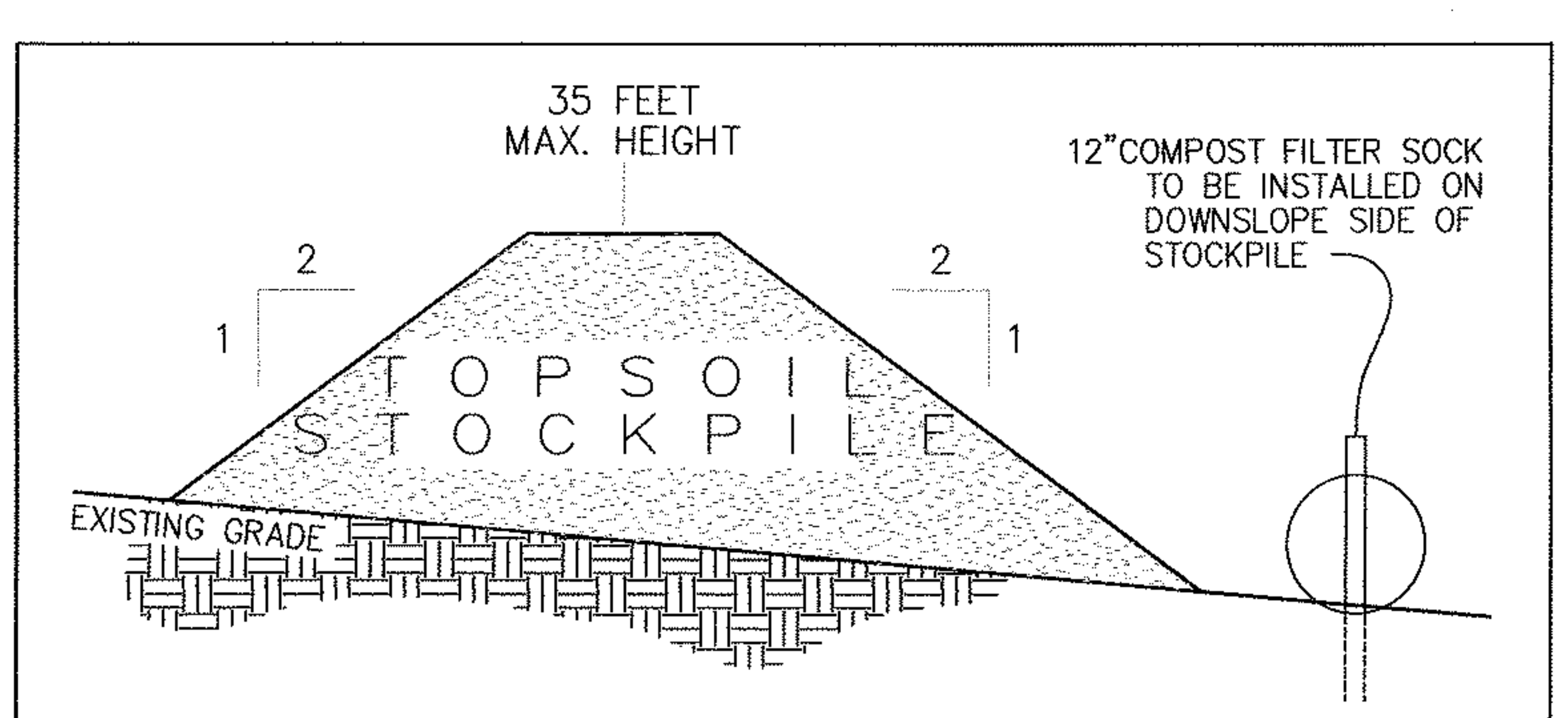
NO SCALE



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

363-2134-008 / March 31, 2012 / Page 58

CONCRETE WASHOUT



TOPSOIL STOCKPILE DETAIL

N.T.S.

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023–05–18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023–05–03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023–03–07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023–03–02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023–01–20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022–12–09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022–09–22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022–07–29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022–06–30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022–05–24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022–03–03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022–02–01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021–12–11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EROSION AND SEDIMENTATION CONTROL DETAILS

KELLY ACRES

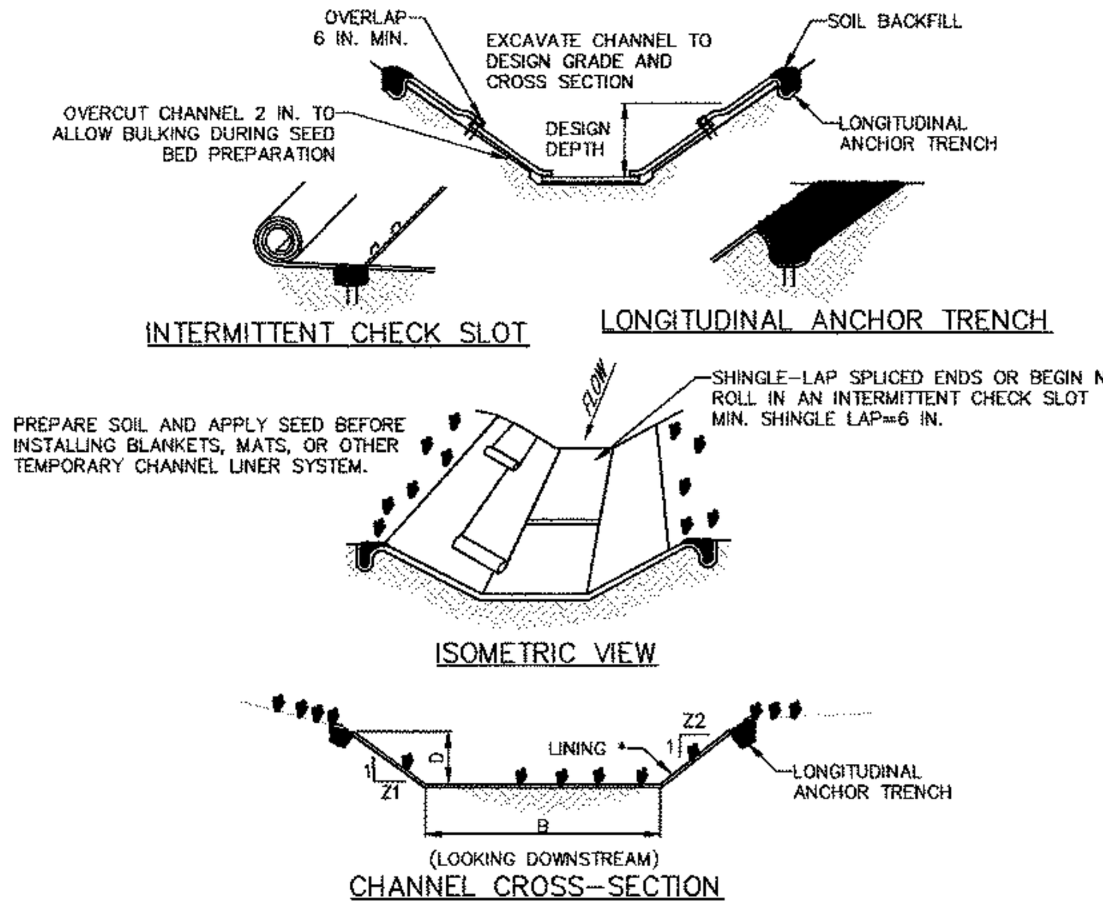
DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY BDB	PROJECT NO. 20–374A
DRAWN BY WJD	CHKD. BY	DWG. NO. ES320374A
DATE 2020–09–04	SCALE NOT TO SCALE	SHEET NO. 11 OF 23



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
1	N/A	2	2	10	2	2	N.A.G. S75
2	N/A	1.25	2	9.25	2	2	N.A.G. S75

NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL

NOT TO SCALE

STANDARD WORKSHEET #11
Channel Design Data

PROJECT NAME: Kelly Acres
LOCATION: Douglass Township, Montgomery County
PREPARED BY: SSR DATE: 20-Jan-2023
CHECKED BY: BDB DATE:

CHANNEL OR CHANNEL SECTION	Swale 1	Swale 1	Swale 2	Swale 2
Temporary or Permanent	TEMP	PERM	TEMP	PERM
Design Storm	N/A	N/A	N/A	N/A
Acres	0.49	0.49	0.25	0.25
Multiplier (1.6, 2.25, or 2.75)[1]	1.60	2.75	1.60	2.75
Q_r (REQUIRED CAPACITY) CFS	0.78	1.35	0.40	0.69
Q (CALCULATED AT FLOW DEPTH d) CFS	1.16	1.16	0.52	0.52
PROTECTIVE LINING[2]	S75	Grass	S75	Grass
n (MANNING'S COEFFICIENT)[2]	0.033	0.080	0.036	0.080
V_a (ALLOWABLE VELOCITY) FPS	3.00	3.00	3.00	3.00
V (CALCULATED AT FLOW DEPTH d) FPS	1.85	1.73	1.59	1.57
T_a (MAX ALLOWABLE SHEAR STRESS) LB/FT^2	2.00	2.00	2.00	2.00
T_d (CALC'D SHEAR STRESS AT FLOW DEPTH d) LB/FT^2	0.56	0.94	0.40	0.62
CHANNEL BOTTOM WIDTH (FT)	2.00	2.00	1.25	1.25
CHANNEL SIDE SLOPES (H:V)	2.00	2.00	2.00	2.00
D (TOTAL DEPTH) FT	2.00	2.00	2.00	2.00
CHANNEL TOP WIDTH@ D (FT)	10.00	10.00	9.25	9.25
d (CALCULATED FLOW DEPTH) FT	0.18	0.30	0.16	0.25
CHANNEL TOP WIDTH@ FLOW DEPTH d (FT)	2.72	3.20	1.89	2.25
BOTTOM WIDTH: FLOW DEPTH RATIO (12:1 MAX)	11.11	6.67	7.81	5.00
d_{50} STONE SIZE (IN)	N/A	N/A	N/A	N/A
A (CROSS-SECTIONAL AREA IN SQ. FT.)	0.42	0.78	0.25	0.44
R (HYDRAULIC RADIUS)	0.15	0.23	0.13	0.18
S (BED SLOPE, FT/FT)[3]	0.05	0.05	0.04	0.04
S_c (CRITICAL SLOPE)	0.03	0.16	0.04	0.17
$0.7S_c$	0.02	0.11	0.03	0.12
$1.3S_c$	0.04	0.21	0.05	0.22
STABLE FLOW? (Y/N)	YES	YES	YES	YES
FREE BOARD BASED ON UNSTABLE FLOW FT	N/A	N/A	N/A	N/A
FREE BOARD BASED ON STABLE FLOW FT	1.82	1.70	1.84	1.75
MINIMUM REQUIRED FREEBOARD FT[4]	0.50	0.50	0.50	0.50
DESIGN METHOD FOR PROTECTIVE LINING[5] PERMISSIBLE VELOCITY (V) OR SHEAR STRESS (S)	V	V	V	V

1. Use 1.6 for Temporary Channels; 2.25 for Temporary Channels in Special Protection (HQ or EV) Watersheds; 2.75 for Permanent Channels. For Rational Method, enter N/A and attach Worksheets 9 and 10. For TR-55 enter N/A and attach appropriate Worksheets.
2. Adjust "n" value for changes in channel liner and flow depth. For vegetated channels, provide data for manufactured linings without vegetation and with vegetation in separate columns.
3. Slopes may not be averaged.
4. Minimum Freeboard is 0.5 ft. or ¼ Total Channel Depth, whichever is greater
5. Permissible velocity lining design method is not acceptable for channels with a bed slope of 10% or greater. Shear stress lining design method is required for channels with a bed slope of 10% or greater. Shear stress lining design method may be used for any channel bed slope.

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet
EroNet™ S75® Erosion Control Blanket

DESCRIPTION

The short-term single net erosion control blanket shall be a machine-produced mat of 100% agricultural straw with a functional longevity of up to 12 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation) The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a lightweight photodegradable polypropylene netting having an approximate 0.50 x 0.50 in. (1.27 x 1.27 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The S75 shall meet Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.28 in. (7 mm)
Resiliency	ECTC Guidelines	78.8%
Water Absorbency	ASTM D1117	301%
Mass/Unit Area	ASTM D6475	9.76 oz/sy (332 g/sm)
Swell	ECTC Guidelines	15%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	6.31 oz-in
Light Penetration	ASTM D6567	6.0%
Tensile Strength - MD	ASTM D6818	122.4 lbs/ft (1.81 kN/m)
Elongation - MD	ASTM D6818	36.1%
Tensile Strength - TD	ASTM D6818	79.2 lbs/ft (1.17 kN/m)
Elongation - TD	ASTM D6818	26.8%
Biomass Improvement	ASTM D7322	301%

Material Content		
Matrix	100% Straw Fiber	0.5 lbs/sq yd (0.27 kg/sm)
Netting	Top side only, lightweight photodegradable	1.5 lb/1000 sq ft (0.73 kg/100 sm)
Thread	Degradable	

Standard Roll Sizes			
Width	6.67 ft (2.03 m)	8.0 ft (2.4 m)	16 ft (4.87 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)	112 ft (34.14 m)
Weight ± 10%	40 lbs (18.14 kg)	50 lbs (22.68 kg)	100 lbs (45.36 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)	200 sq yd (167.22 sm)

Design Permissible Shear Stress	
Unvegetated Shear Stress	1.55 psf (74 Pa)
Unvegetated Velocity	5.00 fps (1.52 m/s)

Slope Design Data: C Factors

Slope Length (L)	Slope Gradients (S) ≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.029	N/A	N/A
20-50 ft	0.11	N/A	N/A
≥ 50 ft (15.2 m)	0.19	N/A	N/A

NTPEP Large-Scale Slope Testing
ASTM D6459 - C-factor = 0.012

Roughness Coefficients – Unveg.

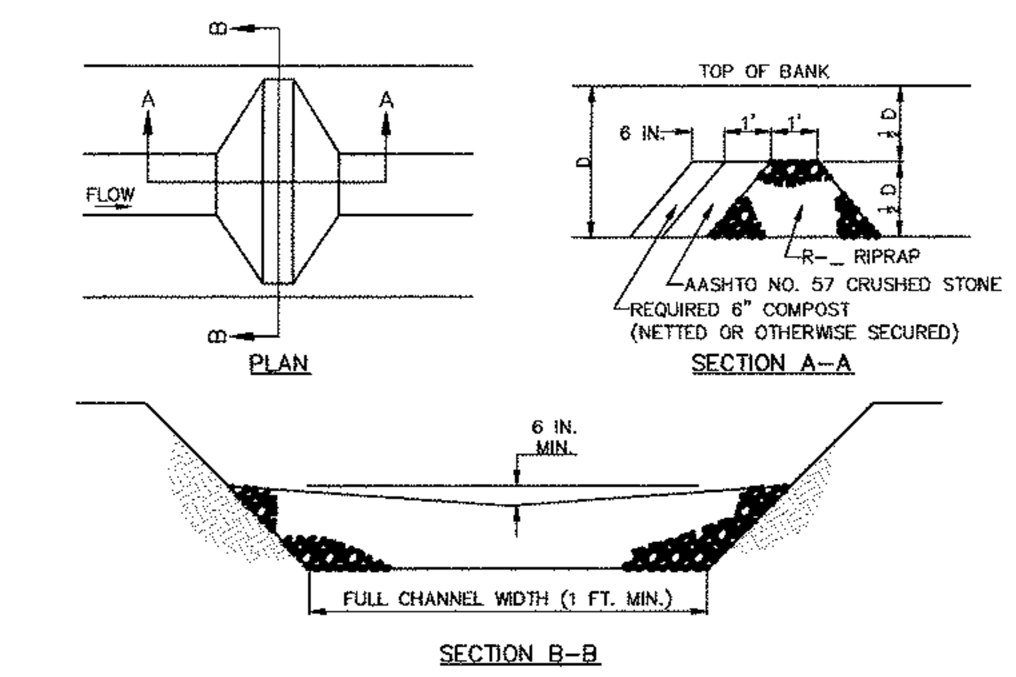
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.055
0.50 – 2.0 ft	0.055-0.021
≥ 2.0 ft (0.60 m)	0.021

NORTH AMERICAN GREEN

Western Green
4609 E. Boonville-New Harmony Rd.
Evansville, IN 47725

nagreen.com
800-772-2040

EC_RMX_MPDS_S75_7.20



ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-_)
1	VEGETATED SWALE 1	2	3
2	VEGETATED SWALE 2	2	3

FOR D ≥ 3 FT. – USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. – USE R-3
NOT APPLICABLE FOR D < 2 FT.

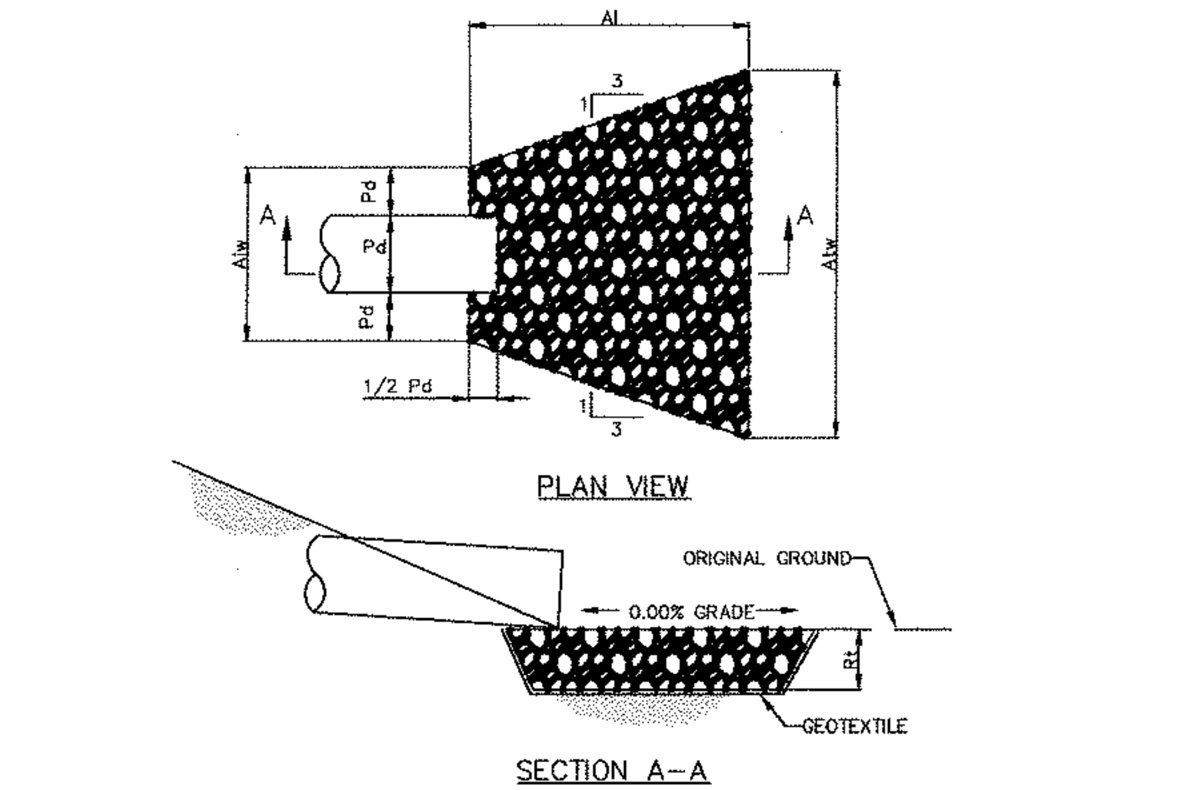
NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

STANDARD CONSTRUCTION DETAIL #4-14
ROCK FILTER

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
SWALE 1	N/A	4	18	8	10	10
SWALE 2	N/A	4	18	8	9.25	9.25

NOTES:

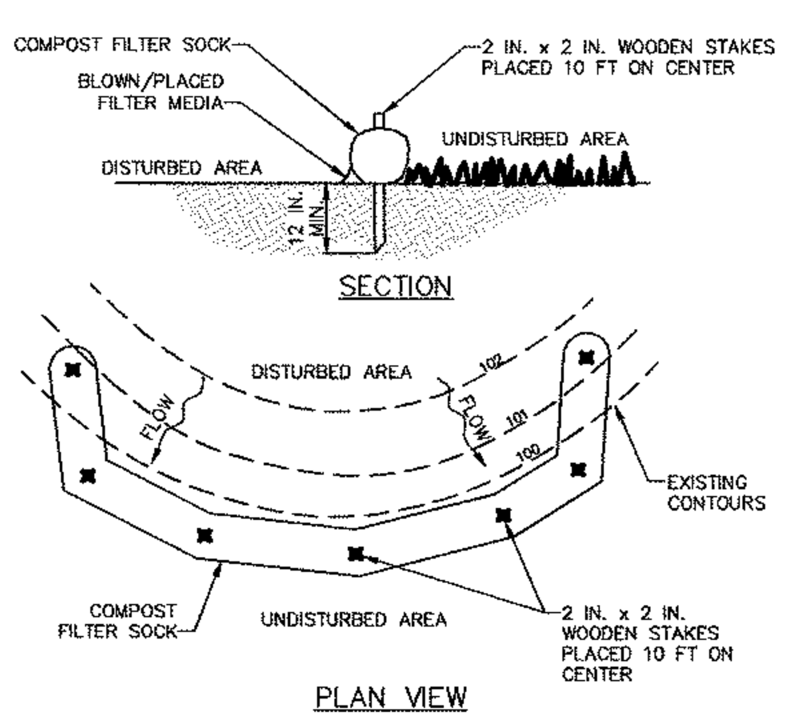
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

STANDARD CONSTRUCTION DETAIL #9-2
RIPRAP APRON AT PIPE OUTLET
NO FLARED ENDWALL

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.

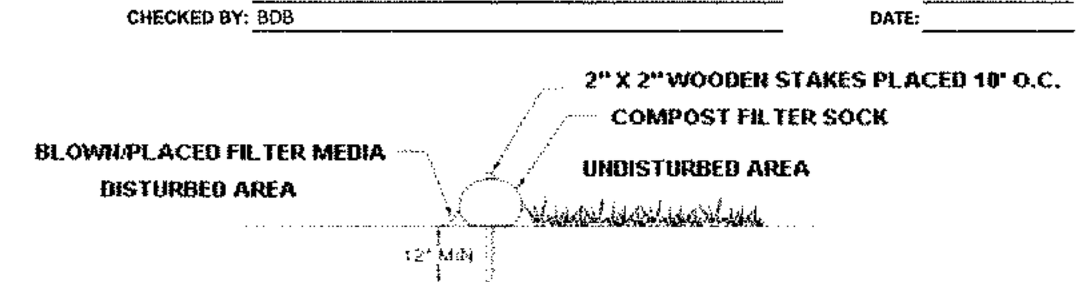
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

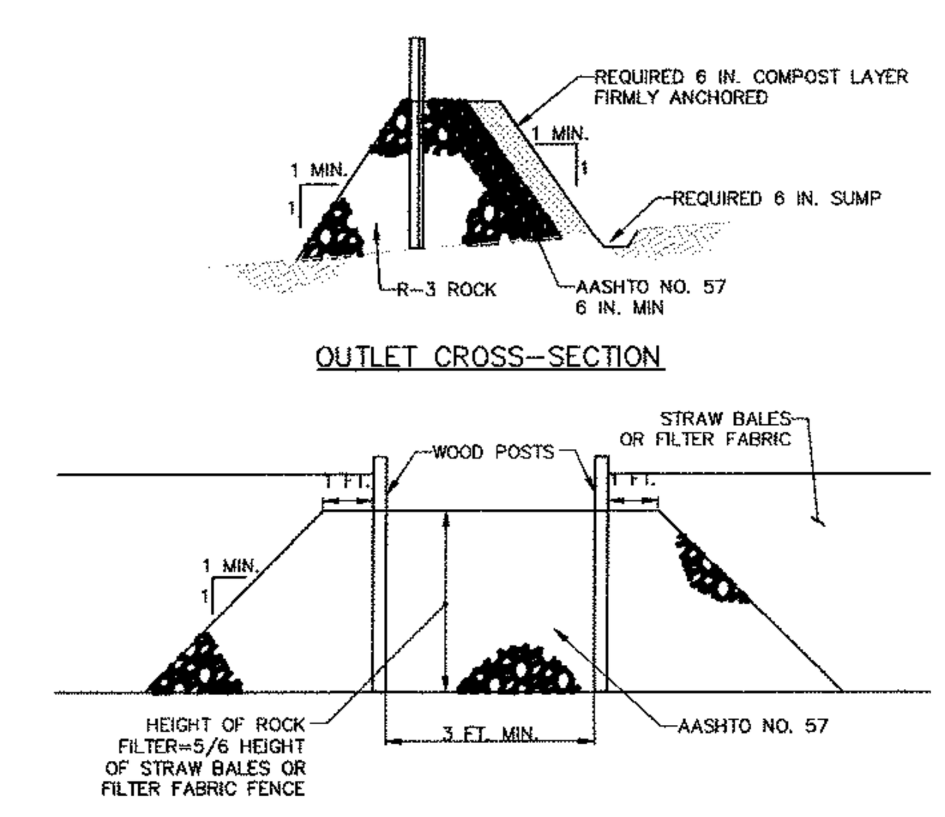
NOT TO SCALE

STANDARD WORKSHEET #1
Compost Filter Socks

PROJECT NAME: Kelly Acres
LOCATION: Douglass Township, Montgomery County
PREPARED BY: SSR DATE: 6-Dec-2022
CHECKED BY: BDB DATE:



SOCK NO.	Dia. In.	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
1	24	Northeast of Sediment Trap 1	3	650
2	12	East of Proposed Dwelling on Lot 2	2.1	140
3	12	Southwest of Rain Garden 5	2.4	167
4	12	South of Rain Garden 5	1.8	219
5	12	East of Rain Garden 5	1.9	214
6	24	North of Sediment Trap 2	3	390
7	24	Northeast of Sediment Trap 2	3	390
8	12	East of Proposed Driveway on Lot 4	4	50
9	18	East of Proposed Driveway on Lot 4	4.2	286
10	24	North of Sediment Trap 3	3	395
11	24	Northeast of Sediment Trap 3	3	395
12	18	Southeast of Proposed Dwelling on Lot 5	2.2	368
13	12	Northeast of Proposed Driveway on Lot 5	3.7	54
14	12	South of Proposed Driveway on Lot 5	3.3	60
15	18	Southwest of Proposed Dwelling on Lot 5	3.3	239
16	12	Northeast of Proposed Dwelling on Lot 5	4	50
17	12	Northwest of Dwelling on Lot 5	4	50
18	12	Northwest of Rain Garden 2	1.5	325
19	18	Downslope from Topsoil Stockpile on Lot 2	1.6	250
20	18	Downslope from Topsoil Stockpile on Lot 3	2.2	360
21	18	Downslope from Topsoil Stockpile on Lot 5	4.2	240
22	18	Downslope from Topsoil Stockpile on Lot 4	4.7	190
23	18	Downslope from Topsoil Stockpile on Lot 1	1.2	325



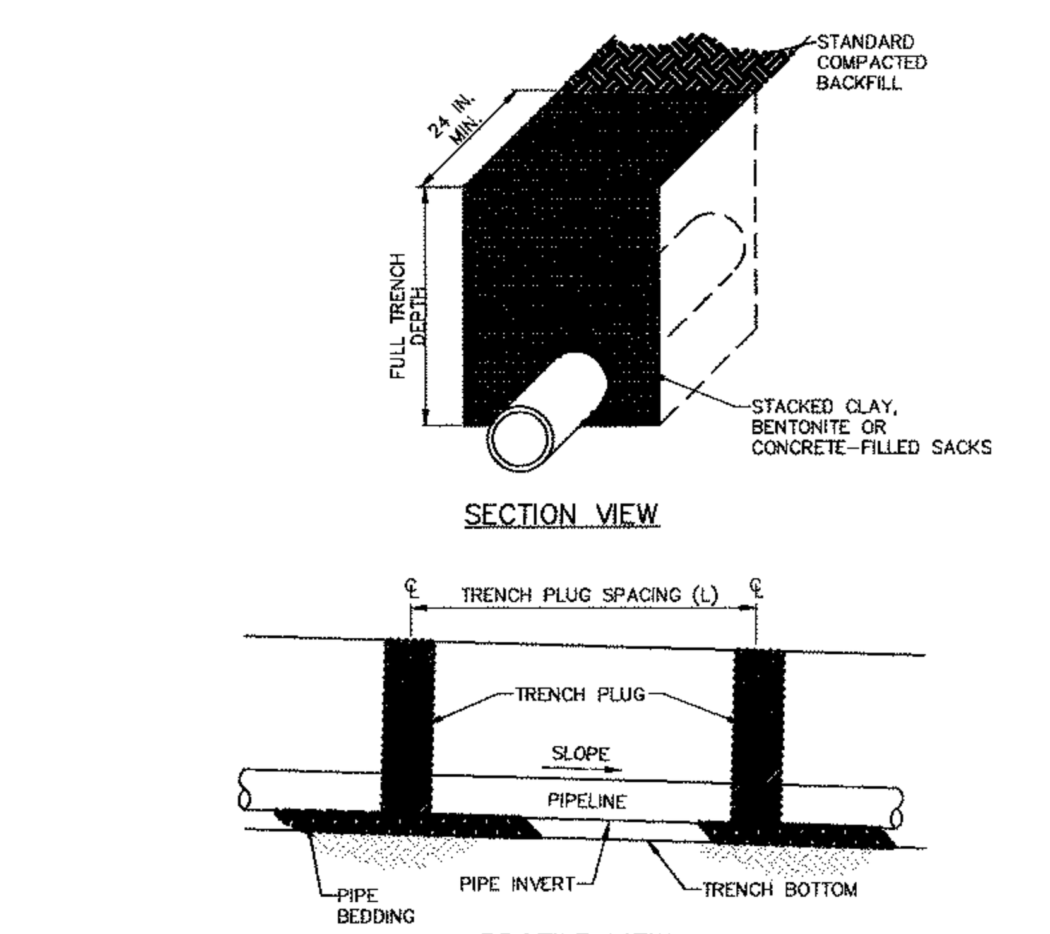
NOTES:

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



PA DEP EROSION CONTROL MANUAL TABLE 13.1
MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS

TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
< 5	1000	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
5 – 15	500	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
15 – 25	300	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
25 – 35	200	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
35 – 100	100	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
> 100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

* TOPSOIL MAY NOT BE USED TO FILL SACKS

NOTES:

IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATER BODY CROSSINGS.

STANDARD CONSTRUCTION DETAIL #13-4
TRENCH PLUG INSTALLATION

NOT TO SCALE

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EROSION AND SEDIMENTATION CONTROL DETAILS

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: NOT TO SCALE

PROJECT NO. 20-374A
DWG. NO. ES420374A

I. 102.4(b)(4) - Site disturbance will be minimized by protecting existing woodlands and vegetation outside of the required area for construction. A construction fence will be installed to protect the area. Rain Gardens will capture post construction stormwater flows from the dwellings and the driveway. Sediment traps and compost filter socks will protect areas impacted by construction. The socks will allow for unimpeded site and BMP construction as well as minimizing compaction and sediment storage in the areas of the BMP areas.

II. 102.4(b)(5)(i) - The existing topographic features of the project site and the immediate surrounding area.

The site contains two distinct watersheds. Watershed 1 to the UNT to Minister Creek slopes towards Buchert Road to the northeast at an average 3-8% slope. Watershed 2 to the UNT to Minister Creek slopes towards Buchert Road to the southeast at an average 3-8% slope. The proposed construction will disturb 4.23 acres. The undisturbed acreage will remain as meadow and wooded. A USGS map is included in Appendix A.

III. 102.4(b)(5)(ii) - The types, depth, slope, locations and limitations of the soils.

The soils boundaries, types, depth are shown on the Erosion Control Plan. The soils mapping and information has been taken from the United States Department of Agriculture National Cooperative Soil Survey for Montgomery County, PA. The soils are not classified as hydric and/or having hydric inclusions. A copy of the soil report is included in Appendix B.

Soil Characteristics

Soil Name	Penn channery silt loam, 3 to 8 percent slopes	Klinesville channery silt loam, 3 to 8 percent slopes
Depth to Seasonal Water Table (ft)	Greater than 6	Greater than 6
Depth to Bedrock (ft)	2.33	1.57
pH	Test Soil	Test Soil
Susceptibility to Frost Action	Moderate	Moderate
Topsoil Suitability	Fair	Poor
Road Fill Suitability	Poor	Poor
Highway Location	Very Limited	Very Limited
Construction and Maintenance of Pipelines	Limited	Limited
Embankment Suitability for Detention Basins	Very Limited	Very Limited
Terrace and Waterway Suitability	Somewhat Limited	Very Limited
Landscaping and Lawn Suitability	Somewhat Limited	Very Limited
On-site Sewage Disposal Suitability Home Site Suitability with Basement	Moderately Limited Very Limited	Very Limited Very Limited
Hydrologic Soil Group	B	D

Soil Limitations

Soil Name	Penn channery silt loam, 3 to 8 percent slopes	Klinesville channery silt loam, 3 to 8 percent slopes
Cutbanks Cave	X	X
Corrosive to Concrete/Steel	C	C/S
Droughty	X	X
Easily Erodible		X
Flooding		
Depth to Saturated Zone/Seasonal High Water Table		
Hydric/Hydric Inclusions	X	X
Low Strength/Landslide Prone	X	
Slow Percolation		X
Piping	X	
Poor Source of Topsoil	X	X
Frost Action	X	X
Shrink-Swell		
Potential Sinkhole		
Ponding		
Wetness		

Soil Limitations and Resolutions

Cutbacks Cave - Cutbacks have potential to cave and have low strength.
All applicable OSHA standards and regulations must be implemented at all times, especially during trenching and excavation.

Corrosive to Concrete/Steel - Soils are corrosive to concrete and steel.
Concrete foundations shall be sealed and backfilled with stone. Stormwater and sanitary force main pipes shall be constructed of HDPE and sanitary laterals and gravity sewer shall be made of PVC. Exposed steel shall be epoxy coated.

Droughty - Soils exhibit poor moisture holding capacity which may limit vegetative stabilization.
Contractor shall refer to Table 11-3 of the E&S Control Manual to select appropriate vegetation. Erosion control blankets may be installed to aid in moisture retention.

Easily Erodible - Soils have the potential to erode under heavy stormwater flow conditions.
Disturbance shall be limited and stabilized as soon as possible. Areas with concentrated stormwater flows, such as vegetated swales and emergency spillways, and steep slopes shall be matted with erosion control blankets.

Hydric/Hydric Inclusions - Soil is saturated during the growing season.
Delineated wetlands shall not be disturbed.

Low Strength - Soils may have a low ability to resist slope failure.
Action shall be taken to avoid slope failures, such as overloading and over-steepening of slopes and prevent saturation of slopes.

Slow Percolation - Permeability rates may be less than suitable for infiltration.
Soil tests have been conducted to determine suitable locations for infiltration BMPs. MRCs are proposed. BMPs shall be inspected after every rainfall to ensure infiltration.

Piping - Trench plugs shall be used on utility lines adjacent to the proposed BMPs. Concrete cradles shall be installed on all BMP outlet pipes.

Poor Source of Topsoil - Soil tests shall determine suitability for topsoil and appropriate application rate for amended soils to promote vegetation growth.

Frost Action - Likelihood of ice formation in the soil causing frost heave or loss of strength during thawing.
Construction shall be limited in freezing conditions and no frozen soil shall be used.

IV. 102.4(b)(5)(iii) - The characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

The existing use is wooded and past land uses are woods. The proposed site alterations include site improvements to construct 5 single-family dwellings and driveways.

V. 102.4(b)(5)(iv) - The amount of runoff from the project area and its upstream area.

The site drains towards Buchert Road. Post-developed flows from the site will be reduced by BMP's to comply with Douglass Township's Stormwater Management Ordinance.

VI. 102.4(b)(5)(v) - The location of waters of the Commonwealth which may receive runoff within or from the project site and their classification pursuant to Chapter 93 of this title.

The site is within the watershed of the UNT to Minister Creek and is located in the Delaware River Basin. The Chapter 93 classification for the Minister Creek is TSF-MF. This stream is not listed as a TMDL stream. UNT to Minister Creek is impaired waters due to siltation. No riparian areas exist on the property.

VII. 102.4(b)(5)(vi) - A written depiction of the location and type of perimeter and on-site BMP's used before, during, and after the earth disturbance activity.

The location of the proposed temporary and permanent BMP's and their construction details are shown on the Erosion Control Plans and Detail Sheet. The worksheets and calculations are provided in Appendix C. BMP's include Rock Construction Entrance, Embankment Sediment Trap, Compost Filter Socks, Temporary and Permanent Seeding, Concrete Washout, Riprap Apron, Erosion Control Blankets, Pumped Water Filter Bag, and Vegetated Channel.

General Notes

1. The operator/responsible person (O/RP) on site shall assure that the approved erosion and sediment control plan is properly and completely implemented.
2. The O/RP shall assure that an erosion and sediment control plan has been prepared, approved by the Montgomery County Conservation District, and is being implemented and maintained for all soil and/or rock spoil and borrow areas regardless of their locations.
3. Only limited disturbance will be permitted to provide access (swales, diversion terraces, etc.) for grading and acquiring borrow to construct those controls.
4. Erosion and sediment BMPs must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs.
5. After final site stabilization has been achieved, temporary erosion and sedimentation BMPs must be removed. Areas disturbed during removal of the BMPs must be stabilized immediately.
6. Vehicles and equipment must use the designated driveway entrances onto Buchert Road. At no time shall construction vehicles be allowed to enter areas outside of the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations may begin.
7. At the end of each working day, any sediment tracked or conveyed onto a public roadway or sidewalk will be removed and re-deposited onto the construction site. Removal can be completed through use of mechanical or hand tools, but must never be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
8. Sediment removed from BMPs shall be disposed of on-site in landscaped areas outside of steep slopes, wetlands, floodplains, or drainage swales and immediately stabilized or placed on topsoil stockpiles and stabilized.
9. All pumping of sediment laden water shall be through a sediment control BMP such as a pumped water filter bag discharging over undisturbed vegetated areas. Discharge points should be established to provide for maximum distance to active waterways.
10. Soil areas to remain ungraded shall be protected from compaction by restricting vehicle and equipment access. Soil areas to be graded shall be protected from compaction by limiting vehicle and equipment access to minimize activity on these areas.
11. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, and other objectionable material.
12. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness. Fill shall not be placed on saturated or frozen surfaces.
13. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fill
14. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
15. All excavation for utility line installation shall be limited to the amount that can be excavated, installed, backfilled and stabilized within one working day. All excavated material shall be deposited on the upslope side of the trench.
16. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the O/RP shall implement appropriate BMPs to eliminate the potential for accelerated erosion and/or sediment pollution. Stockpiles of wood chips, hay bales, crushed stone and other mulches shall be held in readiness to deal immediately with emergency problems of erosion.
17. The contractors and O/RP are advised to become thoroughly familiar with the provisions of the Appendix 64, Erosion Control Rules and Regulations, Title 25, Part 1, Department of environmental Protection, Subpart C, Protection of Natural Resources, Article III, Water Resources, Chapter 102, Erosion Control.
18. A copy of the approved erosion and sedimentation control report and plans must be available on the project site at all times.
19. Failure to correctly install E&S BMPs, failure to prevent sediment laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/ or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.

Temporary Control Measures and Facilities for Use During Earthmoving

1. Compost filter sock sand/or silt fence shall be installed at locations noted on the plan prior to any disturbance of the existing ground cover. During the construction phase, the O/RP shall be responsible for cleaning or replacing compost filter socks and/or silt fence after each rainfall event to insure continued operation.
2. Stockpile heights must not exceed 35 feet; stockpile slopes must not exceed 2:1.
3. Stone base courses for roads and driveways shall be placed as soon as practical.
4. Stockpiles of mulches, such as wood chips, crushed stone, straw and jute mesh shall be kept onsite and be available to deal with erosive conditions as they arise.
5. All cut and fill slope areas whose surfaces are subject to erosive action shall be protected with one of the mulches in item 4 above.
6. All temporary controls are to remain in place during the entire construction phase until the soil has been stabilized, unless otherwise noted.

Stabilization Notes

1. Topsoil required for the establishment of vegetation shall be stockpiled at the location shown on the plan in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected by a compost filter sock. Stockpile heights must not exceed 35'. Stockpile slopes must be 2:1 or flatter.
2. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches, 6 to 12 inches on compacted soils, prior to placement of topsoil. Areas to be vegetated shall have a minimum of 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.
3. Immediately 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 the specified rates.
4. Disturbed areas which are not at finished grade and which will be re-disturbed within one year must be stabilized in accordance with temporary vegetative stabilization specifications.
5. Disturbed areas that are at finished grade or which will not be re-disturbed within one year must be stabilized with permanent vegetative stabilization specifications.
6. Stockpiles must be stabilized immediately.
7. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre.
8. 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 otherwise shown on the plan drawings, shall be blanketed according to the plan.
9. Until a site is stabilized, all erosion and sediment BMPs must be maintained properly. Maintenance must include inspections of all erosion and sedimentation BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, re-seeding, re-mulching, and re-netting, must be performed immediately. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
10. An area shall be considered to have achieved final stabilization when it has a minimum of 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 or other movements.
11. Mulch with mulch control netting or erosion control blankets must be installed on all slopes greater than 3:1.

Permanent Control Measures and Facilities for Long Term Protection

The following activities shall be undertaken to achieve permanent stabilization of all exposed and disturbed soil areas as required or directed.

Permanent Vegetative Surface Stabilization

Site Preparation - Incorporate lime and fertilizer (rate based upon soil testing) as deeply into the soil as possible. If soil tests are not available, apply four tons per acre of agricultural limestone and 10-20-20 fertilizer at a rate of 500 pounds per acre.

Seeding - All disturbed areas shall be prepared and seeded with the species the noted seeding rate following the final grading.

Temporary and Permanent Stabilization Specifications

Temporary Seeding
Species: Annual Ryegrass
%: Pure Live Seed: 89%
Application Rate: 40 lbs. per acre
Fertilizer Type: 10-10-20
Fertilizer Application Rate: 500 lbs. per acre
Liming Rate: Agricultural Grade Limestone A at 1 ton per acre
Mulch Type: Hay or Straw
Mulching Rate: 3 tons per acre

Permanent Seeding
Species: Tall Fescue (39%), Fine Fescue (38%), Alsike Clove (20%), Redtop (3%)
%: Pure Live Seed: 89%
Application Rate: 20, 10, 20 and 12 lbs. per acre, respectively
Fertilizer Type: 10-20-20
Fertilizer Application Rate: 1000 lbs. per acre
Liming Rate: Agricultural Grade Limestone A at 6 ton per acre
Mulch Type: Hay or Straw
Mulching Rate: 3 tons per acre
Anchor Material: None
Anchoring Method: Cleat with deep cleats
Seeding Season Dates: March through June, September, October

Permanent Steep Slope Seeding
Species: Tall Fescue Alsike
%: Pure Live Seed: 89%
Application Rate: 20 and 10 lbs. per acre, respectively
Fertilizer Type: Refer to Permanent Control Measures Section
Fertilizer Application Rate: Refer to Permanent Control Measures Section
Liming Rate: Agricultural Grade Limestone A at 6 ton per acre
Mulch Type: Hay or Straw
Mulching Rate: 3 tons per acre
Anchor Material: North American Green P300 or equal
Anchoring Method: Staples
Seeding Season Dates: March through June, September, October

A nurse crop of oats shall be used with the permanent seeding at a rate of 45 lbs per acre.

Channel Notes

1. All channels must be kept free of obstructions such as fill ground, fallen leaves & woody debris, accumulated sediment, and construction materials/wastes. Channels should be kept mowed and/or free of all weedy, brushy or woody growth. Any underground utilities running across/ through the channel(s) shall be immediately backfilled and the channel(s) repaired and stabilized per the channel cross-section detail.
2. Vegetated channels shall be constructed free of rocks, tree roots, stumps or other projections that will impede normal channel flow and/or prevent good lining to soil contact. The channel shall be initially over-excavated to allow for the placement of topsoil.

Utility Line Trench Excavation

1. Limit advanced clearing and grubbing operations to a distance equal to two times the length of pipe installation that can be completed in one day.
2. Work crews and equipment for trenching, placement of pipe, plug construction and backfilling will be self-contained and separate from clearing and grubbing and site restoration and stabilization operations.
3. All soil excavated from the trench shall be placed on the uphill side of the trench.
4. Limit the daily trench excavation to the length of pipe placement, plug installation and backfilling that can be completed the same day.
5. Water which accumulates in the open trench will be completely removed by pumping before pipe placement and/or backfilling begins. Water removed from the trench shall be pumped through a filtration device.
6. On the day following pipe placement and trench backfilling, the disturbed area will be graded to final contours and immediately stabilized.
7. Soils excavated from existing surface layer should be stockpiled separately and returned as final surface layer following trench backfilling.
8. In certain cases, trenches cannot be backfilled until the pipe is hydrostatically tested, or anchors and other permanent features are installed. In these cases, all of the requirements under steps 1 through 7 will remain in effect with the following exceptions:
   a. Daily backfilling of the trench may be delayed for six days. All pressure testing and the complete backfilling of the open trench must be completed by the seventh working day.
   b. If daily backfilling is delayed, the disturbed area will be graded to final contours, appropriate temporary erosion and sediment control measures/facilities will be installed and the area seeded and mulched within the next two calendar days.
9. Trench plugs shall be installed along lines that are adjacent to proposed stormwater BMPs.
10. Appropriate trenching equipment shall be used to install utility lines in wooded areas that are not to be disturbed. No trees shall be removed in areas outside the limit of disturbance.

Soil Amendment Notes

1. Compost shall be added to topsoil at a rate of 60:40 (soil:compost). The compost shall have a ph between 5.0 and 8.5, have a moisture content between 30% and 60% and an organic content between 25% and 65%.
2. The compost should have 100% passing a 3" mesh, 90%+ passing a 1" mesh, 65%+ passing the 3/4 mesh, up to 75% passing the 1/4" mesh and a maximum particle size of 6". The compost shall meet the standards of the U.S. composing council's seal of testing program.
3. Amended soil shall be mixed utilizing a rototiller or mechanical mixer at a rate of 60:40 (soil:amended soil). Light track equipment or spread my hand method shall be utilized to install the amended soil to permanent grade.
4. Seed, rake and stabilize the disturbed area.

NPDES Permit Notes

1. Upon reduction, loss or failure of the BMP, the permittee and co-permittee shall take immediate action to restore the BMPs or provide an alternative method of treatment.
2. Where E&S BMPs are found to be inoperative or ineffective during an inspection, or any other time, the permitee and co-permitee shall immediately contact the Montgomery County Conservation District, by phone or personal contact, followed by the submission of a written report within 5 days of the initial contact.
3. Permittees requesting a renewal of coverage under general permit must submit to the Montgomery County Conservation District an administratively complete and acceptable NOI, at least 180 days prior to the expiration date of the coverage.
4. Notice of Termination. Where all Storm water discharges associated with construction activity that are authorized by this permit are eliminated, and BMPs identified in the Post Construction Stormwater Management (PCSM) Plan have been installed, the permitee or co-permitee of the facility must submit a Notice of Termination (NOT) form that is signed in accordance with Part B.1.c (Signatory Requirements) of this permit to the Montgomery County Conservation District.

X. 102.4(b)(5)(vii) - A sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities.

Approximate start date for construction - December 2022

Approximate end date for construction - December 2025

Construction Sequence Notes

1. All earth disturbances, including clearing and grubbing as well as cuts and fills, be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed, and dated by the Montgomery County Conservation District) must be available at the project site at all times. The Montgomery County Conservation District shall be notified of any changes to the approved plan prior to implementation of those changes. The Montgomery County Conservation District may require a written submittal of those changes for review.
2. Each stage shall be completed in compliance with Chapter 102 regulations before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.
3. At least seven (7) days before starting any earth disturbance activities, the O/RP shall invite all contractors involved in that activity, the landowner, all appropriate municipal officials, the erosion and sediment control plan designer and the Montgomery County Conservation District to a pre-construction meeting.
4. At least three (3) days before starting any earth disturbance activity, all O/RPs involved in that activity shall notify the Pennsylvania One Call System Inc. at 1-800-242-1776 to determine underground utilities' locations.
5. 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 Montgomery County Conservation District.
6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of construction sequence. General site clearing, grubbing, and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.
7. Upon temporary cessation or completion of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities exceeds 4 days, the operator shall immediately seed and mulch or otherwise protect the site from accelerated erosion and sedimentation pending further earth disturbance activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be re-disturbed within 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 1 year, must be stabilized in accordance with permanent seeding specifications.
8. 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.
9. Before disposing of soil or receiving borrow for the site, the operator must assure that each spoil or borrow area has an erosion and sediment control plan approved by the local County Conservation District or the Department of Environmental Protection, and which is fully implemented and maintained according to Chapter 102 regulations prior to being activated. The operator shall also notify the Montgomery County Conservation District in writing of all receiving spoil and borrow areas when they have been identified.
10. The operator is responsible for ensuring that any material brought to 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.

The general sequence of construction is as follows. If any modifications are necessary or desired by the O/RP, they must be approved by the Montgomery County Conservation District prior to implementing the changes.

1. The limit of disturbance (LOD) and extent of protected sensitive features including woods, steep slopes, floodplain, minimized disturbance and reduced grading shall be marked with survey stakes, posts and rope, construction fence or some other acceptable material prior to disturbance activities. The protected sensitive feature areas shown on the PCSM plans shall not be disturbed during construction except for temporary impacts for mitigation and restoration efforts.
2. Install the Rock Construction Entrance area on Lots 1 and 4 for staging area, clearing and grubbing as necessary.
3. Install tree and infiltration/BMP area protection fencing at the locations shown on the plan across the site. The area of the rain garden BMP's shall not be compacted or receive excessive heavy equipment traffic. The area shall be protected by using tape, fencing or other suitable method.
4. Any areas of tree canopy protections shall not be compacted or receive excessive heavy equipment traffic. The area shall be protected by using tape, fencing or other suitable method.
5. Clear trees to be removed along Buchert Road and install the compost filter socks immediately after clearing in the locations shown on the plan for all disturbed areas. Clear trees only, no grubbing shall occur during this step until the downslope socks are in place.
6. Install the offsite rip rap apron. The apron may only be installed with hand tools to prevent disturbance.

Upon the installation or stabilization of all perimeter sediment control BMP's and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Montgomery County Conservation District.

7. Install the sewer line using the following procedure:
   - Limit advanced clearing and grubbing operations to a distance equal to two times the length of pipe installation that can be completed in one day.
   - Work crews and equipment for trenching, placement of pipe, plug construction and backfilling will be self-contained and separate from clearing and grubbing and site restoration and stabilization operations.
   - All soil excavated from the trench shall be placed on the uphill side of the trench.
   - Limit the daily trench excavation to the length of pipe placement, plug installation and backfilling that can be completed the same day.
   - Water which accumulates in the open trench will be completely removed by pumping before pipe placement and/or backfilling begins. Water removed from the trench shall be pumped through a filtration device.
   - On the day following pipe placement and trench backfilling, the disturbed area will be graded to final contours and immediately stabilized.
   - Soils excavated from existing surface layer should be stockpiled separately and returned as final surface layer following trench backfilling.
   - In certain cases, trenches cannot be backfilled until the pipe is hydrostatically tested, or anchors and other permanent features are installed. In these cases, all of the requirements under steps 1 through 7 will remain in effect with the following exceptions:
     - Daily backfilling of the trench may be delayed for six days. All pressure testing and the complete backfilling of the open trench must be completed by the seventh working day.
   - If daily backfilling is delayed, the disturbed area will be graded to final contours, appropriate temporary erosion and sediment control measures/facilities will be installed and the area seeded and mulched within the next two calendar days.
   - Trench plugs shall be installed along lines that are adjacent to proposed stormwater BMPs.
   - Appropriate trenching equipment shall be used to install utility lines in wooded areas that are not to be disturbed. No trees shall be removed in areas outside the limit of disturbance.
   - The water service line.
   - The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.
8. Begin construction of the Sediment Trap 1 using the following procedure:
   - Install Compost Filter Socks
   - Grub the Sediment Trap area.
   - The topsoil shall be stripped and be placed in the areas designated on the plan.
   - Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
   - CRITICAL STAGE. Install and backfill the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. Outlet shall be capped with an 8" PVC cap while sediment trap is in operation. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
   - Install the cleanout stake and mark the sediment cleanout elevation on the stake.
   - Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
   - Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin.
9. Begin construction of the Sediment Trap 2 using the following procedure:
   - Install Compost Filter Socks
   - Grub the Sediment Trap area.
   - The topsoil shall be stripped and be placed in the areas designated on the plan.
   - Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
   - CRITICAL STAGE. Install and backfill the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. Outlet shall be capped with an 8" PVC cap while sediment trap is in operation. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
   - Install the cleanout stake and mark the sediment cleanout elevation on the stake.
   - Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
   - Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin.
10. Construction of each lot may begin once both sediment traps are complete. They may be constructed in any order.

Lot 1

11. Install the Compost Filter Sock 1 in the location shown on the plan.
12. Clear and grub for all disturbed areas.
13. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.
14. The house, driveway, and site grading may begin using the following procedure:
    - The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
    - Place the topsoil where shown on the plan and seed and mulch the area.
    - Place fill and compact to proposed grades starting downhill working uphill.
    - The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
    - Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
    - Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
      - The sewer laterals.
    - The water service line.
    - The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.
15. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.
16. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.
17. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.
18. Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

Lot 2

19. Install the Rock Construction Entrance, clear and grub as needed.
20. Install the Compost Filter Socks 2 and 18 in the locations shown on the plan.
21. Clear and grub for all disturbed areas.
22. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.
23. Install Vegetated Swale 1 and permanently stabilize. Rock filter and rip rap apron shall be installed during sediment trap operation.
24. The house, driveway, and site grading may begin using the following procedure:
    - The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
    - Place the topsoil where shown on the plan and seed and mulch the area.
    - Place fill and compact to proposed grades starting downhill working uphill.
    - The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
    - Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
    - Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
      - The sewer laterals.
    - The water service line.
    - The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.
25. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.
26. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.
27. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT
EROSION AND SEDIMENTATION CONTROL NARRATIVE

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: NOT TO SCALE

PROJECT NO. 20-374A
DWG. NO. ES520374A
SHEET NO. 13 OF 23

P:\PROJECTS\20-374A Kelly - Kelly Lot\Dwg\TP 20374A.dwg, 19-May-23 09:34:59

27. CRITICAL STAGE. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 2. **A licensed Professional Engineer shall be present for this step.**
    - CRITICAL STAGE. Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- CRITICAL STAGE. Install the outlet structure, concrete cradle, and outlet pipe. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the rain garden, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

Lot 3

28. Install the Rock Construction Entrance, clear and grub as needed.

29. Install the Compost Filter Socks 3, 4, 5, 16, and 17 in the locations shown on the plan.

30. Clear and grub for all disturbed areas.

31. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

32. Install Vegetated Swale 2 and permanently stabilize. Rock filter and rip rap apron shall be installed during sediment trap operation.

33. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
    - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

34. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

35. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

36. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

37. CRITICAL STAGE. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 5. **A licensed Professional Engineer shall be present for this step.**
    - CRITICAL STAGE. Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- CRITICAL STAGE. Install the outlet structure, outlet pipe, and concrete cradle. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the rain garden, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

Lot 4

38. Install the Compost Filter Socks 6-9 in the locations shown on the plan.

39. Clear and grub for all disturbed areas.

40. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

41. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
    - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

42. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

43. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

44. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

45. Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

Lot 5

46. Install the Rock Construction Entrance, clear and grub as needed.

47. Install the Compost Filter Socks 10-15 in the locations shown on the plan.

48. Begin construction of the Sediment Trap 3 using the following procedure:

- Grub the Sediment Trap area.
- The topsoil shall be stripped and be placed in the areas designated on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- CRITICAL STAGE. Install and backfill the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. The underdrain shall not be installed at this time. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Install the cleanout stake and mark the sediment cleanout elevation on the stake.
- Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
- Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1. The emergency spillway shall have the North American Green Blanket P300 installed.

49. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

50. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

51. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
    - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

52. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

53. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

54. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

55. CRITICAL STAGE. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 4. **A licensed Professional Engineer shall be present for this step.**
    - Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- CRITICAL STAGE. Install the underdrain. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the rain garden, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

56. Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

57. CRITICAL STAGE. After Lots 1 and 2 are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 1. **A licensed Professional Engineer shall be present for this step.**
    - Construction shall occur during dry weather only to prevent discharge from Rain Garden 2 from entering the trap during conversion. If wet conditions are unavoidable, discharge from Swale 1 shall be directed to temporarily bypass the trap and discharge into a stabilized area.
- CRITICAL STAGE. Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the rain garden, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

58. CRITICAL STAGE. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 3. **A licensed Professional Engineer shall be present for this step.**
    - Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- CRITICAL STAGE. Install the underdrain. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the rain garden, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

59. When all of the disturbances on the site are completely stabilized (a minimum of 70% uniform perennial vegetative cover), all temporary BMP's should be removed from the site and any disturbance created when removing them shall immediately be permanently seeded and mulched. Compost filter socks shall be split open and the compost distributed in landscaped areas of the site. Stakes and casings shall be disposed of properly.

Upon permanent stabilization of earth disturbance activity under 25 Pa. Code § 102.22(a)(2) and installation of BMPs in accordance with the approved plan prepared and implemented in accordance with 25 Pa. Code § 102.4 and 102.8, the permitee and/or co-permitee shall submit a Notice of Termination (NOT) to the Department or authorized conservation district.

XI. 102.4(b)(5)(x) - A maintenance program which provides for inspection of BMP's on a weekly basis and after each measurable rainfall event, including the repair of the BMP's to ensure effective and efficient operation.

Maintenance Program

1. The O/RP shall be responsible for the installation and maintenance of all erosion control facilities.

2. All erosion control facilities shall be inspected after each rainfall event and weekly to ensure that they are in good repair and in working condition. Any damaged facility shall be repaired immediately.

3. Seeded areas that have eroded shall be filled and graded as necessary and then reseeded and mulched.

4. The inspections and maintenance shall continue after each sizable storm event until signs of erosion are gone. Inspections and necessary cleaning and maintenance shall be performed monthly thereafter.

5. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

6. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the Montgomery County Conservation District.

7. The silt that has accumulated shall be removed from the erosion control structure, allowed to dry and then it can be used as fill where needed on the site. Inspect the rock filter outlets and compost filter socks weekly and after each storm event. The filter material shall be cleaned and/or replaced if it is clogged.

8. The vegetation shall be mowed as necessary to maintain a neat appearance and discourage weed growth. The local ordinances shall be followed.

9. Any trash that is removed from the erosion control structures shall be disposed in accordance with local, state and federal regulations. The installation and maintenance of the temporary control facilities will be the responsibility of the O/RP. The temporary controls will be maintained in accordance with the Pennsylvania Department of Environmental Protection regulations.

10. The Pennsylvania Department of Environmental Protection regulations require a 70% uniform erosion resistant perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion over all disturbed areas be established before the site is considered permanently stabilized. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements. Until such time as the standard is achieved, interim stabilization and temporary erosion and sedimentation control measures and facilities that are used to treat the runoff shall remain in place.

11. The O/RP is responsible for removing the temporary erosion controls after the site is permanently stabilized with vegetation. The O/RP shall stabilize any areas disturbed during the removal of the erosion control facilities.

12. After the site is permanently stabilized, the property owner shall periodically check the graded areas and swales for any developing erosion problems. Any damaged areas shall be repaired immediately.

XII. 102.4(b)(5)(xi) - Procedures which ensure that the proper measures for the recycling or disposal of materials associated with or from the project site will be undertaken in accordance with Department regulations.

The site will not be used to store any chemicals, solvents or other hazardous waste or materials with the potential to cause accidental pollution during earth disturbance activities. Project construction waste will be sediment from the site and associated construction building materials. Sediment removed from the erosion control measures/facilities shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains and drainage swales and immediately stabilized or placed on topsoil stockpiles. Waste building materials will be removed from the site by a licensed hauler and either recycled or disposed of according to State and Federal Regulations.

No material may be removed from this project without an erosion control plan approved by the local conservation district for the disposal site.

Temporary and permanent control measures and facilities must be maintained during the progress of the work at the site. This will be done by implementing a program of proper disposal of materials and frequent removal of solid materials from the erosion control facilities.

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 operator.

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.

Environmental due diligence: The applicant must perform environmental due diligence to determine if the fill materials associated with the project quality 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 .

XIII. 102.4 (b)(5)(xii) Identification of the naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities and include BMPs to avoid or minimize potential pollution and its impacts from the formations.

There are no naturally occurring geologic formations or soil conditions with the potential to cause pollution during earth disturbance. The soils have a potential for erosion, the erosion from the soils could potentially cause water pollution. To minimize this potential risk, the erosion and sediment control BMPs mentioned above are to be provided.

XIV. 102.4(b)(5)(xiii)- Identification of potential thermal impacts to surface waters from the earth disturbance activity including BMPs to avoid, minimize or mitigate potential pollution from thermal impacts.

The potential for thermal impacts is present due to storm water flows over impervious areas. This impact is mitigated through directing stormwater to the rain gardens, vegetated areas, and across shaded and pervious areas.

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNDNI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNDNI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNDNI REVIEW LETTER DATED NOVEMBER 3, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

EROSION AND SEDIMENTATION CONTROL NARRATIVE

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

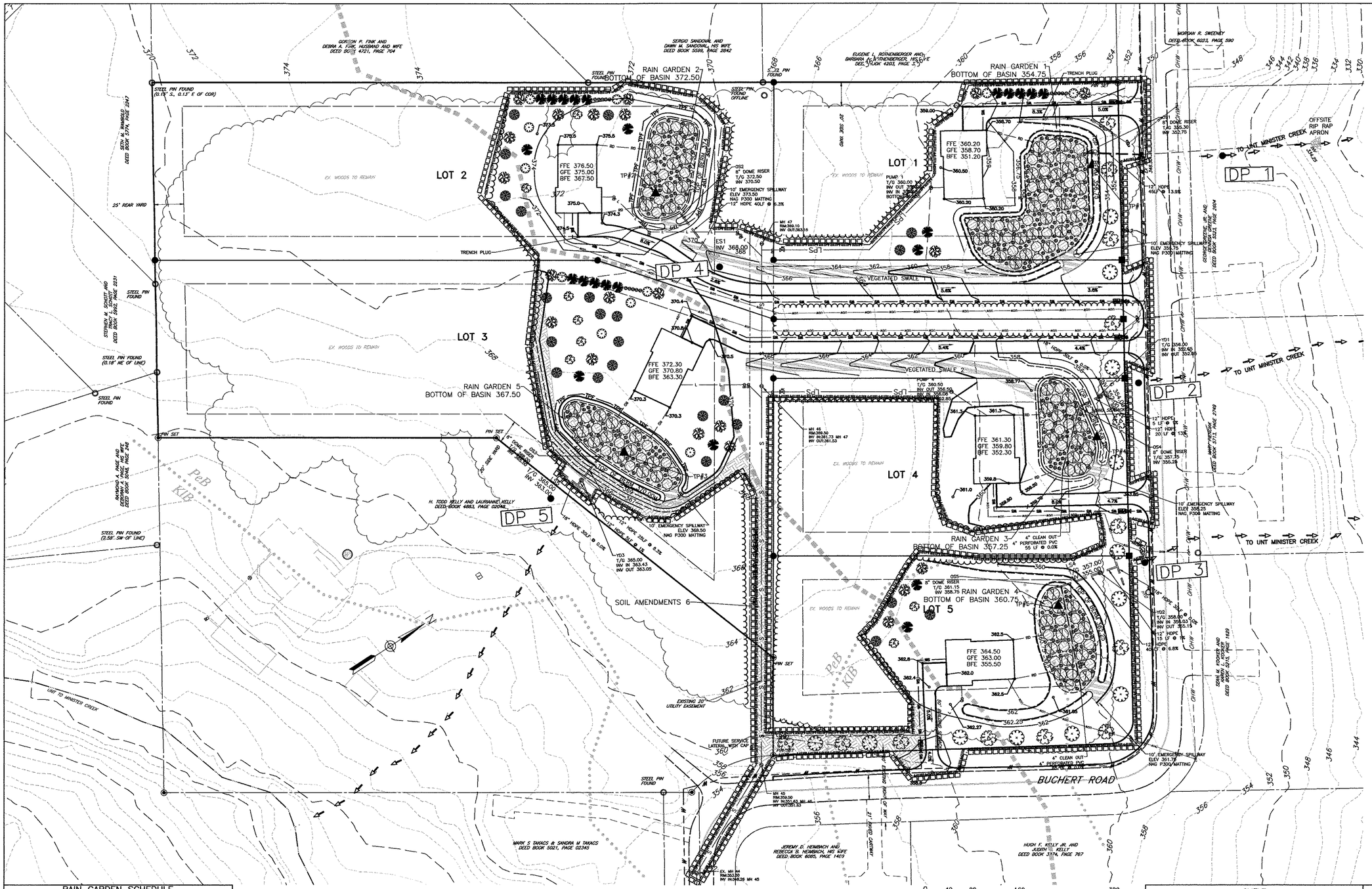
SEAL

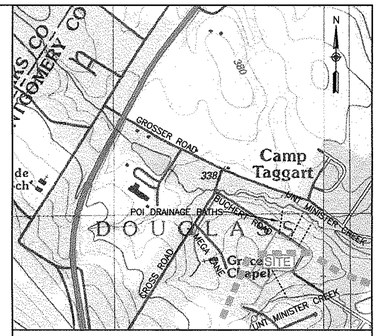
Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	ES620374A
SHEET NO.	14 OF 23
DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: NOT TO SCALE

F:\PROJECTS\20-374A Robbs - Kelly Lot Geg\PP\20374A.dwg, 18-May-23 08:34:41





LOCATION MAP
SCALE: 1"=1000'

LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. RIGHT-OF-WAY
- SETBACKS
- EX. STORMWATER PIPE
- EX. SANITARY — S — S —
- EX. WATERLINE — W — W —
- EX. MONUMENTATION
- EX. UTILITY POLE & GUY WIRE
- EX. OVERHEAD WIRES — OHW —
- EX. SANITARY MANHOLE
- EX. FIRE HYDRANT
- EX. TREELINE
- EX. SOILS (Gc, PeB)
- EX. CONTOURS 230 / 228
- PR. CONTOURS 230 / 228
- INFILTRATION TEST PIT TP #
- PR. EDGE OF PAVING
- PR. BUILDING
- PR. WATER SERVICE — WS — WS — WS — WS —
- PR. SEWER LATERAL — L — L — L — L —
- PR. FORCE MAIN — LPS —
- PR. SANITARY SEWER — S — S —
- PR. STORMWATER PIPE
- PR. ROOF DRAINS — RD — RD — RD — RD —
- PR. UNDERGROUND UTILITY — UGW — UGW —
- PR. OVERHEAD UTILITY — OHW — OHW —
- PR. TREELINE
- PR. SPILLWAY/CHANNEL LINING
- PR. RIP RAP
- PR. SEWER MANHOLE
- PR. SEWER CLEANOUT CO
- PR. SEWER SHUTOFF
- PR. WATER VALVE
- PR. TREES
- NPDES BOUNDARY
- LIMIT OF DISTURBANCE
- WATERSHED
- PR. ELEVATION 360.00
- AMENDED SOILS

TEST PITS

TEST PIT #	LIMITING ZONE ELEVATION	LIMITING ZONE SEPARATION (FT)
1	351.25	2.00
2	368.83	2.17
3	365.00	2.00
4	354.17	1.08
5	357.75	1.00

RAIN GARDEN SCHEDULE

SYMBOL	SPECIES	QUANTITY	SIZE	RG1	RG2	RG3	RG4	RG5
	EASTERN REDBUD, CERCIS CANADENSIS	68	MIN 2.5" CAL./B&B	24	11	10	11	12
	FLOWERING DOGWOOD, CORNUS FLORIDA	68	MIN 2.5" CAL./B&B	24	11	10	11	12
	INKBERRY HOLLY, ILEX GLABRA	319	MIN 18" HT	112	51	47	52	56

RAIN GARDEN PLANTING CALCULATIONS:
300 TREES PER ACRE OF BMP BOTTOM AREA
700 SHRUBS PER ACRE OF BMP BOTTOM AREA

SOILS TABLE

SYMBOL	NAME/DESC
PeB	PENN SILT LOAM, 3 TO 8 PERCENT SLOPES
KlB	KLINESVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENTS SLOPES

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

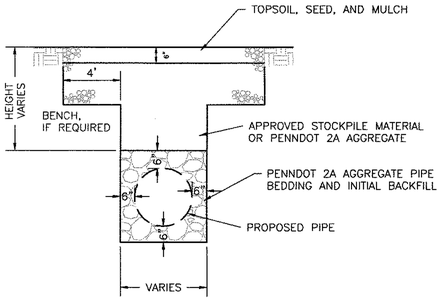
SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN	BDB	CHKD. BY	BDB
DRAWN BY	WJD	CHKD. BY	
DATE	2020-09-04	SCALE	1"=40'

PROJECT NO. 20-374A
DWG. NO. PC120374A
SHEET NO. 15 OF 23

P:\PROJECTS\20-374A Rotate - Kelly Lot\dwg\PT120374A.dwg, 18-May-23 09:34:46



STORM SEWER TRENCH – TYP. BACKFILL DETAIL

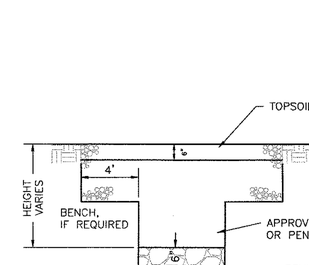
NO SCALE

CONSTRUCTION NOTES:

1. SOIL AMENDMENT CAN CONSIST OF COMPOST, MULCH AND SAND.
2. AMENDED SOILS SHALL NOT BE PLACED ON SLOPES GREATER THAN 4:1
3. AMENDED SOILS SHALL NOT BE CONSTRUCTED WITHIN THE DRIP LINE OF EXISTING TREES.
4. PERMANENT PLANTING/SEEDING SHALL BE IMMEDIATELY INSTALLED ON THE SURFACE BY HAND TO MINIMIZE COMPACTION.

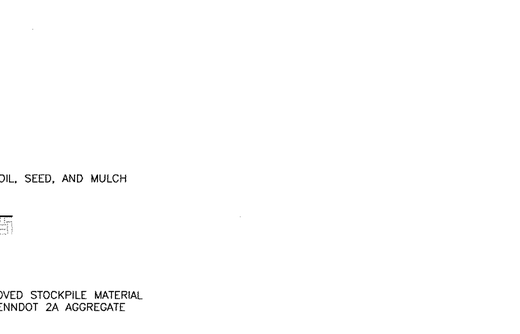
SOIL AMENDMENT

NO SCALE



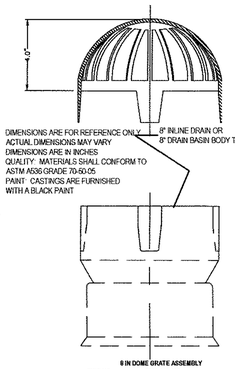
DECIDUOUS TREE PLANTING DETIAL

NO SCALE



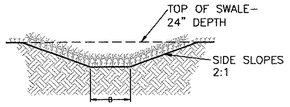
SHRUB PLANTING DETAIL

BALLED OR BARE SHRUB–NO SCALE



ADS NYLOPLAST 0899CGD 8" DOME GRATE

NO SCALE

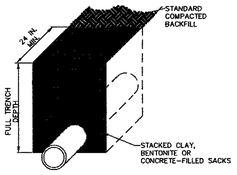


SEED SWALE AREA WITH ERNST SEED MIX ERNMX–183(OR EQUAL) AT 15#/AC AND OVERSEED WITH ANNUAL RYE AT 30#/AC

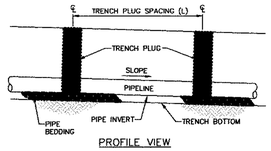
VEGETATED SWALE CROSS SECTION

NO SCALE

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
1	N/A	2	2	10	2	2	N.A.G. S75
2	N/A	1.25	2	9.25	2	2	N.A.G. S75



SECTION VIEW



PROFILE VIEW

PA DEP EROSION CONTROL MANUAL TABLE 13.1
MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS

TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
< 5	1000	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
5 – 15	500	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
15 – 25	300	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
25 – 35	200	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
35 – 100	100	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
> 100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

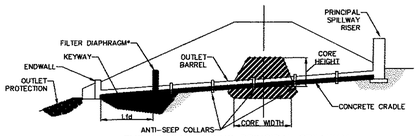
* TOPSOIL MAY NOT BE USED TO FILL SACKS

NOTES:

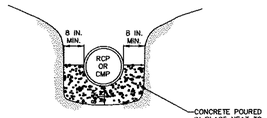
IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATER BODY CROSSINGS.

STANDARD CONSTRUCTION DETAIL #13-4 TRENCH PLUG INSTALLATION

NOT TO SCALE



EMBANKMENT ALONG PRINCIPAL SPILLWAY



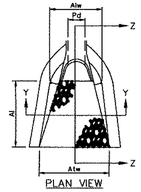
CROSS–SECTION AT OUTLET BARREL

NOTES:

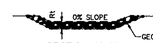
A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI–SEEP COLLARS AND/OR FILTER DIAPHRAGM.
ANTI–SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
FILTER DIAPHRAGM LOCATION (1.5d) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL #7-17 CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

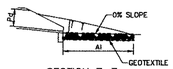
NOT TO SCALE



PLAN VIEW



SECTION Y–Y



SECTION Z–Z

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R–	RIPRAP THICK. R1 (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Alw (FT)	APRON TERMINAL WIDTH Atw (FT)
ES1	12	4	16	8	3	11
OFFSITE	12	4	16	8	3	11

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1 RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE

NOTES

1. PREPARE BEDDING: BEDDING MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE. PLACE A FEW INCHES OF BEDDING MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS MATERIAL TO GENERALLY MATCH THE END SECTION: EXCAVATE AN AREA IN THE BEDDING WHERE THE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL ALIGN TO PROPER GRADE IN THE FINISHED INSTALLATION.

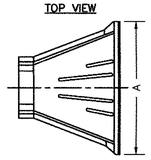
2. PLACE END SECTION ON PIPE: OPEN THE END SECTION COLLAR AND SEAT IT OVER THE LAST TWO PIPE CORRUGATIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS ALIGNED TO THE PROPER GRADE.

3. SECURE THE END SECTION: SLIP THE STAINLESS STEEL ROD THROUGH THE PRE–DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO CORRUGATIONS AT THE END OF THE PIPE. PLACE A WASHER ON EITHER END OF THE ROD: PLACE A NUT ON EITHER END OF THE ROD AND HAND TIGHTEN WITH A WRENCH UNTIL THE COLLAR IS IGHT AROUND THE PIPE. O NOT OVER–TIGHTEN.

4. SECURE TOE TROUGH: TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW. IT IS RECOMMENDED THAT THE TOE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

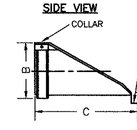
5. FINISH BACKFILL: SHOVEL BACKFILL AROUND THE END SECTION IN 6–TO 9–INCH LAYERS EQUALLY ON BOTH SIDES. KNIFING IT IN TO ELIMINATE VOIDS. TAMP WITH A SMALL–FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING AND COMPACTING BACKFILL MATERIAL IN LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

TOP VIEW

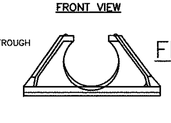


HDPE END SECTION PIPE DIAMETER, in.						
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59–1/2	88	88
B	14–1/2	19	22	28	36	43
C	33	34	43	48	63–1/2	66–1/2
D	6	6	6	6	6	6

SIDE VIEW



FRONT VIEW



FLARED END SECTION

NO SCALE

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023–05–18	SSR	BDB
12.	REVISED PER PENNDNR REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023–05–03	SSR	BDB
11.	REVISED PER PENNDNR REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023–03–07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023–03–02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023–01–20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022–12–09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022–09–22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022–07–29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022–06–30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022–05–24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022–03–03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022–02–01	SSR	BDB
1.	REVISED PER PENNDNR REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021–12–11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

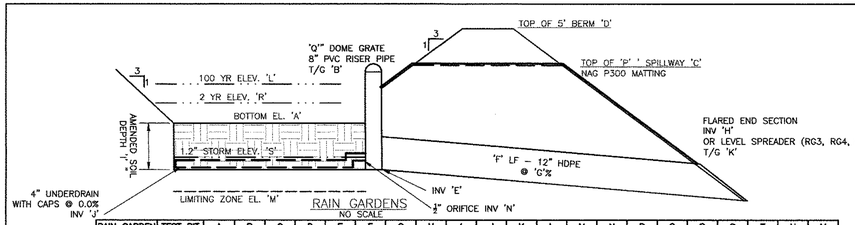
Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN	CHKD. BY
BDB	BDB
DRAWN BY	CHKD. BY
WJD	
DATE	SCALE
2020–09–04	NOT TO SCALE

PROJECT NO. 20–374A
DWG. NO. PC220374A
SHEET NO. 16 OF 23

P:\PROJECTS\20-374A Rotelle - Kelly Lot\dwg\PT\20374A.dwg, 18-May-22 08:34:47



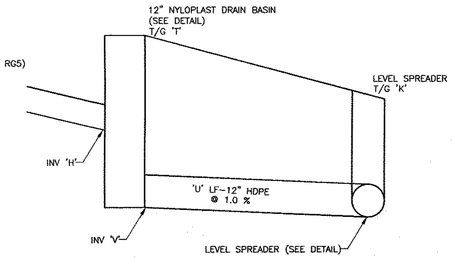
RAIN GARDENS
NO SCALE

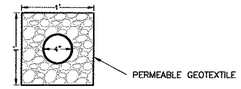
RAIN GARDEN	TEST PIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V
1	1	354.75	355.25	355.75	356.75	352.75	45	13.9	346.50	18	N/A	N/A	355.35	351.25	N/A	10	8	355.17	N/A	N/A	N/A	N/A
2	2	372.50	372.50	373.50	374.00	370.50	40	6.3	368.00	18	N/A	N/A	372.67	368.83	N/A	10	8	372.61	N/A	N/A	N/A	N/A
3	4	357.25	357.75	358.25	358.75	355.25	20	3.9	352.65	24	355.25	354.00	357.33	354.17	356.25	10	8	356.86	356.18	356.00	5	352.05
4	5	360.75	361.15	361.75	362.25	358.75	40	6.8	356.03	24	358.75	357.00	359.60	357.75	359.75	10	8	359.61	359.62	358.00	15	355.15
5	3	367.50	368.00	368.50	369.00	365.50	25	8.3	363.43	18	N/A	365.00	367.81	364.00	N/A	10	8	367.69	N/A	365.00	5	363.05

NOTES FOR RAIN GARDEN:
1. ALL BASIN EMBANKMENTS SHALL BE PLACED AT A MAXIMUM OF EIGHT (8") LIFTS TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM D-1557. PRIOR TO PROCEEDING TO THE NEXT LIFT, THE COMPACTION SHALL BE CHECKED BY THE TOWNSHIP ENGINEER. THE DEVELOPER'S CONTRACTOR SHALL OBTAIN THE SERVICES OF A QUALIFIED LABORATORY TECHNICIAN TO CONDUCT COMPACTION TESTS ON THE LEADING AND THE TRAILING EDGE OF THE THE BERM ALONG WITH THE TOP OF THE BERM. ALL TEST SHALL BE FURNISHED TO THE TOWNSHIP FOR REVIEW.
2. A CLAY CORE SHALL BE PROVIDED FOR THE BERM WITH A TOP ELEVATION AT THE PRINCIPAL SPILLWAY ELEVATION, MINIMUM TOP WIDTH OF 2' AND SIDE SLOPE OF 1:1.
3. A KEY TRENCH SHALL BE PROVIDED UNDER FILL EMBANKMENTS. THE KEY TRENCH SHALL BE A MINIMUM OF 8' WIDE, 2' BELOW EXISTING GRADE, WITH SIDE SLOPES OF 1:1.
4. ALL JOINTS SHALL BE WATERTIGHT.

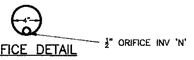
MAINTENANCE:
1. THE OVERLYING VEGETATION OF SUBSURFACE INFILTRATION FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS RE-VEGETATED AS SOON AS POSSIBLE.
2. VEHICULAR ACCESS ON SUBSURFACE INFILTRATION AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.

LEVEL SPREADER SPECIFIC OUTLET

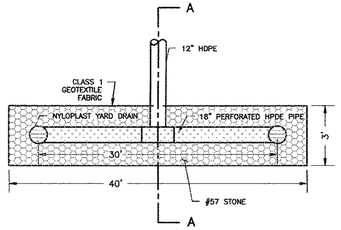




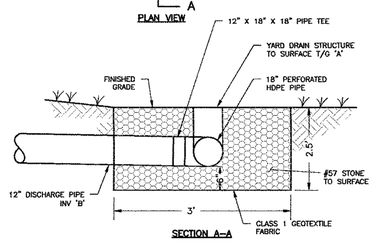
UNDERDRAIN DETAIL
NO SCALE



ORIFICE DETAIL
NO SCALE



PLAN VIEW



SECTION A-A

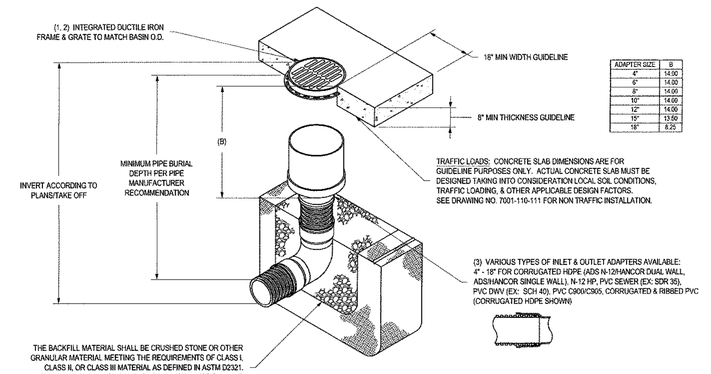
NOTES
1. SPREADER IS TO BE 30' IN LENGTH.
2. OUTFALL PIPE IS TO BE TERMINATED IN "TEE" COUPLING.
3. YARD DRAIN BASINS OR INLINE COUPLINGS SHALL BE USED WITH SURFACE GRATES AT EACH OF THE PERFORATED PIPE TO THE SURFACE.

BMP	A	B
RAIN GARDEN 3	354.00	352.00
RAIN GARDEN 4	357.00	355.00
RAIN GARDEN 5	365.00	363.00

LEVEL SPREADER DETAIL (LS3, LS4, LS5)
NO SCALE

LEVEL SPREADER DRAIN

NYLOPLAST 18" INLINE DRAIN: 2718AG _ _ X



ADAPTER SIZE	B
4"	14.00
6"	14.00
8"	14.00
10"	14.00
12"	14.00
15"	13.50
18"	8.25

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1896CGP	7001-110-202
STANDARD	MEETS H-20	1899CGS	7001-110-203
SOLID COVER	MEETS H-20	1896CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1896CGPB	7001-110-205
DOME	N/A	1896CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1801DI	7001-110-074

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
4 - DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
5 - DIMENSIONS ARE IN INCHES.
6 - SEE DRAWING NO. 7001-110-225 FOR ADS N-12 & HANCOR DUAL WALL BELL INFORMATION & DRAWING NO. 7001-110-364 FOR N-12 HP BELL INFORMATION.

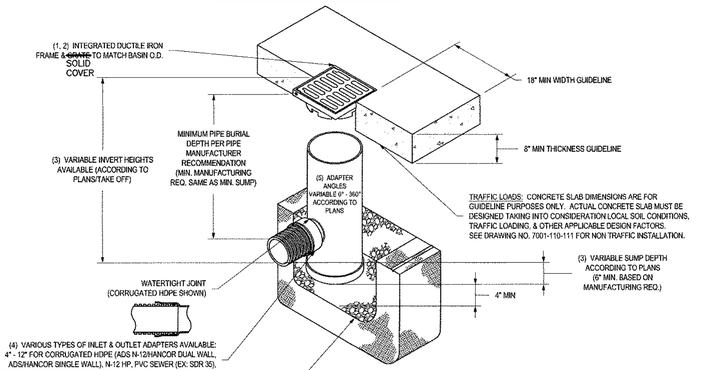
DRAWN BY	EBC
DATE	04-03-06
REVISED BY	NMH
DATE	03-15-16
DWG SIZE	A
MATERIAL	
PROJECT NO./NAME	
SCALE	1:30
SHEET	1 OF 1

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2496
www.nyloplast-us.com

TITLE
18 IN INLINE DRAIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7003-110-027 REV E

NYLOPLAST 12" DRAIN BASIN: 2812AG _ _ X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1296CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1296CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1296CGPB	7001-110-205
DOME	N/A	1296CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

1 - ~~GRATES~~/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

DRAWN BY	EBC
DATE	03-29-06
REVISED BY	NMH
DATE	03-11-16
DWG SIZE	A
MATERIAL	
PROJECT NO./NAME	
SCALE	1:20
SHEET	1 OF 1

ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2496
www.nyloplast-us.com

TITLE
12 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-189 REV E

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER EMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN	BDB	CHKD. BY	BDB
DRAWN BY	WJD	CHKD. BY	
DATE	2020-09-04	SCALE	NOT TO SCALE

PROJECT NO. 20-374A
DWG. NO. PC320374A
SHEET NO. 17 OF 23

P:\PROJECTS\20-374A Robelle - Kelly Lot\dwg\PI 20374A.dwg, 19-May-23 09:34:48

NPDES PERMIT NOTES

1. UPON REDUCTION, LOSS OR FAILURE OF THE BMP, THE PERMITTEE AND CO-PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT.

2. WHERE E&S BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITEE AND CO-PERMITEE SHALL IMMEDIATELY CONTACT THE MONTGOMERY COUNTY CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT.

3. PERMITTEES REQUESTING A RENEWAL OF COVERAGE UNDER GENERAL PERMIT MUST SUBMIT TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT AN ADMINISTRATIVELY COMPLETE AND ACCEPTABLE NOI, AT LEAST 90 DAYS PRIOR TO THE EXPIRATION DATE OF THE COVERAGE.

4. NOTICE OF TERMINATION. WHERE ALL STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT ARE ELIMINATED, AND BMPS IDENTIFIED IN THE POST CONSTRUCTION STORM WATER MANAGEMENT (PCSM) PLAN HAVE BEEN INSTALLED, THE PERMITEE OR CO-PERMITEE OF THE FACILITY MUST SUBMIT A NOTICE OF TERMINATION (NOT) FORM THAT IS SIGNED IN ACCORDANCE WITH PART B.1.C (SIGNATORY REQUIREMENTS) OF THIS PERMIT TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT.

OPERATION AND MAINTENANCE NOTES:

A. RAIN GARDEN
- WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED.
- ONCE EVERY 2 TO 3 YEARS THE ENTIRE AREA SHALL BE MULCHED.
- RETENTION AREAS SHALL BE INSPECTED TWICE A YEAR FOR EROSION, INVASIVE SPECIES, SEDIMENT BUILDUP, AND VEGETATIVE CONDITIONS. IF FOUND, THE PROBLEM SHALL BE CORRECTED IMMEDIATELY.
- DURING PERIODS OF EXTENDED DROUGHT, THE RAIN GARDENS SHALL BE WATERED.
- TREES AND SHRUBS SHALL BE INSPECTED TWICE PER YEAR BY A PROFESSIONAL FOR HEALTH AND REPLACED IF NECESSARY.
- IF INSPECTIONS FIND STANDING WATER LONGER THAN 72 HOURS AFTER THE END OF THE RAINFALL EVENT, THE OWNER MAY FIND IT DESIRABLE TO CONTACT A PROFESSIONAL TO EVALUATE THE BMP AND DETERMINE A COURSE OF ACTION TO REMEDY STANDING WATER. THE WATER MAY BE PUMPED THROUGH A FILTER BAG OR SIMILAR DEVICE TO DEWATER THE RAIN GARDEN.
- THE BASIN, BERM AND OUTLET STRUCTURE SHALL BE INSPECTED EVERY TWO YEARS BY AN APPROPRIATELY LICENSED PROFESSIONAL FOR PROPER OPERATION AND STRUCTURAL STABILITY.
- BASIN REMEDIATION MAY INCLUDE SOIL REPLACEMENT, TREE AND SHRUB PLANTINGS, SLOW-RELEASE DEVICES OR ANY OTHER APPROVED TECHNIQUE.
- INSPECTIONS SHALL OCCUR 72 HOURS AFTER THE RAINFALL EVEN AND INCLUDE A LOG OF DAILY DEWATERING MEASUREMENTS.

B. VEGETATED SWALE
- INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION AND SEDIMENT AND DEBRIS ACCUMULATION.
- MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION OR TO SUPPRESS WEEDS. MOW ONLY WHEN SWALE IS DRY TO AVOID RUTS AND REMOVE LITTER AND DEBRIS PRIOR TO MOWING.
- WATER DURING DROUGHT CONDITIONS, RESEED BARE AREAS AND CLEAR DEBRIS AND BLOCKAGES.
- REMEDIATION MAY INCLUDE SOIL REPLACEMENT, TREE AND SHRUB PLANTINGS, SLOW RELEASE DEVISES OR ANY OTHER APPROVED TECHNIQUE.
- INSPECTIONS SHALL OCCUR 72 HOURS AFTER THE RAINFALL EVENT AND INCLUDE A LOG OF DAILY DEWATERING MEASUREMENTS.

C. SOIL AMENDMENT AREAS
- THE OVERLYING VEGETATION OF THE AMENDED FEATURES SHOULD BE MAINTAINED IN GOOD CONDITION, BARE SPOTS SHALL BE SEEDED IMMEDIATELY.
- VEHICULAR ACCESS ON AMENDED AREAS SHOULD BE PROHIBITED, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. IF ACCESS IS NEEDED, USE OF PERMEABLE, TURF REINFORCEMENT SHOULD BE CONSIDERED.
- THE AMENDED AREAS SHALL BE INSPECTED EVERY TWO YEARS BY AN APPROPRIATELY LICENSED PROFESSIONAL FOR COMPACTION.
- ADDITIONAL AMENDMENT MAY BE NECESSARY TO MITIGATE COMPACTION.

STREAM INTEGRITY PRESERVATION SECTION 102.8(B)(1)

THE PROPOSED BMPS AS PART OF THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN HAVE BEEN PLANNED AND PROVIDED IN ORDER TO PRESERVE THE INTEGRITY OF STREAM CHANNELS, AND TO MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM.

PREVENT STORMWATER RUNOFF RATE INCREASE SECTION 102.8(B)(2)

THE PROPOSED POST CONSTRUCTION STORMWATER MANAGEMENT PLAN WILL PREVENT AN INCREASE IN STORMWATER RUNOFF THROUGH THE USE OF BMPS AND BY MAINTAINING EXISTING VEGETATION.

MINIMIZE STORMWATER RUNOFF VOLUME INCREASE SECTION 102.8(B)(3)

THE PROPOSED POST CONSTRUCTION STORMWATER MANAGEMENT PLAN WILL MINIMIZE AN INCREASE IN STORMWATER RUNOFF VOLUME THROUGH THE USE OF BMPS AND BY MAINTAINING EXISTING VEGETATION FOR THE 2-YEAR 24-HOUR STORM EVENT.

MINIMIZE IMPERVIOUS AREAS SECTION 102.8(B)(4)

THE EXISTING DRAINAGE FEATURES AND VEGETATION SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICAL. TO ACHIEVE THIS GOAL, THE AREAS ON SITE OUTSIDE OF THE LIMITS OF DISTURBANCE ARE SUBJECT TO THE FOLLOWING CRITERIA:

-AREAS SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOIL.
-EXISTING VEGETATION IN A HEALTHY CONDITION MAY NOT BE REMOVED.
-INVASIVE NON-NATIVE VEGETATION MAY BE REMOVED.
-PRUNING OR OTHER REQUIRED MAINTENANCE OF VEGETATION IS PERMITTED. ADDITIONAL PLANTING IS PERMITTED.
-AREAS SHALL BE PROTECTED AND DELINEATED IN THE FIELD.
-THE AREAS NOT SUBJECT TO GRADING ARE ALSO DELINEATED ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. IF ANY FUTURE GRADING OR DISTURBANCE OF THESE AREAS OCCURS, SUBSEQUENT STORMWATER MANAGEMENT MUST BE PROVIDED TO ADDRESS DISTURBANCE.

MINIMIZE LAND CLEARING AND GRADING SECTION 102.8(B)(6)

IN ORDER TO MINIMIZE LAND CLEARING AND GRADING, THE AREAS BETWEEN TREE PROTECTION FENCING AND PROPERTY BOUNDARIES ARE SUBJECT TO THE FOLLOWING CRITERIA:

-AREAS SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOIL.
-EXISTING VEGETATION IN A HEALTHY CONDITION MAY NOT BE REMOVED.
-INVASIVE NON-NATIVE VEGETATION MAY BE REMOVED.
-PRUNING OR OTHER REQUIRED MAINTENANCE OF VEGETATION IS PERMITTED. ADDITIONAL PLANTING IS PERMITTED.
-AREAS SHALL BE PROTECTED AND DELINEATED IN THE FIELD.
-THE AREAS NOT SUBJECT TO GRADING ARE ALSO DELINEATED ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.
IF ANY FUTURE GRADING OR DISTURBANCE OF THESE AREAS OCCURS, SUBSEQUENT STORMWATER MANAGEMENT MUST BE PROVIDED TO ADDRESS DISTURBANCE.

MINIMIZE SOIL COMPACTION SECTION 102.8(B)(7)

THE LIMITS OF DISTURBANCE HAVE BEEN DELINEATED AS THE MINIMUM PRACTICAL AREA AND ALL OTHER AREAS SHALL NOT BE DISTURBED AND ARE SUBJECT TO THE FOLLOWING CRITERIA:

-AREAS SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOIL.
-EXISTING VEGETATION IN A HEALTHY CONDITION MAY NOT BE REMOVED.
-INVASIVE NON-NATIVE VEGETATION MAY BE REMOVED.
-PRUNING OR OTHER REQUIRED MAINTENANCE OF VEGETATION IS PERMITTED. ADDITIONAL PLANTING IS PERMITTED.
-AREAS SHALL BE PROTECTED AND DELINEATED IN THE FIELD.
-THE AREAS NOT SUBJECT TO GRADING ARE ALSO DELINEATED ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. IF ANY FUTURE GRADING OR DISTURBANCE OF THESE AREAS OCCURS, SUBSEQUENT STORMWATER MANAGEMENT MUST BE PROVIDED TO ADDRESS DISTURBANCE.

MAINTENANCE PROGRAM SECTION 102.8(F)(10)

1. THE PERMITTEE IS TO PROVIDE PROOF BY THE DESIGN ENGINEER OR ON-SITE INSPECTOR THAT MAJOR DRAINAGE STRUCTURES AND CONTROLS HAVE BEEN CONSTRUCTED AS DESIGNED.
2. THE PERMITTEE IS ULTIMATELY RESPONSIBLE FOR ALL EROSION AND SEDIMENTATION POLLUTION CONTROL AND SITE STABILIZATION. THE PERMITTEE MAY DELEGATE AUTHORITY FOR IMPLEMENTING AND MAINTAINING THE CONTROLS TO INDIVIDUAL LANDOWNERS OR CONTRACTORS. THE ULTIMATE RESPONSIBILITY FOR PROPER INSTALLATION AND MAINTENANCE IS THE PERMITTEE'S.
3. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING, MUST BE DONE IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S, OR MODIFICATIONS TO THOSE INSTALLED WILL BE REQUIRED.
4. SEDIMENT SHALL BE REMOVED FROM STORMWATER BMP'S WHEN IT HAS ACCUMULATED TO A DEPTH OF 6 INCHES. COLLECTED SEDIMENT SHALL BE SPREAD ELSEWHERE (IN AREAS UNDER CONSTRUCTION) DURING CONSTRUCTION AND STABILIZATION. SEEDING AND MULCHING OF SLOPES SHALL CONFORM TO THE RECOMMENDATIONS WITHIN OR APPROVED EQUAL. TOPSOIL (MINIMUM 6 INCHES) SHALL BE PLACED PRIOR TO SEEDING.
5. THE STORMWATER BMP'S AND WATER QUALITY FEATURES ARE TO BE MAINTAINED AND THE OUTLET STRUCTURES CHECKED AND REPAIRED IF NECESSARY.
6. MAINTENANCE OF THE STORMWATER BMP'S AND OTHER FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF RECORD. THE OWNER OF RECORD MAY DELEGATE AUTHORITY FOR MAINTAINING THE MAINTENANCE TO OTHER INDIVIDUALS OR CONTRACTORS BUT THE ULTIMATE RESPONSIBILITY FOR PROPER MAINTENANCE IS THE OWNER OF RECORD.
7. VEGETATION SHALL BE MOWED WHENEVER NECESSARY TO MAINTAIN A PLEASING APPEARANCE AND DISCOURAGE WEED GROWTH. ALL LOCAL REGULATIONS WILL BE COMPLIED WITH.
8. AREAS THAT CONTAIN SOD SHALL BE CHECKED VERY CAREFULLY TO ENSURE THAT JOINTS BETWEEN THE SOD STRIPS ARE TIGHT AND SECURE. WHERE JOINT SEPARATION IS IN EVIDENCE, A CAREFUL INSPECTION OF EACH STRIP SHALL BE MADE TO DETERMINE WHETHER UNDERMINING OF THE STRIPS IS OCCURRING. IF IT IS, THE STRIPS SHALL BE ROLLED UP, THE SUBSURFACE SHALL BE FILLED AND GRADED AS REQUIRED AND THE SOD STRIPS SHALL BE RE-LAID WITH TIGHT JOINTS AND PEGGING.
9. SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEEDED. A BURLAP OR STRAW COVER WILL BE APPLIED AT A RATE OF 3 TONS/ACRE TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY.
10. THE ABOVE PROCEDURE SHALL BE REPEATED AFTER EACH SIZEABLE STORM UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT. AT WEEKLY INTERVALS THEREAFTER, INSPECTION AND NECESSARY CLEANING WILL BE DONE. PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, AND RESEEDING AFTER EVERY MAJOR RAINFALL EVENT.
11. INSPECTIONS SHALL BE LOGGED ONTO DEP FORM 3800-FM-BCW0027D REV. 12/2019 AND KEPT ONSITE AT ALL TIMES.

EXISTING/ PROPOSED RIPARIAN BUFFER

*THERE ARE NO RIPARIAN BUFFERS REGULATED BY CHAPTER 102 PRESENT OR PROPOSED AT THIS SITE BY THIS PROJECT.

EXISTING/ PROPOSED RIPARIAN FOREST BUFFERS SECTION 102.8 (F)(14)

*THERE ARE NO RIPARIAN FOREST BUFFERS REGULATED BY CHAPTER 102 PRESENT OR PROPOSED AT THIS SITE BY THIS PROJECT. MINISTER CREEK AND UNT TO MINISTER CREEK ARE IMPAIRED BY SILTATION.

RAIN GARDEN CONSTRUCTION SEQUENCE:
a. ANY SEDIMENT ENTERING THE BMP SHALL BE REMOVED WITH LIGHT EQUIPMENT. THE UNDERLYING SOIL SHALL BE SCARIFIED A MINIMUM OF TWELVE INCHES WITH A YORK RAKE, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. A LICENSED PROFESSIONAL SHALL PROVIDE OVERSIGHT DURING THE SCARIFYING OF THE SUBGRADE.
b. THE TOPSOIL AND SUBSURFACE SOIL SHALL BE STRIPPED AND BE PLACED WHERE SHOWN ON THE PLAN.
c. EXCAVATE THE BERM, REMOVE THE TEMPORARY OUTLET STRUCTURE AND PIPE, AND PLACE AND COMPACT THE FILL FOR THE BERM. THE STRUCTURAL SOIL SHALL BE PLACED WHERE SHOWN ON THE PLAN.
d. INSTALL THE PERMANENT OUTLET STRUCTURE AND OUTLET PIPE. A LICENSED PROFESSIONAL SHALL PROVIDE OVERSIGHT DURING THE BACKFILLING OF THE OUTLET PIPE.
e. STABILIZE THE ENTIRE OUTSIDE OF THE BERM AND ON THE INSIDE OF THE BERM WITH TOPSOIL.
f. IMMEDIATELY APPLY THE PERMANENT SEEDING AND MULCH FOR THE ENTIRE AREA. A SLOPE PROTECTION BLANKET SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND ALL SLOPES GREATER THAN 3:1.
g. AMENDED TOPSOIL PER THE PROCEDURE OUTLINED ON THE PLANS SHALL BE INSTALLED ON THE INSIDE OF THE RAIN GARDEN, PERMANENTLY SEEDED AND MULCHED. A SLOPE PROTECTION BLANKET SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND ALL SLOPES GREATER THAN 3:1

RAIN GARDEN/MRC CONSTRUCTION SEQUENCE:
a. ANY SEDIMENT ENTERING THE BMP SHALL BE REMOVED WITH LIGHT EQUIPMENT. THE UNDERLYING SOIL SHALL BE SCARIFIED A MINIMUM OF TWELVE INCHES WITH A YORK RAKE, ROTOTILLER OR OTHER SUITABLE EQUIPMENT. A LICENSED PROFESSIONAL SHALL PROVIDE OVERSIGHT DURING THE SCARIFYING OF THE SUBGRADE.
b. THE TOPSOIL AND SUBSURFACE SOIL SHALL BE STRIPPED AND BE PLACED WHERE SHOWN ON THE PLAN.
c. EXCAVATE THE BERM, REMOVE THE TEMPORARY OUTLET STRUCTURE AND PIPE, AND PLACE AND COMPACT THE FILL FOR THE BERM. THE STRUCTURAL SOIL SHALL BE PLACED WHERE SHOWN ON THE PLAN.
d. INSTALL THE PERFORATED UNDERDRAIN PIPE.
e. INSTALL THE PERMANENT OUTLET STRUCTURE AND OUTLET PIPE. A LICENSED PROFESSIONAL SHALL PROVIDE OVERSIGHT DURING THE BACKFILLING OF THE OUTLET PIPE.
f. STABILIZE THE ENTIRE OUTSIDE OF THE BERM AND ON THE INSIDE OF THE BERM WITH TOPSOIL.
g. IMMEDIATELY APPLY THE PERMANENT SEEDING AND MULCH FOR THE ENTIRE AREA. A SLOPE PROTECTION BLANKET SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND ALL SLOPES GREATER THAN 3:1.
h. AMENDED TOPSOIL PER THE PROCEDURE OUTLINED ON THE PLANS SHALL BE INSTALLED ON THE INSIDE OF THE RAIN GARDEN, PERMANENTLY SEEDED AND MULCHED. A SLOPE PROTECTION BLANKET SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND ALL SLOPES GREATER THAN 3:1

RECYCLING PROCEDURES SECTION 102.8(F)(11)

THE POTENTIAL OR ANTICIPATED POST CONSTRUCTION WASTES FOR THIS PROJECT INCLUDE THOSE THAT ARE INCIDENTAL TO YARD MAINTENANCE, SUCH AS LAWN TRIMMINGS AND LEAVES, AS WELL AS THOSE ASSOCIATED WITH STORMWATER EVENTS, SUCH AS FALLEN BRANCHES.

ALL POST CONSTRUCTION WASTES, GRASS TRIMMINGS, LEAVES, BRANCHES, ROOTS, SOIL, AND ANY MATERIALS DEEMED UNUSABLE SHALL BE DISPOSED OF. THE OPERATOR/RESPONSIBLE PERSON SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL MATERIALS AND WASTES IN ACCORDANCE WITH THE PA 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. WASTE MATERIALS (USED OR UNUSED) SHALL NOT ILLEGALLY BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

POTENTIAL POLLUTION IDENTIFICATION SECTION 102.8(F)(12)

THE GEOLOGICAL FORMATIONS ON-SITE ARE SUCH THAT THE POLLUTION POTENTIAL IS POSSIBLE AND APPROPRIATE ACTIONS ARE REQUIRED. THE SOILS HAVE A POTENTIAL FOR EROSION. THE EROSION FROM THE SOILS COULD POTENTIALLY CAUSE WATER POLLUTION, AND TO MINIMIZE THIS POTENTIAL THE EROSION AND SEDIMENT CONTROL BMPS MENTIONED ABOVE ARE TO BE PROVIDED.

OTHER CONTROLS TO MINIMIZE RUNOFF SECTION 102.8(B)(8)

NO OTHER MEASURES AND CONTROLS SHALL BE UTILIZED TO PREVENT OR MINIMIZE THE GENERATION OF ADDITIONAL STORMWATER.

UTILITY LINE NOTES:
1. TRENCH PLUGS SHALL BE INSTALLED ALONG UTILITY LINES THAT ARE ADJACENT TO STORMWATER BMPS.
2. APPROPRIATE TRENCHING EQUIPMENT SHALL BE USED TO INSTALL UNDERGROUND UTILITY WIRES WITHIN WOODED AREA TO PREVENT ANY TREE REMOVAL.

BMP CRITICAL STAGES:

(1) PRECONSTRUCTION MEETING

(2) DURING THE SCARIFICATION OF THE UNDERLYING SOIL

(3) DURING CONCRETE CRADLE, OUTLET STRUCTURE, AND PIPE INSTALLATION

(4) DURING SOIL AMENDMENT INSTALLATION.

ANTICIPATED BMP INSTALLATION SEQUENCE

1. RAIN GARDEN 2
2. RAIN GARDEN 3
3. RAIN GARDEN/MRC 5
4. RAIN GARDEN/MRC 4
5. RAIN GARDEN 1

BMP 6.7.3 SOIL AMENDMENT & RESTORATION

1. SUB-SOILING TO RELIEVE COMPACTION
   a. BEFORE THE TIME THE COMPOST IS PLACED AND PREFERABLY WHEN EXCAVATION IS COMPLETED, THE SUBSOIL SHALL BE IN A LOOSE, FRIABLE CONDITION TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE AND THERE SHALL BE NO EROSION RILLS OR WASHOUTS IN THE SUBSOIL SURFACE EXCEEDING SINGLESS IN DEPTH.
   b. TO ACHIEVE THIS CONDITION, SUBSOILING, RIPPING, OR SCARIFICATION OF THE SUBSOIL WILL BE REQUIRED AS DIRECTED BY THE OWNERS'S REPRESENTATIVE, WHEREVER THE SUBSOIL HAS BEEN COMPACTED BY EQUIPMENT OPERATION OR HAS BECOME DRIED OUT AND CRUSTED, AND WHERE NECESSARY TO OBLITERATE EROSION RILLS. SUB-SOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN ALL AREAS WHERE PLANT ESTABLISHMENT IS PLANNED. SUB-SOILING SHALL BE PERFORMED BY THE PRIME OR EXCAVATING CONTRACTOR AND SHALL OCCUR BEFORE COMPOST PLACEMENT.
   c. SUBSOILED AREAS SHALL BE LOOSENED TO LESS THAN 1400 KPA (200 PSI) TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE. WHEN DIRECTED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL VERIFY THAT THE SUB-SOILING WORK CONFORMS TO THE SPECIFIED DEPTH.
   d. SUB-SOILING SHALL FORM A TWO-DIRECTIONAL GRID. CHANNELS SHALL BE CREATED BY A COMMERCIALLY AVAILABLE, MULTI-SHANKED, PARALLELOGRAM IMPLEMENT (SOLID-SHANK RIPPER). THE EQUIPMENT SHALL BE CAPABLE OF EXERTING A PENETRATION FORCE NECESSARY FOR THE SITE. NO DISC CULTIVATORS CHISEL PLOWS, OR SPRING-LOADED EQUIPMENT WILL BE ALLOWED. THE GRID CHANNELS SHALL BE SPACED A MINIMUM OF 12 INCHES TO A MAXIMUM OF 36 INCHES APART, DEPENDING ON EQUIPMENT, SITE CONDITIONS, AND THE SOIL MANAGEMENT PLAN. THE CHANNEL DEPTH SHALL BE A MINIMUM OF 20 INCHES OR AS SPECIFIED IN THE SOIL MANAGEMENT PLAN. IF SOILS ARE SATURATED, THE CONTRACTOR SHALL DELAY OPERATIONS UNTIL THE SOIL WILL NOT HOLD A BALL WHEN SQUEEZED. ONLY ONE PASS SHALL BE PERFORMED ON ERODIBLE SLOPES GREATER THAN 1 VERTICAL TO 3 HORIZONTAL. WHEN ONLY ONE PASS IS USED, WORK SHOULD BE AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE, WHENEVER PRACTICAL.
   e. EXCEPTIONS TO SUB-SOILING INCLUDE AREAS WITHIN THE DRIP LINE OF ANY EXISTING TREES, OVER UTILITY INSTALLATIONS WITHIN 30 INCHES OF THE SURFACE, WHERE TRENCHING/DRAINAGE LINES ARE INSTALLED, WHERE COMPACTION IS BY DESIGN (ABUTMENTS, FOOTINGS, OR IN SLOPES), AND ON INACCESSIBLE SLOPES, AS APPROVED BY THE OWNER'S REPRESENTATIVE. IN CASES WHERE EXCEPTIONS OCCUR, THE CONTRACTOR SHALL OBSERVE A MINIMUM SETBACK OF 20 FEET OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. ARCHEOLOGICAL CLEARANCES MAY BE REQUIRED IN SOME INSTANCES.
2. COMPOST SOIL AMENDMENT INSTALLATION
   a. SPREAD 2-3 INCHES OF APPROVED COMPOST ON EXISTING SOIL. TILL ADDED SOIL INTO EXISTING SOIL WITH A ROTARY TILLER THAT IS SET TO A DEPTH OF 6 INCHES. ADD AN ADDITIONAL 4 INCHES OF APPROVED COMPOST TO BRING THE AREA UP TO GRADE.
   b. AFTER PERMANENT PLANTING/SEEDING, 2-3 INCHES OF COMPOST

SOIL AMENDMENT AND RESTORATION:

SOIL AMENDMENT AND RESTORATION SHALL BE DONE BY MIXING THE STOCKPILED EXISTING ON-SITE TOPSOIL WITH COMPOST BEFORE REDISTRIBUTING THE TOPSOIL. THE RATIO SHALL BE 2 PARTS TOPSOIL AND 1 PART COMPOST. THE COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2:

TABLE 4.2 - COMPOST STANDARDS

ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION (mmhos/cm) MAXIMUM	5.0 dS/m

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER BMMA EMAIL DATED MAY 17, 2023	2023-05-16	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SGE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT
R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT
POST CONSTRUCTION STORMWATER MANAGEMENT NARRATIVE

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY BDB	PROJECT NO.	20-374A
DRAWN BY WJD	CHKD. BY	DWG. NO.	PC420374A
DATE 2020-09-04	SCALE NOT TO SCALE	SHEET NO.	18 OF 23

P:\PROJECTS\20-374A Rotelle - Kelly Lot\eng\PP\20374A.dwg, 18-May-23 08:34:48

Construction Sequence Notes

1. All earth disturbances, including clearing and grubbing as well as cuts and fills, be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed, and dated by the Montgomery County Conservation District) must be available at the project site at all times. The Montgomery County Conservation District shall be notified of any changes to the approved plan prior to implementation of those changes. The Montgomery County Conservation District may require a written submittal of those changes for review.

2. Each stage shall be completed in compliance with Chapter 102 regulations before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.

3. At least seven (7) days before starting any earth disturbance activities, the O/RP shall invite all contractors involved in that activity, the landowner, all appropriate municipal officials, the erosion and sediment control plan designer and the Montgomery County Conservation District to a pre-construction meeting.

4. At least three (3) days before starting any earth disturbance activity, all O/RPs involved in that activity shall notify the Pennsylvania One Call System Inc. at 1-800-242-1776 to determine underground utilities' locations.

5. 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 Montgomery County Conservation District.

6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of construction sequence. General site clearing, grubbing, and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.

7. Upon temporary cessation or completion of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities exceeds 4 days, the operator shall immediately seed and mulch or otherwise protect the site from accelerated erosion and sedimentation pending further earth disturbance activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be re-disturbed within 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 1 year, must be stabilized in accordance with permanent seeding specifications.

8. 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.

9. Before disposing of soil or receiving borrow for the site, the operator must assure that each spoil or borrow area has an erosion and sediment control plan approved by the local County Conservation District or the Department of Environmental Protection, and which is fully implemented and maintained according to Chapter 102 regulations prior to being activated. The operator shall also notify the Montgomery County Conservation District in writing of all receiving spoil and borrow areas when they have been identified.

10. The operator is responsible for ensuring that any material brought to 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.

The general sequence of construction is as follows. If any modifications are necessary or desired by the O/RP, they must be approved by the Montgomery County Conservation District prior to implementing the changes.

1. The limit of disturbance (LOD) and extent of protected sensitive features including woods, steep slopes, floodplain, minimized disturbance and reduced grading shall be marked with survey stakes, posts and rope, construction fence or some other acceptable material prior to disturbance activities. The protected sensitive feature areas shown on the PCSM plans shall not be disturbed during construction except for temporary impacts for mitigation and restoration efforts.

2. Clear, grub, and install the Rock Construction Entrance area on Lot 4 for staging area.

3. Install tree and infiltration/BMP area protection fencing at the locations shown on the plan. The area of the infiltration basin BMP's shall not be compacted or receive excessive heavy equipment traffic. The area shall be protected by using tape, fencing or other suitable method.

4. Any areas of tree canopy protections shall not be compacted or receive excessive heavy equipment traffic. The area shall be protected by using tape, fencing or other suitable method.

5. Clear trees to be removed along Buchert Road and install the compost filter socks immediately after clearing in the locations shown on the plan for all disturbed areas. Clear trees only, no grubbing shall occur during this step until the downslope socks are in place.

6. Install offsite rip rap apron. The apron may only be installed with hand tools to prevent disturbance.

Upon the installation or stabilization of all perimeter sediment control BMP's and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Montgomery County Conservation District.

7. Install the sewer line.

8. Begin construction of the Sediment Trap 1 using the following procedure:

- Install Compost Filter Socks
- Grub the Sediment Trap area.
- The topsoil shall be stripped and be placed in the areas designated on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install and backfil the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. Outlet shall be capped while sediment trap is in operation. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Install the cleanout stake and mark the sediment cleanout elevation on the stake.
- Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
- Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1. The emergency spillway shall have the North American Green Blanket P300 installed.

8. Begin construction of the Sediment Trap 2 using the following procedure:

- Install Compost Filter Socks
- Grub the Sediment Trap area.
- The topsoil shall be stripped and be placed in the areas designated on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install and backfil the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. Outlets shall be capped while sediment trap is in operation. The underdrain shall not be installed at this time. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Install the cleanout stake and mark the sediment cleanout elevation on the stake.
- Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
- Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1. The emergency spillway shall have the North American Green Blanket P300 installed.

9. Construction of each lot may begin at this time. They may be constructed in any order.

Lot 1

10. Install the Rock Construction Entrance, clear and grub as needed.

11. Install the Compost Filter Sock 1 in the location shown on the plan.

12. Clear and grub for all disturbed areas.

13. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

14. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

15. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Remove and grub the root material.
- Strip the topsoil from the proposed disturbed area.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
  - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

16. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

17. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

18. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

19. Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

Lot 2

20. Install the Rock Construction Entrance, clear and grub as needed.

21. Install the Compost Filter Socks 2 and 18 in the locations shown on the plan.

22. Clear and grub for all disturbed areas.

23. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

24. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

25. Install Vegetated Swale 1 and permanently stabilize. Rock filter and rip rap apron shall be installed during Sediment Trap 1 operation.

26. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Remove and grub the root material.
- Strip the topsoil from the proposed disturbed area.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
  - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

27. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

28. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

29. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

30. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 2. **A licensed Professional Engineer shall be present for this step.**
- Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install the outlet structure and outlet pipe. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the infiltration basin, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

Lot 3

1. Install the Rock Construction Entrance, clear and grub as needed.

2. Install the Compost Filter Socks 3, 4, 5, 16, and 17 in the locations shown on the plan.

3. Clear and grub for all disturbed areas.

4. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

5. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

6. Install Vegetated Swale 2 and permanently stabilize. Rock filter and rip rap apron shall be installed during Sediment Trap 2 operation.

7. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Remove and grub the root material.
- Strip the topsoil from the proposed disturbed area.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
  - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

38. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

39. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

40. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

41. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 3. **A licensed Professional Engineer shall be present for this step.**
- Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install the outlet structure, outlet pipe, and concrete cradle. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the infiltration basin, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install rain garden plantings.

Lot 4

42. Install the Rock Construction Entrance, clear and grub as needed.

43. Install the Compost Filter Socks 6-9 in the locations shown on the plan.

44. Clear and grub for all disturbed areas.

45. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

46. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

47. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Remove and grub the root material.
- Strip the topsoil from the proposed disturbed area.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
- The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

48. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

49. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

50. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

51. Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

Lot 5

52. Install the Rock Construction Entrance, clear and grub as needed.

53. Install the Compost Filter Socks 10-15 in the locations shown on the plan.

54. Clear and grub for all disturbed areas.

55. Begin construction of the Sediment Trap 3 using the following procedure:

- Grub the Sediment Trap area.
- The topsoil shall be stripped and be placed in the areas designated on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install and backfill the outlet structure and outlet pipe from the end section to the outlet structure starting at the downstream end and working uphill. Immediately install the concrete cradle. The permanent outlet structure shall be installed in the Sediment trap. Joints shall be water tight. Outlet shall be capped while sediment trap 3 is in operation. **The underdrain shall not be installed at this time. A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Install the cleanout stake and mark the sediment cleanout elevation on the stake.
- Stabilize the entire outside of the berm with amended soils and on the inside of the sediment trap above the cleanout elevation with topsoil.
- Immediately apply the permanent seeding and mulch for the entire outside of the berm and above the sediment cleanout elevation on the inside of the basin. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1. The emergency spillway shall have the North American Green Blanket P300 installed.

56. Strip topsoil, stockpile and immediately stabilize with temporary seed and mulch.

57. Install the concrete washout area where shown on the Erosion Control Plans per the details for the Filtrexx® Filter Ring prior to starting any concrete work on the site.

58. The house, driveway, and site grading may begin using the following procedure:

- The contractor shall ensure that the runoff from all possible earth disturbance activities shall constantly be directed towards compost filter socks.
- Remove and grub the root material.
- Strip the topsoil from the proposed disturbed area.
- Place the topsoil where shown on the plan and seed and mulch the area.
- Place fill and compact to proposed grades starting downhill working uphill.
- The subgrade shall be rolled and the stone placed where shown on the plan for the driveway.
- Begin house construction. Excavated material shall be placed on the subsoil stockpile, seeded, and mulched.
- Begin installing the utilities using the following procedure. The utility lines may be installed simultaneously if desired by the O/RP:
  - The sewer laterals.
- The water service line.
- The gas, electric, telephone and cable lines, if proposed, shall be installed. The open trenches shall be backfilled and stabilized at the end of each day.

61. Stabilize the disturbed areas on the site with a minimum of six inches of topsoil, permanently seed and mulch. A slope protection blanket shall be installed where shown on the plan.

62. No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations on areas proposed to be lawn areas.

63. Pave areas shown on the plans and stabilize any disturbed areas any time after this step.

64. After upslope areas are stabilized (a minimum of 70% uniform perennial vegetative cover), install MRC 5. **A licensed Professional Engineer shall be present for this step.**
- Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install the underdrain. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the infiltration basin, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install Rain Garden plantings.

- Install landscaping and tress in areas of lawn shown on the plans using light tracked equipment. Do not run equipment over areas of soil amendment to avoid compaction. Stabilize all disturbed areas with seed and mulch.

65. After Lots 1 and 2 are stabilized (a minimum of 70% uniform perennial vegetative cover), install Rain Garden 1. **A licensed Professional Engineer shall be present for this step.**
- Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the infiltration basin, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install Rain Garden plantings.

67. After Lots 3 and 4 are stabilized (a minimum of 70% uniform perennial vegetative cover), install MRC 4. **A licensed Professional Engineer shall be present for this step.**
- Any sediment entering the BMP shall be removed with light equipment. The underlying soil shall be scarified a minimum of twelve inches with a york rake, rototiller or other suitable equipment. **A licensed professional shall provide oversight during the scarifying of the subgrade.**
- The topsoil shall be stripped and be placed where shown on the plan.
- Excavate the berm and place and compact the fill for the berm. The structural soil shall be placed where shown on the plan.
- Install the underdrain. **A licensed Professional shall provide oversight during the backfilling of the outlet pipe.**
- Stabilize the entire outside of the berm and on the inside of the berm with topsoil.
- Immediately apply the permanent seeding and mulch for the entire area. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install amended topsoil, per the procedure outlined on the plans, on the inside of the infiltration basin, permanently seeded and mulched. A slope protection blanket shall be installed where shown on the plan and all slopes greater than 3:1.
- Install Rain Garden plantings

68. When all of the disturbances on the site are completely stabilized (a minimum of 70% uniform perennial vegetative cover), all temporary BMP's should be removed from the site and any disturbance created when removing them shall immediately be permanently seeded and mulched. Compost filter socks shall be split open and the compost distributed in landscaped areas of the site. Casing and stakes shall be disposed of properly.

Upon permanent stabilization of earth disturbance activity under 25 Pa. Code § 102.22(a)(2) and installation of BMPs in accordance with the approved plan prepared and implemented in accordance with 25 Pa. Code § 102.4 and 102.8, the permitee and/or co-permitee shall submit a Notice of Termination (NOT) to the Department or authorized conservation district.

NO.	REVISION	DATE	BY	APP.
13.	REVISED PER EMMA EMAIL DATED MAY 17, 2023	2023-05-18	SSR	BDB
12.	REVISED PER PENNONI REVIEW LETTER DATED APRIL 21, 2023 AND MCPC LETTER DATED APRIL 18, 2023	2023-05-03	SSR	BDB
11.	REVISED PER PENNONI REVIEW LETTER DATED MARCH 9, 2022 AND FOR FINAL PLAN	2023-03-07	SSR	BDB
10.	REVISED PER MCCD EMAIL DATED MARCH 2, 2023	2023-03-02	SSR	BDB
9.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 19, 2023	2023-01-20	SSR	BDB
8.	REVISED PER MCCD REVIEW LETTER DATED NOVEMBER 15, 2022	2022-12-09	SSR	BDB
7.	REVISED PER MCCD REVIEW LETTER DATED SEPTEMBER 9, 2022	2022-09-22	SSR	BDB
6.	REVISED PER MCCD EMAIL DATED JULY 28, 2022	2022-07-29	JLK	BDB
5.	REVISED PER MCCD REVIEW LETTER DATED JUNE 29, 2022	2022-06-30	SSR	BDB
4.	REVISED PER MCCD REVIEW LETTER DATED APRIL 14, 2022	2022-05-24	SSR	BDB
3.	REVISED PER MCCD REVIEW LETTER DATED JANUARY 18, 2022	2022-03-03	SSR	BDB
2.	REVISED PER SDE REVIEW LETTER DATED JANUARY 24, 2022	2022-02-01	SSR	BDB
1.	REVISED PER PENNONI REVIEW LETTER DATED NOVEMBER 5, 2021 AND MCCD REVIEW LETTER DATED OCTOBER 19, 2021	2021-12-11	SSR	BDB

CLIENT

R.B. ASHLEY CUSTOMS, LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

POST CONSTRUCTION STORMWATER MANAGEMENT SEQUENCE

KELLY ACRES

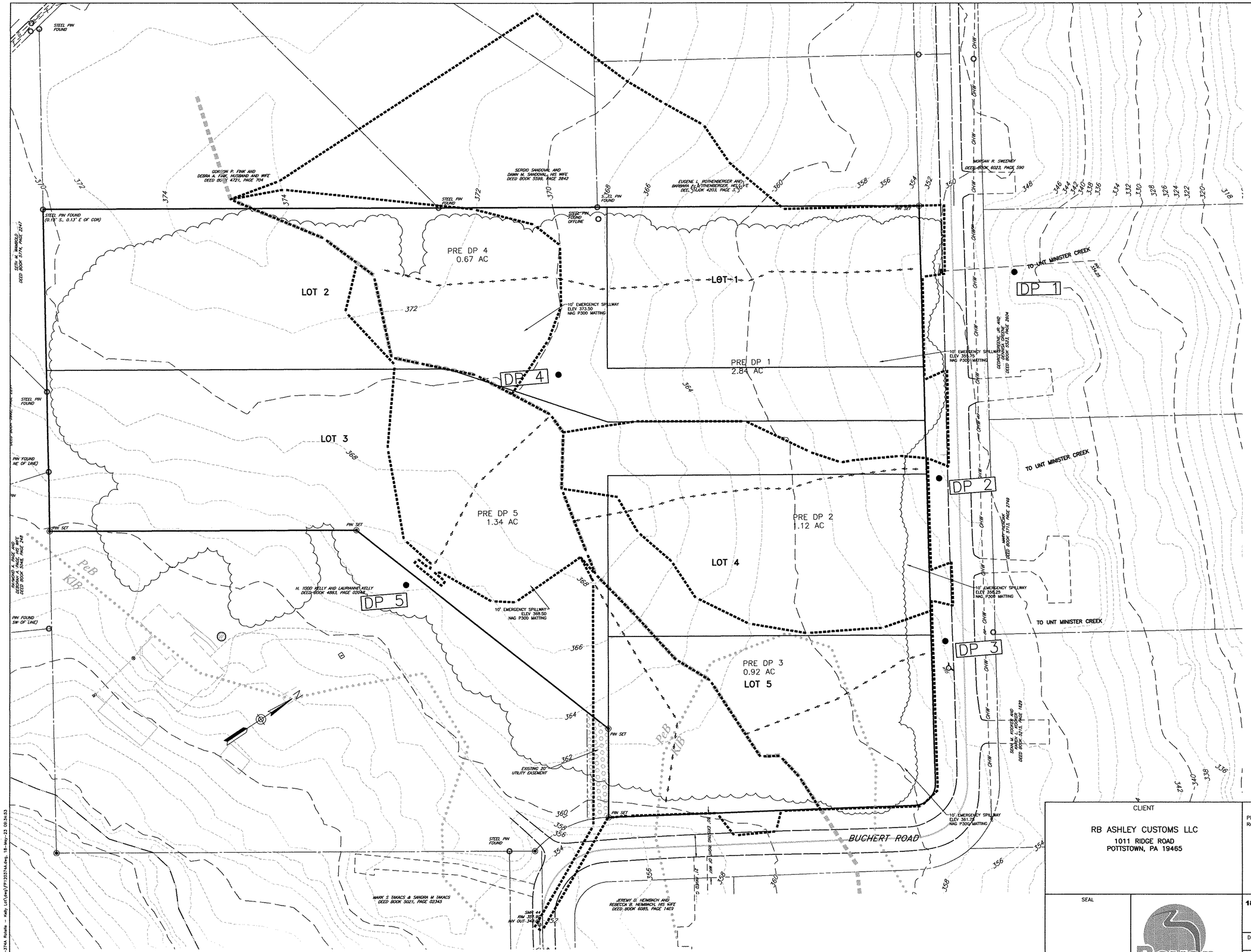
DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

PROJECT NO.	20-374A
DWG. NO.	PC520374A
SHEET NO.	19 OF 23
DESIGN: BDB	CHKD. BY: BDB
DRAWN BY: WJD	CHKD. BY:
DATE: 2020-09-04	SCALE: NOT TO SCALE

P:\PROJECTS\20-374A Rowles - Kelly Lot\Dwg\PP-20374A.dwg, 18-May-23 09:34:50



CLIENT	SUBJECT
RB ASHLEY CUSTOMS LLC 1011 RIDGE ROAD POTTSTOWN, PA 19465	PREDEVELOPED DRAINAGE AREA RATE KELLY ACRES DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

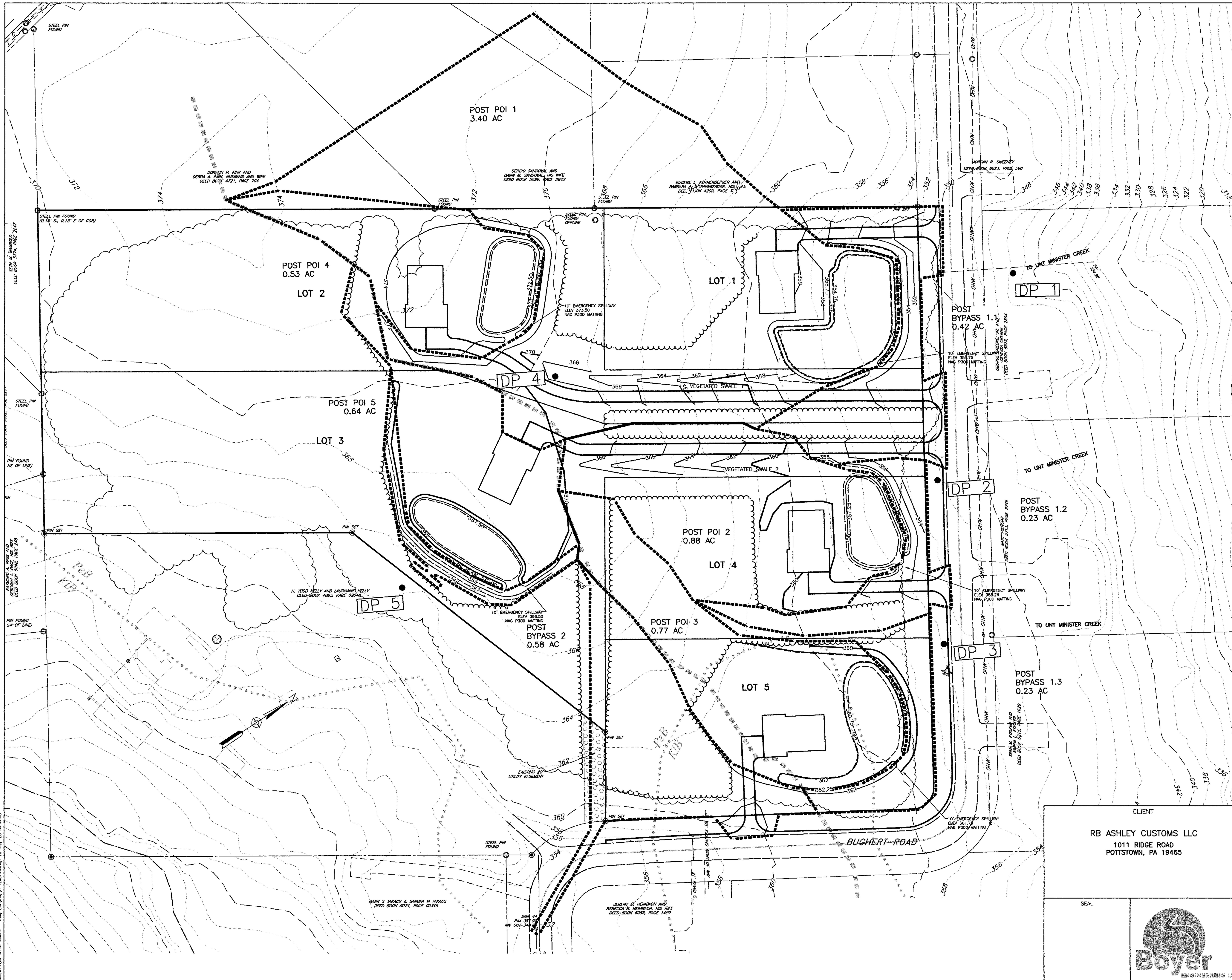
SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY	PROJECT NO. 20-374A
DRAWN BY SSR	CHKD. BY BDB	DWG. NO. DA120374A
DATE 2021-06-03	SCALE 1"=40'	SHEET NO. 20 OF 23

P:\PROJECTS\20-374A Rotelle - Kelly Lot\Dwg\PI120374A.dwg, 18-May-23 09:34:53



LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. TREELINE
- EX. SOILS
- EX. CONTOURS
- PR. CONTOURS
- PR. EDGE OF PAVING
- PR. BUILDING
- POST DEVELOPED DRAINAGE
- WATERSHED

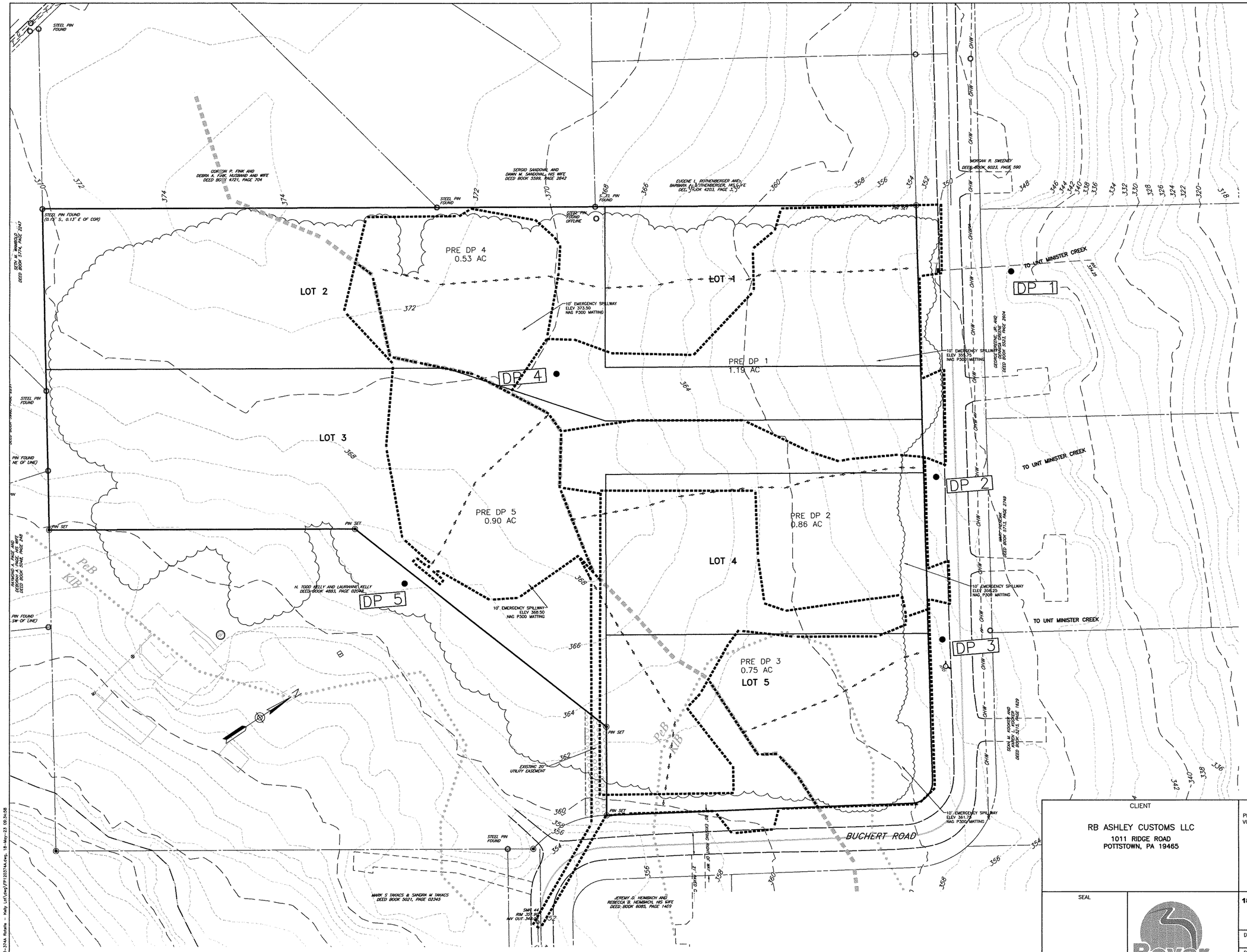
CLIENT	SUBJECT
RB ASHLEY CUSTOMS LLC 1011 RIDGE ROAD POTTSTOWN, PA 19465	POSTDEVELOPED DRAINAGE AREA RATE KELLY ACRES DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY	PROJECT NO. 20-374A
DRAWN BY SSR	CHKD. BY BDB	DWG. NO. DA220374A
DATE 2021-06-03	SCALE 1"=40'	SHEET NO. 21 OF 23



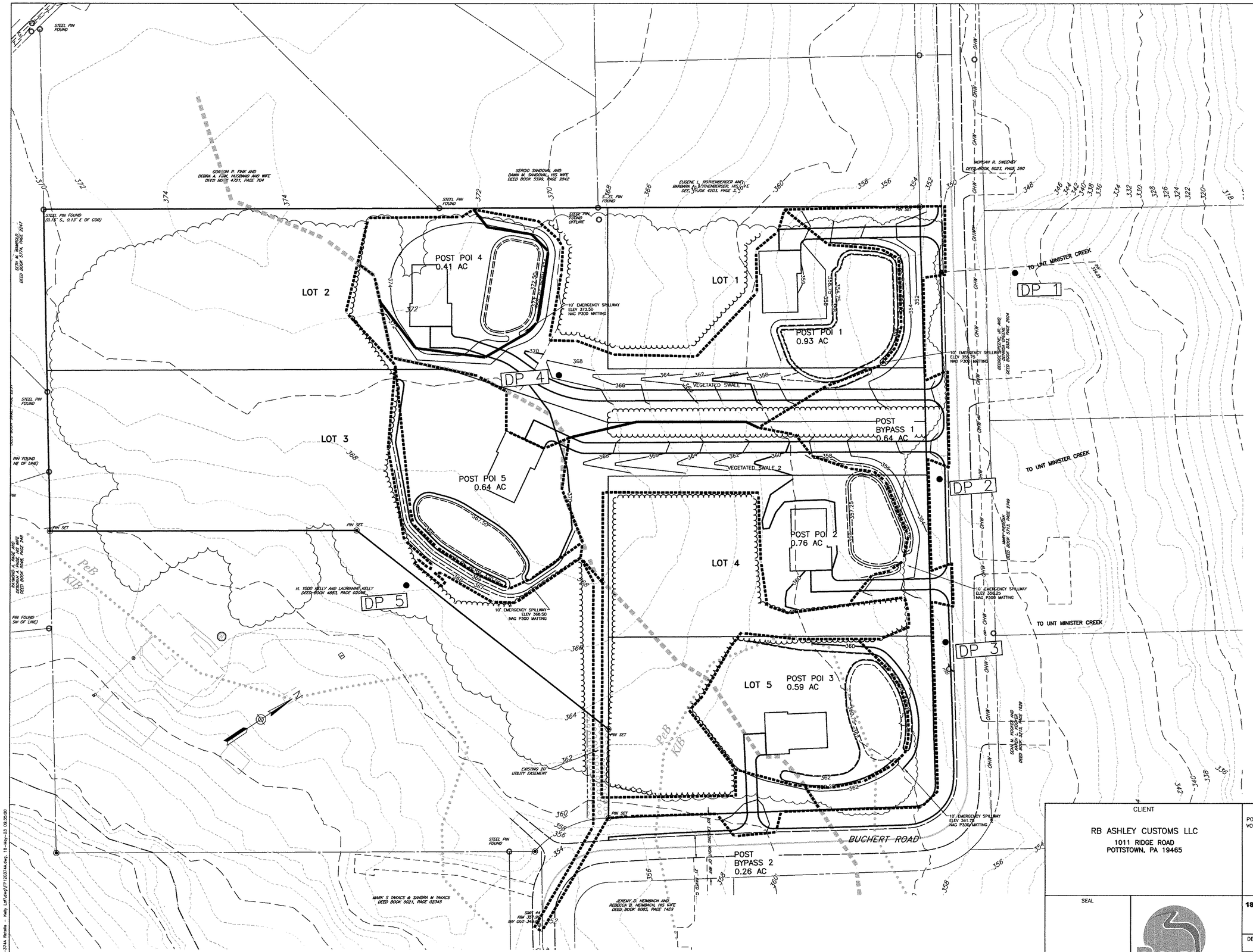
LEGEND

- EX. TRACT LINE
- EX. BOUNDARY
- EX. TREELINE
- EX. SOILS — Gc, PeB
- EX. CONTOURS — 230 / 228
- PRE DEVELOPED DRAINAGE
- WATERSHED

CLIENT	SUBJECT
RB ASHLEY CUSTOMS LLC 1011 RIDGE ROAD POTTSTOWN, PA 19465	PREDEVELOPED DRAINAGE AREA VOLUME KELLY ACRES DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA
SEAL	1860 WEAVERTOWN ROAD, SUITE 100 DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021 FAX: 610-689-4538
	PROJECT NO. 20-374A
	DESIGN BDB / CHKD. BY
	DWG. NO. DA320374A
	DRAWN BY SSR / CHKD. BY BDB
	DATE 2021-06-03 / SCALE 1"=40'
	SHEET NO. 22 OF 23

Boyer ENGINEERING LLC

P:\PROJECTS\20-374A Robels - Kelly Lot\dwg\PT\20374Adwg, 18-May-23 09:34:08



P:\PROJECTS\20-374A Rohde - Kelly Lot\dwg\FP\20374A.dwg, 18-May-21 09:35:00

CLIENT

RB ASHLEY CUSTOMS LLC
1011 RIDGE ROAD
POTTSTOWN, PA 19465

SUBJECT

POSTDEVELOPED DRAINAGE AREA VOLUME

KELLY ACRES

DOUGLASS TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SEAL

Boyer ENGINEERING LLC
1860 WEAVERTOWN ROAD, SUITE 100
DOUGLASSVILLE, PA 19518
PHONE: 610-689-8021
FAX: 610-689-4538

DESIGN BDB	CHKD. BY	PROJECT NO. 20-374A
DRAWN BY SSR	CHKD. BY BDB	DWG. NO. DA420374A
DATE 2021-06-03	SCALE 1"=40'	SHEET NO. 23 OF 23