

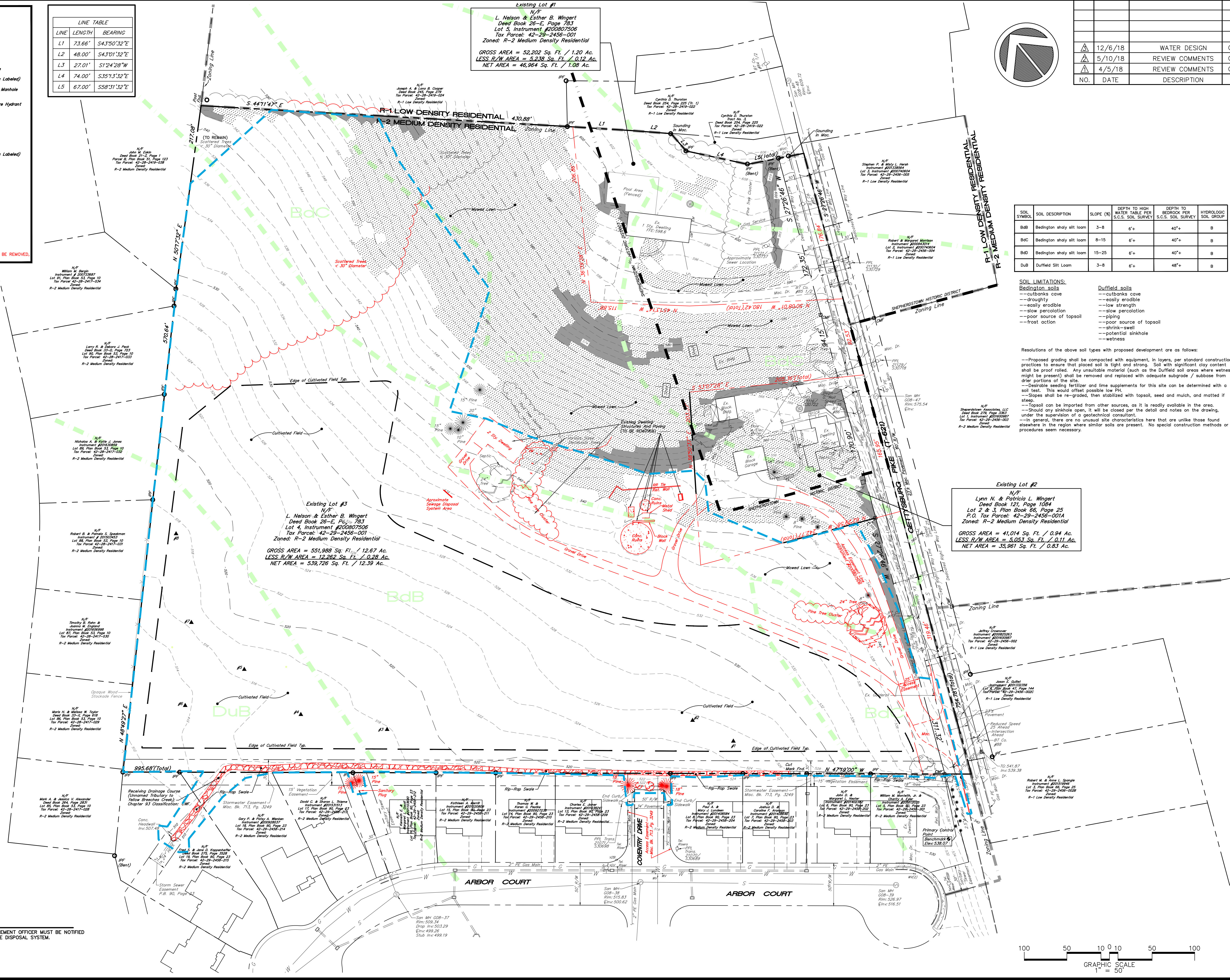
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA

ALPHA
ALPHA CONSULTING ENGINEERS, INC.
PLANNING • ENGINEERING • SURVEYING
115 LIMSKILL RD., BOX 16
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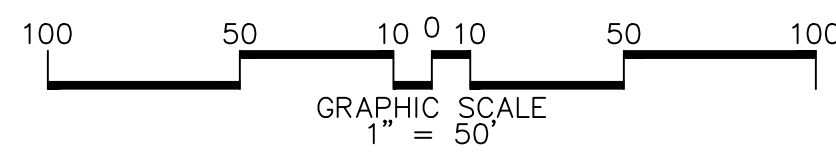
LEGEND

Existing Property Line
Existing Easement
Existing 10' Contour
Existing 2' Contour
Existing Edge of Pavement
Existing Storm Sewer
Inlet, Pipe Size and Manhole
Existing Fence
Existing Spot Elevation
Existing Utility Pole, Guy Wire
Existing Overhead Utility Line
Existing Property Corners (As Labeled)
Existing Zoning Boundary
Existing Sanitary Sewer Line, Manhole
Existing Water Line, Valve, Fire Hydrant
Soil Boundary
Per S.C.S. Soil Survey
Tree / Brush Line
Existing Sign
Significant Individual Tree (As Labeled)
Existing On-Site
15-25% Slopes
Existing On-Site
25%+ Slopes
Soil Test Site:
L2
Existing Wall
Shepherdstown Historic
District Boundary
Existing Gas Line
NPDES Permit Boundary Line
ITEMS IN RED COLOR ARE TO BE REMOVED,
RELOCATED OR ABANDONED

LINE TABLE		
LINE	LENGTH	BEARING
L1	73.66'	S43°50'32"E
L2	48.00'	S43°01'32"E
L3	27.01'	S124°28'W
L4	74.00'	S35°13'32"E
L5	67.00'	S58°31'32"E



NOTES:
1. THE UPPER ALLEN TOWNSHIP SEWAGE ENFORCEMENT OFFICER MUST BE NOTIFIED PRIOR TO ABANDONING EXISTING ON-LOT SEWAGE DISPOSAL SYSTEM.



DESIGN :	T.C.S.
DRAWN :	G.D.G.
CHECKED :	J.K.M.
DATE :	3/01/2018
REV :	

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EXISTING FEATURES PLAN
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO.	317565
SURVEY BOOK :	
SCALE :	1" = 50'
DWG. NO.	317565-01 (Prelim-Final)
FILE :	317565-01.dwg
SHEET	2 of 15

LEGEND

- Property Line
- Existing Zoning Boundary
- Existing Conc. Mon. Found
- SETBACK LINE
- PROPOSED PUBLIC WALK
- ACCESSIBLE RAMP LOCATION
- PROPOSED CONCRETE MONUMENT
- PROPOSED IRON PIN
- Access Easement Line
Instrument #200807506
(TO BE REMOVED WITH THIS PLAN)

				DESIGN : T.C.S.
				DRAWN : G.D.G.
				CHECKED : J.K.M.
				DATE : 3/01/2018
				REV :
△	12/6/18	WATER DESIGN	GDG	
△	5/10/18	REVIEW COMMENTS	GDG	
△	4/5/18	REVIEW COMMENTS	GDG	
NO.	DATE	DESCRIPTION	BY	

PLAN SYMBOL	PENNDOT DESIGNATION	SIGN DESCRIPTION	SIZE
(A)	R1-1	STOP	24"x24"
(B)	---	STREET NAME SIGN	PER TWP REQ.

LINE TABLE			CURVE TABLE			
LINE	LENGTH	BEARING	CURVE	LENGTH	RADIUS	CHORD
L1	73.66'	S43°50'32"E	C2	25.02'	175.00'	25.00'
L2	48.00'	S43°01'32"E	C3	26.95'	25.00'	25.66'
L3	27.01'	S12°24'28"W	C3A	33.11'	42.00'	32.26'
L4	74.00'	S35°13'32"E	C3B	58.22'	125.00'	57.69'
L5	67.00'	S58°31'32"E	C5	33.92'	175.00'	33.87'
L5A	36.93'	S58°31'32"E	C6	5.53'	175.00'	5.53'
L5B	12.03'	S58°31'32"E	C8	152.59'	125.00'	143.29'
L5C	18.04'	S58°31'32"E	C10	42.72'	125.00'	42.52'
L6	26.57'	S38°50'37"W	C12	30.77'	25.00'	28.87'
L7	12.44'	N47°19'00"W	C12A	90.83'	50.00'	78.85'
L7A	18.65'	N47°19'00"W	C13	75.00'	50.00'	68.16'
L8	46.11'	N55°54'48"E	C14	52.79'	50.00'	50.37'
L9	17.14'	N40°03'10"W	C17	20.88'	175.00'	20.87'
L12	25.76'	N49°28'17"E	C18	75.00'	175.00'	74.43'
L13	10.66'	N19°58'05"E	C19	75.00'	175.00'	74.43'
L14	22.21'	N49°28'17"E	C20	75.00'	175.00'	74.43'
L15	30.21'	N48°49'27"E	C21	27.55'	175.00'	27.52'
L15A	44.80'	N50°17'32"E	C24	30.45'	125.00'	30.45'
L16	75.00'	N49°28'17"E	C24A	46.32'	27.00'	40.84'
L21	47.53'	S40°03'10"E	C24B	90.26'	175.00'	89.26'
L24	46.69'	S40°03'10"E	OSC1	61.90'	125.00'	61.27'
OSL1	35.54'	S42°41'00"W	OSC2	42.41'	27.00'	38.18'
OSL2	8.65'	S27°25'17"W	OSC4	119.08'	175.00'	116.79'
OSL3	35.54'	S42°41'00"W				
OSL4	4.91'	N71°03'21"E	OSC7	37.25'	25.00'	33.90'

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SEAL

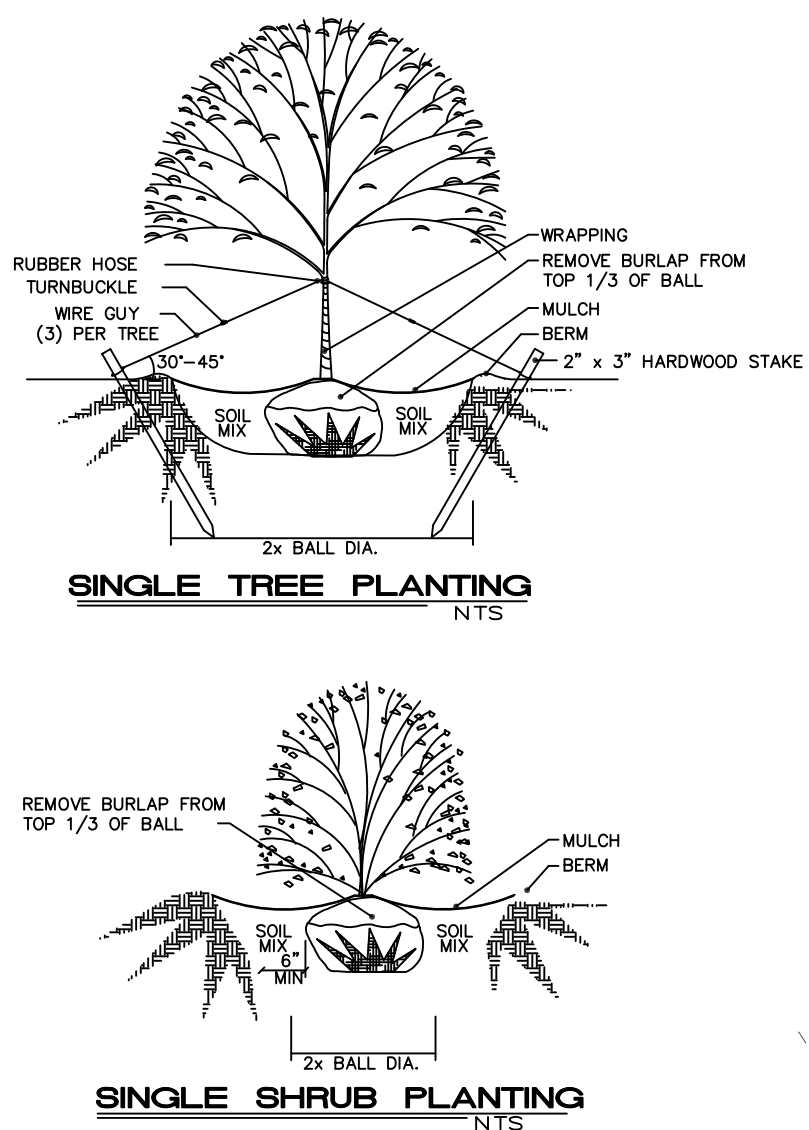
SEAL

SUBDIVISION PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN

PROJECT NO. 317565
SURVEY BOOK :
SCALE : 1" = 50'
DWG: 317565.dwg
FILE: 317565.dwg
SHEET 3 of 15





STREET TREE OPTIONS:
Note: Other Tree Species May Be Substituted, but must comply with SALDO Section 220-28.0 of Upper Allen Township. No one species shall compose more than 25% of the entire number of street in a particular development.

(Minimum trunk diameter at planting is 2" @ 6" above finish grade.)

1. **Summary:** Furnish all labor, materials, services, equipment, and other necessary items required or establishing landscaped area in accordance with project specifications and these landscape notes.
2. Soil pH shall be determined by electronic or chemical soil test; pH shall be adjusted as required for specific plant material to be grown.
3. The subgrade in planting area shall be loosened and mixed to a depth of three inches (3") and lightly compacted. Distribute topsoil over area to be planted to a minimum depth of four inches (4").
4. Shrubs and trees: Contractor shall install all shrubs and trees as recommended on an experienced local AAMP/PA - certified nursery, unless noted otherwise on the drawings. The standard warranty for for one (1) year period, commencing on the date of final payment. Plants shall be alive and in satisfactory growth at the end of the warranty period.
5. Shrubs and trees shall be planted in accordance with the details shown in the plan set. If excessive rock or stone is encountered while digging planting holes, the contractor shall be responsible for removing the rock or stone and backfilling with additional soil.
6. The landscape contractor shall review the entire set of the contract drawings to become aware of any possible conflicts with utilities and determine measures required to protect existing and proposed utilities.
7. Any plant grown using in baling the tree must be cut and removed from the root ball.
8. If plant quantities on the plant schedule to not conform to the planting plan, the planting plan shall take precedence. No fewer plants may be installed without prior approval by the developer.
9. On-site landscaping shall be maintained in a healthy growing condition at all times by the contractor until the owner or their designated representative has inspected and accepted all landscape improvements at the beginning of the one-year warranty period. Once accepted, during the one-year warranty period, landscaping in accordance with the care and maintenance schedule provided to the developer by the landscape contractor.
10. The contractor shall be responsible for the maintenance of the landscape during the warranty period. If the owner has followed the care and maintenance schedule and plant material has become diseased, is dying, or dead, the contractor shall replace all diseased, dying, or dead plant material. If the developer has not followed the care and maintenance schedule and plant material has become diseased, is dying, or is dead, the contractor is not responsible for replacing the diseased, dying, or dead plant material.
11. If the contractor believes a replacement plant will not grow because of identified environmental conditions, then the contractor may replace the originally specified plant with a similar species that meets the design intent, upon prior approval by the developer.
12. Landscaped areas shall be continuously maintained by the landowner. Failure to adequately maintain landscaped areas may be subject to a citation issued by the

(using a Type 3 buffer planting)

Requirement: One shade tree per 30 linear feet of the top of dam.
Calculation: 650 linear feet of top of berm from rain garden #A along storm basin #1 to end of rain garden #C, divided by 30 = 22 shade trees required.
Compliance: 22 shade trees are provided.

Requirement: One shade tree per 30 linear feet of the top of dam.
Calculation: 80 linear feet of top of berm from rain garden #D, divided by 30 = 3 shade trees required.
Compliance: 3 shade trees are provided.

Compliance: A total of 25 shade trees are provided around or within stormwater management facilities.

Requirement: One evergreen tree per 10 linear feet of the top of dam.
Calculation: 650 linear feet of top of berm from rain garden #A along storm basin #1 to end of rain garden #C, divided by 10 = 65 evergreen trees required.
Compliance: 65 evergreen trees are provided.

Requirement: One evergreen tree per 10 linear feet of the top of dam.
Calculation: 80 linear feet of top of berm along rain garden #D, divided by 10 = 8 evergreen trees required.
Compliance: 8 evergreen trees are provided.

Compliance: A total of 73 evergreen trees are provided around stormwater management facilities.

Requirement: One evergreen or deciduous shrub per 10 linear feet of the top of dam, with minimum 70% of the shrubs being evergreen.
Calculation: 650 linear feet of top of berm of storm basin #1, divided by 10 = 65 shrubs required.
Compliance: 65 shrubs are provided, with minimum 70% being evergreen.



Requirement: One evergreen or deciduous shrub per 10 linear feet of the top of dam, with minimum 70% of the shrubs being evergreen.
Calculation: 80 linear feet of top of berm along rain garden #D, divided by 10 = 8 shrubs required.
Compliance: 8 shrubs are provided, with minimum 70% being evergreen.

Compliance: A total of 73 shrubs are provided around or within stormwater management facilities, of which 52 are evergreen.

Requirement: 30-foot wide planting strip.
Compliance: The open space lots on which the plantings are placed are more than 30 feet wide.

	SYMBOL	QTY	COMMON NAME	BOTANICAL NAME	NATIVE (Y/N)	MIN. SIZE AT PLANTING TIME	SPACING	COMMENTS	
O P T I O N S		21	ARROW WOOD VIBURNUM OR BLACKHAW VIBURNUM	Viburnum dentatum or Viburnum prunifolium	X				
			WINTER RED WINTER BERRY	Ilex verticillata (not 1 male in each cluster; remainder are females)	X	12-15' HIGH		8' O.C. SEE PLAN	Deciduous stormwater facility buffer/screening per SALDO section 220-26.B.
			BRIGHT RED CHOKEBERRY	Aronia arbutifolia	X				
O P T I O N S		52	EASTERN ARBORVITAE	Thuja occidentalis "Elegantissima" or "Emerald Green"	X	2-3' HIGH			
			INBERRY HOLLY	Ilex glabra "Shamrock"	X	12-15' HIGH		8' O.C. SEE PLAN	Evergreen shrub stormwater facility buffer/screening shrub per SALDO Section 220-26.B.
			ALLEGHENY VIBURNUM	Viburnum X thyridophloides "Allegheny"	X	2-3' HIGH			
O P T I O N S		73	WHITE PINE	Pinus strobus	X				
			WHITE SPRUCE	Picea glauca	X	5' HIGH		SEE PLAN	Evergreen buffer/screening tree per SALDO section 220-26.B.
			EASTERN RED CEDAR	Juniperus virginiana "Canadensis", or "Blue Mountain"	X				
O P T I O N S		25	REDBUD	Cercis canadensis (cultivars acceptable)	X				
			FLOWERING DOGWOOD	Cornus florida (cultivars acceptable)	X	6' HIGH; 2" CALIPER		SEE PLAN	Buffer/screening shade tree per SALDO section 220-26.B.
			BLACK GUM	Nyssa sylvatica	X				
			WINTER KING HAWTHORN	Crataegus Viridis "Winter King"	X				

NATIVE SPECIES RE-VEGETATION MEADOW SEEDING		
Native, Upland, Wildlife Forage & Cover: Meadow Mix – ERNMY-123 Or Approved Equivalent		
Scientific Name	Common Name	
<i>Andropogon gerardii</i>	Turkey Foot Bluestem	
<i>Chamaecrista fasciculata</i>	Partridge Pea	
<i>Coreopsis tinctoria</i>	Plains Coreopsis	
<i>Desmodium canadense</i>	Showy Tick Trefoil	
<i>Elymus virginicus</i>	Virginia Wild Rye	
<i>Panicum virgatum</i>	Switchgrass	
<i>Poa polystris</i>	Pawl Bluegrass	
<i>Rudbeckia hirta</i>	Black Eyed Susan	
<i>Schizachyrium scoparium</i>	Little Bluestem	
<i>Sorghastrum nutans</i>	Indiangrass	
<i>Tripsacum dactyloides</i>	Eastern Oenoma Grass	

	12/6/18	WATER DESIGN	GDG
	5/10/18	REVIEW COMMENTS	GDG
	4/5/18	REVIEW COMMENTS	GDG
NO.	DATE	DESCRIPTION	BY

DESIGN :	T.C.S.
DRAWN :	G.D.G.
CHECKED :	J.K.M.

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SEAL

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ARBORVIEW

UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA




PROJECT NO. 317565
SURVEY BOOK :
SCALE : 1" = 50'
DWG FILE : Y:\17\317565.aph\317565.dwg Dwg\Plans\Prelim-Final
SHEET 5 of 1

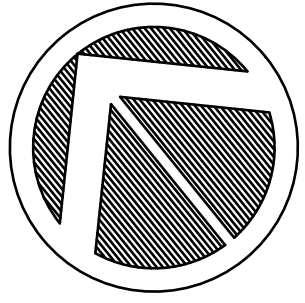
LEGEND

- Property Line
- Existing Contour
- Existing Curb
- Existing Edge Of Pavement
- Existing Gas Line/Valve
- Existing Water Line/Valve/Hydrant
- Existing Storm Sewer Inlet, Pipe Size And Manhole
- Existing Sanitary Sewer Line Cleanout And Manhole
- Existing Sanitary Sewer Force Main
- Existing Sign
- Existing Electric Line And Utility Pole/Post
- Existing Spot Elevation
- Existing Tree
- Soil Test Location; ID#
- PROPOSED TREE LINE
- PROPOSED STORM SEWER LINE AND INLET; ID #
- PROPOSED RIP RAP APRON
- PROPOSED SANITARY SEWER MAIN AND MANHOLE; ID #
- PROPOSED SANITARY SEWER LATERAL; CLEANOUT
- PROPOSED WATER LINE; HYDRANT AND VALVE
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION B.C.=BOTTOM OF CURB H.P.=HIGH POINT
- PROPOSED PUBLIC WALK ACCESSIBLE RAMP LOCATION
- DECK/PATIO/PORCH FIRST FLOOR ELEVATION
- POSSIBLE EXPOSED BASEMENT ELEVATION
- UNIT BOUNDARY (SCHEMATIC ONLY)
- GARAGE DRIVEWAY
- POSSIBLE GARAGE FLOOR ELEVATION

BMP LEGEND

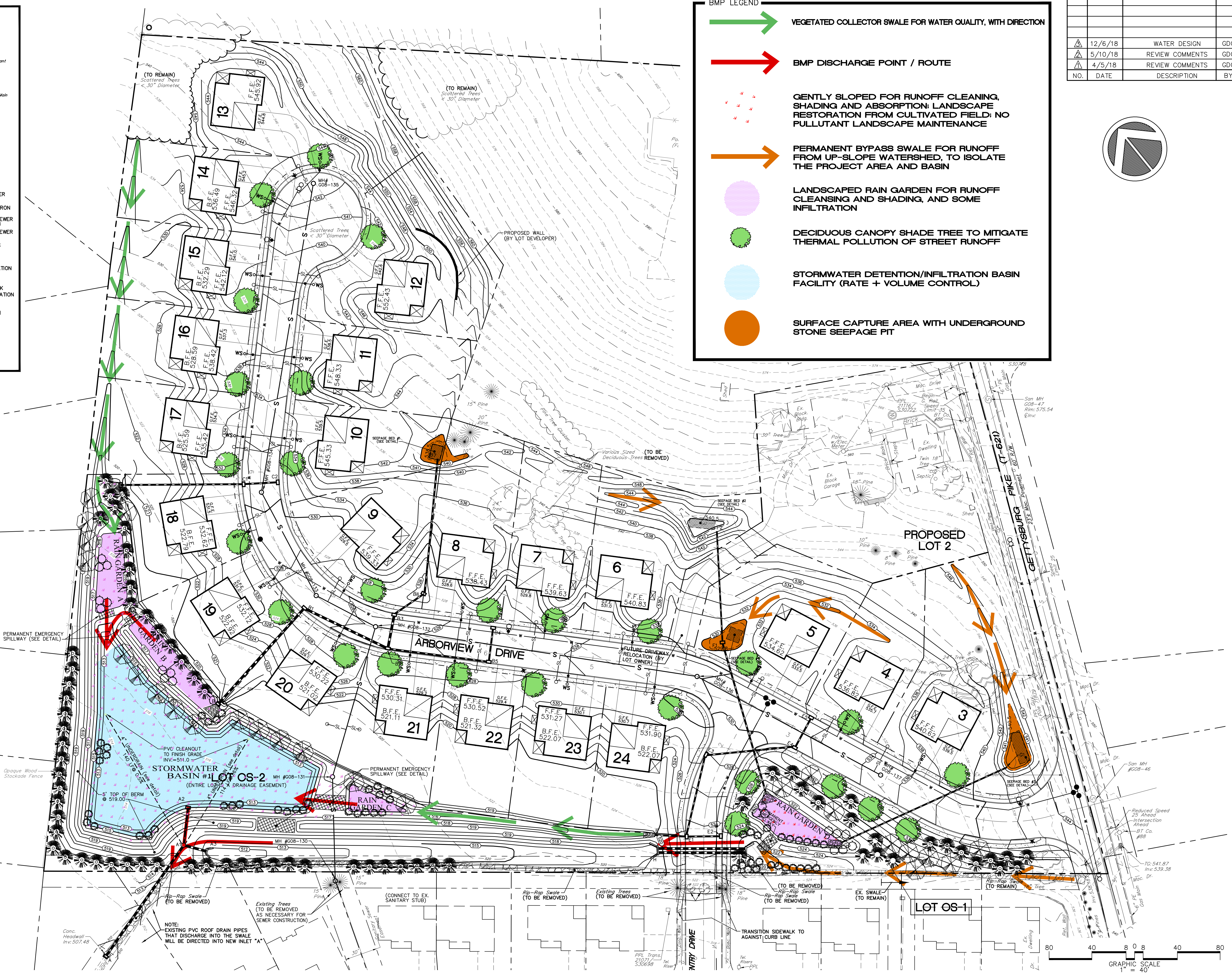
- VEGETATED COLLECTOR SWALE FOR WATER QUALITY, WITH DIRECTION
- BMP DISCHARGE POINT / ROUTE
- GENTLY SLOPED FOR RUNOFF CLEANING, SHADING AND ABSORPTION; LANDSCAPE RESTORATION FROM CULTIVATED FIELD; NO POLLUTANT LANDSCAPE MAINTENANCE
- PERMANENT BYPASS SWALE FOR RUNOFF FROM UP-SLOPE WATERSHED, TO ISOLATE THE PROJECT AREA AND BASIN
- LANDSCAPED RAIN GARDEN FOR RUNOFF CLEANSING AND SHADING, AND SOME INFILTRATION
- DECIDUOUS CANOPY SHADE TREE TO MITIGATE THERMAL POLLUTION OF STREET RUNOFF
- STORMWATER DETENTION/INFILTRATION BASIN FACILITY (RATE + VOLUME CONTROL)
- SURFACE CAPTURE AREA WITH UNDERGROUND STONE SEEPAGE PIT

				DESIGN : T.C.S.
				DRAWN : G.D.G.
				CHECKED : J.K.M.
				DATE : 3/01/2018
				REV :
NO.	DATE	DESCRIPTION	BY	
	12/6/18	WATER DESIGN	GDG	
	5/10/18	REVIEW COMMENTS	GDG	
	4/5/18	REVIEW COMMENTS	GDG	






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STORMWATER BMP CONCEPT PLAN
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO.	317565
SURVEY BOOK :	
SCALE :	1" = 40'
DWG. FILE :	317565.dwg (317565.dwg)
SHEET	6 of 15

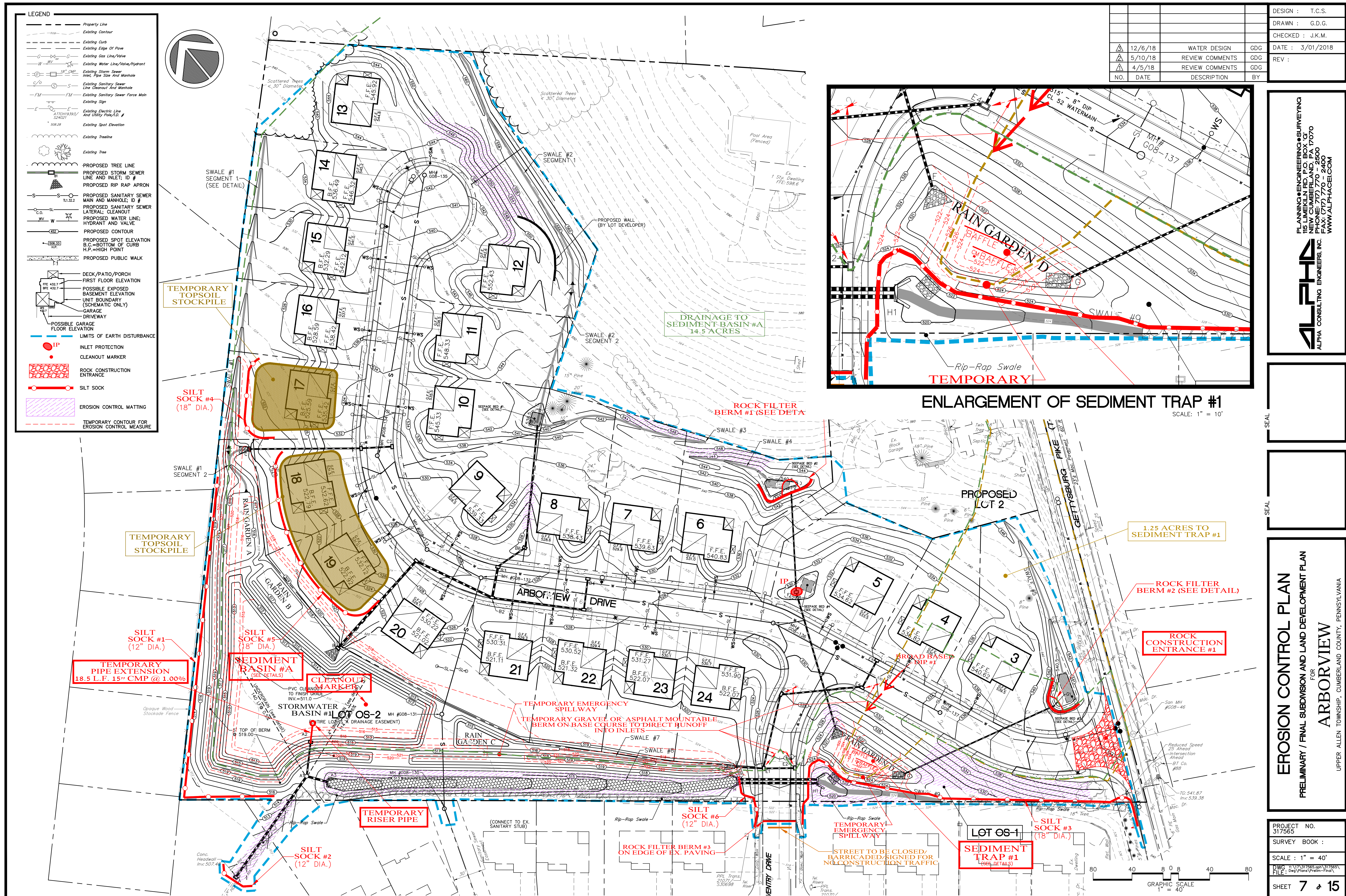
				DESIGN : T.C.S.
				DRAWN : G.D.G.
				CHECKED : J.K.M.
	12/6/18	WATER DESIGN	GDG	DATE : 3/01/2018
	5/10/18	REVIEW COMMENTS	GDG	REV :
	4/5/18	REVIEW COMMENTS	GDG	
NO.	DATE	DESCRIPTION	BY	

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EROSION CONTROL PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO. 317565
SURVEY BOOK :
SCALE : 1" = 40'
DWG FILE : Y:\17\317565.gph\317565\ FILE : Dwg\Plans\Prelim-Final\
SHEET 7 of 15



			DESIGN :	T.C.S.
			DRAWN :	G.D.G.
			CHECKED :	J.K.M.
			DATE :	3/01/2018
			REV :	
12/6/18	WATER DESIGN	GDG		
5/10/18	REVIEW COMMENTS	GDG		
4/5/18	REVIEW COMMENTS	GDG		
NO.	DATE	DESCRIPTION	BY	

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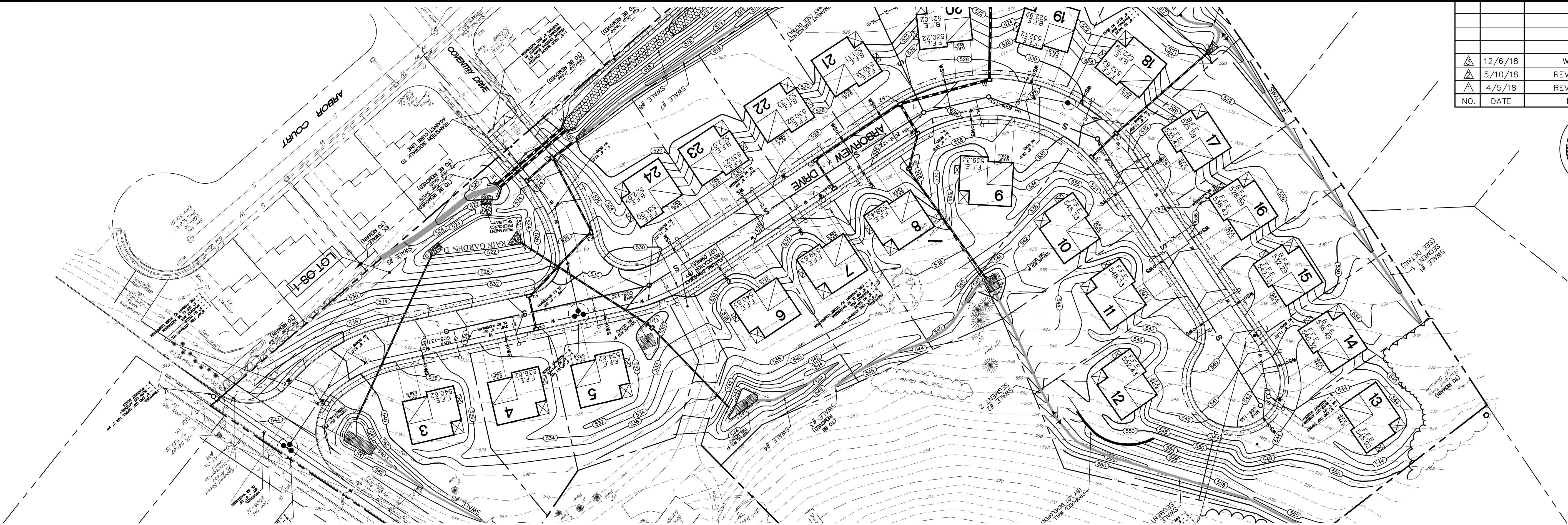
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ARBORVIEW / COVENTRY DRIVE PROFILES
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO.
317565
SURVEY BOOK :
SCALE : 1" = 50'
DWG: 317565.dwg
FILE: 317565.dwg
SHEET 8 of 15



PLAN VIEW

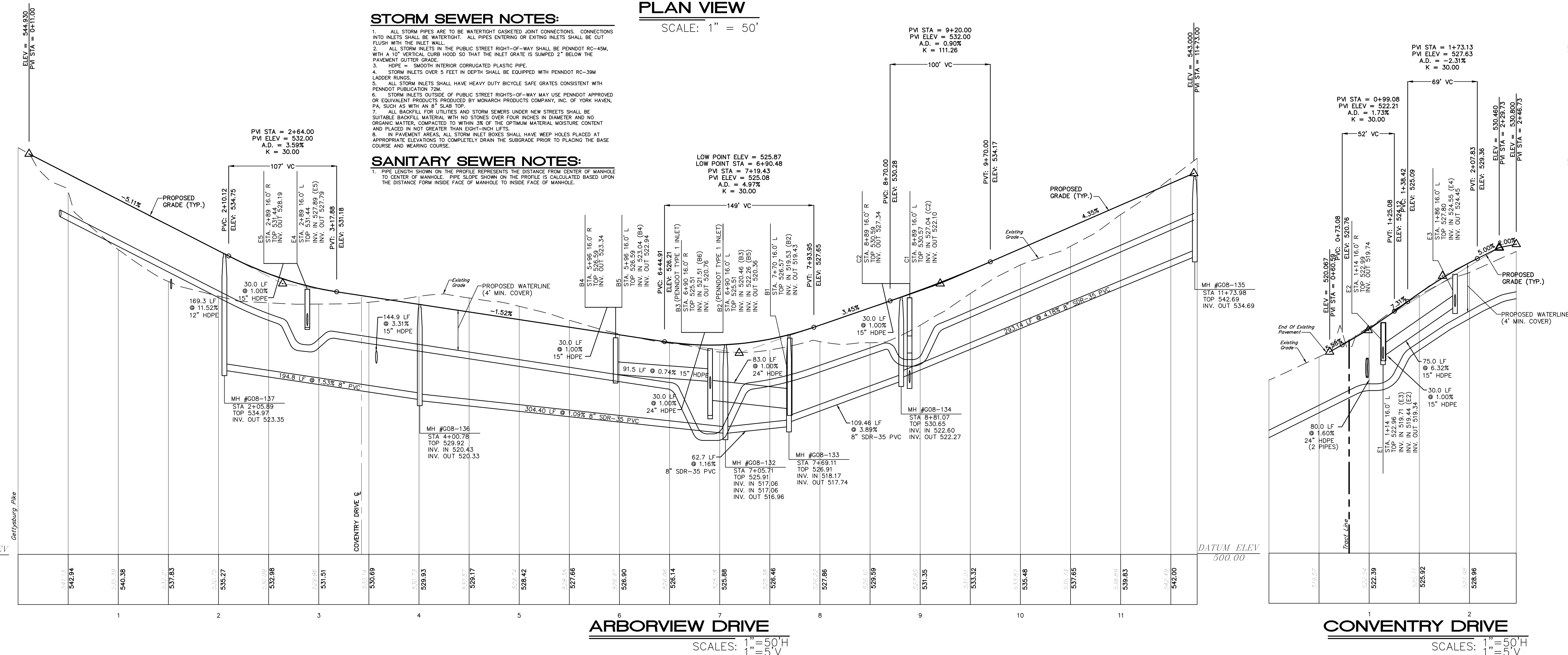
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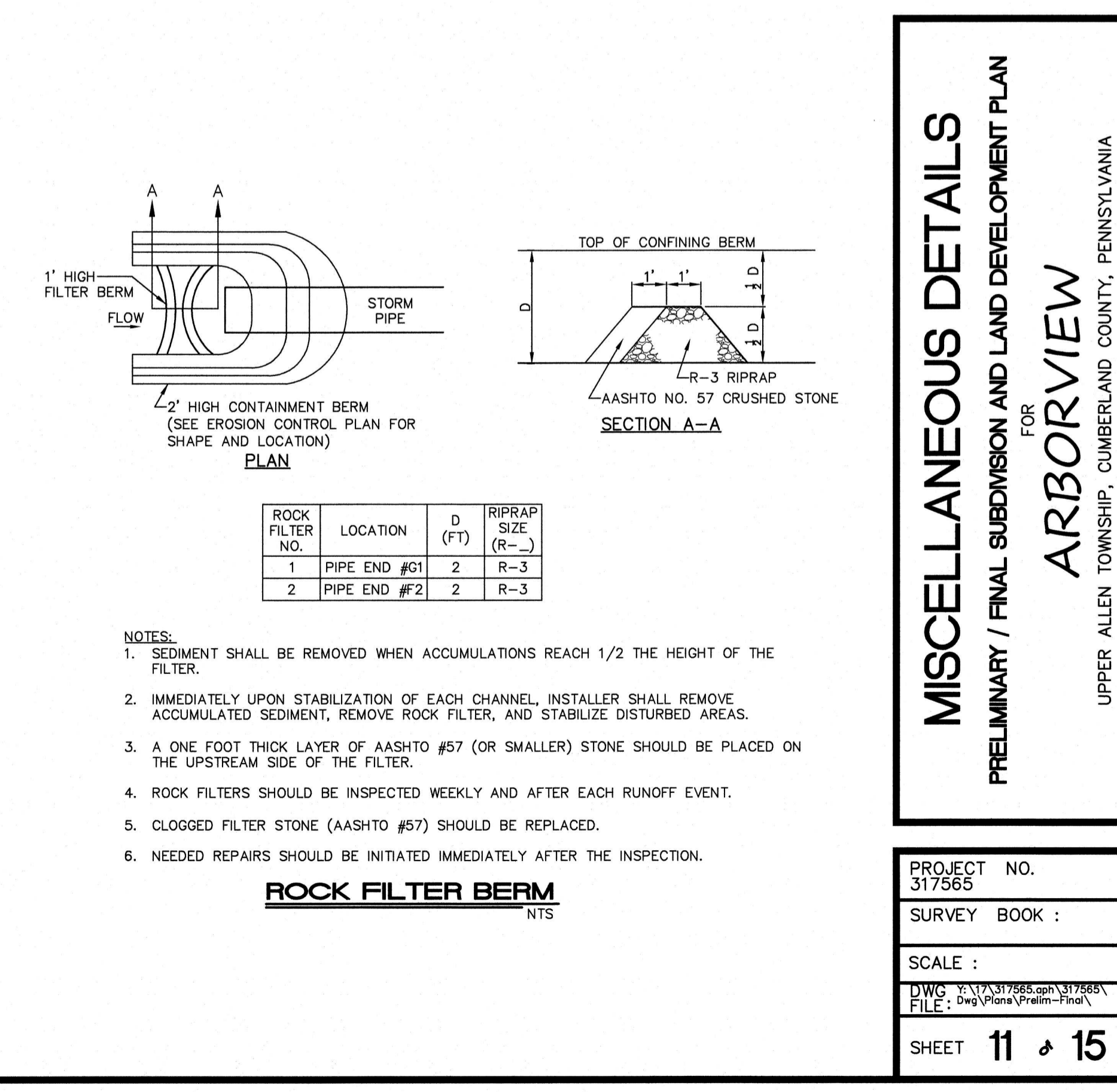
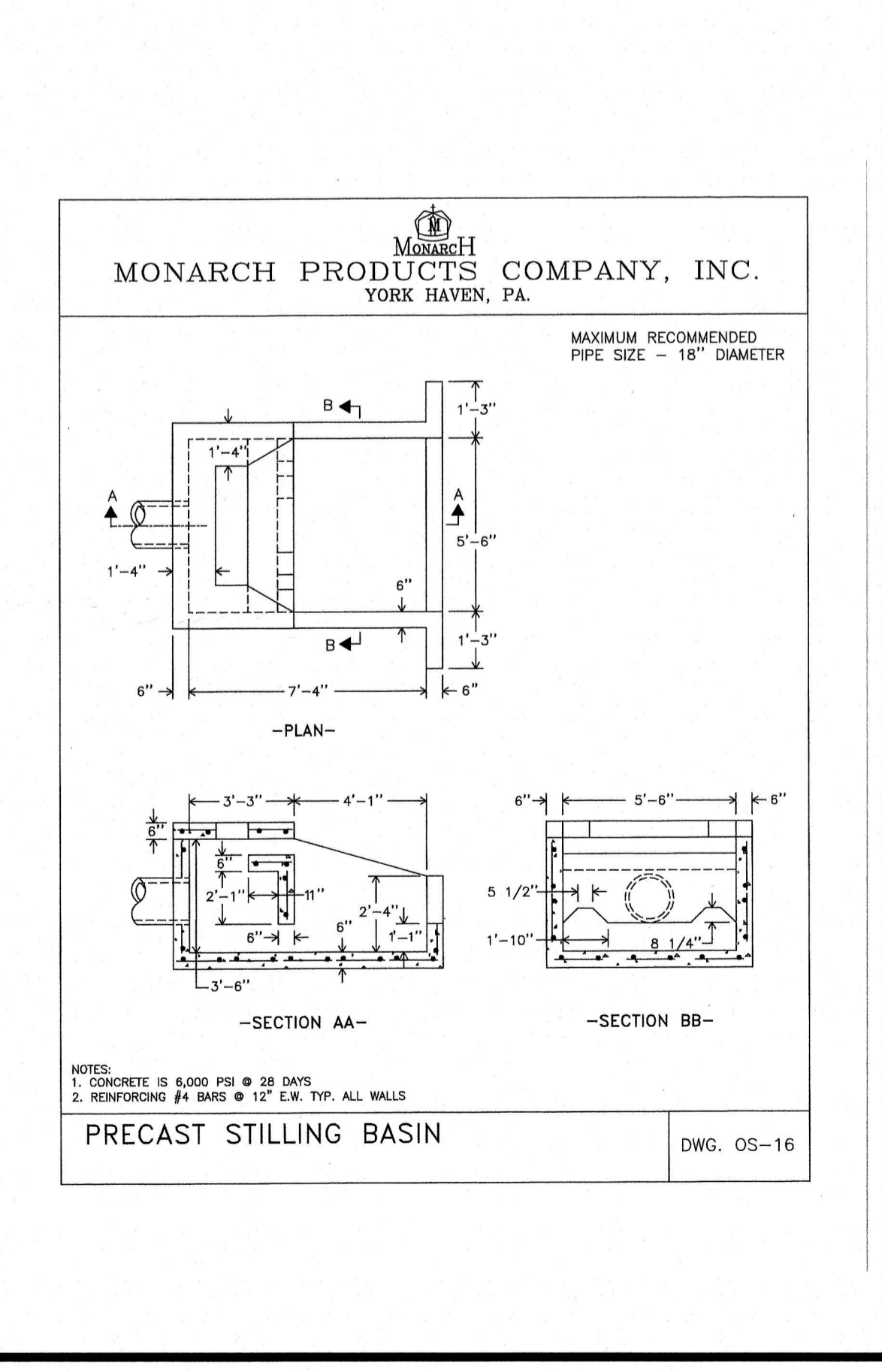
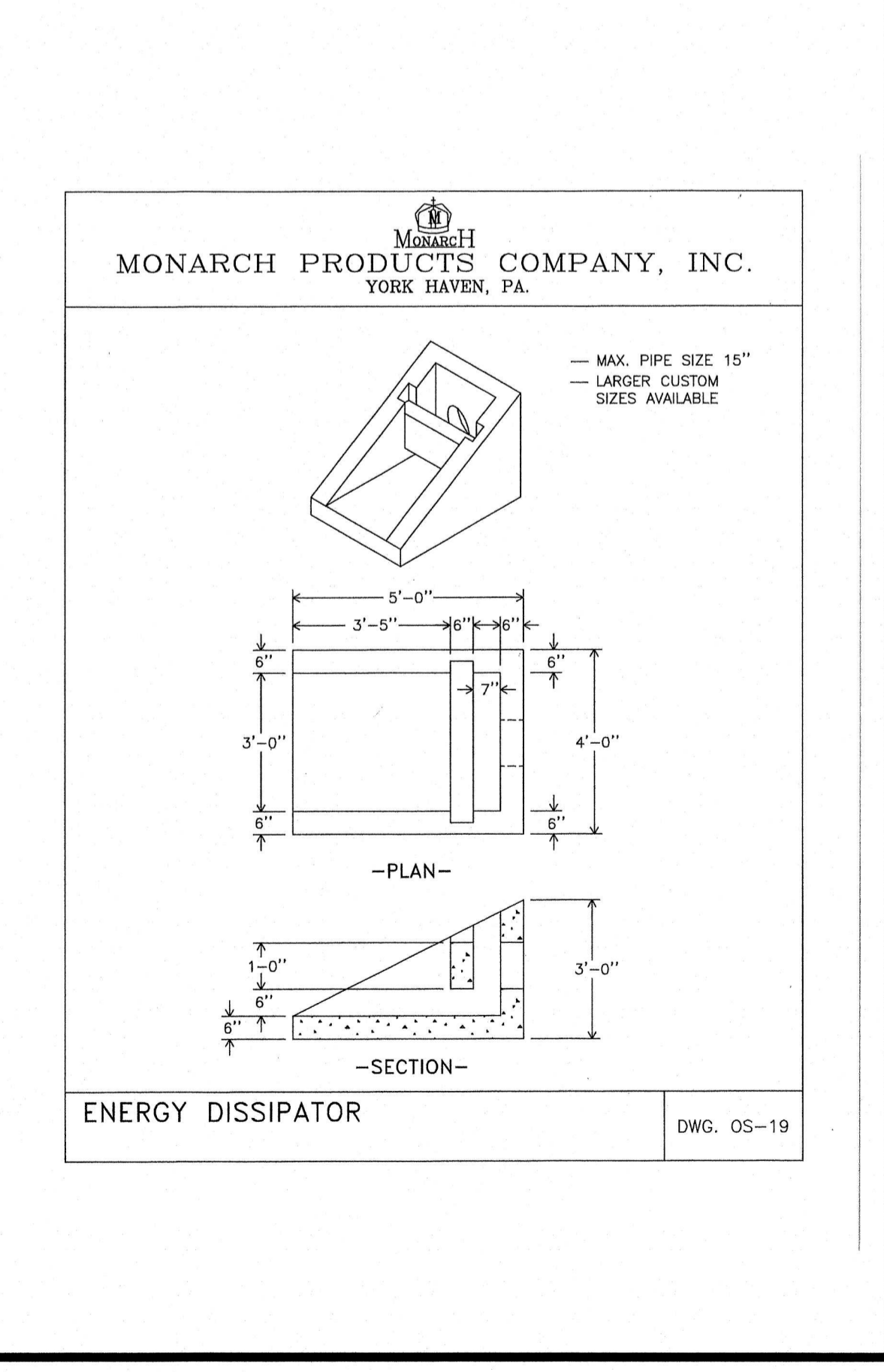
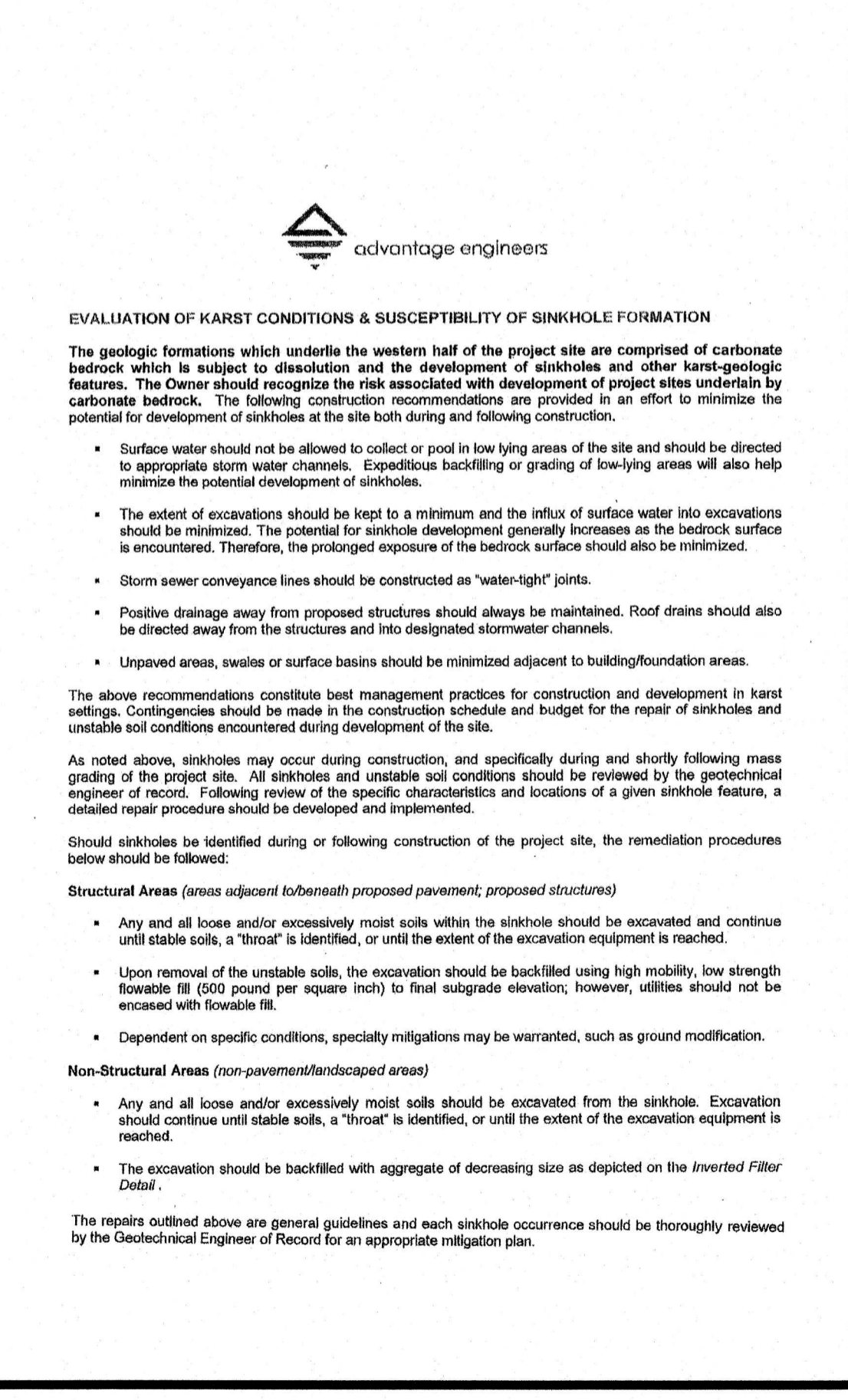
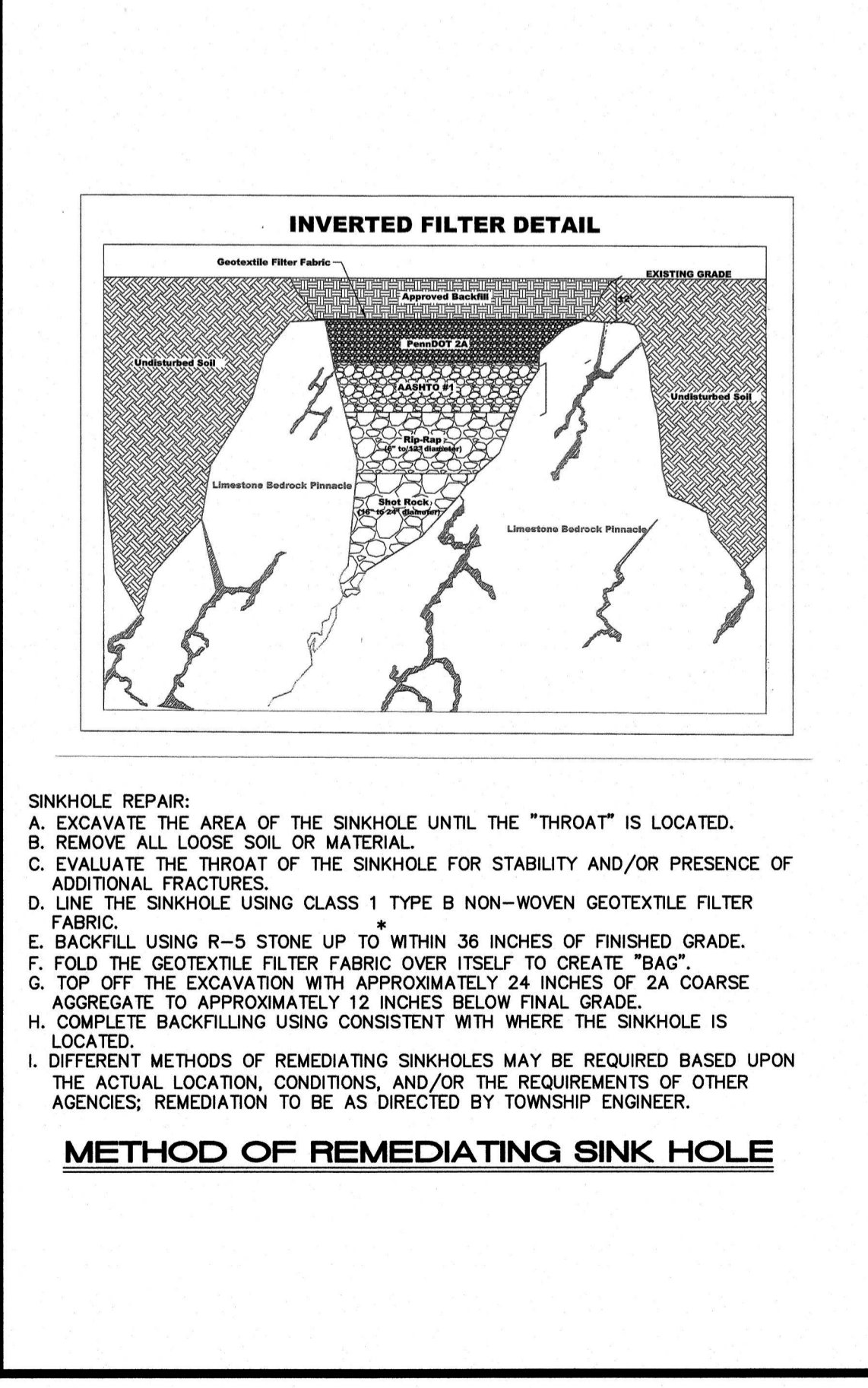
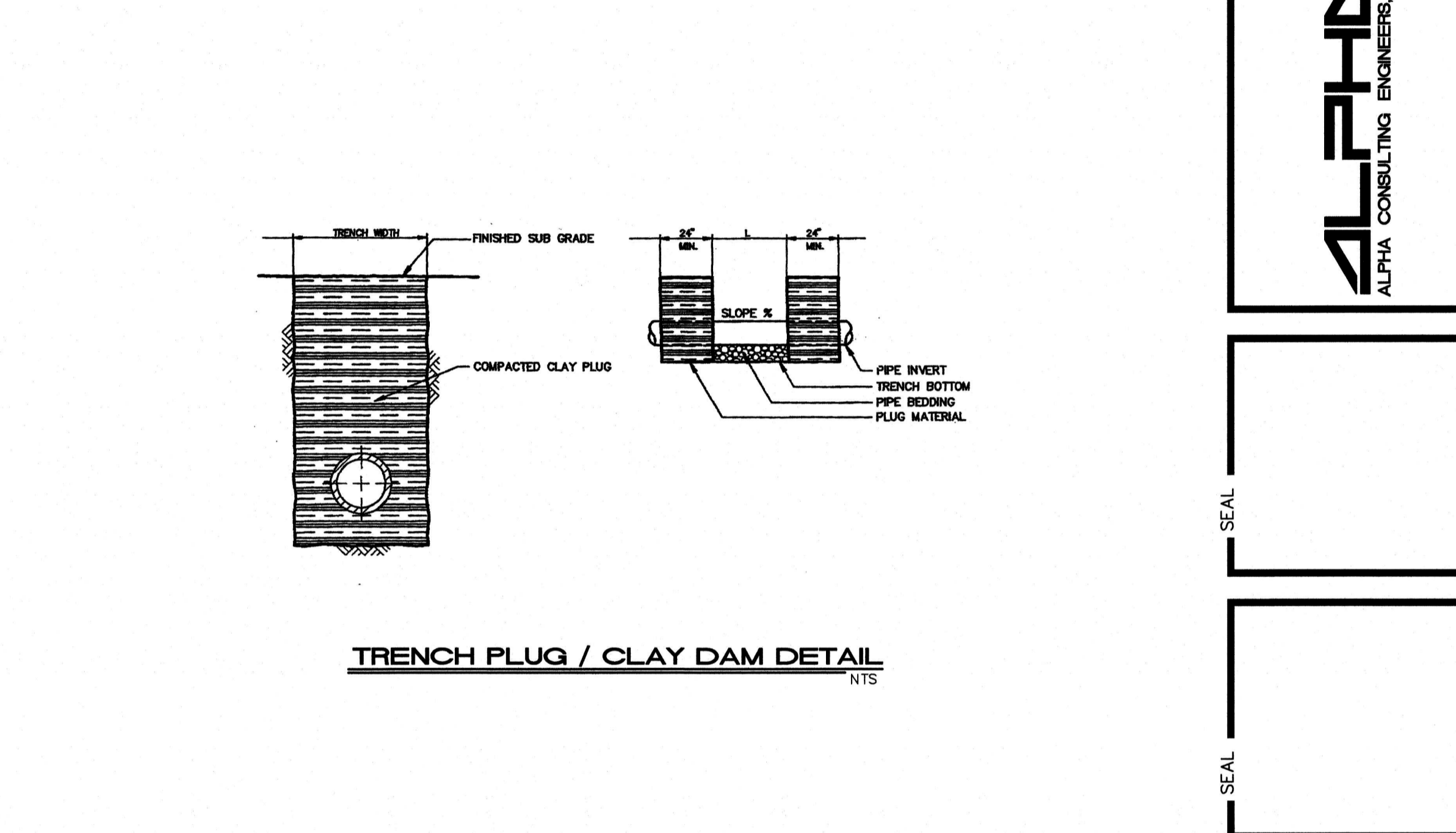
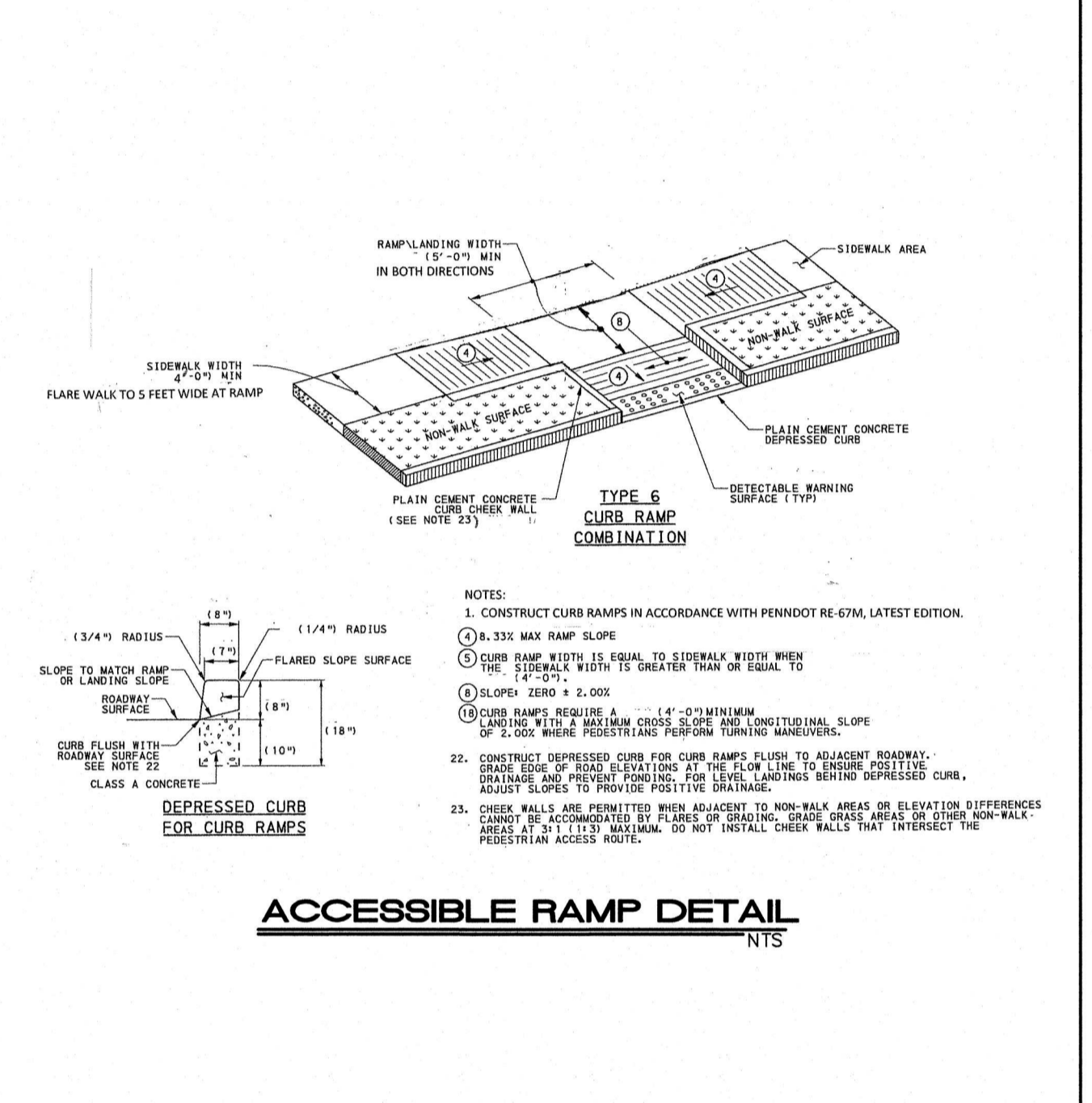
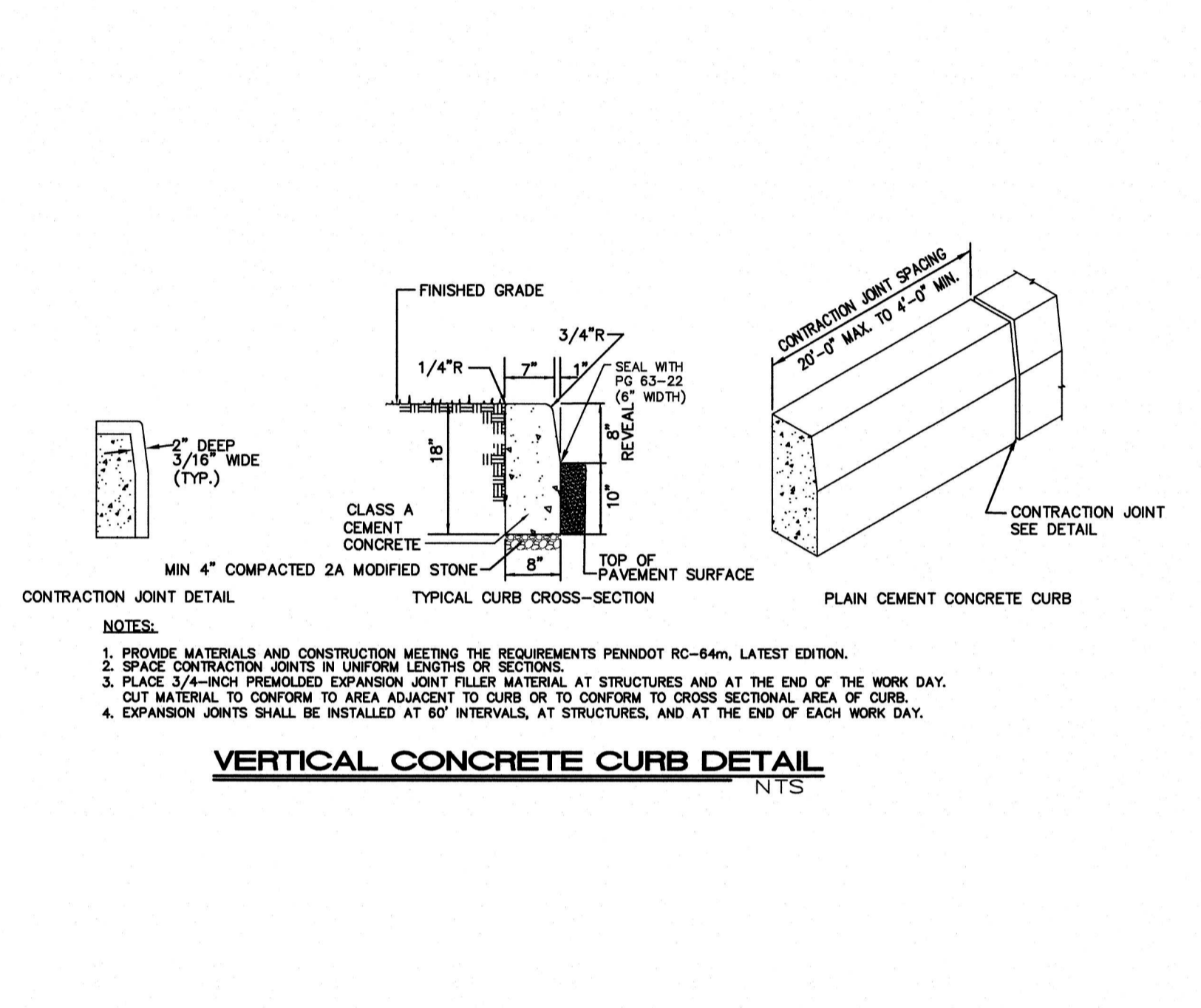
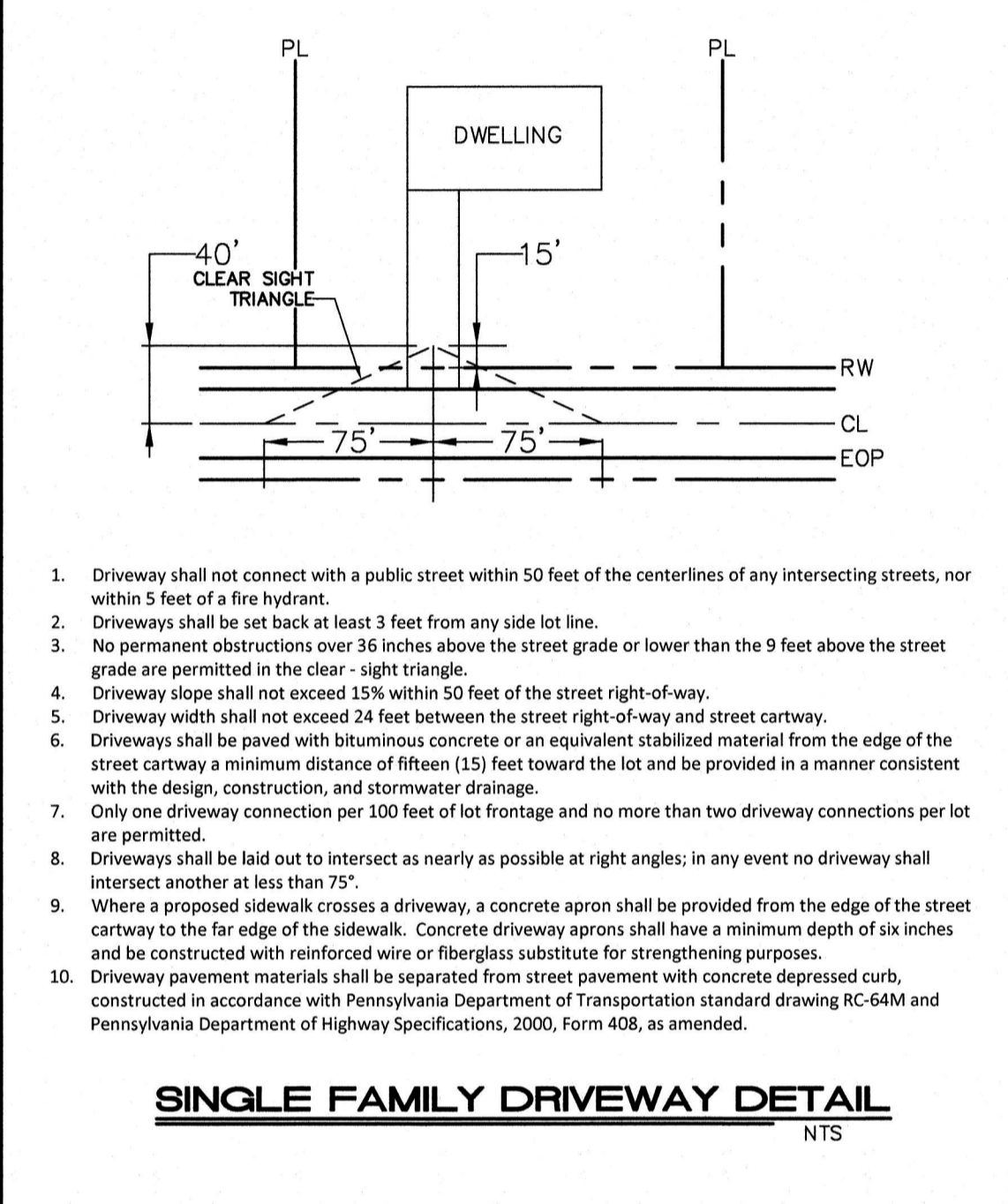
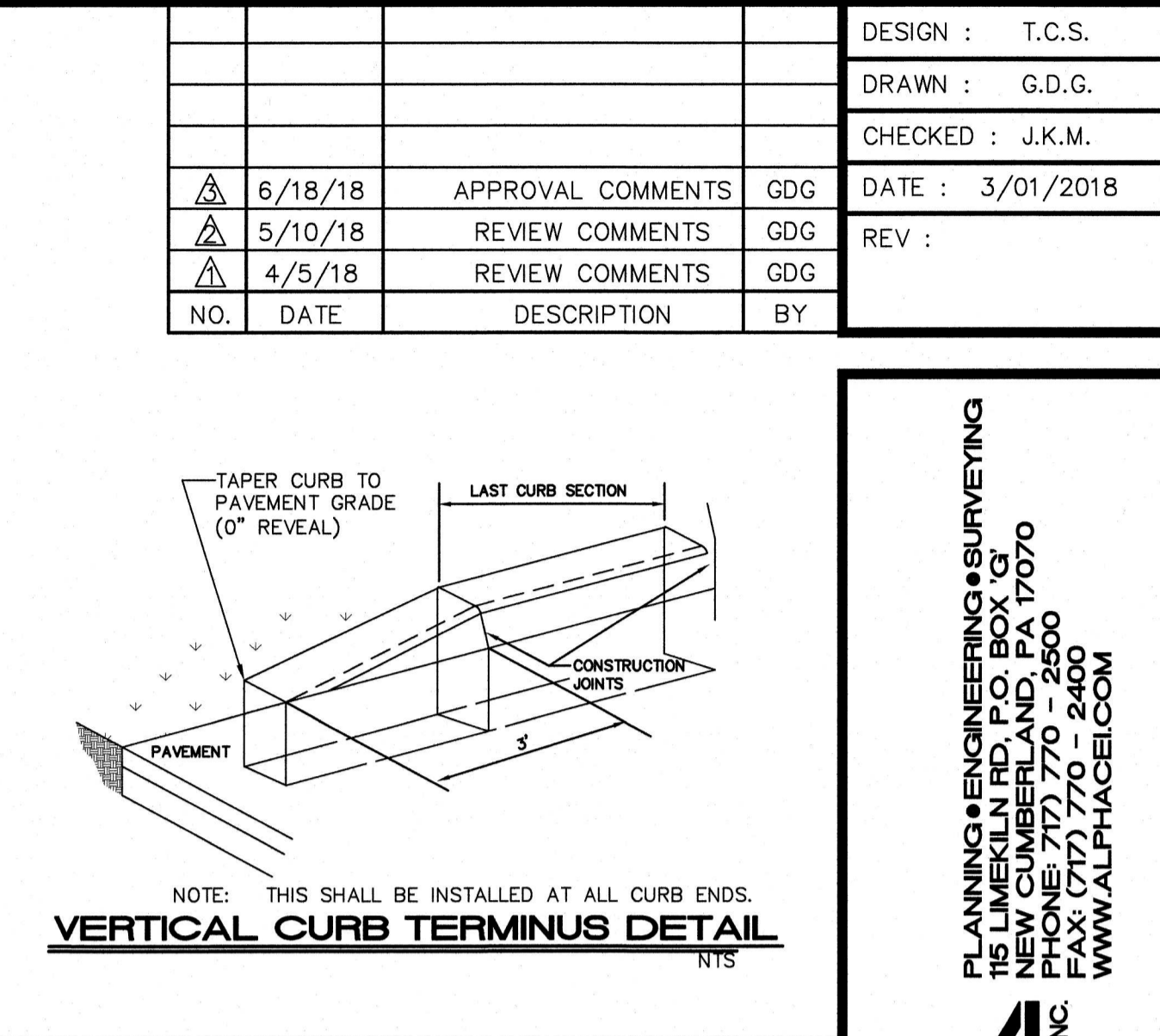
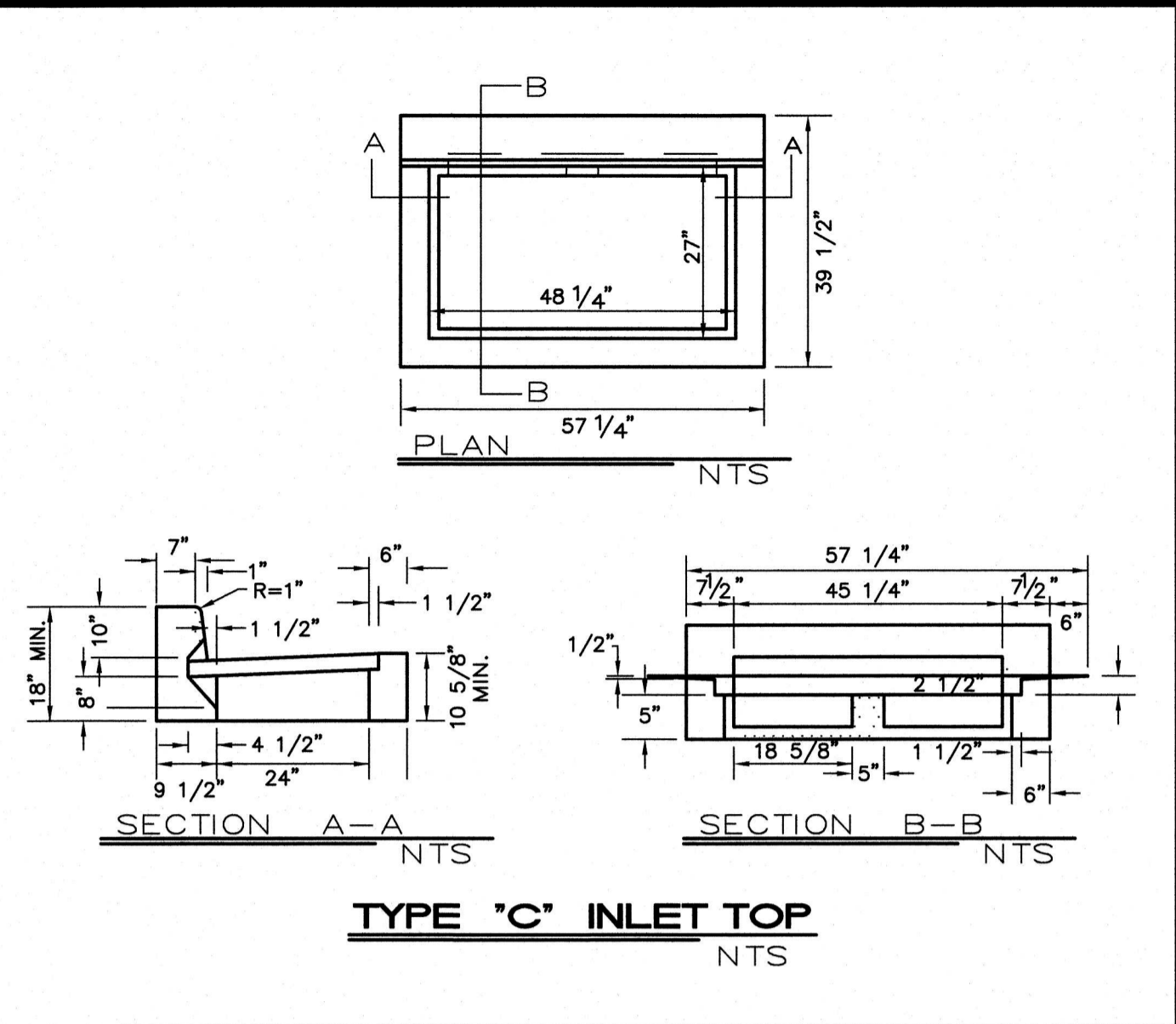
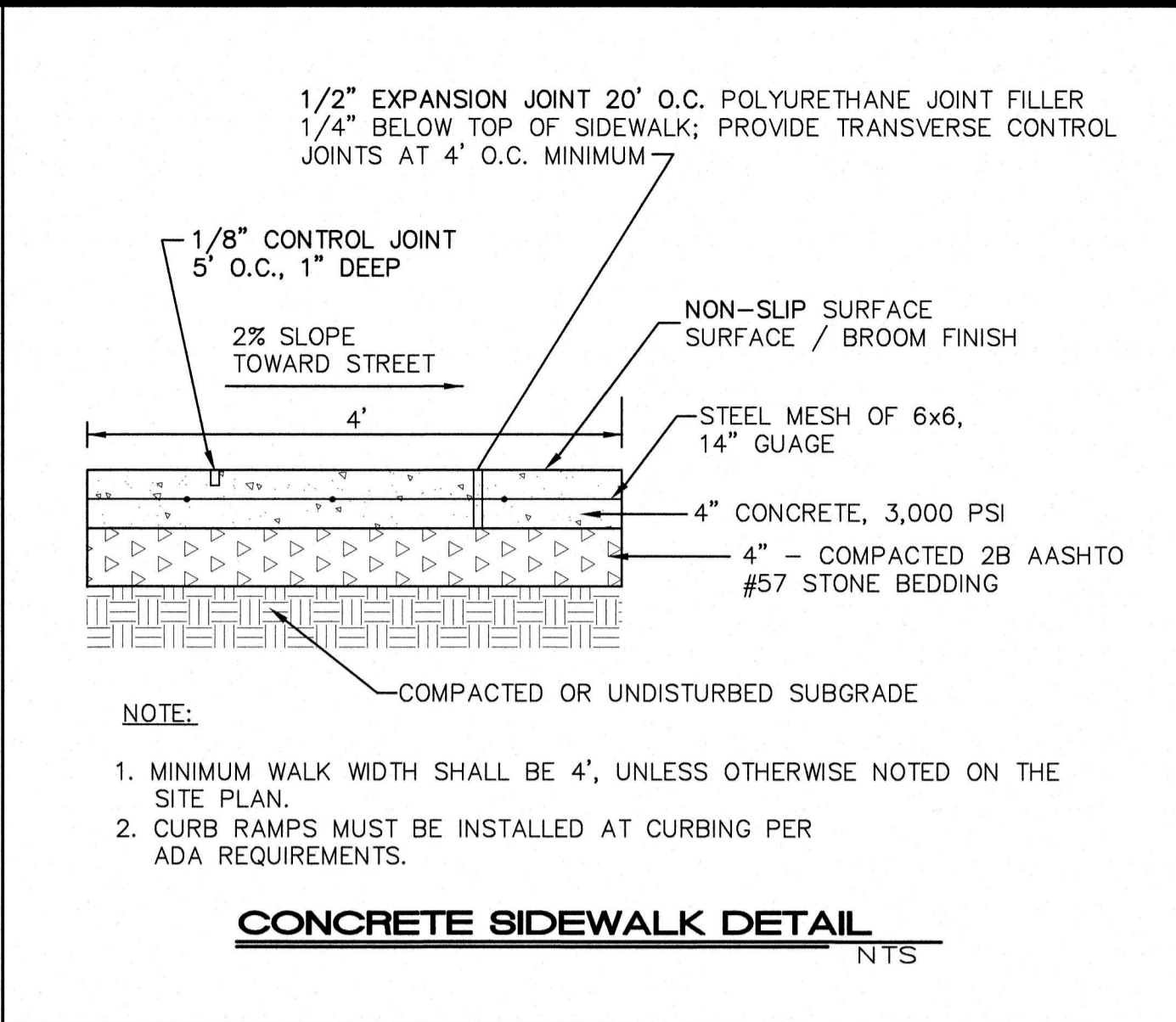
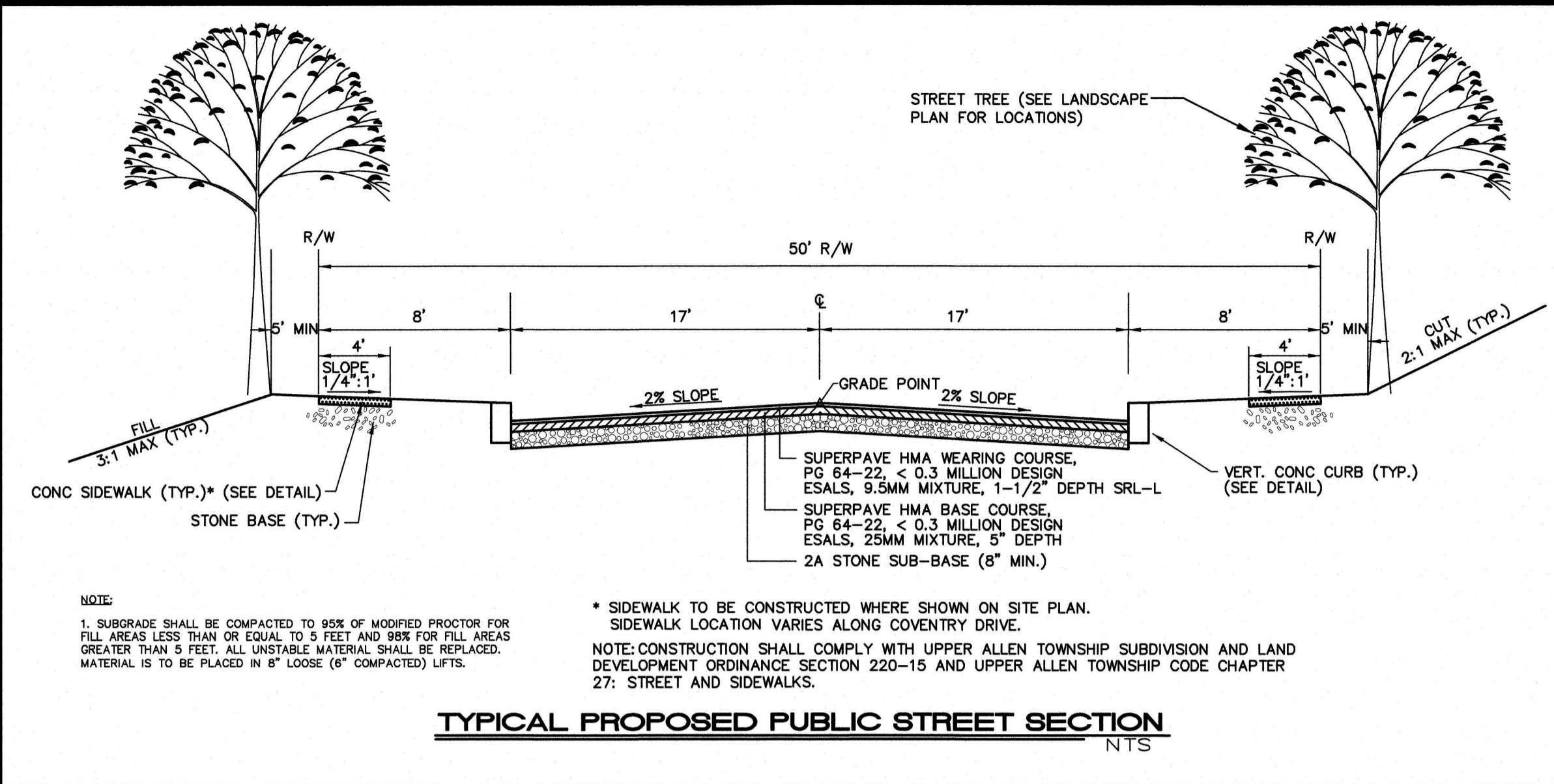
STORM SEWER NOTES:

1. ALL STORM PIPES ARE TO BE WATER TIGHT GASKETED JOINT CONNECTIONS. CONNECTIONS INTO INLETS SHALL BE WATER TIGHT. ALL PIPES ENTERING OR EXITING INLETS SHALL BE CUT FLUSH WITH THE INLET WALL.
2. ALL STORM INLETS IN THE PUBLIC STREET RIGHT-OF-WAY SHALL BE PENNDOT RC-45M, WITH A 10" VERTICAL CURB HOOD SO THAT THE INLET GRATE IS SUMMED 2" BELOW THE PAVEMENT GUTTER GRADE.
3. HDPE = SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.
4. STORM INLETS OVER 5 FEET IN DEPTH SHALL BE EQUIPPED WITH PENNDOT RC-39M LADDER RUNGS.
5. ALL STORM INLETS SHALL HAVE HEAVY DUTY BICYCLE SAFE GRATES CONSISTENT WITH PENNDOT PUBLICATION 72M.
6. STORM INLETS OUTSIDE OF PUBLIC STREET RIGHTS-OF-WAY MAY USE PENNDOT APPROVED OR EQUIVALENT PRODUCTS PRODUCED BY MONARCH PRODUCTS COMPANY, INC. OF YORK HAVEN, PA, SUCH AS WITH AN 8" SLAB TOP.
7. ALL BACKFILL FOR UTILITIES AND STORM SEWERS UNDER NEW STREETS SHALL BE SUITABLE BACKFILL MATERIAL WITH NO STONES OVER FOUR INCHES IN DIAMETER AND NO ORGANIC WASTE. COMPACTED TO WITHIN 3% OF THE OPTIMUM MATERIAL MOISTURE CONTENT AND PLACED IN NOT GREATER THAN EIGHT-INCH LIFTS.
8. IN PAVEMENT AREAS, ALL STORM INLET BOXES SHALL HAVE WEEP HOLES PLACED AT APPROPRIATE ELEVATIONS TO COMPLETELY DRAIN THE SUBGRADE PRIOR TO PLACING THE BASE COURSE AND WEARING COURSE.

SANITARY SEWER NOTES:

1. PIPE LENGTH SHOWN ON THE PROFILE REPRESENTS THE DISTANCE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE SHOWN ON THE PROFILE IS CALCULATED BASED UPON THE DISTANCE FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.





DESIGN : T.C.S.
DRAWN : G.D.G.
CHECKED : J.K.M.
DATE : 3/01/2018
REV :
NO. DATE DESCRIPTION BY

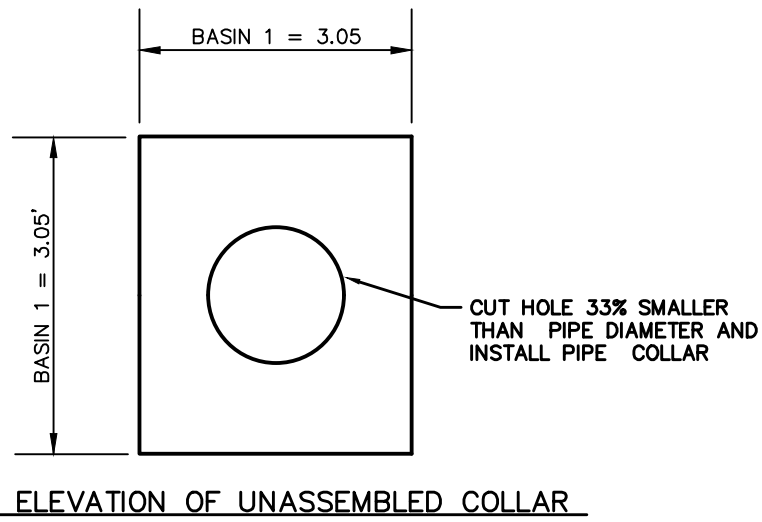
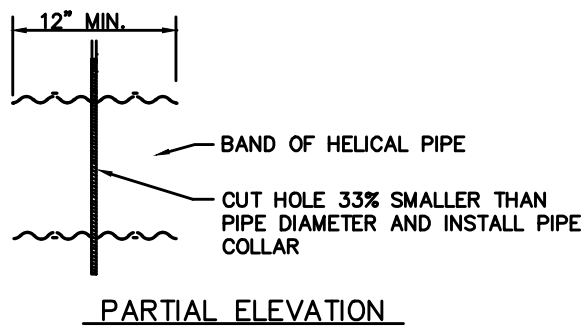
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MISCELLANEOUS DETAILS
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

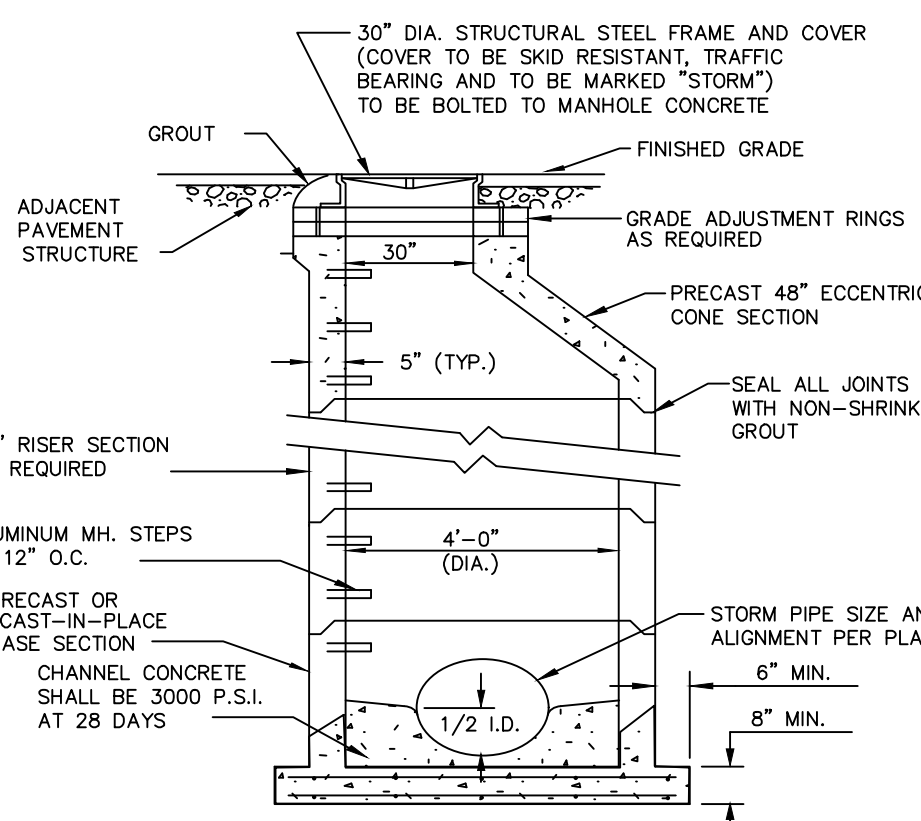
PROJECT NO.
317565
SURVEY BOOK :
SCALE :
DWG: 11/11/17/565.dwg
FILE: 11/11/17/565.dwg
SHEET 11 of 15



- NOTES:
1. USE AGRI DRAIN ANTI-SEEP COLLARS, PRODUCT NO. ASC05.
 2. REFER TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
 3. INSTALL TWO COLLARS SIX FEET APART.

ANTI-SEEP COLLAR DETAIL

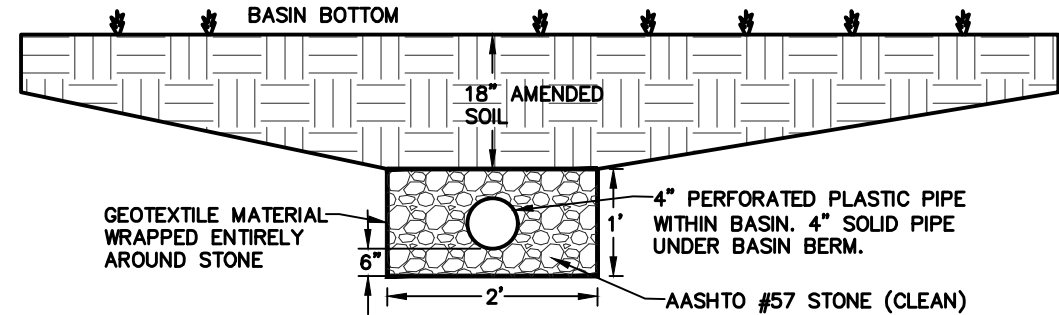
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- NOTES:
1. CONSTRUCT MANHOLE IN ACCORDANCE WITH PENN DOT PUBLICATION 72, RC-39 FOR PRECAST CONCRETE MANHOLES.
 2. ALL MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PENN DOT PUBLICATION 408, LATEST EDITION.
 3. SEE THE STORM SEWER PROFILES, WHICH MAY INDICATE A LARGER DIAMETER MANHOLE.

TYPICAL STORM SEWER MANHOLE

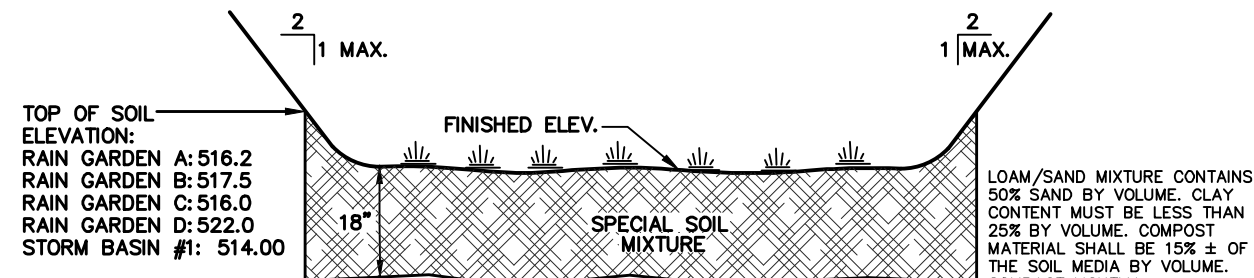
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- NOTES:
1. TERMINATE UNDERDRAIN IN MANHOLE.
 2. SEE GRADING PLAN FOR UNDERDRAIN LOCATIONS.

BASIN UNDERDRAIN DETAIL

NTS



STORM BASIN/RAIN GARDEN BOTTOM SOIL MIXTURE DETAIL

NTS

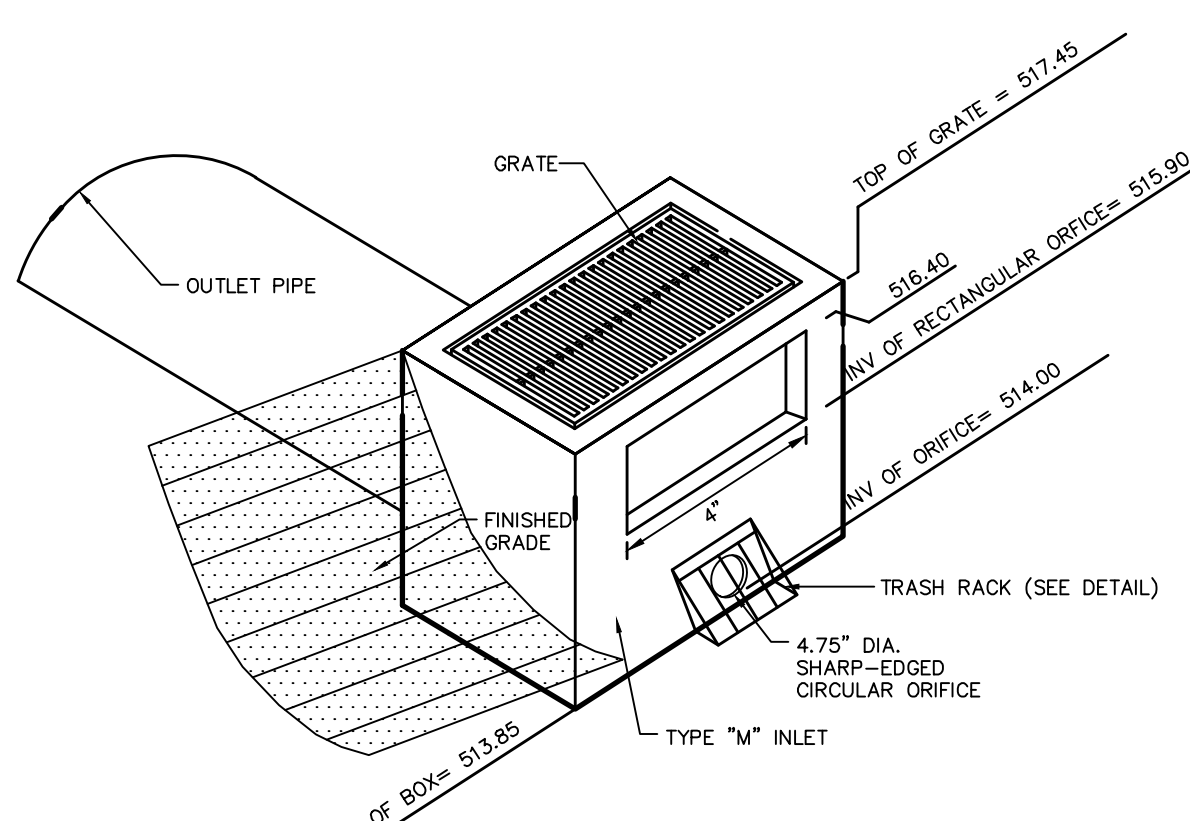
Subgrade Preparation:
Existing subgrade should not be compacted or subject to excessive construction equipment traffic. Initial excavation can be performed during rough site grading but shall not be carried to within one foot of the final bottom elevation. Final excavation should not take place until all disturbed areas in the drainage area have been stabilized.

Where erosion of sub-grade has caused accumulation of fine materials and/or surface ponding in the graded bottom, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake or equivalent light tractor.

Bring sub-grade to final grade and elevations indicated. Fill and lightly re-grade any areas damaged by erosion, ponding or traffic compaction.

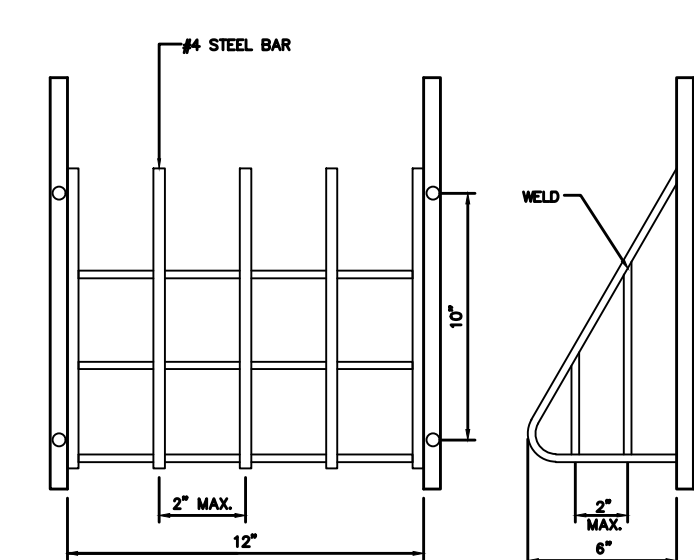
Amended Soil Installation:
Upon completion of sub-grade work, the Site Engineer and Owner shall be notified and they or their representative shall inspect before proceeding with rain garden installation.

Install soil in 12-inch maximum lifts, and lightly compact (comp with backhoe bucket or by hand). Keep equipment movement over planting soil to a minimum; do not over compact. Install soil to final grades indicated on the drawings.



STORM BASIN #1 OUTLET STRUCTURE

NTS



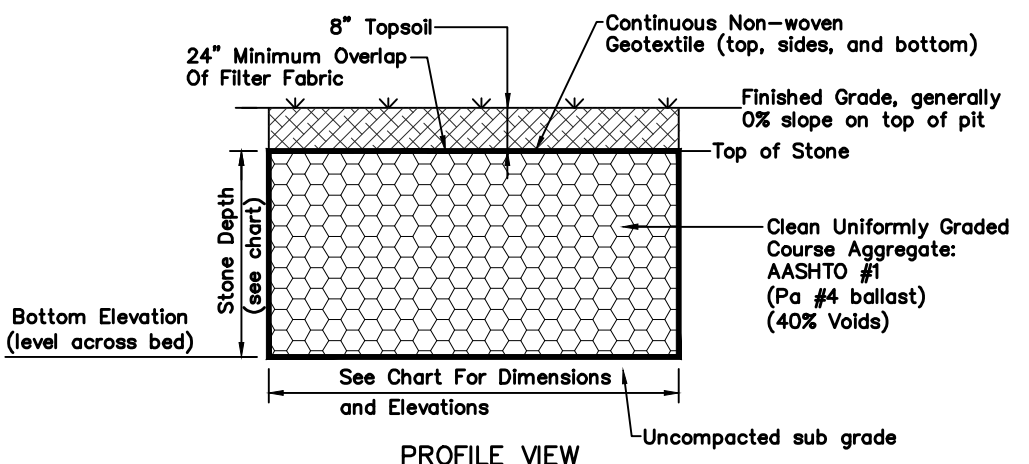
- NOTES:
1. CONSTRUCT TRASH RACK OF STAINLESS STEEL OR ALUMINUM. TRASH RACK SHALL BE ATTACHED TO DOWNHILL INLET BOX/ ORIFICE PLATE.

ORIFICE TRASH RACK DETAIL

NTS

INSTALLATION PROCEDURES AND GUIDELINES FOR SEEPAGE PIT

1. IF POSSIBLE, INSTALL SUBSURFACE BEDS IN THE LATE PHASE OF SITE CONSTRUCTION, TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY.
2. EXCAVATE SUBSURFACE BED BOTTOM TO A UNIFORM, LEVEL AND UNCOMPACTED GRADE, FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. ALL EXCAVATION AND COMPACTION WITHIN THE BED AREA SHOULD BE PERFORMED WITH THE LIGHTEST PRACTICAL EQUIPMENT. EXCAVATION SHOULD PREFERABLY OCCUR FROM EQUIPMENT PLACED OUTSIDE THE LIMITS OF THE BED. THE BOTTOM OF THE BED SHOULD BE TILLED, THEN SMOOTHED OUT WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT.
3. BACKFILL WITH UNIFORMLY GRADED CLEAN--WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
4. FOLD AND SECURE NONWOVEN GEOTEXTILE AROUND SUBSURFACE AREA, WITH A MINIMUM OVERLAP OF 24 INCHES.
5. EXCAVATED PITS GREATER THAN 5 FEET MUST BE TEMPORARILY FENCED TO PREVENT UNAUTHORIZED ENTRY WHEN THE CONTRACTOR IS NOT ON SITE.

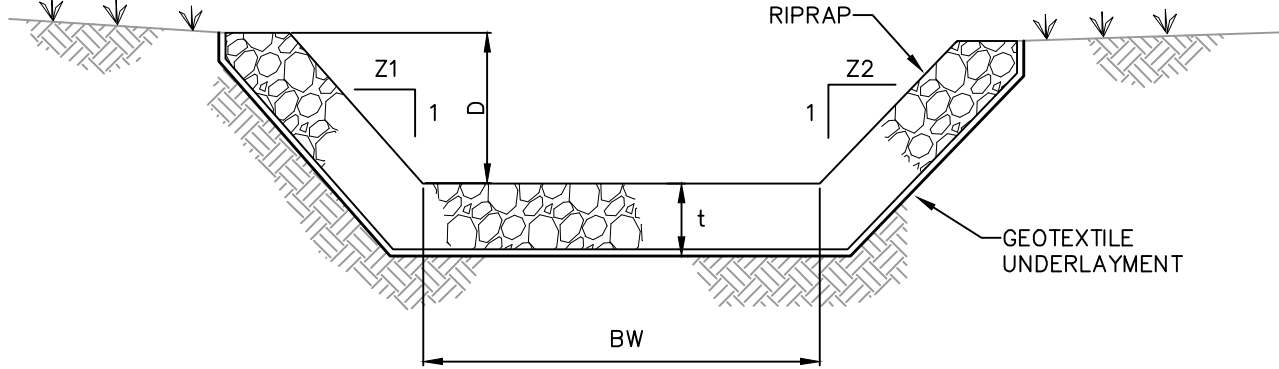


SEEPAGE PIT SUMMARY						
PIT ID#	PIT LENGTH (FT.)	PIT WIDTH (FT.)	HORIZ. AREA (S.F.)	BOTTOM OF STONE (S.F.) ELEVATION	STONE DEPTH (FT.)	FINISHED GRADE ELEV.
1	13.0	10.0	130	534.3	3.0	538.0
2	24.0	8.0	192	536.3	3.0	540.0
3	30.0	10.0	300	536.3	3.0	540.0
4	12.0	12.0	144	525.6	3.0	529.3

NOTE: THIS IS A NON-REGULATED FEATURE. PIT SIZES AND SHAPES CAN BE ADJUSTED TO SITE CONDITIONS AS NECESSARY.

SEEPAGE PIT DETAIL

NTS



CHANNEL CROSS-SECTION

CHANNEL NO.	STATIONS	BOTTOM WIDTH BW (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION	RIPRAP DEPTH (IN)	UNDERLAYMENT
9	ENTIRE LENGTH	5.5	1.4	2	2	R-5	27	GEOTEXTILE

NOTES:

CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.

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.

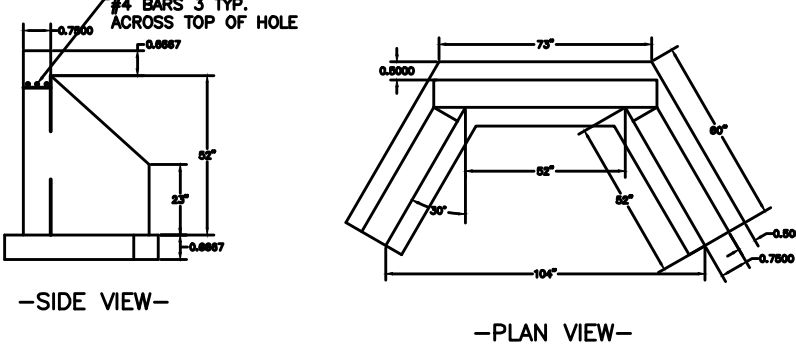
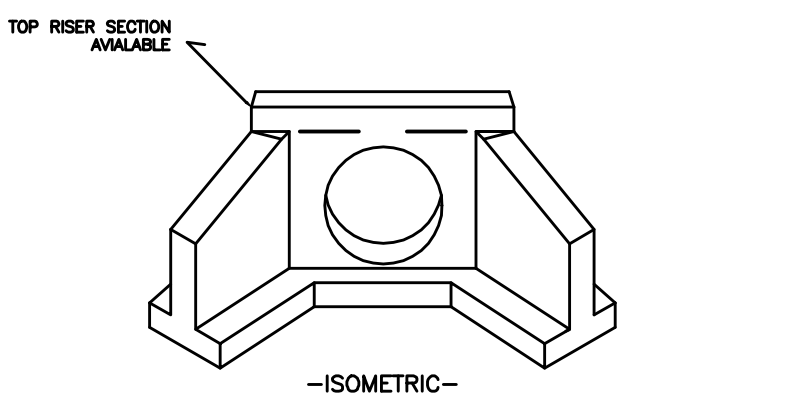
THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

STANDARD CONSTRUCTION DETAIL #6-3 RIPRAP CHANNEL

NOT TO SCALE

MONARCH PRODUCTS COMPANY, INC.

YORK HAVEN, PA.



NOTE: REINFORCEMENT TO BE 0.12 IN²/FT. EACH WAY

TYPE D-W ENDWALL
MAXIMUM PIPE SIZE - 48\" C.M.P.

DWG. OS-3

GSE BentoLiner NSL Geosynthetic Clay Liner

GSE BentoLiner "NSL" is a needle-punched reinforced composite geosynthetic clay liner (GCL) comprised of a uniform layer of granular sodium bentonite encapsulated between a woven and a nonwoven geotextile. The product is intended for moderate to steep slopes and moderate to high load applications where increased internal shear strength is required.

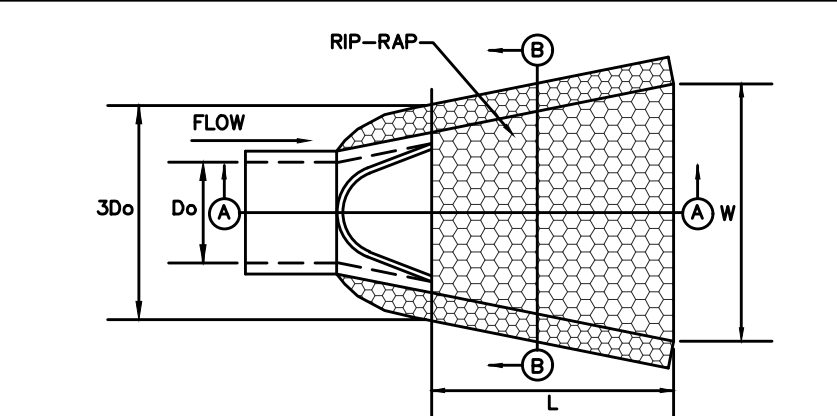
Product Specifications

Tested Property	Test Method	Frequency	Value
Geotextile Property			
Cap Nonwoven, Mass/Unit Area	ASTM D 5261	1/200,000 R ²	6.0 oz/yd ² MARV ^(a)
Carrier Woven, Mass/Unit Area	ASTM D 5261	1/200,000 R ²	33 oz/yd ² MARV
Bentonite Property			
Swell Index	ASTM D 5890	1/100,000 lb	24 ml/2 g min
Moisture Content	ASTM D 4643	1/100,000 lb	12% max
Fluid Loss	ASTM D 5891	1/100,000 lb	18 ml max
Finished GCL Property			
Bentonite, Mass/Unit Area ^(b)	ASTM D 5993	1/40,000 R ³	0.75 lb/yd ² MARV
Tensile Strength ^(a)	ASTM D 6768	1/40,000 R ³	30 lb/in MARV
Pearl Strength	ASTM D 6496 ASTM D 4632 ^(a)	1/40,000 R ³	3.5 lb/in MARV 21 lb MARV
Hydraulic Conductivity ^(a)	ASTM D 5897	1/Week	5 x 10 ⁻¹⁴ cm/sec max
Index Flow ^(a)	ASTM D 5897	1/Week	1 x 10 ⁻¹⁴ m ³ /m ² /sec max
Internal Shear Strength ^(a)	ASTM D 6343	Periodically	500 psf Typical
TYPICAL ROLL DIMENSIONS			
Width x Length ^(a)	Typical	Every Roll	15.5 ft x 150 ft
Area per Roll	Typical	Every Roll	2,325 ft ²
Packaged Weight	Typical	Every Roll	2,600 lb

- NOTES:
- (a) Minimum Average Roll Value
 - (b) 94% DRS moisture content
 - (c) Tested in machine direction
 - (d) Modified ASTM D 4632 to use a 4 in wide grip. The maximum peak of five specimens averaged in machine direction.
 - (e) Prepared, deionized water @ 5 psi maximum effective confining stress and 2 psi head pressure.
 - (f) Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf normal stress.
 - (g) Roll widths and lengths have a tolerance of ±1%.

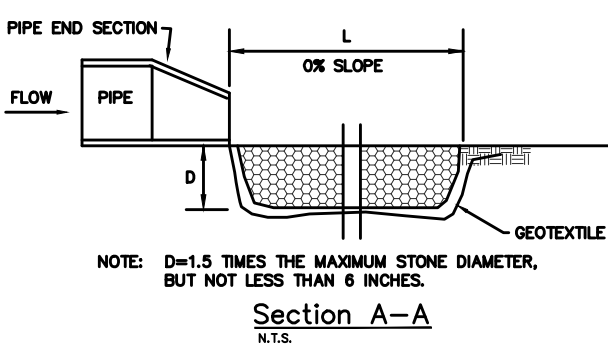
CHANNEL #8 LINING

NOT TO SCALE

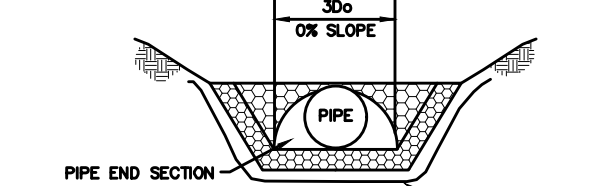


OUTLET STRUCTURE DESIGNATION	W (FT)	L (FT)	SIZE OF ROCK (S.F.)	MIN ROCK DEPTH (D) (FT)	PIPE DIA. (IN)	PIPE MATERIAL
B	18.0	12.0	R-4	18"	24"	HDPE
C	11.75	8.0	R-5	27"	15"	HDPE
E	7.0	8.0	R-4	18"	15"	HDPE
F	14.75	11.0	R-5	27"	15"	HDPE
G	11.75	8.0	R-4	18"	12"	HDPE
H	7.0	14.0	R-5	27"	24"	HDPE

*APRON SHAPE SHOULD BE ADJUSTED TO FIT RECEIVING SHALE SHAPE.
IF BEDROCK IS PRESENT IN THE APRON AREA, DO NOT REMOVE IT TO INSTALL RIPRAP. THE BEDROCK WILL BE SUFFICIENT.
SMOOTH BORE CORRUGATED PLASTIC PIPE



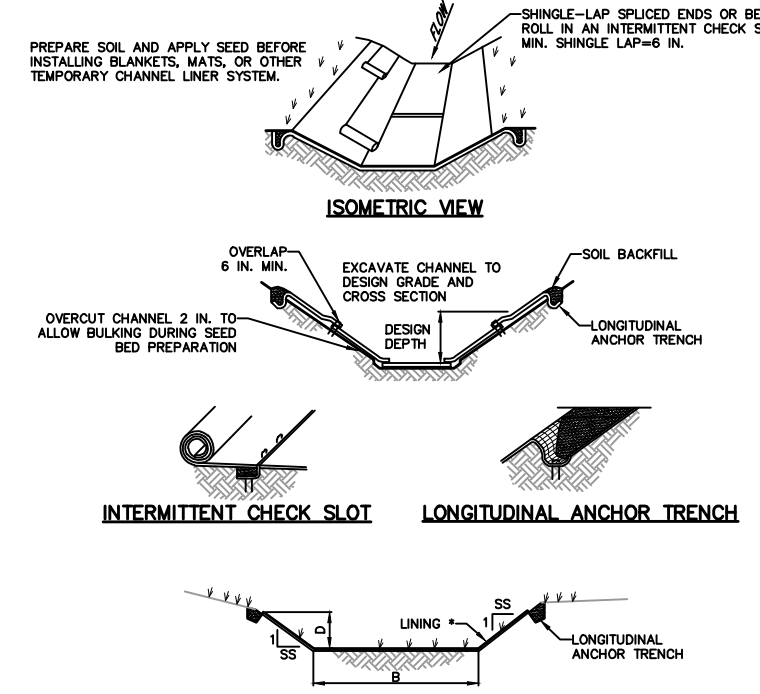
NOTE: D=1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.



- NOTES:
1. THICKNESS IN ONE CONTINUOUS OPERATION TO PREVENT SEGREGATION OF MATERIALS. INDIVIDUAL ROCKS MAY BE REARRANGED, AND VOIDS FILLED WITH HAND PLACED SMALLER ROCK, TO ACHIEVE A UNIFORM ROCK BLANKET.
 2. NO ROCK PIECES SHALL HAVE A LENGTH EXCEEDING THREE.
 3. ROCK SHALL BE ANGULAR, CRUSHED AND HAVE A UNIT WEIGHT OF 165 LBS./C.F.
 4. TERMINAL ADJUSTS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
 5. ALL APRONS SHOULD BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIP-RAP APRON DETAIL

NTS



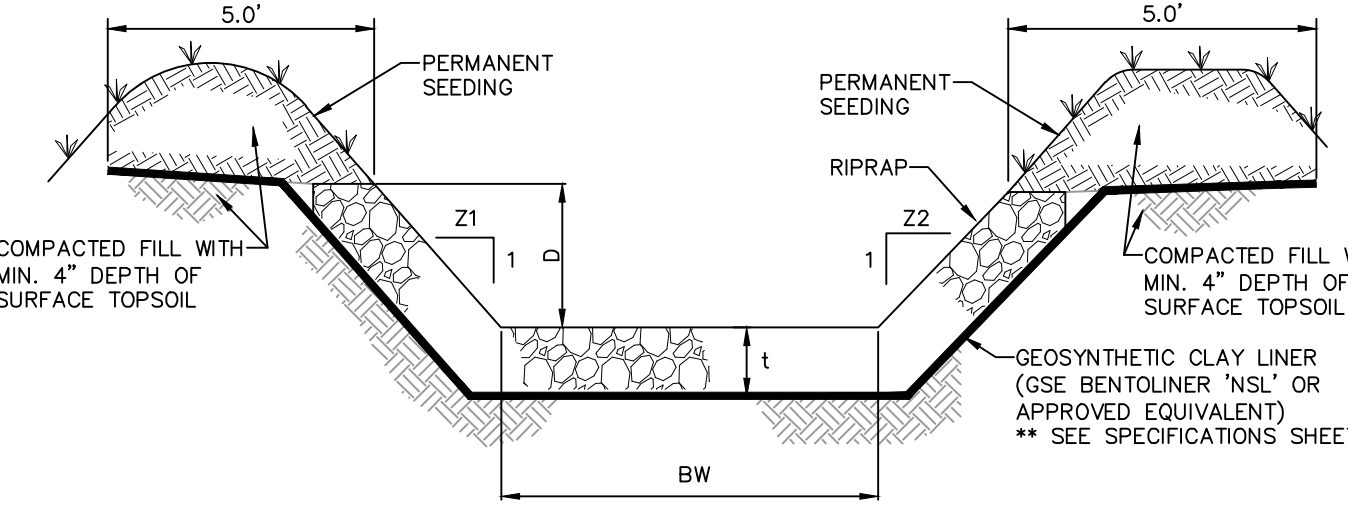
CHANNEL CROSS-SECTION

CHANNEL NO.	CHANNEL SLOPE	SS	B (FT)	D (MIN) (FT)	LINING
1, SEG 1	6.15%	3	3.5	1.0	TENSAR P300 MAT
1, SEG 2	2.80%	3	3.5	1.1	TENSAR S75 MAT
2, SEG 1	2.00%	2	5.3	1.1	TENSAR S75 MAT
2, SEG 2	12.50%	3	3.0	0.8	TENSAR P300 MAT
3	6.30%	3	2.0	0.8	TENSAR S75 MAT
4	4.40%	3	1.5	0.8	TENSAR S75 MAT
5	1.30%	3	1.5	0.9	TENSAR S75 MAT
7	1.00%	2	5.0	1.2	TENSAR S75 MAT

1. All Channels Must Be kept Free Of Obstruction Such As Fill Ground, Fallen Leaves And Woody Debris, Accumulated Sediment, And Construction Materials. Wetters. Channels Should Be kept Mowed And/or Free Of All Weeds, Brush Or Woody Growth (unless Part Of The Landscape Plan). Any Underground Utilities Running Across / Through The Channels Shall Be Immediately Backfilled And The Channels 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 Minimum Of 6" To Allow For Placement Of Lining.
3. Channels Must Be Stabilized With Indicated Lining Immediately Upon Construction.
4. Channel Maintenance: Channels Must Be Maintained To Ensure that The Specified Design Dimensions And Stabilization Are Available At All Times.
5. Anchor Trenches Shall Be Installed At Beginning And End Of Channel In The Same Manner As Longitudinal Anchor Trenches.
6. 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.
7. 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

NTS



CHANNEL CROSS-SECTION

CHANNEL NO.	STATIONS	BOTTOM WIDTH BW (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION	RIPRAP DEPTH (IN)	UNDERLAYMENT
8	ENTIRE LENGTH	5.0	1.7	3	3	R-4	18	30 MIL PVC LINER

NOTES:

CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.

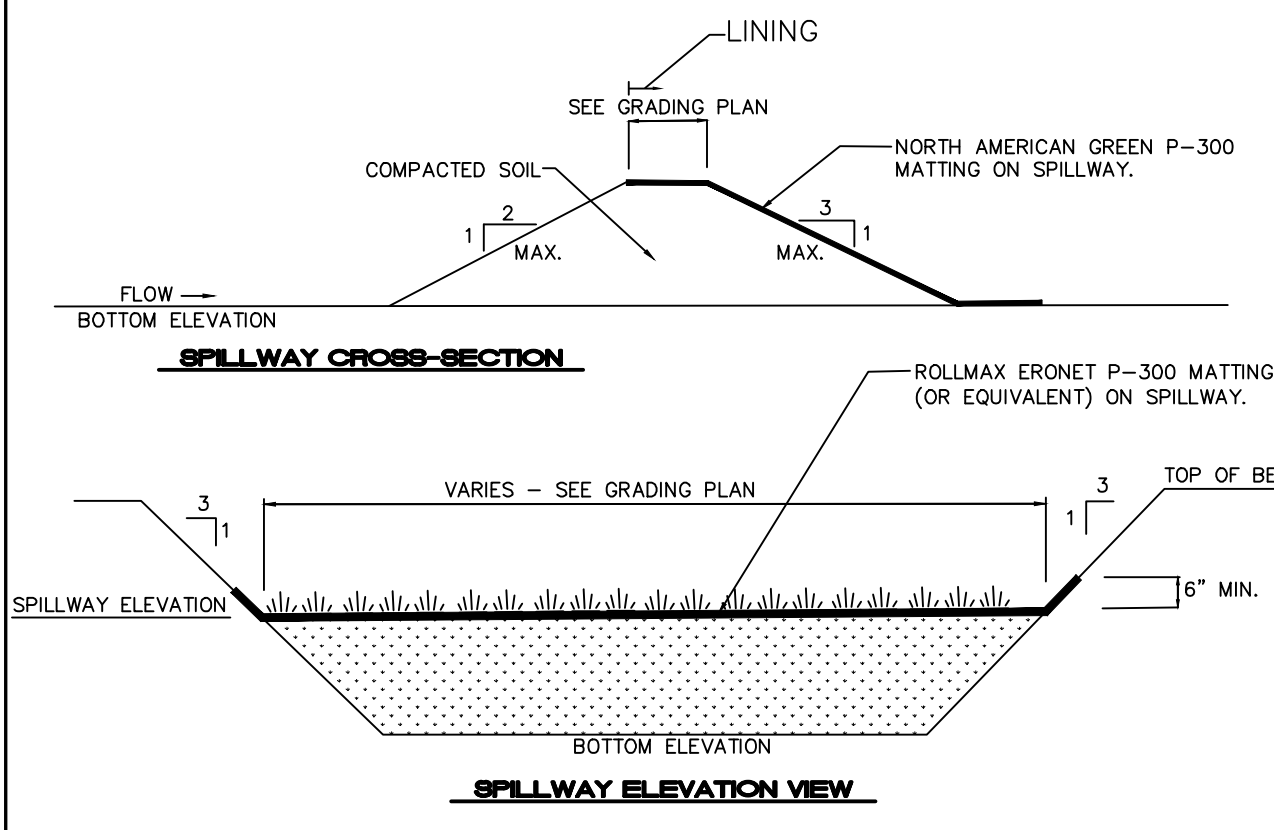
CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE.

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

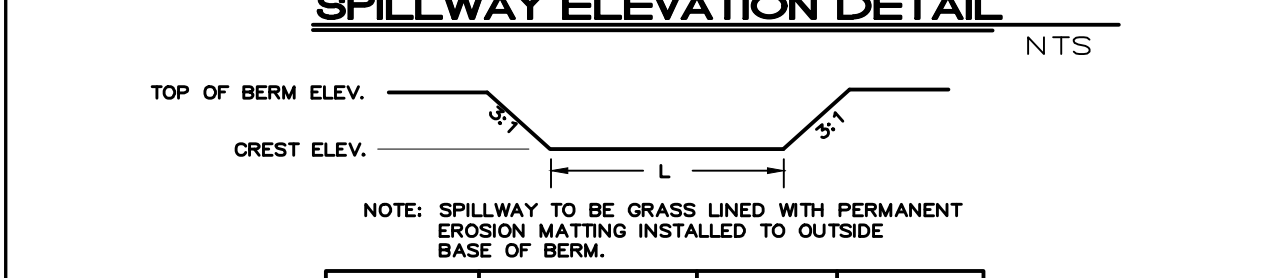
THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

STANDARD CONSTRUCTION DETAIL #6-3 PERMANENT SEEDING RIPRAP CHANNEL

NOT TO SCALE



SPILLWAY CROSS-SECTION



SPILLWAY ELEVATION DETAIL

NTS

NOTE: SPILLWAY TO BE GRASS LINED WITH PERMANENT EROSION MATTING INSTALLED TO OUTSIDE BASE OF BERM.

	TOP OF BERM ELEV.	CREST ELEV.	LENGTH (L)
STORM BASIN 1	518.0	517.5	35'
RAIN GARDEN A	518.0	516.5	10'
RAIN GARDEN B	518.0	517.5	10'
RAIN GARDEN C	518.0	516.7	20'
RAIN GARDEN D	524.0	522.5	10'

STORMWATER MANAGEMENT AREA PERMANENT EMERGENCY SPILLWAY DETAIL

NTS

STORMWATER DETAILS

PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN FOR ARBORVIEW

UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO. 317565

SURVEY BOOK :

SCALE :

DWG. T: 171317565.dgn (3/17/2018)

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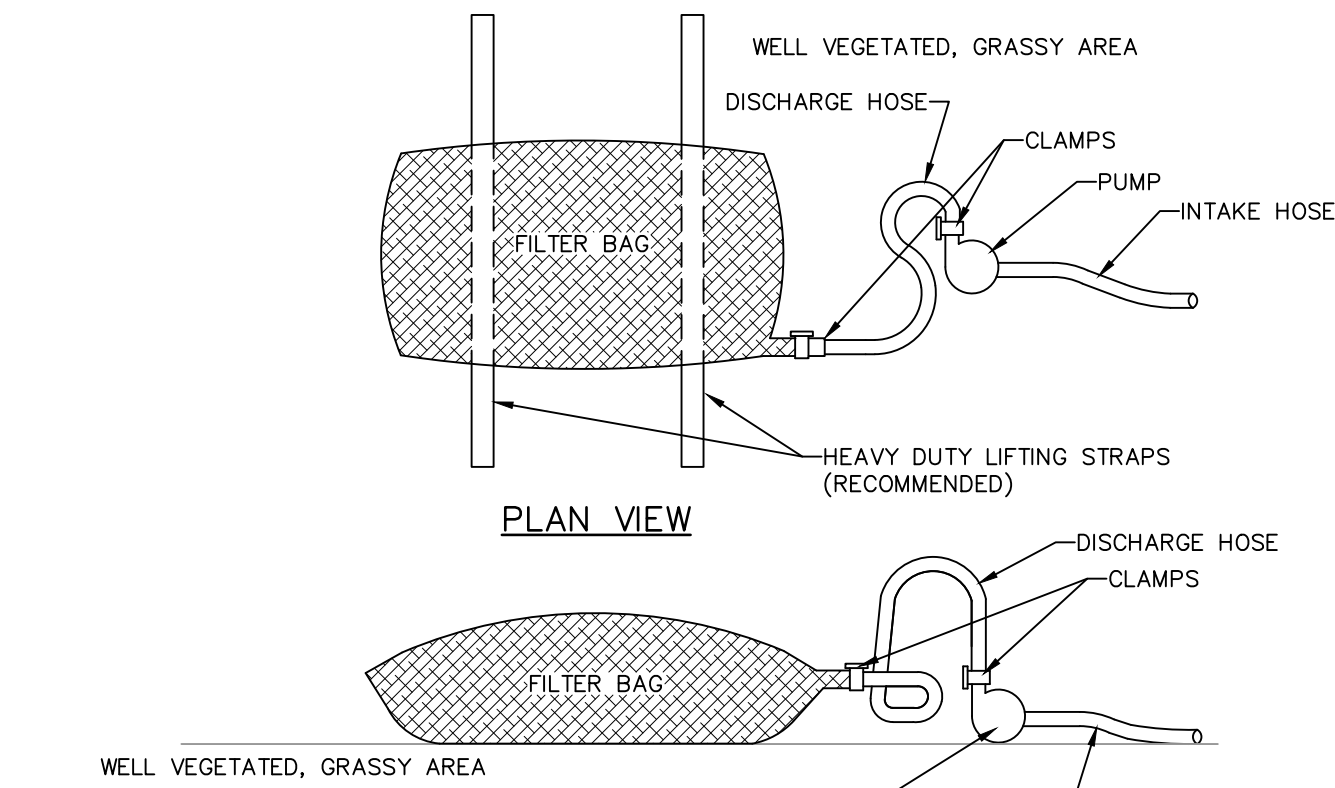
SHEET 12 of 15

ALPHA ENGINEERING & SURVEYING
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ALPHA CONSULTING ENGINEERS, INC.

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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.

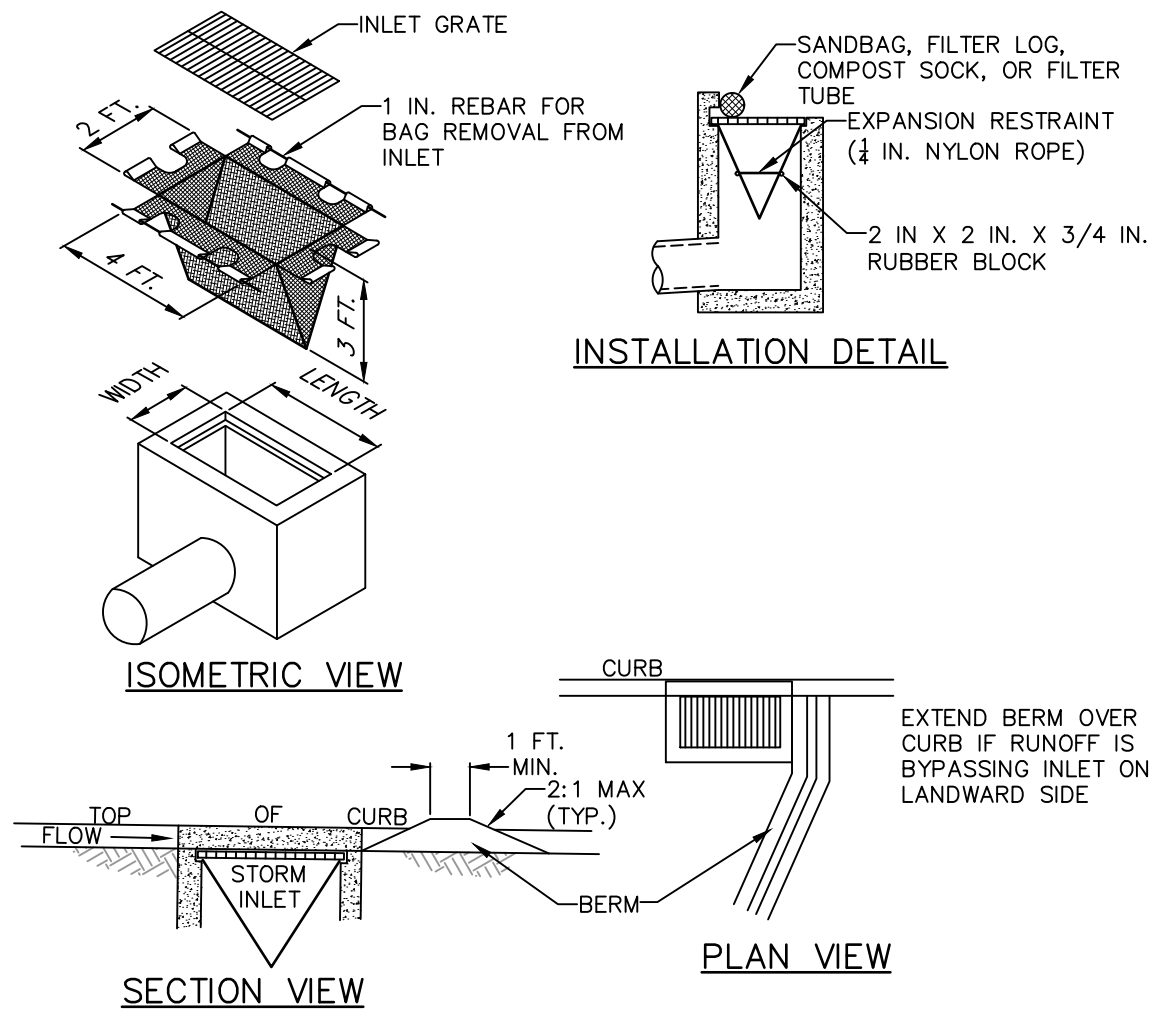
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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.

PUMPED WATER FILTER BAG

NTS



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

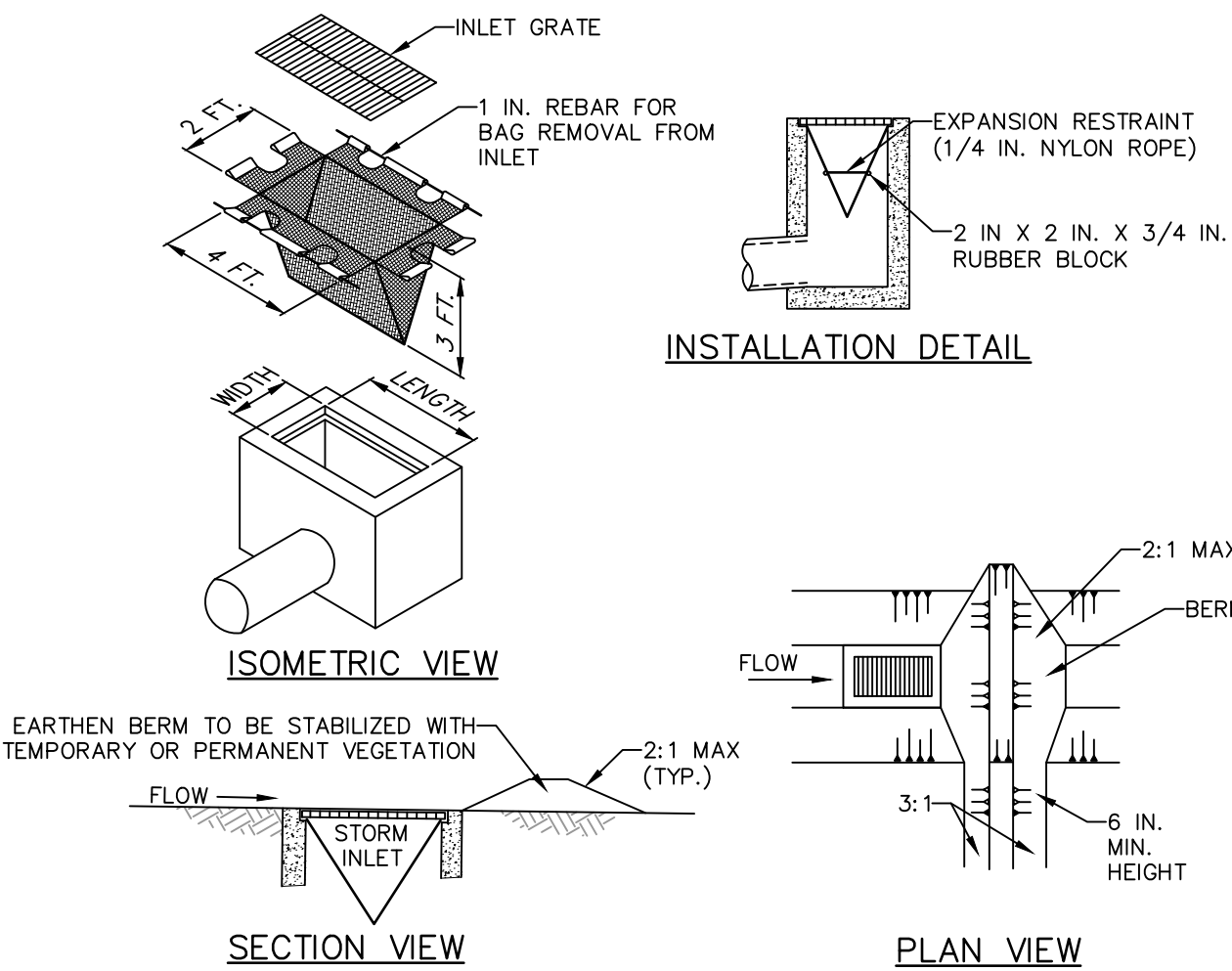
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION (CURBED ROADWAY)

NTS



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

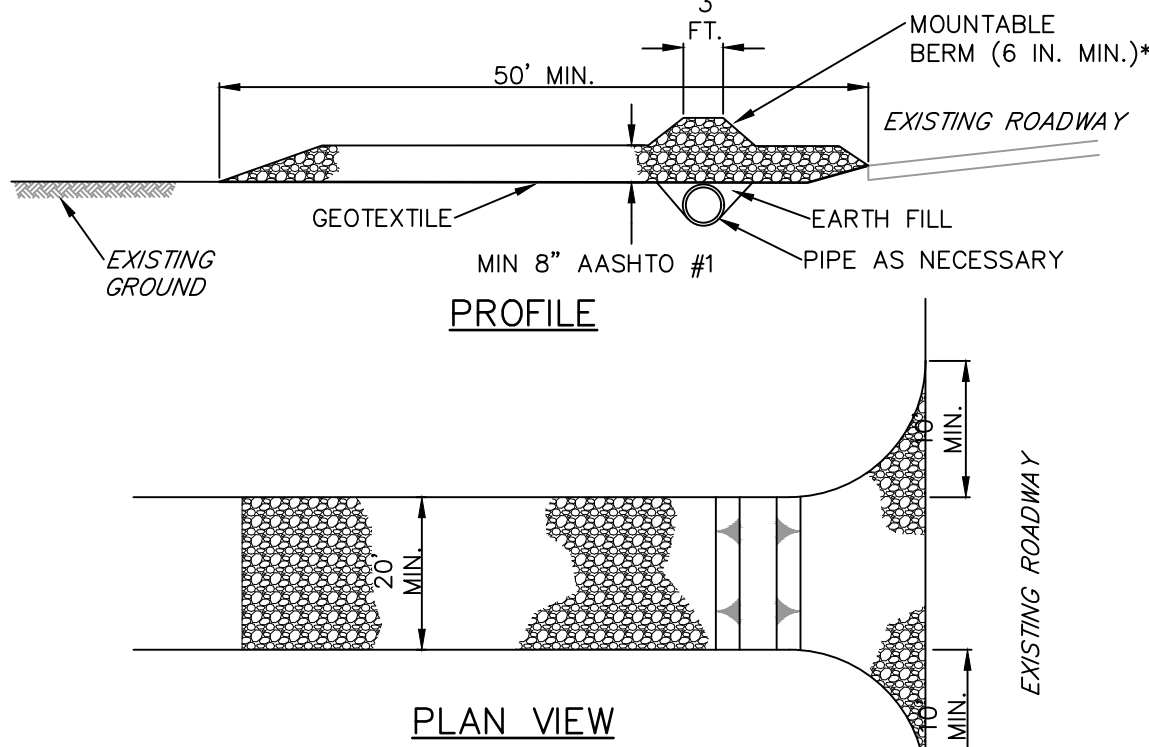
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION (CHANNEL OR ROADSIDE SWALE)

NTS



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

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

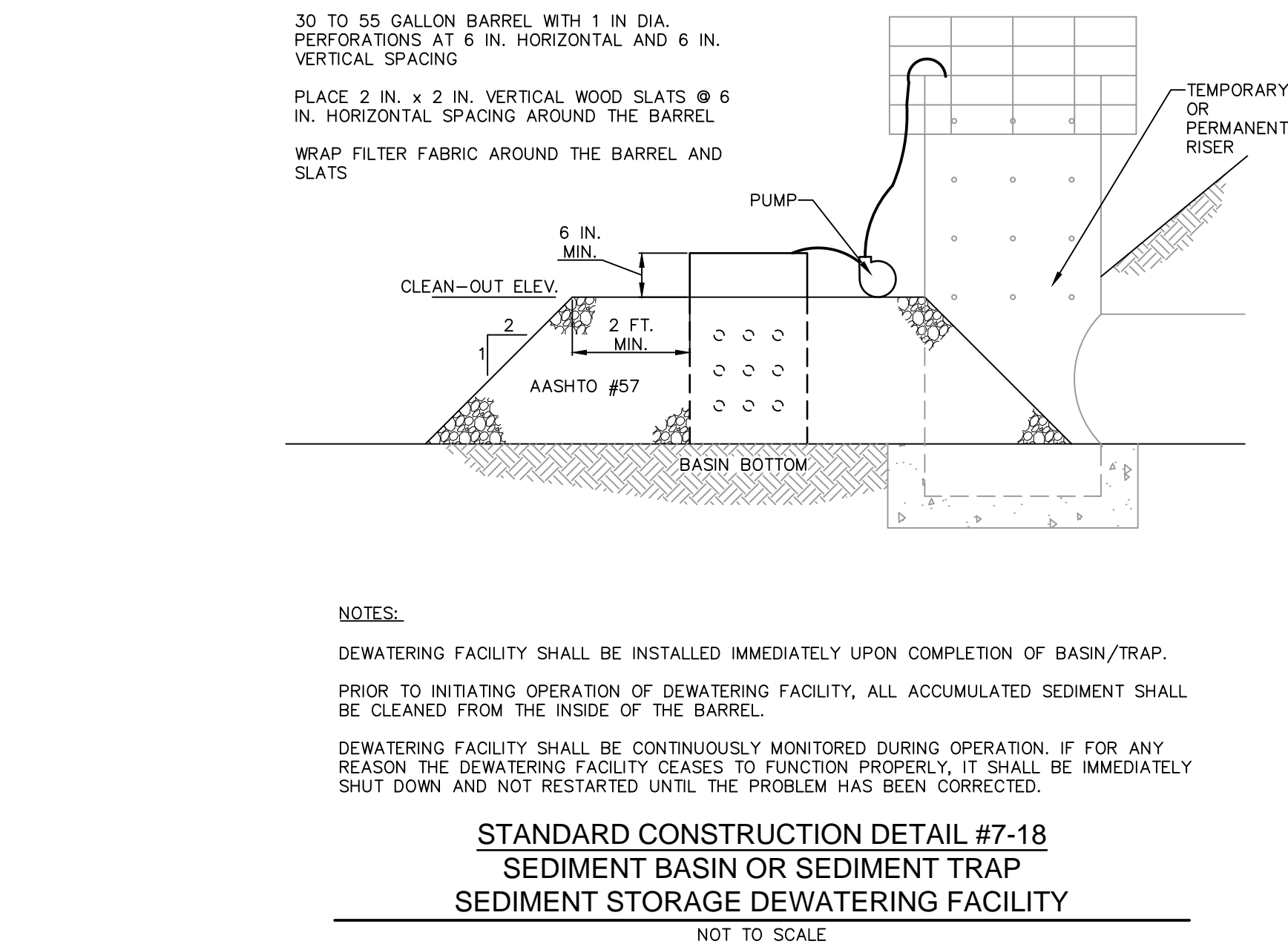
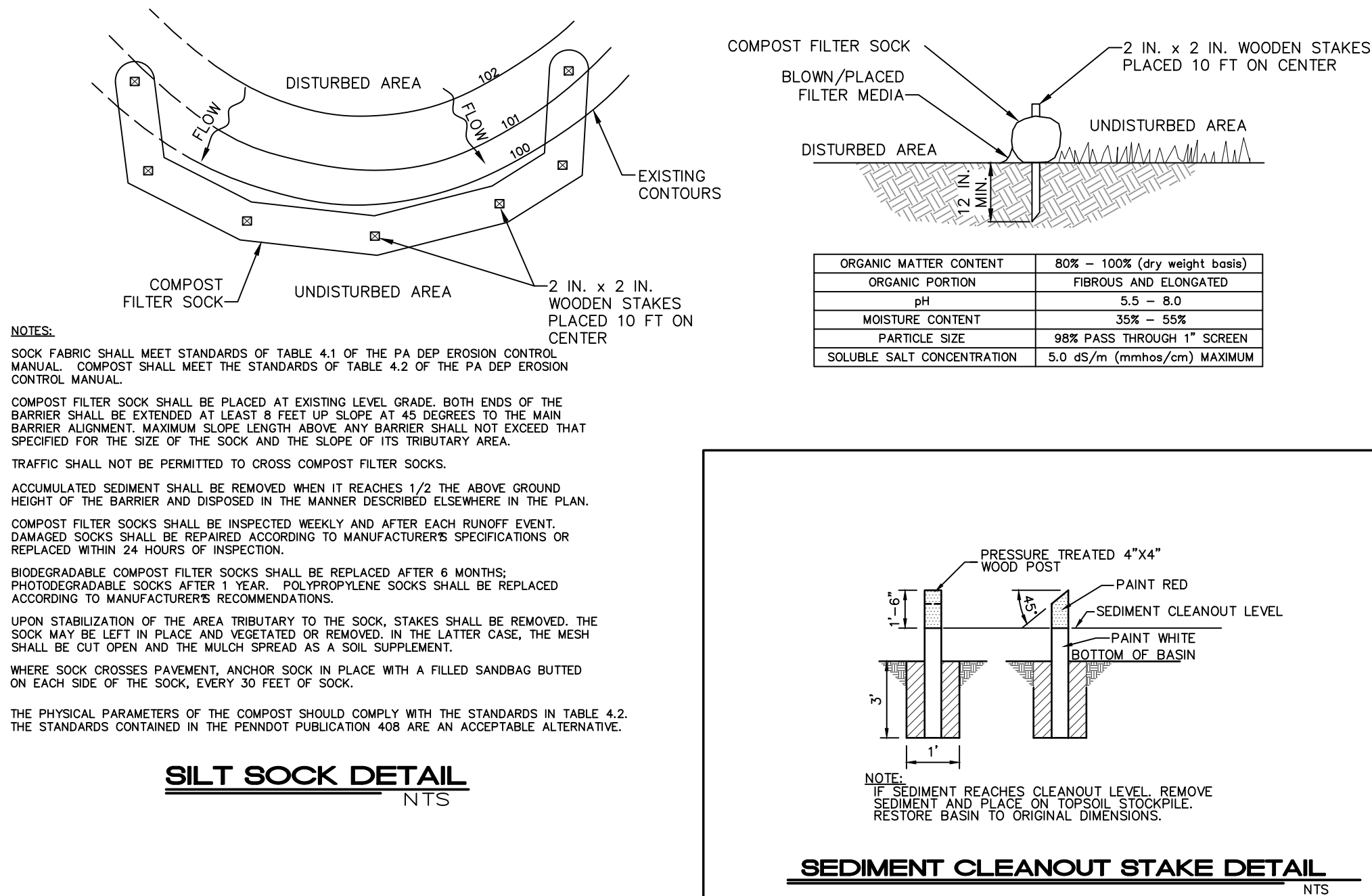
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

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

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

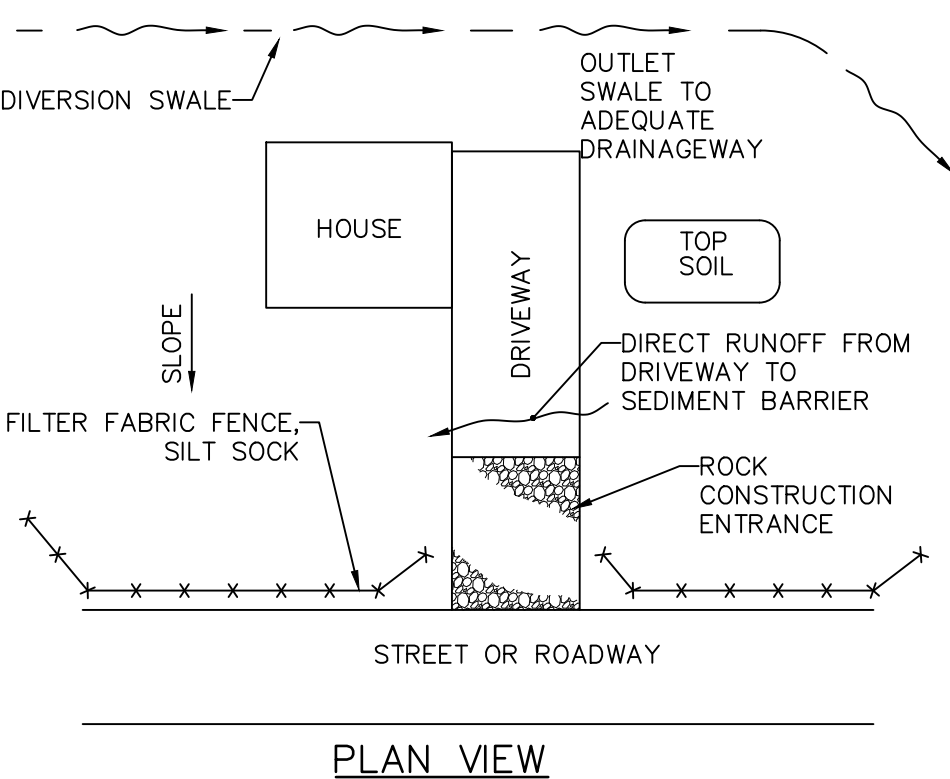
STABILIZED ROCK CONSTRUCTION ENTRANCE

NTS



STANDARD CONSTRUCTION DETAIL #7-18 SEDIMENT BASIN OR SEDIMENT TRAP SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE

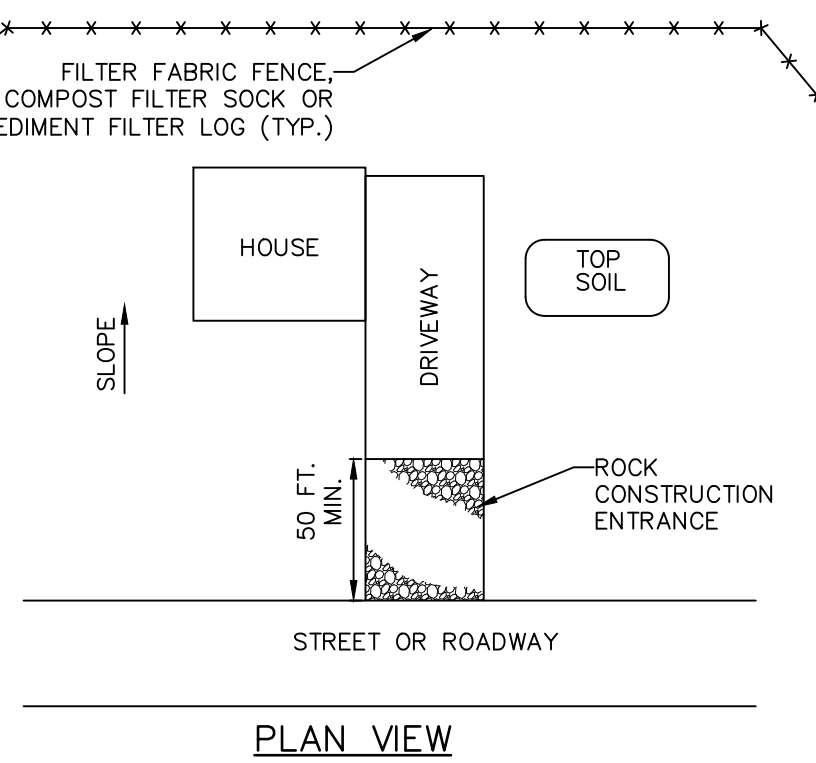


NOTES:

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER THE LOT EXTENDS MORE THAN 150 FEET ABOVE THE ROADWAY OR WHERE RUNOFF FORM AREAS ABOVE THE LOT IS NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

STANDARD CONSTRUCTION DETAIL #10-1 TYPICAL ON-LOT BMPs FOR LOT ABOVE ROADWAY

NTS



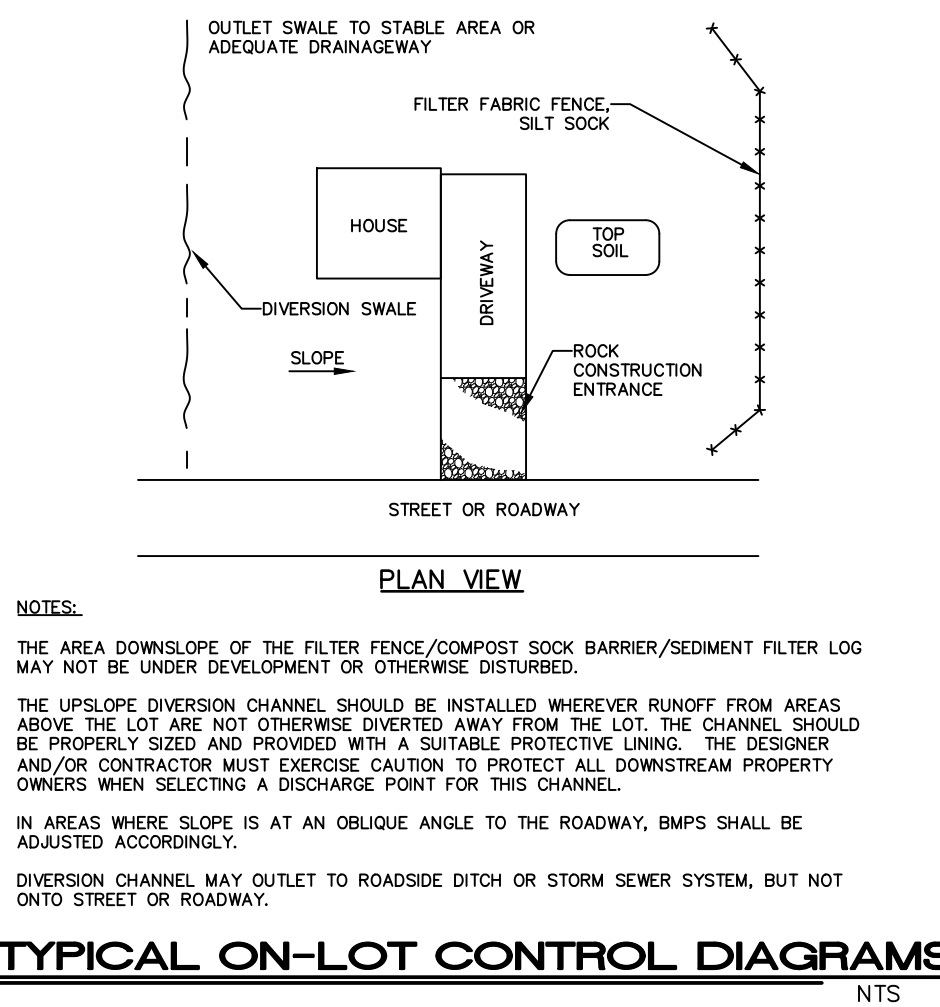
NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

STANDARD CONSTRUCTION DETAIL #10-2 TYPICAL ON-LOT BMPs FOR LOT BELOW ROADWAY

NTS

				DESIGN :	T.C.S.
				DRAWN :	G.D.G.
				CHECKED :	J.K.M.
				DATE :	3/01/2018
				REV :	
NO.	DATE	DESCRIPTION	BY		



NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER RUNOFF FROM AREAS ABOVE THE LOT ARE NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

IN AREAS WHERE SLOPE IS AT AN OBLIQUE ANGLE TO THE ROADWAY, BMPs SHALL BE ADJUSTED ACCORDINGLY.

DIVERSION CHANNEL MAY OUTLET TO ROADSIDE DITCH OR STORM SEWER SYSTEM, BUT NOT ONTO STREET OR ROADWAY.

TYPICAL ON-LOT CONTROL DIAGRAMS

NTS

PLANNING & ENGINEERING & SURVEYING
THE LIVING CENTER
NEW CUMBERLAND, PA 17070
PHONE: 717) 770-2500
FAX: 717) 770-2400
WWW.ALPHACON.COM

ALPHA
ALPHA CONSULTING ENGINEERS, INC.

EROSION CONTROLS DETAILS
PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW
UPPER ALLEN TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA

PROJECT NO. 317565
SURVEY BOOK :
SCALE :
DWG: 317565.dwg FILE: 317565.dwg PLOT: 317565.dwg
SHEET 13 of 15

STAGING OF EARTHMOVING ACTIVITIES--

GENERAL NOTES FOR ALL WORK--

- A. At least 7 days before starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors involved those activities, the landowner, all appropriate municipal officials, the erosion control plan preparer, the owner's professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative of the County Conservation District to an on-site pre-construction meeting.
- B. At least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call system incorporated at 1-800-242-1776 (or 811) for the location of existing underground utilities.
- C. All earth disturbance activities shall proceed in accordance with the following specific sequencing. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage. Any deviation from the following sequence must be approved in writing by the County Conservation District.
- D. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for erosion and/or sediment pollution, and notify the County Conservation District.
- E. Immediately after earth disturbance activities cease, the operator shall stabilize the disturbed areas. During non-permitting periods, much must be seeded at the specified rates. Disturbed areas which are not at finished grade and will be re-disturbed within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are not at final grade or which will not be re-disturbed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
- F. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.

PRIOR TO CONSTRUCTION:

- A. Abandon any existing well at the dwelling to be removed. All well closures and abandonment shall conform to water well abandonment guidelines as published in chapter 7 of the PA DEP publication "Ground Water Monitoring Guidance Manual".
- B. Remove the existing sewage disposal system at the dwelling to be removed, per the instruction of the Upper Allen Township Sewage Enforcement Officer.
- C. At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the land owner, all appropriate municipal officials, the erosion control plan preparer, and a representative of the Cumberland County Conservation District to an on-site pre-construction meeting. Also, at least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the PA One Call System, Inc. At 1-800-242-1776 for buried utilities location.

SPECIFIC STAGES OF CONSTRUCTION:

Install stabilized construction entrance #1 off the edge of existing driveway paving. Clearly mark the limits of earth disturbance. Install all stock #1 to S, install the rock filter berm on the pavement from curb to curb at the end of Coventry Drive stub.

Raze existing dwelling, only disturbing the minimum amount of ground necessary. Remove existing vegetation. All building waste material must be removed from the site and recycled or disposed of in accordance with the department's solid waste management regulations and 25 Pa. Code 260.1 et seq., 27.11, and 28.21 et seq. Remove pole lines associated with the razeed building in coordination with the utility company(s).

Stage 3
In one continuous short-term operation when precipitation is not forecasted and the existing channel is E, remove riprap stone, existing trees and strip topsoil as necessary and install sanitary sewer run the slab in Ardenfield for residential monohole #008-131. Replace the riprap in the existing swale for now. Permanently seed the disturbed yard area around monohole #008-130.

*Stage 4
In one continuous short-term operation when precipitation is not forecasted and the existing channel is E, remove riprap stone and strip topsoil as necessary and place to the side of the channel, and install storm pipe system A to A2 and A3. Basin outlet installation is a critical stage of construction, for which a licensed professional or their designee must be present during installation. Install inlet protection on inlet A as soon as it is placed. After the pipe runs A to A1 is backfilled, immediately replace topsoil and permanently seed and mulch as this area will not be disturbed again. The developer and contractor should coordinate this work with the installed Ardenfield property owners.

*Stage 5
In one continuous short-term operation, strip topsoil and remove riprap as necessary and then install swales #6 and 9, including the permanent swale linings. Install and backfill over pipes H1 to H4 and place riprap apron at the outlet of H. Perform the final grading between H1 and the adjacent property and permanently seed and mulch as soon as it is placed. At the same time, install permanent basin #4 using select cut material as necessary from the vicinity of lots #5 to 8. Install the sediment basin temporary spillway and stabilize it immediately. Install, stub and temporarily backfill the basin inlet with the sediment basin #4. Basin inlet and outlet shall be installed in accordance with the licensed professional or their designee must be present during installation. Permanently grade, seed and mulch any remaining disturbed soil along the swales and outside of the berm as these swales are cleaned water bypass routes while the main project area is being constructed. Adjust soil #3 location to be along the edge of the completed swale #6, and ground and over and under #1. The developer and contractor should coordinate the work in this stage with the affected adjacent Ardenfield property owners. At the end of this stage, swales #6 and 9 should be fully installed and the berms on each side of them permanently stabilized, or have a silt sock along the edge to protect them since they will be receiving clean water from off-site.

Stage 6
Finish internal grading of sediment basin #4 per the temporary contours shown on the drawings, including the temporary riser pipe and cleanout marker. Do not install the basin underdrains at this time. Temporary seed the inside of the basin as soon as it is graded. The outside of the basin berm should be permanently seeded since it will remain for a while.

Stage 7
In one continuous short-term operation, strip topsoil and install swale #1, beginning at the downhill end and working uphill, stabilizing each day the portion of swale completed that day, with topsoil, seed and mulching.

Stage 8
Install sediment trap #1, including the cleanout marker, outlet spillway, and temporary seed the trap.

Stage 9
Strip topsoil and stockpile as necessary to rough grade the streets, except at construction entrance #1, which shall remain. Install broad based dip #1 to drain into sediment trap #1, and continuously maintain it until the street is ready for curbing / paving. While placing fill for the grading Ardenbury Drive from Gettysburg Pike to lot #4, direct as much runoff as possible to sediment trap #1, such as a berm / swale along the west edge of the fill at the end of a day when precipitation is expected.

Stage 10
Install sanitary sewer system with laterals. During trenching, should any water accumulate in trenches or elsewhere, to a depth that must be pumped, then the contractor shall use a Facility for Sediment Removal From Pumped Water as detailed on the drawings.

*Stage 11
Install storm sewer system, and water system. During trenching, should any water accumulate in trenches or elsewhere, to a depth that must be pumped, then the contractor shall use a Facility for Sediment Removal From Pumped Water as detailed on the drawings. Install riprap apron at pipe outlets as soon as a pipe is placed. Install seepage bed #4 with pipe run F2 to F construction. Inlet protection must be placed on inlet #1 as soon as the grate is placed. Install electric / cable / gas utilities. As soon as pipe G1 to G is in place, install swale #6, beginning at the downhill end and working uphill, stabilizing each day the portion of swale completed that day, with topsoil, seed and mulching. Seepage bed #3 shall be installed with the swale construction. Rock filter berm #2 shall be installed around pipe end #2 immediately after the swale and seepage bed are finished. As soon as pipe F2 to F is in place, install swale #4, beginning at the downhill end and working uphill, stabilizing each day the portion of swale completed that day, with topsoil, seed and mulching. Seepage beds #2 and 4 shall be installed with the swale construction. Rock filter berm #1 shall be installed around pipe end #2 immediately after the swale and seepage bed are finished. As soon as pipe B1 to B is in place, install swales #2 and 3, beginning at the downhill end and working uphill, stabilizing each day the portion of swale completed that day, with topsoil, seed and mulching. Seepage bed #1 shall be installed with the swale construction. Installation of any seepage bed shall be considered a critical stage of construction, for which a licensed professional or their designee must be present during construction.

Stage 12
Install curbing and gravel subbase of streets, and pave with base course (eliminating construction entrance #1, broad based dip #1 and rock filter berm #3). Continuously maintain gravel or temporary asphalt water berms in Coventry Lane to divert runoff into inlets #E1, E2 and E3. Block off Coventry Lane from construction traffic with barricades / signs as necessary. Seed disturbed soil throughout the site and permanently seed mulch where indicated on the drawing. House construction may begin as lots are laid (see separate staging of earthmoving activities for individual house construction below). Once Ardenbury Drive is in place, sediment trap #1 can be removed since it will have no watered. In a short term operation install swale #7, beginning at the downhill end and working uphill, stabilizing each day the portion of swale completed that day, with topsoil, seed and mulching.

*Stage 13
Temporary control measures can be removed when the watershed draining to the measure is permanently stabilized, meaning a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density capable to resist accelerated surface erosion, and subsurface characteristics sufficient to resist sliding and other movements. The location of the control measure must be immediately permanently stabilized upon its removal. All areas to be permanently seeded shall have a minimum depth of 4" of topsoil before seeding; import topsoil if necessary. Note that some areas are to receive mesquite seed.

When the site is permanently stabilized, in one short-term operation during the growing season when precipitation is not anticipated for several days, install rain gardens #A, B, C and D, and permanently seed and mulch disturbed areas immediately. Installation of a rain garden shall be considered a critical stage of construction, for which a licensed professional or their designee must be present during construction.

Upon completion of all earth disturbance activities, removal of all temporary BMPs, installation of all permanent PCSM BMPs, and permanent stabilization of all disturbed areas, the owner and/or operators shall contact the County Conservation District for a final inspection.

EROSION CONTROL PLAN GENERAL NOTES:

1. The site contractor shall be responsible for implementation of this Erosion Control Plan.
2. The site contractor shall not disturb more area than is necessary for the task to be done, so that potential for erosion is minimized.
3. Erosion and sedimentation controls must be constructed, stabilized, and functional before site disturbance within the tributary areas to the controls.
4. A copy of the approved Erosion and Sediment Control Plan / Drawings (stamped, signed and dated by the reviewing agency) must be available at the project site during all times.
5. At least 7 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the owner and/or operator shall invite all contractors involved in those activities, the landowner, appropriate municipal officials, the erosion control plan preparer, the owner's professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative of the County Conservation District to an on-site pre-construction meeting.
6. At least 3 days before starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call system incorporated shall be notified at 1-800-242-1776 for the location of existing underground utilities.
7. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage. Deviation from that sequence must be approved in writing from the County Conservation District prior to implementation.
8. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E & S BMPs specified by the Construction Sequence for that stage or phase have been initiated and are functioning as described in this document.
9. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operation begin.
10. Topsoil stockpile heights shall not exceed 35 feet. Stockpile side slopes must be 2:1 or flatter.

11. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices (BMPs) to minimize the potential for erosion and sediment pollution, and notify the County Conservation District or the responsible office of PA DEP.
12. Solids, trash and other pollutants shall be disposed in accordance with federal and state regulations in order to prevent any pollutant in such materials from adversely affecting the environment. All building materials and waste must be removed from the site and recycled or disposed in accordance with the Department of Environmental Protection's Solid Waste Management regulations at 25 Pa. Code 260.1 et seq., 27.11, and 28.21 et seq. No building materials or waste or unused building material shall be burned, buried, dumped, or discharged on the site.
13. All off-site waste and borrow areas must have an E & S Plan approved by the Conservation District or DEP, and fully implemented prior to being activated.
14. The contractor is responsible for ensuring that any material brought onto 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 its dilution.
15. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
16. Areas which are to be topsoiled shall be scarified to a minimum depth of 4 inches prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outcrops shall have a minimum of 2 inches of topsoil.
17. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended for foundations, structures, roads, parking lots, and other uses shall be compacted in accordance with local requirements or codes. All fills shall be placed in compacted layers not to exceed 9 inches in thickness. Fill materials shall be free of frozen particles, brush, rocks, sod, or other foreign or objectionable materials that will interfere with or prevent construction of satisfactory fills. Frozen materials or soft, muddy, or highly compressible materials shall not be incorporated into fills. Fill shall not be placed on saturated or frozen surfaces.
18. Seeps or springs encountered during construction shall be handled in accordance with the standard and special provisions for subsurface drain or other approved methods.
19. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated.

20. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-permitting periods, much must be seeded at the specified rates. Disturbed areas which are not at finished grade and will be re-disturbed within 1 year must be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be re-disturbed within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
21. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion. Cut and fill slopes shall be seeded and mulched in accordance with the specifications of the E & S Plan.
22. All E & S BMPs must remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the Conservation District or PA DEP.

23. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and / or operator shall contact the Conservation District for an inspection prior to removal / conversion of the E & S BMPs.

24. After final site stabilization has been achieved, temporary E & S BMPs must be removed or converted to permanent post construction stormwater management facilities. Areas disturbed during removal or conversion of the BMPs must be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal / conversions should be done only during the germinating season.

25. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and / or operator shall contact the Conservation District to schedule a final inspection.

26. 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 Pennsylvania Department of Environmental Protection 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.

27. Only limited disturbance will be permitted to initially access and acquire borrow to construct facilities, before general site alteration begins.

28. If fuel or other dangerous chemicals are stored on site, then a Preparedness, Prevention and Contingency (PPC) Plan must be developed and kept on site.

29. An erosion control blanket must be installed on all disturbed slopes steeper than 3:1, in all areas with concentrated flows as noted on the drawings.

30. Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work in the manner described in this plan until such restoration is complete.

TEMPORARY SEEDING SCHEDULE:

The contractor shall immediately temporarily stabilize any rough graded area, topsoil stockpile or unused excavated fill material that will be left idle for less than 1 year. The grass will provide interim protection against the impact of precipitation, running water and wind. Permanently seed any area that will be idle for more than 1 year.

Temporary seeding schedule is as follows:

Species: annual rye grass
% Live Seed: 98%
Application rate: 10 lbs./1,000 sq. yds.
Fertilizer type: general purpose granular, 10-20-20
Fertilizer application rate: 11 lbs./1,000 sq. yds.
Liming rate: per soil test; minimum of 4 tons per acre.
Strawable mulch rate: 1,200 lbs./1,000 sq. yds.
Seeding dates: no seeding between 1/1 and 3/15
Mulch anchoring: Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1,000 square yards. Synthetic binders (chemical binders) may be used per manufacturer's recommendation provided they are non-toxic to plant and animal species.

When seeding is not possible due to the time of year or other limitations, disturbed area shall be mulched with strawbales at the rate above. An erosion control blanket must be installed on all disturbed slopes steeper than 3:1, and all areas with concentrated flows. Matting can be North American Green S75 or approved equal.

- Maintenance procedure:
- 1) Maintain a minimum 70% soil surface coverage with grass and/or mulch.
 - 2) If a washout, slope failure or similar disturbance occurs, correct drainage problem if necessary, then reapply soil to the proper grade, reapply soil amendments, seed and mulch.

PERMANENT SEEDING SCHEDULE: (NON-MEADOW AREAS)

All disturbed soil not to be covered with impervious surfaces, riprap or landscaping mulch shall be permanently seeded to provide protection against the impact of precipitation, running water and wind. Permanent seeding schedule for the general project area is as follows:

FOR GENERAL LAWN PLANTING--
Species: 30% Kentucky bluegrass
40% Penninnaw Creeping Red Fescue
20% Norton Perennial ryegrass
10% annual ryegrass

% Pure live seed: 98%
Application rate: 6 lbs./1,000 sq. ft.
Fertilizer type: general purpose granular, 10-20-20
Fertilizer application rate: 11 lbs./1,000 sq. yds.
Liming rate: per soil test; minimum of 6 tons per acre
Seeding dates: between 4/1 and 10/15
Strawable mulch rate: 3 tons per acre
Mulch anchoring: Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1,000 square yards. Synthetic binders (chemical binders) may be used per manufacturer's recommendation provided they are non-toxic to plant and animal species.

MAINTENANCE PLAN:

1. Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. Responsibility for maintaining erosion and sedimentation control measures shall be designated to a minimum of one individual who will be present at the project site each working day. Maintenance must include inspections of all erosion and sediment control BMPs after each runoff event and on a weekly basis to ensure that they are in place, stable, and functioning properly. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, reseeding, re-mulching, and re-netting must be performed immediately, to restore the control measure to the original design. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed, will be required.
2. 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.
3. Any sediment removed from BMPs during construction will be returned to upland areas within the project area, and incorporated into the site grading, or in the manner described on the plan drawings.
4. See the construction details and seeding specifications for maintenance procedures for the various control measures.
5. Mud must be removed from vehicle tires before they exit the site. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer or surface water.

E&S GENERAL NOTES CONT'

31. Fill Materials--
The NPDES Permit covers the moving, depositing, stockpiling, or storing of soil rock or earth materials. If the site will need to have fill imported from an off site location, the responsibility for performing environmental due diligence and the determination of clean fill will be must comply with the Department of Environmental Protection's policy. A copy of this policy is available online at www.dep.state.pa.us. Under the heading Quick Access on the left side of the screen, click on Forms and Publications. On the left side of the screen click on "Technical Guidance Documents- Fill". Then type the document number 228-2182-773 into the search window and conduct the search. Click on Management of Fill.
32. The erosion and sediment pollution control plan and NPDES permit must be approved by the County Conservation District prior to any earthmoving activities on this site.

Clean Fill is defined as: Uncontaminated, non-water soluble, non-decomposable, inert, solid material. It 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.

Environmental due diligence: Investigative techniques, including, but not limited to, visual property inspection, electronic data base searches, review of property ownership, review of property use history, standard questions, transaction searches, 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 management regulations at 25 Pa. Code Chapters 267 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable.

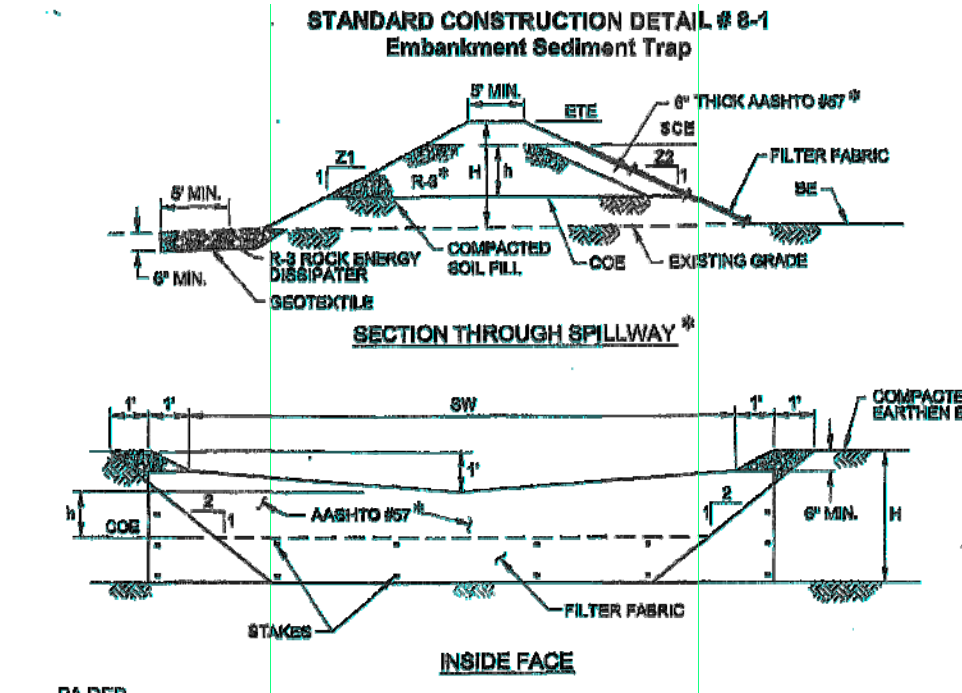
33. The erosion and sediment pollution control plan and NPDES permit must be approved by the County Conservation District prior to any earthmoving activities on this site.

34. Vegetated channels shall be constructed free of rocks, tree 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.

35. The permittee or co-permittee must ensure that visual site inspections are conducted weekly, and offer each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the Erosion and Sediment Control (E&S) BMPs are operational and effective in preventing pollution to the waters of the Commonwealth. A written report of each inspection shall be kept, and include:

- 1) a summary of the site conditions, E&S BMPs, and compliance; and
- 2) the date, time, and the name of the person conducting the inspection.

36. The contractor shall be responsible for the removal of any excess material and make sure the site(s) receiving the excess has an approved erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.



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, 4" thick layer of compost, compost rock, or clean sand shall be installed on top of the AASHTO #57 stone and securely anchored in HD watersheded. 24" diameter compact socket(s) shall be used in place of filter fabric and AASHTO #57 stone in EV watershedes.

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 layers of not more than 8". The maximum rock size shall be no greater than 8".

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 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.

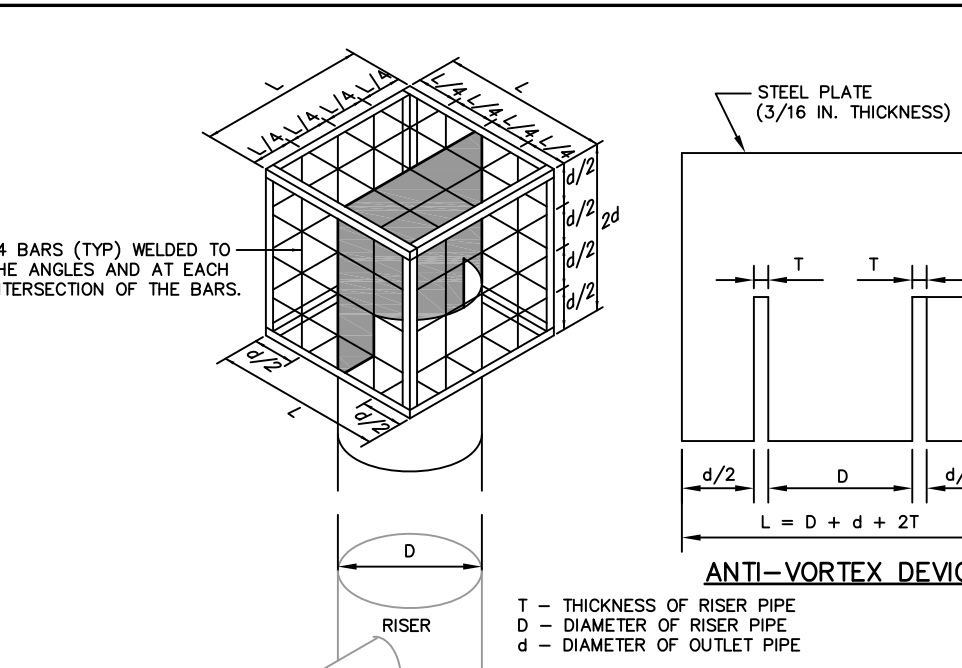
Check embankments, spillways, and outlets for erosion, piping and settlement. Clogged or damaged spillways and/or embankments shall be immediately restored to the design specifications.

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.

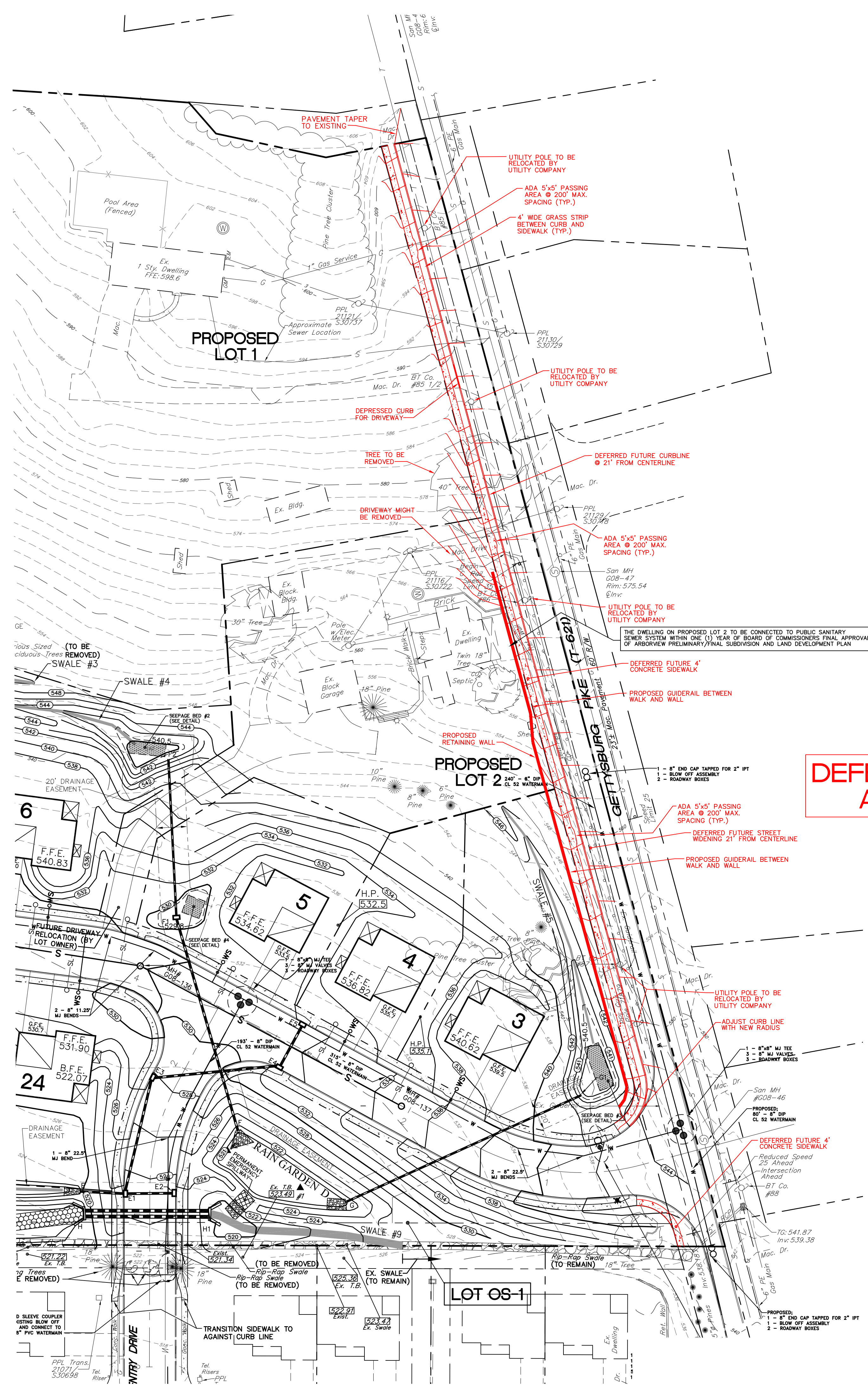
TRAP STAKE	Z1 (FT)	Z2 (FT)	H (FT)	h (FT)	EMBANK. TOP ELEV. ETE (FT)	SPILLWAY TOP ELEV. SCE (FT)	CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BOE (FT)	SPILLWAY WIDTH (FT)
1	2	2	4	3	526.0	525.0	523.1	522.0	2.5




STANDARD CONSTRUCTION DETAIL #8-1 EMBANKMENT SEDIMENT TRAP

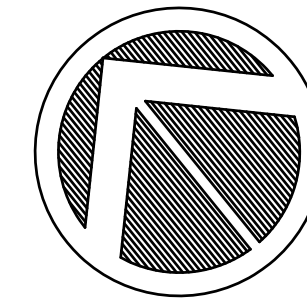


LEGEND

— Properly Line
--- Existing Contour
--- Existing Curb
--- Existing Edge of Pav
G — G Existing Gas Line/Vaive
W — W, WV, WY Existing Water Line/Vaive/Hydrant
18" — 18" CWP Existing Storm Sewer Inlet, Pipe Size and Manhole
C/O — C/O Existing Sanitary Sewer Line Cleanout and Manhole
FM — FM Existing Sanitary Sewer Force Main
E — E Existing Sign
ATTN(13.39)/524021 Existing Electric Line and Utility Pole/LD #
508.28 Existing Spot Elevation
--- Existing Treeline
--- Existing Tree
#10 Soil Test Location; ID#
PROPOSED TREE LINE
PROPOSED STORM SEWER LINE AND INLET; ID #
PROPOSED RIP RAP APRON
S — S, SL, SL.32.2 PROPOSED SANITARY SEWER MAIN AND MANHOLE; ID #
C.O. — C.O. PROPOSED SANITARY SEWER LATERAL; CLEANOUT
WV — WV PROPOSED WATER LINE; HYDRANT AND VALVE
--- 508.2 PROPOSED CONTOUR
B.C. (508.33) H.P. PROPOSED SPOT ELEVATION B.C.=BOTTOM OF CURB H.P.=HIGH POINT
1' — 1' ACCESSIBLE PAVEMENT WALK
DECK/PATIO/PORCH
FIBER OPTIC ELEVATION
BASEMENT ELEVATION
UNIT BOUNDARY (SCHEMATIC ONLY)
GARAGE DRIVEWAY
POSSIBLE GARAGE FLOOR ELEVATION



				DESIGN : T.C.S.
				DRAWN : G.D.G.
				CHECKED : J.K.M.
	12/6/18	WATER DESIGN	GDG	DATE : 3/01/2018
	5/10/18	REVIEW COMMENTS	GDG	REV :
	4/5/18	REVIEW COMMENTS	GDG	
NO.	DATE	DESCRIPTION	BY	



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THE

SEAI

SEAI

DEFERRED IMPROVEMENTS PLAN

PRELIMINARY / FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
ARBORVIEW

PROJECT NO. 317565
SURVEY BOOK :
SCALE : 1" = 40'
DWG FILE : Y:\17\317565.aph\317565.dwg Y:\17\317565.aph\317565.dwg FILE : Dwg\Plans\Prelim-Final
SHEET 15 of 1

