MALIN ROAD DEVELOPMENT

REVISED PRELIMINARY
LAND DEVELOPMENT PLAN
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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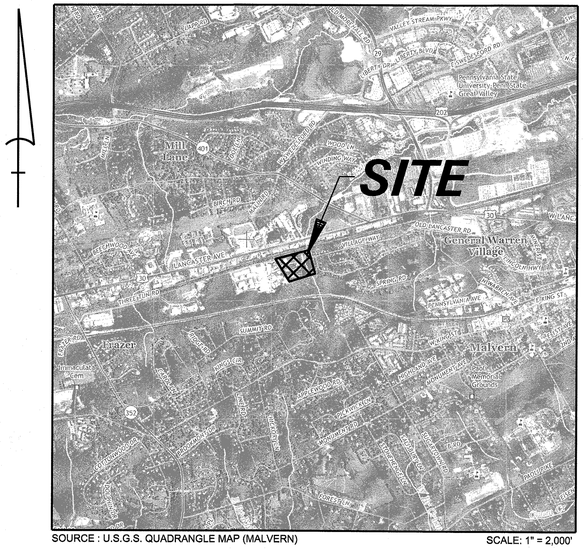
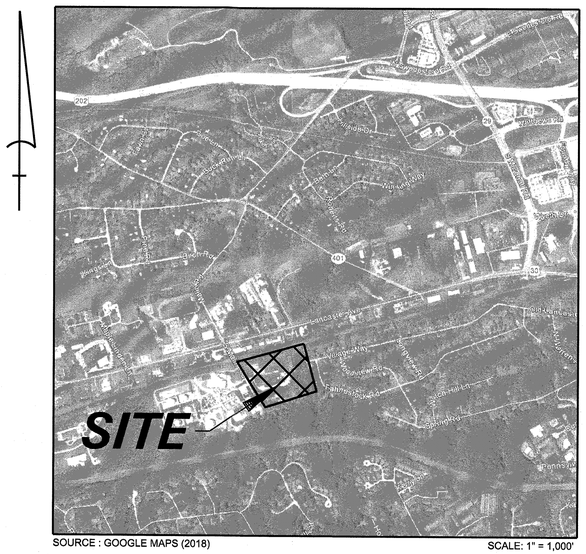


SOURCE : U.S.G.S. QUADRANGLE MAP (MALVERN) SCALE: 1" = 2,000'



SOURCE : GOOGLE MAPS (2018) SCALE: 1" = 1,000'

REVIEWED BY THE PLANNING COMMISSION OF EAST WHITELAND TWP., CHESTER COUNTY, PA THIS_____DAY OF_____, 20__.

_____
_____
_____

APPROVED BY THE BOARD OF SUPERVISORS OF EAST WHITELAND TWP., CHESTER COUNTY, PA THIS_____DAY OF_____, 20__.

_____
_____
_____

REVIEWED BY THE CHESTER COUNTY PLANNING COMMISSION THIS_____DAY OF _____, 20__.

_____
_____
_____

RECORED IN THE OFFICE OF THE RECORDER OF DEEDS CHESTER COUNTY AT WEST CHESTER, PENNSYLVANIA IN PLAN BOOK_____, PAGE_____, ON THE_____ DAY OF _____20__.

_____
(DEPUTY) RECORDER OF DEEDS

RECOMMENDED FOR APPROVAL BY EAST WHITELAND TOWNSHIP ENGINEER:

_____ _____
TOWNSHIP ENGINEER DATE

I HEREBY CERTIFY THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, THE INFORMATION SHOWN HERON AND THE SURVEY ON WHICH IT IS BASED IS CORRECT, THE SURVEY MARKERS EXIST AS SHOWN, AND THE SURVEY MEETS THE ACCURACY REQUIREMENTS SET FORTH IN THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

_____ _____
PROFESSIONAL LAND SURVEYOR DATE

COMMONWEALTH OF PENNSYLVANIA:
:SS
COUNTY OF MONTGOMERY:

ON THE_____ DAY OF _____ A.D. 20__, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, APPEARED _____, WHO ACKNOWLEDGES HIMSELF TO BE _____ OF CONSTITUTION DRIVE PARNERS, LP A LIMITED PARTNERSHIP, AND AS SUCH BEING AUTHORIZED TO DO SO, HE EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING THE NAME OF THE CORPORATION BY HIMSELF.

BY: _____
OWNER

IN WITNESS WHEREOF, I HEREUN TO SET MY HAND AND OFFICIAL SEAL.

_____
NOTARY PUBLIC

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT	
DATE SIGNED:		REVISIONS NO.	DATE

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
PA. PROFESSIONAL ENGINEER NO. PE073278

TITLE SHEET

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
AS SHOWN	SEPTEMBER 22, 2018	018-06476-LD	1 OF 24

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LANCASTER AVENUE (S.R. 0030)

EXIST. BUILDING

PROJECT BENCHMARK

PARCEL #42-4-318
N/F
MERION MANOR APARTMENTS, LP

PARCEL #42-4-322.1
N/F
UNIVERSAL PLUMBING, INC.

PARCEL #42-4-322.2
N/F
JARLE E. & MYRINA S. ROKKE

PARCEL #42-4-322.4
N/F
JOHN C. & CAROLE R. LESTER

PARCEL #42-4-322.5
N/F
154 INC.

PARCEL #42-4-322.6
N/F
DANAI & BUNGHA KURANURUK

PARCEL #42-4-319
N/F
PENNSYLVANIA LINES, LLC

PARCEL #42-4-334
N/F
PENNSYLVANIA LINES, LLC

EXISTING RAILROAD BRIDGE

MALIN ROAD

INDUSTRIAL DISTRICT
RRD RESIDENTIAL

20' WIDE PHILADELPHIA ELECTRIC EASEMENT DB 97, PG 486 (TRACT 1)

20' WIDE PHILADELPHIA ELECTRIC EASEMENT DB 114, PG 605

20' WIDE PHILADELPHIA ELECTRIC EASEMENT DB 97, PG 486 TRACT 2)

SUSQUEHANA PIPE LINE COMPANY EASEMENT DB84, PG 561

PARCEL #42-4-320
N/F
FRIENDS FIDUCIARY CORP.

EXISTING 4 STORY BLOCK BUILDING (BLDG HEIGHT = 55.5')

20' WIDE SUBURBAN WATER EASEMENT DB 465, PG 292

20' WIDE SANITARY SEWER EASEMENT DB 197, PG 688

PARCEL #42-4Q-001
N/F
JEFFERY S. JONES

PARCEL #42-4Q-002
N/F
SHARON ELAINE CONNOR

PARCEL #42-4Q-003
N/F
CECIL O. MOORE

VILLAGE WAY

FAHNESTOCK ROAD

EXISTING R.O.W.

PARCEL #42-4-295
N/F
BUCKEYE TERMINALS, LLC.

PHILADELPHIA ELECTRIC EASEMENT RIGHTS DB 121, PG 321 (THE BED OF MALIN ROAD)

SUSQUEHANA PIPE LINE COMPANY EASEMENT DB84, PG 561

PARCEL #42-4-295.1
N/F
BUCKEYE TERMINALS, LLC.

PARCEL #42-4-321.1
N/F
10 MALIN ROAD ASSOCIATES

20' WIDE PRIVATE ACCESS RIGHT-OF-WAY AS PER DB 1038, PG 132

20' WIDE SANITARY SEWER DEDICATION DB 286, PG 340

100' RIPARIAN BUFFER (NON-DISTURBANCE)

50' WETLAND BUFFER

WETLANDS DELINEATED AS PER WETLAND JURISDICTIONAL DETERMINATION #CENAP-OP-R-2015-00446-78 DATED JUN 27, 2015 (DEPT. OF THE ARMY)

WETLANDS

PARCEL #42-4Q-96
N/F
LEWIS H. DELORES M. HITCHCOCK

PARCEL #42-4Q-97
N/F
RICHARD ROMAIN & LAURA BOGAN

PARCEL #42-4Q-98
N/F
JASON DI BALY & AMY R. HAUPTLY

PARCEL #42-4Q-99
N/F
GARY PAGE

PARCEL #42-4Q-100
N/F
BETTY J. CLOUD

PARCEL #42-4Q-101
N/F
VINCENT & CAROLE BUETTNER

PARCEL #42-4Q-025
N/F
CHARLES & JANICE DUFFY

PARCEL #42-4Q-024
N/F
JEANETTE HOOVEN

PARCEL #42-4Q-023
N/F
ANGELA CLAYTON SMITH

R-3 LOW INTENSITY RESIDENTIAL DISTRICT
RRD RESIDENTIAL

ZONING BOUNDARY

RRD RESIDENTIAL
INDUSTRIAL DISTRICT

UrgB
UrgD
CtA
UugD
MaD

SOIL TYPES

MaB	MANOR LOAM, 3-8% SLOPES	B
MaD	MANOR LOAM, 15-25% SLOPES	B
MaE	MANOR LOAM, 25-35% SLOPES	B
UrgB	URBAN LAND-CONESTOGA COMPLEX, 0-8% SLOPES	B
UrgD	URBAN LAND-CONESTOGA COMPLEX, 8-25% SLOPES	B
UugD	URBAN LAND-UDORTHNTS, 8-25% SLOPES	C

LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	SL
RD	ROOF DRAIN	RD
WL	WATER SERVICE	WS
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	
	100' STREAM BUFFER	
	50' WETLAND BUFFER	
	WETLANDS	
	ZONING BOUNDARY	
	SOIL BOUNDARY	
	LIMIT OF DISTURBANCE	
	15%-25% SLOPES	
	>25% SLOPES	
	TREE PRESERVATION AREA	
	SOIL CONTAMINATION AREAS	

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

SITE ID: 20182813492

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UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.

60 30 0 60 120 180 240

GRAPHIC SCALE

DESIGNED: MJW | DRAWN: JAB | CHECKED: MMT

DATE SIGNED:

REVISIONS

NO.	DATE

MARK M. THOMPSON
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA

PA. PROFESSIONAL ENGINEER NO. PE073278

CONSERVATION PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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SCALE: 1"=60' | DATE: SEPTEMBER 22, 2018 | DRAWING NO: 018-06476-LD | SHEET: 2 OF 24

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PARCEL #42-4-319
N/F
PENNSYLVANIA LINES, LLC

PARCEL #42-4-334
N/F
PENNSYLVANIA LINES, LLC

PARCEL #42-4-320
N/F
FRIENDS FIDUCIARY CORP.

PARCEL #42-4-295
N/F
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PARCEL #42-4-295.1
N/F
BUCKEYE TERMINALS, LLC.

PARCEL #42-4-321.1
N/F
10 MALIN ROAD ASSOCIATES

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N/F
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PARCEL #42-4Q-002
N/F
SHARON ELAINE CONNOR

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N/F
CECIL O. MOORE

PARCEL #42-4Q-96
N/F
LEWIS H. DELORES M. HITCHCOCK

PARCEL # 42-4Q-97
N/F
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N/F
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PARCEL #42-4Q-025
N/F
CHARLES & JANICE DUFFY

PARCEL #42-4Q-024
N/F
JEANETTE HOOVEN

PARCEL #42-4Q-023
N/F
ANGELA CLAYTON SMITH

MALIN ROAD

VILLAGE WAY

FAHNESTOCK ROAD

6' CHAINLINK FENCE TO BE REMOVED

FIRE HYDRANT TO BE REMOVED

895 LF 6" WATERMAIN TO BE REMOVED

WATER LATERAL AND FIRE HYDRANT TO BE REMOVED

BITUMINOUS PAVING TO BE REMOVED

TOPPLED UTILITY POLE

EXISTING 4 STORY BLOCK BUILDING (BLDG HEIGHT= 55.5')

BUILDING TO BE DEMOLISHED (TYP.)

CONVERT INLET TOP TO MANHOLE RIM

GRASS / OVERGROWN AREA

EXISTING ELECTRIC AND UTILITY POLE TO BE REMOVED (TYP)

BITUMINOUS PAVING TO BE REMOVED

STONE AREA

TANK TO BE REMOVED

FIRE HYDRANT(S) TO BE REMOVED

CURB TO BE REMOVED (TYP)

VEGETATION TO BE REMOVED (TYP)

BITUMINOUS PAVING TO BE REMOVED

EXISTING ELECTRIC TO BE REMOVED (TYP)

BEGIN REMOVAL OF FENCE

GARAGE TO BE REMOVED

WOODS

SOIL TYPES

MaB	MANOR LOAM, 3-8% SLOPES	B
MaD	MANOR LOAM, 15-25% SLOPES	B
MaE	MANOR LOAM, 25-35% SLOPES	B
UrgB	URBAN LAND-CONESTOGA COMPLEX, 0-8% SLOPES	B
UrgD	URBAN LAND-CONESTOGA COMPLEX, 8-25% SLOPES	B
UugD	URBAN LAND-UDORTHNTS, 8-25% SLOPES	C

DEMO LEGEND

TO REMAIN		TO BE REMOVED
N/A	PAVEMENT/CONCRETE MACADAM	
N/A	BUILDING/STRUCTURE	
N/A	VEGETATION	
=====	CURB	=====
—X—	FENCE	—X—
	UTILITY POLE	
	LIGHT POLE	
—G—	GAS	—G—
—W—	WATER	—W—
—ST—	STORM	—ST—
—S—	SAN. SEWER	—S—
—E—	ELECTRIC	—E—

LEGEND

EXISTING		PROPOSED
	MANHOLE	
	INLET	
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
—S—	SANITARY SEWER	
—ST—	STORM DRAIN	
—W—	WATER MAIN	
—SL—	SANITARY LATERAL	
—RD—	ROOF DRAIN	
—WL—	WATER SERVICE	—W—
—T—	TELEPHONE LINE	—T—
—E—	ELECTRIC LINE	—E—
—G—	GAS LINE	—G—
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
=====	CONCRETE CURB	
-----	EDGE OF PAVEMENT	
N/A	CONCRETE	

DEMOLITION NOTES

1. THE DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO COMMENCEMENT OF OPERATIONS INCLUDING, BUT NOT LIMITED TO, A DEMOLITION PERMIT FROM EAST WHITELAND TOWNSHIP.
2. THE DEMOLITION CONTRACTOR AND HIS SUB-CONTRACTOR(S) SHALL OBSERVE ALL FEDERAL, STATE AND COUNTY HEALTH, SAFETY AND ENVIRONMENTAL RULES AND REGULATIONS. THE DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES AND UTILITIES NECESSARY, BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE HEAVY EQUIPMENT ENTERS THE CONSTRUCTION SITE.
3. MANIFEST DOCUMENTING PROPER LEGAL DISPOSAL SHALL BE PROVIDED TO OWNER, INCLUDING WEIGH SLIPS FOR MATERIAL TO BE HAULED AND/OR RECYCLED.
4. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR THE LAWFUL REMOVAL, TRANSPORTATION AND DISPOSAL OF ALL RETIRED BUILDING DEBRIS. RETIRED BUILDING DEBRIS SHALL NOT BE STOCKPILED ON SITE.
5. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR TERMINATING ALL UTILITY SERVICES AND/OR FOR CONTACTING THE UTILITY OWNER TO TERMINATE THEIR UTILITY SERVICE AS REQUIRED BY THE UTILITY OWNER BEFORE REMOVAL OF THAT UTILITY, IN WHOLE OR IN PART.
6. REMOVAL OF ALL DEMOLITION DEBRIS IS THE RESPONSIBILITY OF DEMOLITION CONTRACTOR.
7. THE OWNER RESERVES THE RIGHT TO RETAIN DEMOLISHED MATERIALS FOR HIS OWN BENEFIT.
8. IT IS THE RESPONSIBILITY OF THE DEMOLITION CONTRACTOR TO COMMUNICATE WITH EACH UTILITY SERVICE PROVIDER AS TO THEIR POLICY AND PRACTICE FOR TERMINATING SERVICES, INCLUDING BUT NOT LIMITED TO, WHO IS AUTHORIZED TO PERFORM THE WORK, GUIDELINES AND SPECIFICATIONS FOR THE UTILITY TERMINATION TASK, AND THE REQUIRED PAPERWORK, OVERSIGHT AND INSPECTION(S). THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF SAME.
9. ALL DISCONNECTED SERVICES WILL HAVE HAZARDOUS ELEMENTS ASSOCIATED WITH THEM. THE DEMOLITION CONTRACTOR AND HIS SUBCONTRACTOR(S) SHALL SEEK THE NECESSARY GUIDANCE AND/OR OVERSIGHT AND TAKE ALL NECESSARY PRECAUTIONS TO RENDER DISCONNECTIONS AND/OR TERMINATIONS 'SEALED AND SAFE.
10. DEMOLITION CONTRACTORS SHALL EMPLOY PRACTICES AND GUIDELINES OUTLINED BY THE SPECIFIC DISCIPLINE OF THE UTILITY BEING DISCONNECTED.
11. CONSULT PROFESSIONALS AND/OR THE UTILITY COMPANY REPRESENTATIVES SHOULD THERE BE ANY QUESTION AS TO THE PROPER PROCEDURE TO MAKE A DISCONNECTION AND/OR ABANDON (TEMPORARILY OR PERMANENTLY, AS THE SITUATION DICTATES) A UTILITY SERVICE.
12. THE LOCATION OF ALL UNDERGROUND UTILITIES ARE NOT SHOWN. CONTRACTORS SHOULD CONTACT THE PENNSYLVANIA ONE-CALL SYSTEM FOR A MARK-OUT PRIOR TO EXCAVATION.
13. THE POINT OF TERMINATION OF ALL SUBSURFACE UTILITIES SHALL BE MARKED ON THE GROUND (IN AN APPROPRIATE MANNER AS TO RENDER THE MARK PERMANENT) ABOVE THE POINT OF TERMINATION AND DOCUMENTED ON AS-BUILT PLANS BY THE DEMOLITION CONTRACTOR.
14. ALL EXCAVATIONS SHALL BE BACKFILLED WITH CLEAN FILL, DEVOID OF ORGANIC OR FROZEN MATERIAL AND DEVOID OF ROCKS GREATER THAN 6 INCHES IN DIAMETER, IN A MAXIMUM HEIGHT OF EIGHT-INCH (8") LIFTS AND COMPACTED TO NOT LESS THAN (95%) PERCENT OF THE MAXIMUM MODIFIED DRY DENSITY, ASTM D 1557-91.
15. EXISTING STRIPING TO BE REMOVED BY GRINDING. BLACK PAINT IS NOT PERMITTED.
16. SANITARY LATERAL(S) TO BE REMOVED ALL THE WAY TO THE SANITARY MAIN AND THE CONNECTION POINT TO THE MAIN SHOULD BE CAPPED OR SEALED TO BE MADE WATER TIGHT.

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 "CALL BEFORE YOU DIG!"

SITE ID: 20182813492

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50 25 0 50 100 150 200

GRAPHIC SCALE

MARK M. THOMPSON
PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
PA. PROFESSIONAL ENGINEER NO. PE073278

DESIGNED:	DRAWN:	CHECKED:
MJW	JAS	MMT

DATE SIGNED:

REVISIONS	
NO.	DATE

DEMOLITION PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
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1" = 50'	SEPTEMBER 22, 2018	018-06476-LD	3 OF 24

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ZONING DATA
RRD - RESIDENTIAL REVITALIZATION DISTRICT

ITEM	REQUIRED	PROVIDED
MAX. TRACT DENSITY	12 UNITS/ACRE	6.8 (93 UNITS/13.71 AC)
MIN. TRACT AREA	10 ACRES	13.71 ACRES
MAX. BUILDING COVERAGE	40%	±16%
MAX. IMPERVIOUS COVERAGE	65%	±37%
CENTRAL WATER & SEWER FACILITIES	YES	YES
MIN. LOT AREA	3,000 SF	N/A
MAX. BUILDING HEIGHT (FEET)	50 FEET	<50 FEET
MAX. BUILDING HEIGHT (STORIES)	4 STORIES	<4 STORIES
MIN. LOT WIDTH AT R.O.W.	60 FEET	±735 FEET
MIN. LOT WIDTH AT BLDG SETBACK	60 FEET	±735 FEET
MIN. SIDE YARD (AGGREGATE)	N/A	N/A
MIN. SIDE YARD (ONE SIDE)	9 FEET	N/A
MIN. REAR YARD	15 FEET	N/A
MIN. SETBACK FROM STREETS:		
- BLDG. FACE TO LOCAL STREET ULT. R.O.W.	10 FEET	±20 FEET
- BLDG. FACE TO COMMON PARKING AREA	10 FEET	±10.5 FEET
- SURFACE PARKING TO LOCAL STREET ULT. R.O.W.	10 FEET	0 FEET
MIN. BLDG SETBACK FROM TRACT PERIMETER:		
- FROM OTHER RESIDENTIAL TRACTS	100 FEET	±100 FEET
- FROM NON-RESIDENTIAL DISTRICT	20 FEET	±56.5 FEET
MIN. SURFACE PARKING SETBACK FROM TRACT PERIMETER:		
- FROM OTHER RESIDENTIAL TRACTS	100 FEET	±300 FEET
- FROM NON-RESIDENTIAL DISTRICT	20 FEET	±100 FEET
MINIMUM PRINCIPAL BUILDING SPACING		
- FRONT TO FRONT	40 FEET	68 FEET
- REAR TO REAR	30 FEET	30 FEET
- END TO END	20 FEET	20 FEET
- FRONT TO REAR	50 FEET	N/A
- FRONT TO END	40 FEET	67 FEET
- REAR TO END	35 FEET	N/A FEET

PARKING REQUIREMENT

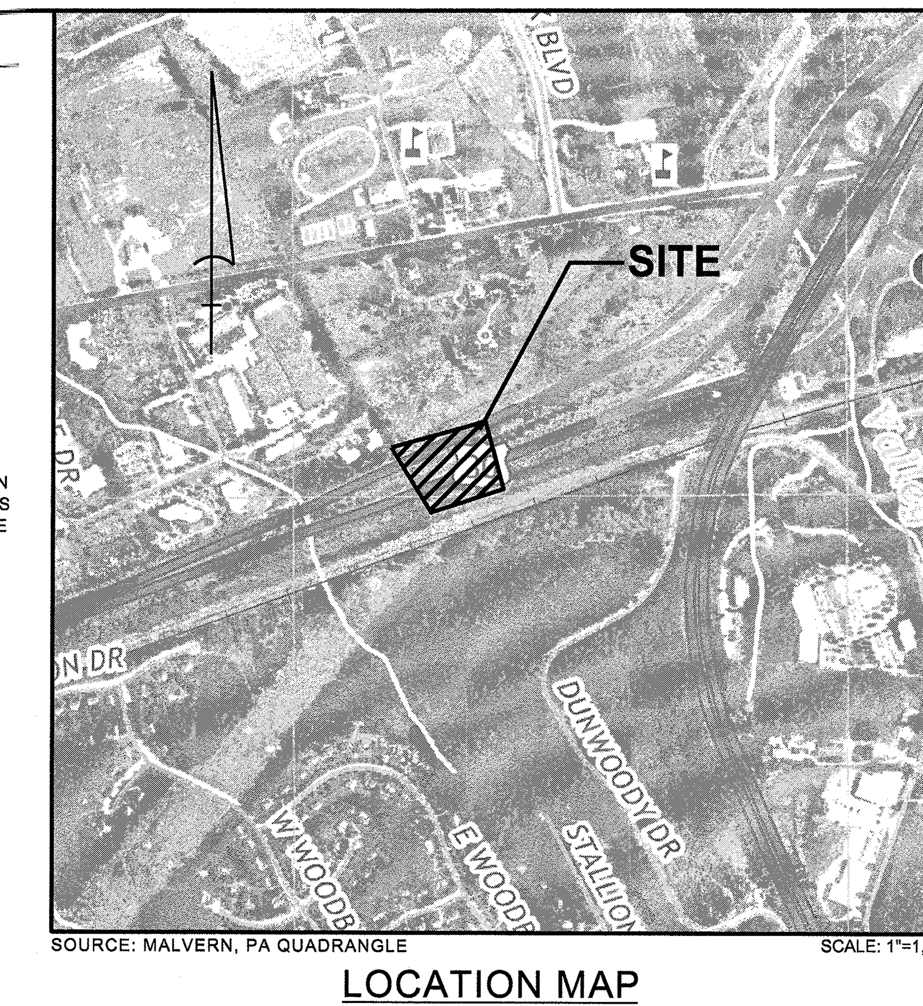
REQUIRED
93 DWELLING UNITS X 2 SPACES/UNIT =186 SPACES

PROPOSED
93 UNITS X 2 GARAGE SPACES = 186 SPACES
93 UNITS X 2 DRIVEWAY SPACES = 186 SPACES
OFF-STREET SPACES = 33 SPACES
TOTAL 405 SPACES

IMPERVIOUS SURFACE COVERAGE:	EXISTING	PROPOSED
	339,248 SF (7.79 AC)	218,577 SF (5.02 AC)

GENERAL NOTES

1. APPLICANT/OWNER: CONSTITUTION DRIVE PARTNERS, LP
   2701 RENAISSANCE BLVD, FOURTH FLOOR
   KING OF PRUSSIA, PA 19406
2. PROPERTY IS KNOWN AS CHESTER COUNTY TAX PARCEL 42-4- 321.2. LOCATED AT 1 MALIN ROAD, EAST WHITELAND TOWNSHIP.
3. BOUNDARY & EXISTING FEATURES OBTAINED FROM "ALTA/ACSM LAND TITLE SURVEY, BISHOP TUBE FOR O'NEILL PROPERTIES," PREPARED BY PENNONI ASSOCIATES, INC., DATED 1/12/05.
4. TOPOGRAPHIC INFORMATION OBTAINED FROM LIDAR DATA PUBLISHED BY PENNSYLVANIA SPATIAL DATA ACCESS (PASDA) AND SUPPLEMENTED WITH FIELD SURVEY INFORMATION OBTAINED BY TAYLOR WISEMAN & TAYLOR, OCTOBER 1, 2018 . VERTICAL DATUM IS NAVD 1988 AS DERIVED FROM GNSS/GPS OBSERVATION UTILIZING THE KEYNET VRS SYSTEM. PROJECT BENCHMARK IS MANHOLE RIM NEAR MALIN ROAD/LANCASTER AVENUE INTERSECTION.
5. GROSS TRACT AREA = 13.71 ACRES
   NET AREA (LESS R.OW.) = 13.58 ACRES
6. BEARINGS SHOWN HEREON ARE REFERENCED TO THE PA STATE PLANE COORDINATE SYSTEM NAD 83 (2011). BEARINGS SHOWN IN [BRACKETS] ARE REPRESENTATIVE OF THE ABOVE REFERENCED ALTA SURVEY BY PENNONI ASSOCIATES. STATE PLANE BEARINGS CALCULATED FROM A BOUNDARY ORIENTATION FIELD SURVEY (GNSS/GPS OBSERVATIONS USING THE KEYNET VRS SYSTEM) MADE BY TAYLOR WISEMAN & TAYLOR (TWT) FIELD PERSONELL ON OCTOBER 1, 2018 AND DOES NOT CONSTITUTE A BOUNDARY SURVEY BY TWT.



SOURCE: MALVERN, PA QUADRANGLE SCALE: 1"=1,500'

LOCATION MAP

VARIANCE GRANTED PER ZONING HEARING BOARD APPEAL No. 2016-24, DATED APRIL 25, 2017:

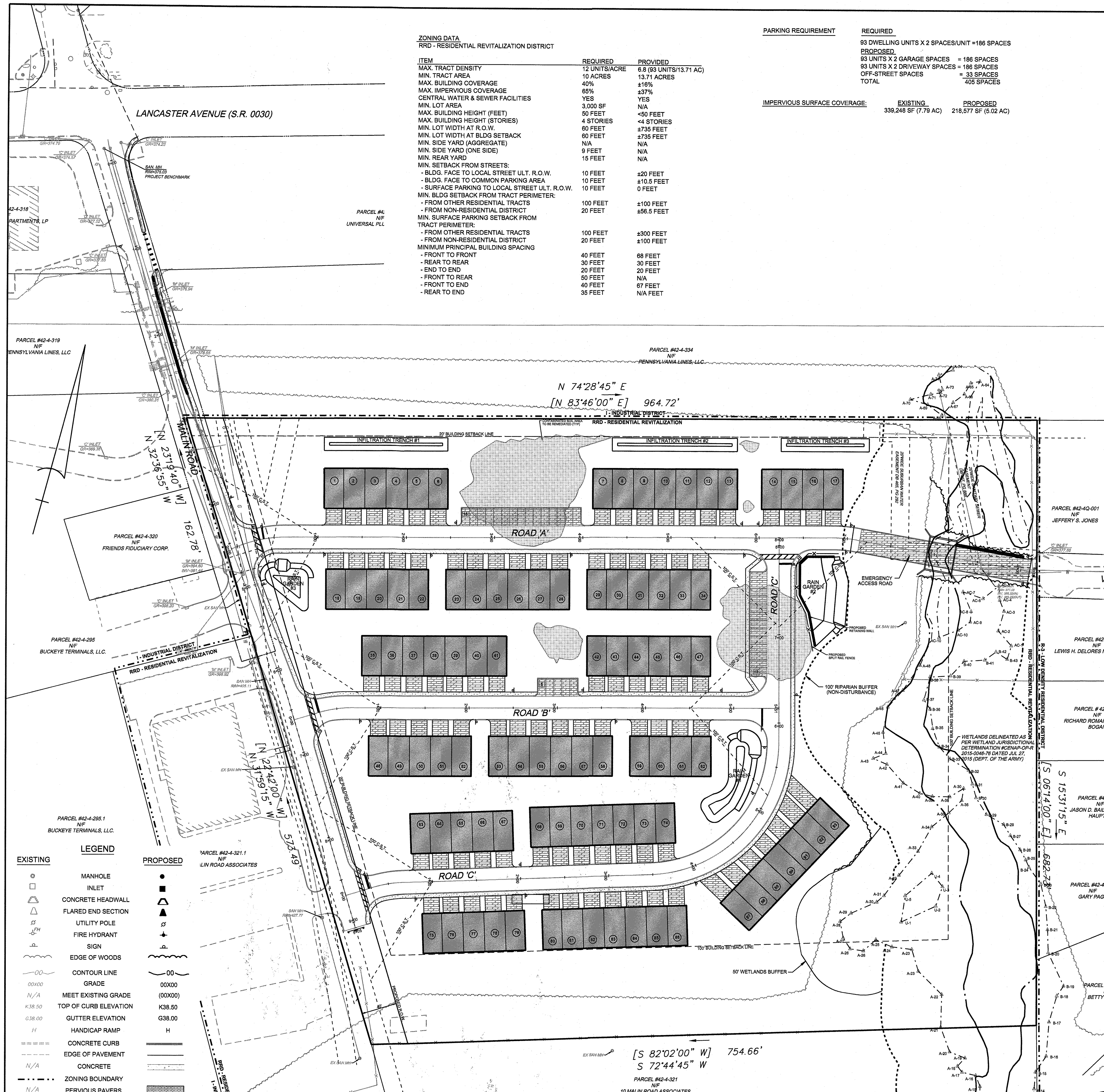
1. VARIANCE FROM SECTION 200-57.C(6) TO ALLOW TOWNHOUSES (INCLUDING UP TO SEVEN (7) WITHIN A SINGLE BUILDING), ROADS, DRIVEWAYS AND UTILITIES TO BE CONSTRUCTED WITHIN AND UPON (i) NATURAL AREAS OF SLOPE BETWEEN 15% AND 25% ("STEEP SLOPES") AND IN EXCESS OF 25% ("VERY STEEP SLOPES") AND (ii) MANMADE AREAS OF SLOPE BETWEEN 15% AND 25% ("MANMADE STEEP SLOPES") AND IN EXCESS OF 25% ("MANMADE VERY STEEP SLOPES") AS DEPICTED ON EXHIBITS A-11 AND A-18 WAS GRANTED.
2. VARIANCE FROM SECTION 200-93.B TO ALLOW A RETAINING WALL TO BE CONSTRUCTED WITH A HEIGHT LIMIT OF 9 FEET.

DESIGN WAIVER REQUEST:

1. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 175-32 F (1) OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE THAT REQUIRES THE ROADWAY TO HAVE A MAXIMUM GRADE OF 7%. THE MAXIMUM CENTERLINE GRADE FOR MALIN ROAD IS 10%, BASED ON EXISTING TOPOGRAPHY.
2. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 175-35 OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE THAT REQUIRES ALL STREETS TO BE CONSTRUCTED WITH UPRIGHT CONCRETE CURB. GRANITE BLOCK CURB IS PROPOSED THROUGHOUT THE PRIVATE STREETS WITHIN THE DEVELOPMENT. MALIN ROAD WILL BE CONSTRUCTED WITH CONCRETE CURBING.
3. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 175-38 C OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE THAT REQUIRES ALL LOTS FRONT ON PUBLIC STREET. ALL LOTS SHALL FRONT ON PRIVATE STREET.
4. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 175-38 G OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE THAT REQUIRES ALL LOTS HAVE DIRECT ACCESS TO PUBLIC STREET. ALL LOTS SHALL FRONT ON PRIVATE STREET.
5. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 170-301 I OF THE EAST WHITELAND TOWNSHIP STORMWATER MANAGEMENT ORDINANCE THAT REQUIRES DIAGONAL;STORM DRAIN CROSSING TO BE MINIMIZED. SOME DIAGONAL STORM DRAIN CROSSINGS ARE PROPOSED TO ELIMINATE STORM INLETS IN FRONT OF DRIVEWAYS.
6. THE APPLICANT REQUESTS A DESIGN WAIVER FROM SECTION 175-31 A OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE THAT REQUIRES A MINIMUM STREET WIDTH OF 32 FEET. THE PROPOSED STREET WIDTH IS 26 FEET, WHICH IS LARGE ENOUGH TO ACCOMMODATE THE EAST WHITELAND TOWNSHIP FIRE TRUCKS.

GENERAL NOTES:

1. PROPERTY TO BE SERVED BY PUBLIC WATER AND SEWER. WATER SERVICE SHALL BE PROVIDED BY AQUA PENNSYLVANIA, INC. SANITARY SEWER SERVICE SHALL BE PROVIDED BY EAST WHITELAND TOWNSHIP.
2. A BLANKET EASEMENT SHALL BE PROVIDED TO EAST WHITELAND TOWNSHIP FOR THE PURPOSE OF ACCESS, INSPECTION, REPAIR, AND MAINTENANCE OF THE SANITARY SEWER SYSTEM. ALL SEWER FACILITIES SHALL BE OFFERED FOR DEDICATION TO EAST WHITELAND TOWNSHIP.
3. ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR CHESTER COUNTY, PENNSYLVANIA, MAP NUMBER 42029C0160F, MAP DATE SEPTEMBER 29, 2006, THERE IS NO FEMA 100-YEAR FLOOD PLAIN LOCATED ON THIS PROPERTY. LIMITS OF THE 100-YEAR FLOOD PLAIN SHOWN PER ANALYSIS PREPARED BY TAYLOR WISEMAN & TAYLOR AND DATED OCTOBER 2018.
4. WETLANDS DELINEATED BY GREAT VALLEY ENVIRONMENTAL, AUGUST 2014. FINAL CONFIGURATION DETERMINED PER SITE WALK WITH ARMY CORPS OF ENGINEERS ON APRIL 17, 2015. SEE APPROVED JURISDICTIONAL DETERMINATION CENAP-OP-R 2015-0046-076 DATED JULY 27, 2015.
5. A BLANKET EASEMENT SHALL BE PROVIDED TO EAST WHITELAND TOWNSHIP AND THE OWNER, THEIR HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSOR AND ASSIGNS, OVER THE PROPOSED PRIVATE ROADWAYS AS SHOWN ON THIS PLAN, FOR ACCESS AND THE USE BY THE TOWNSHIP, ITS RESIDENTS, EMERGENCY VEHICLES, UTILITY COMPANIES AND OTHER SERVICE VEHICLES AS NECESSARY FOR THE CONTINUED SAFETY AND OPERATION OF THE ROADWAY AND UTILITIES CONTAINED WITH THE PROPOSED DEVELOPMENT PARCEL AND OVER ALL GREEN SPACE AND FOR THE CONSTRUCTION AND MAINTENANCE OF ALL STORM WATER MANAGEMENT FACILITIES. THE PROPOSED ROADWAYS AS SHOWN ON THIS PLAN SHALL BE OWNED AND MAINTAINED BY THE CONDOMINIUM ASSOCIATION FOR THE PROPOSED DEVELOPMENT. ALL PROPOSED STREETS AS SHOWN ON THIS PLAN SHALL REMAIN PRIVATELY OWNED IN PERPETUITY AND SHALL NOT BE OFFERED FOR DEDICATION TO EAST WHITELAND TOWNSHIP UPON THE COMPLETION OF CONSTRUCTION OR AT ANY TIME IN THE FUTURE.
6. LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON FIELD SURVEY OF UTILITY MARK-OUTS, FIELD SURVEY OR ABOVE-GROUND, VISIBLE STRUCTURES, AND PLOTTING OF UTILITY INFORMATION CONTAINED IN PLANS AVAILABLE AT THE TIME OF SURVEY, AVAILABLE AS-BUILT PLANS AND UTILITY MARK-OUTS DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, DEPTH, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.
7. RECEIVING WATER CLASSIFICATION: LITTLE VALLEY CREEK EXCEPTIONAL VALUE (EV).
8. THE REQUIRED AS-BUILT PLANS HALL BE PROVIDED TO THE TOWNSHIP FOR REVIEW AND APPROVAL UPON COMPLETION OF CONSTRUCTION AND PRIOR TO THE FULL RELEASE OF ANY FINANCIAL SECURITY.
9. THE SPEED LIMIT FOR ALL PRIVATE STREETS AND THE PORTION OF MALIN ROAD WITHIN THIS DEVELOPMENT IS TO BE POSTED AT 20 MPH. ON-STREET PARKING SHALL NOT BE PERMITTED.
10. NO VISION OBSTRUCTING OBJECTS (FENCES, TREES, ETC.) MAY BE PLACED WITHIN THE PROVIDED CLEAR SIGHT EASEMENTS.
11. ALL BASEMENTS AND/OR SUBGRADE FOUNDATIONS WALLS FOR ALL UNITS SHALL BE WATERPROOFED AS REQUIRED.
12. ALL EXISTING SANITARY MANHOLES AFFECTED BY THE PROPOSED SANITARY SEWER DESIGN SHALL BE REPLACED. THESE STRUCTURES MAY ONLY BE REUSED IF APPROVED BY EAST WHITELAND TOWNSHIP. THE AFFECTED STRUCTURE IS THE SEWER MANHOLE EAST OF THE PROPOSED CULVERT AT THE ROADWAY CONNECTION TO VILLAGE WAY.
13. ALL SANITARY SEWER DESIGN AND CONSTRUCTION SHALL CONFORM TO THE EAST WHITELAND TOWNSHIP STANDARD SPECIFICATIONS FOR CONSTRUCTION OF SANITARY SEWERS. ALL SANITARY SEWER MAINS AND LATERALS SHALL BE TESTED AND WITNESSED BY A TOWNSHIP REPRESENTATIVE PRIOR TO THE TOWNSHIP ISSUING A USE OF OCCUPANY PERMIT.
14. SHOP DRAWING SUBMITTALS FOR ALL PROPOSED SANITARY SEWER IMPROVEMENTS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE EAST WHITELAND TOWNSHIP ENGINEER.
15. ENGINEERED DESIGN CALCULATIONS AND PLAN SHALL BE SUBMITTED TO THE TOWNSHIP FOR REVIEW/APPROVAL FOR THE PROPOSED RETAINING WALLS PRIOR TO CONSTRUCTION.
16. FOR NEW DEVELOPMENT WITHIN THE RIPARIAN BUFFER AREA (RBA), NO DISTURBANCE OF VEGETATION AND SOIL EXCEPT FOR RESTORATION AND/OR REFORESTATION SHALL OCCUR. WHERE PROHIBITIVE SLOPES OF 25% OR GREATER ARE LOCATED WITHIN THE DESIGNATED AREA, THE RBA SHALL BE INCREASED IN WIDTH SUCH THAT, AT ANY LOCATION, THE MINIMUM WIDTH OF DESIGNATED AREA WITH SLOPES LESS THAN 25% IS 25 FEET. FORESTED AND UNFORESTED VEGETATION SHALL BE ESTABLISHED THROUGH NATURAL SUCCESSION. SELECTIVE PLANTING SHALL BE INCORPORATED ON SITES DEVOID OF VEGETATION TO STIMULATE NATIVE SPECIES AND DISCOURAGE INVASIVE SPECIES. PLANT SELECTION AND PLANTING SHALL BE CONSISTENT WITH THE CHESTER COUNTY CONSERVATION DISTRICT, PADEP AND THE USDA RIPARIAN FORESTED BUFFER GUIDELINES. RIPARIAN BUFFER AREAS SHALL BE RESTRICTED TO THE FOLLOWING USES: FLOOD CONTROL, UTILITY RIGHT-OF-WAYS, PEDESTRIAN TRAILS, PASSIVE RECREATIONAL USES, STREET CROSSINGS, AND STORMWATER BMPS. TREE REMOVAL IN AN RBA SHALL REQUIRE PRIOR TOWNSHIP APPROVAL IN WRITING. RIPARIAN BUFFER AREAS SHALL BE PRESERVED OR RESTORED WITH NATIVE VEGETATION THAT CAN BE MAINTAINED THROUGH THE DELINEATION, PLAN REVIEW AND PERMITTING PROCESS, CONSTRUCTION, AND OCCUPANCY STAGES OF THE PROJECT.
17. THE EROSION AND SEDIMENT CONTROL PLAN IS SHEET 13 AND THE ASSOCIATED COMPUTATIONS CAN BE FOUND IN SECTION 2 OF THE EROSION & SEDIMENT CONTROL REPORT. ALL PROPOSED CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA). FOR HANDICAP CONSTRUCTION REFER TO THE DETAILS ON SHEET 21.
18. IN GENERAL, THE VERTICAL DESIGN OF PROPOSED GRAVITY UTILITIES, AS SHOWN, ARE INFLUENCED BY THE EXISTING GRAVITY UTILITIES ONLY, WHICH MAY NECESSITATE THE RELOCATIONS OF OTHER UTILITIES. UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.
19. GAS, ELECTRIC, TELEPHONE, CABLE TV AND STREET LIGHTING SHALL BE INSTALLED UNDERGROUND THROUGHOUT THE SITE IN ACCORDANCE WITH REGULATIONS OF THE LOCAL UTILITY COMPANIES.
20. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. SIGN MATERIALS SHALL BE MADE OF REFLECTIVE SHEETING ON ALUMINUM BLANKS MOUNTED ON STEEL U-CHANNEL POSTS.
21. THE APPLICANT WILL PAY A FEE IN LIEU OF DEDICATING LAND FOR PARK, OPEN SPACE AND RECREATIONAL (POR) USE, IN ACCORDANCE WITH SECTION 175-40 B OF THE EAST WHITELAND TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.



LEGEND

EXISTING		PROPOSED
◎	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
	FLARED END SECTION	
ø	UTILITY POLE	ø
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	
	ZONING BOUNDARY	
N/A	PERVIOUS PAVERS	
	CONTAMINATED SOIL	

APPROVED BY RESOLUTION OF THE BOARD OF SUPERVISORS OF EAST WHITELAND TOWNSHIP THIS __________ DAY OF ________________, 20___.

CHAIRMAN

VICE CHAIRMAN

MEMBER

REVIEWED BY THE PLANNING COMMISSION OF THE EAST WHITELAND TOWNSHIP THIS __________ DAY OF ______________, 20___.

CHAIRMAN

VICE CHAIRMAN

SECRETARY

REVIEWED BY THE EAST WHITELAND TOWNSHIP ENGINEER

TOWNSHIP ENGINEER DATE

REVIEWED BY THE CHESTER COUNTY PLANNING COMMISSION THIS _________ DAY OF ____________, 20 ___.

DIRECTOR DATE

COMMONWEALTH OF PENNSYLVANIA :
:SS
COUNTY OF MONTGOMERY :

ON THE _____ DAY OF _________ A.D. 20__, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, APPEARED ________________, WHO ACKNOWLEDGES HIMSELF TO BE ________________ OF CONSTITUTION DRIVE PARNERS, LP A LIMITED PARTNERSHIP, AND AS SUCH BEING AUTHORIZED TO DO SO, HE EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING THE NAME OF THE CORPORATION BY HIMSELF.

BY: ____________________
OWNER

IN WITNESS WHEREOF, I HEREUN TO SET MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
STOP - CALL BEFORE YOU DIG!
SITE ID: 20182813492

THE CONTRACTOR AND/OR OWNER SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES AND UTILITIES, WHICH HE DEEMS NECESSARY, BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE HEAVY EQUIPMENT ENTERS THE CONSTRUCTION SITE.

FINAL INQUIRIES TO PENNSYLVANIA ONE CALL SYSTEM INC." (PHONE #: 1-800-242-1776) SHALL BE MADE BY THE CONTRACTOR AND/OR OWNER WITHIN SEVEN (7) DAYS OF ENTERING THE SITE. THE CONTRACTOR AND/OR OWNER SHALL COORDINATE AND VERIFY THE METHOD OF UTILITY LOCATION WITH THE APPROPRIATE UTILITY COMPANIES.

IN GENERAL, THE VERTICAL DESIGN OF PROPOSED GRAVITY UTILITIES, AS SHOWN, ARE INFLUENCED BY THE EXISTING GRAVITY UTILITIES ONLY, WHICH MAY NECESSITATE THE RELOCATIONS OF OTHER UTILITIES.

UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.

60 30 0 60 120 180 240
GRAPHIC SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS
		NO. DATE

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARK M. THOMPSON ENGINEER PE073278
PA. PROFESSIONAL ENGINEER NO. PE073278

OVERALL RECORD PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 60'	SEPTEMBER 22, 2018	018-06476-LD	4 OF 24

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PARCEL #42-4-319
N/F
VANIA LINES, LLC

PARCEL #42-4-334
N/F
PENNSYLVANIA LINES, LLC

N 74°28'45" E
[N 83°46'00" E] 964.72'

I - INDUSTRIAL DISTRICT

RRD - RESIDENTIAL REVITALIZATION

MALIN ROAD

[N 23°19'40" W]
N 32°36'55" W
162.78'

PARCEL #42-4-320
N/F
FRIENDS FIDUCIARY CORP.

PARCEL #42-4-295
N/F
BUCKEYE TERMINALS, LLC.

I - INDUSTRIAL DISTRICT

RRD - RESIDENTIAL REVITALIZATION

CONTAMINATED SOIL AREA TO BE REMEDIATED (TYP)

20' BUILDING SETBACK LINE

INFILTRATION TRENCH #1

INFILTRATION TRENCH #2

INFILTRATION TRENCH #3

ROAD 'A'

ROAD 'B'

ROAD 'C'

5' WIDE SIDEWALK

BELGIAN BLOCK CURB

CONCRETE CURB

RAIN GARDEN #1

RAIN GARDEN #2

RAIN GARDEN #3

PROPOSED RETAINING WALL

PROPOSED SPLIT RAIL FENCE

100' RIPARIAN BUFFER (NON-DISTURBANCE)

WETLANDS DELINEATED AS PER WETLAND JURISDICTIONAL DETERMINATION #CENAP-OP-R 2015-0046-76 DATED JUL 27, 2015 (DEPT. OF THE ARMY)

100' WETLANDS SETBACK

50' WETLANDS BUFFER

100' BUILDING SETBACK LINE

20' BUILDING SETBACK LINE

20' WIDE SUBURBAN WATER EASEMENT BK 1405, PG 292

20' WIDE EASEMENT BK 1405, PG 285

20' WIDE SANITARY SEWER EASEMENT

EMERGENCY ACCESS ROAD

48 LF 4' X 30' PRECAST CONSPAN ARCH OPEN BOTTOM

PROPOSED 40' WIDE RIGHT-OF-WAY OFFERED TO EAST WHITELAND TOWNSHIP AREA = 23,810 SF (0.55 Ac.)

20' WIDE PRIVATE ACCESS RIGHT-OF-WAY AS PER DEED BK 1038, PG 132

TYPE III BREAKAWAY BARRICADE

PARCEL #42-4-321.1
N/F
10 MALIN ROAD ASSOCIATES

PARCEL #42-4-295.1
N/F
BUCKEYE TERMINALS, LLC.

[S 82°02'00" W]
S 72°44'45" W
754.66'

PARCEL #42-4-321
N/F
10 MALIN ROAD ASSOCIATES

PARCEL #42-4Q-001
N/F
JEFFERY S. JONES

PARCEL #42-4Q-002
N/F
SHARON ELAINE CONNOR

PARCEL #42-4Q-003
N/F
CECIL O. MOORE

VILLAGE WAY

FAHNESTOCK ROAD

R-3 - LOW DENSITY RESIDENTIAL DISTRICT

RRD - RESIDENTIAL REVITALIZATION

PARCEL #42-4Q-96
N/F
LEWIS H. DELORES M. HITCHCOCK

PARCEL #42-4Q-025
N/F
CHARLES & JANICE DUFFY

PARCEL # 42-4Q-97
N/F
RICHARD ROMAIN & LAURA BOGAN

PARCEL #42-4Q-024
N/F
JEANETTE HOOVEN

PARCEL #42-4Q-98
N/F
JASON D. BAILY & AMY R. HAUPTLY

PARCEL #42-4Q-023
N/F
ANGELA CLAYTON SMI

PARCEL #42-4Q-99
N/F
GARY PAGE

PARCEL #42-4Q-100
N/F
BETTY J. CLOUD

PARCEL #42-4Q-101
N/F
VINCENT & CAROLE BUETTNER

S 15°31'15" E
[S 06°14'00" E]
682.73'

LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WL	WATER SERVICE	W
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
BV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	
	CLEAR SITE TRIANGLE	100' C.S.T.
	STOP BAR	
	PEDESTRIAN CROSSWALK	
	CONTAMINATED SOIL	
	ZONING BOUNDARY	

SITE ID: 20182813492

THE CONTRACTOR AND/OR OWNER SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES AND UTILITIES, WHICH HE DEEMS NECESSARY, BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE HEAVY EQUIPMENT ENTERS THE CONSTRUCTION SITE.

FINAL INQUIRIES TO PENNSYLVANIA ONE CALL SYSTEM, INC." (PHONE #: 1-800-242-1776) SHALL BE MADE BY THE CONTRACTOR AND/OR OWNER WITHIN SEVEN (7) DAYS OF ENTERING THE SITE. THE CONTRACTOR AND/OR OWNER SHALL COORDINATE AND VERIFY THE METHOD OF UTILITY LOCATION WITH THE APPROPRIATE UTILITY COMPANIES.

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40 20 0 40 80 120 160

GRAPHIC SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS
		NO. DATE

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA
ENGINEER
PE073278
PA PROFESSIONAL ENGINEER No. PE073278

RECORD PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
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PARCEL #42-4-319
N/F
VANIA LINES, LLC

PARCEL #42-4-334
N/F
PENNSYLVANIA LINES, LLC

PARCEL #42-4-320
N/F
FRIENDS FIDUCIARY CORP.

PARCEL #42-4-295
N/F
BUCKEYE TERMINALS, LLC.

PARCEL #42-4-295.1
N/F
BUCKEYE TERMINALS, LLC.

PARCEL #42-4-321.1
N/F
10 MALIN ROAD ASSOCIATES

PARCEL #42-4-321
N/F
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JEFFERY S. JONES

PARCEL #42-4Q-002
N/F
SHARON ELAINE CONNOR

PARCEL #42-4Q-003
N/F
CECIL O. MOORE

PARCEL #42-4Q-96
N/F
LEWIS H. DELORES M. HITCHCOCK

PARCEL #42-4Q-025
N/F
CHARLES & JANICE DUFFY

PARCEL # 42-4Q-97
N/F
RICHARD ROMAIN & LAURA BOGAN

PARCEL #42-4Q-024
N/F
JEANETTE HOOVEN

PARCEL #42-4Q-98
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JASON D. BAILY & AMY R. HAUPTLY

PARCEL #42-4Q-023
N/F
ANGELA CLAYTON SMIT

PARCEL #42-4Q-99
N/F
GARY PAGE

PARCEL #42-4Q-100
N/F
BETTY J. CLOUD

PARCEL #42-4Q-101
N/F
VINCENT & CAROLE BUETTNER

MALIN ROAD

VILLAGE WAY

FAHNESTOCK ROAD

ROAD 'A'

ROAD 'B'

ROAD 'C'

INFILTRATION TRENCH #1

INFILTRATION TRENCH #2

INFILTRATION TRENCH #3

RAIN GARDEN #1

RAIN GARDEN #2

RAIN GARDEN #3

EMERGENCY ACCESS ROAD

EMERGENCY ACCESS ROAD GATE

PROPOSED RETAINING WALL

PROPOSED CHAIN LINK FENCE

100' RIPARIAN BUFFER (NON-DISTURBANCE)

50' WETLANDS BUFFER

WETLANDS DELINEATED AS PER WETLAND JURISDICTIONAL DETERMINATION #CENAP-OP-R 2015-0046-79 DATED JUL 27, 2015 (DEPT. OF THE ARMY)

20' WIDE PRIVATE ACCESS RIGHT-OF-WAY AS PER DEED BK 1038, PG 132

CONTAMINATED SOIL AREA TO BE REMEDIATED (TYP)

SUNOCO PIPELINE L.P. MARKER

PECO GASLINE MARKER

LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
△	FLARED END SECTION	▲
	UTILITY POLE	
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WS	WATER SERVICE	W
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
BV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

SITE ID: 20182813492

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40 20 0 40 80 120 160

GRAPHIC SCALE

DESIGNED: MJW | DRAWN: JAS | CHECKED: MMT

DATE SIGNED:

REVISIONS

NO.	DATE

MARK M. THOMPSON

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK M. THOMPSON PE073278

PA. REGISTERED ENGINEER NO. PE073278

GRADING PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE: 1" = 40' | DATE: SEPTEMBER 22, 2018 | DRAWING NO. 018-06476-LD | SHEET: 6 OF 24

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LEGEND

EXISTING		PROPOSED
	MANHOLE	
	INLET	
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WL	WATER SERVICE	
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	
N/A	POROUS PAVERS	

ROOF DRAIN CONNECTIONS:

1. UNITS 1-6 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INFILTRATION TRENCH #1.
2. UNITS 7-13 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INFILTRATION TRENCH #2.
3. UNITS 14-17 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INFILTRATION TRENCH #3.
4. UNITS 48-52 AND 63-67 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INLET #100.
5. UNITS 53-58 AND 68-74 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INLET #101.
6. UNITS 59-61 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO RAIN GARDEN #1.

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
STOP-CALL BEFORE YOU DIG!
SITE ID: 20182813492

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PA. PROFESSIONAL ENGINEER NO. PE073278

UTILITY PLAN

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1 MALIN ROAD

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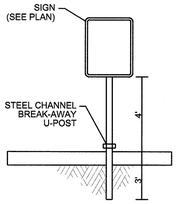
24"x 30"
R2-1
SPEED LIMIT SIGN

12"x18"
R8-31

12"x6"
R7-201

24"x36"
R5-101

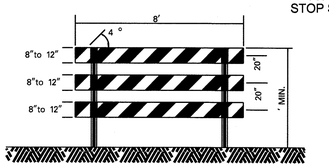
30"x30"
R3-7-1R



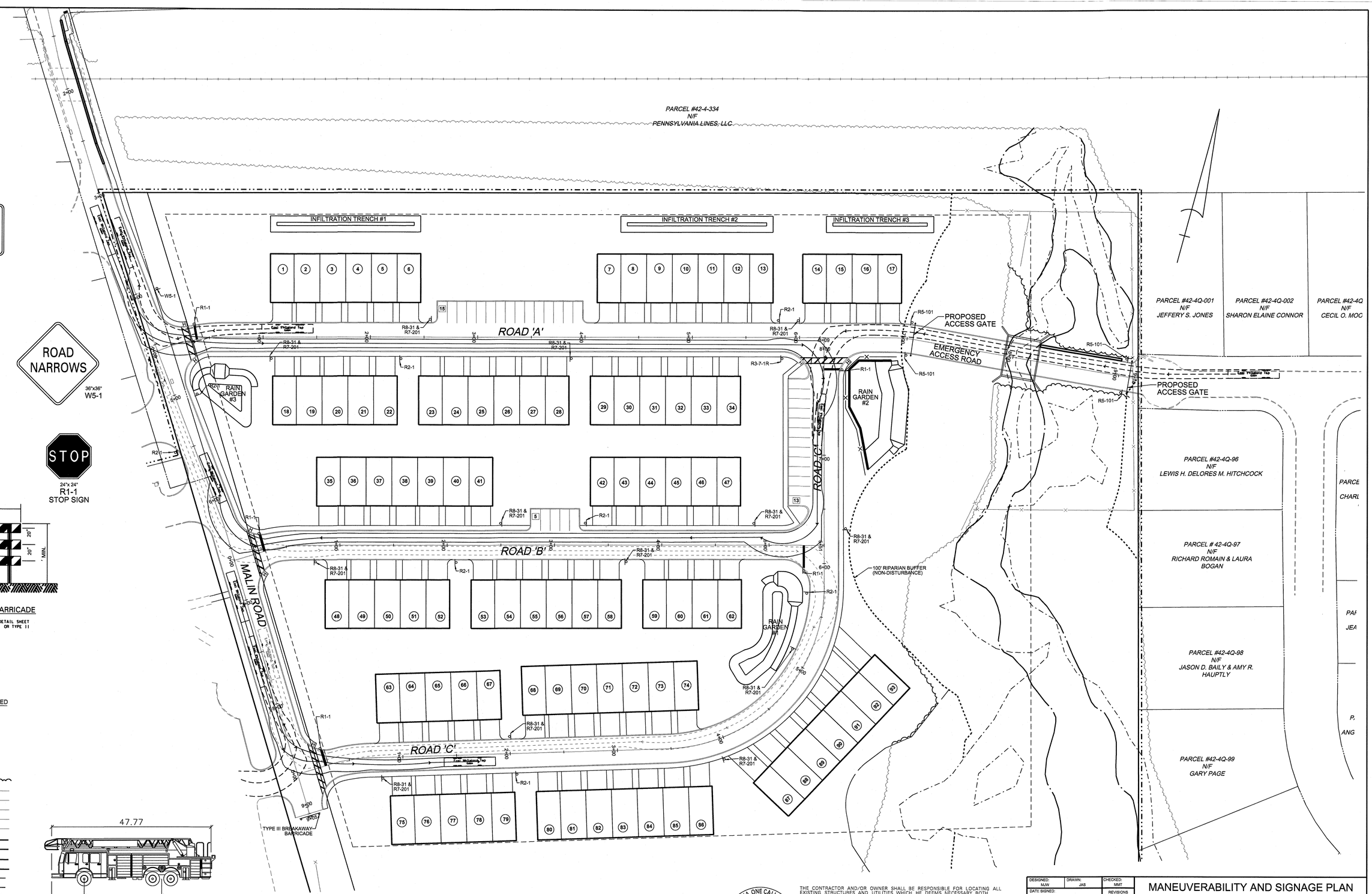
HANDICAP SIGN

36"x36"
W5-1

24"x 24"
R1-1
STOP SIGN



TYPE III BREAKAWAY BARRICADE
NOT TO SCALE
REFER TO N.J.D.O.T. CONSTRUCTION DETAIL SHEET
CD - 33. CROSS REFERENCE TYPE I OR TYPE II
BREAKAWAY BARRICADE



LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
⏢	CONCRETE HEADWALL	⏢
⏢	FLARED END SECTION	⏢
⌀	UTILITY POLE	⌀
FH	FIRE HYDRANT	FH
S	SIGN	S
~~	EDGE OF WOODS	~~~
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WL	WATER SERVICE	W
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
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K38.50	TOP OF CURB ELEVATION	K38.50
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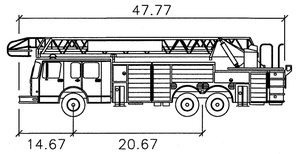
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	



East Whiteland Twp

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP - CALL BEFORE YOU DIG!

SITE ID: 20182813492

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40 20 0 40 80 120 160

GRAPHIC SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS

NO.	DATE

MARK M. THOMPSON
REGISTERED PROFESSIONAL ENGINEER
PA. PROFESSIONAL ENGINEER NO. PE073278

MANEUVERABILITY AND SIGNAGE PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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1" = 40'	SEPTEMBER 22, 2018	018-06476-LD	8 OF 24

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LANDSCAPE SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE/ROOTS/REMARKS
AR	Acer rubrum 'October Glory'	OCTOBER GLORY MAPLE	19	2 1/2-3" cal., 12-14'ht., B&B
AS	Acer saccharum	SUGAR MAPLE	5	2 1/2-3" cal., 12-14'ht., B&B
CS	Catalpa speciosa	NORTHERN CATALPA	11	2 1/2-3" cal., 12-14'ht., B&B
GT	Gleditsia triacanthos var. inermis	THORNLESS HONEYLOCUST	17	2 1/2-3" cal., 12-14'ht., B&B
LS	Liquidambar styraciflua 'Rotundiloba'	SWEETGUM	11	2 1/2-3" cal., 12-14'ht., B&B
NS	Nyssa sylvatica	BLACKGUM	12	2 1/2-3" cal., 12-14'ht., B&B
QR	Quercus rubra	RED OAK	18	2 1/2-3" cal., 12-14'ht., B&B
ZS	Zelkova serrata	JAPANESE ZELKOVA	29	2 1/2-3" cal., 12-14'ht., B&B
EVERGREEN TREES:				
CD	Cedrus deodara	HIMALAYAN CEDAR	11	6-7' HT., B&B
JV	Juniperus virginiana	EASTERN RED CEDAR	5	6-7' HT., B&B
IN	Ilex x Nellie Stevens	NELLIE STEVENS HOLLY	12	6-7' HT., B&B
IO	Ilex opaca	AMERICAN HOLLY	11	6-7' HT., B&B
IR	Ilex x Robin	ROBIN HOLLY	10	6-7' HT., B&B
PA	Picea abies	NORWAY SPRUCE	26	7-8' HT., B&B
PP	Picea pungens	COLORADO BLUE SPRUCE	20	7-8' HT., B&B
PS	Pinus strobus	WHITE PINE	63	7-8' HT., B&B
UNDERSTORY TREES:				
AC	Amelanchier canadensis	SERVICEBERRY	9	1-1 1/2" cal., B&B
MV	Magnolia virginiana	SWEETBAY MAGNOLIA	7	1-1 1/2" cal., B&B; MULTI-TRUNK
SHRUBS				
CH	Clethra alnifolia 'Hummingbird'	COMPACT SWEET PEPPERBUSH	35	18-24" ht., B&B
IG	Ilex glabra 'Compacta'	COMPACT INKBERRY	18	18-24" ht., B&B
VC	Viburnum trilobum 'Bailey's Compact'	CRANBERRYBUSH VIBURNUM	21	30-36" ht., B&B
VR	Viburnum rhytidophyllum 'Cree'	CREE' LEATHERLEAF VIBURNUM	29	30-36" ht., B&B
GROUNDCOVER				
CA	Carex amphibola	CREEK SEDGE	354	5" PLUG
CE	Carex emoryi	EMORY'S SEDGE	146	5" PLUG

LANDSCAPE REQUIREMENTS:

PER THE EAST WHITELAND TOWNSHIP, PENNSYLVANIA ZONING ORDINANCE.

	REQUIRED	PROPOSED
SECTION 175-30(D): STREET TREES REQUIREMENT - 2,891.11 LF STREET FRONTAGE, STAGGERED ALONG BOTH SIDES AND SPACED ON FORTY-FOOT CENTERS	73 STREET TREES	73 STREET TREES*
SECTION 175-41(D)(1): NEW TREES REQUIREMENT - MIN. (1) DECIDUOUS TREE & (1) CONIFEROUS TREE PER 5,000 S.F. LOT AREA - (93) UNITS @ (1,800) S.F. PER UNIT (LOT) = 167,400 S.F.	**REQUIRED**	**PROPOSED**
	(34) DECIDUOUS TREES (34) CONIFEROUS TREES	(34) SHADE & ORNAMENTAL TREES (34) EVERGREEN TREES
SECTION 200-61: LANDSCAPE BUFFER REQUIREMENT - NORTH PROPERTY LINE - 964 L.F. (NEIGHBORING DISTRICT = I - INDUSTRIAL) - WEST PROPERTY LINE - 256 L.F. / 480 L.F. (NEIGHBORING DISTRICTS = I - INDUSTRIAL / RRD - RESIDENTIAL) - SOUTH PROPERTY LINE - 755 L.F. (NEIGHBORING DISTRICT = RRD - RESIDENTIAL) - EAST PROPERTY LINE - 683 L.F. (NEIGHBORING DISTRICT = RRD - RESIDENTIAL)	**REQUIRED**	**PROPOSED**
	(0) TREES	(0) TREES
	(0) TREES	(0) TREES
	(0) TREES	(0) TREES
	(0) TREES	(0) TREES

* WAIVER FOR PLANTING STREET TREES IN OTHER OPEN AREAS; DRIVEWAYS, UTILITIES, AND SIDEWALKS PREVENT THE INSTALLATION OF TREES NEAR ROADWAY.

NOTES:
1. SEE 'LANDSCAPE PLAN AND DETAILS', SHEET 22, FOR RAIN GARDEN PLANTING ENLARGEMENTS AND SEEDING MIXTURES FOR RAIN GARDEN AND RIPARIAN BUFFER.
2. ALL PROPOSED STREET TREES ARE TO BE PLANTED 40 FT O.C. AND A MINIMUM OF 5 FT AWAY FROM ANY CURBS, EASEMENTS, OR UTILITIES TO AVOID CONFLICTS.
3. ALL PROPOSED VEGETATION ARE TO BE PLANTED A MINIMUM OF 5 FT AWAY FROM ANY CURBS, EASEMENTS, OR UTILITIES TO AVOID CONFLICTS.
4. TREE PLANTINGS SHOWN WITHIN EXISTING TREELINE SHALL BE PLANTED WITHIN BARE SPOTS OF THE WOODLAND. PLANTING LOCATIONS TO BE FIELD VERIFIED BY LANDSCAPE ARCHITECT.

LEGEND:

- PROPOSED STREET TREE
- PROPOSED SHADE TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREENS
- PROPOSED SHRUBS
- PROPOSED GRASSES
- RIPARIAN BUFFER ZONE 1
- RIPARIAN BUFFER ZONE 2
- RIPARIAN BUFFER ZONE 3
- TREE PROTECTION FENCE

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40 20 0 40 80 120 160
GRAPHIC SCALE

DESIGNED: CBS | DRAWN: MRL | CHECKED: CBS
DATE SIGNED: 10.9.18
REVISIONS:

NO.	DATE

CECILIA B. WISE SCHMIDT
PA CERTIFIED LANDSCAPE ARCHITECT NO. LA000952E

LANDSCAPE PLAN & DETAILS

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1 MALIN ROAD
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1" = 40'	SEPTEMBER 22, 2018	018-08476-LD	9 OF 24

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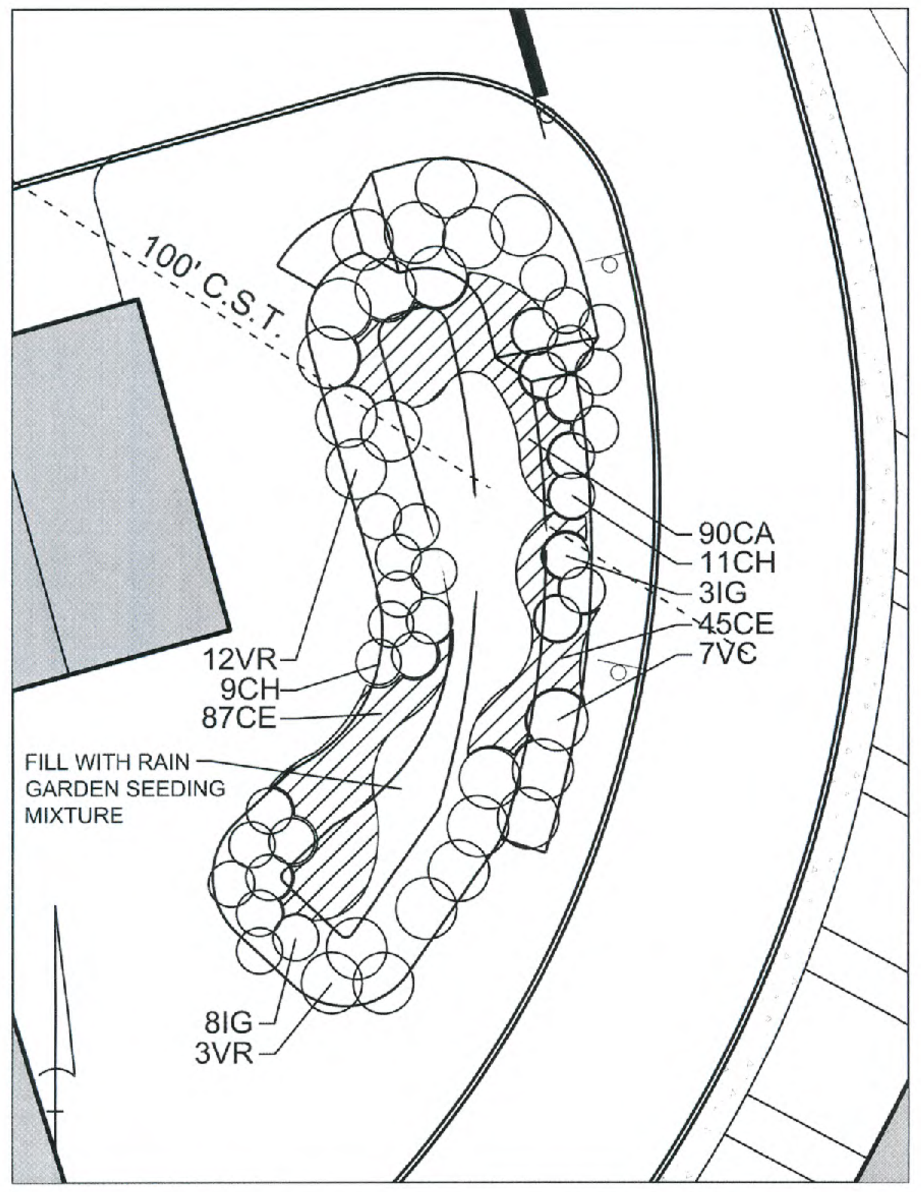
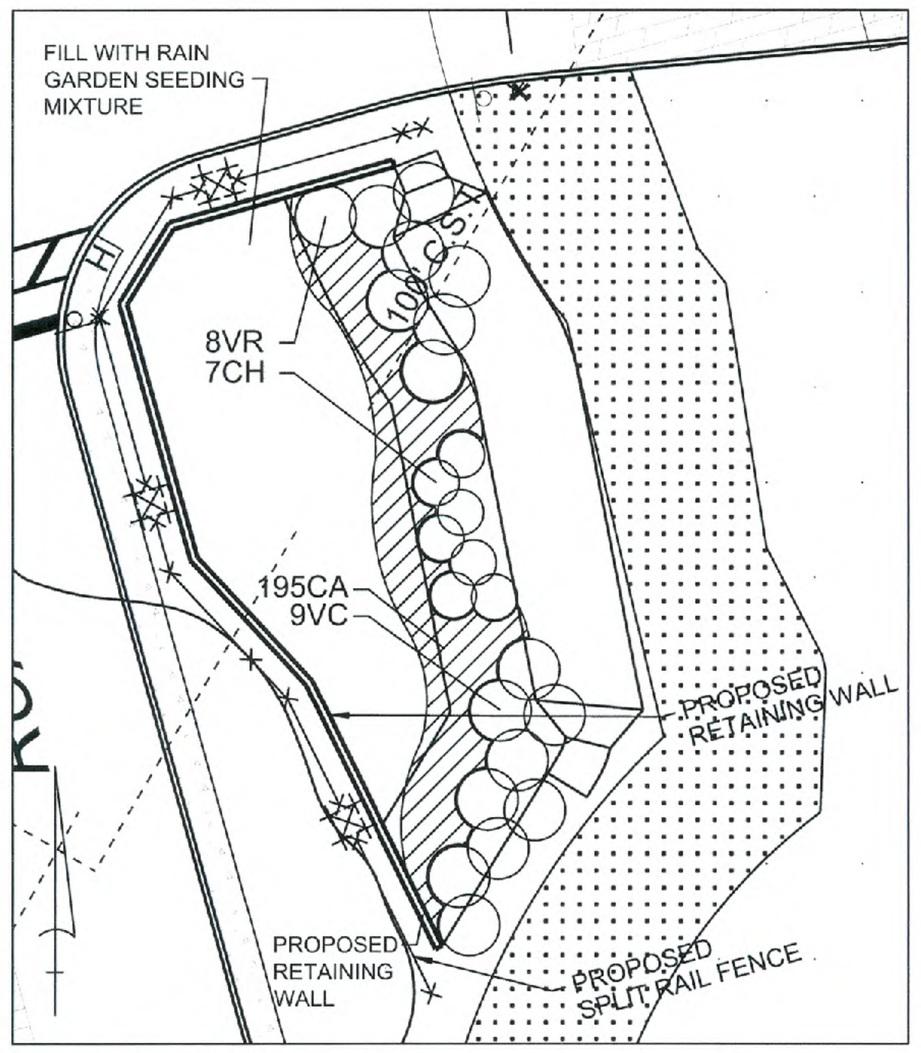


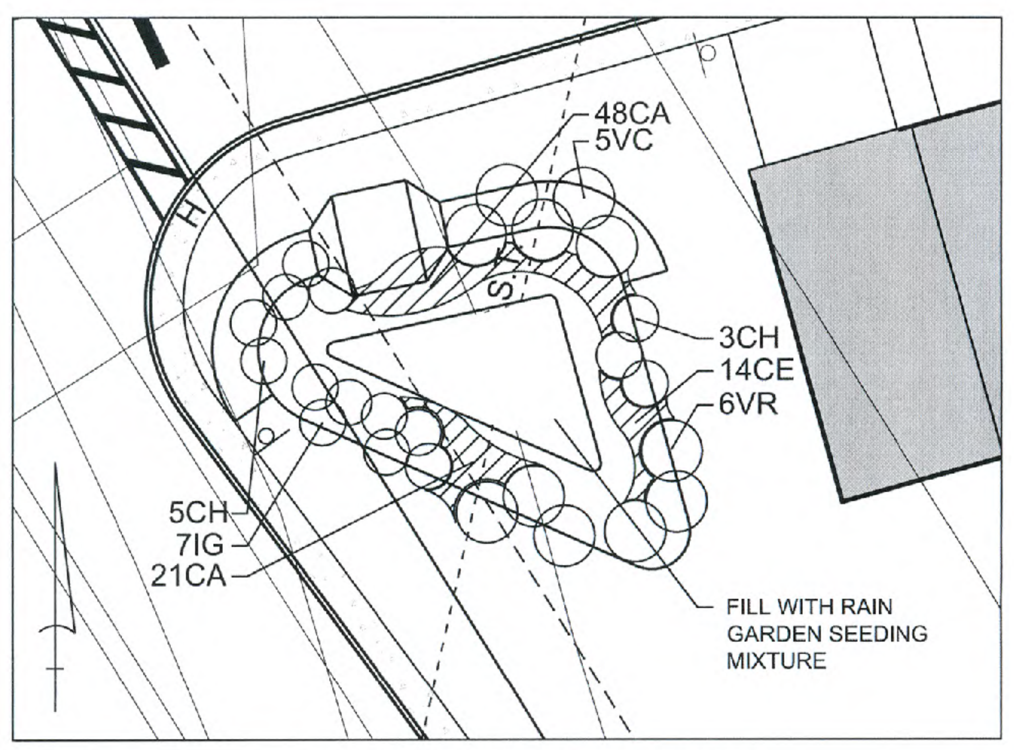
RAIN GARDEN #1 ENLARGEMENT

NOTE: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE SCALE: 1" = 20'



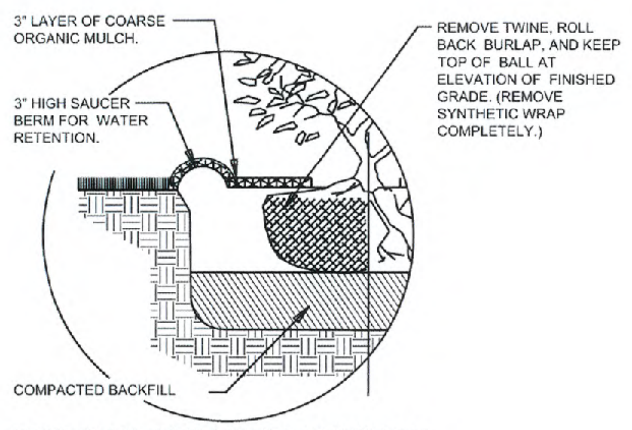
RAIN GARDEN #2 ENLARGEMENT

NOTE: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE SCALE: 1" = 20'

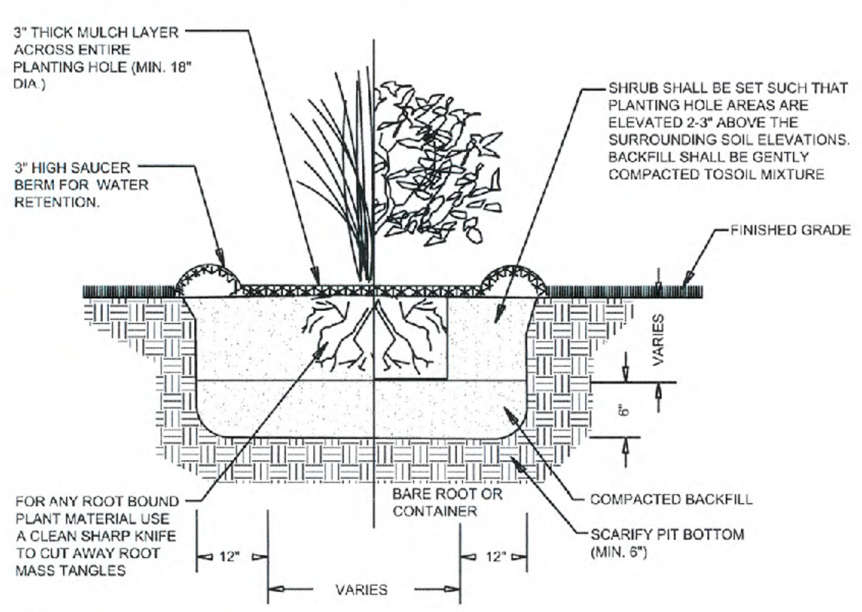


RAIN GARDEN #3 ENLARGEMENT

NOTE: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE SCALE: 1" = 20'



FOR B&B SHRUB PLANTINGS

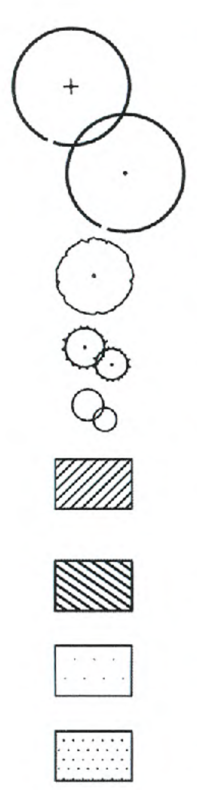


NOTE:
A CONTAINER SHRUB SHALL BE IN THAT CONTAINER SUFFICIENT TIME THAT FIBROUS ROOTS ARE FORMED SO THAT THE SHAPE WILL REMAIN AND THE MEDIUM WILL HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER

SHRUB / GRASS PLANTING DETAIL

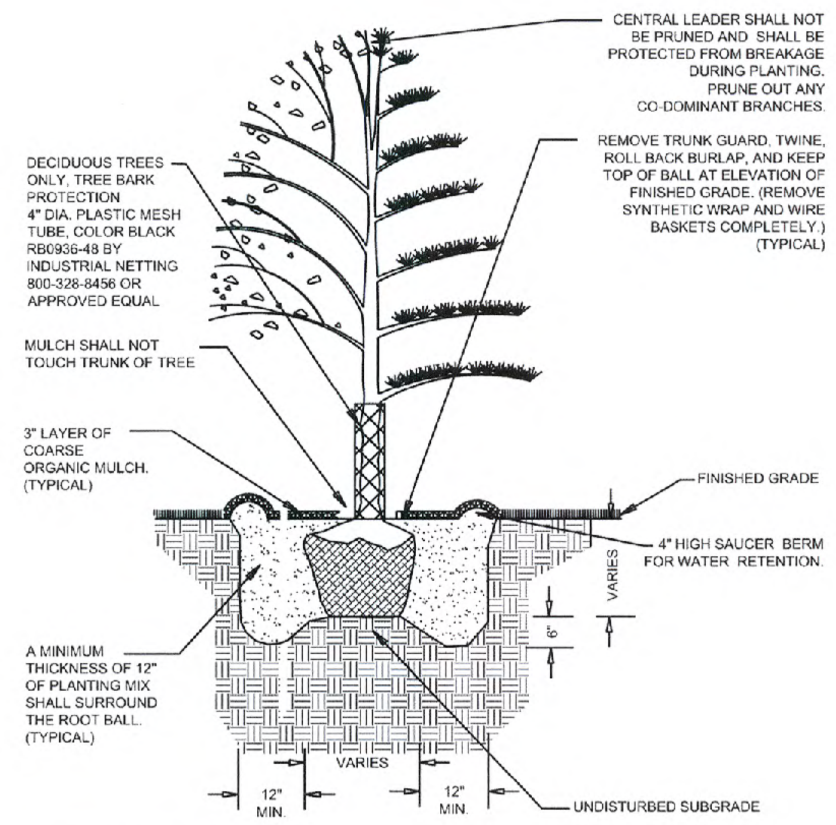
FOR B&B and CONTAINER GROWN PLANTS N.T.S.

LEGEND:



PROPOSED STREET TREE
PROPOSED SHADE TREE
PROPOSED ORNAMENTAL TREE
PROPOSED EVERGREENS
PROPOSED SHRUBS
PROPOSED GRASSES
RIPARIAN BUFFER ZONE 1
RIPARIAN BUFFER ZONE 2
RIPARIAN BUFFER ZONE 3

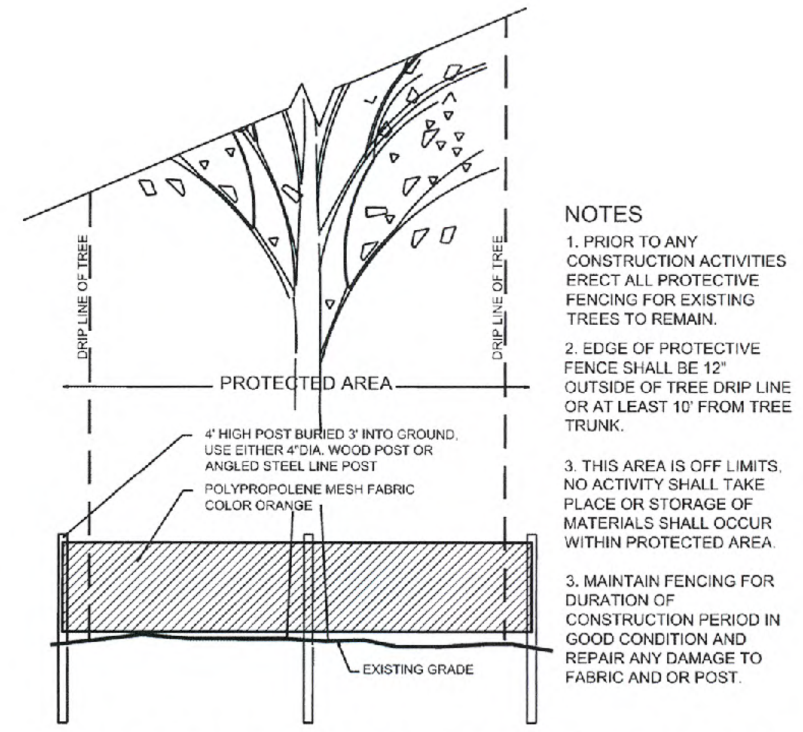
NOTE: ALL PROPOSED VEGETATION ARE TO BE PLANTED A MINIMUM OF 5 FT AWAY FROM ANY CURBS, EASEMENTS, OR UTILITIES TO AVOID CONFLICTS.



ALL STREET TREES TO HAVE A STRAIGHT TRUNK TO 9'HT AND LIMBED UP TO 7'HT.
IF PLANTING AREA IS COMPACTED, DIG A WIDER PLANTING HOLE.

TREE PLANTING DETAIL

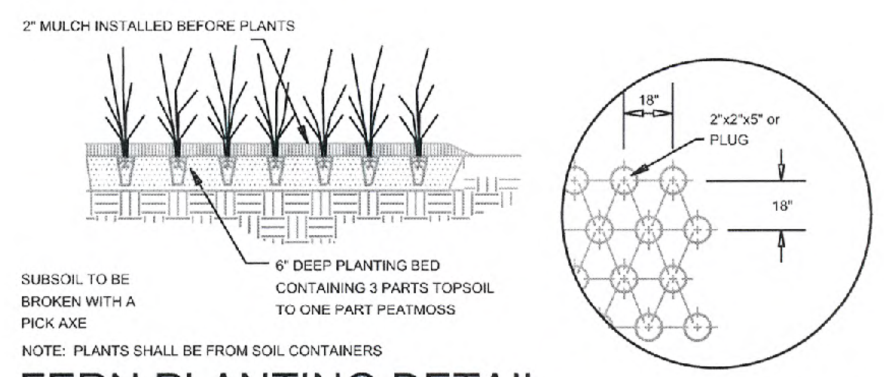
SHADE AND EVERGREEN TREES N.T.S.



NOTES
1. PRIOR TO ANY CONSTRUCTION ACTIVITIES ERECT ALL PROTECTIVE FENCING FOR EXISTING TREES TO REMAIN.
2. EDGE OF PROTECTIVE FENCE SHALL BE 12" OUTSIDE OF TREE DRIP LINE OR AT LEAST 10' FROM TREE TRUNK.
3. THIS AREA IS OFF LIMITS, NO ACTIVITY SHALL TAKE PLACE OR STORAGE OF MATERIALS SHALL OCCUR WITHIN PROTECTED AREA.
3. MAINTAIN FENCING FOR DURATION OF CONSTRUCTION PERIOD IN GOOD CONDITION AND REPAIR ANY DAMAGE TO FABRIC AND OR POST.

TREE PROTECTION FENCE DETAIL

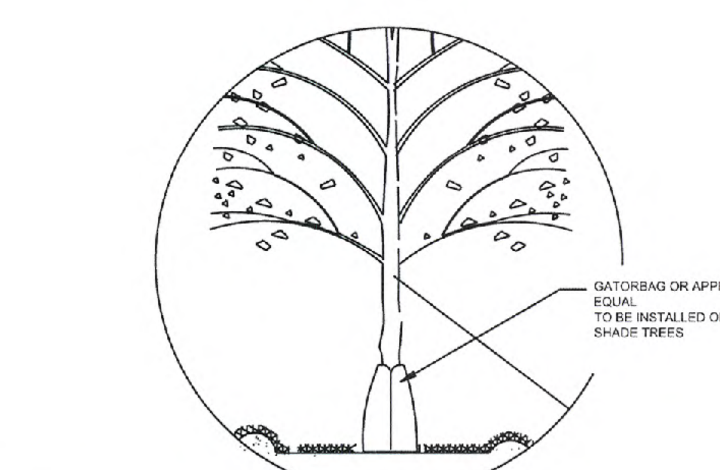
N.T.S.



NOTE: PLANTS SHALL BE FROM SOIL CONTAINERS

FERN PLANTING DETAIL

N.T.S.



NOTES:
1. SINGLE BAG HOLDS APPROX. 20 GALLONS, SINGLE BAG FITS 1-4" CAL. TREE (TWO BAGS ZIPPED TOGETHER HOLDS 50 GALLONS AND FITS UP TO 8" CAL TREE)
2. USE ON TREES WITH BRANCHES AT LEAST 30" OFF THE GROUND.
3. MADE OF POLYETHYLENE PLASTIC WITH NYLON WEBBING
4. TWO WATER RELEASE POINTS PER BAG FOR EVEN WATERING.
5. UV STABILIZED TO WITHSTAND EXPOSURE TO SUNLIGHT.
6. BAG EMPTIES IN APPROX 5-9 HOURS.
7. USE DONUT SHAPED BAGS FOR EVERGREEN TREES

WATERING BAG DETAIL

N.T.S.

LAWN SEED SCHEDULE

TALL FESCUE SEED MIXTURE

SUPPLIER MUST PROVIDE SEED PACKAGE LABEL WITH NAME OF SEED MIX, LOT NO., % OF SPECIES, INERT MATERIAL AND WEED SEED, PROVIDE GERMINATION % AND PLS, AGRICULTURAL MARKING NO., ORIGIN OF SEED, TEST DATE, AND PACKAGE WEIGHT.

% WT	VARIETY/SPECIES
45%	Rebel Exeda Turf Tyep Tall Fescue
45%	Rebel Century Turf Type Tall Fescue
10%	Tuckahoe Bluegrass Blend

SEED RATE 40 LBS/ 10,000 SF
STRAW /HAY RATE 1.5-2 TONS / ACRE
SEED MIXTURES AND APPLICATION RATES MAY ADJUST IN ACCORDANCE WITH BEST LOCAL PRACTICES AND APPROVING AGENCIES AUTHORITY.
RECOMMENDED SEEDING DATES: MARCH 15-MAY 15 & SEPTEMBER 1 -NOVEMBER 1

SEEDING MIXTURES

Rain Garden Mix

A rain garden is a simple and stunning way to reduce runoff from parking lots, driveways, and roofs. They also help filter out contaminants in runoff. The plants we have selected for this mix, are capable of withstanding brief intervals of standing water, tolerate drought, and have deep roots that allow water to effortlessly percolate into the soil. At the same time, they offer food and shelter to native pollinators and other wildlife.

15 lbs. per acre. $75.00 per lb.

Composition:
10% Verbena hastata
10% Heliopsis helianthoides
10% Penstemon digitalis
10% Panicum virgatum
8% Schoenoplectus atrovirens
8% Elymus virginicus
8% Echinacea purpurea
7% Lobelia siphilitica
6% Andropogon gerardii
5% Eupatorium coelestinum
5% Rudbeckia hirta
4% Asclepias syriaca
3% Vernonia noveboracensis
2% Symphyotrichum novae-angilae
2% Euthamia graminifolia
2% Iris versicolor

Riparian Buffer Mix

It has been proven that waterways with a strip of protective vegetation alongside them have increased water quality and numerous ecological benefits. Pinelands Nursery's Riparian Buffer Mix is a diverse mix of native forbs and wetland grasses that can aid in the stabilization of stream banks and decrease erosion. Creating a riparian buffer also helps to lessen the occurrence and strength of flooding and inhibit sedimentation of waterways while simultaneously supporting a wide variety of pollinators and wildlife. Great for sites with steep slopes, shaded edges, boggy areas, and occasional running water.

15 lbs. per acre. $60.00 per lb.

Composition:
10% Andropogon gerardii
10% Elymus virginicus
10% Carex crinita
10% Carex lurida
10% Elymus virginicus
8% Rudbeckia hirta
8% Heliopsis helianthoides
8% Schoenoplectus atrovirens
6% Panicum virgatum
6% Schizachyrium scoparium
5% Carex stricta
4% Juncus effusus
3% Glyceria striata
3% Helenium autumnale
2.50% Verbena hastata
2.50% Iris versicolor
2% Vernonia noveboracensis
2% Chamaecrista fasciculata
2% Eupatorium coelestinum
2% Eupatorium purpureum
1.50% Lobelia siphilitica
1% Sorghastrum nutans
1% Symphyotrichum novae-angilae
0.50% Asclepias incarnata

SEED MIXES SUPPLIED BY PINELANDS NURSERY & SUPPLY
323 ISLAND ROAD
COLUMBUS, NJ.
www.pinelandsnursery.com

LANDSCAPE NOTES

1. A COMPLETE LIST OF PLANTS, INCLUDING A SCHEDULE OF QUANTITIES, SIZES, AND OTHER REQUIREMENTS IS SHOWN ON THE PLANT SCHEDULE. IN THE EVENT THAT DISCREPANCIES OCCUR BETWEEN THE QUANTITIES OF PLANTS INDICATED IN THE PLANT LIST AND THOSE INDICATED ON THE PLAN, THE PLANT QUANTITIES INDICATED ON THE PLAN SHALL GOVERN.
2. ANY PLANT SCHEDULE MODIFICATIONS SHALL BE SUBJECT TO THE APPROVAL BY THE TOWNSHIP REPRESENTATIVE, PROJECT LANDSCAPE ARCHITECT & CLIENT PRIOR TO THE PRECONSTRUCTION MEETING AND REQUEST SHALL BE MADE IN WRITING TO AUTHORITY.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES BEFORE EXCAVATING.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE SOIL TESTING RESULTS AND A COURSE OF ACTION TO REMEDY ANY TOPSOIL DEFICIENCIES PRIOR TO THE COMENCEMENT OF WORK.
5. IT IS UNDERSTOOD THAT THE OWNER SHALL ASSUME RESPONSIBILITY FOR WATERING ALL PLANT MATERIAL AND LAWN AREAS BEYOND THE GUARANTEE PERIOD COMMENCING WITH THE DATE OF INITIAL ACCEPTANCE. THE CONTRACTOR MUST PROVIDE LANDSCAPE MAINTENANCE INSTRUCTIONS AT THE TIME OF ACCEPTANCE. AT A MINIMUM THESE INSTRUCTIONS SHOULD INCLUDE A SCHEDULE OF FERTILIZING, PRUNING, WEEDING, & MOWING.
6. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. ALL PLANTS SHALL HAVE NORMAL, WELL DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEMS. THEY SHALL BE FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUNSCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL OTHER FORMS OF INFECTIONS. ALL PLANT MATERIAL SHALL BE THOROUGHLY WETTED WITH AN ANTI-DESICCANT UPON DELIVERY OF MATERIAL TO THE SITE. ALL EVERGREEN MATERIAL SHALL BE RESPRAYED PRIOR TO THE FIRST WINTER BY THE OWNER.
7. SIZE AND GRADING STANDARDS SHALL CONFORM TO ANSI #1, IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1, LATEST EDITION OR BETTER AND SHALL BE GUARANTEED FOR A PERIOD OF 2 YEARS AFTER ACCEPTANCE BY THE OWNER. MULTI-TRUNKED TREES SHALL MEAN AT LEAST 3 DISTINCT STEMS WITH BRANCHING AT ½ THE HEIGHT OF TREE, (AND MAINTAINED AS SUCH) LOW BRANCHING SHALL MEAN BRANCHING OCCURS FROM A SINGLE TRUNK AND SHRUB FORM TREES SHALL MEAN MULTI-STEMED WITH LOW BRANCHING.
8. ALL PLANTS SHALL BE PACKED, TRANSPORTED AND HANDLED WITH THE UTMOST CARE TO INSURE ADEQUATE PROTECTION AGAINST INJURY AND DEHYDRATION. EACH SHIPMENT SHALL BE CERTIFIED TO BE FREE FROM DISEASES AND INFESTATION. ANY INSPECTION CERTIFICATES REQUIRED BY LAW TO THIS EFFECT SHALL ACCOMPANY EACH SHIPMENT INVOICE OR ORDER OF STOCK AND ON ARRIVAL.
9. NO PLANT MATERIAL SHALL BE PLANTED BY THE CONTRACTOR UNTIL IT IS INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS AGENT AT THE SITE. THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE SHALL BE THE SOLE JUDGE OF THE QUALITY AND ACCEPTABILITY OF THE MATERIALS. ALL REJECTED MATERIALS SHALL BE IMMEDIATELY REPLACED WITH ACCEPTABLE MATERIAL AT NO ADDITIONAL COST.
10. ALL PLANT MATERIAL IS TO BE PLANTED ON THE DAY OF DELIVERY. IF THIS IS NOT FEASIBLE, THE CONTRACTOR MUST PROVIDE MEASURES TO PROPERLY STORE & PROTECT PLANT MATERIAL ON SITE AND AT NO TIME SHALL THE STORAGE AND PROTECTION OF PLANT MATERIAL EXCEED 3 DAYS. A WATERING SCHEDULE MUST BE INITIATED FOR STORAGE OF PLANT MATERIAL. IT IS IMPORTANT THAT SOD BE PLANTED ON THE DAY OF DELIVERY OR WITHIN 24 HOURS. SOD PALLETS ARE TO BE STORED IN A SHADED LOCATION OR COVERED AND WETTED.
11. CONTRACTOR SHALL SCALE PLANT LOCATIONS FROM PLANS AND STAKE LOCATIONS ON SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR HIS AGENT.
12. SHADE AND EVERGREEN TREES SHALL BE PLANTED AT LEAST TWO (2) FEET FROM ANY CURBING, PAVING OR SIDEWALK. WHENEVER POSSIBLE THIS DIMENSION SHOULD BE INCREASED TO FOUR (4) FEET.
13. ALL PLANTING BEDS SHALL BE ROTOTILLED TO A DEPTH OF TEN (10) INCHES PRIOR TO ANY PLANTING. ALL STONES, WIRE, CONCRETE AND UNSUITABLE MATERIALS IN EXCESS OF 1 INCH DIA. SHALL BE REMOVED.
14. PLANTING MIXTURE SHALL CONSIST OF APPROXIMATELY FOUR PARTS OF ACCEPTANCE NATURAL TOPSOIL, ONE PART COMPOSTED WOOD MULCH, 1 PART LEAF MOLD, & 1 PART SAND AND TO EACH CUBIC YARD SHALL BE ADDED AND INCORPORATED BY THOROUGHLY MIXING, FOUR POUNDS OF ORGANIC COMMERCIAL FERTILIZER HAVING AN ANALYSIS OF 6-6-6 BASED ON SOIL TEST RESULTS AND RECOMMENDATIONS TO MODIFY AS REQUIRED. ALSO USE OF MYCARHIZAL BACTERIA, BIO-STIMULANTS AND WATER ABSORBANT GEL AS PER MANUFACTURER'S RECOMMENDATIONS. WATER ALL PLANTS AT THE TIME OF PLANTING.
15. PLANTING BEDS SHALL BE THOROUGHLY EXCAVATED TO A DEPTH OF 14", AND BACKFILLED WITH THE PLANT MIXTURE DESCRIBED ABOVE. ALL PAVEMENT SUBBASE AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE ISLAND PLANTING BEDS UNTIL VIRGIN SOIL IS REPLACED.
16. IF REQUIRED, PEAT MOSS FOR PLANTING MEDIUM SHALL BE IMPORTED CANADIAN SPHAGNUM PEAT MOSS, BROWN, LOW IN CONTENT OF WOODY MATERIAL AND BE FREE OF MINERAL CONTENT HARMFUL TO PLANT LIFE.
17. ALL SEEDED AREAS THAT DO NOT SHOW A PROMPT UNIFORM GERMINATION SHALL BE RESEEDED BY THE LANDSCAPE CONTRACTOR AT INTERVALS OF 45-60 DAYS, UNTIL A GOOD GROWTH IS ESTABLISHED OVER THE ENTIRE LAWN AREA. GOOD GROWTH MEANS 95% TOTAL COVERAGE.
18. ALL PLANT BEDS SHALL BE MULCHED WITH THREE (3) INCHES OF SHREDDED HARDWOOD MULCH OR OTHER MATERIAL APPROVED BY THE LANDSCAPE ARCHITECT. THE LIMIT OF THIS MULCH FOR TREES SHALL BE THE AREA OF THE PIT AND FOR SHRUBS AND BEDS, THE ENTIRE SHRUB OR BED AREAS AS INDICATED ON THE PLAN. DO NOT CREATE MULCH PYRAMIDS; SEE PLANTING DETAIL FOR MULCH APPLICATION.
19. THE MULCH BED SHALL BE WEED FREE AT THE TIME OF INSPECTION AND 3 MONTHS AFTER INSTALLATION. HAND WEED PLANTING BEDS PROIR TO APPLYING MULCH AND APPLY PRE EMERGENT HERBICIDE SAFE FOR VEGETABLE GARDENS. DO NOT USE ROUND UP IN PLANTING BEDS.
20. ANY AND ALL IRRIGATION SYSTEMS SHALL CONTAIN A RAIN SENSOR. IT IS RECOMMENDED THAT IF PLANTING BEDS ARE IRRIGATED, DRIP IRRIGATION IS PREFERRED.
21. ALL EVERGREEN TREES SHALL BE CONICAL IN SHAPE UNLESS OTHERWISE NOTED. CONICAL SHALL MEAN THE PLANT SHALL HAVE A WIDER BASE, (5:3 RATIO) AT A MINIMUM AND TAPER TO THE TOP. PLANT LEADER SHALL BE NO LONGER THAN 12 INCHES. CONICAL SHALL ALSO IMPLY A FULL SHAPE FROM THE BOTTOM OF PLANT (6-12" FROM ROOT BALL) TO TOP LEADER. REFER TO ANSI 260-1996, 4.1.2.5 TYPE 5- CONE TYPE.
22. SPECIMEN PLANT MATERIAL SHALL MEAN FOR EVERGREEN SPECIES: EXCEPTIONALLY HEAVY, WELL SHAPED PLANTS WHICH HAVE BEEN TRIMMED TO FORM A PERFECTLY SYMMETRICAL TIGHTLY KNIT PLANT.
23. FOR CONICAL AND EVERGREEN PLANT MATERIAL AVERAGE HEIGHT SHALL BE MEASURED FROM THE UPPER LIMIT OF BRANCH WHORL AND MIDPOINT OF LEADER.
24. ALL EVERGREEN TREES MUST BE SLIGHTLY SHEARED.
25. ALL SHADE TREES SHALL BE BALLED & BURLAPPED, NO BOX OR CONTAINER ROOTED TREES TO BE ACCEPTED.
26. WITHIN SITE TRIANGLES, ALL SHADE TREES SHALL BE LIMBED UP TO 7 FEET AND ALL SHRUBS ARE TO BE MAINTAINED 30 INCHES HIGH.
27. LANDSCAPE INSPECTION SHALL TAKE PLACE PRIOR TO OWNER ACCEPTANCE. ANY SHADE TREES DEAD OR DYING, WITH BROKEN LEADER OR WITH A WITH A COMPROMISED CROWN OF MORE THAN 20% OR DAMAGED BARK WILL NOT BE ACCEPTED. ANY EVERGREEN TREE DEAD OR DYING OR WITH MORE THAN 20% BROWNING WILL NOT BE ACCEPTED AND ANY SHRUB DEAD OR DYING OR WITH MORE THAT 20% DEADWOOD WILL NOT BE ACCEPTED.

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SITE ID: 20182813492

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UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.

40 20 0 40 80 120 160
GRAPHIC SCALE

DESIGNED: CBS	DRAWN: MRL	CHECKED: CBS	LANDSCAPE PLAN & DETAILS
DATE SIGNED: 10.9.18		REVISIONS	MALIN ROAD DEVELOPMENT 1 MALIN ROAD EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
CECILIA BYRNE-SCHMIDT PA CERTIFIED LANDSCAPE ARCHITECT NO. LA000952E		NO. / DATE	Taylor Wiseman & Taylor ENGINEERS / SURVEYORS / SCIENTISTS 5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422 TELEPHONE: (267) 956-1020 FAX: (267) 956-1019 www.taylorwiseman.com
SCALE: AS SHOWN	DATE: SEPTEMBER 22, 2018	DRAWING NO. 018-06476-LD	SHEET: 10 OF 24

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Schedule									
Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage
A	24	ARCHITECTURAL AREA LIGHTING	ALN440-Y3-32LED-4K-700	TOWN COMMONS- CAST ALUMINUM HOUSING. ONE PIECE CLEAR ACRYLIC LENS. LED ARRAY WITH PRISMS AND HEATSINK	32 219B DIODES. 4000K	1	4974	1	75
B	5	ARCHITECTURAL AREA LIGHTING	ALN440-Y4-32LED-4K-700	TOWN COMMONS- CAST ALUMINUM HOUSING. ONE PIECE CLEAR ACRYLIC LENS. LED ARRAY WITH PRISMS AND HEATSINK	32 219B DIODES. 4000K	1	5446	1	74

NOTES:

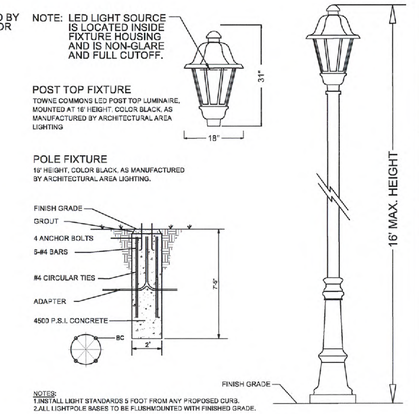
1. LIGHTING FOR PRIVATE STREETS WAS DESIGNED SIMILAR TO PUBLIC R.O.W.'S WHERE AVERAGE UNIFORMITY IS NOT DESIRED. PARKING AREAS AND SIDEWALKS WHERE UNIFORMITY AND AVERAGE LIGHT INTENSITIES ARE DESIRED AND CONFORM.
2. FIXTURES NEAR TOWNHOUSE UNITS WILL REQUIRE A HOUSE SIDE SHIELD.
3. ALL PROPOSED LIGHTS ARE TO BE INSTALLED A MINIMUM OF 5 FEET AWAY FROM ANY PROPOSED CURBS AND UTILITIES TO AVOID CONFLICT.
4. LIGHT FIXTURES TO BE OWNED AND MAINTAINED BY THE HOA. PECO TO PROVIDE SEPARATE METER FOR STREET LIGHTING.

Statistics					
Description	Avg	Max	Min	Max/Min	Avg/Min
OFF-STREET PARKING AREAS	0.6 fc	1.9 fc	0.2 fc	9.5:1	3.2:1
PRIVATE STREETS	0.9 fc	2.6 fc	0.0 fc	N/A	N/A
SIDEWALK AREAS	0.8 fc	2.0 fc	0.2 fc	10.0:1	4.2:1

NOTE: LED LIGHT SOURCE IS LOCATED INSIDE FIXTURE HOUSING AND IS NON-GLARE AND FULL CUTOFF.

POST TOP FIXTURE
TOWNE COMMONS LED POST TOP LUMINAIRE, MOUNTED AT 16' HEIGHT, COLOR BLACK, AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING

POLE FIXTURE
16' HEIGHT, COLOR BLACK AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING.



NOTES:
1.INSTALL LIGHT STANDARDS 5 FOOT FROM ANY PROPOSED CURB.
2.ALL LIGHTPOLE BASES TO BE FLUSHMOUNTED WITH FINISHED GRADE.

SITE LIGHT, POLE & FOOTING DETAIL

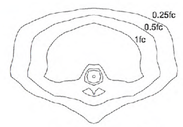
N.T.S.

FIXTURE A - QTY: 24
CATALOG NO. ALN440-Y3-32LED-4K-700-BL-HSS-L-POST TOP
FIXTURE TO BE STYLE TOWNE COMMONS LED (ALN440) POST TOP TRADITIONAL LUMINAIRE. 32 LEDs, 4000K, TYPE III DISTRIBUTION, 700mA, COLOR BLACK, (13) FIXTURES WITH HOUSE SIDE SHIELD & (11) FIXTURES WITHOUT, AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING www.aal.net (626) 968-5668 OR APPROVED EQUAL.

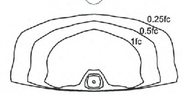
FIXTURE B - QTY: 5
CATALOG NO. ALN440-Y4-32LED-4K-700-BL-HSS-L-POST TOP
FIXTURE TO BE STYLE TOWNE COMMONS LED (ALN440) POST TOP TRADITIONAL LUMINAIRE. 32 LEDs, 4000K, TYPE IV DISTRIBUTION, 700mA, COLOR BLACK, (4) FIXTURES WITH HOUSE SIDE SHIELD & (1) WITHOUT, AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING www.aal.net (626) 968-5668 OR APPROVED EQUAL.

POLE & BASE FIXTURE - QTY: 29
CATALOG NO. D93-4R15-125-16'-BL-POST TOP
POLE AND BASE TO BE STYLE (D93) DECORATIVE POST TOP, 16' HEIGHT, 4"/130mm O.D. POLE, COLOR BLACK, AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING www.aal.net (626) 968-5668 OR APPROVED EQUAL.

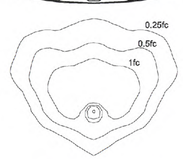
LEGEND:



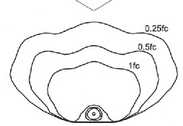
FIXTURE A
A1-A7, A13, A17 & A23-A24
SINGLE FIXTURE
TYPE III DISTRIBUTION
16' MOUNTING HEIGHT



FIXTURE A
A8-A12, A14-A16 & A18-A22
SINGLE FIXTURE WITH HOUSE SIDE SHIELD
TYPE III DISTRIBUTION
16' MOUNTING HEIGHT



FIXTURE B
B4
SINGLE FIXTURE
TYPE IV DISTRIBUTION
16' MOUNTING HEIGHT



FIXTURE B
B1-B3 & B5
SINGLE FIXTURE WITH HOUSE SIDE SHIELD
TYPE IV DISTRIBUTION
16' MOUNTING HEIGHT

PROPOSED POLE
FIXTURE LOCATION

LEGEND

EXISTING		PROPOSED
	MANHOLE	
	INLET	
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WL	WATER SERVICE	W
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

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40 20 0 40 80 120 180
GRAPHIC SCALE

CECILIA BYRNE SCHMIDT
REGISTERED LANDSCAPE ARCHITECT
PA CERTIFICATE NO. LA000682E

DESIGNED: CBS	DRAWN: MRL	CHECKED: CBS
DATE SIGNED: 10.9.18		REVISIONS
		NO. DATE

LIGHTING PLAN & DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 955-1020 FAX: (267) 955-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 40'	SEPTEMBER 22, 2018	018-06476-LD	11 OF 24

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PCSM NOTES:

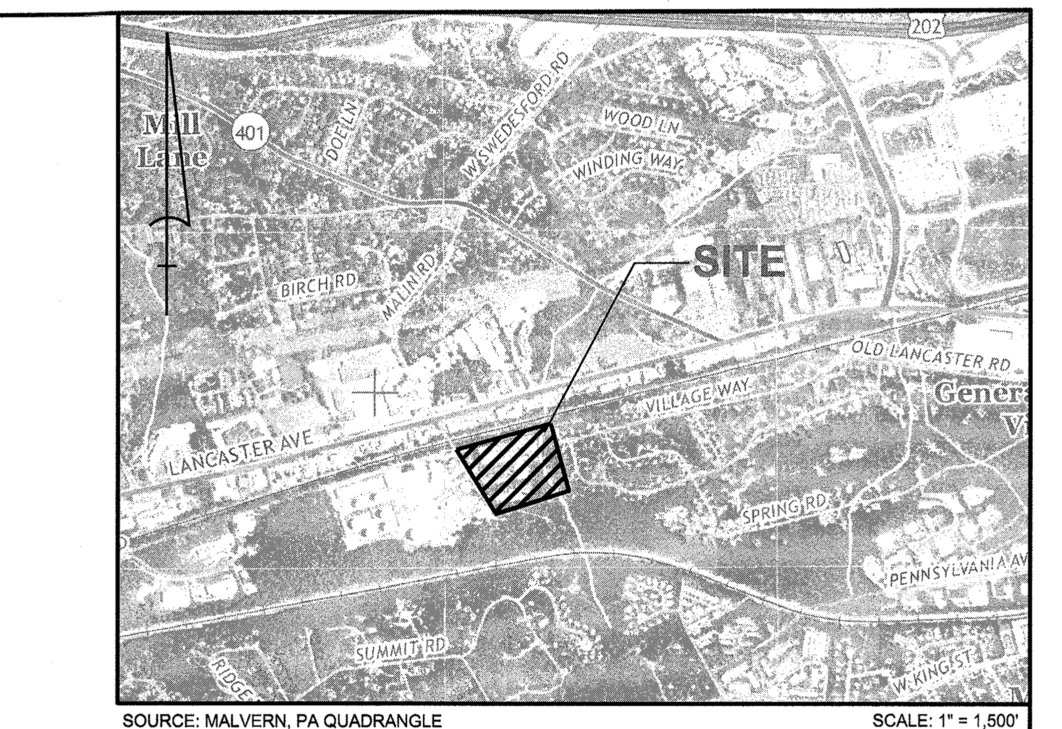
1. CRITICAL STAGES OF CONSTRUCTION SHALL BE WITNESSED BY A LICENSED PROFESSIONAL ENGINEER INCLUDING THE CONSTRUCTION OF THE RAIN GARDENS, INFILTRATION TRENCHES AND SOIL AMENDMENT AREAS.
2. PA CODE TITLE 25, CHAPTER 102.2 READS: THIS CHAPTER REQUIRES PERSONS PROPOSING OR CONDUCTING EARTH DISTURBANCE ACTIVITIES TO DEVELOP, IMPLEMENT AND MAINTAIN BMP'S TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION. THE BMP'S SHALL BE UNDERTAKEN TO PROTECT, MAINTAIN, RECLAIM AND RESTORE WATER QUALITY AND THE EXISTING AND DESIGNATED USES OF WATERS IN THE COMMONWEALTH.
3. THE PROPOSED DEVELOPMENT WILL LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE AND GRADING. THE CONSTRUCTION SEQUENCE SHALL BE ADHERED TO. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING & GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH PHASE. THE CONTRACTOR SHALL FOLLOW THE PADEP EROSION & SEDIMENT POLLUTION CONTROL PROGRAM MANUAL. AREAS AND TREES ARE OUTSIDE THE LIMIT OF DISTURBANCE ARE TO BE PRESERVED. THE SITE HAS BEEN DESIGNED TO TIE THE PROPOSED GRADING INTO THE EXISTING WITH MINIMAL CHANGES IN SLOPE AND PRESERVING THE DRAINAGE PATHS AND LOCATIONS OFF-SITE.
4. SOIL COMPACTION HAS BEEN MINIMIZED BY LIMITING THE AREA OF DISTURBANCE. ADDITIONALLY, THE RAIN GARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVERS WILL BE CONSTRUCTED WITH MINIMAL COMPACTION TO THE SUBGRADE.
5. THE PROPOSED RAIN GARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVERS WILL REDUCE THE PEAK RATE AND VOLUME OF STORMWATER RUNOFF FOR ALL STORM EVENTS, THUS REDUCING THE POTENTIAL FOR EROSION.
6. THE PROPOSED IMPERVIOUS AREAS HAVE BEEN MINIMIZED BY UTILIZING THE SMALLEST ACCEPTABLE ROADWAYS AND SIDEWALK WIDTHS PER THE TOWNSHIP REQUIREMENTS. OVERALL, THE PROPOSED DEVELOPMENT WILL REDUCE THE IMPERVIOUS COVERAGE AT THE SITE.
7. STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED INTO THE LITTLE VALLEY CREEK. IT HAS AN EXISTING AND DESIGNATED USE AS EXCEPTIONAL VALUE (EV) AND MIGRATORY FISHES (MF). THE LITTLE VALLEY CREEK IS AN IMPAIRED STREAM ACCORDING TO CATEGORY 4c OF THE PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT. THE IMPARIMENT SOURCES-CAUSES ARE AS FOLLOWS: HABITAT MODIFICATIONS- OTHER HABITAT ALTERATIONS; URBAN RUNOFF/STORM SEWERS - WATER/FLOW VARIABILITY. THE LITTLE VALLEY CREEK IS ALSO LISTED AS IMPAIRED PER CATEGORY 5, THE SOURCE-CAUSES OF IMPAIRMENTS ARE AS FOLLOWS: URBAN RUNOFF/STORM SEWERS - SILTATION, CAUSE UNKNOWN; SOURCE UNKNOWN-PATHOGENS.

PCSM NOTES - CONT'D:

8. THE PROPOSED IMPROVEMENT WILL PROTECT THE EXISTING DRAINAGE FEATURES AND VEGETATION. AREAS OUTSIDE THE LIMIT OF DISTURBANCE ARE TO BE PRESERVED. THE PROPOSED DESIGN PROTECTS THE RIPARIAN CORRIDOR OF LITTLE VALLEY CREEK AND PROVIDES RIPARIAN BUFFER RE-FORESTATION AREAS.
9. THE PROJECT HAS BEEN DESIGNED TO UTILIZE BOTH STRUCTURAL AND NON-STRUCTURAL BMP MEASURES TO MINIMIZE STORMWATER RUNOFF VOLUME. THE RIPARIAN BUFFER RE-FORESTATION, PROPOSED RAIN GARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVERS ARE STRUCTURAL MEASURES AND THE NON-STRUCTURAL MEASURES ARE PROTECT/CONSERVE/ENHANCE RIPARIAN BUFFERS, MINIMIZING DISTURBED AREAS AND PROTECT SENSITIVE/SPECIAL VALUE FEATURES.
10. THE PROPOSED DEVELOPMENT WILL PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL AND CHEMICAL QUALITIES OF THE LITTLE VALLEY CREEK. THE PROPOSED USE IS CONSISTENT WITH THE TOWNSHIP ZONING ORDINANCE. THE PROPOSED DEVELOPMENT WILL REDUCE THE IMPERVIOUS COVERAGE AT THE SITE. THE PROPOSED STORMWATER MANAGEMENT DESIGN WILL PROVIDE WATER QUALITY BENEFITS THROUGH THE USE OF THE BMP's TO TREAT THE WATER BEFORE IT ENTERS THE STREAM.
11. STORMWATER FACILITIES SHALL BE OWNED, OPERATED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION IN PERPETUITY.
12. UPON COMPLETION OF CONSTRUCTION, THE APPLICANT, SHALL BE RESPONSIBLE FOR COMPLETING FINAL AS-BUILT PLANS (SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL) OF ALL BMP's, CONVEYANCES, OR OTHER STORMWATER MANAGEMENT FACILITIES INCLUDED IN THE APPROVED PCSM PLAN.
13. A NOTICE OF TERMINATION (N.O.T.) WILL BE REQUIRED TO BE SUBMITTED FOLLOWING THE APPROVAL OF THE FINAL AS-BUILT PLANS. PRIOR TO ACCEPTING THE N.O.T., THE DEPARTMENT AND/OR CONSERVATION DISTRICT WILL PERFORM FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERIFY ADEQUATE INSTALLATION AND FUNCTION OF STORMWATER BMP's.
14. AS ON-SITE EARTHWORK COMMENCES, WITHIN THE CONTAMINATED AREAS FOR REMEDIATION, DEMOLITION AND/OR CONSTRUCTION, THE ENVIRONMENTAL CONSULTANT SHALL OBSERVE THE OPERATIONS, FOR ASSURING THAT THE REMEDIATION FOLLOWS ALL SUBMITTED REPORTS, PLANS AND PROCEDURES THAT WERE PROVIDED IN ACCORDANCE WITH THE LAND RECYCLING AND ENVIRONMENTAL REMEDIATION STANDARDS ACT (ACT 2) AND/OR APPROVED BY THE DEPARTMENTS ENVIRONMENTAL CLEANUP AND BROWNFIELDS (ECB) PROGRAM.
15. THE PCSM PLAN, INSPECTION REPORTS, AND MONITORING RECORDS MUST BE AVAILABLE ON-SITE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR CONSERVATION DISTRICT.

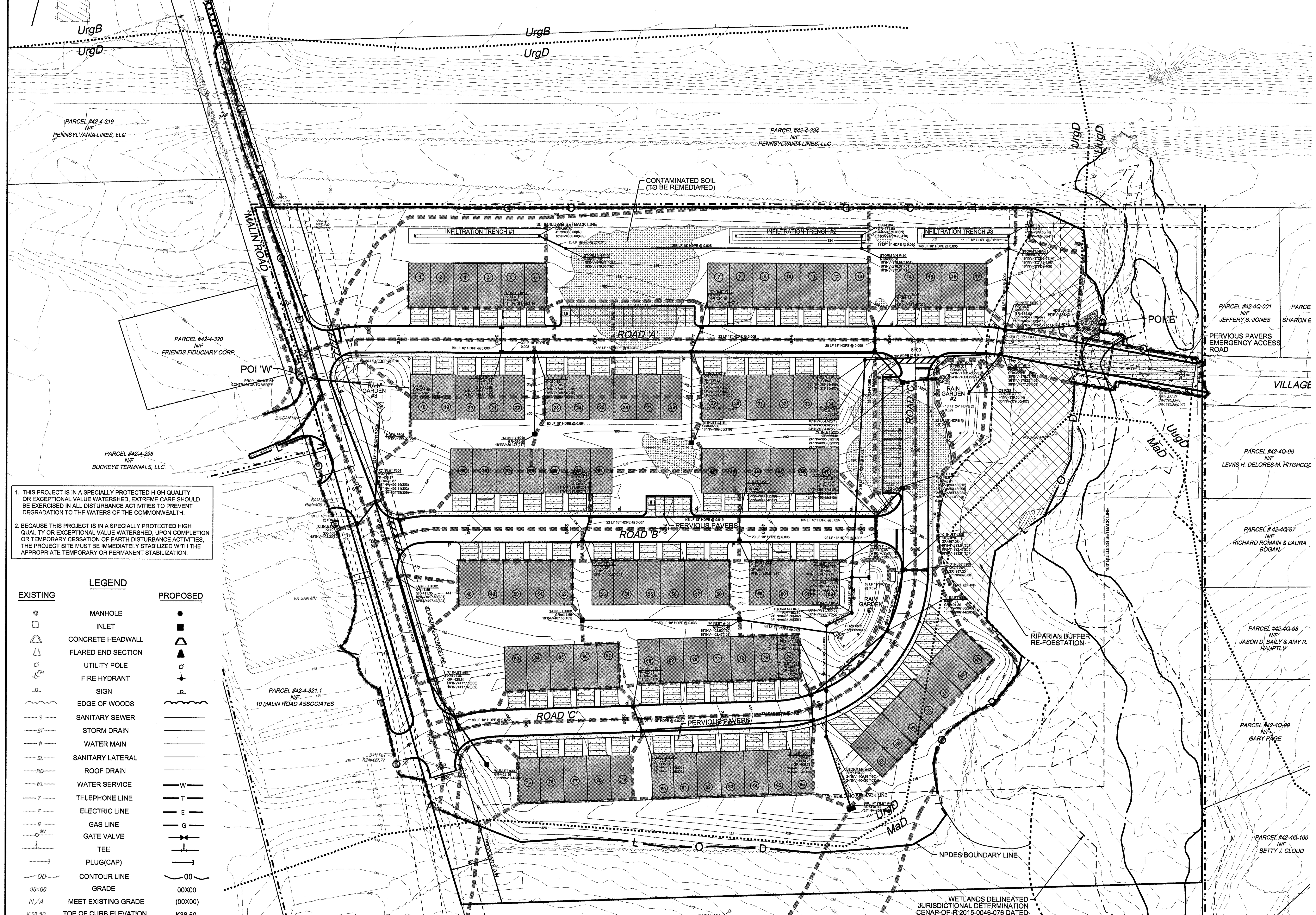
SEQUENCE OF BMP INSTALLATION (VEGETATED SWALES):

1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN THE UPGRADIENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE.
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHOULD OPERATE FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM.
   a. IF EXCAVATION LEADS TO SUBSTANTIAL COMPACTION OF THE SUBGRADE, 18-INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL AND SAND TO PROMOTE INFILTRATION & BIOLOGICAL GROWTH. AT THE VERY LEAST, TOPSOIL SHALL BE THOROUGHLY DEEP PLOWED INTO THE SUBGRADE IN ORDER THE PENETRATE THE COMPACTED ZONE.
   b. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO WITNESS THE SUBGRADE PREPARATION OF THE CHANNEL.**
3. FINE GRADE THE VEGETATED SWALE. THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
4. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS. PLANT THE SWALE AT A TIME OF YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY.
5. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION & SEDIMENT CONTROLS.



SOURCE: MALVERN, PA QUADRANGLE SCALE: 1" = 1,500'

LOCATION MAP



1. THIS PROJECT IS IN A SPECIALLY PROTECTED HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH.
2. BECAUSE THIS PROJECT IS IN A SPECIALLY PROTECTED HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
	FLARED END SECTION	
ø	UTILITY POLE	ø
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
— S —	SANITARY SEWER	
— ST —	STORM DRAIN	
— W —	WATER MAIN	
— SL —	SANITARY LATERAL	
— RD —	ROOF DRAIN	
— WL —	WATER SERVICE	— W —
— T —	TELEPHONE LINE	— T —
— E —	ELECTRIC LINE	— E —
— G —	GAS LINE	— G —
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
— 00 —	CONTOUR LINE	— 00 —
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

PCSM LEGEND

- — L — O — D — LIMIT OF DISTURBANCE
- CONTAMINATED SOIL AREA TO BE REMEDIATED
- DRAINAGE AREA LINE
- TEST PIT LOCATION
- TREE TO BE REMOVED
- PERVIOUS PAVERS
- RIPARIAN BUFFER RESTORATION ZONE 1
- RIPARIAN BUFFER RESTORATION ZONE 2
- RIPARIAN BUFFER RESTORATION ZONE 3

SEQUENCE OF BMP INSTALLATION (PERVIOUS PAVERS):

1. ROUGH GRADE THE PAVER AREA AND INSTALL GEOTEXTILE AT SUBGRADE INVERT ELEVATION. INSTALLATION TO BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. SCARIFY THE EXISTING SUBGRADE, DO NOT COMPACT IN-SITU SOILS. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO INSPECT THE SUBGRADE BEFORE GEOTEXTILE INSTALLATION.**
2. CLEAN (WASHED) UNIFORMLY GRADED AGGREGATE IS PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED. ONCE BED AGGREGATE IS INSTALLED TO THE DESIRED GRADE, A 2-INCH LAYER OF CHOKER BASE COURSE (AASHTO #57) AGGREGATE SHOULD BE INSTALLED UNIFORMLY OVER THE SURFACE IN ORDER TO PROVIDE AN EVEN SURFACE FOR PAVING. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO WITNESS THE STONE BACKFILL.**
3. THE PERVIOUS PAVERS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.

SEQUENCE OF BMP INSTALLATION (RAINGARDENS)

1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS
   a. THE AREA IMMEDIATELY ADJACENT TO THE RAINGARDEN MUST BE STABILIZED IN ACCORDANCE WITH THE PADEP'S EROSION & SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, PRIOR TO RAINGARDEN CONSTRUCTION.
2. EXCAVATE RAINGARDEN TO PROPOSED INVERT DEPTH, AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
3. INSTALL GEOTEXTILE FABRIC AND PVC BASIN LINER IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. A LINER REPRESENTATIVE SHALL BE PRESENT TO CERTIFY THE INSTALLATION AND SEALING OF SEAMS. **A LICENSED PROFESSIONAL ENGINEER SHALL ALSO WITNESS THE PVC BASIN LINER INSTALLATION.**
4. BACKFILL RAINGARDEN WITH STONE AND AMENDED SOIL AS SHOWN ON THE PLANS. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO WITNESS THE STONE BACKFILL & AMENDED SOIL PLACEMENT.**
5. PRE-SOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
6. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS.

SEQUENCE OF BMP INSTALLATION (RAINGARDENS) - CONT'D:

7. PLANT VEGETATION ACCORDING TO THE LANDSCAPE PLANS.
8. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION & SEDIMENT CONTROLS.
9. IF ANY UNFAVORABLE GEOLOGIC CONDITIONS ARE ENCOUNTERED DURING THE INSTALLATION OF INFILTRATION SYSTEMS (I.E. GROUNDWATER AND/OR BEDROCK, ETC.) THEN THE OWNER AND ENGINEER SHOULD BE NOTIFIED AND THE PROPOSED INFILTRATION SYSTEM SHOULD BE RELOCATED TO A MORE SUITABLE LOCATION ON THE SITE.

SEQUENCE OF BMP INSTALLATION (INFILTRATION TRENCHES)

1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS
   a. THE AREA IMMEDIATELY ADJACENT TO THE TRENCH MUST BE STABILIZED IN ACCORDANCE WITH THE PADEP'S EROSION & SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, PRIOR TO TRENCH CONSTRUCTION.
2. EXCAVATE TRENCH TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCK/DEBRIS, AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
3. INSTALL GEOTEXTILE FABRIC AND PVC BASIN LINER IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. A LINER REPRESENTATIVE SHALL BE PRESENT TO CERTIFY THE INSTALLATION AND SEALING OF SEAMS. **A LICENSED PROFESSIONAL ENGINEER SHALL ALSO WITNESS THE PVC BASIN LINER INSTALLATION.**
4. PLACE UNIFORMLY GRADED, LIGHTLY COMPACTED WASHED STONE. INSTALL UNDERDRAIN PIPE AND BACKFILL TRENCH WITH STONE AS SHOWN ON THE PLANS. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY. PLACE 2 FEET OF APPROVED AMENDED SOIL OVER TRENCH AS INDICATED ON PLANS. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS. SEED AND STABLIZE SOIL. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO WITNESS THE STONE BACKFILL & AMENDED SOIL PLACEMENT.**
5. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION & SEDIMENT CONTROLS. ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.
6. IF ANY UNFAVORABLE GEOLOGIC CONDITIONS ARE ENCOUNTERED DURING THE INSTALLATION OF INFILTRATION SYSTEMS (I.E. GROUNDWATER AND/OR BEDROCK, ETC.) THEN THE OWNER AND ENGINEER SHOULD BE NOTIFIED AND THE PROPOSED INFILTRATION SYSTEM SHOULD BE RELOCATED TO A MORE SUITABLE LOCATION ON THE SITE.

CRITICAL STAGES (LICENSED PROFESSIONAL ENGINEER NEEDED ON-SITE)

1. **BASIN LINER & BACKFILL OF THE RAINGARDEN SUBGRADE.**
2. **BASIN LINER & BACKFILL OF THE INFILTRATION STONE TRENCH.**
3. **PREPARATION OF VEGETATED SWALE SUBGRADE.**
4. **PERVIOUS PAVER SUBGRADE PREPARATION & STONE BACKFILL.**
5. **SITE INSPECTION OF ALL BMP'S.**

STORMWATER OPERATION AND MAINTENANCE NOTES:

1. RAIN GARDENS:
   A. FOR THE FIRST YEAR OF OPERATION, INSPECTION OF RAIN GARDEN SHOULD OCCUR ON A QUARTERLY BASIS AND AFTER EACH STORM EVENT EXCEEDING 1 INCH OF RAINFALL. AFTER THE FIRST YEAR, INSPECT RAIN GARDEN EVERY 12 MONTHS. MAKE NOTE OF ANY OF THE FOLLOWING CONDITIONS:
      (1) ENSURE THAT ALL INLETS AND OUTFLOWS ARE KEPT CLEAR AND IN GOOD CONDITION. LOOK FOR EROSION AROUND OUTFLOWS.
      (2) INSPECT VEGETATION. REPLACE DEAD OR DYING PLANTS. THIN OR PRUNE EXCESSIVE GROWTH.
   B. INSPECT EMBANKMENTS, SPILLWAYS, RISERS, AND OUTFALLS EVERY 12 MONTHS, MAKING NOTE OF THE FOLLOWING:
      (1) LOOK FOR GULLIES OR BARE AREAS ON THE BERM OR EMBANKMENTS. THESE AREAS SHOULD NOT BE ERODED OR BARE.
      (2) ENSURE THE DISCHARGE ORIFICE, OR OVERFLOW RISER, AND SPILLWAY ARE CLEAR OF SEDIMENT AND DEBRIS AND IN GOOD CONDITION.
      (3) ENSURE THAT THE SPILLWAY, BERM AND EMBANKMENTS ARE NOT OVERGROWN WITH UNDERBRUSH AND TREES.
   C. IF PROBLEMS ARE OBSERVED, TAKE IMMEDIATE CORRECTIVE ACTION AS NECESSARY.
   D. FAILURE OF THE RAIN GARDENS COULD ENTAIL STANDING WATER OBSERVED 72 HOURS AFTER THE STORM EVENT OR WATER OVERTOPPING THE EMBANKMENT. SHOULD THIS OCCUR, REMOVE CAP WITH 1/2" DIA. ORIFICE IN OUTLET STRUCTURE TO DISCHARGE STANDING WATER. REPLACE CAP ONCE WATER HAS DRAINED FROM RAIN GARDEN. SHOULD WATER NOT EXIT THE RAIN GARDEN, CORRECTIVE ACTIONS SHOULD BE TAKEN AS NECESSARY. (e.g. TILLING, SOIL REMOVAL AND REPLACEMENT, ETC.)
   E. IF THERE IS ANY EVIDENCE THAT LINER MAY NOT BE WATERTIGHT IMMEDIATE ACTION AND SYSTEM REPLACEMENT WILL BE WARRANTED.
2. INFILTRATION TRENCH:
   A. TRENCH SHOULD BE INSPECTED AT LEAST 2 TIMES PER YEAR
   B. VEGETATION ALONG THE SURFACE OF THE TRENCH SHOULD BE MAINTAINED IN GOOD CONDITION AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
   C. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON A VEGETATED INFILTRATION TRENCH AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS.
   D. FAILURE OF THE TRENCH COULD ENTAIL STANDING WATER OBSERVED 72 HOURS AFTER THE STORM EVENT. SHOULD THIS OCCUR, TAKE CORRECTIVE ACTIONS AS NECESSARY. (e.g. SCARIFY TOPSOIL, REMOVE AND REPLACE TOPSOIL, REMOVE AND REPLACE STONE TRENCH, ETC.)
   E. IF THERE IS ANY EVIDENCE THAT LINER MAY NOT BE WATERTIGHT IMMEDIATE ACTION AND SYSTEM REPLACEMENT WILL BE WARRANTED.
3. PERVIOUS PAVERS:
   A. INSPECT AND VACUUM PAVEMENT TWICE ANNUALLY. A LOG SHALL BE MAINTAINED DOCUMENTING WHEN PERVIOUS PAVERS HAVE BEEN VACUUMED.
   B. UNDER NO CIRCUMSTANCE SHOULD THE PAVER SURFACE EVER BE SEAL COATED.
   C. SYSTEM REPLACEMENT WILL BE WARRANTED WHERE THE FOLLOWING CONDTIONS EXIST:
      (1) IF THERE ARE POTHOLES OR SETTLEMENT AREAS GREATER THAN 50 SQUARE FEET
      (2) IF THERE IS ANY EVIDENCE THAT LINER MAY NOT BE WATERTIGHT
      (3) IF SEDIMENT BUILD UP DOES NOT ALLOW SYSTEM TO COMPLETELY DRAIN WITHIN 72 HOURS AFTER A STORM EVENT.
4. VEGETATED SWALES:
   A. INSPECT CHANNEL EVERY 12 MONTHS. MAKE NOTE OF ANY OF THE FOLLOWING CONDITIONS:
      (1) INSPECT & CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT ACCUMULATION. (ADDRESS WHEN >3-INCHES AT ANY SPOT OR COVERING VEGETATION).
      (2) INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED.
      (3) INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADES.
      (4) MOW & TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING.
      (5) INSPECT FOR LITTER. REMOVE PRIOR TO MOWING.
      (6) INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
   B. FAILURE OF THE VEGETATED SWALE COULD CONSIST OF EXCESSIVE EROSION OR EMBANKMENT OVERTOPPING. SHOULD THESE BE IDENTIFIED, TAKE IMMEDIATE CORRECTIVE ACTION (e.g. RIP-RAP APRON, EROSION CONTROL MATTING AND/OR RE-GRADING, ETC.).
5. WATER QUALITY INLET:
   A. INLETS SHOULD BE INSPECTED WEEKLY DURING CONSTRUCTION. SEDIMENT & DEBRIS TO BE REMOVED WHEN OVER HALF FULL OF SEDIMENT (AND TRASH).
   B. POST-CONSTRUCTION WATER QUALITY INLETS SHALL BE INSPECTED QUARTERLY AND CLEANED AT LEAST TWICE A YEAR. VACUUM TRUCKS ARE AN EFFICIENT CLEANING MECHANISM.
   C. FAILURE OF THE WATER QUALITY INLET MAY ENTAIL WATER BACKING UP IN THE INLET OR OVERTOPPING THE GRATE. SHOULD THESE BE IDENTIFIED TAKE CORRECTIVE ACTION (e.g. REMOVE SEDIMENT/DEBRIS).
6. CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS.
7. A WRITTEN MAINTENANCE REPORT MUST BE KEPT AT THE SITE DURING CONSTRUCTION. INSPECTIONS SHALL BE LOGGED ONTO DEP FORM 3150-FM-BWEW0083, DATED 2/2012. IT IS THE RESPONSIBILITY OF THE SITE OWNER TO ENSURE THAT THIS OPERATION & MAINTENENCE SCHEDULE BE MAINTAINED AND LOGGED.

SITE OWNER/APPLICANT: CONSTITUTION DRIVE PARTNERS, LP
2701 RENAISSANCE BLVD, FOURTH FLOOR
KING OF PRUSSIA, PA 19406
(610) 239-6100

CONSTRUCTION SEQUENCE

1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE A FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
2. A PRE-CONSTRUCTION MEETING SHOULD BE HELD ON-SITE BETWEEN THE DEVELOPER, DESIGN PROFESSIONAL ENGINEER, TOWNSHIP REPRESENTATIVES AND THE CHESTER COUNTY CONSERVATION DISTRICT (CCCD). THE CCCD SHOULD BE NOTIFIED 7 DAYS PRIOR TO CONSTRUCTION FOR THE MEETING.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES AND SAFETY REQUIREMENTS OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXCAVATIONS DURING THE PERIOD OF CONSTRUCTION. CONTROL OF GROUNDWATER SEEPAGE AND STORMWATER RUNOFF INTO EXCAVATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. AS SOON AS SLOPES, CHANNELS, DITCHES AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED IN ACCORDANCE WITH THE E&S STANDARD NOTES.
5. INSTALL SURVEY STAKES/CONSTRUCTION FENCE AT LIMIT OF DISTURBANCE PRIOR TO DISTURBANCE ACTIVIES. INITIAL CLEARING & GRUBBING SHALL BE LIMITED TO THAT WHICH IS REQUIRED TO INSTALL THE PERIMETER BMP's. INSTALL ORANGE CONSTRUCTION FENCING AROUND PROPOSED INFILTRATION BMP's.
6. INSTALL TREE PROTECTION FENCING AND IDENTIFY TREES TO BE PRESERVED IN THE FIELD, AS DEPICTED ON THE CONSERATION PLAN. TREE PROTECTION FENCING IS TO REMAIN IN PLACE THROUGHOUT THE CONSTRUCTION ACTIVITIES.
7. INSTALL SILT FENCE, COMPOST FILTER SOCKS, AND INLET PROTECTION FOR EXISTING INLETS PRIOR TO ANY SITE DISTURBANCE.
8. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND CONRETE WASHOUT, AS SHOWN ON PLAN. WHEN INSTALLING TEMPORARY ENTRANCE ROAD, NO SOIL SHOULD BE EXPOSED TO THE ELEMENTS OVERNIGHT.
9. 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 DEP OR AUTHORIZED CONSERVATION DISTRICT.
10. REMOVE EXISTING TREES, PAVED AREAS, BUILDING, VEGETATION AND UTILITY PIPING AS NOTED ON THE APPROVED PLANS.
11. STRIP TOPSOIL IN REMAINING SITE AREAS. ALL REMAINING VEGETATION TO BE PROPERLY PROTECTED AND TO REMAIN IN ITS NATURAL STATE.
12. ROUGH GRADE PROPOSED DEVELOPMENT AREA. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA, WHICH IS TO BE PERMANENTLY STABILIZED BY VEGETATION, SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS. THE CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION WITH SEED, STRAW, MULCH, STONE, WOOD CHIPS OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. INSTALL CONSTRUCTION FENCING AROUND AREAS OF THE PROPOSED RAIN GARDENS AND INFILTRATION TRENCHES TO LIMIT CONSTRUCTION TRAFFIC AND EXCESSIVE COMPACTION.
13. INSTALL PERMANENT SWALE AND STORM PIPE BYPASS (INLET #400 TO HDWL#412) AND RIP-RAP APRON.
14. LAYOUT LOCATION OF PRPOSED ROADWAYS AND INSTALL PROPOSED UTILITES (SANITARY, WATER, ELECTRIC, STORM SEWER, GAS ETC.) NEWLY CONSTRUCTED INLETS ARE TO RECEIVE INLET PROTECTION ONCE INSTALLED. CONTRACOR SHALL COORDINATE UTILITY INSTALLATION PRIOR TO PERMANENT STABILIZATION.
15. CONSTRUCT THE RAIN GARDENS, UNDERDRAINS AND OUTLET PIPING. ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL FLOW THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS. FOR SEQUENCE OF BMP INSTALLATION REFER TO THE PCSM PLAN. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE DURING THE CONSTRUCTION OF THE RAIN GARDEN SUBGRADE, PVC LINER INSTALLATION AND AMENDED SOIL PLACEMENT TO ENSURE COMPLIANCE WITH THE PLANS.**
16. BEGIN CONSTRUCTION OF PROPOSED BUILDINGS/STRUCTURES.
17. CONSTRUCT THE INFILTRATION TRENCHES, UNDERDRAINS AND OUTLET PIPING AS DWELLING UNITS WITHIN THE CONTRIBUTING DRAINAGE AREAS ARE CONSTRUCTED. **A LICENSED PROFESSIONAL SHALL BE ON-SITE DURING THE PREPARATION AND BACKFILLING OF STONE, PVC LINER INSTALLATION AND AMENDED SOILS PLACEMENT.**
18. FINAL GRADING OF SITE, INSTALLATION OF TOP COURSE PAVING AND PLACEMENT OF TOPSOIL. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA, WHICH IS TO BE PERMANENTLY STABILIZED BY VEGETATION, REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.
19. STABILIZATION OF SITE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.
20. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ONLY AFTER THE PROPER STABILIZATION OF THE DISTURBED TRIBUTARY AREAS LEADING TO THE CONTROLS HAS BEEN COMPLETED WITH A UNIFORM 70% PERENNIAL GROWTH AND ONLY IF THEIR REMOVAL WILL NOT CONTRIBUTE TO ADDITIONAL SEDIMENT PROBLEMS OUTSIDE THE AREA. STABILIZE AREAS FROM REMOVAL OF TEMPORARY CONTROL MEASURES. THE DISTRICT MAY REQUIRE A SITE INSPECTION PRIOR TO REMOVAL OF SAID FACILITY.
21. AFTER COMPLETION OF EARTH DISTURBANCE ACTIVITIES, INCLUDING PERMANENT STABILIZATION, AND IMPLEMENTATION OF PCSM BMP'S PER THE APPROVED PCSM PLAN, THE PERMITTEE SHALL FILE WITH THE AUTHORIZED CONSERVATION DISTRICT FINAL CERTIFICATIONS, VIA THE NOTICE OF TERMINATION DOCUMENT, SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE NPDES PERMIT AND THE APPROVED E&S AND PCSM PLANS.

SITE SOIL LIMITATIONS:

LIMITATIONS	SOIL TYPE LIMITED (YES/NO) Manor loam (MaD)	Urban land-Conestoga (UrgD)	Urban land-Udorthents (UugD)	RESOLUTION
CUTBANKS CAVE	YES	YES	YES	PERFORM SOIL TESTING PRIOR TO FOUNDATION DESIGN
CORROSIVE TO CONCRETE/STEEL (C/S)	YES-C	YES-C&S	YES-C&S	SEAL EXPOSED CONCRETE WITH BITUMASTIC
DROUGHTY	NO	NO	YES	MOISTURE WILL BE ADDED PRIOR TO SOIL COMPACTION, IF NECESSARY
EASILY ERODIBLE	YES	NO	YES	INSTALL ALL E&S MEASURES PER PLAN AND STABILIZE AREAS IMMEDIATELY AFTER GRADING IS COMPLETE
LOW STRENGTH/LANDSLIDE PRONE	YES	YES	YES	MINIMIZING THE DISTURRBACE AT STEEP SLOPES
SLOW PERCOLATION	YES	YES	YES	UTILIZE AREAS WITH GOOD TESTED PERCOLATION FOR BASINS & BMP's
PIPING	YES	YES	NO	SOFT LOOSE SOIL ENCOUNTERED, DURING PROOF-ROLLING WILL BE EVALUATED FOR POSSIBLE SINK HOLE CONDITIONS
POOR SOURCE OF TOPSOIL	YES	NO	YES	ANY REQUIRED TOPSOIL SHALL BE OF ADEQUATE QUALITY
FROST ACTION	YES	YES	YES	INSTALL FOUNDATIONS BELOW FROST LINE
POTENTIAL SINKHOLE	NO	YES	NO	SINKHOLE CONDITIONS IF ENCOUNTERED, WILL BE REMEDIATED UNDER DIRECTION OF ONSITE GEOTECHNICAL ENGINEER

SOIL TYPES

MaB	MANOR LOAM, 3-8% SLOPES	B
MaD	MANOR LOAM, 15-25% SLOPES	B
MaE	MANOR LOAM, 25-35% SLOPES	B
UrgB	URBAN LAND-CONESTOGA COMPLEX, 0-8% SLOPES	B
UrgD	URBAN LAND-CONESTOGA COMPLEX, 8-25% SLOPES	B
UugD	URBAN LAND-UDORTHNTS, 8-25% SLOPES	C

THE STORMWATER BMPS ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP.

CONSTITUTION DRIVE PARTNERS, LP - OWNER

I, MARK THOMPSON, ON THIS DATE _________, HEREBY CERTIFY THAT THE BEST OF MY KNOWLEDGE THAT THE SWM SITE PLAN MEETS ALL DESIGN AND CRITERIA OF THE EAST WHITELAND TOWNSHIP ORDINANCE NO. 250-2014, EAST WHITELAND TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

MARK M. THOMPSON
PA. PROFESSIONAL
ENGINEER NO. PE073278

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!
SITE ID: 20182813492

THE CONTRACTOR AND/OR OWNER SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES AND UTILITIES, WHICH HE DEEMS NECESSARY, BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE HEAVY EQUIPMENT ENTERS THE CONSTRUCTION SITE.

FINAL INQUIRIES TO PENNSYLVANIA ONE CALL SYSTEM INC." (PHONE #: 1-800-242-1776) SHALL BE MADE BY THE CONTRACTOR AND/OR OWNER WITHIN SEVEN (7) DAYS OF ENTERING THE SITE. THE CONTRACTOR AND/OR OWNER SHALL COORDINATE AND VERIFY THE METHOD OF UTILITY LOCATION WITH THE APPROPRIATE UTILITY COMPANIES.

IN GENERAL, THE VERTICAL DESIGN OF PROPOSED GRAVITY UTILITIES, AS SHOWN, ARE INFLUENCED BY THE EXISTING GRAVITY UTILITIES ONLY, WHICH MAY NECESSITATE THE RELOCATIONS OF OTHER UTILITIES.

UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.

60 30 0 60 120 180 240

GRAPHIC SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS NO. DATE

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK M. THOMPSON
PA. PROFESSIONAL ENGINEER NO. PE073278

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

TWT Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 60'	SEPTEMBER 22, 2018	018-06476-LD	12 OF 24

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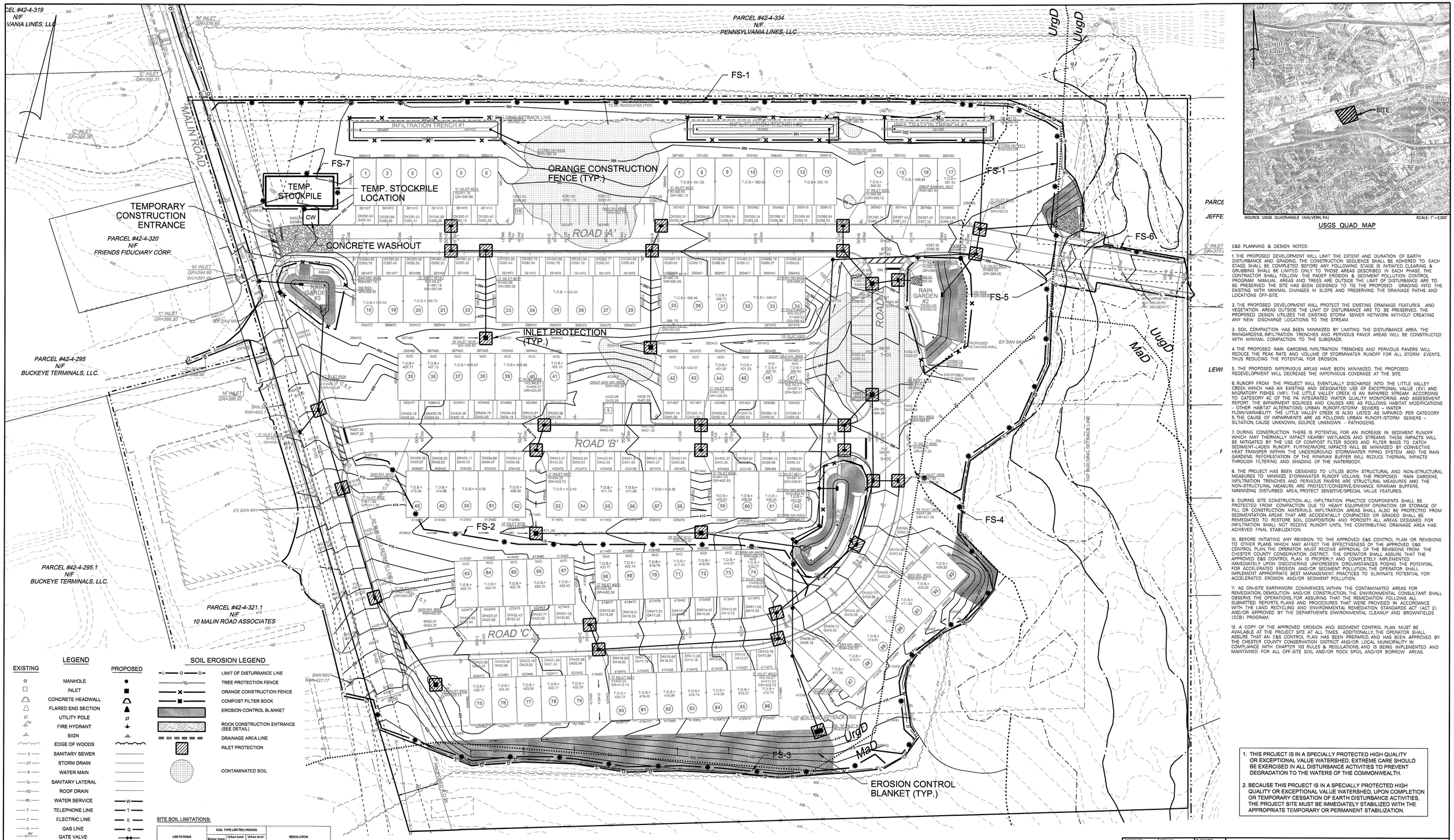

USGS QUAD MAP

LEGEND

EXISTING		PROPOSED
○	MANHOLE	●
□	INLET	■
	CONCRETE HEADWALL	
	FLARED END SECTION	▲
	UTILITY POLE	
	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
—S—	SANITARY SEWER	
—ST—	STORM DRAIN	
—W—	WATER MAIN	
—SL—	SANITARY LATERAL	
—RD—	ROOF DRAIN	
—WL—	WATER SERVICE	—W—
—T—	TELEPHONE LINE	—T—
—E—	ELECTRIC LINE	—E—
—G—	GAS LINE	—G—
—GV—	GATE VALVE	
	TEE	
	PLUG(CAP)	
00	CONTOUR LINE	00
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

SOIL EROSION LEGEND

- LIMIT OF DISTURBANCE LINE
- TREE PROTECTION FENCE
- ORANGE CONSTRUCTION FENCE
- COMPOST FILTER SOCK
- EROSION CONTROL BLANKET
- ROCK CONSTRUCTION ENTRANCE (SEE DETAIL)
- DRAINAGE AREA LINE
- INLET PROTECTION
- CONTAMINATED SOIL

SITE SOIL LIMITATIONS:

LIMITATIONS	SOIL TYPE LIMITED (YES/NO)			RESOLUTION
	Manor loam (MaD)	Urban land-Conestoga (UrgD)	Urban land-Udorthents (UugD)	
CUTBANKS CAVE	YES	YES	YES	PERFORM SOIL TESTING PRIOR TO FOUNDATION DESIGN
CORROSIVE TO CONCRETE/STEEL (C/S)	YES-C	YES-C&S	YES-C&S	SEAL EXPOSED CONCRETE WITH BITUMINITIC
DROUGHTY	NO	NO	YES	MOISTURE WILL BE ADDED PRIOR TO SOIL COMPACTION, IF NECESSARY
EASILY ERODIBLE	YES	NO	YES	INSTALL ALL E&S MEASURES PER PLAN AND STABILIZE AREAS IMMEDIATELY AFTER GRADING IS COMPLETE
LOW STRENGTH/LANDSLIDE PRONE	YES	YES	YES	MINIMIZING THE DISTURBANCE AT STEEP SLOPES
SLOW PERCOLATION	YES	YES	YES	UTILIZE AREAS WITH GOOD TESTED PERCOLATION FOR BASINS & BMP's
PIPING	YES	YES	NO	SOFT LOOSE SOIL ENCOUNTERED, DURING PROOF-ROLLING WILL BE EVALUATED FOR POSSIBLE SINK HOLE CONDITIONS
POOR SOURCE OF TOPSOIL	YES	NO	YES	ANY REQUIRED TOPSOIL SHALL BE OF ADEQUATE QUALITY
FROST ACTION	YES	YES	YES	INSTALL FOUNDATIONS BELOW FROST LINE
POTENTIAL SINKHOLE	NO	YES	NO	SINKHOLE CONDITIONS IF ENCOUNTERED, WILL BE REMEDIATED UNDER DIRECTION OF ONSITE GEOTECHNICAL ENGINEER

SOIL TYPES

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UrgD	URBAN LAND-CONESTOGA COMPLEX, 8-25% SLOPES	B
UugD	URBAN LAND-UDORTHNTS, 8-25% SLOPES	C

RECYCLING & DISPOSAL OF MATERIALS

1. ANTICIPATED CONSTRUCTION WASTES MAY INCLUDE: REMOVED ASPHALT, REMOVED CONCRETE AND DEBRIS FROM TREE CLEARING.

2. CONTRACTOR SHALL DEVELOP AND IMPLEMENT PROCEDURES WHICH WILL ENSURE THAT THE PROPER MEASURES FOR DISPOSAL AND RECYCLING OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY.

3. THE CONTRACTOR SHALL INSPECT THE PROJECT AREA WEEKLY AND PROPERLY DISPOSE OF ALL CONSTRUCTION WASTES. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL WHEREVER POSSIBLE, REUSABLE WASTES WILL BE SEGREGATED FROM OTHER WASTE AND STORED SEPARATELY FOR RECYCLING.

4. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

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40 20 0 40 80 120 160

GRAPHIC SCALE

E&S PLANNING & DESIGN NOTES:

1. THE PROPOSED DEVELOPMENT WILL LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE AND GRADING. THE CONSTRUCTION SEQUENCE SHALL BE ADHERED TO. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED.CLEARING & GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH PHASE. THE CONTRACTOR SHALL FOLLOW THE PADEP EROSION & SEDIMENT POLLUTION CONTROL PROGRAM MANUAL. AREAS AND TREES ARE OUTSIDE THE LIMIT OF DISTURBANCE ARE TO BE PRESERVED. THE SITE HAS BEEN DESIGNED TO TIE THE PROPOSED GRADING INTO THE EXISTING WITH MINIMAL CHANGES IN SLOPE AND PRESERVING THE DRAINAGE PATHS AND LOCATIONS OFF-SITE.

2. THE PROPOSED DEVELOPMENT WILL PROTECT THE EXISTING DRAINAGE FEATURES AND VEGETATION. AREAS OUTSIDE THE LIMIT OF DISTURBANCE ARE TO BE PRESERVED. THE PROPOSED DESIGN UTILIZES THE EXISTING STORM SEWER NETWORK WITHOUT CREATING ANY NEW DISCHARGE LOCATIONS TO THE STREAM.

3. SOIL COMPACTION HAS BEEN MINIMIZED BY LIMITING THE DISTURBANCE AREA. THE RAINGARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVER AREAS WILL BE CONSTRUCTED WITH MINIMAL COMPACTION TO THE SUBGRADE.

4. THE PROPOSED RAIN GARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVERS WILL REDUCE THE PEAK RATE AND VOLUME OF STORMWATER RUNOFF FOR ALL STORM EVENTS, THUS REDUCING THE POTENTIAL FOR EROSION.

5. THE PROPOSED IMPERVIOUS AREAS HAVE BEEN MINIMIZED. THE PROPOSED REDEVELOPMENT WILL DECREASE THE IMPERVIOUS COVERAGE AT THE SITE.

6. RUNOFF FROM THE PROJECT WILL EVENTUALLY DISCHARGE INTO THE LITTLE VALLEY CREEK, WHICH HAS AN EXISTING AND DESIGNATED USE OF EXCEPTIONAL VALUE (EV) AND MIGRATORY FISHES (MF). THE LITTLE VALLEY CREEK IS AN IMPAIRED STREAM ACCORDING TO CATEGORY 4C OF THE PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT. THE IMPAIRMENT SOURCES AND CAUSES ARE AS FOLLOWS: HABITAT MODIFICATIONS – OTHER HABITAT ALTERATIONS; URBAN RUNOFF/STORM SEWERS – WATER FLOW/VARIABILITY. THE LITTLE VALLEY CREEK IS ALSO LISTED AS IMPAIRED PER CATEGORY 5, THE CAUSE OF IMPAIRMENTS ARE AS FOLLOWS: URBAN RUNOFF/STORM SEWERS – SILTATION, CAUSE UNKNOWN; SOURCE UNKNOWN – PATHOGENS.

7. DURING CONSTRUCTION THERE IS POTENTIAL FOR AN INCREASE IN SEDIMENT RUNOFF WHICH MAY THERMALLY IMPACT NEARBY WETLANDS AND STREAMS. THESE IMPACTS WILL BE MITIGATED BY THE USE OF COMPOST FILTER SOCKS AND FILTER BAGS TO CATCH SEDIMENT-LADEN RUNOFF. FURTHERMORE, IMPACTS WILL BE MINIMIZED BY CONVECTIVE HEAT TRANSFER WITHIN THE UNDERGROUND STORMWATER PIPING SYSTEM AND THE RAIN GARDENS. REFORESTATION OF THE RIPARIAN BUFFER WILL REDUCE THERMAL IMPACTS THROUGH FILTERING AND SHADING OF THE WATERBODY.

8. THE PROJECT HAS BEEN DESIGNED TO UTILIZE BOTH STRUCTURAL AND NON-STRUCTURAL MEASURES TO MINIMIZE STORMWATER RUNOFF VOLUME. THE PROPOSED RAIN GARDENS, INFILTRATION TRENCHES AND PERVIOUS PAVERS ARE STRUCTURAL MEASURES AND THE NON-STRUCTURAL MEASURE ARE PROTECT/CONSERVE/ENHANCE RIPARIAN BUFFERS, MINIMIZING DISTURBED AREA, PROTECT SENSITIVE/SPECIAL VALUE FEATURES.

9. DURING SITE CONSTRUCTION, ALL INFILTRATION PRACTICE COMPONENTS SHALL BE PROTECTED FROM COMPACTION DUE TO HEAVY EQUIPMENT OPERATION OR STORAGE OF FILL OR CONSTRUCTION MATERIALS. INFILTRATION AREAS SHALL ALSO BE PROTECTED FROM SEDIMENTATION AREAS THAT ARE ACCIDENTALLY COMPACTED OR GRADED SHALL BE REMEDIATED TO RESTORE SOIL COMPOSITION AND POROSITY. ALL AREAS DESIGNED FOR INFILTRATION SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTING DRAINAGE AREA HAS ACHIEVED FINAL STABILIZATION.

10. BEFORE INITIATING ANY REVISION TO THE APPROVED E&S CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CHESTER COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE THAT THE APPROVED E&S CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. 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 POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

11. AS ON-SITE EARTHWORK COMMENCES, WITHIN THE CONTAMINATED AREAS FOR REMEDIATION, DEMOLITION AND/OR CONSTRUCTION, THE ENVIRONMENTAL CONSULTANT SHALL OBSERVE THE OPERATIONS, FOR ASSURING THAT THE REMEDIATION FOLLOWS ALL ALL SUBMITTED REPORTS, PLANS AND PROCEDURES THAT WERE PROVIDED IN ACCORDANCE WITH THE LAND RECYCLING AND ENVIRONMENTAL REMEDIATION STANDARDS ACT (ACT 2) AND/OR APPROVED BY THE DEPARTMENTS ENVIRONMENTAL CLEANUP AND BROWNFIELDS (ECB) PROGRAM.

12. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. ADDITIONALLY, THE OPERATOR SHALL ASSURE THAT AN E&S CONTROL PLAN HAS BEEN PREPARED, AND HAS BEEN APPROVED BY THE CHESTER COUNTY CONSERVATION DISTRICT AND/OR LOCAL MUNICIPALITY IN COMPLIANCE WITH CHAPTER 102 RULES & REGULATIONS, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL OFF-SITE SOIL AND/OR ROCK SPOIL AND/OR BORROW AREAS.

1. THIS PROJECT IS IN A SPECIALLY PROTECTED HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED. EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH.

2. BECAUSE THIS PROJECT IS IN A SPECIALLY PROTECTED HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

DESIGNED: MJW | DRAWN: JAS | CHECKED: MMT

DATE SIGNED:

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
MARK M. THOMPSON
PE073278
ENGINEER
COMMONWEALTH OF PENNSYLVANIA

PA. PROFESSIONAL ENGINEER NO. PE073278

NO.	REVISIONS DATE

SOIL EROSION & SEDIMENT CONTROL PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
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SCALE: 1" = 40' | DATE: SEPTEMBER 22, 2018 | DRAWING NO. 018-06476-LD | SHEET: 13 OF 24

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GENERAL CONSERVATION NOTES AND SPECIFICATIONS

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) 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 IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 15 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER. STOCKPILE SHOULD BE SURROUNDED BY SILT FENCE OR COMPOST FILTER SOCK.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 et seq., 271.1, AND 287.1 et seq. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.
11. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-OOI 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.
12. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
13. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
14. 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.
15. 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.
16. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
17. 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 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUT SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
18. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
19. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
20. 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.
21. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
22. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
23. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
24. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
25. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
26. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
27. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
28. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
29. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
31. 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.
32. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
33. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
34. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
35. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
36. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN 8-INCH MAXIMUM LAYERED LIFTS AT 95% DENSITY.
37. THE CONSTRUCTION SEQUENCE SHALL BE ADHERED TO AND THE CONTRACTOR SHALL FOLLOW THE PADEP EROSION & SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.
38. DUST SHALL BE CONTROLLED ON-SITE BY SPRINKLING WATER. THE USE OF MOTOR OILS OR TOXIC LIQUIDS IS PROHIBITED.
39. IF THE ROCK CONSTRUCTION ENTRANCE ALONE IS NOT SUFFICIENT TO PREVENT EXCESSIVE TRACKING OF MUD ONTO ROADWAYS, A WASH AREA SHALL BE ADDED TO THE CONSTRUCTION ENTRANCE TO REMOVE DIRT AND MUD FROM VEHICLES.
40. IN AN EMERGENCY, WHERE NO SILT FENCE OR COMPOST FILTER SOCK IS AVAILABLE, A TEMPORARY STRAW BALE DIKE MAY BE USED, SEE DETAIL. STRAW BALES SHALL BE REPLACED WITH COMPOST FILTER SOCKS WITHIN 5 DAYS.
41. FOR DEWATERING REQUIREMENTS, SEE SUMP PIT DETAIL.
42. FOR TYPICAL STAGING AREA EROSION AND SEDIMENT CONTROL, SEE DETAIL.

TRENCH NOTES

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, 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 WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, 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.

LAND RECYCLING AND DISPOSAL METHODS

CONTRACTOR SHALL MAKE EVERY EFFORT TO PROPERLY RECYCLE AS MUCH ON-SITE MATERIAL AS POSSIBLE. SEDIMENT ACCUMULATIONS FOR EACH EROSION CONTROL DEVICE MAY BE REGRADED ON-SITE, IF CLEAN. ALL MATERIALS TO BE DISPOSED OF OFF-SITE SHALL BE PROPERLY DISPOSED OF AT AN APPROVED FACILITY. DISPOSAL METHODS SHALL FOLLOW ALL APPLICABLE LOCAL, COUNTY AND FEDERAL REGULATIONS.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

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

EROSION AND SEDIMENT CONTROL DEVICE NOTES:

1. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE WITHIH THE TRIBUTARY AREAS OF THOSE CONTROLS.
2. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.
3. STOCKPILE HEIGHTS MUST NOT EXCEED (15) FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
4. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROL AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY.

CLEAN FILL & ENVIRONMENTAL DUE DILIGENCE

IF IT IS NECESSARY TO IMPORT FILL, THE CONTRACTOR WILL BE RESPONSIBLE TO PERFORM DUE DILIGENCE AND DETERMINE THAT ALL FILL IMPORTED TO THE SITE MEETS THE PADEP'S DEFINITION OF CLEAN FILL. THE PENNSYLVANIA DEP DEFINES CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE AS FOLLOWS PER DOCUMENT NUMBER 258-2182-773.

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 (25Pa. CODE SECTION 271.101 AND 287.101). THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATER 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 SUBSTANCE THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1a AND FP-1b FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

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

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIROMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITIED TO, VISUAL PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONAIRES, 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

TEMPORARY STABILIZATION AND PERMANENT STABILIZATION

1. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
2. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 OR STEEPER.
3. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
4. 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. E&SPCPM P. 168
5. SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN LANDSCAPE AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
6. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
7. AN E&S PLAN SHALL BE SUBMITTED TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT AND IMPLEMENTED FOR ALL SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATION.
8. THE NPDES BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE OF THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL. OFF-SITE FACILITIES SUCH AS: UTILITIES AND ROADWAYS.
9. THE PROJECTS RECEIVING WATERCOURSE IS THE LITTLE VALLEY CREEK, AND THE CHAPTER 93 CLASSIFICATION IS EV, MF.
10. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (E&S MANUAL), COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION NO. 363-2134-008, APRIL 2000, AS AMENDED AND UPDATED. EROSION AND SEDIMENT CONTROL BMPs SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED AND PCSM BMPs ARE OPERATIONAL.

PLANTING MEDIA SPECIFICATIONS

SOIL FOR PLANTING MEDIA SHALL HAVE A SANDY LOAM TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT IS <5%; SOIL MIXTURE SHALL BE 50-60% SAND; 20-30% LEAF COMPOST; AND 20-30% TOPSOIL. LEAF COMPOST IS ESSENTIALLY COMPOSED OF AGED LEAF MULCH AND PROVIDES ADDED ORGANIC MATTER TO IMPROVE THE HEALTH OF THE SOIL AND ENSURE ADEQUATE SOIL STRUCTURE. THE SOIL MUST BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE RAIN GARDEN THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL MUST BE FREE OF PLANT OR SEED MATERIAL OF NON-NATIVE, INVASIVE SPECIES, OR NOXIOUS WEEDS.

SOIL TESTING:
PLANTING SOIL FOR RAIN GARDEN AREAS MUST BE TESTED PRIOR TO INSTALLATION FOR PH AND ORGANIC MATTER. THE SOIL SHOULD MEET THE FOLLOWING CRITERIA (LANDSCAPE CONTRACTORS ASSOCIATION, 1986).

PH RANGE: 5.5-6.5
ORGANIC MATTER: 1.5-3.0%

SIEVE ANALYSIS, PH, AND ORGANIC MATTER TESTS MUST BE PERFORMED PER EACH RAIN GARDEN AREA.

SOIL PREPARATION:
SOIL PREPARATION CAN BE PERFORMED ONSITE OR OFFSITE AND TRANSPORTED TO THE FACILITY LOCATION WHEN READY FOR INSTALLATION. PRIOR TO TRANSPORT, THE SOIL MIX SHOULD BE CERTIFIED AS MEETING THE CRITERIA ESTABLISHED FOR THE SOIL MEDIUM AND APPROVED BY THE SITE INSPECTOR.

SOIL PREPARATION CAN BE ACCOMPLISHED BY THOROUGHLY MIXING SOIL COMPONENTS, AMENDMENTS AND ADDITIVES, AS NEEDED UTILIZING A BACKHOE OR FRONT-END LOADER.

TOPSOIL APPLICATION

1. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
2. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM - 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
3. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

TABLE 11.1 (E&SPC MANUAL)
CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

DEPTH (IN)	PER 1,000 SF	PER ACRE
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

TOPSOIL & SEEDING - SOIL STABILIZATION NOTES

1. GENERAL NOTES

SOIL TESTING SHALL BE DONE PRIOR TO SEEDING AND MULCHING TO DETERMINE PROPER SOIL AMENDMENTS AND APPLICATION RATES. SOIL TEST KITS MAY BE OBTAINED FROM THE COUNTY COOPERATIVE EXTENSION SERVICE OFFICES.

PERMANENT COVER: REFER TO SPECIFICATION SECTION 32 90 00 (PLANTING).

WATER SHOULD BE APPLIED AS REQUIRED TO ESTABLISH A HEALTHY STAND OF VEGATION.

HYDRO-SEEDING IS AN ACCEPTABLE MEANS OF APPLICATION.

2. SEEDBED PREPARATION, SEEDING AND MULCHING

A. WORK APPROVED RATES OF LIME AND FERTILIZER INTO SOIL TO A DEPTH OF APPROXIMATELY (4) INCHES WITH A DISC SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION MUST BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEEDBED IS PREPARED. SEED TO BE APPLIED UNIFORMLY BY GRAIN DRILL OR GRASS SEEDER TO A DEPTH OF APPROXIMATELY 1/2 - 1 INCH WITH THE SPECIFIED SEED MIXTURE AND APPLICATION RATES.

B. AREAS THAT ARE PERMANENTLY SEEDED SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE FOLLOWING:

APPLICATION RECOMMENDED	SEED RATE	PLANTING DATES
PRIMARY MIXTURE	6 LBS./1000 SF	3/30 - 6/15 OR
SECONDARY MIXTURE	10 LBS./1000 SF	8/15 - 11/1

C. FOR SANDY SOILS APPLY PERENNIAL RYE GRASS AT THE RATE OF 3-4 LBS. PER 1,000 S.F. (135-180 LBS. PER ACRE) IN ADDITION TO THE ABOVE.

D. TEMPORARY STABILIZATION SHALL CONSIST OF OF A QUICK GROWING TEMPORARY SEED MIXTURE (ANNUAL RYEGRASS) AND MULCHED. TEMPORARY SEED MIXTURE IS TO BE APPLIED AT A RATE OF 3-7 LBS. PER 1,000 S.F. (160 LBS. PER ACRE). IF THE INITIAL SEEDING DOES NOT TAKE, AREAS SHALL BE RESEEDED. TEMPORARY STABILIZATION FOR AREAS NOT IN VEGETATED AREAS MAY CONSIST OF STONE OR WOODCHIPS.

E. ANY DISTURBED AREA ON WHICH ACTIVITIES HAVE CEASED AND WHICH WILL REMAIN EXPOSED FOR MORE THAN FOUR (4) DAYS MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON-GERMINATING PERIODS MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN (1) YEAR MAY BE SEEDED WITH A QUICK GROWING TEMPORARY SEED MIXTURE (ANNUAL RYEGRASS) AND MULCHED, IN ACCORDANCE WITH THE STANDARDS. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED. STRAW MULCH SHALL BE APPLIED AT A RATE OF THREE (3) TONS PER ACRE. THE MULCH SHALL BE HELD IN PLACE WITH NETTING OR ASPHALT EMULSION OR CUT-BACK ASPHALT AT A RATE OF 100-150 GAL./ACRE. APPLICATIONS OR CELLULOSE FIBER OVER THE MULCH IS ALSO ACCEPTABLE.

F. AREAS RECEIVING BOTH TEMPORARY AND PERMANENT SEEDING SHALL BE STRAW MULCHED AT A RATE OF (3) TONS PER ACRE. STRAW MULCH TO BE ANCHORED WITH A BLANKET, NET TACKIFIER OR CRIMPING TO PREVENT IT FROM BEING WIND BLOWN.

G. SHOULD OVERCOMPACTION OF THE SOIL BECOME APPARENT, THESE GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 6" TO 12" PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL.

H. SEDIMENTATION TRAPS AND BASINS, INTERCEPTOR CHANNELS AND TOPSOIL STOCKPILES MUST BE SEEDED WITH PERMANENT SEEDING AND MULCHED IMMEDIATELY AFTER GRADING OR CONSTRUCTION OF THESE FACILITIES ARE COMPLETE.

I. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE CONFIRMATION OF SEED APPLICATION AND RATE OF APPLICATION AT THE REQUEST OF THE BUREAU OF SOIL AND WATER CONSERVATION AREA ENGINEER.

2. LIME APPLICATION RATES:

A. TEMPORARY SEEDED AREAS SHALL BE LIMED AT THE RATE OF (1) TON PER ACRE. PERMANENT SEEDED AREAS SHALL BE LIMED AT THE RATE OF (6) TONS PER ACRE.

B. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE CONFIRMATION OF LIME APPLICATION AND RATE OF APPLICATION AT THE REQUEST OF THE BUREAU OF SOIL AND WATER CONSERVATION AREA ENGINEER.

3. FERTILIZER APPLICATION RATES:

A. TEMPORARY SEEDED AREAS SHALL BE FERTILIZED AT THE RATE OF (500) LBS PER ACRE. PERMANENT SEEDED AREAS SHALL BE FERTILIZED AT THE RATE OF (1,000) LBS PER ACRE.

B. IT SHALL BE THE RESPONSIBILTIY OF THE CONTRACTOR TO PROVIDE CONFIRMATION OF FERTILIZER APPLICATION AND RATE OF APPLICATION AT THE REQUEST OF THE BUREAU OF SOIL AND WATER CONSERVATION AREA ENGINEER.

MONITORING, INSPECTION, AND REPORTING REQUIREMENTS

VISUAL INSPECTIONS

THE PERMITTEE AND CO PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT E&S BMPS AND PCSM BMPS ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

(1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP,IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND
(2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

NONCOMPLIANCE REPORTING

WHERE E&S, PCSM OR PPC BMPs ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND CO PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

(1) ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;

(2) THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;

(3) STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND

(4) THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

REDUCTION, LOSS, OR FAILURE OF THE BMPS

UPON REDUCTION, LOSS, OR FAILURE OF THE BMPS, THE PERMITTEE AND CO PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPS OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPS.

TERMINATION OF COVERAGE

NOT: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPS IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPS AND PCSM BMPS ON THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

COMPLETION CERTIFICATE AND FINAL PLANS

WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

E&S BMP's OPERATION AND MAINTENANCE

INSPECTIONS SHOULD BE LOGGED ONTO DEP FORM 3150-FM-BWEW0083 DATED 2/2012 AND KEPT ON SITE AT ALL TIMES.

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

2. FILTER BAG INLET PROTECTION
A. 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 THE INLET.
B. 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.

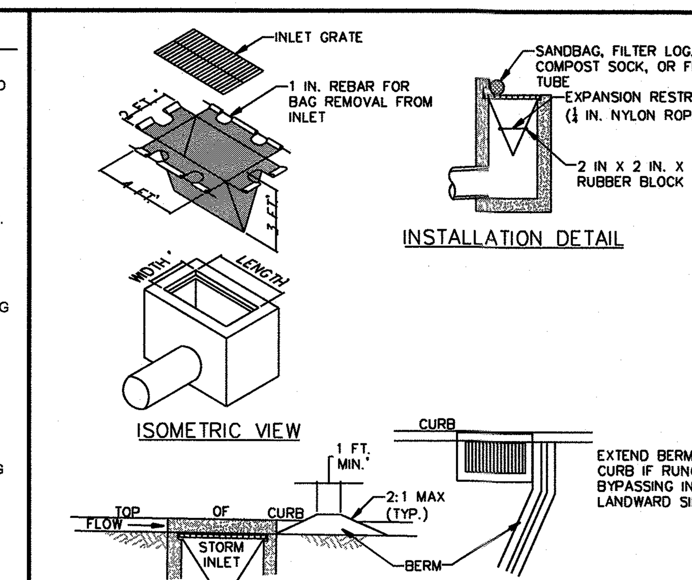
3. FILTER BAGS
A. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
B. 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.
C. 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.
D. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

4. STANDARD & REINFORCED SILT FENCE
A. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
B. FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

5. COMPOST FILTER SOCK
A. 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.
B. 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.
C. 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.
D. 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.

CONSTRUCTION SEQUENCE

1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE A FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
2. A PRE-CONSTRUCTION MEETING SHOULD BE HELD ON-SITE BETWEEN THE DEVELOPER, DESIGN PROFESSIONAL ENGINEER, TOWNSHIP REPRESENTATIVES AND THE CHESTER COUNTY CONSERVATION DISTRICT (CCCD). THE CCCD SHOULD BE NOTIFIED 7 DAYS PRIOR TO CONSTRUCTION FOR THE MEETING.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES AND SAFETY REQUIREMENTS OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXCAVATIONS DURING THE PERIOD OF CONSTRUCTION. CONTROL OF GROUNDWATER SEEPAGE AND STORMWATER RUNOFF INTO EXCAVATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. AS SOON AS SLOPES, CHANNELS, DITCHES AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED IN ACCORDANCE WITH THE E&S STANDARD NOTES.
5. INSTALL SURVEY STAKES/CONSTRUCTION FENCE AT LIMIT OF DISTURBANCE PRIOR TO DISTURBANCE ACTIVIES. INITIAL CLEARING & GRUBBING SHALL BE LIMITED TO THAT WHICH IS REQUIRED TO INSTALL THE PERIMETER BMP's. INSTALL ORANGE CONSTRUCTION FENCING AROUND PROPOSED INFILTRATION BMP's.
6. INSTALL TREE PROTECTION FENCING AND IDENTIFY TREES TO BE PRESERVED IN THE FIELD, AS DEPICTED ON THE CONSERATION PLAN. TREE PROTECTION FENCING IS TO REMAIN IN PLACE THROUGHOUT THE CONSTRUCTION ACTIVITIES.
7. INSTALL SILT FENCE, COMPOST FILTER SOCKS, AND INLET PROTECTION FOR EXISTING INLETS PRIOR TO ANY SITE DISTURBANCE.
8. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND CONRETE WASHOUT, AS SHOWN ON PLAN. WHEN INSTALLING TEMPORARY ENTRANCE ROAD, NO SOIL SHOULD BE EXPOSED TO THE ELEMENTS OVERNIGHT.
9. 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 DEP OR AUTHORIZED CONSERVATION DISTRICT.
10. REMOVE EXISTING TREES, PAVED AREAS, BUILDING, VEGETATION AND UTILITY PIPING AS NOTED ON THE APPROVED PLANS.
11. STRIP TOPSOIL IN REMAINING SITE AREAS. ALL REMAINING VEGETATION TO BE PROPERLY PROTECTED AND TO REMAIN IN ITS NATURAL STATE.
12. ROUGH GRADE PROPOSED DEVELOPMENT AREA. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA, WHICH IS TO BE PERMANENTLY STABILIZED BY VEGETATION, SHALL REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS. THE CESSATION OF ACTIVITY FOR 4 DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION WITH SEED, STRAW, MULCH, STONE, WOOD CHIPS OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. INSTALL CONSTRUCTION FENCING AROUND AREAS OF THE PROPOSED RAIN GARDENS AND INFILTRATION TRENCHES TO LIMIT CONSTRUCTION TRAFFIC AND EXCESSIVE COMPACTION.
13. INSTALL PERMANENT SWALE AND STORM PIPE BYPASS (INLET #400 TO HDWL#412) AND RIP-RAP APRON.
14. LAYOUT LOCATION OF PRPOSED ROADWAYS AND INSTALL PROPOSED UTILITES (SANITARY, WATER, ELECTRIC, STORM SEWER, GAS ETC.) NEWLY CONSTRUCTED INLETS ARE TO RECEIVE INLET PROTECTION ONCE INSTALLED. CONTRACOR SHALL COORDINATE UTILITY INSTALLATION PRIOR TO PERMANENT STABILIZATION.
15. CONSTRUCT THE RAIN GARDENS, UNDERDRAINS AND OUTLET PIPING. ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL FLOW THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS. FOR SEQUENCE OF BMP INSTALLATION REFER TO THE PCSM PLAN. **A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE DURING THE CONSTRUCTION OF THE RAIN GARDEN SUBGRADE, PVC LINER INSTALLATION AND AMENDED SOIL PLACEMENT TO ENSURE COMPLIANCE WITH THE PLANS.**
16. BEGIN CONSTRUCTION OF PROPOSED BUILDINGS/STRUCTURES.
17. CONSTRUCT THE INFILTRATION TRENCHES, UNDERDRAINS AND OUTLET PIPING AS DWELLING UNITS WITHIN THE CONTRIBUTING DRAINAGE AREAS ARE CONSTRUCTED. **A LICENSED PROFESSIONAL SHALL BE ON-SITE DURING THE PREPARATION AND BACKFILLING OF STONE, PVC LINER INSTALLATION AND AMENDED SOILS PLACEMENT.**
18. FINAL GRADING OF SITE, INSTALLATION OF TOP COURSE PAVING AND PLACEMENT OF TOPSOIL. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA, WHICH IS TO BE PERMANENTLY STABILIZED BY VEGETATION, REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS.
19. STABILIZATION OF SITE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.
20. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ONLY AFTER THE PROPER STABILIZATION OF THE DISTURBED TRIBUTARY AREAS LEADING TO THE CONTROLS HAS BEEN COMPLETED WITH A UNIFORM 70% PERENNIAL GROWTH AND ONLY IF THEIR REMOVAL WILL NOT CONTRIBUTE TO ADDITIONAL SEDIMENT PROBLEMS OUTSIDE THE AREA. STABILIZE AREAS FROM REMOVAL OF TEMPORARY CONTROL MEASURES. THE DISTRICT MAY REQUIRE A SITE INSPECTION PRIOR TO REMOVAL OF SAID FACILITY.
21. AFTER COMPLETION OF EARTH DISTURBANCE ACTIVITIES, INCLUDING PERMANENT STABILIZATION, AND IMPLEMENTATION OF PCSM BMP'S PER THE APPROVED PCSM PLAN, THE PERMITTEE SHALL FILE WITH THE AUTHORIZED CONSERVATION DISTRICT FINAL CERTIFICATIONS, VIA THE NOTICE OF TERMINATION DOCUMENT, SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE NPDES PERMIT AND THE APPROVED E&S AND PCSM PLANS.



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

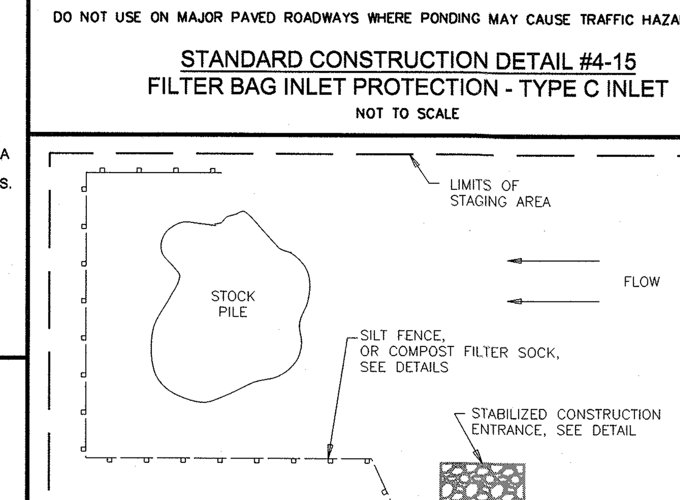
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

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.

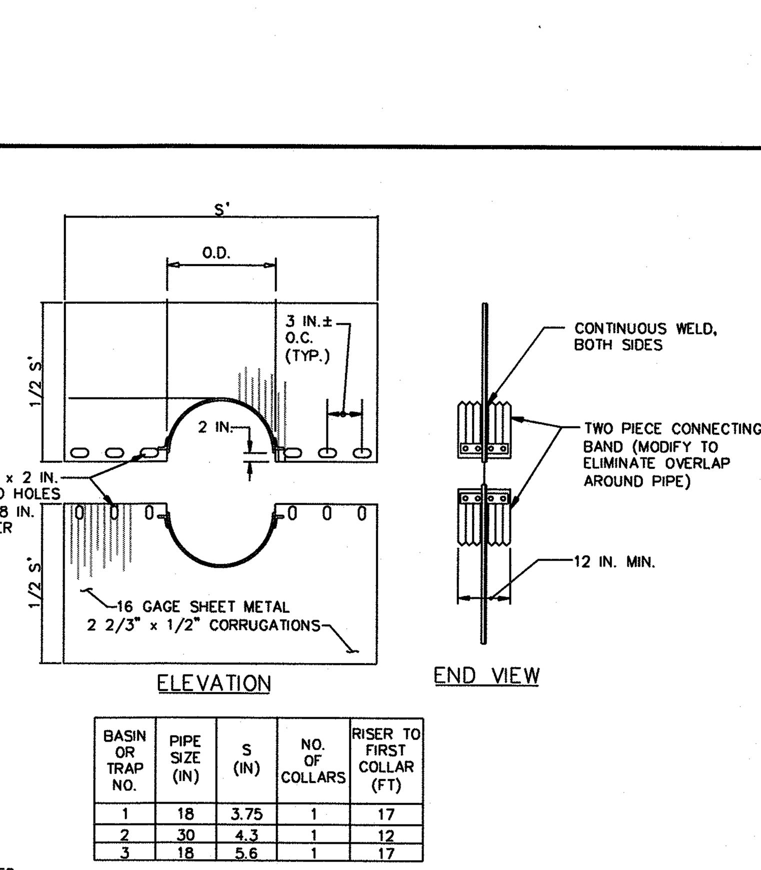
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED 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.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE



TYPICAL STAGING AREA DETAIL
NOT TO SCALE



BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)
1	18	3.75	1	17
2	30	4.3	1	12
3	18	5.6	1	17

NOTES:

COLLAR SHALL BE OF SAME GAGE AND WITH SAME COATING AS PIPE WITH WHICH IT IS USED.

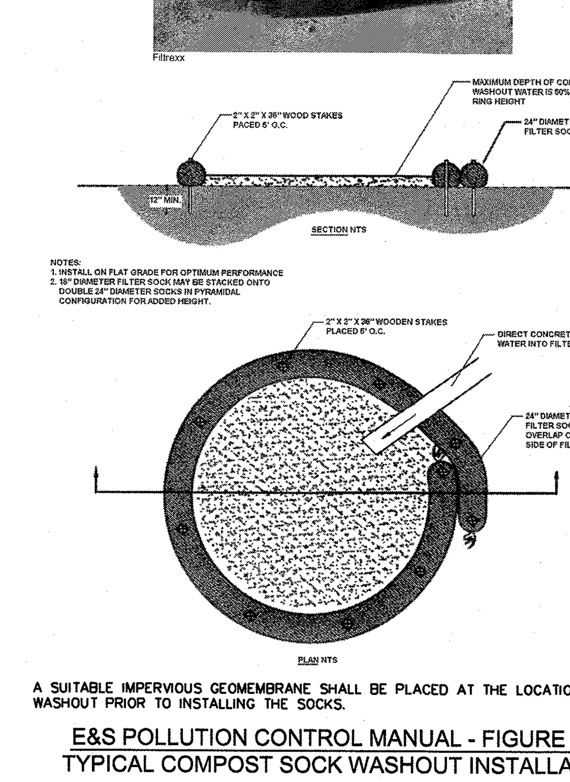
INSTALL WITH CORRUGATIONS VERTICAL.

MINIMUM DISTANCE TO PIPE JOINT SHALL BE 2 FEET.

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT. THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND CONNECTING BAND SHALL BE CAULKED WITH ASPHALT MASTIC AT TIME OF INSTALLATION.

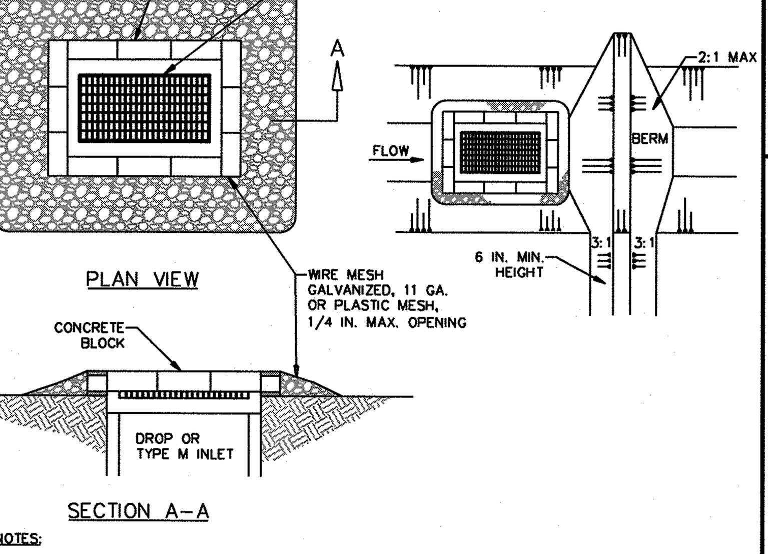
COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-15
METAL ANTI-SEEP COLLAR FOR TEMPORARY BASINS OR TRAPS
NOT TO SCALE



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

E&S POLLUTION CONTROL MANUAL - FIGURE 3.18
TYPICAL COMPOST SOCK WASHOUT INSTALLATION
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA =1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

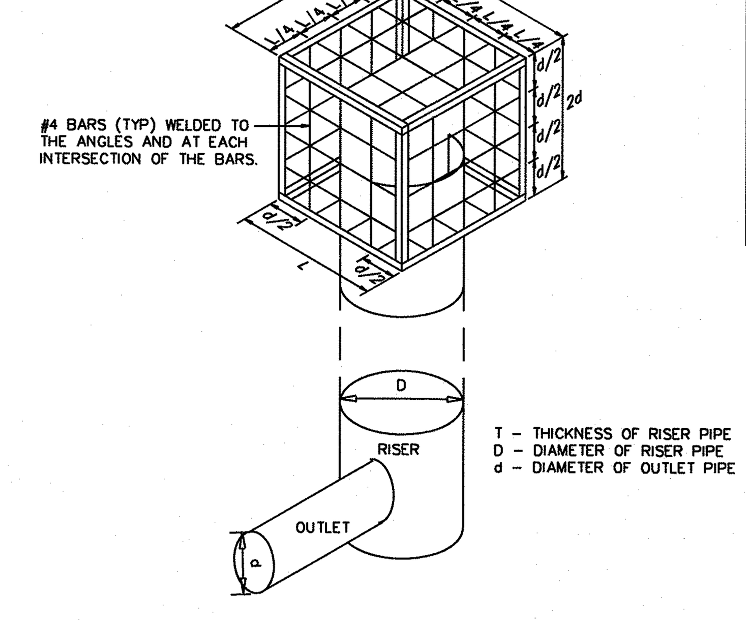
ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

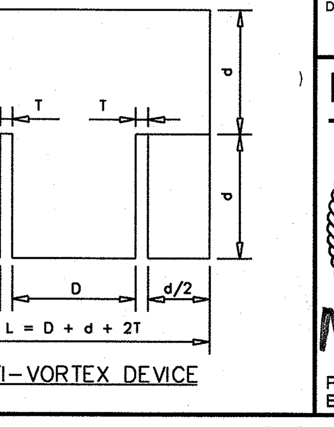
SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

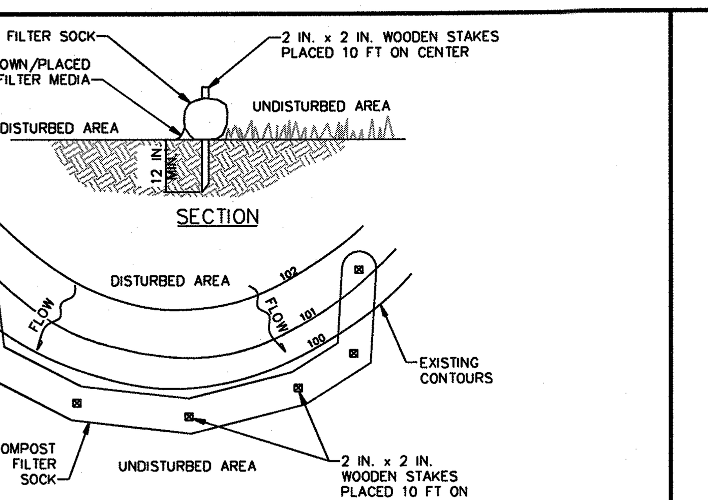
FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL #4-18
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE M INLET
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE
NOT TO SCALE

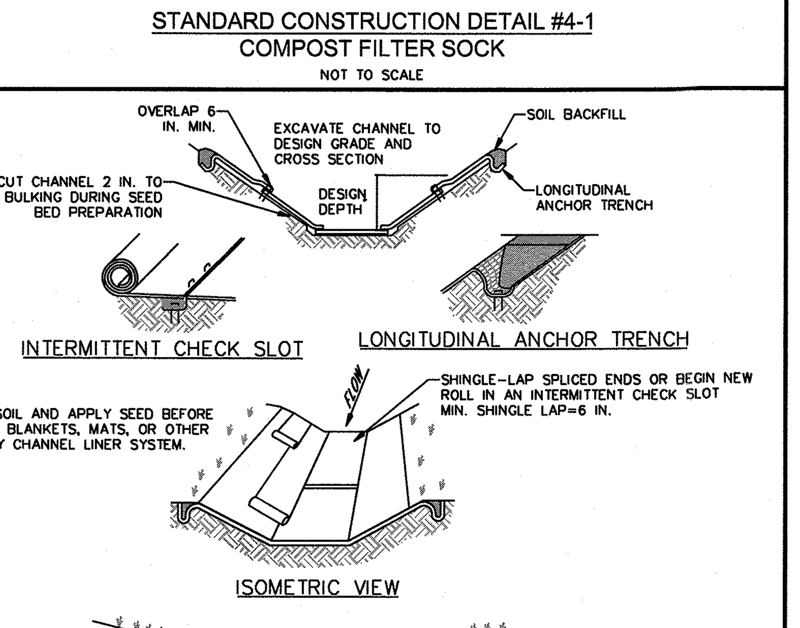




NOTES:
SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE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

SOCK NO.	DIA. IN.	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
FS-1	24	5%	500
FS-2	18	15%	200
FS-3	32	15%	560
FS-4	24	9%	310
FS-5	12	9%	140
FS-6	18	7%	230
FS-7	18	-	-

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



* 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		3	0.8	17.4	25	3	N.A.G. ERONET P-300

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.

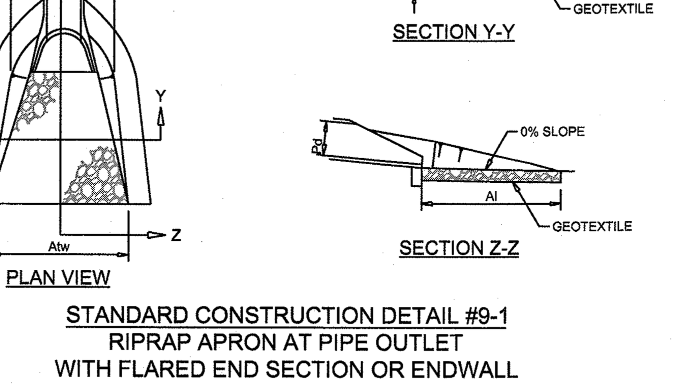
NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL
NOT TO SCALE

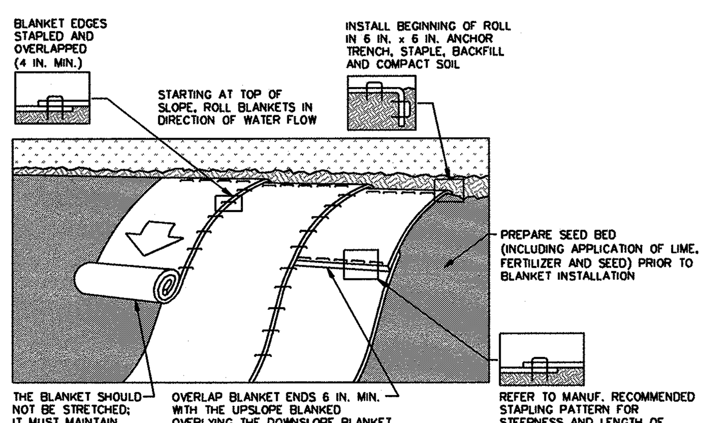
NOTES:

1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

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)
HDWL #102 (RG #1)	18	3	12	7	4.5	7.3
RAIN GARDEN #2	24	3	12	11	6	10.4
HDWL #305 (RG #3)	18	3	12	7	4.5	7.3
HDWL #412	36	5	18	21	9	30



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.

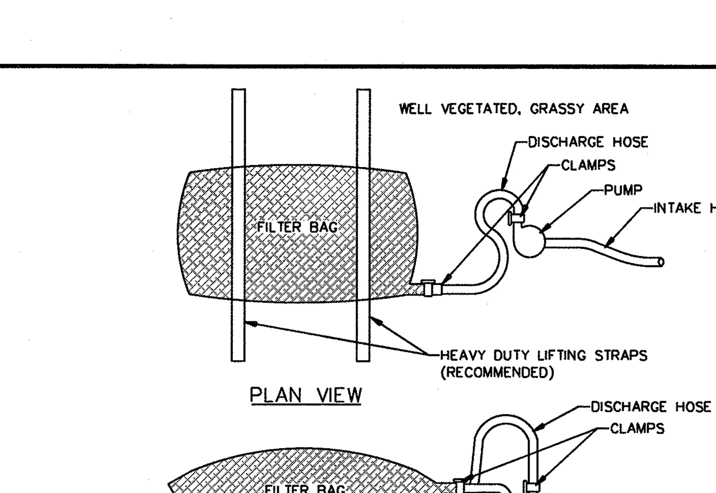
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

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



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.

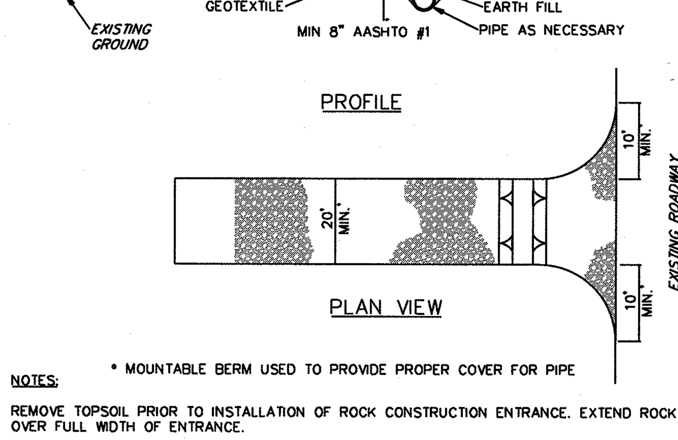
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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



* 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.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS
		NO. / DATE

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MARK M. THOMPSON — ENGINEER — PE073278
PA. PROFESSIONAL ENGINEER NO. PE073278

EROSION & SEDIMENT CONTROL NOTES AND DETAILS
MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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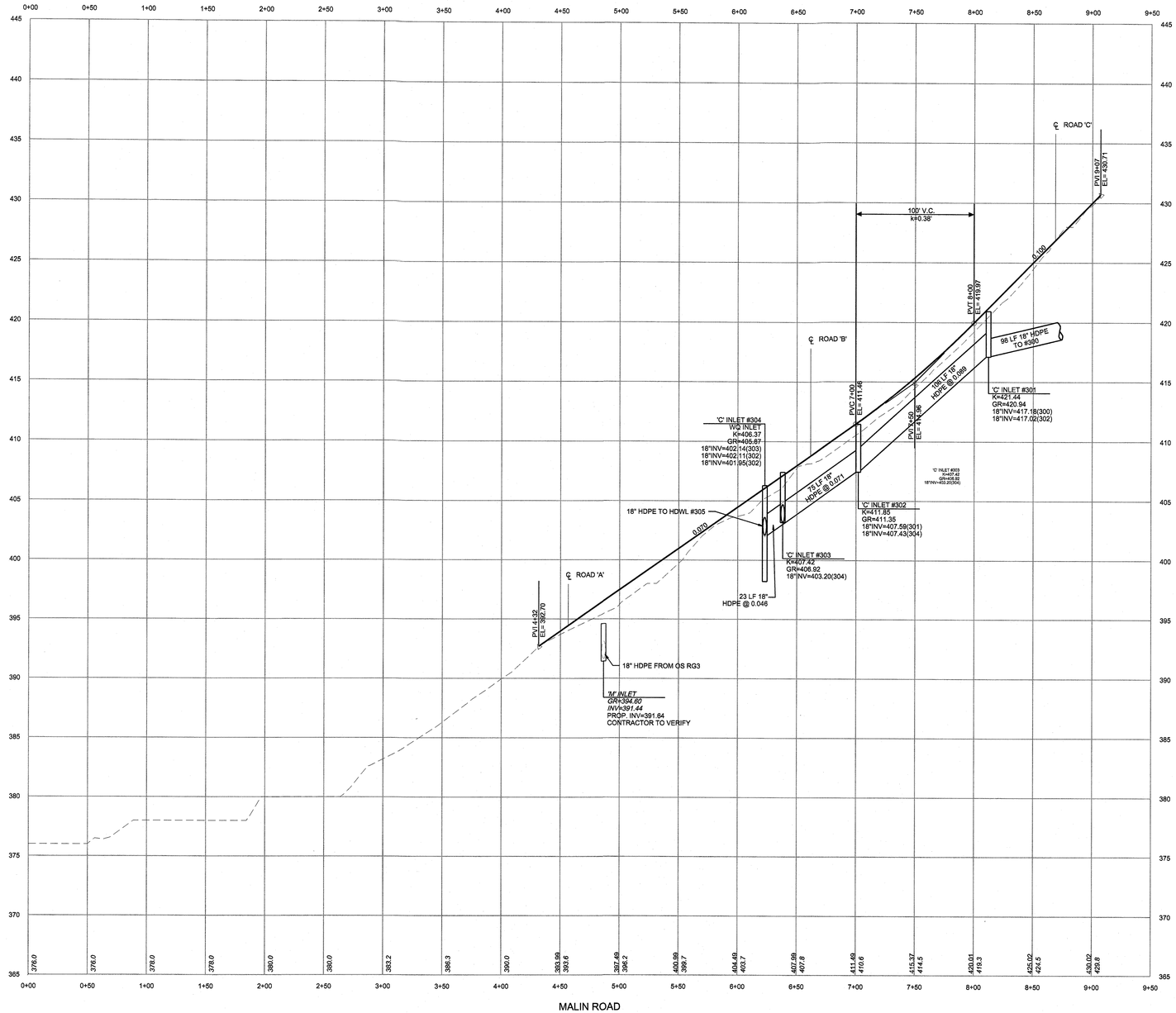

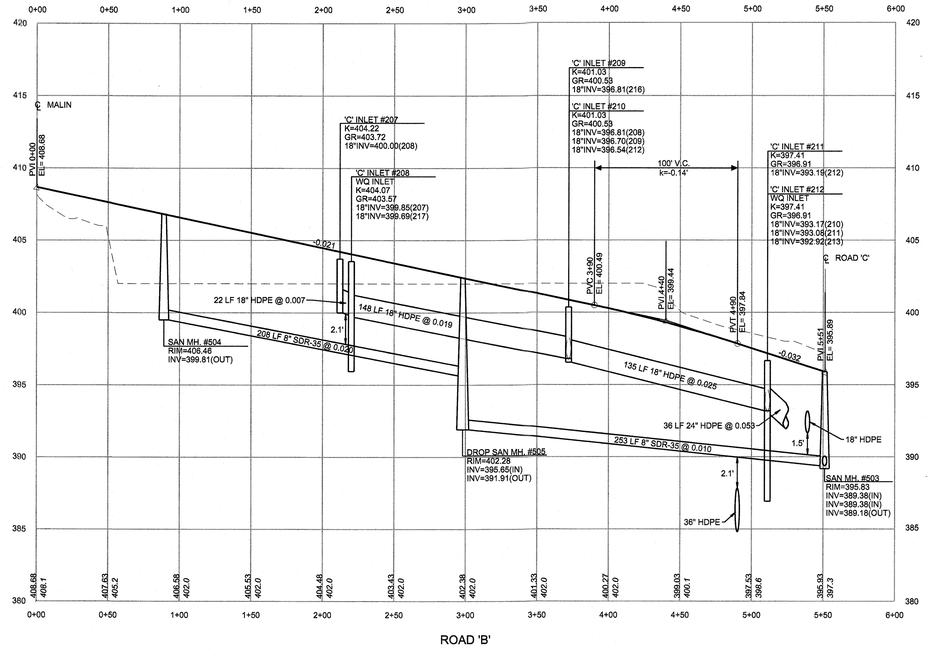

ROAD 'B'

GRAPHIC SCALE: VERTICAL 1" = 5'

GRAPHIC SCALE: HORIZONTAL 1" = 50'

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DATE SIGNED:		REVISIONS	
		NO.	DATE

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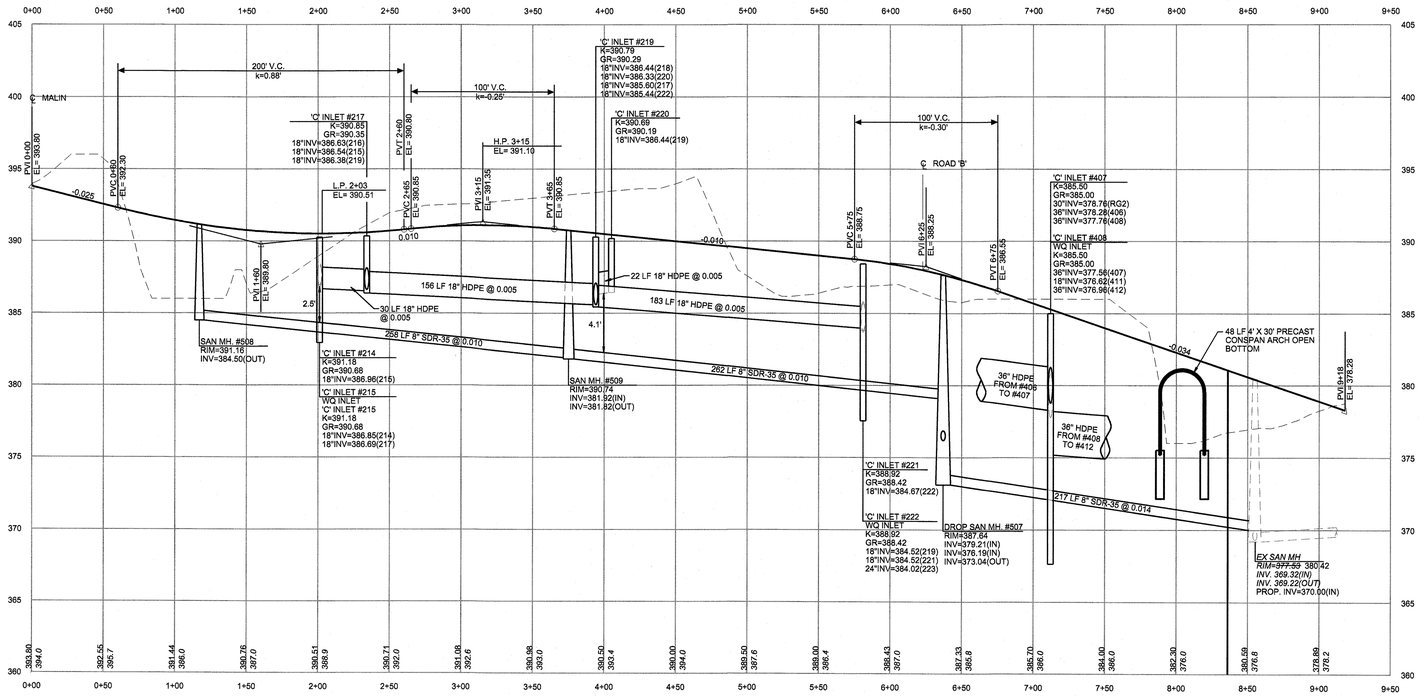
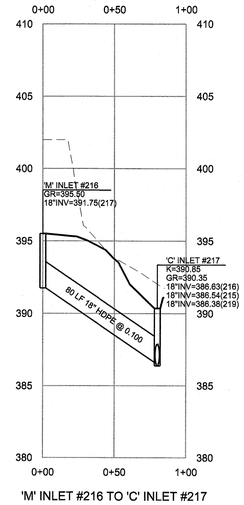
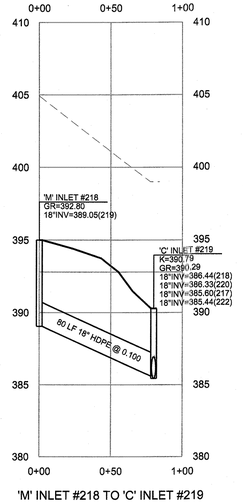


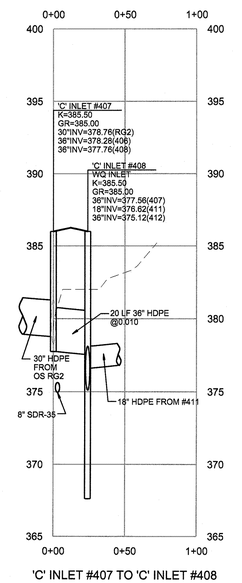
ROAD 'A'



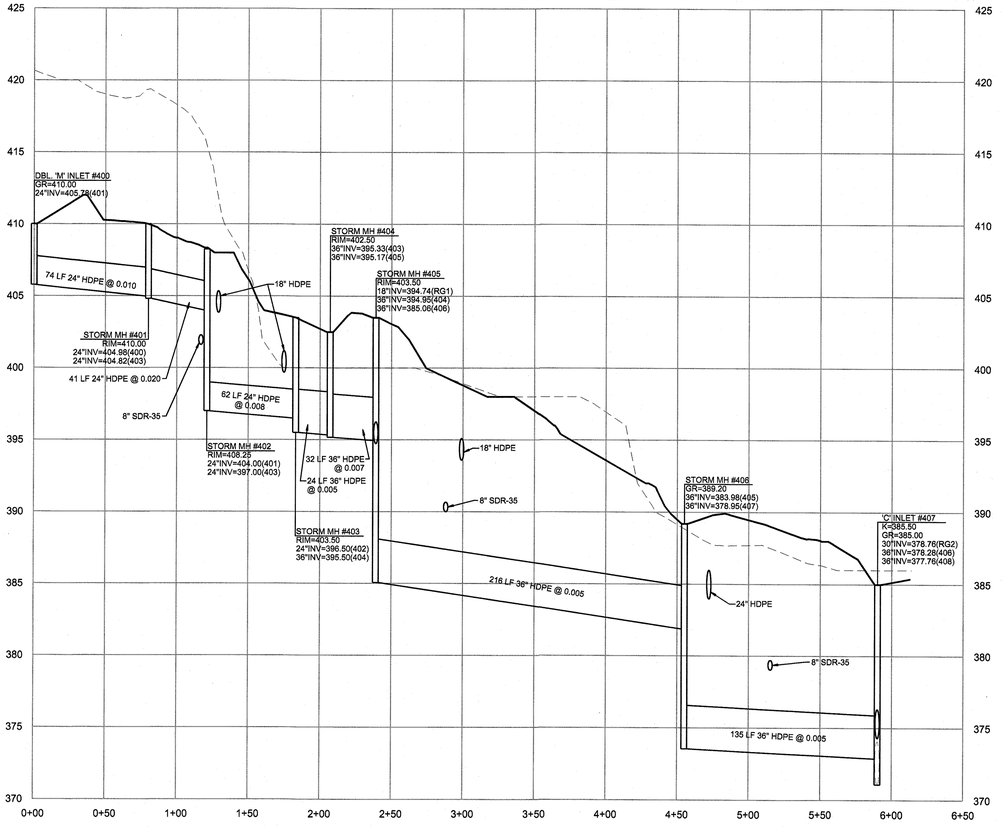
'M' INLET #216 TO 'C' INLET #217



'M' INLET #218 TO 'C' INLET #219



'C' INLET #407 TO 'C' INLET #408



DBL. 'M' INLET #400 TO 'C' INLET #407

GRAPHIC SCALE: VERTICAL 1" = 5'

GRAPHIC SCALE: HORIZONTAL 1" = 50'

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DATE SIGNED:

MARK M. THOMPSON
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PROFESSIONAL ENGINEER
MARK M. THOMPSON
No. PE073278
PA. PROFESSIONAL ENGINEER NO. PE073278

REVISIONS

NO.	DATE

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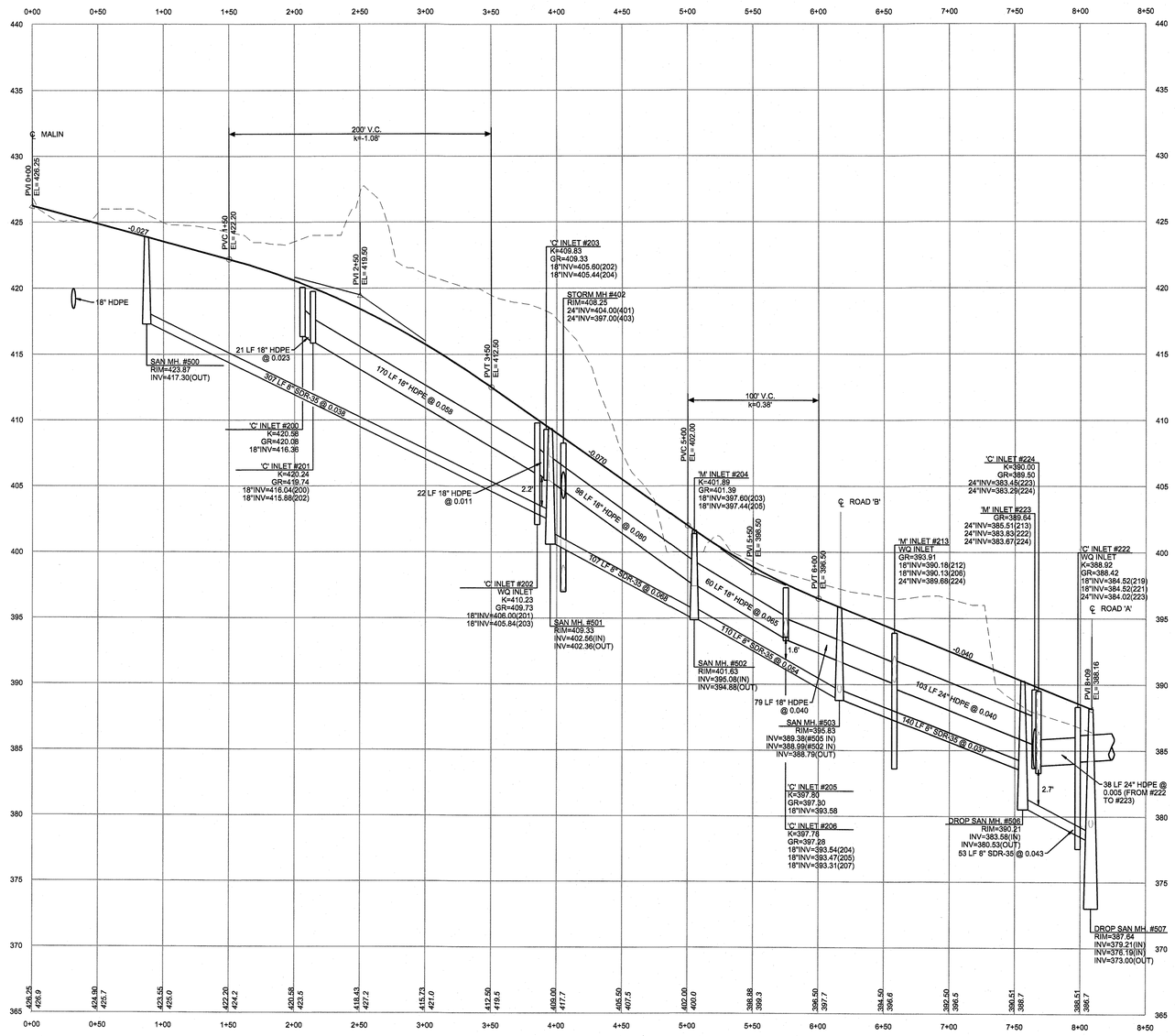
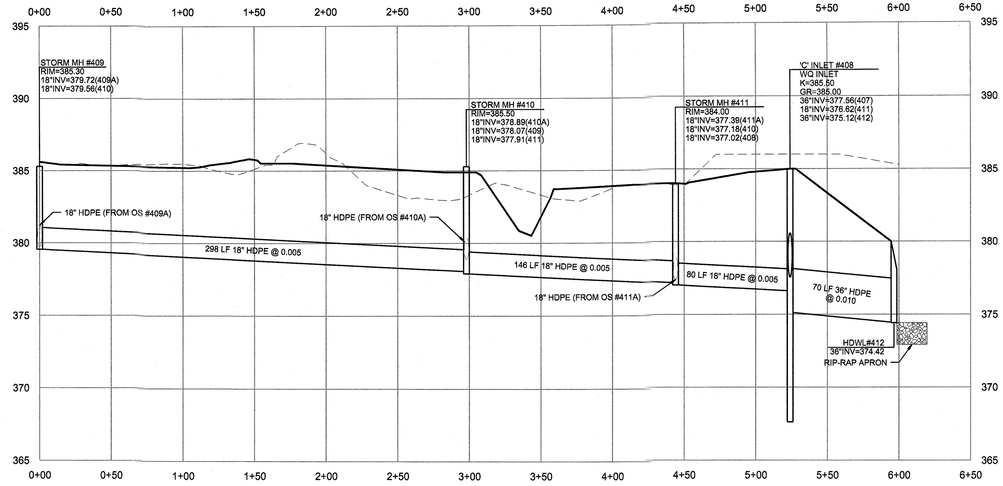
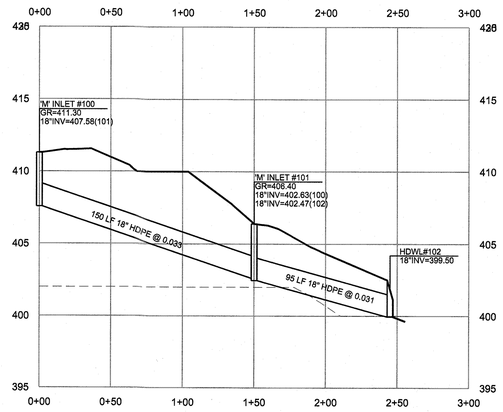


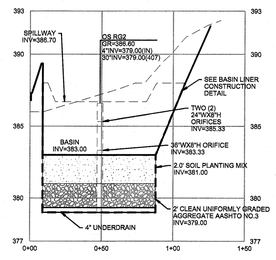
ROAD 'C'



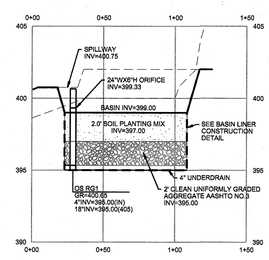
STORM MH #409 TO HDWL #412



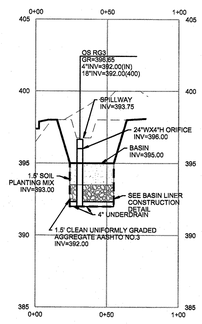
'M' INLET #100 TO HDWL#102



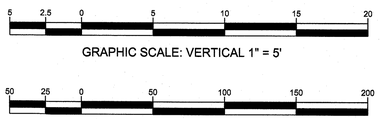
RAIN GARDEN 2



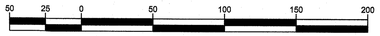
RAIN GARDEN 1



RAIN GARDEN 3



GRAPHIC SCALE: VERTICAL 1" = 5'



GRAPHIC SCALE: HORIZONTAL 1" = 50'

DESIGNED: MJW | DRAWN: JAS | CHECKED: MMT
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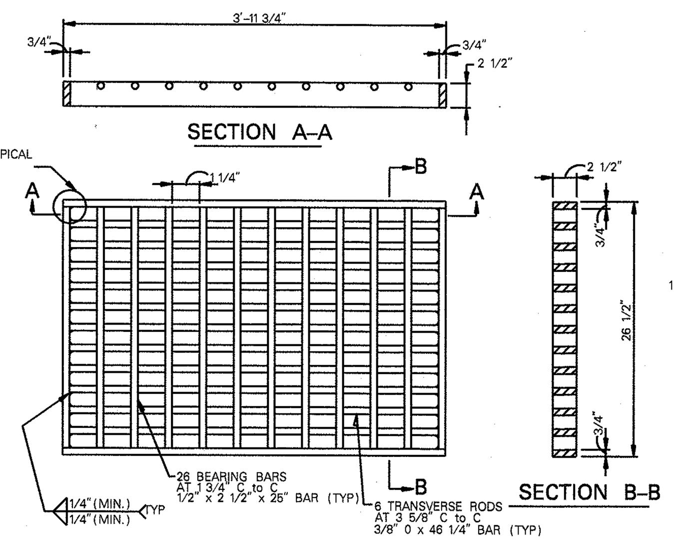
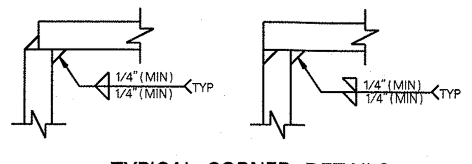




TYPICAL CORNER DETAILS

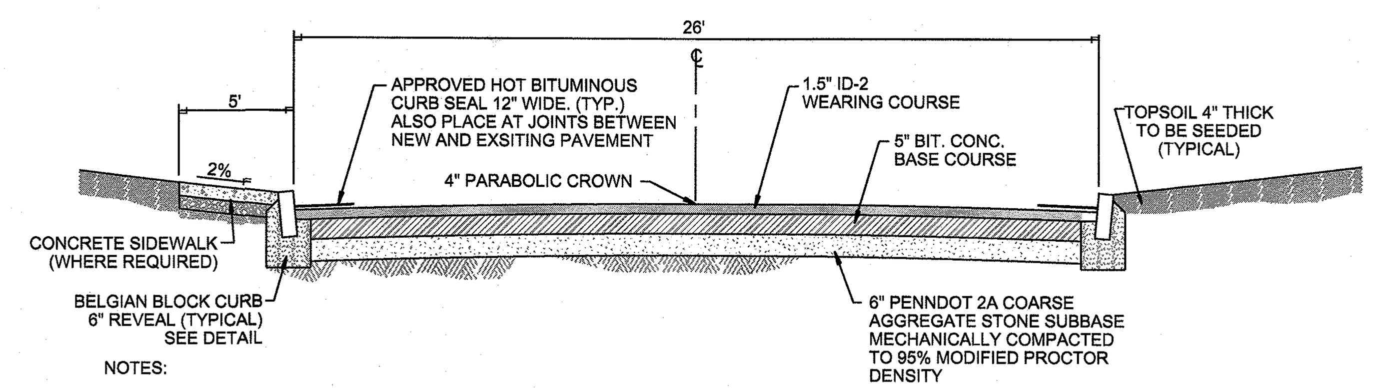
NOTE:
STEEL GRATE TO BE USED IN ROADWAY SUMP AND YARD INLETS ONLY. ALL OTHER INLETS ARE TO HAVE CAST IRON VANE GRATES.

NOTES:

1. THIS SHEET DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OR MANUFACTURING. PERMIT ONLY GRATES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15. FOR DEVIATIONS OR MODIFICATIONS OF THE STANDARDS SUBMIT SHOP DRAWLING FOR APPROVAL
2. PROVIDE BICYCLE-SAFE, STRUCTURAL STEEL OR CAST IRON VANE GRATES FOR INSTALLATION WHERE BICYCLE TRAFFIC IS ANTICIPATED, SUCH AS CURBED ROADWAYS IN URBAN AREAS OR ROADWAYS SPECIFICALLY ESTABLISHED AND SIGNED AS BIKEWAYS OR HAVING BIKE LANES. ALTERNATE BICYCLE-SAFE GRATE DESIGNS SHALL REQUIRE A SHOP DRAWING SUBMISSION, AS SPECIFIED IN NOTE 1, AND SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT CONCRETE TOP UNITS.

STRUCTURAL STEEL GRATE (BICYCLE SAFE)

N.T.S.

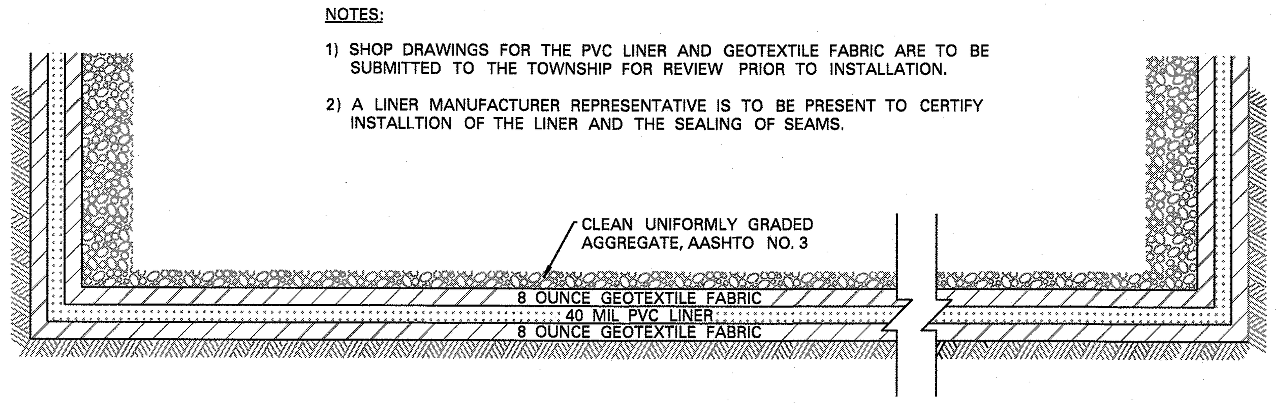


NOTES:

1. ALL CONCRETE FOR CURBS AND SIDEWALKS TO BE CLASS A; AIR-ENTRAINED CONCRETE
2. FILL MATERIAL TO BE PLACED IN MAXIMUM 7" COMPACTED LIFTS PER PENNDOT SPECIFICATIONS SECTION 210. MATERIAL TO BE SELECT BORROW, AND MEET PENNDOT SPECIFICATION 408, MAXIMUM 30% PASSING #200 SIEVE (UNLESS APPROVED BY ENGINEER), NO MATERIAL >4" DIAMETER, NO ORGANICS, COMPACTED TO 97% MAXIMUM DRY DENSITY. MATERIAL WITHIN 3' OF SUBBASE TO BE COMPACTED TO 100% MAXIMUM DRY DENSITY. DENSITY TESTS TO BE PERFORMED FOR EACH LIFT OF 3,000 SY OF PLACED MATERIAL.

TYPICAL ROADWAY SECTION

NOT TO SCALE

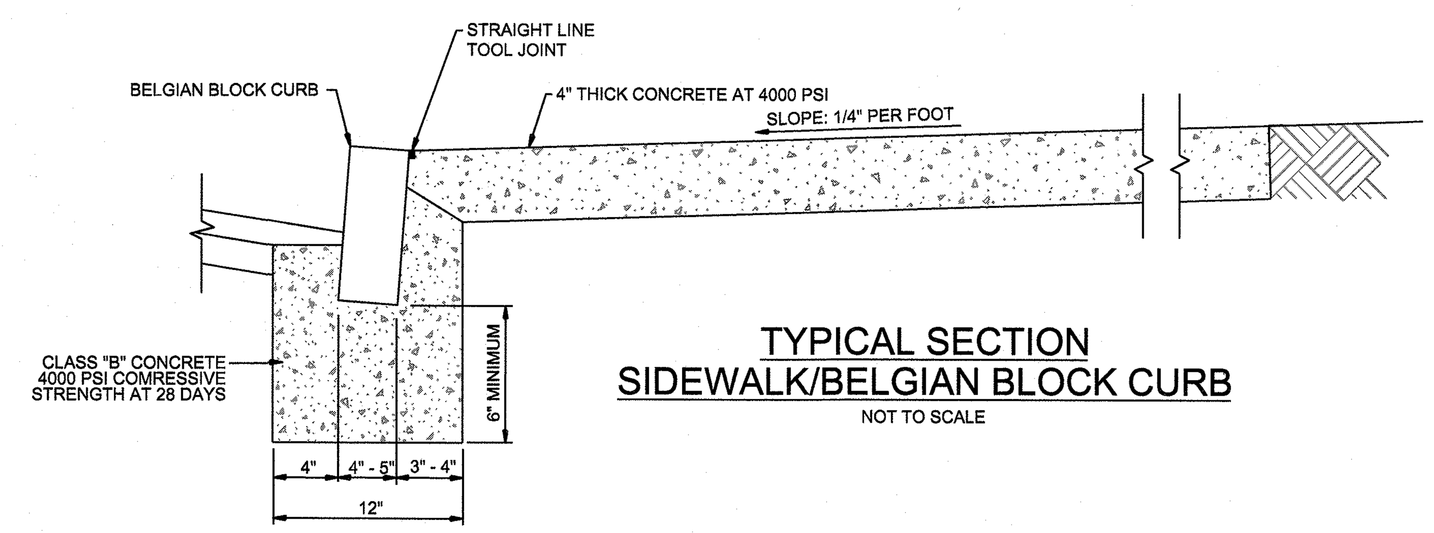


NOTES:

1) SHOP DRAWINGS FOR THE PVC LINER AND GEOTEXTILE FABRIC ARE TO BE SUBMITTED TO THE TOWNSHIP FOR REVIEW PRIOR TO INSTALLATION.
2) A LINER MANUFACTURER REPRESENTATIVE IS TO BE PRESENT TO CERTIFY INSTALLTION OF THE LINER AND THE SEALING OF SEAMS.

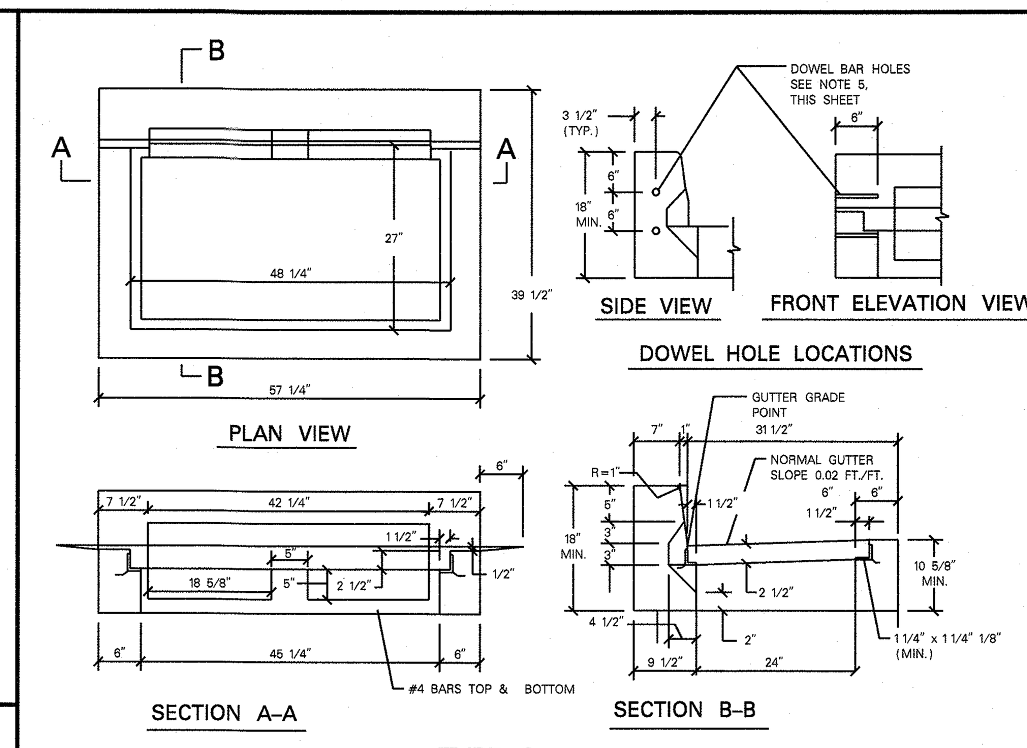
PVC BASIN LINER DETAIL

NOT TO SCALE



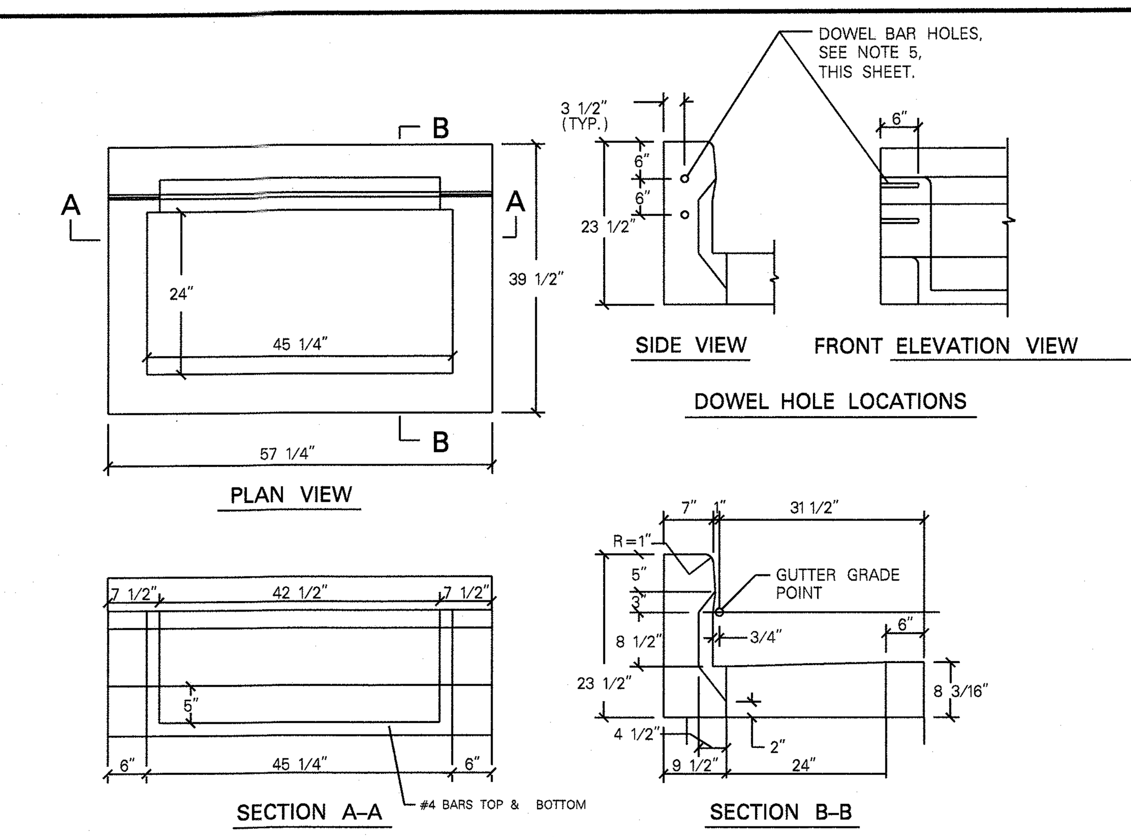
TYPICAL SECTION SIDEWALK/BELGIAN BLOCK CURB

NOT TO SCALE

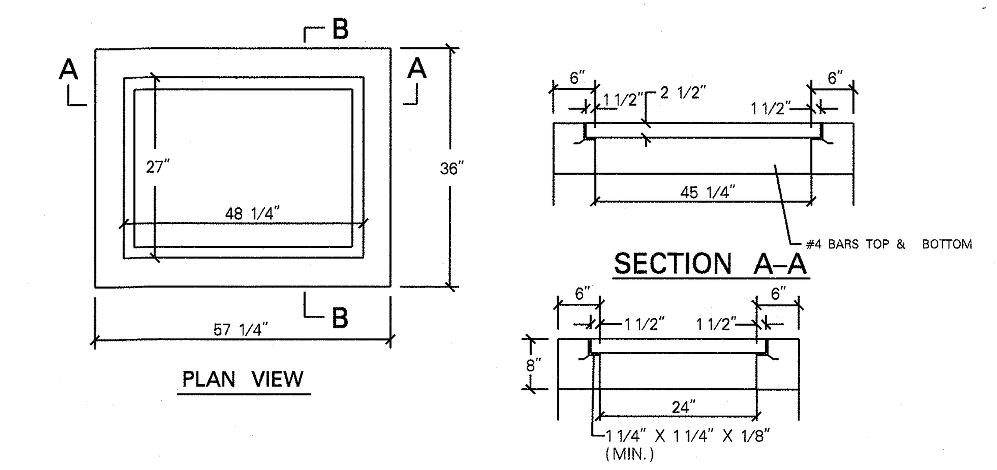


NOTES

1. THIS SHEET DEPICTS THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. IT DOES NOT INCLUDE DETAILS FOR MANUFACTURING AND HANDLING PRECAST TOP UNITS. PERMIT ONLY TOP UNITS SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15. FOR A BULLETIN 15 LISTING, SUBMIT S 22" x 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL OF FOR DEVIATION OR MODIFICATIONS.
2. CAST-IN-PLACE TOP UNITS MONOLITHIC WITH THE INLET BOX.
3. PROVIDE ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE GRATE FOR ALL TOP UNITS WHICH SEAT THE GRATE DIRECTLY WITHIN THE UNIT.
4. PLACE A TYPE M INLET ADJACENT TO THE BACK EDGE OF THE CURB, FLUSH WITH THE PAVEMENT SURFACE, WHEN REQUIRED WITHIN A CONCRETE MOUNTABLE CURB SECTION.
5. DOWEL TYPE C INLET TOP UNITS WITH 2=#8 x 1'-0" DOWEL BARS AND PLACE 1/4" PREMOLDED EXPANSION JOINT FILLER WHEN CONNECTING TO ADJACENT CURB SECTIONS.
6. THE PLACEMENT OF THE TYPE S INLET RELATIVE TO THE GUTTER INVERT IS DEPENDENT ON THE RATE OF BACK SLOPE. FOR BACK SLOPES GREATER THAN 2:1 LOCATE THE INLET WHERE THE BACK SLOPE LINE INTERSECTS THE BACK, TOP, OUTSIDE CORNER OF THE INLET. FOR BACK SLOPES LESS THAN 2:1, LOCATE THE INLET WHERE THE BACK SLOPE LINE INTERSECTS THE EDGE OF THE INLET GRATE.
7. TAPERS MAY BE PROVIDED ON INSIDE VERTICAL FACE OF PRECAST INLET TOPS TO FACILITATE FORM STRIPPING. TAPERS WILL RESULT IN INTERNAL BOTTOM DIMENSIONS THAT VARY TO A MAXIMUM OF 1".



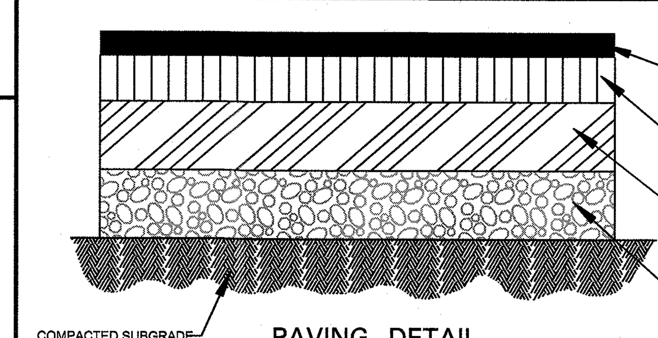
TYPE C ALTERNATE



TYPE M

CONCRETE INLET TOP UNITS

NTS



PAVING DETAIL

NOT TO SCALE

NOTE: THE MATERIALS AND CONSTRUCTION METHODS SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 305, "BITUMINOUS CONCRETE BASE COURSE," PADOT PUBLICATION 408, AS AMENDED. THE BASE COURSE SHALL BE ROLLED WITH VIBRATION ROLLER.

TABLE A

2:1 EMBANKMENT SLOPES

PIPE DIAM.	SKEW ∡ -90° TO 60° 0 - 30°			SKEW ∡ -55° 0 - 35°			SKEW ∡ -50° 0 - 40°			SKEW ∡ -45° 0 - 45°			SKEW ∡ -40° 0 - 50°			SKEW ∡ -30° 0 - 60°			SKEW ∡ -20° 0 - 70°			SKEW ∡ -10° 0 - 80°				
d	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	L	ℓ	W_1	W_2	W
(in.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)
15	3.7	0	0.6	3.8	.33	0.6	3.9	.5	0.7	4.1	.67	0.7	4.2	.75	.8	4.8	1.33	1.0	6.0	1.75	1.5	9.5	5.0	2.9	-	12
18	4.0	0	1.2	4.1	.33	1.2	4.3	.5	1.3	4.4	.67	1.4	4.6	.75	1.6	5.3	1.33	2.0	6.7	1.75	2.9	10.9	5.0	5.7	-	12
21	4.3	0	1.7	4.4	.33	1.8	4.6	.5	2.0	4.8	.67	2.1	5.0	.75	2.3	5.8	1.33	3.0	7.4	1.75	4.4	12.4	5.0	8.6	-	12
24	4.6	0	2.3	4.7	.33	2.4	4.9	.5	2.6	5.1	.67	2.8	5.4	.75	3.1	6.3	1.33	4.0	8.1	1.75	5.8	13.8	5.0	11.5	-	12
36	5.8	0	4.6	6.0	.33	4.9	6.2	.5	5.2	6.5	.67	5.7	7.0	.75	6.2	8.3	1.33	8.0	11.1	1.75	11.7	19.6	5.0	23.0	4.6	12
42	6.3	0	5.8	6.6	.33	6.1	6.9	.5	6.5	7.3	.67	7.1	7.8	.75	7.8	9.3	1.33	10.0	12.5	1.75	14.6	22.5	5.0	28.8	5.8	12
48	6.9	0	6.9	7.2	.33	7.3	7.5	.5	7.8	8.0	.67	8.5	8.5	.75	9.4	10.3	1.33	12.0	14.0	1.75	17.5	25.3	5.0	34.6	6.9	12
54	7.5	0	8.0	7.8	.33	8.5	8.2	.5	9.1	8.7	.67	9.9	9.3	.75	10.9	11.3	1.33	14.0	15.5	1.75	20.5	28.2	5.0	40.3	8.0	12
60	8.1	0	9.2	8.4	.33	9.8	8.8	.5	10.4	9.4	.67	11.3	10.1	.75	12.5	12.3	1.33	16.0	16.9	1.75	23.4	31.1	5.0	46.0	9.2	15
72	9.2	0	11.5	9.6	.33	12.2	10.1	.5	13.0	10.8	.67	14.1	11.7	.75	15.6	14.3	1.33	20.0	19.8	1.75	29.2	36.9	5.0	57.6	11.5	15

$SD = \frac{d}{\cos\theta} = \frac{d}{\sin \text{Skew} ∡}$

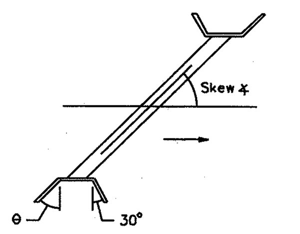
$L = SD + 2.3'$

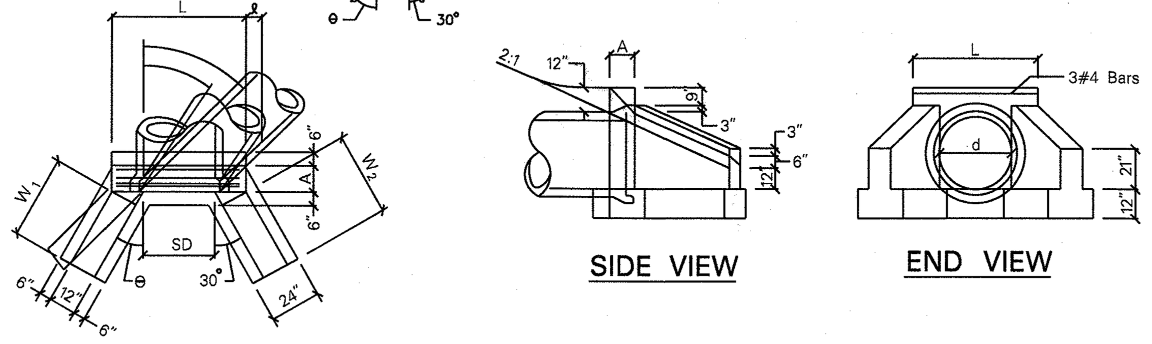
$W_1 = \frac{2d - 2'}{\cos\theta}$ (For 2:1 Slope)

$W_1 = \frac{X}{\cos\theta}(d - 0.5 - \frac{1.0}{X})$ (For variable slope when X equals horizontal dimension of the slope designation)

NOTES:

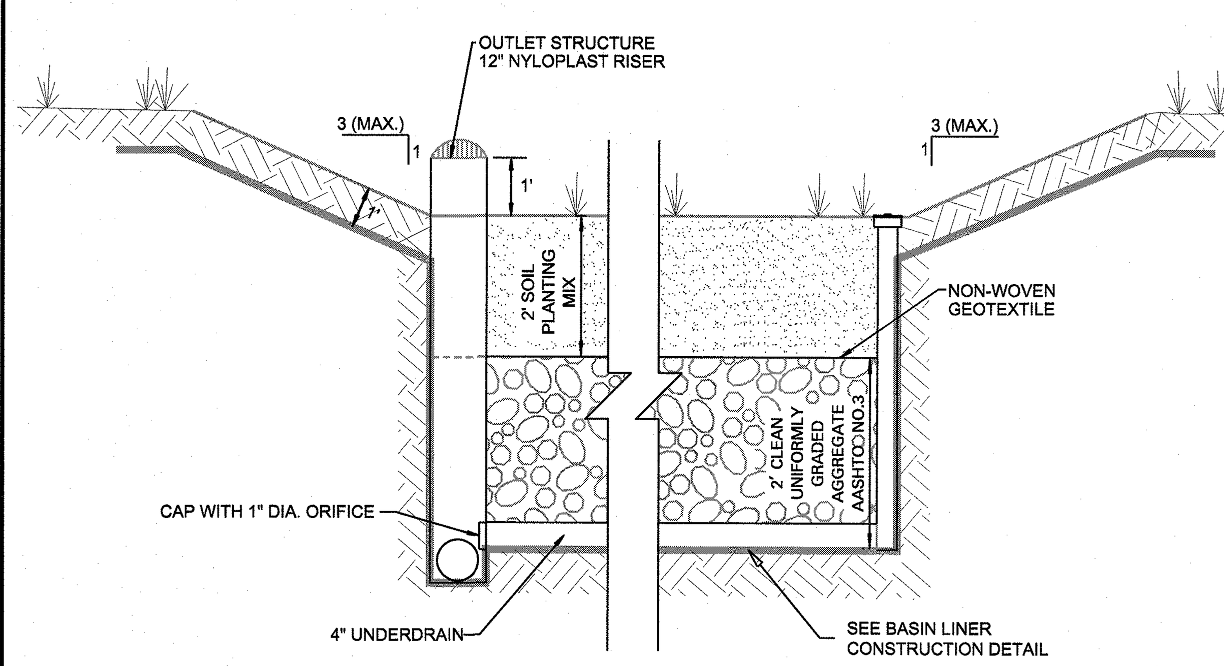
1. Construct in accordance with the requirements of Publication 408, Section 605.
2. Use Class A Cement Concrete or better.
3. Chamfer exposed edges one inch.





TYPE D–W ENDWALL

(See Table A, This Sheet, For Dimensions Not Indicated.)

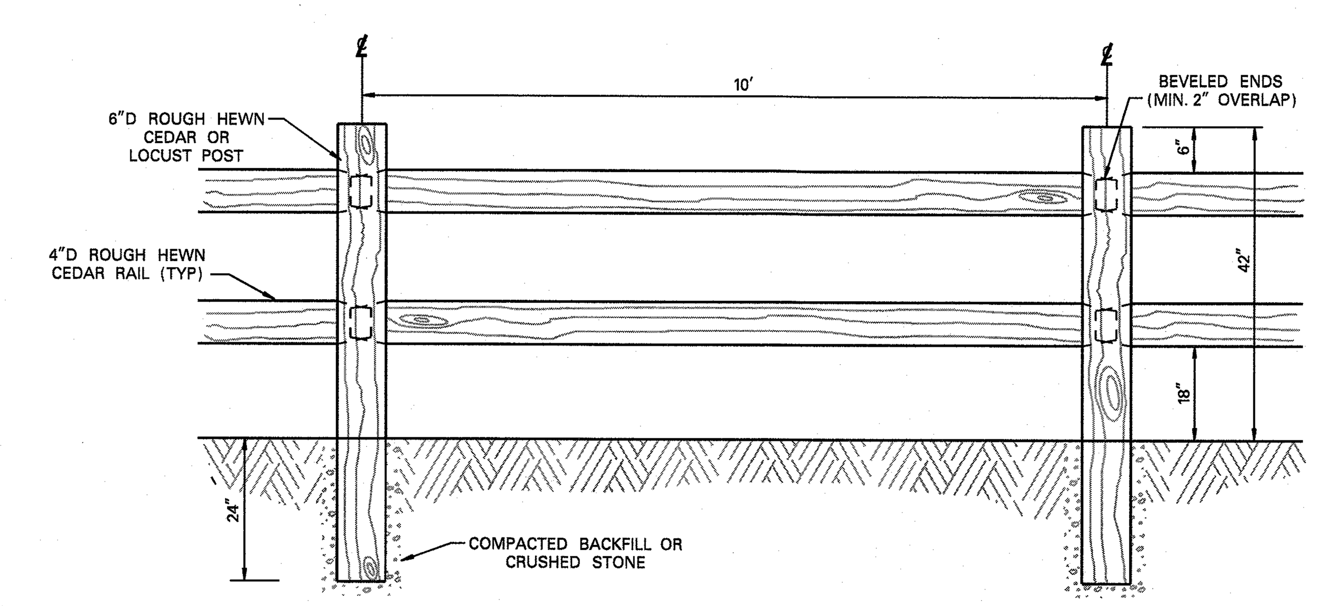


TRENCH SPECIFICATIONS:

1. SOIL PLANTING MIX SHALL BE COMPRISED OF: 50% TOPSOIL, 30% SAND AND 20% COMPOST. SOIL MUST BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2".
2. TRENCH INSTALLATION TO BE IN CONFORMANCE WITH CHAPTER 6 OF THE PENNSYLVANIA BMP MANUAL. EARTHWORK OPERATIONS IN BIORETENTION BASIN TO BE PERFORMED WITH MEANS AND METHODS NECESSARY TO LIMIT COMPACTION OF EXISTING OR PROPOSED MATERIALS TO ACCEPTABLE LEVELS. THE BOTTOM OF ALL BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE. EXISTING SUBGRADE IN TRENCH AREAS SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC.
3. FOR SEEDING SCHEDULE REFER TO LANDSCAPE PLAN.
4. SEE SHEET 17 FOR INFILTRATION TRENCH PROFILES.

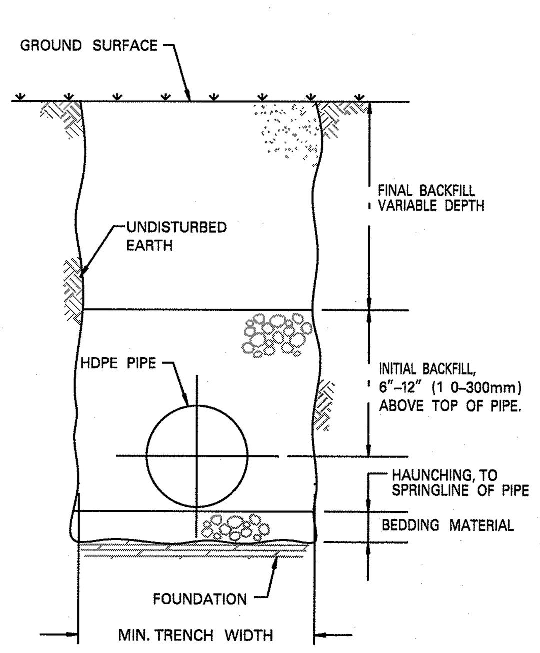
INFILTRATION TRENCH DETAIL

NOT TO SCALE



SPLIT RAIL FENCE

N.T.S.



TYPICAL TRENCH CROSS-SECTION

NOTES :

1. FOUNDATION : WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. BEDDING : SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

   UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"–24" (100–600mm) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (1 0mm) FOR 30"–60" (7 0–1 00mm) CPEP.
3. HAUNCHING AND INITIAL BACKFILL : SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

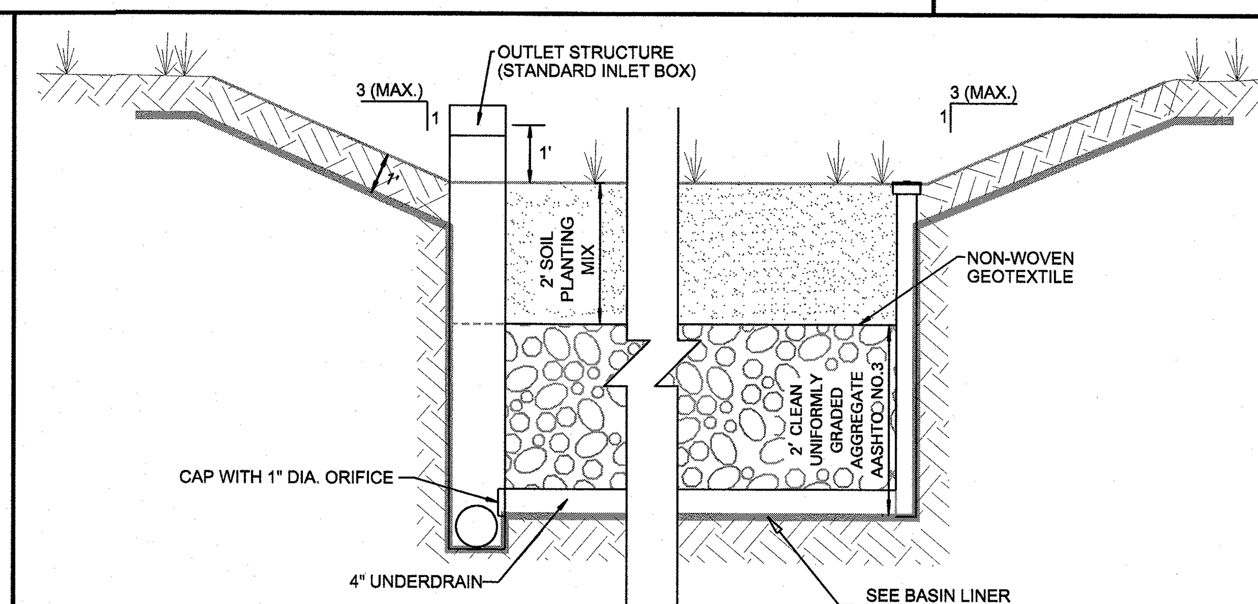
NOMINAL * in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
4 (100)	21 (30)
6 (1 0)	23 (80)
8 (200)	2 (630)
10 (2 0)	28 (710)
12 (300)	31 (790)
1 (37)	34 (860)
18 (4 0)	39 (990)
24 (600)	48 (1220)
30 (7 0)	66 (1680)
36 (900)	78 (1980)
42 (10 0)	83 (2110)
48 (1200)	89 (2260)
60 (1 00)	102 (2 90)

MINIMUM COVER : MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H2 (FLEXIBLE PAVEMENT)	12 (300), 24 (600) FOR 60" (1 00) PIPE
H2 (RIGID PAVEMENT)	12 (300), 24 (600) FOR 60" (1 00) PIPE
E80 RAILWAY	24 (600)
HEAVY CONSTRUCTION	48 (1200)

*TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

HDPE PIPE TRENCH INSTALLATION DETAIL

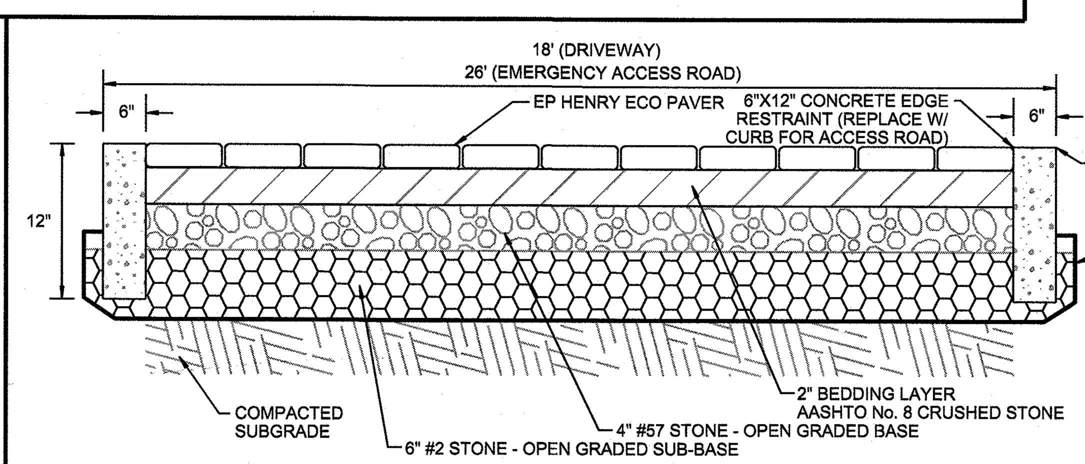


BIORETENTION SPECIFICATIONS:

1. SOIL PLANTING MIX SHALL BE COMPRISED OF: 50% TOPSOIL, 30% SAND AND 20% COMPOST. SOIL MUST BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2".
2. BIORETENTION AREA INSTALLATION TO BE IN CONFORMANCE WITH CHAPTER 6 OF THE PENNSYLVANIA BMP MANUAL. EARTHWORK OPERATIONS IN BIORETENTION BASIN TO BE PERFORMED WITH MEANS AND METHODS NECESSARY TO LIMIT COMPACTION OF EXISTING OR PROPOSED MATERIALS TO ACCEPTABLE LEVELS. THE BOTTOM OF ALL BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE. EXISTING SUBGRADE IN BIORETENTION AREAS SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC.
3. FOR SEEDING SCHEDULE REFER TO LANDSCAPE PLAN.
4. SEE SHEET 17 FOR RAIN GARDEN PROFILES.

BIORETENTION/RAIN GARDEN DETAIL

NOT TO SCALE



NOTES:

1. AVOID OVER COMPACTION OF THE NATURAL SUBGRADE SOILS. UNDERDRAINS MAY BE USED TO PROVIDE POSITIVE DRAINAGE.
2. OPEN GRADED BASE MATERIAL TO BE INSTALLED IN 6" LIFTS AND COMPACTED. THERE SHOULD BE A MINIMUM OF FOUR PASSES WITH NO VISIBLE MOVEMENT OF THE MATERIAL.
3. PRESS #8 STONE INTO TOP OF #57 STONE WITH COMPACTION EQUIPMENT.
4. PAVERS TO BE SET USING 5000 LBF PLATE COMPACTOR.
5. FOR BEST RESULTS, MAINTAIN GRADES OF LESS THAN 2 PERCENT.
6. INSTALL IN ACCORDANCE WITH PERMEABLE INTERLOCKING CONCRETE PAVERMENTS, 2ND EDITION, AVAILABLE THROUGH EP HENRY OR THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE. THE GUIDE PROVIDES DESIGN SPECIFICATIONS, CONSTRUCTION METHODOLOGY, AND MAINTENANCE SUGGESTIONS.
7. INSTALL UNDERDRAIN AS PER PLAN.

POROUS PAVER DETAIL

NOT TO SCALE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS

MARK M. THOMPSON

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARK M. THOMPSON ENGINEER PE073278

PA. PROFESSIONAL ENGINEER PE073278

NO. | DATE

CONSTRUCTION DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	18 OF 24

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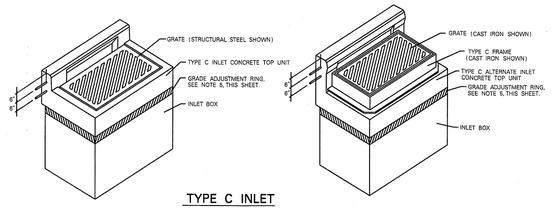
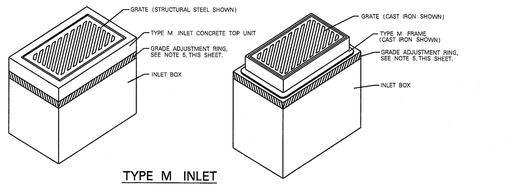


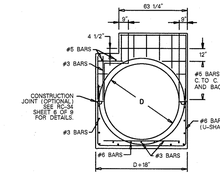
TYPE C INLET



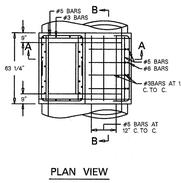
TYPE M INLET

NOTES:

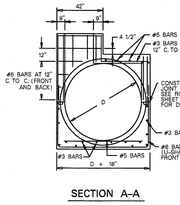
1. THIS SHEET DEPICTS THE VARIOUS COMPONENTS REQUIRED FOR COMPLETE INLET ASSEMBLIES FOR INDIVIDUAL COMPONENTS AND OTHER SPECIAL DETAILS SEE THE FOLLOWING:
   - SHEET 3 OF 9 FOR CONCRETE TOP UNITS
   - SHEET 3 OF 9 AND SHEET 4 OF 9 FOR GRATES
   - SHEET 5 OF 9 FOR FRAMES
   - SHEET 6 OF 9 FOR STANDARD INLET BOXES (CAST-IN-PLACE)
   - SHEET 7 OF 9 FOR STANDARD INLET BOXES AND GRADE ADJUSTMENT RING (PRECAST)
   - SHEET 8 OF 9 FOR MODIFIED INLET BOXES (CAST-IN-PLACE PRECAST)
   - SHEET 9 OF 9 FOR TYPE D-H INLET
2. EACH TYPE OF INLET SHOWN IS SUITED FOR A PARTICULAR SITUATION AS FOLLOWS:
   - TYPE C INLET IS DESIGNATED FOR INSTALLATION WITH NON-MOUNTABLE CURBS
   - TYPE M INLET IS DESIGNATED FOR INSTALLATION IN MEDIAN AREAS AND MOUNTABLE CURBS
   - TYPE S INLET IS DESIGNATED FOR INSTALLATION IN SHOULDER SWALE AREAS.
3. THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET ASSEMBLY IS THE CONTRACTOR'S RESPONSIBILITY.
4. CONSTRUCT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 605, FOR INLET ASSEMBLIES.
5. USE PRECAST CONCRETE OR MASONRY GRADE ADJUSTMENT RINGS.
6. ALL INLET BOXES ARE TO BE CONSTRUCTED WITH OPEN BOTTOM AND STONE TRENCH. (SEE OPEN BOTTOM INLET DETAIL)



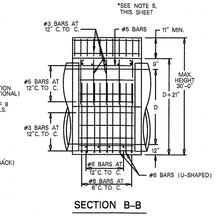
SECTION D-D



PLAN VIEW

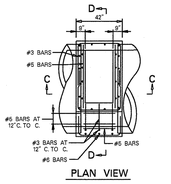


SECTION A-A

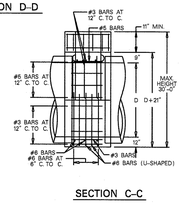


SECTION B-B

INLET BOX
MODIFIED TYPE I

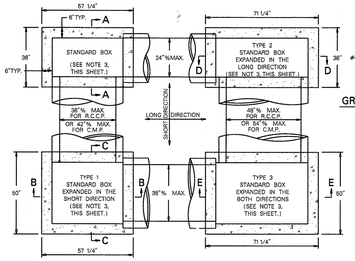


PLAN VIEW

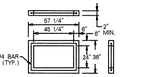


SECTION C-C

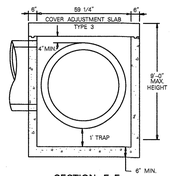
INLET BOX



PLAN VIEW



PRECAST CONCRETE GRADE ADJUSTMENT RING

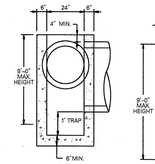


SECTION E-E

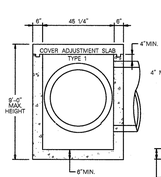
TYPE 3 ONLY (SEE NOTE 8, THIS SHEET.)

NOTES:

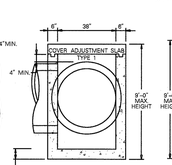
1. CONSTRUCT INLET BOXES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, FOR PRECAST CEMENT CONCRETE UNITS.
2. ONLY PRECAST INLET BOXES SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED, FOR A BULLETIN 15 LISTING, USE CLASS AA CEMENT CONCRETE FOR PRECAST BOXES. SUBMITT A 22" x 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL OF DEVIATIONS OR MODIFICATIONS.
3. PROVIDE STANDARD INLET BOXES AND COVER ADJUSTMENT SLABS WITH A 24" x 45 1/4" OPENING TO ACCOMMODATE STANDARD TOP COMPONENTS.
4. INLETS THAT EXCEED TEH MAXIMUM HEIGHT SHOWN SHALL REQUIRE A SPECIAL DETAIL AND DESIGN FOR THE INLET WALLS AND BASE.CONSTRUCT INLETS THAT EXCEED 5 FEET IN HEIGTH WITH STEPS SIMILAR TO MANHOLES. SEE RC-39.
5. LOCATE PIPE OR PIPES, AS INDICATED. ALL INLET BOXES ARE TO BE CONSTRUCTED WITH OPEN BOTTOM AND STONE TRENCH. (SEE OPEN BOTTOM INLET DETAIL)
6. PLACE SUBBASE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 305.2, IN 4 INCH LAYERS, COMPACTED TO A DENSITY SATISFACTORY TO THE ENGINEER AND INCIDENTAL TO THE INLET PAY ITEM.
7. FOR PIPE DIAMETERS LARGER THAN 36" IN THIS WALL FOR A TYPE I, USE A MODIFIED TYPE 1 INLET BOX ON RC-34, SHEET 8 OF 9.
8. FOR PIPE DIAMETERS LARGER THAN 48" R.C.C.P. OR 54" C.M.P. IN THE LONG WALL FOR A TYPE 2, USE A MODIFIED TYPE II INLET BOX ON RC-34, SHEET 8 OF 9.
9. FOR PIPE DIAMETERS LARGER THAN 48" R.C.C.P. OR 54" C.M.P. IN THE LONG DIRECTION OR LARGER THAN 38" IN THE SHORT DIRECTION, A SPECIAL DETAIL AND DESIGN IS REQUIRED.



SECTION A-A

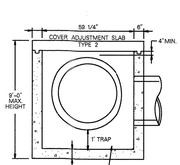


SECTION B-B



SECTION C-C

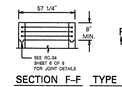
(SEE NOTE 3, THIS SHEET.)



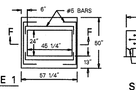
SECTION D-D

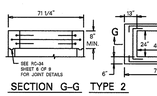
(SEE NOTE 8, THIS SHEET.)

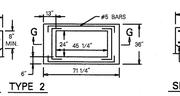
DETAIL A
PRECAST CONCRETE INLET BOX BASE PREPARATION



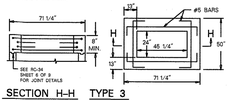
SECTION F-F TYPE 1







SECTION G-G TYPE 2



SECTION H-H TYPE 3

COVER ADJUSTMENT SIZES

PRECAST CONCRETE INLET BOXES

NTS

NOTES:

1. PRECAST MANHOLES MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST – IN – PLACE MANHOLE FOR DEVIATION OR MODIFICATION OF THE STANDARDS, SUBMIT SHOP DRAWINGS FOR APPROVAL.
2. FOR RISERS OR BASE SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT DEPTHS GREATER THAN 25', SUE A 10" THINK WALL RISER OR BASE SECTION WITH CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.22 IN /VERTICAL FT FOR THE HEIGHT OF THE RISER OR BASE SECTION

TABLE A

BASE SLAB DIMENSIONS

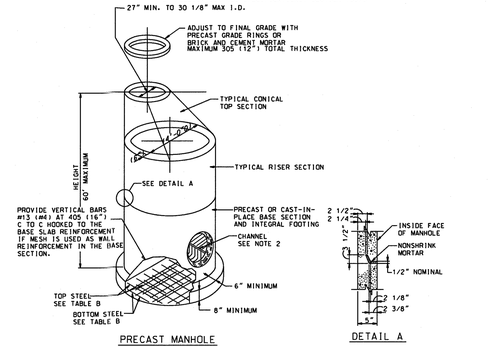
MAXIMUM DIAMETER OF PIPE	TYPE OF MANHOLE	DEPTH FROM TOP OF MANHOLE TO INVERT OF PIPE	AS DESIGNED ** TONS PER SQUARE FOOT	MINIMUM WIDTH OF BASE	MINIMUM THICKNESS OF BASE BELOW BOTTOM OF THE PIPE
30"	A	MAX. 10'-0"	0.65	6'-6"	0'-8"
30"	A	MAX. 20'-0"	0.82	7'-0"	0'-8"
30"	A	MAX. 30'-0"	1.12	7'-0"0	0'-8"
30"	B	MAX. 40'-0"	1.38	7'-6"0	1'-0"
30"	B	MAX. 50'-0"	1.50	8'-6"0	1'-6"
30"	B	MAX. 60'-0"	1.55	9'-6"0	2'-0"
	MOD.	MAX. 40'-0"	1.05	7'-0"x 7'-0"	—

** A SAFE BEARING CAPACITY OF 1.50 TONS PER SQUARE FOOT IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE ENGINEER SPECIFIES AN ADEQUATE BASE DESIGN.

TABLE B

PRECAST MANHOLE HEIGHT	TOP STEEL REQUIREMENTS	BOTTOM STEEL REQUIREMENTS
≤ 30'-0"	#4 BARS @ 6" C to C OR 0.33 IN²/FT WWF 6" MAXIMUM SPACING	#4 BARS @ 12" C to C OR 0.16 IN²/FT WWF 6" MAXIMUM SPACING
℄ 30'-0" TO 60'-0"	#5 BARS @ 6" C to C OR 0.56 IN²/FT WWF 6" MAXIMUM SPACING	#4 BARS @ 6" C to C OR 0.27 IN²/FT WWF 6" MAXIMUM SPACING

PROVIDE WELDED WIRE FABRIC MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS. SECTION 709-3



PRECAST MANHOLE

DETAIL A

NOTE:
ALL MANHOLES IN NON-PAVED AREAS TO UTILIZE BOLTED COVER.

STORM MANHOLE DETAIL

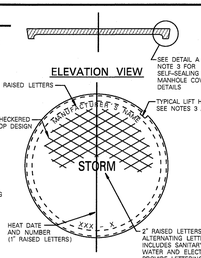
NOT TO SCALE

NOTES:

1. PROVIDE MANHOLE FRAMES AND COVERS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 605.2(B), DESIGN MANHOLE FRAME, COVER AND GRADE ADJUSTMENT RINGS FOR H025 LIVE LOAD. IF MANHOLES ARE NOT IN OR ADJACENT TO ROADWAY, DESIGN FOR ALL POSSIBLE LIVE LOADS AS APPROVED BY THE DEPARTMENT.
2. PROVIDE MANHOLE FRAMES, COVERS, AND GRADE ADJUSTMENT RISERS SUPPLIED BY A MANUFACTURER AS LISTED IN BULLETIN 15. FOR A BULLETIN 15 LISTING, SUBMIT A 22" X 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW.
3. PROVIDE A GASKET SEALING SYSTEM (DOVETAIL GROOVE AND CONTINUOUS GASKET), AS INDICATED IN DETAIL A, TO PREVENT INFLOW THROUGH THE BEARING SURFACES, OF SURFACE RUNOFF WATER INTO THE MANHOLE SYSTEM. WHEN SPECIFIED, PROVIDE 1/4" DIA. ONE PIECE SELF SEAL POLYISOPRENE ROUND GASKET, 40 DUROMETER GLUED IN PLACE. PROVIDE TWO (2) LIFT HOLES AT 180° TO FACILITATE COVER REMOVAL FOR SELF-CLEANING MANHOLE COVER.
4. PROVIDE ONE LIFT HOLE TO FACILITATE COVER REMOVAL FOR NON-SEALING MANHOLE COVER.
5. FRAME AND GRADE ADJUSTMENT RISER TO HAVE A MINIMUM 1" BEARING SEAT FOR COVER.
6. LOCATE TOP OF FRAME OR ADJUSTMENT RISER 1/8" BELOW THE TOP OF ROADWAY SERVICE
7. GRADE ADJUSTMENT RISERS

   PROVIDE GRADE ADJUSTMENT RISERS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 606, AND AS MODIFIED HEREIN:

   A. EACH ADJUSTMENT RISER TO BE CUSTOM FABRICATED FROM MEASUREMENTS PROVIDED WITH EACH ORDER.
   B. BAR STOCK AND RETAINER CLIP TO BE MANUFACTURED FROM US MADE CARBON STEEL MEETING OR EXCEEDING THE MINIMUM REQUIREMENTS OF A.S.T.M. A-36.
   C. FULL CIRCUMFERENTIAL WELDS ARE REQUIRED ON BOTH TOP AND BOTTOM RINGS.THE INNER WELD TO BE BEVEL GROOVE WELD (FLUSH FINISH) FOR PROPER SEATING OF MANHOLE LID AND THE OUTER WELD TO BE FILLET WELD.
   D. MINIMUM WIDTH OF BOTTOM AND TOP BAR STOCK TO BE 1" AND 3/8", RESPECTIVELY.
   E. BOTTOM BAR STOCK FOR MULTI-PIECE ADJUSTMENT RISER TO BE TAPPED FOR 1/2" DIAMETER ADJUSTMENT BOLT.
   F. ADJUSTMENT RISER TO BE ADEQUATELY REINFORCED TO PREVENT BENDING.
   G. PROVIDE AN ADJUSTMENT RISER WHICH IS FLUSH WITH COVER AND DOES NOT ALLOW EXCESSIVE MOVEMENT. PROVIDE AN ADJUSTMENT RISER WHICH CONFORMS TO THE SHAPE OF THE ORIGINAL FRAME.
8. FRAME AND/OR PRECAST CONCRETE GRADE RINGS TO BE ATTACHED RIGIDLY TO TOP OF MANHOLE.USE 3 – 1/2" DIA.THREADED STUDS WITH HEX HEAD NUTS AND WASHERS,INSERTED THROUGH 5/8" DIA. HOLES TO BE SPACED AT 120° AND 2" FROM OUTSIDE EDGE OF FRAME. EMBED STUDS 4" (MINIMUM) INTO MANHOLE. GROUT STUDS INTO MANHOLE.
9. THE BASE OF THE FRAME AND/OR PRECAST CONCRETE GRADE RINGS TO BE SET IN A BED OF CEMENT MORTAR.

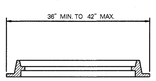


ELEVATION VIEW

PLAN VIEW

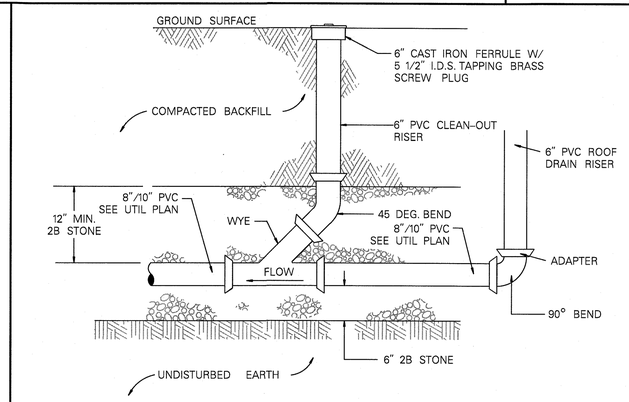
CAST–IRON MANHOLE COVER
(PLATEN COVER)

NOT TO SCALE



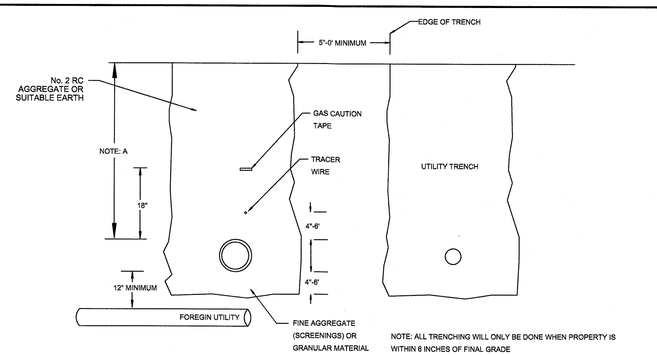
ELEVATION VIEW
OF MANHOLE FRAME

NOT TO SCALE



ROOF DRAIN CLEAN–OUT DETAIL

NOT TO SCALE



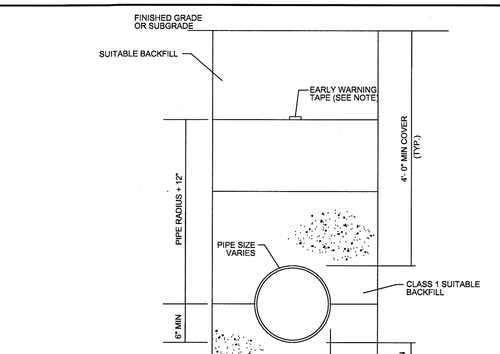
NOTE: ALL TRENCHING WILL ONLY BE DONE WHEN PROPERTY IS WITHIN 6 INCHES OF FINAL GRADE

IF THERE ARE CUSTOMER CHARGES THERE WILL NOT BE ANY SCHEDULING OF SERVICE INSTALLATION UNTIL REMITTANCE IS RECIEVED

NOTE: A
UNDER DEVELOPMENT FOOTWAY=24"
UNDER DEVELOPMENT ROADWAY=30"
UNDER AND OR ALONG MAJOR ROADS OR HIGHWAYS=36"

TYPICAL GAS SERVICE TRENCHING REQUIREMENTS
BUILDING TRENCHING

NOT TO SCALE

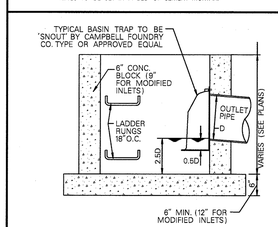


NOTES:

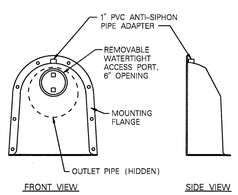
1. ALL BACKFILL MATERIAL SHAL BE MECHANICALLY TAMPED IN 6" LIFTS.
2. EARLY WARNING TAPE SHALL BE METALLIC LINED PRINTED PLASTIC TAPE TWO (2) INCHES WIDE. TAPE SHALL BE GREEN COLORED WITH THE WORDS "CAUTION BURIED WATER LINE BELOW" STENCELED ON THE TAPE EVERY TWO (2) FEET.

TYPICAL WATER TRENCH CONSTRUCTION

NOT TO SCALE



INLET NUMBER	PIPE SIZE (IN)	MODEL NUMBER
INLET #202	18"	36FTB
INLET #208	18"	36FTB
INLET #212	18"	36FTB
INLET #213	24"	36FTB
INLET #215	18"	36FTB
INLET #222	24"	36FTB
INLET #304	18"	36FTB
INLET #408	36"	48FTB



WATER QUALITY INLET W/SUMP

NOT TO SCALE

NOTES:

1. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS OR APPROVED EQUAL.
2. ALL HOODS SHALL BE EQUIPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT.
3. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE.
4. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE OF MINIMUM DISTANCE OF 6".
5. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY A MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO THE STRUCTURE CONFIGURATION.
6. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
7. THE HOOD SHALL BE SECURLY ATTACHED TO THE STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL RESISTANT GASKET.
8. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT WHICH SHALL INCLUDE –

   A. INSTALLATION INSTRUCTIONS
   B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
   C. OIL-RESISTANT CRUSHED CELL FOAM GASKET w/ PSA BACKING
   D. 3/8" STAINLESS STEEL BOLTS
   E. ANCHOR SHEILDS

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS

NO.	DATE

MARK M. THOMPSON
REGISTERED PROFESSIONAL ENGINEER
PE073278
COMMONWEALTH OF PENNSYLVANIA

PA. PROFESSIONAL ENGINEER NO. PE073278

CONSTRUCTION DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
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www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-08476-LD	19 OF 24

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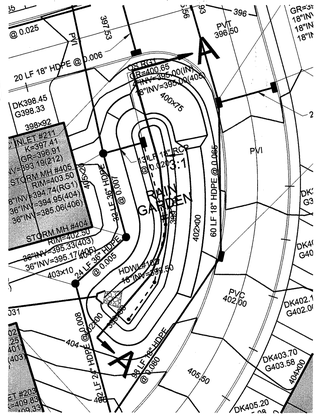
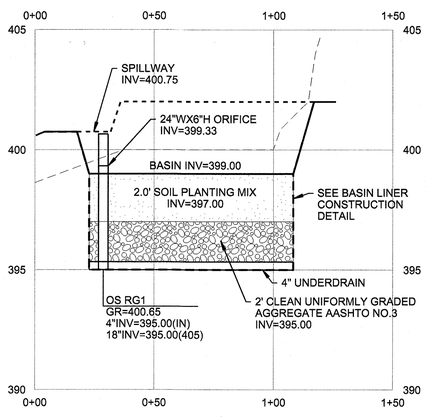


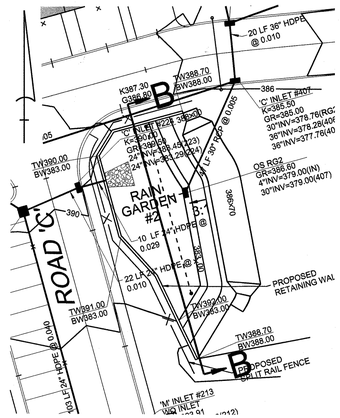


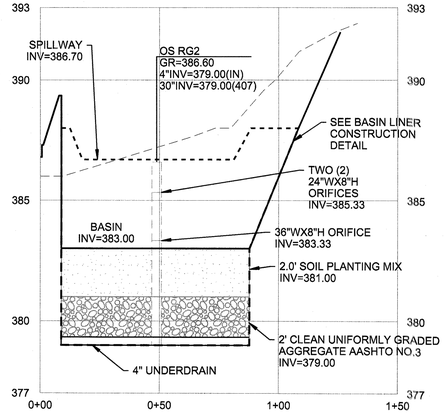
RAIN GARDEN #1

SCALE: 1" = 30'

SECTION A-A

VERTICAL 1" = 3'
HORIZONTAL 1" = 30'



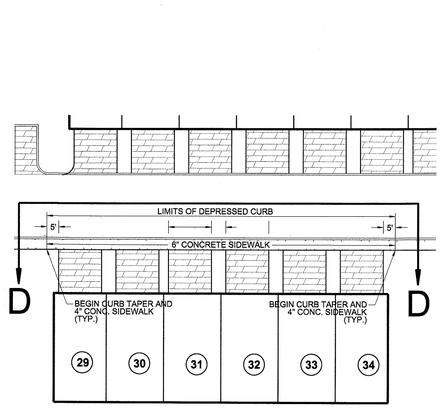


RAIN GARDEN #2

SCALE: 1" = 30'

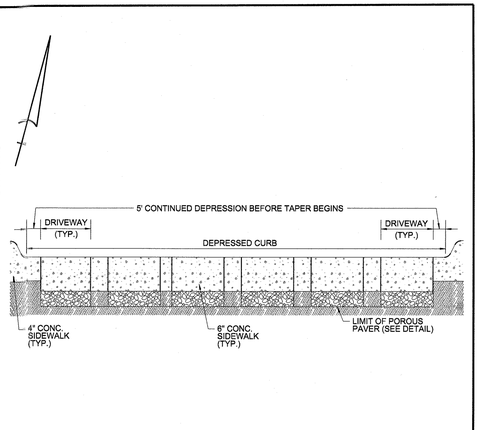
SECTION B-B

VERTICAL 1" = 3'
HORIZONTAL 1" = 30'



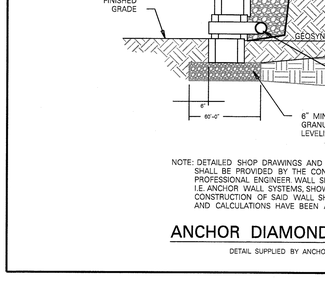
TYPICAL DRIVEWAY

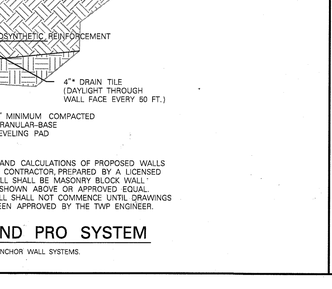
SCALE: 1" = 30'



SECTION D-D

NOT TO SCALE





RAIN GARDEN #3

SCALE: 1" = 30'

SECTION E-E

VERTICAL 1" = 3'
HORIZONTAL 1" = 30'

	TRENCH #1	TRENCH #2	TRENCH #1
BASIN BED LENGTH	128 FT.	130 FT.	88 FT.
TRENCH INVERT	384.00	383.00	381.50
PLANTING MIX INVERT	382.00	381.00	379.50
STONE INVERT	380.00	379.00	377.50
12" NYLOPLAST RISER	385.50	384.50	383.00
4" DIA. ORIFICE INV.	385.00	384.00	382.50
4" UNDERDRAIN & 18" HDPE INV.	380.00	379.00	377.50

TYPICAL INFILTRATION TRENCH

VERTICAL 1" = 3'
HORIZONTAL 1" = 30'

NYLOPLAST DRAIN BASIN WITH DOME GRATE

1 - 8" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-045.
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. 7001-110-060.
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 (4" - 24").
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 8" - 30" DOME GRATES HAVE NO LOAD RATING.

CONTRACTOR TO PROVIDE ANTI-FLOTATION CALCULATIONS WITH SHOP DRAWING SUBMITTAL.

NOTE: DETAILED SHOP DRAWINGS AND CALCULATIONS OF PROPOSED WALLS SHALL BE PROVIDED BY THE CONTRACTOR, PREPARED BY A LICENSED PROFESSIONAL ENGINEER. WALL SHALL BE MASONRY BLOCK WALL I.E. ANCHOR WALL SYSTEMS, SHOWN ABOVE OR APPROVED EQUAL. CONSTRUCTION OF SAID WALL SHALL NOT COMMENCE UNTIL DRAWINGS AND CALCULATIONS HAVE BEEN APPROVED BY THE TWP ENGINEER.

ANCHOR DIAMOND PRO SYSTEM

DETAIL SUPPLIED BY ANCHOR WALL SYSTEMS.

FRONT VIEW

SIDE VIEW

OUTLET STRUCTURE DETAIL (BASIN CHN-3)

NOT TO SCALE

	OS RG1	OS RG2		OS RG3
GRATE ELEV. (A)	400.65	386.60		396.65
ORIFICE DIMENSION (B)	24"W x 6"H	36"W x 8"H	TWO - 24"W x 8"H	24"W x 4"H
ORIFICE INVERT (C)	399.33	383.33	385.33	396.00
BASIN INVERT (D)	399.00	383.00		395.00
4" UNDERDRAIN & OUTFALL INVERT (E)	395.00	379.00		392.00
OUTFALL DIAMETER (F)	18"	30"		18"

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DRAWN BY	EBC	MATERIAL	
DATE	3-25-10		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-25-11		
DWG SIZE	A	SCALE 1:40	SHEET 1 OF 1

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

TITLE: DRAIN BASIN WITH DOME GRATE
QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-397 REV B

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT	
DATE SIGNED:		REVISIONS NO.	DATE

MARK M. THOMPSON
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
PA. PROFESSIONAL ENGINEER NO. PE073278

CONSTRUCTION DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	20 OF 24

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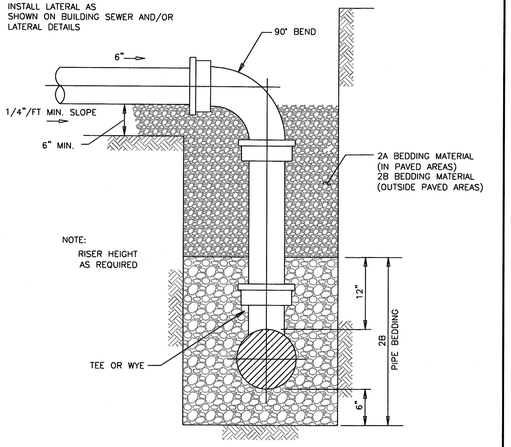
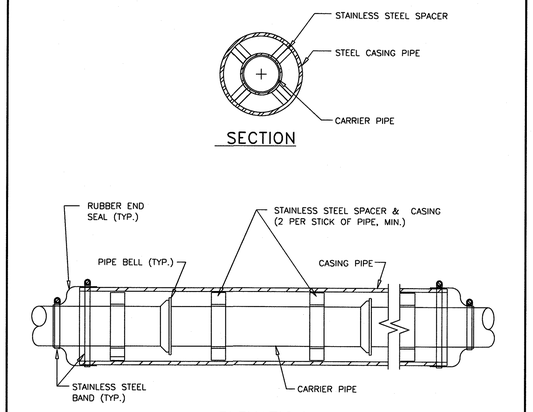


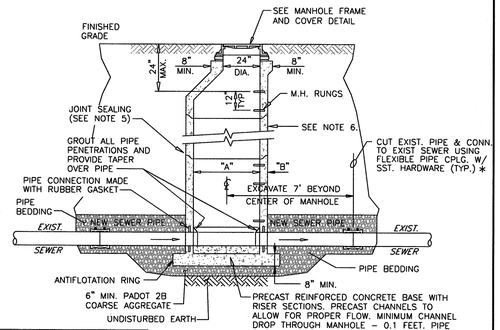
		EAST WHITELAND TOWNSHIP STANDARD DETAIL – SEWER SYSTEM	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303
		VERTICAL RISER LATERAL CONNECTION	DATE: 5/9/13 DETAIL: 20
REVISION	DATE		



		EAST WHITELAND TOWNSHIP STANDARD DETAIL – SEWER SYSTEM	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303
		STANDARD CASING CRADLE	DATE: 5/9/13 DETAIL: 4
REVISION	DATE		

NOTES:

1. ADJUST TO GRADE WITH CONCRETE GRADE RINGS (MAXIMUM VERTICAL ADJUSTMENT 6"). SEE FRAME & COVER DETAILS.
2. MECHANICALLY VIBRATED PRECAST CONCRETE SHALL CONFORM TO A.S.T.M. SPEC. C-478.
3. FOR MANHOLES WHERE TOP OF RIM TO INVERT DISTANCE IS LESS THAN 5'-0", USE FLAT TOP MANHOLE IN LIEU OF CONE TOP.
4. FILL ALL LIFTING HOLES WITH NON-SHRINK GROUT.
5. PROVIDE 2 RINGS OF PREFORMED BUTYL RUBBER SEALING COMPOUND (INSIDE & OUTSIDE) AT ALL MANHOLE JOINTS.
6. COAT INTERIOR WITH NSF APPROVED EPOXY, 20-MIL DFT & EXTERIOR WITH BITUMASTIC, 20-MIL DFT. INTERIOR COLOR: WHITE EXTERIOR COLOR: BLACK
7. CONTRACTOR SHALL VERIFY O.D. OF PIPES SCHEDULED FOR REPLACEMENT PRIOR TO ORDERING OF COUPLINGS.

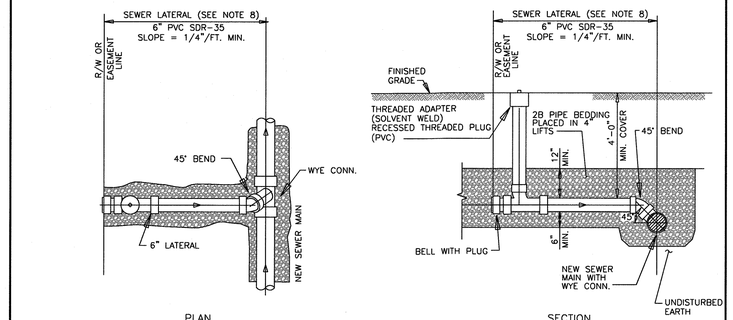


PIPE DIA.	DIMENSIONS	
	"A"	"B" (MIN.)
8"–15"	4'–0"	5"
18"–21"	5'–0"	6"
24"–36"	6'–0"	7"

SECTION

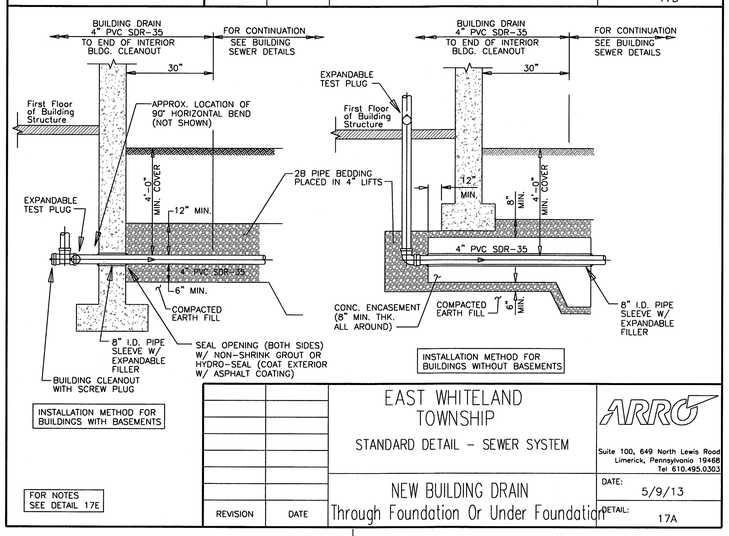
* FOR SDR 35 PVC PIPE USE REPAIR COUPLING SLEEVE. ALL OTHER PIPE USE HYMAX 2000 COUPLING OR APPROVED EQUAL.

		EAST WHITELAND TOWNSHIP STANDARD DETAIL – SEWER SYSTEM	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303
1	12/18/13	PRECAST INSERTION MANHOLE WITHIN EXISTING SEWER RUN	DATE: 5/9/13 DETAIL: 1A
REVISION	DATE		



FOR NOTES SEE DETAIL 17E

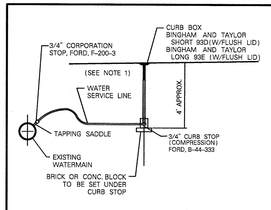
		EAST WHITELAND TOWNSHIP STANDARD DETAIL – SEWER SYSTEM	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303
		NEW LATERAL AND SEWER MAIN	DATE: 5/9/13 DETAIL: 17D
REVISION	DATE		



FOR NOTES SEE DETAIL 17E

		EAST WHITELAND TOWNSHIP STANDARD DETAIL – SEWER SYSTEM	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303
		NEW BUILDING DRAIN Through Foundation Or Under Foundation	DATE: 5/9/13 DETAIL: 17A
REVISION	DATE		

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF DESIGN		
CURB RAMPS AND SIDEWALKS NEW CONSTRUCTION OR ALTERATION DETAILS TYPE 2 AND TYPE 3 CURB RAMPS		
RECOMMENDED ---, --, 2009 CHIEF, HWY. QA DIVISION	RECOMMENDED JUN. 1, 2010 DIRECTOR, BUREAU OF DESIGN	SHT 3 OF 13 RC-67M



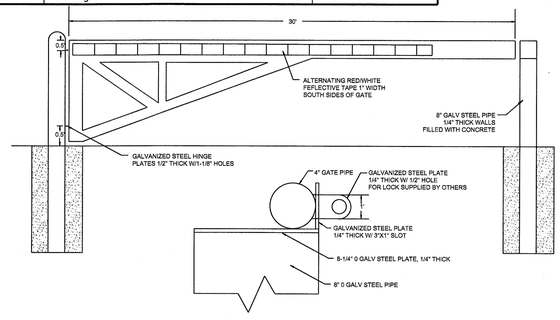
NOTES:

1. P.V.C. PIPE ONLY PERMISSIBLE ON SERVICE SIDE OF CURB STOP BUT IN NO CASE SHALL THERE BE P.V.C. PIPE IN THE ROADWAY
2. CONTRACTOR TO CONFIRM SERVICE SIZE WITH MECHANICAL PLANS.

TYPICAL WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

GENERAL WATER SYSTEM NOTES (FROM AQUA PA):

1. ALL GATES VALVES ARE TO OPEN RIGHT.
2. ALL DIRECTIONAL CHANGE FITTINGS REQUIRE RETAINING GLANDS (MEGA-LUG OR EQUAL) AND FIELD-LOK GASKETS IN SINK HOLE PRONE AREAS WITH THE PROPER SQUARE FOOTAGE OF CONCRETE BLOCKING.
3. ALL PERMANENT BLOW-OFFS ARE TO BE BLOCKED WITH A STEEL RAIL AND THE PROPER SQUARE FOOTAGE OF CONCRETE BLOCKING (SEE DETAIL SHEET).
4. 3/4" M.A.V./CL2 ASSEMBLIES (SEE DETAIL SHEET) ARE REQUIRED OF ALL WATER MAIN EXTENSIONS. THE EXACT QUANTITY AND LOCATION WILL BE DETERMINED AT THE PROJECT SITE BY THE ASSIGNED AQUA PENNSYLVANIA INSPECTOR.
5. WHEN THE WORKING PRESSURE OF THE MAIN EXCEEDS 100 P.S.I., PRESSURE REDUCING VALVES ARE REQUIRED ON THE AFFECTED SERVICES. PRESSURE REDUCING VALVES ARE NOT SUPPLIED OR MAINTAINED BY AQUA PENNSYLVANIA, INC.
6. ALL THRUST BLOCK VALUES ARE DETERMINED ACCORDING TO THE INTENDED WORKING PRESSURE OF THE PROPOSED MAIN. WHEN PRESSURES ARE IN EXCESS OF 200 P.S.I., THE ENGINEERING DEPARTMENT WILL PROVIDE SPECIFIC REQUIREMENTS.
7. EASMENT RIGHTS SHALL INCLUDE AN ADDITIONAL 10' WIDE TEMPORARY EASMENT ON ALL SIDES DURING CONSTRUCTION.
8. AN ADDITIONAL 10' WIDE EASMENT IS GRANTED FOR EACH WATER SERVICE THAT IS, OR WILL BE CONNECTED.
9. A LENGTH EQUIVALENT TO TWO COMPLETE LENGTHS OF PIPE UPSTREAM AND DOWNSTREAM OF DIRECTIONAL CHANGE FITTINGS REQUIRE FIELD-LOK GASKETS IN SINKHOLE PRONE AREAS.
10. FIELD CHANGES WILL BE MADE AT THE DISCRETION OF THE AQUA INSPECTOR OR AQUA CONSTRUCTION SUPERVISOR.



EMERGENCY ACCESS DRIVE GATE

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT	CONSTRUCTION DETAILS
DATE SIGNED:		REVISIONS NO. DATE	MALIN ROAD DEVELOPMENT 1 MALIN ROAD EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MARK M. THOMPSON REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF PENNSYLVANIA			Taylor Wiseman & Taylor ENGINEERS / SURVEYORS / SCIENTISTS 5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422 TELEPHONE: (267) 956-1020 FAX: (267) 956-1019 www.taylorwiseman.com
PA. PROFESSIONAL ENGINEER NO. PE073278			SCALE: AS NOTED DATE: SEPTEMBER 22, 2018 DRAWING NO. 018-06476-LD SHEET: 21 OF 24

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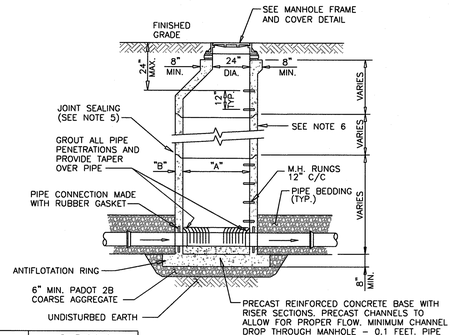
NOTES:

1. ADJUST TO GRADE WITH CONCRETE GRADE RINGS (MAXIMUM VERTICAL ADJUSTMENT 6"). SEE FRAME & COVER DETAILS.
2. MECHANICALLY VIBRATED PRECAST CONCRETE SHALL CONFORM TO A.S.T.M. SPEC. C-478.
3. FOR MANHOLES WHERE TOP OF RIM TO INVERT DISTANCE IS LESS THAN 5'-0", USE FLAT TOP MANHOLE IN LIEU OF CONE TOP.
4. FILL ALL LIFTING HOLES WITH NON-SHRINK GROUT.
5. PROVIDE 2 RINGS OF PREFORMED BUTYL RUBBER SEALING COMPOUND (INSIDE & OUTSIDE) AT ALL MANHOLE JOINTS.
6. COAT INTERIOR WITH NSF APPROVED EPOXY, 20-MIL DFT & EXTERIOR WITH BITUMASTIC, 20-MIL DFT. INTERIOR COLOR: WHITE EXTERIOR COLOR: BLACK



PIPE DIA.	DIMENSIONS	
	"A"	"B" (MIN.)
8"-15"	4'-0"	5"
18"-21"	5'-0"	6"
24"-36"	6'-0"	7"

SECTION

REVISION	DATE

EAST WHITELAND TOWNSHIP

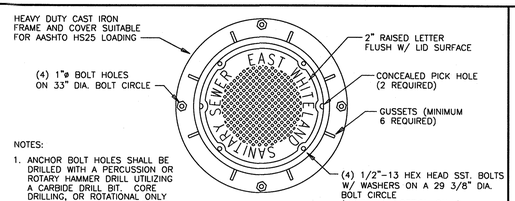
STANDARD DETAIL - SEWER SYSTEM

PRECAST MANHOLE

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

DATE: 5/9/13

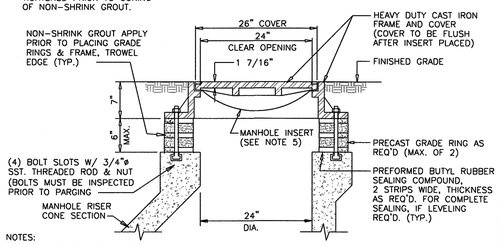
DETAIL: 1



NOTES:

1. ANCHOR BOLT HOLES SHALL BE DRILLED WITH A PERCUSSION OR ROTARY HAMMER DRILL UTILIZING A CARBIDE DRILL BIT. CORE DRILLING, OR ROTATIONAL ONLY DRILLING, OF ANY KIND, IS NOT ALLOWED.
2. FRAME ANCHORS SHALL BE TIGHTENED PRIOR TO CURING OF NON-SHRINK GROUT.

PLAN-COVER PATTERN



NOTES:

1. STANDARD MH FRAME (1045) & COVER (1045AGS) SHALL BE AS MANUFACTURED BY EAST JORDAN IRON WORKS, INC.
2. WATERTIGHT FRAME (1045ZPT) & COVER (1040APT) SHALL BE AS MANUFACTURED BY EAST JORDAN IRON WORKS, INC.
3. MANHOLE INSERT NOT REQUIRED FOR WATERTIGHT MH. FRAME & COVER.
4. FRAME & COVER SHALL BE DESIGNED FOR AASHTO HS-25 LOADING.
5. MANHOLE INSERTS REQ'D. FOR ALL STANDARD FRAMES & COVERS. FRAME SHALL BE SPECIALLY MACHINED TO ACCOMODATE INSERT SO THAT TOP OF COVER IS EVEN WITH TOP OF FRAME WHEN INSERT IS INSTALLED.

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

STANDARD MANHOLE FRAME & COVER

ARRO
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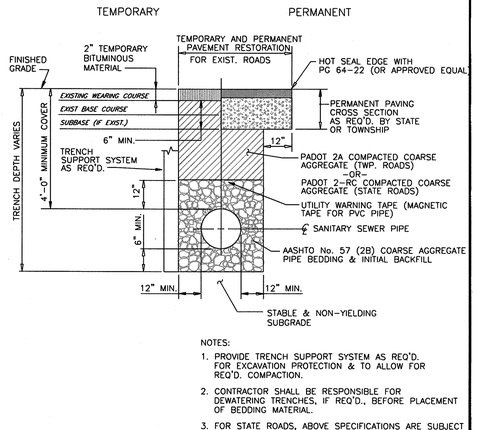
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 2



NOTES:

1. PROVIDE TRENCH SUPPORT SYSTEM AS REQ'D. FOR EXCAVATION PROTECTION & TO ALLOW FOR REQ'D. COMPACTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING TRENCHES, IF REQ'D., BEFORE PLACEMENT OF BEDDING MATERIAL.
3. FOR STATE ROADS, ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE. DESIGN & CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HIGHWAY OCCUPANCY PERMIT ISSUED BY PADOT FOR THE SPECIFIC PROJECT.
4. A MINIMUM HALF CARTWAY-WIDTH MILL & OVERLAY IS REQUIRED. FOR FACILITIES LOCATED IN THE ROAD CENTERLINE, A FULL CARTWAY-WIDTH MILL & OVERLAY SHALL BE REQUIRED.

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

TRENCH RESTORATION - EXISTING ROADS

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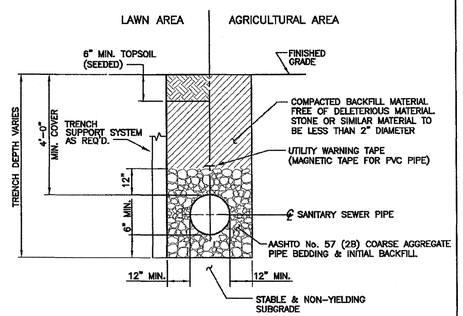
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 6A



NOTES:

1. PROVIDE TRENCH SUPPORT SYSTEM AS REQ'D. FOR EXCAVATION PROTECTION & TO ALLOW FOR REQ'D. COMPACTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING TRENCHES, IF REQ'D., BEFORE PLACEMENT OF BEDDING MATERIAL.
3. IF EDGE OF TRENCH IS 3' OR LESS FROM EDGE OF PAVING OF A STATE ROAD, RESTORATION ABOVE TOP OF INITIAL BACKFILL SHALL BE IN ACCORDANCE WITH THE HIGHWAY OCCUPANCY PERMIT ISSUED BY PADOT FOR THE SPECIFIC PROJECT.

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

TRENCH RESTORATION - LAWN/AGRICULTURAL AREAS

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Limerick, Pennsylvania 19468
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 6C

DWG. NAME 1031000sd06C

NOTES:

1. BUILDING SEWER SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL PLUMBING CODE.
2. BUILDING SEWER (4") IS MINIMUM. LARGER PIPE MAY BE USED IF REQUIRED & CONSISTENT WITH LOCAL PLUMBING CODE.
3. ALL LATERALS SHALL BE PLUGGED AS INDICATED WHEN INSTALLED PRIOR TO BUILDING SEWER.
4. ACCORDING TO FIELD CONDITIONS, VERTICAL RISER (SEE STANDARD DETAIL) MAY BE UTILIZED WHEN AUTHORIZED BY THE TOWNSHIP ENGINEER.
5. TO CONDUCT TESTING OF BUILDING SEWER, INSTALL EXPANDABLE TEST PLUGS AT LOCATIONS SHOWN. AT COMPLETION OF SUCCESSFUL TESTING, REMOVE PLUGS.
6. NO BUILDING SEWER VENT CAPS SHALL BE INSTALLED WITHIN A 100-YR FLOOD PLAIN OR WITHIN FLOOD PRONE AREAS.
7. NO VENT CAPS OR CLEANOUTS SHALL BE INSTALLED IN DRIVEWAYS OR OTHER PAVED AREAS, UNLESS SPECIFICALLY APPROVED BY THE TOWNSHIP.
8. WHEN INSTALLED PRIOR TO BUILDING SEWER THE LATERAL SHALL BE INSTALLED TO THE EDGE OF THE SEWER EASEMENT FOR SEWERS LOCATED IN AN EASEMENT OR TO THE STREET RIGHT-OF-WAY AS A MIN., OR TO SUCH POINT, AS REQUIRED, TO CLEAR STREET SIDEWALKS & UNDERGROUND UTILITIES.
9. FOR NEW SEWER MAINS AND LATERALS INSTALLED PRIOR TO BUILDING SEWER, INSTALL & TEST LATERAL CONCURRENTLY WITH MAIN.
10. FOR CONNECTION TO EXISTING SEWER MAINS, CONCURRENTLY TEST BUILDING SEWER & LATERAL UP TO TEST TEE.
11. REFER TO SECTION 6 OF TECHNICAL SPECIFICATIONS FOR COMPLETE MATERIAL, INSTALLATION & TESTING REQUIREMENTS.
12. TEST PRESSURE: MINIMUM RESIDUAL PRESSURE OF 5.0 PSI MUST BE MAINTAINED FOR 15 MINUTES WITHOUT INTRODUCTION OF ADDITIONAL AIR.
13. ***(Left Blank Intentionally)***
14. CLEANOUTS SHALL BE INSTALLED AT MAXIMUM SEVENTY FIVE (75) FOOT INTERVALS, UNLESS 6" DIAMETER BUILDING SEWER PIPE IS UTILIZED, IN WHICH CASE THE CLEANOUTS SHALL BE INSTALLED AT MAXIMUM ONE HUNDRED (100) FOOT INTERVALS. A CLEANOUT SHALL BE INSTALLED AT EACH CHANGE IN HORIZONTAL DIRECTION.
15. THE TOWNSHIP ENGINEER MAY APPROVE MINOR DEVIATION(S) FROM THE REQUIREMENT(S) OF THE 17-SERIES DETAILS ON A CASE-BY-CASE BASIS (E.G. DEPTH OF COVER OVER BUILDING SEWER, TRAP LOCATION, ETC.) UPON BEING FURNISHED SUFFICIENT JUSTIFICATION THAT SAID REQUIREMENT(S) CANNOT BE MET DUE TO ACTUAL FIELD CONDITIONS.
16. NEW BUILDING SEWERS & LATERALS SHALL BE CONNECTED TO EXISTNG MAINS VIA CUT-IN WYES. THE CUT-IN WYE SHALL BE CONNECTED TO THE EXISTING MAIN ON BOTH SIDES WITH MECHANICAL COUPLINGS, AS APPROVED BY THE TOWNSHIP ENGINEER.
17. ON DETAIL 17B, THE CONNECTION TO THE EXISTING LATERAL MAY ALTERNATIVELY BE MADE WITH A 6"x4" REDUCER (B-S) FOLLOWED BY A 4" TEST TEE (B-B-S) WITH 4" CLEAN OUT RISER. TEST TEE TO BE INSTALLED ONLY IF CLEANOUT DOES NOT EXIST WITHIN 5 FEET OF R/W OR EASEMENT LINE.

NOTE:
USE THE ABOVE NOTES WITH DETAILS 17A, 17B, 17C & 17D

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

BUILDING DRAIN, BUILDING SEWER, & LATERAL NOTES

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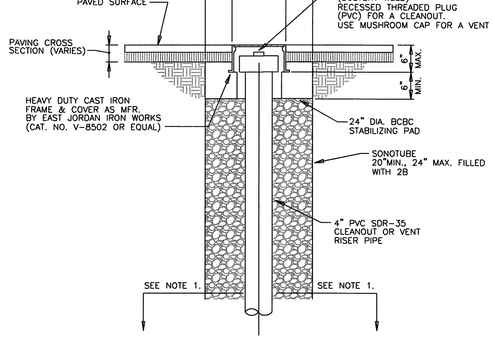
Limerick, Pennsylvania 19468
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 17E



SECTION

NOTE:
1. SEE BUILDING SEWER DETAILS.

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

CLEANOUT OR VENT IN PAVED AREA

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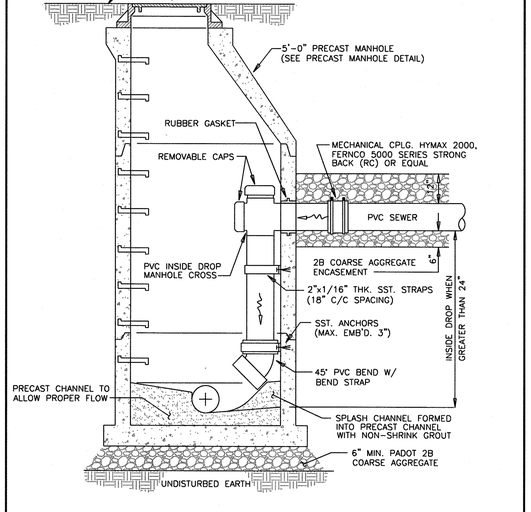
Limerick, Pennsylvania 19468
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 18



NOTE:
SEE DETAIL 1 FOR MANHOLE REQUIREMENTS UNLESS NOTED OTHERWISE ON THIS DETAIL.

REVISION	DATE

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

MANHOLE DROP CONNECTION

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

DATE: 5/9/13

DETAIL: 5A

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS

NO.	DATE

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MARK M. THOMPSON
ENGINEER
PA. PROFESSIONAL ENGINEER NO. PE073278

CONSTRUCTION DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	22 OF 24

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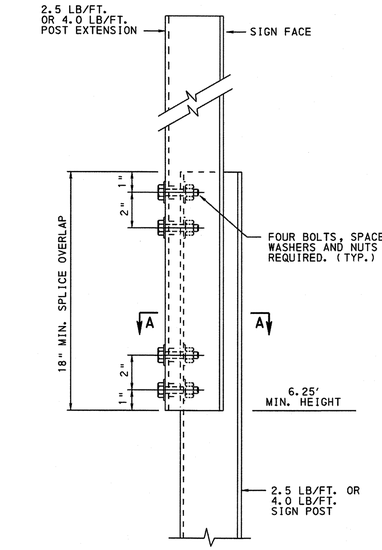
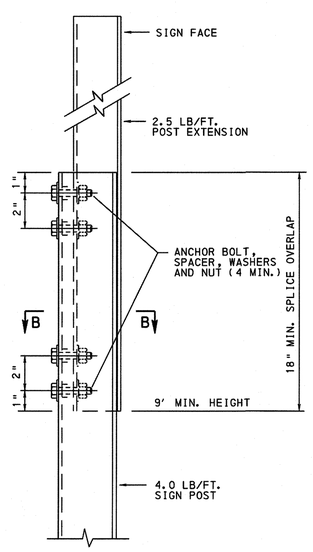


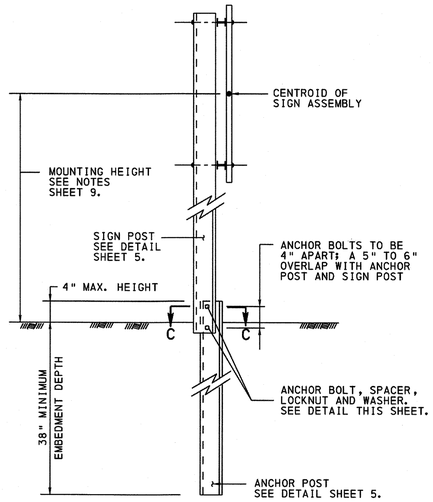
POST EXTENSION SPLICE DETAIL A

FOR USE IN EXTENDING SIGN POSTS



ALTERNATE POST EXTENSION SPLICE DETAIL B

FOR USE IN EXTENDING SIGN POSTS



INSTALLATION DETAIL

ANCHOR SPLICE INSTALLATION INSTRUCTIONS:

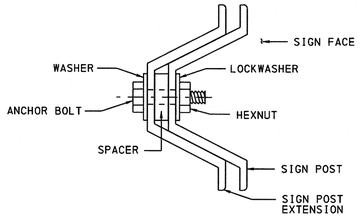
1. DETERMINE THE PROPER SIZE SIGN POST AND ANCHOR POST FROM THE APPROPRIATE GRAPH ON SHEET 7. USE 2.5 LB/FT. ANCHOR POSTS WITH 2.5 LB/FT. SIGN POSTS AND 4.0 LB/FT. ANCHOR POSTS WITH 4.0 LB/FT. SIGN POSTS.
2. REMOVE A SHOVEL OF SOIL AT THE POST LOCATION TO ALLOW FOR FINAL ATTACHMENT OF THE SIGN POST TO THE ANCHOR POST.
3. DRIVE ANCHOR POST WITH A DRIVE CAP TO WITHIN APPROXIMATELY 12" ABOVE GROUND LEVEL. PLACE ONE BOLT AND WASHER IN FIFTH HOLE FROM THE END OF THE EXPOSED ANCHOR POST. SECURELY TIGHTEN SPACER ONTO BOLT.
4. DRIVE ANCHOR POST TO 4" ABOVE GROUND LEVEL. PLACE REMAINING BOLT AND WASHER IN FIRST HOLE FROM THE END OF POST AND SECURELY TIGHTEN SPACER ONTO BOLT. (BOLTS 4" APART).
5. NEST TOP SIGN POST OVER PROTRUDING ANCHOR POST BOLTS THROUGH FIRST AND FIFTH HOLES OF TOP SIGN POST. THIS WILL RESULT IN A 5" TO 6" OVERLAP.
6. PLACE A LOCKNUT ON EACH BOLT (A STANDARD LOCKWASHER AND NUT MAY BE USED IN LIEU OF THE LOCKNUT). TIGHTEN BOLTS AND NUTS BY TURN-OF-NUT METHOD. BRING NUT TO A SNUG TIGHT CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL ½ TURN.
7. RESTORE SOIL AROUND THE ANCHOR POST.

INSTALLATION IN SOFT SOIL:

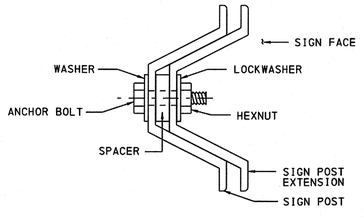
1. USE THE ANCHOR PLATE IN AREAS WITH SOFT SOIL. BOLT THE TOP ANCHOR BOLT 1" BELOW THE BOTTOM ANCHOR POST BOLT, (6 TO 7 HOLES FROM THE END OF THE ANCHOR POST).

POST EXTENSION SPLICE NOTES:

1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. FOUR ANCHOR BOLTS WITH SPACERS, WASHERS, LOCKWASHERS AND NUTS ARE REQUIRED (LOCKNUTS MAY BE USED IN LIEU OF STANDARD LOCKWASHERS AND NUTS). SEE THIS SHEET FOR ANCHOR BOLT SYSTEM.
3. POST EXTENSION SPLICE DETAIL A IS PREFERRED OVER POST EXTENSION SPLICE DETAIL B. WHEN DETAIL A IS USED, 2.5 LB/FT. POSTS SHALL USE A 2.5 LB/FT. POST EXTENSION POST FOR SPLICE EXTENSIONS; 4.0 LB/FT. POSTS SHALL USE A 4.0 LB/FT. POST EXTENSION POST FOR SPLICE EXTENSIONS. WHEN DETAIL A IS USED, POST EXTENSION SPLICES SHALL BE MOUNTED ON THE BACK (NON-IMPACT) SIDE OF THE SIGN POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 6.25 FT., MEASURED TO THE BOTTOM OF THE SPLICE.
4. POST EXTENSION SPLICE DETAIL B IS PERMITTED FOR USE TO PROVIDE A FLUSH SIGN MOUNT SURFACE FOR 4.0 LB/FT. POSTS. WHEN DETAIL B IS USED, 2.5 LB/FT. POST EXTENSION SPLICES MAY BE NESTED ON THE FRONT OF A 4.0 LB/FT. POST. SPLICES SHALL BE MADE AT A MINIMUM HEIGHT OF 9 FT., MEASURED TO THE BOTTOM OF THE SPLICE.



SECTION A-A



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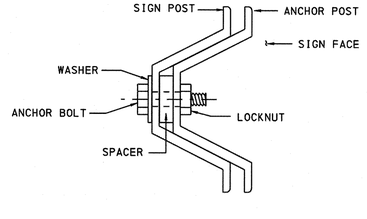
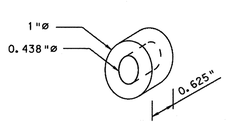
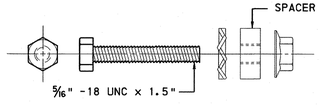


SECTION C-C



SPACER DETAIL

ZINC PLATED



ANCHOR BOLT, WASHER, SPACER AND LOCKNUT

ANCHOR BOLTS TO BE 1.5", GRADE 9, HEX HEAD.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

POST-MOUNTED SIGNS, TYPE B

CHANNEL BAR POSTS ERECTION DETAILS

RECOMMENDED JUN. 13, 2013	RECOMMENDED JUN. 13, 2013	SHT. 6 OF 9
CHIEF, TRAFFIC ENGINEERING AND PERMITS SECTION	CHIEF, HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8702B

DESIGNED: MJW | DRAWN: JAS | CHECKED: MMT
DATE SIGNED:
REVISIONS: NO. | DATE

MARK M. THOMPSON
REGISTERED PROFESSIONAL
MARK M. THOMPSON
ENGINEER
PE073278
COMMONWEALTH OF PENNSYLVANIA

PA. PROFESSIONAL ENGINEER NO. PE073278

CONSTRUCTION DETAILS

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
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TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE: AS NOTED | DATE: SEPTEMBER 22, 2018 | DRAWING NO.: 018-06476-LD | SHEET: 23 OF 24

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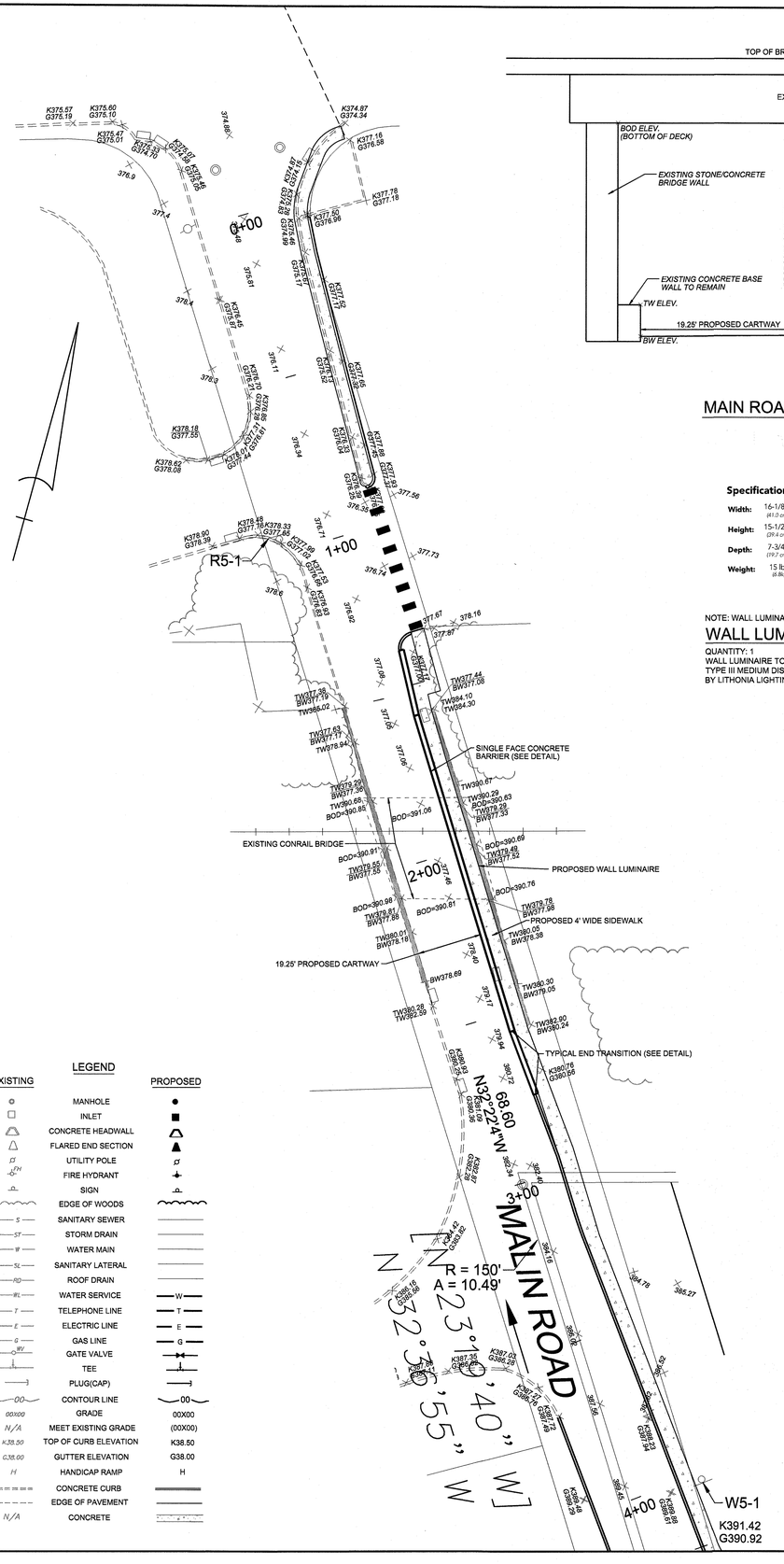
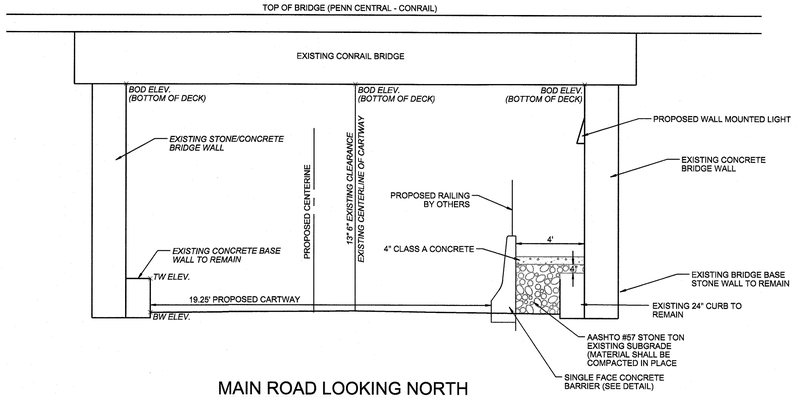


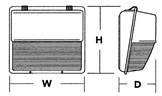


MAIN ROAD LOOKING NORTH

NOT TO SCALE

Specifications

Width:	16-1/8"	(41.2 cm)
Height:	15-1/2"	(39.4 cm)
Depth:	7-3/4"	(19.7 cm)
Weight:	15 lbs	(6.8kg)



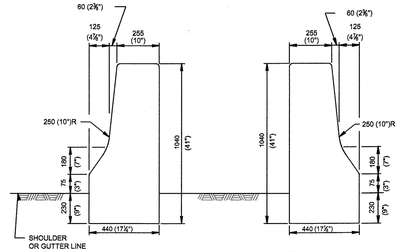
NOTE: WALL LUMINAIRE TO BE PLACED UNDER RAILROAD OVERPASS.

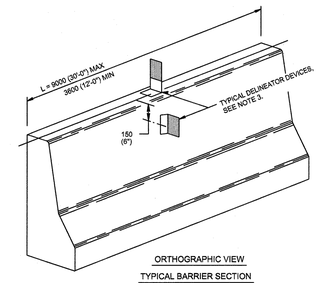
WALL LUMINAIRE DETAIL

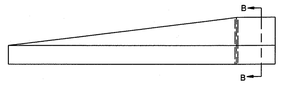
SCALE: 1" = 20'

QUANTITY: 1

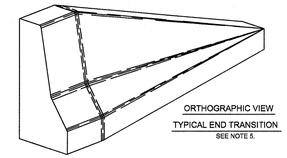
WALL LUMINAIRE TO BE STYLE TWP LED, ALO POWER PACKAGE, 4000K, TYPE III MEDIUM DISTRIBUTION, MVOLT, COLOR BLACK, AS MANUFACTURED BY LITHONIA LIGHTING www.lithonia.com (800) 279-8041 OR APPROVED EQUAL

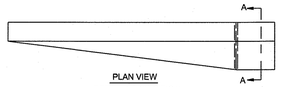






PLAN VIEW
RIGHT END TRANSITION





PLAN VIEW
LEFT END TRANSITION

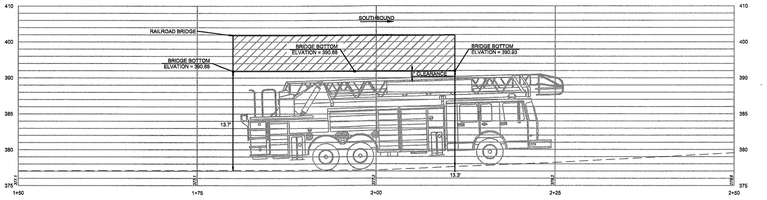
TABLE 1
FLARE RATES FOR BARRIER DESIGN

DESIGN SPEED		MAXIMUM FLARE RATES	
km/h	mph	CONCRETE BARRIER	GUIDE RAIL
110	70	20:1	15:1
105	65	19:1	15:1
100	60	18:1	14:1
90	55	16:1	12:1
80	50	14:1	11:1
70	45	12:1	10:1
65	40	11:1	9:1
60	35	10:1	8:1
50	30	8:1	7:1

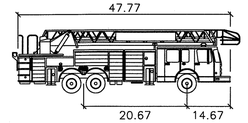
NOTES

1. PROVIDE SINGLE FACE CONCRETE BARRIER MEETING THE REQUIREMENTSOF PUBLICATION 408, SECTION 623. A. MINIMUM CONCRETE CLASS: AA, EXCEPT USE CLASS AAA CONCRETE FOR PRECAST BARRIER.
2. PROVIDE PRECAST SINGLE FACE CONCRETE BARRIER SUPPLIED BY A MANUFACTURER AS LISTED IN BULLETIN 15. MODIFICATIONS OR DEVIATIONS FROM THE STANDARD REQUIRE THE SUBMISSION OF SHOP DRAWINGS FOR REVIEW.
3. PROVIDE BARRIER-MOUNT OR REFLECTOR UNIT DELINEATORS, AS INDICATED ON TC-8604.
4. PROVIDE REINFORCEMENT FOR SINGLE FACE CONCRETE BARRIER AS INDICATED.
5. PROVIDE END TRANSITIONS OR IMPACT ATTENUATING DEVICES AS INDICATED ON RC-57M.
6. ROUND OR CHAMFER ALL EDGES WITH A RADIUS OF 25 (1") EXCEPT AS SHOWN.
7. FABRICATE REINFORCEMENT BARS ACCORDING TO PENNDOT BRIDGE CONSTRUCTION STANDARD, BC-736M.
8. TO LIMIT LATERAL DISPLACEMENT OF PORTABLE BARRIER WHEN USED IN WORK ZONES, PROVIDE A ROUGH FINISH AT THE BOTTOM SURFACE, BEFORE THE CONCRETE HAS INITIALLY SET, FINISH THE BOTTOM SURFACE WITH STIFF, WIRE BROOM OR SPECIAL TEMPLATE IN A LONGITUDINAL DIRECTION TO PRODUCE SCORES APPROXIMATELY 4 (1/16") IN DEPTH.
9. PROVIDE SUITABLE LIFTING DEVICES FOR HANDLING, INSTALLING AND REMOVING PRECAST CONCRETE BARRIER. GALVANIZE METAL DEVICES AS SPECIFIED IN PUBLICATION 408, SECTION 1105.02(a).
10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESES.

TYPICAL PRECAST OR CAST-IN-PLACE SINGLE FACE CONCRETE BARRIER



SCALE: 1" = 10'



East Whiteland Twp

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

LEGEND

EXISTING		PROPOSED
	MANHOLE	
	INLET	
	CONCRETE HEADWALL	
	FLARED END SECTION	
	UTILITY POLE	
FH	FIRE HYDRANT	
	SIGN	
	EDGE OF WOODS	
S	SANITARY SEWER	
ST	STORM DRAIN	
W	WATER MAIN	
SL	SANITARY LATERAL	
RD	ROOF DRAIN	
WS	WATER SERVICE	W
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
G	GAS LINE	G
WV	GATE VALVE	
	TEE	
	PLUG(CAP)	
OO	CONTOUR LINE	OO
00X00	GRADE	00X00
N/A	MEET EXISTING GRADE	(00X00)
K38.50	TOP OF CURB ELEVATION	K38.50
G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

PENNSYLVANIA ONE CALL SYSTEM INC. 1-800-242-1776 STOP - CALL BEFORE YOU DIG!

SITE ID: 20182813492

THE CONTRACTOR AND/OR OWNER SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES AND UTILITIES, WHICH HE DEEMS NECESSARY, BOTH ABOVE AND BELOW THE GROUND SURFACE BEFORE HEAVY EQUIPMENT ENTERS THE CONSTRUCTION SITE.

FINAL INQUIRIES TO PENNSYLVANIA ONE CALL SYSTEM, INC." (PHONE #: 1-800-242-1776) SHALL BE MADE BY THE CONTRACTOR AND/OR OWNER WITHIN SEVEN (7) DAYS OF ENTERING THE SITE. THE CONTRACTOR AND/OR OWNER SHALL COORDINATE AND VERIFY THE METHOD OF UTILITY LOCATION WITH THE APPROPRIATE UTILITY COMPANIES.

IN GENERAL, THE VERTICAL DESIGN OF PROPOSED GRAVITY UTILITIES, AS SHOWN, ARE INFLUENCED BY THE EXISTING GRAVITY UTILITIES ONLY, WHICH MAY NECESSITATE THE RELOCATIONS OF OTHER UTILITIES.

UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE, AND BASED ON EXISTING INFORMATION RECEIVED FROM UTILITY COMPANIES.

20 10 0 20 40 60 80

GRAPHIC SCALE

MARK M. THOMPSON — COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ENGINEER

PA. PROFESSIONAL ENGINEER NO. PE073278

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT
DATE SIGNED:		REVISIONS
		NO. DATE

UNDERPASS WALKWAY PLAN

MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 20'	SEPTEMBER 22, 2018	018-06476-LD	24 OF 24

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