MALIN ROAD DEVELOPMENT

REVISED PRELIMINARY LAND DEVELOPMENT PLAN

EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

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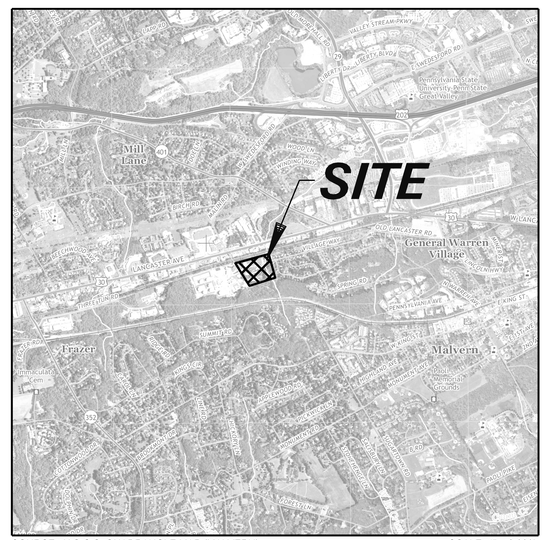
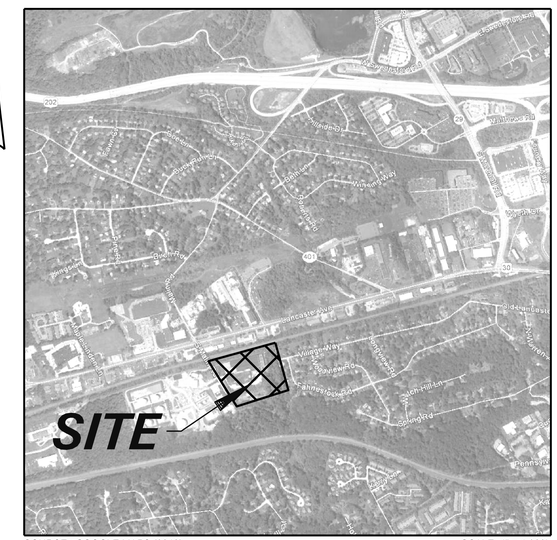
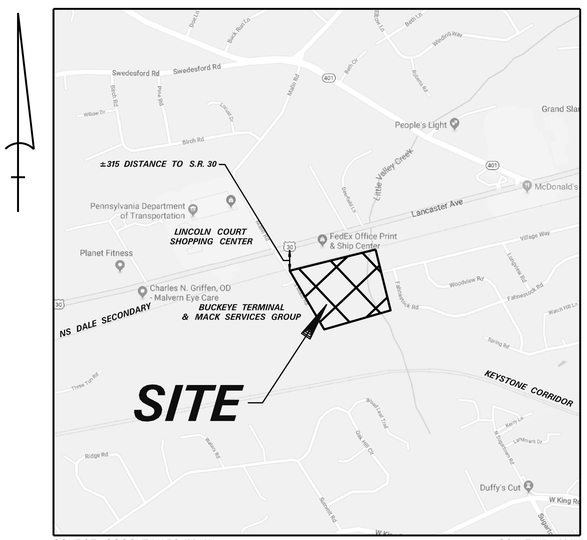
15-17	PROFILES
18-24	CONSTRUCTION DETAILS
25	UNDERPASS WALKWAY PLAN
26	MANEUVERABILITY AND SIGNAGE PLAN



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



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



SOURCE : GOOGLE MAPS (2019) SCALE: 1" = 800'

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

REVIEWED 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

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

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

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 26

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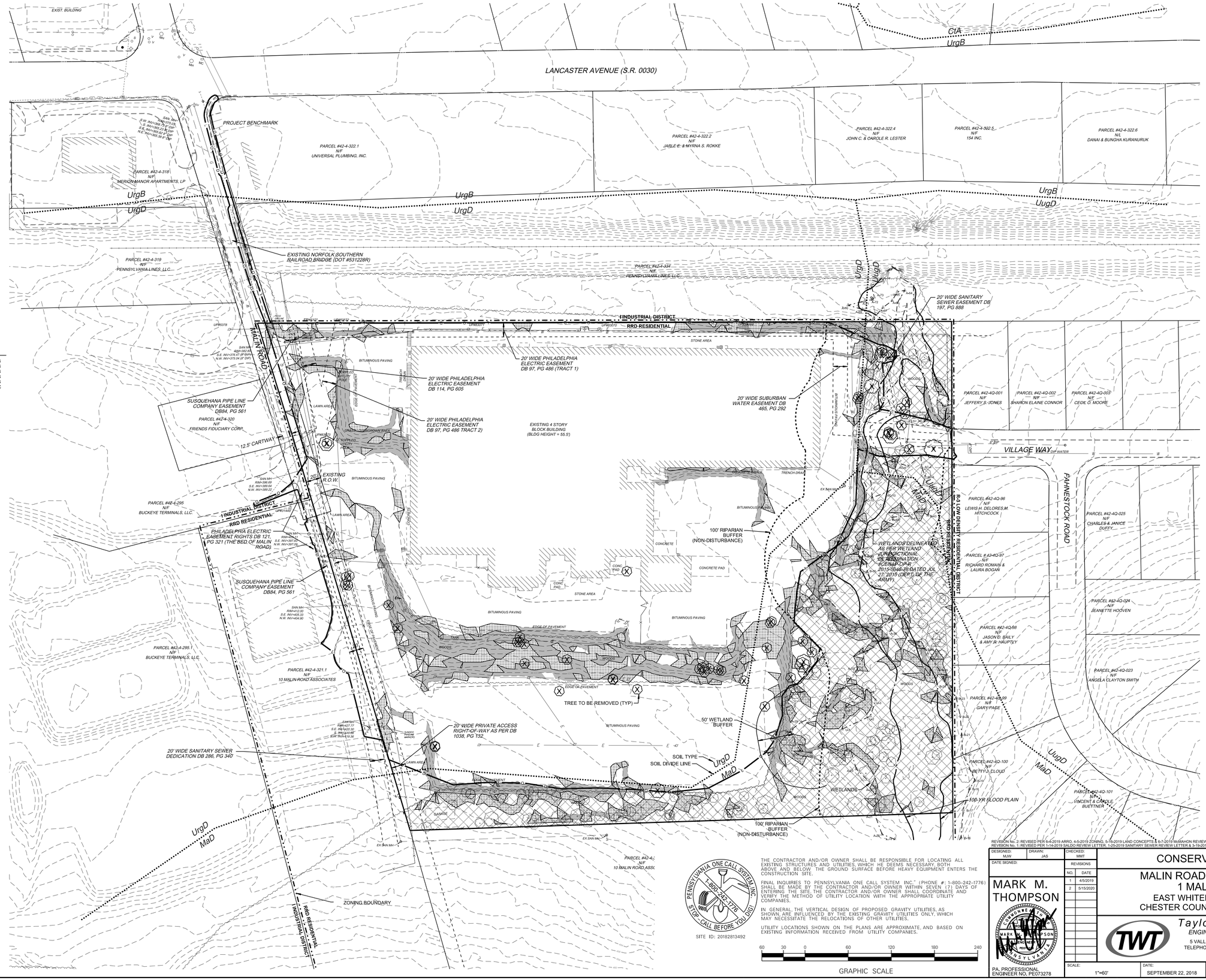

SOIL TYPES

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	
CH	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	

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

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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.

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60 30 0 60 120 180 240
GRAPHIC SCALE

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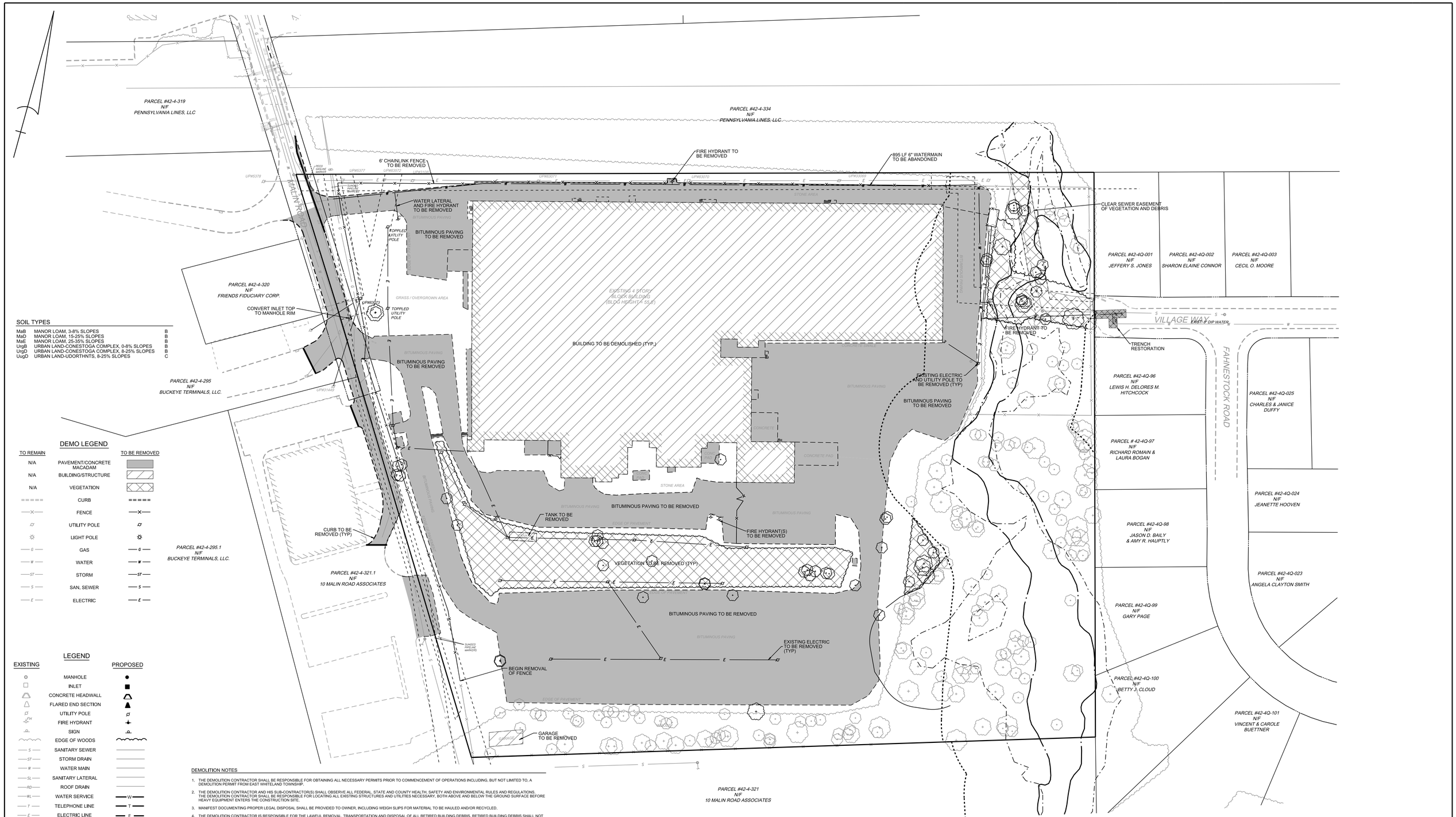

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UugD	URBAN LAND-UDORTHNTS, 8-25% SLOPES	C

DEMO LEGEND

TO REMAIN		TO BE REMOVED
N/A	PAVEMENT/CONCRETE MACADAM	
N/A	BUILDING/STRUCTURE	
N/A	VEGETATION	
	CURB	
	FENCE	
	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	
CH	FIRE HYDRANT	
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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.

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50 25 0 50 100 150 200
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ZONING DATA
RRD - RESIDENTIAL REVITALIZATION DISTRICT

ITEM	REQUIRED	PROVIDED
MAX. TRACT DENSITY	12 UNITS/ACRE	6.7 (92 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

PARKING REQUIREMENT

REQUIRED
92 DWELLING UNITS X 2 SPACES/UNIT =184 SPACES
PROPOSED
92 UNITS X 2 GARAGE SPACES = 184 SPACES
92 UNITS X 2 DRIVEWAY SPACES = 184 SPACES
OFF-STREET SPACES = 33 SPACES
TOTAL 401 SPACES

IMPERVIOUS SURFACE COVERAGE:

EXISTING	PROPOSED
339,248 SF (7,79 AC)	223,620 SF (5,13 AC)

SAFE SIGHT DISTANCE (SSD) TABLE

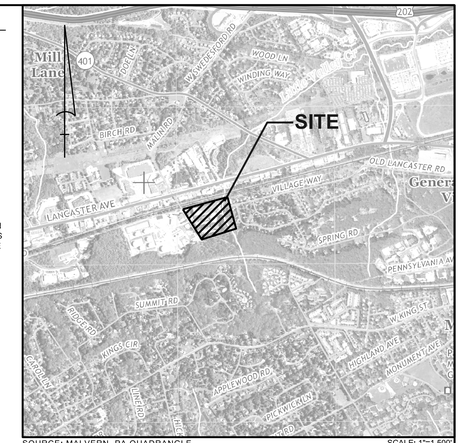
SSD NUMBER	REQUIRED DISTANCE (FT)	PROVIDED DISTANCE (FT)
1A	138	250
1B	159	>500
2A	138	450
2B	166	>350
3A	135	650
3B	166	>166
4A	166	>166
4B	135	>135
5A	161	>225
5B	142	400
6A	161	>400
6B	142	315
7A	161	>600
7B	138	138

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.) = 12.87 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.

LIST OF REGULATORY APPROVALS

1. TOWNSHIP SUPERVISORS
2. NPDES PERMITS
3. CHESTER COUNTY CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL
4. DEP GP-10
5. DEP GP-5
6. PENNDOT HOP
7. SEWER PLANNING MODULE
8. DEP ACT 2 SOIL REMEDIATION



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

LOCATION MAP

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

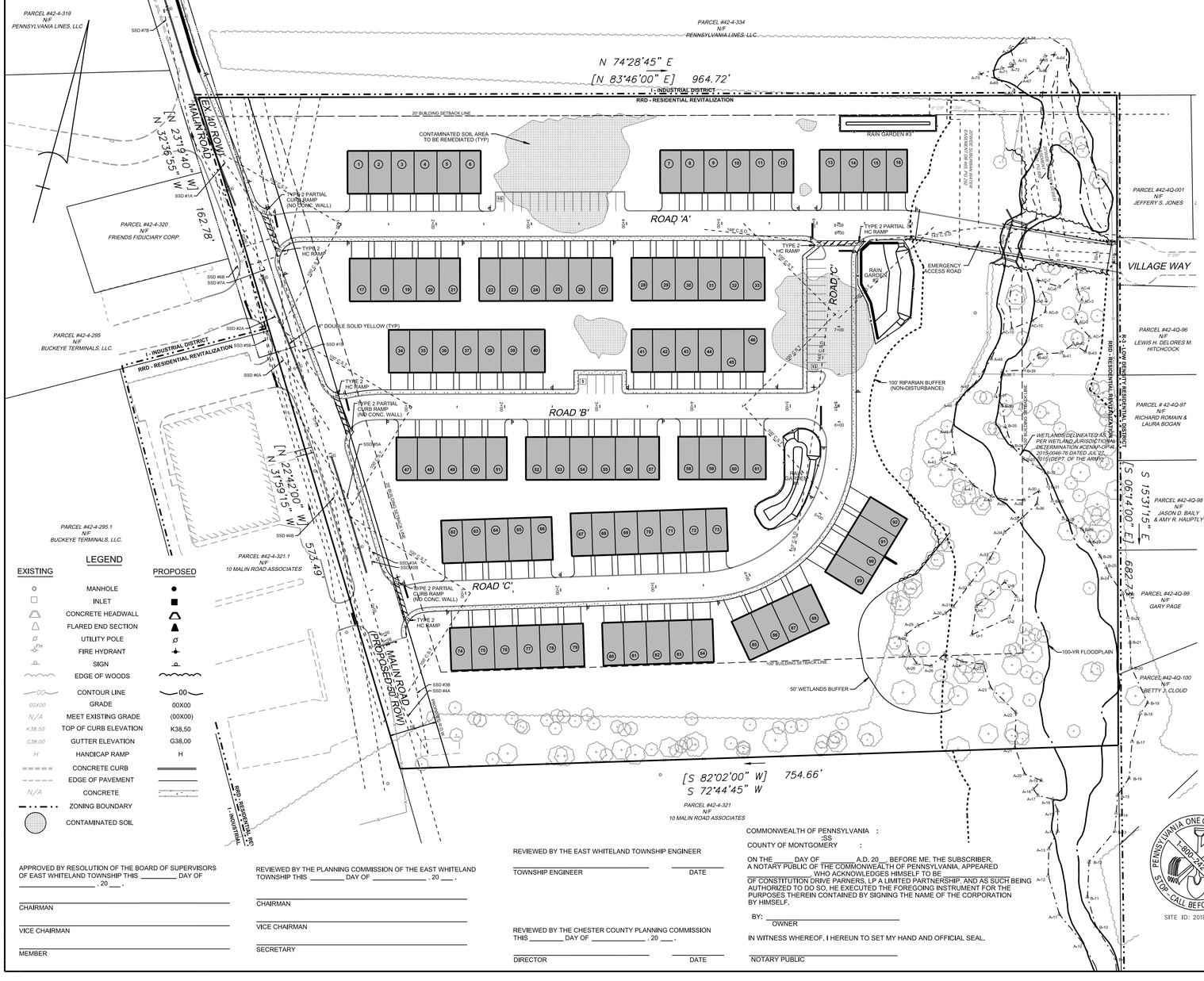
1. VARIANCE FROM SECTION 200-57.C(6) TO ALLOW TOWNHOUSES (INCLUDING UP TO SEVEN (7) WITHIN A SINGLE BUILDING), ROADS, DRIVEWAYS AND UTILITIES TO BE CONSTRUCTED WITHIN AND UPON (I) NATURAL AREAS OF SLOPE BETWEEN 15% AND 25% ("STEEP SLOPES") AND IN EXCESS OF 25% ("VERY STEEP SLOPES") AND (II) MANMADE AREAS 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. PROPOSED ROADWAY WITHIN DEVELOPMENT COMPLIES WITH ORDINANCE.
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 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 FOR STREETS "A", "B" AND "C".

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 WITHIN 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. THE STORMWATER MANAGEMENT FACILITIES ARE TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS' ASSOCIATION.
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 SHALL 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. THE PROPOSED SANITARY SEWER SYSTEM IS NOT INTENDED TO SERVICE BASEMENTS VIA GRAVITY LATERALS.
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.
18. 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.
19. 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. GAS, ELECTRIC, TELEPHONE, CABLE TV AND STREET LIGHTING SHALL BE INSTALLED UNDERGROUND THROUGHOUT THE SITE IN ACCORDANCE WITH REGULATIONS OF THE LOCAL UTILITY COMPANIES.
21. 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.
22. 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.
23. DEVELOPER SHALL APPLY FOR A SEWER CONNECTION PERMIT CONCURRENTLY WITH EACH BUILDING PERMIT APPLICATION.
24. THE SITE DOES NOT CONTAIN KARST TOPOGRAPHY.



LEGEND

EXISTING	PROPOSED
MANHOLE	
INLET	
CONCRETE HEADWALL	
FLARED END SECTION	
UTILITY POLE	
FIRE HYDRANT	
SIGN	
EDGE OF WOODS	
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	
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

REVISION No. 2: REVISED PER 6-A-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA
MARK M. THOMPSON
No. PE073278
PROFESSIONAL ENGINEER
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 26

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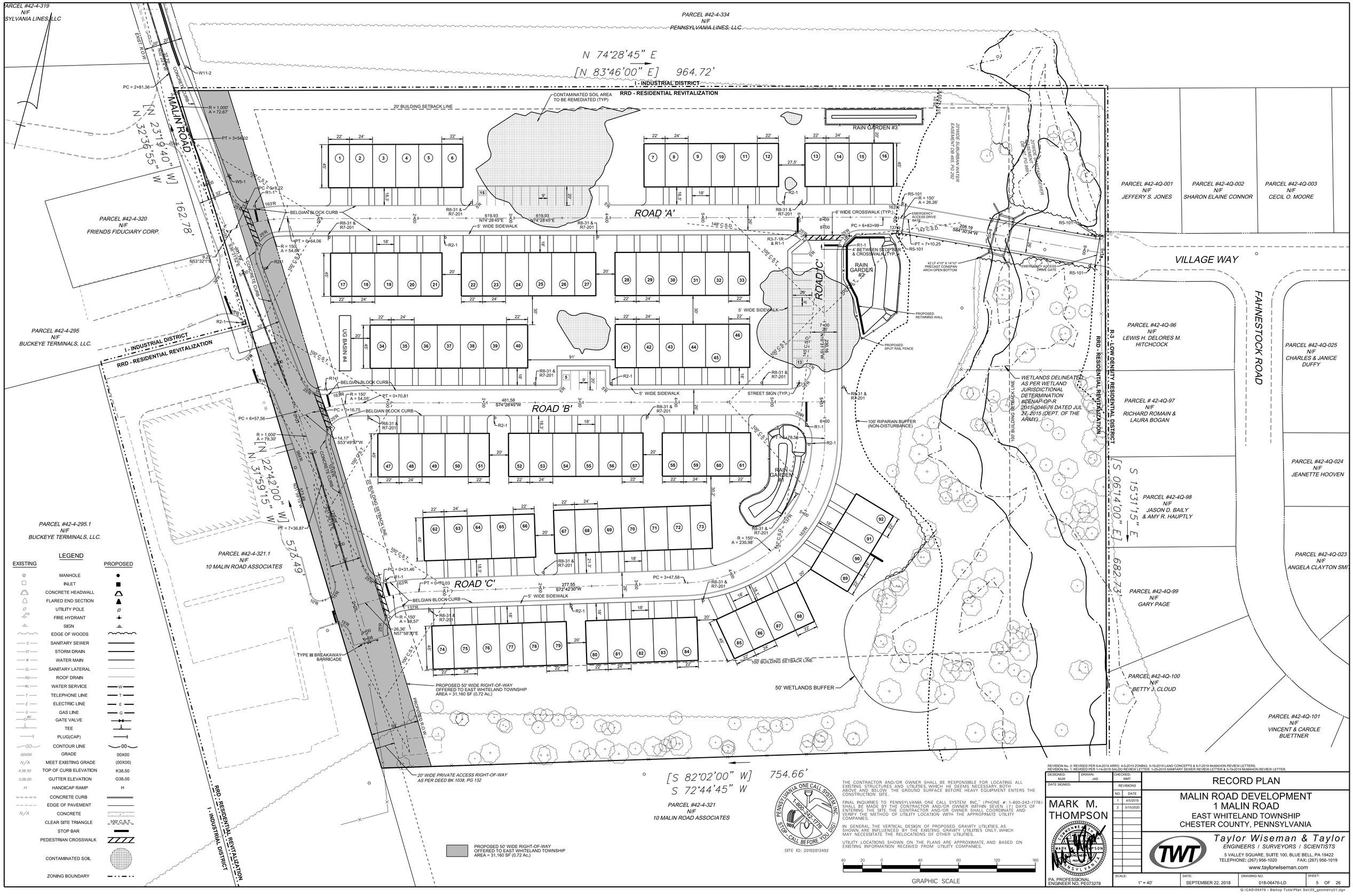
PARCEL #42-4-319
N/F
PENNSYLVANIA LINES, LLC
PARCEL #42-4-334
N/F
PENNSYLVANIA LINES, LLC
N 74°28'45" E
[N 83°46'00" E] 964.72'
I - INDUSTRIAL DISTRICT
RRD - RESIDENTIAL REVITALIZATION
MALIN ROAD
[N 23°19'40" W]
N 32°36'55" W
162.78'
PARCEL #42-4-320
N/F
FRIENDS FIDUCIARY CORP.
PARCEL #42-4-295
N/F
BUCKEYE TERMINALS, LLC.
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
10 MALIN ROAD ASSOCIATES
ROAD 'A'
ROAD 'B'
ROAD 'C'
RAIN GARDEN #1
RAIN GARDEN #2
RAIN GARDEN #3
UG BASIN #4
CONTAMINATED SOIL AREA TO BE REMEDIATED (TYP)
20' BUILDING SETBACK LINE
100' BUILDING SETBACK LINE
5' WIDE SIDEWALK
BELGIAN BLOCK CURB
6' WIDE CROSSWALK (TYP.)
EMERGENCY ACCESS DRIVE
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)
50' WETLANDS BUFFER
TYPE III BREAKAWAY BARRICADE
PROPOSED 50' WIDE RIGHT-OF-WAY OFFERED TO EAST WHITELAND TOWNSHIP AREA = 31,160 SF (0.72 Ac.)
PROPOSED R.O.W.
20' WIDE PRIVATE ACCESS RIGHT-OF-WAY AS PER DEED BK 1038, PG 132
[S 82°02'00" W]
S 72°44'45" W
754.66'
PARCEL #42-4-001
N/F
JEFFERY S. JONES
PARCEL #42-4-002
N/F
SHARON ELAINE CONNOR
PARCEL #42-4-003
N/F
CECIL O. MOORE
VILLAGE WAY
FAHNESTOCK ROAD
PARCEL #42-4Q-96
N/F
LEWIS H. DELORES M. HITCHCOCK
PARCEL # 42-4Q-97
N/F
RICHARD ROMAIN & LAURA BOGAN
PARCEL #42-4Q-025
N/F
CHARLES & JANICE DUFFY
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
R-3 - LOW DENSITY RESIDENTIAL DISTRICT
RRD - RESIDENTIAL REVITALIZATION
I - INDUSTRIAL DISTRICT
S 15°31'15" E
[S 06°14'00" E]
682.73'
573.49'
[N 22°42'00" W]
N 31°59'15" W
LEGEND
EXISTING
PROPOSED
MANHOLE
INLET
CONCRETE HEADWALL
FLARED END SECTION
UTILITY POLE
FIRE HYDRANT
SIGN
EDGE OF WOODS
SANITARY SEWER
STORM DRAIN
WATER MAIN
SANITARY LATERAL
ROOF DRAIN
WATER SERVICE
TELEPHONE LINE
ELECTRIC LINE
GAS LINE
GATE VALVE
TEE
PLUG(CAP)
CONTOUR LINE
GRADE
MEET EXISTING GRADE
TOP OF CURB ELEVATION
GUTTER ELEVATION
HANDICAP RAMP
CONCRETE CURB
EDGE OF PAVEMENT
CONCRETE
CLEAR SITE TRIANGLE
STOP BAR
PEDESTRIAN CROSSWALK
CONTAMINATED SOIL
ZONING BOUNDARY
PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
IT'S OUR CALL BEFORE YOU DIG
SITE ID: 20182613492
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40 20 0 40 80 120 160
GRAPHIC SCALE
REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
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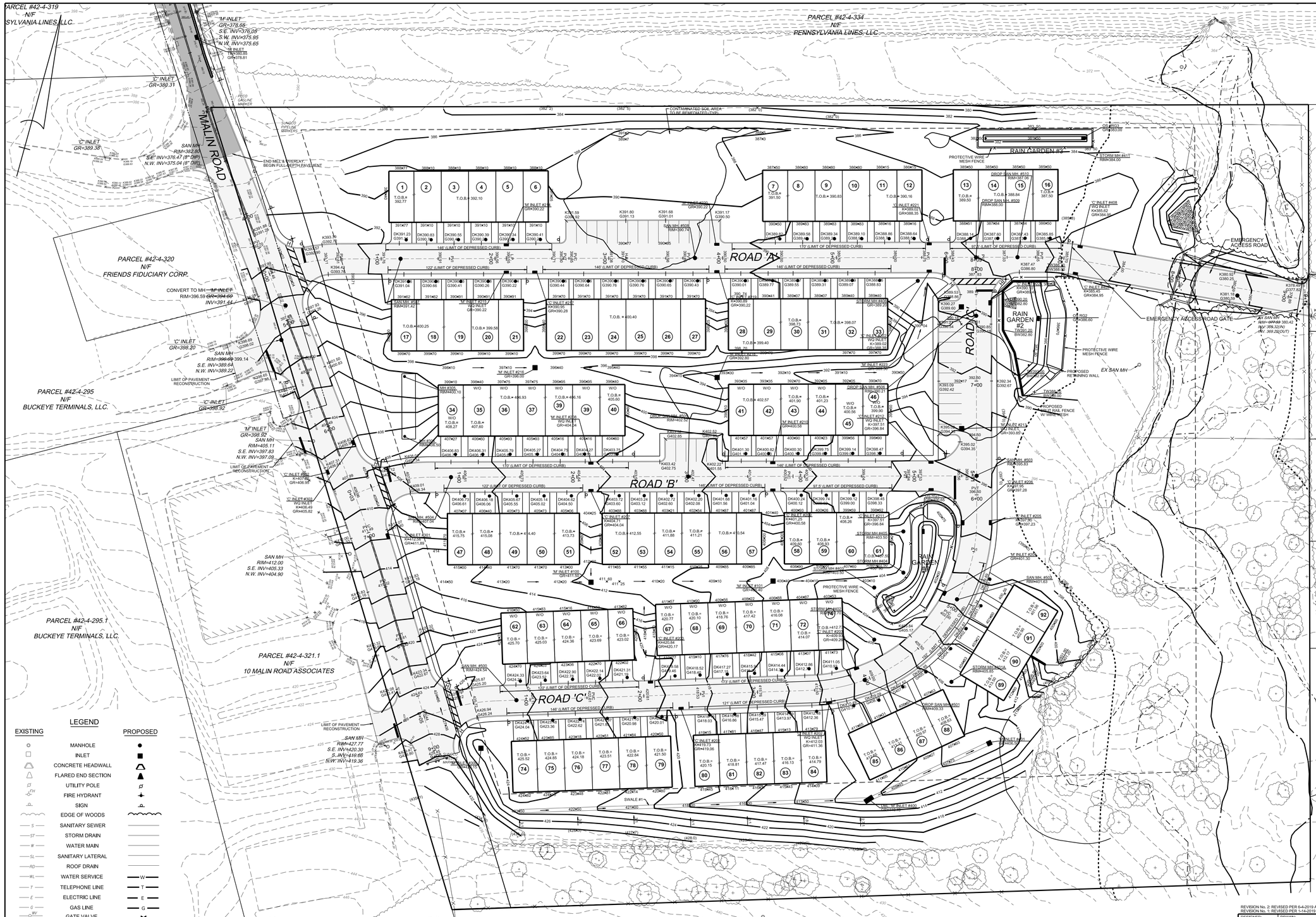
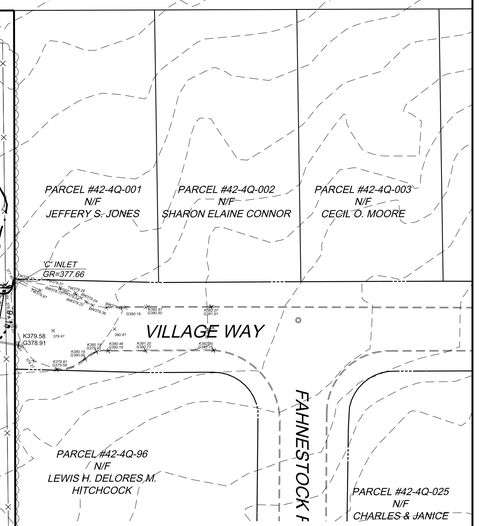
DESIGNED: MJW
DRAWN: JAS
CHECKED: MMT
DATE SIGNED:
REVISIONS
NO. DATE
1 4/5/2019
2 5/15/2020
MARK M. THOMPSON
PA. PROFESSIONAL ENGINEER NO. PE073278
RECORD PLAN
MALIN ROAD DEVELOPMENT
1 MALIN ROAD
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
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: 5 OF 26
Q:\CAD\06476 - Bishop Tube\Plan Set\05_geometry01.dgn





MANAGEMENT AND ONSITE REUSE OF IMPACTED SOIL

IMPACTED SOIL EXISTS AT LOCATIONS INDICATED ON THE ENGINEERING PLANS AND DOCUMENTS. THESE IMPACTED SOIL AREAS ARE HEREBY REFERRED TO AS "REMEDIATION AREAS." SOIL WITHIN THE REMEDIATION AREAS HAVE BEEN DOCUMENTED TO CONTAIN ELEVATED LEVELS OF VOLATILE ORGANIC COMPOUNDS (TCE, TCA, OTHER COMPOUNDS), SEMI-VOLATILE ORGANIC COMPOUNDS, CHROMIUM, VANADIUM, ARSENIC AND OTHER CONSTITUENTS AS INDICATED IN JUNE 10, 2019 REMEDIAL INVESTIGATION REPORT VOLUMES 1 AND 2, BY ROUX ASSOCIATES, INC.

THE CONTRACTOR MUST COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS REGARDING IMPACTED SOIL LOCATED IN THE REMEDIATION AREAS AT THE SITE THAT WILL BE ENCOUNTERED DURING UTILITY INSTALLATION AND OTHER SITE WORK.

IMPACTED SOIL SHALL NOT LEAVE THE SUBJECT PARCEL. INSTEAD, IMPACTED SOIL SHALL BE REUSED WITHIN THE ORIGINATING REMEDIATION AREA AS BACKFILL FOR UTILITY TRENCHES OR AS ROADWAY SUBGRADE, AS APPROPRIATE. NO IMPACTED SOIL SHALL LEAVE THE FOOTPRINT OF THE ORIGINATING REMEDIATION AREA. IMPACTED SOILS RE-USED AS SUBGRADE SOIL SHALL BE COMPACTED / STABILIZED AND TESTED FOR LOAD-BEARING CAPACITY. CONTRACTOR SHALL EMPLOY METHODS NECESSARY TO ISOLATE IMPACTED SOILS FROM NON-CONTAMINATED SOILS.

THE WORK MAY REQUIRE DEWATERING TO ALLOW FOR EXCAVATION OF IMPACTED SOIL AND INSTALLATION OF UTILITIES WITHIN THE IMPACTED SOIL IN DRY CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DEWATERING AND THE MANAGEMENT OF GROUNDWATER, INCLUDING CONTAMINATED GROUNDWATER, IF ENCOUNTERED.

THE CONTRACTOR SHALL PREPARE A SITE-SPECIFIC HEALTH AND SAFETY PLAN. THE PLAN SHALL OUTLINE PROCEDURES FOR THE HANDLING IMPACTED SOIL AND GROUNDWATER, WORKER PROTECTION PROTOCOL, AND EQUIPMENT DECONTAMINATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING THE EXCAVATION AND RE-PLACEMENT OF IMPACTED SOILS, INCLUDING SCALED PLANS SHOWING THE SOURCE, ESTIMATED VOLUMES, AND FINAL LOCATION OF RE-PLACED IMPACTED SOIL.

WORK PROCEDURES IN AREAS CONTAINING IMPACTED SOIL SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICES. SHORING AND OTHER CAVE IN PROTECTION MAY BE REQUIRED AS DETERMINED BY THE CONTRACTOR.

CONTRACTOR IS RESPONSIBLE FOR MINIMIZING THE GENERATION OF DUST DURING EXCAVATION, ESPECIALLY IN HOT SPOT AREAS. CONTRACTOR IS TO AVOID EXCESSIVE WATER USAGE CAUSING RUN OFF. CONTRACTOR SHAL PROVIDE ALL NECESSARY EQUIPMENT, HOSES, AND OTHER ITEMS NECESSARY TO PROVIDE ADEQUATE DUST CONTROL.

CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ADEQUATE EROSION AND SEDIMENTATION CONTROL TO PREVENT IMPACTED SOIL AND SOIL RUNOFF FROM EXITING THE FOOTPRINT OF EACH REMEDIATION AREA DURING EARTH MOVING AND OTHER DISTURBANCE ACTIVITIES. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND OTHER ITEMS NECESSARY TO PROVIDE EROSION AND SEDIMENTATION CONTROL. CONTRACTOR IS ALSO RESPONSIBLE FOR SURFACE STABILIZATION TECHNIQUES SUCH AS TEMPORARY SEEDING TO CONTROL RUNOFF AND EROSION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED FOLLOWING EARTHWORK.

ALL IMPACTED SOILS FROM REMEDIATION AREAS. EXCAVATED TO BE STOCKPILED, SHALL BE MANAGED AS FOLLOWS: SOIL SHALL BE PLACED ON AND COVERED WITH PLASTIC SHEETING. PLASTIC SHEETING IS NECESSARY TO MINIMIZE DUST AND POTENTIAL RUNOFF FROM PRECIPITATION. THE PLASTIC SHEETING MUST BE SECURE ENOUGH TO WITHSTAND THE REASONABLY EXPECTED WIND CONDITIONS AND THE CONTRACTOR SHALL MAINTAIN THE PLASTIC SHEETING FROM EACH STOCKPILE UNTIL THE MATERIAL IS REPLACED EITHER AS BACKFILL OR RE-PLACEMENT WITHIN THE REMEDIATION AREA. DAMAGED OR MISSING SHEETING SHALL BE REPAIRED AND/OR CORRECTED IMMEDIATELY.

IF THE IMPACTED SOIL CANNOT BE REUSED OR REPLACED WITHIN THE REMEDIATION AREA, THE CONTRACTOR MAY ALTERNATIVELY PROPERLY DISPOSE OF THE MATERIAL AT AN OFFSITE BENEFICIAL REUSE, DISPOSAL OR OTHER LICENSED / PERMITTED FACILITY. THE RECEIVING FACILITY SHALL BE FULLY PERMITTED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL PREPARE AND SUBMIT REQUIRED WASTE PROFILE INFORMATION REQUIRED BY THE RECEIVING FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ALL DISPOSAL MATERIAL MANIFESTS AND/OR BILLS OF LADING WITH ALL APPLICABLE ANALYTICAL BACKUP, NOTIFICATION, AND CONTROL FORMS. MANIFEST/BILLS OF LADING SHALL BE SIGNED BY THE RESPONSIBLE PARTY AS THE GENERATOR. THE CONTRACTOR SHALL, FOLLOWING APPROVAL FROM THE RECEIVING FACILITY TO ACCEPT THE IMPACTED SOIL, PROVIDE THE FOLLOWING INFORMATION TO THE ENGINEER, DEVELOPER AND RESPONSIBLE PARTY:

1) RECEIVING FACILITY INFORMATION INCLUDING A. FACILITY NAME, B. FACILITY ADDRESS, C. NAME OF CONTACT PERSON, D. TITLE OF CONTACT PERSON, E. TELEPHONE NUMBER OF CONTACT PERSON, F. PERMIT NUMBER;
2) WRITTEN CONFIRMATION THAT THE FACILITY IS PERMITTED TO ACCEPT AND WILL ACCEPT THE IMPACTED SOIL;
3) A LISTING OF ALL CURRENT AND VALID FACILITY PERMITS, LICENSES, LETTERS OF APPROVAL, AND OTHER AUTHORIZATIONS TO OPERATE, PERTAINING TO THE RECEIPT AND MANAGEMENT OF THE IMPACTED SOIL.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A WRITTEN LOG FOR THE TRANSPORT OF EACH LOAD FROM THE SITE AND THE LOCATION THAT THE SOIL WAS EXCAVATED, INCLUDING TRACTOR/TRAILER REGISTRATIONS, TIME OF DEPARTURE, TIME OF ARRIVAL AT THE RECEIVING FACILITY AND SIGNATURE OF VEHICLE OPERATOR. THE CONTRACTOR SHALL ALSO PROVIDE CERTIFIED TARE AND GROSS WEIGHT SLIPS FOR EACH LOAD RECEIVED AT THE DESIGNATED DISPOSAL FACILITY. THESE SHALL BE ATTACHED TO EACH RETURNED MANIFEST AND/OR BILL OF LADING. THE CONTRACTOR SHALL FURNISH ALL GENERATOR COPIES OF THE MATERIAL MANIFEST TO THE ENGINEER, DEVELOPER, AND GENERATOR.

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	

PAVING LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY (MALIN ROAD FULL WIDTH MILL & OVERLAY TO EXTEND TO THE S.R. 0030 INTERSECTION)

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

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

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

COMMONWEALTH OF PENNSYLVANIA — MARK MATTHEW THOMPSON — PROFESSIONAL ENGINEER

PA. PROFESSIONAL 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:	DATE:	DRAWING NO.	SHEET:
1" = 40'	SEPTEMBER 22, 2018	018-06476-LD	6 OF 26

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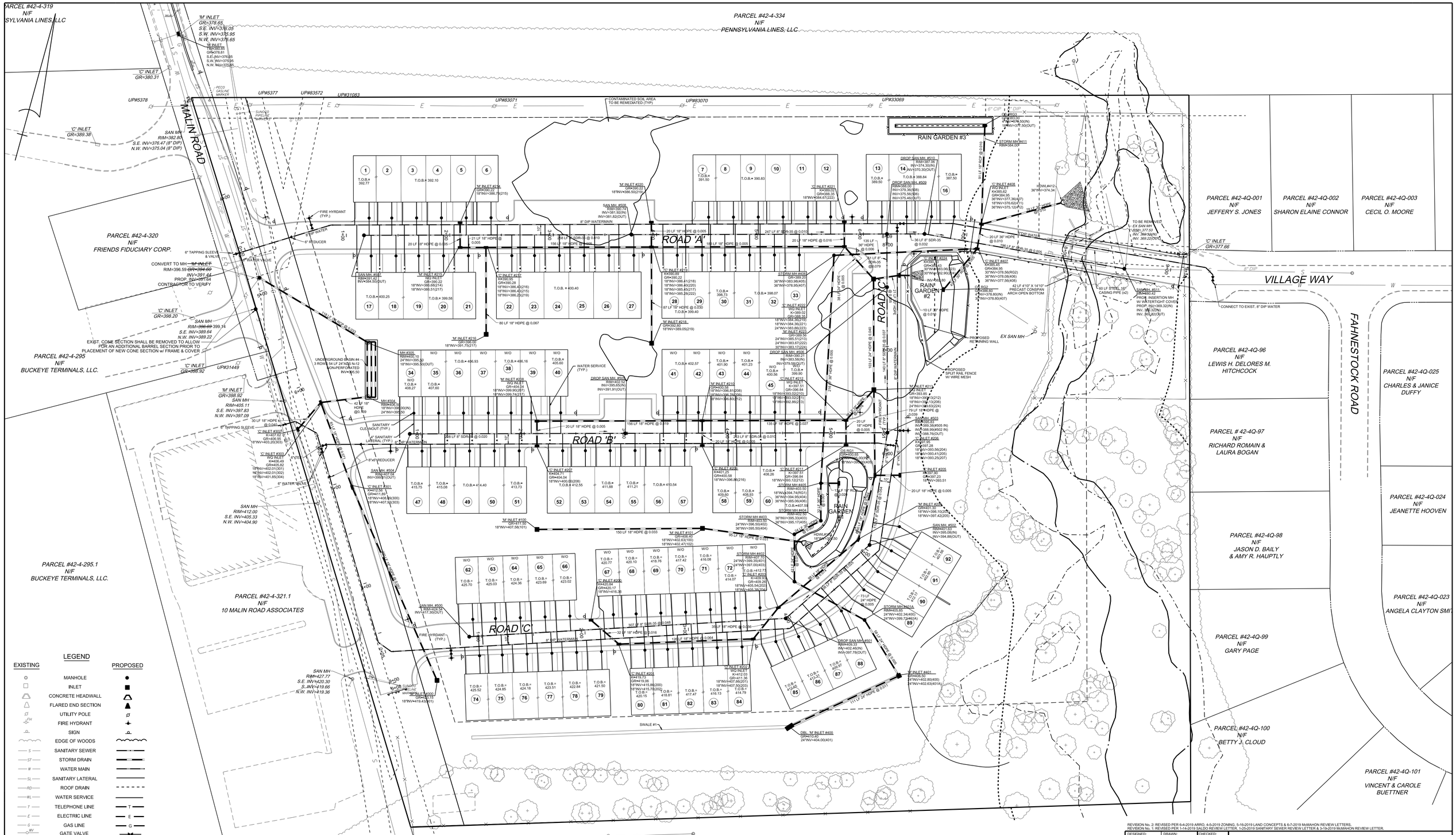

LEGEND

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	
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 INLET #214.
2. UNITS 7-16 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO RAIN GARDEN #3.
3. UNITS 47-51 AND 62-66 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INLET #100.
4. UNITS 52-57 AND 67-73 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO INLET #101.
5. UNITS 58-61 ROOF RUNOFF SHALL BE DIRECTED, VIA ROOF DRAINS, TO RAIN GARDEN #1.

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MARK M. THOMPSON

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK M. THOMPSON

PA. PROFESSIONAL ENGINEER NO. PE073278

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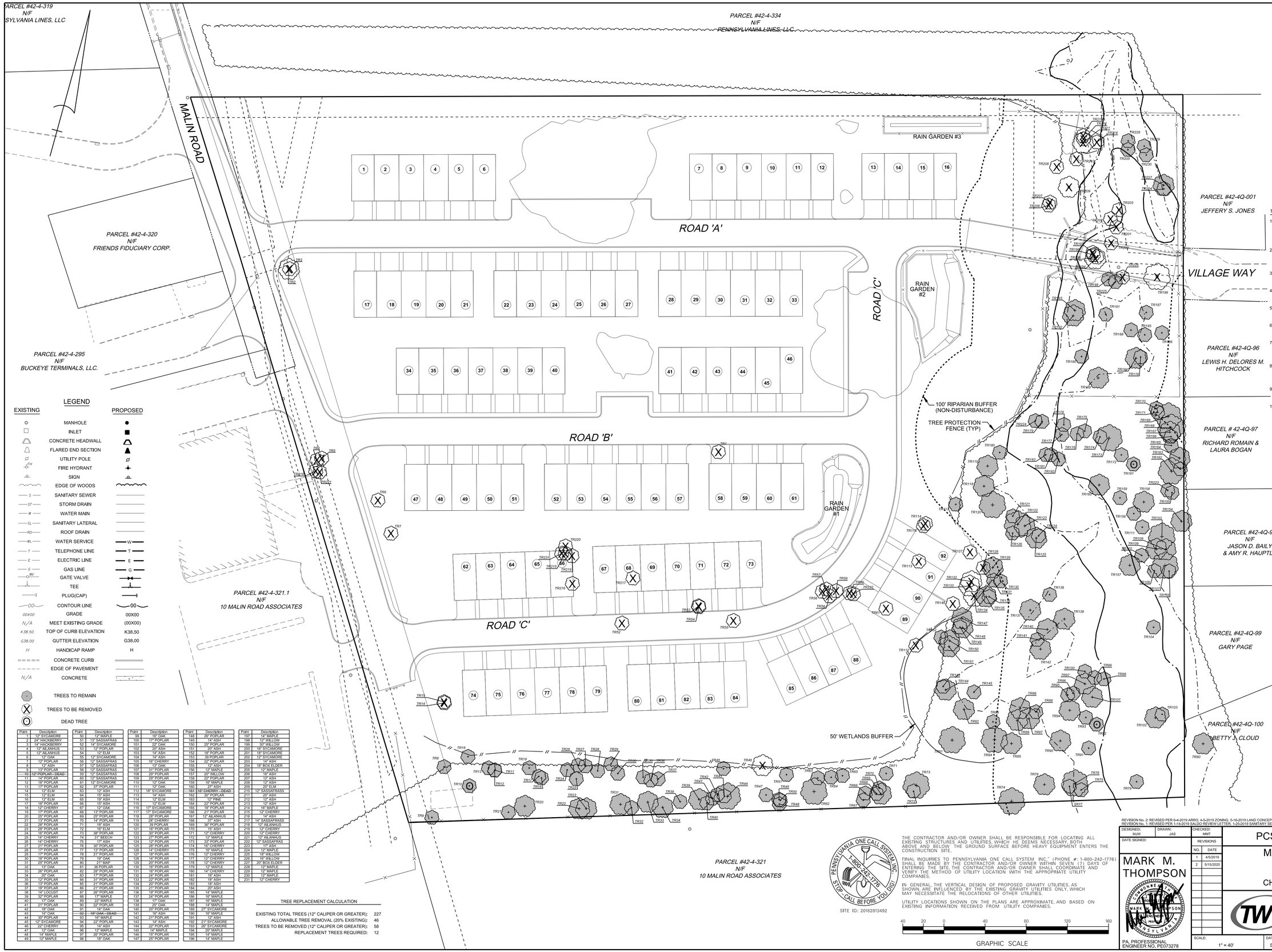

LEGEND

EXISTING		PROPOSED
	MANHOLE	
	INLET	
	CONCRETE HEADWALL	
	FLARED END SECTION	
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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)
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G38.00	GUTTER ELEVATION	G38.00
H	HANDICAP RAMP	H
	CONCRETE CURB	
	EDGE OF PAVEMENT	
N/A	CONCRETE	

TREES TO REMAIN

TREES TO BE REMOVED

DEAD TREE

Point	Description
1	12" SYCAMORE
2	24" HACKBERRY
3	14" HACKBERRY
4	12" ALNHUS
5	12" ALANHUS
6	12" OAK
7	12" POPLAR
8	12" ASH
9	13" POPLAR
10	12" POPLAR - DEAD
11	14" POPLAR
12	18" POPLAR
13	17" POPLAR
14	12" ELM
15	12" ELM
16	12" ELM
17	18" POPLAR
18	12" CHERRY
19	17" POPLAR
20	25" POPLAR
21	13" POPLAR
22	28" POPLAR
23	28" POPLAR
24	16" POPLAR
25	14" CHERRY
26	14" CHERRY
27	21" POPLAR
28	17" POPLAR
29	17" POPLAR
30	18" POPLAR
31	25" POPLAR
32	13" OAK
33	26" POPLAR
34	20" OAK
35	12" POPLAR
36	13" POPLAR
37	18" POPLAR
38	14" LOCUST
39	32" POPLAR
40	17" OAK
41	21" POPLAR
42	16" OAK
43	14" OAK
44	30" POPLAR
45	12" SYCAMORE
46	22" CHERRY
47	12" OAK
48	14" MAPLE
49	12" MAPLE

Point	Description
50	12" MAPLE
51	13" SASSAFRAS
52	14" SYCAMORE
53	12" POPLAR
54	12" ELM
55	12" SYCAMORE
56	12" SASSAFRAS
57	12" SASSAFRAS
58	13" SASSAFRAS
59	12" SASSAFRAS
60	13" SASSAFRAS
61	12" SYCAMORE
62	37" POPLAR
63	12" ASH
64	15" ASH
65	19" ASH
66	15" ASH
67	12" OAK
68	13" POPLAR
69	25" POPLAR
70	14" POPLAR
71	18" ASH
72	16" ELM
73	38" POPLAR
74	31" BEECH
75	11" ASH
76	30" POPLAR
77	13" POPLAR
78	21" POPLAR
79	19" OAK
80	21" MAP
81	36 POPLAR
82	28" POPLAR
83	17" POPLAR
84	31" POPLAR
85	21" POPLAR
86	28" POPLAR
87	26" POPLAR
88	17" MAPLE
89	22" MAPLE
90	22" POPLAR
91	14" OAK
92	18" OAK - DEAD
93	16" MAPLE
94	22" POPLAR
95	14" ASH
96	12" MAPLE
97	26" POPLAR
98	18" OAK

Point	Description
99	16" OAK
100	17" POPLAR
101	20" OAK
102	20" ASH
103	14" ASH
104	14" ASH
105	18" CHERRY
106	13" OAK
107	31" POPLAR
108	29" POPLAR
109	29" POPLAR
110	12" OAK
111	12" OAK
112	18" SYCAMORE
113	14" ASH
114	12" ELM
115	12" ELM
116	17" SYCAMORE
117	17" SYCAMORE
118	28" POPLAR
119	28" CHERRY
120	33 POPLAR
121	16" POPLAR
122	30" POPLAR
123	27" POPLAR
124	12" POPLAR
125	28" POPLAR
126	14" CHERRY
127	18" POPLAR
128	14" POPLAR
129	20" POPLAR
130	16" POPLAR
131	16" POPLAR
132	24" POPLAR
133	22" POPLAR
134	20" POPLAR
135	31" POPLAR
136	19" POPLAR
137	24" POPLAR
138	17" OAK
139	25" OAK
140	20" POPLAR
141	16" ASH
142	21" POPLAR
143	14" ASH
144	22" POPLAR
145	14" MAPLE
146	15" POPLAR
147	25" POPLAR

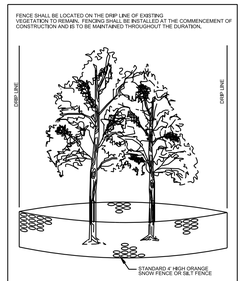
Point	Description
148	26" POPLAR
149	14" ASH
150	26" POPLAR
151	20" ASH
152	18" POPLAR
153	39 POPLAR
154	22" POPLAR
155	12" ASH
156	12" MAPLE
157	20" WILLOW
158	22" POPLAR
159	16" MAPLE
160	27" ASH
161	16" CHERRY - DEAD
162	30" POPLAR
163	12" PINE
164	22" POPLAR
165	18" POPLAR
166	21" POPLAR
167	12" ALANHUS
168	27" ASH
169	38" POPLAR
170	15" ASH
171	12" CHERRY
172	12" MAPLE
173	33" POPLAR
174	16" CHERRY
175	16" MAPLE
176	12" CHERRY
177	12" CHERRY
178	12" CHERRY
179	12" MAPLE
180	14" CHERRY
181	18" ASH
182	18" ASH
183	18" ASH
184	20" ASH
185	14" MAPLE
186	16" MAPLE
187	16" MAPLE
188	14" MAPLE
189	27" SYCAMORE
190	16" MAPLE
191	12" ASH
192	21" SYCAMORE
193	20" SYCAMORE
194	20" MAPLE
195	14" MAPLE
196	14" MAPLE

Point	Description
197	14" MAPLE
198	12" WILLOW
199	30" WILLOW
200	16" SYCAMORE
201	18" SYCAMORE
202	12" SYCAMORE
203	14" ASH
204	18" BOX ELDER
205	12" MAPLE
206	16" ASH
207	12" ASH
208	12" ASH
209	20" ELM
210	12" SASSAFRASS
211	20" ASH
212	12" ASH
213	12" ASH
214	16" MAPLE
215	12" CHERRY
216	14" ASH
217	14" SASSAFRASS
218	12" ALANHUS
219	12" CHERRY
220	13" CHERRY
221	12" ALANHUS
222	12" SASSAFRAS
223	31" ASH
224	12" MAPLE
225	18" WILLOW
226	16" WILLOW
227	20" BOX ELDER
228	12" MAPLE
229	12" MAPLE
230	12" MAPLE
231	12" CHERRY

TREE REPLACEMENT CALCULATION

EXISTING TOTAL TREES (12" CALIPER OR GREATER):	227
ALLOWABLE TREE REMOVAL (20% EXISTING):	46
TREES TO BE REMOVED (12" CALIPER OR GREATER):	58
REPLACEMENT TREES REQUIRED:	12

FENCE SHALL BE LOCATED ON THE DRIP LINE OF EXISTING VEGETATION TO REMAIN. FENCING SHALL BE INSTALLED AT THE COMMENCEMENT OF CONSTRUCTION AND IS TO BE MAINTAINED THROUGHOUT THE DURATION.



EXISTING TREE PROTECTION DURING CONSTRUCTION

N.T.S.

TREE PROTECTION PROGRAM

1. IN THE EVENT THAT A 24" OR GREATER DIAMETER TREE INTENDED TO BE PROTECTED IS LOST DURING CONSTRUCTION, TWO (2) 2 1/2 -3" CAL, B&B REPLACEMENT TREES WILL BE PROVIDED ON-SITE. SPECIES TO BE APPROVED BY TOWNSHIP ENGINEER.
2. TREES INTENDED TO BE PROTECTED IN THE VICINITY OF CONSTRUCTION ACTIVITIES SHALL BE ROOT PRUNED, ROOT AERATED AND FERTILIZED AS NECESSARY TO PRESERVE THE INTEGRITY OF SAID TREES.
3. TREES SHALL NOT BE USED FOR ROPING, CABLES, SIGNS, OR FENCING. NAILS AND SPIKES SHALL NOT BE DRIVEN INTO TREES.
4. TREES BEING REMOVED SHALL NOT BE FELLED, PUSHED OR PULLED INTO A TREE PROTECTION ZONE (TPZ) OR INTO TREES THAT ARE TO BE RETAINED.
5. GRADE CHANGES AND EXCAVATIONS SHALL NOT ENCROACH UPON THE TPZ, UNLESS NOTED, NOR CAUSE WATER TO BE TRAPPED IN THE TPZ.
6. NO TOXIC MATERIALS SHALL BE STORED WITHIN 100 FEET OF A TPZ, INCLUDING PETROLEUM BASED AND/OR DERIVED PRODUCTS.
7. THE AREA WITHIN THE TPZ SHALL NOT BE BUILT UPON, NOR SHALL ANY MATERIALS BE STORED TERE EITHER TEMPORARILY OR PERMANENTLY, VEHICLES AND EQUIPMENT SHALL NOT BE PARKED IN THE TPZ.
8. WHEN TREE STUMPS ARE LOCATED WITHIN 10 FEET OF THE TPZ, THE STUMPS SHALL BE REMOVED BE MEANS OF A STUMP GRINDER TO MINIMIZE THE EFFECT ON SURROUNDING ROOT SYSTEMS.
9. TREE ROOTS WHICH MUST BE SEVERED WITHIN THE TPZ SHALL BE CUT AND NOT RIPPED.
10. EXPOSED OR DAMAGED ROOTS SHALL BE TRIMMED CLEANLY AND COVERED TEMPORARILY WITH MOIST PEAT MOSS, MOIST BURLAP OR OTHER MOIST BIODEGRADABLE MATERIAL TO KEEP THEM FROM DRYING OUT UNTIL PERMANENT COVER CAN BE INSTALLED.

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1-800-242-1776
IT'S THE LAW - CALL BEFORE YOU DIG!

SITE ID: 20182813492

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MARK M. THOMPSON

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

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PCSM TREE PROTECTION PLAN

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RIPARIAN BUFFER PLANT SCHEDULE

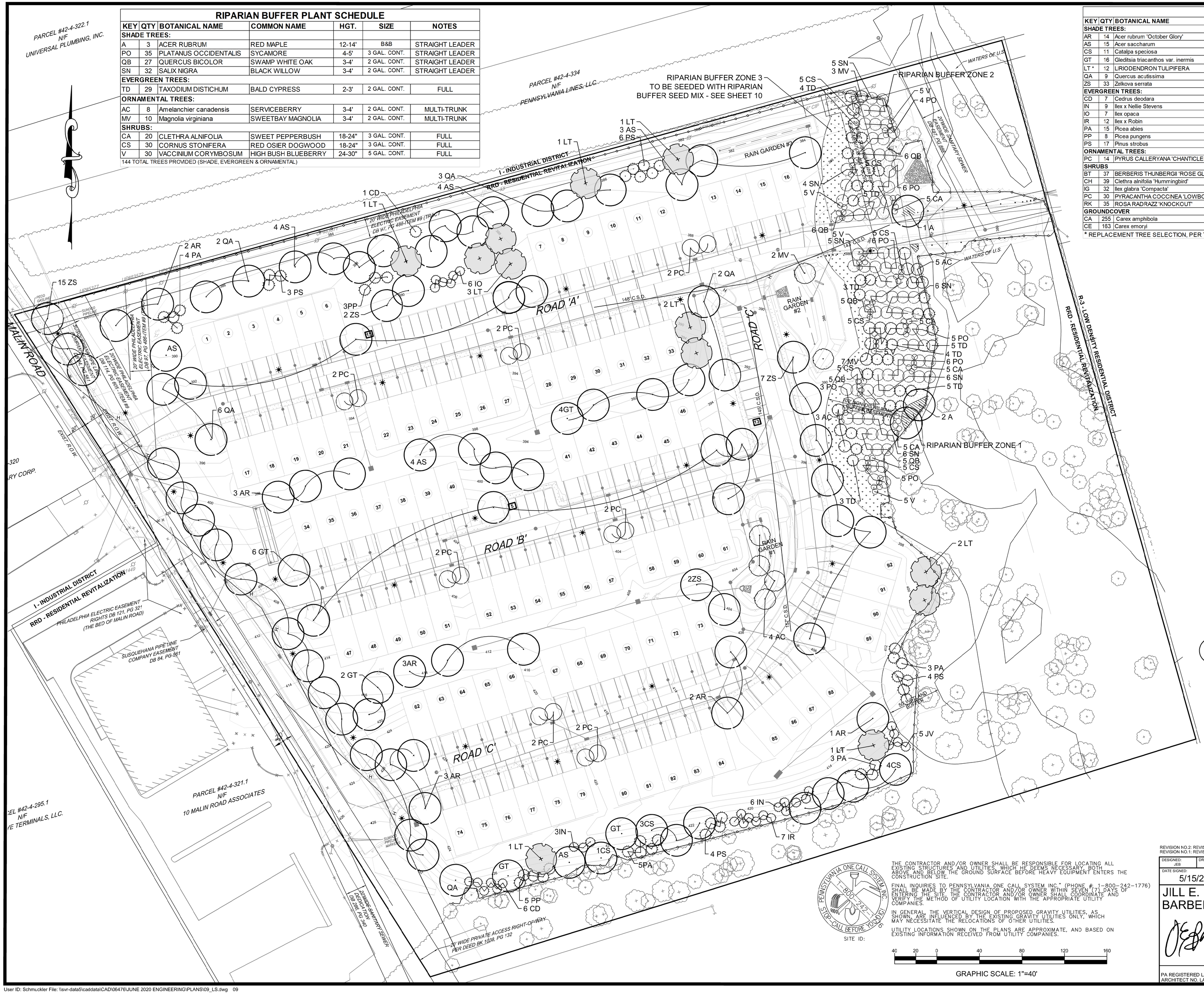
KEY	QTY	BOTANICAL NAME	COMMON NAME	HGT.	SIZE	NOTES
SHADE TREES:						
A	3	ACER RUBRUM	RED MAPLE	12-14'	B&B	STRAIGHT LEADER
PO	35	PLATANUS OCCIDENTALIS	SYCAMORE	4-5'	3 GAL. CONT.	STRAIGHT LEADER
QB	27	QUERCUS BICOLOR	SWAMP WHITE OAK	3-4'	2 GAL. CONT.	STRAIGHT LEADER
SN	32	SALIX NIGRA	BLACK WILLOW	3-4'	2 GAL. CONT.	STRAIGHT LEADER
EVERGREEN TREES:						
TD	29	TAXODIUM DISTICHUM	BALD CYPRESS	2-3'	2 GAL. CONT.	FULL
ORNAMENTAL TREES:						
AC	8	Amelanchier canadensis	SERVICEBERRY	3-4'	2 GAL. CONT.	MULTI-TRUNK
MV	10	Magnolia virginiana	SWEETBAY MAGNOLIA	3-4'	2 GAL. CONT.	MULTI-TRUNK
SHRUBS:						
CA	20	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	18-24"	3 GAL. CONT.	FULL
CS	30	CORNUS STONIFERA	RED OSIER DOGWOOD	18-24"	3 GAL. CONT.	FULL
V	30	VACCINIUM CORYMBOSUM	HIGH BUSH BLUEBERRY	24-30"	5 GAL. CONT.	FULL

144 TOTAL TREES PROVIDED (SHADE, EVERGREEN & ORNAMENTAL)

LANDSCAPE PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	HGT.	CAL.	SIZE	NOTES
SHADE TREES:							
AR	14	Acer rubrum 'October Glory'	OCTOBER GLORY MAPLE	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
AS	15	Acer saccharum	SUGAR MAPLE	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
CS	11	Catalpa speciosa	NORTHERN CATALPA	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
GT	16	Gleditsia triacanthos var. inermis	THORNLESS HONEYLOCUST	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
LT *	12	LIRIODENDRON TULIPIFERA	TULIPTREE (POPULAR)	12-14'	3-3.5"	B&B	STRAIGHT LEADER, FULL HEAD
QA	9	Quercus acutissima	SAWTOOTH OAK	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
ZS	33	Zelkova serrata	JAPANESE ZELKOVA	12-14'	2 1/2-3"	B&B	STRAIGHT LEADER, FULL HEAD
EVERGREEN TREES:							
CD	7	Cedrus deodara	HIMALAYAN CEDAR	6-7'		B&B	FULL/MATCHED
IN	9	Ilex x Nellie Stevens	NELLIE STEVENS HOLLY	6-7'		B&B	FULL/MATCHED
IO	7	Ilex opaca	AMERICAN HOLLY	6-7'		B&B	FULL/MATCHED
IR	12	Ilex x Robin	ROBIN HOLLY	6-7'		B&B	FULL/MATCHED
PA	15	Picea abies	NORWAY SPRUCE	6-7'		B&B	FULL/MATCHED
PP	8	Picea pungens	COLORADO BLUE SPRUCE	6-7'		B&B	FULL/MATCHED
PS	17	Pinus strobus	WHITE PINE	6-7'		B&B	FULL/MATCHED
ORNAMENTAL TREES:							
PC	14	PYRUS CALLERYANA 'CHANTICLEER'	UPRIGHT FLOWERING PEAR	6-7'			SINGLE LEADER /WELL BRANCHED
SHRUBS							
BT	37	BERBERIS THUNBERGII 'ROSE GLOW'	ROSE GLOW BARBERRY	30-36"		5 GAL. CONT.	FULL / WELL BRANCHED
CH	39	Clethra alnifolia 'Hummingbird'	COMPACT SWEET PEPPERBUSH	18-24"		3 GAL. CONT.	FULL / WELL BRANCHED
IG	32	Ilex glabra 'Compacta'	COMPACT INKBERRY	18-24"		3 GAL. CONT.	FULL / WELL BRANCHED
PC	30	PYRACANTHA COCCINEA 'LOWBOY'	SCARLET FIRETHORN	30-36"		5 GAL. CONT.	FULL / WELL BRANCHED
RK	35	ROSA RADRAZZ 'KNOCKOUT'	KNOCKOUT ROSE	18-24"		3 GAL. CONT.	FULL / WELL BRANCHED
GROUNDCOVER							
CA	255	Carex amphibola	CREEK SEDGE	18-24"			PLANTED 2' O.C.
CE	163	Carex emoryi	EMORY'S SEDGE	18-24"			PLANTED 2' O.C.

* REPLACEMENT TREE SELECTION, PER TOWNSHIP APROVAL



LANDSCAPE REQUIREMENTS:

PER THE EAST WHITELAND TOWNSHIP, PENNSYLVANIA ZONING ORDINANCE.

	REQUIRED	PROPOSED
SECTION 175-30(D): STREET TREES - 2,891.11 LF STREET FRONTAGE, STAGGERED ALONG BOTH SIDES AND SPACED ON FORTY-FOOT CENTERS	73 STREET TREES	38 STREET TREES 35* OTHER LOCATIONS
SECTION 175-41(D)(1): NEW TREES - MIN. (1) DECIDUOUS TREE & (1) CONIFEROUS TREE PER 5,000 S.F. LOT AREA - (92) UNITS @ (1,800) S.F. PER UNIT (LOT) = 165,600 S.F.	REQUIRED (33) DECIDUOUS TREES (33) CONIFEROUS TREES	PROPOSED (33) SHADE & ORNAMENTAL TREES (33) EVERGREEN TREES
SECTION 200-61: LANDSCAPE BUFFER - NORTH PROPERTY LINE - 364 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 (0) TREES (0) TREES (0) TREES (0) TREES	PROPOSED (0) TREES (0) TREES (0) TREES (0) TREES
SECTION 200-63: SETBACK FROM STREET BUFFER - MALIN ROAD IS A LOCAL STREET REQUIRING A TYPE A1 BUFFER - 1 CANOPY TREE PER 40 L.F. MALIN ROAD FRONTAGE = 605 L.F.	REQUIRED 15 TREES	PROPOSED 15 TREES

* WAIVER FOR PLANTING STREET TREES IN OTHER OPEN AREAS AS DRIVEWAYS, UTILITIES, AND SIDEWALKS PREVENT THE INSTALLATION OF TREES ALONG ROADWAYS.

ADDITIONAL LANDSCAPE REQUIREMENTS:

PER THE EAST WHITELAND TOWNSHIP, PENNSYLVANIA ZONING ORDINANCE.

SECTION 175-33(C): CLEAR SIGHT TRIANGLES

REQUIRED: WITHIN CLEAR SIGHT TRIANGLES, NO VISION-OBSTRUCTING OBJECT SHALL BE PERMITTED. THE HEIGHT OF THE SIGHT TRIANGLE AREA SHALL BE CONSIDERED TO BE FROM 36 INCHES ABOVE GRADE TO 10 FEET ABOVE GRADE.

PROPOSED: WAIVER REQUESTED - ALL SHADE TREES WILL BE LIMBED UP TO 7 FT. ALL SHRUBS WITHIN THE CLEAR SIGHT TRIANGLES ARE TO BE NO TALLER THAN 3 FT HEIGHT AND ARE TO BE MAINTAINED.

SECTION 175-41C(4): EXISTING REMOVAL

REQUIRED: NO MORE THAN 20% OF TREES ON ANY WOODED LOT MAY BE CUT OR REMOVED. THE REMAINING 80% SHALL BE RETAINED, UNLESS A WAIVER IS GRANTED BY THE BOARD SUBJECT TO THE FOLLOWING:
- a. THE TREES REMOVED FROM A WOODED LOT WILL BE SHALL BE REPLACED ON A TREE-FOR-TREE BASIS.
- b. ALL REPLACEMENT TREES SHALL BE 3" CALIPER MINIMUM AND TOWNSHIP WILL SELECT THE TYPE OF TREE TO BE USED FOR REPLACEMENT.
- c. PREPLACEMENTPLANTINGS REQUIRED ARE IN ADDITION TO THE BUFFER, YARD AND LANDSCAPING REQUIREMENTS.

PROPOSED: WAIVER REQUESTED - 46 TREES ALLOWED TO BE REMOVED AT 20% TREE REMOVAL. 58 TREES ARE BEING REMOVED. 12 REQUIRED REPLACEMENT TREES WILL BE PROVIDED AT 3" CALIPER.

SECTION 170-310(E)(1)(e): LANDSCAPING OF STORMWATER MANAGEMENT PRACTICES

REQUIRED: LANDSCAPING SHALL BE REQUIRED IN AND AROUND ALL CONSTRUCTED STORMWATER MANAGEMENT PRACTICES WITH A MINIMUM SURFACE AREA OF 1,000 S.F. FOR THE PURPOSES OF: (e) A FENCE OR SUITABLE VEGETATIVE SCREEN SHALL BE PROVIDED AROUND ALL DETENTION AND RETENTION BASINS AS REQUIRED BY THE TOWNSHIP ENGINEER.

PROPOSED: REQUIRED PLANTINGS AND FENCING PROVIDED:
- RAIN GARDEN #1 IS PLANTED WITH 3 FT TALL SHRUBS TO ACT AS A SCREEN AND WIRE FENCING PER ORDINANCE
- RAIN GARDEN #2 WILL HAVE A SPLIT RAIL FENCE PROPOSED AROUND THE PORTION ADJACENT TO THE RETAINING WALL. THE REMAINING AREA IS PLANTED WITH 3 FT TALL SHRUBS AND WIRE FENCING PER ORDINANCE
- RAIN GARDEN #3 IS PLANTED WITH 3 FT TALL SHRUBS TO ACT AS A SCREEN AND WIRE FENCING PER ORDINANCE.

LEGEND:

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

NOTES:
1. SEE 'LANDSCAPE PLAN AND DETAILS', SHEET 10, FOR RAIN GARDEN PLANTING ENLARGEMENTS AND SEEDING MIXTURES FOR RAIN GARDEN AND RIPARIAN BUFFER.
2. ALL PROPOSED STREET TREES ARE TO BE PLANTED A MAXIMUM OF 40 FT O.C. AND A MINIMUM OF 5 FT AWAY FROM ANY CURBS, EASEMENTS, OR UTILITIES.
3. ANY PROPOSED STREET TREES NEAR SIGHT TRIANGLES ARE TO BE LIMBED 7 FT AND ANY SHRUBS TO BE MAINTAINED AT MAXIMUM OF 3 FT HEIGHT.
4. TREE PLANTINGS WITHIN RIPARIAN BUFFER AREAS ARE SPACED APPROXIMATELY ON A 10 FT. x 15 FT. GRID.
5. THE RIPARIAN BUFFER REQUIRES 320 TREES PER ACRE, FOR A TOTAL OF 141 TREES. 144 TOTAL TREES PROVIDED.

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

SITE ID:

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.

40 20 0 40 80 120 160

GRAPHIC SCALE: 1"=40'

REVISION NO.2: REVISED PER 5-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 MCMAHON REVIEW LETTER.
REVISION NO.1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 MCMAHON REVIEW LETTER.

DESIGNED: JEB	DRAWN: DR	CHECKED: JEB
DATE SIGNED: 5/15/20		REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2019

JILL E. BARBER

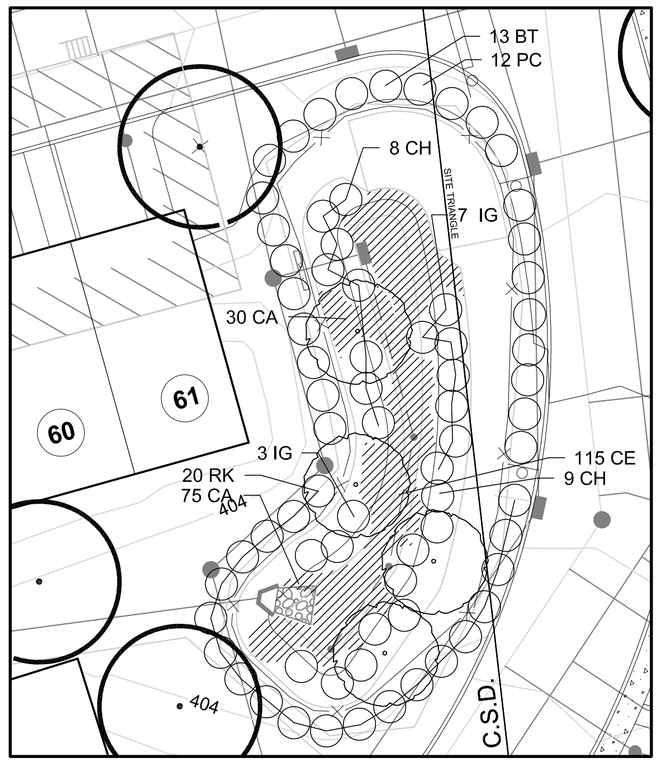
PA REGISTERED LANDSCAPE ARCHITECT NO. LA003255

LANDSCAPE 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) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28032900

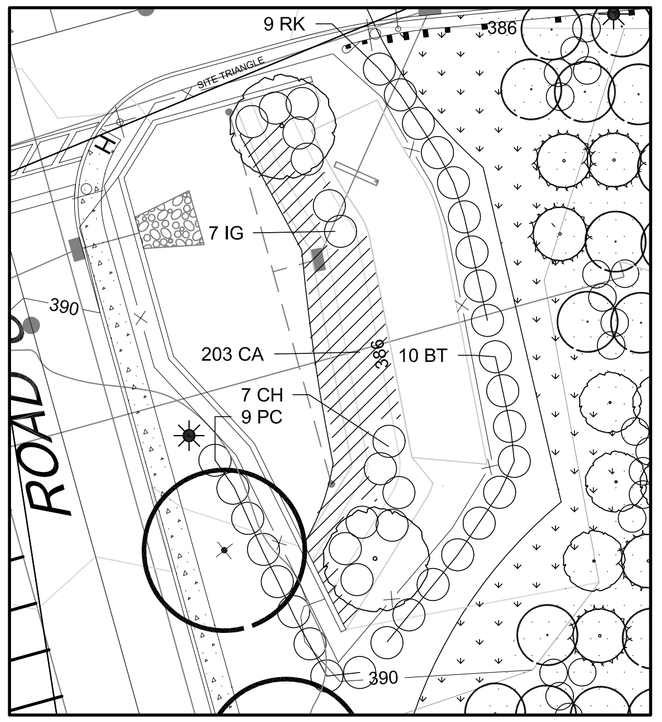
SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 40"	SEPTEMBER 22, 2018	018-06476-LD	9 OF 26



RAIN GARDEN #1 ENLARGEMENT

NOTES: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE. PLANT QUANTITIES ARE INCLUDED IN LANDSCAPE PLANT SCHEDULE, SHEET 9.

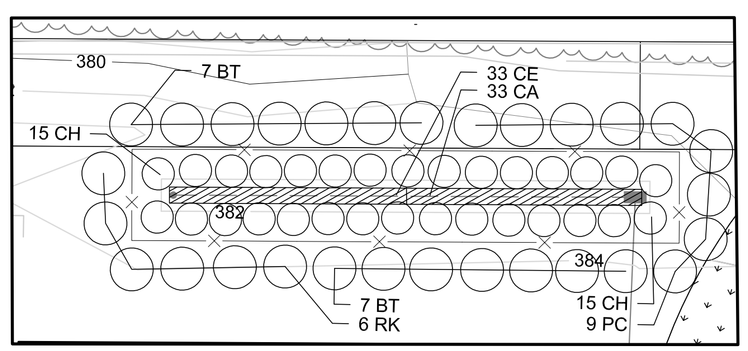
SCALE: 1" = 20'



RAIN GARDEN #2 ENLARGEMENT

NOTES: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE. PLANT QUANTITIES ARE INCLUDED IN LANDSCAPE PLANT SCHEDULE, SHEET 9.

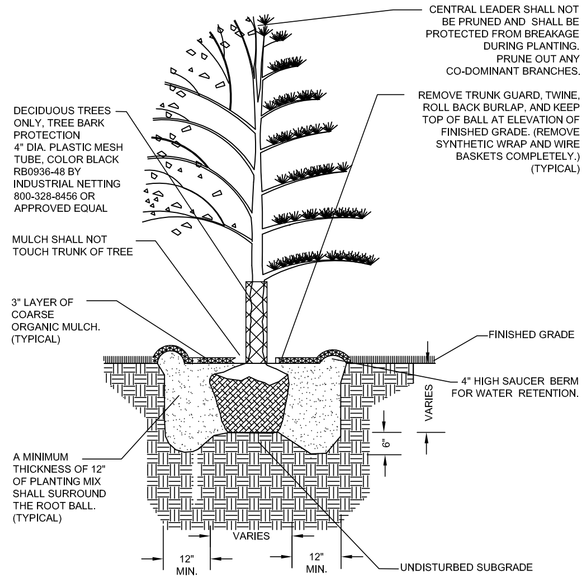
SCALE: 1" = 20'



RAIN GARDEN #3 ENLARGEMENT

NOTES: SEE SCHEDULE FOR RAIN GARDEN SEEDING MIXTURE. PLANT QUANTITIES ARE INCLUDED IN LANDSCAPE PLANT SCHEDULE, SHEET 9.

SCALE: 1" = 20'

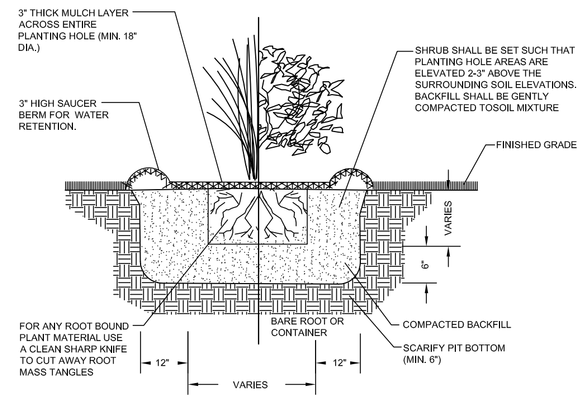


ALL STREET TREES TO HAVE A STRAIGHT TRUNK TO 9'HT AND LIMBED UP TO 7'HT.
IF PLANTING AREA IS COMPACTED, DIG A WIDER PLANTING HOLE.

TREE PLANTING DETAIL

SHADE AND EVERGREEN TREES

N.T.S.

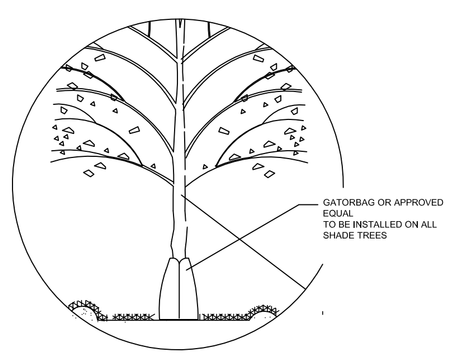


NOTE:
A CONTAINER SHRUB SHALL BE IN THAT CONTAINER SUFFICIENT TIME THAT FIBROUS ROOTS ARE FORMED SO THAT THE SHAPE WILL REMAIN AND THE MEDIUM WILL HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER

SHRUB / GRASS PLANTING DETAIL

FOR B&B and CONTAINER GROWN PLANTS

N.T.S.



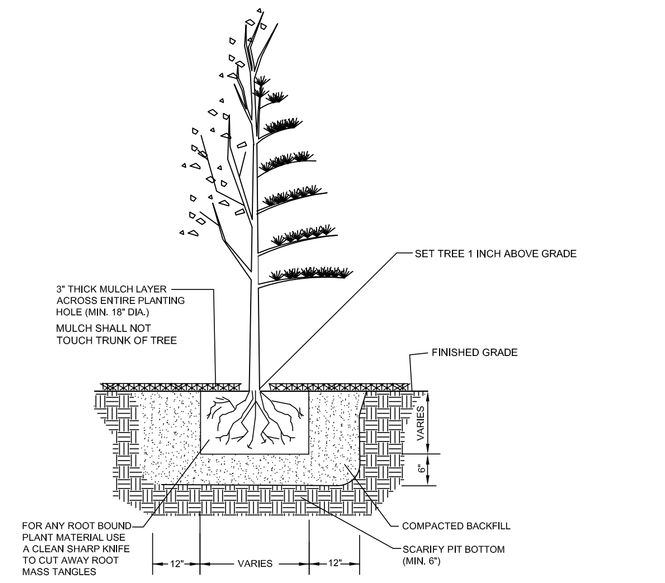
NOTES:
1. SINGLE BAG HOLDS APPROX. 20 GALLONS, SINGLE BAG FITS 1-4" CAL. TREE (TWO BAGS ZIPPED TOGETHER HOLDS 50 GALLONS AND FITS UP TO 8" CAL TREE)
2. USE ON TREES WITH BRANCHES AT LEAST 30" OFF THE GROUND.
3. MADE OF POLYETHYLENE PLASTIC WITH NYLON WEBBING
4. TWO WATER RELEASE POINTS PER BAG FOR EVEN 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.

LEGEND:

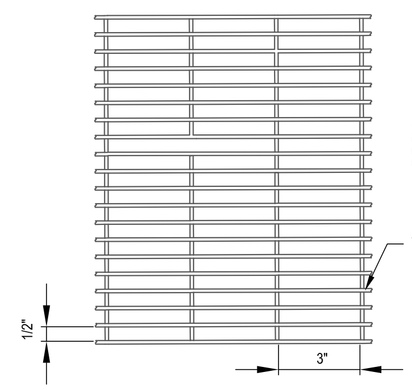
- PROPOSED STREET TREE
- PROPOSED SHADE TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREENS
- PROPOSED SHRUBS
- PROPOSED REPLACEMENT TREES
- PROPOSED GRASSES
- RIPARIAN BUFFER ZONE 1
- RIPARIAN BUFFER ZONE 2
- RIPARIAN BUFFER ZONE 3



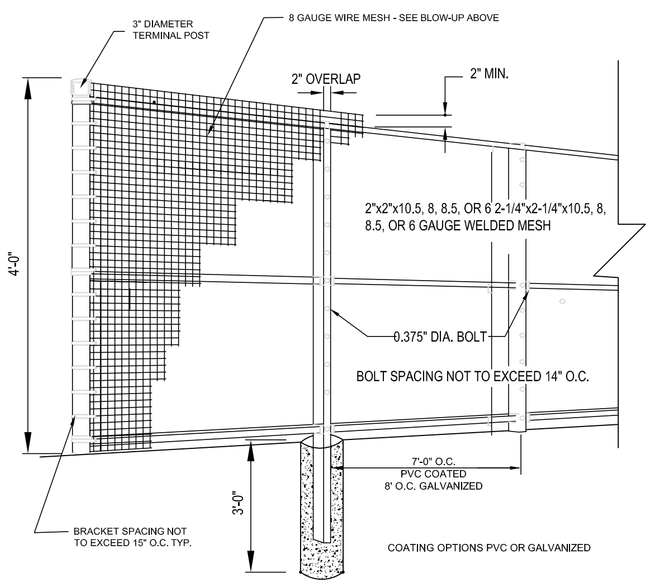
#2 AND #3 CONTAINER TREE PLANTING

SHADE AND EVERGREEN TREES (RIPARIAN BUFFER)

N.T.S.



1/2 IN. x 3 IN. x 8 GA. WIRE MESH



NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. BRACKETS AND ACCESSORIES HOT-DIP ZINC COATED IN ACCORDANCE WITH ASTM A 153
3. STEEL: HOT-ROLLED, LOW CARBON, COMMERCIAL QUALITY.

WIRE MESH FENCE (AROUND RAIN GARDENS)

N.T.S.

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.plnelandsnursery.com

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 Type 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

LANDSCAPE NOTE:

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 TOWNSHIP REPRESENTATIVE, PROJECT LANDSCAPE ARCHITECT & CLIENT PRIOR TO THE PRE-CONSTRUCTION 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 COMMENCEMENT 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 PLANT MATERIALS SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND SHALL BE FIRST QUALITY NURSERY CROWN STOCK, FREE FROM DISEASE OR OBJECTIONABLE DISFIGUREMENTS AND PLANTED IN CONFORMANCE WITH SOUND NURSERY PRACTICE AND APPLICABLE CITY STANDARD.
7. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OF VARIETY. ALL PLANTS SHALL HAVE NORMAL, WELL DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEM. THEY SHALL BE FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF BARK, SUN-SCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL OTHER FORMS OF INFECTIONS. ALL PLANT MATERIAL SHALL BE THOROUGHLY WETTED WITH AN ANTI-TRANSPARENT UPON DELIVERY OF MATERIAL TO THE SITE. ALL EVERGREEN MATERIAL SHALL BE RE-SPRAYED PRIOR TO THE FIRST WINTER BY OWNER.
8. 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 24 MONTHS AFTER ACCEPTANCE BY THE OWNER. MULTITRUNKED TREES SHALL MEAN AT LEAST 3 DISTINCT STEMS WITH BRANCHING AT 1/2 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-STEMMED WITH LOW BRANCHING.
9. EXISTING TREES TO BE RELOCATED SHALL BE HANDLED ACCORDING TO ACCEPTANCE HORTICULTURAL PRACTICE.
10. 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 CERTIFICATED REQUIRED BY LAW TO THIS EFFECT SHALL ACCOMPANY EACH SHIPMENT INVOICE OR ORDER OF STOCK AND ON ARRIVAL.
11. NO PLANT MATERIAL SHALL BE PLANTED BY THE CONTRACTOR UNTIL IT IS INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE SHALL BE THE SOLE JUDGE OF THE QUALITY AND ACCEPTABILITY MATERIAL AT NO ADDITIONAL COST.
12. ALL PLANT MATERIAL IS TO BE PLANTED ON THE DAY OF DELIVERY WITHIN THE RECOMMENDED SEASONAL TIME PERIODS AS PRESCRIBED BY ACCEPTED HORTICULTURAL PRACTICE. PLANT MATERIAL WITH FALL PLANTING HAZARDS SHALL BE HANDLED ACCORDINGLY. 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.
13. CONTRACTOR SHALL SCALE PLANT LOCATIONS FROM PLANS AND STAKE LOCATIONS ON SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR HIS/HER AGENT. PROPOSED TREES SHALL NOT BE PLANTED WITHIN EASEMENTS, DRIVEWAYS, AND SIGHT TRIANGLES. THEREFORE, THE TREE LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE ADJUSTED IN THE FIELD.
14. A TEMPORARY FENCE, SUCH AS A SNOW FENCE, SHALL BE ERECTED AT THE PERIMETER OR THE DRIP-LINE OF ALL EXISTING VEGETATION INDICATED TO REMAIN PRIOR TO ANY EXCAVATION, CONSTRUCTION AND FINAL GRADING.
15. 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.
16. ALL DISTURBED ARES NOT SHOWN AS PLANTED OR LAWN ARE TO BE TOPSOILED AND SEEDED OR RETURNED TO THEIR ORIGINAL STATE BEFORE DISTURBANCE AS DIRECTED BY THE CITY ENGINEER. ALL AREAS NOT RELATED TO THE DEVELOPMENT SHALL REMAIN IN THEIR NATURAL STATE.
17. 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.
18. PLANTING MIXTURES 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 ABSORBENT GEL AS PER MANUFACTURER'S RECOMMENDATIONS. WATER ALL PLANTS AT THE TIME OF PLANTING.
19. 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.
20. 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.
21. ALL SEEDED AREAS THAT DO NOT SHOW A PROMPT UNIFORM GERMINATION SHALL BE RE-SEEDED BY THE LANDSCAPE CONTRACTOR AT INTERVALS OF 45-50 DAYS, UNTIL A GOOD GROWTH IS ESTABLISHED OVER THE ENTIRE LAWN AREA. GOOD GROWTH MEANS 95% TOTAL COVERAGE.
22. 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.
23. THE MULCH BED SHALL BE WEED FREE AT THE TIME OF INSPECTION AND 3 MONTHS AFTER INSTALLATION. HAND WEED PLANTING BEDS PRIOR TO APPLYING MULCH AND APPLYING PRE-EMERGENT HERBICIDE SAFE FOR VEGETABLE GARDENS. DO NOT USE ROUND UP IN PLANTING BEDS.
24. ANY AND ALL IRRIGATION SYSTEMS SHALL CONTAIN A RAIN SENSOR. IT IS RECOMMENDED THAT IF PLANTING BEDS ARE IRRIGATED, DRIP IRRIGATION IS PREFERRED.
25. 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.
26. 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.
27. FOR CONICAL AND EVERGREEN PLANT MATERIAL AVERAGE HEIGHT SHALL BE MEASURED FROM THE UPPER LIMIT OF BRANCH WHORL AND MIDPOINT OR LEADER.
28. ALL EVERGREEN TREES MUST BE SLIGHTLY SHEARED.
29. ALL TREES (EXCEPT AS NOTED) SHALL BE BALLED & BURLAPPED NURSERY GROWN STOCK. NO BOX OR CONTAINER ROOTED TREES TO BE ACCEPTED.
30. WITHIN SITE TRIANGLES AND IN PEDESTRIAN WALK AREAS, ALL SHADE TREES SHALL BE LIMBED UP TO 7 FEET AND ALL SHRUBS ARE TO BE MAINTAINED 30 INCHES HIGH.
31. LANDSCAPE INSPECTION SHALL TAKE PLACE PRIOR TO OWNER ACCEPTANCE. ANY SHADE TREES DEAD OR DYING, WITH BROKEN LEADER OR WITH A COMPROMISED CROWN OF MORE THAN 20% OR DAMAGED BARK WILL NOT BE ACCEPTED. ANY EVERGREEN TREE DEAD OR DYING WITH MORE THAN 20% BROWNING WILL NOT BE ACCEPTED AND ANY SHRUB DEAD OR DYING OR WITH MORE THAN 20% DEADWOOD WILL NOT BE ACCEPTED.

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

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REVISION NO.2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 MCMAHON REVIEW LETTER
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DESIGNED: JEB	DRAWN: DR	CHECKED: JEB	LANDSCAPE PLAN & DETAILS
DATE SIGNED: 5/15/20		REVISIONS NO. / DATE: 1 4/5/2019; 2 5/15/2019	MALIN ROAD DEVELOPMENT 1 MALIN ROAD EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
JILL E. BARBER			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 NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28032900
PA REGISTERED LANDSCAPE ARCHITECT NO. LA003255	SCALE: AS SHOWN	DATE: SEPTEMBER 22, 2018	DRAWING NO. 018-06476-LD; SHEET: 10 OF 26

Date: Jun 30, 2020, 9:07am

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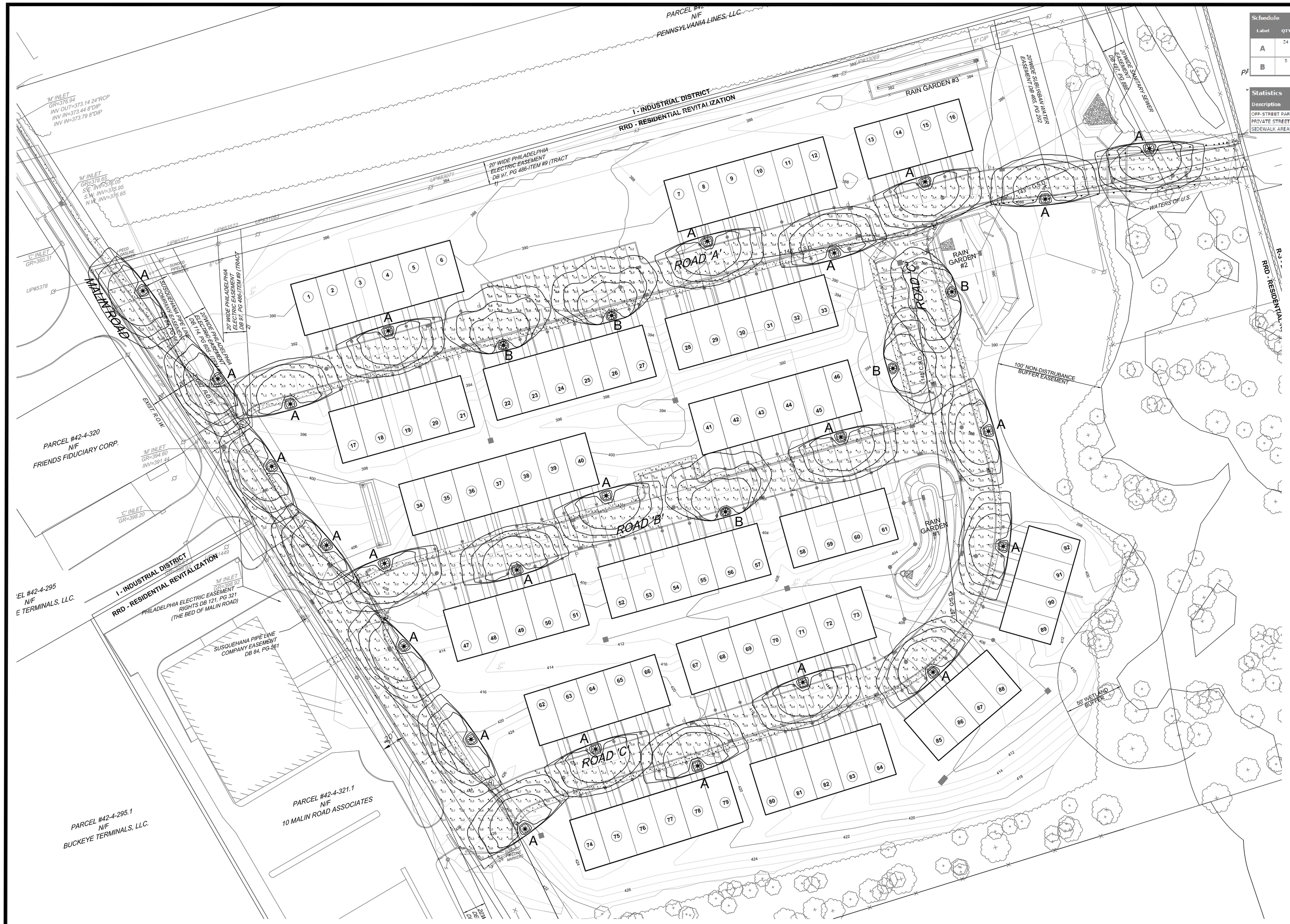


Schedule

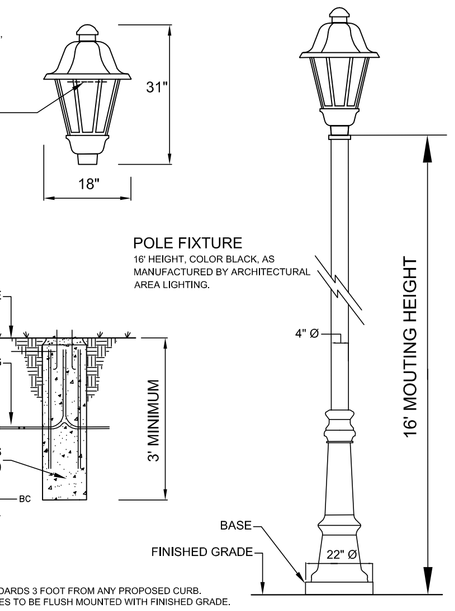
Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage
A	24	ARCHITECTURAL AREA LIGHTING	ALN440-Y3-32LED-4K-700	TOWN COMMONS- CAST ALUMINUM HOUSING, ONE PIECE CLEAR ACRYLIC LENS. LED ARRAY WITH PRISMS AND HEATSINK	32 219B DIODES, 4000K	1	4974	1	75
B	5	ARCHITECTURAL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

Statistics

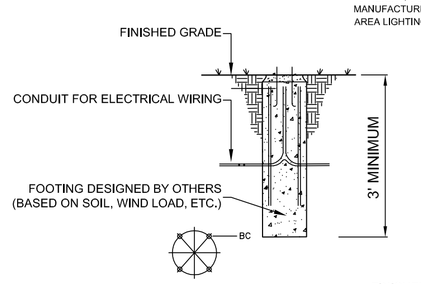
Description	Avg	Max	Min	Max/Min	Avg/Min
OFF-STREET PARKING AREAS	0.6 fc	1.9 fc	0.2 fc	9.5:1	3.2:1
PRIVATE STREETS	0.9 fc	2.5 fc	0.0 fc	N/A	N/A
SIDEWALK AREAS	0.9 fc	2.1 fc	0.2 fc	10.5:1	4.4:1

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

LED LIGHT SOURCE IS LOCATED INSIDE FIXTURE HOUSING AND IS NON-GLARE AND FULL CUT-OFF



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



NOTES:
1.INSTALL LIGHT STANDARDS 3 FOOT FROM ANY PROPOSED CURB.
2.ALL LIGHT POLE BASES TO BE FLUSH MOUNTED 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) 968-5666 OR APPROVED EQUAL.

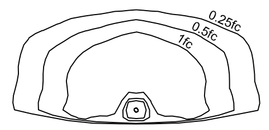
FIXTURE B - QTY: 5

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) 968-5666 OR APPROVED EQUAL.

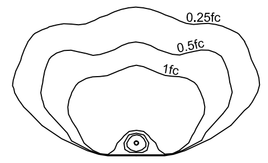
POLE & BASE FIXTURE - QTY: 29

CATALOG NO. DB3-4R16-125-16'-BL-POST TOP
POLE AND BASE TO BE STYLE (DB3) DECORATIVE POST TOP, 16' HEIGHT, 4"/100mm O.D. POLE, COLOR BLACK, AS MANUFACTURED BY ARCHITECTURAL AREA LIGHTING www.aal.net (626) 968-5666 OR APPROVED EQUAL.

LEGEND:



FIXTURE A
SINGLE FIXTURE WITH HOUSE SIDE SHIELD
TYPE III DISTRIBUTION
16' MOUNTING HEIGHT



FIXTURE B
SINGLE FIXTURE WITH HOUSE SIDE SHIELD
TYPE IV DISTRIBUTION
16' MOUNTING HEIGHT

PROPOSED POLE FIXTURE LOCATION

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. ALL FIXTURES ARE EQUIPPED WITH A HOUSE SIDE SHIELD.

3. ALL PROPOSED LIGHTS ARE TO BE INSTALLED A MINIMUM OF 3 FEET AWAY FROM ANY PROPOSED CURBS. LIGHT SYMBOL ON PLAN ARE EXAGGERATED IN SIZE. SEE LIGHT DETAIL ON THIS SHEET FOR TRUE DIAMETER OF LIGHT POLES / FOOTINGS.

4. LIGHT FIXTURES TO BE OWNED AND MAINTAINED BY THE HOA. PECO TO PROVIDE SEPARATE METER FOR STREET LIGHTING.

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

SITE ID:

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40 20 0 40 80 120 160

GRAPHIC SCALE: 1"=40'

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DESIGNED: DRAWN: CHECKED:
DATE SIGNED:

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2019

MARK M. THOMPSON

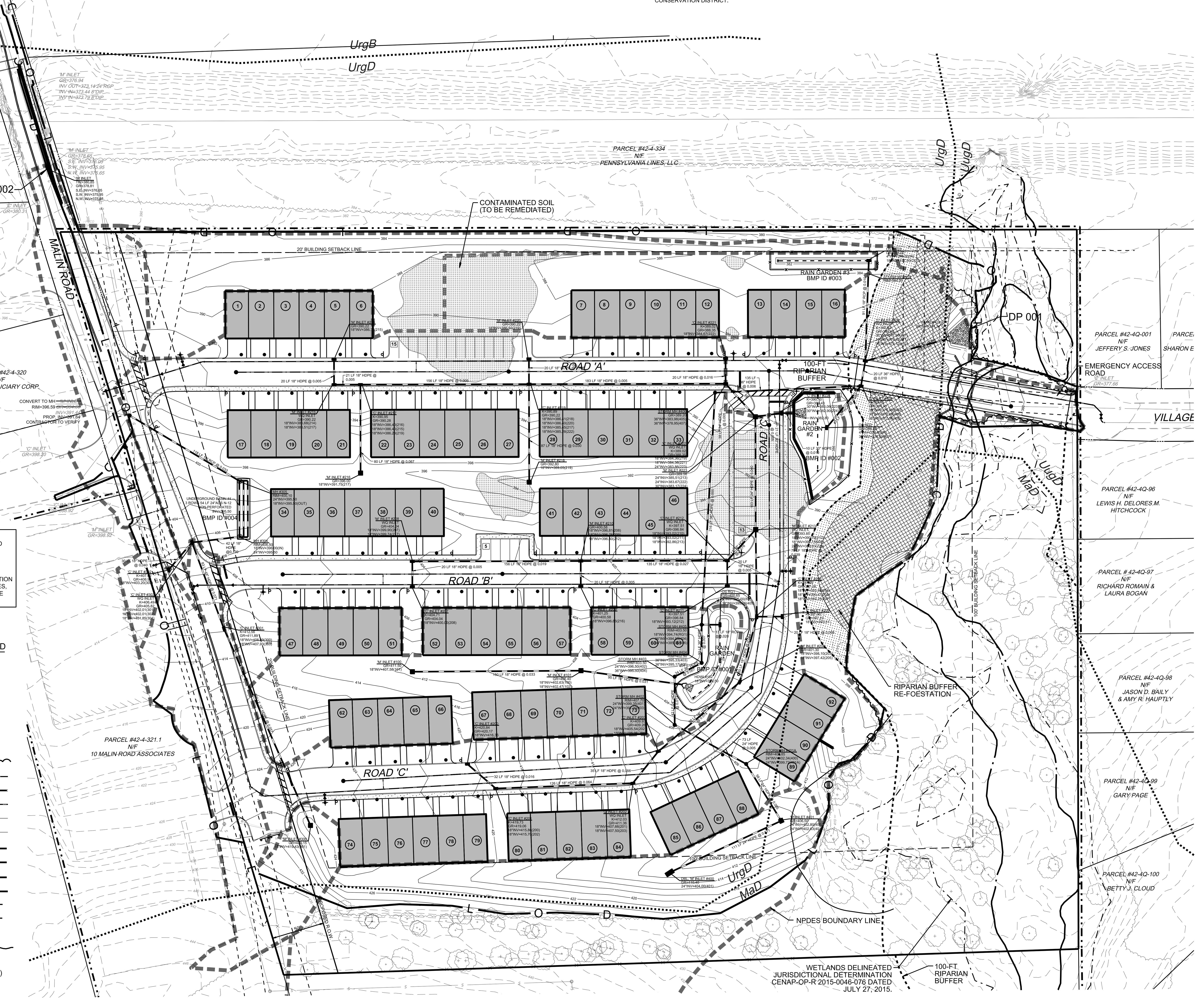
PA. PROFESSIONAL ENGINEER NO. PE073278

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) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28032900

SCALE: 1' = 40" DATE: SEPTEMBER 22, 2018 DRAWING NO. 018-06476-LT SHEET: 11 OF 26



PCSM NOTES:

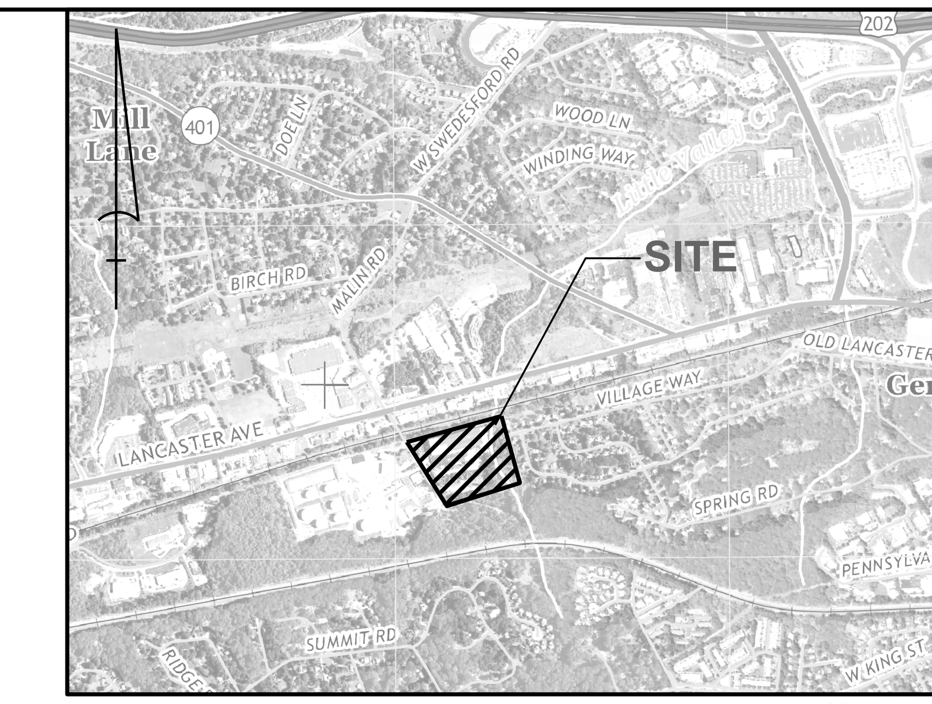
1. CRITICAL STAGES OF CONSTRUCTION SHALL BE WITNESSED BY A LICENSED PROFESSIONAL ENGINEER INCLUDING THE CONSTRUCTION OF THE RAIN GARDENS AND VEGATATED SWALE.
2. PA CODE TITLE 25, CHAPTER 102.2 READS: THIS CHAPTER REQUIRES PERSONS PROPOSING OR CONDUCTING EARTH DISTURBANCE ACTIVITIES TO DEVELOP, IMPLEMENT 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 WILL BE CONSTRUCTED WITH MINIMAL COMPACTION TO THE SUBGRADE.
5. THE PROPOSED RAIN GARDENS 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 IMPAIRMENT 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 AND PROPOSED RAIN GARDENS ARE STRUCTURAL MEASURESAND 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.
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

RIPARIAN BUFFER RESTORATION NOTES

ZONE 1:
15 FEET WIDE FROM TOP OF STREAMBANK. COMPOSED OF A VARIETY OF NATIVE RIPARIAN TREE AND SHRUB SPECIES AND SUCH PLANTINGS AS NECESSARY FOR STREAMBANK STABILIZATION DURING THE ESTABLISHMENT PERIOD. FOR TREE AND SHRUB PLANTING, REFER TO LANDSCAPE PLAN.

ZONE 2:
60 FEET WIDE FROM EDGE OF ZONE 1. COMPOSED OF RIPARIAN TREES AND SHRUBS SUITABLE TO THE SITE, WITH EMPHASIS ON NATIVE SPECIES, AND SUCH PLANTINGS AS NECESSARY TO STABILIZE SOIL DURING THE ESTABLISHMENT PERIOD. FOR TREE AND SHRUB PLANTING, REFER TO LANDSCAPE PLAN.

ZONE 3:
10-20 FEET WIDE FROM EDGE OF ZONE 2. COMPOSED OF DENSE GRASSES AND FORBS FOR STRUCTURE STABILIZATION, SEDIMENT CONTROL, AND NUTRIENT UPTAKE. MOWING AND REMOVAL OF CLIPPINGS ARE NECESSARY TO RECYCLE SEQUESTERED NUTRIENTS, PROMOTE VIGOROUS SOD, AND CONTROL WEED GROWTH. VEGETATION MUST BE MAINTAINED IN A VIGOROUS CONDITION. THE VEGETATIVE GROWTH MUST BE HAYED, GRAZED, OR OTHERWISE REMOVED FROM ZONE 3. MAINTAINING VIGOROUS GROWTH OF ZONE 3 VEGETATION MUST TAKE PRECEDENCE AND MAY NOT BE CONSISTENT WITH WILDLIFE NEEDS. FOR SEEDING MIXTURE AND SCHEDULE, REFER TO LANDSCAPING PLAN.

RIPARIAN BUFFER MAINTENANCE

1. GENERAL:
A. BUFFERS MUST BE INSPECTED ANNUALLY AND IMMEDIATELY FOLLOWING SEVERE STORMS FOR EVIDENCE OF SEDIMENT DEPOSIT, AND EROSION, OR CONCENTRATED FLOW CHANNELS. PROMPT CORRECTIVE ACTION MUST BE TAKEN TO STOP EROSION AND RESTORE SHEET FLOW.
B. THE FOLLOWING SHOULD BE AVOIDED WITHIN THE BUFFER AREAS: EXCESS USE OF FERTILIZERS, PESTICIDES, OR OTHER CHEMICALS; VEHICULAR TRAFFIC OR EXCESSIVE PEDESTRIAN TRAFFIC; AND REMOVAL OR DISTURBANCE OF VEGETATION AND LITTER INCONSISTENT WITH EROSION CONTROL AND BUFFERING OBJECTIVES.
C. ZONE 1 VEGETATION SHOULD REMAIN UNDISTURBED EXCEPT FOR REMOVAL OF INDIVIDUAL TREES OF EXTREMELY HIGH VALUE OR TREES PRESENTING UNUSUAL HAZARDS SUCH AS POTENTIALLY BLOCKING CULVERTS.
D. ZONE 2 VEGETATION, UNDERGROWTH, FOREST FLOOR, DUFF LAYER, AND LEAF LITTER SHALL REMAIN UNDISTURBED EXCEPT FOR PERIODIC CUTTING OF TREES TO REMOVE SEQUESTERED NUTRIENTS; TO MAINTAIN AN EFFICIENT FILTER BY FOSTERING VIGOROUS GROWTH; AND FOR SPOT SITE PREPARATION FOR REGENERATION PURPOSES. CONTROLLED BURNING FOR SITE PREPARATION, CONSISTENT WITH GOOD FOREST MANAGEMENT PRACTICES, COULD ALSO BE USED IN ZONE 2.
E. ZONE 3 VEGETATION SHOULD BE MOWED AND THE CLIPPINGS REMOVED AS NECESSARY TO REMOVE SEQUESTERED NUTRIENTS AND PROMOTE DENSE GROWTH FOR OPTIMUM SOIL STABILIZATION. HAY OR PASTURE USES CAN BE MADE COMPATIBLE WITH THE OBJECTIVES OF ZONE 3.
F. ZONE 3 VEGETATION SHOULD BE INSPECTED TWICE ANNUALLY, AND REMEDIAL MEASURES TAKEN AS NECESSARY TO MAINTAIN VEGETATION DENSITY AND REMOVE PROBLEM SEDIMENT ACCUMULATIONS.

2. STABLE DEBRIS:
A. AS ZONE 1 REACHES 60 YEARS OF AGE, IT WILL BEGIN TO PRODUCE LARGE STABLE DEBRIS. LARGE DEBRIS, SUCH AS LOGS, CREATE SMALL DAMS WHICH TRAP AND HOLD DETRITUS FOR PROCESSING BY AQUATIC INSECTS, THUS ADDING ENERGY TO THE STREAM ECOSYSTEM, STRENGTHENING THE FOOD CHAIN, AND IMPROVING AQUATIC HABITAT. WHEREVER POSSIBLE, STABLE DEBRIS SHOULD BE CONSERVED.
B. WHERE DEBRIS DAMS MUST BE REMOVED, TRY TO RETAIN USEFUL, STABLE PORTIONS WHICH PROVIDE DETRITUS STORAGE.
C. DEPOSIT REMOVED MATERIAL A SUFFICIENT DISTANCE FROM THE STREAM SO THAT IT WILL NOT BE REFLOATED BY HIGH WATER.

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. 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.).

3. 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).

4. UNDERGROUND BASIN:
A. FOR THE FIRST YEAR OF OPERATION, INSPECTION OF THE BASIN SHOULD OCCUR ON A QUARTERLY BASIS AND AFTER EACH STORM EVENT EXCEEDING 1 INCH OF RAINFALL. AFTER THE FIRST YEAR, INSPECT BASIN EVERY 12 MONTHS. MAKE NOTE OF ANY OF THE FOLLOWING CONDITIONS:
(1) DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTER MATERIAL REMOVED FROM THE MANHOLES AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL WASTE REGULATIONS.
(2) EVALUATE DRAIN DOWN TIME OF THE BASIN TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN DOWN TIMES ARE EXCEEDING THE MAXIMUM, DRAIN THE BASIN VIA PUMPING AND CLEAN OUT THE HDPE PIPING.
(3) CLEAN OUT INLETS THAT DISCHARGE TO THE BASIN EVERY 6 MONTHS.
B. FAILURE OF THE UNDERGROUND DETENTION BASIN COULD ENTAIL STANDING WATER OBSERVED 72 HOURS AFTER THE STORM EVENT. SHOULD WATER NOT EXIT THE UNDERGROUND BASIN, CORRECTIVE ACTIONS SHOULD BE TAKEN AS NECESSARY (e.g. PUMPING OUT WATER AND REPLACEMENT, ETC.).

5. CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS.

6. 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. A LICENSED PROFESSIONAL ENGINEER SHALL BE ON-SITE TO WITNESS THE SUBGRADE PREPARATION OF THE CHANNEL.
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 UNDERGROUND DETENTION BASIN, OUTLET STRUCTURE AND OUTLET PIPING.
16. 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.**
17. BEGIN CONSTRUCTION OF PROPOSED BUILDINGS/STRUCTURES.
18. 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.**
19. 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.
20. STABILIZATION OF SITE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.
21. 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.
22. 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

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	
	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	

PCSM LEGEND

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

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.
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 (UNDERGROUND BASIN)

1. INSTALL AND MAINTAIN ADEQUATE EROSION & SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
2. INSTALL UPSTREAM AND DOWNSTREAM CONTROL MEASURES, WATER QUALITY INLETS, MANHOLES, PIPING AND ALL NECESSARY STORMWATER STRUCTURES. WATER QUALITY INLETS SHALL BE INSTALLED UPSTREAM OF THE BASIN. ALL INLETS ARE TO RECEIVE TEMPORARY INLET PROTECTION DURING CONSTRUCTION. MH #305 TO SERVE AS THE BASIN OUTLET STRUCTURE. INSTALL STEEL WEIR PLATE WITH ORIFICES (SEE MH #305 DETAIL).
3. EXCAVATE THE BASIN TO A UNIFORM LEVEL AND FILL WITH 6-INCH STONE BEDDING. WHERE THE TRENCH BOTTOM IS UNSTABLE, REPLACE WITH FOUNDATION (REFER TO THE HDPE PIPE TRENCH INSTALLATION DETAIL).
4. PLACE ADS N-12 PIPING AT AN EVEN LEVEL (NO SLOPE) AND SECURE PIPING TO BASIN MANHOLES.
5. FILL IN REMAINING STONE TO A DEPTH 6-INCHES ABOVE THE ADS N-12 PIPING. PLACE FINAL BACKFILL TO GROUND SURFACE ELEVATION AND SEED.
6. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

CRITICAL STAGES (LICENSED PROFESSIONAL ENGINEER NEEDED ON-SITE)

1. **BASIN LINER & BACKFILL OF THE RAINGARDEN SUBGRADE.**
2. **PREPARATION OF VEGETATED SWALE SUBGRADE.**
3. **SITE INSPECTION OF ALL BMP'S.**

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

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS	
NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK M. THOMPSON ENGINEER PE073278
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 26

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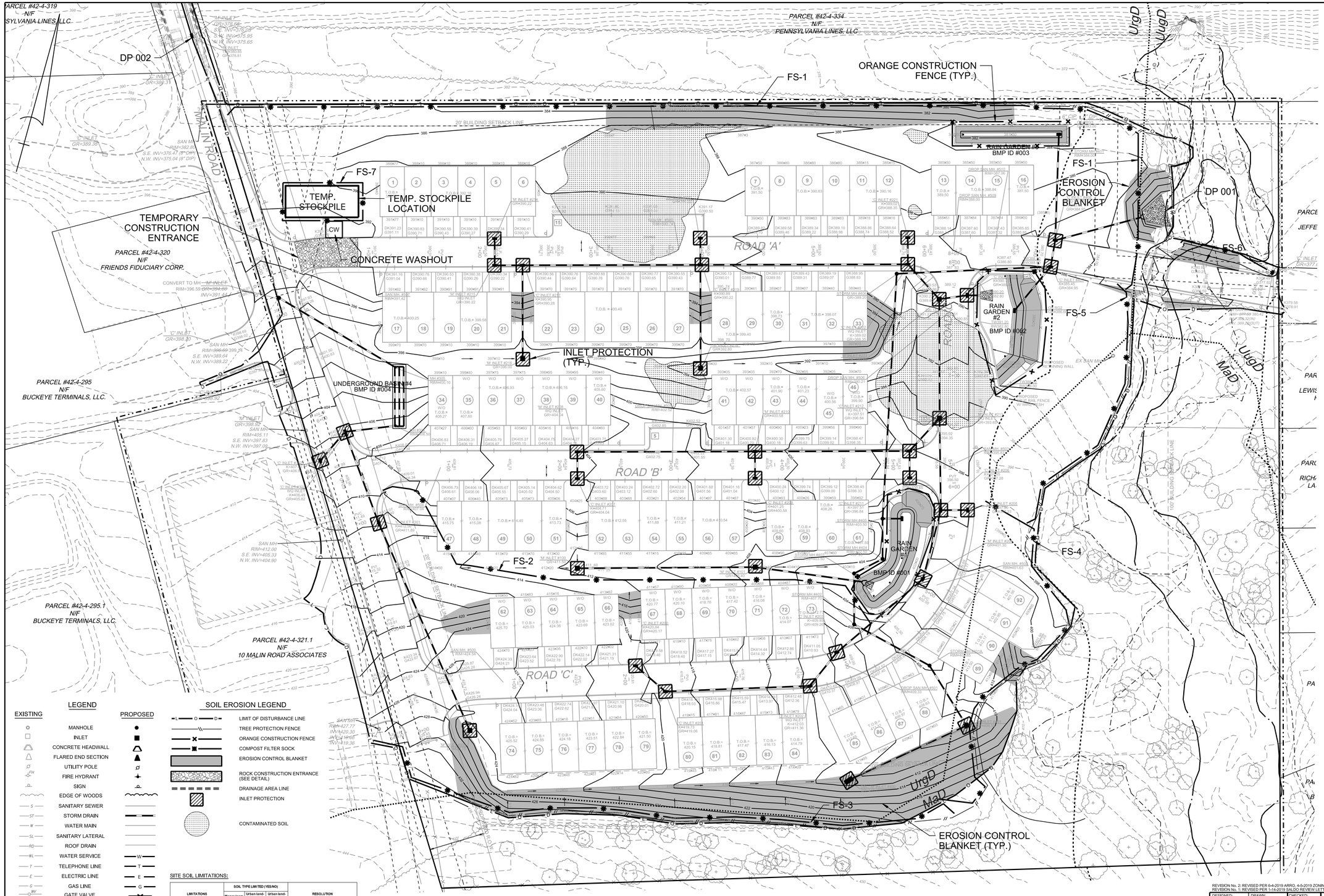

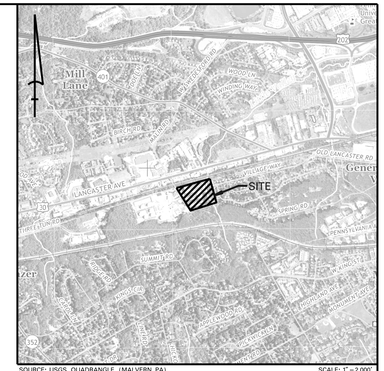

USGS QUAD MAP

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
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	

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) Manor loam (MaD)	Urban land-Conestoga (UugD)	Urban land-Udorthents (UugB)	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 DISTURBANCE AT STEEP SLOPES
SLOW PERCOLATION	YES	YES	YES	UTILIZE AREAS WITH GOOD TESTED PERCOLATION FOR BASINS & BMPs
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	D
MaE	MANOR LOAM, 25-35% SLOPES	D
UugB	URBAN LAND-CONESTOGA COMPLEX, 0-8% SLOPES	B
UugD	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.

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
IT'S THE LAW - 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.

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 WILL BE CONSTRUCTED WITH MINIMAL COMPACTION TO THE SUBGRADE.

4. THE PROPOSED RAIN GARDENS AND UNDERGROUND DETENTION BASIN 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 AND UNDERGROUND DETENTION BASIN 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 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.

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS NO.	DATE
1	4/5/2019
2	5/15/2020

SOIL EROSION & SEDIMENT CONTROL PLAN

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

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

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SCALE:	DATE:	DRAWING NO.	SHEET:
1" = 40'	SEPTEMBER 22, 2018	018-06476-LD	13 OF 26

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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.

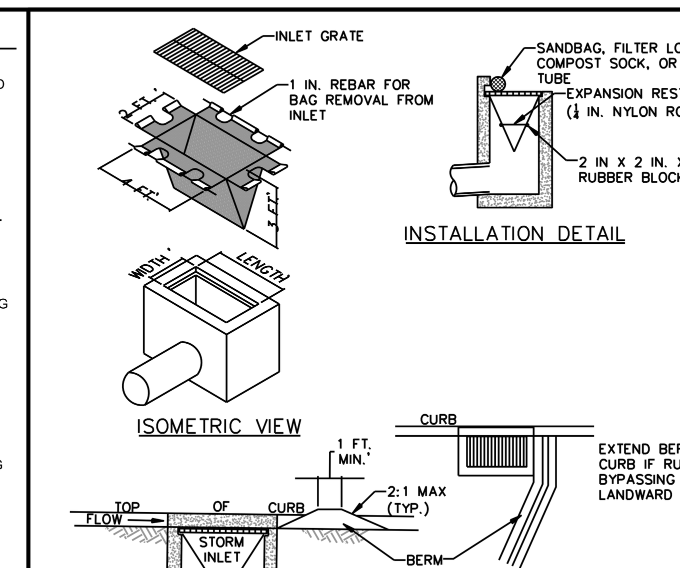
E&S BMP's OPERATION AND MAINTENANCE

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 UNDERGROUND DETENTION BASIN, OUTLET STRUCTURE AND OUTLET PIPING.
16. 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.**
17. BEGIN CONSTRUCTION OF PROPOSED BUILDINGS/STRUCTURES.
18. 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.**
19. 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.
20. STABILIZATION OF SITE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.
21. 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.
22. 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.

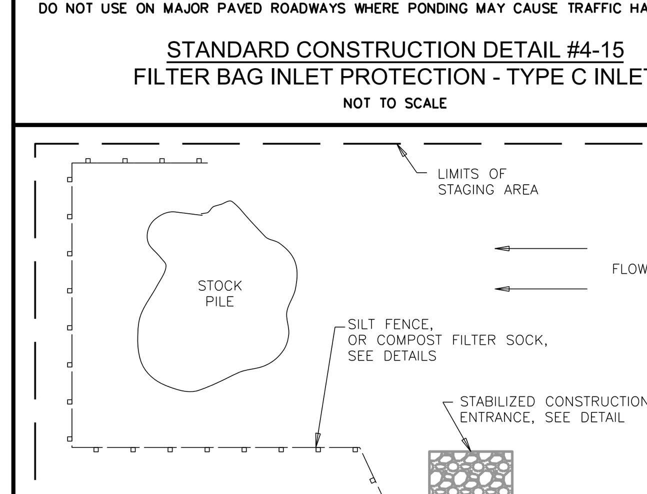
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

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.

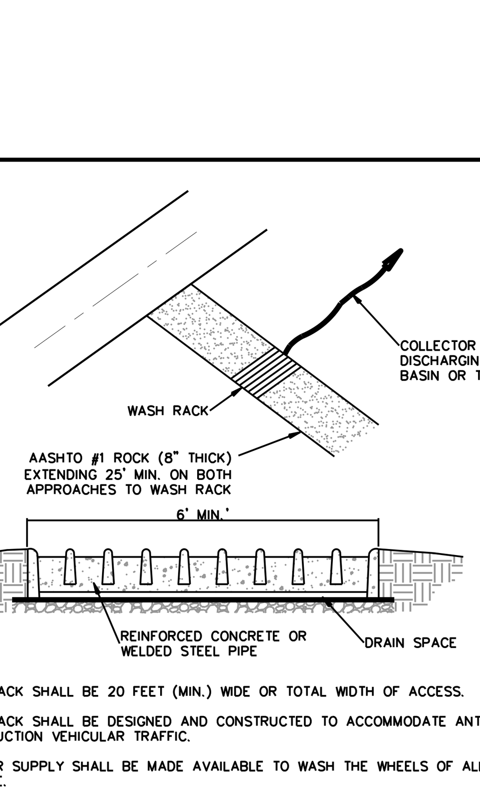
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED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



NOTES:

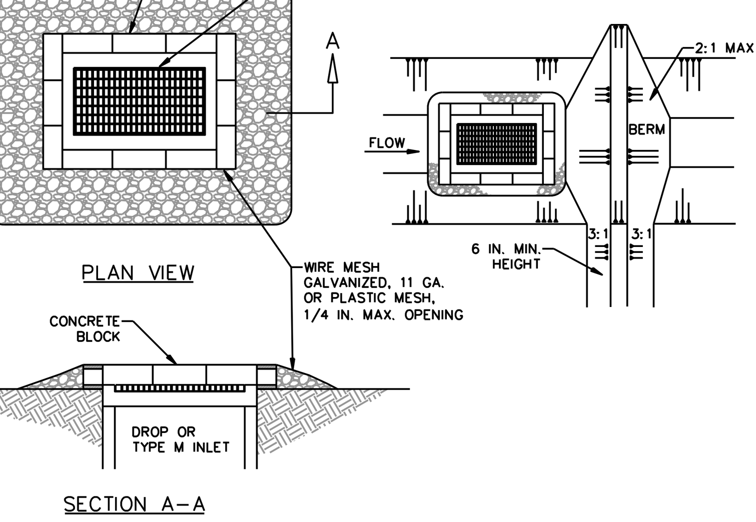
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-2
ROCK CONSTRUCTION ACCESS WITH WASH RACK
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.

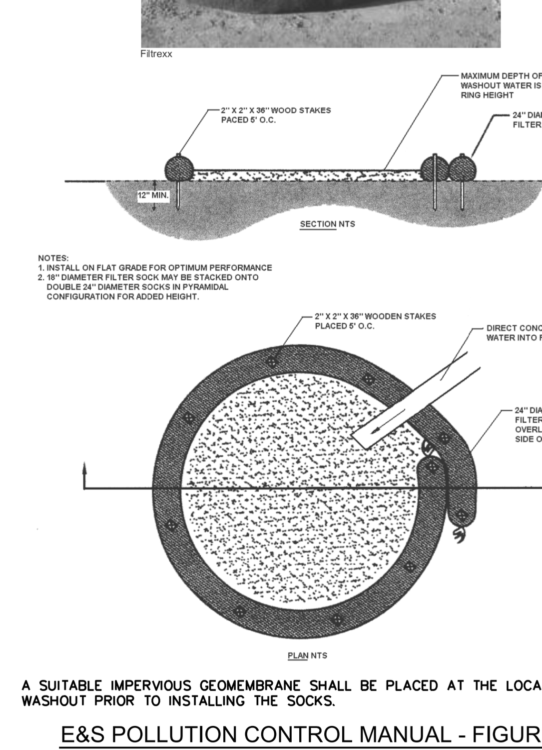
ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR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

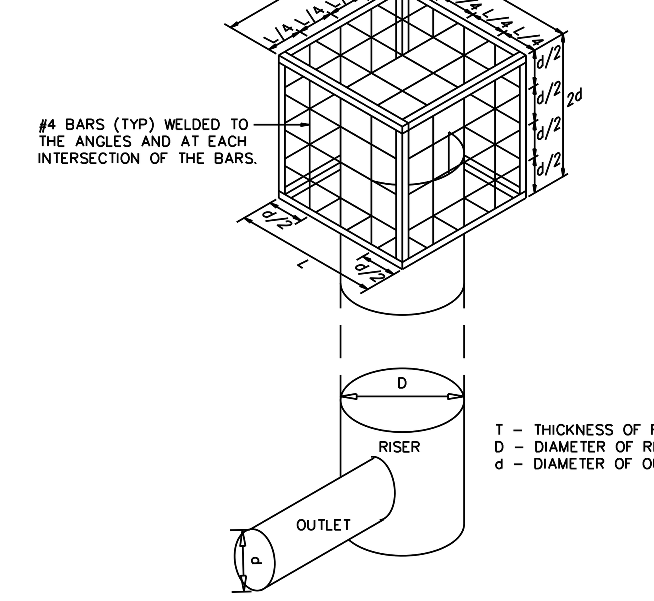
FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

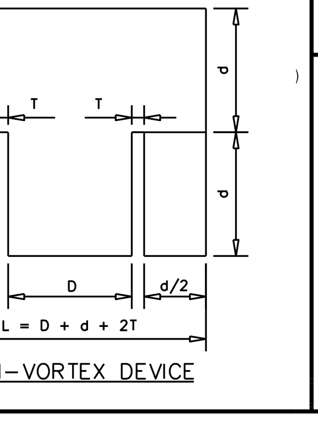
STANDARD CONSTRUCTION DETAIL #4-18
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE M INLET
NOT TO SCALE



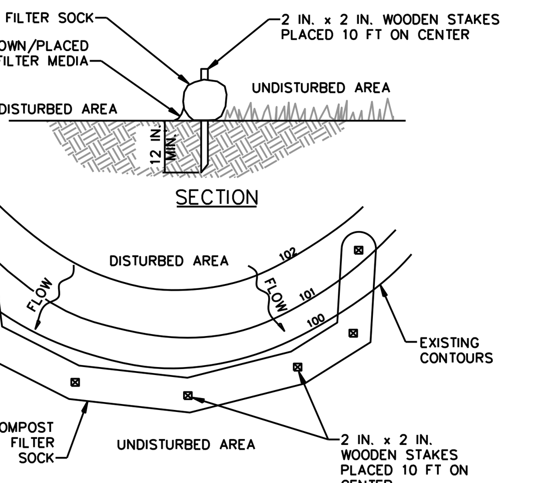
A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

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





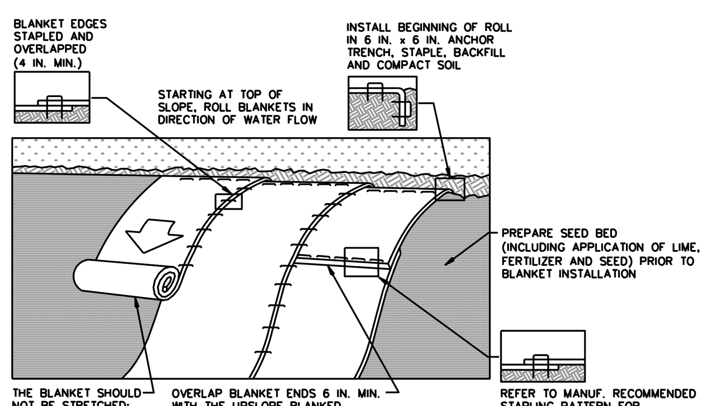
STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE
NOT TO SCALE



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



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.

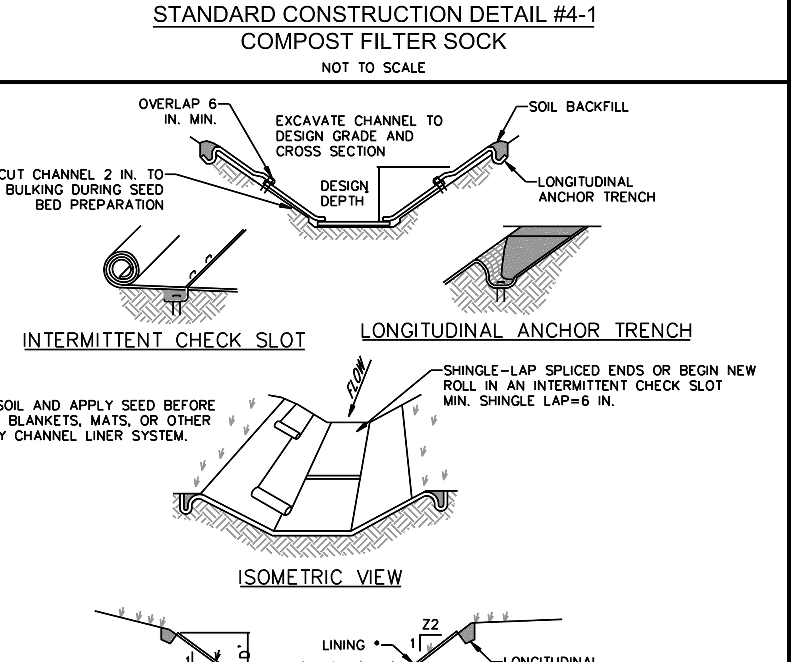
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

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



* 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

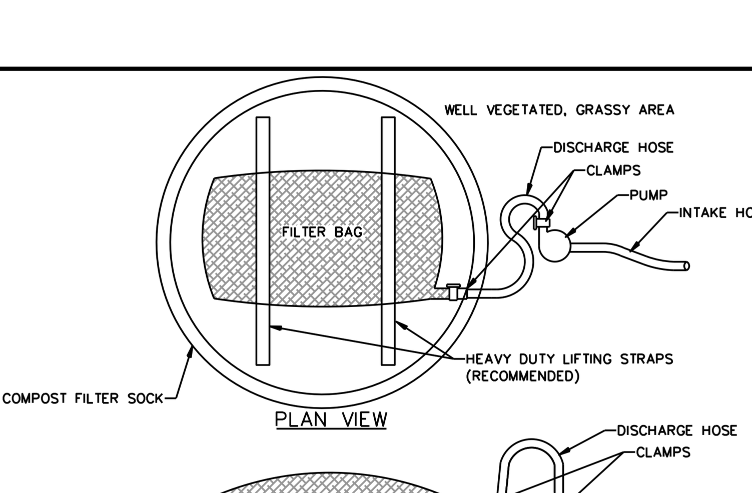
NOTES:

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:

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.

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.

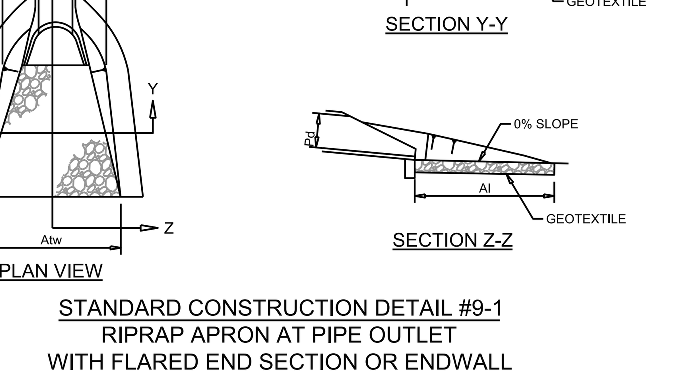
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG (W/ COMPOST FILTER SOCK)
NOT TO SCALE

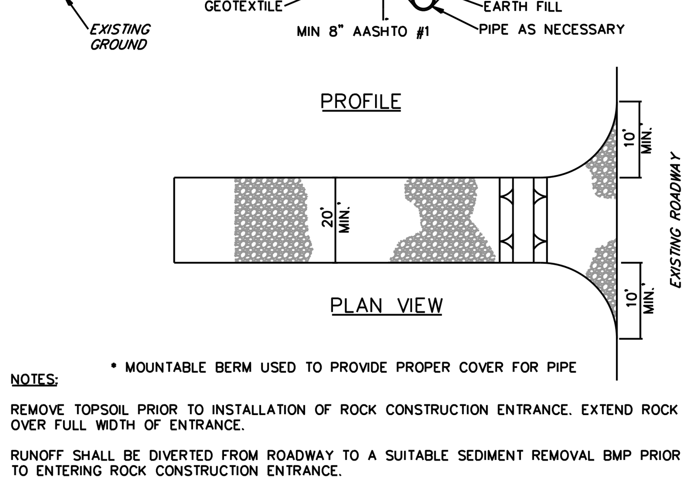
NOTES:

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 #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



* 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

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

DESIGNED:	DRAWN:	CHECKED:
MJW	JAS	MMT

DATE SIGNED:

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON
PA. PROFESSIONAL ENGINEER NO. PE073278

EROSION & SEDIMENT CONTROL NOTES AND 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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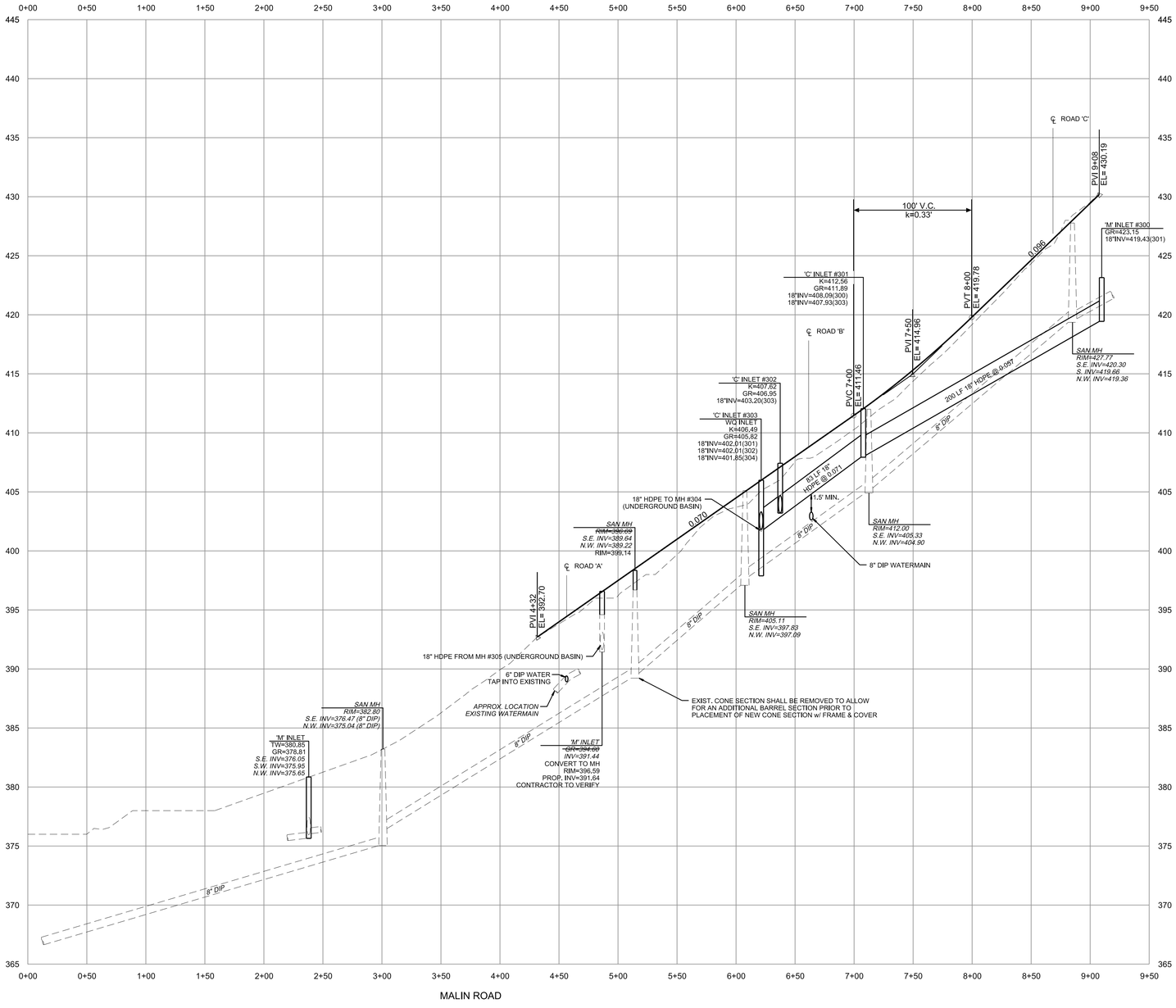
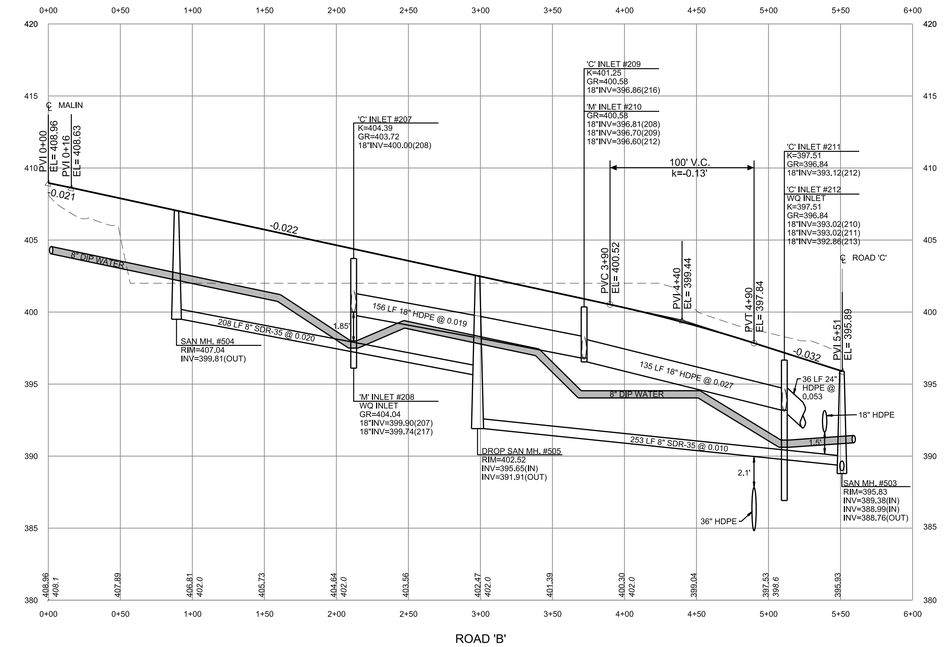
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.:	SHEET:
AS SHOWN	SEPTEMBER 22, 2018	018-06476-LD	14 OF 26





GRAPHIC SCALE: VERTICAL 1" = 5'

GRAPHIC SCALE: HORIZONTAL 1" = 50'

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

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

PA. PROFESSIONAL ENGINEER NO. PE073278

PROFILES

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

Taylor Wiseman & Taylor
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SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	15 OF 26

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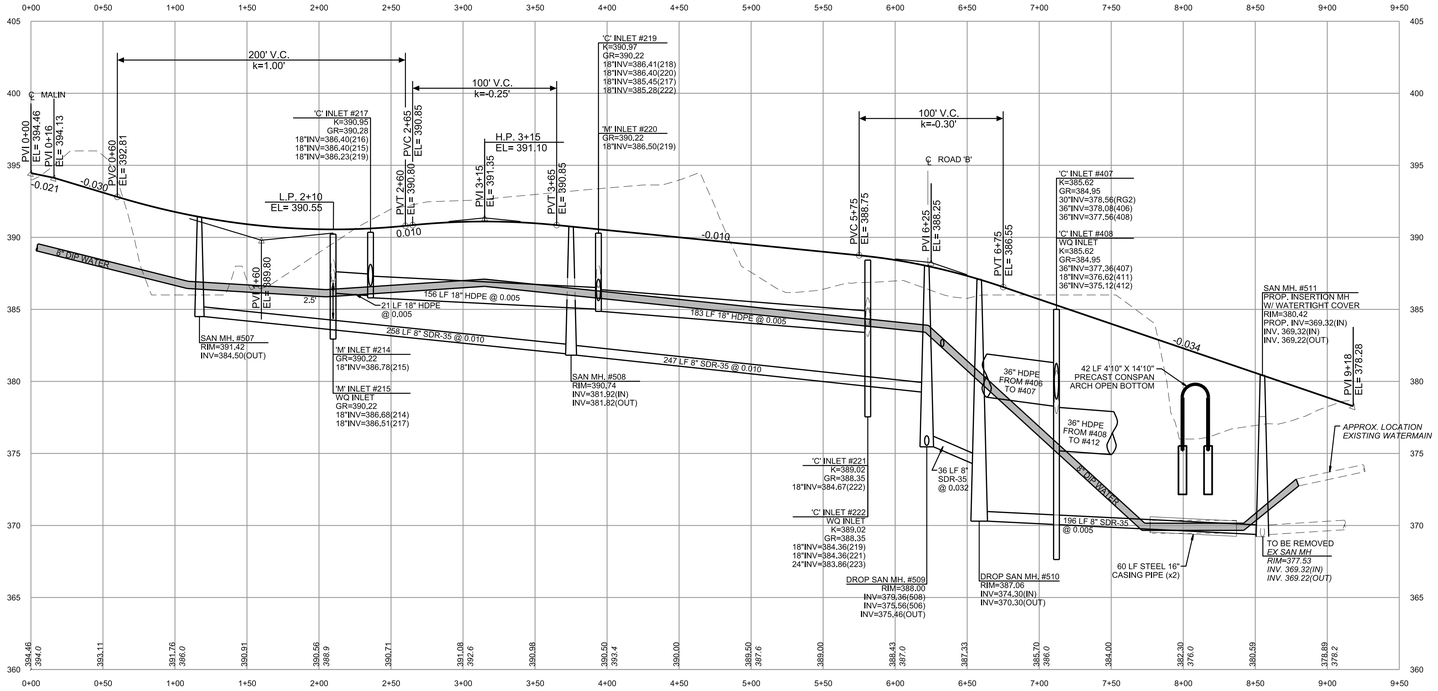
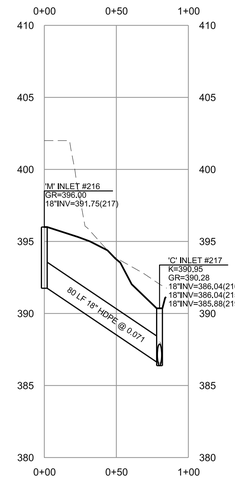
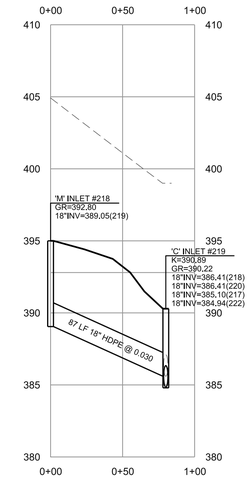




'M' INLET #216 TO 'C' INLET #217



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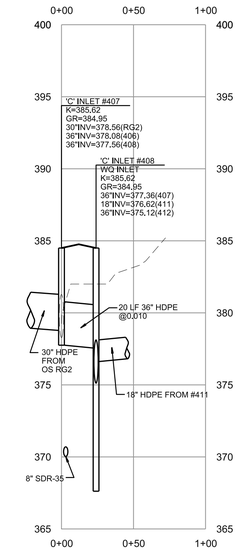
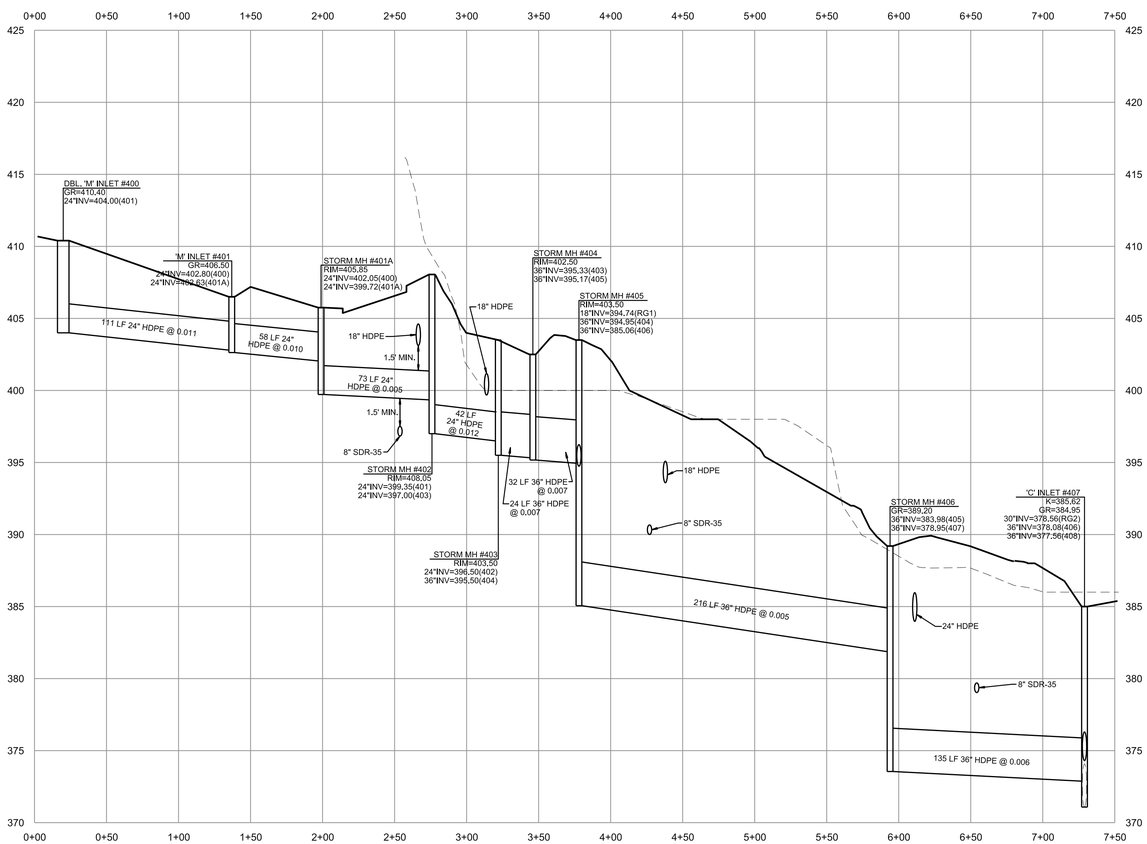


'C' INLET #407 TO 'C' INLET #408



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

GRAPHIC SCALE: VERTICAL 1" = 5'

GRAPHIC SCALE: HORIZONTAL 1" = 50'

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

PA. PROFESSIONAL ENGINEER NO. PE073278

PROFILES

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1 MALIN ROAD
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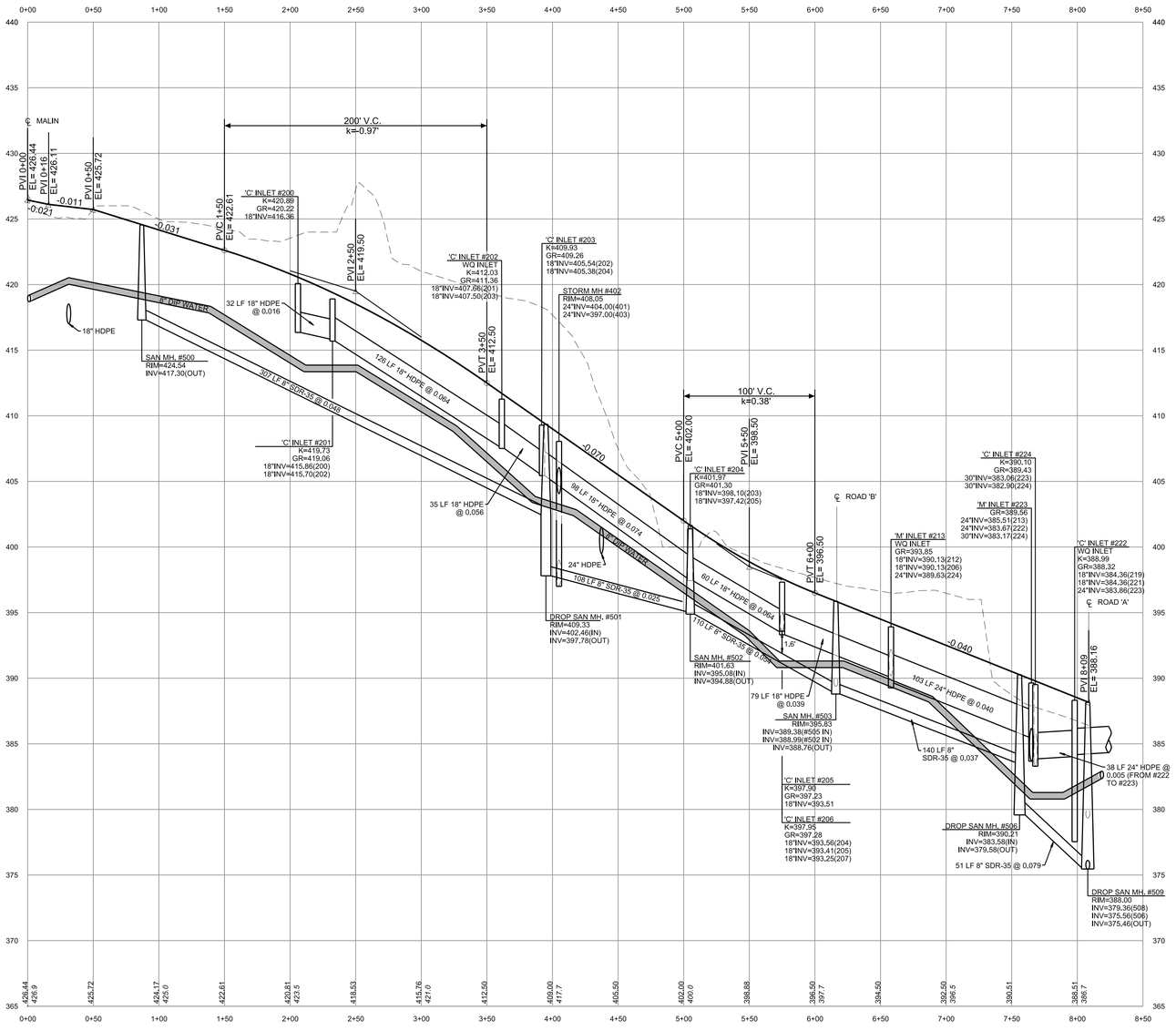
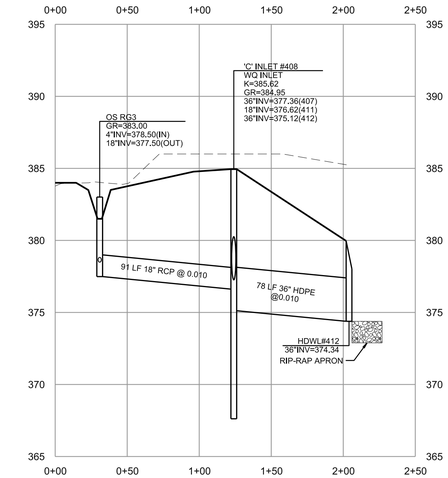
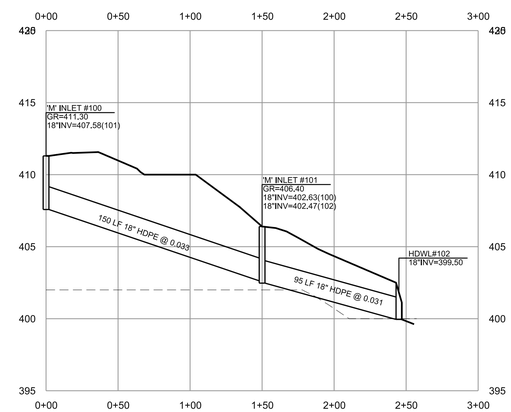


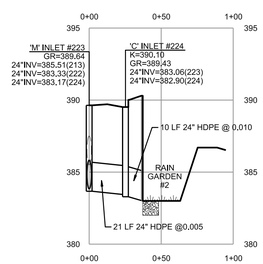
ROAD 'C'



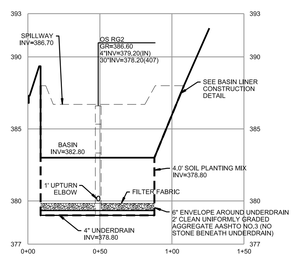
OS #RG3 TO HDWL #412



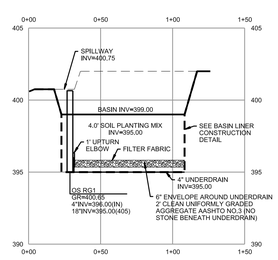
'M' INLET #100 TO HDWL#102



'M' INLET #223 TO RAIN GARDEN #2



RAIN GARDEN 2



RAIN GARDEN 1

GRAPHIC SCALE: VERTICAL 1" = 5'

GRAPHIC SCALE: HORIZONTAL 1" = 50'

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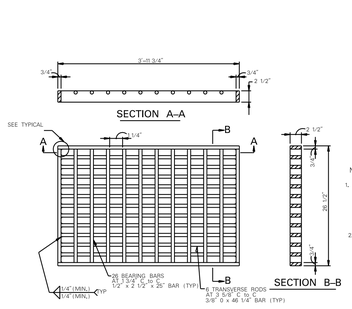
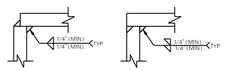




TYPICAL CORNER DETAILS

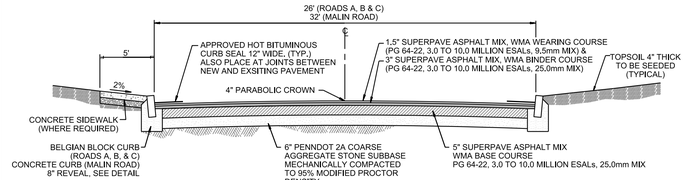
NOTE:
STEEL GRATE TO BE USED IN ROADWAY SUMP AND YARD INLETS ONLY. ALL OTHER INLETS ARE TO HAVE CAST IRON VANE GRATES.

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 DRAWING 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.

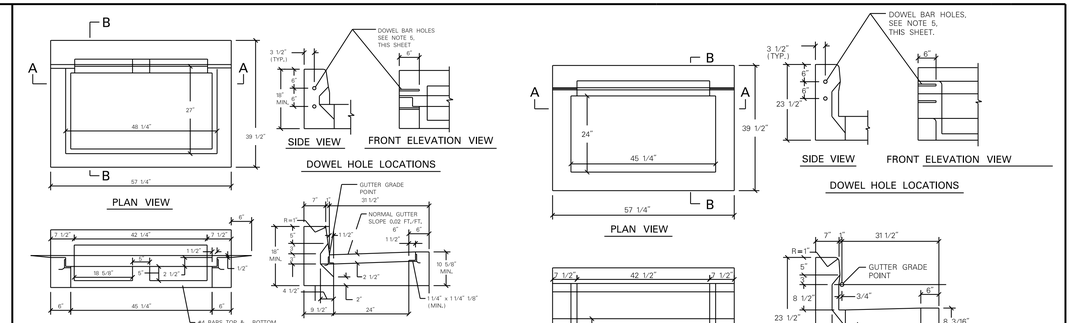


NOTES:

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.

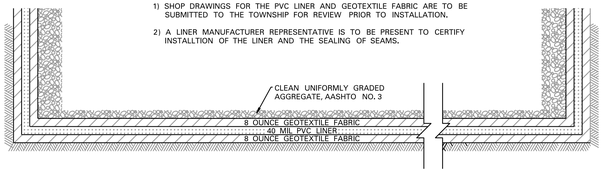
TYPICAL ROADWAY SECTION

NOT TO SCALE



NOTES

1. 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".

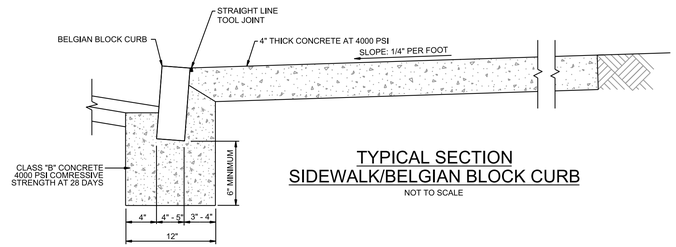


NOTES:

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

TABLE A
2:1 EMBANKMENT SLOPES

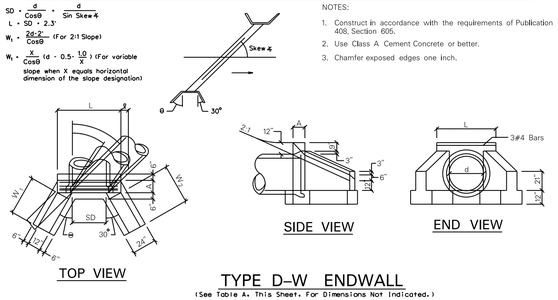
PIPE DIAM.	SKEW ∠ -90° TO 60° 0 - 30°			SKEW ∠ -55° 0 - 35°			SKEW ∠ -50° 0 - 40°			SKEW ∠ -45° 0 - 45°			SKEW ∠ -40° 0 - 50°			SKEW ∠ -30° 0 - 60°			SKEW ∠ -20° 0 - 70°			SKEW ∠ -10° 0 - 80°				
d	L	X	W_1	L	X	W_1	L	X	W_1	L	X	W_1	L	X	W_1	L	X	W_1	L	X	W_1	L	X	W_1	W_2	W
(in.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(Ft.)	(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	34.4	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	36.4	5.0	57.6	11.5	15

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

$L = SD + 2.3'$

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

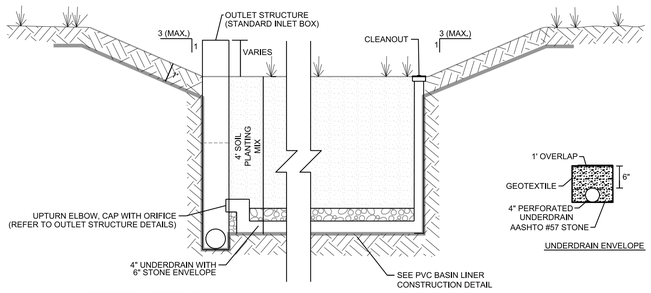
$W_1 = \frac{x}{\cos\theta}(d - 0.5 - \frac{1.0}{x})$ (For variable slope when X equals horizontal dimension of the slope designation)



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.)

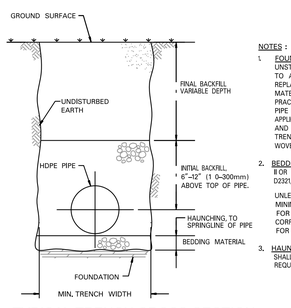


BIORETENTION SPECIFICATIONS:

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 RAIN GARDEN SEEDING SCHEDULE REFER TO LANDSCAPE PLAN.
4. SOIL INFILTRATION RATE SHOULD BE BETWEEN 0.1 INCHES PER HOUR AND 10 INCHES PER HOUR FOR INFILTRATION INTO NATIVE SOILS.

BIORETENTION/MRC RAIN GARDEN DETAIL

NOT TO SCALE



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:

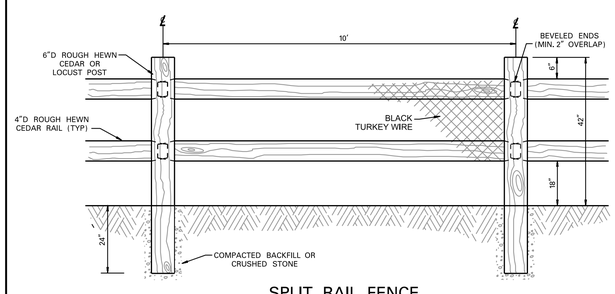
NOMINAL * in. (mm)	MIN. RECOMMENDED TRENCH WIDTH, in. (mm)
4 (100)	21 (30)
6 (1 0)	23 (80)
8 (200)	2 (630)
10 (2 0)	28 (710)
12 (300)	31 (790)
1 (37)	34 (860)
18 (4 0)	39 (990)
24 (600)	48 (1220)
30 (7 0)	66 (1680)
36 (900)	78 (1980)
42 (10 0)	83 (2110)
48 (1200)	89 (2260)
60 (1 00)	102 (2 90)

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



SPLIT RAIL FENCE

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AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	18 OF 26

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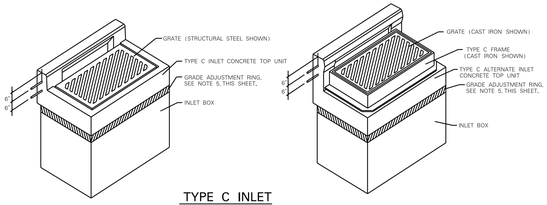
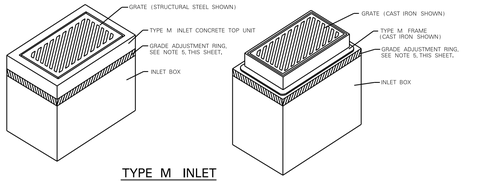


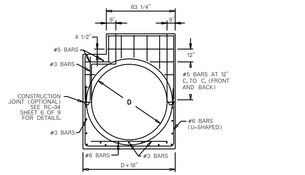
TYPE C INLET



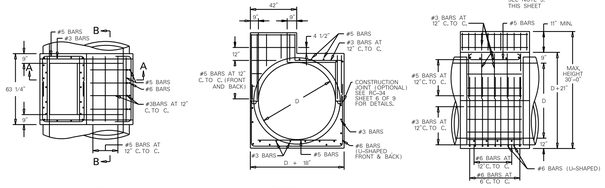
TYPE M INLET

NOTES:

1. THIS SHEET DEPICTS THE VARIOUS COMPONENTS REQUIRED FOR COMPLETE INLET ASSEMBLIES, FOR INDIVIDUAL COMPONENTS AND OTHER SPECIAL DETAILS, SEE THE FOLLOWING:
   - SHEET 2 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 606, 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)

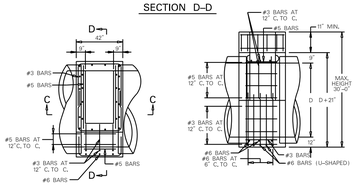


SECTION D–D



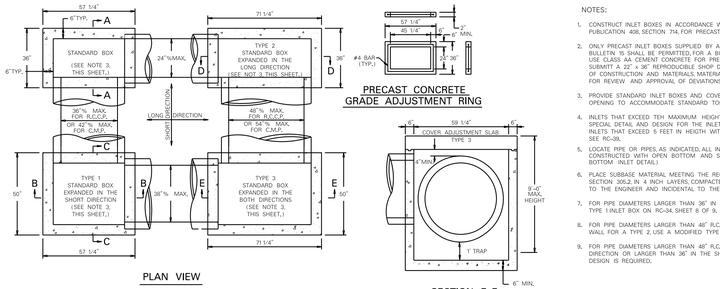
PLAN VIEW — SECTION A–A — SECTION B–B

INLET BOX MODIFIED TYPE I



PLAN VIEW — SECTION C–C

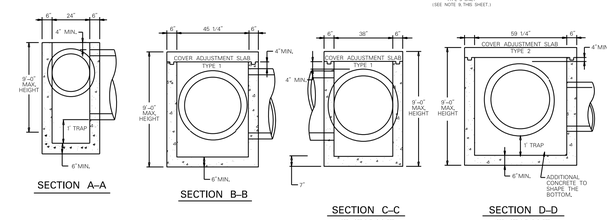
INLET BOX



PLAN VIEW — PRECAST CONCRETE GRADE ADJUSTMENT RING — SECTION E–E

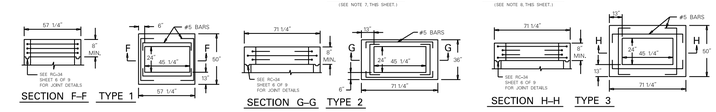
NOTES:

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 I 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 36" IN THE SHORT DIRECTION, A SPECIAL DETAIL AND DESIGN IS REQUIRED.



SECTION A–A — SECTION B–B — SECTION C–C (SEE NOTE 7, 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

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.

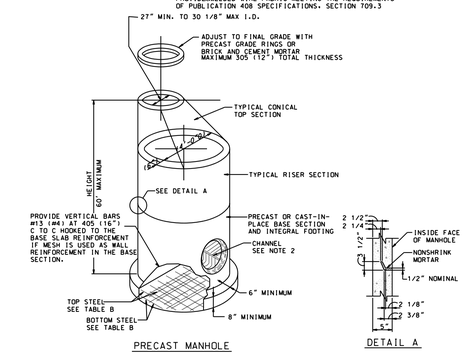
NOTES:

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 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

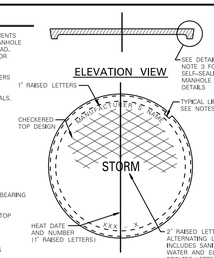
NOT TO SCALE

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 HS20 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 POLYNEOPRENE 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 TAPERED 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.



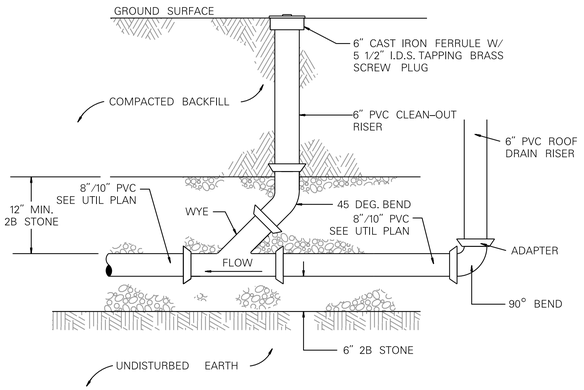
CAST–IRON MANHOLE COVER

(PLATEN COVER)

NOT TO SCALE

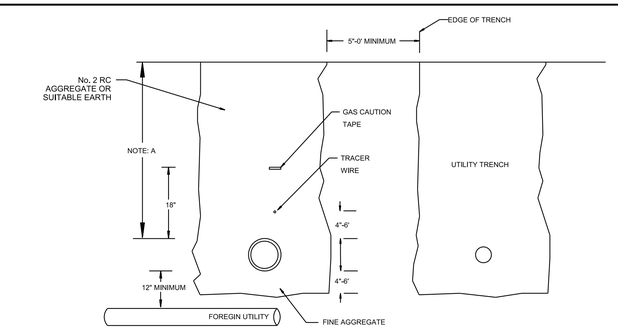
ELEVATION VIEW OF MANHOLE FRAME

NOT TO SCALE



ROOF DRAIN CLEAN–OUT DETAIL

NOT TO SCALE



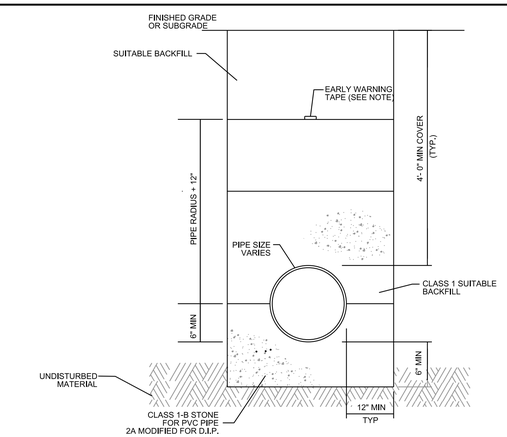
NOTE: ALL TRENCHING WILL ONLY BE DONE WHEN PROPERTY IS WITHIN 6 INCHES OF FINAL GRADE

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

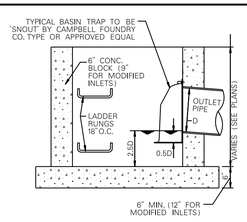


NOTES:

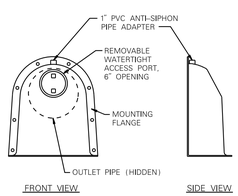
1. ALL BACKFILL MATERIAL SHAL BE MECHANICALLY TAMPED IN 6" LIFTS.
2. EARLY WARNING TAPE SHALL BE METALLIC LINED PRINTED PLASTIC TAPE TWO (2) INCHES WIDE. TAPE SHALL BE GREEN COLORED WITH THE WORDS "CAUTION BURIED WATER LINE BELOW" STENCELED ON THE TAPE EVERY TWO (2) FEET.

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 #303	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

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

DESIGNED: MJW	DRAWN: JAS	CHECKED: MMT	CONSTRUCTION DETAILS
DATE SIGNED:		REVISIONS	MALIN ROAD DEVELOPMENT 1 MALIN ROAD EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

PA. PROFESSIONAL ENGINEER NO. PE073278

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SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	19 OF 26

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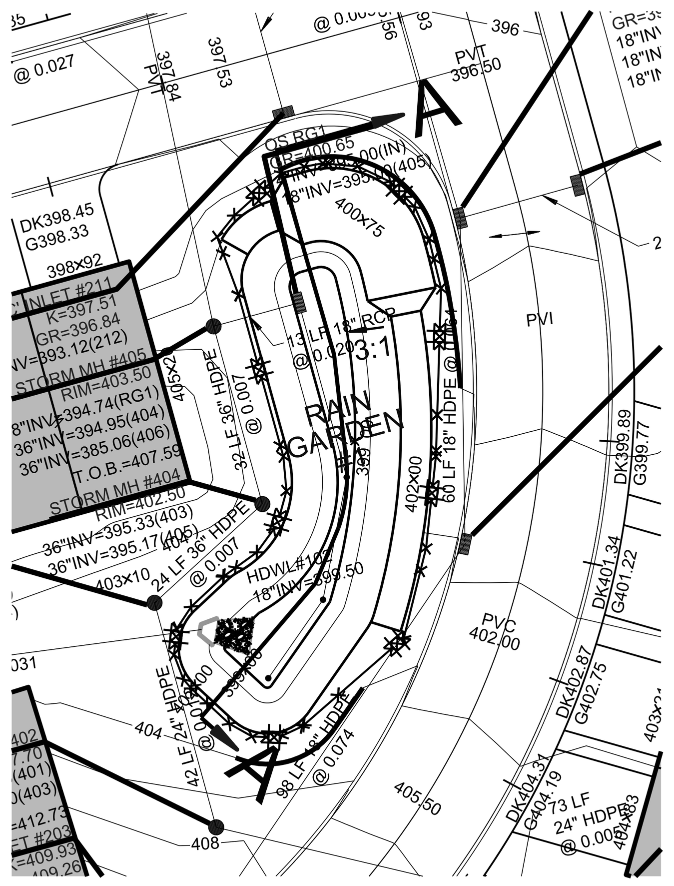
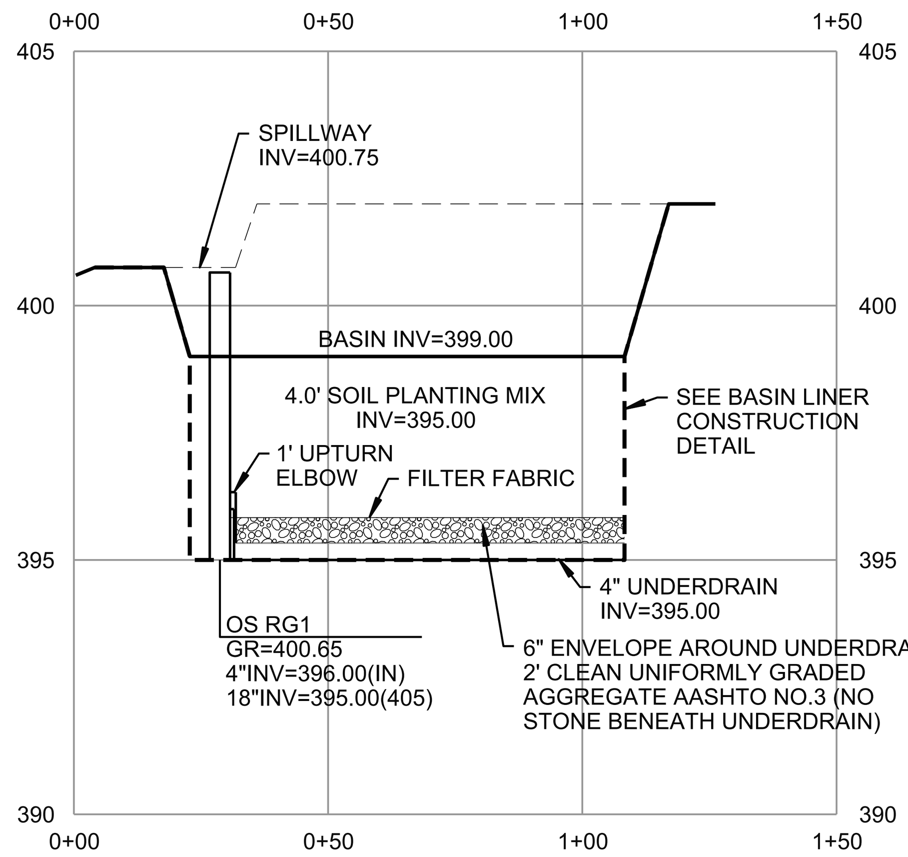


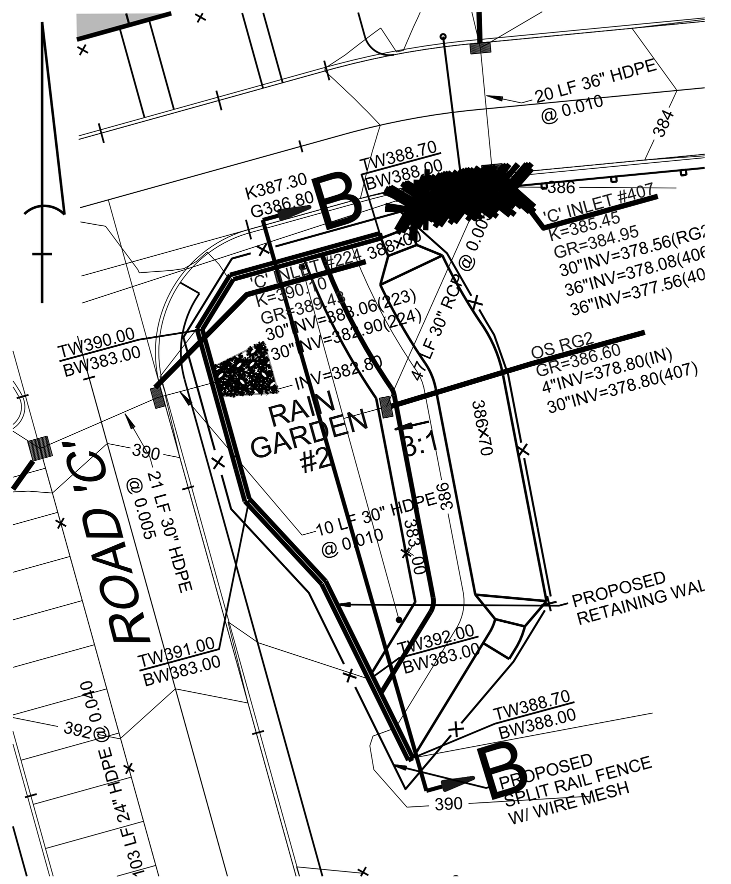
RAIN GARDEN #1

SCALE: 1" = 30'



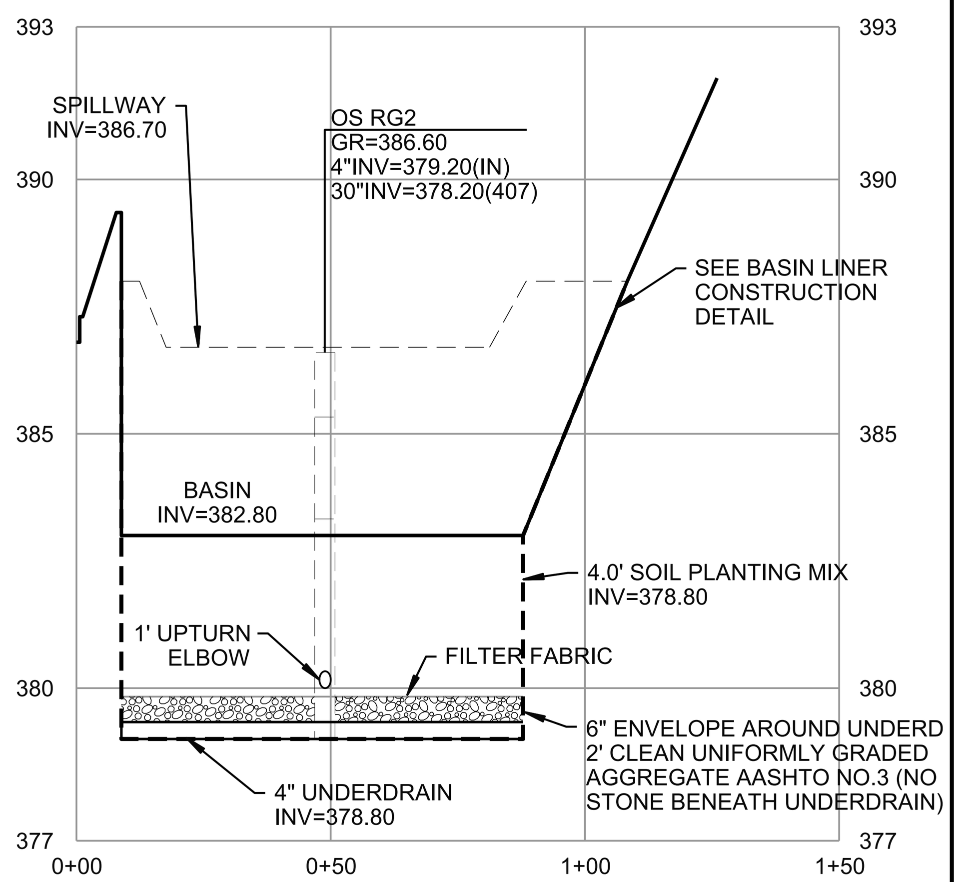
SECTION A-A

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



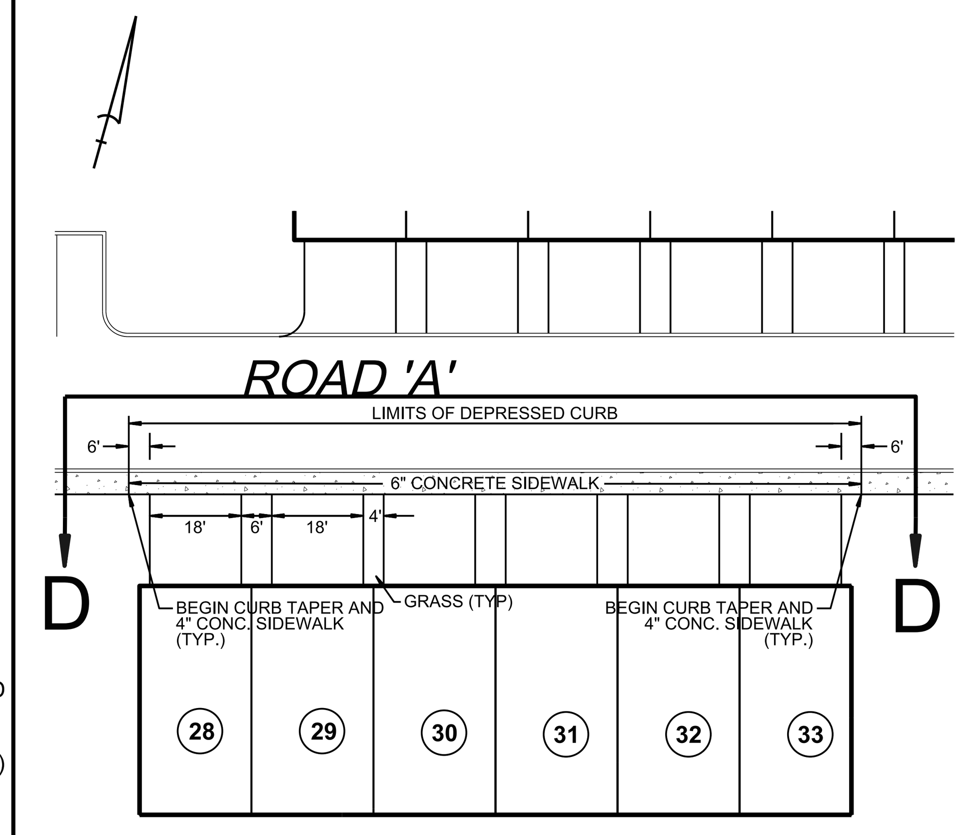
RAIN GARDEN #2

SCALE: 1" = 30'



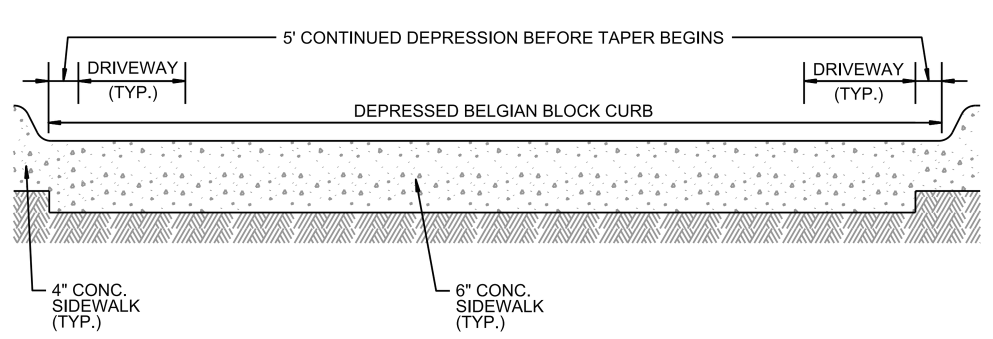
SECTION B-B

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



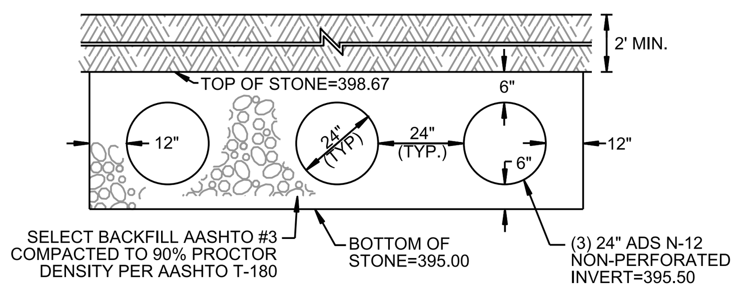
TYPICAL DRIVEWAY

SCALE: 1" = 30'



SECTION D-D

NOT TO SCALE



SECTION A-A

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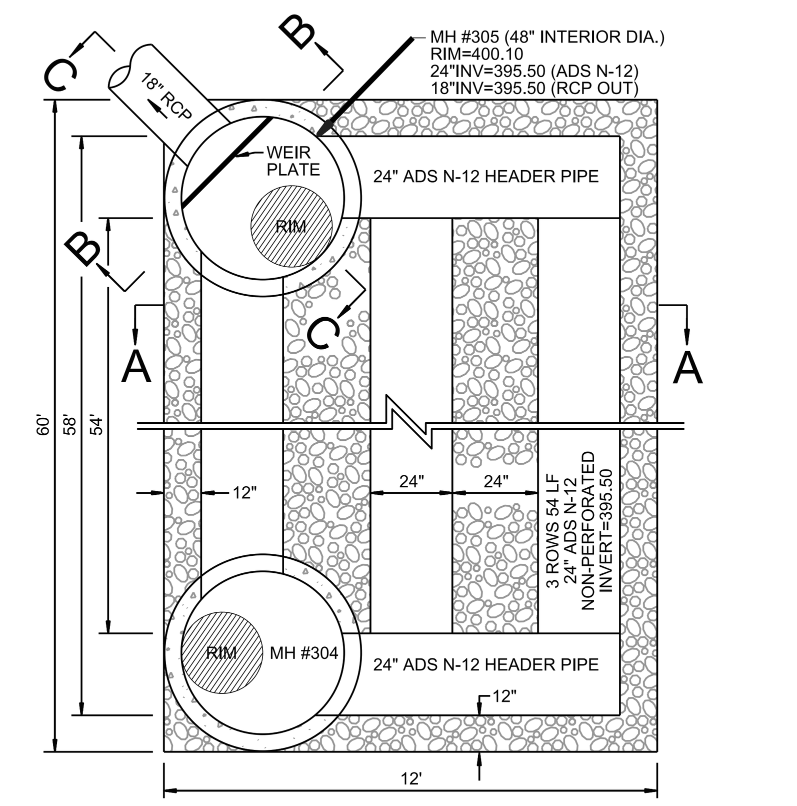
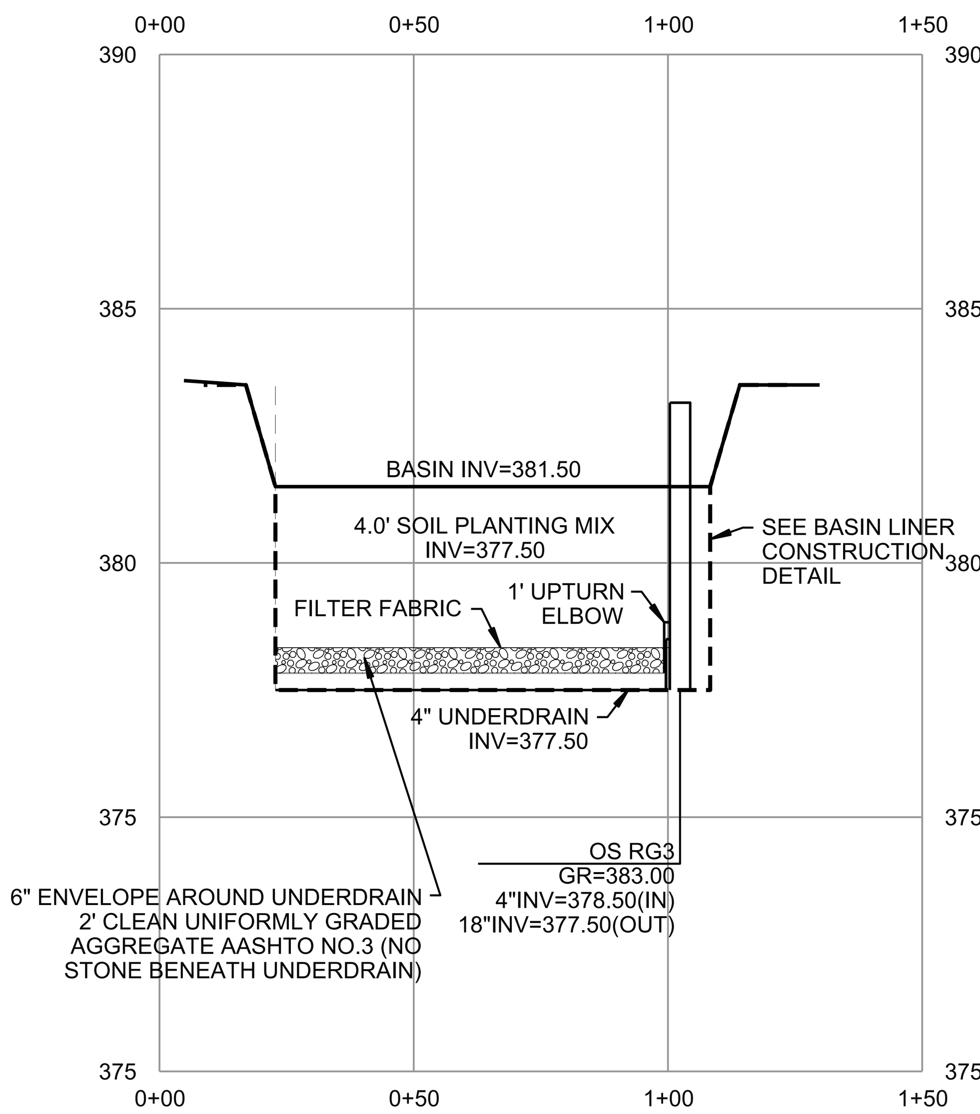


PLAN VIEW

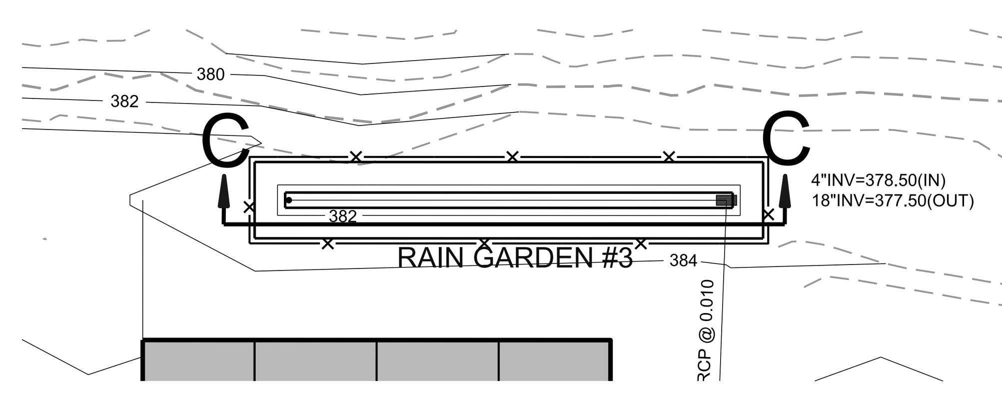
UNDERGROUND BASIN #3

NOT TO SCALE



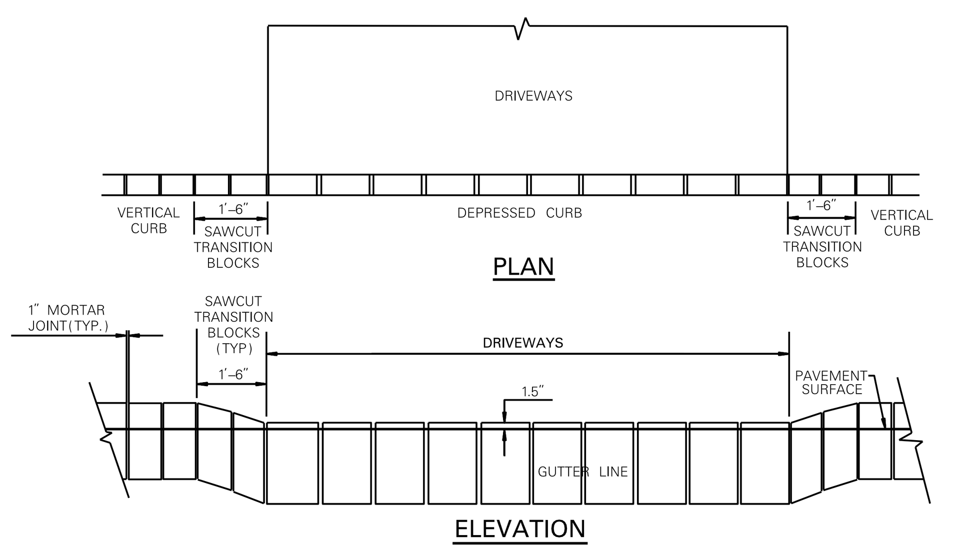
SECTION C-C

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



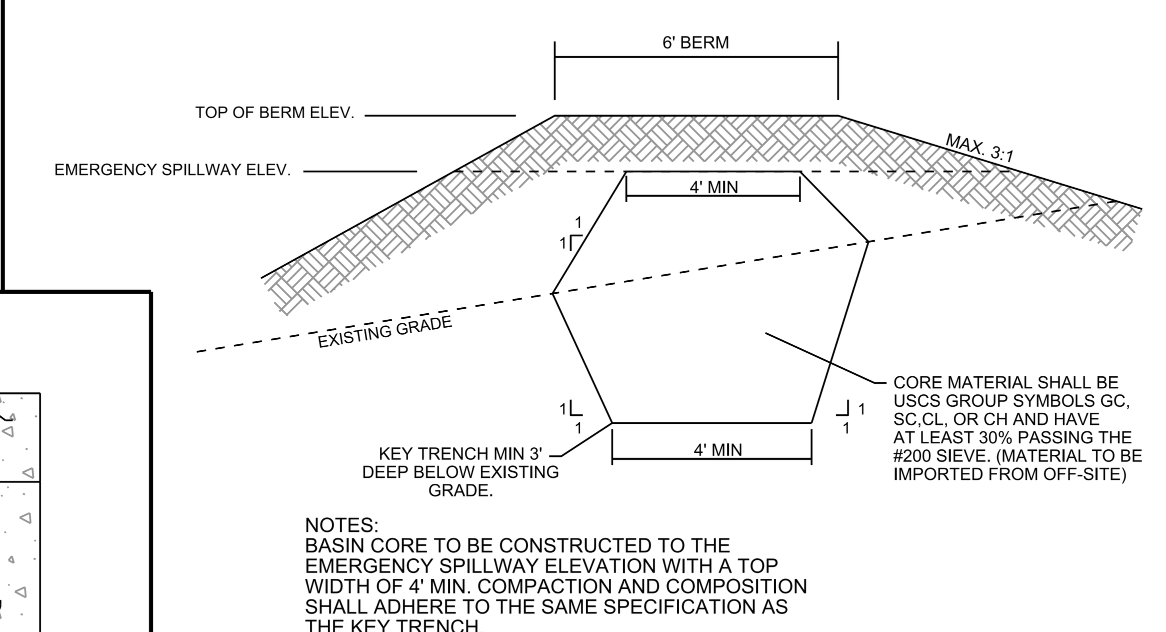
RAIN GARDEN #3

SCALE: 1" = 30'



DEPRESSED BELGIAN BLOCK CURB AT DRIVEWAY (NO SIDEWALK)

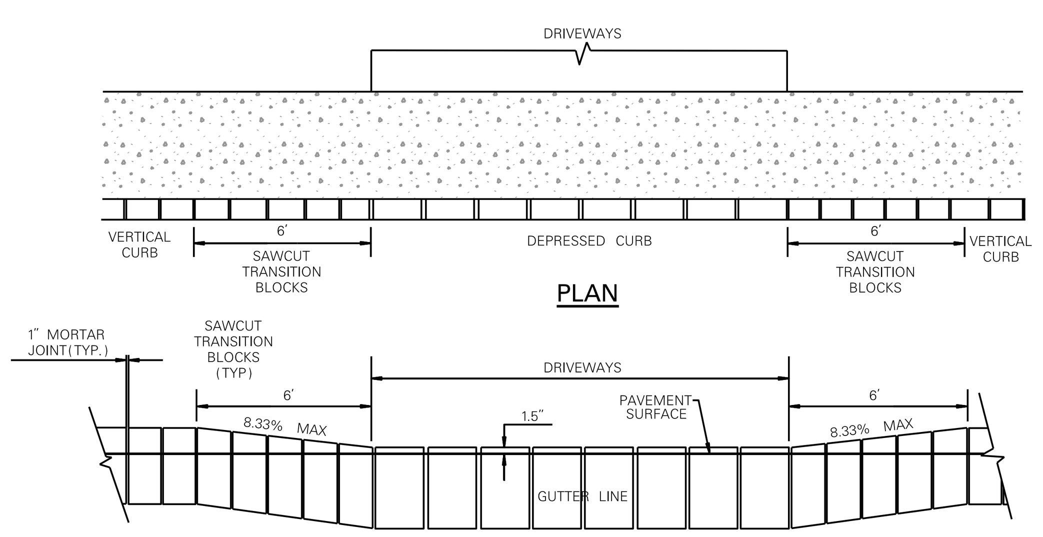
NOT TO SCALE



NOTES:
BASIN CORE TO BE CONSTRUCTED TO THE EMERGENCY SPILLWAY ELEVATION WITH A TOP WIDTH OF 4' MIN. COMPACTION AND COMPOSITION SHALL ADHERE TO THE SAME SPECIFICATION AS THE KEY TRENCH.

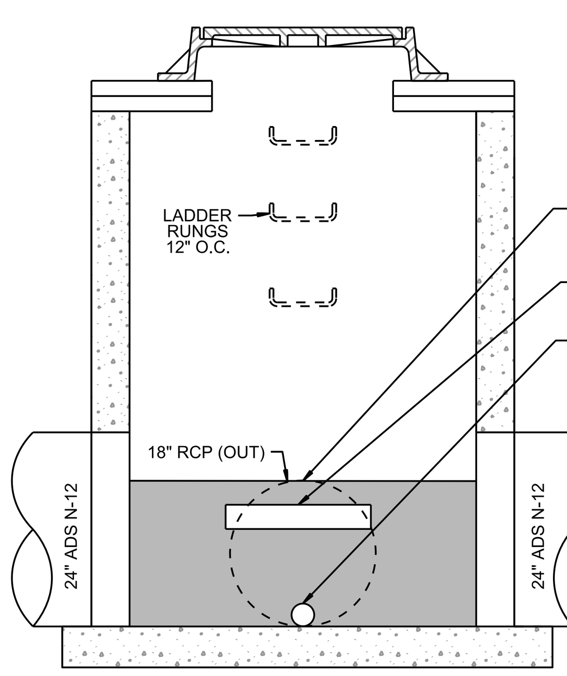
BASIN CORE AND KEY TRENCH DETAIL

NOT TO SCALE

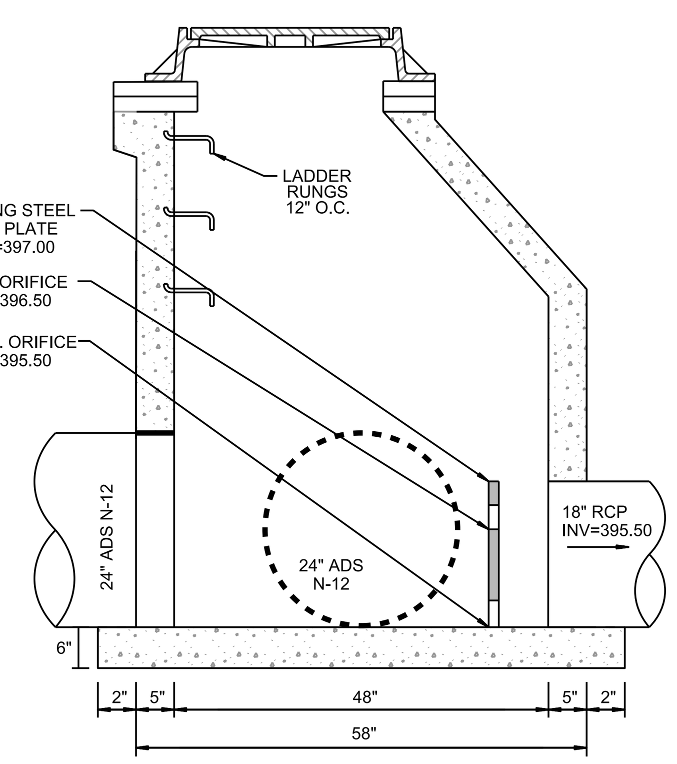


DEPRESSED BELGIAN BLOCK CURB AT DRIVEWAY W/ SIDEWALK

NOT TO SCALE



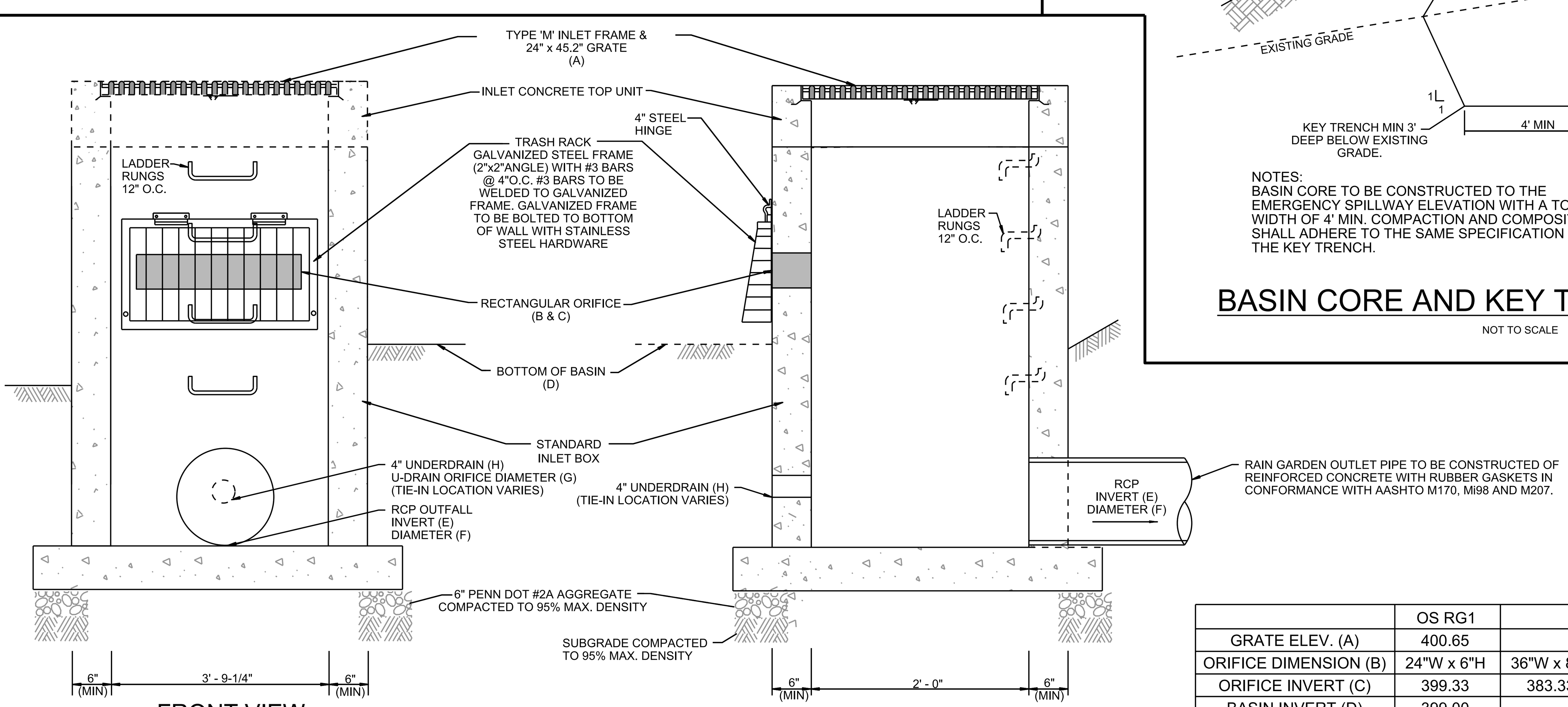
SECTION B-B



SECTION C-C

MH #305 (OUTLET STRUCTURE)

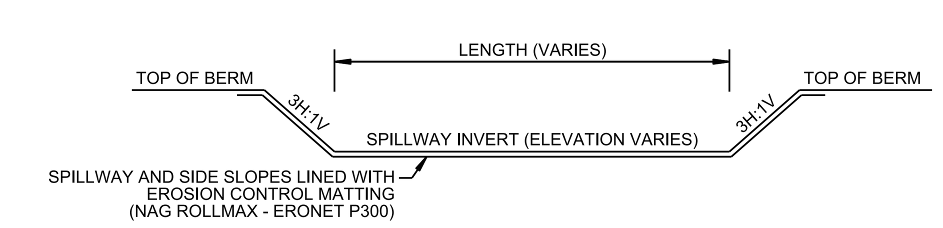
NOT TO SCALE



RAIN GARDEN OUTLET STRUCTURE DETAIL

NOT TO SCALE

	OS RG1	OS RG2		OS RG3
GRATE ELEV. (A)	400.65	386.60		383.00
ORIFICE DIMENSION (B)	24"W x 6"H	36"W x 8"H	TWO - 24"W x 8"H	5"W x 2"H
ORIFICE INVERT (C)	399.33	383.33	385.33	382.60
BASIN INVERT (D)	399.00	382.80		381.50
OUTFALL INVERT (E)	395.00	378.80		377.50
OUTFALL DIAMETER (F)	18"	30"		18"
U-DRAIN ORIFICE DIA. (G)	1/2"	1"		1/2"
U-DRAIN ORIFICE INV. (H)	396.00	379.80		378.50



RAIN GARDEN OVERFLOW SPILLWAY DETAIL

NOT TO SCALE

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS	
NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON
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: AS NOTED | DATE: SEPTEMBER 22, 2018 | DRAWING NO. 018-06476-LD | SHEET: 20 OF 26

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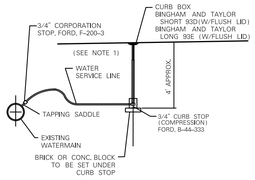


NOTES:

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 SIDE 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.

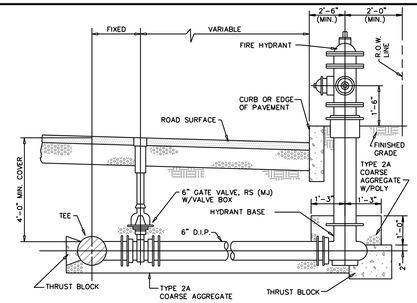
6. ALL THRUST BLOCK VALUES ARE DETERMINED ACCORDING TO THE INTENDED WORKING PRESSURE OF THE PROPOSED MAIN. WHEN PRESSURES ARE IN EXCESS OF 200 P.S.I. THE ENGINEERING DEPARTMENT WILL PROVIDE SPECIFIC REQUIREMENTS.

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.

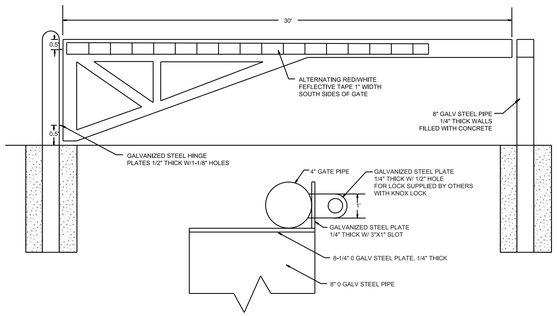


ELEVATION

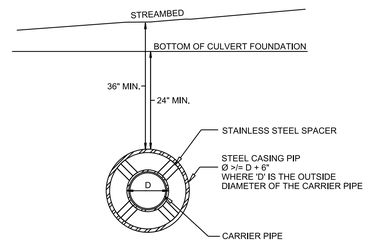
NOTE: DRAIN HOLE IN HYDRANT MUST NOT BE OBSTRUCTED WITH CONCRETE.

FIRE HYDRANT

N.T.S.



EMERGENCY ACCESS DRIVE GATE

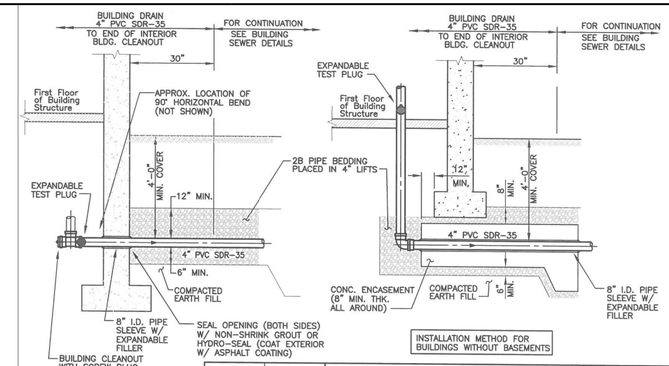


NOTES:

1. REFER TO EAST WHITELAND TOWNSHIP SEWER SYSTEM STANDARD DETAIL #4.
2. REFER TO STANDARD SPECIFICATIONS FOR CONSTRUCTION OF SANITARY SEWERS AND APPURTENANCES, SECTION 2.3 BORING, JACKING AND TUNNELING

CASING PIPE DETAIL

NOT TO SCALE



FOR NOTES SEE DETAIL 17G

REVISION	DATE
2	7/26/18
1	6/20/18

EAST WHITELAND TOWNSHIP

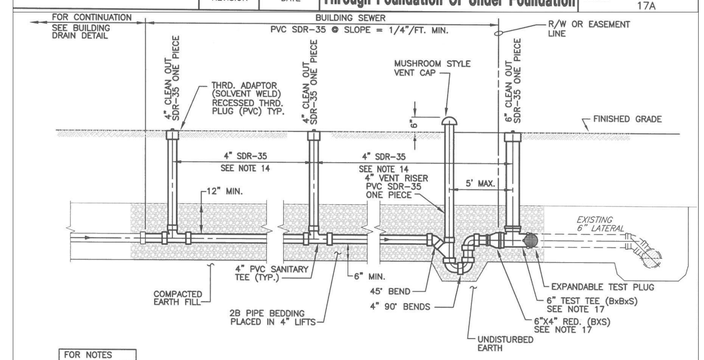
STANDARD DETAIL - SEWER SYSTEM

NEW BUILDING DRAIN Through Foundation Or Under Foundation

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

DATE: 5/9/13

DETAIL: 17A



FOR NOTES SEE DETAIL 17F

REVISION	DATE
3	7/26/18
2	6/20/18
1	3/30/18

EAST WHITELAND TOWNSHIP

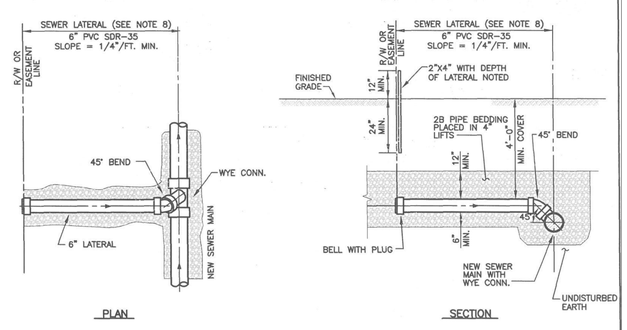
STANDARD DETAIL - SEWER SYSTEM

NEW BUILDING SEWER CONNECTION TO EXISTING LATERAL

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

DATE: 5/9/13

DETAIL: 17B



FOR NOTES SEE DETAIL 17G

REVISION	DATE
1	7/26/18

EAST WHITELAND TOWNSHIP

STANDARD DETAIL - SEWER SYSTEM

NEW LATERAL AND SEWER MAIN

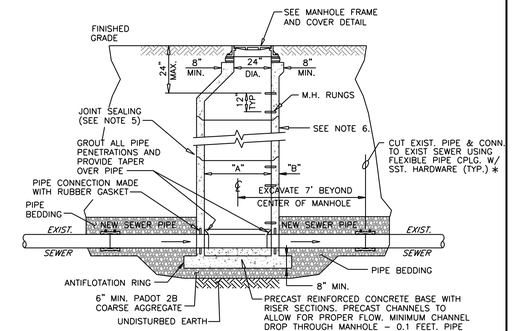
ARRO — Suite 100, 649 North Lewis Road, Limerick, Pennsylvania 19468, Tel 610.495.0303

DATE: 6/20/18

DETAIL: 17E

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"	DIMENSIONS "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.

REVISION	DATE
1	12/18/13

EAST WHITELAND TOWNSHIP

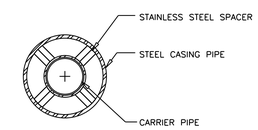
STANDARD DETAIL - SEWER SYSTEM

PRECAST INSERTION MANHOLE WITHIN EXISTING SEWER RUN

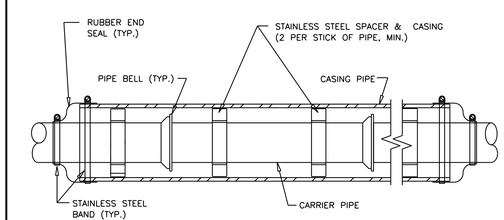
ARRO — Suite 100, 649 North Lewis Road, Limerick, Pennsylvania 19468, Tel 610.495.0303

DATE: 5/9/13

DETAIL: 1A



SECTION



ELEVATION

REVISION	DATE

EAST WHITELAND TOWNSHIP

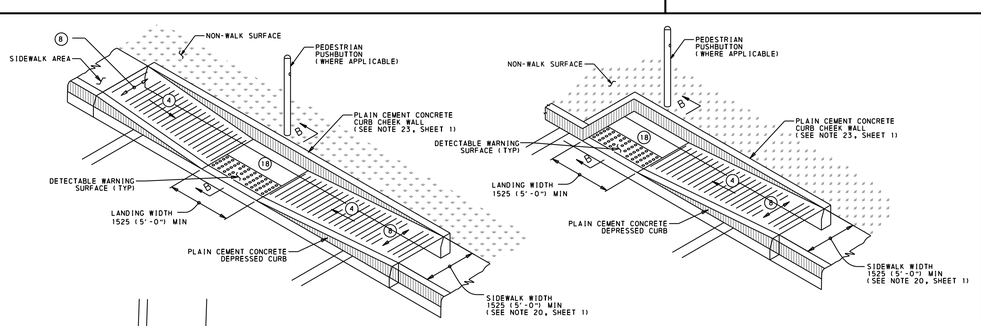
STANDARD DETAIL - SEWER SYSTEM

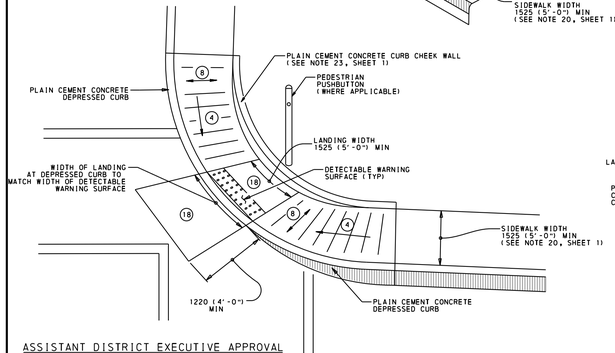
STANDARD CASING CRADLE

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

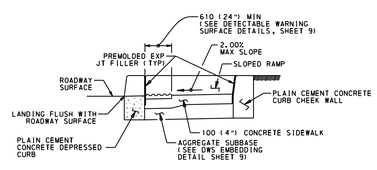
DATE: 5/9/13

DETAIL: 4





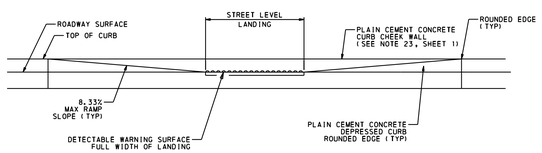
ASSISTANT DISTRICT EXECUTIVE APPROVAL REQUIRED IF LANDING FOR TURNING MANEUVER IS NOT ENTIRELY ON SIDEWALK



CURB RAMP

(1) SIDE FLARES 10.00% MAX SLOPE
(4) 8.33% MAX RAMP SLOPE
(8) SLOPE: ZERO ±2.00%
(18) CURB RAMPS REQUIRE A 1220 (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.



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	RECOMMENDED JUN. 1, 2010	SHT 3 OF 13
CHIEF, HWY. QA DIVISION	DIRECTOR, BUREAU OF DESIGN	RC-67M

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

DESIGNED: MJW | DRAWN: JAS | CHECKED: MMT

DATE SIGNED:

REVISIONS NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

PA. PROFESSIONAL ENGINEER NO. PE073278

CONSTRUCTION DETAILS

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

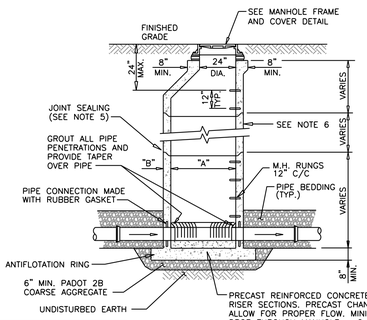
Taylor Wiseman & Taylor
ENGINEERS / SURVEYORS / SCIENTISTS
5 VALLEY SQUARE, SUITE 100, BLUE BELL, PA 19422
TELEPHONE: (267) 956-1020 FAX: (267) 956-1019
www.taylorwiseman.com

SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	21 OF 26

Q:\CAD\06476 - Bishop Tube\Plan Set\21_cd04.dgn

NOTES:

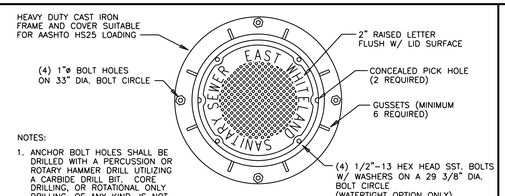
1. ADJUST TO GRADE WITH CONCRETE GRADE RINGS (MAXIMUM VERTICAL ADJUSTMENT 6"). SEE FRAME & COVER DETAILS.
2. MECHANICALLY VIBRATED PRECAST CONCRETE SHALL CONFORM TO A.S.T.M. SPEC. C-478.
3. FOR MANHOLES WHERE TOP OF RIM TO INVERT DISTANCE IS LESS THAN 5'-0", USE FLAT TOP MANHOLE IN LIEU OF CONE TOP.
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"	DIMENSIONS "B" (MIN.)
8"-15"	4'-0"	5"
18"-21"	5'-0"	6"
24"-36"	6'-0"	7"

SECTION

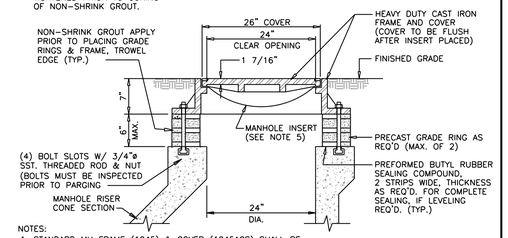
REVISION	DATE	EAST WHITELAND TOWNSHIP STANDARD DETAIL - SEWER SYSTEM PRECAST MANHOLE	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303	DATE: 5/9/13	DETAIL: 1



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.

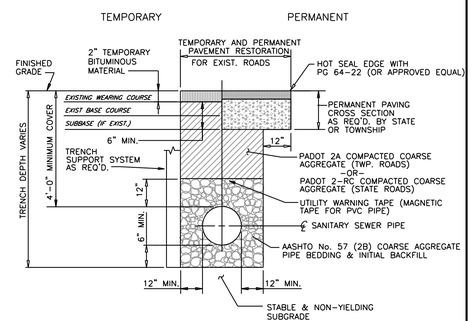
PLAN-COVER PATTERN



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 Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 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.

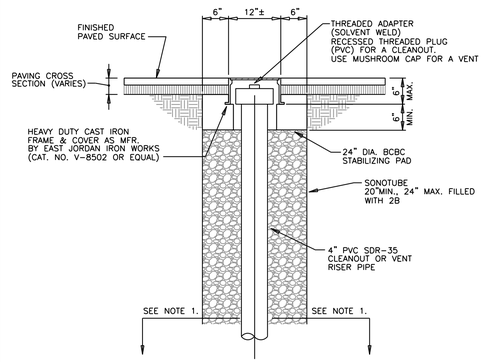
REVISION	DATE	EAST WHITELAND TOWNSHIP STANDARD DETAIL - SEWER SYSTEM TRENCH RESTORATION - EXISTING ROADS	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303	DATE: 5/9/13	DETAIL: 6A

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 (BxS) FOLLOWED BY A 4" TEST TEE (BxBxS) 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, 17E & 17F

REVISION	DATE	EAST WHITELAND TOWNSHIP STANDARD DETAIL - SEWER SYSTEM BUILDING DRAIN, BUILDING SEWER, & LATERAL NOTES	ARRO Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303	DATE: 5/9/13	DETAIL: 17G
2	7/26/18				
1	6/20/18				

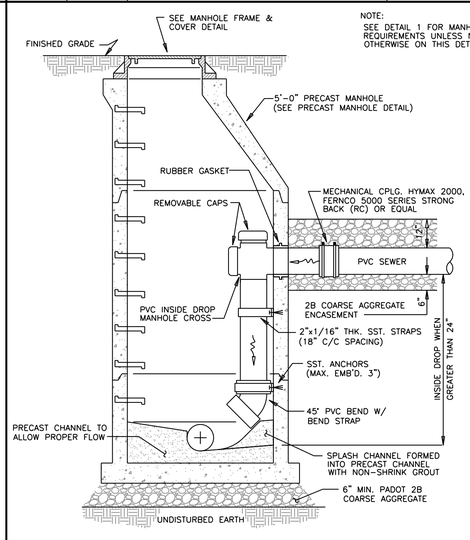


SECTION

NOTE:

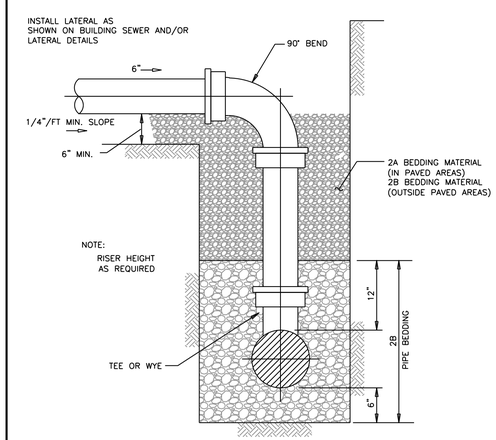
1. SEE BUILDING SEWER DETAILS.

REVISION	DATE	EAST WHITELAND TOWNSHIP STANDARD DETAIL - SEWER SYSTEM CLEANOUT OR VENT IN PAVED AREA	ARRO Suite 100, 649 North Lewis Road 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



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

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK M. THOMPSON

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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SCALE:	DATE:	DRAWING NO.	SHEET:
AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	22 OF 26

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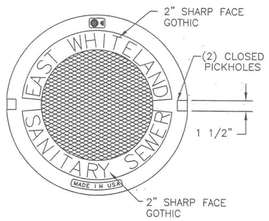
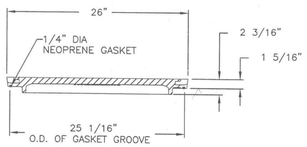
1040AGS Cover

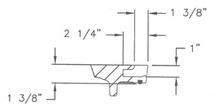


BOTTOM VIEW OF COVER

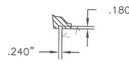


COVER SECTION

COVER MACHINED DOWN TO 1 5/16" FROM 1 1/2"



PICKHOLE DETAIL



GROOVE DETAIL

Product Number
00104479
Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Dipped
- ✓ Designates Machined Surface

Certification
- ASTM A48
-
-
-Country of Origin: USA

Drawing Revision
Designer: MAH
11/19/2018 Revised By: MAH

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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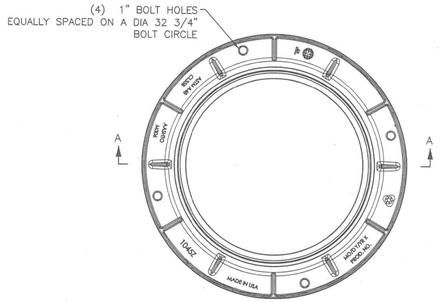
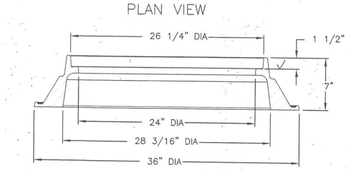
ejco.com

1045Z Frame



PLAN VIEW



SECTION A–A

Product Number
00104510
Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Dipped
- ✓ Designates Machined Surface

Certification
- ASTM A48
-
-
-Country of Origin: USA

Drawing Revision
07/16/2015 Designer: LCK
1/23/2017 Revised By: MAH

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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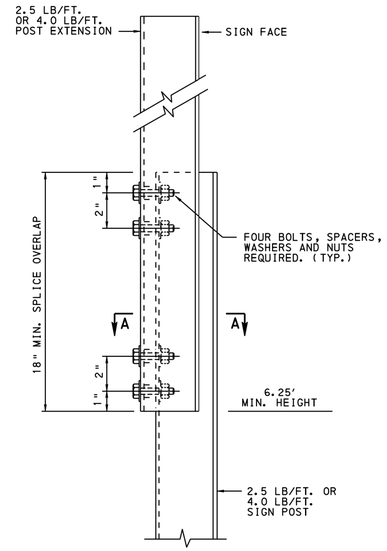
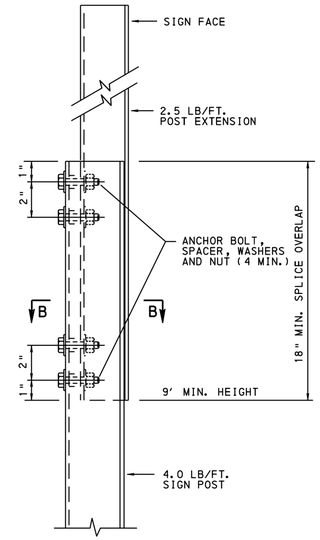


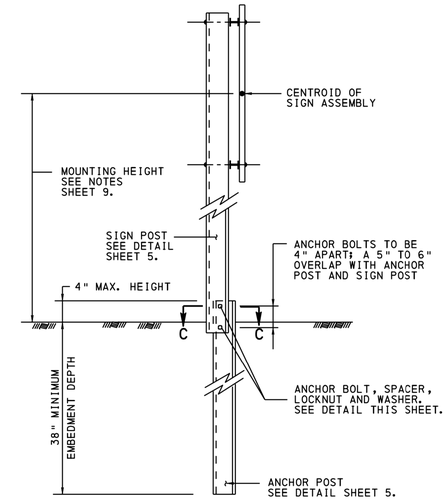
POST EXTENSION SPLICE DETAIL A

FOR USE IN EXTENDING SIGN POSTS



ALTERNATE POST EXTENSION SPLICE DETAIL B

FOR USE IN EXTENDING SIGN POSTS



INSTALLATION DETAIL

ANCHOR SPLICE INSTALLATION INSTRUCTIONS:

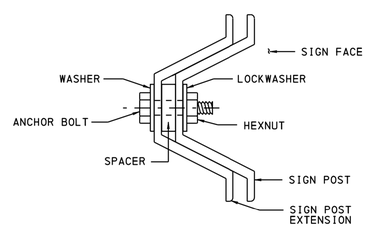
1. DETERMINE THE PROPER SIZE SIGN POST AND ANCHOR POST FROM THE APPROPRIATE GRAPH ON SHEET 7. USE 2.5 LB/FT. ANCHOR POSTS WITH 2.5 LB/FT. SIGN POSTS AND 4.0 LB/FT. ANCHOR POSTS WITH 4.0 LB/FT. SIGN POSTS.
2. REMOVE A SHOVEL OF SOIL AT THE POST LOCATION TO ALLOW FOR FINAL ATTACHMENT OF THE SIGN POST TO 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:

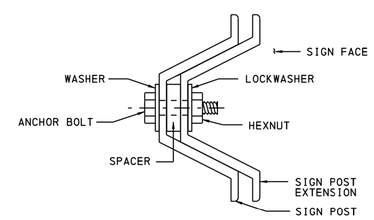
1. USE THE ANCHOR PLATE IN AREAS WITH SOFT SOIL. BOLT THE TOP ANCHOR BOLT 1" BELOW THE BOTTOM ANCHOR POST BOLT, (6 TO 7 HOLES FROM THE END OF THE ANCHOR POST).

POST EXTENSION SPLICE NOTES:

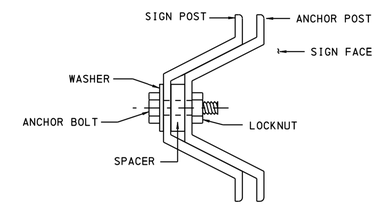
1. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE.
2. FOUR ANCHOR BOLTS WITH SPACERS, WASHERS, LOCKWASHERS AND NUTS ARE REQUIRED (LOCKNUTS MAY BE USED IN LIEU OF STANDARD LOCKWASHERS AND NUTS). SEE THIS SHEET FOR ANCHOR BOLT SYSTEM.
3. POST EXTENSION SPLICE DETAIL A IS PREFERRED 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.



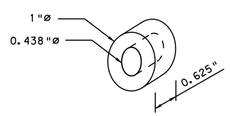
SECTION A-A



SECTION B-B

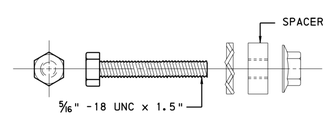


SECTION C-C



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

REVISION No. 2: REVISED PER 6-4-2019 ARRO. 4-5-2019 ZONING. 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER. 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

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

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

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	23 OF 26

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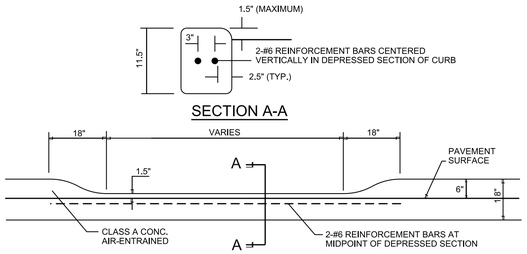
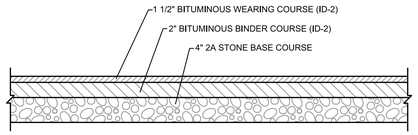


DEPRESSED CURB DETAIL

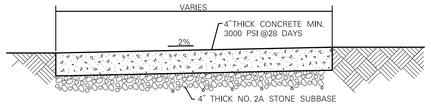
NOT TO SCALE



NOTE: IF CONTRACTOR OR DEVELOPER CHOOSES NOT TO PROVIDE PAVEMENT TOPPING UNTIL THE END OF THE PROJECT, THE SECTION SHALL INCLUDE ALL COMPONENTS UP TO AND INCLUDING THE BINDER COURSE. IN ADDITION THE CONTRACTOR SHALL PROPERLY CLEAN THE PAVEMENT AND PROVIDE A TACK COAT PRIOR TO FINAL TOPPING.

DRIVEWAY PAVEMENT SECTION

NOT TO SCALE

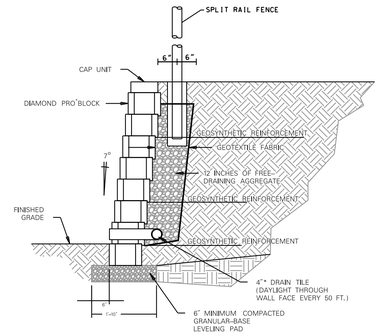


CONCRETE SIDEWALK DETAIL

NOTE:
1. SIDEWALKS SHALL BE CONSTRUCTED 6" THICK WITH WELDED WIRE FABRIC REINFORCEMENT ACROSS DRIVEWAY APRONS.

2. 1/2" PREMOLDED EXPANSION JOINTS TO BE PLACED EVERY 24 FEET OR 25 FEET (MAXIMUM) WHERE SIDEWALKS ARE REQUIRED TO BE 5 FEET WIDE, AND AT ALL LOCATIONS WHERE EXISTING PAVEMENT OR SIDEWALK MEETS PROPOSED SIDEWALK, WHERE SIDEWALK ABUTS CURB OR OTHER SIMILAR STRUCTURES, AND WHERE SIDEWALK TRANSITIONS FROM 4" THICK TO 6" THICK. (DRIVEWAY APRONS, ETC.)

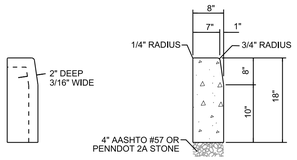
3. WITH ALL PROPOSED SIDEWALK, A NON-SLIP SURFACE TEXTURE SHALL BE BROOMED TRAVERSE TO THE SLOPE OF THE SIDEWALK. ALL EDGES SHALL BE FINISHED WITH AN APPROVED EDGING TOOL.



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.

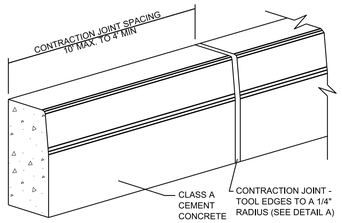
ANCHOR DIAMOND PRO SYSTEM

DETAIL SUPPLIED BY ANCHOR WALL SYSTEMS.



DETAIL A
CONTRACTION JOINT

TYPICAL CROSS SECTION
PLAIN CEMENT CONCRETE CURB



NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CONCRETE CURB AND FOR PLAIN CONCRETE CURB GUTTER.

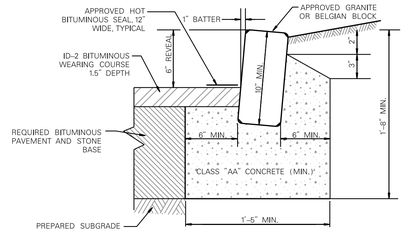
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.

3. PLACE 3/4 - INCH PREMOLDED EXPANSION JOINT FILLER MATERIAL EVERY 50' (MAX.), AT ALL STRUCTURES, ALL DRIVEWAYS (DEPRESSED CURB CUTS), CURBS, RADII, AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.

4. DOWELL PIN CURB WHERE CURB ABUTS INLET HOODS.

TYPICAL CROSS SECTION PLAIN CEMENT CONCRETE CURB

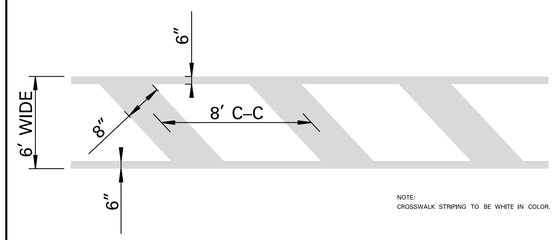
NOT TO SCALE



SECTION A–A

BELGIAN BLOCK CURB

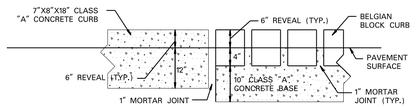
N.T.S.



NOTE:
CROSSWALK STRIPING TO BE WHITE IN COLOR.

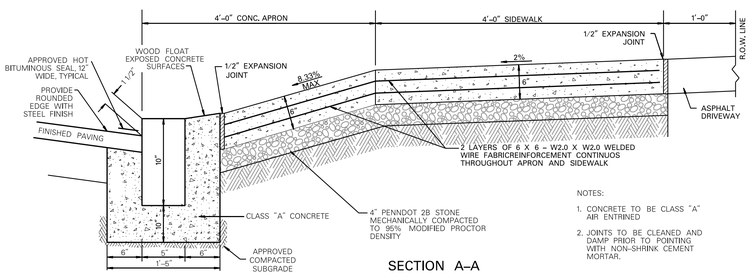
CROSS WALK MARKING

NOT TO SCALE



CONCRETE CURB TO BELGIAN BLOCK CURB TRANSITION DETAIL

NOT TO SCALE

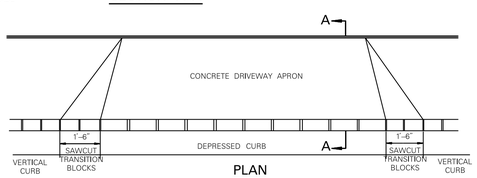


NOTES:

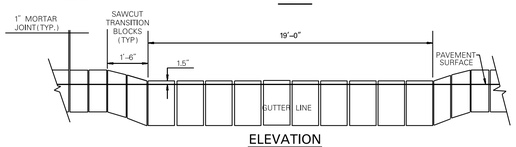
1. CONCRETE TO BE CLASS "A" AIR ENTRINED

2. JOINTS TO BE CLEANED AND DAMP PRIOR TO POINTING WITH NON-SHRINK CEMENT MORTAR.

SECTION A–A



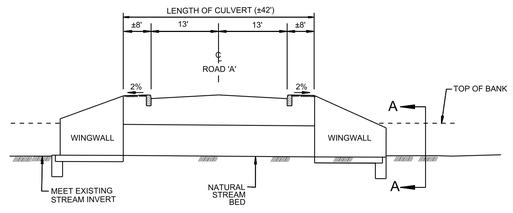
PLAN



ELEVATION

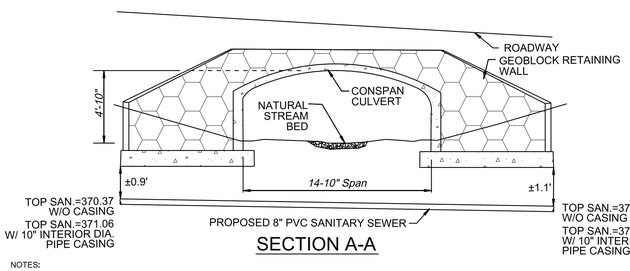
DEPRESSED BELGIAN BLOCK CURB AT DRIVEWAY

NOT TO SCALE



ELEVATION

NOT TO SCALE



SECTION A-A

NOTES:

1. SEE GRADING AND UTILITY PLANS FOR LOCATION.
2. DESIGN AND CONSTRUCTION ARE TO BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. SHOP DRAWINGS AND DESIGN CALCULATIONS, SIGNED AND SEALED BY A PENNSYLVANIA LICENSED PROFESSIONAL ENGINEER, ARE TO BE SUBMITTED AND APPROVED PRIOR TO MANUFACTURING.
4. INSTALL AND MAINTAIN STREAM BYPASS PIPE FLUME AND TEMPORARY EROSION & SEDIMENT CONTROL MEASURES UNTIL CULVERT IS INSTALLED AND AREA IS STABILIZED.
5. EXISTING STORM PIPES ARE TO BE REMOVED, AND CHANNEL IS TO BE GRADED AND STABILIZED TO CONFORM TO EXISTING CHANNEL

CONSPAN ARCH CULVERT DETAIL

SCALE AS NOTED

REVISION No. 2: REVISED PER 6-4-2019 ARRO, 4-5-2019 ZONING, 5-16-2019 LAND CONCEPTS & 6-7-2019 McMAHON REVIEW LETTERS.
REVISION No. 1: REVISED PER 1-14-2019 SALDO REVIEW LETTER, 1-25-2019 SANITARY SEWER REVIEW LETTER & 3-19-2019 McMAHON REVIEW LETTER.

DESIGNED:	DRAWN:	CHECKED:
MJW	JAS	MMT

DATE SIGNED:

REVISIONS

NO.	DATE
1	4/5/2019
2	5/15/2020

MARK M. THOMPSON

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

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

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AS NOTED	SEPTEMBER 22, 2018	018-06476-LD	24 OF 26

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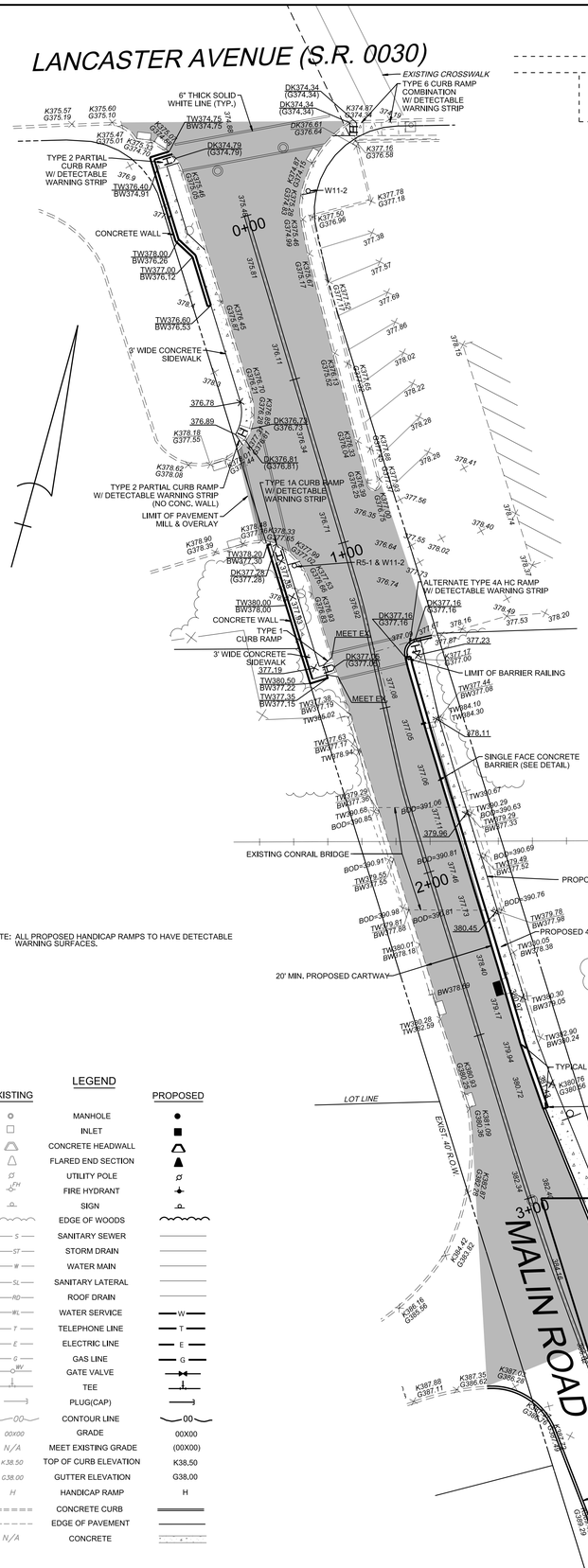
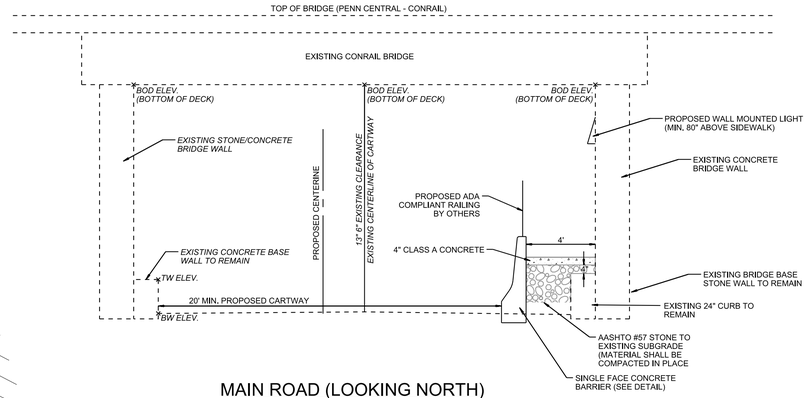


NOTE: ALL PROPOSED HANDICAP RAMPS TO HAVE DETECTABLE WARNING SURFACES.

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	

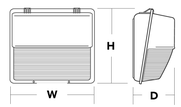


MAIN ROAD (LOOKING NORTH)

NOT TO SCALE

Specifications

Width:	16-1/8" (41.0 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

QUANTITY: 1 SCALE: 1" = 20'

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

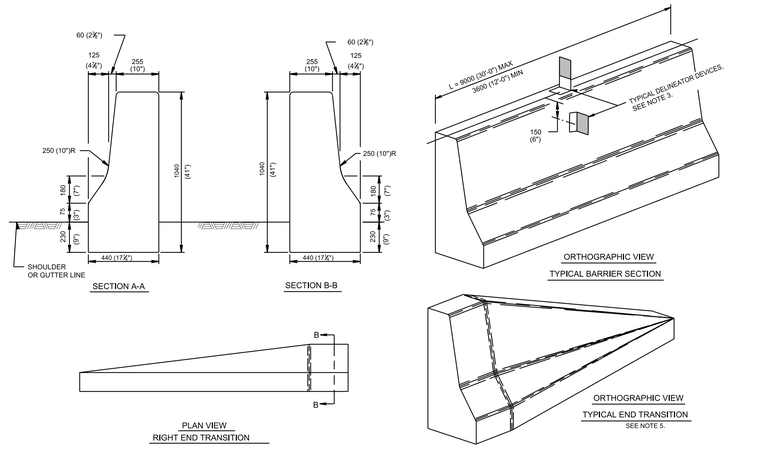


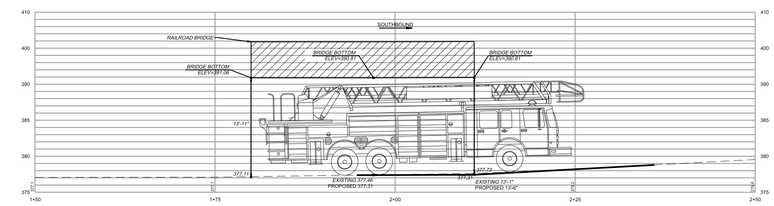
TABLE 1
FLARE RATES FOR BARRIER DESIGN

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

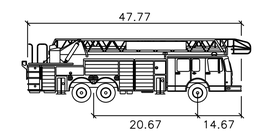
NOTES

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 (1/8") 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(s).
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

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

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

PA. PROFESSIONAL ENGINEER NO. PE073278

UNDERPASS WALKWAY PLAN

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

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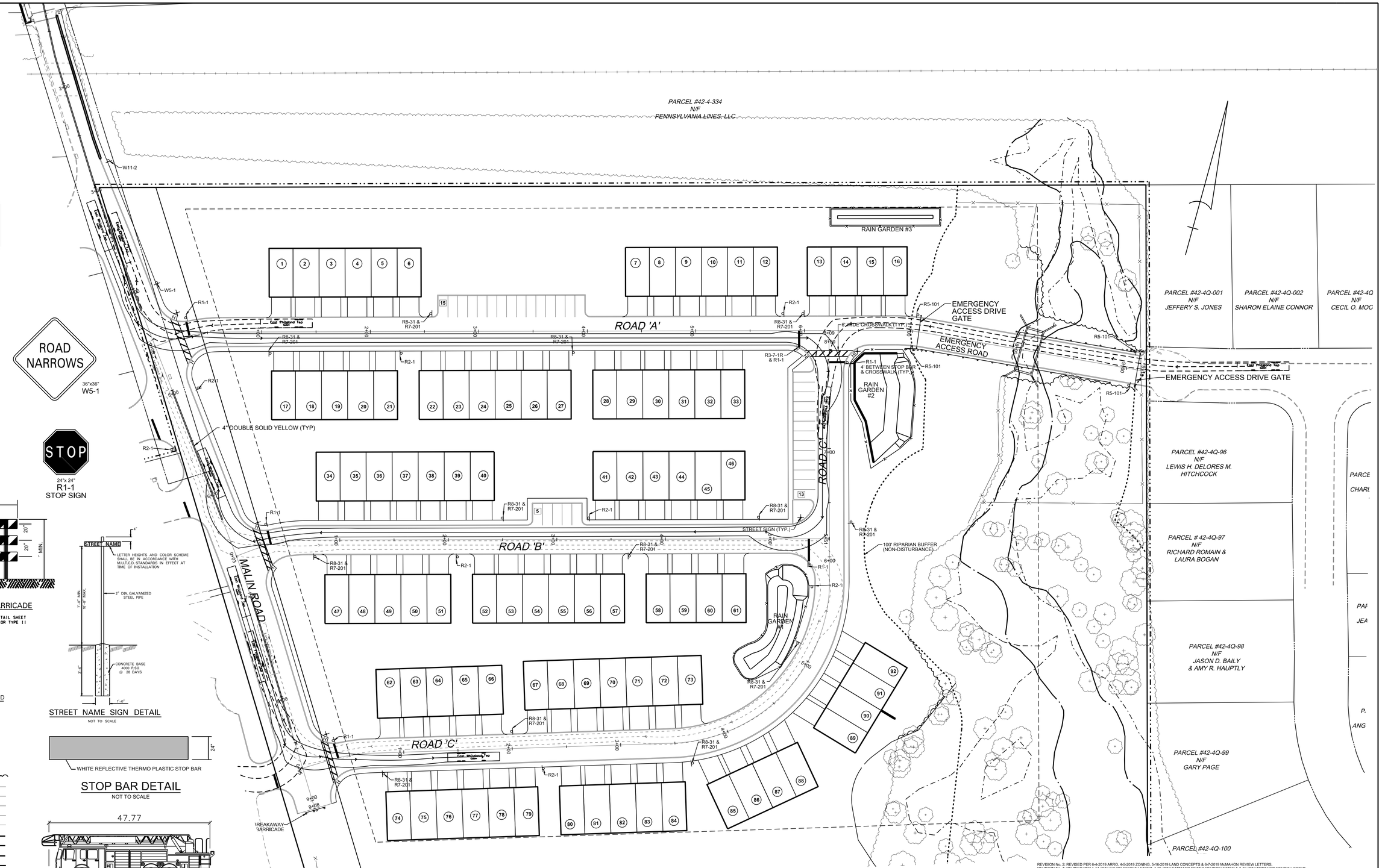
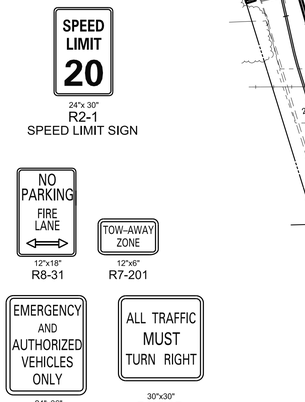
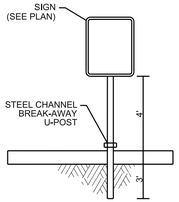
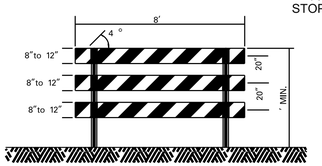






HANDICAP SIGN



TYPE III BREAKAWAY BARRICADE

NOT TO SCALE

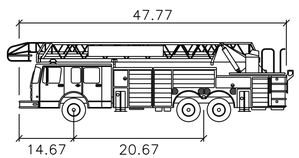
REFER TO N.J.D.O.T. CONSTRUCTION DETAIL SHEET # CD - 33. CROSS REFERENCE TYPE I OR TYPE II BREAKAWAY BARRICADE

STREET NAME SIGN DETAIL

NOT TO SCALE

STOP BAR DETAIL

NOT TO SCALE



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	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	
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	

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40 20 0 40 80 120 160

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MANEUVERABILITY AND SIGNAGE PLAN

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