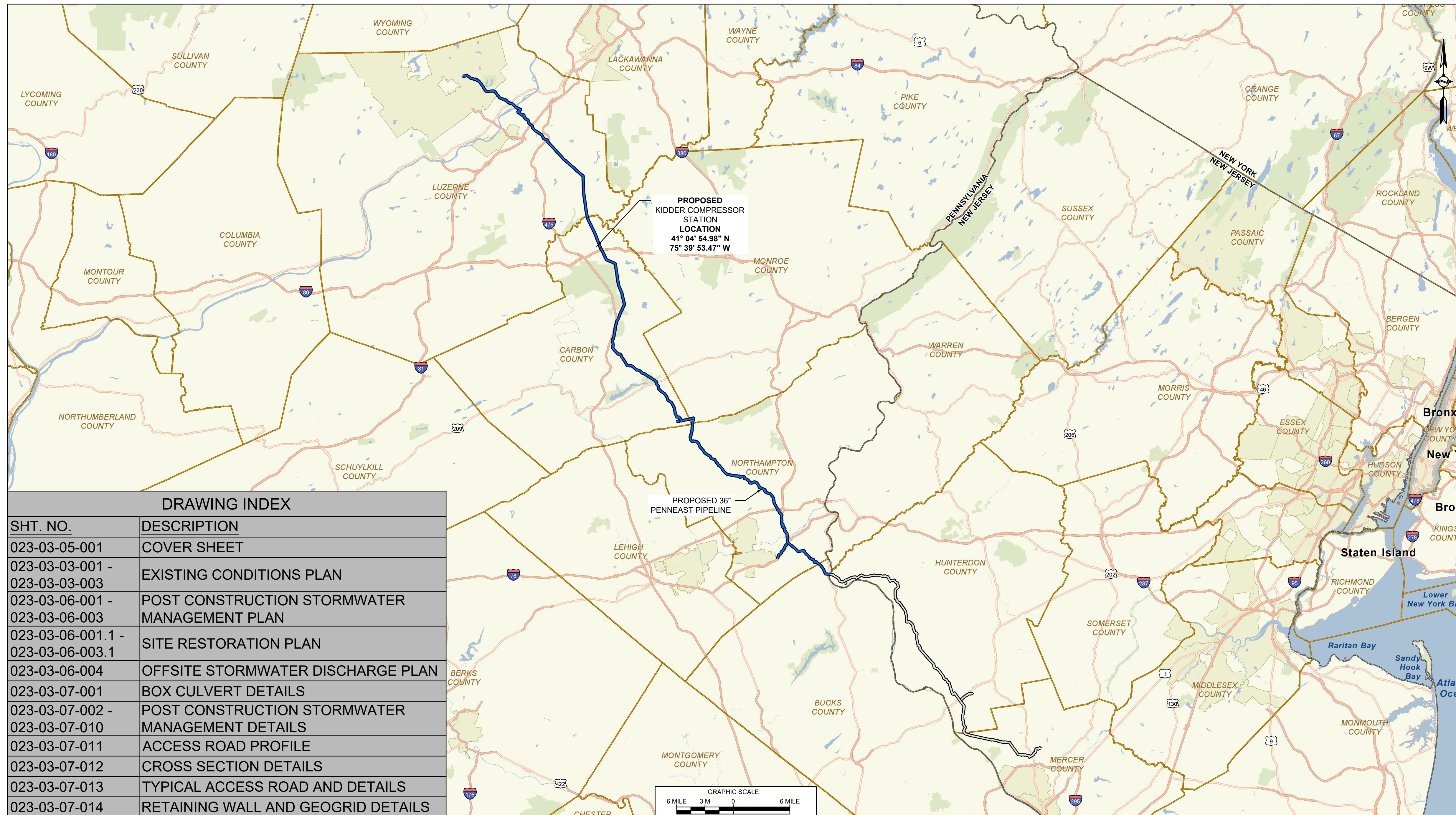
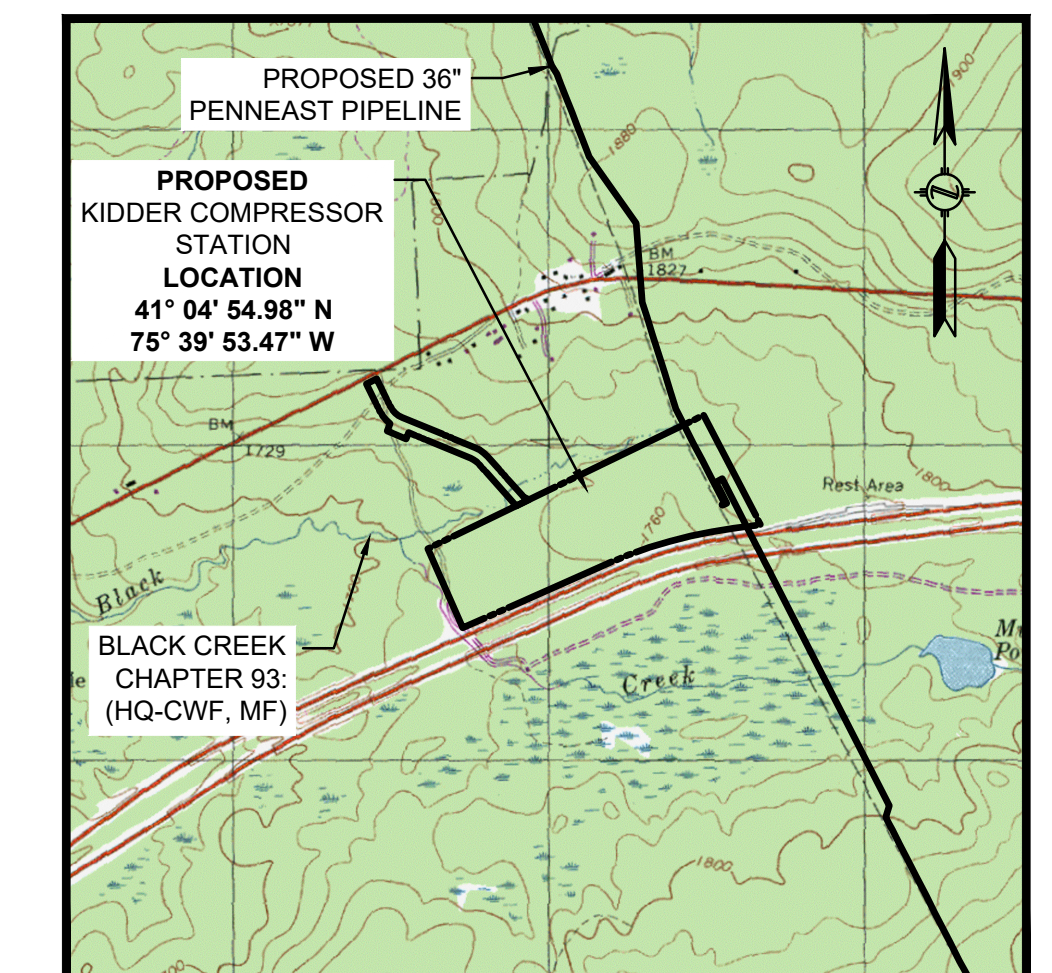


PADEP - POST CONSTRUCTION STORMWATER MANAGEMENT PLAN



DRAWING INDEX	
SHT. NO.	DESCRIPTION
023-03-05-001	COVER SHEET
023-03-03-001 - 023-03-03-003	EXISTING CONDITIONS PLAN
023-03-06-001 - 023-03-06-003	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
023-03-06-001.1 - 023-03-06-003.1	SITE RESTORATION PLAN
023-03-06-004	OFFSITE STORMWATER DISCHARGE PLAN
023-03-07-001	BOX CULVERT DETAILS
023-03-07-002 - 023-03-07-010	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS
023-03-07-011	ACCESS ROAD PROFILE
023-03-07-012	CROSS SECTION DETAILS
023-03-07-013	TYPICAL ACCESS ROAD AND DETAILS
023-03-07-014	RETAINING WALL AND GEOGRID DETAILS



LOCATION MAP
SCALE: 1" = 2000'
USGS QUAD: HICKORY RUN, PA

GENERAL NOTES:

1. THIS PLAN SET CONTAINS INFORMATION FOR THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (PCSM PLAN) REQUIRED FOR THE PADEP ESCGP. THIS IS A PERMIT DOCUMENT ONLY. ADDITIONAL PLANS AND DOCUMENTATION ARE REQUIRED FOR CONSTRUCTION OF THE PROPOSED DEVELOPMENT.
2. FULL SIZE SHEETS OF THIS PLAN SET MAY BE PRINTED OUT ON 24"x36" SHEETS. REPRODUCTION AT DIFFERENT SIZES SHALL RESULT IN DIFFERENT SCALES.

REFERENCE (ALL SHEETS):

1. EXISTING CONTOURS SHOWN WERE SURVEYED BY MOTT MACDONALD DURING 2015 THRU 2018. ADDITIONAL EXISTING CONTOURS WERE PROVIDED BY PICTOMETRY, 2015 AND SUPPLEMENTED FROM PASDA.
2. SITE TOPOGRAPHIC AND FEATURE SURVEY PERFORMED BY MOTT MACDONALD 2015 THRU 2018.
3. PROPERTY INFORMATION ON THIS PLAN BASED ON GIS TAX MAP DATA AND RECTIFIED PROPERTY LINES AND ARE NOT THE RESULT OF A BOUNDARY SURVEY.
4. WATERBODY INFORMATION PROVIDED BY AECOM 2015 THRU 2018.
5. HORIZONTAL DATUM IS UTM83-18F. VERTICAL DATUM IS NAVD1988.

PENNSYLVANIA ONE-CALL SERIAL NUMBERS

20162661360-000



CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING DAYS IN
DESIGN STAGE - STOP CALL
PENNSYLVANIA ONE CALL SYSTEM INC.
1-800-242-1776

M **M**
IOTT I
IAGDONALD

11 WOOD AVENUE
SOUTH ISELIN, NJ 08830
UNITED STATES
73-379-3400
INFO@MOTTMAC.COM

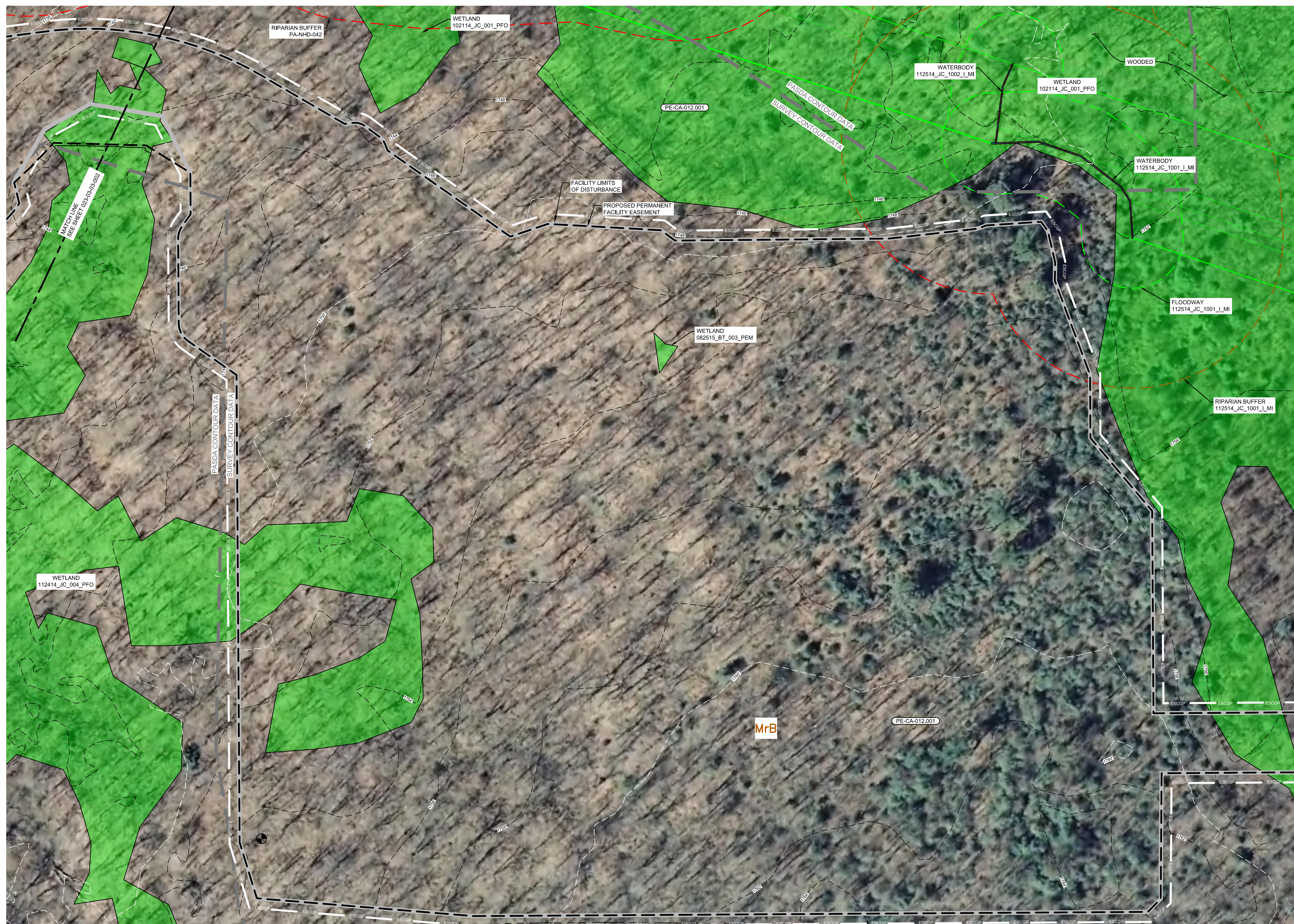
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PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION COVER SHEET

INFORMATION ONLY IN R THAN HARED P.T.Y.	DRAWN BY CAF		DATE ISSUED 10/15/2018	
	CHECKED BY WMC		SCALE AS SHOWN	
	APPROVED BY JRD		APPROVED BY	
	DWG. NO. 023-03-05-001			REV. B

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



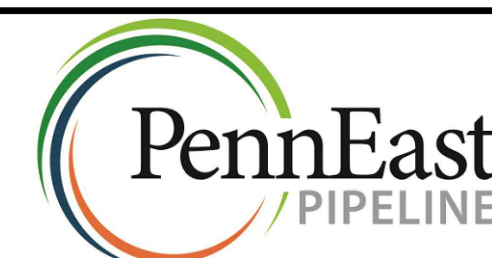
SITE PLAN

A horizontal scale bar with tick marks at 0, 50', and 100 feet.

SCALE: 1" = 50'

REFERENCE:

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[illegible]

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ENVIRONMENTAL NOTES:

1. AS PER §102.4(b)(5)(III), THE LAND USE CHARACTERISTICS ARE CLASSIFIED BY PRIMARY VEGETATION COVER TYPE AND/OR PREDOMINANT LAND USE. THE MAJORITY OF THE FACILITY SITE IS LAND USE TYPE FORESTED WOODLAND, WITH ABOUT 0.1 ACRES OF THE WORKSPACE ON OPEN LAND.
2. AS PER §102.4(b)(5)(V), THE SITE DRAINS TO AN UNT TO BLACK CREEK, WHICH HAS A CHAPTER 93 DESIGNATED USE OF HQ-CWF (HIGH QUALITY COLD WATER FISH), AND MF (MIGRATORY FISH).



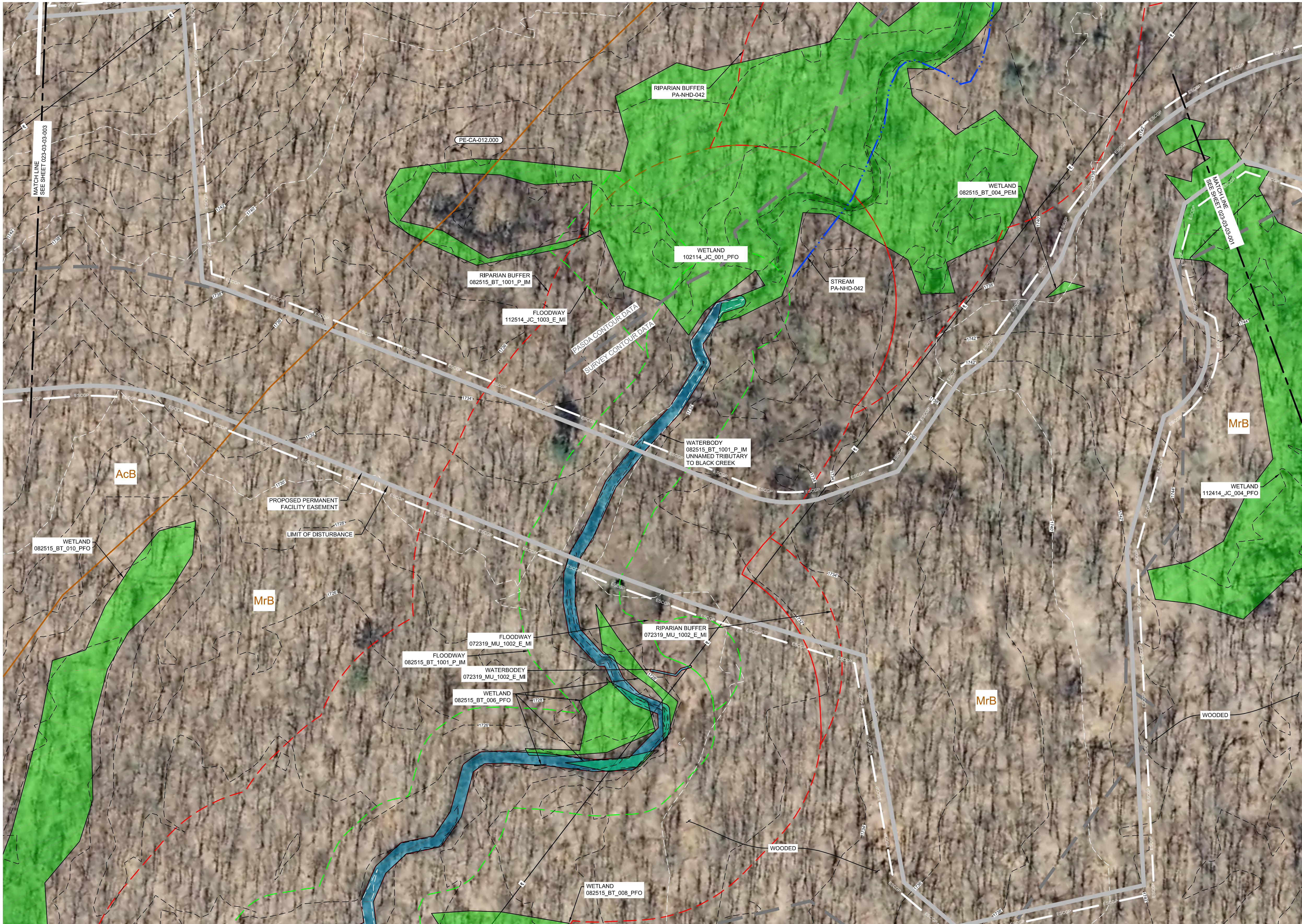
Know what's below.
Call before you dig.

PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
EXISTING CONDITIONS PLAN

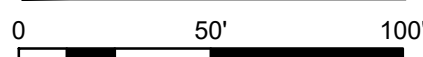
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	KEK	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-001	REV. NO.	B

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



SITE PLAN

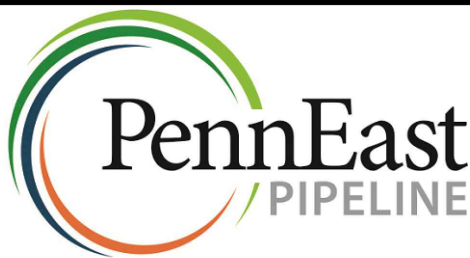


SCALE: 1" = 50'

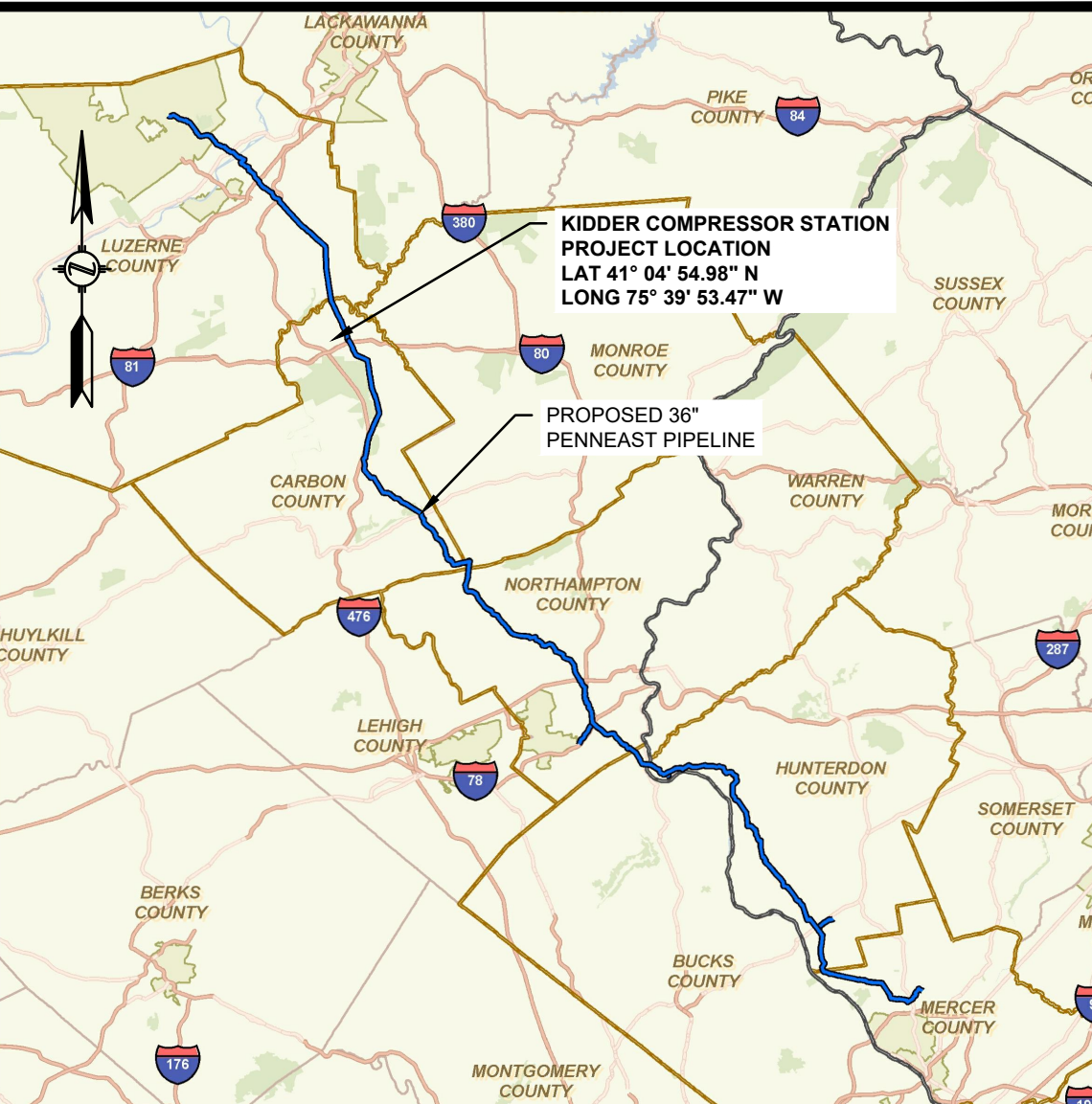
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LOCATION MAP
SCALE: 1" = 15 MILES

LEGENDS

- PROPOSED**
- FACILITY PERMANENT EASEMENT
 - FACILITY LIMITS OF DISTURBANCE
 - ESGCP BOUNDARY
- EXISTING**
- PROPERTY LINE
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - SOIL BOUNDARY
 - SOIL TYPE ABBREVIATION
 - EXISTING UTILITY POLE
 - LINE LIST NUMBER
 - WETLAND (DELINEATED)
 - WATERBODY (DELINEATED)
 - APPROXIMATE 100 YEAR FLOODWAY
 - APPROXIMATE 150' RIPARIAN BUFFER
 - EXISTING ROAD CENTERLINE
 - EXISTING OVERHEAD LINE



ENVIRONMENTAL NOTES:

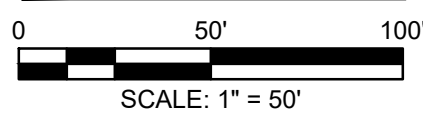
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CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



SITE PLAN



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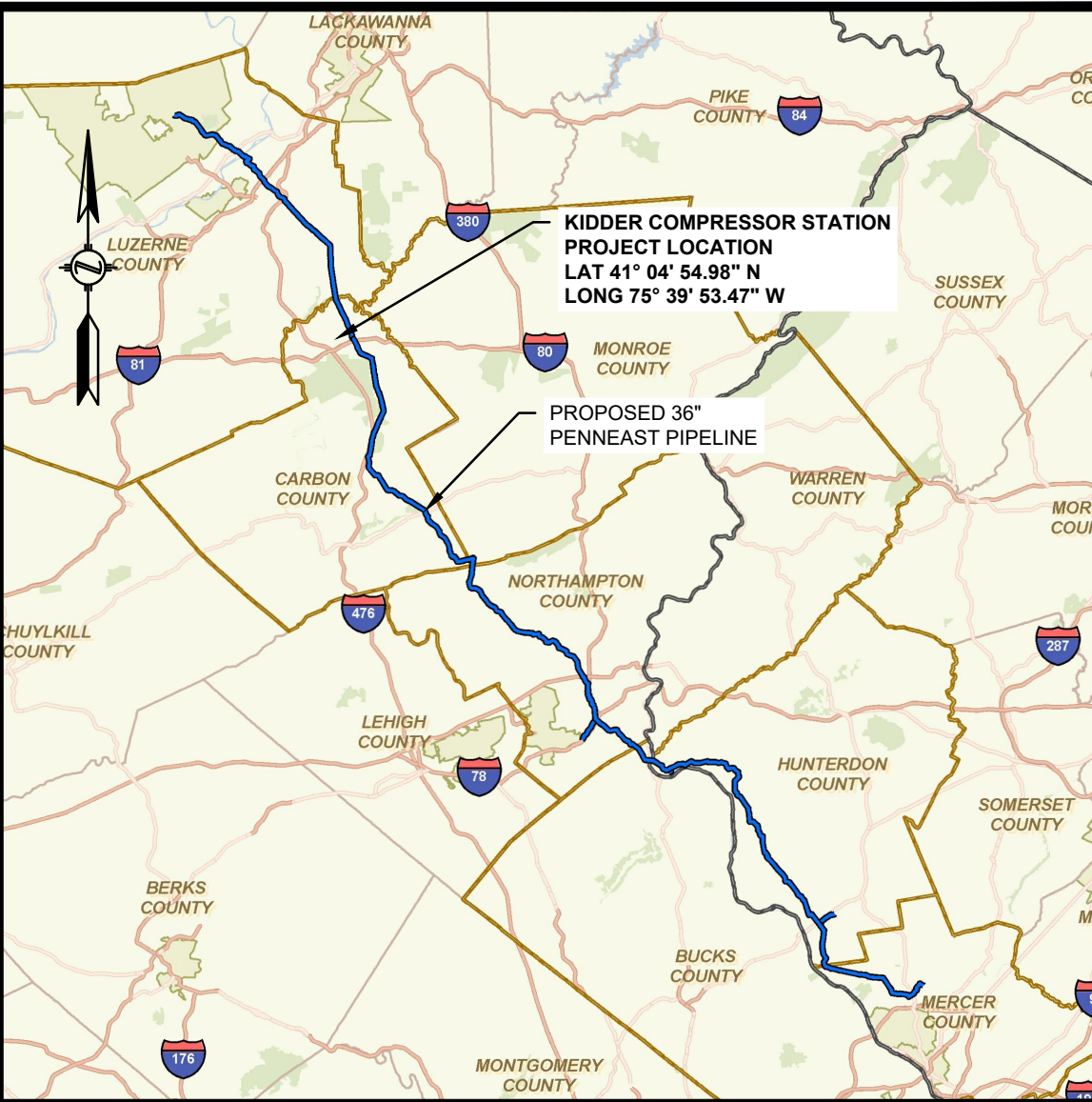
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PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
EXISTING CONDITIONS PLAN
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	KEK	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-03-003	REV. NO.	B



LOCATION MAP
SCALE: 1" = 15 MILES

LEGENDS

- PROPOSED**
- FACILITY PERMANENT EASEMENT
 - FACILITY LIMITS OF DISTURBANCE
 - ESGP BOUNDARY
- EXISTING**
- PROPERTY LINE
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - SOIL BOUNDARY
 - SOIL TYPE ABBREVIATION
 - EXISTING UTILITY POLE
 - LINE LIST NUMBER
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ENVIRONMENTAL NOTES:

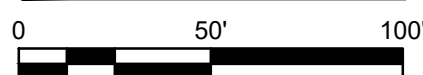
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CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



SITE PLAN



SCALE: 1" = 50'

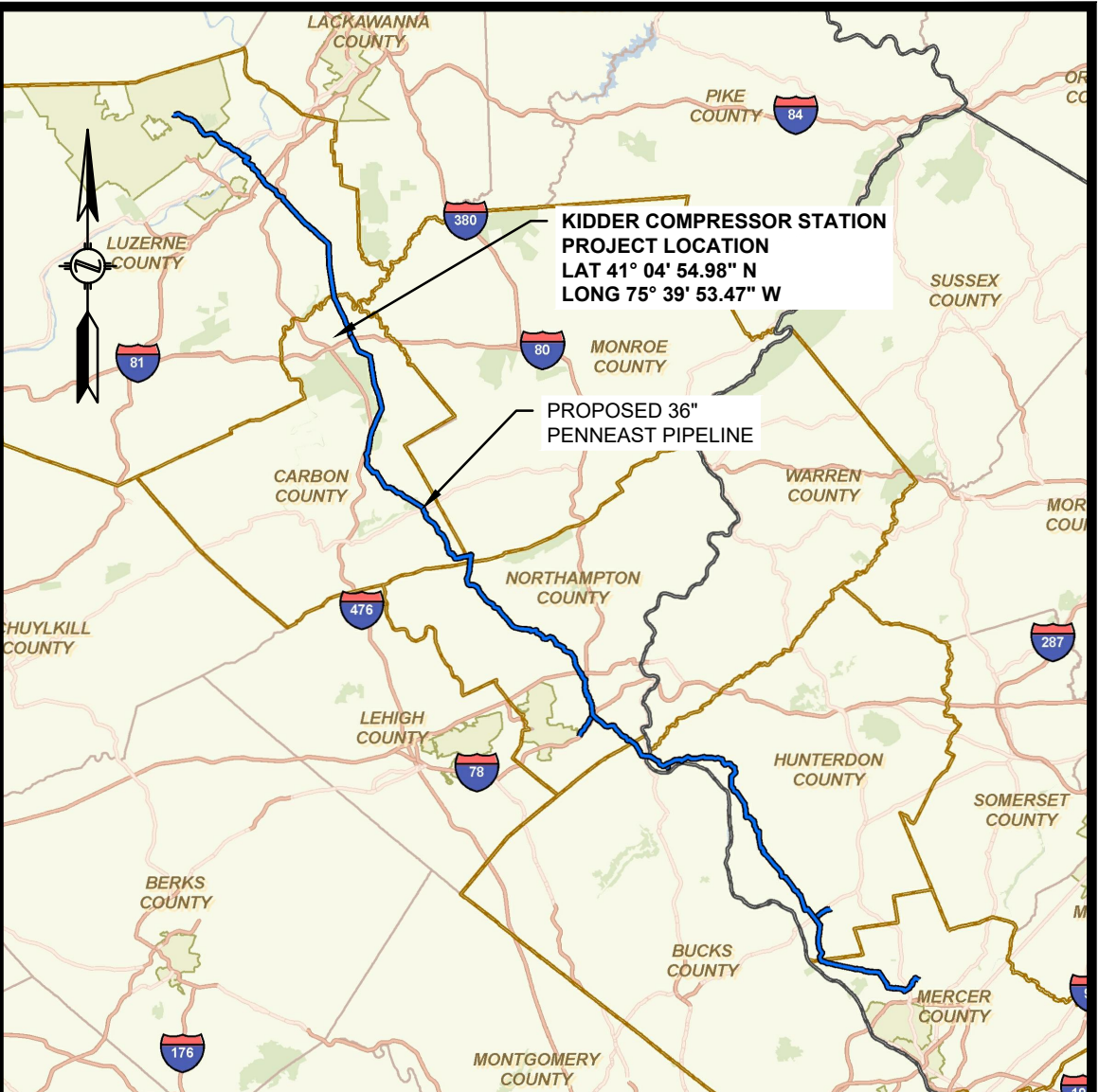
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LOCATION MAP

SCALE: 1" = 15 MILES

LEGENDS

- PROPOSED**
- FACILITY PERMANENT EASEMENT
 - FACILITY LIMITS OF DISTURBANCE
 - ESGCP BOUNDARY
- EXISTING**
- PROPERTY LINE
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - SOIL BOUNDARY
 - SOIL TYPE ABBREVIATION
 - EXISTING UTILITY POLE
 - LINE LIST NUMBER
 - WETLAND (DELINEATED)
 - WATERBODY (DELINEATED)
 - APPROXIMATE 100 YEAR FLOODWAY
 - APPROXIMATE 150' RIPARIAN BUFFER
 - EXISTING ROAD CENTERLINE
 - EXISTING OVERHEAD LINE



ENVIRONMENTAL NOTES:

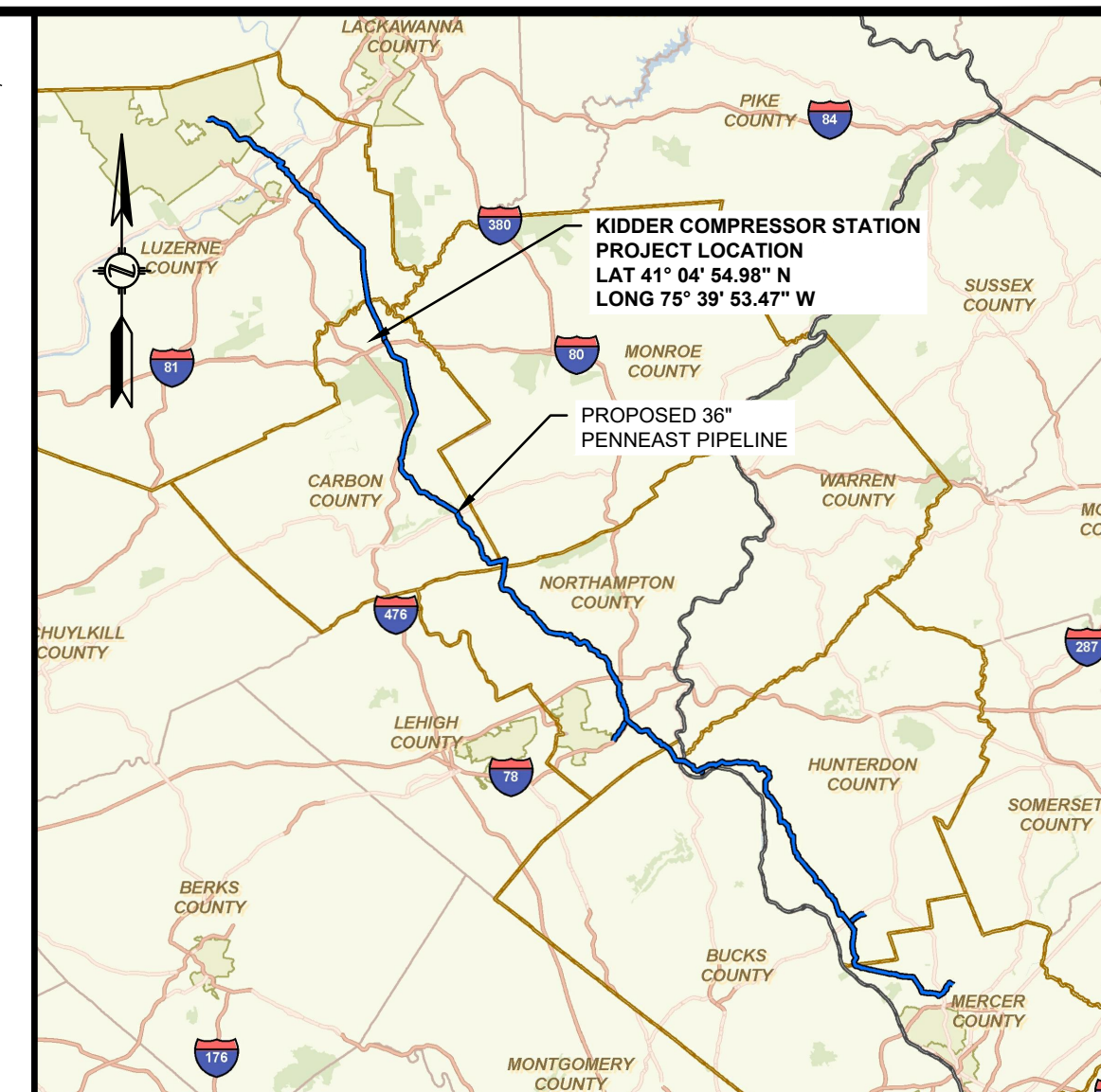
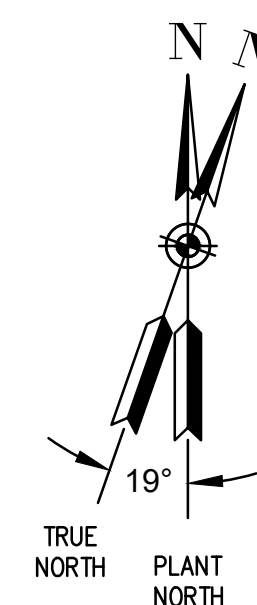
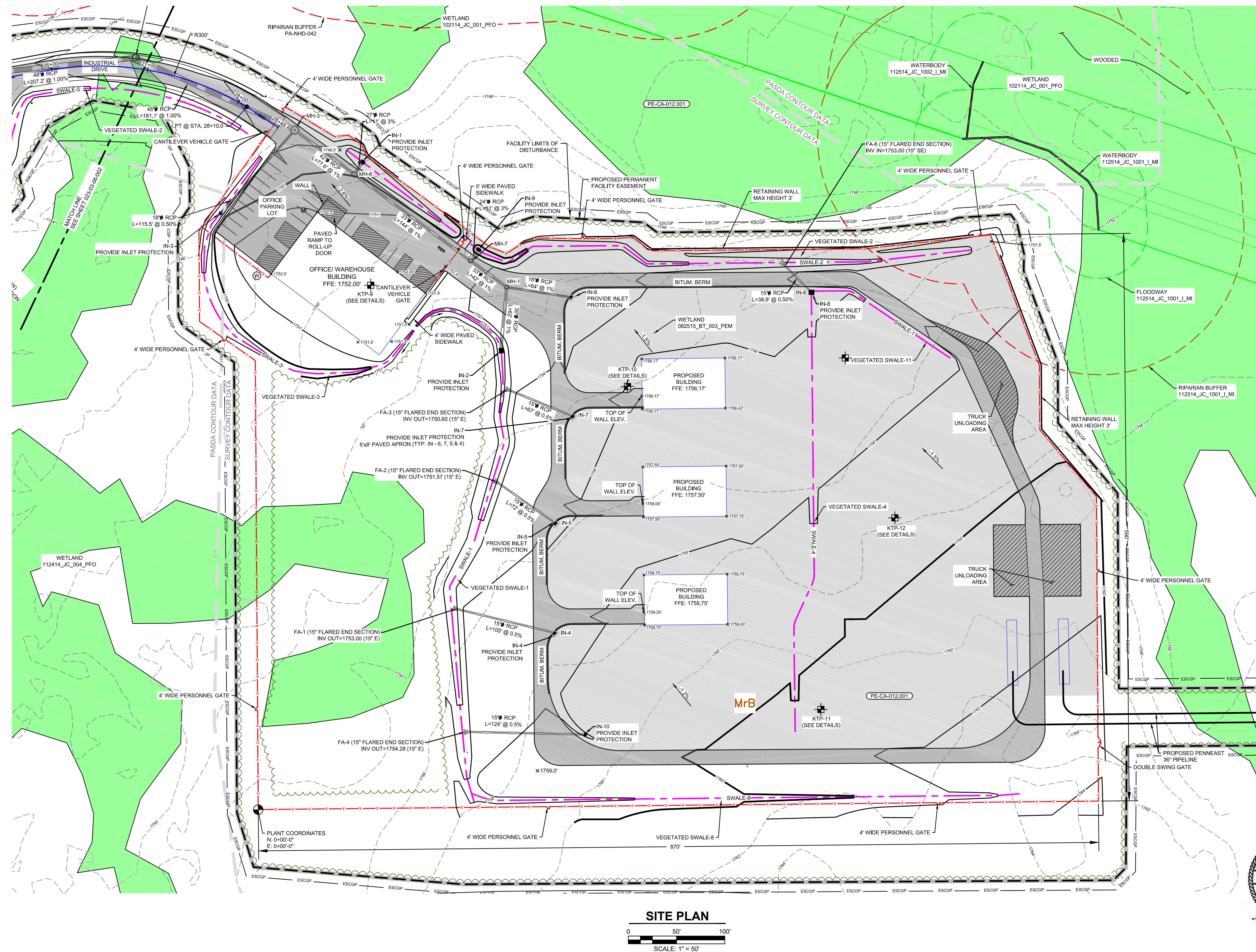
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PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
EXISTING CONDITIONS PLAN
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/2019
CHECKED BY	KEK	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-03-003.1	REV. NO.	B

















CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA










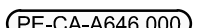





LOCATION MAP
SCALE: 1" = 15 MILES

LEGENDS

PROPOSED

-
-  PROPOSED PIPELINE
 PROPOSED PIPELINE PERMANENT EASEMENT
 FACILITY PERMANENT EASEMENT
 FACILITY LIMITS OF DISTURBANCE
 ESCRP BOUNDARY
 PROPOSED MAJOR CONTOURS
 PROPOSED MINOR CONTOURS
 PROPOSED SPOT ELEVATION
 PROPOSED OVERHEAD LINE
 PROPOSED FENCE
 PROPOSED ACCESS ROAD
 ROCK OUTLET PROTECTION
 PROPOSED CULVERT
 PROPOSED SWALE
 ORANGE SAFETY FENCE
 PROPOSED TREELINE

EXISTING

- | | |
|---|----------------------------------|
|  | PROPERTY LINE |
|  | EXISTING MAJOR CONTOUR |
|  | EXISTING MINOR CONTOUR |
|  | SOIL BOUNDARY |
| BhD | SOIL TYPE ABBREVIATION |
|  | EXISTING UTILITY POLE |
|  | LINE LIST NUMBER |
|  | WETLAND (DELINEATED) |
|  | WATERBODY (DELINEATED) |
|  | APPROXIMATE 100 YEAR FLOODWAY |
|  | APPROXIMATE 150' RIPARIAN BUFFER |
|  | EXISTING ROAD CENTERLINE |
|  | EXISTING OVERHEAD LINE |
|  | TEST PITS |

STORM DRAIN INLETS & MANHOLES				
ID	Type	RIM/ELEV	INVERT IN (ft)	INVERT OUT (ft)
IN#2	TYPE M INLET	1764.06	NA	1743.62 (3' 2")
IN#2	TYPE M DOUBLE	1750.00	NA	1745.54 (3' 0")
IN#3	YARD INLET	1744.74	NA	1741.69 (3' 8")
IN#4	TYPE M	1756.65	NA	1753.53 (3' 1")
IN#5	TYPE M	1751.98	NA	1750.95 (3' 1")
IN#6	TYPE M	1753.05	NA	1746.47 (3' 18")
IN#7	TYPE M	1754.20	NA	1750.95 (3' 1")
IN#8	TYPE M DOUBLE	1755.00	NA	1753.39 (3' 15")
IN#9	TYPE M DOUBLE	1749.00	NA	1745.24 (2' 4")
IN#10	YARD INLET	1757.50	NA	1754.90 (3' 5")
			1744.92 (3' 0")	
	5' DIA MH	1752.31	175.72 (3' 18")	1744.92 (3' 5")
MH#3	7' DIA MH	1746.73	1741.66 (4' 2")	1740.42 (4' 8")
			1741.11 (3' 8" SW)	
MH#6	5' DIA MH	1748.80	1742.96 (3' 3")	1742.44 (4' 8")
			1743.51 (3' 7")	
			1744.66 (3' 3")	
MH#7	5' DIA MH	1751.80	1744.94 (3' 8")	1744.46 (3' 3")

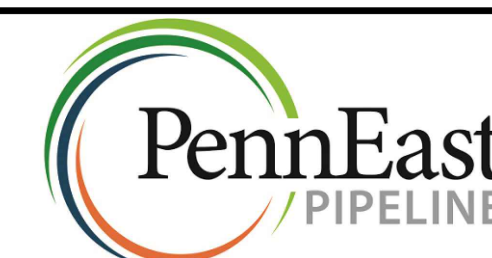


Know what's below.
Call before you dig.

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REFERENCE DRAWINGS		REVISIONS					
DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CK	APPR.
		A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
		B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
023-03-07-011	ACCESS ROAD PROFILE						

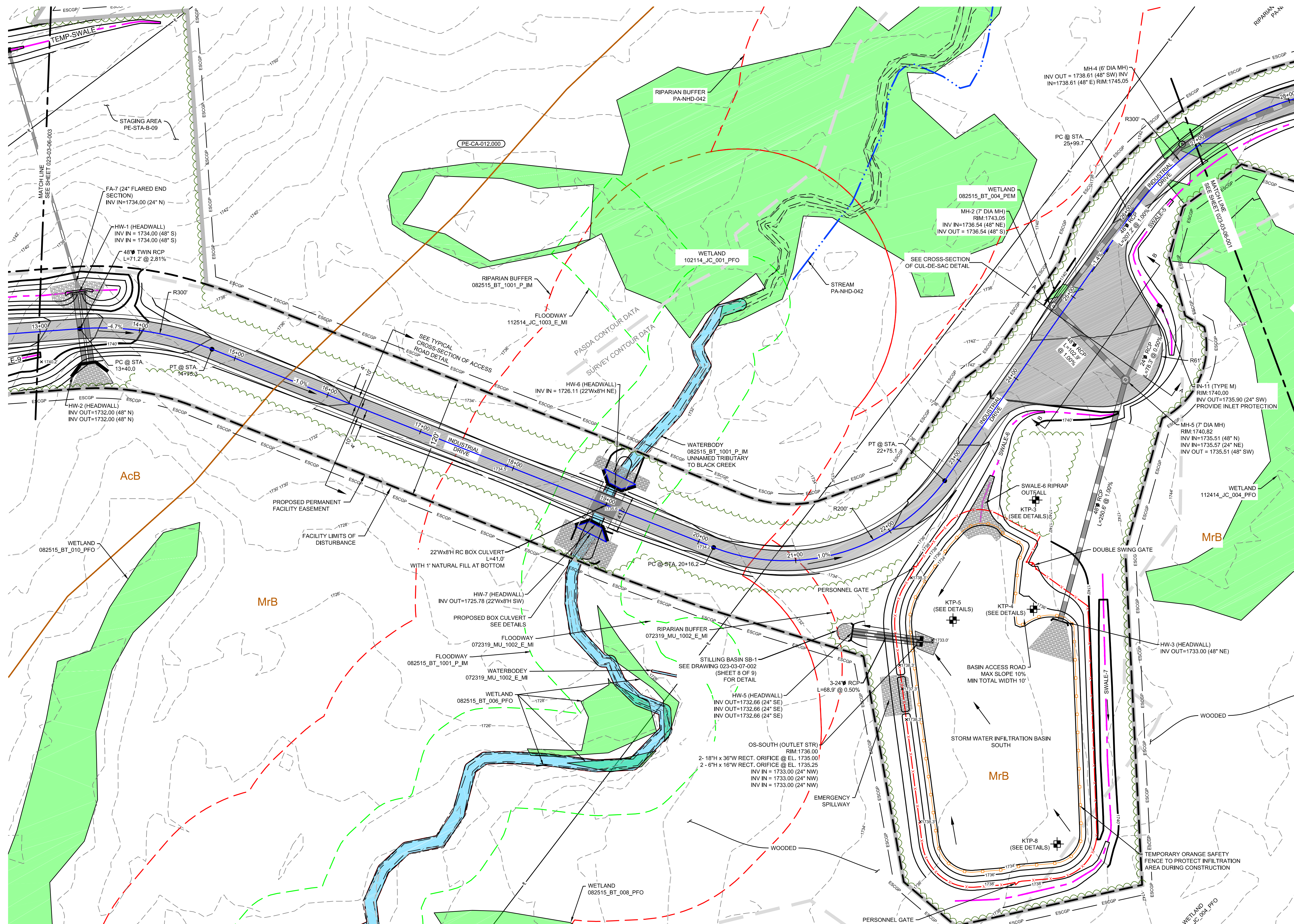


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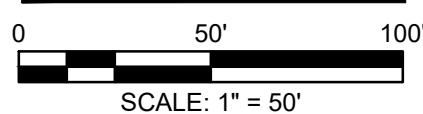
PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-06-001	REV. NO.	B

USGS QUAD: HICKORY RUN, PENNSYLVANIA



SITE PLAN



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023-03-07-012	CROSS SECTION DETAIL						
023-03-07-011	ACCESS ROAD PROFILE						



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PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	23-03-06-002	REV. NO.	B

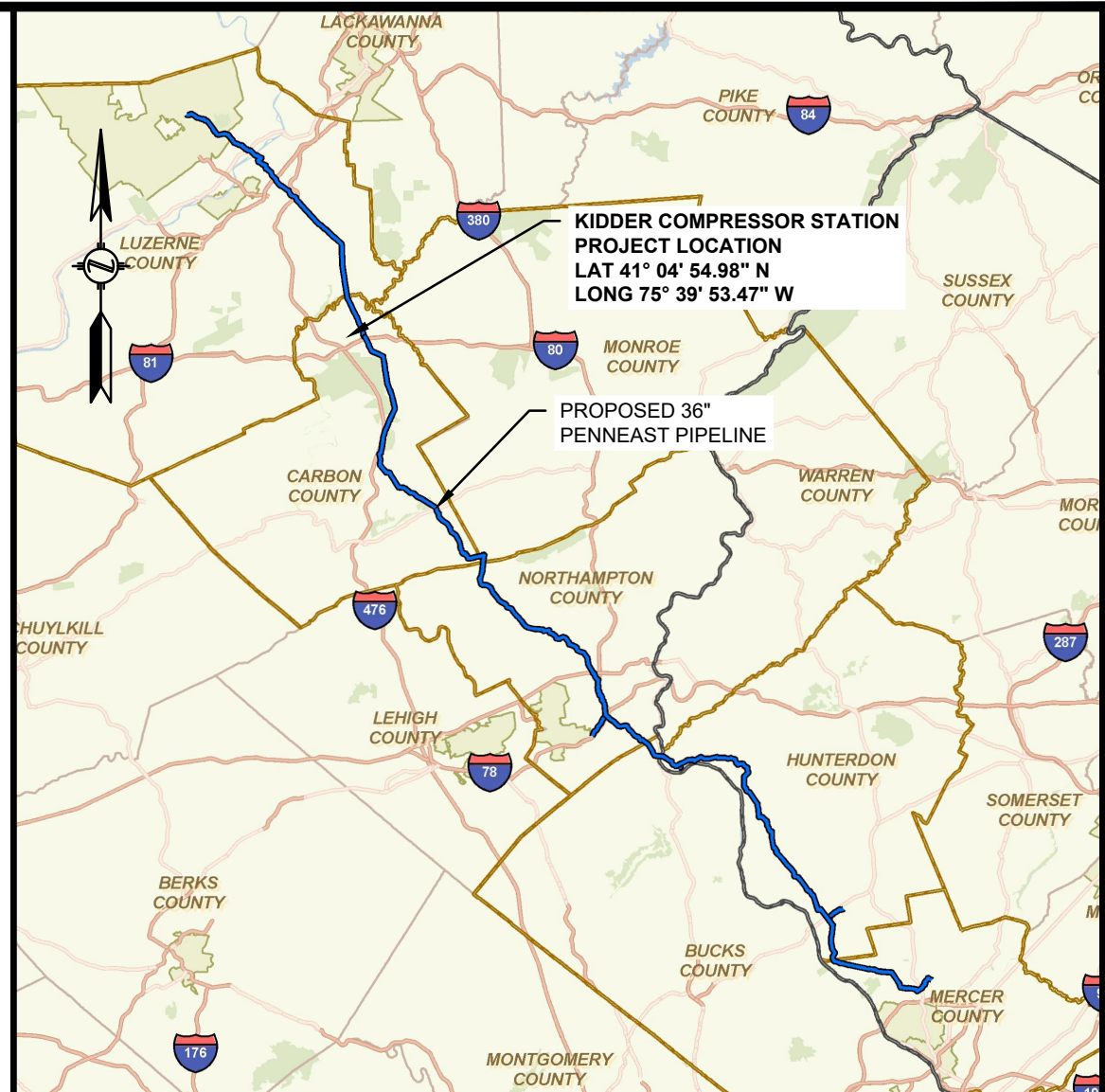
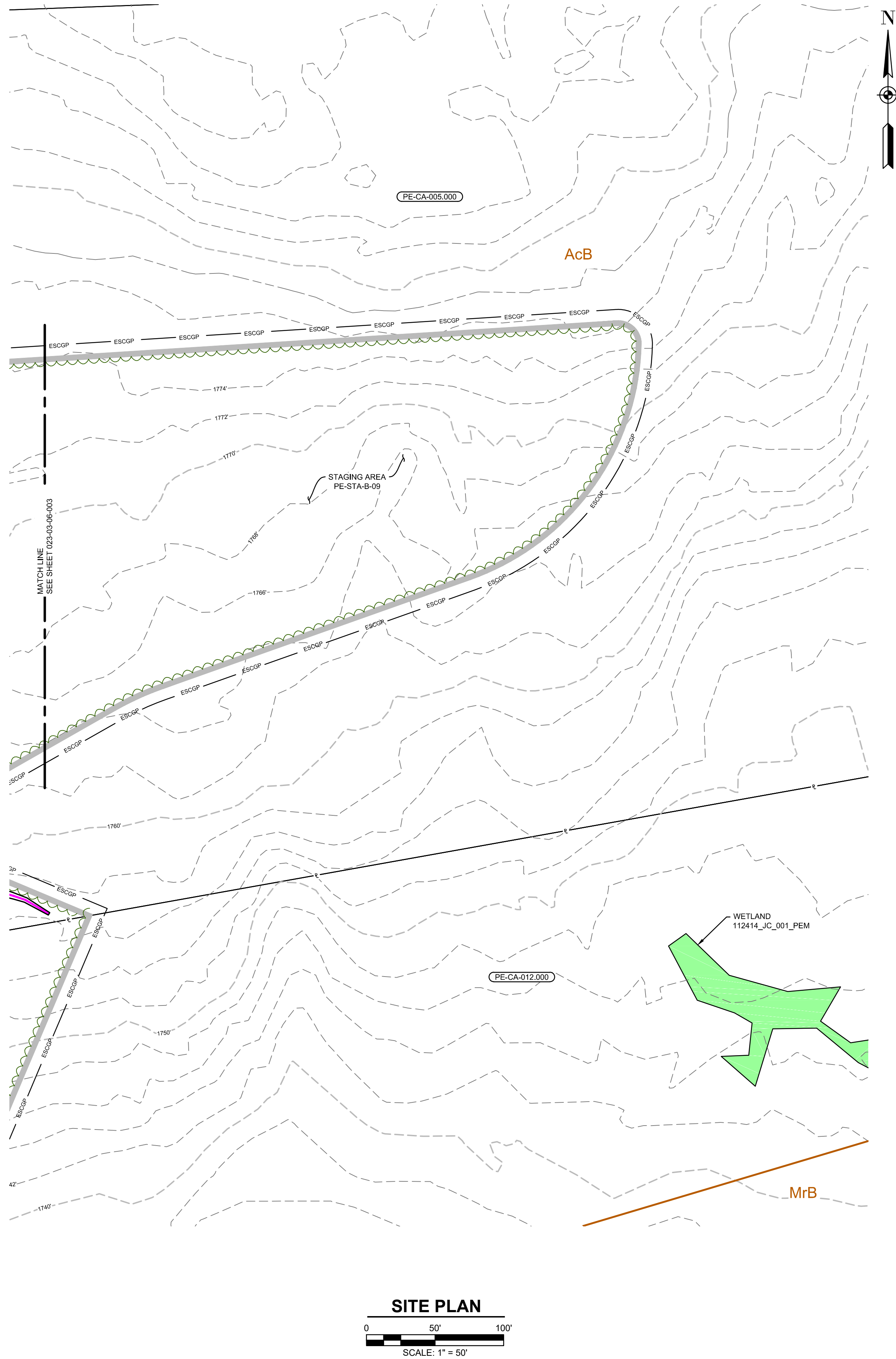


10/25/2019



Know what's below.
Call before you dig.

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



LOCATION MAP
SCALE: 1" = 15 MILES

LEGENDS

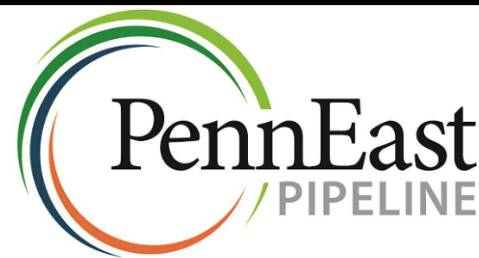
- PROPOSED**
- PROPOSED PIPELINE
 - PROPOSED PIPELINE PERMANENT EASEMENT
 - FACILITY PERMANENT EASEMENT
 - FACILITY LIMITS OF DISTURBANCE
 - ESCGP BOUNDARY
 - PROPOSED MAJOR CONTOURS
 - PROPOSED MINOR CONTOURS
 - PROPOSED SPOT ELEVATION
 - PROPOSED OVERHEAD LINE
 - PROPOSED FENCE
 - PROPOSED ACCESS ROAD
 - ROCK OUTLET PROTECTION
 - PROPOSED CULVERT
 - PROPOSED SWALE
 - ORANGE SAFETY FENCE
 - PROPOSED TREELINE
- EXISTING**
- PROPERTY LINE
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - SOIL BOUNDARY
 - SOIL TYPE ABBREVIATION
 - EXISTING UTILITY POLE
 - LINE LIST NUMBER
 - WETLAND (DELINEATED)
 - WATERBODY (DELINEATED)
 - APPROXIMATE 100 YEAR FLOODWAY
 - APPROXIMATE 150' RIPARIAN BUFFER
 - EXISTING ROAD CENTERLINE
 - EXISTING OVERHEAD LINE
 - TEST PITS



REFERENCE:

- EXISTING CONTOURS SHOWN WERE SURVEYED BY MOTT MACDONALD DURING 2015 THRU 2019. ADDITIONAL EXISTING CONTOURS WERE PROVIDED BY PICTOMETRY, 2015 AND SUPPLEMENTED FROM USGS.
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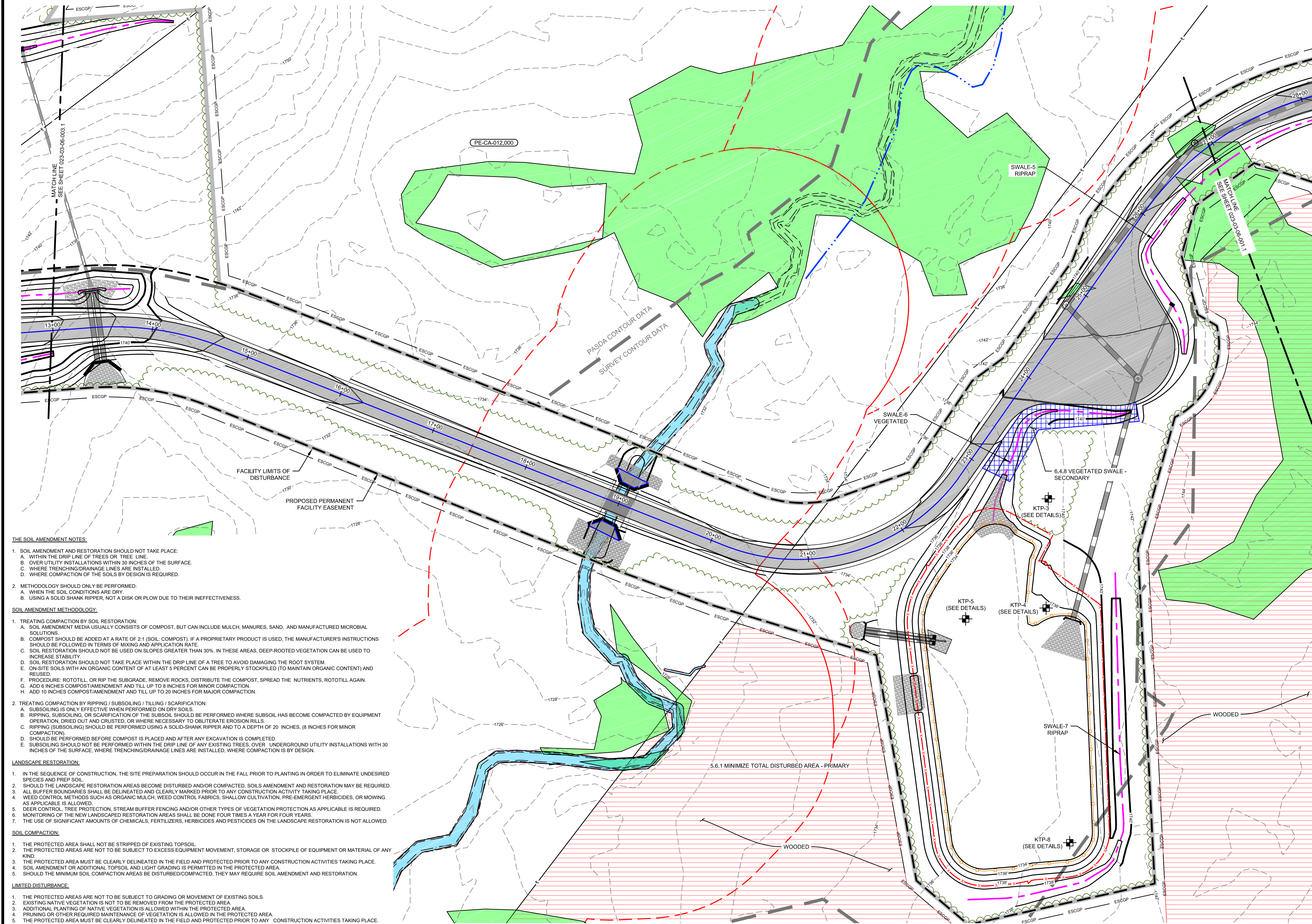
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DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
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		B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
023-03-07-011	ACCESS ROAD PROFILE						



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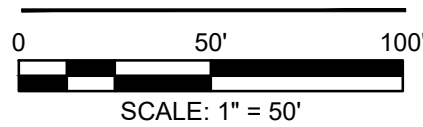
PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION POST CONSTRUCTION STORMWATER MANAGEMENT PLAN CARBON COUNTY, PENNSYLVANIA			
DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-06-003.01	REV. NO.	B

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



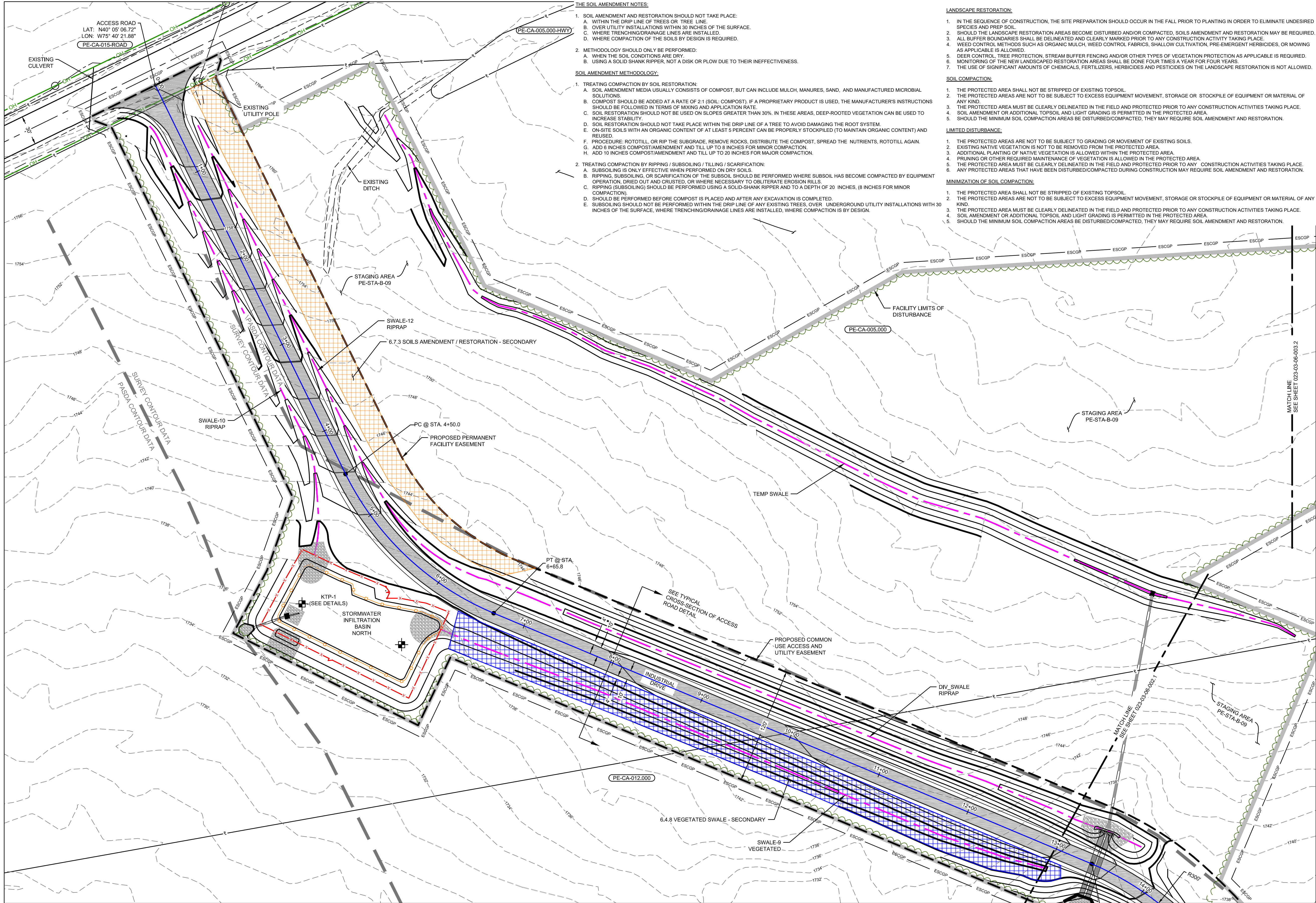
- THE SOIL AMENDMENT NOTES:**
- SOIL AMENDMENT AND RESTORATION SHOULD NOT TAKE PLACE:
 - WITHIN THE DRIP LINE OF TREES OR TREE LINE.
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 - WHERE COMPACTION OF THE SOILS BY DESIGN IS REQUIRED.
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 - WEED CONTROL METHODS SUCH AS ORGANIC MULCH, WEED CONTROL FABRICS, SHALLOW CULTIVATION, PRE-EMERGENT HERBICIDES, OR MOWING AS APPLICABLE IS ALLOWED.
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SITE PLAN



REFERENCE:

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA



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SOIL COMPACTION:

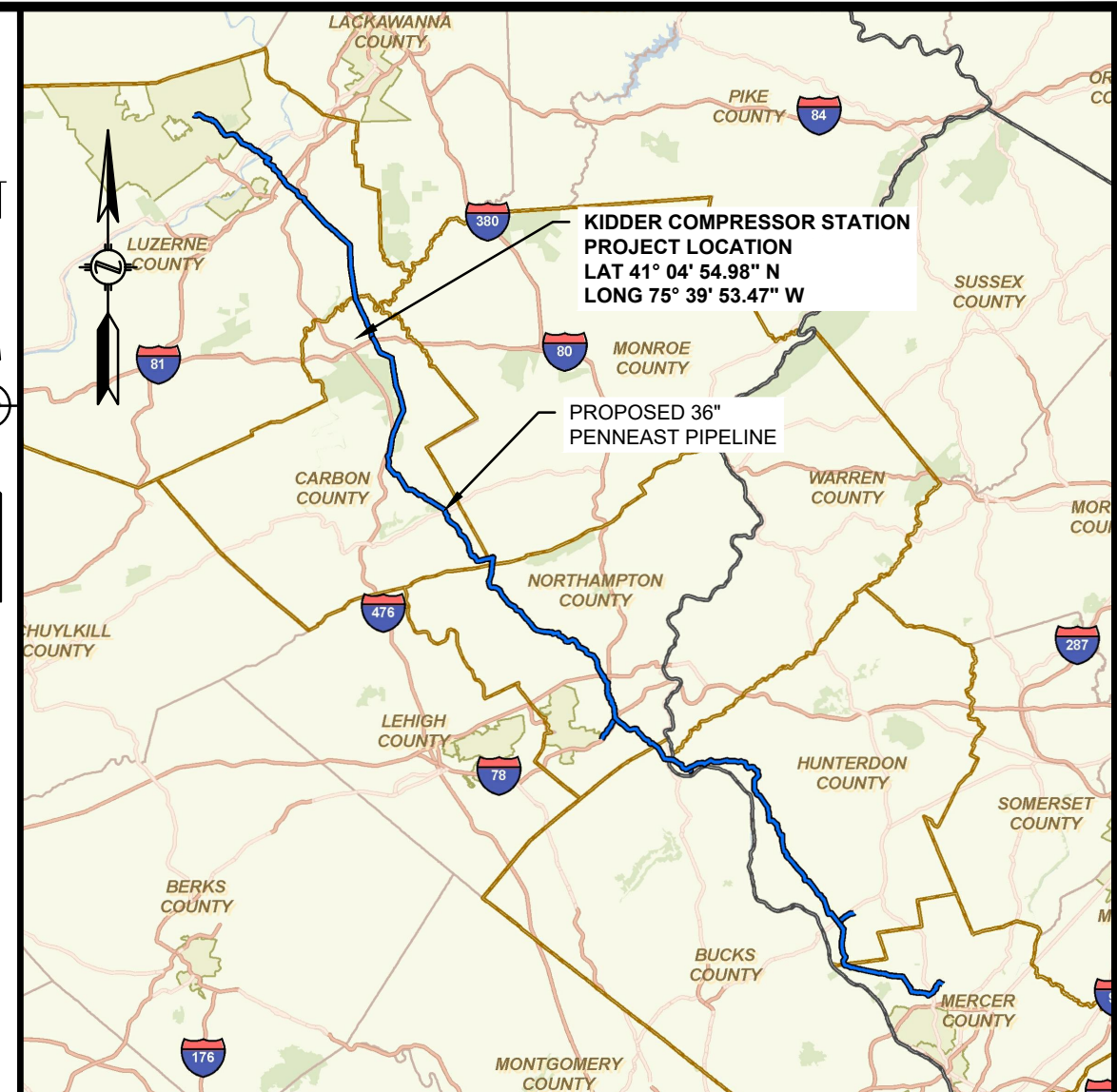
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LOCATION MAP
SCALE: 1" = 15 MILES

LEGENDS

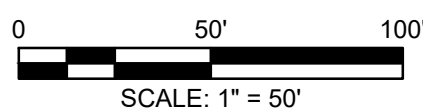
PROPOSED

- PROPOSED PIPELINE
- PROPOSED PIPELINE PERMANENT EASEMENT
- FACILITY PERMANENT EASEMENT
- FACILITY LIMITS OF DISTURBANCE
- ESCCP BOUNDARY
- 1260'
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- PROPOSED SPOT ELEVATION
- OH
- PROPOSED OVERHEAD LINE
- PROPOSED FENCE
- PROPOSED ACCESS ROAD
- ROCK OUTLET PROTECTION
- PROPOSED CULVERT
- PROPOSED SWALE
- ORANGE SAFETY FENCE
- PROPOSED TREELINE
- 5.6.1 MINIMIZE TOTAL DISTURBED AREA - PRIMARY
- 6.7.2 LANDSCAPE RESTORATION - PRIMARY
- 5.6.2 MINIMIZE SOIL COMPACTION - SECONDARY
- 6.7.3 SOILS AMENDMENT / RESTORATION - SECONDARY
- 6.4.8 VEGETATED SWALE - SECONDARY

EXISTING

- PROPERTY LINE
- 660'
- EXISTING MAJOR CONTOUR
- 658'
- EXISTING MINOR CONTOUR
- EXISTING UTILITY POLE
- LINE LIST NUMBER
- WETLAND (DELINEATED)
- WATERBODY (DELINEATED)
- EXISTING ROAD CENTERLINE
- TEST PITS

SITE PLAN



REFERENCE:

1. EXISTING CONTOURS SHOWN WERE SURVEYED BY MOTT MACDONALD DURING 2015 THRU 2019. ADDITIONAL EXISTING CONTOURS WERE PROVIDED BY PICTOMETRY, 2015 AND SUPPLEMENTED FROM USGS.
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REFERENCE DRAWINGS		REVISIONS					
DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
		A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
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023-03-07-011	ACCESS ROAD PROFILE						



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PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
SITE RESTORATION PLAN
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-06-003.1	REV. NO.	B



CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA

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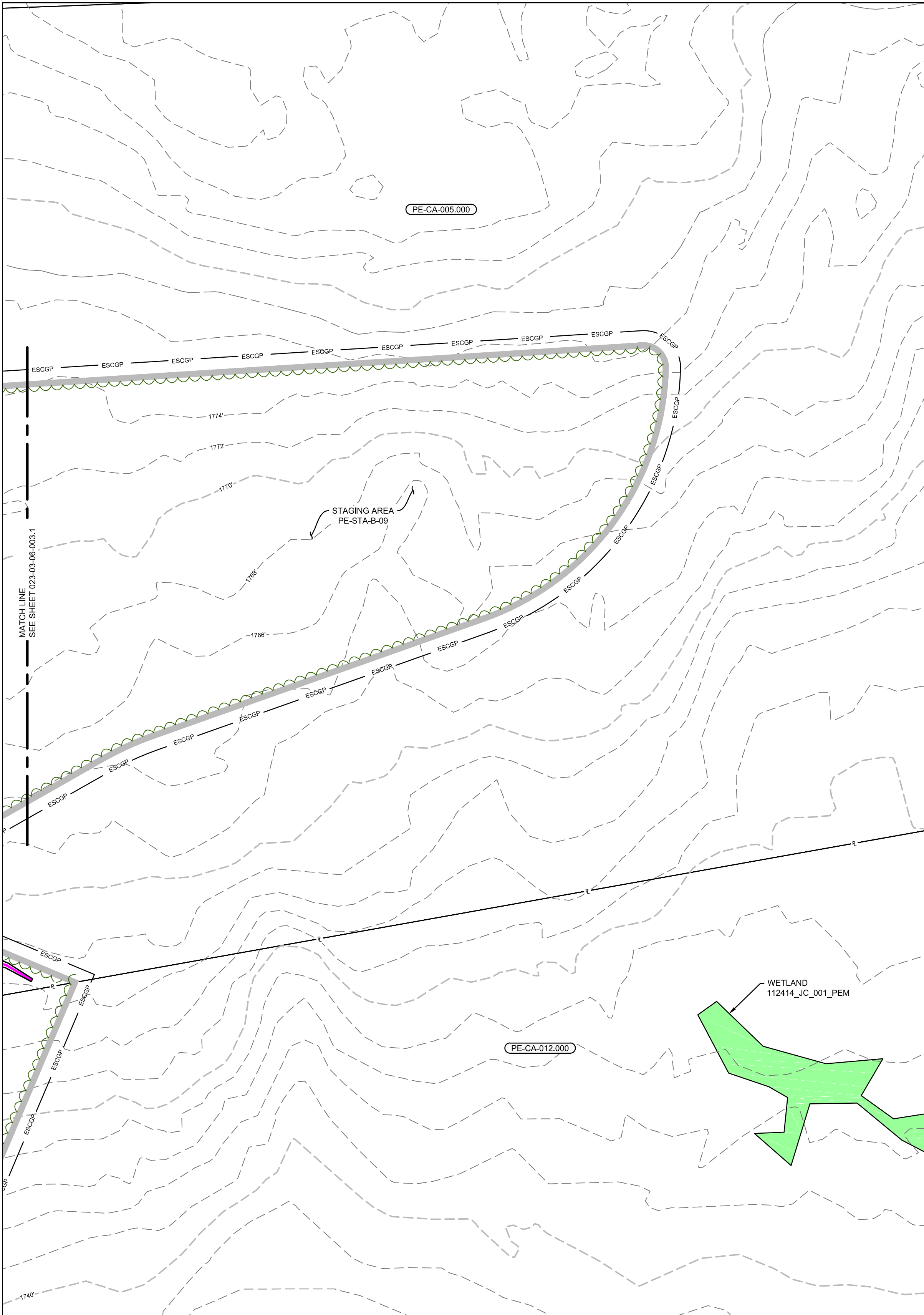
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- THE PROTECTED AREA MUST BE CLEARLY DELINEATED IN THE FIELD AND PROTECTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE.
- SOIL AMENDMENT OR ADDITIONAL TOPSOIL AND LIGHT GRADING IS PERMITTED IN THE PROTECTED AREA.
- SHOULD THE MINIMUM SOIL COMPACTION AREAS BE DISTURBED/COMPACTED, THEY MAY REQUIRE SOIL AMENDMENT AND RESTORATION.

LIMITED DISTURBANCE:

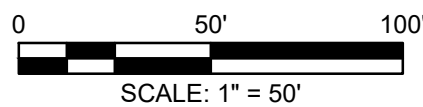
- THE PROTECTED AREAS ARE NOT TO BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOILS.
- EXISTING NATIVE VEGETATION IS NOT TO BE REMOVED FROM THE PROTECTED AREA.
- ADDITIONAL PLANTING OF NATIVE VEGETATION IS ALLOWED WITHIN THE PROTECTED AREA.
- PRUNING OR OTHER REQUIRED MAINTENANCE OF VEGETATION IS ALLOWED IN THE PROTECTED AREA.
- THE PROTECTED AREA MUST BE CLEARLY DELINEATED IN THE FIELD AND PROTECTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE.
- ANY PROTECTED AREAS THAT HAVE BEEN DISTURBED/COMPACTED DURING CONSTRUCTION MAY REQUIRE SOIL AMENDMENT AND RESTORATION.

MINIMIZATION OF SOIL COMPACTION:

- THE PROTECTED AREA SHALL NOT BE STRIPPED OF EXISTING TOPSOIL.
- THE PROTECTED AREAS ARE NOT TO BE SUBJECT TO EXCESS EQUIPMENT MOVEMENT, STORAGE OR STOCKPILE OF EQUIPMENT OR MATERIAL OF ANY KIND.
- THE PROTECTED AREA MUST BE CLEARLY DELINEATED IN THE FIELD AND PROTECTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE.
- SOIL AMENDMENT OR ADDITIONAL TOPSOIL AND LIGHT GRADING IS PERMITTED IN THE PROTECTED AREA.
- SHOULD THE MINIMUM SOIL COMPACTION AREAS BE DISTURBED/COMPACTED, THEY MAY REQUIRE SOIL AMENDMENT AND RESTORATION.



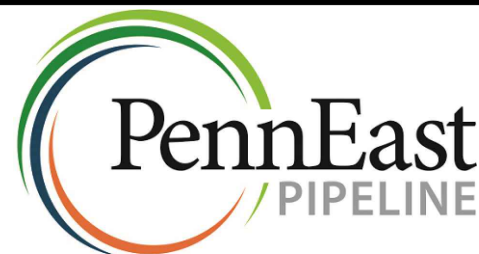
SITE PLAN



REFERENCE:

- EXISTING CONTOURS SHOWN WERE SURVEYED BY MOTT MACDONALD DURING 2015 THRU 2019. ADDITIONAL EXISTING CONTOURS WERE PROVIDED BY PICTOMETRY, 2015 AND SUPPLEMENTED FROM USGS.
- SITE TOPOGRAPHIC AND FEATURE SURVEY PERFORMED BY MOTT MACDONALD 2015 THRU 2019.
- PROPERTY INFORMATION ON THIS PLAN BASED ON GIS TAX MAP DATA AND RECTIFIED PROPERTY LINES AND ARE NOT THE RESULT OF A BOUNDARY SURVEY.
- WATERBODY INFORMATION PROVIDED BY AECOM 2016 THRU 2019.
- HORIZONTAL DATUM IS UTM83-16F; VERTICAL DATUM IS NAVD1988.

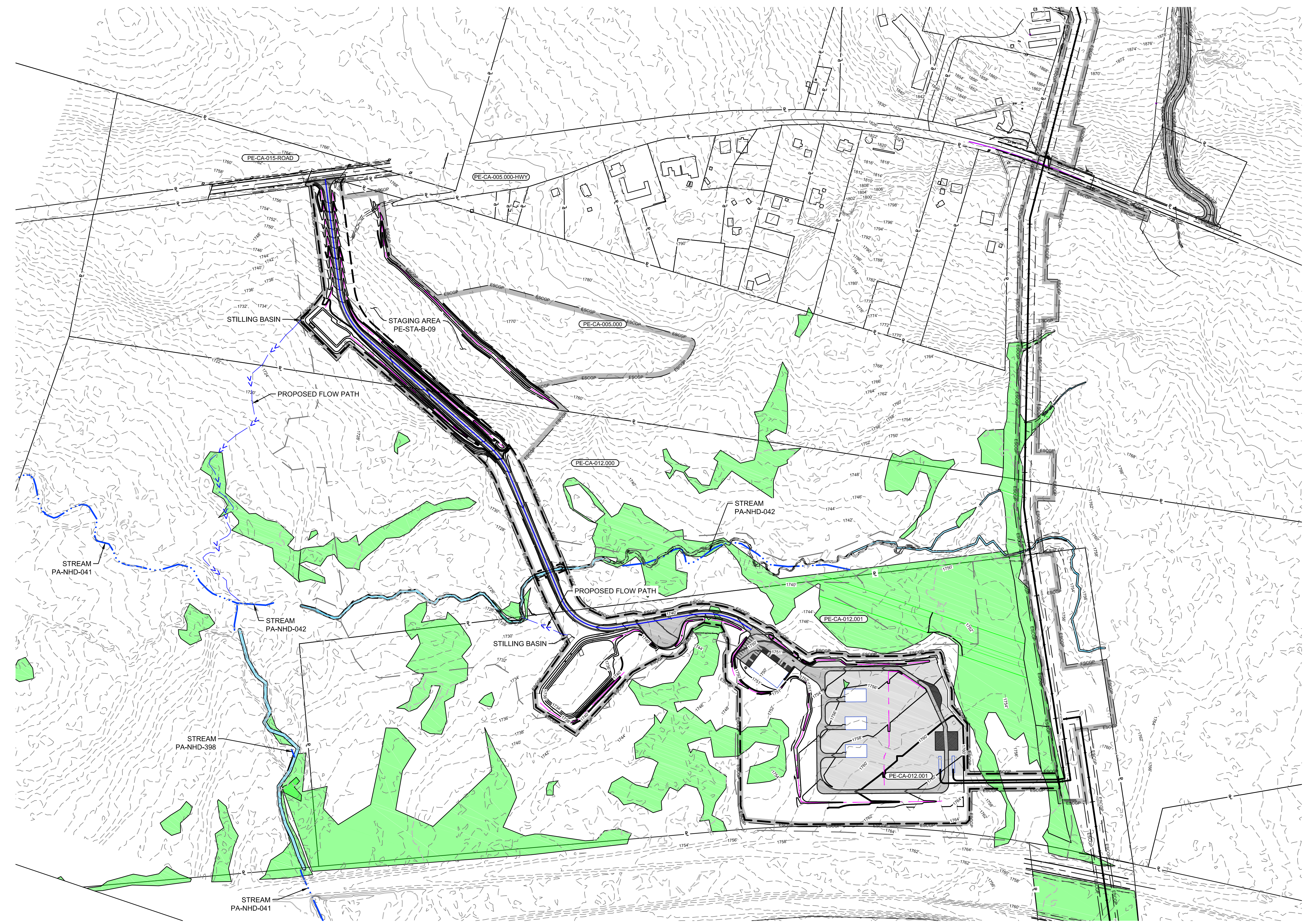
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		B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
023-03-07-011	ACCESS ROAD PROFILE						



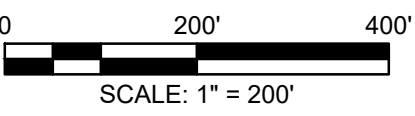
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PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION SITE RESTORATION PLAN CARBON COUNTY, PENNSYLVANIA			
DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-06-003.2	REV. NO.	B

CARBON COUNTY, PENNSYLVANIA
USGS QUAD: HICKORY RUN, PENNSYLVANIA

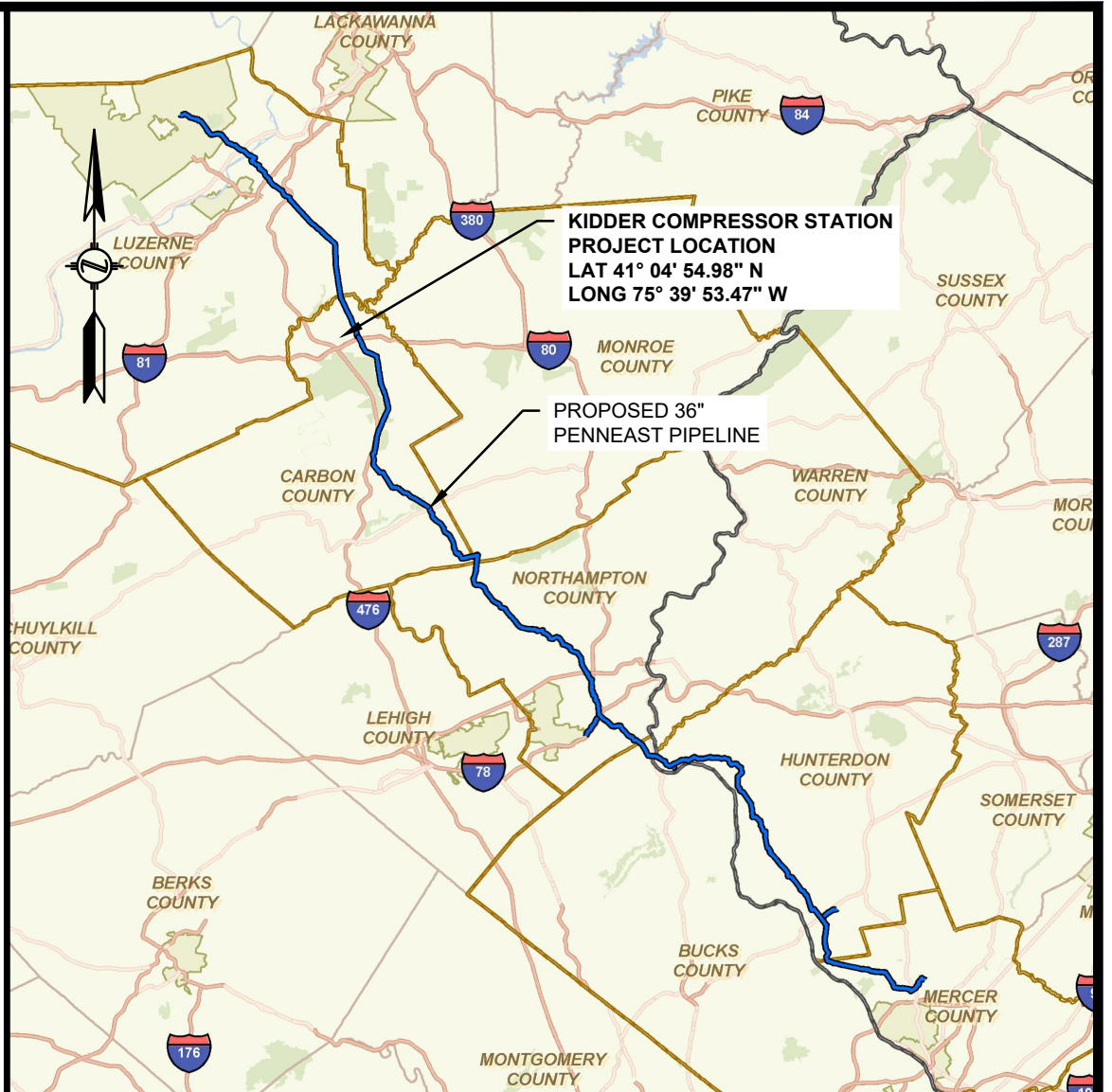
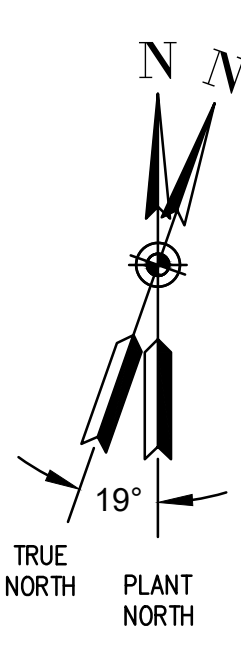


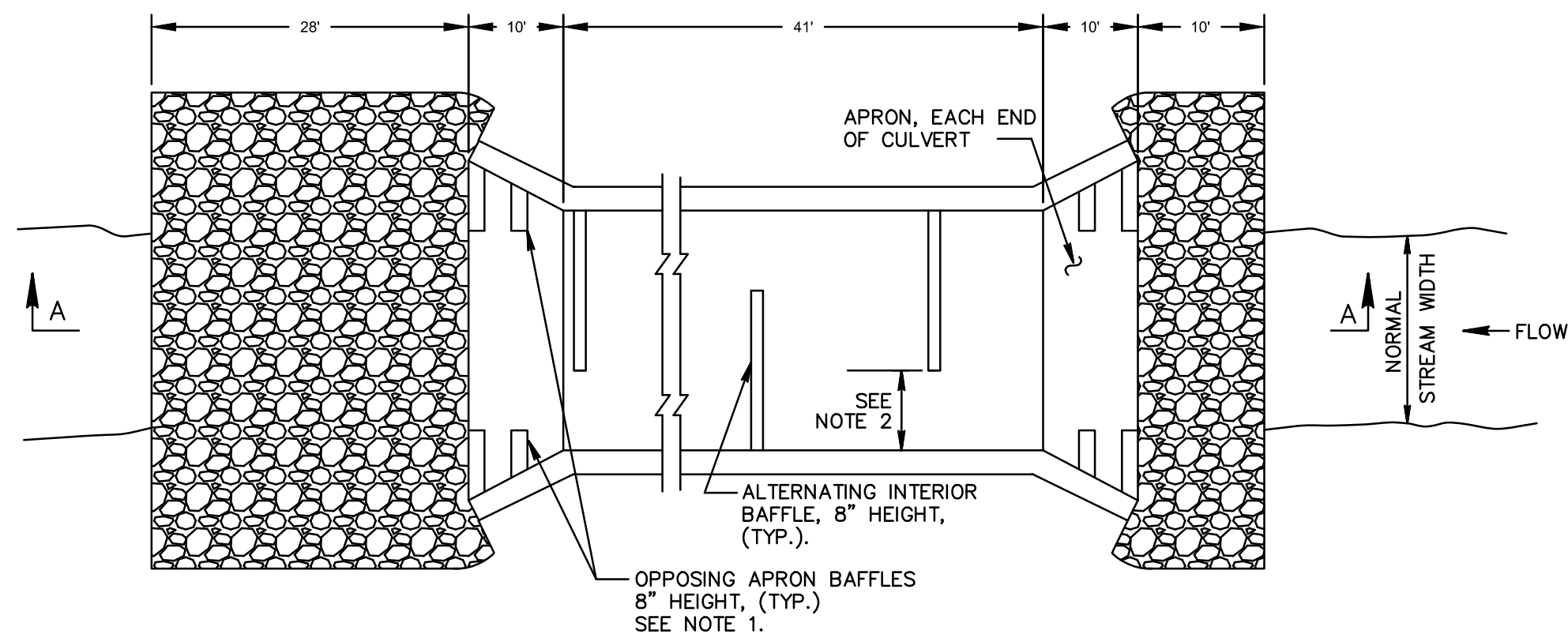
SITE PLAN



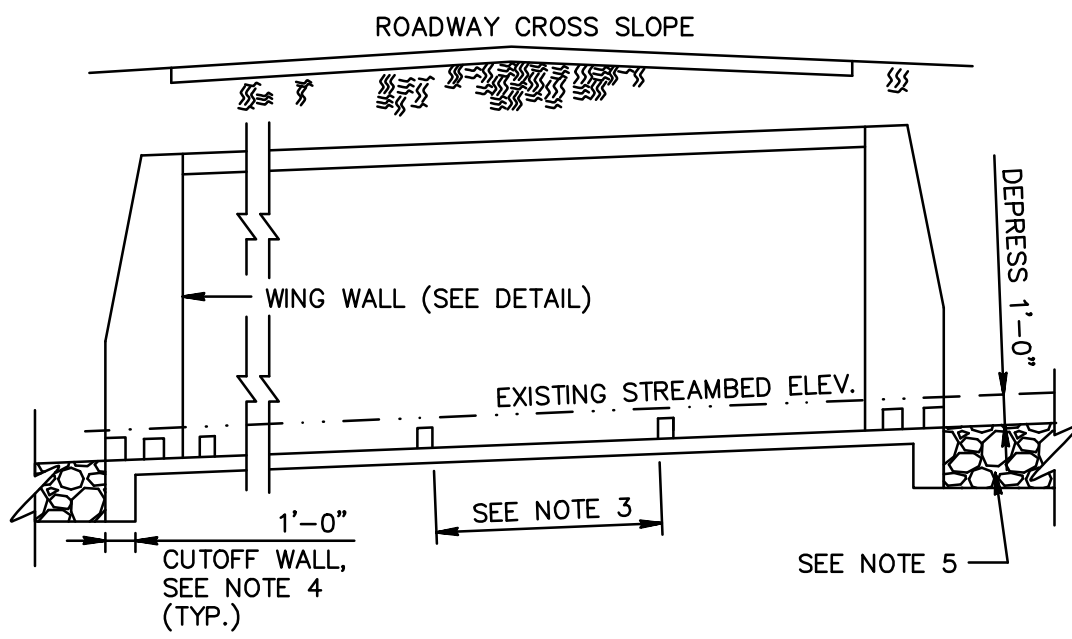
- REFERENCE:
- EXISTING CONTOURS SHOWN WERE SURVEYED BY MOTT MACDONALD DURING 2015 THRU 2019. ADDITIONAL EXISTING CONTOURS WERE PROVIDED BY PICTOMETRY, 2015 AND SUPPLEMENTED FROM USGS.
 - SITE TOPOGRAPHIC AND FEATURE SURVEY PERFORMED BY MOTT MACDONALD 2015 THRU 2019.
 - PROPERTY INFORMATION ON THIS PLAN BASED ON GIS TAX MAP DATA AND RECTIFIED PROPERTY LINES AND ARE NOT THE RESULT OF A BOUNDARY SURVEY.
 - WATERBODY INFORMATION PROVIDED BY AECOM 2016 THRU 2019.
 - HORIZONTAL DATUM IS UTM83-16F. VERTICAL DATUM IS NAVD1988.

REFERENCE DRAWINGS			REVISIONS				
DWG. NO.	TITLE	NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
		A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
		B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
023-03-07-01	ACCESS ROAD PROFILE						

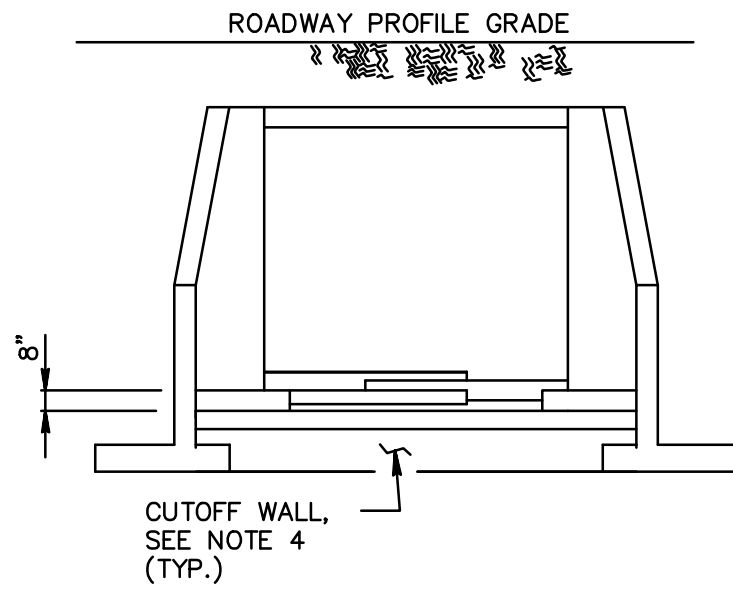




PLAN VIEW

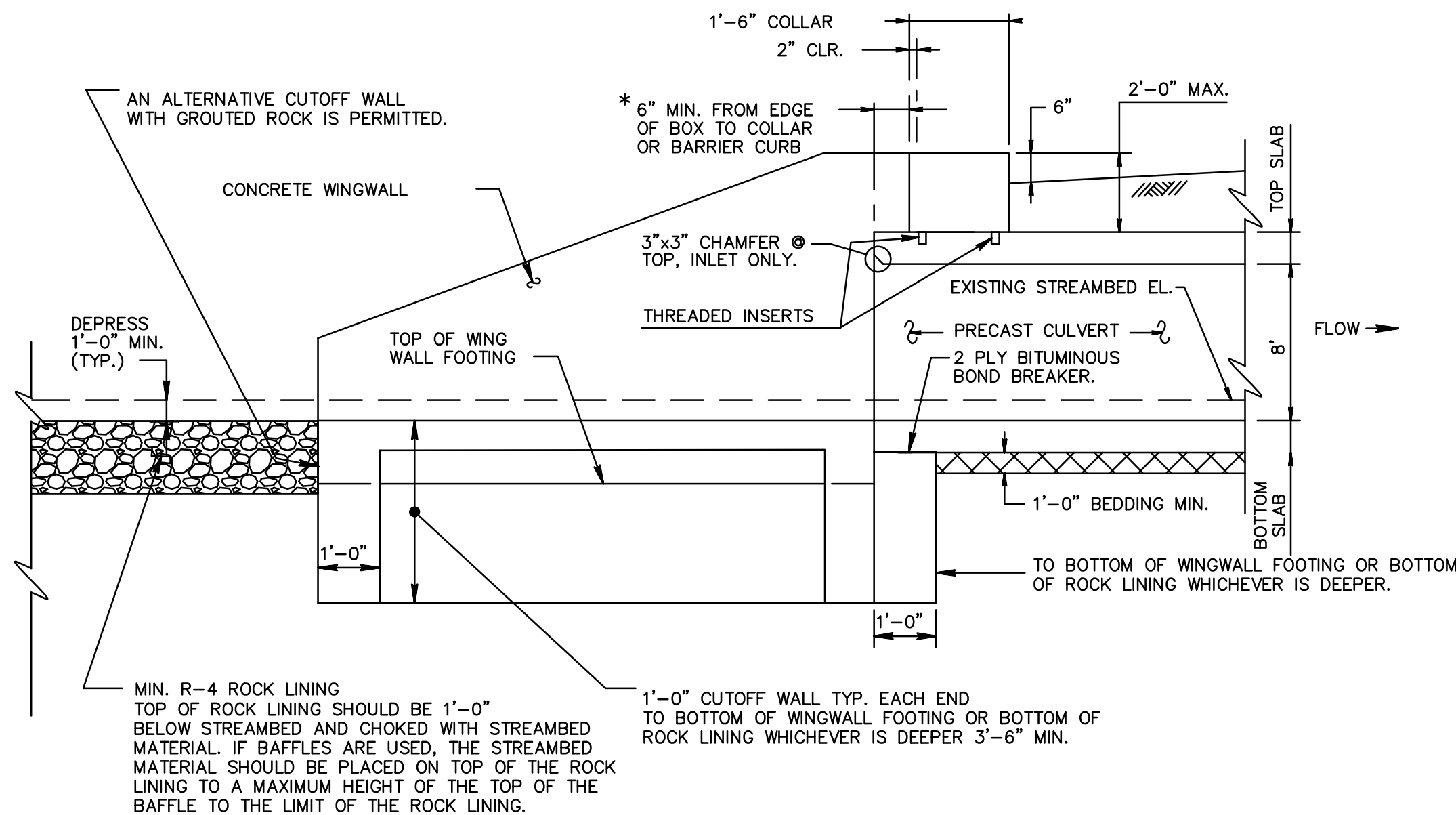


SECTION A-A

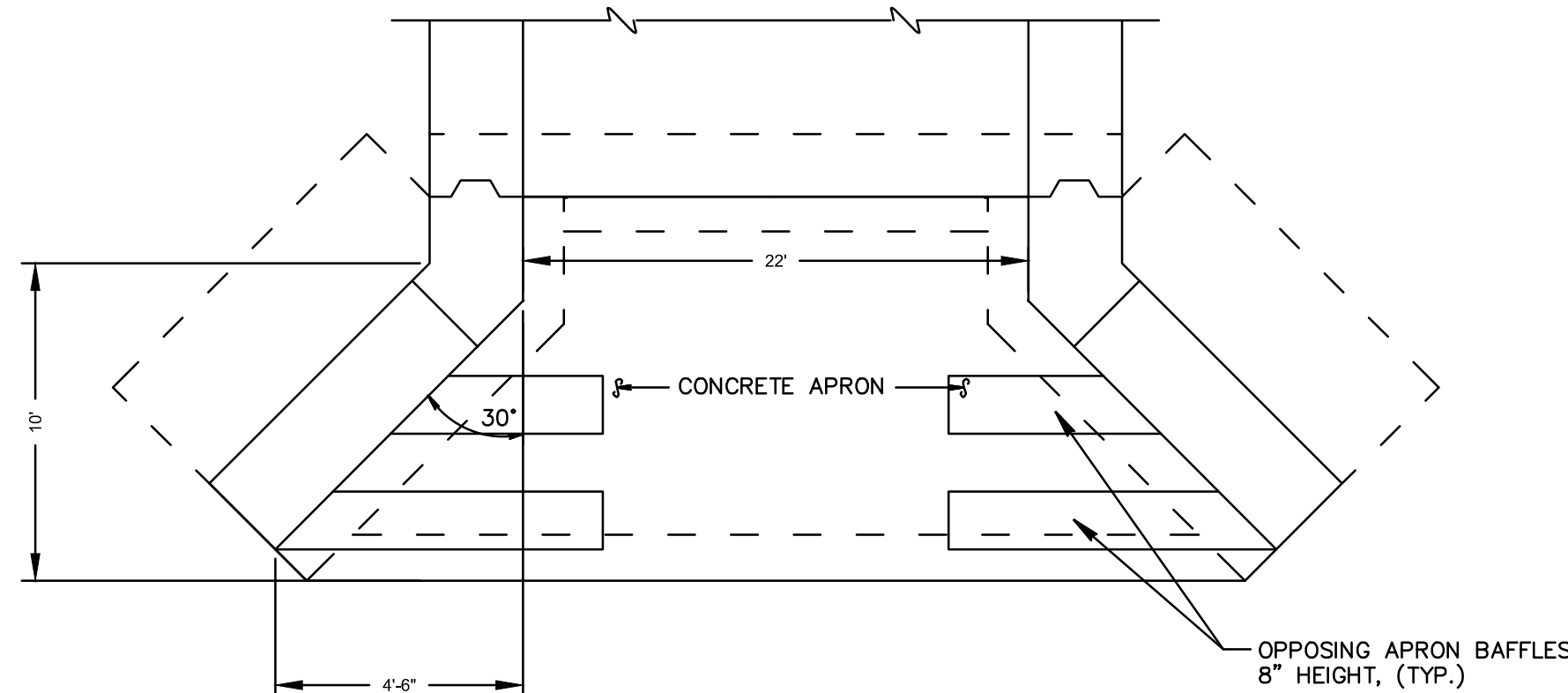


ELEVATION

PRE-FABRICATED BOX CULVERT
NOT TO SCALE



PROFILE



PLAN
(COLLAR OR BARRIER CURB NOT SHOWN)

CULVERT WINGWALLS
NOT TO SCALE

BOX CULVERT DESIGN CRITERIA

THE ENGINEER OF RECORD SHALL DELEGATE THE RESPONSIBILITY FOR THE DESIGN AND PLANS OF THE BOX CULVERT TO A SPECIALTY ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA. BASIS OF DESIGN AND PROVIDED ITEMS ASSOCIATED WITH THE BOX CULVERT CONSTRUCTION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- SUBMIT SHOP DRAWINGS AND CALCULATIONS TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATING ANY BRIDGE COMPONENTS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SIGNED, DATED, AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN PENNSYLVANIA.
- BOX CULVERT DESIGN AND CONSTRUCTION SHALL MEET THE FOLLOWING CRITERIA:
 - DESIGN SPECIFICATIONS: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LOAD AND RESISTANCE FACTOR (LRFD) BRIDGE DESIGN SPECIFICATIONS (7TH) EDITION AND ALL SUBSEQUENT INTERIMS.
 - GOVERNING CONSTRUCTION SPECIFICATIONS: COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PENNDOT) PUBLICATION 408/2016 SPECIFICATIONS AS AMENDED BY THESE PLANS OR PROJECT SPECIFICATIONS.
 - DESIGN LOADINGS:
 - DEAD LOADS
 - SELF-WEIGHT OF ALL STRUCTURAL COMPONENTS AND TRAFFIC RAILING
 - EARTHWORK/FILL - 120 PCF
 - ASPHALT - 145 PCF
 - FUTURE ADDITIONAL ASPHALT - 15 PSF
 - LIVE LOADS FOR BOX CULVERT AND WING WALLS
 - HL-93 DESIGN LOAD
 - PENNDOT LEGAL LOAD FOR LOAD RATING
 - CONSTRUCTION LOADING: IT IS THE CONSTRUCTION CONTRACTOR'S RESPONSIBILITY TO PROVIDE SUPPORT FOR CONSTRUCTION LOADS THAT EXCEED HL-93 LOADING AND ANY CONSTRUCTION LOAD APPLIED PRIOR TO THE PLACEMENT OF THE DESIGN COMPACTED FILL ABOVE THE TOP SLAB.
 - TL-3 TRAFFIC RAILING LOAD
 - DESIGN SERVICE LIFE = 75 YEARS
 - MATERIAL PROPERTIES AND CONCRETE CLEAR COVER SHALL MEET PENNDOT REQUIREMENTS.
 - FILTER FABRIC SHALL BE PLACED OVER JOINTS IN SLABS AND HEADWALLS AS REQUIRED TO PREVENT SOIL LEACHING UNDER FULLY SUBMERGED CONDITIONS. THE DESIGN LIFE OF THE FILTER FABRIC AND PLACEMENT DETAILS SHALL BE NO LESS THAN THE BOX CULVERT DESIGN SERVICE LIFE.
 - BOX CULVERT GEOMETRY SHALL PROVIDE THE REQUIRED HYDRAULIC OPENING, SLAB ELEVATIONS, AND BRIDGE WIDTH SHOWN IN THE PLANS. LARGER STRUCTURES WHICH MEET THE PROJECT REQUIREMENTS MAY BE PROVIDED.
 - LIMIT DIFFERENTIAL SETTLEMENT BETWEEN SEPARATE ADJACENT PRECAST BOX SECTIONS TO 0.50 INCHES OR LESS.
- CONTRACTOR SHALL SUBMIT A SIGNED AND SEALED LOAD RATING FOR THE AS-BUILT CONDITION OF THE BOX CULVERT MEETING THE REQUIREMENTS OF THE PENNDOT BRIDGE SAFETY INSPECTION MANUAL (PUB 238, CURRENT EDITION).
- CONTRACTOR SHALL PROVIDE AS-BUILT BOX CULVERT PLANS AND A CERTIFICATION LETTER STATING THAT THE STRUCTURE HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. BOTH THE AS-BUILT PLANS AND THE CERTIFICATION LETTER SHALL BE SIGNED AND SEALED BY THE BOX CULVERT SPECIALTY ENGINEER.

PROJECT BOX CULVERT STRUCTURE DIMENSIONS

CULVERT SPAN (FT) = 22

CULVERT RISE (FT) = 8

OPENING OF INTERIOR BAFFLE (FT) = 4 (SEE NOTE 2)

BAFFLE SPACING (FT) = 11 (SEE NOTE 3)

RIPRAP LINING D50 (in) = 12

NOMINAL PLACEMENT THICKNESS (in) = 30

NOTES:

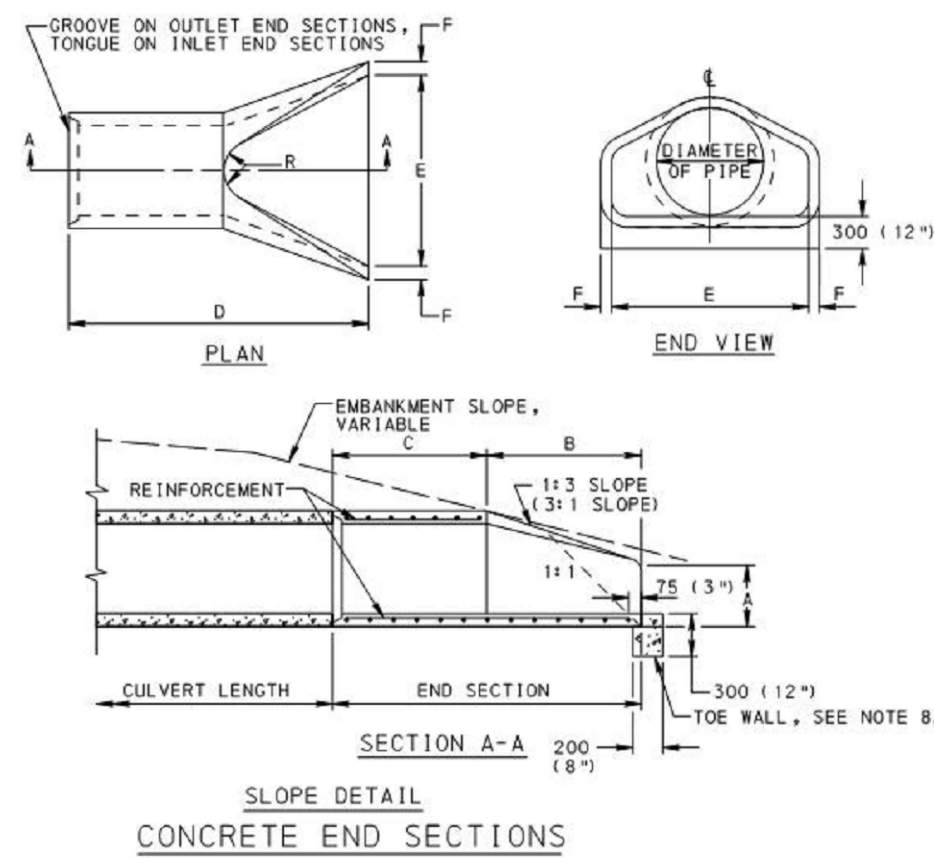
- THE OPENING IN THE APRON BAFFLES SHOULD BE EQUAL TO AVERAGE NORMAL WIDTH OF THE STREAM. THE APRON BAFFLES SHOULD CONNECT TO THE WING WALLS AT EACH SIDE OF THE CULVERT. PLACE THE FIRST SET OF BAFFLES AT THE END OF THE APRON. IF THE APRON IS GREATER THAN 8'-0" LONG, A SECOND SET OF OPPOSING BAFFLES ARE REQUIRED TO BE SET AT 1/2 THE DISTANCE FROM THE END BAFFLE TO THE FACE OF THE BOX. FOR LONGER APRONS, BAFFLES NOT TO EXCEED 8' - 0" SPACING.
- THE OPENING IN THE INTERIOR BAFFLES SHOULD BE EQUAL TO 1/3 THE AVERAGE NORMAL WIDTH OF THE STREAM.
- BAFFLES SHOULD BE SPACED AT THE AVERAGE NORMAL STREAM WIDTH OR 8' , WHICHEVER IS GREATER. THE FIRST INTERIOR BAFFLE AT THE OUTLET SHOULD BE LOCATED AS CLOSE TO THE DOWNSTREAM END OF CULVERT AS POSSIBLE AND SPACED ACCORDINGLY FROM THAT POINT TO THE INLET.
- CUTOFF WALL IS TO ENSURE STREAMFLOW DOES NOT PASS BENEATH THE CULVERT. BOTTOM OF CUTOFF WALL IS TO EQUAL WING WALL FOOTINGS OR ROCK LINING WHICHEVER IS DEEPER 3'-6" MIN.
- ROCK LINING AT THE INLET AND OUTLET SHOULD BE DEPRESSED THE ENTIRE LENGTH AND CHOKED WITH NATURAL STREAMBED MATERIAL. THE ROCK SHOULD BE FLUSH WITH THE CULVERT BOTTOM, NOT THE TOP OF THE BAFFLES. STREAMBED MATERIAL SALVAGED FROM EXCAVATION FOR THE BOX CULVERT SHOULD BE PLACED ON TOP OF THE ROCK LINING AND APRON TO THE MAXIMUM HEIGHT OF THE TOP OF THE BAFFLE TO THE LIMIT OF THE ROCK LINING TO FACILITATE THE DEVELOPMENT OF A NATURAL STREAM BOTTOM IF FEASIBLE.
- THE SLOPE OF THE NEW STRUCTURE SHOULD MATCH THE NATURAL STREAM SLOPE.

DETAILS FOR CONCRETE CULVERT AS ADOPTED FROM
PENNDOT PUBLICATION 218M: BRIDGE DESIGN (BD)
STANDARDS, BD-632M, DATED NOV. 2014.



		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION BOX CULVERT DETAILS CARBON COUNTY, PENNSYLVANIA			
DRAWN BY CAF CHECKED BY WMC APPROVED BY JRD		DATE ISSUED 10/15/2018 SCALE AS SHOWN APPROVED BY			
DWG. NO. 023-03-07-001		REV. NO. 8			

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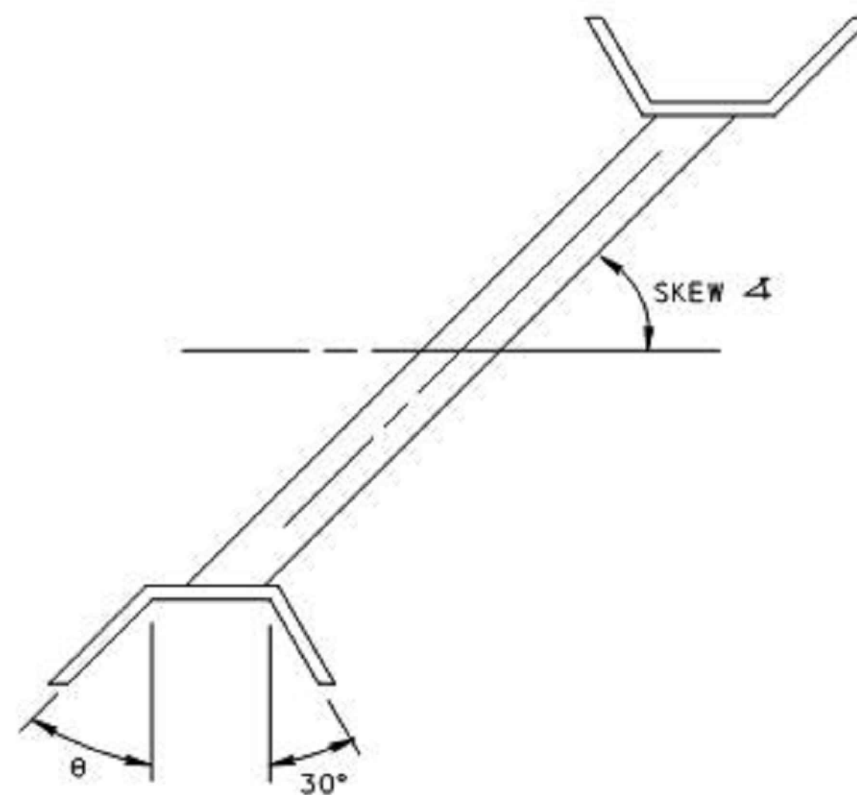
GENERAL NOTES

- PROVIDE END SECTIONS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 616. PROVIDE GALVANIZED STEEL END SECTIONS WHEN SECTIONS ARE REQUIRED WITH ALUMINIZED STEEL PIPE OR PRECOATED GALVANIZED STEEL PIPE.
- PROVIDE 2.77 THICK (12 GAGE) SIDES AND 3.50 THICK (10 GAGE) CENTER PANELS FOR 3 PIECE UNITS. PROVIDE CENTER PANEL WIDTH GREATER THAN 20% OF PIPE PERIPHERY. PROVIDE 50 (2'') LAP JOINT TIGHTLY FASTENED BY 10 (3/8'') Ø GALVANIZED OR ALUMINIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM ALLOY RIVETS OR BOLTS FOR ALUMINUM UNITS, ON CENTERLINE, SPACED 150 (6'') C TO C FOR MULTIPLE PANEL UNITS. CONSTRUCT SKIRTS OF THE SAME THICKNESS AND PIECES AS THE END SECTION.
- PROVIDE TOE PLATES OF THE SAME MATERIAL AS THE END SECTION. LOCATE PUNCHED HOLES IN PLATE TO MATCH HOLES IN SKIRT. PROVIDE 10 (3/8'') Ø GALVANIZED OR ALUMINIZED BOLTS AND NUTS FOR STEEL UNITS AND ALUMINUM ALLOY BOLTS AND NUTS FOR ALUMINUM UNITS. PROVIDE TOE PLATE LENGTHS AS FOLLOWS:
PIPE-ARCH CULVERT 1060 x 740, 1010 x 790 (42" x 29", 40" x 31") OR SMALLER-W+250 (+10'')
PIPE-ARCH CULVERT 1240 x 840, 1160 x 920 (49" x 33", 46" x 36") OR LARGER-W+500 (+20'')
PIPE 750 (30'') DIAMETER OR SMALLER-W+250 (+10'')
PIPE 900 (36'') DIAMETER OR LARGER-W+500 (+20'')
- SUPPLEMENT REINFORCED EDGES WITH GALVANIZED STEEL STIFFENER ANGLES WITH GALVANIZED OR ALUMINIZED BOLTS AND NUTS OR ALUMINUM ALLOY STIFFENER ANGLES WITH ALUMINUM ALLOY NUTS AND BOLTS OF THE FOLLOWING SIZES:
• 50 (2'') x 50 (2'') x 6 (1/4'') FOR, 1500 (60'') TO 1800 (72'') DIAMETER PIPE, 1950 x 1320, 1850 x 1400 (77" x 52", 73" x 55'') AND 2100 x 1450, 2050 x 1500 (83" x 57", 81" x 59'') PIPE-ARCH CULVERT.
• 63 (2 1/2'') x 63 (2 1/2'') x 6 (1/4'') FOR, 1950 TO 2100 (78" TO 84'') DIAMETER PIPE.
PLACE ANGLE REINFORCEMENT UNDER THE CENTER PANEL SEAMS FOR, 1950 x 1320, 1850 x 1400 (77" x 52", 73" x 55'') AND 2100 x 1450, 2050 x 1500 (83" x 57", 81" x 59'') PIPE-ARCH CULVERTS.
- ANCHOR ALUMINUM OR STEEL END SECTIONS, THAT ARE USED ON THE INLET END OF PIPE LARGER THAN 1350 (54'') DIAMETER, AS INDICATED ON THE PLAN.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESES.
- FOR DIMENSION TABLES SEE TABLE A BELOW.
- PROVIDE TOE WALL OF CLASS A CONCRETE.

DIA	A	B	C	D	E	F	R
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2 1/2"	7 1/2"
21"	9"	3'-0"	3'-1"	6'-1"	3'-6"	2 1/2"	8"
24"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3"	8"
27"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	4'-6"	3 1/4"	9"
30"	12"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3 1/2"	8"
33"	13 1/2"	4'-10 1/2"	3'-1 1/2"	8'-0"	5'-6"	3 3/4"	9"
36"	15"	5'-3"	2'-9"	8'-0"	6'-0"	4"	10"
42"	21"	5'-3"	2'-9"	8'-0"	6'-6"	4 1/2"	11"
48"	24"	6'-0"	2'-0"	8'-0"	7'-0"	5"	12"

CONCRETE FLARED END SECTIONS

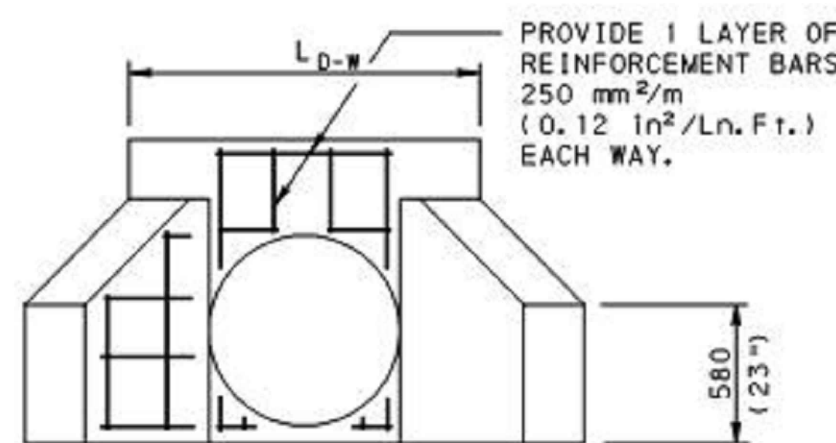
NOT TO SCALE



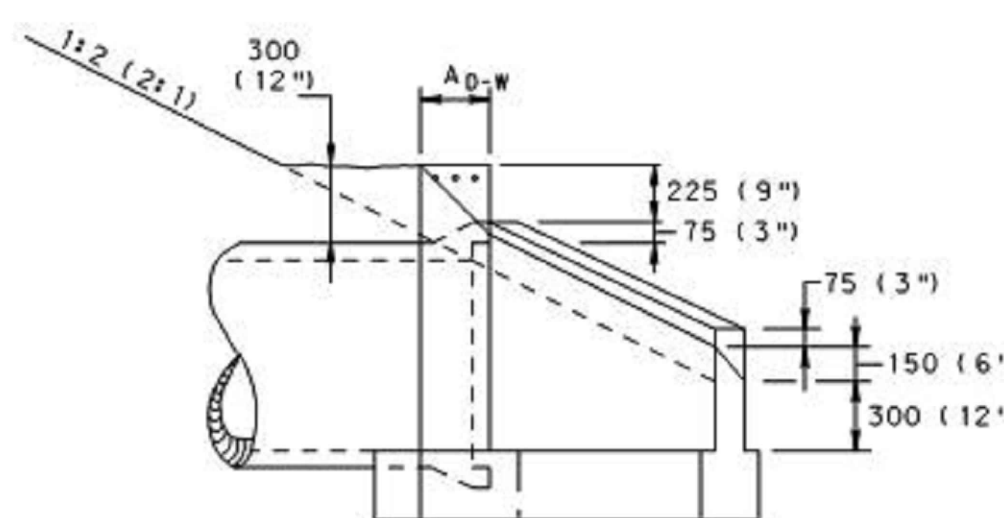
#13 (#4) BARS Ø 300 (12'') C TO C
(TYP) EACH WAY TOP & BOTTOM



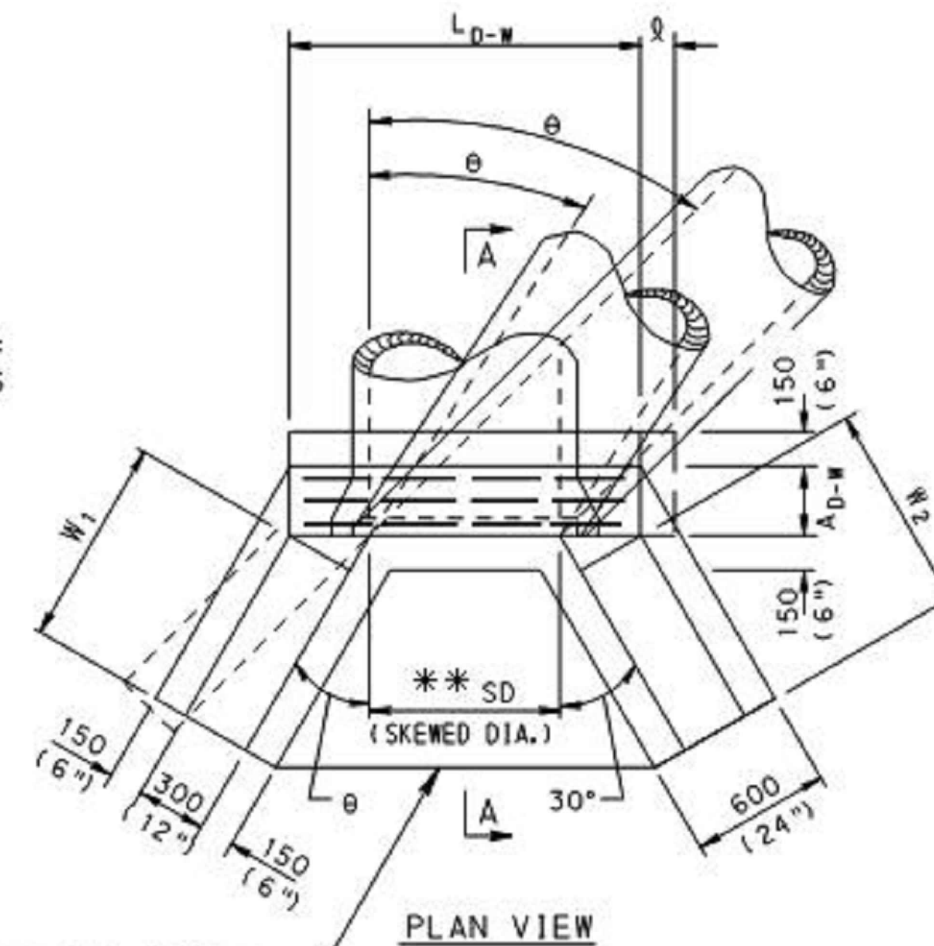
FRONT ELEVATION VIEW
BASE SECTION FOR TYPE D-W



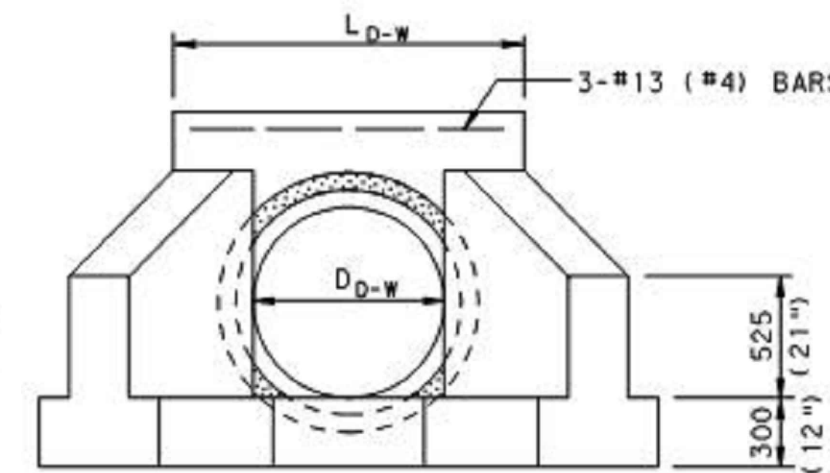
FRONT ELEVATION VIEW
HEAD & WINGWALL SECTION
FOR TYPE D-W



SECTION A-A



ALLOW FOR OPTIONAL APRON ON PRECAST UNITS.



FRONT ELEVATION VIEW

TYPE D-W ENDWALL (SEE TABLE A FOR DIMENSIONS NOT INDICATED.)

CONCRETE END WALLS (HEAD WALLS)

NOT TO SCALE

METRIC EQUATION

$$**SD = \frac{D_{D-W}}{\cos \theta} = \frac{D_{D-W}}{\sin \text{SKEW } \Delta}$$

$$L_{D-W} = SD + 0.70 \text{ m}$$

$$W_1 = \frac{2D_{D-W} - 0.60 \text{ m}}{\cos \theta} \text{ FOR } 1:2 \text{ SLOPE}$$

$$W_1 = \frac{X}{\cos \theta} (D_{D-W} - 0.5 - \frac{1.0}{X}) \text{ (FOR VARIABLE SLOPE WHEN X EQUALS HORIZONTAL DIMENSION OF THE SLOPE DESIGNATION.)}$$

ENGLISH EQUATION

$$**SD = \frac{D_{D-W}}{\cos \theta} = \frac{D_{D-W}}{\sin \text{SKEW } \Delta}$$

$$L_{D-W} = SD + 2.3'$$

$$W_1 = \frac{2D_{D-W} - 2.0'}{\cos \theta} \text{ FOR } 2:1 \text{ SLOPE}$$

$$W_1 = \frac{X}{\cos \theta} (D_{D-W} - 0.5 - \frac{1.0}{X}) \text{ (FOR VARIABLE SLOPE WHEN X EQUALS HORIZONTAL DIMENSION OF THE SLOPE DESIGNATION.)}$$



CLIENT APPROVAL

DATE

REVISIONS

NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2019	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)



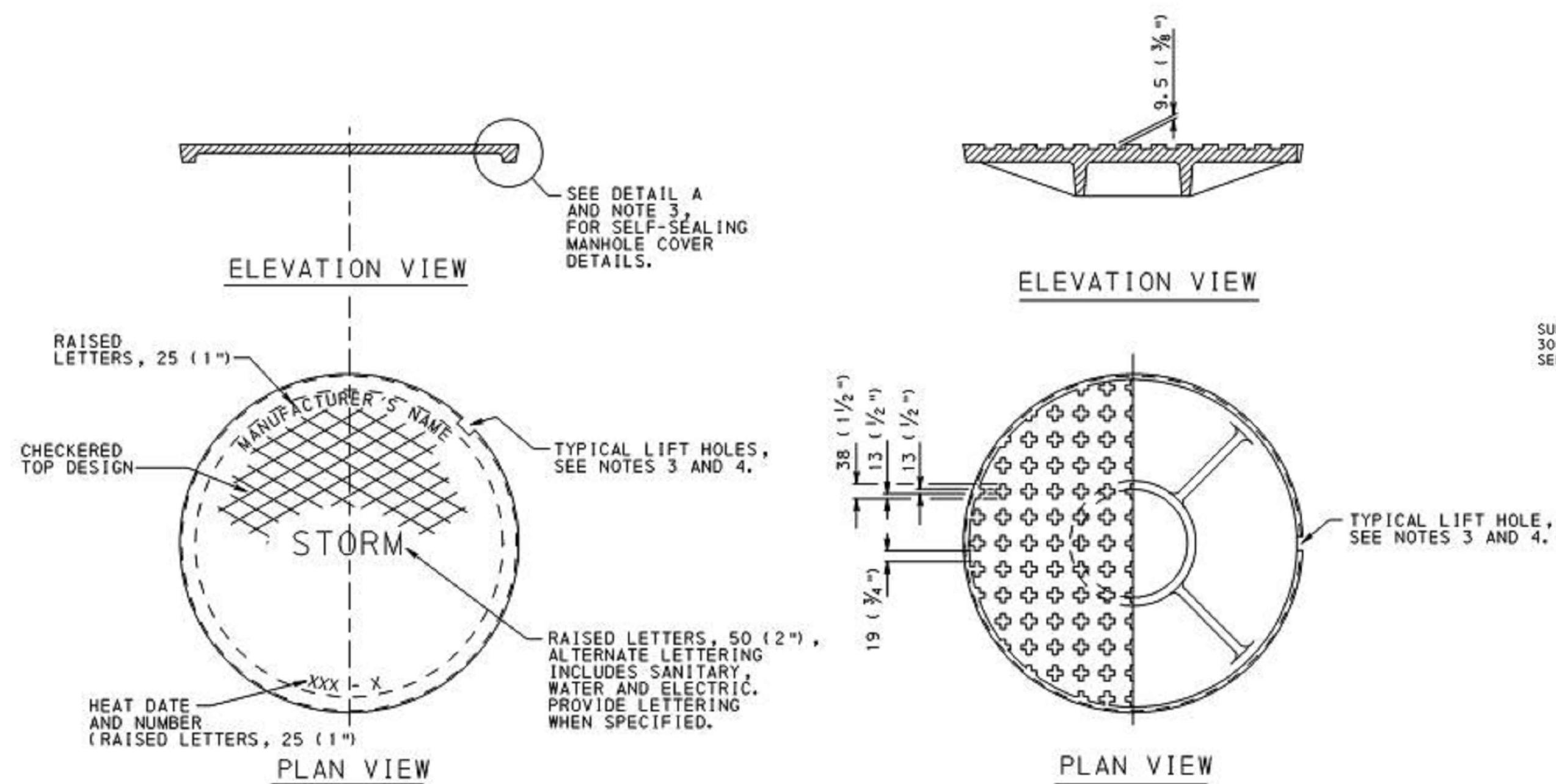
PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS
CARBON COUNTY, PENNSYLVANIA

DRAWN BY CAF DATE ISSUED 10/15/2019

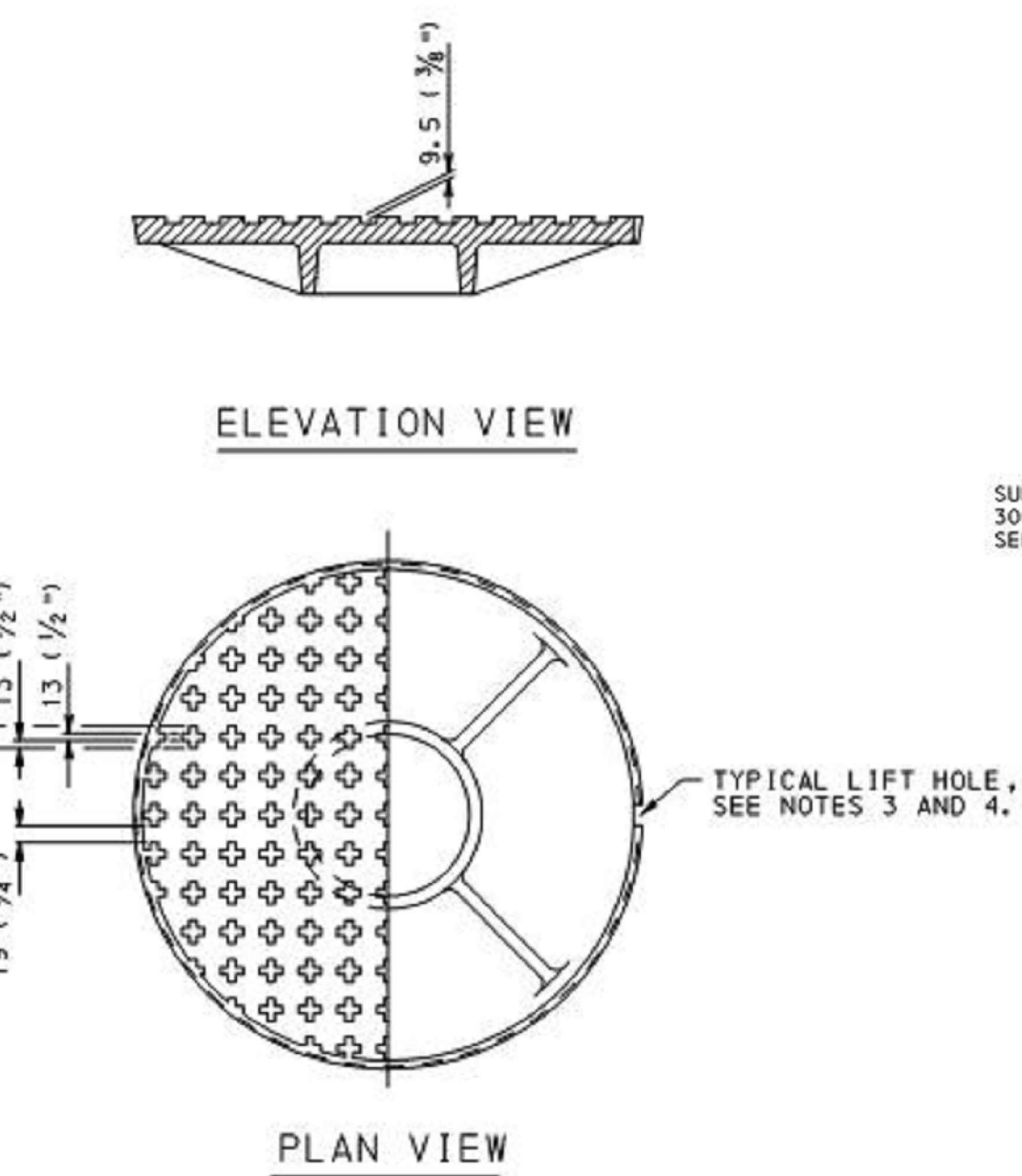
CHECKED BY WMC SCALE AS SHOWN

APPROVED BY JRD APPROVED BY

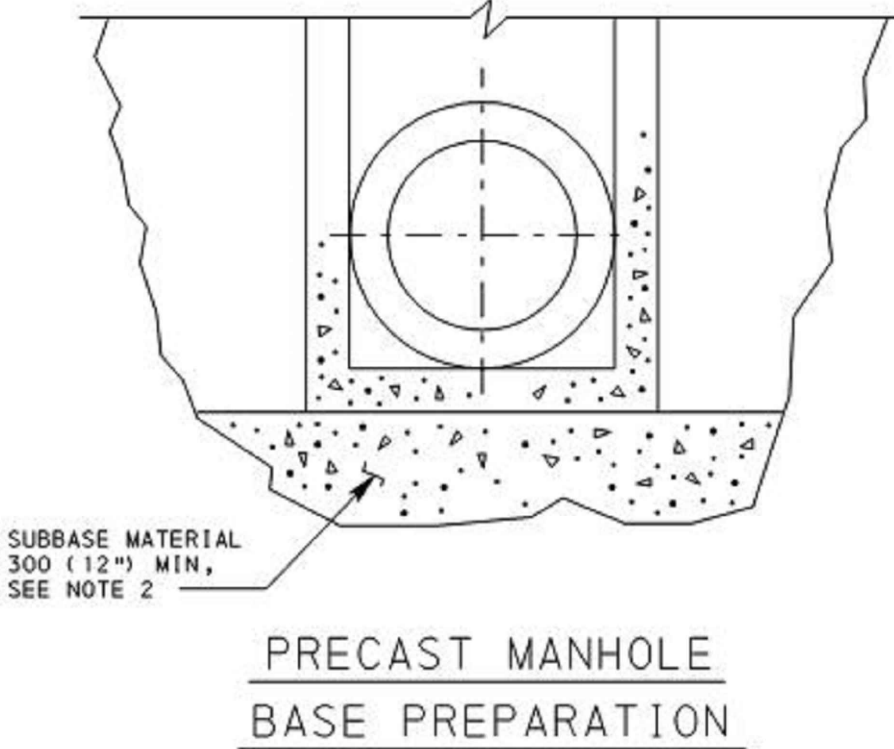
DWG. NO. 023-03-07-002 REV. NO. B



CAST IRON MANHOLE COVER
(PLATEN COVER)

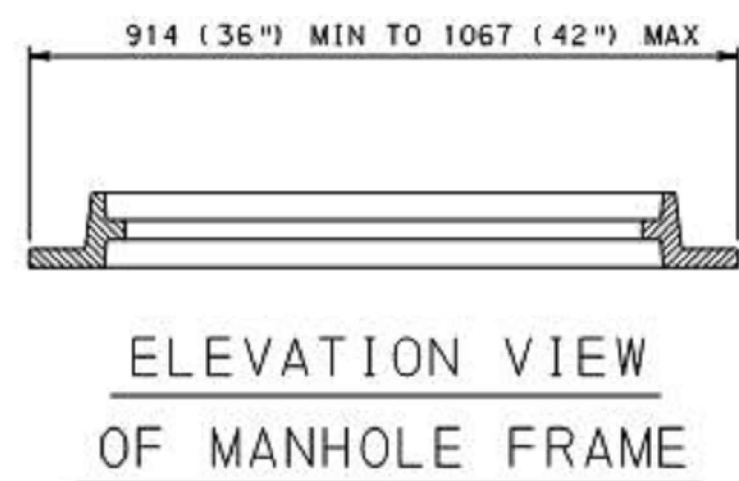


CAST IRON MANHOLE COVER
(STANDARD COVER)

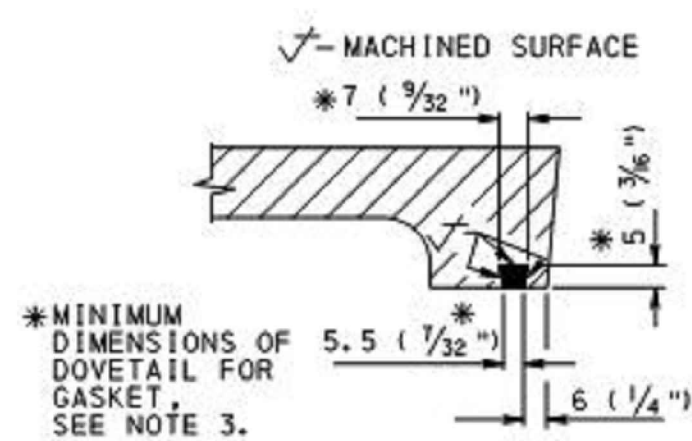


PRECAST MANHOLE
BASE PREPARATION

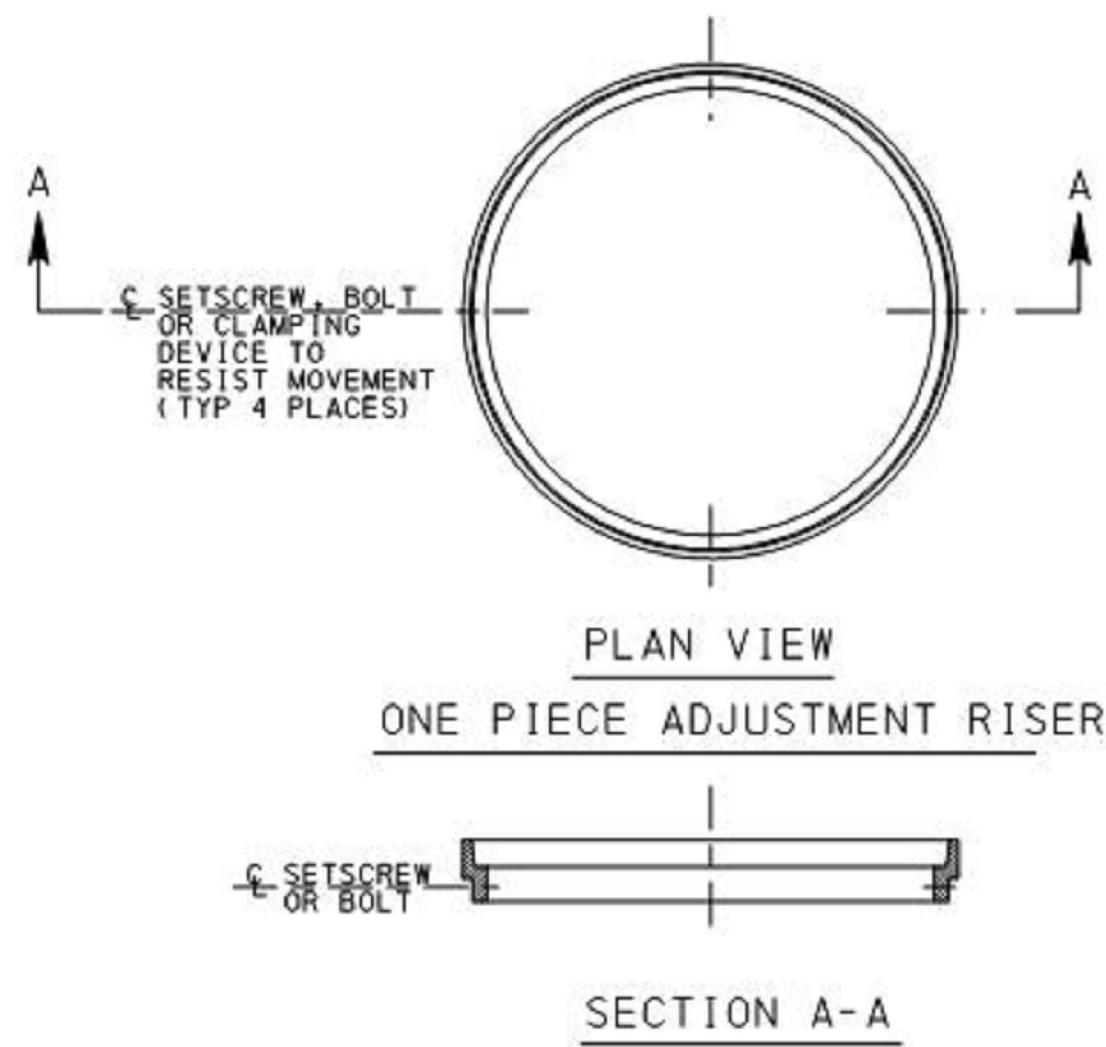
- NOTES**
1. PROVIDE MANHOLE FRAMES AND COVERS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 605.2(b). DESIGN MANHOLE FRAME, COVER AND GRADE ADJUSTMENT RINGS FOR PHL 93 (HS25) LIVE LOAD. IF MANHOLES ARE NOT IN OR ADJACENT TO ROADWAY, DESIGN FOR ALL POSSIBLE LIVE LOADS AS APPROVED BY THE DEPARTMENT.
 2. PROVIDE MANHOLE FRAMES, COVERS AND GRADE ADJUSTMENT RISERS SUPPLIED BY A MANUFACTURER AS LISTED IN BULLETIN 15. FOR DEVIATION OR MODIFICATION TO THE STANDARDS, SUBMIT SHOP DRAWINGS FOR APPROVAL.
 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 6 (1/4") DIA ONE PIECE SELF-SEAL POLYISOPRENE ROUND GASKET, 40 DUROMETER GLUED IN PLACE. PROVIDE TWO (2) LIFT HOLES AT 180° TO FACILITATE COVER REMOVAL FOR SELF-SEALING 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 BEARING SEAT OF 25 (1") FOR COVER.
 6. LOCATE TOP OF FRAME OR ADJUSTMENT RISER 3 (1/8") BELOW THE TOP OF ROADWAY SURFACE.
 7. PROVIDE GRADE ADJUSTMENT RISERS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 606, AND AS MODIFIED HEREIN:
 - A. CUSTOM FABRICATE EACH ADJUSTMENT RISER FROM MEASUREMENTS PROVIDED WITH EACH ORDER.
 - B. MANUFACTURE BAR STOCK AND RETAINER CLIP FROM U.S. MADE CARBON STEEL MEETING OR EXCEEDING THE MINIMUM REQUIREMENTS OF ASTM A-36M.
 - C. REQUIRE FULL CIRCUMFERENTIAL WELDS ON BOTH TOP AND BOTTOM RINGS. MAKE THE INNER WELD A BEVEL GROOVE WELD (FLUSH FINISH) FOR PROPER SEATING OF MANHOLE LID AND MAKE THE OUTER WELD A FILLET WELD.
 - D. MAKE THE MINIMUM WIDTH OF BOTTOM AND TOP BAR STOCK 25 (1") AND 10 (1/2"), RESPECTIVELY.
 - E. TAP THE BOTTOM BAR STOCK FOR MULTI-PIECE ADJUSTMENT RISER FOR M14 ADJUSTMENT BOLT.
 - F. REINFORCE THE ADJUSTMENT RISER ADEQUATELY 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. ATTACH FRAME AND/OR PRECAST CONCRETE GRADE RINGS RIGIDLY TO TOP OF MANHOLE. USE 3-M14 (1/2") THREADED STUDS WITH HEX HEAD NUTS AND WASHERS, INSERTED THROUGH AT 16 (5/8") DIA HOLES THROUGH FRAME AND/OR RINGS. SPACE HOLES AT 120° AND 50 (2") FROM OUTSIDE EDGE OF FRAME. EMBED STUDS 102 (4") MINIMUM INTO MANHOLE. GROUT STUDS INTO MANHOLE.
 9. SET THE BASE OF THE FRAME AND/OR PRECAST CONCRETE GRADE RINGS IN A BED OF CEMENT MORTAR.



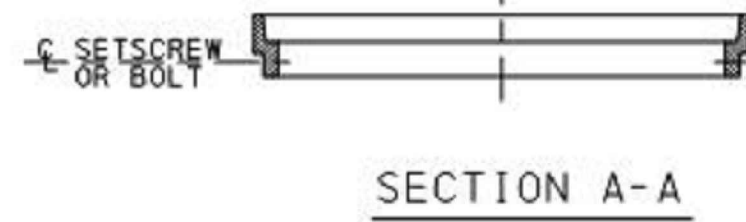
ELEVATION VIEW
OF MANHOLE FRAME



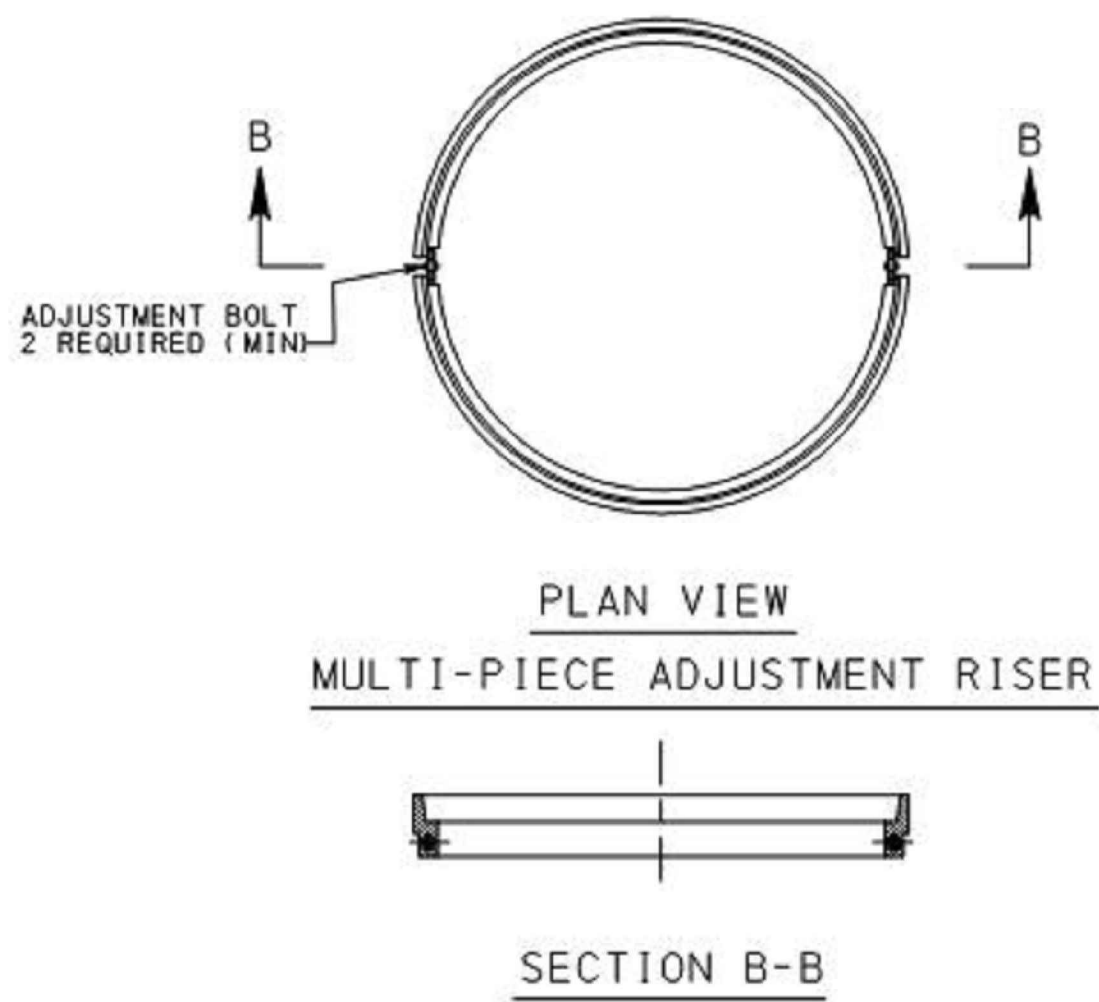
DETAIL A
GASKET SEALING SYSTEM



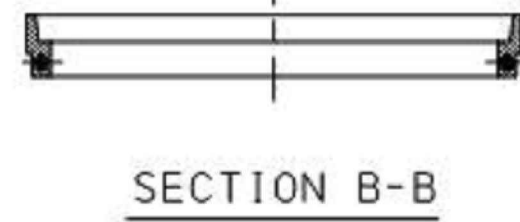
PLAN VIEW
ONE PIECE ADJUSTMENT RISER



SECTION A-A



PLAN VIEW
MULTI-PIECE ADJUSTMENT RISER


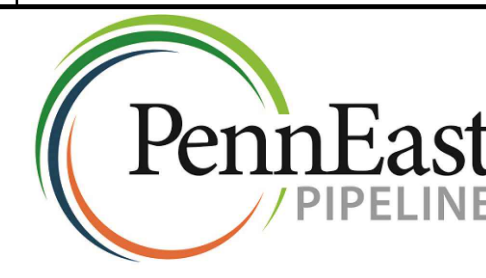


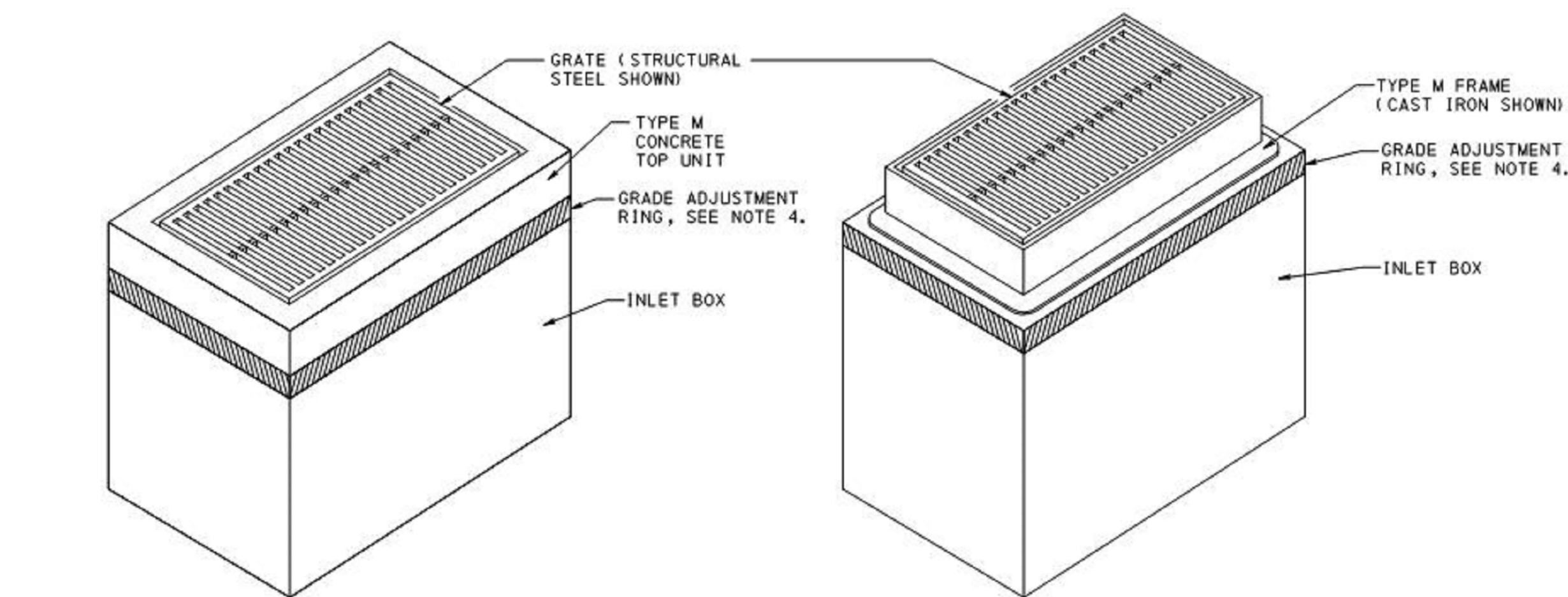
SECTION B-B

ADJUSTMENT RISERS

PRECAST DRAINAGE MANHOLES
NOT TO SCALE

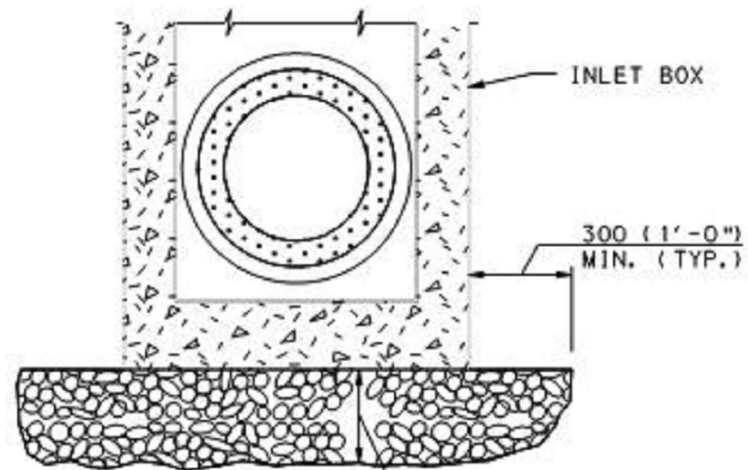
DETAILS FOR DRAINAGE STRUCTURES AS ADOPTED FROM PENNDOT PUBLICATION 72M: STANDARDS FOR ROADWAY CONSTRUCTION, DATED JUNE 2010.

 Know what's below. Call before you dig.		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS CARBON COUNTY, PENNSYLVANIA			
		DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY		WMC	SCALE	AS SHOWN	
APPROVED BY		JRD	APPROVED BY		
DWG. NO.		023-03-07-003	REV. NO.	B	



CONCRETE TOP UNIT - TYPE M INLET BOX WITH TYPE M FRAME

- NOTES:
- FOR ADDITIONAL NOTES, SEE SHEET 1 NOTES.
 - STANDARD INLET BOXES SHOWN, PROVIDE TOP SLABS FOR OTHER INLET BOX TYPES.
 - SEE RC-45M FOR DETAILS FOR THE CONCRETE TOP UNITS, FRAMES, AND GRATES.
 - PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. SEE RC-45M FOR DETAILS.

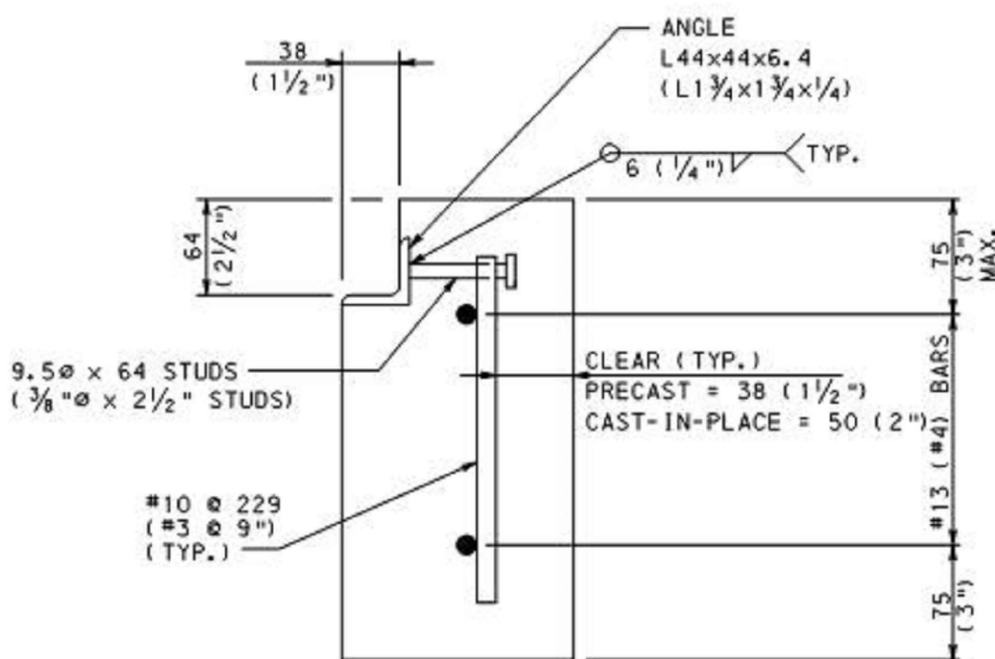


INLET BOX SUBBASE PREPARATION DETAIL (SEE FIELD CONSTRUCTION NOTES ON SHEET 1)

NOTE:
COST OF NO. 2A COARSE AGGREGATE IS INCIDENTAL TO THE INLET BOX.

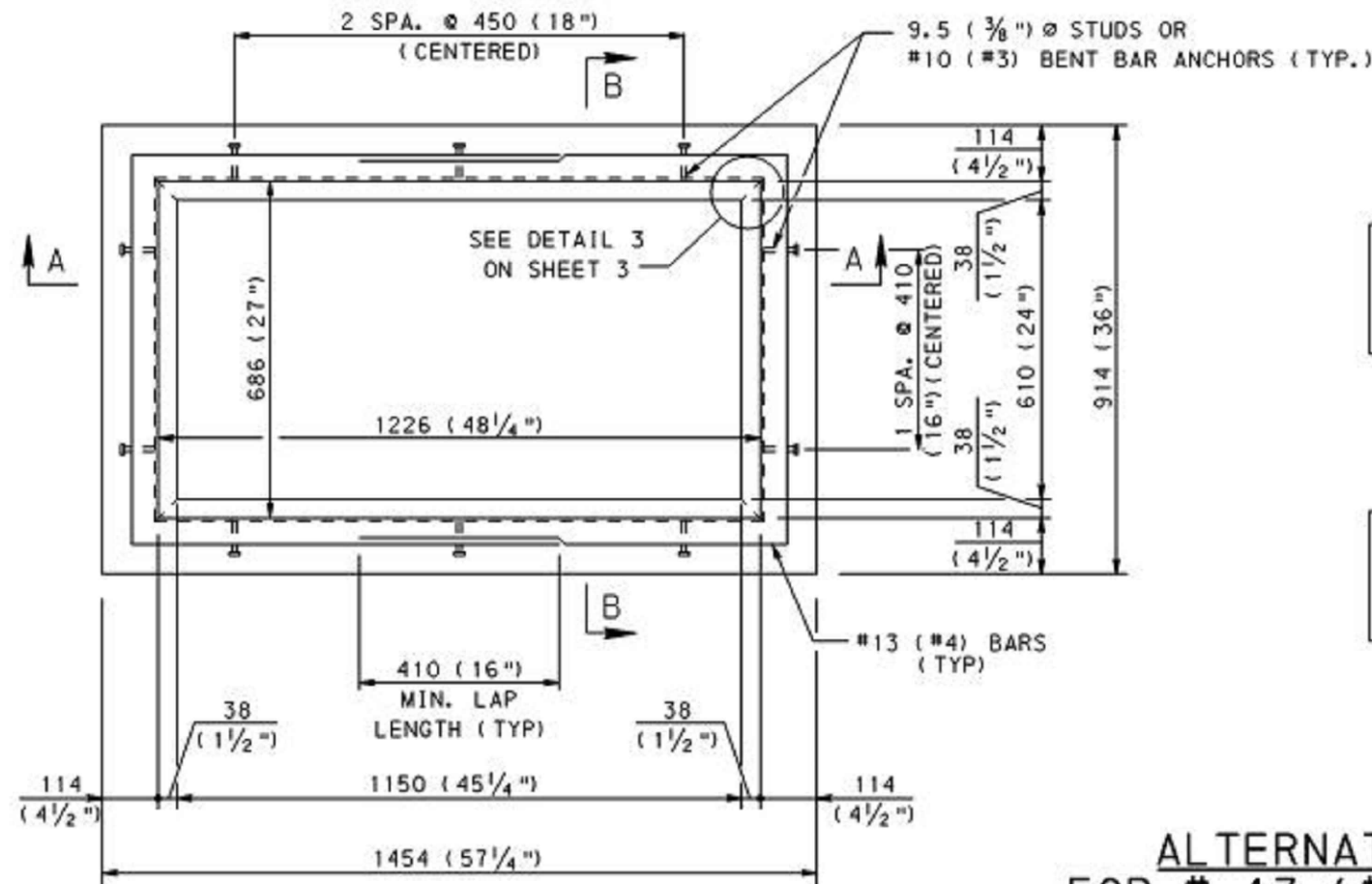
NOTE:
COST OF NO. 57 COARSE AGGREGATE AND GEOTEXTILE IS INCIDENTAL TO THE INLET BOX.

WEEPHOLE DETAIL (SEE GENERAL NOTE 15 ON SHEET 1)

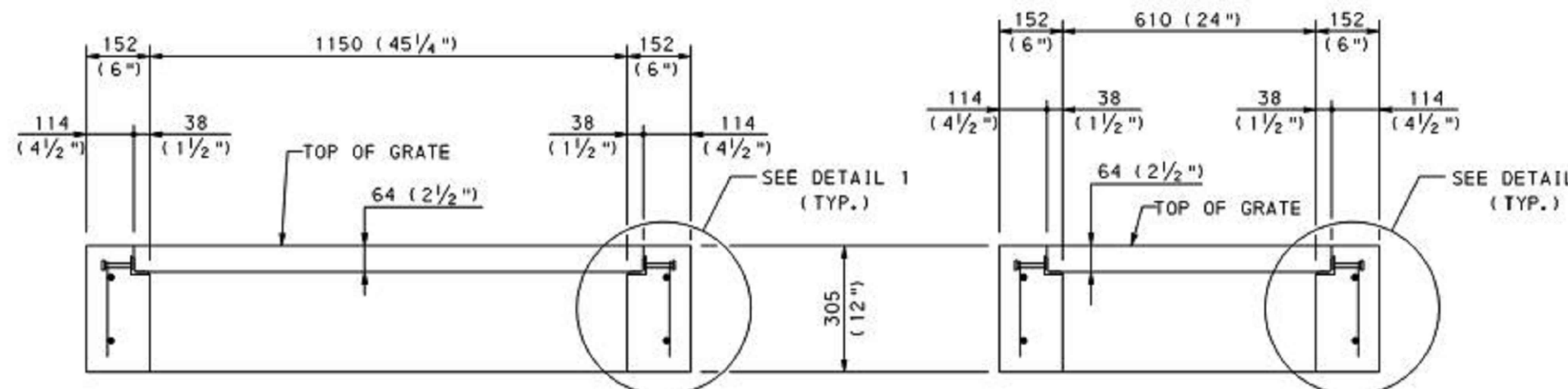


DETAIL 1

DETAILS FOR DRAINAGE STRUCTURES AS ADOPTED FROM PENNDOT PUBLICATION 72M: STANDARDS FOR ROADWAY CONSTRUCTION, DATED JUNE 2010.

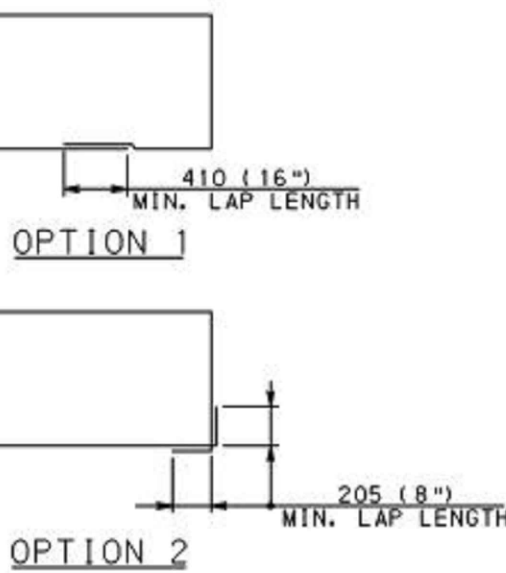


PLAN VIEW - TYPE M

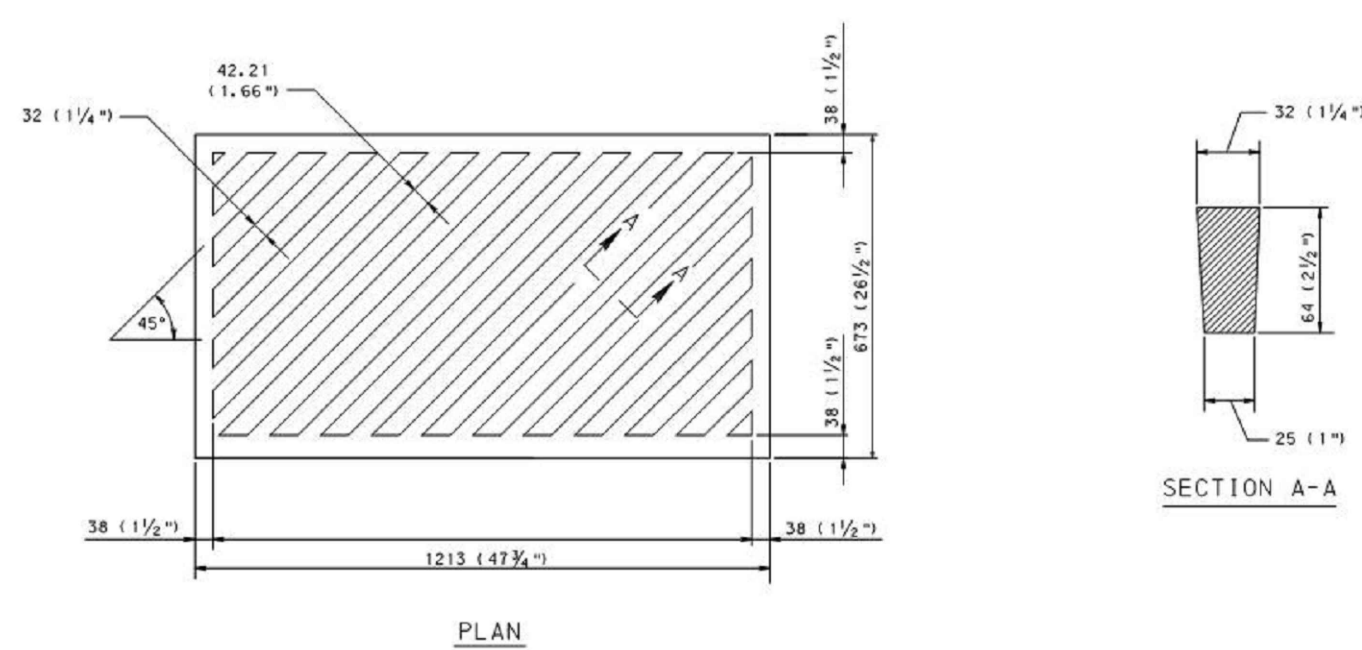


SECTION A-A

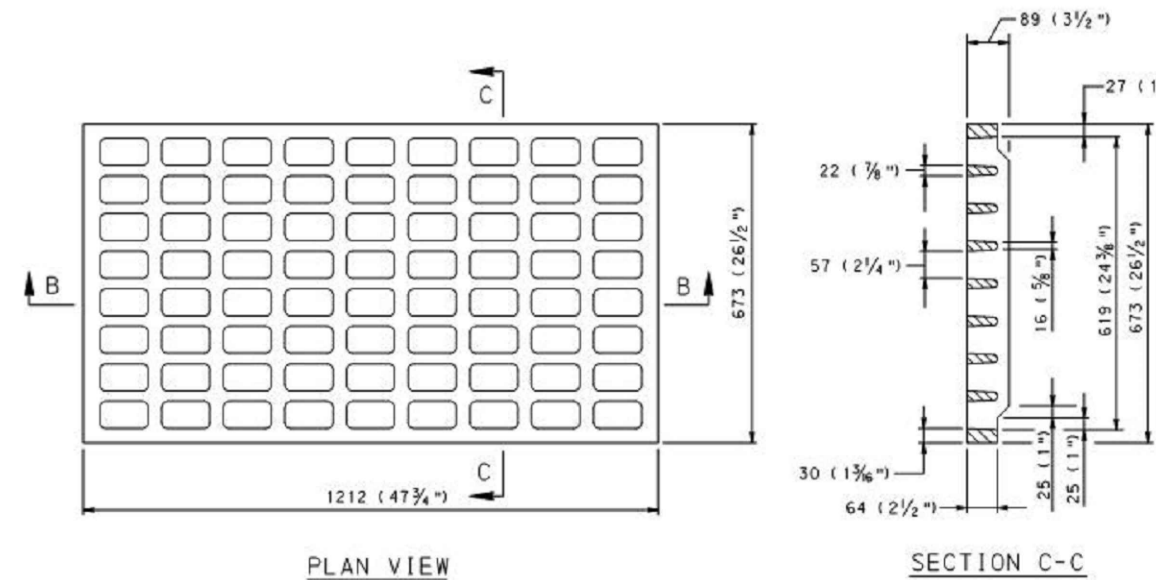
SECTION B-B



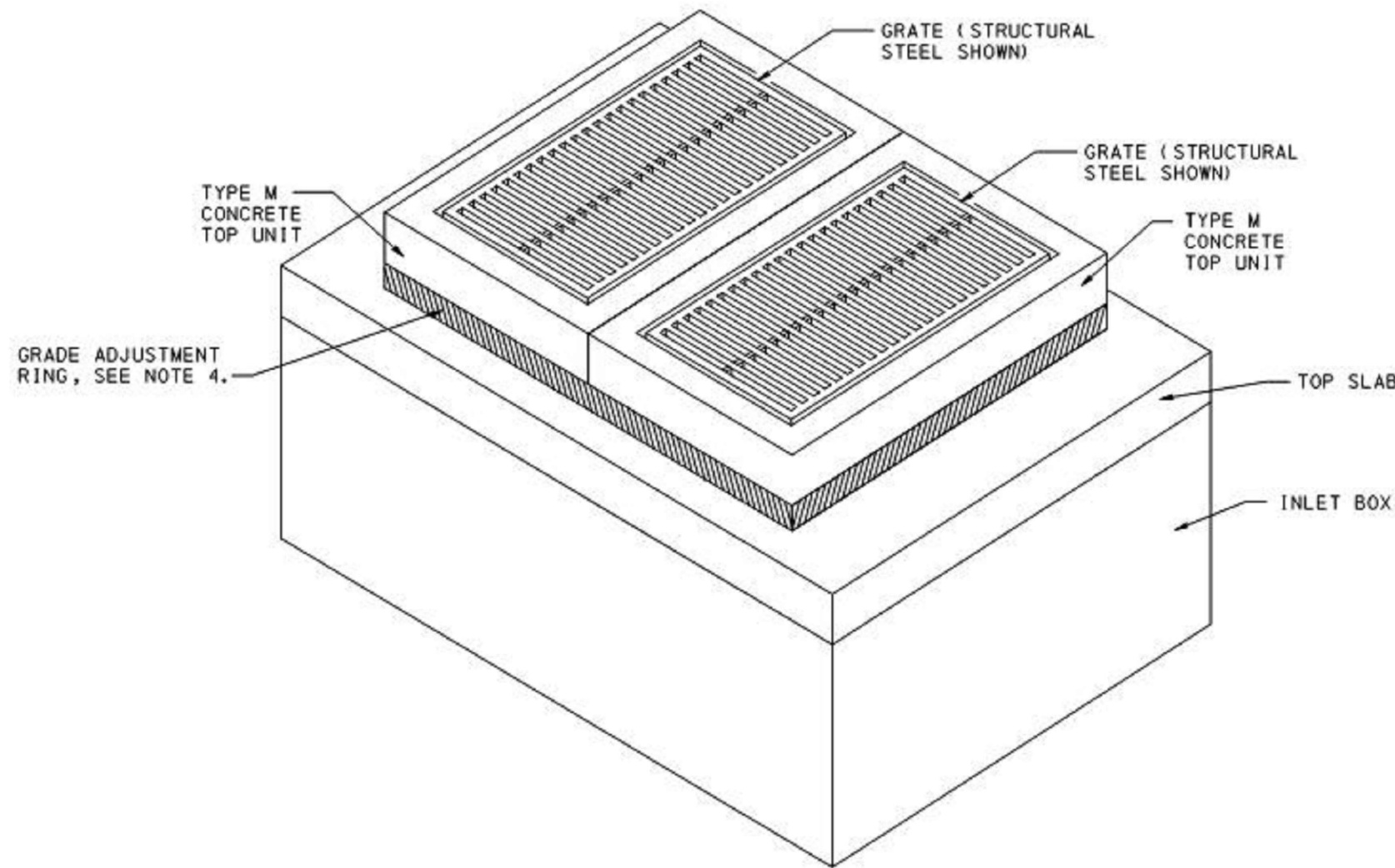
ALTERNATE ONE BAR OPTIONS FOR # 13 (#4) HORIZONTAL U-BARS



ONE PIECE CAST IRON GRATE



ONE PIECE CAST IRON GRATE - BICYCLE SAFE



CONCRETE TOP UNIT - DOUBLE TYPE M

CAST IRON GRATE NOTES:

- SHEETS 8 AND 10 DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OR MANUFACTURING. FOR DEVIATIONS OR MODIFICATIONS OF THE STANDARDS, SUBMIT SHOP DRAWINGS TO THE BUREAU OF DESIGN HIGHWAY QUALITY ASSURANCE DIVISION CHIEF FOR REVIEW AND ACCEPTANCE.
- PROVIDE CAST IRON GRATES SUPPLIED BY A MANUFACTURER LISTED IN PENNDOT BULLETIN 15.
- PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE PUBLICATION 408 AND THE CONTRACT SPECIAL PROVISIONS.
- PROVIDE GRAY CAST IRON CONFORMING TO AASHTO M105 (ASTM A48/A48M), CLASS 225B (35B) AND AASHTO M306.
- PROVIDE BICYCLE SAFE GRATES 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 REQUIRE A SHOP DRAWING, AS SPECIFIED IN NOTE 1, AND MUST CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT TOP UNITS.
- PROVIDE ADA COMPLIANT GRATES WHERE PEDESTRIAN TRAFFIC IS ANTICIPATED, SUCH AS CURBED ROADWAYS IN URBAN AREAS ADJACENT TO SIDEWALKS. ALTERNATE ADA COMPLIANT GRATE DESIGNS REQUIRE A SHOP DRAWING, AS SPECIFIED IN NOTE 1, AND MUST CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT TOP UNITS.
- CAST IRON GRATES ARE PERMITTED TO BE USED AS AN ALTERNATE TO THE STRUCTURAL STEEL GRATES PROVIDED THEY ARE SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 AND ARE APPROVED FOR PHL-93 OR HS-25 LOADING. CAST IRON GRATES NOT APPROVED FOR PHL-93 OR HS-25 LOADING MAY BE USED OUTSIDE OF THE TRAVEL LANES AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIUM SWALES AND INFIELD AREAS.
- REFER TO SHEET 10 FOR TWO-PIECE CAST IRON GRATES.


SHEET 1 NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESES.
- METRIC UNITS INDICATED ARE SOFT CONVERTED FROM U.S. CUSTOMARY UNITS.
- DESIGN SPECIFICATIONS AND REQUIREMENTS:
 - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND AS SUPPLEMENTED BY THE DESIGN MANUAL, PART 4, STRUCTURES
 - DESIGN IS IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD).
 - INLET BOXES ARE DESIGNED FOR AN ALLOWABLE FOUNDATION PRESSURE EQUAL TO 0.190 MPa (2.0 TONS/SQ. FT.) AT THE SERVICE LIMIT STATE.
- CONSTRUCTION SPECIFICATIONS:
 - PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE CURRENT VERSION OF THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408 AND THE CONTRACT SPECIAL PROVISIONS.
- SHOP DRAWINGS FOR INLET BOXES, TOP SLABS, AND TRANSITION SLABS ARE NOT REQUIRED IF THE ITEM IS CONSTRUCTED/FABRICATED IN ACCORDANCE WITH THIS STANDARD.
- THIS STANDARD DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY. IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OR MANUFACTURING. FOR DEVIATIONS OR MODIFICATIONS OF THE STANDARDS, SUBMIT SHOP DRAWINGS TO THE BUREAU OF DESIGN HIGHWAY QUALITY ASSURANCE DIVISION CHIEF FOR REVIEW AND ACCEPTANCE.
- THE DESIGNER IS RESPONSIBLE FOR DETERMINING THE TYPE OF INLET BOX REQUIRED BASED ON THE REQUIRED PIPE SIZE(S) AND PIPE OPENING(S). REFER TO TABLES A AND B ON SHEET 45 FOR ADDITIONAL INFORMATION. THE DESIGNER IS ALSO RESPONSIBLE TO DETERMINE THE REQUIRED PAY ITEM FOR AN INSTALLATION BASED ON THE OVERALL INSTALLATION HEIGHT.
- THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET ASSEMBLY IS THE CONTRACTOR'S RESPONSIBILITY, UNLESS OTHERWISE INDICATED ON THE CONTRACT DOCUMENTS.
- THE SIZE OF THE INLET TOP UNITS, PER RC-45M, ARE BASED ON THE MINIMUM DIMENSIONS INDICATED FOR THE STANDARD INLET BOX.
- MINIMUM PIPE DIAMETERS (INSIDE):
 - FILL HEIGHT LESS THAN OR EQUAL TO 7600 mm (25') : 450 mm (18") FOR CIRCULAR PIPE (OR EQUIVALENT SIZE PIPE ARCH)
 - FILL HEIGHTS GREATER THAN 7600 mm (25') : 600 mm (24")
- INSIDE INLET BOX DIMENSIONS ARE BASED ON PROVIDING A PIPE OPENING TO ACCOMMODATE A MINIMUM 450 mm (18") PIPE TO A MAXIMUM 2438 mm (80") PIPE. IF A LARGER PIPE SIZE IS REQUIRED, THE DESIGNER IS RESPONSIBLE FOR PROVIDING DESIGN AND DETAILS IN ACCORDANCE WITH PENNDOT REQUIREMENTS.
- INLETS THAT EXCEED THE MAXIMUM HEIGHT INDICATED REQUIRE SPECIAL DESIGN AND DETAILS. DESIGNER IS RESPONSIBLE FOR PROVIDING DESIGN AND DETAILS IN ACCORDANCE WITH PENNDOT REQUIREMENTS.
- SHOW ORIENTATION OF INLET BOXES ON THE CONTRACT DRAWINGS.
- THE TOP SLAB IS NOT PERMITTED TO BE POURED MONOLITHICALLY WITH THE ADJACENT BOX SECTION.
- PROVIDE 50 mm (2") DIAMETER WEEPHOLES IN THE WALLS WHEN THE DEPTH BETWEEN THE FINISHED GRADE ELEVATION AND THE TOP OF BOTTOM SLAB ELEVATION IS GREATER THAN 3048 mm (10'-0").
 - VERTICAL PLACEMENT: 1500 mm (5'-0") MAXIMUM SPACING
 - HORIZONTAL PLACEMENT: PLACE WEEPHOLES IN THE SIDE WALLS THAT ARE PERPENDICULAR TO TRAFFIC.
 - LOCATE WEEPHOLES A MINIMUM OF 150 mm (6") FROM PIPE OPENINGS OR JOINTS.
 - LOCATE WEEPHOLES A MINIMUM OF 305 mm (1'-0") ABOVE OUTLET PIPE INVERT.

NOTE:

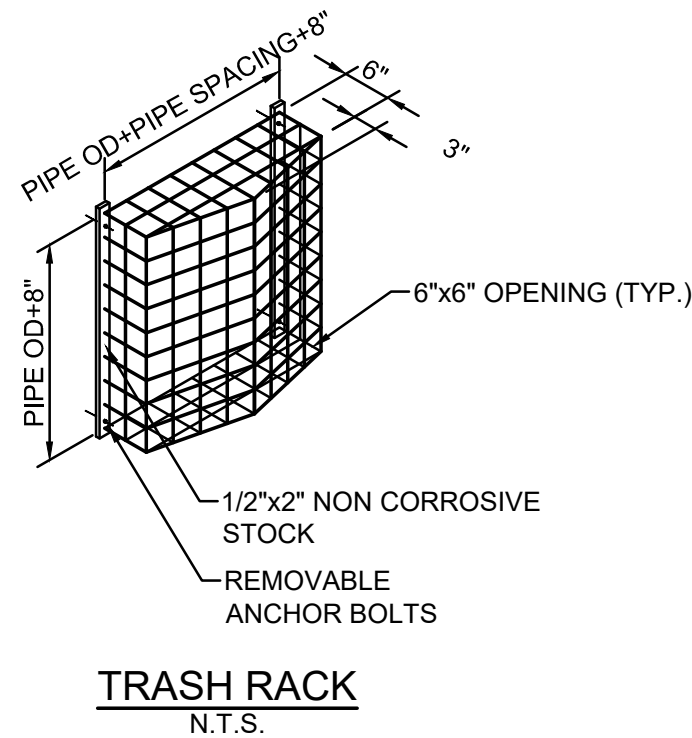
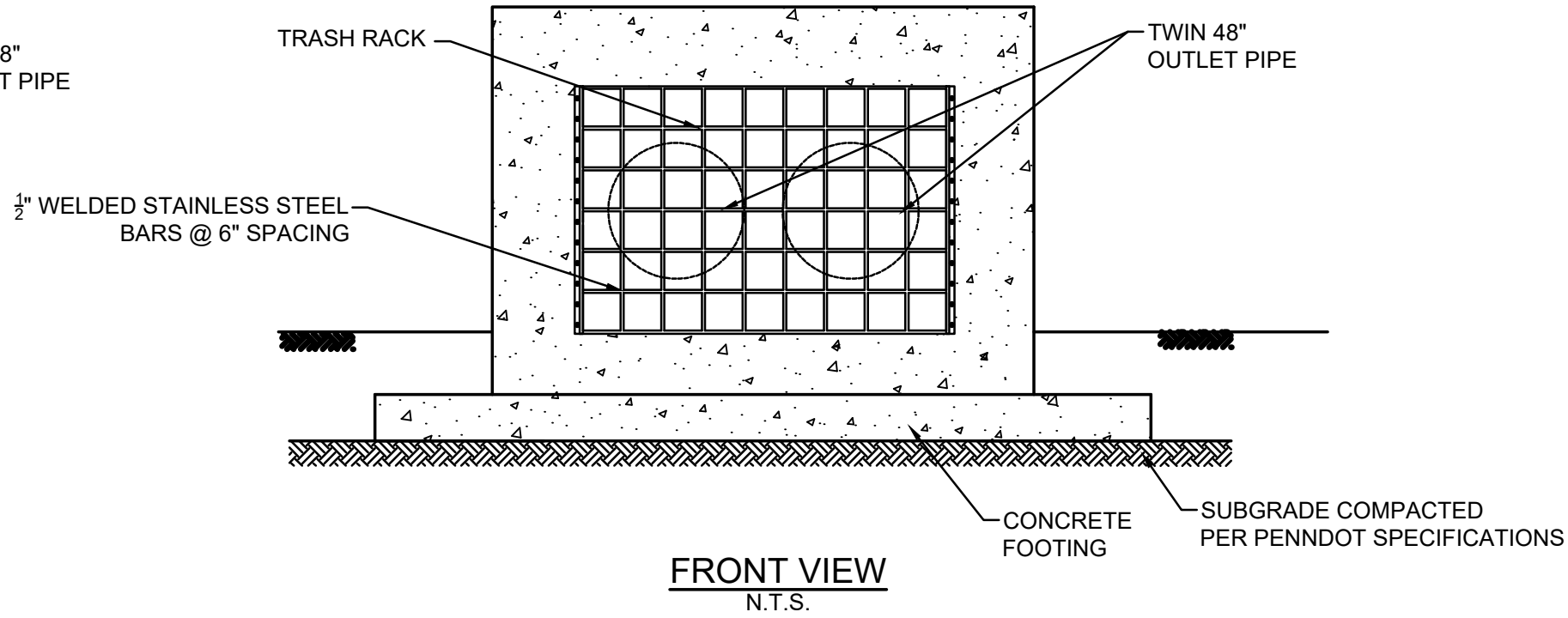
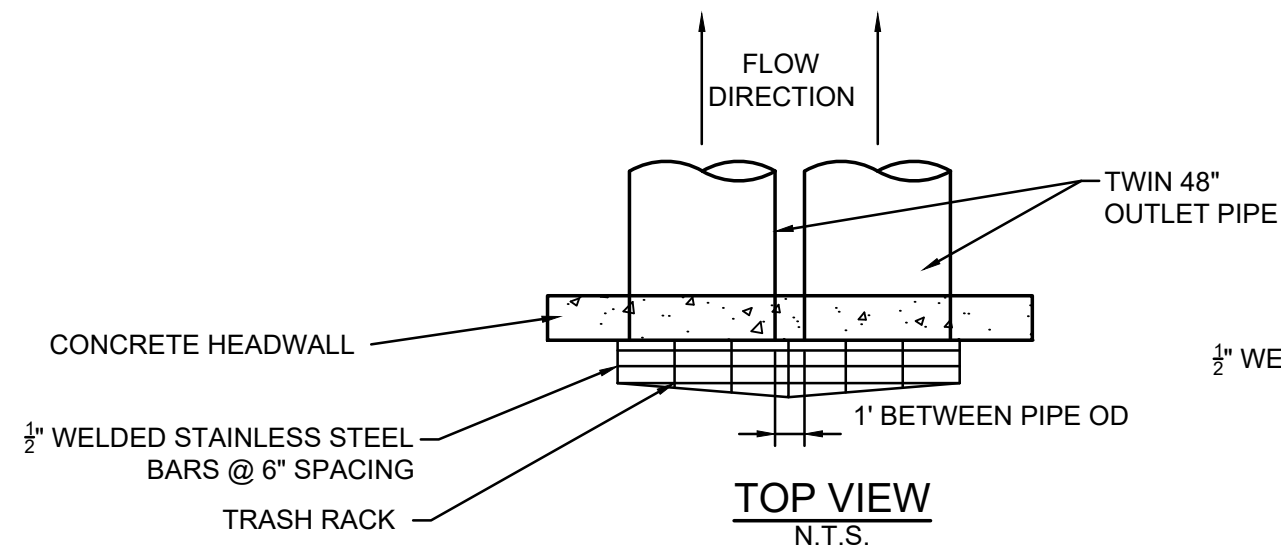
ALL PROPOSED INLETS AND MANHOLES SHOWN ON THESE PLANS SHALL HAVE A 3-FT SUMP BELOW THE INVERT OF THE LOWEST CONNECTING PIPE, UNLESS OTHERWISE NOTED.

PRECAST INLET BOX NOT TO SCALE

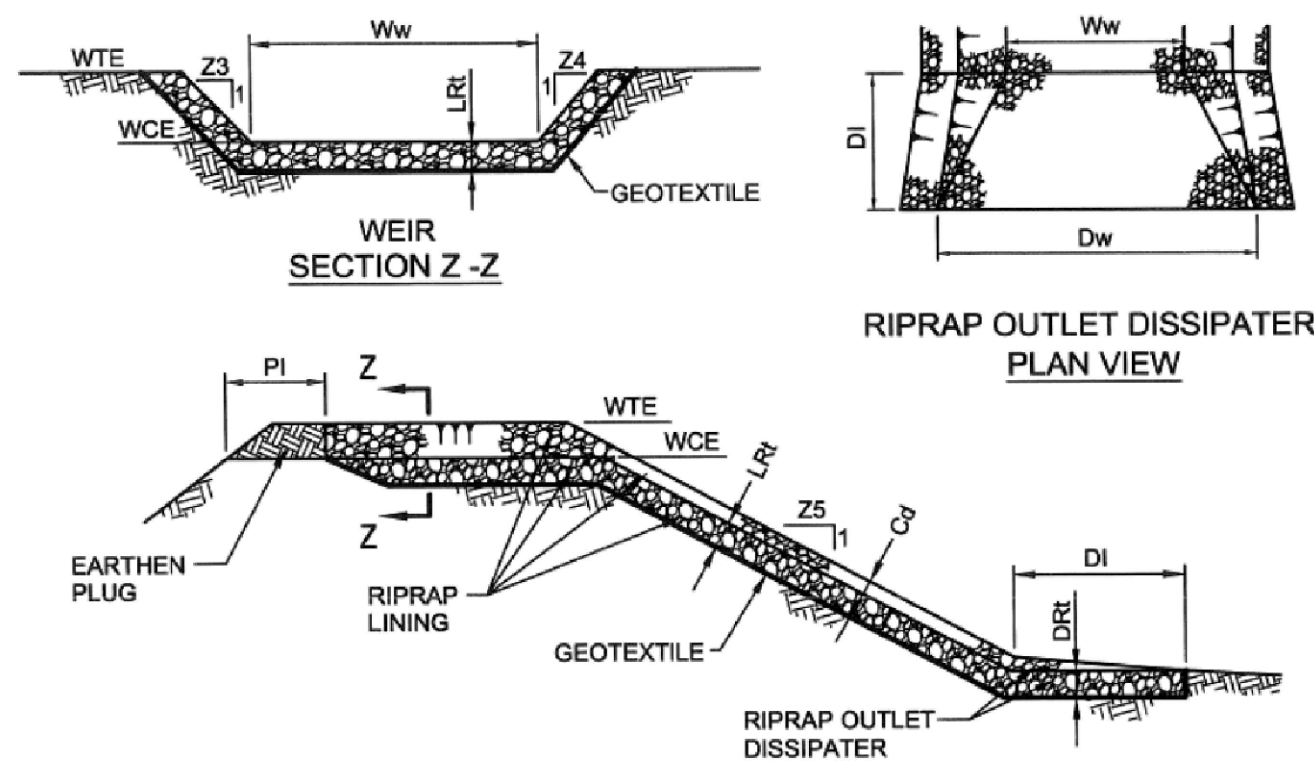
 Know what's below. Call before you dig.		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS CARBON COUNTY, PENNSYLVANIA		DRAWN BY CAF		DATE ISSUED 10/15/2018	
		CHECKED BY WMC		SCALE AS SHOWN	
		APPROVED BY JRD		APPROVED BY	
DWG. NO. 023-03-07-005		REV. NO. B			



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ENTRANCE TRASH RACK FOR
PROPOSED HEADWALL HW#1
NOT TO SCALE



NOTES:


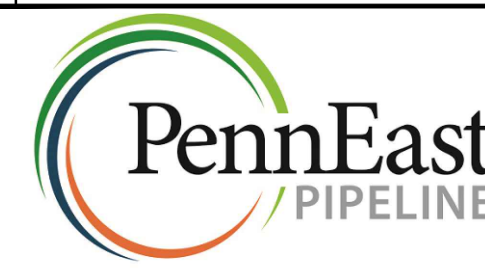
DISPLACED RIPRAP WITHIN SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

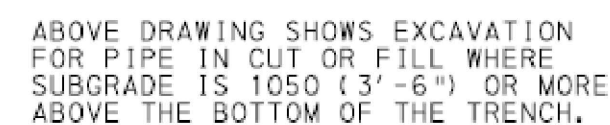
SITE	BASIN ID	WEIR				LINING		CHANNEL		DISSIPATER				
		Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	RIPRAP SIZE (R-)	RIPRAP THICK LRt (IN)	Z5 (FT)	DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R-)	RIPRAP THICK DRt (IN)
KIDDER COMPRESSOR STATION	NORTH	3	3	1738.00	1737.25	25	R-5	27	3	1	4	28	R-5	18
	SOUTH	3	3	1739.00	1738.00	35	R-7	45	3	1	4	38	R-7	54

EMERGENCY SPILLWAY
NO SCALE

DETAILS FOR DRAINAGE STRUCTURES AS ADOPTED FROM
PENNDOT PUBLICATION 72M: STANDARDS FOR ROADWAY
CONSTRUCTION, DATED JUNE 2010.



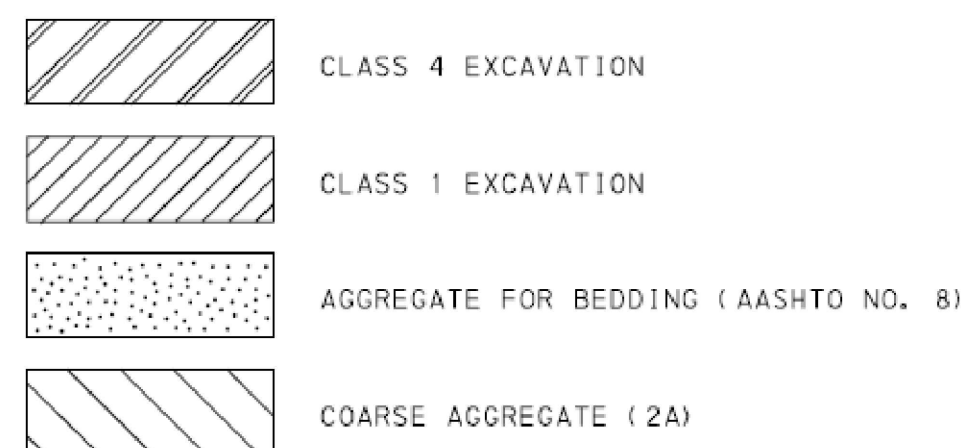
 Know what's below. Call before you dig.		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS CARBON COUNTY, PENNSYLVANIA			
		DRAWN BY	CAF	DATE ISSUED	10/15/2018
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		APPROVED BY	JRD	APPROVED BY	
DWG. NO.		023-03-07-006		REV.	B



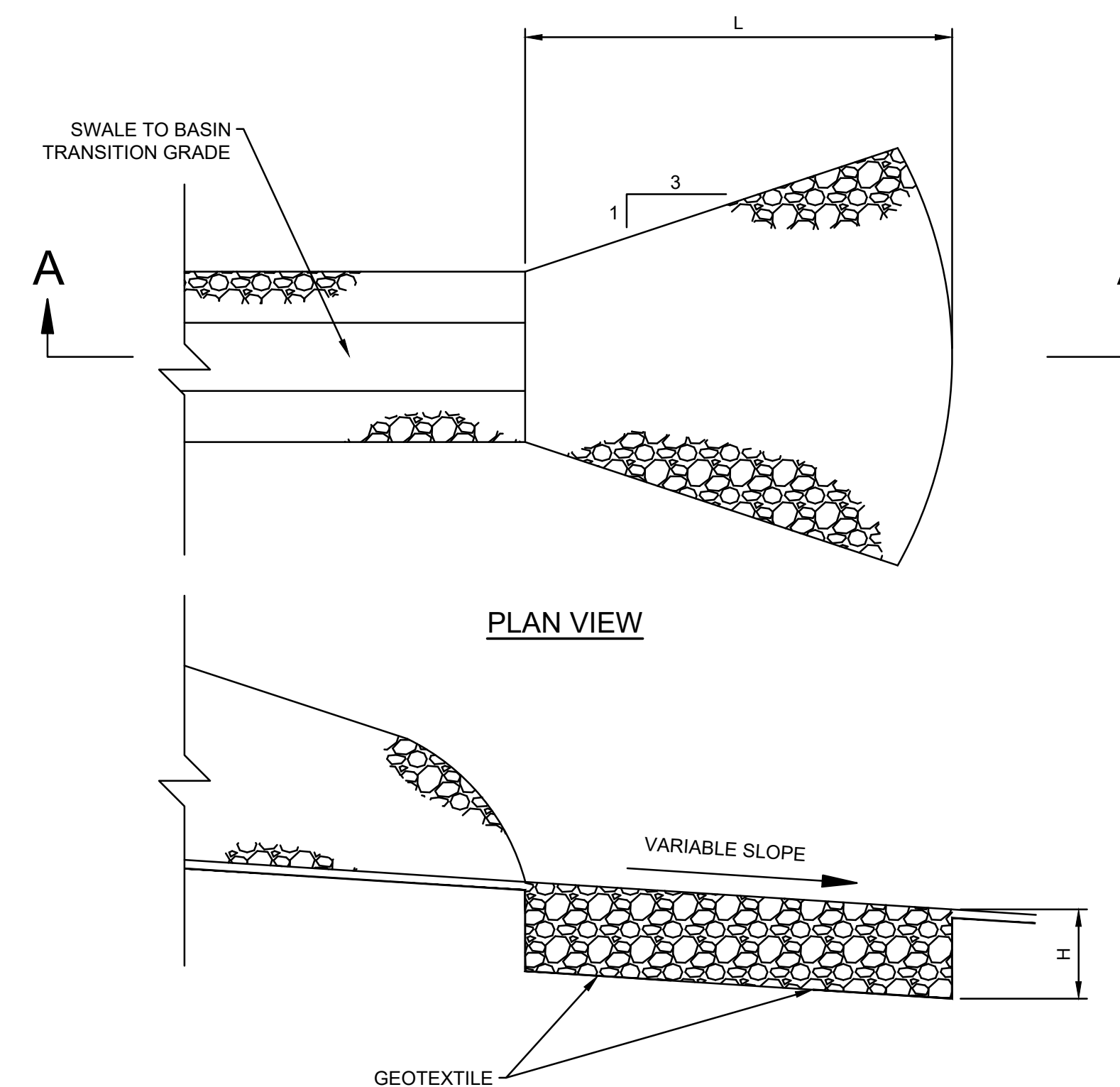
PAY LIMITS FOR PIPE EXCAVATION

- ### NOTES
1. PROVIDE MATERIALS AND CONSTRUCT AS SPECIFIED IN PUBLICATION 408, SECTION 601 FOR PIPE CULVERTS, SECTION 602 FOR CORRUGATED METAL PIPE-ARCH CULVERTS AND SECTION 603 FOR METAL PLATE CULVERTS.
 2. SHORING OR TRENCH BOX INSTALLATION FOR FLEXIBLE PIPE IS NOT NORMALLY USED. IF SHORING OR TRENCH BOX INSTALLATION IS PERMITTED IN SPECIAL CIRCUMSTANCES, REFER TO PUBLICATION 408, SECTION 601.3(g).
 3. IN ALL EXCAVATION AREAS FOLLOW OSHA SAFETY REQUIREMENTS.
 4. DO NOT COMPACT NO. 8 MATERIAL USED FOR BEDDING UNDER CONCRETE PIPES.
 5. ALLOW NO PAYMENT FOR EXCAVATION IN EXCESS OF SPECIFIED LIMITS AND FOR ADDITIONAL BACKFILL MATERIAL REQUIRED.
 6. PAYMENT FOR THE BACKFILL ENVELOPE, INCLUDING BEDDING, COARSE AGGREGATE AND SUITABLE MATERIAL UP TO 300 (12") ABOVE THE PIPE IS INCIDENTAL TO THE PIPE.
 7. FOR BOTTOM TRENCH WIDTHS ≥ 2.5 m (8'-0"), ALL EXCAVATION IS CLASS 1.
 8. FOR INLET OR OUTLET PROTECTION SEE DETAIL ~~A-4~~.
 9. CONSTRUCT FLEXIBLE BASE REPLACEMENT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 316.
 10. PREPARE EXPOSED VERTICAL AND HORIZONTAL SURFACES AS PER PUBLICATION 408, SECTION 409.3(k).
 11. FOR NON-OVERLAY APPLICATIONS, THE TOP 40 (1½") OF BASE REPLACEMENT WILL BE SUPERPAVE WEARING COURSE.
 12. FOR RESTORATION OF RIGID PAVEMENT, REFER TO PUBLICATION 408, SECTION 516 AND RC-26M.
 13. FOR SUPERPAVE BASE REPLACEMENT, SAW CUTTING, EXCAVATION, HAULING AND DISPOSAL, BITUMINOUS TACK COAT, BITUMINOUS MATERIAL, AND SEALING OF THE JOINTS ARE CONSIDERED AS INCIDENTAL.
 14. PERFORM AND COMPLETE PIPE RESTORATION WORK PRIOR TO THE FLEXIBLE SUPERPAVE BASE REPLACEMENT.

LEGEND



Do = OUTSIDE DIAMETER OF PIPE.



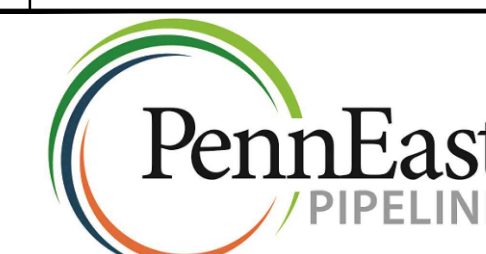
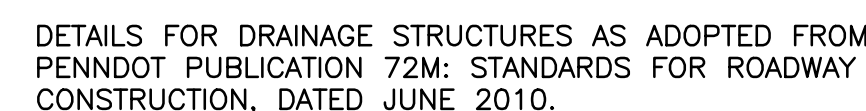
SECTION A-A

SWALE ID	RIPRAP SIZE	LENGTH OF APRON L, FT	PLACEMENT THICKNESS H, IN
SWALE 6	R-3	9	9
SWALE 9	R-3	13	9
SWALE 10	R-4	10	18

SWALE OUTFALL PROTECTION
NOT TO SCALE



PIPE TRENCH, BEDDING AND BACKFILL DETAIL



PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
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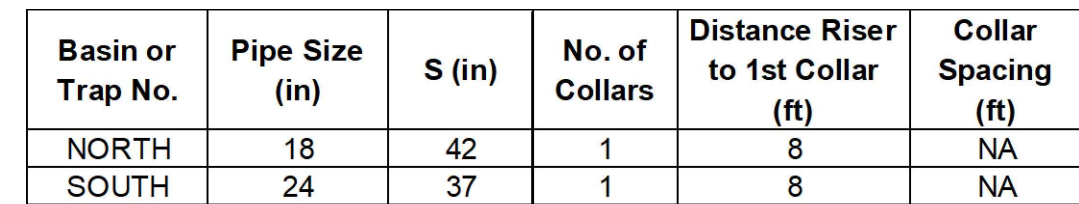
CHECKED BY	WMC	SCALE	AS SHOWN
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APPROVED BY	JRD	APPROVED BY
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NO BE RTY.	DWG. NO.	023-03-07-007	REV. NO.	B
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G:\PennEast\353754_PennEast Pipeline EPCMDDataProd\Facilities\DRAFTING\013 - C - Plan & Profiles\Kidder Compressor Station\PADEP Civil\Include in both sets\023-03-07-007.dwg

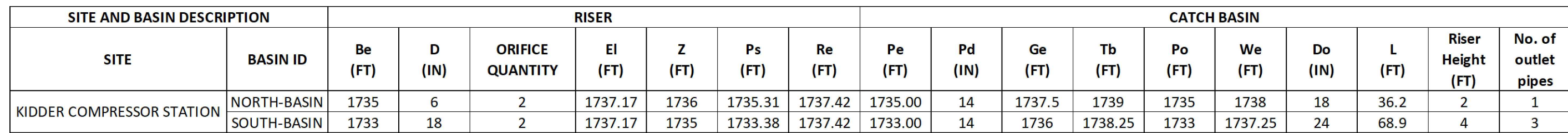


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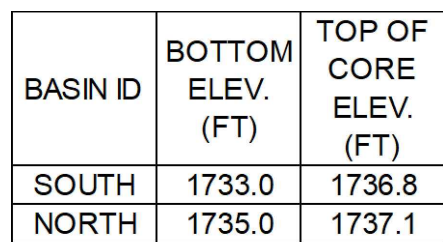


SURFACE BASIN SPILLWAY RIPRAP LINING
NOT TO SCALE

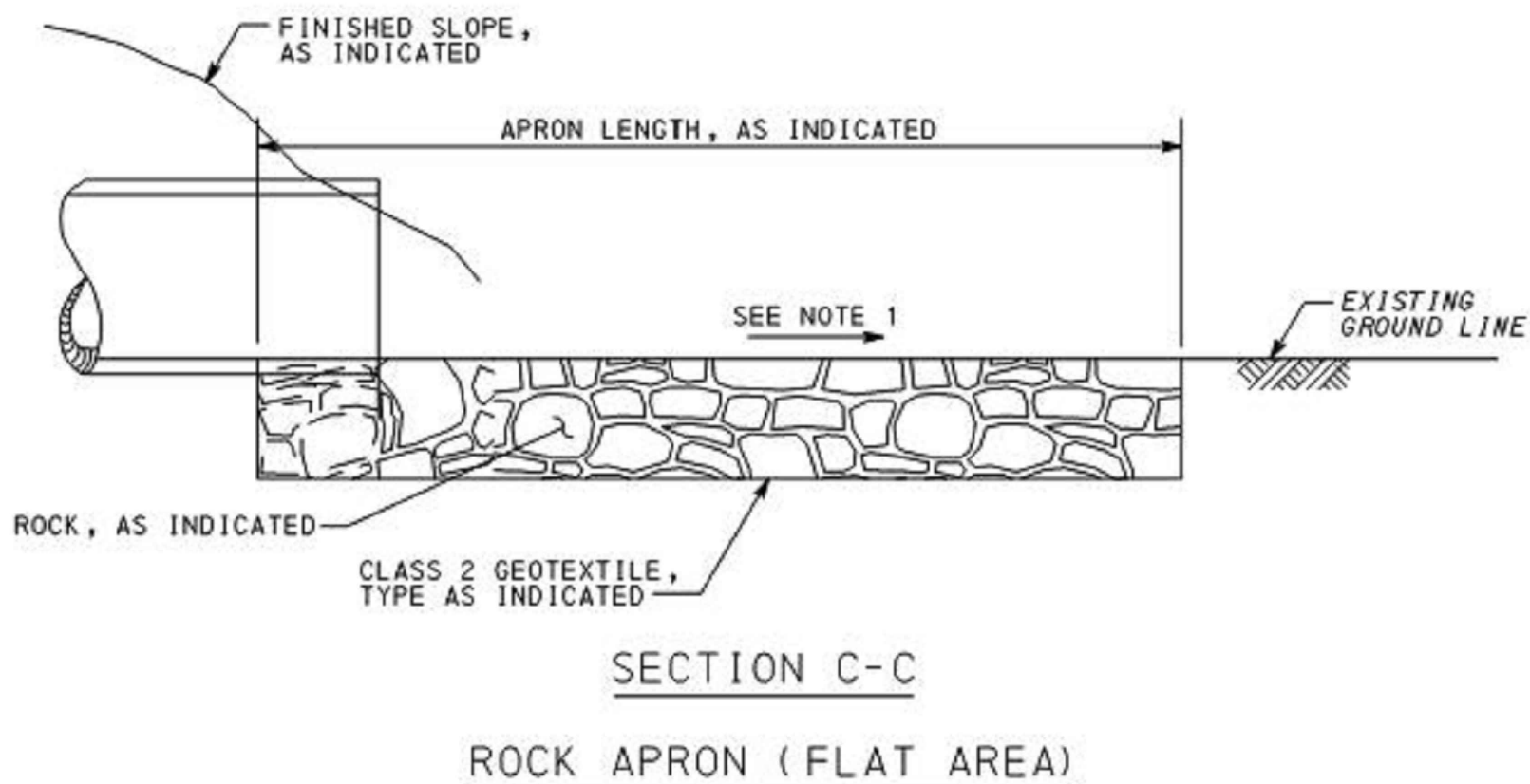
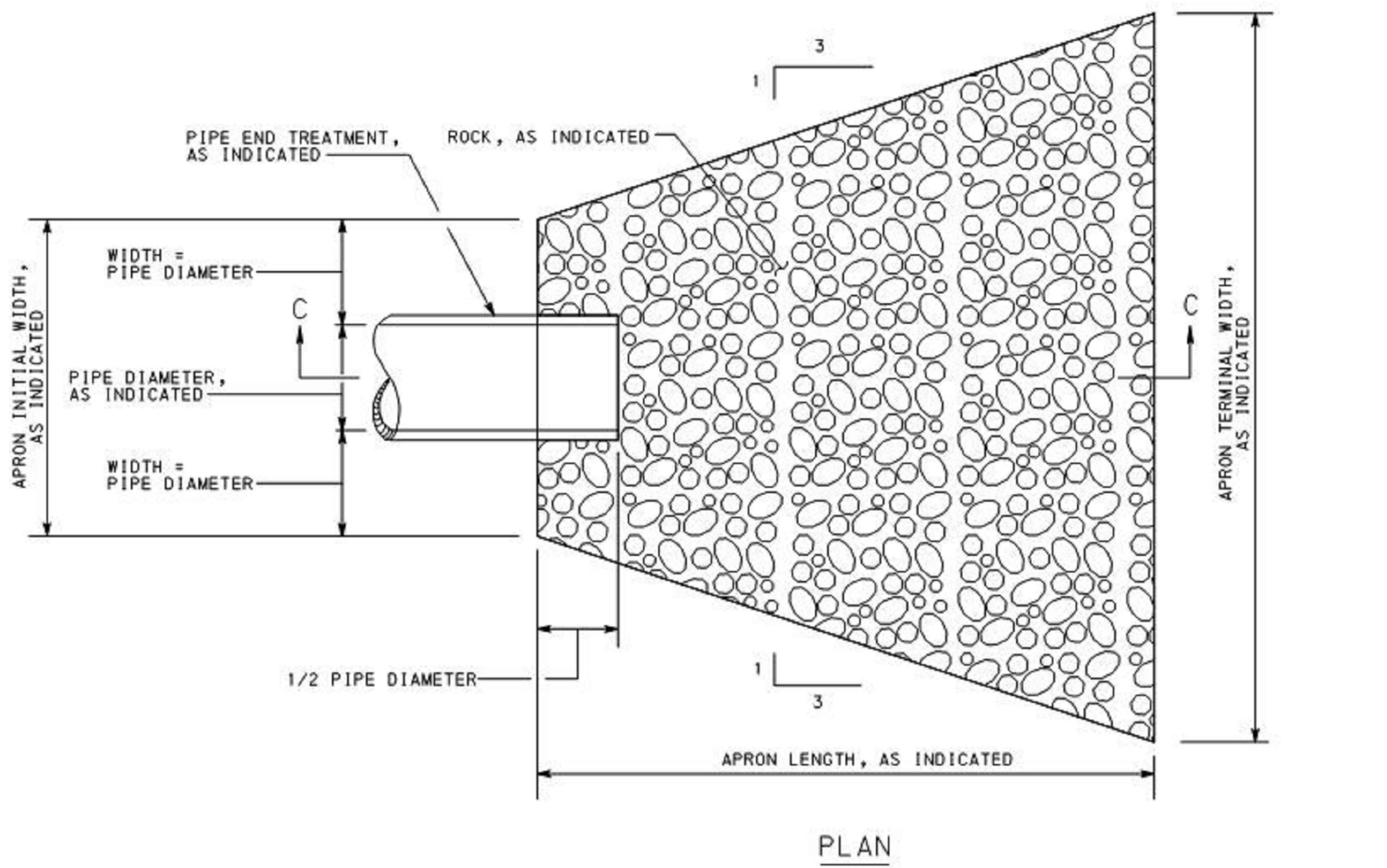
TEST PIT SUMMARY



NOT TO SCALE

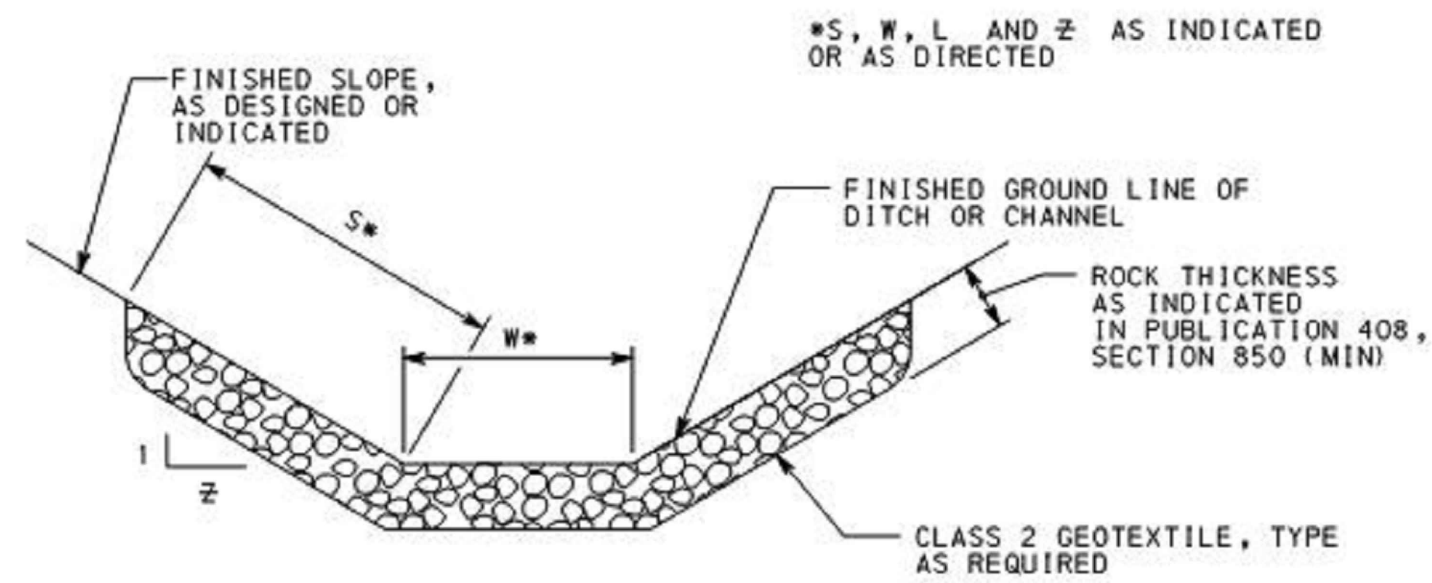
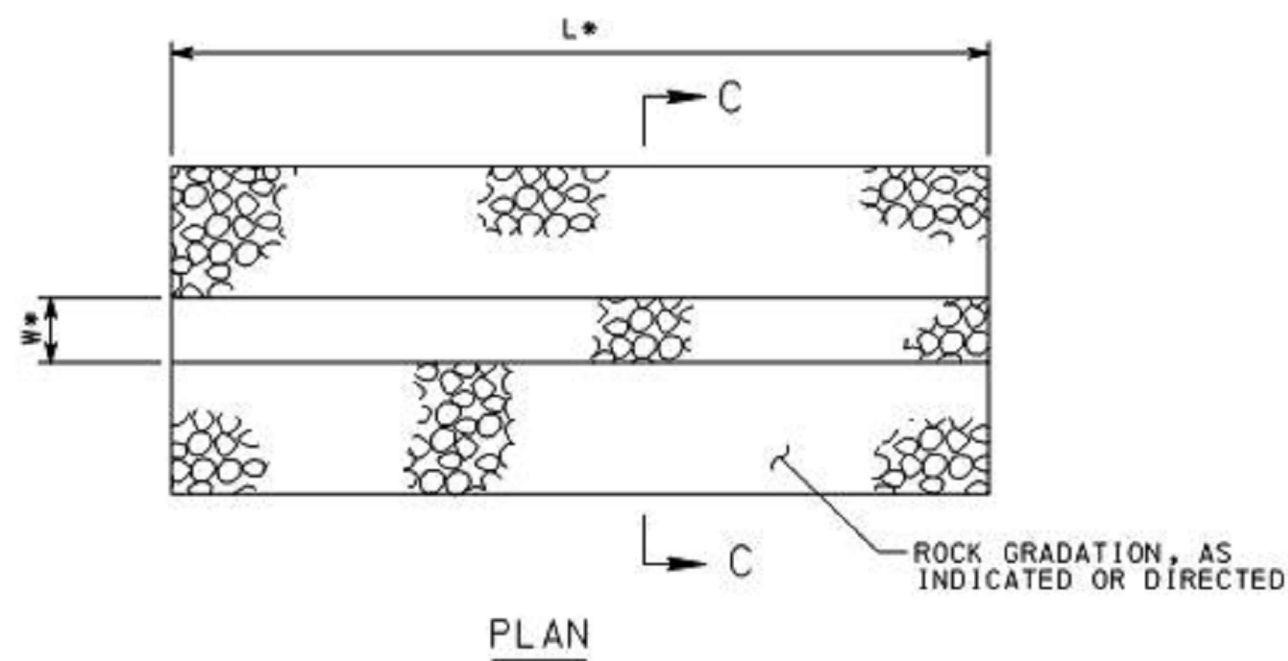
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DETAILS FOR DRAINAGE STRUCTURES AS ADOPTED FROM
PENNDOT PUBLICATION 72M: STANDARDS FOR ROADWAY
CONSTRUCTION, DATED JUNE 2010.



OUTLET NO.	PIPE DIA. Pd (IN)	RIPRAP		APRON		
		SIZE (R-)	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Alw (FT)	TERMINAL WIDTH Atw (FT)
BASIN SOUTH (HW#3)	48	R-6	36	30	12	42
HW#2	48	R-5	27	30	24	54

RIPRAP OUTLET PROTECTION
NOT TO SCALE



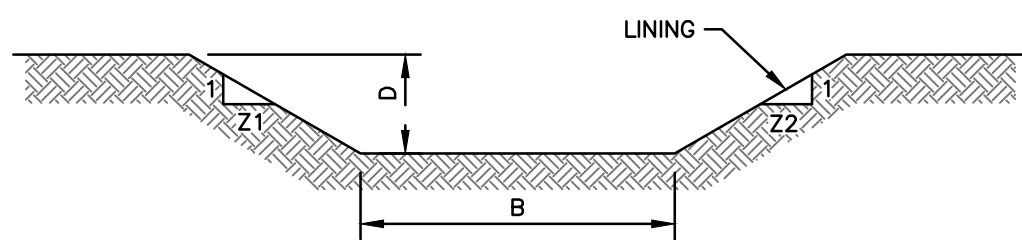
- NOTES**
1. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE ROCK BARRIER. REPLACE CLOGGED FILTER STONE. REMOVE AND DISPOSE OF SEDIMENT IN AN APPROVED MANNER.
 2. PROVIDE GEOTEXTILE MATERIAL ALONG ALL INTERFACE AREAS WITH GROUND CONTACT.

NOTES:

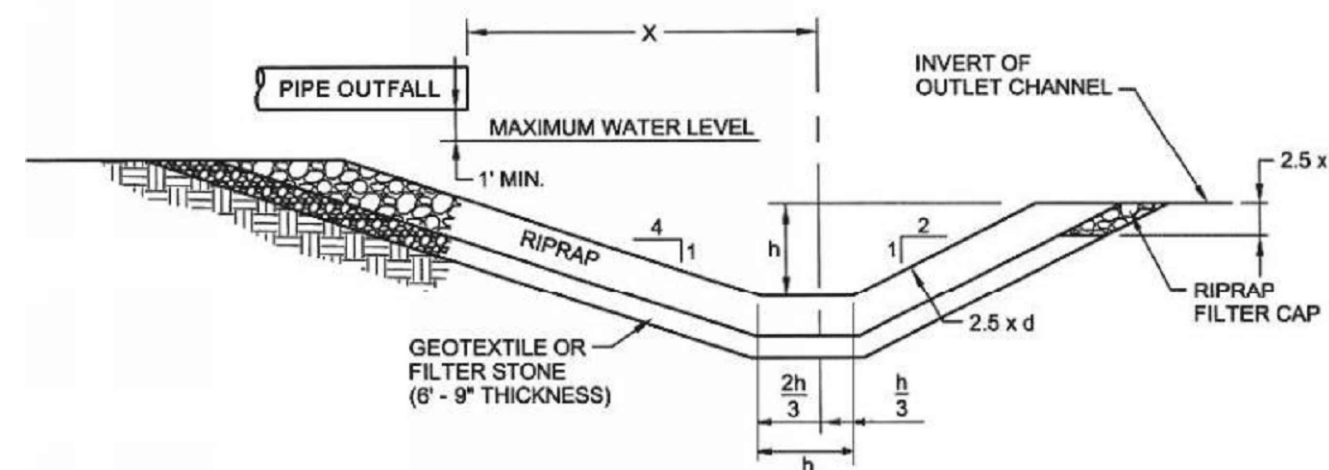
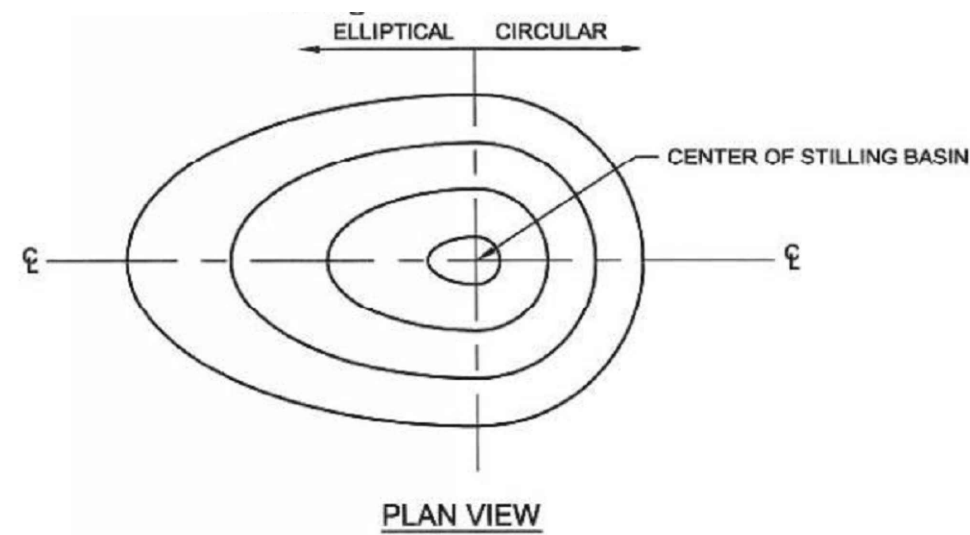
1. CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.
2. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED.
3. CHANNEL SHALL BE CLEANED WHENEVER TOTAL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
4. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HRS OF DISCOVERY OR AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE.
5. DAMAGED LINING SHALL BE REPLACED WITHIN 48 HRS OF DISCOVERY.
6. THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

CHANNEL ID	BOTTOM WIDTH Wo (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION	ROCK THICKNESS t (IN)	UNDERLAYMENT	UNDERLAYMENT THICKNESS (IN)
DIV_SWALE	6	4	2.5	2	R-3	9	AASHTO#3	6
SWALE10	3	2	3	3	R-4	18	AASHTO#3	6
SWALE11	4	1	3	3	R-3	9	AASHTO#3	6
SWALE12	2	2	3	3	R-8	63	AASHTO#3	6
SWALE2	3	2	3	3	R-4	18	AASHTO#3	6
SWALE5	4	2	3	3	R-3	9	AASHTO#3	6
SWALE7	4	2	3	3	R-4	18	AASHTO#3	6
SWALE8	2	1	3	3	R-3	9	AASHTO#3	6

RIPRAP SWALE LINING
NOT TO SCALE



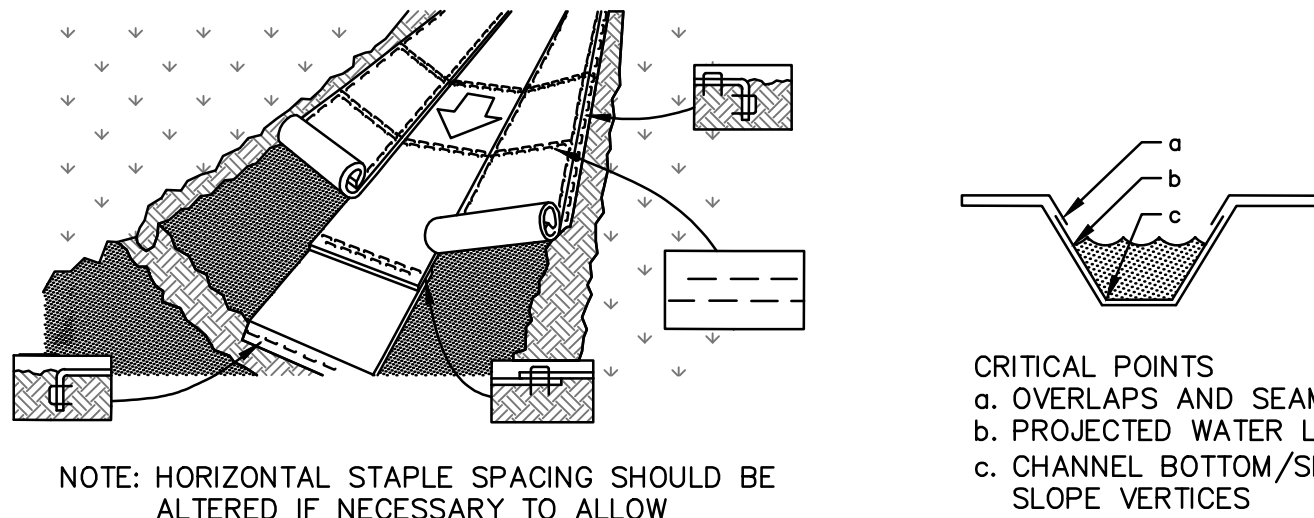
TYPICAL VEGETATED SWALE CROSS-SECTION
NOT TO SCALE



OUTLET NO.	X (ft)	h (ft)	Riprap Size (R_)	d+ Stone Size	Placement Thickness (ft)	Major Axis, Ft	Minor Axis, Ft
NORTH BASIN (SB-2)	3	1	R-3	3	1	5	2
SOUTH BASIN (SB-1)	4	2	R-7	18	4	10	15

NOTE: MINOR AXIS FOR SB-1 ACCOUNTS FOR THREE OUTFALL PIPES.

STILLING BASIN
NOT TO SCALE



NOTES:

1. ALL GRADING IS TO MINIMIZE HARD EDGES TO PRODUCE CONTOURED SMOOTH GRADE CHANGES.
2. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED.
3. CHANNEL SHALL BE CLEANED WHENEVER TOTAL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
4. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HRS OF DISCOVERY OR AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE.
5. DAMAGED LINING SHALL BE REPLACED WITHIN 48 HRS OF DISCOVERY.
6. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

CHANNEL ID	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)
SWALE1	6	2	3	3
SWALE3	4	1	3	3
SWALE4	8	1	3	3
SWALE6	4	2	3	3
SWALE9	3	2	3	3

VEGETATED SWALE LINING
NOT TO SCALE



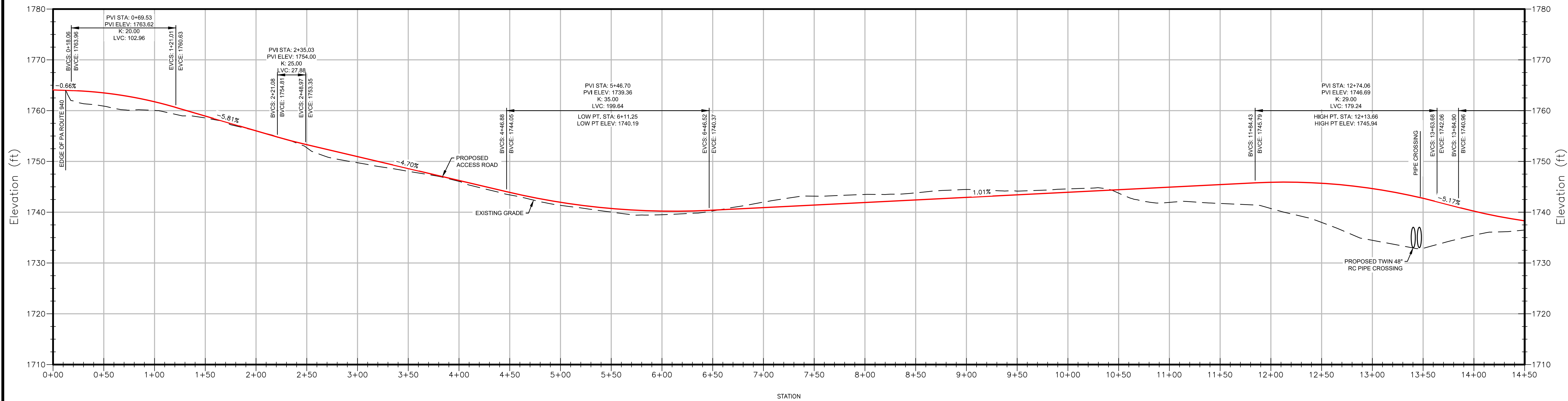
DETAILS FOR DRAINAGE STRUCTURES AS ADOPTED FROM PENNDOT PUBLICATION 72M: STANDARDS FOR ROADWAY CONSTRUCTION, DATED JUNE 2010.



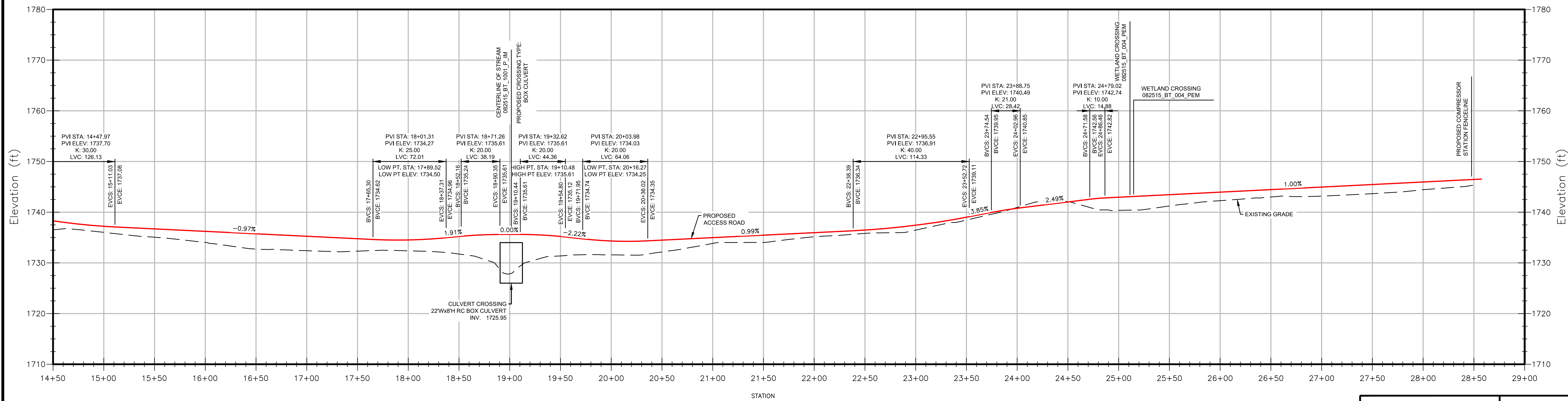
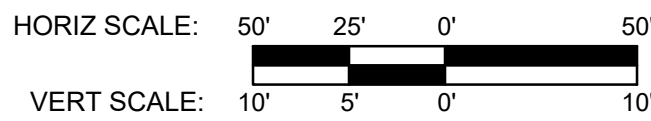
PENNEAST PIPELINE PROJECT
KIDDER COMPRESSOR STATION
POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS
CARBON COUNTY, PENNSYLVANIA

DRAWN BY	CAF	DATE ISSUED	10/15/2018
CHECKED BY	WMC	SCALE	AS SHOWN
APPROVED BY	JRD	APPROVED BY	
DWG. NO.	023-03-07-009	REV. NO.	B

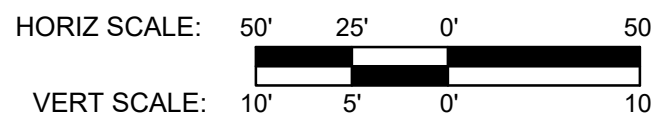
G:\PennEast\353754_PennEast_Pipeline_EPCNDataProd\Facilities\Draft\TING013 - C - Plan & Profiles\Kidder_Compressor_Station\PADEP_Cv\include in both sets\023-03-07-009.dwg



ACCESS ROAD PROFILE



ACCESS ROAD PROFILE



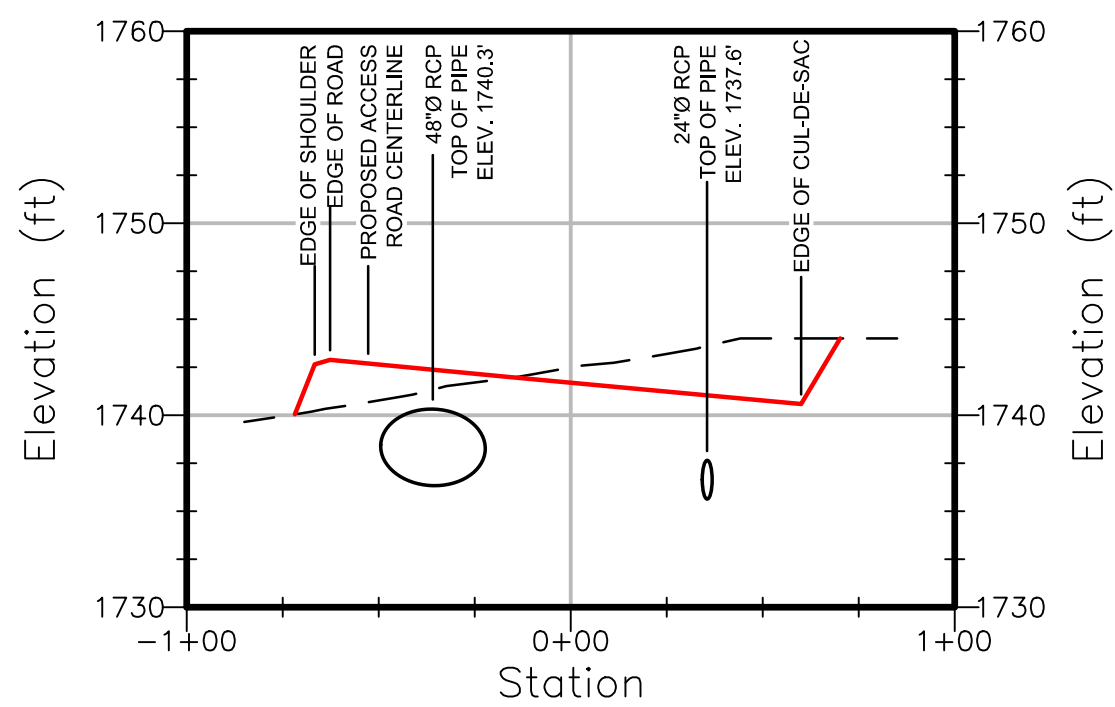
LEGEND

- EXISTING GRADE
- PROPOSED ACCESS ROAD



FOR VERTICAL SIGHT DISTANCES, CHAPTER 3 OF THE AASHTO PUBLICATION "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" WAS APPLIED. THE STOPPING SIGHT DISTANCE REQUIRED WAS DETERMINED TO BE 215'. THE SIGHT LINE REPORT CONFIRMED THE PROPOSED VERTICAL SIGHT LINES ARE WITHIN THE REQUIREMENTS DICTATED BY AASHTO.

		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION ACCESS ROAD PROFILE CARBON COUNTY, PENNSYLVANIA			
		DRAWN BY	CAF	DATE ISSUED	10/15/2018
THIS DRAWING IS THE PROPERTY OF PENNEAST PIPELINE COMPANY, LLC ("P.E.C."). IT MAY CONTAIN INFORMATION OR DESIGNING TECHNOLOGY OWNED BY P.E.C. AND DEEMED TO BE CONFIDENTIAL. SENSITIVE. IT IS TO BE USED ONLY IN CONNECTION WITH WORK PERFORMED FOR P.E.C. REPRODUCTION IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN WORK FOR P.E.C. IS EXPRESSLY FORBIDDEN EXCEPT BY EXPRESS WRITTEN PERMISSION OF P.E.C. IT IS TO BE NOTED AGAINST BOTH CLIENTS AND PROJECTS DISCLOSURE TO ANY THIRD PARTY.		CHECKED BY	WMC	SCALE	AS SHOWN
		APPROVED BY	JRD	APPROVED BY	
DWG. NO.		023-03-07-011		REV. NO.	B

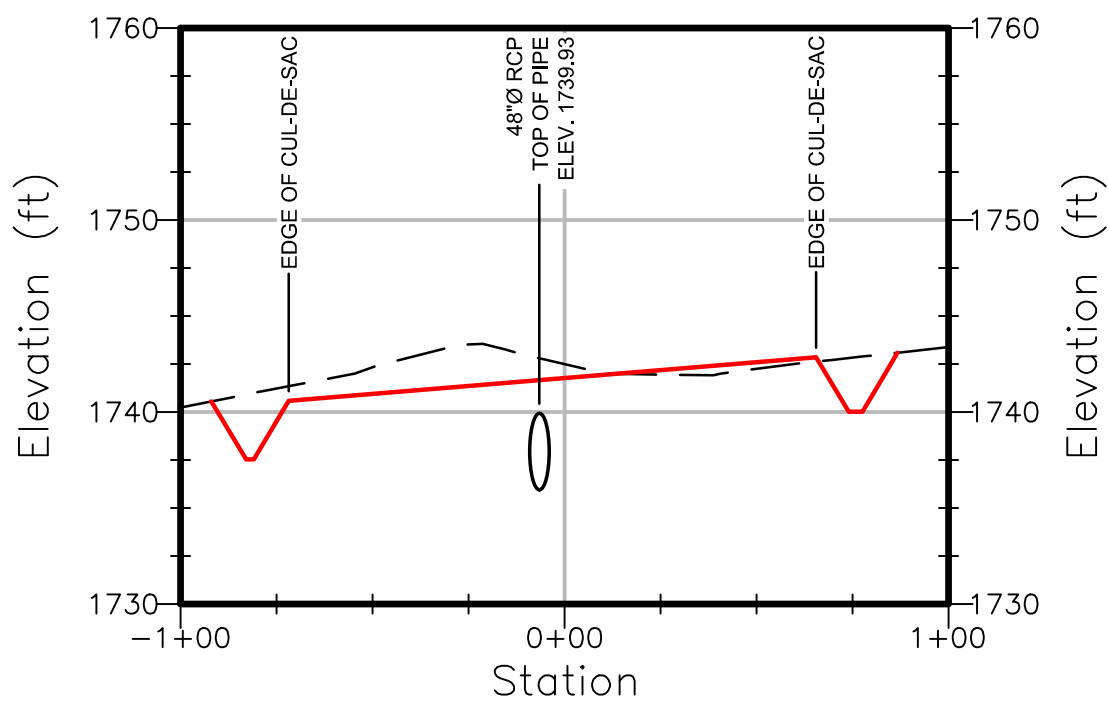


CUL-DE-SAC CROSS SECTION A-A

HORIZ SCALE: 50' 25' 0' 50'
VERT SCALE: 10' 5' 0' 10'

LEGEND

- EXISTING GRADE
- PROPOSED ACCESS ROAD

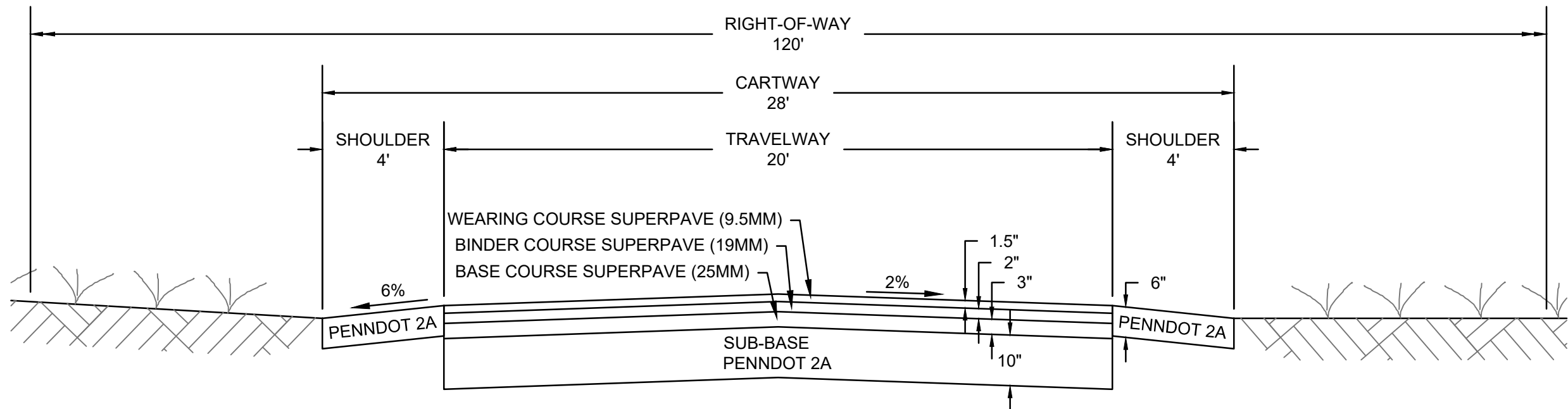


CUL-DE-SAC CROSS SECTION B-B

HORIZ SCALE: 50' 25' 0' 50'
VERT SCALE: 10' 5' 0' 10'



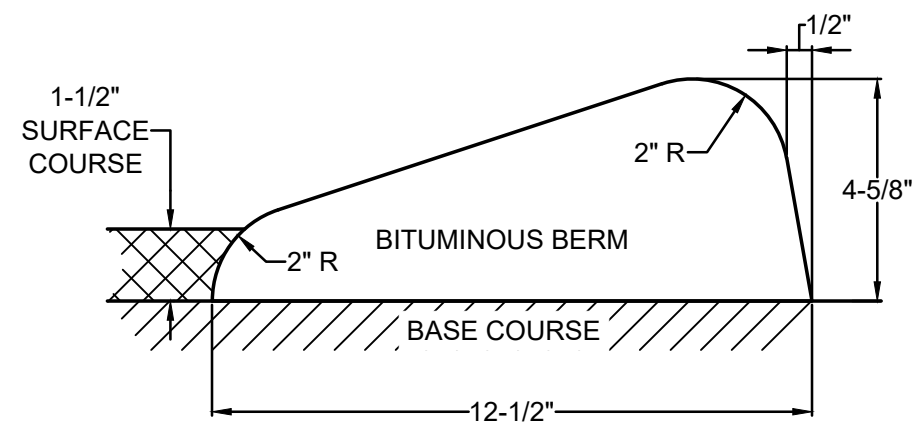
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		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION CROSS SECTION DETAILS CARBON COUNTY, PENNSYLVANIA			
		DRAWN BY	CAF	DATE ISSUED	10/15/2018
		CHECKED BY	WMC	SCALE	AS SHOWN
		APPROVED BY	JRD	APPROVED BY	
DWG. NO.		023-03-07-012		REV. NO.	B



TYPICAL CROSS-SECTION OF ACCESS ROAD
NOT TO SCALE

SPEED LIMIT = 35 MPH
MAX SLOPE = 10%

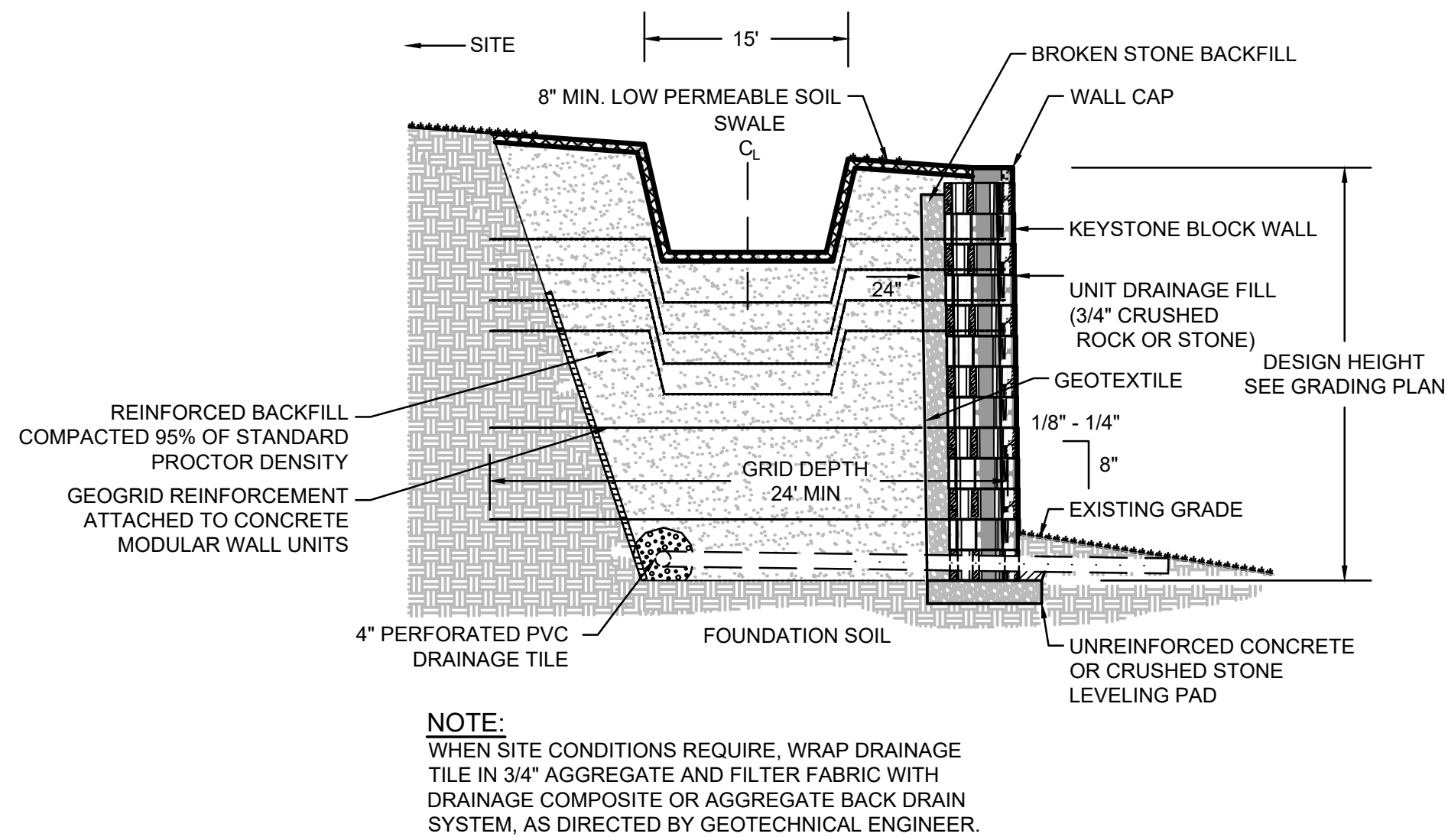
BASED ON KIDDER TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, TABLE 153-29-1, DESIGN STANDARDS FOR ROADS (NONRESIDENTIAL BUSINESS AND INDUSTRIAL, LOCAL STREET).
NOTE:
THE PROPOSED CARTWAY WIDTH IS BASED ON PROPOSED TOWNSHIP REGULATIONS. IF THE PROPOSED TOWNSHIP REGULATIONS ARE NOT ADOPTED, PENNEAST WILL REQUEST A WAIVER DURING FINAL PLAN APPROVAL.



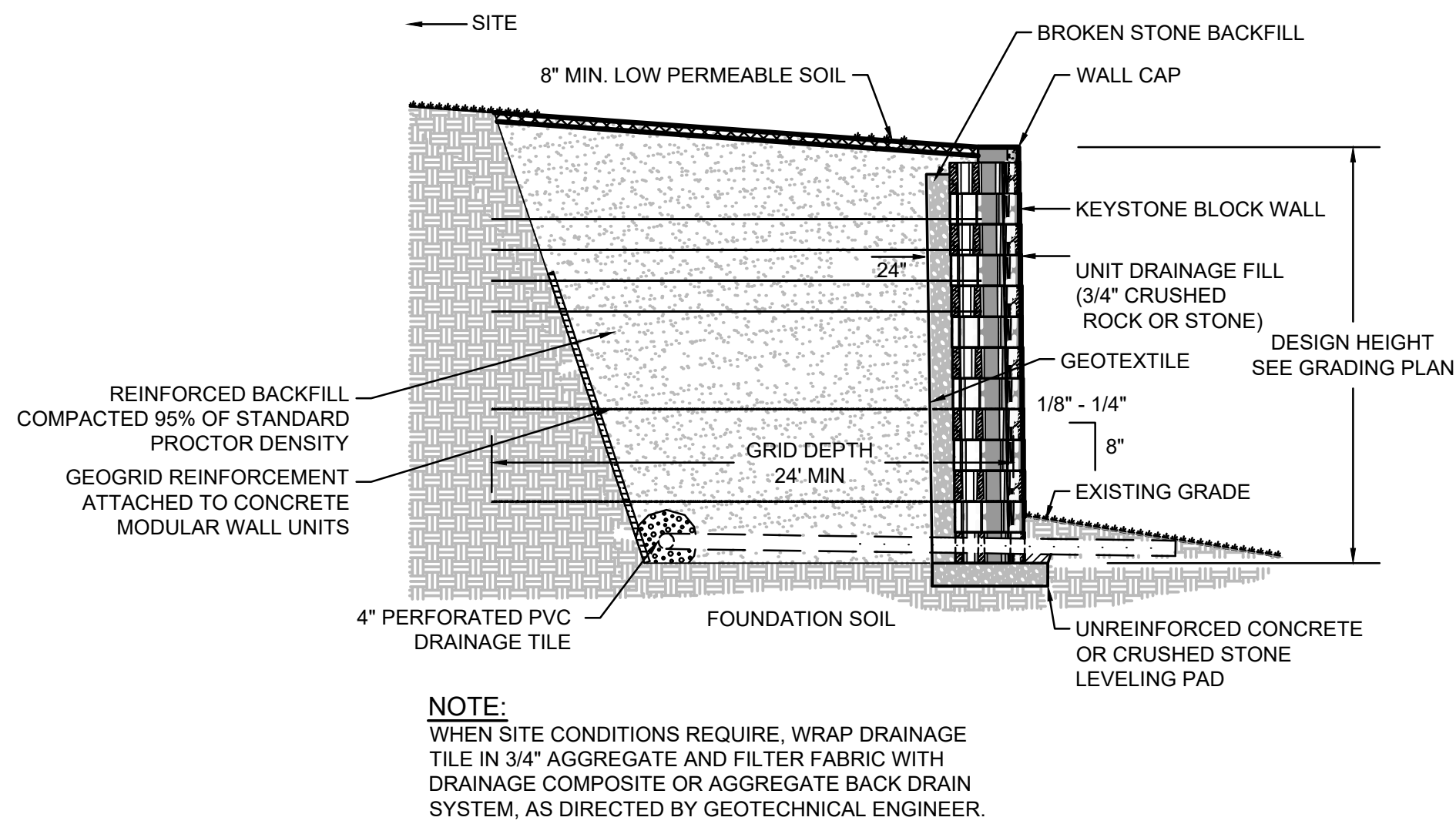
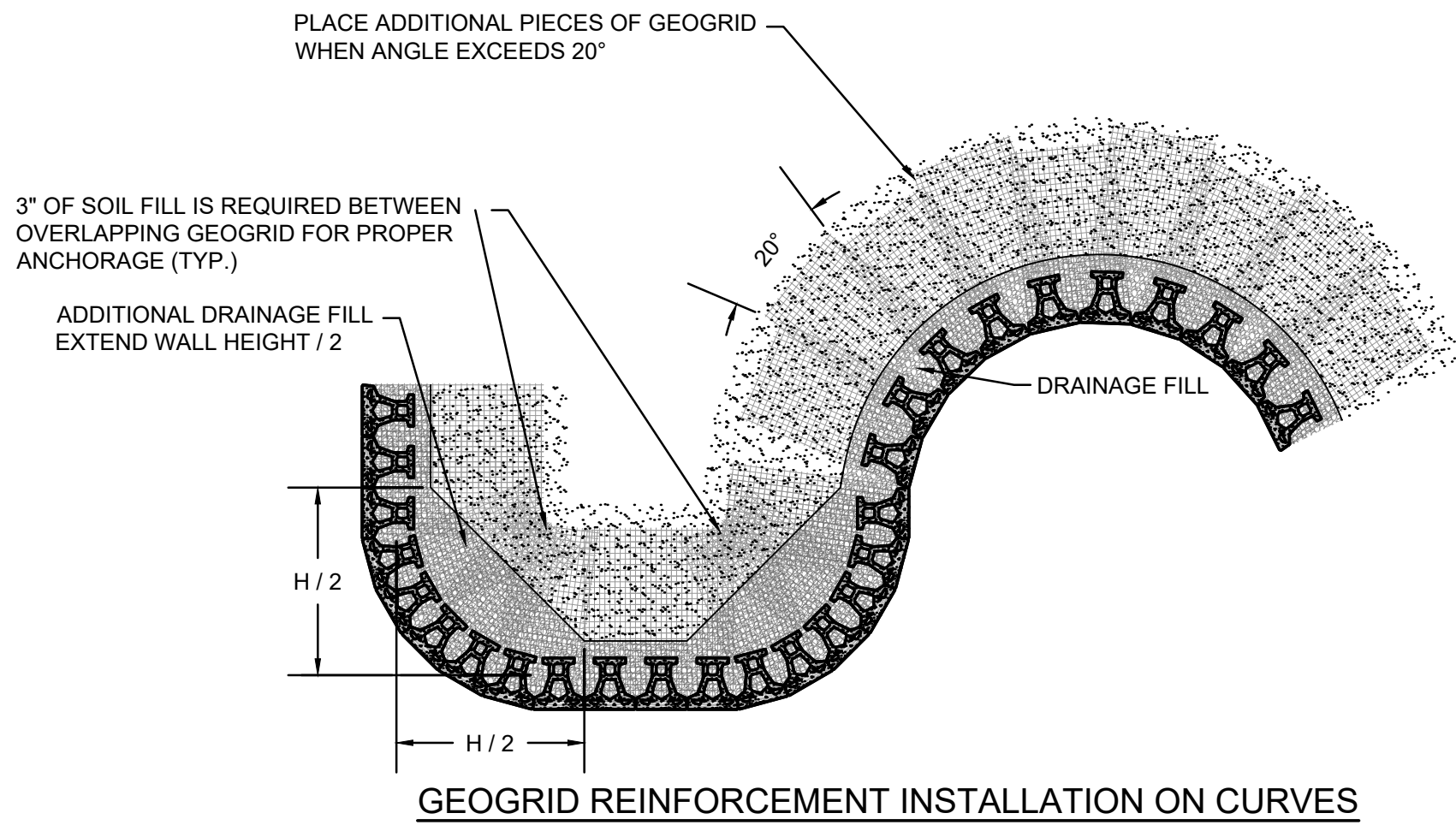
CURB DETAIL
NOT TO SCALE



		CLIENT APPROVAL			
		DATE			
REVISIONS					
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION TYPICAL ACCESS ROAD SECTION AND DETAILS CARBON COUNTY, PENNSYLVANIA			
		DRAWN BY	CAF	DATE ISSUED	10/15/2018
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		APPROVED BY	JRD	APPROVED BY	
DWG. NO.		023-03-07-013		REV. NO.	B


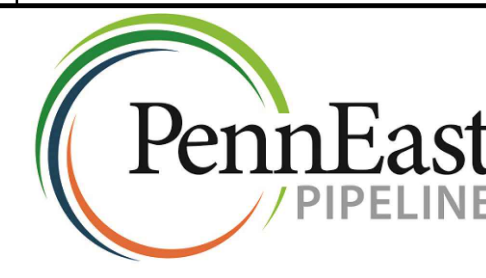


TYPICAL REINFORCED RETAINING WALL SECTION WITH SWALE



TYPICAL REINFORCED RETAINING WALL SECTION WITHOUT SWALE



 Know what's below. Call before you dig.		CLIENT APPROVAL				
		DATE				
REVISIONS						
NO.	DESCRIPTION	DATE	DRAWN	CK	APPR	
A	ISSUED FOR PADEP	10/15/2018	CAF(MM)	WMC(MM)	JRD(MM)	
B	RE-ISSUED FOR PADEP	10/2019	MWF(MM)	DOW(MM)	WMC(MM)	
		PENNEAST PIPELINE PROJECT KIDDER COMPRESSOR STATION RETAINING WALL AND GEOGRID DETAILS CARBON COUNTY, PENNSYLVANIA				
		DRAWN BY	CAF	DATE ISSUED	10/15/2018	
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		APPROVED BY	JRD	APPROVED BY		
DWG. NO.		023-03-07-014			REV. NO.	B