

# ET - BRADDOCK WELL PAD SITE RESTORATION / POST CONSTRUCTION STORMWATER MANAGEMENT PLAN PERMIT NO. PAD-0200114

PERMITTEE:

MERRION OIL & GAS  
CONTACT: RYAN DAVIS  
610 REILLY AVENUE  
FARMINGTON, NM 87401  
(505) 402-5998



PENNSYLVANIA  
ONE CALL SYSTEM  
PA ACT 287 OF 1974 AS AMENDED BY ACT 121 OF 2008  
REQUIRES THREE WORKING DAYS NOTICE  
SERIAL # 20171993045

DURING DESIGN, TRANT CORPORATION PERFORMED A PA ONE CALL INQUIRY FOR THE PROPOSED PROJECT AREA. ALL UNDERGROUND UTILITY OWNERS THAT RESPONDED TO THE PA ONE CALL HAVE BEEN CONTACTED AND THEIR REPORTED UTILITIES ADDED TO PLANS BASED ON INFORMATION PROVIDED BY THE UTILITY. HOWEVER, IN VIOLATION OF LAWS OF THE COMMONWEALTH OF PENNSYLVANIA, NOT ALL UNDERGROUND UTILITY OWNERS ARE REGISTERED WITH THE PA ONE CALL SYSTEM. NEITHER THE PERMIT OPERATOR, ARM GROUP INC., NOR THE PROFESSIONAL ENGINEER SIGNING THESE PLANS CERTIFIES THAT THE FOLLOWING DEPICTS UNDERGROUND UTILITIES OWNED BY THOSE NOT REGISTERED WITH THE PA ONE CALL SYSTEM.

GENERAL UTILITY & ACT 187 INFORMATION

- THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- CONTRACTOR SHALL NOTIFY THE PA ONE CALL SYSTEM NOT LESS THAN THREE (3) DAYS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PLACE THE CALL AND REFERENCE THE SERIAL NUMBER GIVEN, AND PROVIDE AN APPROXIMATE DATE AND TIME THAT DIGGING WILL OCCUR. THE ONE CALL SYSTEM WILL AGAIN NOTIFY THE PUBLIC UTILITIES IN THE AREA. PUBLIC UTILITIES WILL THEN COORDINATE DIRECTLY WITH THE CONTRACTOR FOR ACTUAL FIELD LOCATIONS.

ELECTRIC:  
DUQUESNE LIGHT COMPANY  
2645 NEW BEAVER AVE.  
PITTSBURGH, PA 15233  
ATTN: JOHN ANDZELIK  
EMAIL: JANDZELIK@DUQLIGHT.COM

WATER:  
WILKINSBURG PENN JT WATER AUTHORITY  
2200 ROBINSON BLVD.  
WILKINSBURG, PA 15221  
ATTN: TOM SORCE  
EMAIL: TSORCE@WPJWA.COM

TELEPHONE:  
VERIZON PENNSYLVANIA LLC  
15 E MONTGOMERY AVE.  
PITTSBURGH, PA 15212  
ATTN: OFFICE PERSONNEL

PUBLIC SEWER:  
ALLEGHENY COUNTY SANITARY AUTHORITY  
3300 PREBLE AVE. PITTSBURGH, PA 15233  
ATTN: KEN BABIN

CABLE:  
CENTURYLINK FORMERLY EMBARQ  
700 W MINERAL AVE.  
GRID NO: UT00-D27.34  
LITTLETON, CO 80120  
ATTN: GEORGE MCELVAIN  
EMAIL: GEORGE.MCELVAIN@CENTURYLINK.COM

GAS:  
PEOPLES NATURAL GAS  
261 CENTER ST.  
MCKEESPORT, PA 15132  
ATTN: DON ZOMBEK  
EMAIL: DON.ZOMBEK@PEOPLES-GAS.COM

COMCAST CABLEVISION  
2300 ELDO ROAD  
MONROEVILLE, PA 15146  
ATTN: KEVIN MYERS  
EMAIL: KEVIN\_MYERS@CABLE.COMCAST.COM

BOROUGH:  
EAST PITTSBURGH BOROUGH  
813 LINDEN AVE.  
EAST PITTSBURGH, PA 15112  
ATTN: LORI PRUNCEK  
EMAIL: EPPDCEHIF@EASTPITTSBURGHBORO.COM

EAST PITTSBURGH BOROUGH,  
NORTH BRADDOCK BOROUGH,  
NORTH VERSAILLES TOWNSHIP,  
ALLEGHENY COUNTY, PENNSYLVANIA

MAY 2018  
OCTOBER 2018

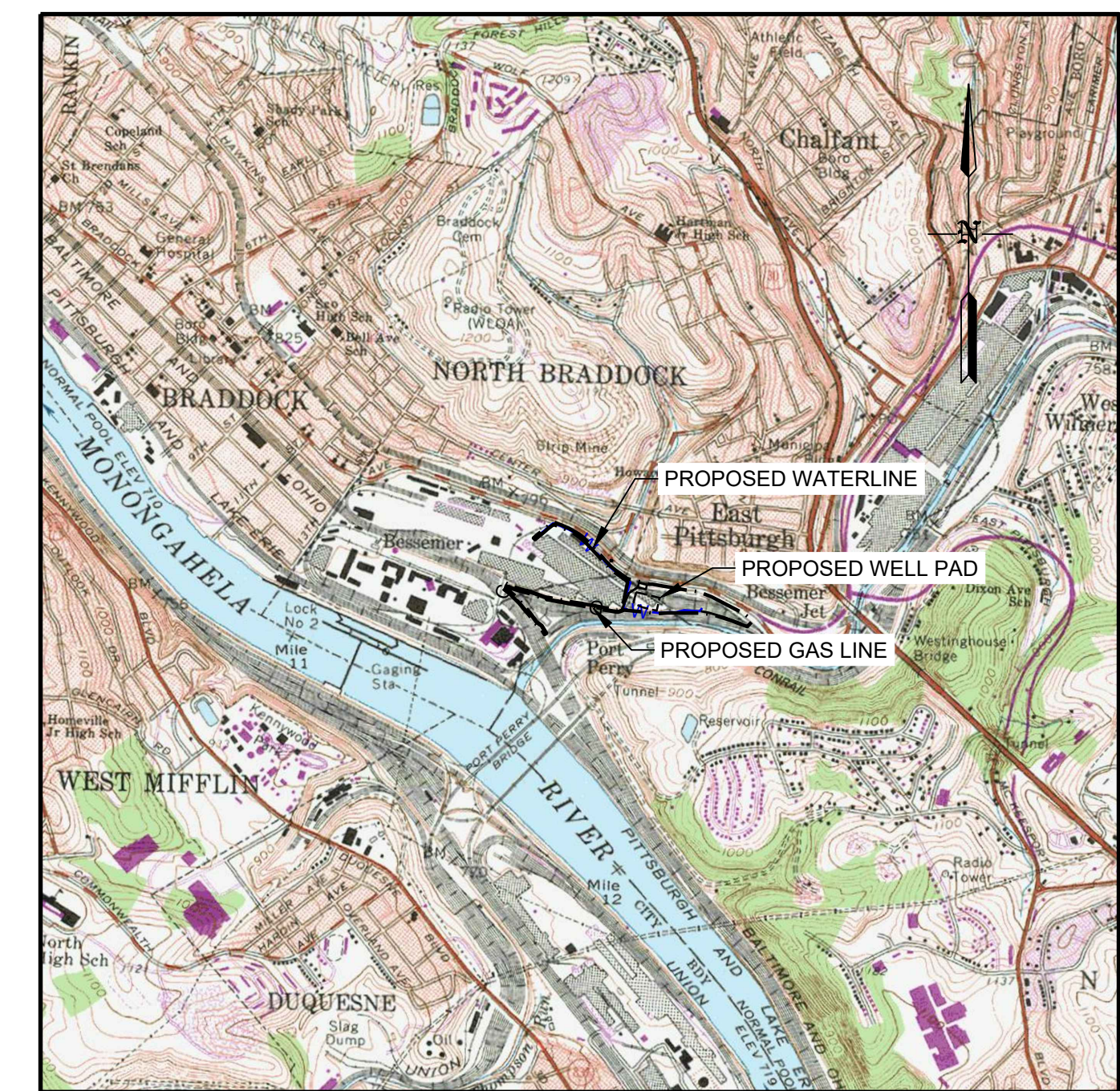
LIST OF SHEETS

SHEET NO.	DESCRIPTION
WS-1A	PRE-DEVELOPMENT WATERSHED AND SOILS MAP - VOLUME
WS-1B	PRE-DEVELOPMENT WATERSHED AND SOILS MAP - RATE
WS-2A	POST-DEVELOPMENT WATERSHED AND SOILS MAP - VOLUME
WS-2B	POST-DEVELOPMENT WATERSHED AND SOILS MAP - RATE
WS-3A	SITE RESTORATION WATERSHED AND SOILS MAP - VOLUME
WS-3B	SITE RESTORATION WATERSHED AND SOILS MAP - RATE
CH-1	CHANNEL WATERSHED MAP
SR-1	SITE RESTORATION PLAN
SR-2	SITE RESTORATION PLAN
N-1	PCSM NOTES
C601	CONSTRUCTION DETAILS
C701	EXISTING CONDITIONS OVERLAY MAP

LEGEND

NOTE: LEGEND IS TYPICAL, NOT ALL OBJECTS IN LEGEND APPEAR IN PLAN.

1550	EXISTING CONTOURS	1490	PROPOSED CONTOURS
[Blue dashed line]	FEMA FLOODPLAIN	[Blue dashed line with arrow]	PROPOSED LIMIT OF DISTURBANCE
[Blue hatched area]	50' FLOODWAY	[Blue line with arrow]	PROPOSED CHANNEL
[Blue hatched area]	FEMA FLOODWAY	[Blue line with arrow]	PROPOSED WATER FEATURES
[Blue dashed line]	EXISTING MAPPED WATERCOURSE	[Blue dashed line]	PROPOSED WELL PAD
[Black outline]	EXISTING STRUCTURE	[Blue dashed line]	PROPOSED TEMPORARY TANK
[Green wavy line]	EXISTING VEGETATION	[Blue line with W]	PROPOSED WATERLINE
[Black dashed line]	EXISTING PROPERTY LINE	[Blue line with G]	PROPOSED GASLINE
[Black dashed line]	EXISTING MUNICIPAL BOUNDARIES	[Blue hatched area]	PROPOSED SLOPE STABILIZATION
[Black dashed line with X]	EXISTING FENCE	[Blue hatched area]	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
[Black dashed line with OE]	EXISTING OVERHEAD ELECTRIC LINE	[Blue dashed line]	PROPOSED ACCESS ROAD
[Black dashed line with G]	EXISTING GAS LINE	[Blue dashed line]	PROPOSED 12" FILTER SOCK
[Blue dashed line with W]	EXISTING WATER LINE	[Blue dashed line]	PROPOSED 24" FILTER SOCK
[Blue dashed line]	EXISTING CULVERT	[Blue dashed line]	PROPOSED CULVERT
[Blue dashed line]	EXISTING WALL	[Blue dashed line]	PROPOSED DIVERSION BERM
[Blue dashed line with +]	EXISTING RAILLINE	[Blue dashed line]	PROPOSED GRAVEL
[Blue dashed line with WeB]	EXISTING SOIL BOUNDARY AND DESCRIPTOR	[Blue dashed line]	PROPOSED INLET



LOCATION MAP  
SCALE: 1" = 2000'

PREPARED BY:

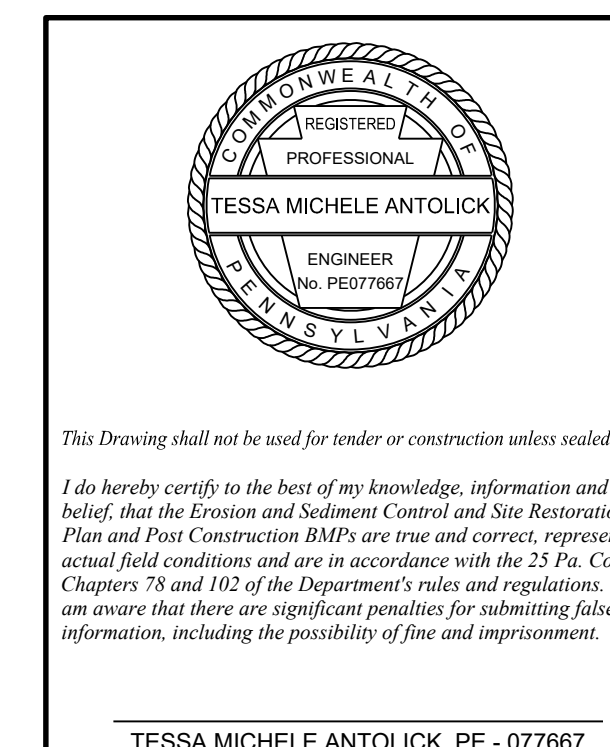


**ARM Group Inc.**  
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HEADQUARTERS:

1129 West Governor Road • Hershey, PA 17033-0797  
Ph: (717) 533-8600 Fax: (717) 533-8605



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I do hereby certify that to the best of my knowledge, information and belief, that the Erosion and Sediment Control and Site Restoration Plan and Post Construction BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

TESSA MICHELE ANTOLICK, PE - 077667

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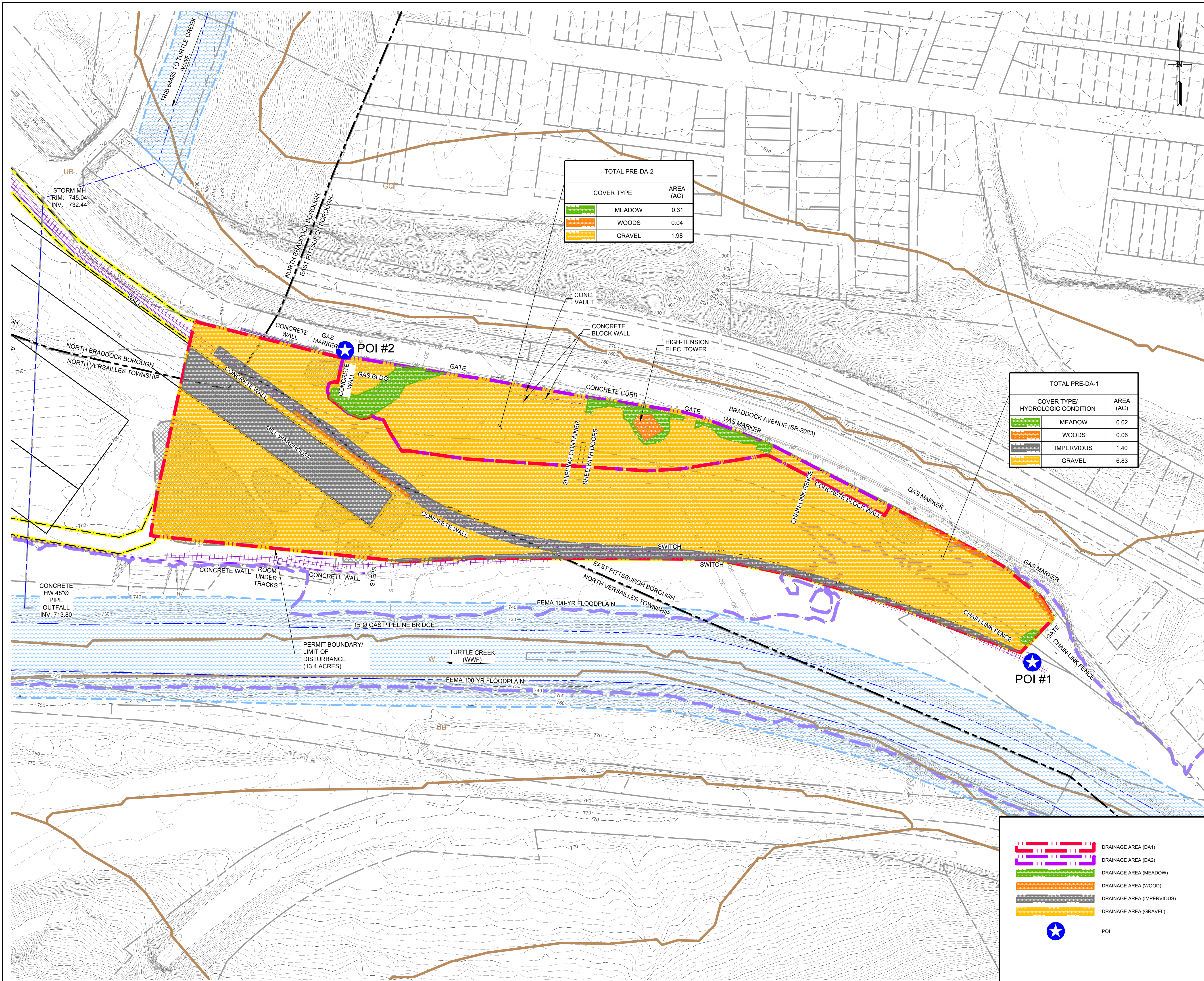


REV	DATE	DESCRIPTION	BY	CHK
1	10/22/2018	REVISED PER PADEP COMMENTS	ARM	
0	05/31/2018	PADEP SUBMISSION	ARM	

NO.	DATE	DESCRIPTION	BY	CHK
AS NOTED	10/22/2018			
180539				

COVER SHEET  
SR / PCSM PLAN  
EAST PITTSBURGH BOROUGH,  
NORTH BRADDOCK BOROUGH,  
NORTH VERSAILLES TOWNSHIP,  
ALLEGHENY COUNTY, PENNSYLVANIA

ET - BRADDOCK WELL PAD  
MERRION OIL & GAS  
Sheet 1



- NOTES:**
- THE BASE MAP HAS BEEN CREATED USING SURVEY DATA (WITHIN LIMIT OF DISTURBANCE) PROVIDED BY TRANT CORPORATION, DATED 05/31/2018. SUPPLEMENTED BY AERIAL PHOTOGRAPHY OF PAMAP FILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
  - AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP FILES 40001380PAS DATED 2010.
  - PROPERTY LINES INFORMATION OF ALLEGHENY COUNTY ARE PROVIDED BY TRANT CORPORATION. THIS BASEMAP IS NOT THE RESULT OF AN ACTUAL FIELD SURVEY OF PROPERTIES SHOWN AND SHOULD NOT BE USED AS SUCH.
  - THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
  - SLOPE AREAS 3:1 OR GREATER BROUGHT TO FINISH GRADE ARE TO BE STABILIZED WITH ROCK OR SEEDED WITH MULCH APPLIED TO SLOPES AS SPECIFIED ON DETAIL SHEETS.
  - EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
  - THE TEMPORARY WATER STORAGE TANK DIMENSIONS AND LAYOUT ARE DISPLAYED FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL TANK DIMENSIONS AND LAYOUT WILL BE DETERMINED PRIOR TO CONSTRUCTION. THE OPEN-TOP TANKS ARE NOT ACCOUNTED FOR IN THE PCSM CALCULATIONS. THE ENTIRE TANK AREA IS MODELED AS A GRAVEL COVER TYPE TO ACCOUNT FOR RUNOFF BEFORE THE TANKS ARE ERECTED.

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- 1550 EXISTING CONTOURS
  - FEMA FLOODPLAIN
  - 50' FLOODWAY
  - FEMA FLOODWAY
  - EXISTING MAPPED WATERCOURSE
  - EXISTING STRUCTURE
  - EXISTING VEGETATION
  - EXISTING PROPERTY LINE
  - EXISTING MUNICIPAL BOUNDARIES
  - EXISTING FENCE
  - OE-OE EXISTING OVERHEAD ELECTRIC LINE
  - EXISTING ELECTRIC POLE
  - G-G-G EXISTING GAS LINE
  - W-W-W EXISTING WATER LINE
  - EXISTING CULVERT
  - EXISTING RAILLINE
  - EXISTING SLAG PILE
  - WeB EXISTING SOIL BOUNDARY AND DESCRIPTOR
  - 1490 PROPOSED CONTOURS
  - PROPOSED LIMIT OF DISTURBANCE
  - PROPOSED CHANNEL
  - PROPOSED WATER FEATURES
  - PROPOSED WELL PAD
  - PROPOSED TEMPORARY TANK
  - PROPOSED WATERLINE
  - PROPOSED GASLINE
  - PROPOSED SLOPE STABILIZATION
  - PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
  - PROPOSED ACCESS ROAD
  - PROPOSED 12" FILTER SOCK
  - PROPOSED 24" FILTER SOCK
  - PROPOSED CULVERT
  - PROPOSED DIVERSION BERM
  - PROPOSED GRAVEL
  - PROPOSED INLET

PROPOSED LEGEND

- DRAINAGE AREA (DA1)
- DRAINAGE AREA (DA2)
- DRAINAGE AREA (MEADOW)
- DRAINAGE AREA (WOOD)
- DRAINAGE AREA (IMPERVIOUS)
- DRAINAGE AREA (GRAVEL)
- POI

PROFESSIONAL SEAL

TESSA MICHELE ANTOLICK, PE - 077667

This Drawing shall not be used for tender or construction unless sealed.

I do hereby certify to the best of my knowledge, information and belief that the Erosion and Sediment Control and Site Restoration Plan and Post Construction BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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1" = 80'

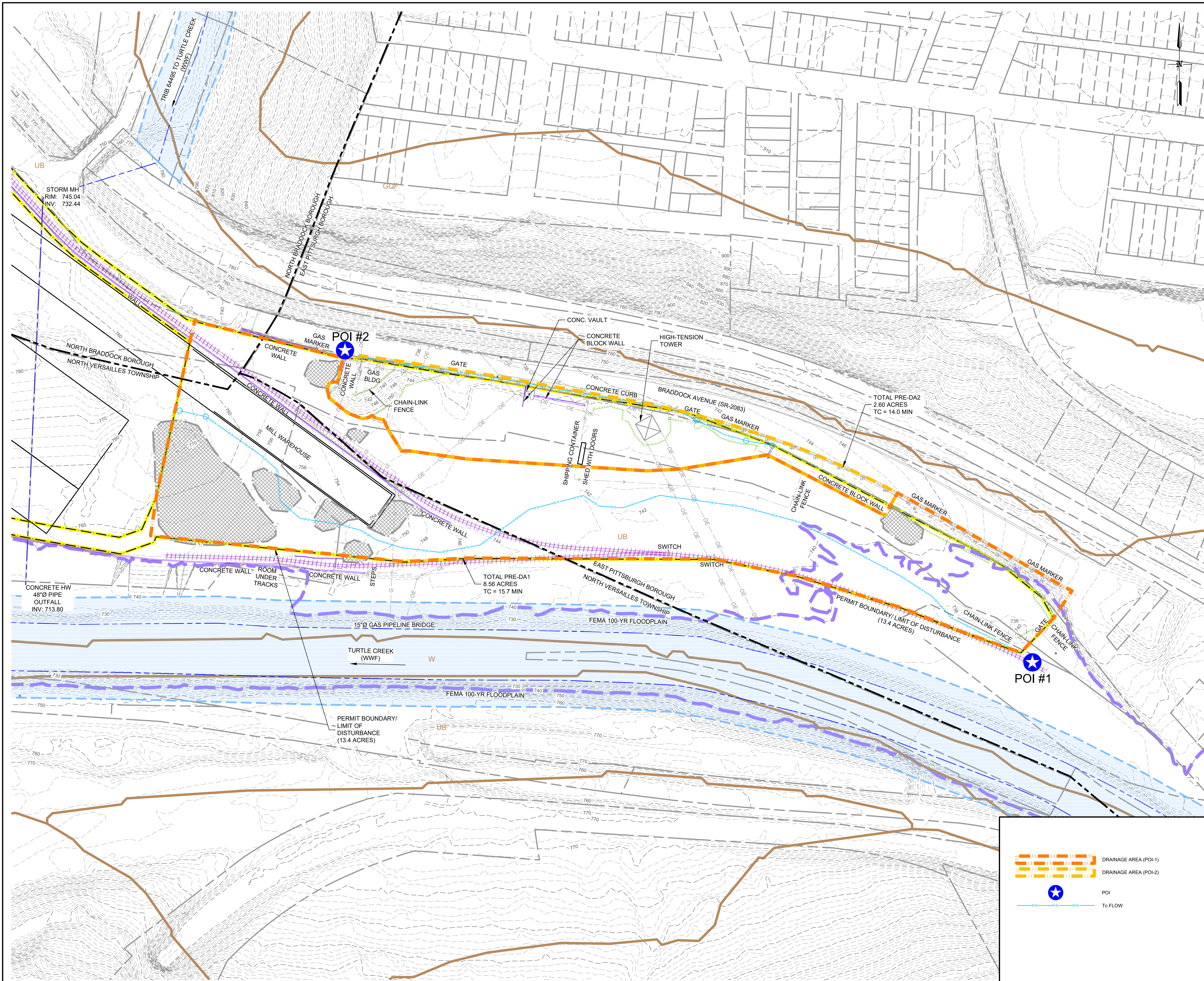
10/22/2018

180539

PRE-DEVELOPMENT WATERSHED AND SOILS MAP - VOLUME  
SR / PCSM PLAN

ET - BRADDOCK WELL PAD  
MERRION OIL & GAS

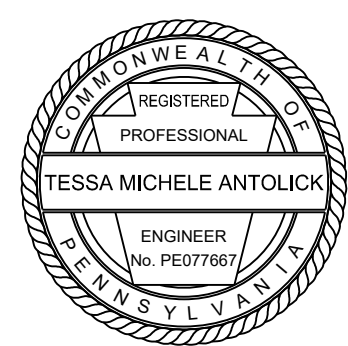
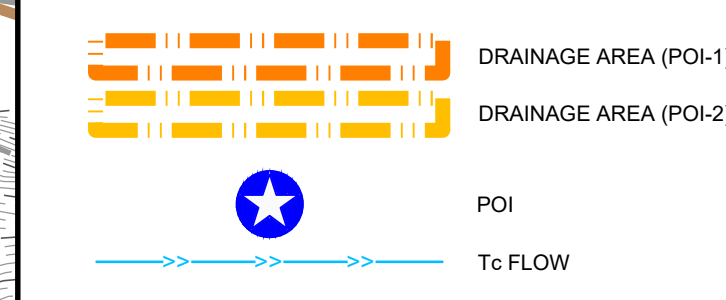
Sheet  
WS-1A



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Symbol	Description
1550	EXISTING CONTOURS
[Blue dashed line]	FEMA FLOODPLAIN
[Blue solid line]	50' FLOODWAY
[Blue hatched area]	FEMA FLOODWAY
[Blue line with arrows]	EXISTING MAPPED WATERCOURSE
[Black outline]	EXISTING STRUCTURE
[Green hatched area]	EXISTING VEGETATION
[Black dashed line]	EXISTING PROPERTY LINE
[Black dashed line]	EXISTING MUNICIPAL BOUNDARIES
[Black dashed line]	EXISTING FENCE
[OE-OE]	EXISTING OVERHEAD ELECTRIC LINE
[E-OE]	EXISTING ELECTRIC POLE
[G-G]	EXISTING GAS LINE
[W-W]	EXISTING WATER LINE
[Grey hatched area]	EXISTING CULVERT
[Black dashed line]	EXISTING WALL
[Black dashed line]	EXISTING RAILLINE
[Grey hatched area]	EXISTING SLAG PILE
[WeB]	EXISTING SOIL BOUNDARY AND DESCRIPTOR
1490	PROPOSED CONTOURS
[Orange dashed line]	PROPOSED LIMIT OF DISTURBANCE
[Blue arrow]	PROPOSED CHANNEL
[Blue hatched area]	PROPOSED WATER FEATURES
[Black dashed line]	PROPOSED WELL PAD
[Circle with X]	PROPOSED TEMPORARY TANK
[W-W]	PROPOSED WATERLINE
[G-G]	PROPOSED GASLINE
[Orange hatched area]	PROPOSED SLOPE STABILIZATION
[Black hatched area]	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
[12-12-12]	PROPOSED ACCESS ROAD
[24-24-24]	PROPOSED 12" FILTER SOCK
[24-24-24]	PROPOSED 24" FILTER SOCK
[DIV-DIV]	PROPOSED CULVERT
[DIV-DIV]	PROPOSED DIVERSION BERM
[Grey hatched area]	PROPOSED GRAVEL
[Black hatched area]	PROPOSED INLET



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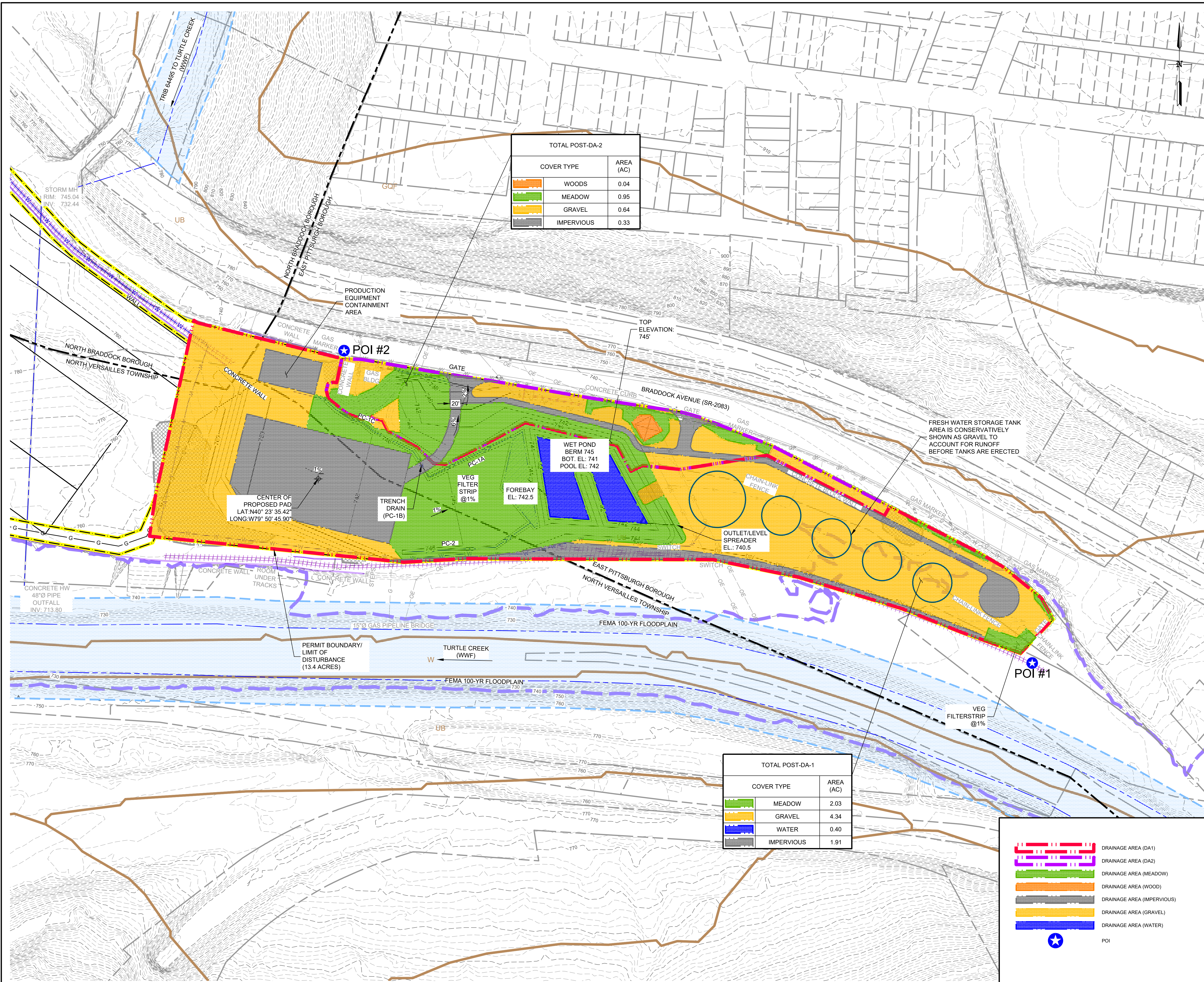


Revised	By	Date
1	REVISED PER PADIP COMMENTS	10/22/2018
0	PADIP SUBMISSION	05/31/2018

Author	Checked	Scale	Date
KGJ	MDR	1" = 80'	10/22/2018
QZ		180539	

**PRE-DEVELOPMENT WATERSHED AND SOILS MAP - RATE SR / PCSM PLAN**  
 EAST PITTSBURGH BOROUGH, NORTH VERSAILLES TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA

**ET - BRADDOCK WELL PAD MERRION OIL & GAS**



TOTAL POST-DA-2	
COVER TYPE	AREA (AC)
WOODS	0.04
MEADOW	0.95
GRAVEL	0.64
IMPERVIOUS	0.33

TOTAL POST-DA-1	
COVER TYPE	AREA (AC)
MEADOW	2.03
GRAVEL	4.34
WATER	0.40
IMPERVIOUS	1.91

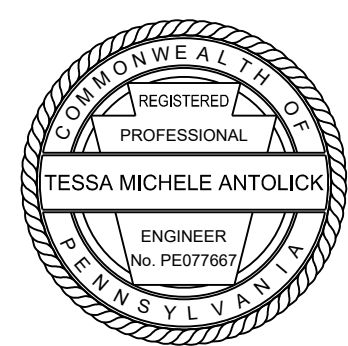
	DRAINAGE AREA (DA1)
	DRAINAGE AREA (DA2)
	DRAINAGE AREA (MEADOW)
	DRAINAGE AREA (WOOD)
	DRAINAGE AREA (IMPERVIOUS)
	DRAINAGE AREA (GRAVEL)
	DRAINAGE AREA (WATER)
	POI

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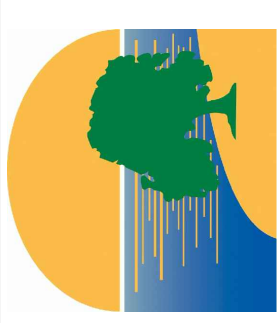
LEGEND	
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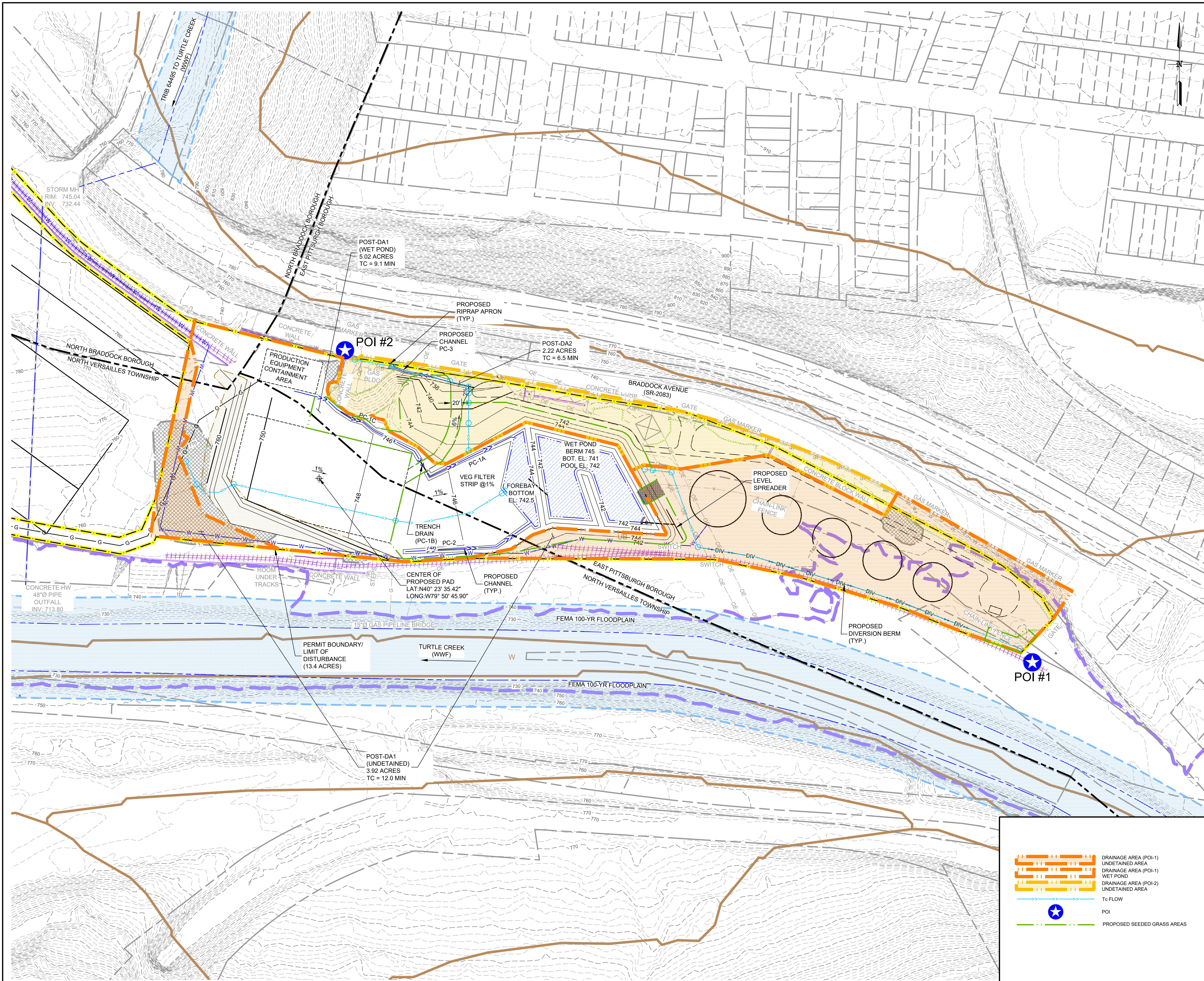


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Scale	North Arrow	Scale
1" = 80'	10/22/2018	180539
MDR	QZ	

POST-DEVELOPMENT WATERSHED AND SOILS MAP - VOLUME  
 SR / PCSM PLAN  
 EAST PITTSBURGH BOROUGH,  
 NORTH VERSAILLES TOWNSHIP,  
 ALLEGHENY COUNTY, PENNSYLVANIA

ET - BRADDOCK WELL PAD  
 MERRION OIL & GAS



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Symbol	Description
1550	EXISTING CONTOURS
[Blue dashed line]	FEMA FLOODPLAIN
[Blue solid line]	50' FLOODWAY
[Blue hatched area]	FEMA FLOODWAY
[Blue line with arrows]	EXISTING MAPPED WATERCOURSE
[Black outline]	EXISTING STRUCTURE
[Green hatched area]	EXISTING VEGETATION
[Dashed line]	EXISTING PROPERTY LINE
[Dashed line]	EXISTING MUNICIPAL BOUNDARIES
[Dashed line]	EXISTING FENCE
[Line with 'OE']	EXISTING OVERHEAD ELECTRIC LINE
[Line with 'E']	EXISTING ELECTRIC POLE
[Line with 'G']	EXISTING GAS LINE
[Line with 'W']	EXISTING WATER LINE
[Line with 'C']	EXISTING CULVERT
[Line with 'R']	EXISTING WALL
[Line with 'RAIL']	EXISTING RAILLINE
[Line with 'SLAG']	EXISTING SLAG PILE
[Line with 'WeB']	EXISTING SOIL BOUNDARY AND DESCRIPTOR
1490	PROPOSED CONTOURS
[Dashed line]	PROPOSED LIMIT OF DISTURBANCE
[Blue line]	PROPOSED CHANNEL
[Blue hatched area]	PROPOSED WATER FEATURES
[Dashed circle]	PROPOSED WELL PAD
[Circle]	PROPOSED TEMPORARY TANK
[Line with 'W']	PROPOSED WATERLINE
[Line with 'G']	PROPOSED GASLINE
[Line with 'S']	PROPOSED SLOPE STABILIZATION
[Line with 'R']	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
[Line with '12']	PROPOSED ACCESS ROAD
[Line with '24']	PROPOSED 12" FILTER SOCK
[Line with '24']	PROPOSED 24" FILTER SOCK
[Line with 'DIV']	PROPOSED CULVERT
[Line with 'DIV']	PROPOSED DIVERSION BERM
[Line with 'G']	PROPOSED GRAVEL
[Line with 'I']	PROPOSED INLET

**LEGEND**

[Orange hatched area]	DRAINAGE AREA (POI-1) UNDETAINED AREA
[Blue hatched area]	DRAINAGE AREA (POI-1) WET POND
[Yellow hatched area]	DRAINAGE AREA (POI-2) UNDETAINED AREA
[Blue arrow]	To FLOW
[Star]	POI
[Green dashed line]	PROPOSED SEEDED GRASS AREAS

**Professional Seal:** TESSA MICHELE ANTOLICK, PE - 077667

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*I do hereby certify to the best of my knowledge, information and belief that the Erosion and Sediment Control and Site Restoration Plan and Post Construction BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

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**POST-DEVELOPMENT WATERSHED AND SOILS MAP - RATE SR / PCSM PLAN**

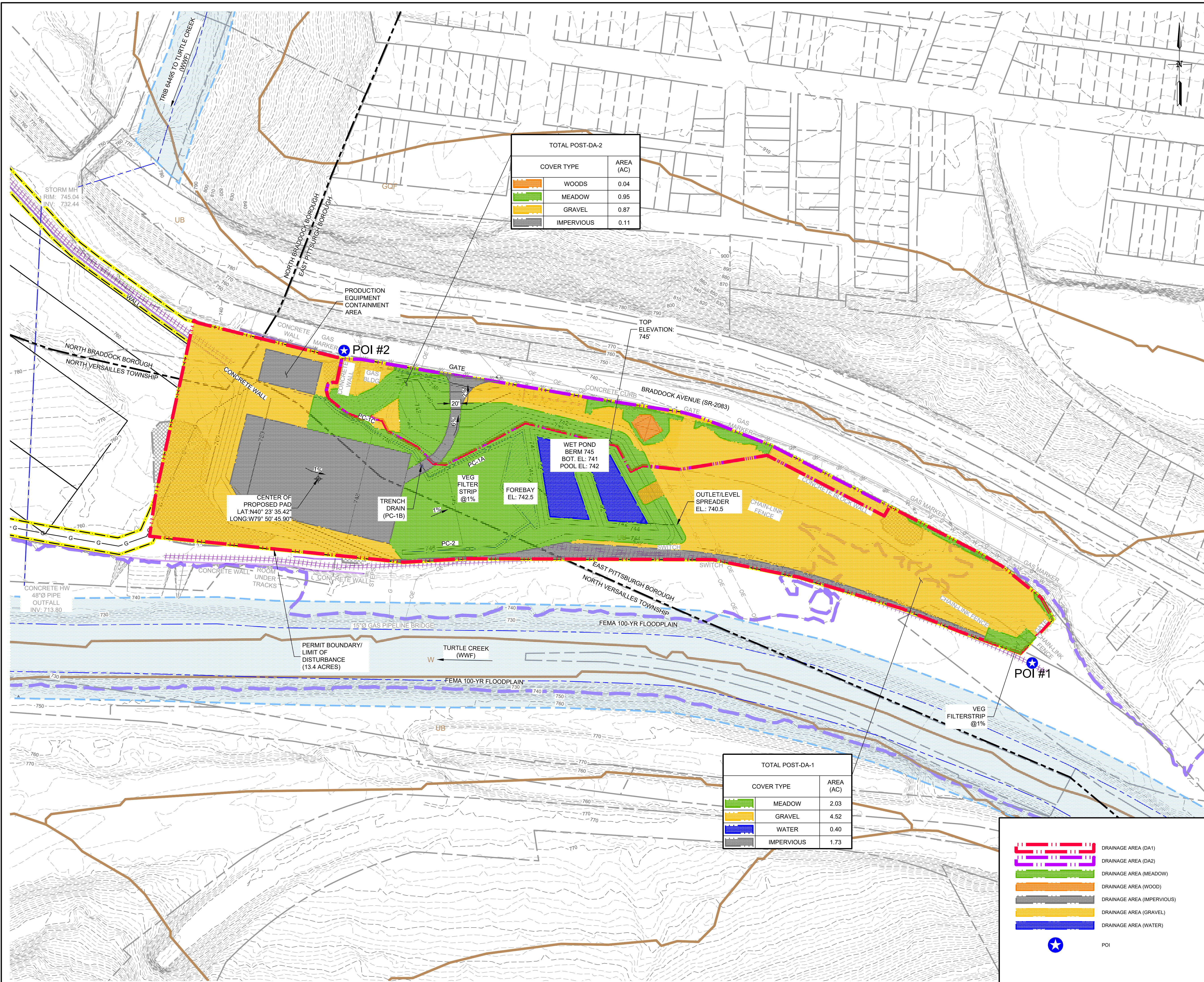
ET - BRADDOCK WELL PAD  
MERRION OIL & GAS

Revised	By	Date	Reason
1	REVISED PER PADIP COMMENTS	10/22/2018	ARM
0	PADIP SUBMISSION	05/31/2018	TRANT

Scale: 1" = 80'

1805539

Sheet **WS-2B**



TOTAL POST-DA-2	
COVER TYPE	AREA (AC)
WOODS	0.04
MEADOW	0.95
GRAVEL	0.87
IMPERVIOUS	0.11

TOTAL POST-DA-1	
COVER TYPE	AREA (AC)
MEADOW	2.03
GRAVEL	4.52
WATER	0.40
IMPERVIOUS	1.73

**NOTES:**

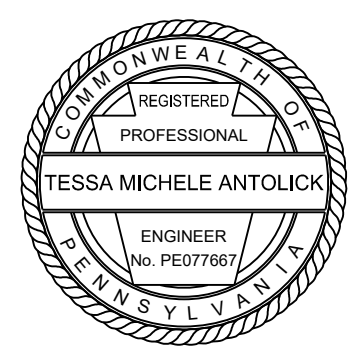
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**LEGEND**

- 1550 EXISTING CONTOURS
- FEMA FLOODPLAIN
- 50' FLOODWAY
- FEMA FLOODWAY
- EXISTING MAPPED WATERCOURSE
- EXISTING STRUCTURE
- EXISTING VEGETATION
- EXISTING PROPERTY LINE
- EXISTING MUNICIPAL BOUNDARIES
- EXISTING FENCE
- OE-OE EXISTING OVERHEAD ELECTRIC LINE
- EXISTING ELECTRIC POLE
- G-G-G EXISTING GAS LINE
- W-W-W EXISTING WATER LINE
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- EXISTING WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- WeB EXISTING SOIL BOUNDARY AND DESCRIPTOR
- 1490 PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED CHANNEL
- PROPOSED WATER FEATURES
- PROPOSED WELL PAD
- PROPOSED TEMPORARY TANK
- PROPOSED WATERLINE
- PROPOSED GASLINE
- PROPOSED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- PROPOSED ACCESS ROAD
- PROPOSED 12" FILTER SOCK
- PROPOSED 24" FILTER SOCK
- PROPOSED CULVERT
- PROPOSED DIVERSION BERM
- PROPOSED GRAVEL
- PROPOSED INLET

- DRAINAGE AREA (DA1)
- DRAINAGE AREA (DA2)
- DRAINAGE AREA (MEADOW)
- DRAINAGE AREA (WOOD)
- DRAINAGE AREA (IMPERVIOUS)
- DRAINAGE AREA (GRAVEL)
- DRAINAGE AREA (WATER)
- POI



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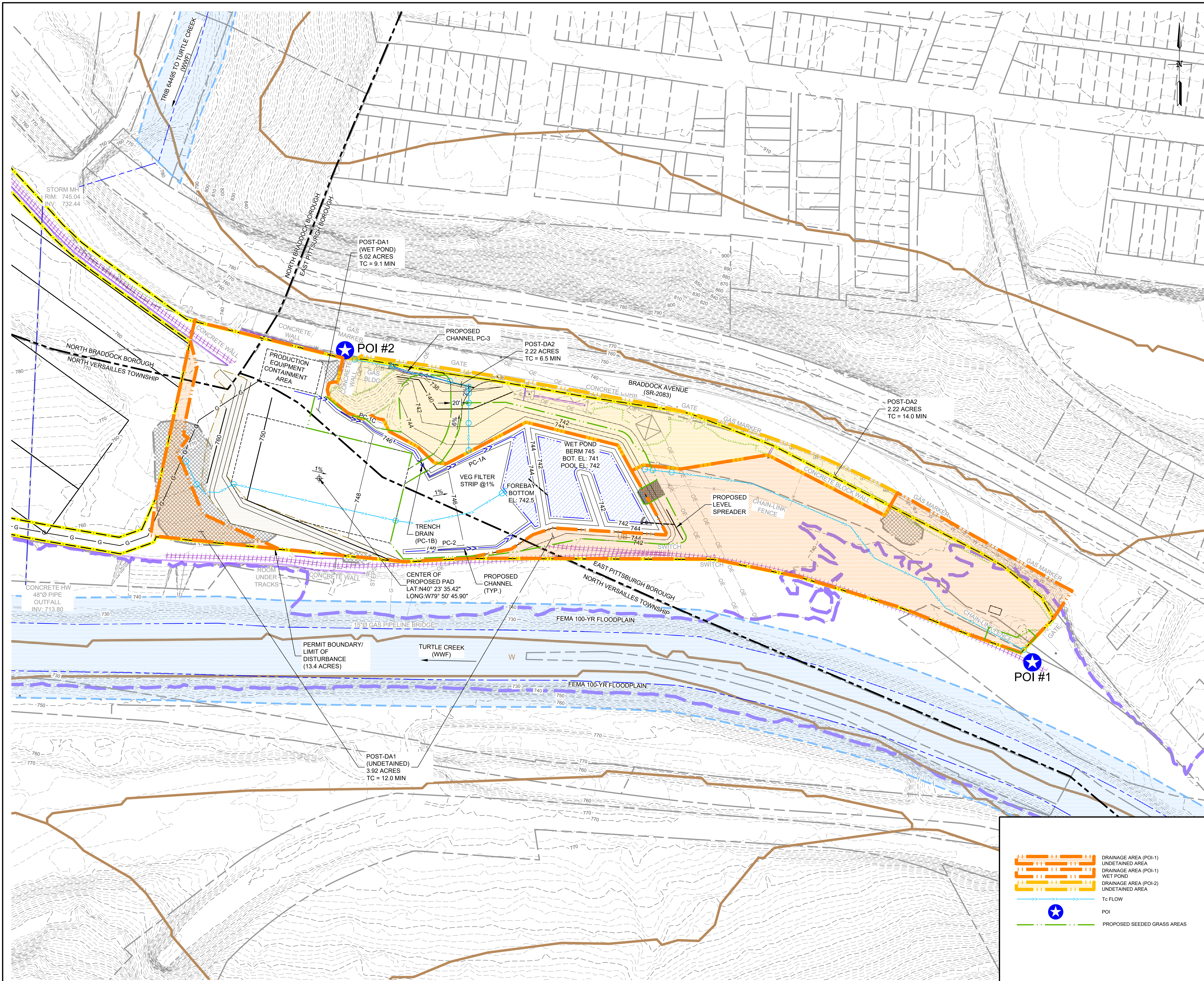


Revised	By	Date	Reason
1	REVISED PER PADIP COMMENTS	10/22/2018	ARM
0	PADIP SUBMISSION	05/31/2018	TRANT

Scale	North Arrow	Scale
1" = 80'	10/22/2018	180539
180539		

**SITE RESTORATION WATERSHED AND SOILS MAP - VOLUME SR / PCSM PLAN**  
 EAST PITTSBURGH BOROUGH, NORTH VERSAILLES TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA

**ET - BRADDOCK WELL PAD MERRION OIL & GAS**



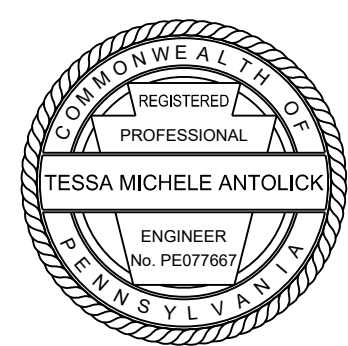
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[Green wavy line]	EXISTING VEGETATION
[Black dashed line]	EXISTING PROPERTY LINE
[Black dashed line]	EXISTING MUNICIPAL BOUNDARIES
[Black dashed line]	EXISTING FENCE
[OE-OE]	EXISTING OVERHEAD ELECTRIC LINE
[E-OE]	EXISTING ELECTRIC POLE
[G-G-G]	EXISTING GAS LINE
[W-W-W]	EXISTING WATER LINE
[Grey line]	EXISTING CULVERT
[Black line]	EXISTING WALL
[Black line]	EXISTING RAILLINE
[Grey hatched]	EXISTING SLAG PILE
[WeB]	EXISTING SOIL BOUNDARY AND DESCRIPTOR
[1490]	PROPOSED CONTOURS
[Dashed line]	PROPOSED LIMIT OF DISTURBANCE
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[Circle]	PROPOSED TEMPORARY TANK
[W-W]	PROPOSED WATERLINE
[G-G]	PROPOSED GASLINE
[Grey hatched]	PROPOSED SLOPE STABILIZATION
[Black hatched]	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
[12-12-12]	PROPOSED ACCESS ROAD
[24-24-24]	PROPOSED 12" FILTER SOCK
[24-24-24]	PROPOSED 24" FILTER SOCK
[DIV-DIV]	PROPOSED CULVERT
[DIV-DIV]	PROPOSED DIVERSION BERM
[Grey hatched]	PROPOSED GRAVEL
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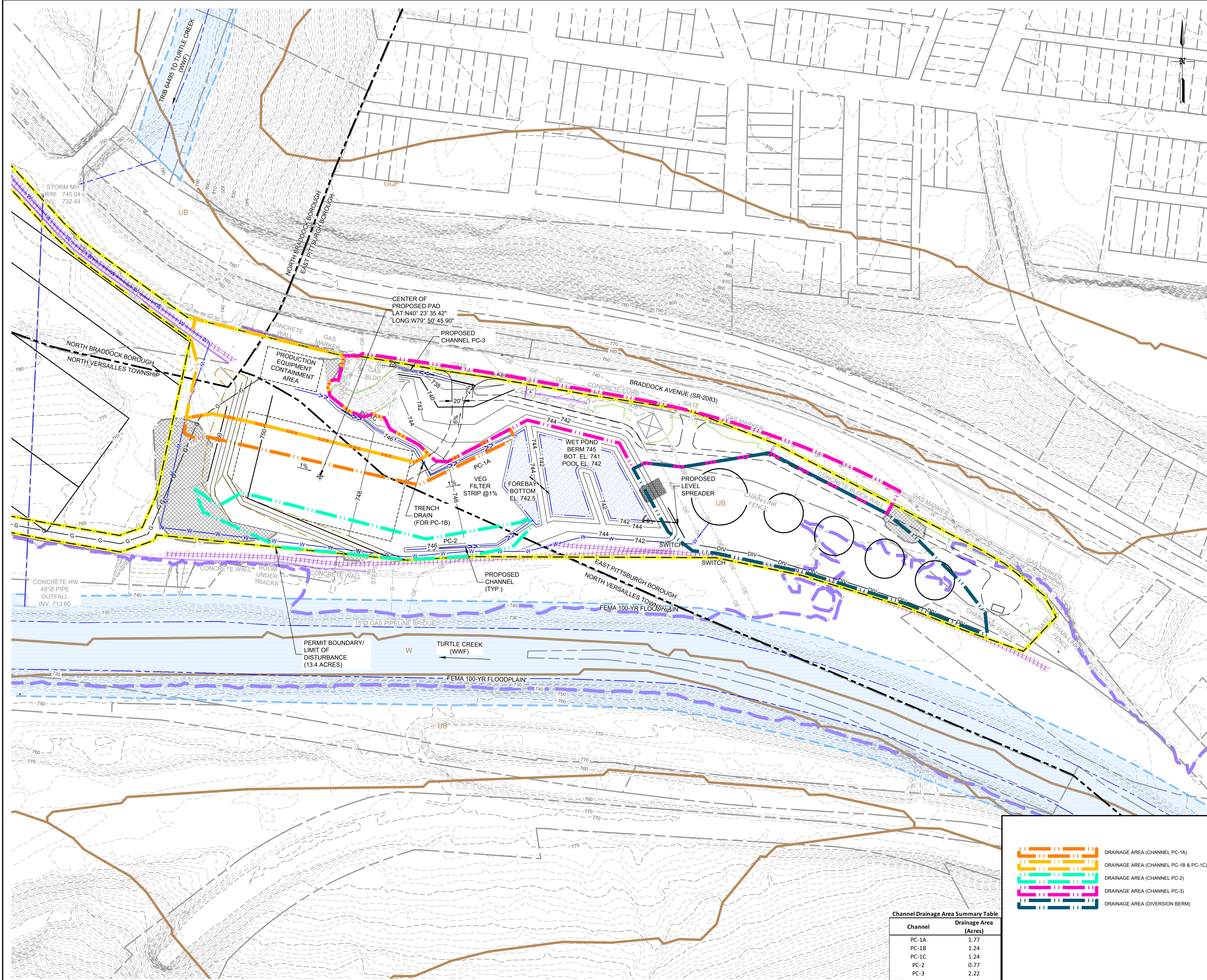
**SITE RESTORATION WATERSHED AND SOILS MAP - RATE SR / PCSM PLAN**

ET - BRADDOCK WELL PAD  
 MERRION OIL & GAS

Sheet **WS-3B**

DATE	10/22/2018	BY	ARM
REVISION	05/31/2018	BY	TRANT
NO.	1	REVISION PER PADIP COMMENTS	
NO.	0	PADIP SUBMISSION	

Scale: 1" = 80'  
 Date: 10/22/2018  
 Project No.: 180539



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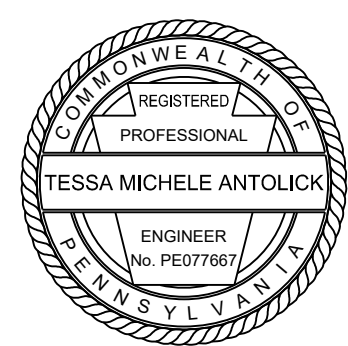
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[Dashed line]	EXISTING FENCE
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[Line with 'E']	EXISTING ELECTRIC POLE
[Line with 'G']	EXISTING GAS LINE
[Line with 'W']	EXISTING WATER LINE
[Line with 'C']	EXISTING CULVERT
[Line with 'W']	EXISTING WALL
[Line with 'R']	EXISTING RAILLINE
[Hatched area]	EXISTING SLAG PILE
[Brown line]	EXISTING SOIL BOUNDARY AND DESCRIPTOR
[Dashed line]	PROPOSED CONTOURS
[Dashed line]	PROPOSED LIMIT OF DISTURBANCE
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[Hatched area]	PROPOSED SLOPE STABILIZATION
[Hatched area]	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
[Line]	PROPOSED ACCESS ROAD
[Line]	PROPOSED 12" FILTER SOCK
[Line]	PROPOSED 24" FILTER SOCK
[Line]	PROPOSED CULVERT
[Line]	PROPOSED DIVERSION BERM
[Line]	PROPOSED GRAVEL
[Line]	PROPOSED INLET

[Orange hatched area]	DRAINAGE AREA (CHANNEL PC-1A)
[Green hatched area]	DRAINAGE AREA (CHANNEL PC-1B & PC-1C)
[Blue hatched area]	DRAINAGE AREA (CHANNEL PC-2)
[Purple hatched area]	DRAINAGE AREA (CHANNEL PC-3)
[Black hatched area]	DRAINAGE AREA (DIVERSION BERM)

**Channel Drainage Area Summary Table**

Channel	Drainage Area (Acres)
PC-1A	1.77
PC-1B	1.24
PC-1C	1.24
PC-2	0.77
PC-3	2.22
Diversion Berm	2.19



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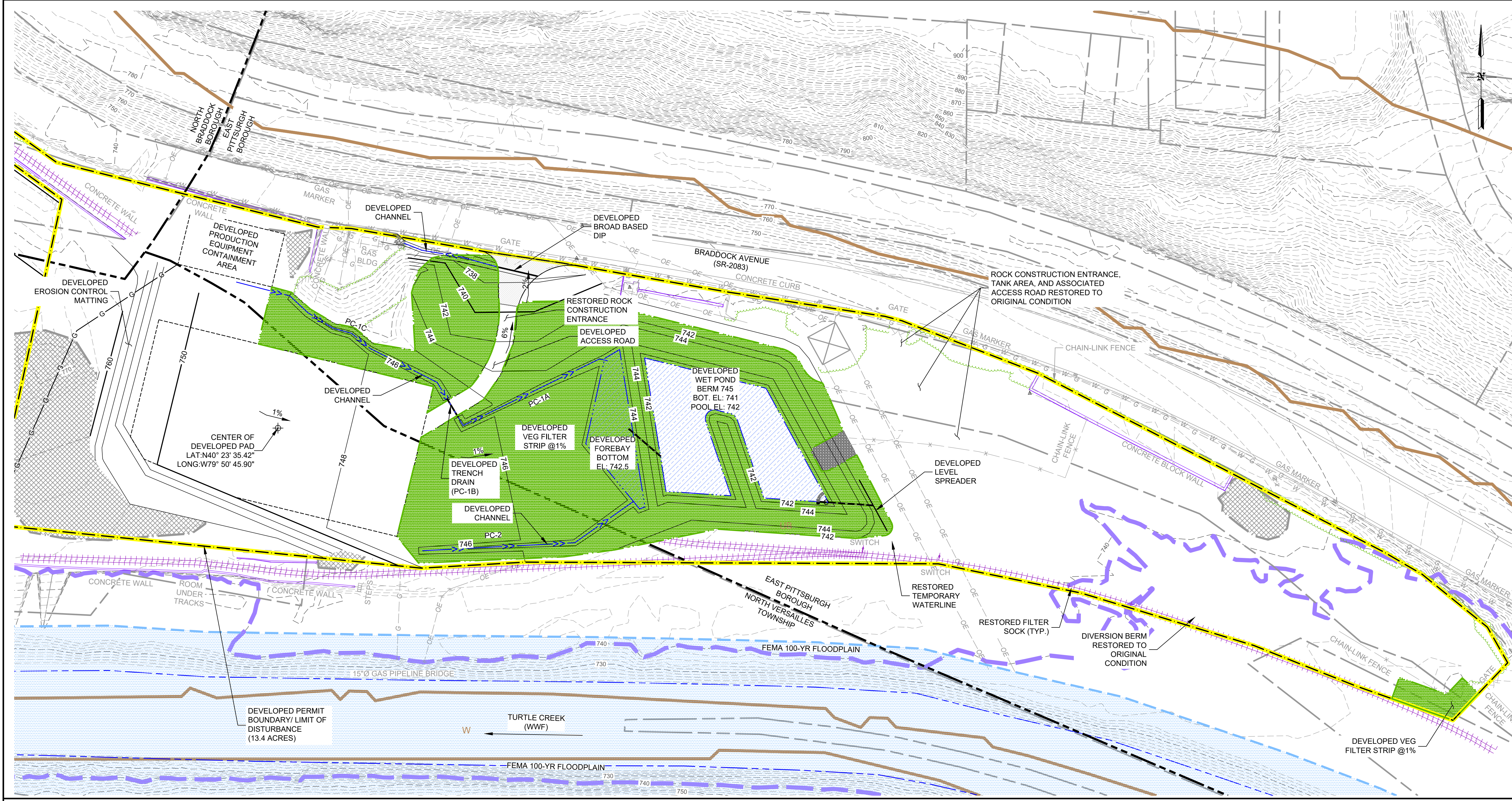


1	REVISED PER PADIP COMMENTS	10/22/2018	ARM	By
0	PADIP SUBMISSION	05/31/2018	TRANT	By

Scale	1" = 80'
Date	10/22/2018
Project No.	180539
Author	KGJ
Checker	MDR
Reviewer	QZ
Scale	0 80 160 240 SCALE IN FEET

**CHANNEL WATERSHED MAP  
 SR / PCSM PLAN**  
 EAST PITTSBURGH BOROUGH,  
 NORTH VERSAILLES TOWNSHIP,  
 ALLEGHENY COUNTY, PENNSYLVANIA





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[Dashed line]	EXISTING WALL
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**LEGEND**

1550 EXISTING CONTOURS

FEMA FLOODPLAIN

50' FLOODWAY

FEMA FLOODWAY

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PROPOSED INLET

PROPOSED SEEDED GRASS AREAS

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**SITE RESTORATION PLAN**  
**SR / PCSM PLAN**

EAST PITTSBURGH BOROUGH  
NORTH VERSAILLES TOWNSHIP  
ALLEGHENY COUNTY, PENNSYLVANIA

ET - BRADDOCK WELL PAD  
MERRION OIL & GAS

Sheet **SR-1**

10/22/2018  
180539

1 REVISOR PER PADIP COMMENTS  
0 PADIP SUBMISSION

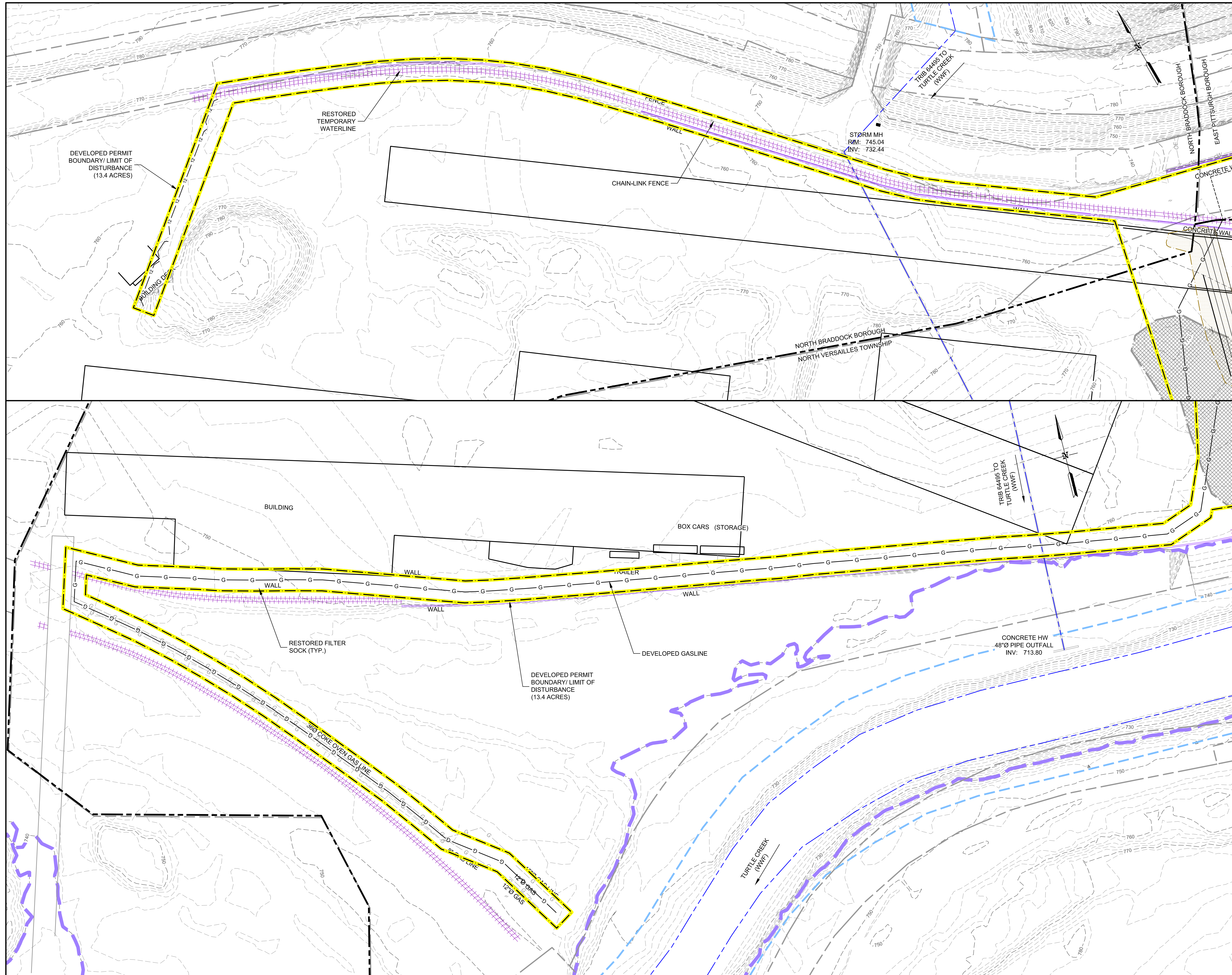
1" = 60'  
SCALE IN FEET

TESSA MICHELE ANTOLICK, PE - 077667

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Symbol	Description
1550	EXISTING CONTOURS
	FEMA FLOODPLAIN
	50' FLOODWAY
	FEMA FLOODWAY
	EXISTING MAPPED WATERCOURSE
	EXISTING STRUCTURE
	EXISTING VEGETATION
	EXISTING PROPERTY LINE
	EXISTING MUNICIPAL BOUNDARIES
	EXISTING FENCE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING ELECTRIC POLE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CULVERT
	EXISTING RAILLINE
	EXISTING RAILLINE
	EXISTING SLAG PILE
	EXISTING SOIL BOUNDARY AND DESCRIPTOR
1490	PROPOSED CONTOURS
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED CHANNEL
	PROPOSED WATER FEATURES
	PROPOSED WELL PAD
	PROPOSED TEMPORARY TANK
	PROPOSED WATERLINE
	PROPOSED GASLINE
	PROPOSED SLOPE STABILIZATION
	PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
	PROPOSED ACCESS ROAD
12	PROPOSED 12" FILTER SOCK
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	PROPOSED INLET

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**ARM Group Inc.**  
Engineers and Scientists  
www.armgroup.net

**SITE RESTORATION PLAN**  
**EROSION AND SEDIMENT CONTROL PLAN**  
ET - BRADDOCK WELL PAD  
MERRION OIL & GAS

Revised	By	Date
1	REVISED PER PADDP COMMENTS	10/22/2018
0	PADDP SUBMISSION	05/31/2018

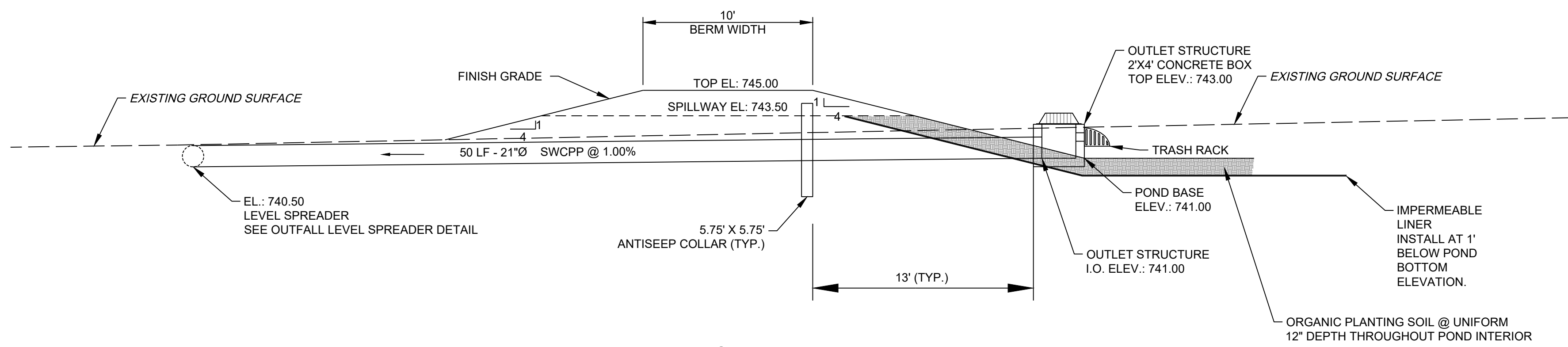
Scale	1" = 60'
Drawn	KGJ
Checked	MDR
Project No.	180539
Scale	0 60 120 180 SCALE IN FEET

SHEET  
**SR-2**

MERRION OIL & GAS  
 ET - BRADDOCK WELL PAD  
 NORTH VERSAILLES TOWNSHIP,  
 EAST PITTSBURGH BOROUGH,  
 ALLEGHENY COUNTY, PENNSYLVANIA

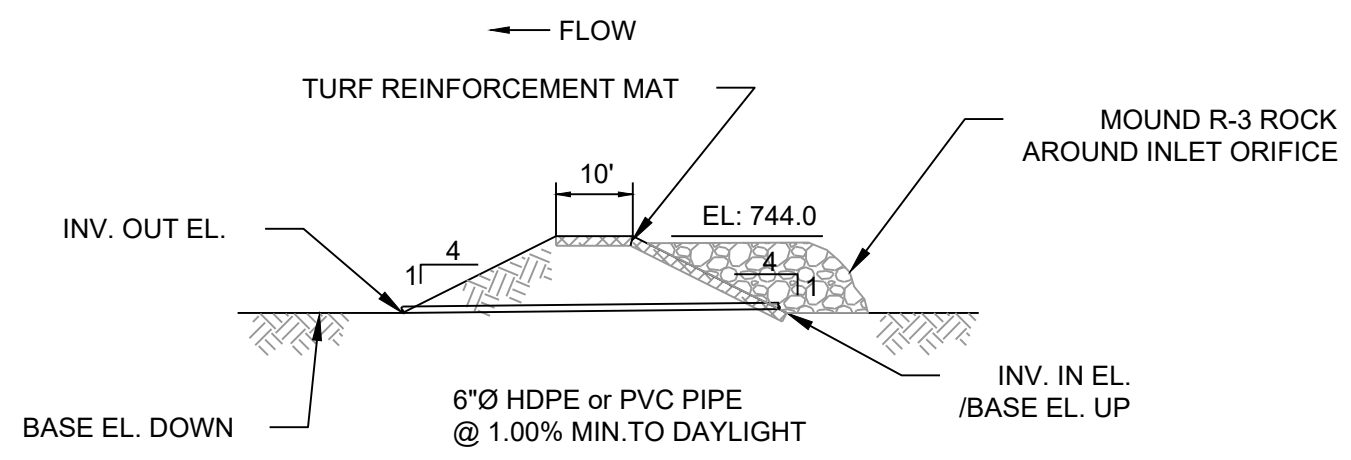
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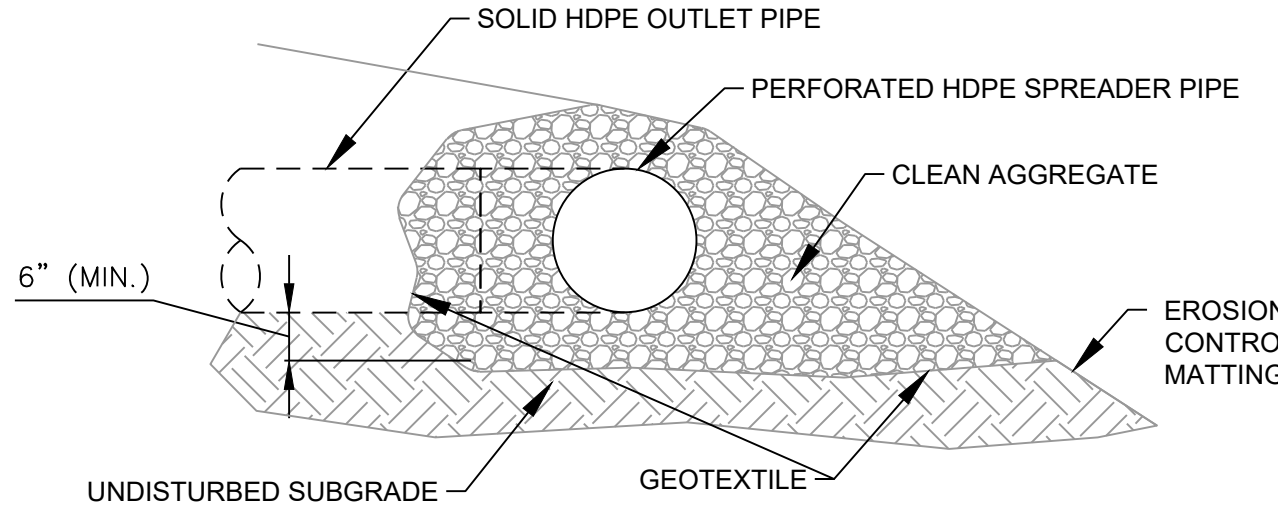
POND 1 SECTION AT OUTLET BOX SCALE 1"=5'

FOREBAY					
POND	BASE EL. UP	BASE EL. DOWN	BERM EL.	WIDTH (FT.)	LENGT H (FT.)
1	742.5	742.0	745	2	196



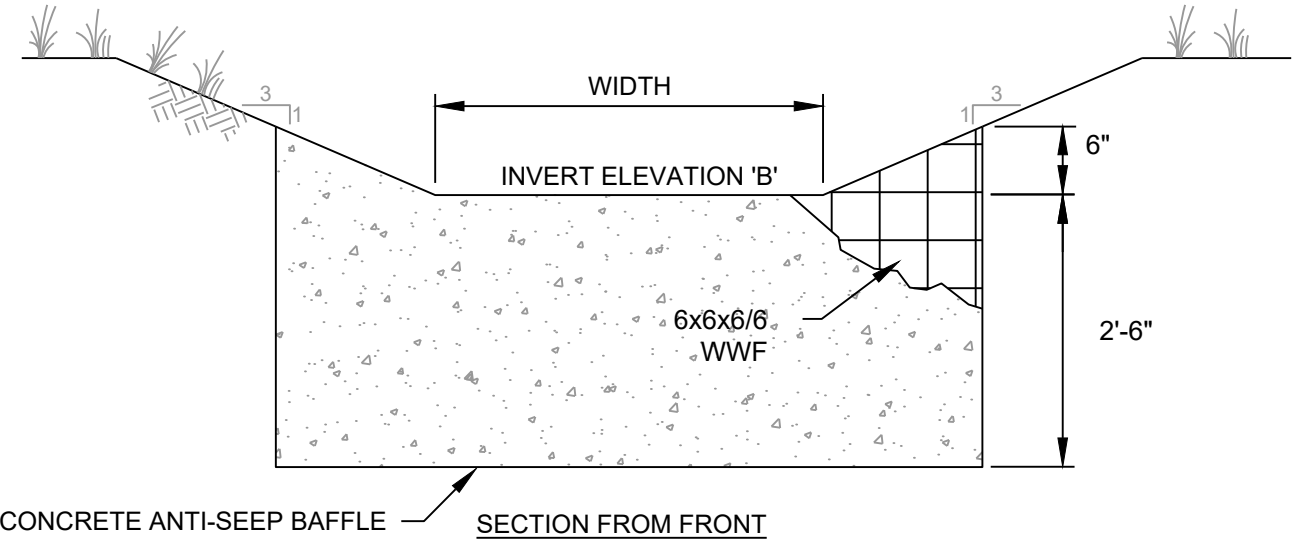
FOREBAY BERM SCALE 1"=5'

LEVEL SPREADER			
	MATERIAL	LENGTH (FT.)	DIAM. (IN.)
POND 1	CORRUGATED HDPE PIPE	60	15

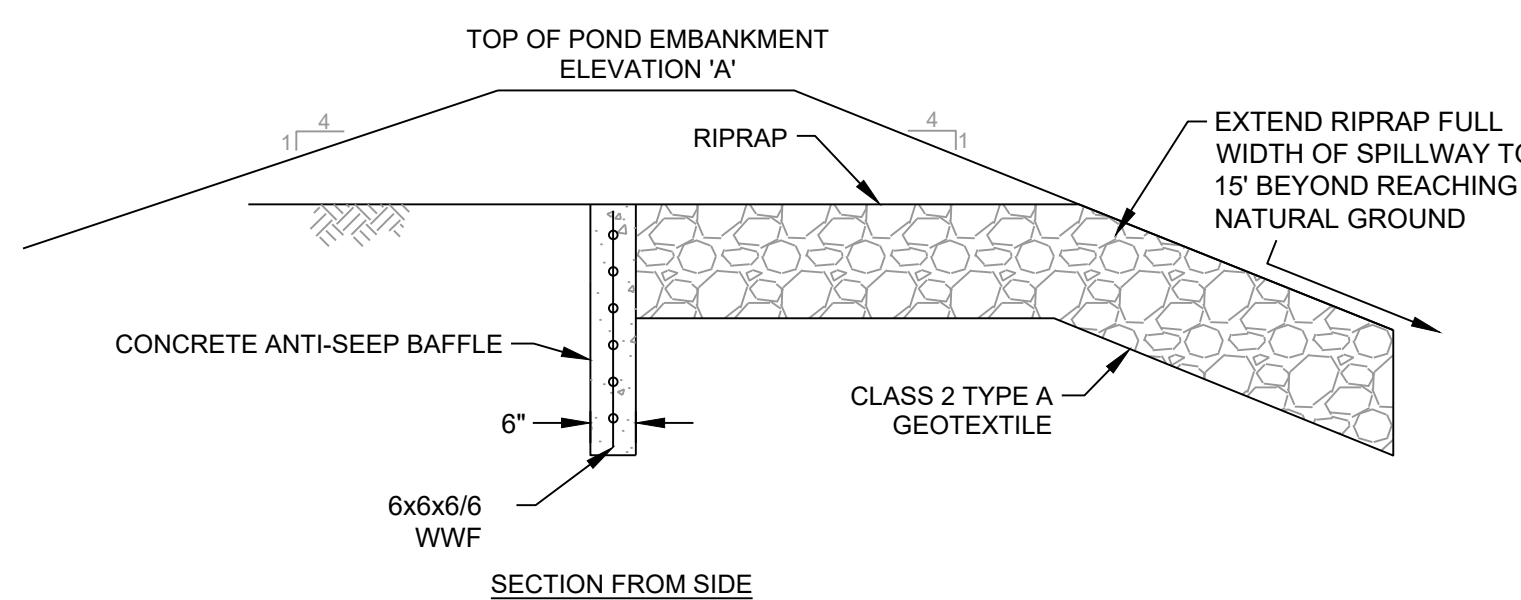


OUTFLOW LEVEL SPREADER DETAIL NOT TO SCALE

EMERGENCY SPILLWAY SCHEDULE					
POND	ELEVATION 'A'	ELEVATION 'B'	WIDTH	MATL.	PLACEMENT THICKNESS
POND 1	745.00	743.50	25'	R-5	18"

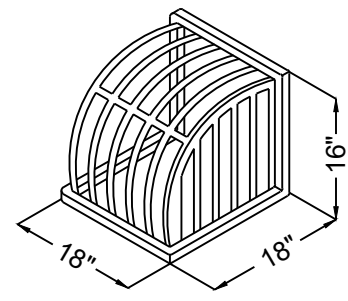


SECTION FROM FRONT



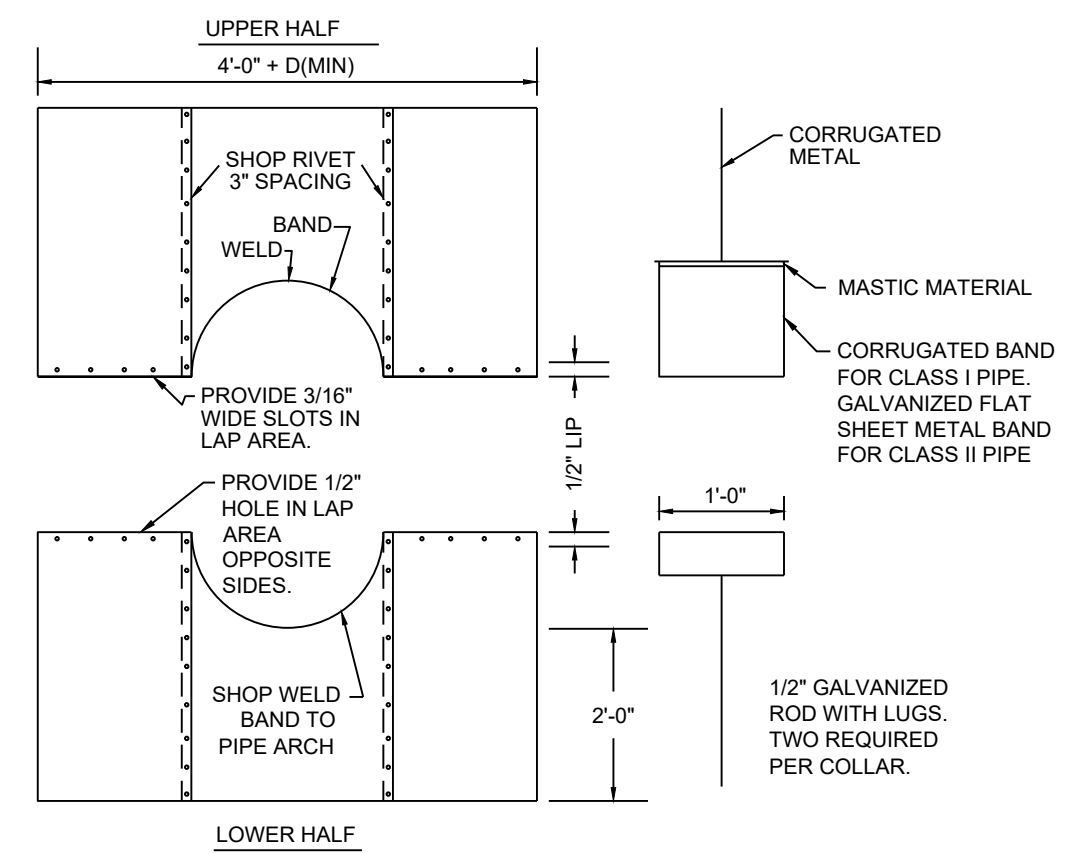
SECTION FROM SIDE

DETENTION POND EMERGENCY SPILLWAY

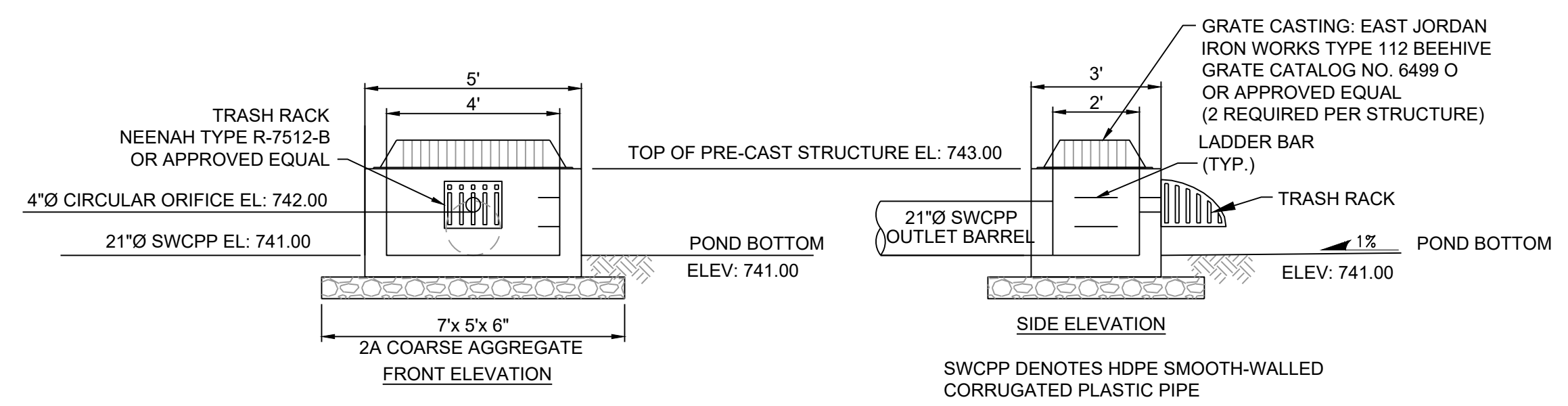


NOTE: NEENAH-R-7512-A (OR EQUAL)  
LOW FLOW TRASH RACK DETAIL

ANTI-SEEP COLLAR SCHEDULE		
	COLLAR SIZE (FT.)	NUMBER OF COLLARS
POND 1	5.75 x 5.75	1

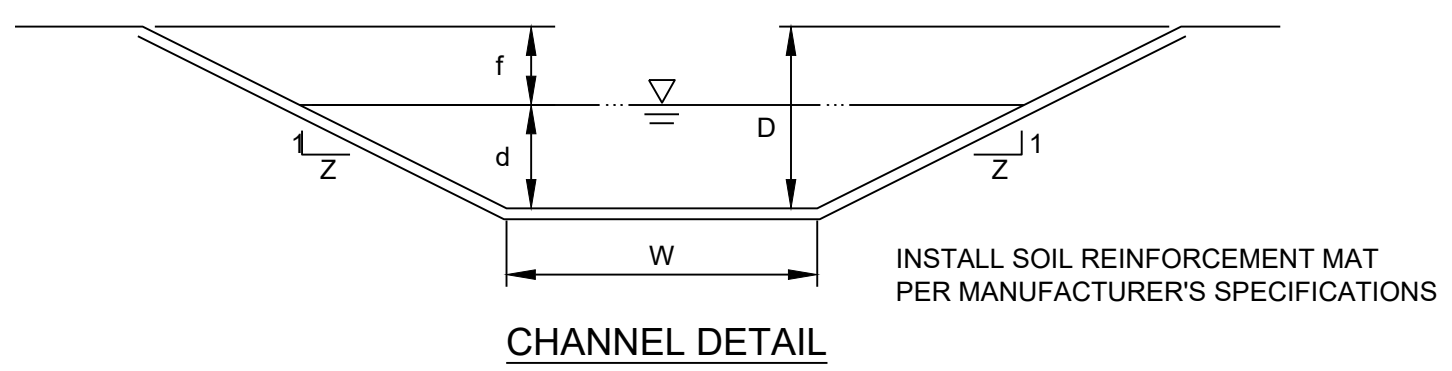


ANTI-SEEPAGE COLLAR DETAIL

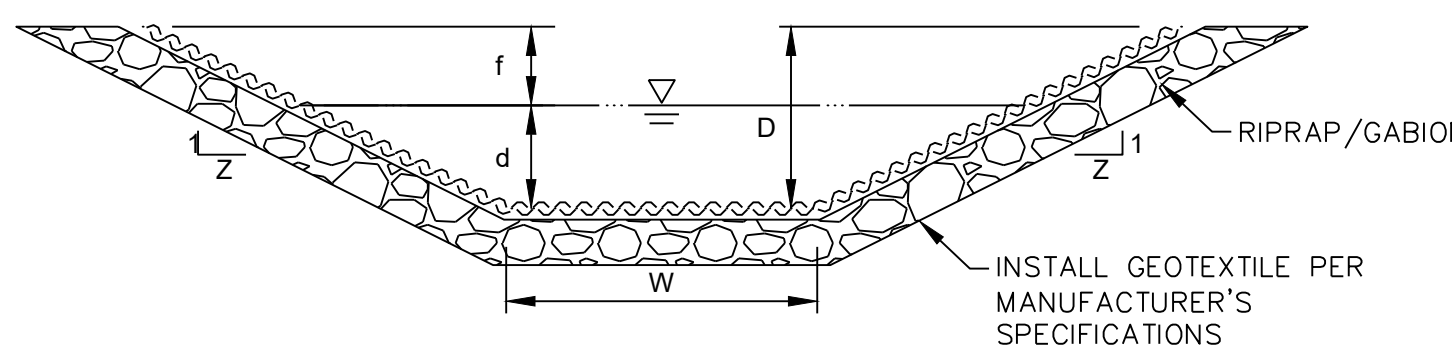


POND 1 EXISTING OUTLET STRUCTURE SCALE: 1"=3'

CHANNEL SCHEDULE												
CHANNEL	LINING	PLACEMENT THICKNESS	VEG. RET.	SLOPE (%)	D (ft.)	W (ft.)	Z	DESIGN FLOW (cfs)	VELOCITY (fps)	d (ft.)	f (ft.)	
PC-1A	SYNTHETIC MAT	NA	NA	1.0%	1.5	2	2	4.9	1.87	0.747	0.753	
PC-1A	VEGETATED	NA	C	1.0%	1.5	2	2	4.9	1.43	0.898	0.602	
PC-1B	CONC. TRENCH DRAIN	NA	NA	2.0%	1.1	1	0	3.4	5.84	0.584	0.516	
PC-1C	SYNTHETIC MAT	NA	NA	1.0%	1.5	2	2	3.4	1.63	0.638	0.862	
PC-1C	VEGETATED	NA	C	1.0%	1.5	2	2	3.4	1.43	0.898	0.602	
PC-2	SYNTHETIC MAT	NA	NA	1.0%	1.5	2	2	2.1	1.37	0.510	0.990	
PC-2	VEGETATED	NA	C	1.0%	1.5	2	2	2.1	1.43	0.898	0.602	
PC-3	SYNTHETIC MAT	NA	NA	1.0%	1.5	2	2	6.1	2.04	0.823	0.877	
PC-3	VEGETATED	NA	C	1.0%	1.5	2	2	6.1	1.55	0.989	0.511	
DIVERSION BERM	SYNTHETIC MAT	NA	NA	0.2%	2.5	2	2	6.0	1.25	1.125	1.375	
DIVERSION BERM	VEGETATED	NA	C	0.2%	2.5	2	2	6.0	0.61	1.777	0.723	



CHANNEL DETAIL



ECM SHALL BE NAG-S150 OR APPROVED EQUIVALENT  
RIPRAPPED/GABION CHANNEL DETAIL

CONCRETE CHANNEL DETAIL/ INSTALLATION

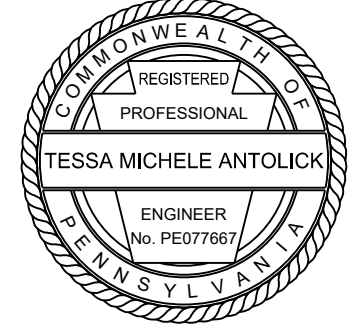


REV	DATE	DESCRIPTION	BY	CHK
1	10/22/2018	REVISED PER PADDP COMMENTS	ARM	
0	05/11/2018	PADDP SUBMISSION	ARM	

NO.	DATE	REVISION
1	AS NOTED	
2	10/22/2018	
3	180539	

CONSTRUCTION DETAILS  
SR / PCSM PLAN

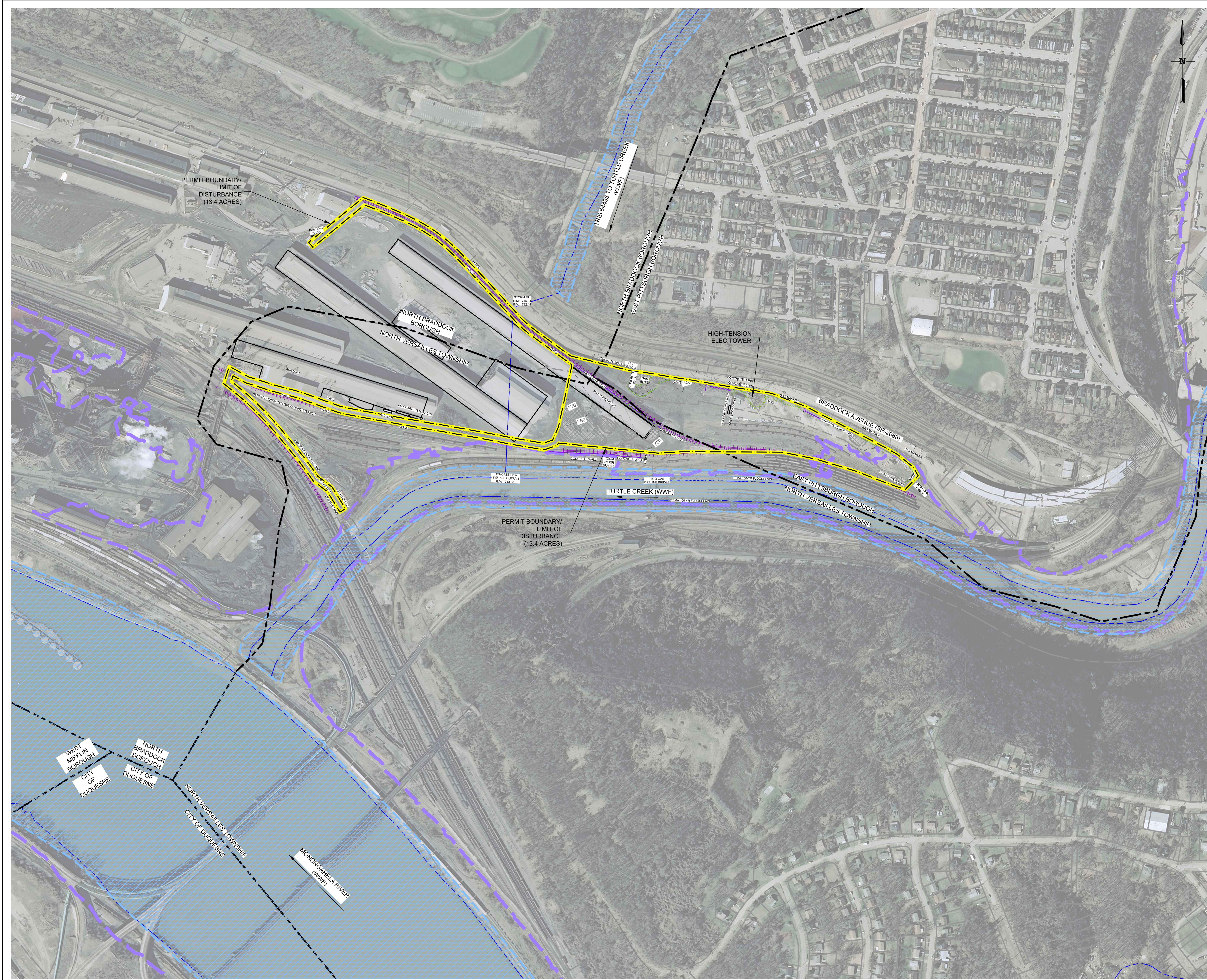
ET - BRADDOCK WELL PAD  
MERRION OIL & GAS



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Revised	By	Date
1	REVISED PER PADIP COMMENTS	10/22/2018
0	PADIP SUBMISSION	06/21/2018

Author	Checked	Scale	Date
KGJ	MDR	1" = 200'	10/22/2018
QZ		180539	

**EXISTING CONDITIONS OVERLAY MAP  
SR / PCSM PLAN**

ET - BRADDOCK WELL PAD  
MERRION OIL & GAS