ET - BRADDOCK WELL PAD
SOIL EROSION AND SEDIMENT POLLUTION CONTROL PLAN
PERMIT NO. PAD0200114

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

MAY 2018
OCTOBER 2018

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

1. 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.

2. 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

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

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

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

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

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

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

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

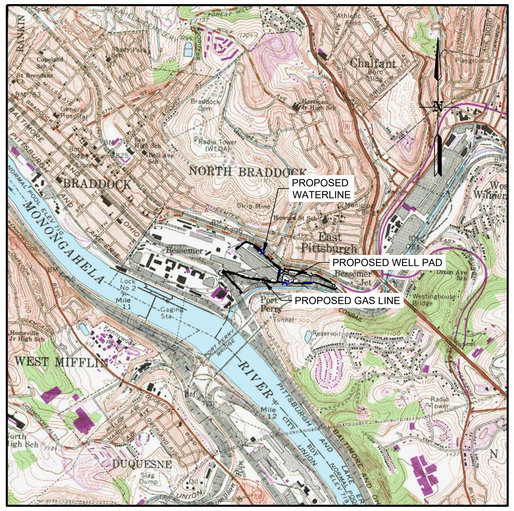
LIST OF SHEETS

SHEET NO.	DESCRIPTION
C701	EXISTING CONDITIONS OVERLAY MAP
C702	EXISTING CONDITIONS & SOILS PLAN
C703A	E&S EXISTING CONDITIONS AND LIMIT OF DISTURBANCE PLAN
C703B	E&S EXISTING CONDITIONS AND LIMIT OF DISTURBANCE PLAN
C704A	E&S GRADING AND DRAINAGE PLAN
C704B	E&S GRADING AND DRAINAGE PLAN
C705A	E&S CONTROL PLAN
C705B	E&S CONTROL PLAN
C705C	E&S CONTROL PLAN
C706	E&S CONSTRUCTION DETAILS
C707	E&S CONSTRUCTION DETAILS
C708	E&S CONSTRUCTION DETAILS
C709	CONSTRUCTION DETAILS
C710	CONSTRUCTION DETAILS

LEGEND

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

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



Base map from the following USGS 7½ minute quadrangles: Braddock dated 1960 and photorevised 1979.

LOCATION MAP

SCALE: 1" = 2000'

REGISTERED PROFESSIONAL ENGINEER
TESSA MICHELE ANTOLICK
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

PREPARED BY:

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

2548 Park Center Boulevard • State College, PA 16801
Ph: (814) 272-0455 Fax: (814) 272-0467

HEADQUARTERS:

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

THIS DRAWING SET WAS ORIGINALLY PRODUCED IN COLOR. NON-COLOR REPRODUCTIONS DO NOT SUFFICIENTLY DIFFERENTIATE AMONG FEATURES DEPICTED IN THIS DRAWING SET.

THIS DRAWING, ITS CONTENTS, AND EACH COMPONENT OF THIS DRAWING ARE THE PROPERTY OF AND PROPRIETARY TO ARM GROUP INC. AND SHALL NOT BE REPRODUCED OR USED IN ANY MANNER EXCEPT FOR THE PURPOSE IDENTIFIED ON THE TITLE BLOCK, AND ONLY BY OR ON BEHALF OF THIS CLIENT FOR THE IDENTIFIED PROJECT UNLESS OTHERWISE AUTHORIZED BY THE EXPRESS, WRITTEN CONSENT OF ARM GROUP INC.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed	KGJ	scale	AS NOTED
checked	MDR	date	10/22/2018
drawn	QZ	project no.	180539
graphic scale			

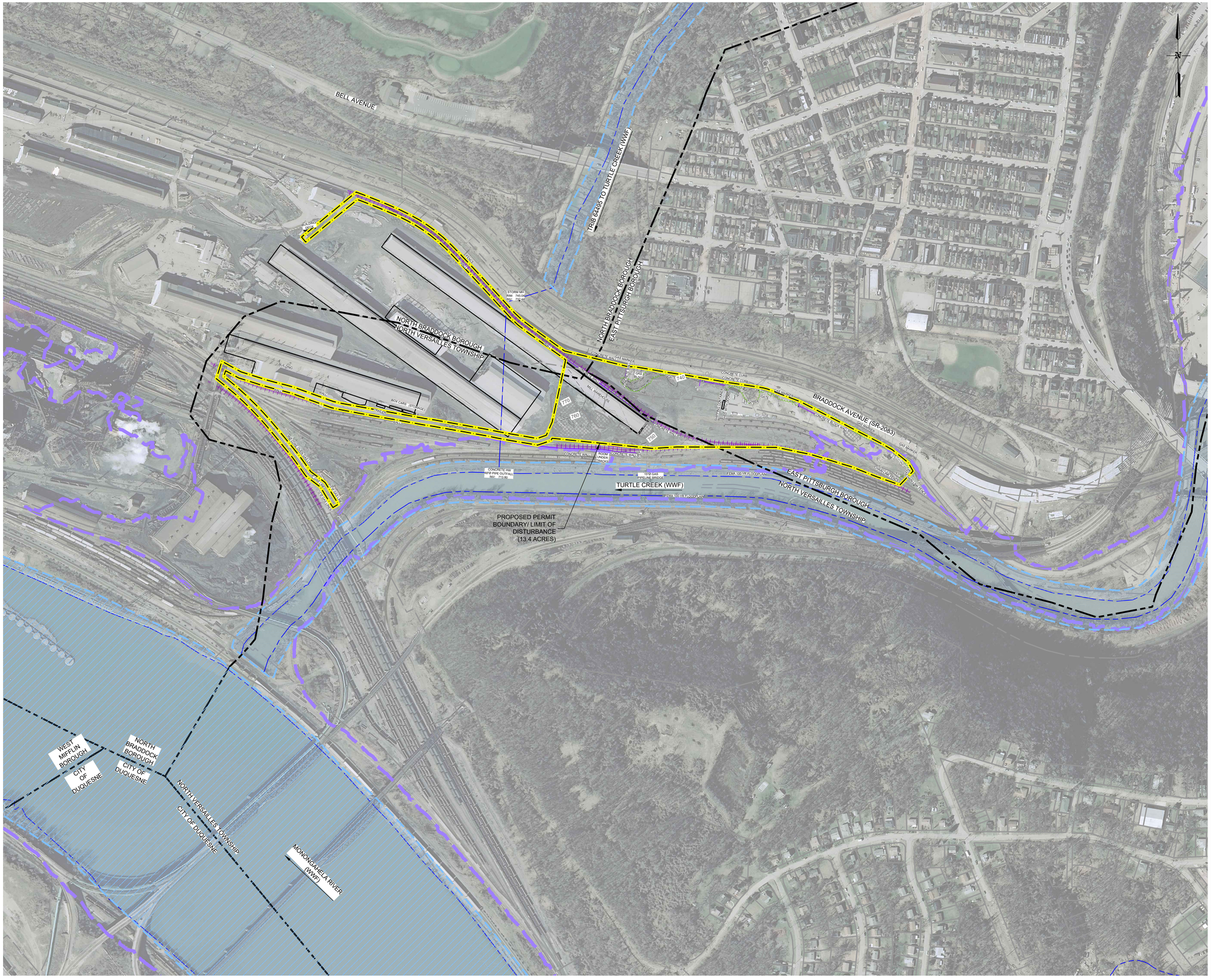
drawing title
COVER SHEET
EROSION AND SEDIMENT CONTROL PLAN

project title
ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

Sheet
1

P:\Merrion Oil & Gas\180539-1-1-ET Braddock 1H\Drwg\Production\E&S (24x36)\180539-ES-COVER SHEET.dwg Plotted: October 19, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
(No. PE077667)

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed	KGJ
checked	MDR
drawn	QZ
scale	1" = 200'
date	10/22/2018
project no.	180539

graphic scale: 0 200 400 800 SCALE IN FEET

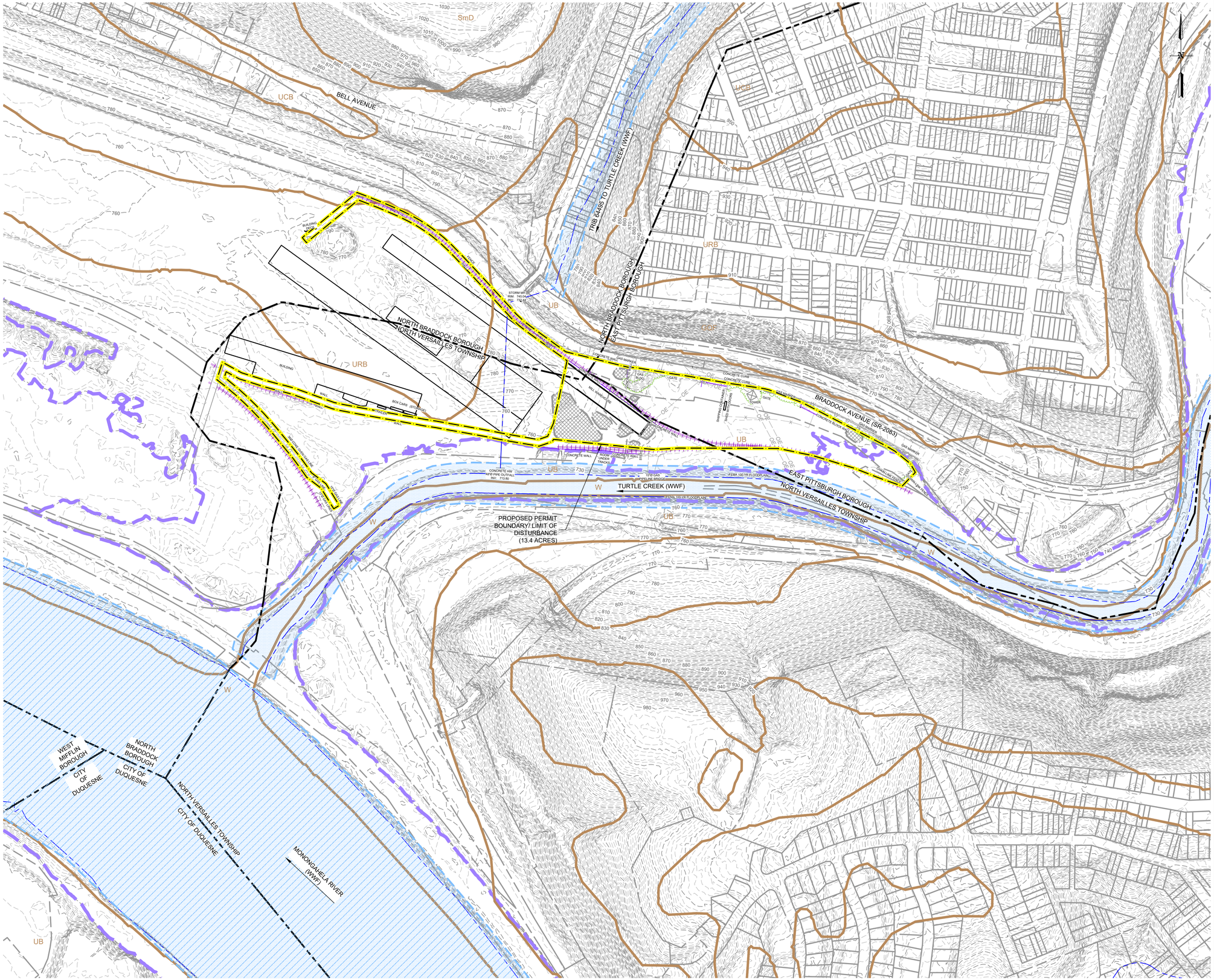
drawing title: EXISTING CONDITIONS OVERLAY MAP
EROSION AND SEDIMENT CONTROL PLAN

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

Sheet C701

Z:\Merrion Oil & Gas\180539-1-ET Braddock 1\Dwg\Production\EAS\24x36\180539-ES-701&C702.dwg Plotted: October 19, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 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 — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING ELECTRIC POLE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- EXISTING CULVERT
- EXISTING WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- WeB — EXISTING SOIL BOUNDARY AND DESCRIPTOR
- 1490 — PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- PROPOSED CHANNEL
- PROPOSED WATER FEATURES
- PROPOSED WELL PAD
- PROPOSED TEMPORARY TANK
- W — PROPOSED WATERLINE
- G — PROPOSED GASLINE
- PROPOSED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- PROPOSED ACCESS ROAD
- 12 — PROPOSED 12" FILTER SOCK
- 24 — PROPOSED 24" FILTER SOCK
- PROPOSED CULVERT
- DIV — PROPOSED DIVERSION BERM
- PROPOSED GRAVEL
- PROPOSED INLET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale:	1" = 200'
date:	10/22/2018
project no.	180539
designed	KGJ
checked	MDR
drawn	QZ
graphic scale	0 200 400 800 SCALE IN FEET

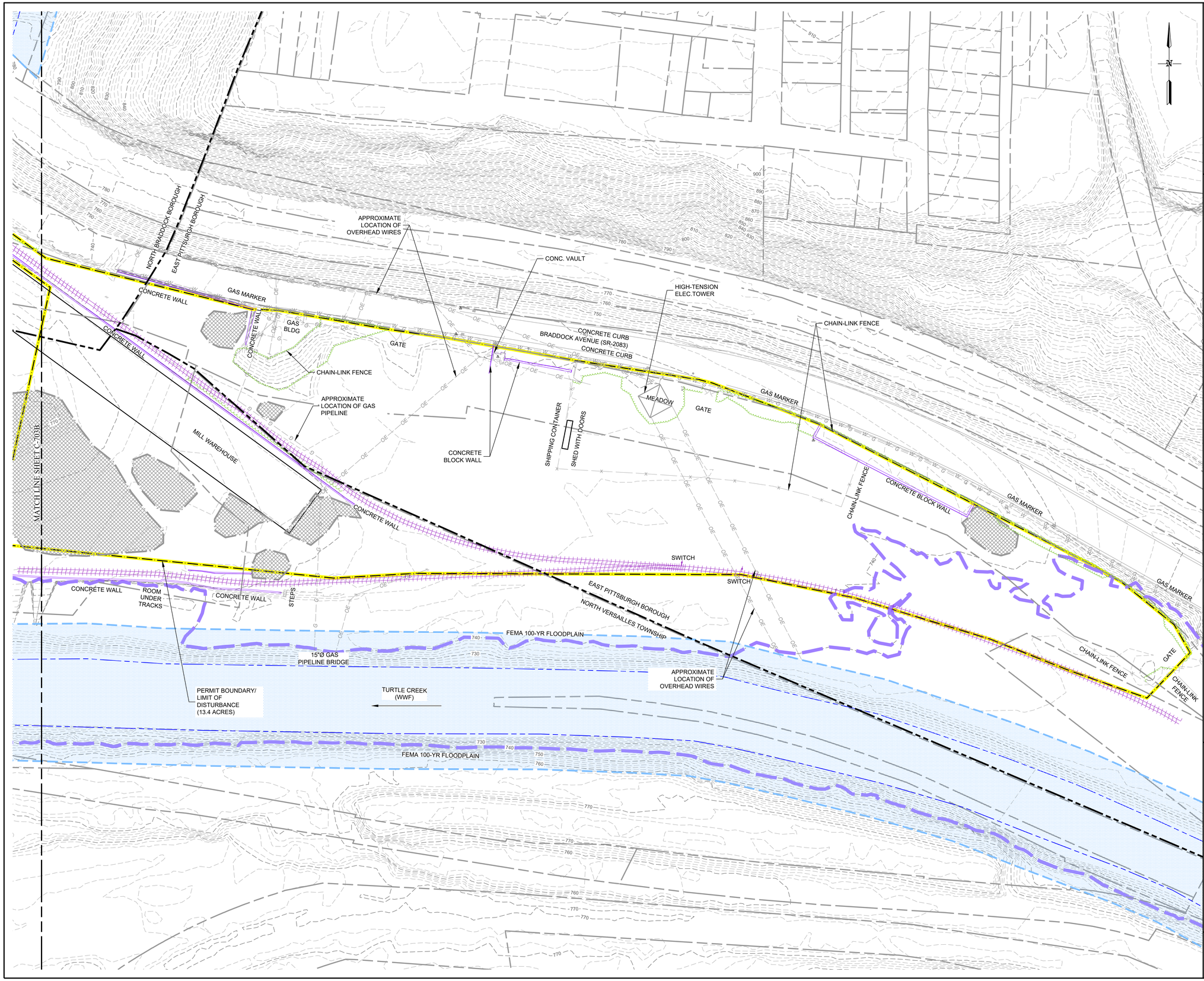
drawing title:
EXISTING CONDITIONS & SOILS PLAN
EROSION AND SEDIMENT CONTROL PLAN

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

project title:
ET - BRADDOCK WELL PAD
MERRION OIL & GAS

Sheet
C702

M:\Merrion Oil & Gas\180539-11 ET Braddock 1\1100 Prep\Production\FAA\C3A-SO11\180539-ESC-TSOLAC702.dwg - Plotted: October 17, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 1550 — EXISTING CONTOURS
- EXISTING 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 WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- WeB — EXISTING SOIL BOUNDARY AND DESCRIPTOR
- 1490 — PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- PROPOSED CHANNEL
- PROPOSED WATER FEATURES
- PROPOSED WELL PAD
- PROPOSED TEMPORARY TANK
- W — W — PROPOSED WATERLINE
- G — G — PROPOSED GASLINE
- PROPOSED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- PROPOSED ACCESS ROAD
- 12 — 12 — 12 — PROPOSED 12" FILTER SOCK
- 24 — 24 — 24 — PROPOSED 24" FILTER SOCK
- PROPOSED CULVERT
- DIV — DIV — PROPOSED DIVERSION BERM
- PROPOSED GRAVEL
- PROPOSED INLET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed	KGJ
checked	MDR
drawn	QZ
scale	1" = 60'
date	10/22/2018
project no.	180539

SCALE IN FEET 0 60 120 180

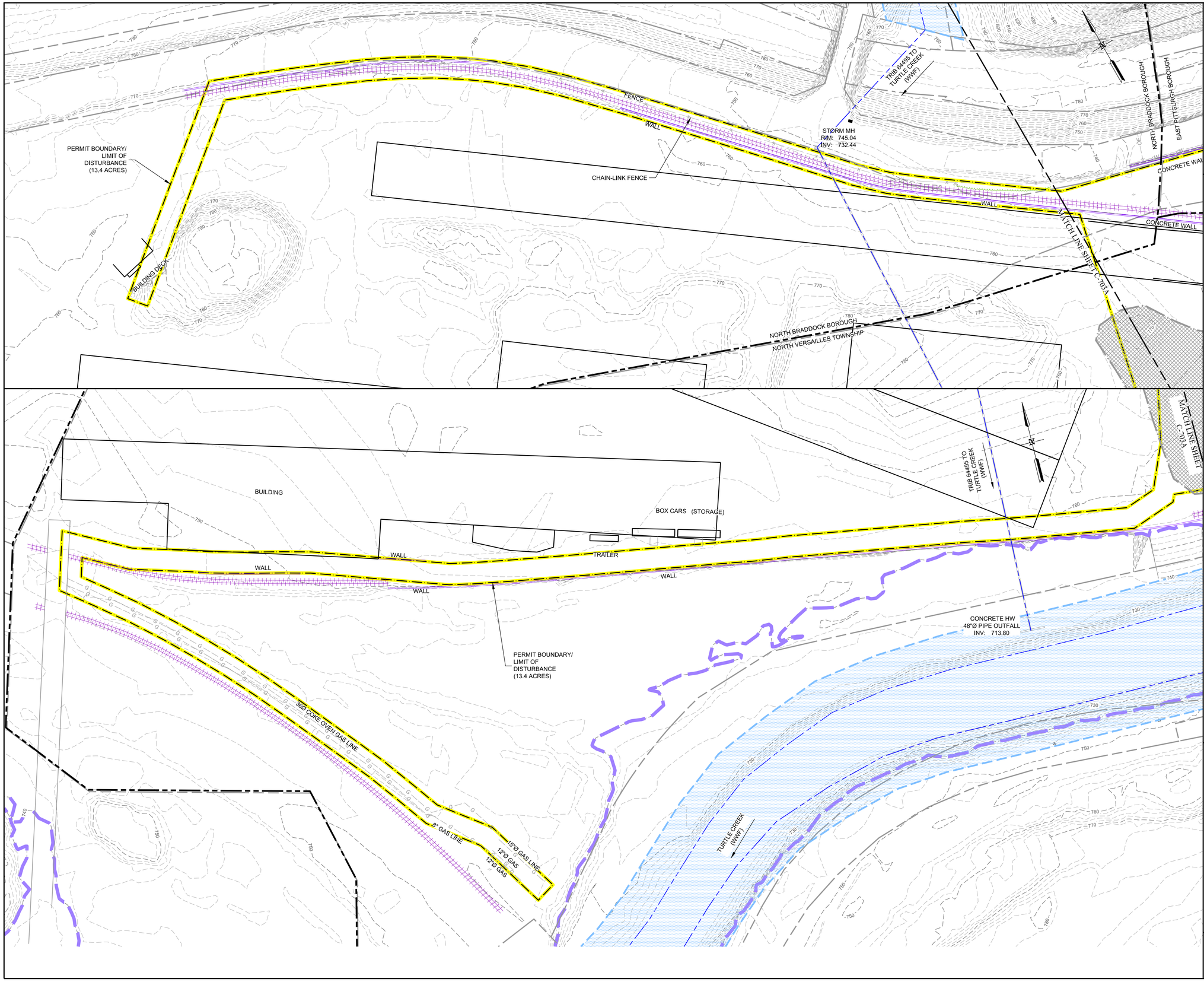
drawing title: E&S EXISTING CONDITIONS AND LIMIT OF DISTURBANCE PLAN
EROSION AND SEDIMENT CONTROL PLAN

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

EAST PITTSBURGH BOROUGH, NORTH BRADDOCK BOROUGH, NORTH VERSAILLES TWP.
ALLEGHENY COUNTY, PENNSYLVANIA

Sheet C703A

Z:\Merrion Oil & Gas\180539-11-ET Braddock 1\Dwg\Production\E&S\C3A.dwg Plotted: October 19, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
(no. PE077667)

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 BMP's 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

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed: KGJ
checked: MDR
drawn: QZ
scale: 1" = 60'
date: 10/22/2018
project no.: 180539
graphic scale: 0 60 120 180 SCALE IN FEET

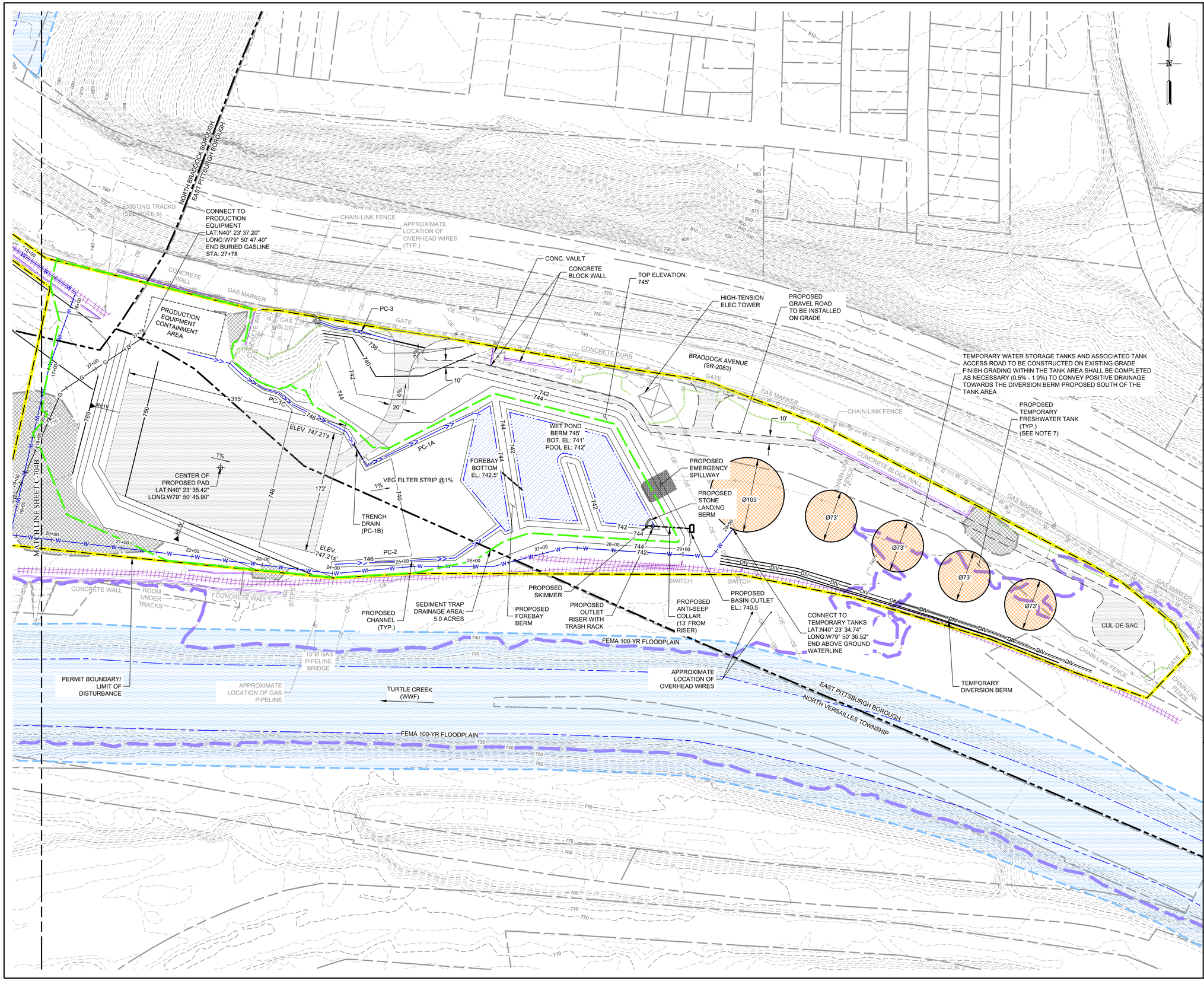
drawing title: E&S EXISTING CONDITIONS AND LIMIT OF DISTURBANCE PLAN
EROSION AND SEDIMENT CONTROL PLAN

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

Sheet
C703B

Z:\Merrion Oil & Gas\180539-1-ET Braddock 1\Dwg\Production\E&S\25\180539-25-C703.dwg Plotted: October 18, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 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 WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- WeB — EXISTING SOIL BOUNDARY AND DESCRIPTOR
- 1490 — PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- PROPOSED CHANNEL
- PROPOSED WATER FEATURES
- PROPOSED WELL PAD
- PROPOSED TEMPORARY TANK
- W — W — PROPOSED WATERLINE
- G — G — PROPOSED GASLINE
- PROPOSED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- PROPOSED ACCESS ROAD
- 12 — 12 — 12 — PROPOSED 12" FILTER SOCK
- 24 — 24 — 24 — PROPOSED 24" FILTER SOCK
- PROPOSED CULVERT
- DIV — DIV — PROPOSED DIVERSION BERM
- PROPOSED GRAVEL
- PROPOSED INLET
- SEDIMENT TRAP DRAINAGE AREA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale	1" = 60'
date	10/22/2018
project no.	180539
designed	KGJ
checked	MDR
drawn	QZ

SCALE IN FEET: 0 60 120 180

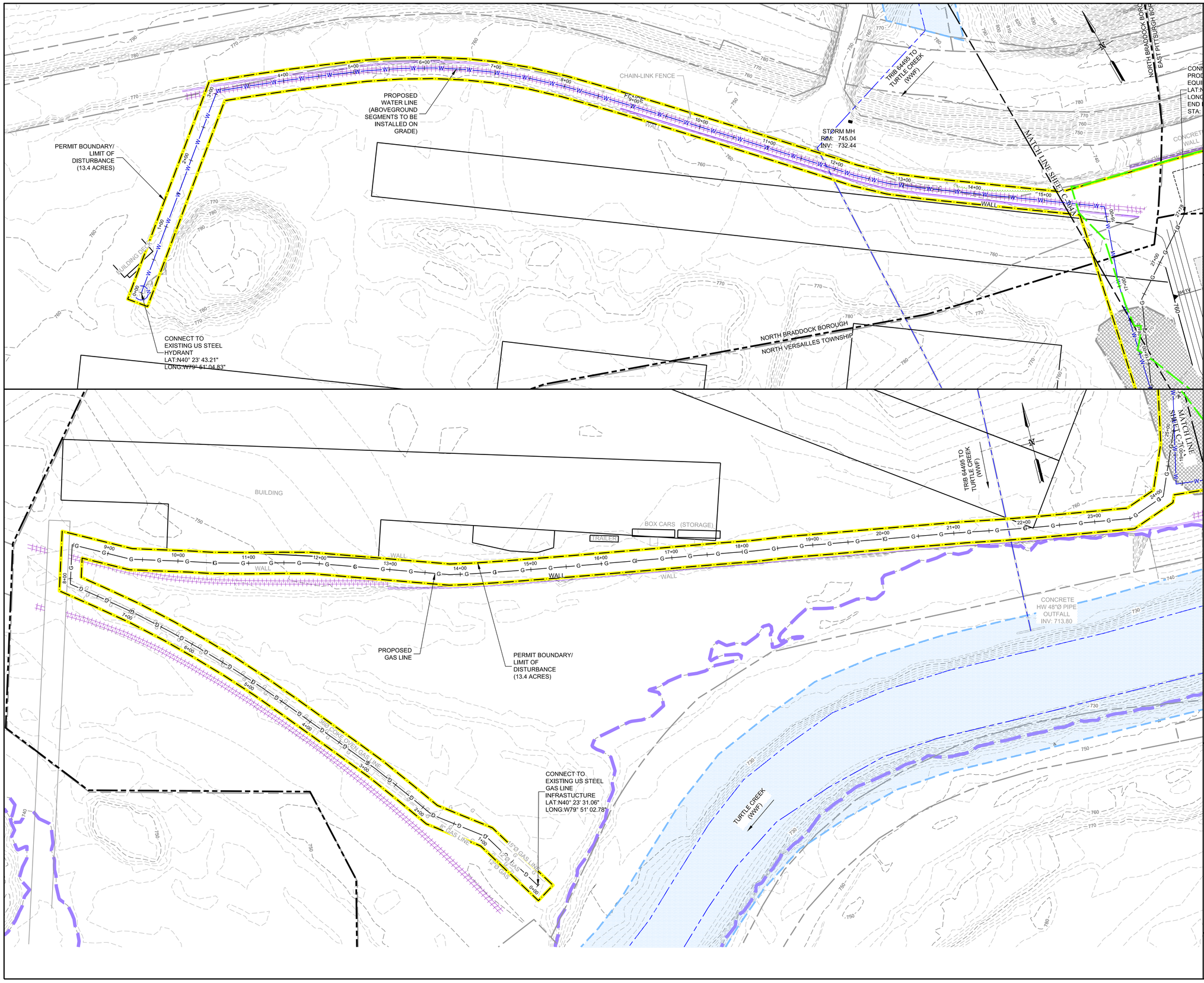
drawing title: E&S GRADING AND DRAINAGE PLAN
EROSION AND SEDIMENT CONTROL PLAN

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

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

Sheet C704A

Z:\Merrion Oil & Gas\180539-1-2 ET Braddock 1\Dwg\Production\E&S\QA\01\05\2018-5-CM.dwg - Printed: October 19, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 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 WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- EXISTING SOIL BOUNDARY AND DESCRIPTOR
- PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- 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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
Lic. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale: 1" = 60'
date: 10/22/2018
project no.: 180539
SCALE IN FEET 0 60 120 180

designed: KGJ
checked: MDR
drawn: QZ
graphic scale:

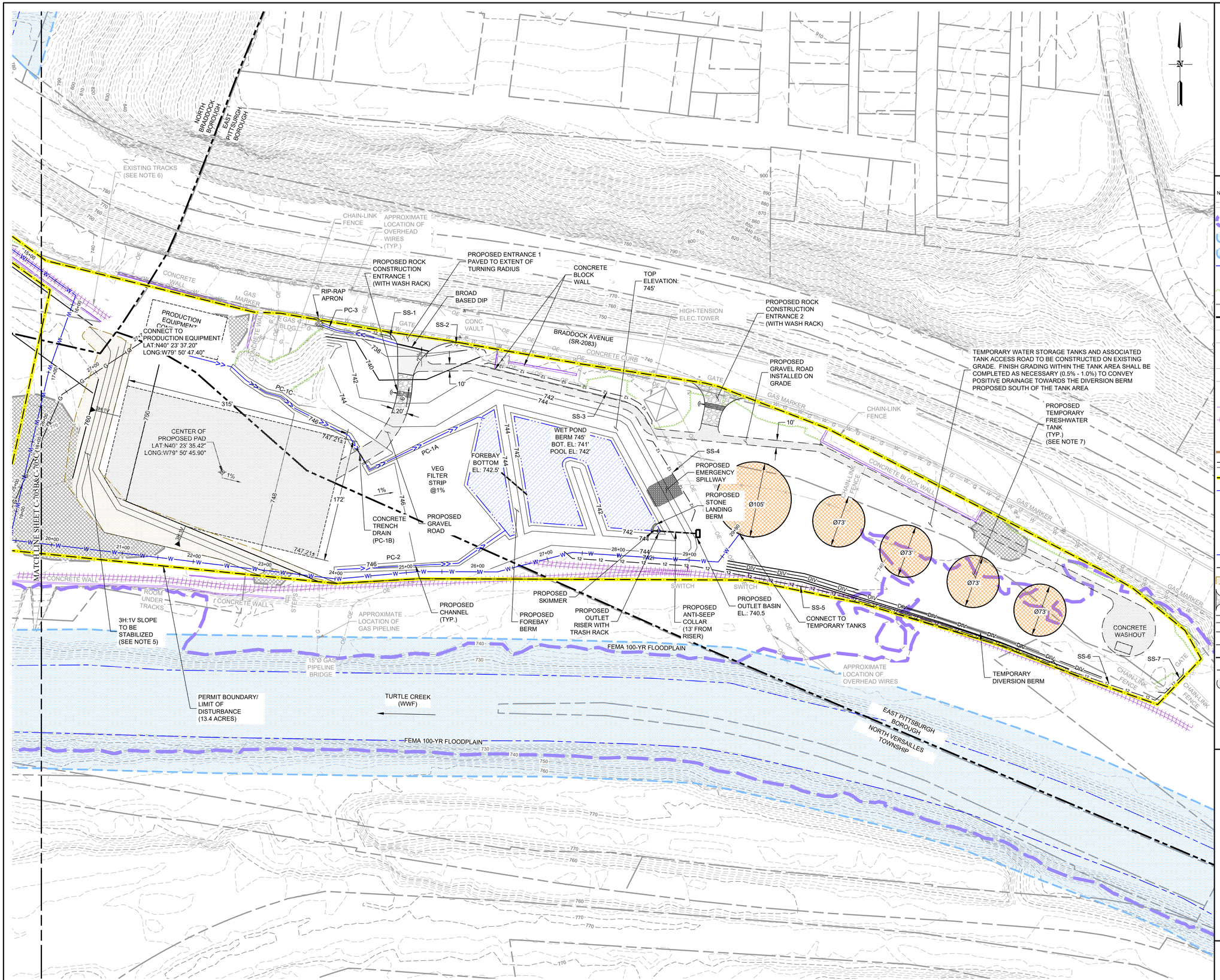
drawing title: E&S GRADING AND DRAINAGE PLAN
EROSION AND SEDIMENT CONTROL PLAN

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

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

Sheet C704B

C:\Merrion Oil & Gas\180539.2 - ET Braddock 1 H\Dwg\Production\E&S\C6-180539-ESC-704.dwg Plotted: October 18, 2018



NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 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 WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- WeB — EXISTING SOIL BOUNDARY AND DESCRIPTOR
- 1490 — PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- PROPOSED CHANNEL
- PROPOSED WATER FEATURES
- PROPOSED WELL PAD
- PROPOSED TEMPORARY TANK
- W — W — PROPOSED WATERLINE
- G — G — PROPOSED GASLINE
- PROPOSED SLOPE STABILIZATION
- PROPOSED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK
- PROPOSED ACCESS ROAD
- 12 — 12 — 12 — PROPOSED 12" FILTER SOCK
- 24 — 24 — 24 — PROPOSED 24" FILTER SOCK
- PROPOSED CULVERT
- DIV — DIV — PROPOSED DIVERSION BERM
- PROPOSED GRAVEL
- PROPOSED INLET

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed	KGJ	scale	1" = 60'
checked	MDR	date	10/22/2018
drawn	QZ	project no.	180539

graphic scale: 0 60 120 180 SCALE IN FEET

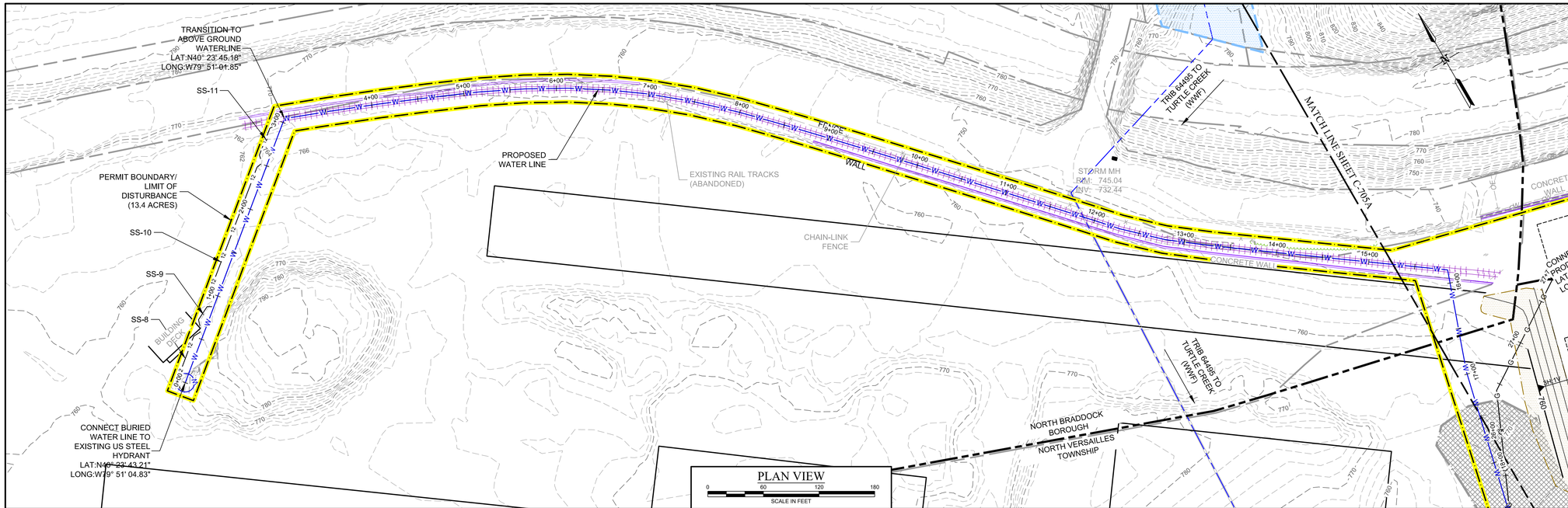
drawing title: E&S CONTROL PLAN
EROSION AND SEDIMENT CONTROL PLAN

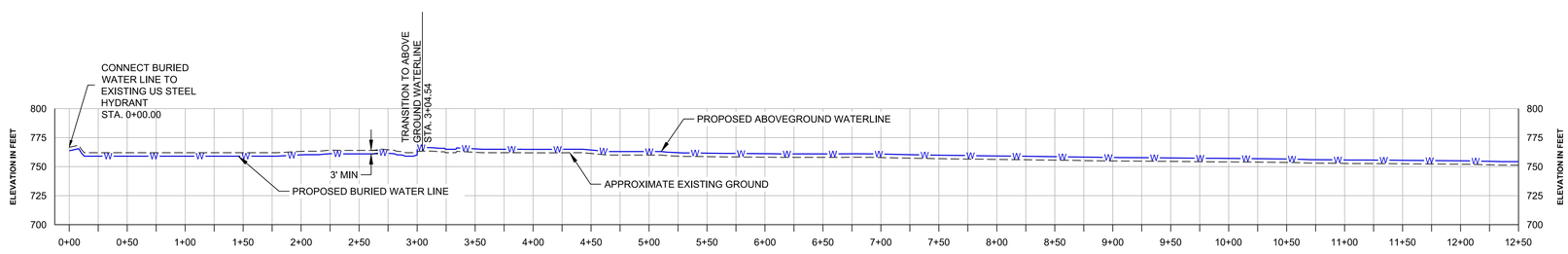
EAST PITTSBURGH BOROUGH, NORTH BRADDOCK BOROUGH, NORTH VERSAILLES TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

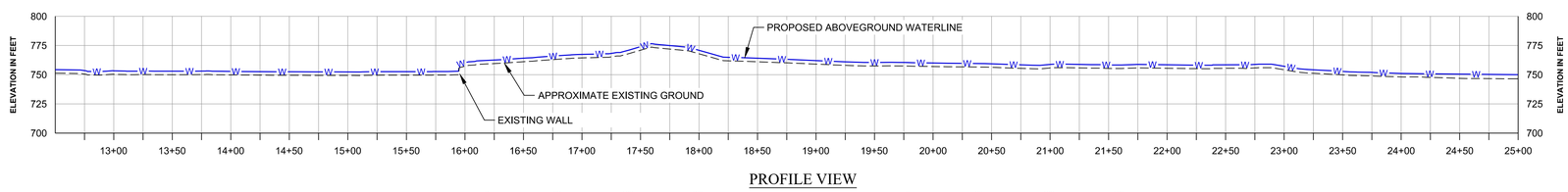
Sheet C705A

Z:\Merrion Oil & Gas\180539-1-2 ET Braddock 1\Dwg\Production\E&S\24x36\180539-E&S-C705.dwg - Printed October 19, 2018

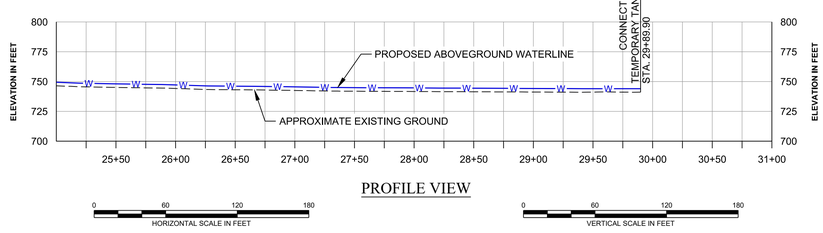




PROFILE VIEW



PROFILE VIEW



PROFILE VIEW

NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

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

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale	AS NOTED
date	10/22/2018
project no.	180539
designed	KGJ
checked	MDR
drawn	QZ
graphic scale	

drawing title: EROSION AND SEDIMENT CONTROL PLAN

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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

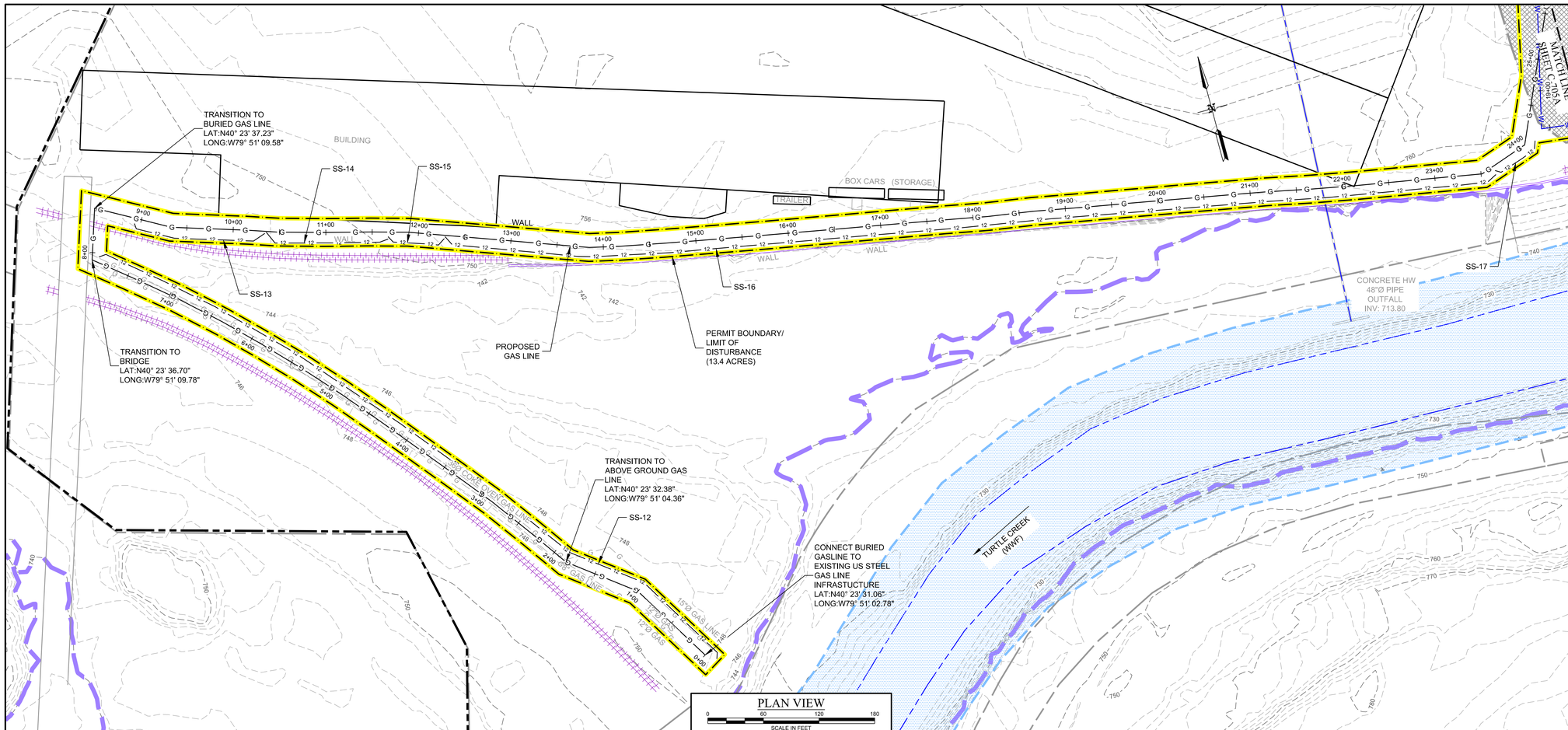
I do hereby certify to the best of my knowledge, information and belief, that the Erosion and Sediment Control and Site Restoration Plan and Post Construction BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's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

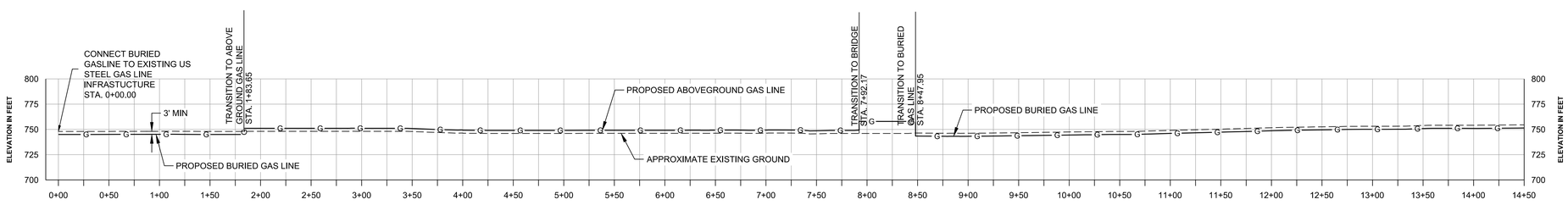
TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

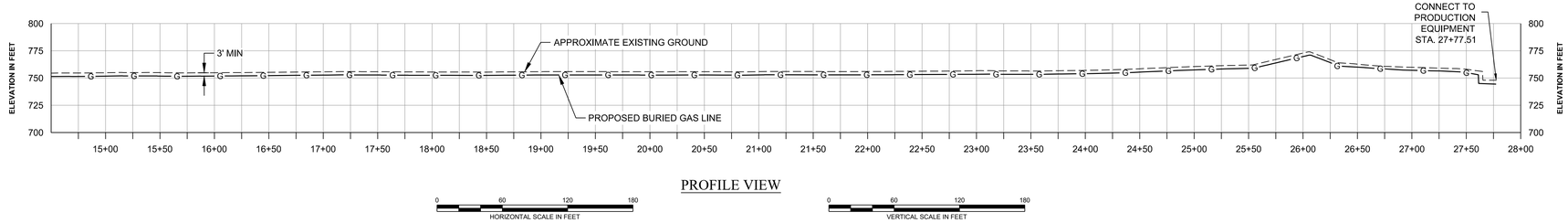
Sheet C705B

Z:\Merrion Oil & Gas\180539-1-ET Braddock 1\Drawings\Production\ES\24x36\180539-ES-C705.dwg - Printed: October 19, 2018





PROFILE VIEW



PROFILE VIEW

NOTES:

1. 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 TILES 40001380PAS PROVIDED BY TRANT CORPORATION. SITE TOPOGRAPHY IS SUBJECT TO CHANGE DUE TO ACTIVE STOCKPILE BY US STEEL.
2. AERIAL IMAGE ON SHEET C701 WAS PROVIDED BY AERIAL PHOTOGRAPHY OF PAMAP TILES 40001380PAS DATED 2010.
3. 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.
4. THIS PLAN IS IN THE PENNSYLVANIA STATE PLANE SOUTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.
5. 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.
6. EXISTING RAILROAD TRACKS WITHIN WELL PAD PROJECT AREA WILL BE REMOVED.
7. 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.

LEGEND

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

- 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 WALL
- EXISTING RAILLINE
- EXISTING SLAG PILE
- EXISTING SOIL BOUNDARY AND DESCRIPTOR
- PROPOSED CONTOURS
- PROPOSED LIMIT OF DISTUBANCE
- 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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale: AS NOTED
date: 10/22/2018
project no.: 180539
designed: KGJ
checked: MDR
drawn: QZ
graphic mode:

drawing title: EROSION AND SEDIMENT CONTROL PLAN
project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS
EAST PITTSBURGH BOROUGH, NORTH BRADDOCK BOROUGH, NORTH VERSAILLES TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA

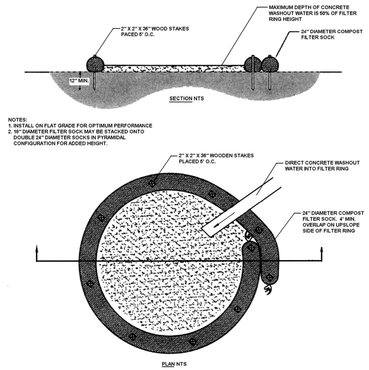
E:\Merrion Oil & Gas\180539.14 ET Braddock 1 TI\Dwg\Production\E&S\23x36\180539-E&S-C705.dwg Plotted: October 18, 2018

Sheet C705C

CONFIDENTIAL

Filtrexx

FIGURE 3.18
Typical Compost Sock Washout Installation



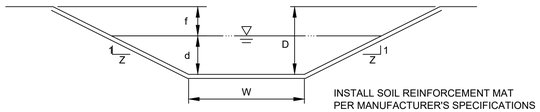
A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

363-2134-008 / March 31, 2012 / Page 58

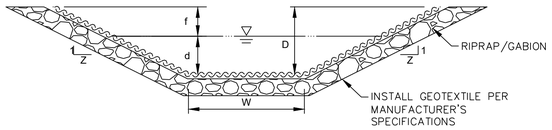
CONCRETE WASHOUT

NOT TO SCALE

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	0.677
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

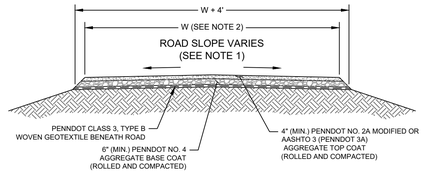


CHANNEL DETAIL



ECM SHALL BE NAG-S150 OR APPROVED EQUIVIALENT

RIPRAPPED/GABION CHANNEL DETAIL



NOTE:

1. IN CASES WHERE THE ACCESS ROAD IS ACCOMPANIED BY A GRASS-LINED CHANNEL, THE ROAD SHALL BE GRADED AT A SLOPE OF 2% TOWARDS THE CHANNEL. IN ALL OTHER CASES, THE ACCESS ROAD SHALL BE CROWNED WITH A 2% SLOPE.
2. SEE PLAN VIEW SHEET FOR EXACT ACCESS ROAD WIDTH.

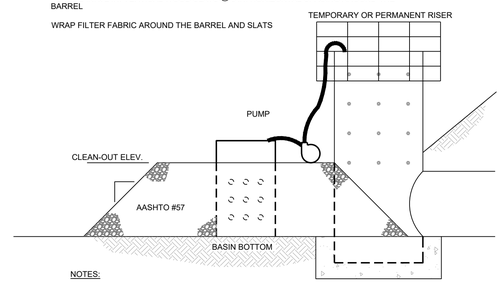
ACCESS ROAD

NOT TO SCALE

30 TO 55 GALLON BARREL WITH 1 IN DIA. PERFORATIONS AT 6 IN. HORIZONTAL AND 6 IN. VERTICAL SPACING

PLACE 2 IN. x 2 IN. VERTICAL WOOD SLATS @ 6 IN. HORIZONTAL SPACING AROUND THE BARREL

WRAP FILTER FABRIC AROUND THE BARREL AND SLATS



NOTES:

DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

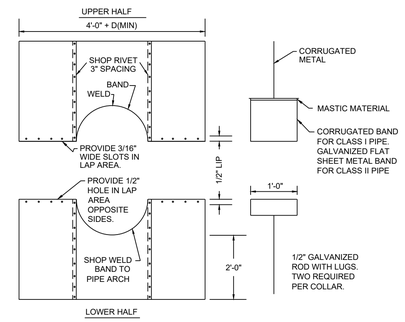
PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

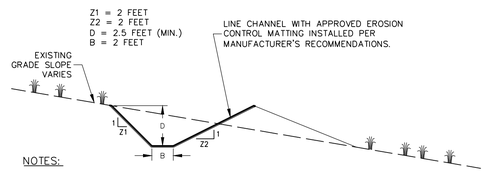
STANDARD CONSTRUCTION DETAIL #7-18
SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE

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



ANTI-SEEPAGE COLLAR DETAIL

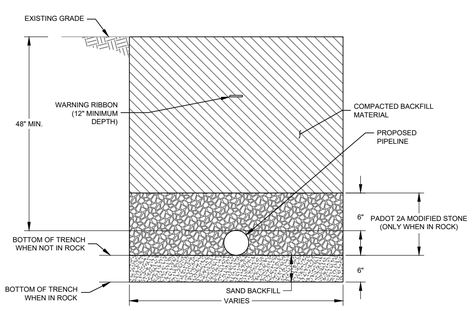


NOTES:

1. PLACE TEMPORARY STONE CHECK DAM / ROCK FILTER AT DOWNSLOPE END OF TEMPORARY DIVERSION CHANNELS WHERE DISTURBED AREAS OR SEDIMENT-LADEN RUNOFF MAY ENTER CHANNEL. REMOVE STONE FILTER WHEN CONTRIBUTING DRAINAGE AREAS ARE STABILIZED.
2. ECM SHALL BE NAG-S150 OR APPROVED EQUIVALENT.
3. SEE CHANNEL SCHEDULE FOR ADDITIONAL DESIGN INFORMATION.

DIVERSION BERM

NOT TO SCALE

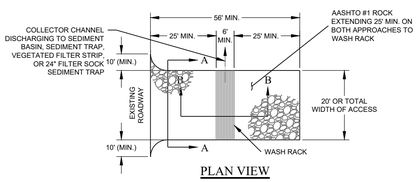


NOTES:

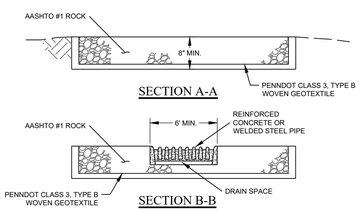
1. PIPE BEDDING WILL BE PLACED BENEATH THE PIPELINE A MINIMUM OF 6" THICK IN AREAS OF EXPOSED STONE.
2. PIPELINE WILL BE PLACED IN THE TRENCH AND BACKFILLED USING EXISTING MATERIALS.
2. WARNING RIBBON WILL BE PLACED A MINIMUM OF 12" BELOW THE EXISTING SURFACE GRADE.

TYPICAL TRENCH SECTION

NOT TO SCALE



PLAN VIEW



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

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

WASH RACK - SHALL BE 20 FEET WIDE MINIMUM, DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICLE TRAFFIC, AND HAVE A WATER SUPPLY AVAILABLE TO WASH THE WHEELS OF VEHICLES LEAVING THE SITE.

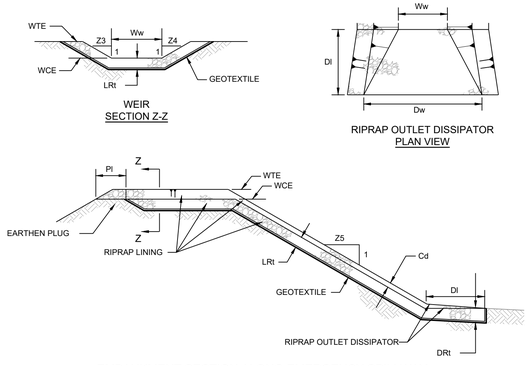
PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

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

WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY

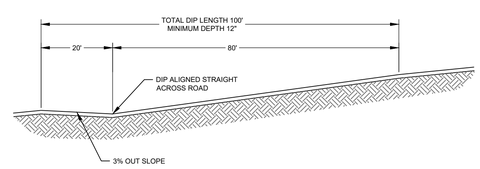
BASIN NO.	WEIR					LINING		CHANNEL		DISSIPATOR			
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	RIPRAP SIZE (R-_)	RIPRAP THICK. LRt (IN)	Z5 (FT)	DEPTH Cd (FT)	LENGTH Dl (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R-_)	RIPRAP THICK. DRt (IN)
POND 1	2	2	745.00	743.50	25	R-4	18	2	1.5	15	32	R-4	18

NOTES:

DIMENSION PI SHALL BE 5' MINIMUM.
DISPLACED RIPRAP WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #7-12
SEDIMENT BASIN EMERGENCY SPILLWAY WITH RIPRAP LINING

NOT TO SCALE

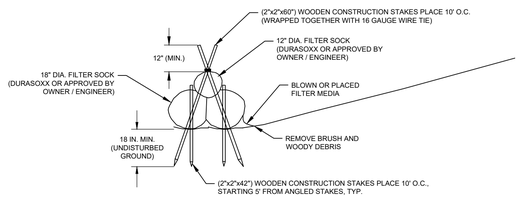


NOTES:

1. DIPS SHALL BE ORIENTED SO AS TO DISCHARGE TO THE LOW SIDE OF THE ROADWAY.
2. DIPS SHALL BE INSPECTED DAILY. DAMAGED OR NON-FUNCTIONING DIPS SHALL BE REPAIRED BY THE END OF THE WORKDAY.

BROAD-BASED DIP

NOT TO SCALE



NOTES:

1. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
2. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

FILTER SOCK SEDIMENT TRAP

NOT TO SCALE

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

scale: AS NOTED
date: 10/22/2018
project no: 180539

designed	KGJ
checked	MDR
drawn	QZ
graphic scale	

drawing title: E&S CONSTRUCTION DETAILS
EROSION AND SEDIMENT CONTROL PLAN

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

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

Sheet C707

Z:\Merrion Oil & Gas\180539-1-ET Braddock 1\Dwg\Production\E&S\24x36\180539-E&S-C707.dwg Plotted: October 18, 2018

CONSTRUCTION SEQUENCE

PROGRAM OF OPERATIONS

STAGE 1

1) Access to site will be via Braddock Avenue.
2) Access and construction disturbance of the site shall be kept to a minimum for installation of Best Management Practices [BMP] facilities. Sediment shall not be permitted to enter waters of the Commonwealth. No organic material is to be buried on site.
3) The extent of the disturbance as well as the duration between initial disturbance and final stabilization shall be minimized with the following techniques:

a Erosion Control Blanketing and seeding are to be done as soon as possible after final grades are reached,
b immediate vegetative stabilization of disturbed areas upon temporary cessation of work for 4 days or longer,
c a maximum of 15000 square feet of disturbed area may reach final grade before initiating seeding and mulching operations,
d limiting the disturbance to one watershed at a time,
e limit the total length of excavated trench to less than the length of utility line which can be placed and back filled at end of workday,
f only 50 lineal feet of open trench at the end of the workday,

4) Excavate area for installation of the Rock Construction Entrance #1 and #2. Lay geotextile at edge of existing pavement. Install stone base per construction entrance detail. Stockpile additional stone for maintenance of entrance. Construction equipment and material will be delivered to the site via this entrance.
5) Install 12" silt socks.

STAGE 2

6) Begin earthwork and installation of Pond 1 and Forebay.
7) As embankment is formed, install **permanent outlet structure** (do not install dewatering orifices in permanent structure), **install pipe**, **anti-seep collar**, **skimmer** as per Construction Detail #7-2, rock apron RA-100, and create the berm. A geo-technical engineer shall verify soils are suitable for trap embankments. Strict adherence to the Geotechnical report is to be followed during the Trap installation. Install impermeable PVC liner. Sediment Trap Storage Dewatering Facility must be installed at the time of Trap installation as per Standard Construction Detail #8-2. **(Critical Stages are in bold text).**
8) Install Sediment Trap Outlet Basin as per Construction Detail #8-6.
9) Install **Emergency Spillway** as per construction details. **(Critical Stage)**
10) Install Clean Out Stake as per plan and details.
11) Install Channels 1-3 and diversion berm.
12) Install Trench Drain within Channel 1. Trench drain is to be installed the length of the proposed roadway that crosses over said channel. Location of trench drain can be found on sheet C705.
13) All exposed embankment slopes should be limed, fertilized, seeded and mulched. Permanent vegetative ground cover should be established upon completion of basin construction.

STAGE 3

14) Excavate/place fill on site until design grade has been established for site. Immediately stabilize fill slopes every ten feet of vertical elevation by seeding per permanent seeding schedule. All slope areas, brought to finish grade are to be stabilized with rock or seeded with mulch applied to slopes as specified on detail sheet.
15) Install erosion control matting on seeded areas greater than 3:1 slope.
16) Install proposed gravel road and cul-de-sac.
17) Install concrete washout in cul-de-sac.
18) Install water and gas lines.
19) All disturbed areas and sub areas are to be stabilized as soon as possible upon reaching finished grade as per the specifications.

STAGE 4 - Erosion Control Removal and Conversions

1) Concrete Washout facility to be removed at completion of construction. Disposal of the waste is to be handled by an experienced contractor following the appropriate rules and regulations.
2) When a uniform 70% perennial vegetative cover stabilizes drainage area to Sediment Trap and the Trap itself, and lots within the tributary are constructed, it can be converted. Convert Sediment Trap as follows during the growing season:
   - Pump sediment laden water from Trap through a sediment filter bag. Pump capacity cannot exceed 750gpm or 50% of manufacturer's recommendation pump rate. Or a barrel and #57 gravel and pump per detail.
   - Remove sediment and stockpile in an area surrounded with filter sock to dry and then mix with topsoil.
   - Remove the clean out stake. Dispose of properly, at an approved landfill.
   - Any damage to design dimensions during removal of temporary facilities and sediment shall be corrected by regarding, restabilization, etc. immediately.
   - Convert Trap to Detention Pond 1 as per plan and details. Seed disturbed area per permanent seeding schedule.
   - Convert Sediment Trap outlet basin as per plans and details to a level spreader.
3) Existing E&S controls can be removed once a uniform 70% perennial vegetative cover is obtained. Silt will be disposed of by being mixed with other soils on the site or spread to dry in an area protected with filter sock and then seeded per permanent seeding specifications when dry. Compost from the filter sock can be used as a soil supplement.
   - Silt sock and erosion control matting is to be removed and disposed of properly, at an approved landfill.

TEMPORARY CONTROL MEASURES AND FACILITIES USED DURING EARTH MOVING.
Program of operations: The life of this project is such that soil erosion and sedimentation measures must be continually applied and maintained during construction activities. This will be preceded by proper interim measures on a scheduled basis as outlined in this application.

PURPOSE - The purpose of the use of temporary or interim control measures is to prevent needless accumulation of sediment in the major drainage channels and to minimize the creation of difficult and undesired conditions in and around the site during construction.

BMP INSTALLATION

All Best Management Practices (BMP's) required by the Soil Erosion and Sedimentation Control Plans shall meet or exceed the standards of the Commonwealth of Pennsylvania Department of Environmental Protection Office of Water Management's "Erosion and Sediment Pollution Control Program Manual" dated March 2000 or newer.

ALTERATIONS PROPOSED TO THE AREA. See Plan Sheets.

METHOD OF CALCULATION
The methods of calculation for the storm water runoff and detention requirements for this project were established by D.E.P. -erosion and sediment pollution control program manual. This method was chosen because it is acceptable to all governmental bodies involved.

COMPOST FILTER SOCK INSTALLATION:
Sock fabric shall meet standards of table 4.1 of the PA DEP Erosion Control Manual. Compost shall meet the standards of table 4.2 of the PA DEP Erosion Control Manual.

Compost filter sock shall be placed at existing level grade. Both ends of the barrier shall be extended at least 8 feet up slope at 45 degrees to the main barrier alignment. Maximum slope length shall not exceed that specified for the size of the sock and the slope of the tributary area.

Traffic shall not be permitted to cross compost filter sock.

EROSION CONTROL BLANKET INSTALLATION:
Seed and soil amendments shall be applied according to the rates in the plan drawings before installing the blanket.

Provide anchor trench at toe of slope in similar fashion as at top of slope.

Slope surface shall be free of rocks, clods, sticks, and grass.

Blanket shall have good continuous contact with underlying soil throughout entire length, lay blanket loosely and stake or staple to maintain direct contact with soil do not stretch blanket.

The blanket shall be stapled in accordance with the manufacturer's recommendations.

SEDIMENT TRAP INSTALLATION:
Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones and other objectionable materials. The embankment shall be compacted in layer lifts of not more than 9 inches. The maximum rock size shall be no greater than 6 inches. Upon completion, the embankment shall be seeded and mulched or otherwise stabilized according to the specifications of the E&S plan drawings.

SEDIMENT TRAP TRASH RACK/RISER INSTALLATION:
Box shall be bolted, strapped or otherwise secured to the temporary riser.

Top of temporary riser extension shall be at least as high as sediment basin temporary riser and shall be 6 inches minimum below crest of emergency spillway.

All joints shall be watertight.

ROCK CONSTRUCTION ENTRANCE INSTALLATION:
Remove topsoil prior to installation of rock construction entrance. Extend rock over full width of entrance.

Runoff shall be diverted from roadway to a suitable sediment removal BMP prior to entering rock construction entrance.

Mountable berm shall be installed whenever optional culvert pipe is used and proper pipe cover as specified by manufacturer is not otherwise provided. Pipe shall be sized appropriately for size of ditch be crossed.

Rock construction entrances shall befitted with wash racks to be ABACT for special protection watersheds.

ROCK APRON INSTALLATION:
All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match receiving channels.

BMP MAINTENANCE

PROJECT AREA MAINTENANCE
Areas within the project, not in the immediate work area, will be interim seeded, if necessary, to avoid problems with accelerated erosion. This will include any temporary grading, channels, etc. Sedimentation control will be achieved by limiting the total amount of disturbance to the site on a scheduled basis. Sedimentation Basin and silt socks will be provided to intercept the runoff from site prior to the discharge to waters of the Commonwealth.

ROCK CONSTRUCTION ENTRANCE MAINTENANCE:
Structure's thickness will be constantly maintained to the specified dimension by adding rock. A stockpile of rock material will be maintained at the site for this purpose. At the end of each construction workday, all sediment deposited on public roadways, will be removed and returned to the site. Washing with water is not permitted. If excessive amounts of sediment are being deposited on roadway, extend length of rock construction entrance by 50 foot increments until condition is alleviated.

EROSION CONTROL BLANKET MAINTENANCE:
Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to minimum uniform 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days.

SEDIMENT TRAPS MAINTENANCE:
All sediment traps shall be inspected on at least a weekly basis and after each runoff event.

Access for sediment removal and other required maintenance activities shall be provided.

A clean out stake shall be placed near the center of each trap. Accumulated sediment shall be removed when it has reached the elevation indicated on the clean out stake and the trap restored to its original dimensions. Dispose of materials removed from the trap in the manner described in the E&S plan.

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

Displaced riprap within the spillway or outlet protection shall be replaced immediately.

Accumulated sediment shall be removed and disturbed areas inside the trap shall be stabilized before conversion to a storm water management facility. To assist in removing sediment, which may be saturated, a device such as shown in standard construction detail #7-18 may be used to dewater the sediment prior to its removal.

TRASH RACK/ RISER MAINTENANCE:
Clogged or damaged spillways shall be repaired immediately. Trash and other debris shall be removed from the basin and riser.

DEWATERING FACILITY MAINTENANCE:
Dewatering Facility shall be continuously monitored during operation. If for any reason the dewatering facility ceases to function properly, it shall be immediately shut down and not restarted until the problem has been corrected.

ROCK APRON MAINTENANCE:
All aprons shall be inspected at least weekly and after each runoff event, displaced riprap within the apron shall be replaced immediately.

SPILLWAY MAINTENANCE:
Displaced riprap within the spillway or outlet channel shall be replaced immediately.

COMPOST FILTER SOCK MAINTENANCE:
Compost filter sock shall be inspected weekly and after each runoff event. Damaged sock shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Accumulated sediment shall be removed when it reaches ½ the above ground height of the barrier and disposed in the manner described in the plan.

Biodegradable compost filter socks shall be replaced after 6 months. Photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

Upon stabilization of the area tributary to the sock, stakes shall be removed, the sock may be left in place and vegetated or removed by cutting open the mesh and spreading the mulch as a soil supplement.

B.) Inspection schedule for proposed BMPs provided.

Response: See information listed below for seeding scheduling. Inspection schedule for proposed BMPs are also located on plan sheet C710.

TYPES OF MEASURES AND FACILITIES -
The types of measures and facilities will include the use of positive grading techniques and practices which will be implemented during construction to insure positive drainage in the work area. This is to prevent the creation of difficult and undesired working conditions. The drainage in these areas will be minimized to prevent excess erosion. If construction should cease during non-growing season disturbed areas shall be covered with straw or excelsior mats.

Those areas where cover is removed will be exposed for a minimum period of time to final grading and reseeding. The seeding of disturbed areas will be in one of three schedules.

SEEDING AND MULCHING MAINTEANENCE/SPECIFICATIONS

SEEDING
If grass does not grow within 20 days of application [during growing season] the area shall be seeded again.

APPLICABILITY.
Upon completion of the development and construction of buildings all disturbed areas will be seeded per permanent seeding schedule.

TEMPORARY SEEDING SCHEDULE AND FERTILIZER RATES:
Early spring (April 15 up to June 15)
- Annual grass (rye) at a rate of 40 pounds per acre.

Late spring and early summer (June 16 to August 15)
- Japanese or foxtail millet at a rate of 35 pounds per acre.

Late summer and fall (August 16 and later)
- Annual Rye at a rate of 40 pounds per acre or Winter wheat at a rate of 180 pounds (3 bu) per acre.

Prepare the ground surface apply ground lime stone and fertilizer per Table 5.10 of DER's "Erosion and Sediment Control Program Manual" (page 5.40), Lime at a rate of 6 ton of agriculture limestone per acre and apply 20 lbs. of N (nitrogen), 40 lbs. of N/2 O/2 (Phosphate) of & 40 lbs. of K2O (Potash) per acre or as indicated by soil testing.

If grading is completed developed during non-growing season, October 15 and April 15, disturbed areas shall be covered with straw mulch applied at 3 tons of mulch per acre to produce a loose layer of .75 to 1.0 inch deep per Penn DOT Standards 408.

PERMANENT SEEDING SCHEDULE AND FERTILIZER RATES
Seed will be applied by approved hydro seeding methods to areas that are graded to final section, for slopes less than 10 feet in height and will not be disturbed, Using Kentucky 31 tall fescue, at a rate of 40 pounds per square acre, or, with fine fescue 10 pounds per square acre. Liming of soil shall be per soil testing or 6 ton of agricultural grade limestone per acre and fertilizer added per soil testing or at a rate of 100 lb. of Nitrogen (N) 200 lb. of Phosphate (P/2 O/5) and 200 lb. of Potash (K/2 O) per acre or as indicated by soil testing. Apply 3 tons of straw mulch per acre to produce a loose layer of .75 to 1.0 inch deep or paper mulch per manufacturer's specifications.

PERMANENT SEEDING SCHEDULE STEEP SLOPES OVER 10 FEET HIGH FERTILIZER & LIMING RATES
Seed will be applied by approved hydro seeding methods to areas that are graded to final section, for steep slopes over 10 feet in height which will not be disturbed, Using a mixture of crown vetch, at a rate of 10 pounds per acre and perennial ryegrass, at a rate of 20 pounds per acre. Liming of soil shall be per soil testing or 6 ton of agricultural grade limestone per acre and fertilizer added per soil testing or at a rate of 100 lb. of Nitrogen (N) 200 lb. of Phosphate (P/2 O/5) and 200 lb. of Potash (K/2 O) per acre or as indicated by soil testing. Apply 3 tons of straw mulch per acre to produce a loose layer of .75 to 1.0 inch deep or paper mulch per manufacturer's specifications.
For construction between October and March use straw blanket applied at a rate of 3 ton per acre.

MULCHING SEEDED AREAS.
Immediately after seeding or within 48 hours after seeding is completed. Place straw, wood cellulose over topsoil areas. Use hay, straw or wood cellulose on other areas as indicated in specifications PENNDOT 408, 805.3

ACCD EROSION & SEDIMENT CONTROL PLAN STANDARD NOTES

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.

2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site preconstruction meeting.

3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.

4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the local conservation district or by the Department prior to implementation.

5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.

6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.

7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.

8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.

9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.

10. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

11. All off-site waste and borrow areas must have an E&S plan approved by the Allegheny County Conservation District or the Department fully implemented prior to being activated.

12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing. Clean fill includes soil, rock, stone, dredged material, used asphalt and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such. The contractor is responsible for performing environmental due diligence regarding the import of clean fill as defined as: investigative techniques, including, but not limited to, visual property inspections, electronic database searches, review of ownership and use history of property, sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments and audits.

13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.

14. Vehicles and equipment may neither enter directly nor exit directly from site onto Braddock Avenue.

15. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and remetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.

16. A log, DEP form 3150-FM-BWEW0083 dated 02/2012, showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

17. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.

18. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.

19. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches - 6 to 12 inches on compacted soils - prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.

20. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.

21. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.

22. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.

23. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.

24. Fill shall not be placed on saturated or frozen surfaces.

25. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.

26. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.

27. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.

28. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.

29. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.

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

31. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.

32. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district to schedule a final inspection.

33. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.

34. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter any surface waters or groundwater systems.

35. Erosion control blanketing shall be installed on all slopes 3H: 1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.

A log, DEP form 3150-FM-BWEW0083 dated 02/2012. showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
0	PADEP SUBMISSION	05/31/2018	TRANT
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM

scale: AS NOTED
date: 10/22/2018
project no.: 180539

designed: KGJ
checked: MDR
drawn: QZ
graphic scale:

drawing title: E&S CONSTRUCTION DETAILS
EROSION AND SEDIMENT CONTROL PLAN

project title: ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

Sheet C708

N:\Merrion Oil & Gas\180539-11-ET Braddock 1\Dwg\Production\E&S\24-30\180539-E&S-C708.dwg Plotted: October 19, 2018

EROSION CONTROL OPERATION & MAINTENANCE SCHEDULE

EROSION & SEDIMENT CONTROLS	E&S CONTROLS APPLICABLE TO THIS PLAN	MINIMUM MAINTENANCE REQUIREMENTS NOTE: All erosion controls are to be inspected weekly and after each runoff event unless otherwise noted below. Any deficiencies found during inspection should be repaired or replaced immediately after inspection unless otherwise noted below.				
BMP's		INSPECT	CLEAN	REPAIR	REPLACE	DESCRIPTION
SILT SOCKS	X	WEEKLY AND EVERY RUNOFF EVENT	SEDIMENT 1/2 BARRIER HEIGHT	WITHIN 24 HOURS	6 MONTHS IF SOCK BIODEGRADABLE 1 YEAR IF SOCK PHOTODEGRADABLE POLYPROPYLENE SOCKS ACCORDING TO MANUFACTURERS RECOMMENDATIONS	1. Compost filter sock shall be inspected weekly and after each runoff event. Damaged sock shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection. 2. Biodegradable compost filter socks shall be replaced after 6 months. Photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations. 3. Accumulated sediment shall be removed when it reaches ½ the above ground height of the barrier and disposed in the manner described in the plan. 4. Upon stabilization of the area tributary to the sock, stakes shall be removed, the sock may be left in place and vegetated or removed by cutting open the mesh and spreading the mulch as a soil supplement.
SILT FENCE		WEEKLY AND EVERY RUNOFF EVENT	SEDIMENT 1/2 BARRIER HEIGHT	IMMEDIATELY	WHEN TOPPED OR UNDERMINED IMMEDIATELY WITH ROCK FILTER OUTLET	1. Filter fence shall be inspected weekly and after each runoff event. Any fence section which has been undermined or topped shall be immediately replaced with a rock filter outlet. 2. Accumulated sediment shall be removed when it reaches ½ the above ground height of the barrier and disposed in the manner described in the plan. 3. Upon stabilization of the area tributary to the fence, fence shall be removed, and properly disposed of in a DEP approved facility.
ROCK CONSTRUCTION ENTRANCE	X	DAILY	DAILY	AS NECESSARY	AS NECESSARY	1. The structure's thickness will be constantly maintained to the specified dimension by adding rock. A stockpile of rock material shall be maintained on site for this purpose. 2. All sediment deposits on paved roadways, will be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on roadway extend length of rock construction entrance by 50 foot increments until condition is alleviated or install wash rack. 3. Washing of the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.
CONCRETE WASHOUT	X	DAILY	75% OF CAPACITY	IMMEDIATELY	DAMAGED OR LEAKING WASHOUT IMMEDIATELY LINER WITH EACH CLEANING	1. All concrete washout facilities should be inspected daily. Damaged or leaking washouts should be deactivated and repaired or replaced immediately. 2. Accumulated materials should be removed when they reach 75% capacity. Plastic liners should be replaced with each cleaning of the washout facility.
CHANNELS	X	WEEKLY AND EVERY RUNOFF EVENT	DEPOSITS WITHIN 24 HOURS 1/4 FULL OF SEDIMENT	LINING WITHIN 48 HOURS	LINING WITHIN 48 HOURS	1. Channel dimensions shall be constantly maintained. Channels shall be cleaned whenever total channel depth is reduced by 1/4 at any location. Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery. No more than 1/3 of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.
SEDIMENT TRAP	X	WEEKLY AND EVERY RUNOFF EVENT	CLEAN OUT ELEVATION=_____	IMMEDIATELY	RIPRAP REPLACE IMMEDIATELY	1. All sediment traps shall be inspected on a weekly basis and after each runoff event. Accumulated sediment shall be removed when it has reached the clean out elevation on the stake and the basin restored to its original dimensions. Trap embankments,spillways and outlets shall be checked for erosion, piping and settlement. Clogged or damaged spillways shall be repaired immediately. Accumulated sediment shall be removed and disturbed areas inside the trap stabilized before conversion to a stormwater management facility. Trash and debris shall be removed from the trap and riser. Displaced riprap within the spillway and/or outlet channel shall be replaced immediately.
SEDIMENT BASIN		WEEKLY AND EVERY RUNOFF EVENT	CLEAN OUT ELEVATION=_____	IMMEDIATELY	RIPRAP REPLACE IMMEDIATELY	1. All sediment basins shall be inspected on a weekly basis and after each runoff event. Accumulated sediment shall be removed when it has reached the clean out elevation on the stake and the basin restored to its original dimensions. Basin embankments,spillways and outlets shall be checked for erosion, piping and settlement. Clogged or damaged spillways shall be repaired immediately. Accumulated sediment shall be removed and disturbed areas inside the basin stabilized before conversion to a stormwater management facility. Trash and debris shall be removed from the basin and riser. Displaced riprap within the spillway and/or outlet channel shall be replaced immediately.
EROSION CONTROL MAT/BLANKET	X	WEEKLY AND EVERY RUNOFF EVENT	N/A	WITHIN 4 DAYS	WITHIN 4 DAYS	1. Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 70% coverage throughout the blanketed area. 2. Damaged sediment filter logs shall be replaced within 4 calendar days of inspection.
PUMPED WATER FILTER BAG		DAILY	N/A	IMMEDIATELY	1/2 FULL OF SEDIMENT	1. Filter bags shall be replaced when bag is 1/2 full of sediment. Spare bags shall be kept available for replacement of those that have failed or are filled. Bags shall be placed on straps to facilitate removal unless bags come with lifting straps already attached. 2. The pump discharge hose shall be inserted into the bags in a manner specified by the manufacturer and securely clamped. A piece of PVC pipe is recommended for this purpose. The pumping rate shall be no greater than 750 gpm or 1/2 the maximum specified by the manufacturer which ever is less. Pump intakes shall be floating and screened. 3. Filter bags should be inspected daily. If any problem is detected, pumping shall cease immediately and not resume until the problem is corrected.
CONSTRUCTION VEHICLE CROSSING		DAILY	DAILY	IMMEDIATELY	IMMEDIATELY	1. The structure's thickness will be constantly maintained to the specified dimension by adding rock. A stockpile of rock material will be maintained on the site for this purpose. 2. After each runoff event, the inlet & outlet condition of the temporary pipe should be evaluated and any "wash-out" areas immediately repaired with compacted backfill materials.
INLET PROTECTION		WEEKLY AND EVERY RUNOFF EVENT	1/2 FULL OF SEDIMENT OR IF FLOODING OCCURS OR IF WATER BYPASSES THE INLET	IMMEDIATELY	IMMEDIATELY	1. Inspect filter bags weekly and after every runoff event. Filter bags shall be emptied, rinsed and/or replaced when bag is 1/2 full or when flow capacity has been reduced so as to cause flooding or bypassing the inlet. Damaged or clogged bags shall be replaced. A supply shall be maintained onsite for replacement of bags. All needed repairs shall be initiated immediately after the inspection. Dispose of accumulated sediment as well as all used bags according to the plan notes.
SEDIMENT FILTER LOG		WEEKLY AND EVERY RUNOFF EVENT	SEDIMENT 1/2 BARRIER HEIGHT	WITHIN 24 HOURS	WITHIN 24 HOURS	1. Sediment filter logs shall be inspected weekly and after each runoff event. 2. Accumulated sediment shall be removed when it reaches ½ the above ground height of the barrier and disposed in the manner described in the plan. 3. Damaged sediment filter logs shall be replaced within 24 hours of inspection.
ROCK APRONS		WEEKLY AND EVERY RUNOFF EVENT	TRASH AND DEBRIS RECYCLED OR DISPOSED OF IN DEP APPROVED FACILITY	IMMEDIATELY	RIPRAP REPLACE IMMEDIATELY	1. Sediment shall be removed when accumulations reach 1/2 the height of the outlet. 2. Materials must be washed completely free of all foreign materials or new rock used to rebuild the filter.
SPILLWAY	X	WEEKLY AND EVERY RUNOFF EVENT	TRASH AND DEBRIS RECYCLED OR DISPOSED OF IN DEP APPROVED FACILITY	IMMEDIATELY	RIPRAP REPLACE IMMEDIATELY	1. Sediment shall be removed when accumulations reach 1/2 the height of the outlet. 2. Materials must be washed completely free of all foreign materials or new rock used to rebuild the filter.
BAFFLES		WEEKLY AND EVERY RUNOFF EVENT	N/A	N/A	WITHIN 7 DAYS	1. In pools with depths exceeding 7', the top of the plywood baffle does not need to extend to the temporary riser crest. Super silt fence baffles need not extend to TRCE elevation. 2. Baffles shall be tied into one side of the basin unless otherwise shown on the plan drawings. 3. Substitution of materials not specified in this detail shall be approved by the department or the local conservation district before installation. 4. Damaged or warped baffles shall be replaced within 7 days of inspection. 5. Baffles requiring support posts shall not be installed in basins requiring impervious liners.
UTILITY TRENCH CONTROLS		WEEKLY AND EVERY RUNOFF EVENT	SEDIMENT 1/2 BARRIER HEIGHT	AS NECESSARY	AS NECESSARY	1. Clean and rake areas where excavated materials have been stockpiled to original vegetation. 2. Backfill, seed and mulch any washout areas as necessary to assure reestablishment of a perenial vegetative cover over disturbed areas. 3. Maintain silt barrier fence/hay bale barriers as specified above.

EROSION CONTROL SITE MAINTENANCE REPORT

Contractor is required to establish a maintenance schedule log, documenting, but not limited to, the following information:

1. Individual or individuals responsible for preparation of report and maintenance of Erosion Controls.
2. Date of Erosion Control review, findings and recomendations.
3. Basic statement as to the effectiveness of the controls with specific attention given to problem areas.

GENERAL INFORMATION

1. Construction and materials shall be in accordance with PennDOT Publication 408, current edition.
2. Grading of site shall be done in increments so that entire site will not be open at one time.
3. As disturbed areas are completed, seed/mulched within 24 hours to establish permanent vegetation.
4. All disturbed areas and stockpiled earth exposed for 7 days or more, with no activity shall be seeded and mulched with a temporary vegetative cover. See DEP Standard Worksheet #21

FINAL SITE STABILIZATION REPAIR PARAMATERS	
AREAS DISTURBED DURING REMOVAL OR CONVERSION SHALL BE STABILIZED IMMEDIATELY. REMOVAL OR CONVERSION ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.	
TEMPORARY E&S BMPs TO BE REMOVED AS PER PLAN	NO CONVERSION OF TEMPORARY E&S BMP's
ROCK CONSTRUCTION ENTRANCE, EROSION CONTROL BLANKET, SILT SOCK, PUMPED FILTER BAG, SEDIMENT BASIN, UNDERGROUND SEDIMENT TRAP	SED. TRAP TO REMAIN AFTER SITE STABILIZATION. TRAP WILL OPERATE AS OVERSIZED PIPE.
ANY REPAIR OR REMOVAL OF BMPs DURING REQUIRED MAINTENANCE WHICH CAUSES DAMAGE TO DESIGN DIMENSIONS WILL BE CORRECTED BY REPLACEMENT, REGRADING, RESTABILIZATION, ETC. IMMEDIATELY.	

A log, DEP form 3150-FM-BWEW0083 dated 02/2012, showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed KGJ
checked MDR
drawn QZ
graphic scale

scale AS NOTED
date 10/22/2018
project no. 180539

drawing title CONSTRUCTION DETAILS
EROSION AND SEDIMENT CONTROL PLAN

project title ET - BRADDOCK WELL PAD
MERRION OIL & GAS

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

Sheet C709

Z:\Merrion Oil & Gas\180539-11-ET Braddock 1\Dwg\Production\E&S\24X36\180539-E&S-C709.dwg Plotted: October 19, 2018

TABLE 11.1

CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

Depth (in)	Per 1000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1074

TABLE 11.2

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

SOIL AMENDMENT	PERMANENT SEEDING APPLICATION RATE			NOTES
	PER ACRE	PER 1,000 SQ.FT.	PER 1,000 SQ.YD.	
AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10–20–20 FERTILIZER	1,000 LB.	25 LB.	210 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	TEMPORARY SEEDING APPLICATION RATE			
AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
10–10–10 FERTILIZER	500 LB.	12.5 LB.	100 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES

ADAPTED FROM PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NON-CROPLAND."

NOTE: A COMPOST BLANKET WHICH MEETS THE STANDARDS OF THIS CHAPTER MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN TABLE 11.2 REVISION OF FERTILIZER TYPE TO 10-20-20. MISPRINT WAS BROUGHT TO ATTENTION ON THE COMMENT SHEET FROM JANUARY 14, 2015 FROM THE ALLEGHENY COUNTY CONSERVATION DISTRICT.

TABLE 11.3

PLANT TOLERANCES OF SOIL LIMITATION FACTORS

SPECIES	GROWTH HABIT (1)	TOLERATES				MINIMUM SEED SPECIFICATIONS (3)				
		WET SOIL	DRY SITE	LOW FERTILITY	ACID SOIL (pH 5–5.5) (2)	PURITY (%)	READY GERM (%)	HARD SEED (%)	TOTAL GERM (%)	SEEDS/LB (1,000s)
WARM–SEASON GRASSES										
DEERTONGUE	BUNCH	YES	YES	YES	YES	95	75		75	250
WEEPING LOVEGRASS	BUNCH	NO	YES	YES	YES	97	75		75	1,500
SWITCHGRASS (4)	BUNCH	YES	YES	YES	NO	(60 PLS)				390
BIG BLUESTERN	BUNCH	NO	YES	YES	YES	(60 PLS)				150
COOL–SEASON GRASSES										
TALL FESCUE	BUNCH	YES	NO	YES	NO	95	80		80	227
REDTOP	SOD	YES	YES	YES	YES	92	80		80	5,000
FINE FESCUES	SOD	NO	NO	YES	NO	95	80		80	400
PERENNIAL RYEGRASS	BUNCH	YES	NO	NO	NO	95	85		85	227
ANNUAL RYEGRASS	BUNCH	YES	NO	YES	NO	95	85		85	227
KENTUCKY BLUEGRASS	SOD	NO	NO	NO	NO	85	75		75	2,200
REED CANARYGRASS	SOD	YES	YES	YES	NO	95	70		70	520
ORCHARDGRASS	BUNCH	YES	YES	YES	YES	95	80		80	654
TIMOTHY	BUNCH	YES	NO	YES	YES	95	80		80	1,230
SMOOTH BROMEGRASS	SOD	NO	YES	YES	NO	95	80		80	136
LEGUMES (5)										
CROWNVETCH	SOD	NO	YES	YES	NO	98	40	30	65	120
BIRDSFOOT TREFOIL (6)	BUNCH	YES	NO	YES	YES	98	60	20	80	400
FLATPEA	SOD	NO	NO	YES	YES	98	55	20	75	10
SERECIA LESPEDEZA	BUNCH	NO	YES	YES	YES	98	60	20	80	335
CEREALS										
WINTER WHEAT	BUNCH	NO	NO	NO	NO	98	85		85	15
WINTER RYE	BUNCH	NO	NO	YES	YES	98	85		85	18
SPRING OATS	BUNCH	NO	NO	NO	NO	98	85		85	13
SUNDANGRASS	BUNCH	NO	YES	NO	NO	98	85		85	55
JAPANESE MILLET	BUNCH	YES	NO	YES	YES	98	80		80	155

(1) GROWTH HABIT REFERS TO THE ABILITY OF THE SPECIES TO EITHER FORM A DENSE SOD BY VEGETATIVE MEANS (STOLONS, RHIZOMES, OR ROOTS) OR REMAIN IN A BUNCH OR SINGLE PLANT FORM. IF SEEDED HEAVILY ENOUGH, EVEN BUNCH FORMERS CAN PRODUCE A VERY DENSE SOD. THIS IS SOMETIMES CALLED A SOD, BUT NOT IN THE SENSE OF A SOD FORMED BY VEGETATIVE MEANS.

(2) ONCE ESTABLISHED, PLANTS MAY GROW AT A SOMEWHAT LOWER pH, BUT COVER GENERALLY IS ONLY ADEQUATE AT pH 6.0 OR ABOVE.

(3) MINIMUM SEED LOTS ARE TRULY MINIMUM, AND SEED LOTS TO BE USED FOR REVEGETATION PURPOSES SHOULD EQUAD OR EXCEED THESE STANDARDS. THUS, DEERTONGUE GRASS SHOULD GERMINATE 75% OR BETTER. CROWNVETCH WHOULD HAVE AT LEAST 40% READILY GERMINABLE SEED AND 30% HARD SEED. COMMONLY, SEED LOTS ARE AVAILABLE THAT EQUAL OR EXCEED MINIMUM SPECIFICATIONS. REMEMBER THAAT DISTURBED SITES ARE ADVERSE FOR PLANT ESTABLISHMENT. READY GERMINATION REFERS TO SEED THAT GERMINATES DURING THE PERIOD OF THE GERMINATION TEST AND THAT WOULD BE EXPECTED, IF CONDITIONS ARE FAVORABLE, TO GERMINATE RAPIDLY WHEN PLANTED. THE OPPOSITE OF READY GERMINATION IS DORMANT SEED, OF WHICH HARD SEED IS ONE TYPE.

(4) SWITCHGRASS SEED IS SOLD ONLY ON THE BASES OF PLS.

(5) NEED SPECIFIC LEGUME INNOCULANT. INNOCULANT SUITABLE FOR GARDEN PEAS AND SWEETPEASE USUALLY IS SATISFACTORY FOR FLATPEA.

(6) BIRDSFOOT TREFOIL IS ADAPTED OVER THE ENTIRE STATE, EXCEPT IN THE EXTREME SOUTHEAST WHERE CROWN AND ROOT ROTS MAY INJURE STANDS.

ADAPTED FROM PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NON-CROPLAND."

TABLE 11.4

RECOMMENDED SEED MIXTURES

MIXTURE NUMBER	SPECIES	SEEDING RATE – PURE LIVE SEED (1)	
		MOST SITES	ADVERSE SITES
1 (2)	SPRING OATS (SPRING), OR	64	96
	ANNUAL RYEGRASS (SPING OR FALL), OR	10	15
	WINTER WHEAT (FALL), OR	90	120
	WINTER RYE (FALL)	56	112
2 (3)	TALL FESCUE, OR	60	75
	FINE FESCUE, OR	35	40
	KENTUCKY BLUEGRASS, PLUS	25	30
	REDTOP (4), OR	3	3
	PERENNIAL RYEGRASS	15	20
3	BIRDSFOOT TREFOIL, PLUS	6	10
	TALL FESCUE	30	15
4	BIRDSFOOT TREFOIL, PLUS	6	10
	REED CANARYGRASS	10	15
5 (8)	CROWNVETCH, PLUS	10	15
	TALL FESCUE, OR	20	25
	PERENNIAL RYEGRASS	20	25
6 (5),(8)	CROWNVETCH, PLUS	10	15
	ANNUAL RYEGRASS	20	25
7 (8)	BIRDSFOOT TREFOIL, PLUS	6	10
	CROWNVETCH, PLUS	10	15
	TALL FESCUE	20	30
8	FLATPEA, PLUS	20	30
	TALL FESCUE, OR	20	30
	PERENNIAL RYEGRASS	20	25
9 (6)	SERECIA LESPEDEZA, PLUS	10	20
	TALL FESCUE, PLUS	20	25
	REDTOP	3	3
10	TALL FESCUE, PLUS	40	60
	FINE FESCUE	10	15
11	DEERTONGUE, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
12 (7)	SWITCHGRASS, OR	15	20
	BIG BLUESTREAM, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
13	ORCHARDGRASS, OR	20	30
	SMOOTH BROMEGRASS, PLUS	25	35
	BIRDSFOOT TREFOIL	6	10

(1) PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE, TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS, DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG. THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35%, DIVIDE 12 pls BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS OF PLS.

(2) IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF 2 BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT 1 BUSHEL PER ACRE. IF GERMINATION IS BELOW 90%, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.

(3) THIS MUXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN 4 INCHES.

(4) KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC.

(5) USE FOR HIGHWAY SLOPES AND SIMILAR SITES WHERE THE DESIRED SPECIES AFTER ESTABLISHMENT IS CROWNVETCH.

(6) USE ONLY IN EXTREME SOUTHEASTERN OR EXTREME SOUTHWESTERN PENNSYLVANIA. SERECIA LESPEDEZA IS NOT WELL-ADAPTED TO MOST OF PENNSYLVANIA.

(7) DO NOT MOW SHORTER THAN 9 TO 10 INCHES.

(8) SEED MIXTURES CONTAINING CROWN VETCH SHOULD NOT BE USED IN AREAS ADJACENT TO WETLANDS OR STREAM CHANNELS DUE TO THE INVASIVE NATURE OF THIS SPECIEA

ADAPTED FROM PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NON-CROPLAND."

TABLE 11.5

RECOMMENDED SEED MIXTURES FOR STABILIZING DISTURBED AREAS

SITE CONDITION	NURSE CROP	SEED MIXTURE (SELECT ONE MIXTURE)
SLOPES AND BANKS (NOT MOWED)		
WELL DRAINED	1 PLUS	3, 5, 8, OR 12 (1)
VARIABLE DRAINAGE	1 PLUS	3 OR 7
SLOPES AND BANKS (MOWED)		
WELL DRAINED	1 PLUS	2 OR 10
SLOPES AND BANKS (GRAZED / HAY)		
WELL–DRAINED	1 PLUS	2, 3, OR 13
GULLIES AND ERODED AREAS	1 PLUS	3, 5, 7, OR 12 (1)
EROSION CONTROL FACILITIES (BMP's)		
SOD WATERWAYS, SPILLWAYS, FREQUENT WATER FLOW AREAS	1 PLUS	2, 3, OR 4
DRAINAGE DITCHES		
SHALLOW, LESS THAN 3 FEET DEEP	1 PLUS	2, 3, OR 4
DEEP, NOT MOWED	1 PLUS	5 OR 7
POND BANKS, DIKES, LEVEES, DAMS, DIVERSION CHANNELS AND OCCASIONAL WATER FLOW AREAS		
MOWED AREAS	1 PLUS	2 OR 3
NON–MOWED AREAS	1 PLUS	5 OR 7
FOR HAY OR SILAGE ON DIVERSION CHANNELS AND OCCASIONAL WATER FLOW AREAS	1 PLUS	3 OR 13
HIGHWAYS (2)		
NON–MOWED AREAS		
PURE CROWNVETCH (3)	1 PLUS	5 OR 6
WELL–DRAINED	1 PLUS	5, 7, 8, 9, OR 10
VARIABLE–DRAINED	1 PLUS	3 OR 7
AREAS MOWED SEVERAL TIMES A YEAR	1 PLUS	2, 3, OR 10
UTILITY RIGHT–OF–WAY		
WELL–DRAINED	1 PLUS	5, 8, OR 12 (1)
VARIABLE–DRAINED	1 PLUS	3 OR 7
WELL–DRAINED AREAS FOR GRAZING / HAY	1 PLUS	2, 3, OR 13
EFFLUENT DISPOSAL AREAS	1 PLUS	3 OR 4
SANITARY LANDFILLS	1 PLUS	3, 5, 7, 11 (1), OR 12 (1)
SURFACE MINES		
SPOILS, MINE WASTS, FLY ASH, SLAG, SETTLING BASIN RESIDUES AND OTHER SEVERELY DISTURBED AREAS (LIME TO SOIL TEST)	1 PLUS	3,4,5,7,8,9, 11 (1), OR 12 (1)
SEVERELY DISTURBED AREAS FOR GRAZING / HAY	1 PLUS	3 OR 13

(1) FOR SEED MIXTURES 11 AND 12, ONLY USE SPRING OATS OR WEEPING LOVEGRASS (INCLUDED IN MIX) AS NURSE CROP.

(2) CONTACT THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION DISTRICT ROADSIDE SPECIALIST FOR SPECIFIC SUGGESTIONS ON TREATMENT TECHNIQUES AND MANAGEMENT PRACTICES.

(3) SEED MIXTURES CONTAINING CROWNVETCH SHOULD NOT BE USED IN AREAS ADJACENT TO WETLANDS OR STREAM CHANNELS DUE TO THE INVASIVE NATURE OF THIS SPECIES.

ADAPTED FROM PENN STATE, "EROSION CONTROL AND CONSERVATION PLANTINGS ON NON-CROPLAND."

STANDARD WORKSHEET #21

Temporary and Permanent Stabilization Specifications

PROJECT NAME: Merrion Oil & Gas ET Braddock 1H
LOCATION: East Pittsburgh Borough, Allegheny County
PREPARED BY: APT DATE:
CHECKED BY: MDK DATE:

SPECIFICATIONS: The Department recommends the use of the Penn State publication "Erosion Control & Conservation Plantings on Non-cropland" as the standard to use for the selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. Specifications for these items may also be obtained from Penn DOT's Publication # 408, Section 804 or by contacting the applicable county conservation district. Upon selection of a reference, that reference must be used to provide all specifications for seeding, mulching, and soil amendments. The following specification will be used for this project:

(TEMPORARY)
SPECIES: Annual Rye
% PURE LIVE SEED: 95 %
APPLICATION RATE: 40 LB. /ACRE
FERTILIZER TYPE: 5-10-10 (X-X-X)
FERTILIZER APPL. RATE: 30 LB. /ACRE
LIMING RATE: 6 T. /ACRE
MULCH TYPE: Straw
MULCHING RATE: 3 T. /ACRE

(PERMANENT)
SPECIES: (Kentucky 31) Tall Fescue
% PURE LIVE SEED: 98 %
APPLICATION RATE: 40 LB. /ACRE
FERTILIZER TYPE: 5-10-10 (X-X-X)
FERTILIZER APPL. RATE: (Per Testing) Minimum 30 LB. /ACRE
LIMING RATE: 6 T. /ACRE
MULCH TYPE: Straw
MULCHING RATE: 3 T. /ACRE
ANCHOR MATERIAL: Nonasphaltic Emulsion
ANCHORING METHOD: Spray
RATE OF ANCHOR MATERIAL APPL.: 100 gallons per acre LB. /ACRE
SEEDING SEASON DATES: April-September

(PERMANENT – STEEP SLOPE)
SPECIES: Crown Vetch
% PURE LIVE SEED: 99 %
APPLICATION RATE: 10 LB. /ACRE
FERTILIZER TYPE: 5-10-10 (X-X-X)
FERTILIZER APPL. RATE: (Per Testing) 30 LB. /ACRE
LIMING RATE: 6 T. /ACRE
MULCH TYPE: Straw
MULCHING RATE: 3 T. /ACRE
ANCHOR MATERIAL: Nonasphaltic Emulsion
ANCHORING METHOD: Spray
RATE OF ANCHOR MATERIAL APPL.: 100 gallons per acre LB. /ACRE
SEEDING SEASON DATES: April-September

*If more than one species is used, indicate application rate for each species.

A log, DEP form 3150-FM-BWEW0083 dated 02/2012. showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TESSA MICHELE ANTOLICK
ENGINEER
No. PE077667

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.

TESSA MICHELE ANTOLICK, PE - 077667

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

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

No.	Revision	Date	By
1	REVISED PER PADEP COMMENTS	10/22/2018	ARM
0	PADEP SUBMISSION	05/31/2018	TRANT

designed KGJ
checked MDR
drawn QZ
graphic scale
scale AS NOTED
date 10/22/2018
project no. 180539

drawing title CONSTRUCTION DETAILS
EROSION AND SEDIMENT CONTROL PLAN

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

project title ET - BRADDOCK WELL PAD
MERRION OIL & GAS

Sheet C710

Z:\Merrion Oil & Gas\180539-1-1 ET Braddock 1H\Dwg\Production\E&S\25\180539-ESC-C710.dwg Plotted: October 18, 2018