20160422-5100 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM

EQUITRANS℠

Paul W. Diehl
Counsel-Midstream
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412.553.7781 Fax
pdiehl@eqt.com

April 22, 2016

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Equitrans, L.P.
Docket No. CP16-13-000
Equitrans Expansion Project
Responses to Data Requests issued March 31, 2016 - UPDATE

Dear Ms. Bose:

On March 31, 2016, the Office of Energy Projects ("OEP") issued data requests to Equitrans, LP ("Equitrans") with respect to Equitrans' certificate application in Docket No. CP16-13-000. By letter dated April 20, 2016, Equitrans submitted its responses to the March 31 data request. Equitrans subsequently noticed that the alignment sheets that were included in the submission were truncated, and all information was not included on those alignment sheets. Equitrans is herewith providing new copies of those alignment sheets. We apologize for any confusion caused by this matter.

If you have any questions about the data responses, please do not hesitate to contact the undersigned at (412) 395-5540 or pdiehl@eqt.com.

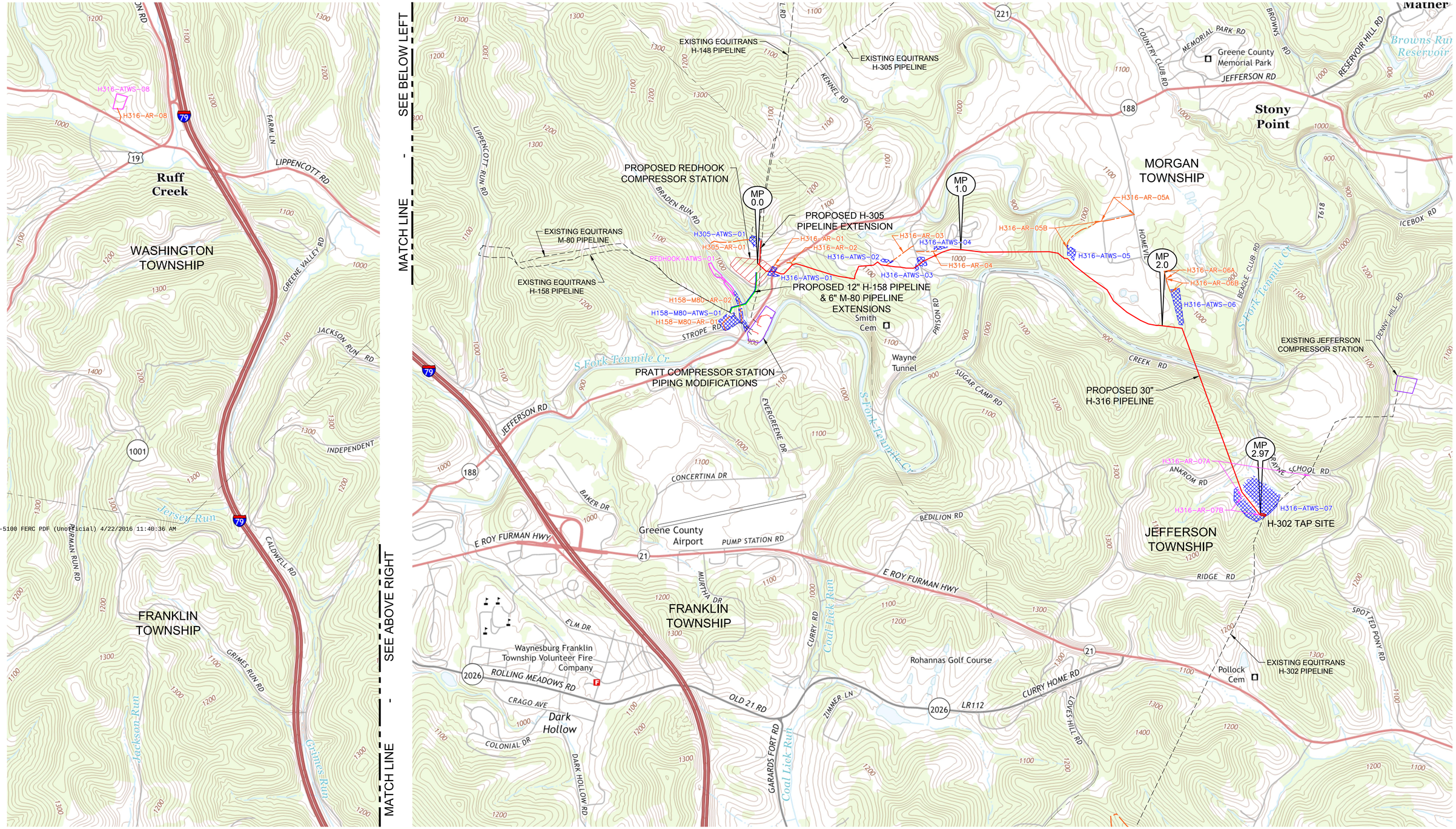
Respectfully submitted,

Equitrans, L.P.

Paul W. Diehl
Counsel-Midstream

Enclosures

cc: Paul Friedman – OEP (w/enclosures)
Lavinia DiSanto - Cardno, Inc. (w/enclosures)
Doug Mooneyhan – Cardno, Inc. (w/enclosures)
Service list (w/o enclosures)



PROJECTION: UTM ZONE 17
HORIZONTAL DATUM: NAD 83 US SURVEY FEET
VERTICAL DATUM: NAVD88

LEGEND

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
-	....

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	JDB	10/23/15	ISSUED TO FERC
2	JDB	04/15/16	RESPONSE TO FERC DATA REQUEST #2

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Southfield, Michigan 48076
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www.hollandengineering.com

APPROVED FOR FERC			APPROVED FOR BIDDING			APPROVED FOR CONSTRUCTION		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	-	....	../../..	-	....	../../..
2	JSW	04/15/16						

HORZ. SCALE: 1" = 1000'		
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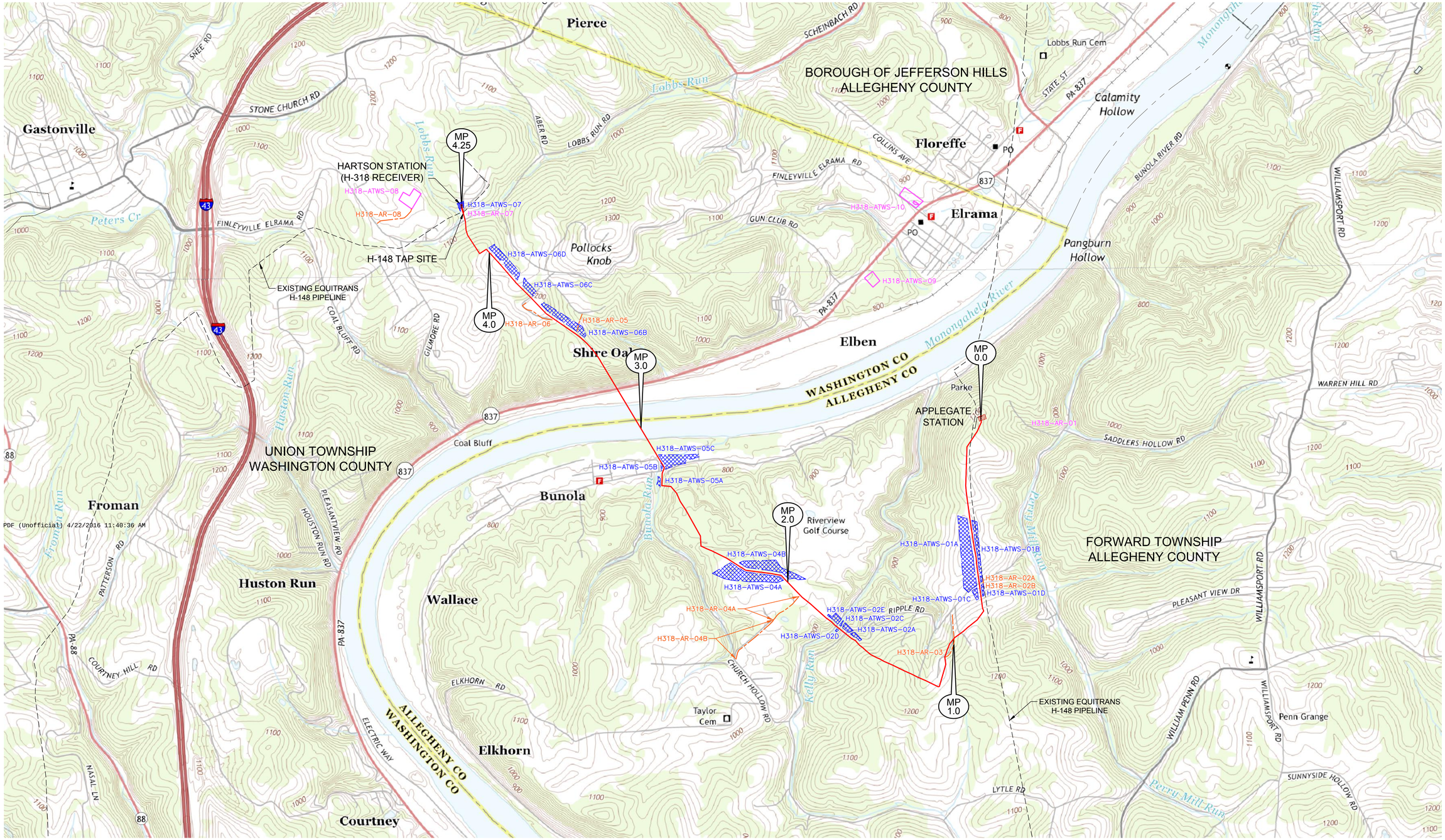
DRAFTING CK:	-	
ENGINEERING CK:		
UEI JOB NO.:		
AFE/P.O.NO.:		
HEI PROJECT NO.:	15-03-071	
UEI FILE NO.		
DRAWING NO.:	H316-AR-01	
SHEET 1 OF 3		REV. 2
DATE OF PLOT: 4/19/16 10:56 AM		

EQUITRANS

PROPOSED ACCESS ROADS
& ANCILLARY SITES
EQUITRANS EXTENSION PROJECT
H158, H305, H316, M80, PRATT & REDHOOK
GREENE COUNTY, PENNSYLVANIA

20160422-5100 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM



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REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	.	....	../../..	.	....	../../..
2	JSW	04/15/16						

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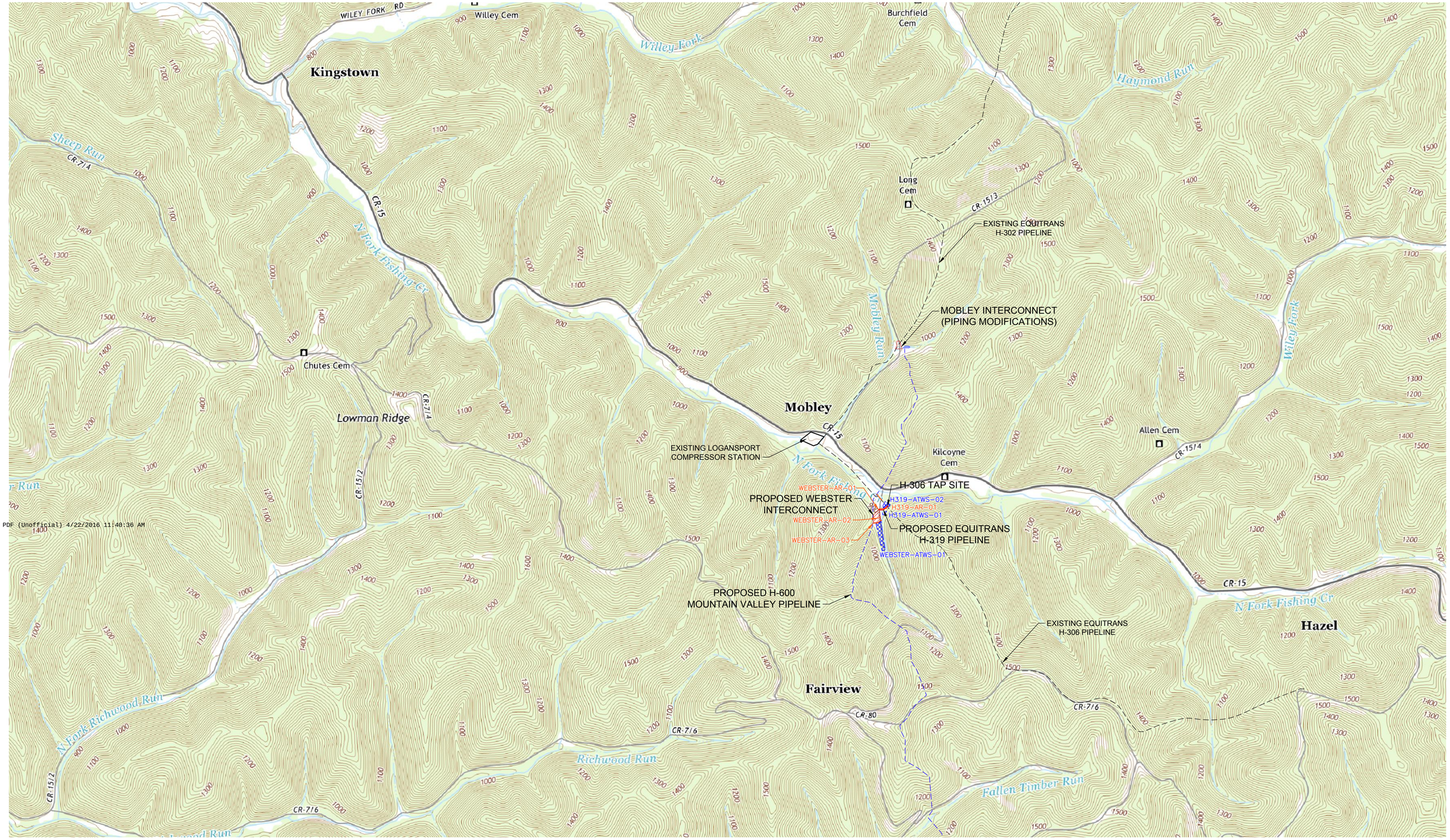
ENGINEERING CK:	
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.:	15-03-071
UEI FILE NO.	
DRAWING NO.:	AR-H318-01
SHEET 2 OF 3	REV. 2
DATE OF PLOT: 4/19/16 10:57 AM	

EQUITRANS

PROPOSED ACCESS ROADS
& ANCILLARY SITES
EQUITRANS EXTENSION PROJECT - H318
ALLEGHENY & WASHINGTON COUNTIES,
PENNSYLVANIA



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PROJECTION: UTM ZONE 17
HORIZONTAL DATUM: NAD 83 US SURVEY FEET
VERTICAL DATUM: NAVD88

LEGEND

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
.	....

REVISIONS

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REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
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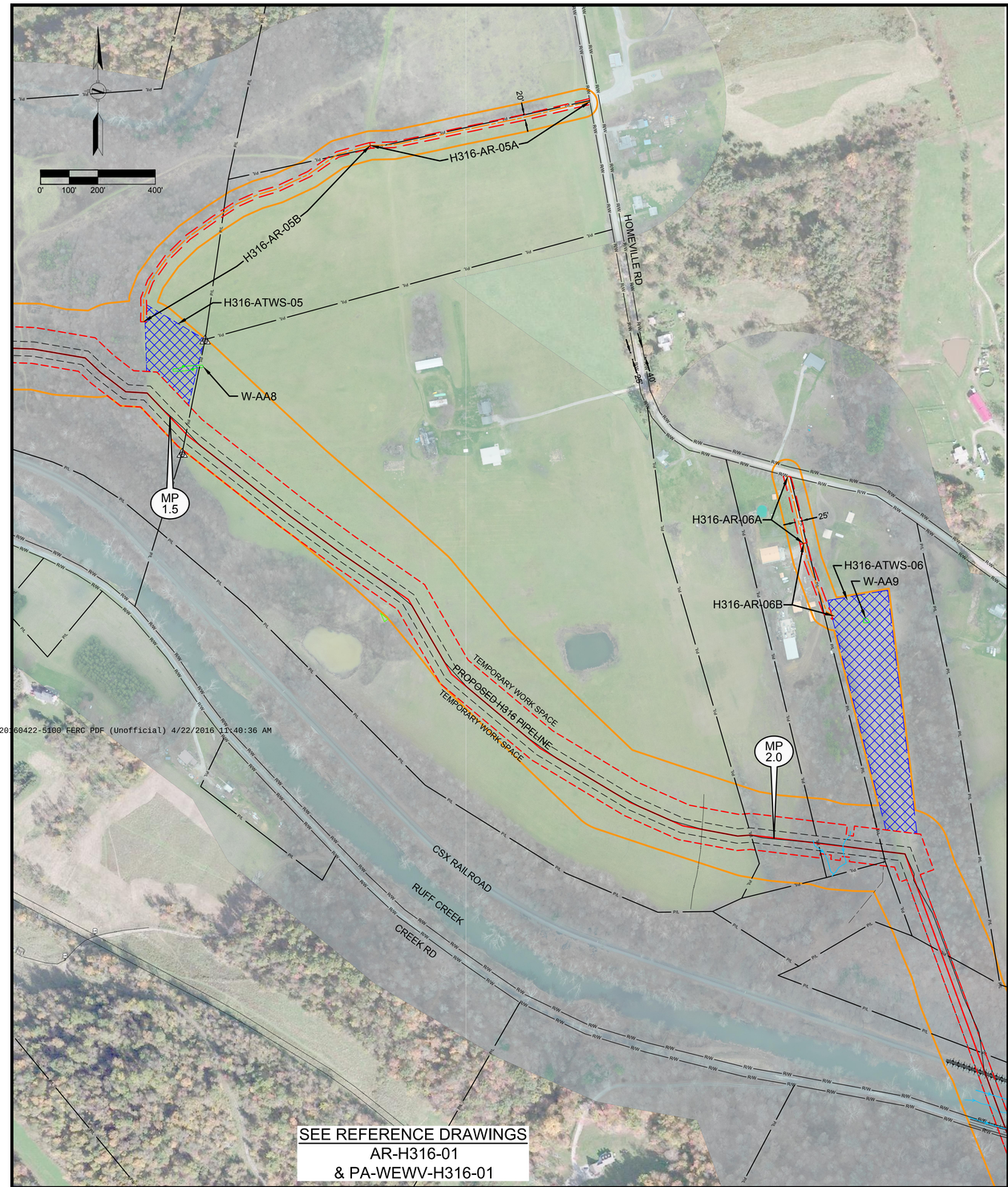
2	JSW	04/15/16						

HORZ. SCALE: 1" = 1000'	
DRAWN BY: HEI(JDB)	09/01/15
DRAFTING CK:	
ENGINEERING CK:	
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
UEI FILE NO.	
DRAWING NO.: AR-H319-01	
SHEET 3 OF 3	REV. 2
DATE OF PLOT: 4/19/16 10:57 AM	

EQUITRANS

PROPOSED ACCESS ROADS
& ANCILLARY SITES
EQUITRANS EXTENSION PROJECT - H319 &
WEBSTER AND MOBLEY INTERCONNECTS
WETZEL COUNTY, WEST VIRGINIA



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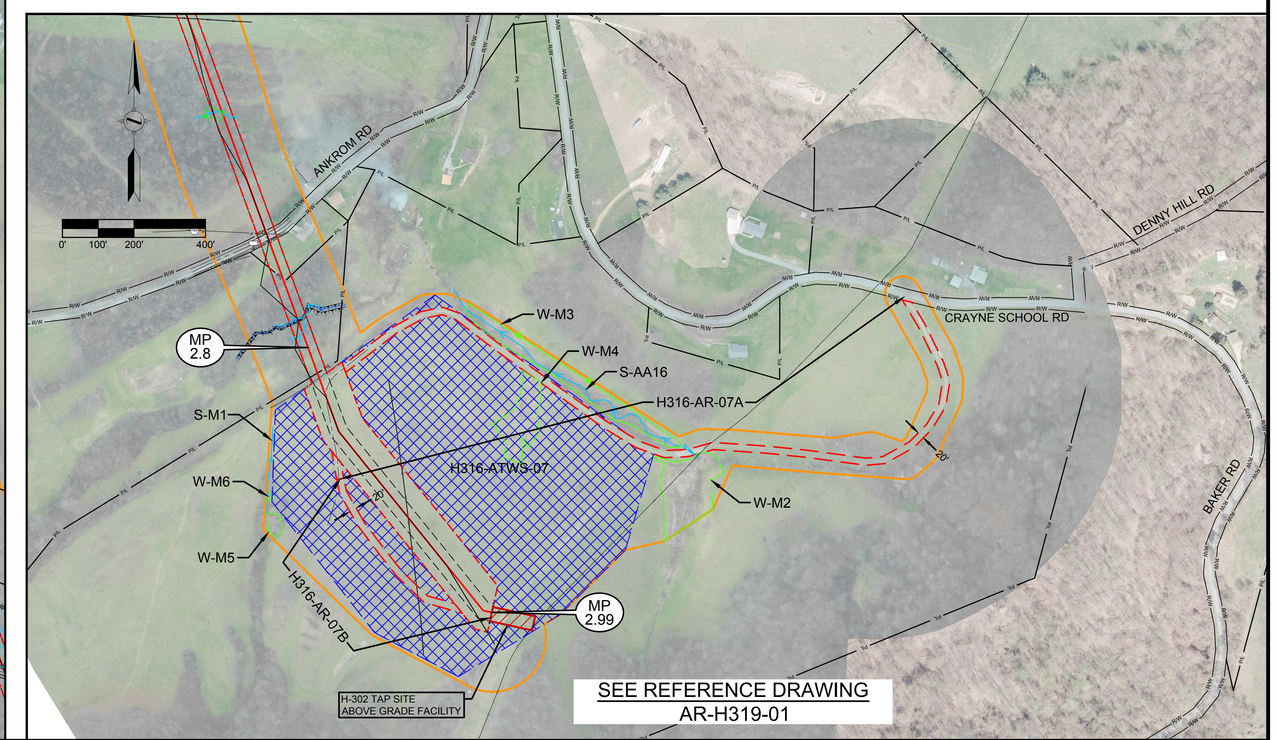

LEGEND

- STUDY CORRIDOR
- ANCILLARY SITE
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- PROPOSED PIPELINE
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORK SPACE
- PIPELINE
- FENCE
- WATER LINE
- OHP LINE
- ROAD RIGHT-OF-WAY LINE
- UNKNOWN UNDERGROUND UTILITY
- WETLAND
- STREAM
- ABOVE GRADE FACILITY
- ADDITIONAL TEMPORARY WORK SPACE
- PIPELINE MARKER
- CULVERT
- GATE - GATE POST
- BUILDING
- POWER/TELEPHONE POLE
- WELL - GAS/OIL/WATER/MONITORING
- FIRE HYDRANT & VALVE
- PEDESTAL - UTILITY
- ELEC/GAS/WTR METER

PROJECTION: UTM ZONE 17 HORIZONTAL DATUM: NAD 83 US SURVEY FEET VERTICAL DATUM: NAVD88

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
-	....

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0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
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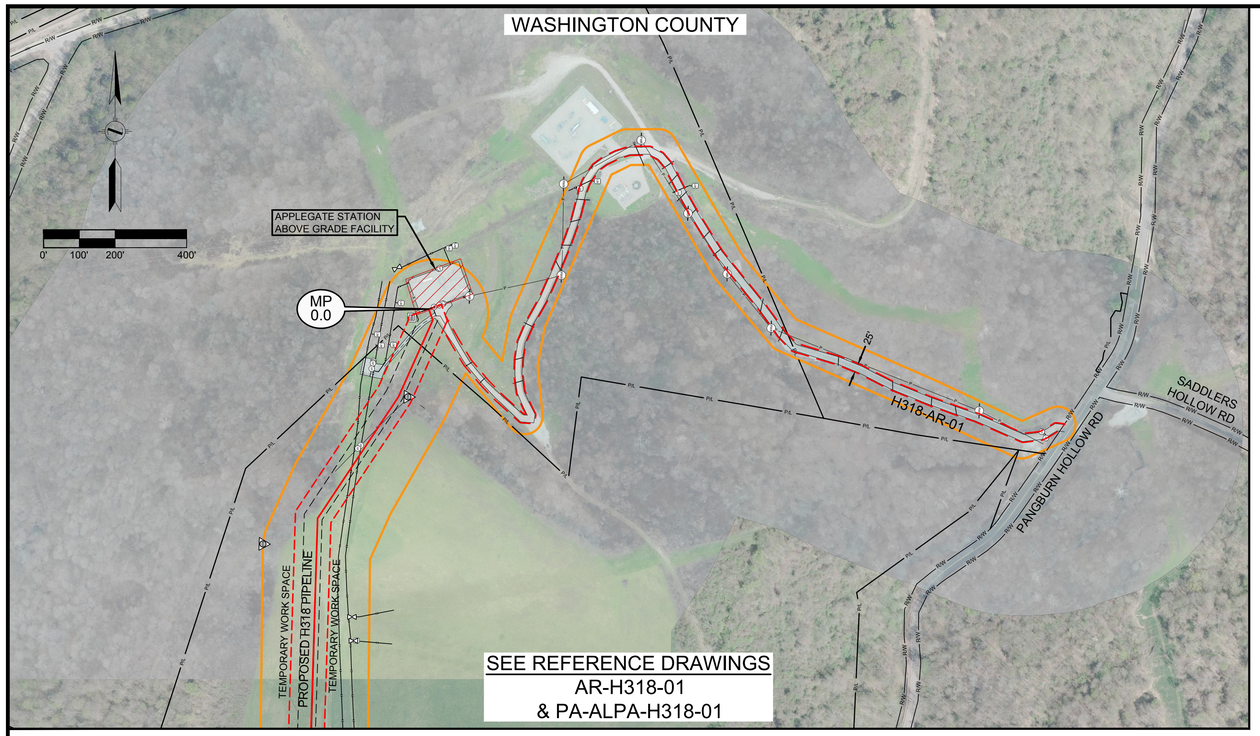
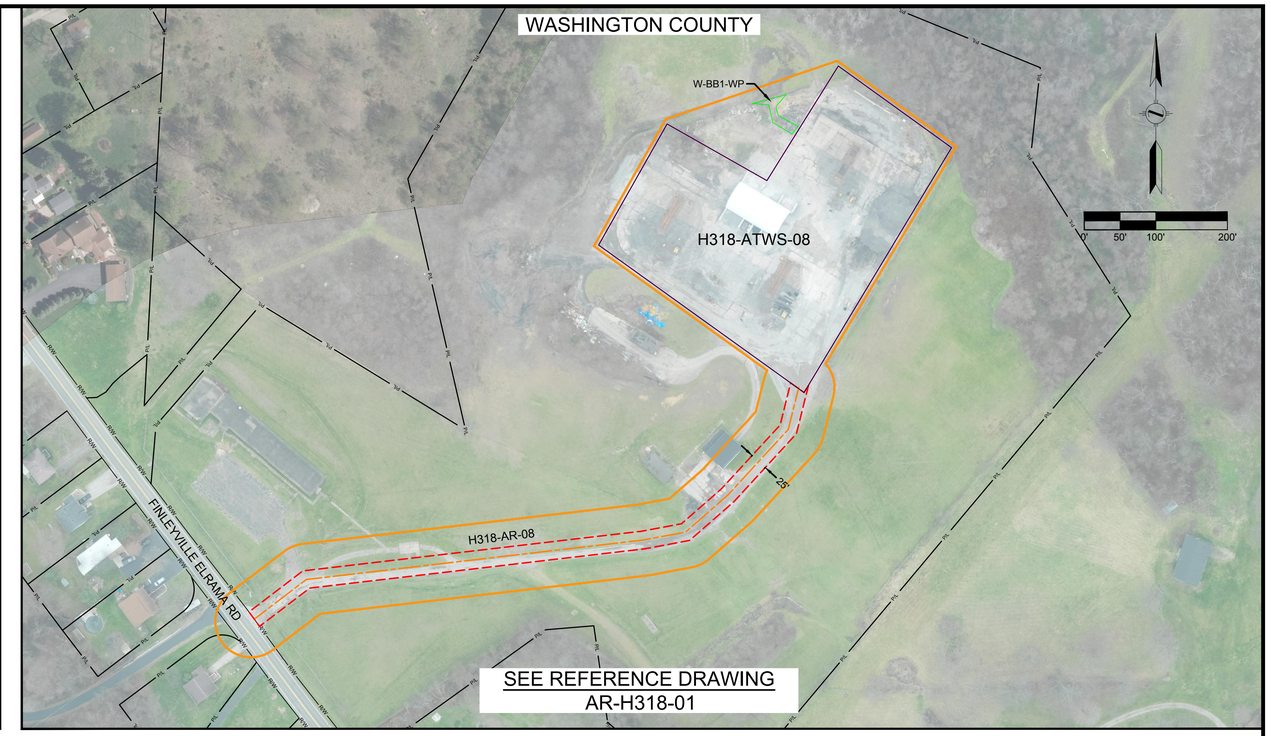
2	JSW	04/15/16						

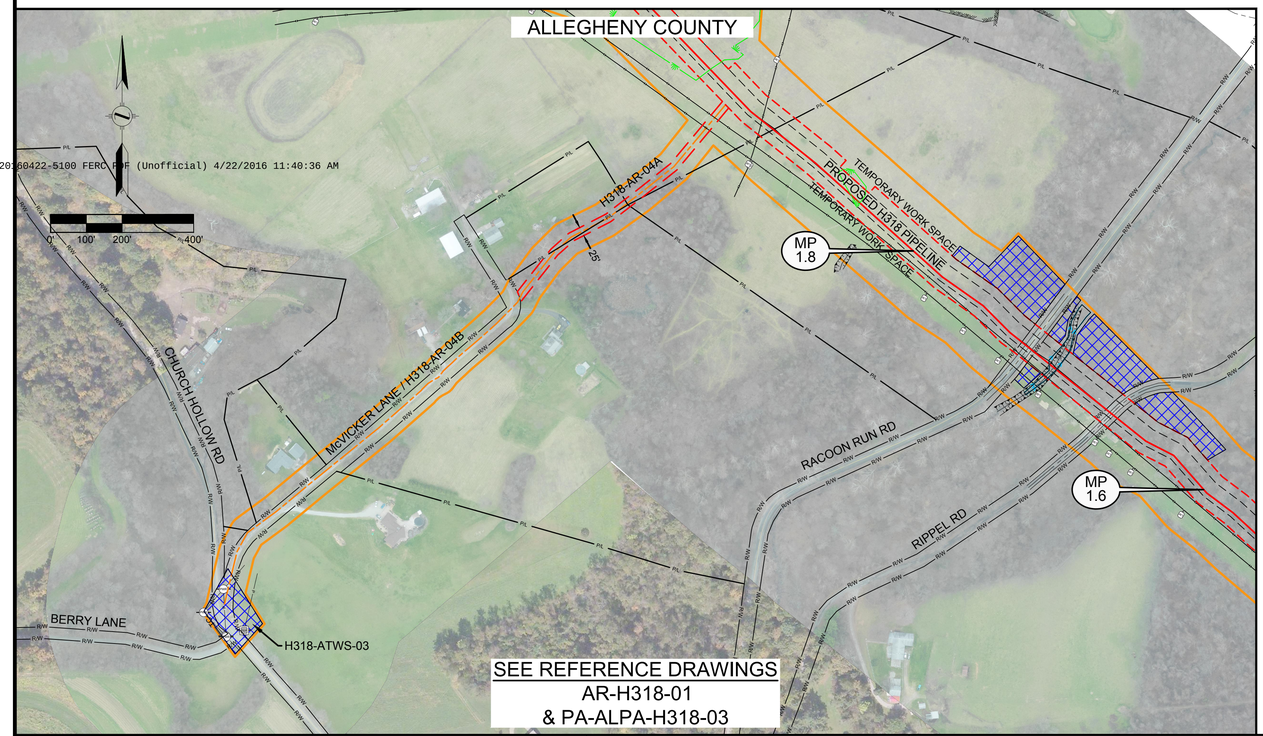
HORZ. SCALE: AS SHOWN	
DRAWN BY: HEI(JDB)	10/07/15
DRAFTING CK:	-
ENGINEERING CK:	-
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.:	14-10-052
UEI FILE NO.	
DRAWING NO.:	EEP-ADAR-01
SHEET 1 OF 3	REV. 1
DATE OF PLOT:	4/19/16 6:06 PM

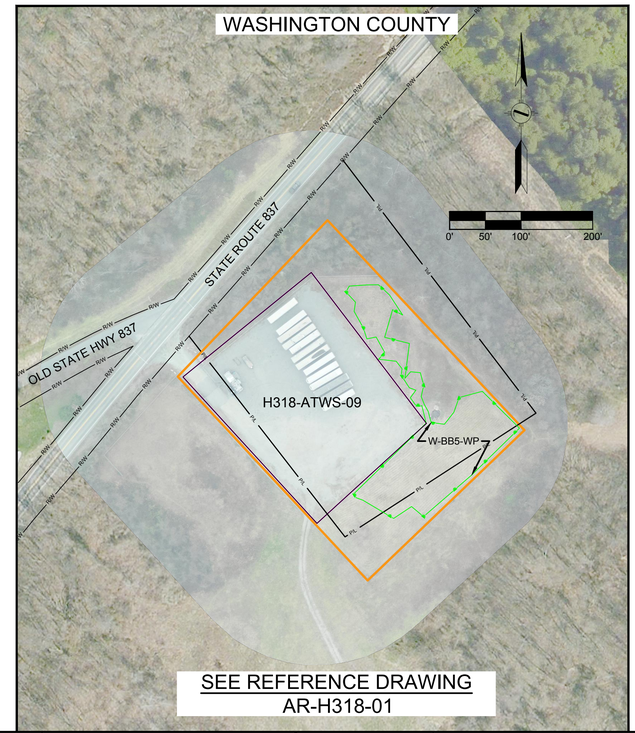
EQUITRANS

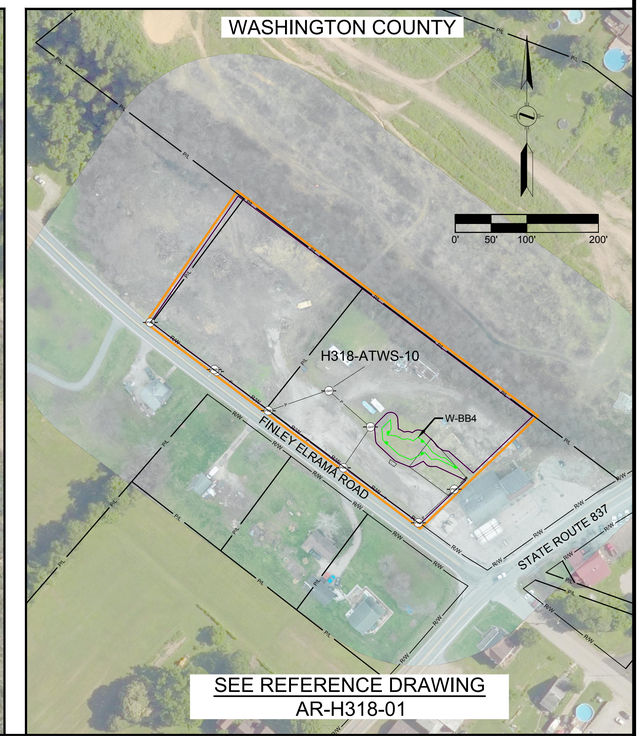
AERIAL DETAILS
PROPOSED ANCILLARY SITES & ACCESS ROADS
EQUITRANS EXPANSION PROJECT
GREENE COUNTY, PENNSYLVANIA











LEGEND

- STUDY CORRIDOR
- ANCILLARY SITE
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- PROPOSED PIPELINE
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORK SPACE
- PIPELINE
- FENCE
- WATER LINE
- OHP LINE
- ROAD RIGHT-OF-WAY LINE
- UNKNOWN UNDERGROUND UTILITY
- WETLAND
- ABOVE GRADE FACILITY
- ADDITIONAL TEMPORARY WORK SPACE
- PIPELINE MARKER
- CULVERT
- GATE - GATE POST
- BUILDING
- POWER/TELEPHONE POLE
- WELL - GAS/OIL/WATER/MONITORING
- FIRE HYDRANT & VALVE
- PEDESTAL - UTILITY
- ELEC/GAS/WTR METER

PROJECTION: UTM ZONE 17 HORIZONTAL DATUM: NAD 83 US SURVEY FEET VERTICAL DATUM: NAVD88

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
-	....

REVISIONS

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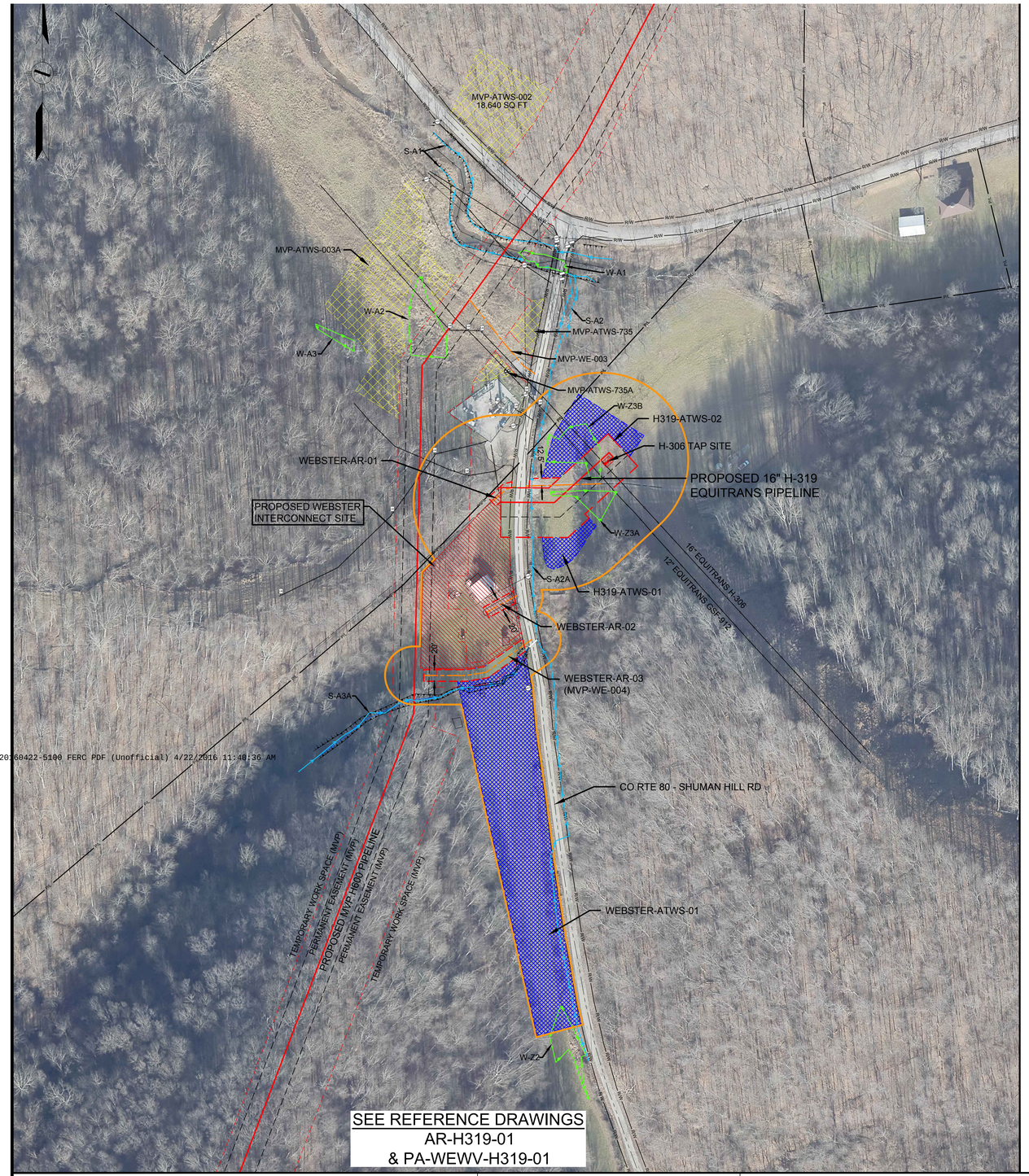
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	-	....	../../..	-	....	../../..
1	JSW	02/05/16						

HORZ. SCALE: AS SHOWN	
DRAWN BY: HEI(JDB)	10/07/15
DRAFTING CK:	-
ENGINEERING CK:	-
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.:	15-03-071
UEI FILE NO.	
DRAWING NO.:	EEP-ADAR-02
SHEET 2 OF 3	REV. 1
DATE OF PLOT: 4/19/16 6:13 PM	

EQUITRANS

AERIAL DETAILS
PROPOSED ANCILLARY SITES & ACCESS ROADS
EQUITRANS EXPANSION PROJECT
ALLEGHENY COUNTY, PENNSYLVANIA



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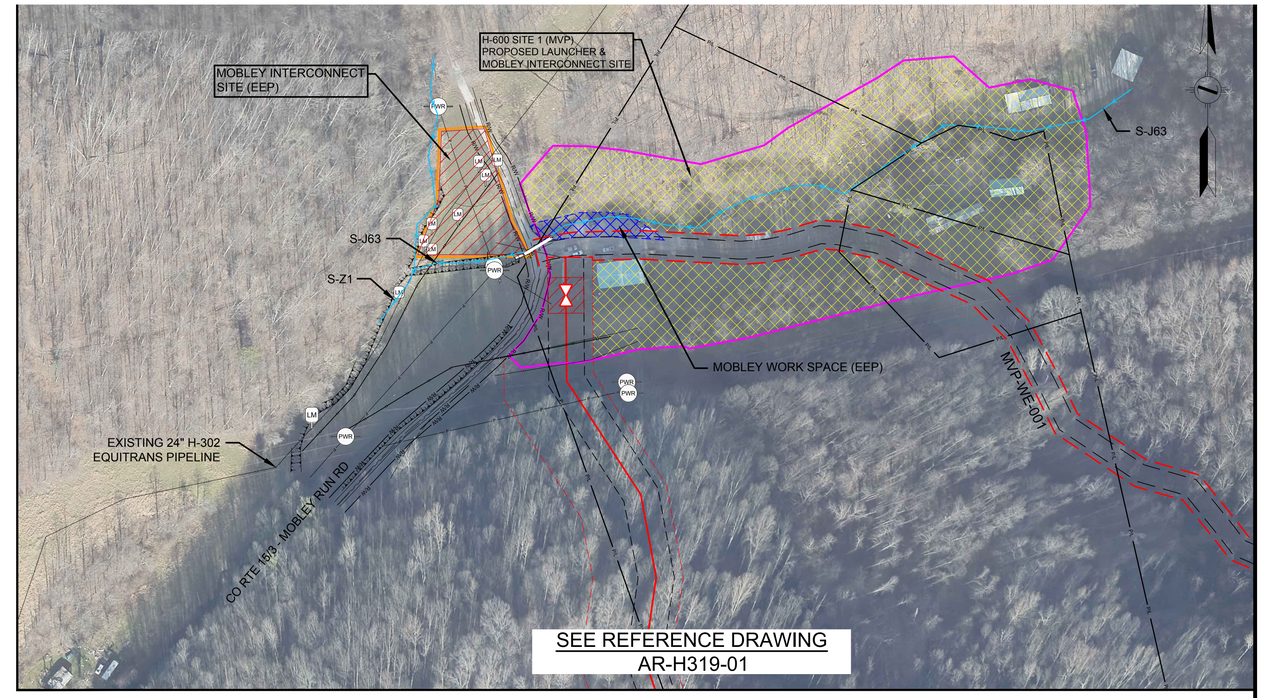

ABBREVATIONS USED:
MVP = MOUNTAIN VALLEY PIPELINE
EEP = EQUITRANS EXPANSION PROJECT

LEGEND

- STUDY CORRIDOR
- ANCILLARY SITE
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- PROPOSED PIPELINE
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORK SPACE
- PIPELINE
- FENCE
- WATER LINE
- OHP LINE
- ROAD RIGHT-OF-WAY LINE
- UNKNOWN UNDERGROUND UTILITY
- WETLAND
- STREAM
- ABOVE GRADE FACILITY
- ADDITIONAL TEMPORARY WORK SPACE (EEP)
- ADDITIONAL TEMPORARY WORK SPACE (MVP)
- CULVERT
- PIPELINE MARKER
- BUILDING
- GATE - GATE POST
- POWER/TELEPHONE POLE
- WELL - GAS/OIL/WATER/MONITORING
- FIRE HYDRANT & VALVE
- PEDESTAL - UTILITY
- ELEC/GAS/WTR METER

PROJECTION: UTM ZONE 17 HORIZONTAL DATUM: NAD 83 US SURVEY FEET VERTICAL DATUM: NAVD88

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2	JSW	04/15/16						

HORZ. SCALE: 1"=100'	
DRAWN BY: HEI(JDB)	10/07/15
DRAFTING CK:	.
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UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
UEI FILE NO.	
DRAWING NO.: EEP-ADAR-03	
SHEET 3 OF 3	REV. 2
DATE OF PLOT: 4/19/16 6:14 PM	

EQUITRANS

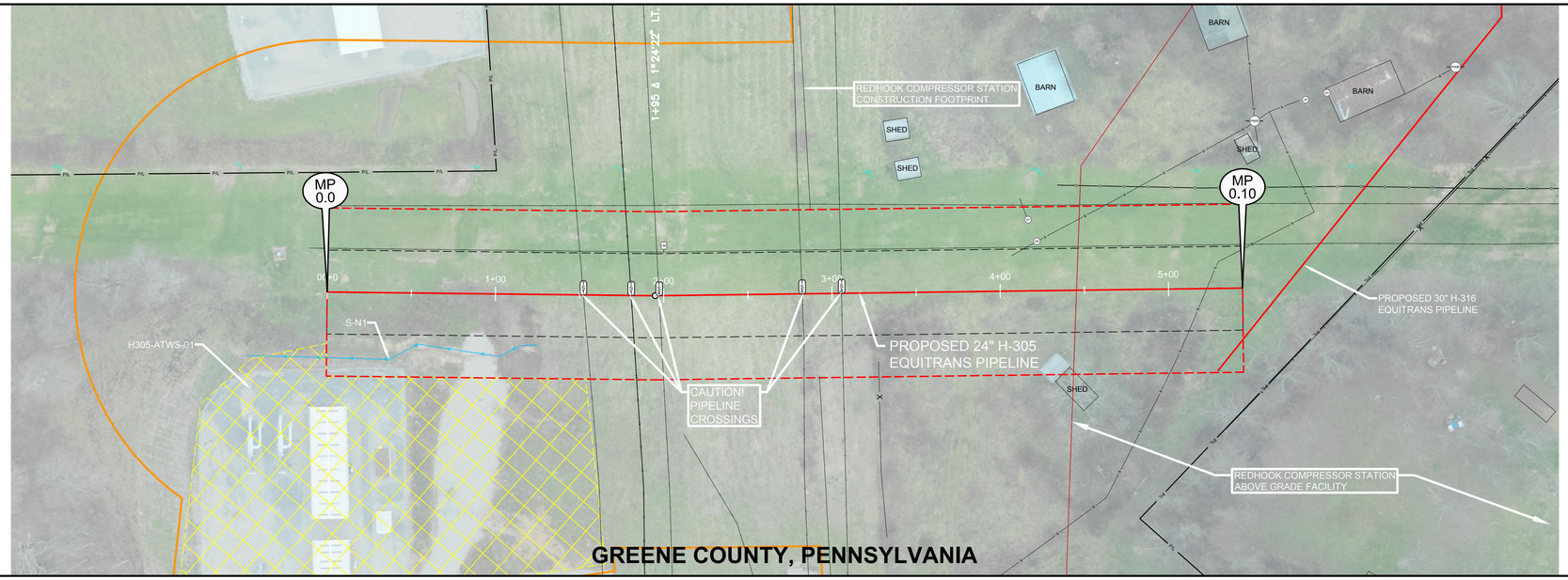
AERIAL DETAILS
PROPOSED ANCILLARY SITES & ACCESS ROADS
EQUITRANS EXPANSION PROJECT
WETZEL COUNTY, WEST VIRGINIA

| RIGHT-OF-WAY & OWNERSHIP DATA | | |

RIGHT-OF-WAY & OWNERSHIP DATA		0+00	H316-XXX 544 LF 552 SLOPE	5+44
DESIGN	PIPE / COATING	0+00	1	5+44
	SLOPE DISTANCE		552'	
	CLASS LOCATION / HCA		1	
ENVIRONMENTAL	CONSTRUCTION EXCLUSION			
	WETLAND / STREAM			
	SEDIMENT BARRIER LEFT			
	SEDIMENT BARRIER RIGHT			

0' 20' 40' 80'

PLAN VIEW



LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 50' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

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REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

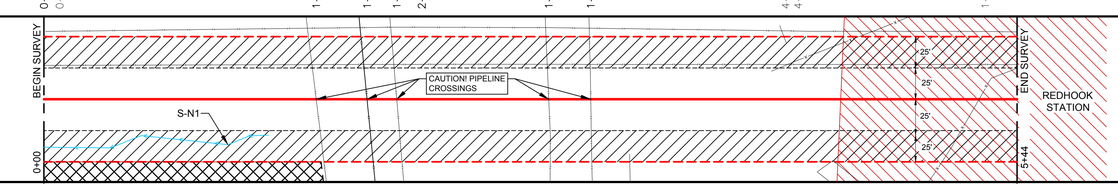
ISSUED TO FERC

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+28 BEGIN WOODS
1+52 FORIEGN PIPELINE – TEXAS EASTERN, PROPOSED TYPE 4 TEST STATION
1+81 FORIEGN PIPELINE – UNKNOWN PROPOSED TYPE 4 TEST STATION
1+97 FORIEGN PIPELINE – TEXAS EASTERN 2, PROPOSED TYPE 4 TEST STATION
2+00 LINE MARKER 25'LT
1+52 FORIEGN PIPELINE – TEXAS EASTERN 15, PROPOSED TYPE 4 TEST STATION
1+52 FORIEGN PIPELINE – TEXAS EASTERN 10, PROPOSED TYPE 4 TEST STATION
4+17 GATE POST 42'LT
4+22 GATE POST 29'LT
1+52 FENCE

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)

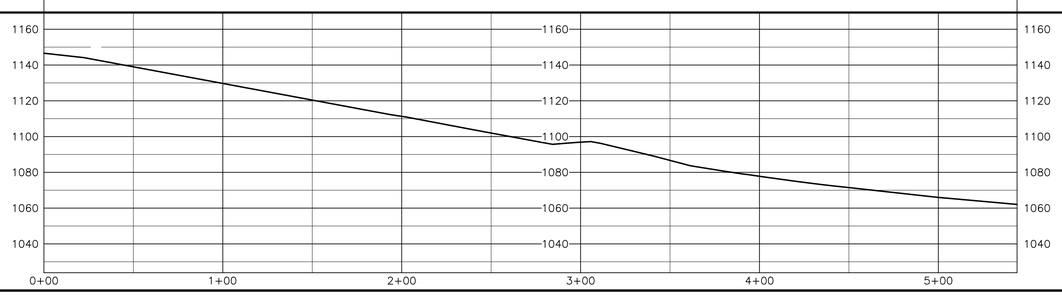


CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY

27 - 6" M-80 PARALLEL CONSTRUCTION
28 - 12" H-158 PARALLEL CONSTRUCTION
29 - 6" M-80 OPEN CUT ROAD CROSSING
30 - 12" H-158 OPEN CUT ROAD CROSSING
31 - 6" M-80 OPEN CUT - DAM AND PUMP
32 - 12" H-158 OPEN CUT - DAM AND PUMP
33 - 6" M-80 OPEN CUT - FLUME
34 - 12" H-158 OPEN CUT - FLUME
33 - 6" M-80 PIPELINE CROSSING
34 - 12" H-158 PIPELINE CROSSING
35 -
36 -
37 - 6" M-80 BORED ROAD CROSSING
38 - 12" H-158 BORED ROAD CROSSING
39 - 24" H-305 OPEN CUT PIPELINE CROSSING
40 - 24" H-305 PARALLEL CONSTRUCTION

PROFILE



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REVISIONS

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AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	552'	24"O.D. X 0.412"W.T. X70, FUSION BOND EPOXY
		SEDIMENT BARRIER
	5	TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR CONSTRUCTION			APPROVED FOR BIDDING			APPROVED FOR FERC		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
						0	JSW	10/23/15

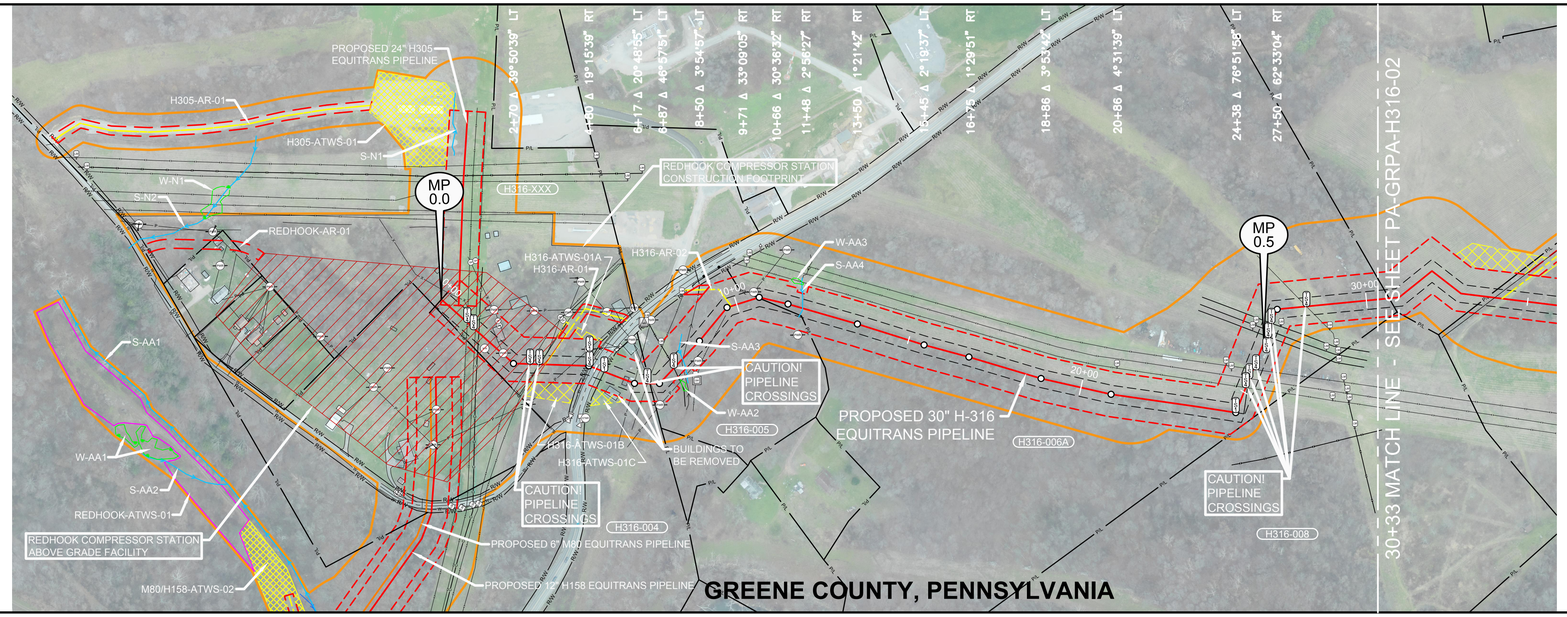
EQUITRANS

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H305 LINE
FRANKLIN TWP., GREENE CO., PA.
STA. 0+00 TO STA. 5+44

HORZ. SCALE: 1" = 40'	
DRAWN BY: HEI(JDB)	9/17/2015
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-GRPA-H305-01	
SHEET 1 OF 1	REV. 1
DATE OF PLOT: 4/14/2016 9:09 AM	

RIGHT-OF-WAY & OWNERSHIP DATA		H316-XXX 269 LF 270 SLOPE (0+00); H316-XXX 184 LF 186 SLOPE (2+69); H316-XXX STATE HWY 188 36 LF 36 SLOPE (4+53); STATE HWY 188 (JEFFERSON ROAD) H316-004 22 LF 22 SLOPE (4+89, 5+22); H316-004 97 LF 98 SLOPE (5+44); H316-005 32 LF 32 SLOPE (6+41); H316-005 337 LF 339 SLOPE (6+73); H316-006A 219 LF 220 SLOPE (10+10); H316-006A 1804 LF 1811 SLOPE (12+29); (30+33)
DESIGN	PIPE / COATING	1 (0+00); 3 (4+64); 1 (5+44); (30+33)
DESIGN	SLOPE DISTANCE	467' ; 80' ; 2520'
DESIGN	CLASS LOCATION / HCA	2 (0+00); 1 (20+80); (30+33)
ENVIRONMENTAL	CONSTRUCTION EXCLUSION	
ENVIRONMENTAL	WETLAND / STREAM	S-AA3 4 LF; S-AA4 4 LF
ENVIRONMENTAL	SEDIMENT BARRIER LEFT	
ENVIRONMENT	SEDIMENT BARRIER RIGHT	



0' 100' 200' 400'

PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL / PROPOSED TEST STATION
- MAILBOX / LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN / TOWER LEG
- TREE / GUY ANCHOR
- TANK / GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

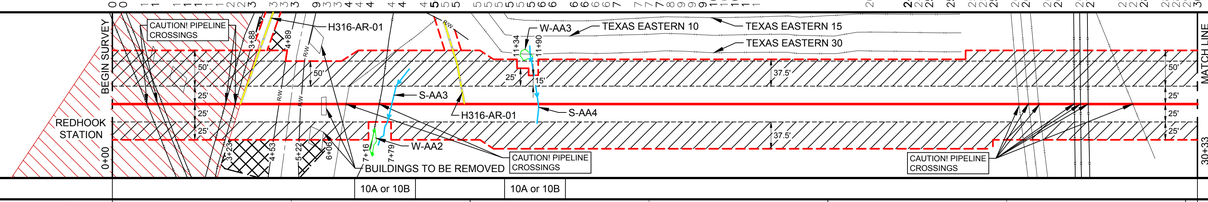
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+97 PIPELINE – EOT – H148
PROPOSED TYPE 4 TEST STATION
1+14 BUILDING – BARN 59'LT
1+27 PIPELINE – EOT – H106
PROPOSED TYPE 4 TEST STATION
1+29 POWER POLE 76'LT
1+40 UNGRD UTILITY – CATHODIC PROTECTION
1+50 ℄
1+61 WELL – WATER 22'RT
1+98 BUILDING BARN 16'LT
2+17 BEGIN WOODS
2+29 POWER POLE 31'LT
3+16 PIPELINE – EOT – H138
PROPOSED TYPE 4 TEST STATION
3+17 END WOODS
3+42 FENCE – EOT – CSC360
3+43 PROPOSED TYPE 4 TEST STATION
PROPOSED TYPE 1 TEST STATION
TEMPORARY(H316-AR-01)
9+84 ACCESS RD
3+71 BEGIN WOODS
3+99 END WOODS
4+43 BEGIN WOODS
4+63 OHP LINE
4+76 RIGHT-OF-WAY, ℞, END WOODS,
PROPOSED TYPE 1 TEST STATION
4+78 PIPELINE – FOREIGN – TWO 70"LT
4+83 UNGRD UTILITY – WATER, SIGN
PROPOSED TYPE 4 TEST STATION
4+90 BEGIN ASPHALT
5+04 ℄ STATE HWY 188(JEFFERSON RD)
5+11 ℄ NAD 1983
5+27 RIGHT-OF-WAY, ℞
PROPOSED TYPE 1 TEST STATION
5+41 VALVE – WATER
5+70 BUILDING – BARN 71'RT
5+79 BUILDING – HOUSE 70'LT
5+85 BUILDING – BARN
5+90 BUILDING – BARN
6+00 BUILDING – BARN 39'RT
6+16 OHP LINE
6+53 PIPELINE – FOREIGN – DOMINION
PROPOSED TYPE 4 TEST STATION
6+60 OHP LINE
6+79 BEGIN WOODS
6+87 POWER POLE 60'RT
7+46 PIPELINE – EOT – H158
PROPOSED TYPE 4 TEST STATION
7+63 LINE MARKER 67'RT
7+65 METER – GAS 68'RT
7+83 ℄ STREAM(S-AA3)(EPH)
8+40 CULVERT 75'RT
9+46 CULVERT 84'LT
9+71 CULVERT 99'LT
9+84 ACCESS RD – TEMPORARY(H316-AR-02)
10+59 POWER POLE 95'LT – BEGIN WOODS
10+62 LINE MARKER 95'LT
10+62 ℞
11+91 STREAM(S-AA4)(EPH)
11+98 POWER POLE 76'RT
20+93 LINE MARKER 73'LT
24+38 PROPOSED TYPE 1 TEST STATION
24+52 END WOODS
25+14 PIPELINE – FOREIGN – TEXAS EASTERN 30
PROPOSED TYPE 4 TEST STATION
25+41 PIPELINE – FOREIGN – TEXAS EASTERN 10
PROPOSED TYPE 4 TEST STATION
25+42 LINE MARKER 54'LT
25+51 LINE MARKER 74'LT
25+69 PIPELINE – FOREIGN – TEXAS EASTERN 15
PROPOSED TYPE 4 TEST STATION
26+37 BEGIN WOODS
26+69 PIPELINE – FOREIGN – UNKNOWN
PROPOSED TYPE 4 TEST STATION
26+86 PIPELINE – FOREIGN – UNKNOWN
PROPOSED TYPE 4 TEST STATION
26+87 LINE MARKER 58'RT
27+08 PIPELINE – FOREIGN – UNKNOWN, LINE MARKER
PROPOSED TYPE 4 TEST STATION
27+38 BEGIN WOODS
27+37 END WOODS
28+32 PIPELINE – FOREIGN – DOMINION
PROPOSED TYPE 4 TEST STATION
28+91 LINE MARKER 73'RT
29+38 LINE MARKER 51'LT
29+63 BEGIN WOODS
30+33 MATCH LINE TOWNSHIP LINE

WORK SPACE

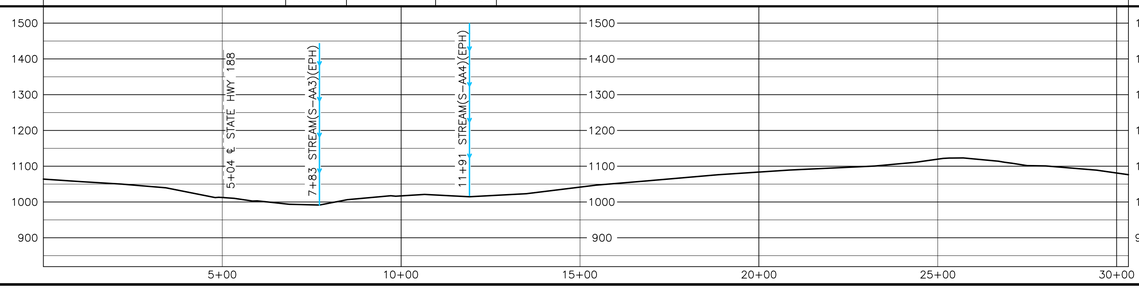
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY
1 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
2 - PARALLEL CONSTRUCTION
3 - PARALLEL TO POWER LINES
4 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
5 - SIDE HILL CONSTRUCTION
6 - TWO TONE METHOD
7 - NON-PARALLEL CONSTRUCTION EXTRA DEEP DITCH (5' COVER)
8 - OPEN CUT ROAD CROSSING
9 - BORED ROAD CROSSING
10A - OPEN CUT - DAM AND PUMP
10B - OPEN CUT - FLUME
11 - PIPELINE CROSSING
12 - PIPELINE CROSSING FROM PARALLEL
13 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

BK. NO.	QTY.	DESCRIPTION
1	52'/4'	30"O.D. X 0.438"W.T. X70, FUSION BOND EPOXY
3	80'	30"O.D. X 0.562"W.T. X70, FBE & ARO
		SEDIMENT BARRIER
3		TYPE 1 TEST STATION - PIPELINE
15		TYPE 4 TEST STATION - FOREIGN CROSSING

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/06/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/09/16
2	JSW	04/15/16

APPROVED FOR BIDDING

REV.	BY	DATE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE

ISSUED TO FERC

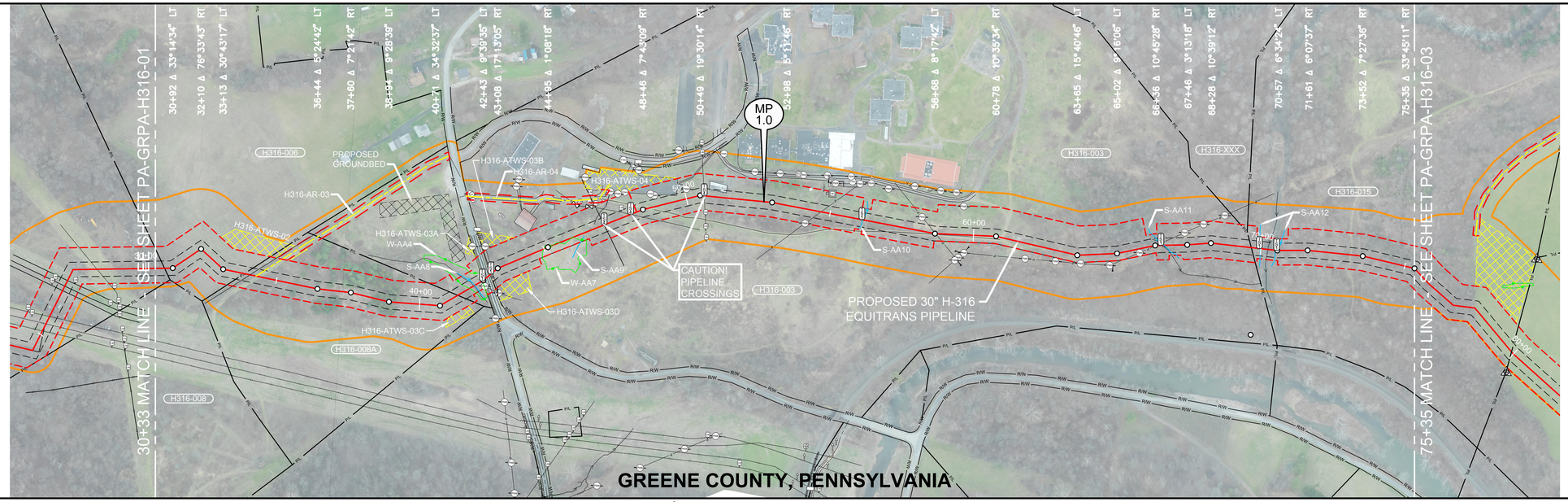
HOLLAND ENGINEERING
220 Hoover Boulevard, Suite 2 | 26500 Evergreen Rd, Suite 430
Holland, Michigan 49423-3766 | Southfield, Michigan 48076
P 616.820.0000 F 616.820.0001 | P 248.557.7220 F 248.557.7249
www.hollandengineering.com

EQUITRANS
PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H316 LINE
FRANKLIN TWP, GREENE CO., PA.
STA. 0+00 TO STA. 30+33

HORZ. SCALE: 1" = 200'
DRAWN BY: HEI(JDB) 1/11/2016
DRAFTING CK:
ENGINEERING CK:
CONSTRUCTION CK:
ENVIRONMENTAL CK:
AFE/P.O.NO.:
HEI PROJECT NO.: 15-03-071
DRAWING NO.: PA-GRPA-H316-01
SHEET 1 OF 4 REV. 2
DATE OF PLOT: 4/21/2016 2:13 PM

2016/04/22 2:13:40 PM PDT (Pacific Daylight) 4/22/2016 11:40:36 AM

RIGHT-OF-WAY & OWNERSHIP DATA		H316-006 / H316-008A: 30+33 – 33 LF, 33 SLOPE; H316-006 / H316-008A / H316-008: 30+86 – 17 LF, 17 SLOPE; H316-006 / H316-008: 30+93 – 9 LF, 9 SLOPE; H316-006: 30+92 – 345 LF, 349 SLOPE; H316-006 / H316-008A: 33+37 – 127 LF, 127 SLOPE; H316-008A / H316-003: 34+64 – 561 LF, 563 SLOPE; H316-003: 40+25 – 154 LF, 159 SLOPE; H316-003: 41+79 – 63 LF, 64 SLOPE; PRISON ROAD SLIP SLOPE: 42+42 – 42+77; H316-003: 42+77 – 2644 LF, 2676 SLOPE; H316-XXX / H316-003: 69+21 – 26 LF, 27 SLOPE; H316-015 / H316-003: 69+47 – 40 LF, 42 SLOPE; H316-015: 69+87 – 448 LF, 457 SLOPE; 75+35
DESIGN – PIPE / COATING		30+33 – 42+19: 1; 42+19 – 42+69: 3; 42+69 – 49+30: 1; 49+30 – 61+75: 2; 61+75 – 75+35: 1
DESIGN – SLOPE DISTANCE		1194'; 80'; 635'; 1246'; 1400'
DESIGN – CLASS LOCATION / HCA		2; 1
ENVIRONMENTAL – CONSTRUCTION EXCLUSION		
ENVIRONMENTAL – WETLAND / STREAM		W-AA4 73 LF; S-AA8 5 LF; W-AA7 163 LF; S-AA9 4 LF; S-AA10 5 LF; S-AA11 14 LF; S-AA12 51 LF
ENVIRONMENTAL – SEDIMENT BARRIER LEFT		
ENVIRONMENTAL – SEDIMENT BARRIER RIGHT		



PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL / PROPOSED TEST STATION
- MAILBOX / LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN / TOWER LEG
- TREE / GUY ANCHOR
- TANK / GAS VALVE
- WELL - GAS/OIL/WATER/MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

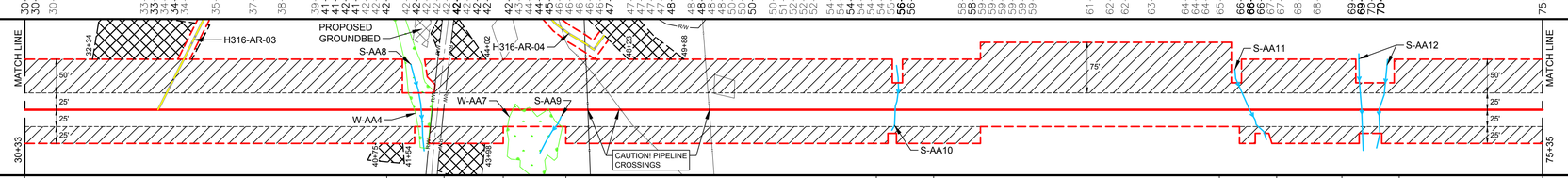
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

30+33 MATCH LINE, TOWNSHIP LINE
30+64 ℞
30+86 END WOODS
33+67 BEGIN WOODS
33+88 ℞
34+36 FENCE
34+41 END WOODS
35+99 BEGIN WOODS
37+43 END WOODS
38+28 BEGIN WOODS
39+27 END WOODS
41+41 ℞ BEGIN WETLAND(W-AA4)(PEM)
42+05 ℄ STREAM(S-AA8)(EPH)
41+89 END WETLAND(W-AA4)(PEM)
42+37 POWER POLE, 20'RT
42+42 RIGHT-OF-WAY, ℞, PROPOSED TYPE 1 TEST STATION
42+46 GUY ANCHOR, 72'RT
42+47 UNGRD UTILITY - WATER
42+50 ℄ PRISON ROAD
42+52 GUY ANCHOR, 63'RT
42+55 POWER POLE, 67'RT
42+59 ℄ PRISON ROAD
42+69 BEGIN WETLAND(W-AA7)(PEM)
42+73 ℄ BAR DITCH
42+77 RIGHT-OF-WAY, ℞, PROPOSED TYPE 1 TEST STATION
42+85 OHP LINE
42+89 POWER POLE, 87'LT
44+54 BUILDING - BARN, 73'LT
44+80 END WETLAND(W-AA7)(PEM)
45+88 END WOODS
46+45 BUILDING - BARN, 90'LT
46+48 LINE MARKER, 91'LT
46+77 LINE MARKER, 78'LT
46+79 VALVE - GAS, 77'LT
46+82 LINE MARKER, 87'LT
47+03 PIPELINE - FOREIGN - UNKNOWN
47+33 CULVERT, 57'LT
47+45 MANHOLE - STORM, 99'LT
47+65 LINE MARKER, 87'LT
47+66 POWER POLE, 82'LT
48+01 PIPELINE - EOT - 2" LATERAL FROM H103
48+10 PROPOSED TYPE 4 TEST STATION
48+64 ℄ FIELD ROAD(DIRT), 79'LT
48+84 MANHOLE - STORM, 46'LT
48+96 POWER POLE, 38'LT
49+49 LINE MARKER, 75'RT
50+49 LINE MARKER, 75'RT
50+63 PIPELINE - EOT - 16" H103
50+77 PROPOSED TYPE 4 TEST STATION
51+77 BUILDING - MOBILE HOME, 24'LT
52+28 BUILDING - MOBILE HOME, 17'LT
52+63 BUILDING - BARN, 66'LT
52+71 BUILDING - BARN, 66'LT
54+22 POWER POLE, 49'RT
54+65 VENT PIPE, 70'LT
54+69 OHP LINE
54+89 BUILDING - INDUSTRIAL, 63'LT
54+96 BUILDING - INDUSTRIAL, 65'LT
55+80 ELECTRIC BOX, 69'LT
56+10 LINE MARKER, 98'LT
56+10 PROPOSED TYPE 1 TEST STATION
56+15 ℄ STREAM(S-AA10)(INT)
58+13 POWER POLE, 48'LT
58+70 OHP LINE
59+40 POWER POLE, 57'RT
59+40 POWER POLE, 89'RT
59+51 POWER POLE, 79'RT
59+63 POWER POLE, 98'LT
59+67 POWER POLE, 62'RT
59+87 GUY ANCHOR, 40'RT
61+92 POWER POLE, 52'RT
62+51 BEGIN WOODS
62+96 POWER POLE, 38'RT
63+75 POWER POLE, 29'RT
64+75 POWER POLE, 40'RT
64+83 GUY ANCHOR, 61'RT
64+93 END WOODS
65+78 POWER POLE, 14'RT
66+39 OHP LINE
66+55 PROPOSED TYPE 1 TEST STATION
66+61 ℄ STREAM(S-AA11)(INT)
67+37 BEGIN WOODS
67+38 POWER POLE, 42'LT
68+07 POWER POLE, 66'LT
68+64 POWER POLE, 100'LT
69+67 ℞
69+95 PROPOSED TYPE 1 TEST STATION
70+25 ℄ STREAM(S-AA12)(INT)
70+55 PROPOSED TYPE 1 TEST STATION
75+35 MATCH LINE

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

10A or 10B	13	10A or 10B	10A or 10B	10A or 10B		

CONSTRUCTION METHOD KEY
1 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
2 - PARALLEL CONSTRUCTION
3 - PARALLEL TO POWER LINES
4 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
5 - SIDE HILL CONSTRUCTION
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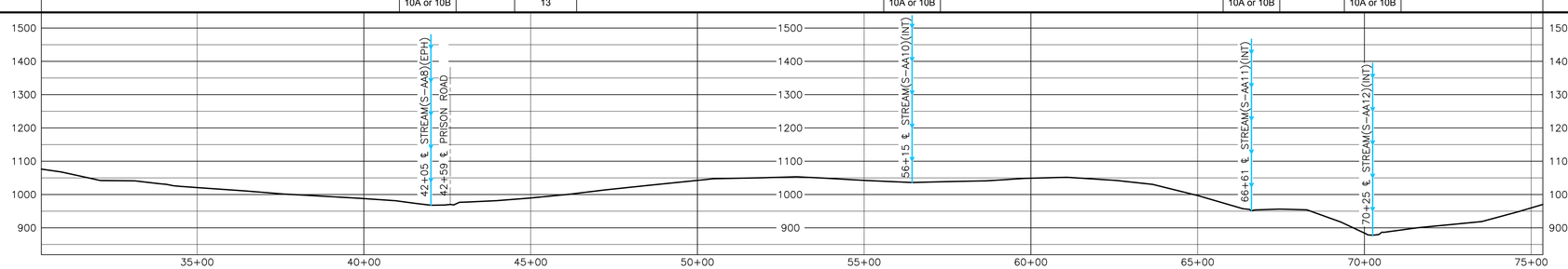
10B - OPEN CUT - FLUME
11 - PIPELINE CROSSING
12 - PIPELINE CROSSING FROM PARALLEL
13 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



ISSUED TO FERC

AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5229'	30"O.D. X 0.438"W.T. X70, FUSION BOND EPOXY
2	1246'	30"O.D. X 0.562"W.T. X70, FUSION BOND EPOXY
3	80'	30"O.D. X 0.562"W.T. X70, FBE & ARO
		SEDIMENT BARRIER
	6	TYPE 1 TEST STATION - PIPELINE
	3	TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR CONSTRUCTION			
REV.	BY	DATE	

APPROVED FOR BIDDING			
REV.	BY	DATE	

APPROVED FOR FERC			
REV.	BY	DATE	
0	JSW	10/22/15	
1	JSW	02/05/16	

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST

HOLLAND ENGINEERING
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EQUITRANS
PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H316 LINE
MORGAN TWP, GREENE CO., PA.
STA. 30+33 TO STA. 75+35

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/11/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.:	15-03-071
DRAWING NO.:	PA-GRPA-H316-02
SHEET 2 OF 4	REV. 1
DATE OF PLOT: 4/21/2016 2:14 PM	

20160421-5166 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM

| RIGHT-OF-WAY & OWNERSHIP DATA | | |

RIGHT-OF-WAY & OWNERSHIP DATA

H316-022	119+25 – 120+06
H316-022 / CREEK ROAD	120+06 – 120+45
CREEK ROAD / H316-012	120+45 – 120+83
H316-012	120+83 – 125+45
H316-017 / H316-012	125+45 – 129+21
H316-017	129+21 – 130+28
H316-016A	130+28 – 136+58
H316-016A / H316-002	136+58 – 138+82
H316-002	138+82 – 144+37
CREEK ROAD / H316-001	144+37 – 144+41
H316-001	144+41 – 145+38
H316-001 / H316-009	145+38 – 145+88
H316-009	145+88 – 146+55
H316-011 / H316-009	146+55 – 148+66
H316-011	148+66 – 157+02

H316-022	H316-022	CREEK ROAD	H316-012	H316-017	H316-017	H316-016A	H316-016A	H316-002	H316-001	H316-001	H316-009	H316-011	H316-009	H316-011		
81 LF 82 SLOPE	39 LF 39 SLOPE	38 LF 38 SLOPE	462 LF 463 SLOPE	76 LF 76 SLOPE	407 LF 407 SLOPE	630 LF 630 SLOPE	24 LF 24 SLOPE	755 LF 762 SLOPE	67 LF 69 SLOPE	50 LF 51 SLOPE	267 LF 273 SLOPE	11 LF 11 SLOPE	836 LF 850 SLOPE			

DESIGN

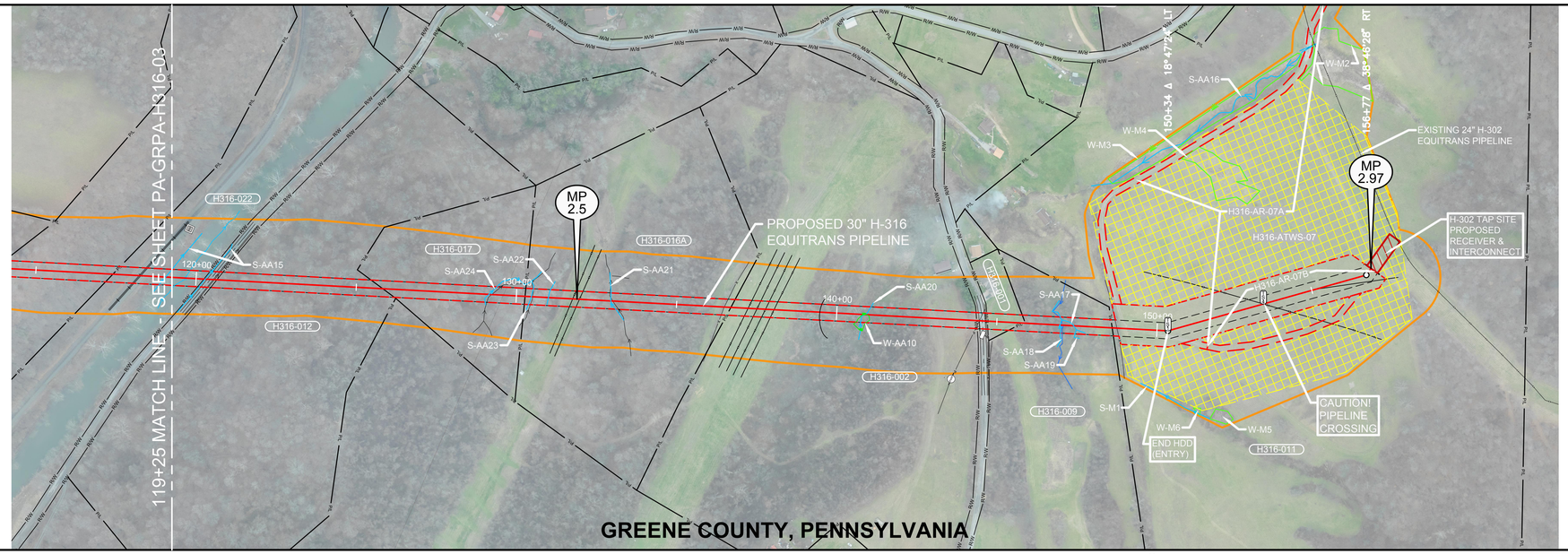
PIPE / COATING	119+25 – 150+34: 4; 150+34 – 157+02: 1
SLOPE DISTANCE	119+25 – 150+34: 3132'; 150+34 – 157+02: 678'
CLASS LOCATION / HCA	1

ENVIRONMENTAL

CONSTRUCTION EXCLUSION	
WETLAND / STREAM	S-AA15 42 LF; S-AA24 12 LF; S-AA23 9 LF; S-AA22 7 LF; S-AA21 5 LF; W-AA10 43 LF; S-AA20 21 LF; S-AA18 8 LF; S-AA17 4 LF
SEDIMENT BARRIER LEFT	
SEDIMENT BARRIER RIGHT	

0' 100' 200' 400'

PLAN VIEW



LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
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- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

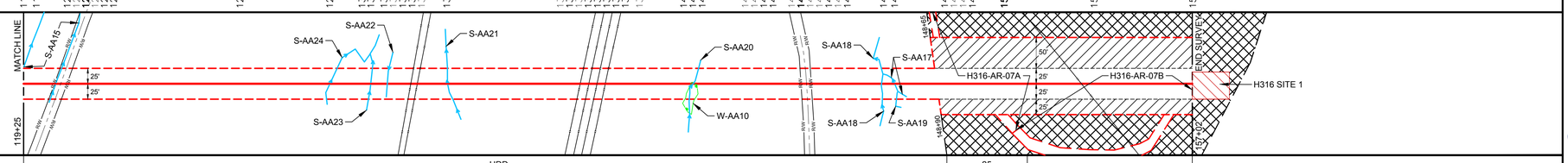
2016 HOLLAND ENGINEERING (Commercial) 4/22/2016 11:40:36 AM

HORIZONTAL STATIONING

119+25 MATCH LINE, TOWNSHIP LINE
119+66 ℄ RUFF CREEK(S-AA15)(PER)
120+25 RIGHT-OF-WAY, ℞
120+35 BEGIN ASPHALT
120+45 ℄ CREEK ROAD
120+54 END ASPHALT
120+58 ℄ BAR DITCH
120+65 RIGHT-OF-WAY, ℞
125+83 ℞
129+23 ℄ STREAM(S-AA24)(INT)
130+28 ℞
130+51 ℄ STREAM(S-AA23)(EPH)
131+00 ℄ STREAM(S-AA22)(EPH)
131+31 END WOODS
131+76 PIPELINE – FOREIGN – UNKNOWN
131+97 PIPELINE – FOREIGN – UNKNOWN
132+20 BEGIN WOODS
133+01 ℄ STREAM(S-AA21)(INT)
136+18 END WOODS
136+29 BEGIN FIELD ROAD(DIRT)
136+40 ℄ FENCE
136+70 ℞
136+76 PIPELINE – FOREIGN – UNKNOWN
137+24 PIPELINE – FOREIGN – UNKNOWN
137+52 PIPELINE – FOREIGN – UNKNOWN
137+80 PIPELINE – FOREIGN – UNKNOWN
138+08 PIPELINE – FOREIGN – UNKNOWN
138+74 BEGIN WOODS
140+82 BEGIN WETLAND(W-AA10)(PEM)
140+88 ℄ STREAM(S-AA20)(PER)
140+94 END WETLAND(W-AA10)(PEM)
142+87 END WOODS
143+89 BEGIN WOODS
144+37 RIGHT-OF-WAY, ℞
144+37 PIPELINE – FOREIGN – UNKNOWN
144+45 BEGIN ASPHALT
144+46 OHP LINE
144+55 ℄ ANKROM ROAD
144+64 END ASPHALT
144+67 ℄ FENCE
144+71 RIGHT-OF-WAY, ℞
144+75 SIGN, 49'RT
145+81 ℞
147+04 ℄ STREAM(S-AA17)(PER)
147+40 ℄ STREAM(S-AA18)(INT)
148+60 ℞
148+75 ℄ FENCE
148+91 END WOODS
149+30 ACCESS RD – PERMANENT(H316-AR-07A)
150+34 END HDD(ENTRY)
153+44 PIPELINE – FOREIGN – PNG 4" PROPOSED TYPE 4 TEST STATION
157+02 END SURVEY

WORK SPACE

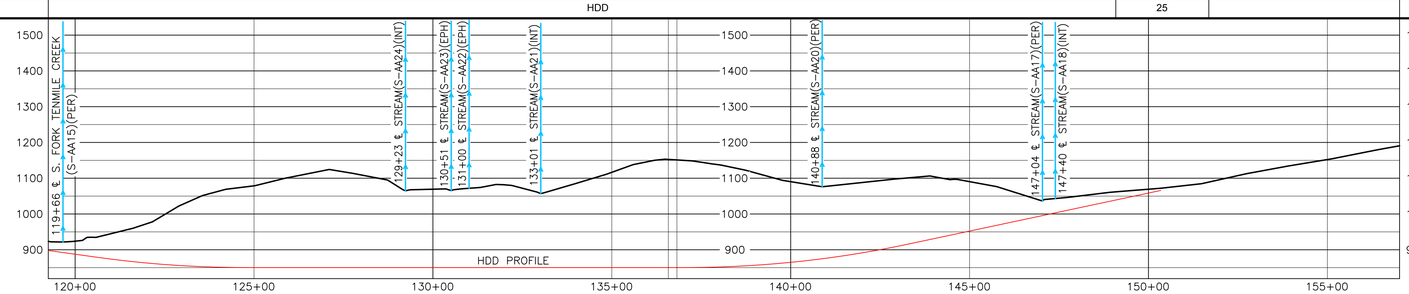
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY
1 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
2 - PARALLEL CONSTRUCTION
3 - PARALLEL TO POWER LINES
4 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
5 - SIDE HILL CONSTRUCTION
6 - TWO TONE METHOD
7 - NON-PARALLEL CONSTRUCTION EXTRA DEEP DITCH (5' COVER)
8 - OPEN CUT ROAD CROSSING
9 - BORED ROAD CROSSING
10A - OPEN CUT - DAM AND PUMP
10B - OPEN CUT - FLUME
11 - PIPELINE CROSSING
12 - PIPELINE CROSSING FROM PARALLEL
13 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



ISSUED TO FERC

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/19/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	241'	30"O.D. X 0.438"W.T. X70, FBE AND ARO
4	313'	30"O.D. X 0.688"W.T. X70, FBE AND ARO
		SEDIMENT BARRIER
1		TYPE 1 TEST STATION - PIPELINE
1		TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR FERC				APPROVED FOR BIDDING				APPROVED FOR CONSTRUCTION			
REV.	BY	DATE		REV.	BY	DATE		REV.	BY	DATE	
0	JSW	10/22/15									
1	JSW	02/08/16									
2	JSW	04/18/16									

EQUITRANS

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H316 LINE
JEFFERSON TWP, GREENE CO., PA.
STA. 119+25 TO STA. 157+02

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/11/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-GRPA-H316-04	
SHEET 4 OF 4	REV. 2
DATE OF PLOT: 4/21/2016 2:14 PM	

HOLLAND ENGINEERING
220 Hoover Boulevard, Suite 2
Holland, Michigan 49423-3766
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26500 Evergreen Rd, Suite 430
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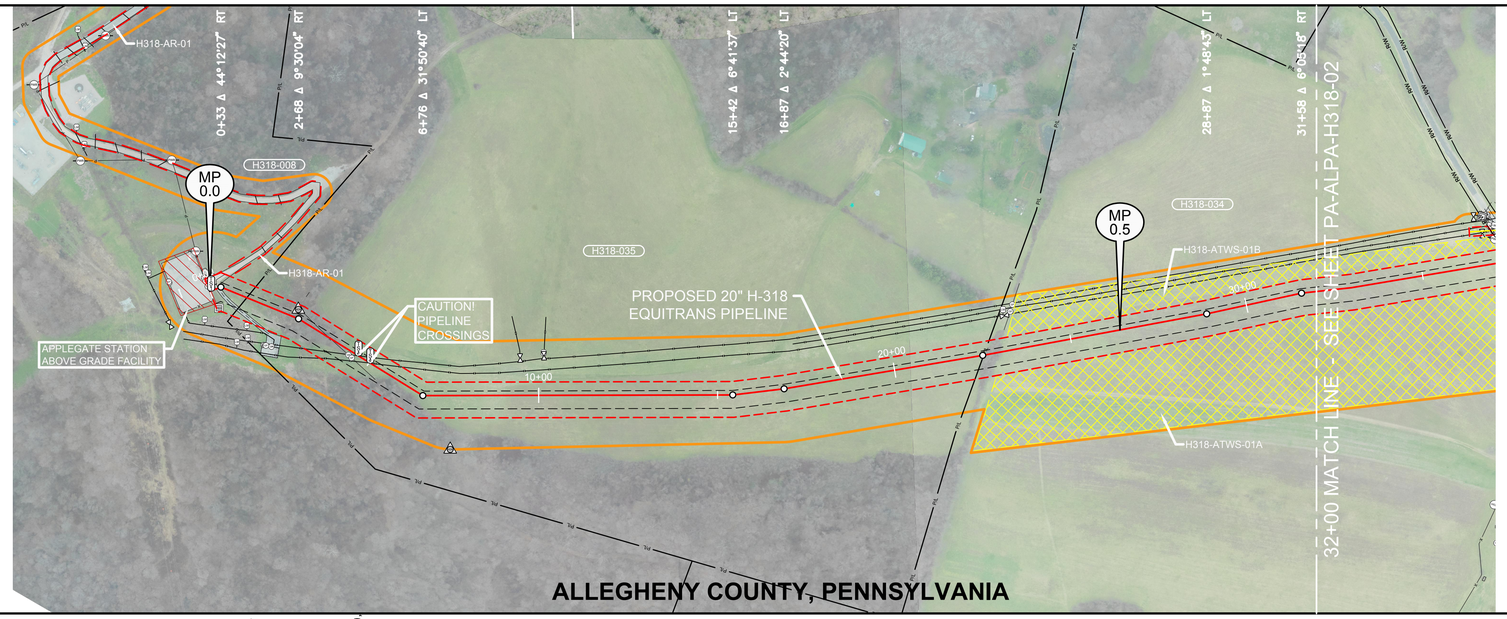
RIGHT-OF-WAY & OWNERSHIP DATA		0+00	H318-008 0+93	H318-008 / H318-035 0+93	H318-035 1+23	H318-035 22+17	H318-035 / H318-034 22+17	H318-034 22+75	32+00
			93 LF 93 SLOPE	30 LF 30 SLOPE	2094 LF 2100 SLOPE		58 LF 58 SLOPE	925 LF 927 SLOPE	
DESIGN	PIPE / COATING	0+00	1						32+00
DESIGN	SLOPE DISTANCE	3208'							
DESIGN	CLASS LOCATION / HCA	1							
ENVIRONMENTAL	CONSTRUCTION EXCLUSION								
ENVIRONMENTAL	WETLAND / STREAM								
ENVIRONMENTAL	SEDIMENT BARRIER LEFT								
ENVIRONMENTAL	SEDIMENT BARRIER RIGHT								



0' 100' 200' 400'

PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

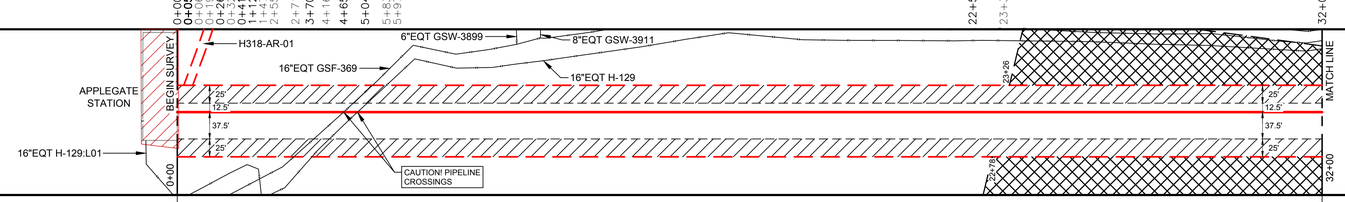
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY, FENCE
0+05 PROPOSED TYPE 1 TEST STATION
0+06 PEDESTAL - CATHODIC 53'RT
0+19 BEGIN ROCK
0+26 ℄ FIELD ROAD(ROCK)
0+27 END ROCK
0+41 ACCESS RD - PERMANENT(H318-AR-01)25'LT
1+12 ℞
1+47 LINE MARKER, 87'RT
2+55 PROPERTY CORNER 29'LT
2+71 BEGIN WOODS
3+70 FENCE
4+16 END WOODS
4+65 PIPELINE - EQT - 16"GSF-369(5.3'COVER), PROPOSED TYPE 4 TEST STATION
5+04 PIPELINE - EQT - 16"H-129(4.9'COVER), PROPOSED TYPE 4 TEST STATION
5+83 BEGIN WOODS
5+97 END WOODS
22+53 ℞
23+30 VALVE - GAS 98'LT
32+00 MATCH LINE

WORK SPACE

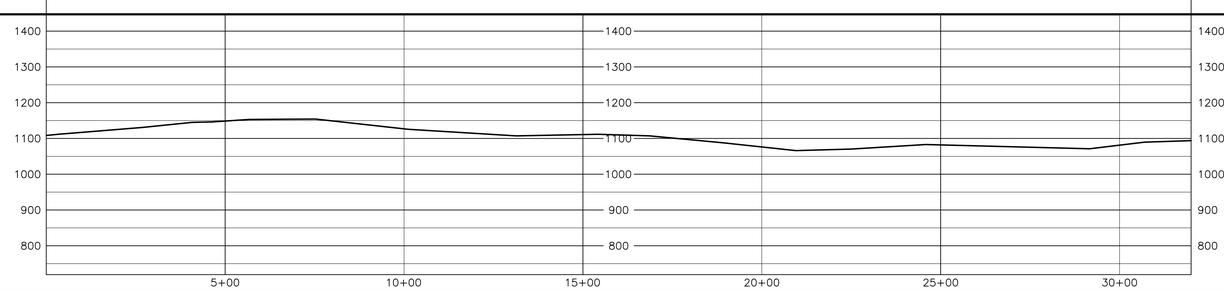
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY
14 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
15 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
16 - SIDE HILL CONSTRUCTION
17 - TWO TONE METHOD
18 - NON-PARALLEL CONSTRUCTION EXTRA DEEP DITCH (5' COVER)
19 - OPEN CUT ROAD CROSSING
20 - BORED ROAD CROSSING
21 - BORED RAIL ROAD CROSSING
22A - OPEN CUT - DAM AND PUMP
22B - OPEN CUT - FLUME
23 - PIPELINE CROSSING
24 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



AERIAL PHOTOGRAPHY DATE: MAY 2015

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
1	3208'	20"O.D. X 0.312"W.T. X70 - 9.5MM BOND EPOXY
		SEDIMENT BARRIER
2		TYPE 4 TEST STATION - FOREIGN CROSSING

REVISIONS			
REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/06/16	RESPONSE TO FERC DATA REQUEST

APPROVED FOR FERC			
REV.	BY	DATE	
0	JSW	10/23/15	
1	JSW	02/06/16	

APPROVED FOR BIDDING			
REV.	BY	DATE	

APPROVED FOR CONSTRUCTION			
REV.	BY	DATE	

ISSUED TO FERC

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Holland, Michigan 49423-3766
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26555 Evergreen Rd, Suite 430
Southfield, Michigan 48076
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EQUITRANS

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H318 LINE
FORWARD TWP, ALLEGHENY CO., PA.
STA. 0+00 TO STA. 32+00

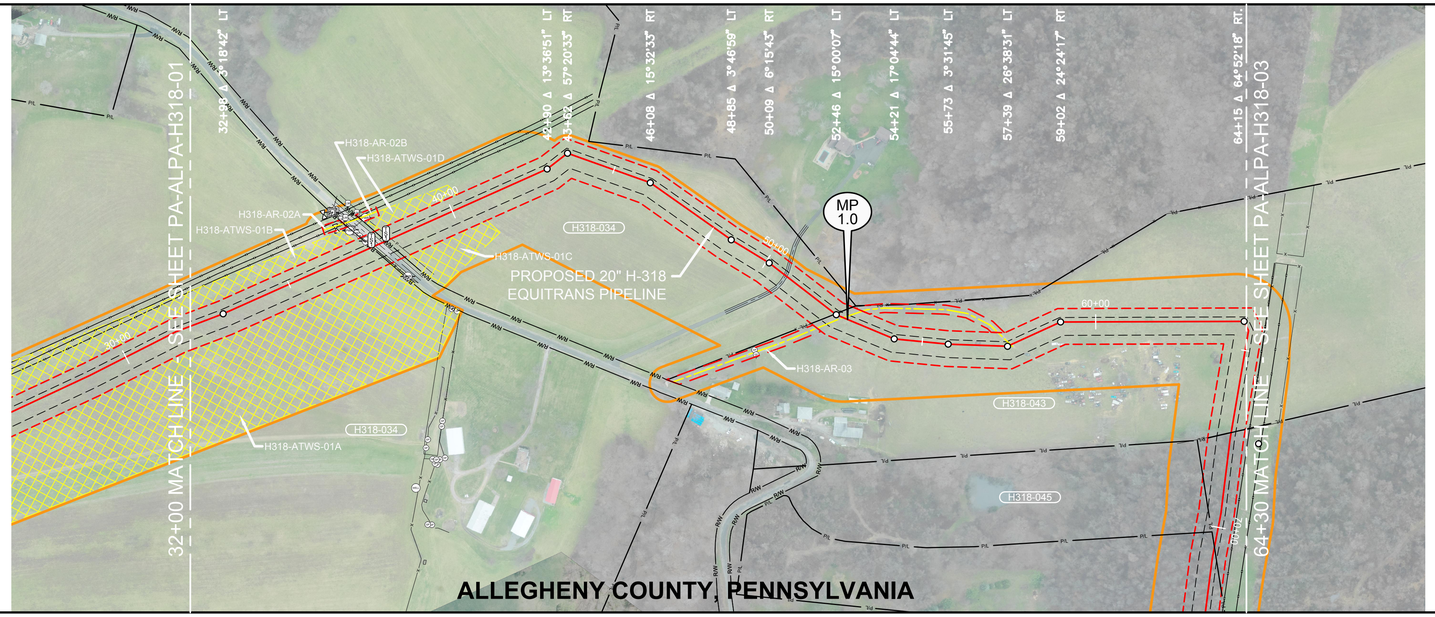
HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/7/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-ALPA-H318-01	
SHEET 1 OF 6	REV. 1
DATE OF PLOT: 4/21/2016 2:08 PM	

2016/04/22 3:06 PM JSW (JSWCivil) 4/22/2016 11:40:36 AM

RIGHT-OF-WAY & OWNERSHIP DATA		32+00; H318-034 544 LF 553 SLOPE; 37+52 PROPOSED ROAD 45LF / 45 SLOPE; 37+97; H318-034 1408 LF 1433 SLOPE; 52+05; H318-034 / H318-043 72 LF 73 SLOPE; 52+79; H318-043 1151 LF 1158 SLOPE; 64+30
DESIGN	PIPE / COATING	32+00; 1; 37+35; 3; 38+03; 1; 50+46; 3; 50+85; 1; 64+30
DESIGN	SLOPE DISTANCE	534'; 80'; 1257'; 40'; 1351'
DESIGN	CLASS LOCATION / HCA	1
ENVIRONMENTAL	CONSTRUCTION EXCLUSION	
ENVIRONMENTAL	WETLAND / STREAM	
ENVIRONMENTAL	SEDIMENT BARRIER LEFT	
ENVIRONMENTAL	SEDIMENT BARRIER RIGHT	

0' 100' 200' 400'

PLAN VIEW



LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

2016/04/22 11:06 AM DRAWING (Special) 4/22/2016 11:40:36 AM

REFERENCE DRAWINGS

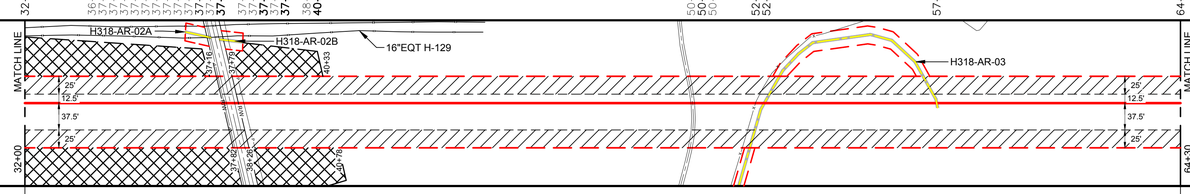
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

32+00 MATCH LINE
36+84 VALVE(GAS)89'LT
37+01 LINE MARKER 93'LT
37+13 LINE MARKER 93'LT
37+14 LINE MARKER 92'LT
37+16 POWER POLE 68'LT
37+17 ELECTRIC BOX 68'LT
37+20 PEDESTAL(UNKNOWN)68'LT
37+21 POWER POLE 91'LT
37+47 POWER POLE 22'LT
37+48 LINE MARKER 91'LT
37+56 FENCE
37+57 FENCE LINE
37+60 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
37+64 BEGIN ASPHALT
37+73 POWER POLE 87'LT
37+74 ℄ RIPPEL ROAD
37+86 END ASPHALT
37+97 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
38+12 FENCE LINE
40+50 END ATWS
50+62 BEGIN ASPHALT
50+66 ℄ DRIVEWAY(ASPHALT)
50+72 END ASPHALT
52+42 FENCE ℞
52+67 ACCESS RD – TEMPORARY(H318-AR-03)
57+49 ACCESS RD – TEMPORARY(H318-AR-03)
64+30 MATCH LINE

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY
14 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
15 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
16 - SIDE HILL CONSTRUCTION
17 - TWO TONE METHOD
18 - NON-PARALLEL CONSTRUCTION EXTRA DEEP DITCH (5' COVER)
19 - OPEN CUT ROAD CROSSING
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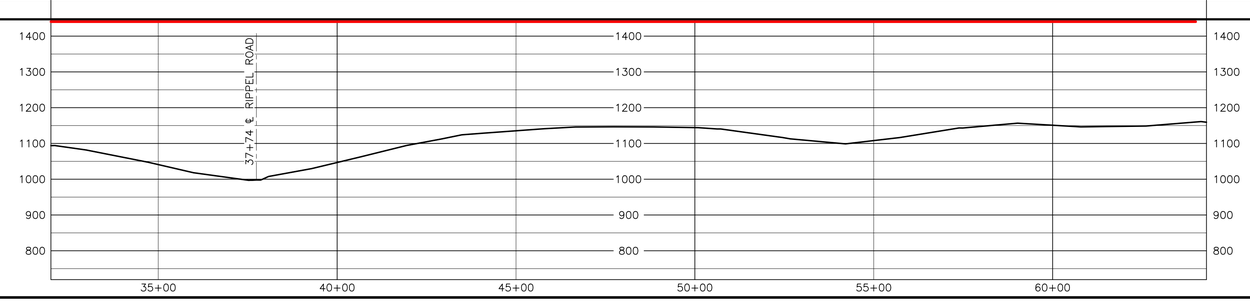
22A - OPEN CUT - DAM AND PUMP
22B - OPEN CUT - FLUME
23 - PIPELINE CROSSING
24 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



ISSUED TO FERC

AERIAL PHOTOGRAPHY DATE: MAY 2015

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	314'	20"O.D. X 0.312"W.T. X70, 3LPE BOND EPOXY
3	126'	20"O.D. X 0.375"W.T. X70, FBE AND ARO
-	-	SEDIMENT BARRIER
2	-	TYPE 1 TEST STATION - PIPELINE

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/06/16	RESPONSE TO FERC DATA REQUEST

APPROVED FOR CONSTRUCTION: REV. | BY | DATE
APPROVED FOR BIDDING: REV. | BY | DATE
APPROVED FOR FERC: REV. | BY | DATE
0 | JSW | 10/23/15
1 | JDB | 02/06/16

HOLLAND ENGINEERING
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Holland, Michigan 49423-3766 | Southfield, Michigan 48076
T 616.820.0000 F 616.820.0010 | T 248.281.7220 F 248.281.7249
www.hollandengineering.com

EQUITRANS
PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H318 LINE
FORWARD TWP, ALLEGHENY CO., PA.
STA. 32+00 TO STA. 64+60

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/7/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-ALPA-H318-02	
SHEET 2 OF 6	REV. 1
DATE OF PLOT: 4/21/2016 2:09 PM	

| RIGHT-OF-WAY & OWNERSHIP DATA | | |

RIGHT-OF-WAY & OWNERSHIP DATA

		115+71
		119+59
		120+15
		140+48
		141+52
		143+34
		143+50
		147+14
		147+68
		151+75
		152+20
		154+95
		155+89
		156+16
		159+58

H318-030	288 LF 288 SLOPE
H318-030 / H318-012	156 LF 156 SLOPE
H318-012	2033 LF 2041 SLOPE
H318-012 / H318-036	104 LF 108 SLOPE
H318-036	182 LF 189 SLOPE
H318-012 / H318-036	16 LF 17 SLOPE
H318-012	364 LF 370 SLOPE
BUNOLA RIVER ROAD	3
H318-012	407 LF 413 SLOPE
H318-038	45 LF 46 SLOPE
H318-012	275 LF 276 SLOPE
H318-018 / H318-012	94 LF 94 SLOPE
H318-018 / MONONGAHELA RIVER	27 LF 27 SLOPE
MONONGAHELA RIVER	342 LF 342 SLOPE

DESIGN

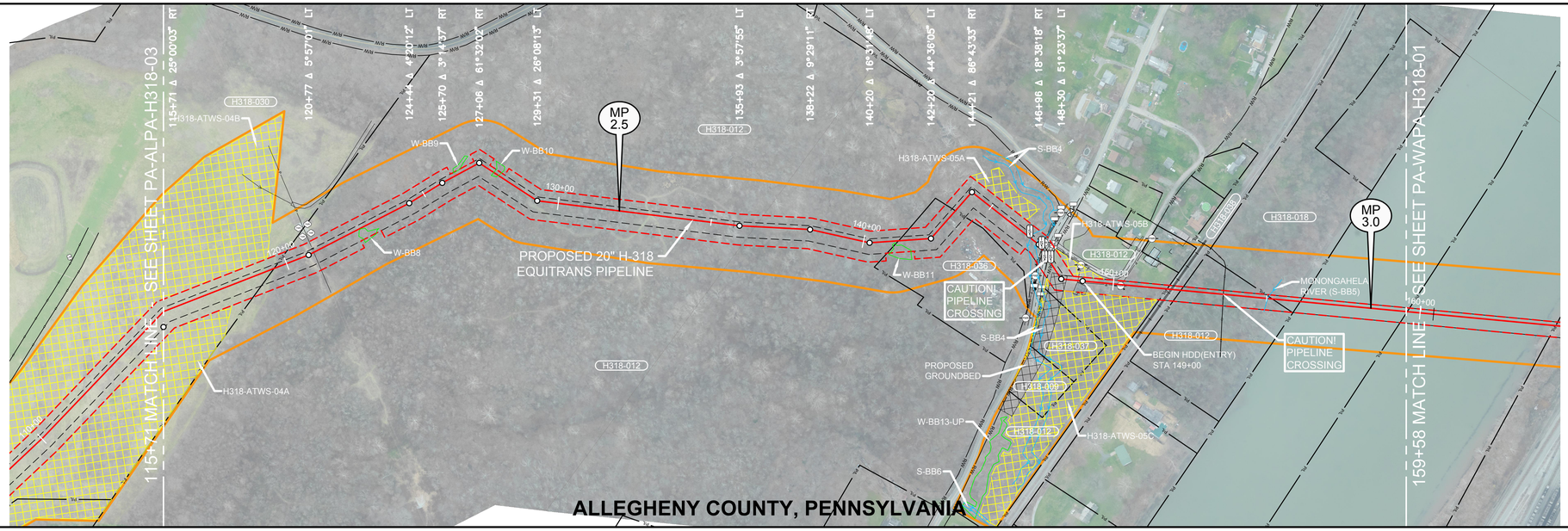
PIPE / COATING	115+71	1
	142+10	3
	147+90	1
	149+00	4
	159+58	
SLOPE DISTANCE	115+71	3164'
	142+10	80'
	147+90	110'
	149+00	1066'
	159+58	
CLASS LOCATION / HCA	115+71	1
	150+74	2
	159+58	

ENVIRONMENTAL

CONSTRUCTION EXCLUSION		
WETLAND / STREAM	W-BB8	70 LF
	W-BB9	25 LF
	W-BB10	23 LF
	W-BB11	68 LF
	S-BB4	76 LF
SEDIMENT BARRIER LEFT		
SEDIMENT BARRIER RIGHT		

0' 100' 200' 400'

PLAN VIEW



LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- CL ROAD
- CL RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

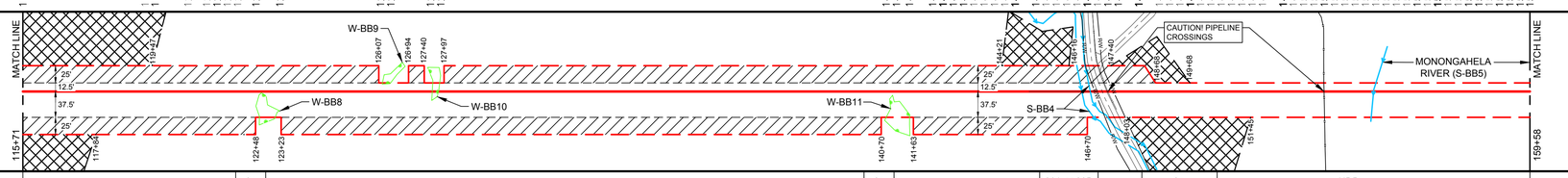
20160422-5166 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM

HORIZONTAL STATIONING

115+71 MATCH LINE
119+27 BEGIN WOODS
119+56 ℄
120+52 END WOODS
120+86 TOWER LEG 62'LT
120+96 OHP LINE
121+16 TOWER LEG 60'LT
121+32 BEGIN WOODS
122+49 BEGIN WETLAND(W-BB8)(PFO)
123+19 END WETLAND(W-BB8)(PFO)
126+17 BEGIN WETLAND(W-BB9)(PFO)
126+42 END WETLAND(W-BB9)(PFO)
127+61 BEGIN WETLAND(W-BB10)(PFO)
127+84 END WETLAND(W-BB10)(PFO)
140+84 BEGIN WETLAND(W-BB11)(PFO)
141+14 ℄
141+52 END WETLAND(W-BB11)(PFO)
143+40 ℄
146+60 PROPOSED TYPE 1 TEST STATION
146+63 STREAM BANK(S-BB4)(PER)
146+89 STREAM BANK(S-BB4)(PER)
146+92 GUY ANCHOR 15'LT
146+96 END WOODS, SIGN 83'LT
147+01 POWER POLE 81'LT
147+14 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℄
147+18 OHP LINE
147+21 VALVE(WATER) 39'LT, SIGN 59'LT
147+22 BEGIN ASPHALT
147+28 VALVE(WATER)31'LT
147+28 VALVE(WATER)36'LT
147+36 ℄ BUNOLA RIVER ROAD
147+49 END ASPHALT
147+52 WORKSPACE – WATER PIPELINE – FOREIGN – PEOPLES GAS,
147+68 PROPOSED TYPE 4 TEST STATION
147+52 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℄
147+75 POWER POLE 65'RT
147+89 SIGN 72'RT
148+15 SIGN 85'RT
148+20 PROPOSED RECTIFIER & GROUNDBED
148+24 BEGIN WOODS 72'LT
148+29 BEGIN WOODS
148+30 SIGN 76'RT
148+71 BUILDING – HOUSE(BURNED)43'RT
148+77 GUY ANCHOR 32'LT
148+83 GUY ANCHOR 34'LT
148+84 BUILDING – HOUSE(BURNED)6'RT
148+87 OHP LINE
149+00 BEGIN HDD(ENTRY)
149+20 BUILDING – HOUSE(BURNED)18'RT
150+18 GUY ANCHOR 16'RT
150+24 POWER POLE 4'RT
150+28 GUY ANCHOR 15'RT
150+89 BUILDING – HOUSE 89'LT
151+11 END WOODS
151+17 BUILDING – HOUSE, DECK 73'LT
151+34 END WOODS
151+34 DECK 67'LT
151+46 DECK 78'LT
151+69 END WOODS
151+75 ℄
151+86 RAIL
151+89 ℄ CSX RAILROAD
151+92 ℄ RAIL
152+20 BEGIN WOODS
153+59 PIPELINE – FOREIGN – PEOPLES GAS
153+63 LINE MARKER 94'LT
155+13 MONONGAHELA RIVER BANK(S-BB5)(PER)
155+18 ℄
156+09 ℄
159+58 MATCH LINE, COUNTY LINE, ℄

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



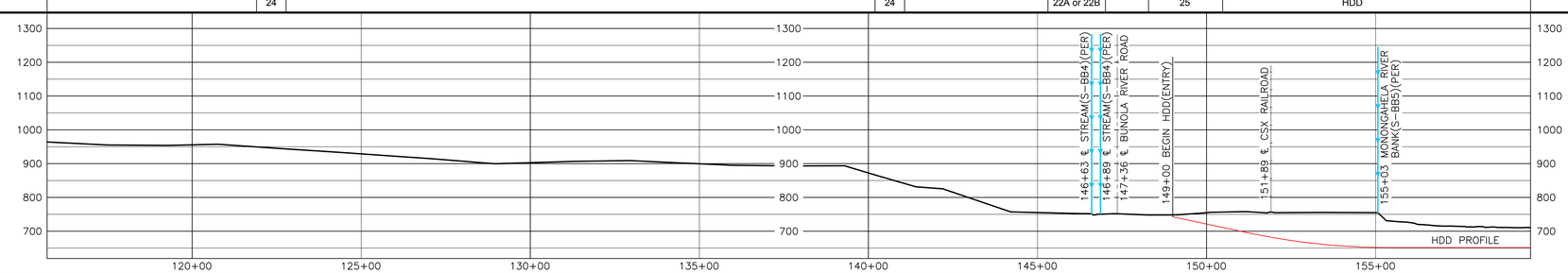
CONSTRUCTION METHOD

115+71	
119+27	24
140+84	24
146+63	22A or 22B
149+00	25
151+89	HDD
159+58	

CONSTRUCTION METHOD KEY

14 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
15 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
16 - SIDE HILL CONSTRUCTION
17 - TWO TONE METHOD
18 - NON-PARALLEL CONSTRUCTION EXTRA DEEP DITCH (5' COVER)
19 - OPEN CUT ROAD CROSSING
20 - BORED ROAD CROSSING
21 - BORED RAIL ROAD CROSSING
22A - OPEN CUT - DAM AND PUMP
22B - OPEN CUT - FLUME
23 - PIPELINE CROSSING
24 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



ISSUED TO FERC

HOLLAND ENGINEERING
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Holland, Michigan 49423-3766 | Southfield, Michigan 48075
P 616.820.0000 F 616.820.0001 | P 248.557.7220 F 248.557.7249
www.hollandengineering.com

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3274'	20"O.D. X 0.312"W.T. X70, FBE BOND EPOXY
3	80'	20"O.D. X 0.375"W.T. X70, FBE AND ARO
4	1066'	20"O.D. X 0.312"W.T. X70, FBE AND ARO
		SEDIMENT BARRIER
3		TYPE 1 TEST STATION - PIPELINE
2		TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR FERC			APPROVED FOR BIDDING			APPROVED FOR CONSTRUCTION		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15						
1	JSW	02/05/16						
2	JSW	04/15/16						

EQUITRANS

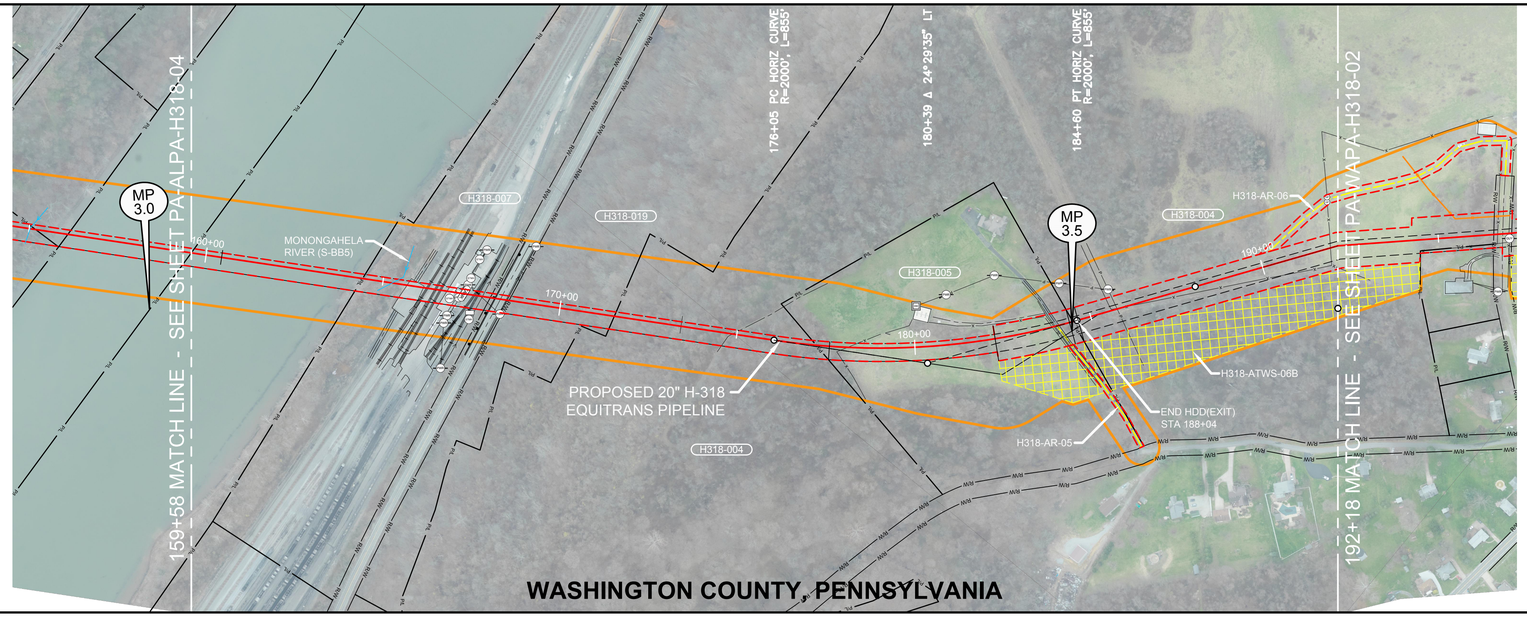
PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H318 LINE FORWARD TWP, ALLEGHENY CO., PA. STA. 115+71 TO STA. 159+58

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/7/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-ALPA-H318-04	
SHEET 4 OF 6	REV. 2
DATE OF PLOT: 4/21/2016 2:10 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

		159+58	MONONGAHELA RIVER		164+26	MONONGAHELA RIVER	H318-007	166+48	H318-007	H318-007	167+50	STATE HWY 837	168+45	STATE HWY 837	168+49	H318-019	168+61	H318-019	171+44	H318-019	H318-004	171+57	H318-004	177+11	H318-005	H318-005	177+61	H318-005	184+59	H318-004	H318-004	184+63	H318-004	192+18
			468 LF 469 SLOPE			22 LF 22 SLOPE		342 LF 347 SLOPE		18 LF 18 SLOPE				18 LF 18 SLOPE			283 LF 289 SLOPE		13 LF 13 SLOPE			554 LF 566 SLOPE		50 LF 51 SLOPE			678 LF 693 SLOPE		24 LF 25 SLOPE			755 LF 771 SLOPE	
DESIGN	PIPE / COATING	159+58	4																												1		192+18
DESIGN	SLOPE DISTANCE		2895'																												423'		
DESIGN	CLASS LOCATION / HCA		2	160+44				1														173+42						2					
ENVIRONMENTAL	CONSTRUCTION EXCLUSION																																
ENVIRONMENTAL	WETLAND / STREAM																																
ENVIRONMENTAL	SEDIMENT BARRIER LEFT																																
ENVIRONMENTAL	SEDIMENT BARRIER RIGHT																																



0' 100' 200' 400'

PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- CL ROAD
- CL RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL
- PROPOSED TEST STATION
- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN
- TOWER LEG
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

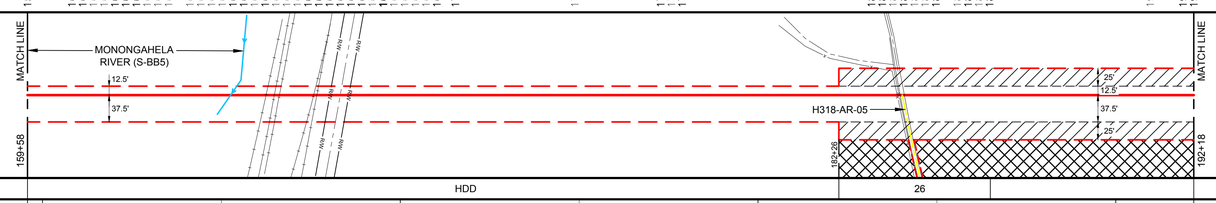
20160422 1140 MM (DWG To PDF.pc3) 4/22/2016 11:40:36 AM

HORIZONTAL STATIONING

159+58 MATCH LINE, COUNTY LINE, ℞
164+42 ℞
165+26 MONONGAHELA RIVER BANK(S-BB5)(PER)
165+68 BEGIN ASPHALT
166+14 END ASPHALT
166+25 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
166+48 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
166+62 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
166+81 BEGIN ASPHALT
166+91 STORM MANHOLE 19'RT,
166+99 POWER POLE 67'RT
166+99 BUILDING – INDUSTRIAL, 54'RT
167+13 END ASPHALT, BEGIN CONCRETE
167+15 END CONCRETE
167+16 POWER POLE, 13'RT
167+19 BEGIN TANK(OIL)
167+25 OHP LINE
167+26 POWER POLE, 26'LT
167+39 END TANK(OIL)
167+42 STORM MANHOLE 46'LT
167+53 STORM MANHOLE 69'RT
167+56 END ASPHALT
167+58 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
167+67 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
167+75 OHP LINE
168+03 ℄ BAR DITCH
168+13 RIGHT-OF-WAY, ℞
168+16 GUARDRAIL
168+18 BEGIN ASPHALT
168+32 ℄ STATE HWY(ASPHALT)
168+35 POWER POLE 41'RT
168+47 END ASPHALT
168+50 ℄ BAR DITCH
168+51 OHP LINE
168+56 RIGHT-OF-WAY, ℞
171+54 ℞
174+88 ℄ FIELD ROAD(DIRT)
177+28 ℞
177+86 END WOODS
177+93 FENCE
183+89 FENCE
183+94 UNGRD UTILITY – WATER
183+97 BEGIN ASPHALT
184+03 ACCESS RD – TEMPORARY(H318-AR-05)
184+09 END ASPHALT
184+10 BEGIN WOODS
184+48 ℞
185+67 POWER POLE 60'LT
185+77 OHP LINE
185+82 GUY ANCHOR 53'LT
185+97 FENCE
190+96 END WOODS
191+97 FENCE
192+18 MATCH LINE

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY

14 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
15 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
16 - SIDE HILL CONSTRUCTION
17 - TWO TONE METHOD
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19 - OPEN CUT ROAD CROSSING
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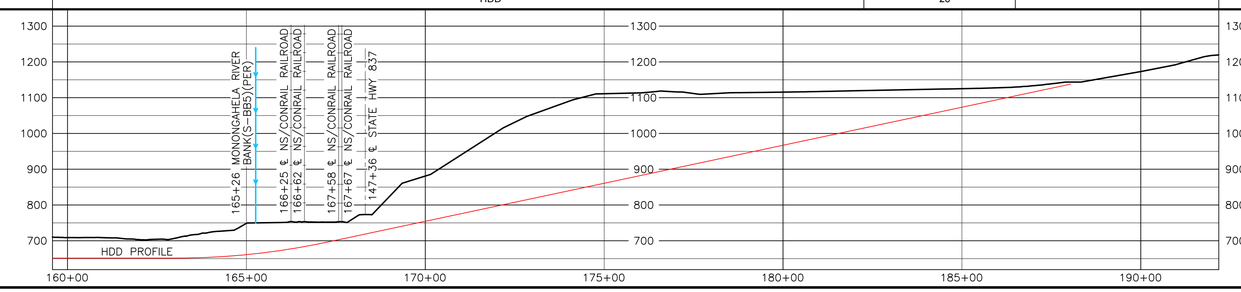
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



ISSUED TO FERC

AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	423'	20"O.D. X 0.312"W.T. X70, FBE AND ARO
4	2895'	20"O.D. X 0.562"W.T. X70, FBE AND ARO
		SEDIMENT BARRIER

APPROVED FOR FERC			
REV.	BY	DATE	
0	JSW	10/20/15	
1	JSW	02/06/16	
2	JSW	04/15/16	

APPROVED FOR BIDDING			
REV.	BY	DATE	

APPROVED FOR CONSTRUCTION			
REV.	BY	DATE	

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/06/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

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26500 Evergreen Rd, Suite 430
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www.hollandengineering.com

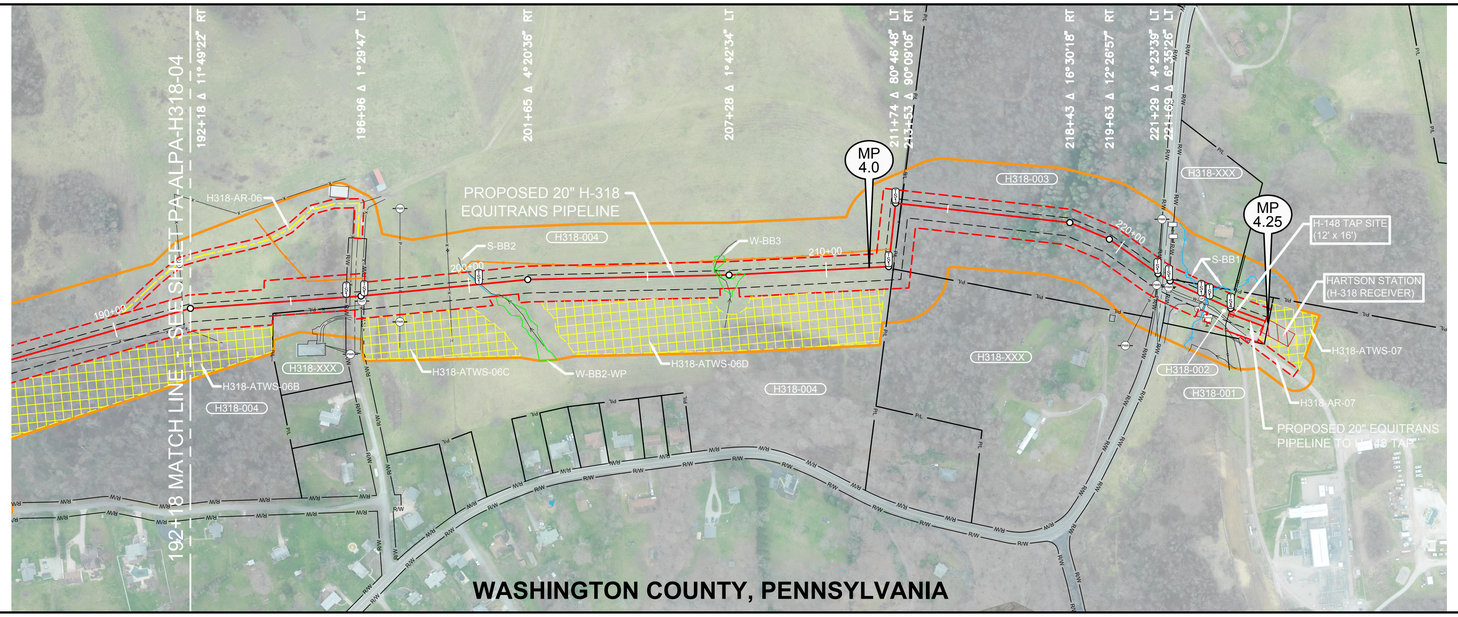
EQUITRANS

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H318 LINE
UNION TWP, WASHINGTON CO., PA.
STA. 159+58 TO STA. 192+18

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	1/7/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-WAPA-H318-01	
SHEET 5 OF 6	REV. 2
DATE OF PLOT: 4/21/2016 2:10 PM	

RIGHT-OF-WAY & OWNERSHIP DATA																													
		192+18	H318-004 227 LF 227 SLOPE	194+45	H318-004 / H318-XXX 210 LF 211 SLOPE	196+41	196+55 SENECA DRIVE ROUTE 51 SLOPE	197+19	H318-004 1434 LF 1448 SLOPE	211+39	H318-004 / H318-XXX 35 LF 36 SLOPE	211+74	H318-004 / H318-003 193 LF 194 SLOPE	213+67	H318-003 743 LF 757 SLOPE	221+10	FINLEY-ELRAMA ROAD / H318-003 37 LF 38 SLOPE	221+47	H318-XXX / FINLEY-ELRAMA ROAD / H318-003 13 LF 13 SLOPE	221+60	H318-XXX / H318-002 / FINLEY-ELRAMA ROAD 25 LF 25 SLOPE	221+85	H318-XXX / H318-002 110 LF 111 SLOPE	222+95	H318-002 163 LF 163 SLOPE	224+58	
DESIGN	PIPE / COATING	192+18	1	196+41	3	197+19	1	221+06	3	221+86	1	223+45	1	224+58	H-318 / PIPE TO H-148 TAP														
	SLOPE DISTANCE		425'		80'		2416'		80'		273'		103'		H-318 / PIPE TO H-148 TAP														
	CLASS LOCATION / HCA		2																										
ENVIRONMENTAL	CONSTRUCTION EXCLUSION																												
	WETLAND / STREAM								S-BB2 68 LF	W-BB2-WP NO IMPACT			W-BB3 88 LF										S-BB1 92 LF						
	SEDIMENT BARRIER LEFT																												
	SEDIMENT BARRIER RIGHT																												



AERIAL PHOTOGRAPHY DATE: MAY 2015/UNKNOWN

MATERIAL SUMMARY			
MK. NO.	QTY.	DESCRIPTION	
1	921'	20"O.D. X 0.312"W.T. X70 FBE BOND EPOXY	
3	160'	20"O.D. X 0.375"W.T. X70, FBE AND ARO	
-	-	SEDIMENT BARRIER	
6	-	TYPE 1 TEST STATION - PIPELINE	

APPROVED FOR FERC			
REV.	BY	DATE	
0	JSW	10/23/15	
1	HEI	02/06/16	
2	JSW	04/15/16	

APPROVED FOR BIDDING			
REV.	BY	DATE	
-	-	-	

APPROVED FOR CONSTRUCTION			
REV.	BY	DATE	
-	-	-	

ISSUED TO FERC

PLAN VIEW

0' 100' 200' 400'

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 500' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL / PROPOSED TEST STATION
- MAILBOX / LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN / TOWER LEG
- TREE / GUY ANCHOR
- TANK / GAS VALVE
- WELL - GAS/OIL/WATER/MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

20160422 Sam Eric (Special) 4/22/2016 11:40:36 AM

REFERENCE DRAWINGS

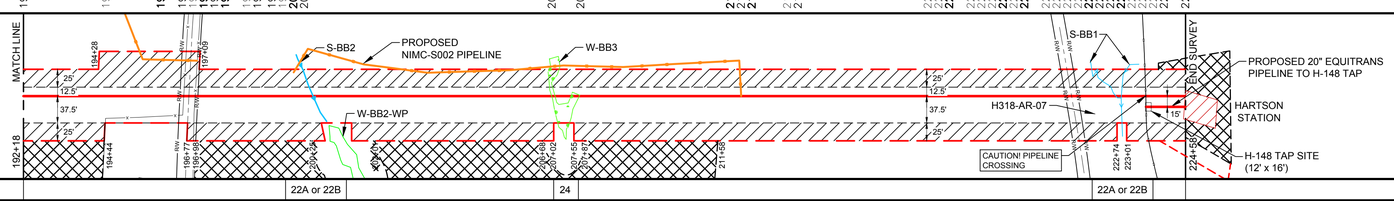
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

192+18 MATCH LINE
194+51 BEGIN WOODS
196+55 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
196+66 FENCE
196+70 END WOODS
196+80 ℄ SENECA DRIVE(GRAVEL)
196+98 FENCE
197+05 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
197+98 POWER POLE 53'RT
198+06 OHP LINE
199+45 FENCE
199+50 BUILDING - SPRING CATCHER 99'LT
200+28 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
200+32 ℄ STREAM(S-BB2)(EPH)
206+95 BEGIN WETLAND(W-BB3)(PEM)
206+73 END WETLAND(W-BB3)(PEM)
211+74 PROPOSED TYPE 1 TEST STATION
212+24 PIPELINE - PROPOSED(NIMC-S002)
213+53 PROPOSED TYPE 1 TEST STATION
213+61 BEGIN WOODS
213+67 FENCE, ℞
221+14 SIGN 95'LT
221+20 END WOODS
221+28 PROPOSED TYPE 1 TEST STATION, OHP LINE RIGHT-OF-WAY, ℞
221+31 GUY ANCHOR 34'RT
221+33 BEGIN ASPHALT
221+42 POWER POLE 29'RT
221+61 END ASPHALT
221+65 PROPOSED TYPE 1 TEST STATION, ℄ FINLEY-ELRAMA ROAD
221+72 POWER POLE 27'RT, VALVE(WATER)21'RT
221+89 GUY ANCHOR 12'RT
222+45 BEGIN WOODS
222+65 END WOODS
222+70 PROPOSED TYPE 1 TEST STATION
222+70 ℄ STREAM(S-BB1)(INT)
222+85 ℄ STREAM(S-BB1)(INT)
222+90 PROPOSED TYPE 1 TEST STATION
223+14 SIGN 71'RT
223+15 POST 2'RT
223+47 LINE MARKER 53'LT
223+55 PIPELINE - EQT - H148, PROPOSED TYPE 4 TEST STATION
224+58 END SURVEY

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY

14 - NON-PARALLEL CONSTRUCTION WITH TOP SOIL SEGREGATION
15 - WETLAND CONSTRUCTION WORKING AREA NON-SATURATED
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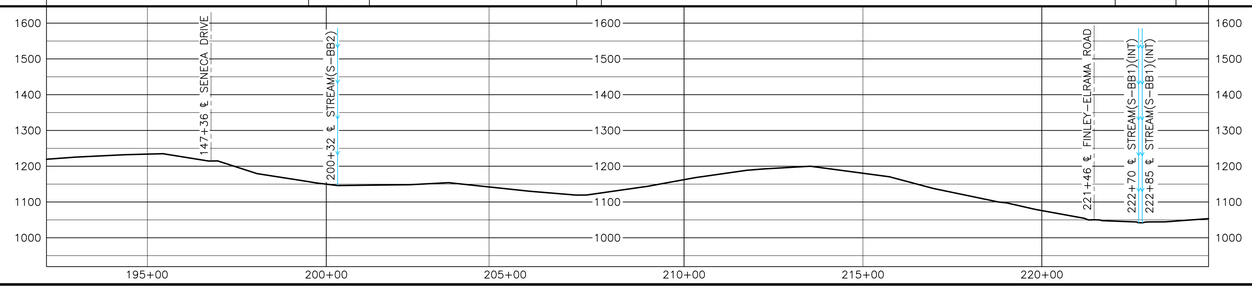
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



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REVISIONS			
REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/06/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

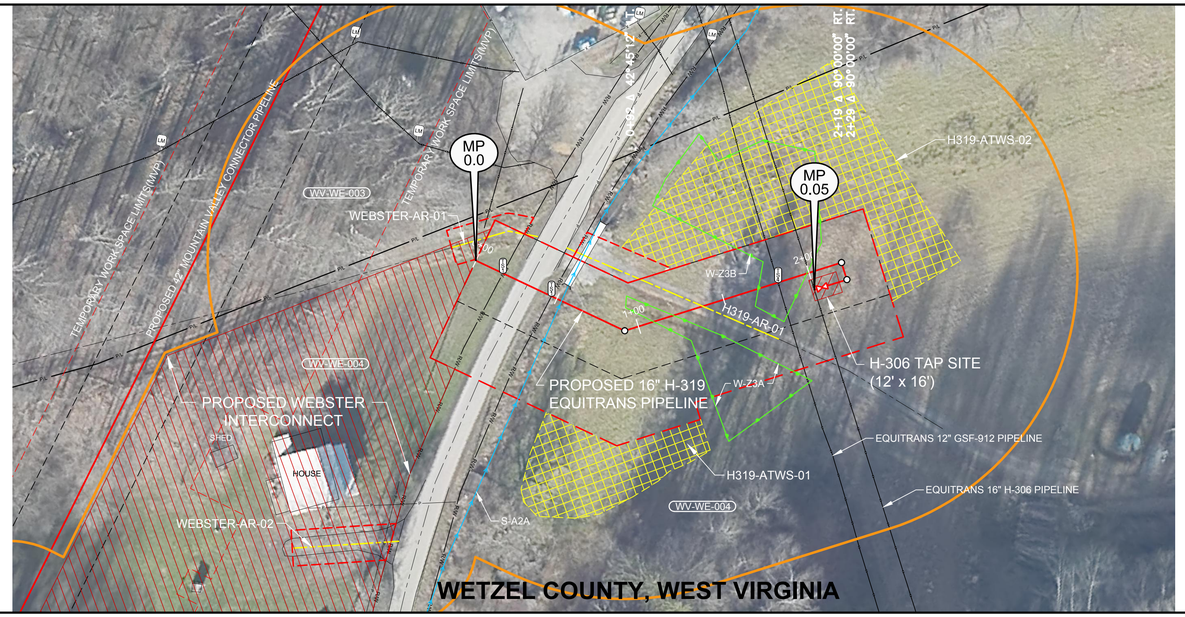
EQUITRANS
PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H318 LINE
UNION TWP, WASHINGTON CO., PA.
STA. 192+18 TO STA. 224+58

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	5/11/2015
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-WAPA-H318-02	
SHEET 6 OF 6	REV. 2
DATE OF PLOT: ----	

RIGHT-OF-WAY & OWNERSHIP DATA		0+00	WV-WE-004 17 LF 17 SLOPE / 0+17 SHUMAN HILL RD (COUNTY ROUTE 80) 24' PAVEMENT / 0+47	WV-WE-004 201 LF 202 SLOPE	2+48
DESIGN	PIPE / COATING	0+00	2	0+80 1	2+48
DESIGN	SLOPE DISTANCE		80'	169'	
DESIGN	CLASS LOCATION / HCA		1		
ENVIRONMENTAL	CONSTRUCTION EXCLUSION				
ENVIRONMENTAL	WETLAND / STREAM			W-Z3A 79 LF / W-Z3B 48 LF	
ENVIRONMENTAL	SEDIMENT BARRIER LEFT				
ENVIRONMENTAL	SEDIMENT BARRIER RIGHT				

0' 20' 40' 80'

PLAN VIEW



LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 50' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- CL ROAD
- CL RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRIKADE FENCE
- PI SYMBOL / PROPOSED TEST STATION
- MAILBOX / LINE MARKER - VENT PIPE
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- SIGN / TOWER LEG
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- TANK / GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

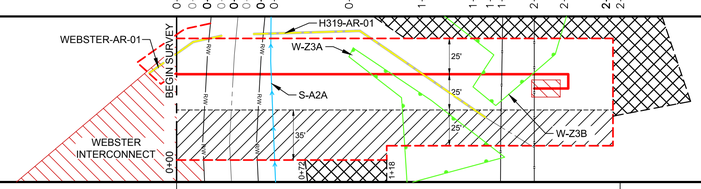
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+28 BEGIN WOODS
0+17 PROPOSED TYPE 1 TEST STATION, ℄
0+25 BEGIN ASPHALT
0+32 ℄ SHUMAN HILL RD(CO RTE 80)
0+39 END ASPHALT
0+47 PROPOSED TYPE 1 TEST STATION, ℄
0+54 ℄ STREAM(S-A2A)(PER)
0+96 BEGIN WETLAND(W-Z3A)(PEM)
1+37 ACCESS RD - TEMPORARY(H319-AR-01)
1+66 BEGIN WETLAND(W-Z3B)(PEM)
1+75 END WETLAND(W-Z3A)(PEM)
1+82 PIPELINE - EQT GSF-912, PROPOSED TYPE 4 TEST STATION
2+00 PIPELINE - EQT H306
2+14 END WETLAND(W-Z3B)(PEM)
2+43 PROPOSED MAIN LINE VALVE
2+48 PIPELINE - EQT H306, END H-319

WORK SPACE

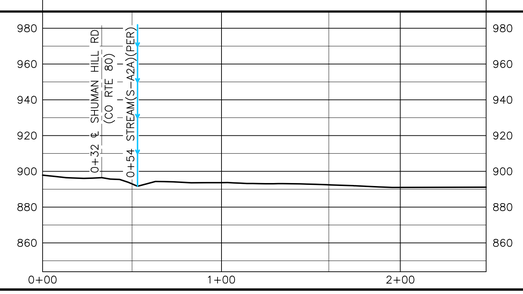
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY
XX - "XX" H-319 TYPICAL CONSTRUCTION
XX - XX H-319 BORE ROAD CROSSING

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

AERIAL PHOTOGRAPHY DATE: DECEMBER 2014

MATERIAL SUMMARY

MK. NO.	QTY.	SIZE & DESCRIPTION
1	169'	18"O.D. X 0.375"W.T. X65, FUSION BOND EPOXY
2	80'	18"O.D. X 0.375"W.T. X65, FBE & ARO
		SEDIMENT BARRIER
2		TYPE 1 TEST STATION - PIPELINE
1		TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR CONSTRUCTION			APPROVED FOR BIDDING			APPROVED FOR FERC		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
						0	JSW	10/23/15

ISSUED TO FERC

EQUITRANS
PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H319 LINE
GRANT DISTRICT, WETZEL CO., W.V.
STA. 0+00 TO STA. 2+48

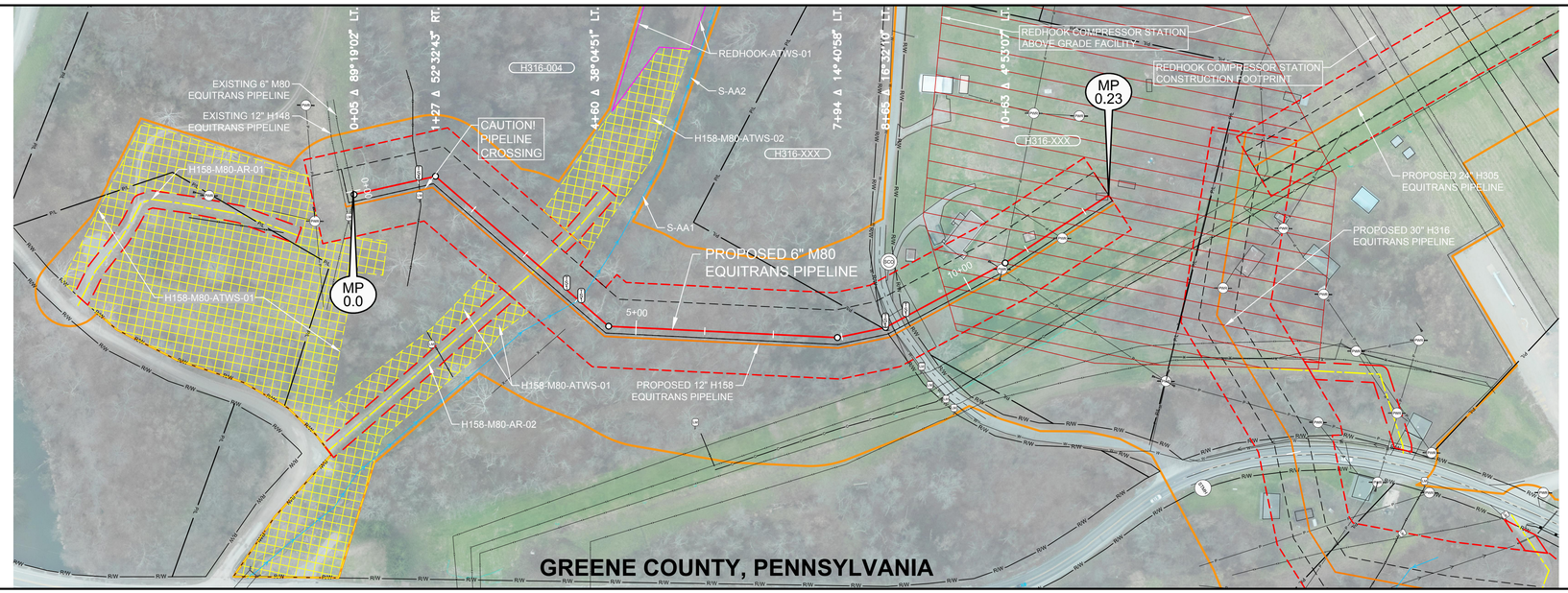
HORZ. SCALE: 1" = 40'	
DRAWN BY: HEI(JDB)	9/2/2015
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-WEWV-H319-01	
SHEET 1 OF 1	REV. 2
DATE OF PLOT: 4/14/2016 2:27 PM	

2016/04/14 14:27 P:\15-03-071 (Equitrans Special) 4/22/2016 11:40:36 AM

RIGHT-OF-WAY & OWNERSHIP DATA		H316-004 762 LF 795 SLOPE; H316-XXX 103 LF 106 SLOPE; H316-004; BRADEN RUN RD; H316-XXX 10 LF 10 SLOPE; BRADEN RUN RD 20 LF 20 SLOPE; H316-XXX; BRADEN RUN RD 20 LF 20 SLOPE; H316-XXX 324 LF 326 SLOPE
DESIGN	PIPE / COATING	1
DESIGN	SLOPE DISTANCE	885'
DESIGN	CLASS LOCATION / HCA	1
ENVIRONMENTAL	CONSTRUCTION EXCLUSION	
ENVIRONMENTAL	WETLAND / STREAM	S-AA1 27 LF
ENVIRONMENTAL	SEDIMENT BARRIER LEFT	
ENVIRONMENTAL	SEDIMENT BARRIER RIGHT	

0+00 7+62 8+65 8+75 8+97 9+17 12+43

2 80' 1 314'



0' 50' 100' 200'

PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED PIPELINE
- 100' TICK MARK
- EXISTING PIPELINE
- PERMANENT EASEMENT
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- ANCILLARY SITE
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRACADE FENCE
- PI SYMBOL — PROPOSED TEST STATION
- MAILBOX — LINE MARKER - VENT PIPE
- POWER/TELE POLE
- SIGN — TOWER LEG
- TREE — GUY ANCHOR
- TANK — GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY

REFERENCE DRAWINGS

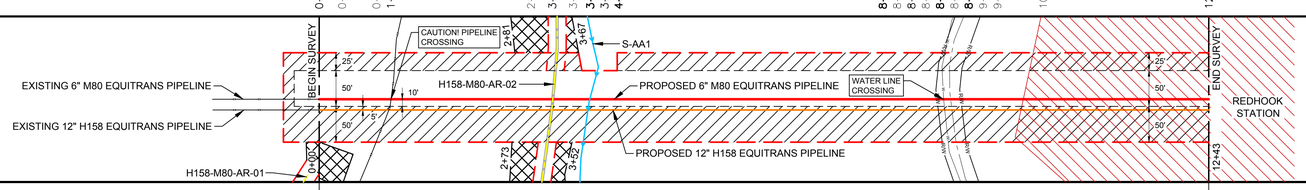
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+32 BEGIN WOODS
0+96 LINE MARKER 32'RT
1+00 PIPELINE – FOREIGN – UNKNOWN, PROPOSED TYPE 4 TEST STATION
2+96 END WOODS
3+26 ACCESS ROAD – TEMPORARY(AR-158-02)
3+55 BEGIN WOODS
3+78 PROPOSED TYPE 1 TEST STATION
3+99 ℄ STREAM(AA-1)(PER)
4+09 PROPOSED TYPE 1 TEST STATION
8+66 PROPOSED TYPE 1 TEST STATION, ℞
8+71 END WOODS
8+74 UNGRD UTILITY – WATER
8+75 BEGIN ASPHALT
8+84 ℄ BRADEN RUN(ASPHALT)
8+92 END ASPHALT
8+99 PROPOSED TYPE 1 TEST STATION, ℞
9+15 SANITARY CLEAN OUT 82'LT
9+48 BARN CORNER 64'LT
10+12 HOUSE CORNER 33'LT
12+43 END SURVEY

WORK SPACE

- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)

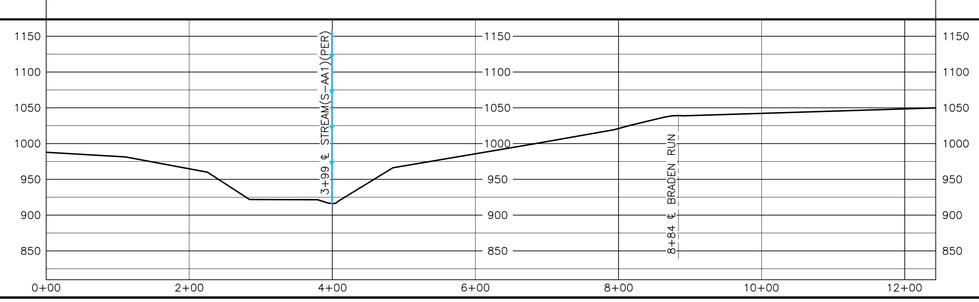


CONSTRUCTION METHOD

CONSTRUCTION METHOD KEY

27 - 6" M-80 PARALLEL CONSTRUCTION
28 - 12" H-158 PARALLEL CONSTRUCTION
29 - 6" M-80 OPEN CUT ROAD CROSSING
30 - 12" H-158 OPEN CUT ROAD CROSSING
31 - 6" M-80 OPEN CUT - DAM AND PUMP
32 - 12" H-158 OPEN CUT - DAM AND PUMP
33 - 6" M-80 OPEN CUT - FLUME
34 - 12" H-158 OPEN CUT - FLUME
33 - 6" M-80 PIPELINE CROSSING
34 - 12" H-158 PIPELINE CROSSING
35 -
36 -
37 - 6" M-80 BORED ROAD CROSSING
38 - 12" H-158 BORED ROAD CROSSING
39 - 24" H-305 OPEN CUT PIPELINE CROSSING
40 - 24" H-305 PARALLEL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2

AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	1199'	6.625"O.D. X 0.280"W.T. - PLIDON BOND EPOXY
2	80'	6.625"O.D. X 0.280"W.T. - X42, FBE & ARO
-	-	SEDIMENT BARRIER
4	-	TYPE 1 TEST STATION - PIPELINE
1	-	TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR CONSTRUCTION			
REV.	BY	DATE	
-	-	-	

APPROVED FOR BIDDING			
REV.	BY	DATE	
-	-	-	

APPROVED FOR FERC			
REV.	BY	DATE	
0	JSW	10/23/15	

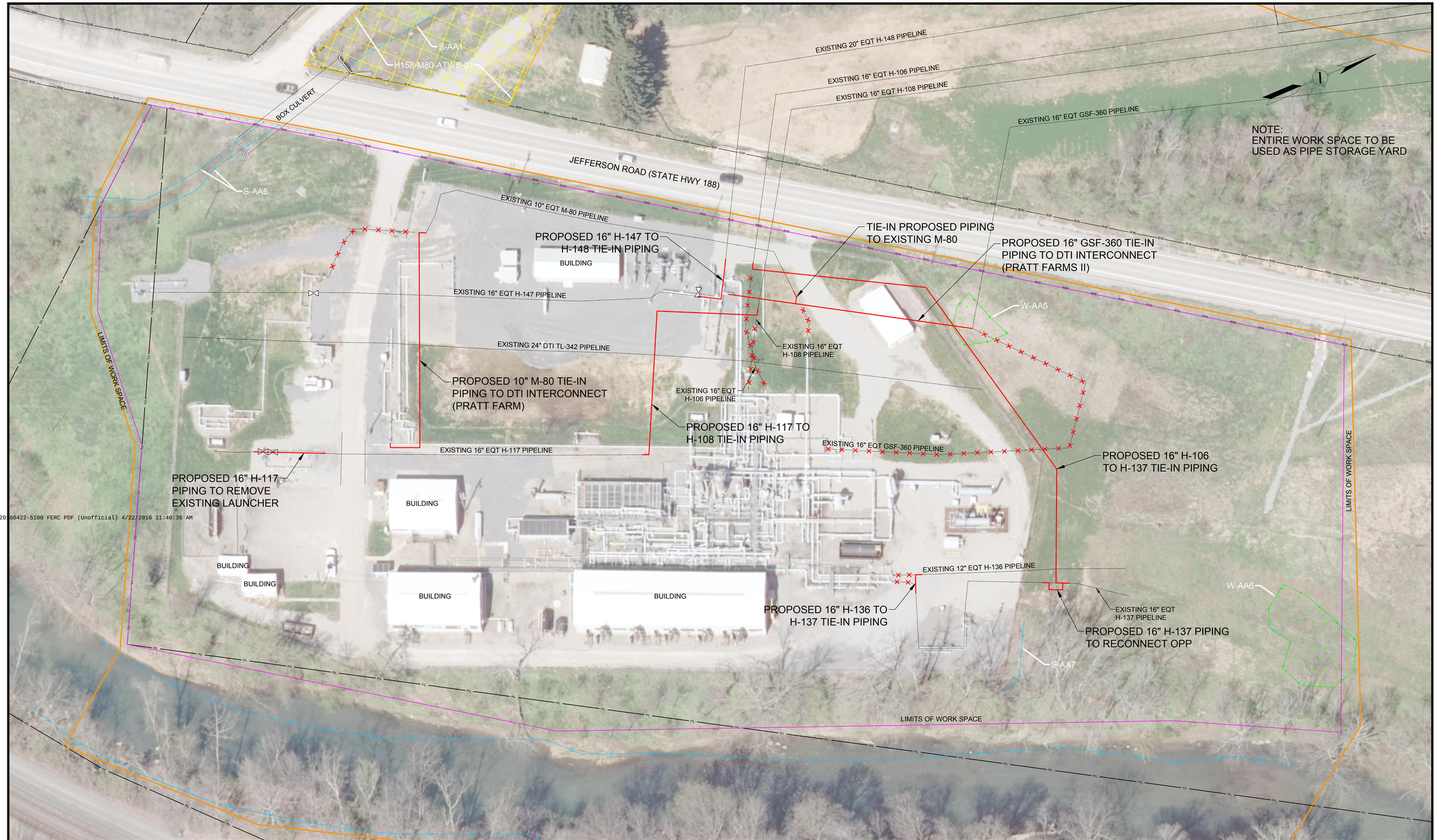
ISSUED TO FERC

EQUITRANS

PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - M80 LINE
FRANKLIN TWP, GREENE CO., PA.
STA. 0+00 TO STA. 12+33

HORZ. SCALE: 1" = 100'
DRAWN BY: HEI(JDB) 8/31/2015
DRAFTING CK:
ENGINEERING CK:
CONSTRUCTION CK:
ENVIRONMENTAL CK:
AFE/P.O.NO.:
HEI PROJECT NO.: 15-03-071
DRAWING NO.: PA-GRPA-M80-01
SHEET 1 OF 1 REV. 2
DATE OF PLOT: 4/14/2016 9:12 AM

20160422-5106 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM



20160422-5100 FERC PDF (Unofficial) 4/22/2016 11:40:36 AM

LEGEND

- PROPOSED PIPELINE
- EXISTING PIPELINE TO REMAIN
- EXISTING PIPELINE TO BE REMOVED
- WORK SPACE LIMITS
- PERMANENT ACCESS RD
- TEMPORARY ACCESS RD
- LAYDOWN CONTRACTOR YARD
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM (PROVIDED BY OTHERS)
- DELINEATED WETLAND (PROVIDED BY OTHERS)
- ABOVE GROUND FACILITY
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- LINE MARKER
- POWER/TELE POLE
- TANK
- TREE
- GUY ANCHOR
- GAS VALVE
- GAS/OIL/WATER WELL
- GATE POST
- ELEC/GAS/WTR METER
- CULVERT

PROJECTION: UTM ZONE 17 HORIZONTAL DATUM: NAD 83 US SURVEY FEET VERTICAL DATUM: NAVD88

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
-	....

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
2	HEI	04/15/16	ISSUED FOR RESPONSE TO DATA REQUEST #2

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APPROVED FOR FERC			APPROVED FOR BIDDING			APPROVED FOR CONSTRUCTION		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	-	....	../../..	-	....	../../..
2	JSW	04/15/16						

HORZ. SCALE: 1" = 30'	
DRAWN BY: HEI(JDB)	09/24/15
DRAFTING CK:	-
ENGINEERING CK:	
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
UEI FILE NO.	
DRAWING NO.:	
SITE-PRATT-01	
SHEET 1 OF 1	REV. 2
DATE OF PLOT: 4/14/16 9:40 AM	

EQUITRANS

PRATT COMPRESSOR STATION MODIFACTIONS
EQUITRANS EXPANSION PROJECT
GREENE COUNTY, PENNSYLVANIA

Document Content(s)

CP16-13 data response update (alignment sheets).PDF.....1-1

PUBLIC_Access & Ancillary Sites(FDR-2).PDF.....2-4

PUBLIC_Access Road Detail Sheets(FDR-2).PDF.....5-7

PUBLIC_H158 Alignment Sheet(FDR-2).PDF.....8-8

PUBLIC_H305 Alignment Sheet(FDR-2).PDF.....9-9

PUBLIC_H316 Alignment Sheets(FDR-2).PDF.....10-13

PUBLIC_H318 Alignment Sheets(FDR-2).PDF.....14-19

PUBLIC_H319 Alignment Sheets(FDR-2).PDF.....20-20

PUBLIC_M80 Alignment Sheet(FDR-2).PDF.....21-21

PUBLIC_Pratt Site Plan(FDR-2).PDF.....22-22