Equitrans, L.P.
Equitrans Expansion Project
Docket No. CP16-13-000
Supplemental Materials Submitted October 31, 2016

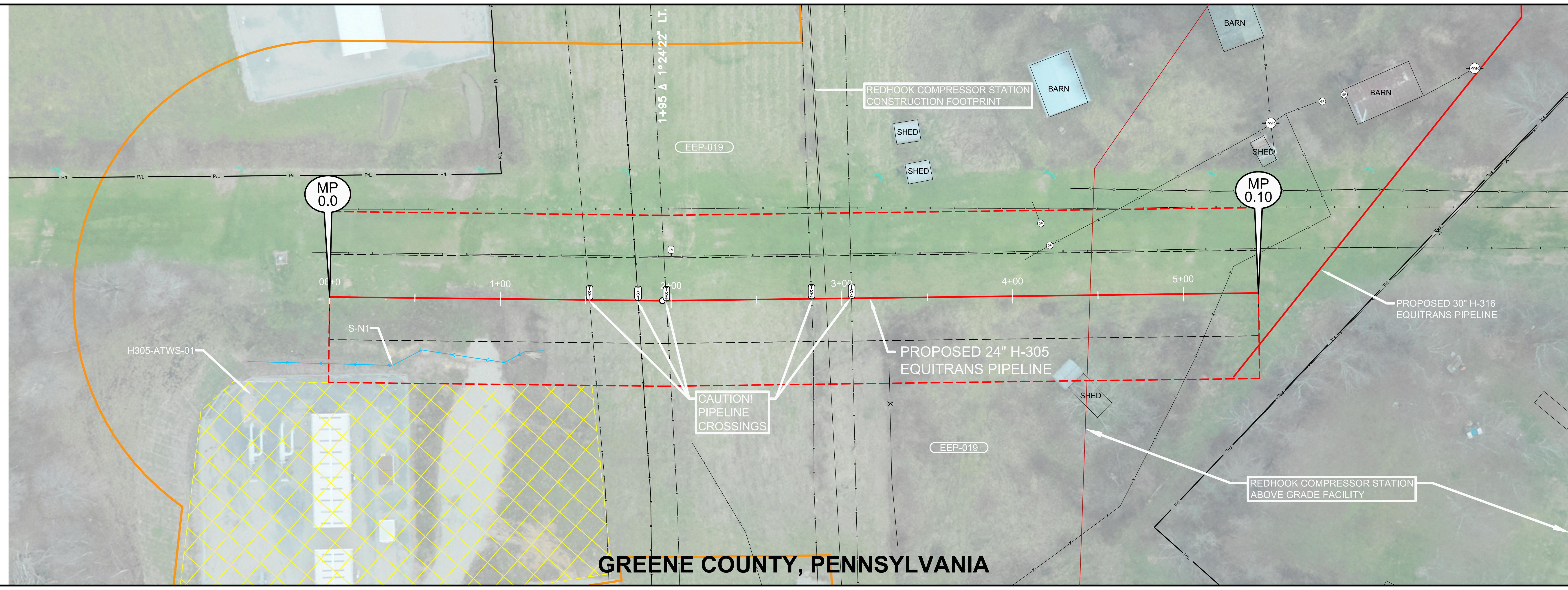
Attachment B-1

Alignment Sheets
Updated October 2016

RIGHT-OF-WAY & OWNERSHIP DATA	0+00	EEP-019 544 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
- BARRICADE 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

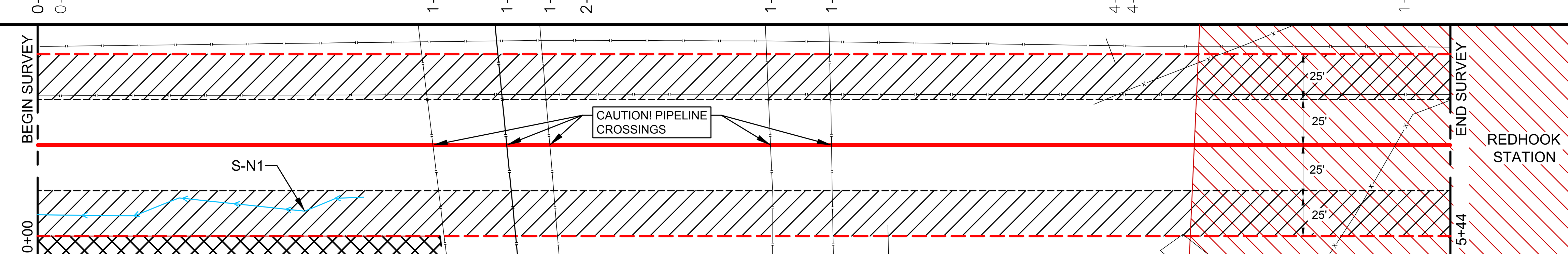
ISSUED FOR REVIEW

HORIZONTAL STATIONING

- 0+00 BEGIN SURVEY
- 0+28 BEGIN WOODS
- 1+52 FOREIGN PIPELINE – TEXAS EASTERN, PROPOSED TYPE 4 TEST STATION
- 1+81 FOREIGN PIPELINE – UNKNOWN PROPOSED TYPE 4 TEST STATION
- 1+97 FOREIGN PIPELINE – TEXAS EASTERN 2, PROPOSED TYPE 4 TEST STATION
- 2+00 LINE MARKER 25'LT
- 1+52 FOREIGN PIPELINE – TEXAS EASTERN 15, PROPOSED TYPE 4 TEST STATION
- 1+52 FOREIGN 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

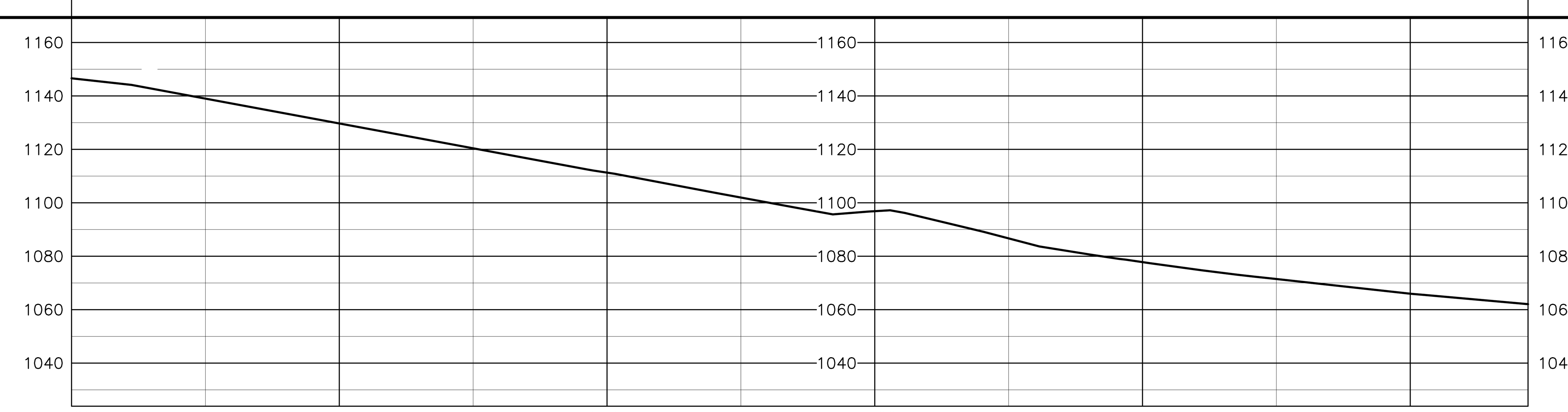
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



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



AERIAL PHOTOGRAPHY DATE: UNKNOWN

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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
3	HEI	07/20/16	ISSUED FOR REVIEW

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

APPROVED FOR BIDDING — REV. BY DATE
APPROVED FOR CONSTRUCTION — REV. BY DATE

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. 3
DATE OF PLOT: 7/20/2016 7:12 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

	0+00 to 8+29	8+29 to 8+81	8+81 to 8+92	8+92 to 9+16	9+16 to 9+27	9+27 to 12+63
Parcel	EEP-012 EQUITRANS LP	EEP-013 EQUITRANS LP / EEP-012 EQUITRANS LP	EEP-013 EQUITRANS LP	BRADEN RUN RD	EEP-014 ROY T FOX / BRADEN RUN RD / EEP-012 EQUITRANS LP	EEP-014 ROY T FOX
Length	829 LF 862 SLOPE	52 LF 53 SLOPE	11 LF 11 SLOPE		11 LF 11 SLOPE	336 LF 336 SLOPE

DESIGN

PIPE / COATING	0+00 – 8+64: 1	8+64 – 9+44: 2	9+44 – 12+63: 1
SLOPE DISTANCE	897'	80'	320'
CLASS LOCATION / HCA	1		

ENVIRONMENTAL

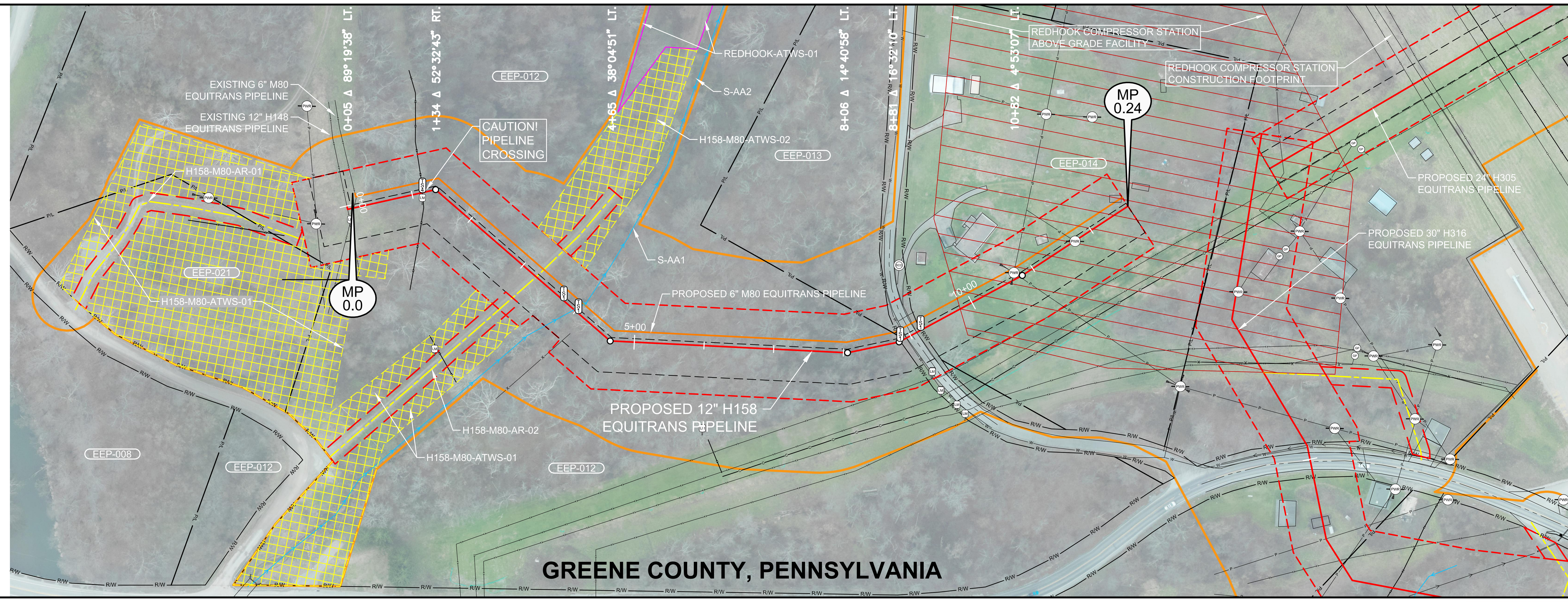
CONSTRUCTION EXCLUSION	
WETLAND / STREAM	S-AA1 27 LF
SEDIMENT BARRIER LEFT	
SEDIMENT BARRIER RIGHT	

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



AERIAL PHOTOGRAPHY DATE: UNKNOWN

ISSUED FOR REVIEW

REFERENCE DRAWINGS

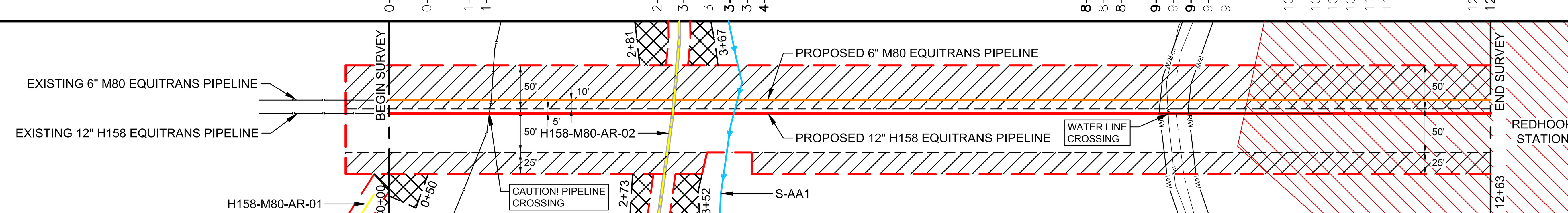
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+49 BEGIN WOODS
1+01 LINE MARKER 32'RT
1+15 PIPELINE - FOREIGN - UNKNOWN, PROPOSED TYPE 4 TEST STATION
2+96 END WOODS
3+25 ACCESS ROAD - TEMPORARY(AR-158-02)
3+55 BEGIN WOODS
3+76 PROPOSED TYPE 1 TEST STATION
3+95 ℄ STREAM(S-AA1)(PER)
4+06 PROPOSED TYPE 1 TEST STATION
8+83 PROPOSED TYPE 1 TEST STATION, ℄
8+89 END WOODS
8+93 UNGRD UTILITY - WATER, BEGIN ASPHALT
9+02 ℄ BRADEN RUN(ASPHALT)
9+10 END ASPHALT
9+16 PROPOSED TYPE 1 TEST STATION, ℄
9+33 SANITARY CLEAN OUT 97'LT
9+66 BARN CORNER 79'LT
10+31 HOUSE CORNER 48'LT
10+62 GUY ANCHOR 4'RT & 29'LT
10+73 POWER POLE 9'LT
10+78 OHP LINES
11+24 FOUNDATION CORNER 24'LT
11+40 FOUNDATION CORNER 20'LT
12+58 SHED CORNER 10'LT
12+63 END SURVEY

WORK SPACE

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



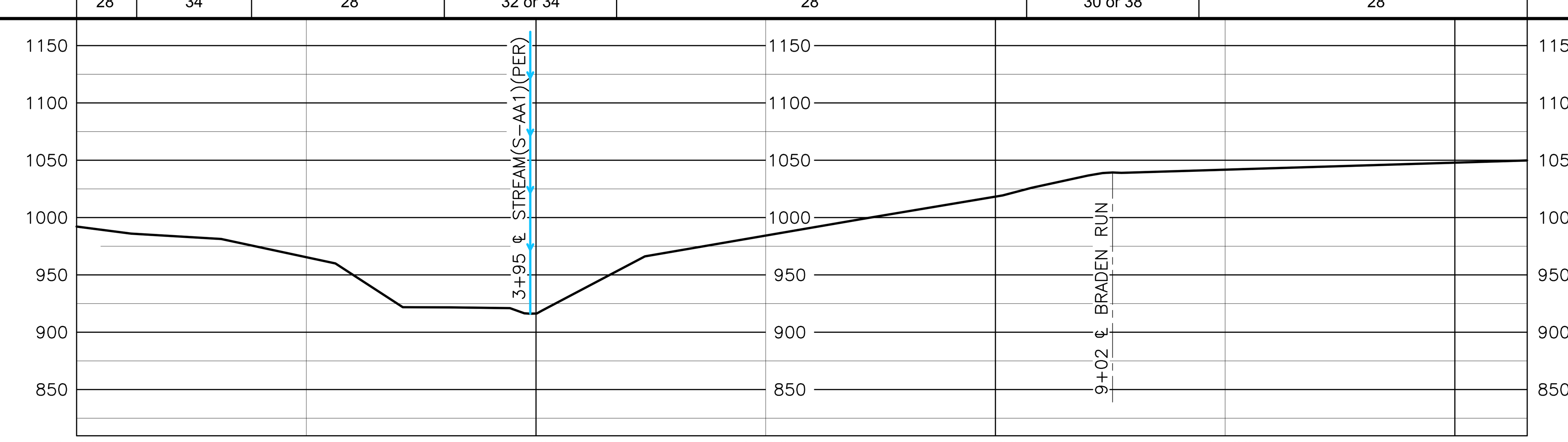
CONSTRUCTION METHOD

28	34	28	32 or 34	28	30 or 38	28

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
35 - 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
3	HEI	07/20/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY	DESCRIPTION
1	1217'	12.75"O.D. X 0.375"W.T. X52, FUSION BOND EPOXY
2	80'	12.75"O.D. X 0.375"W.T. 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

EQUITRANS

PIPELINE ALIGNMENT
EQUITRANS EXPANSION PROJECT - H158 LINE
FRANKLIN TWP, GREENE CO., PA.
STA. 0+00 TO STA.12+63

HORZ. SCALE: 1" = 100'	
DRAWN BY: HEI(JDB)	8/25/2015
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-GRPA-H158-01	
SHEET 1 OF 1	REV. 2
DATE OF PLOT: 7/20/2016 7:06 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

0+00 – 7+62	H316-012	EQUITRANS LP	762 LF, 795 SLOPE
7+62 – 8+65	H316-013 / H316-012	EQUITRANS LP	103 LF, 106 SLOPE
8+65 – 8+75	H316-013	EQUITRANS LP	10 LF, 10 SLOPE
8+75 – 8+97		BRADEN RUN RD	22 LF, 22 SLOPE
8+97 – 9+17	H316-014	ROY T FOX / BRADEN RUN RD	20 LF, 20 SLOPE
9+17 – 12+43	H316-014	ROY T FOX	324 LF, 326 SLOPE

DESIGN

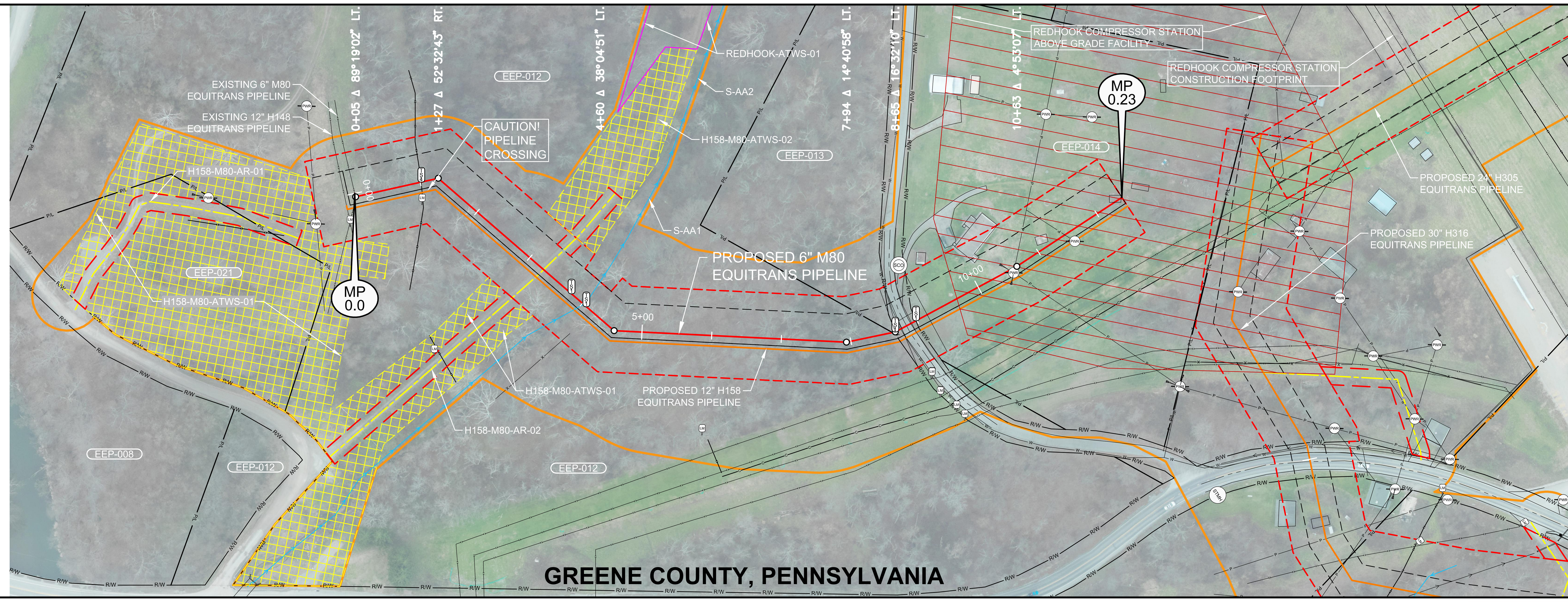
PIPE / COATING	0+00 – 8+50: 1	8+50 – 9+30: 2	9+30 – 12+43: 1
SLOPE DISTANCE	885'	80'	314'
CLASS LOCATION / HCA	1		

ENVIRONMENTAL

CONSTRUCTION EXCLUSION	
WETLAND / STREAM	S-AA1, 27 LF
SEDIMENT BARRIER LEFT	
SEDIMENT BARRIER RIGHT	

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
- BARRICADE 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

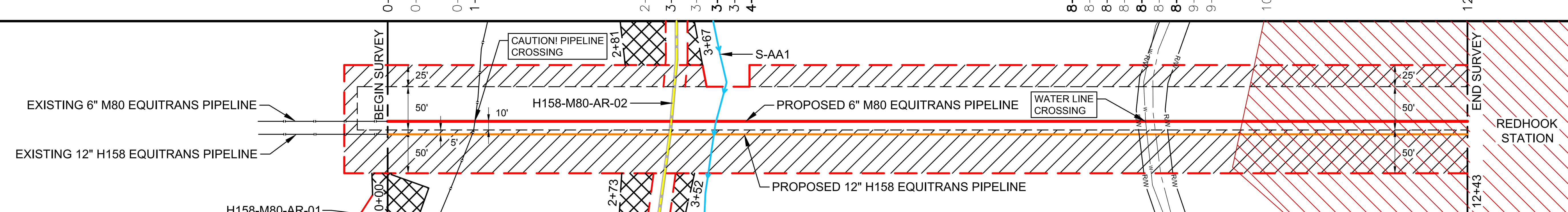
ISSUED FOR REVIEW

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)



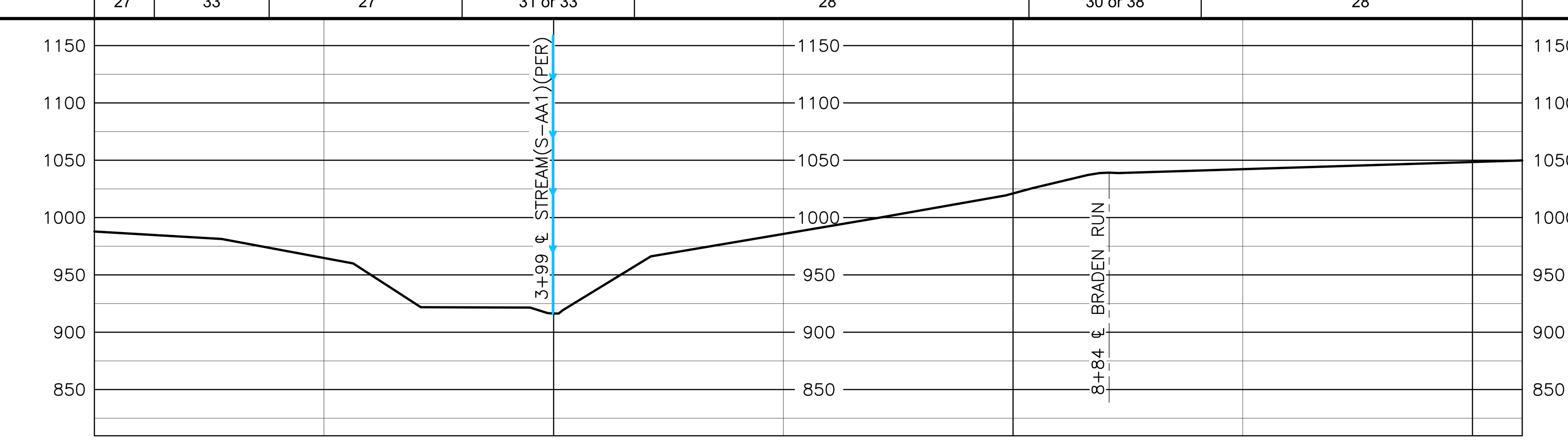
CONSTRUCTION METHOD

0+00 – 0+32	27
0+32 – 1+00	33
1+00 – 3+26	27
3+26 – 4+09	31 or 33
4+09 – 8+66	28
8+66 – 8+99	30 or 38
8+99 – 12+43	28

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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AERIAL PHOTOGRAPHY DATE: UNKNOWN

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
3	HEI	07/20/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	1199'	6.625"O.D. X 0.280"W.T., X42, FUSION 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

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. 3
DATE OF PLOT: 7/20/2016 9:58 PM	

RIGHT-OF-WAY & OWNERSHIP DATA	EEP-281.03: 0+00 – 1+92, 192 LF, 193 SLOPE	EEP-281.03 / EEP-220: 1+92 – 2+15, 23 LF, 23 SLOPE	EEP-220: 2+15 – 22+75, 2060 LF, 2066 SLOPE	EEP-220 / EEP-219: 22+75 – 23+27, 52 LF, 52 SLOPE	EEP-219: 23+27 – 32+00, 873 LF, 875 SLOPE

DESIGN		
PIPE / COATING	0+00 – 32+00	1
SLOPE DISTANCE		3208'
CLASS LOCATION / HCA		1

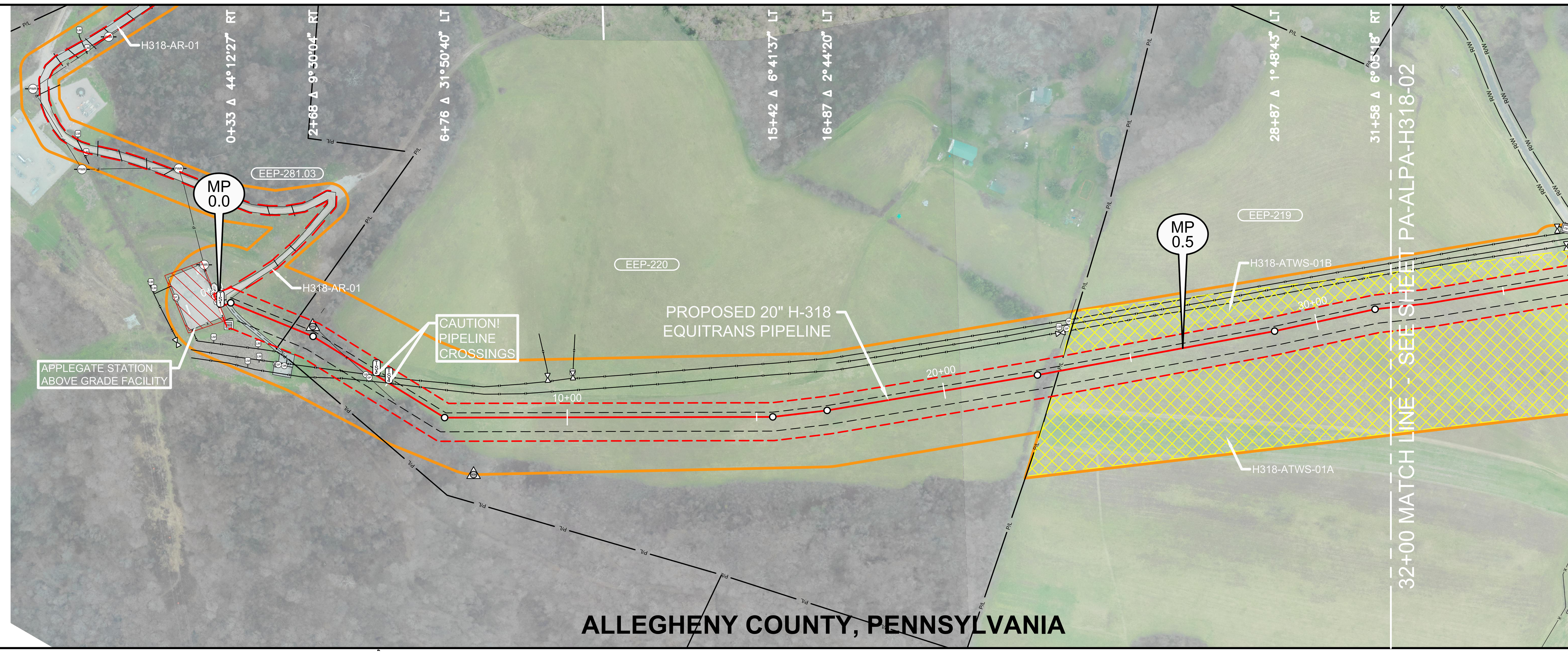
ENVIRONMENTAL	
CONSTRUCTION EXCLUSION	
WETLAND / STREAM	
SEDIMENT BARRIER LEFT	
SEDIMENT BARRIER RIGHT	

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
- 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



AERIAL PHOTOGRAPHY DATE: MAY 2015

ISSUED FOR REVIEW

REFERENCE DRAWINGS

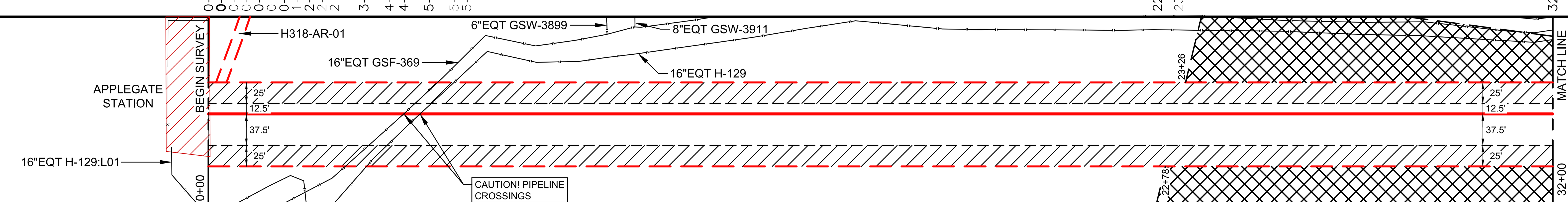
DRAWING NO.	DESCRIPTION

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+32 END ROCK
- 0+41 ACCESS RD - PERMANENT(H318-AR-01)25'LT
- 1+47 LINE MARKER, 87'RT
- 2+06 PI
- 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)
- 5+04 PROPOSED TYPE 4 TEST STATION
- PIPELINE - EQT - 16"H-129(4.9'COVER)
- PROPOSED TYPE 4 TEST STATION
- 5+83 BEGIN WOODS
- 5+97 END WOODS
- 22+89 PI
- 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)

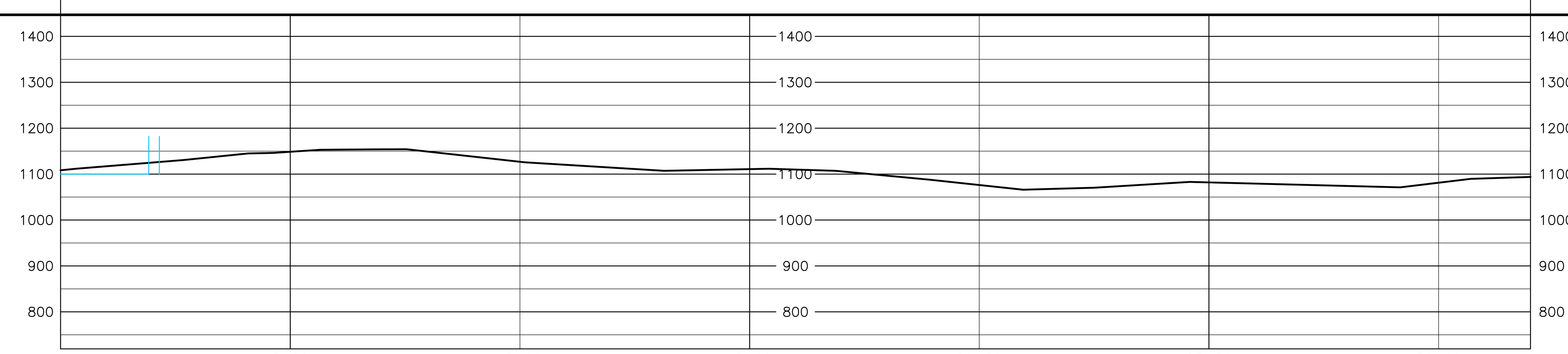


CONSTRUCTION METHOD

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



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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
3	HEI	08/03/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3208'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
	.	SEDIMENT BARRIER
	2	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
1	JSW	02/05/16

EQUITRANS

PIPELINE ALIGNMENT

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

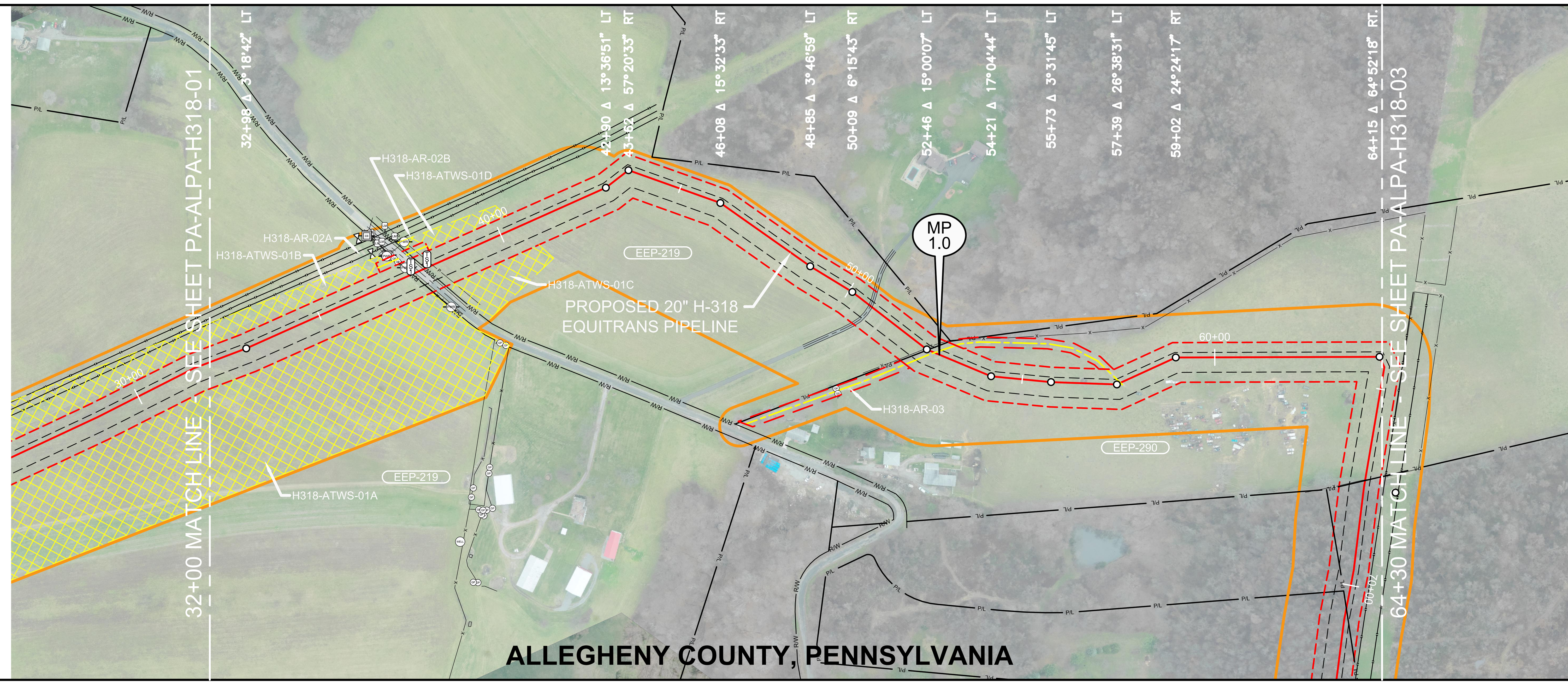
HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	6/30/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-ALPA-H318-01	
SHEET 1 OF 6	REV. 3
DATE OF PLOT: 8/3/2016 5:56 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

DESIGN	PIPE / COATING	1, 3, 1, 3, 1
	SLOPE DISTANCE	534', 80', 1257', 40', 1351'
	CLASS LOCATION / HCA	1
ENVIRONMENTAL	CONSTRUCTION EXCLUSION	
	WETLAND / STREAM	
	SEDIMENT BARRIER LEFT	
	SEDIMENT BARRIER RIGHT	

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
- BARRICADE 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

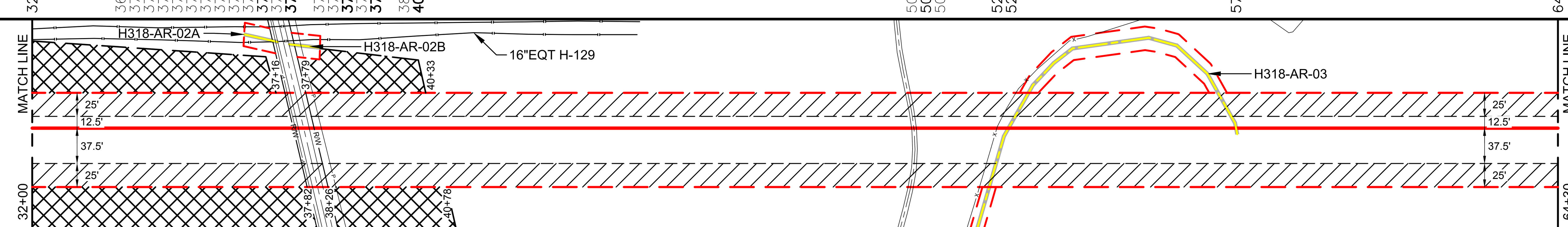
HORIZONTAL STATIONING

32+00 MATCH LINE
36+84 VALVE(GAS)89'LT
37+01 LINE MARKER 93'LT
37+13 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 69'LT
37+47 POWER POLE 22'LT
37+48 LINE MARKER 91'LT
37+56 FENCE
37+57 OHP LINE
37+60 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℄
37+64 BEGIN ASPHALT
37+74 POWER POLE 83'LT
37+74 ℄ RIPPEL ROAD
37+86 END ASPHALT
37+97 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℄
38+12 OHP 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

ISSUED FOR REVIEW

WORK SPACE

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

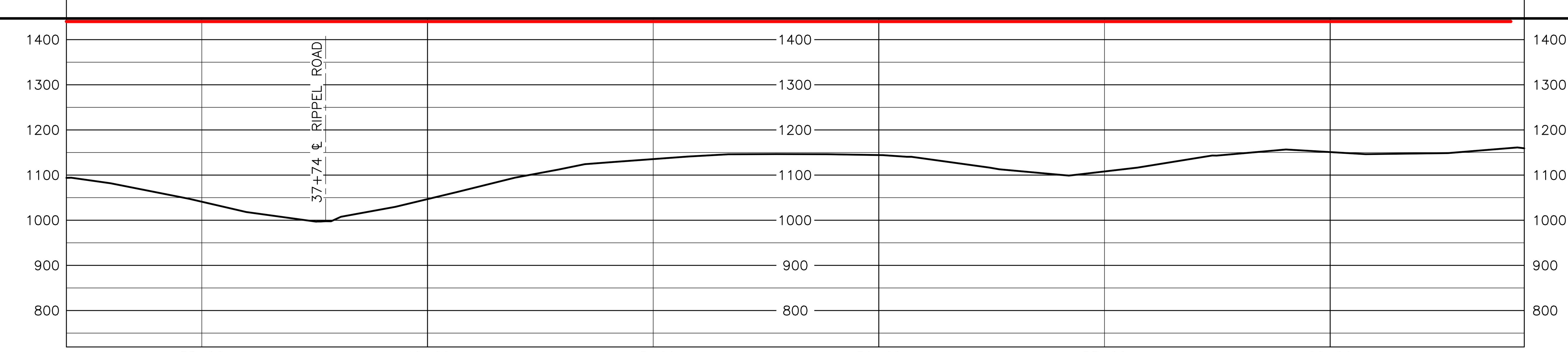


CONSTRUCTION METHOD

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

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
3	HEI	08/03/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3142'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
3	120'	20"O.D. X 0.375"W.T., X70, FBE AND ARO
		SEDIMENT BARRIER
	2	TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

APPROVED FOR BIDDING

APPROVED FOR FERC

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

HOLLAND ENGINEERING

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)	6/30/2016
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. 3
DATE OF PLOT: 8/3/2016 5:56 PM	

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H318 LINE
FORWARD TWP, ALLEGHENY CO., PA.
STA. 64+30 TO STA. 115+71

ISSUED FOR REVIEW

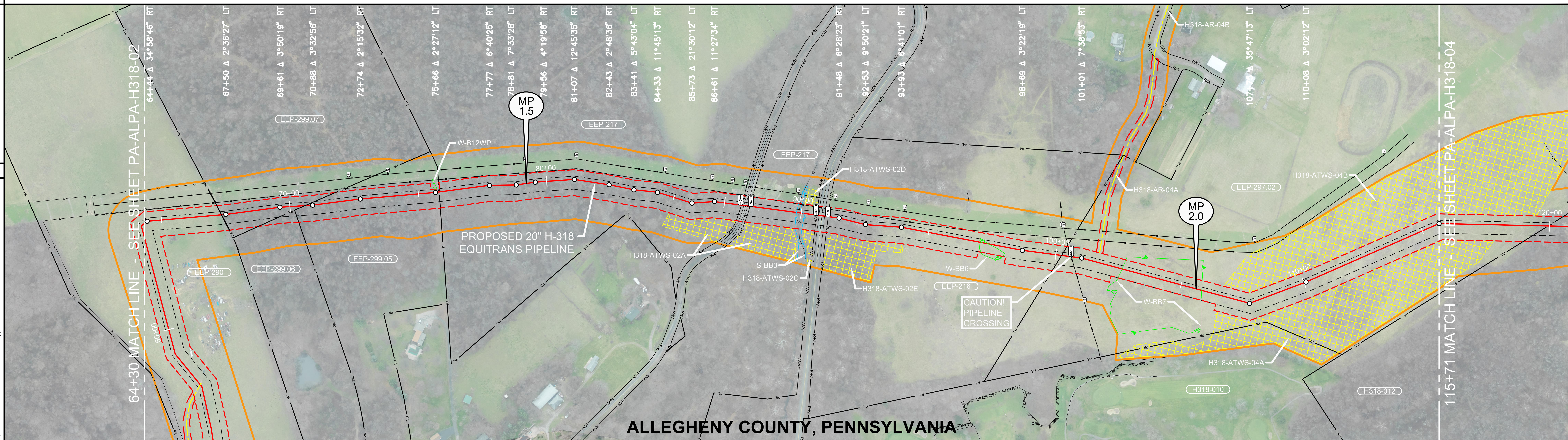
RIGHT-OF-WAY & OWNERSHIP DATA		EEP-290 (288 LF, 290 SLOPE); EEP-299.07 (39 LF, 39 SLOPE); EEP-299.07 (111 LF, 112 SLOPE); EEP-299.07 (149 LF, 151 SLOPE); EEP-299.07 (13 LF, 13 SLOPE); EEP-299.07 (153 LF, 155 SLOPE); EEP-299.05 (398 LF, 401 SLOPE); EEP-217 (1185 LF, 1210 SLOPE); RIPPEL ROAD; EEP-217 (261 LF, 267 SLOPE); RACOON RUN ROAD; EEP-216 (890 LF, 912 SLOPE); EEP-216 (44 LF, 44 SLOPE); EEP-297.02 (1532 LF, 1534 SLOPE)
DESIGN	PIPE / COATING	1 · 3 · 1 · 3 · 1
	SLOPE DISTANCE	2350' · 80' · 245' · 80' · 2473'
	CLASS LOCATION / HCA	1
ENVIRONMENTAL	CONSTRUCTION EXCLUSION	
	WETLAND / STREAM	W-BB12-WP 15 LF · S-BB3 32 LF · W-BB6 103 LF · W-BB7 333 LF
	SEDIMENT BARRIER LEFT	
	SEDIMENT BARRIER RIGHT	

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; BARRICADE 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

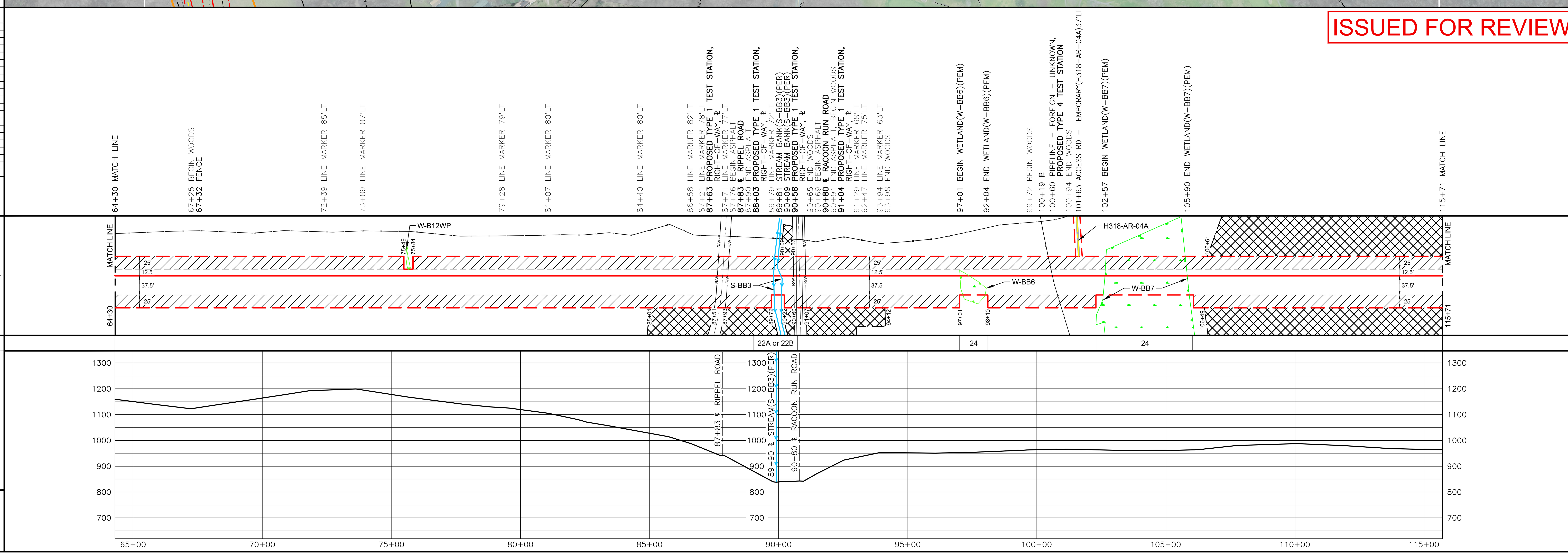
HORIZONTAL STATIONING

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



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
3	HEI	08/03/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5068'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
3	160'	20"O.D. X 0.375"W.T., X70, FBE AND ARO
	.	SEDIMENT BARRIER
	4	TYPE 1 TEST STATION - PIPELINE
	2	TYPE 4 TEST STATION - FOREIGN CROSSING

APPROVED FOR FERC

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

APPROVED FOR BIDDING

APPROVED FOR CONSTRUCTION

HOLLAND ENGINEERING
220 Hoover Boulevard, Suite 2
Holland, Michigan 49423-3766
T 616-392-5938 F 616-392-2116
www.hollandengineering.com

EQUITRANS

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	6/30/2016
DRAFTING CK:	
ENGINEERING CK:	
CONSTRUCTION CK:	
ENVIRONMENTAL CK:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 15-03-071	
DRAWING NO.: PA-ALPA-H318-03	
SHEET 3 OF 6	REV. 3
DATE OF PLOT: 8/3/2016 5:57 PM	

PIPELINE ALIGNMENT

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

ISSUED FOR REVIEW

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Parcel	Length
115+71 – 118+98	EEP-297.02	327 LF / 327 SLOPE
118+98 – 120+51	EEP-297.02 / EEP-203	153 LF / 153 SLOPE
120+51 – 140+48	EEP-203 (EQUATION: 129+16 BACK= 129+31 AHEAD)	1997 LF / 2005 SLOPE
140+48 – 141+52	EEP-203 / EEP-221	104 LF / 106 SLOPE
141+52 – 143+40	EEP-221	188 LF / 195 SLOPE
143+40 – 146+96	EEP-203	356 LF / 362 SLOPE
146+96 – 147+34	BUNOLA RIVER ROAD / EEP-203	38 LF / 38 SLOPE
147+34 – 147+90	EEP-266 / BUNOLA RIVER ROAD	56 LF / 56 SLOPE
147+90 – 149+96	EEP-266	206 LF / 209 SLOPE
149+96 – 150+19	EEP-266 / EEP-203	23 LF / 23 SLOPE
150+19 – 151+71	EEP-203	152 LF / 155 SLOPE
151+71 – 152+17	EEP-266	46 LF / 47 SLOPE
152+17 – 153+96	EEP-203	179 LF / 180 SLOPE
153+96 – 154+80	EEP-209 / EEP-203	84 LF / 84 SLOPE
154+80 – 155+52	EEP-209	72 LF / 72 SLOPE
155+52 – 155+79	EEP-209 / MONONGAHELA RIVER	27 LF / 27 SLOPE
155+79 – 159+62	MONONGAHELA RIVER	383 LF / 383 SLOPE

DESIGN

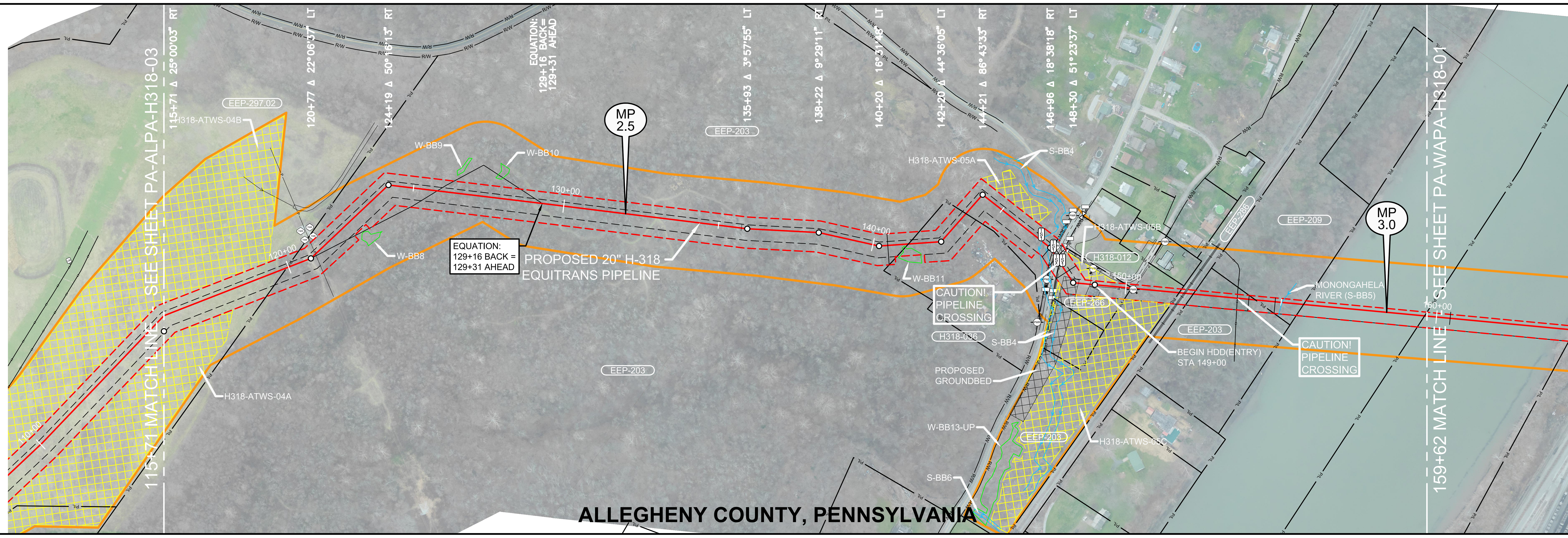
PIPE / COATING	115+71 – 147+10: 1	147+10 – 147+90: 3	147+90 – 149+00: 1	149+00 – 159+62: 4	
SLOPE DISTANCE	3164'	80'	110'	1070'	
CLASS LOCATION / HCA	1	150+74: 2			

ENVIRONMENTAL

CONSTRUCTION EXCLUSION		
WETLAND / STREAM	W-BB11: 68 LF	S-BB4: 76 LF
SEDIMENT BARRIER LEFT		
SEDIMENT BARRIER RIGHT		

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
- BARRICADE 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

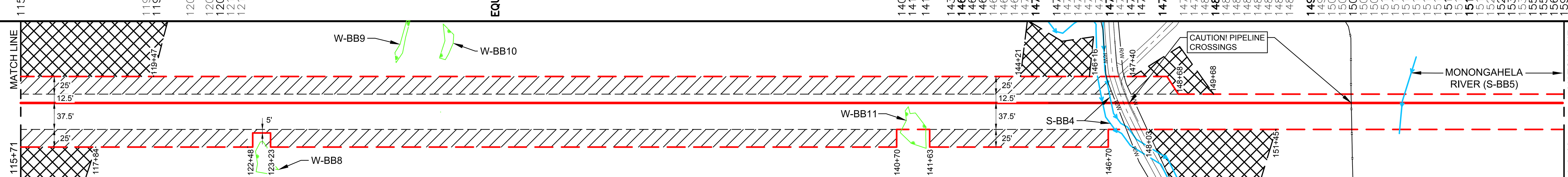
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

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
EQUATION: 129+15 BACK = 129+31 AHEAD
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+94 GUY ANCHOR 15'LT
146+96 END WOODS, SIGN 83'LT
147+01 POWER POLE 19'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+26 VALVE(WATER)31'LT
147+28 VALVE(WATER)36'LT
147+36 ℄ BUNOLA RIVER ROAD
147+49 END ASPHALT
147+51 UNGRD UTILITY - WATER
147+52 PIPELINE - FOREIGN - PEOPLES GAS, **PROPOSED TYPE 4 TEST STATION**
147+68 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℄
147+75 POWER POLE 65'RT
147+89 SIGN 72'RT
148+15 SIGN 95'RT
148+20 PROPOSED RECTIFIER & GROUNDBED
148+27 POWER POLE 79'LT
148+29 BEGIN WOODS
148+30 SIGN 76'RT
148+71 BUILDING - HOUSE(BURNED)43'RT
148+82 GUY ANCHOR 33'LT
148+83 GUY ANCHOR 34'LT
148+84 BUILDING - HOUSE(BURNED)6'RT
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+26 OHP LINE
150+38 GUY ANCHOR 15'RT
150+89 BUILDING - HOUSE 89'LT
151+11 END WOODS
151+17 BUILDING - HOUSE, DECK 73'LT
151+26 BEGIN 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+10 BEGIN WOODS
152+20 ℄
153+59 PIPELINE - FOREIGN - PEOPLES GAS
153+63 LINE MARKER 94'LT
155+03 MONONGAHELA RIVER BANK(S-BB5)(PER)
155+18 ℄
156+09 ℄
159+62 MATCH LINE, COUNTY LINE, ℄

WORK SPACE

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



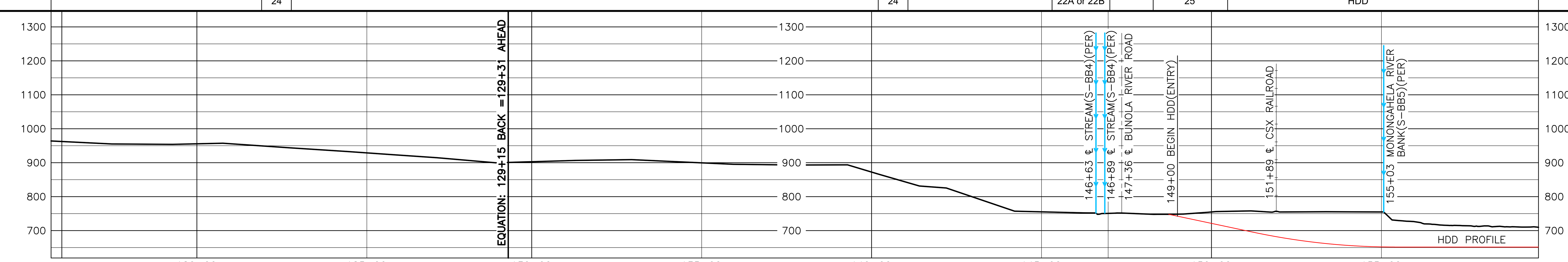
CONSTRUCTION METHOD

24	24	22A or 22B	25	HDD

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: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3274'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
3	80'	20"O.D. X 0.375"W.T., X70, FBE AND ARO
4	1070'	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

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
3	HEI	08/03/16	ISSUED FOR REVIEW

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/05/16
2	JSW	04/15/16

APPROVED FOR BIDDING

REV.	BY	DATE
-	-	-

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
-	-	-

HOLLAND ENGINEERING

220 Hoover Boulevard, Suite 2, Holland, Michigan 49423-3766, T 616-392-5938 F 616-392-2116
26555 Evergreen Rd. Suite 430, Southfield, Michigan 48076, T 248-827-7322 F 248-827-7549
www.hollandengineering.com

EQUITRANS

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(JDB)	6/30/2016
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. 3
DATE OF PLOT: 8/3/2016 5:57 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

MONONGAHELA RIVER — 468 LF, 469 SLOPE (159+62 to 164+30)
MONONGAHELA RIVER / EEP-169 — 21 LF, 21 SLOPE (164+30 to 164+51)
EEP-169 — 342 LF, 347 SLOPE (164+51 to 167+93)
EEP-169 / STATE HWY 837 — 18 LF, 18 SLOPE (167+93 to 168+11)
STATE HWY 837 (168+11 to 168+46)
STATE HWY 837 / EEP-170 — 18 LF, 18 SLOPE (168+46 to 168+64)
EEP-170 — 283 LF, 289 SLOPE (168+64 to 171+47)
EEP-170 / EEP-171 — 13 LF, 13 SLOPE (171+47 to 171+60)
EEP-171 — 553 LF, 565 SLOPE (171+60 to 177+13)
EEP-172 / EEP-171 — 50 LF, 51 SLOPE (177+13 to 177+63)
EEP-172 — 678 LF, 693 SLOPE (177+63 to 184+41)
EEP-171 / EEP-172 — 24 LF, 25 SLOPE (184+41 to 184+65)
EEP-171 — 753 LF, 769 SLOPE (184+65 to 192+18)

DESIGN

PIPE / COATING	159+62 — 4 — 188+04 — 1 — 192+18	
SLOPE DISTANCE	2891'	423'
CLASS LOCATION / HCA	2 — 160+44 — 1 — 173+42 — 2	

ENVIRONMENTAL

CONSTRUCTION EXCLUSION

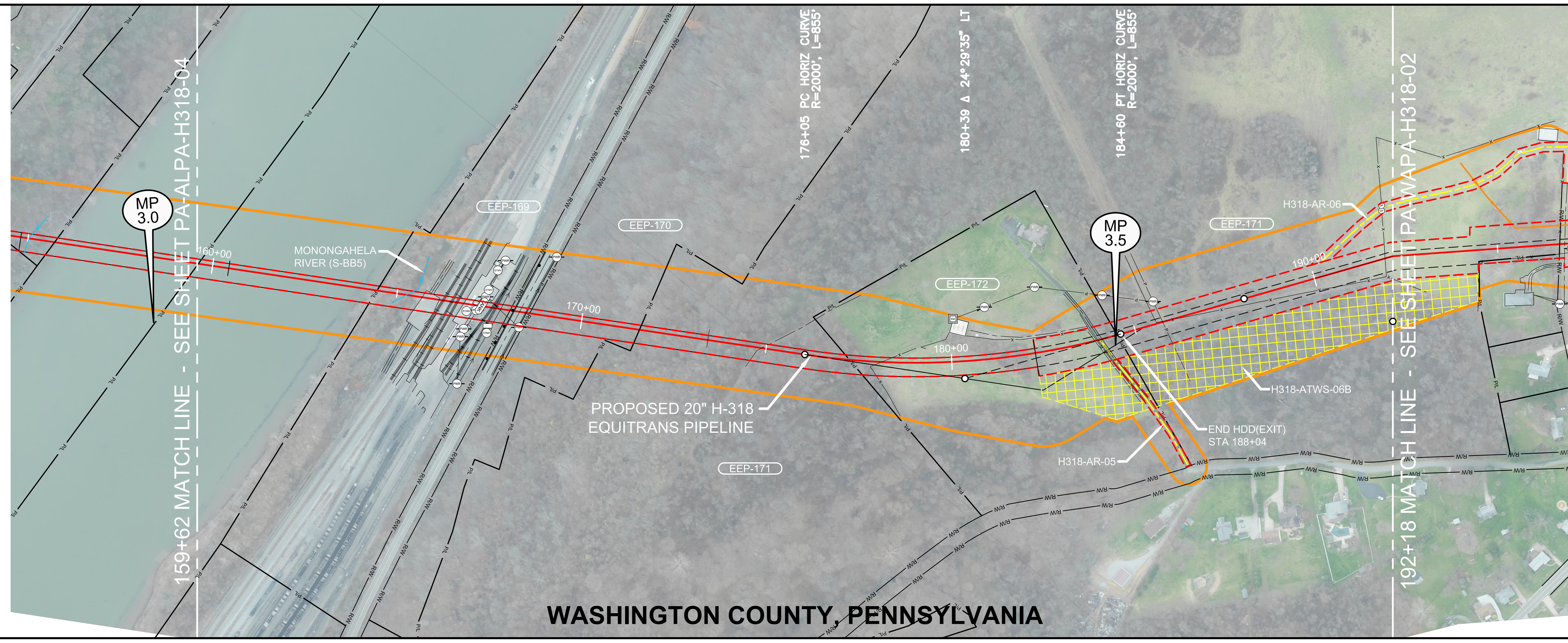
WETLAND / STREAM

SEDIMENT BARRIER LEFT

SEDIMENT BARRIER RIGHT

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

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

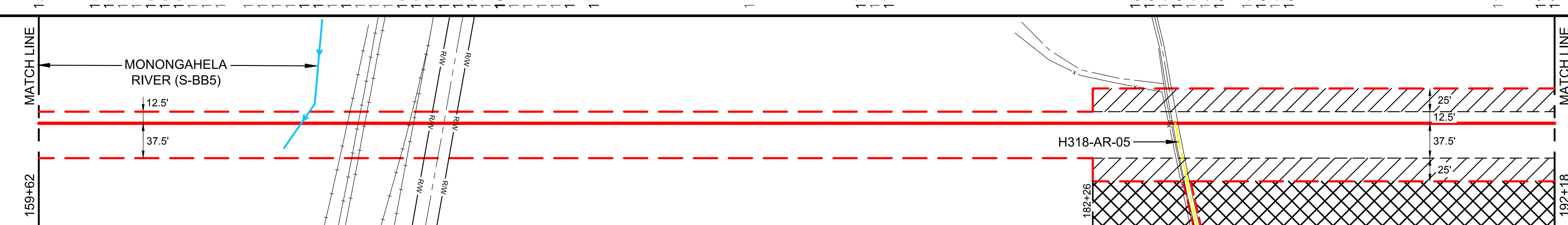
ISSUED FOR REVIEW

HORIZONTAL STATIONING

159+62 MATCH LINE, COUNTY LINE, PL
164+42 PL
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+85 POWER POLE 89'RT
166+91 STORM MANHOLE 19'RT, 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+36 POWER POLE, 26'LT
167+39 END TANK(OIL)
167+42 STORM MANHOLE 46'LT
167+53 STORM MANHOLE 69'RT
167+56 SIGN, 68'RT
167+58 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
167+67 ℄ NORFOLK SOUTHERN/CONRAIL RAILROAD
167+75 OHP LINE
167+81 ℄ BAR DITCH
168+03 RIGHT-OF-WAY, PL
168+16 GUARDRAIL
168+18 BEGIN ASPHALT
168+32 ℄ STATE HWY(ASPHALT)
168+36 POWER POLE 41'RT
168+47 END ASPHALT
168+50 ℄ BAR DITCH
168+51 OHP LINE
168+56 RIGHT-OF-WAY, PL
171+54 PL
174+88 ℄ FIELD ROAD(DIRT)
177+28 PL
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 PL
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)

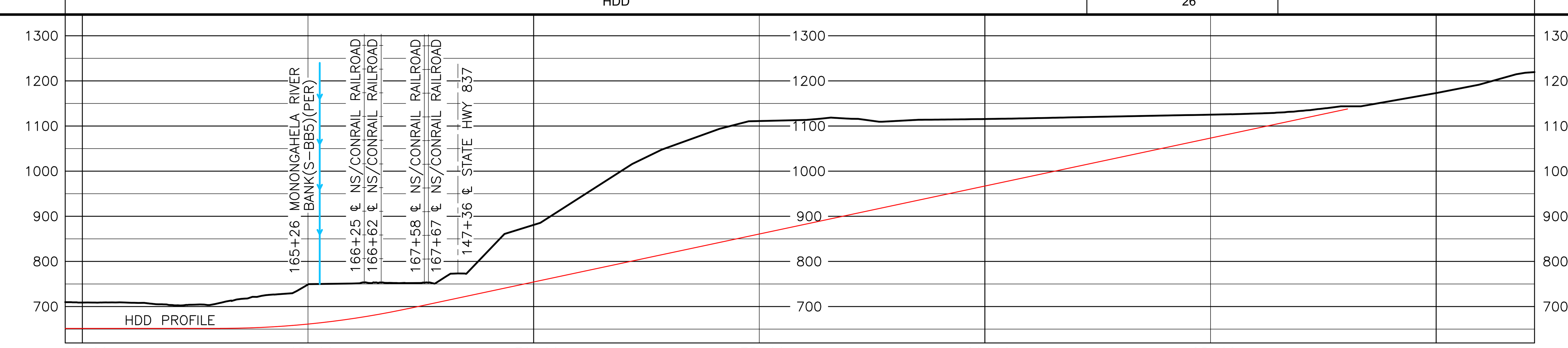


CONSTRUCTION METHOD

HDD — 26

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: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	423'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
4	2891'	20"O.D. X 0.562"W.T., X70, FBE AND ARO
	.	SEDIMENT BARRIER

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
3	HEI	08/03/16	ISSUED FOR REVIEW

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/05/16
2	JSW	04/15/16

APPROVED FOR BIDDING

REV.	BY	DATE
.	.	.

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

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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) 6/30/2016
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. 3
DATE OF PLOT: 8/3/2016 5:57 PM

RIGHT-OF-WAY & OWNERSHIP DATA

EEP-171 229 LF 229 SLOPE (192+18 to 194+47); EEP-171 / EEP-173 220 LF 221 SLOPE (194+47 to 196+67); SENECA DRIVE 80 LF 51 SLOPE (196+67 to 197+17); EEP-171 1434 LF 1448 SLOPE (197+17 to 211+39); EEP-171 / EEP-141 35 LF 36 SLOPE (211+39 to 211+74); EEP-171 / EEP-140 199 LF 200 SLOPE (211+74 to 213+73); EEP-140 735 LF 749 SLOPE (213+73 to 221+08); FINLEY-ELRAMA ROAD / EEP-140 38 LF 39 SLOPE (221+08 to 221+44); EEP-131 / FINLEY-ELRAMA ROAD / EEP-140 14 LF 14 SLOPE (221+44 to 221+58); EEP-131 / EEP-127 / FINLEY-ELRAMA ROAD 22 LF 22 SLOPE (221+58 to 221+80); EEP-131 / EEP-127 110 LF 111 SLOPE (221+80 to 222+90); EEP-127 160 LF 160 SLOPE (222+90 to 224+50)

DESIGN

PIPE / COATING	192+18 — 1	196+41 — 3	197+19 — 1	220+99 — 3	221+79 — 1	223+47 — 1	224+50	H-318 PIPE TO H-148 TAP
SLOPE DISTANCE	425'	80'	2407'	80'	272'	103'		H-318 PIPE TO H-148 TAP
CLASS LOCATION / HCA	2							

ENVIRONMENTAL

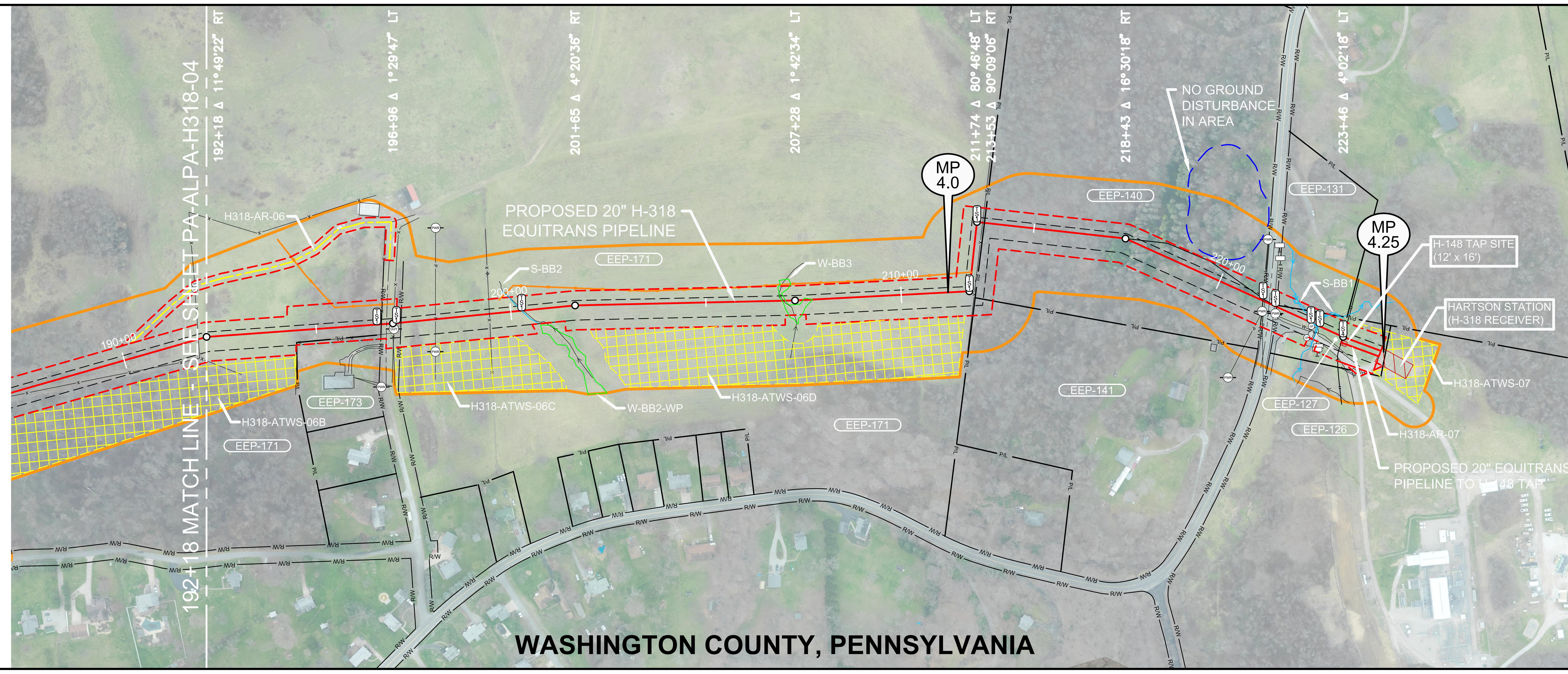
CONSTRUCTION EXCLUSION				
WETLAND / STREAM	S-BB2 68 LF	W-BB2-WP NO IMPACT	W-BB3 88 LF	S-BB1 92 LF
SEDIMENT BARRIER LEFT				
SEDIMENT BARRIER RIGHT				

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
BARRICADE 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



AERIAL PHOTOGRAPHY DATE: MAY 2015/UNKNOWN

ISSUED FOR REVIEW

REFERENCE DRAWINGS

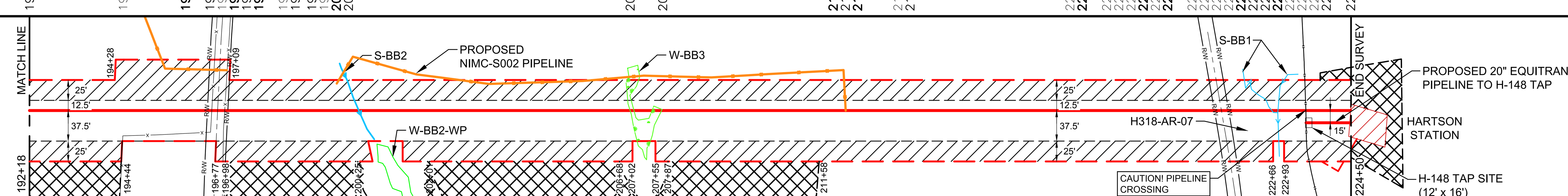
DRAWING NO.	DESCRIPTION

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 83'RT
198+06 OHP LINE
199+45 FENCE
199+50 BUILDING - SPRING CATCHER 99'LT
200+28 PROPOSED TYPE 1 TEST STATION,
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+15 END WOODS
221+21 PROPOSED TYPE 1 TEST STATION, OHP LINE, RIGHT-OF-WAY, ℞
221+19 GUY ANCHOR 30'RT
221+26 BEGIN ASPHALT
221+31 POWER POLE 26'RT
221+39 ℄ FINLEY-ELRAMA ROAD
221+53 END ASPHALT
221+60 PROPOSED TYPE 1 TEST STATION, RIGHT-OF-WAY, ℞
221+64 POWER POLE 17'RT, VALVE(WATER)21'RT
221+80 GUY ANCHOR 12'RT
222+37 BEGIN WOODS
222+59 END WOODS
222+57 PROPOSED TYPE 1 TEST STATION
222+62 ℄ STREAM(S-BB1)(INT)
222+77 ℄ STREAM(S-BB1)(INT)
222+82 PROPOSED TYPE 1 TEST STATION
223+06 SIGN 64'RT
223+07 SIGN 73'RT
223+39 LINE MARKER 53'LT
223+47 PIPELINE - EQT - H148, PROPOSED TYPE 4 TEST STATION
224+50 END SURVEY

WORK SPACE

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

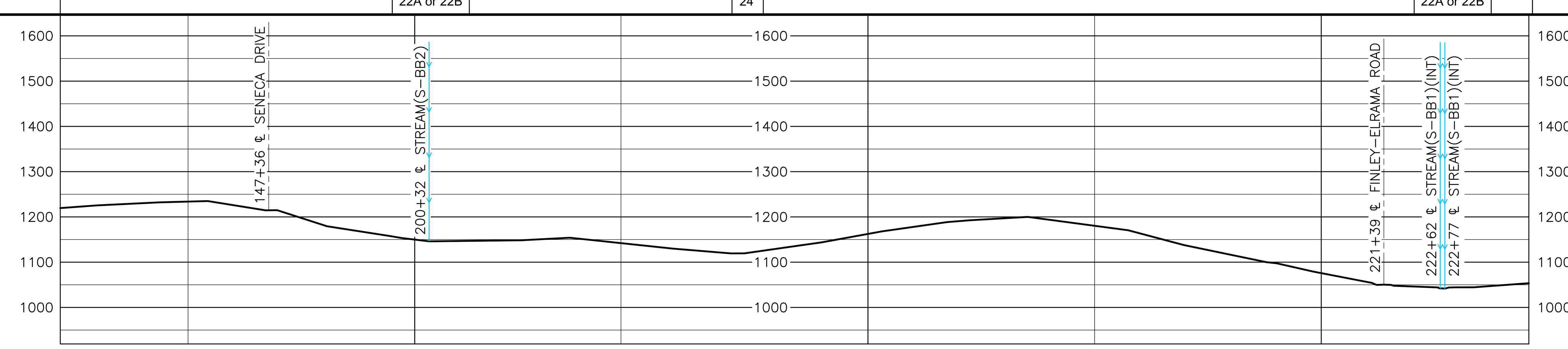


CONSTRUCTION METHOD

22A or 22B | 24 | 22A or 22B

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



MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3209'	20"O.D. X 0.312"W.T., X70, FUSION BOND EPOXY
3	160'	20"O.D. X 0.375"W.T., X70, FBE AND ARO
	.	SEDIMENT BARRIER
	6	TYPE 1 TEST STATION - PIPELINE

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
3	HEI	08/03/16	ISSUED FOR REVIEW

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
.	.	.

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/05/16
2	JSW	04/15/16

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EQUITRANS

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H318 LINE
UNION TWP, WASHINGTON CO., PA.
STA. 192+18 TO STA. 224+50

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. 3
DATE OF PLOT: ----	

RIGHT-OF-WAY & OWNERSHIP DATA	0+00	EEP-019 / EEP-014 269 LF 270 SLOPE	2+69	EEP-019 184 LF 186 SLOPE	4+53	EEP-019 / STATE HWY 188 36 LF 36 SLOPE	4+89	STATE HWY 188 (JEFFERSON ROAD) 33 LF 33 SLOPE	5+22	STATE HWY 188 / EEP-012 22 LF 22 SLOPE	5+44	EEP-012 97 LF 98 SLOPE	6+41	EEP-033 / EEP-012 32 LF 32 SLOPE	6+73	EEP-033 337 LF 339 SLOPE	10+10	EEP-029 / EEP-033 219 LF 220 SLOPE	12+29	EEP-029 1804 LF 1811 SLOPE	30+33

DESIGN			
PIPE / COATING	0+00 — 1 — 4+64 — 3 — 5+44 — 1 — 30+33		
SLOPE DISTANCE	467'	80'	2520'
CLASS LOCATION / HCA	0+00 — 2 — 20+80 — 1 — 30+33		

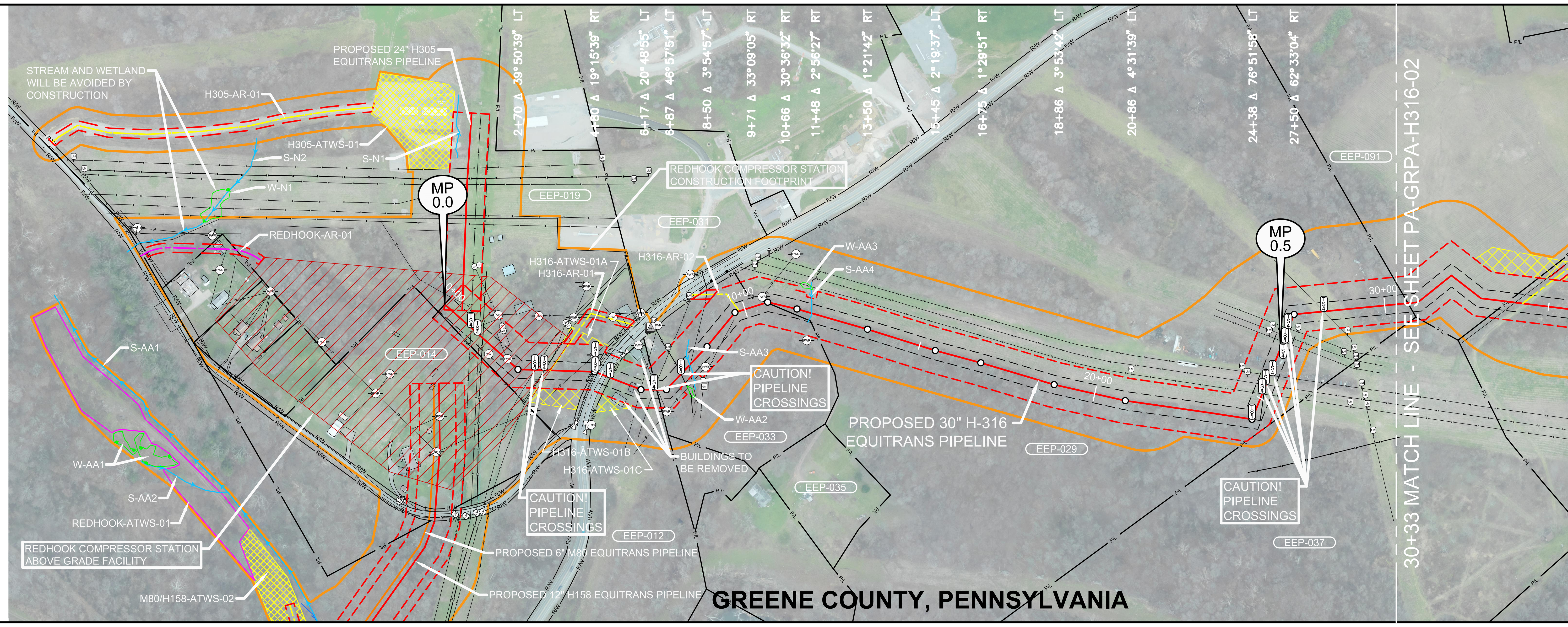
ENVIRONMENTAL		
CONSTRUCTION EXCLUSION		
WETLAND / STREAM	S-AA3 4 LF	S-AA4 4 LF
SEDIMENT BARRIER LEFT		
SEDIMENT BARRIER RIGHT		

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
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRICADE 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



AERIAL PHOTOGRAPHY DATE: UNKNOWN

ISSUED FOR REVIEW

REFERENCE DRAWINGS

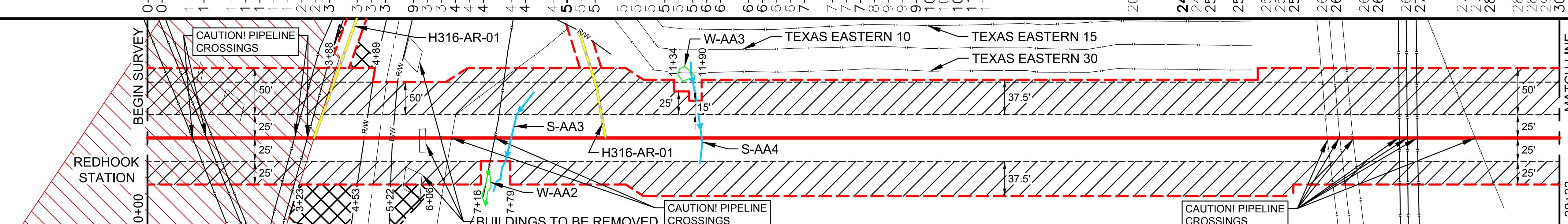
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

0+00 BEGIN SURVEY
0+97 PIPELINE - EQT - H148
1+14 PROPOSED TYPE 4 TEST STATION
1+27 BUILDING - BARN 59'LT
PIPELINE - EQT - H106
PROPOSED TYPE 4 TEST STATION
1+29 POWER POLE 76'LT
1+40 UNGRD UTILITY - CATHODIC PROTECTION
1+50 ℙ
1+81 WELL - WATER 22'RT
1+98 BUILDING - BARN 16'LT
2+17 BEGIN WOODS
2+29 POWER POLE 31'LT
2+70 PIPELINE - EQT - H138
3+16 PROPOSED TYPE 4 TEST STATION
3+17 END WOODS
3+42 FENCE
3+43 PIPELINE - EQT - GSF360
PROPOSED TYPE 4 TEST STATION
9+84 ACCESS RD - TEMPORARY(H316-AR-01)
3+71 BEGIN WOODS
3+99 END WOODS
4+31 OHP LINE
4+63 BEGIN WOODS
4+76 RIGHT-OF-WAY - ℙ - END WOODS
PROPOSED TYPE 4 TEST STATION
4+79 ℄ BAR DITCH POWER POLE 47'LT
4+83 UNGRD UTILITY - WATER - SIGN
PROPOSED TYPE 4 TEST STATION
4+90 BEGIN ASPHALT
5+04 ℄ STATE HWY 188(JEFFERSON RD)
5+15 END ASPHALT
5+27 RIGHT-OF-WAY - ℙ
PROPOSED TYPE 1 TEST STATION
5+41 VALVE - WATER 77'LT
5+55 BUILDING - BARN 31'RT
5+79 BUILDING - HOUSE 70'LT
5+85 BUILDING - BARN
5+98 BUILDING - BARN 39'RT
6+16 OHP LINE
6+53 PIPELINE - FOREIGN - DOMINION
PROPOSED TYPE 4 TEST STATION
ℙ
6+60 OHP LINE
6+64 BEGIN WOODS
6+67 POWER POLE 60'RT
7+46 PIPELINE - EQT
PROPOSED TYPE 4 TEST STATION
7+63 LINE MARKER 67'RT
7+65 METER - GAS 68'RT
7+83 ℄ STREAM(S-AA3)(EPH)
8+50 POWER POLE 73'LT
9+46 CULVERT 84'LT
9+71 CULVERT 99'LT
9+84 ACCESS RD - TEMPORARY(H316-AR-02)
10+56 POWER POLE 19'LT, BEGIN WOODS
10+59 LINE MARKER 95'LT
10+62 ℙ
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 - TEXAS EASTERN
PROPOSED TYPE 4 TEST STATION
26+70 LINE MARKER 41'LT
26+86 PIPELINE - FOREIGN - TEXAS EASTERN
PROPOSED TYPE 4 TEST STATION
26+87 LINE MARKER 38'LT
27+08 PIPELINE - FOREIGN - TEXAS EASTERN, LINE MARKER
PROPOSED TYPE 4 TEST STATION
27+38 BEGIN WOODS
27+80 END WOODS
28+32 PIPELINE - FOREIGN - DOMINION
PROPOSED TYPE 4 TEST STATION
28+91 LINE MARKER 73'RT
29+01 LINE MARKER 5'LT
29+06 BEGIN WOODS
30+33 MATCH LINE TOWNSHIP LINE

WORK SPACE

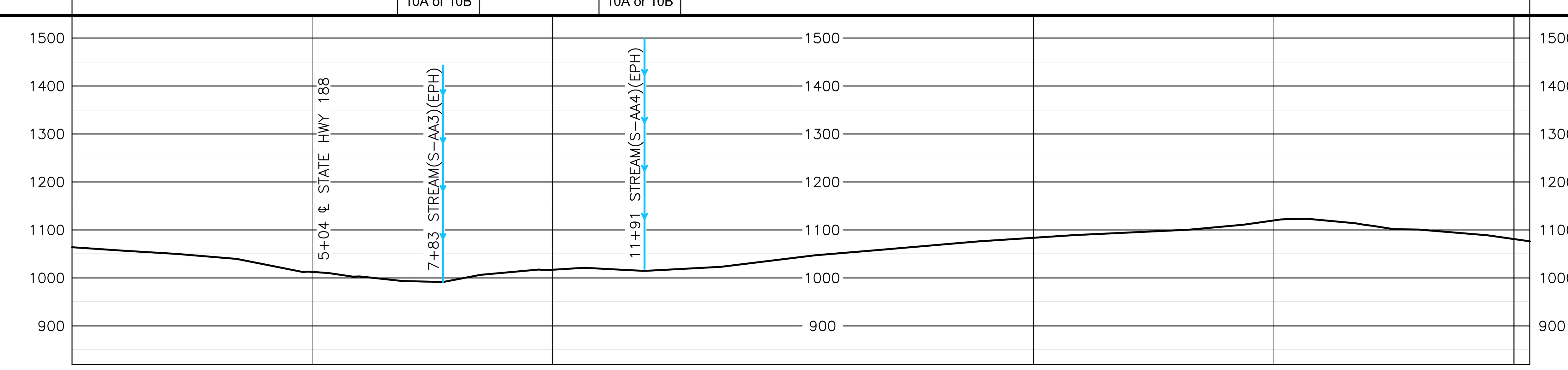
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD	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
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



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2
3	HEI	08/03/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3210'	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

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
2	JSW	04/15/16

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: 8/3/2016 11:05 PM

PIPELINE ALIGNMENT

RIGHT-OF-WAY & OWNERSHIP DATA

Parcel	Length
EEP-091 / EEP-029	33 LF, 33 SLOPE
EEP-091 / EEP-029 / EEP-037	17 LF, 17 SLOPE
EEP-091 / EEP-037	9 LF, 9 SLOPE
EEP-091	345 LF, 349 SLOPE
EEP-091 / EEP-109	127 LF, 127 SLOPE
EEP-109	561 LF, 563 SLOPE
EEP-107 / EEP-109	154 LF, 156 SLOPE
EEP-107	63 LF, 64 SLOPE
EEP-107	2644 LF, 2676 SLOPE
EEP-240 / EEP-107	26 LF, 27 SLOPE
EEP-110 / EEP-107	40 LF, 42 SLOPE
EEP-110	448 LF, 497 SLOPE

DESIGN

	30+33 to 42+19	42+19 to 42+99	42+99 to 49+30	49+30 to 61+75	61+75 to 75+35
PIPE / COATING	1	3	1	2	1
SLOPE DISTANCE	1194'	80'	635'	1246'	1400'
CLASS LOCATION / HCA	2		1		

ENVIRONMENTAL

CONSTRUCTION EXCLUSION

WETLAND / STREAM	W-AA4	S-AA8	W-AA7	S-AA9	S-AA10	S-AA11	S-AA12
	73 LF	5 LF	163 LF	4 LF	5 LF	14 LF	51 LF

SEDIMENT BARRIER LEFT

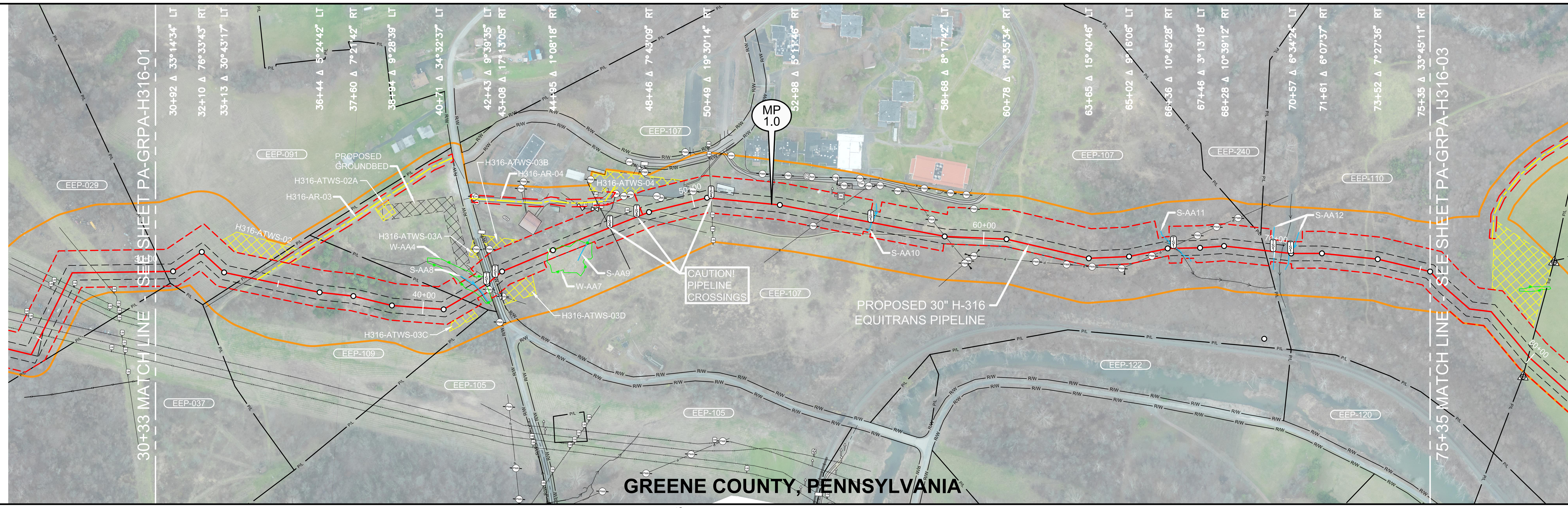
SEDIMENT BARRIER RIGHT

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



AERIAL PHOTOGRAPHY DATE: UNKNOWN

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

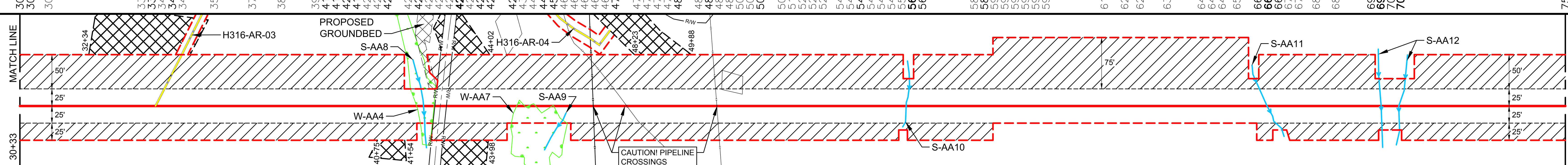
ISSUED FOR REVIEW

HORIZONTAL STATIONING

30+33 MATCH LINE, TOWNSHIP LINE
30+64 PI
30+86 END WOODS
33+87 BEGIN WOODS
33+88 PI
34+08 FENCE
34+36 ACCESS RD – TEMPORARY(H316-AR-03)
34+41 END WOODS
35+99 BEGIN WOODS
37+43 END WOODS
38+28 BEGIN WOODS
39+27 END WOODS
41+41 PI
41+89 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+41 OHP LINE
42+42 RIGHT-OF-WAY, PI, PROPOSED TYPE 1 TEST STATION
42+46 GUY ANCHOR, 72'RT
42+47 UNGRD UTILITY – WATER
42+51 BEGIN ASPHALT
42+52 GUY ANCHOR, 63'RT
42+55 POWER POLE, 67'RT
42+59 ¢ PRISON ROAD
42+68 ENDASPHALT
42+73 ¢ BAR DITCH
42+77 RIGHT-OF-WAY, PI, PROPOSED TYPE 1 TEST STATION
42+85 OHP LINE
43+08 POWER POLE, 87'LT
44+54 BUILDING – BARN, 73'LT
44+80 BEGIN WETLAND(W-AA7)(PEM)
45+88 END WETLAND(W-AA7)(PEM)
46+45 BUILDING – SHED, 90'LT
46+48 LINE MARKER, 91'LT
46+77 LINE MARKER, 78'LT
46+79 VALVE – GAS, 77'LT
46+98 LINE MARKER, 66'LT
47+03 PIPELINE – FOREIGN – UNKNOWN, PROPOSED TYPE 4 TEST STATION
47+33 CULVERT, 57'LT
47+65 MANHOLE – STORM, 99'LT
47+73 LINE MARKER, 20'LT
47+86 POWER POLE, 82'LT
48+01 PIPELINE – EQT – 2" LATERAL FROM H103, PROPOSED TYPE 4 TEST STATION
48+10 MANHOLE – STORM, 79'LT
48+64 ¢ FIELD ROAD(DIRT)
48+84 MANHOLE – STORM, 46'LT
48+96 POWER POLE, 38'LT
50+08 POWER POLE, 33'LT
50+49 LINE MARKER, 75'RT
50+63 PIPELINE – EQT – 16" H103, PROPOSED TYPE 4 TEST STATION
50+77 BUILDING – MOBILE HOME, 24'LT
51+37 BUILDING – MOBILE HOME, 17'LT
52+28 POWER POLE, 99'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+75 BUILDING – INDUSTRIAL, 63'LT
54+89 BUILDING – INDUSTRIAL, 65'LT
54+96 ELECTRIC BOX, 69'LT
55+02 BUILDING – INDUSTRIAL, 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+39 GUY ANCHOR, 57'RT
59+40 POWER POLE, 89'RT
59+51 POWER POLE, 79'RT
59+63 POWER POLE, 98'LT
59+70 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+28 BEGIN WOODS
67+38 POWER POLE, 42'LT
68+07 POWER POLE, 66'LT
68+64 POWER POLE, 100'LT
69+67 PI
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)

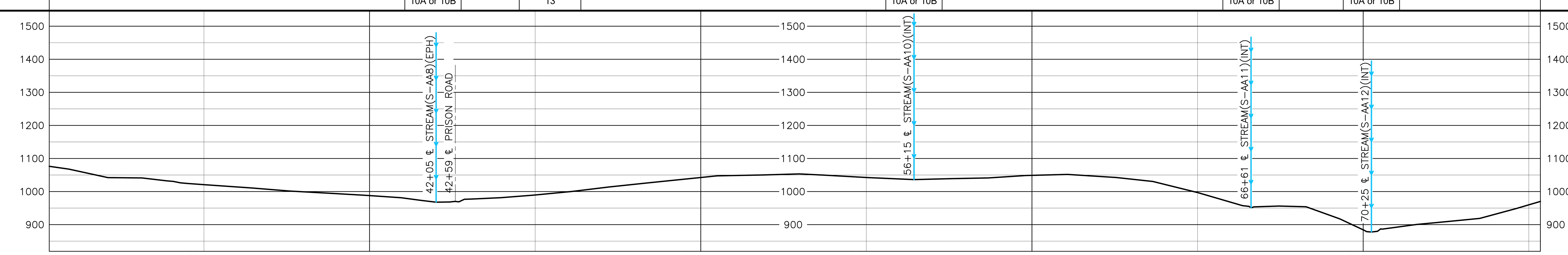


CONSTRUCTION METHOD

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
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



MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3229'	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

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
3	HEI	08/03/16	ISSUED FOR REVIEW

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

APPROVED FOR BIDDING REV.	BY	DATE
.	.	.

APPROVED FOR CONSTRUCTION REV.	BY	DATE
.	.	.

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26555 Evergreen Rd. Suite 430, Southfield, Michigan 48076, T 248-827-7322 F 248-827-7549
www.hollandengineering.com

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: 8/3/2016 11:06 PM	

PIPELINE ALIGNMENT

EQUITRANS EXPANSION PROJECT - H316 LINE
FORWARD TWP, GREENE CO., PA.
STA. 75+55 TO STA. 119+45

ISSUED FOR REVIEW

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Parcel	Length / Slope
75+35 – 79+38	EEP-110	403 LF / 411 SLOPE
79+38 – 80+16	EEP-111, EEP-110	78 LF / 78 SLOPE
80+16 – 104+53	EEP-111	2437 LF / 2438 SLOPE
104+53 – 104+90	EEP-246, EEP-111	37 LF / 37 SLOPE
104+90 – 106+77	EEP-246	187 LF / 188 SLOPE
106+77 – 107+18	EEP-242, EEP-246	41 LF / 41 SLOPE
107+18 – 108+92	EEP-242	174 LF / 174 SLOPE
108+92 – 109+36	EEP-299, EEP-242, H316-112	44 LF / 44 SLOPE
109+36 – 113+45	EEP-299	409 LF / 413 SLOPE
113+45 – 114+02	EEP-299, EEP-113	57 LF / 58 SLOPE
114+02 – 117+19	EEP-113	317 LF / 320 SLOPE
117+19 – 117+63	EEP-113, EEP-121	44 LF / 44 SLOPE
117+63 – 119+25	EEP-121	162 LF / 164 SLOPE

DESIGN

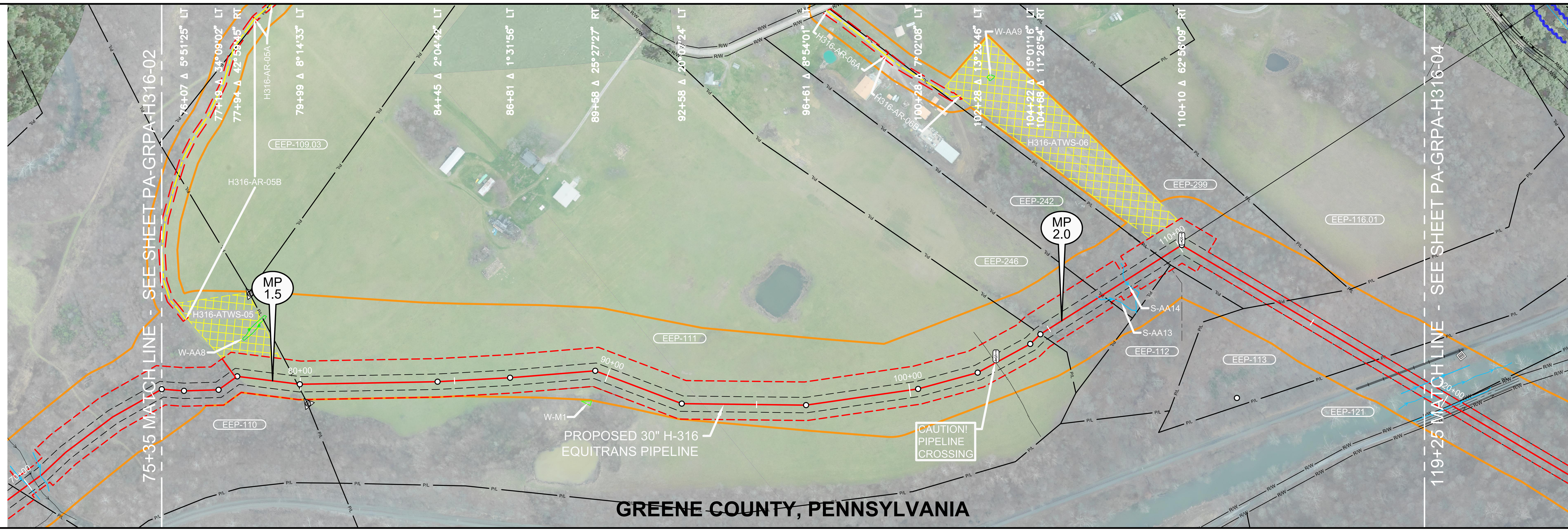
	75+35 – 110+10	110+10 – 119+25
PIPE / COATING	1	4
SLOPE DISTANCE	3486'	924'
CLASS LOCATION / HCA	1	1

ENVIRONMENTAL

- CONSTRUCTION EXCLUSION
- WETLAND / STREAM: S-AA13 4 LF; S-AA14 4 LF; S-AA15 19 LF
- SEDIMENT BARRIER LEFT
- SEDIMENT BARRIER RIGHT

PLAN VIEW

Scale: 0' 100' 200' 400'



AERIAL PHOTOGRAPHY DATE: UNKNOWN

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
- BARRICADE 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

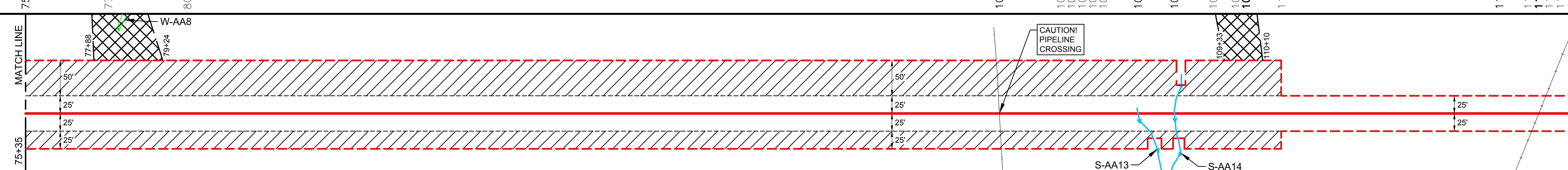
REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

- 75+35 MATCH LINE
- 77+97 END WOODS
- 80+21 PROPERTY CORNER, 59'RT
- 102+96 PIPELINE – FOREIGN – RICE ENERGY
- PROPOSED TYPE 4 TEST STATION
- 104+75 BEGIN WOODS
- 105+10 END WOODS
- 105+16 BEGIN WOODS
- 105+49 END WOODS
- 106+02 BEGIN WOODS
- 106+89 ℄ STREAM(S–AA13)(EPH)
- 107+92 ℄ STREAM(S–AA14)(EPH)
- 109+30 ℄ FIELD ROAD(DIRT)
- 109+80 END WOODS
- 109+80 BEGIN HDD(EXIT)
- 111+02 BEGIN WOODS
- 117+41 ℄
- 118+22 ℄ RAIL
- 118+25 ℄ CSX RAILROAD
- 118+28 ℄ RAIL
- 119+14 SIGN, 89'LT
- 119+25 MATCH LINE, TOWNSHIP LINE

WORK SPACE



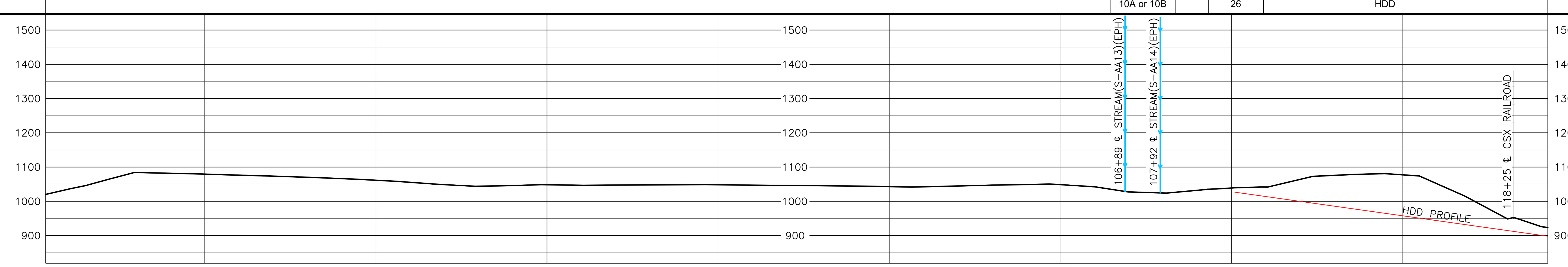
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)

CONSTRUCTION METHOD

10A or 10B | 26 | HDD

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



MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3486'	30"O.D. X 0.438"W.T., X70, FUSION BOND EPOXY
4	924'	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

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2
3	HEI	08/03/16	ISSUED FOR REVIEW

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
.	.	.

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/05/16
2	JSW	04/15/16

HOLLAND ENGINEERING

EQUITRANS

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-H316-03	
SHEET 3 OF 4	REV. 2
DATE OF PLOT: 8/3/2016 11:06 PM	

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Parcel	Length
119+25 – 120+06	EEP-121	81 LF / 82 SLOPE
120+06 – 120+45	EEP-121 / CREEK ROAD	39 LF / 39 SLOPE
120+45 – 120+83	CREEK ROAD / EEP-059	38 LF / 38 SLOPE
120+83 – 125+45	EEP-059	462 LF / 463 SLOPE
125+45 – 126+21	EEP-065 / EEP-059	76 LF / 76 SLOPE
126+21 – 130+28	EEP-065	407 LF / 407 SLOPE
130+28 – 136+58	EEP-068	630 LF / 630 SLOPE
136+58 – 136+82	EEP-068 / EEP-065	24 LF / 24 SLOPE
136+82 – 144+37	EEP-065	755 LF / 762 SLOPE
144+37 – 144+71	ANKROM ROAD	34 LF / 35 SLOPE
144+71 – 145+38	EEP-076	67 LF / 69 SLOPE
145+38 – 145+88	EEP-076 / EEP-067	50 LF / 51 SLOPE
145+88 – 148+55	EEP-067	267 LF / 273 SLOPE
148+55 – 148+66	EEP-050 / EEP-067	11 LF / 11 SLOPE
148+66 – 157+02	EEP-050	836 LF / 850 SLOPE

DESIGN

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

ENVIRONMENTAL

CONSTRUCTION EXCLUSION

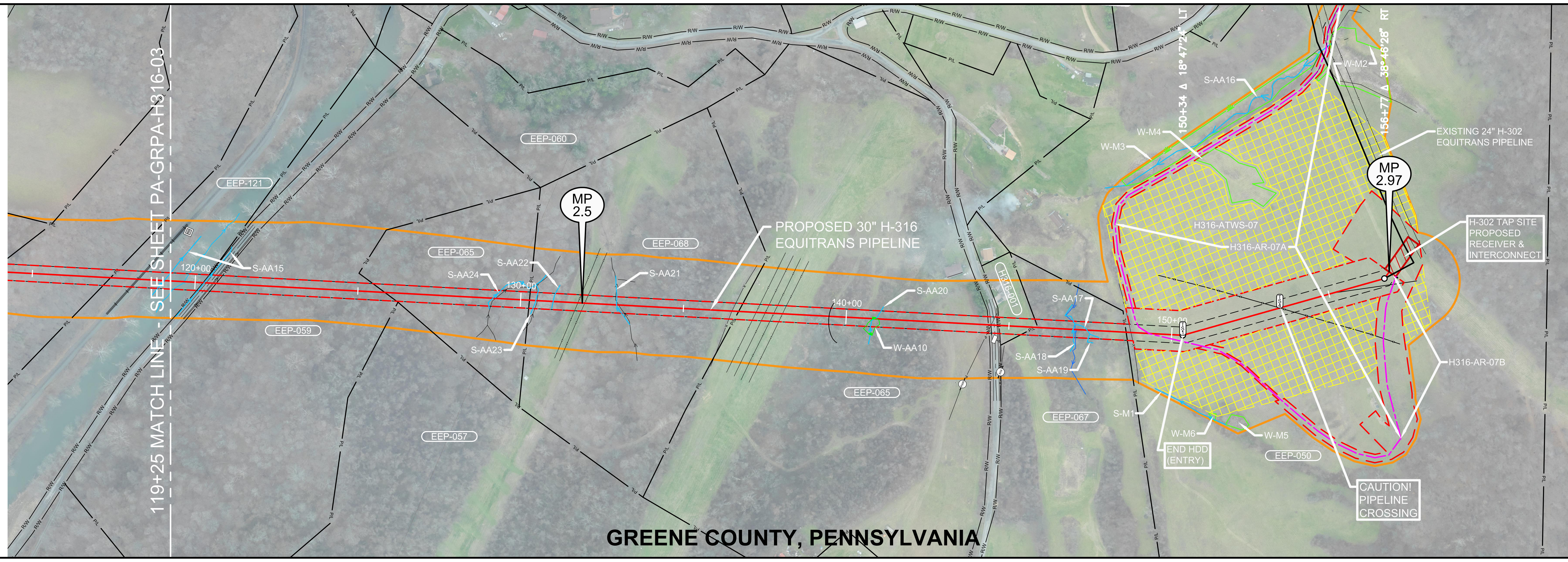
WETLAND / STREAM	
S-AA15	42 LF
S-AA24	12 LF
S-AA23	9 LF
S-AA22	7 LF
S-AA21	5 LF
W-AA10	43 LF
S-AA20	21 LF
S-AA18	8 LF
S-AA17	4 LF

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
- COUNTY LINE
- PROPERTY LINE
- ROAD RIGHT-OF-WAY
- FENCE LINE
- OVERHEAD POWER
- OVERHEAD TELEPHONE
- C/L ROAD
- C/L RAILROAD
- DELINEATED STREAM
- DELINEATED WETLAND
- BARRICADE 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

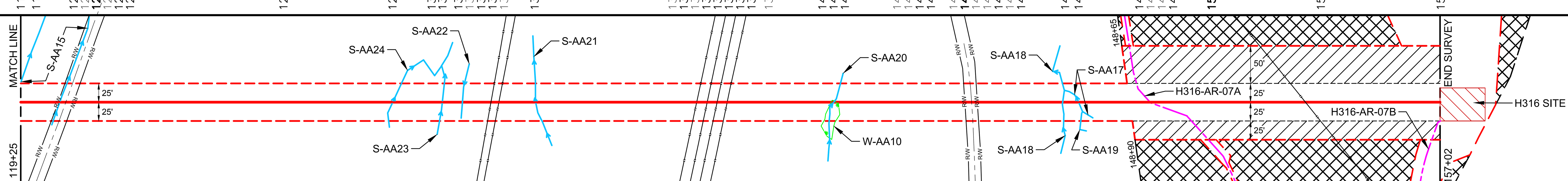
ISSUED FOR REVIEW

HORIZONTAL STATIONING

- 119+25 MATCH LINE, TOWNSHIP LINE
- 119+66 ℄ RUFF CREEK(S-AA15)(PER)
- 120+25 RIGHT-OF-WAY, ℙ
- 120+35 BEGIN ASPHALT
- 120+45 ℄ CREEK ROAD
- 120+54 END ASPHALT
- 120+58 ℄ BAR DITCH
- 120+65 RIGHT-OF-WAY, ℙ
- 125+83 ℙ
- 129+23 ℄ STREAM(S-AA24)(INT)
- 130+28 ℙ
- 130+51 ℄ STREAM(S-AA23)(EPH)
- 131+00 ℄ STREAM(S-AA22)(EPH)
- 131+31 END WOODS
- 131+76 PIPELINE – FOREIGN – TEXAS EASTERN
- 131+97 PIPELINE – FOREIGN – TEXAS EASTERN
- 132+20 BEGIN WOODS
- 133+01 ℄ STREAM(S-AA21)(INT)
- 136+18 END WOODS
- 136+29 ℄ FIELD ROAD(DIRT)
- 136+49 FENCE
- 136+70 ℙ
- 137+24 PIPELINE – FOREIGN – TEXAS EASTERN
- 137+52 PIPELINE – FOREIGN – TEXAS EASTERN
- 137+78 PIPELINE – FOREIGN – TEXAS EASTERN
- 138+05 PIPELINE – FOREIGN – TEXAS EASTERN
- 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, ℙ
- 144+45 PIPELINE – FOREIGN – UNKNOWN
- 144+46 BEGIN ASPHALT
- 144+55 OHP LINE
- 144+55 ℄ ANKROM ROAD
- 144+64 END ASPHALT
- 144+67 FENCE
- 144+71 RIGHT-OF-WAY, ℙ
- 144+75 SIGN, 49'RT
- 145+81 ℙ
- 147+04 ℄ STREAM(S-AA17)(PER)
- 147+40 ℄ STREAM(S-AA18)(INT)
- 148+60 ℙ
- 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

HDD | 25

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
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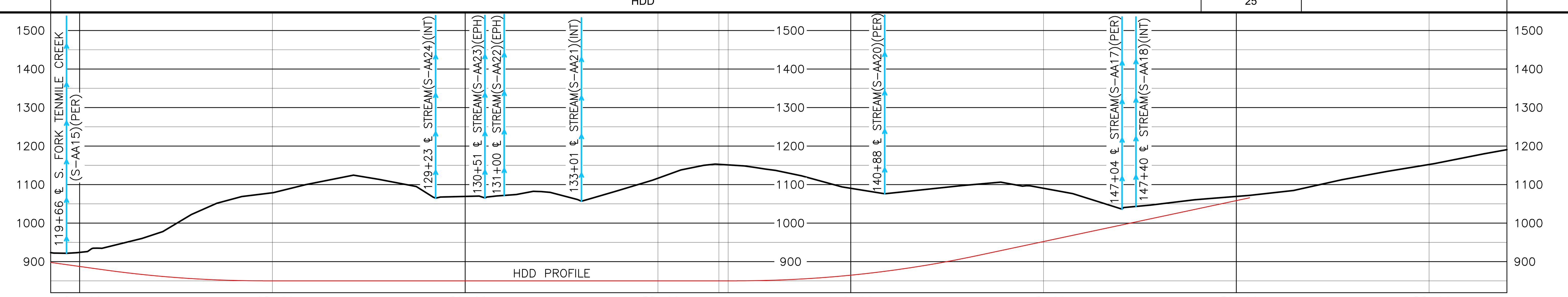
9 - BORED ROAD CROSSING
10A - OPEN CUT - DAM AND PUMP
10B - OPEN CUT - FLUME
11 - PIPELINE CROSSING
12 - PIPELINE CROSSING FROM PARALLEL
13 - WETLAND CROSSING
25 - TYPICAL DIRECTIONAL DRILL ENTRY SITE PLAN & PROFILE
26 - TYPICAL DIRECTIONAL DRILL EXIT SITE PLAN & PROFILE

PROFILE



AERIAL PHOTOGRAPHY DATE: UNKNOWN

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	751'	30"O.D. X 0.438"W.T., X70, FUSION BOND EPOXY
4	3132'	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

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10/15/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST #2
3	HEI	08/02/16	ISSUED FOR REVIEW

APPROVED FOR FERC

REV.	BY	DATE
0	JSW	10/23/15
1	JSW	02/05/16
2	JSW	04/15/16

APPROVED FOR BIDDING

REV.	BY	DATE
-	-	-

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
-	-	-

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www.hollandengineering.com

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: 8/3/2016 11:06 PM	

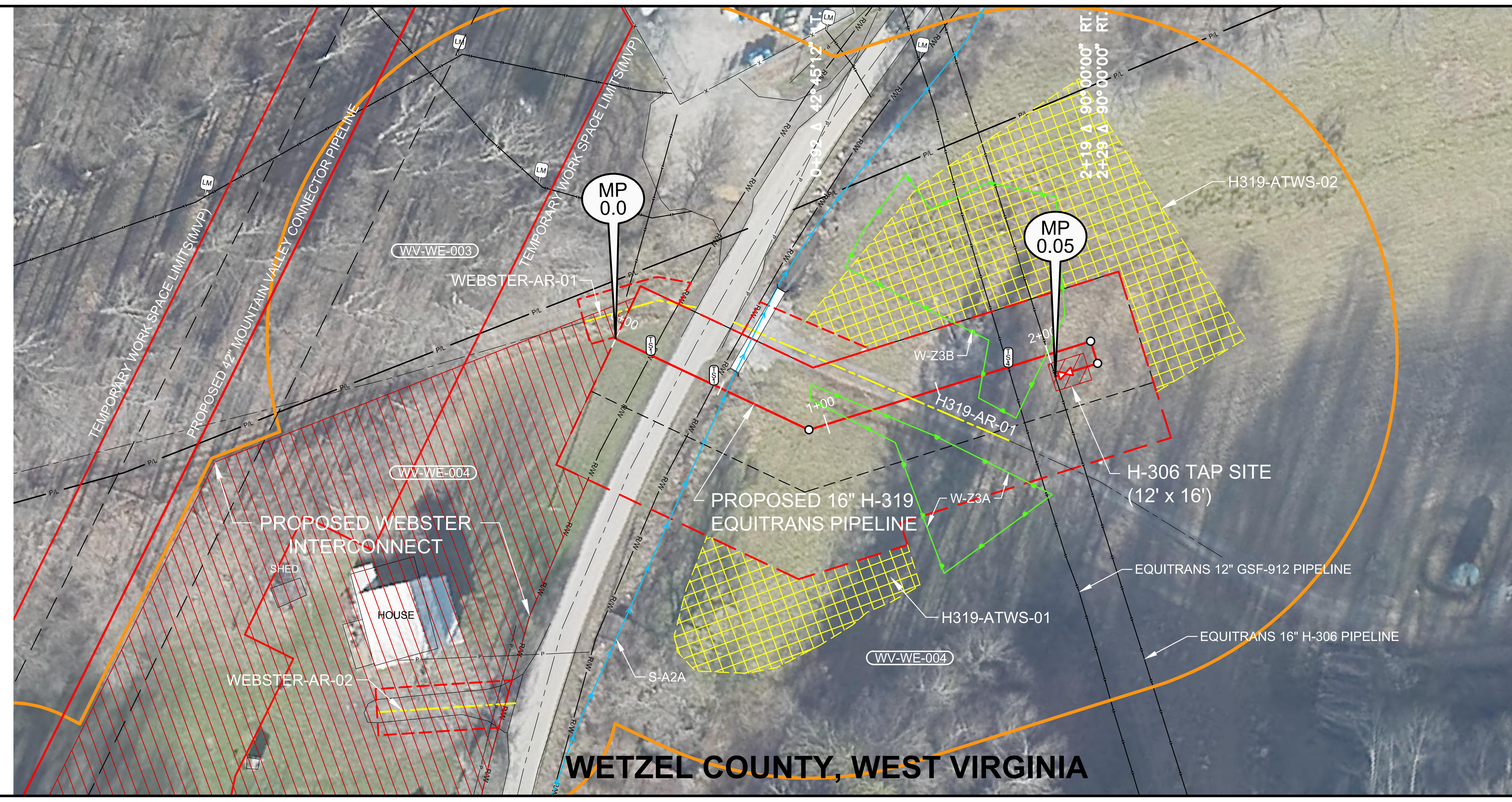
RIGHT-OF-WAY & OWNERSHIP DATA	0+00 WV-WE-004 17 LF 17 SLOPE	0+17 SHUMAN HILL RD (COUNTY ROUTE 80) 30 LF 30 SLOPE	0+47 WV-WE-004 201 LF 202 SLOPE	2+48
DESIGN – PIPE / COATING	0+00 2		0+80 1	2+48
DESIGN – SLOPE DISTANCE	80'		169'	
DESIGN – CLASS LOCATION / HCA	1			
ENVIRONMENTAL – CONSTRUCTION EXCLUSION				
ENVIRONMENTAL – WETLAND / STREAM			W-Z3A 79 LF	W-Z3B 48 LF
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
- BARRICADE 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



ISSUED FOR REVIEW

REFERENCE DRAWINGS

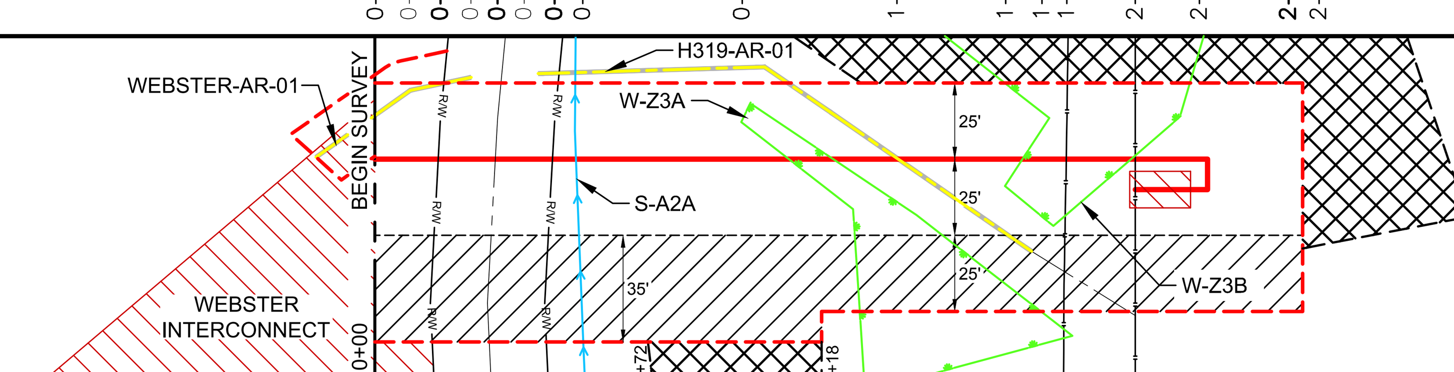
DRAWING NO.	DESCRIPTION

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

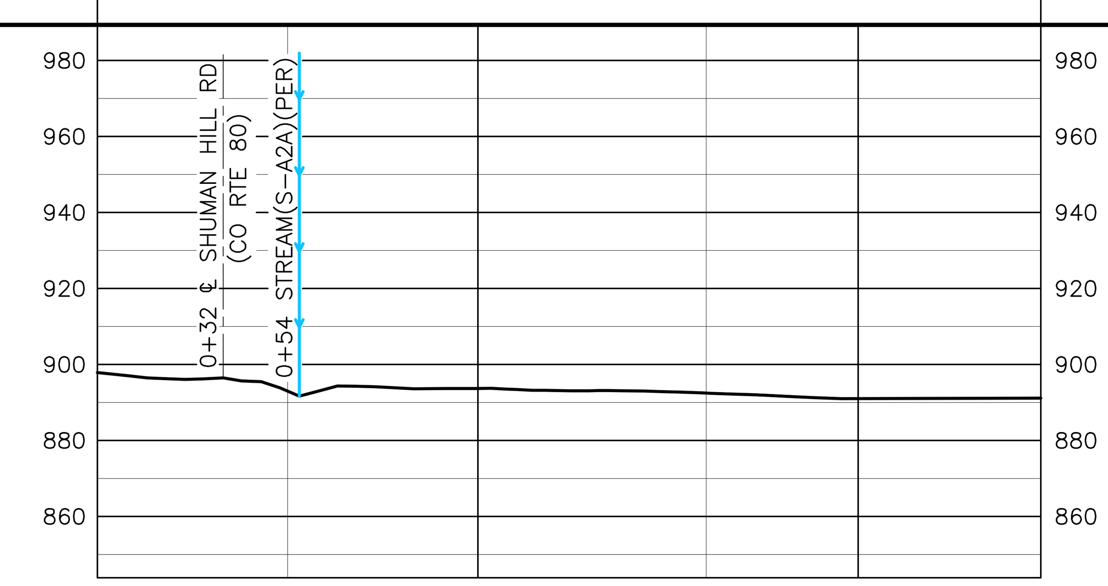
- PROPOSED PIPELINE
- EXISTING PIPELINE
- WORK SPACE LIMITS
- PERMANENT EASEMENT
- TEMPORARY WORK SPACE(TWS)
- ADD. TEMPORARY WORK SPACE(ATWS)



CONSTRUCTION METHOD

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

PROFILE



AERIAL PHOTOGRAPHY DATE: DECEMBER 2014

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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
3	HEI	07/20/16	ISSUED FOR REVIEW

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	169'	16"O.D. X 0.375"W.T., X65, FUSION BOND EPOXY
2	80'	16"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 REV.	BY	DATE
-	-	-

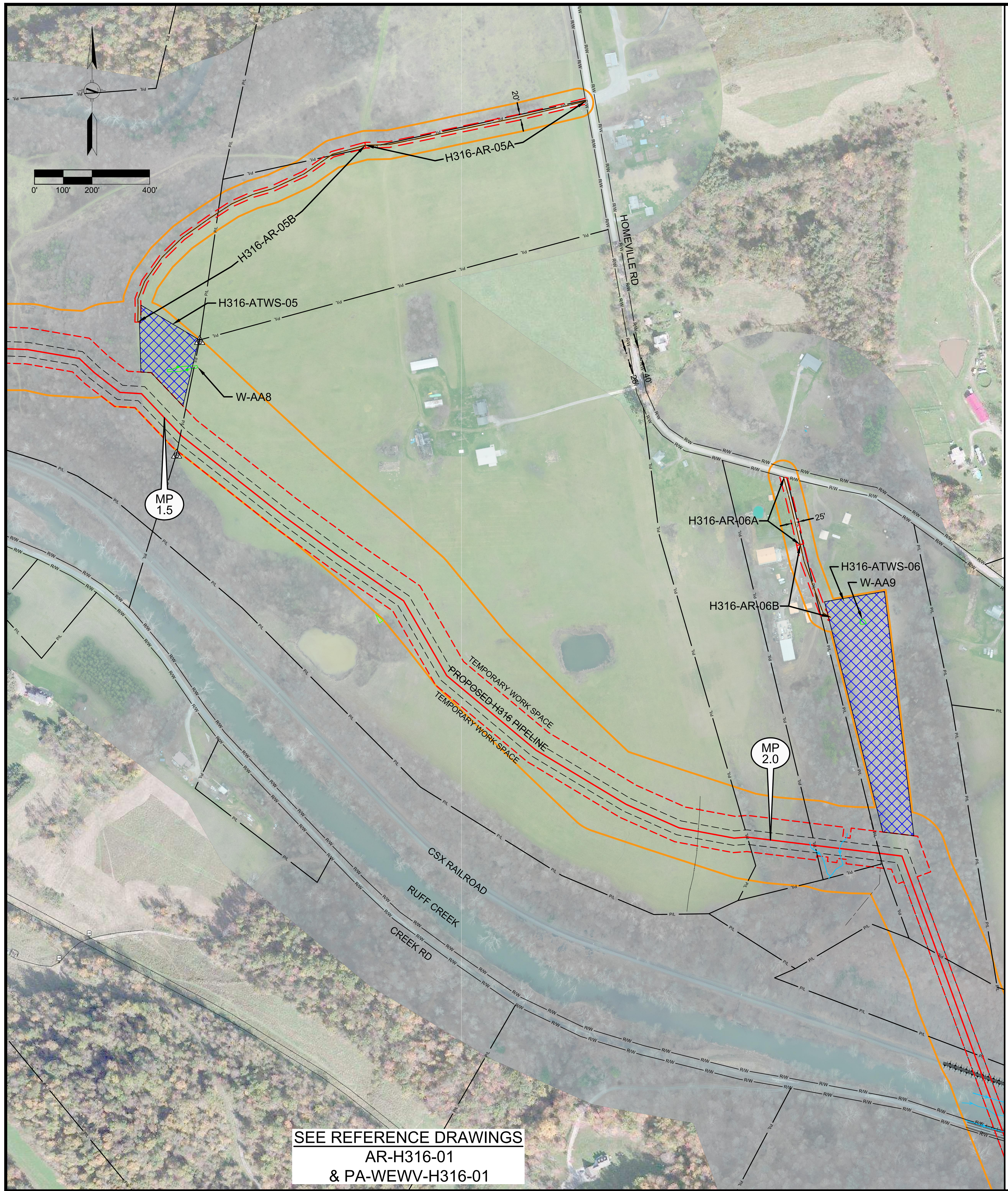
APPROVED FOR BIDDING REV.	BY	DATE
-	-	-

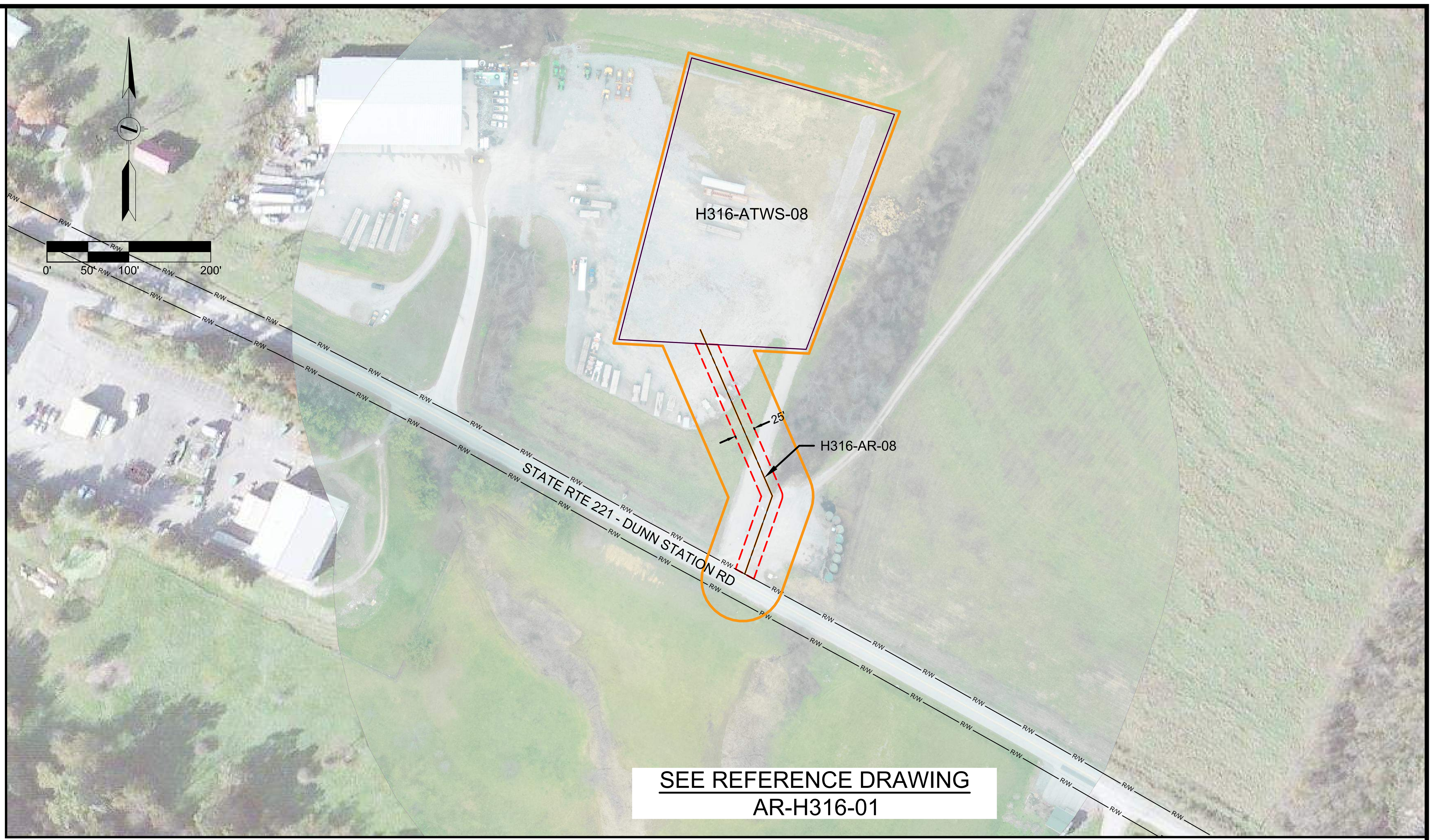
APPROVED FOR FERC REV.	BY	DATE
0	JSW	10/23/15

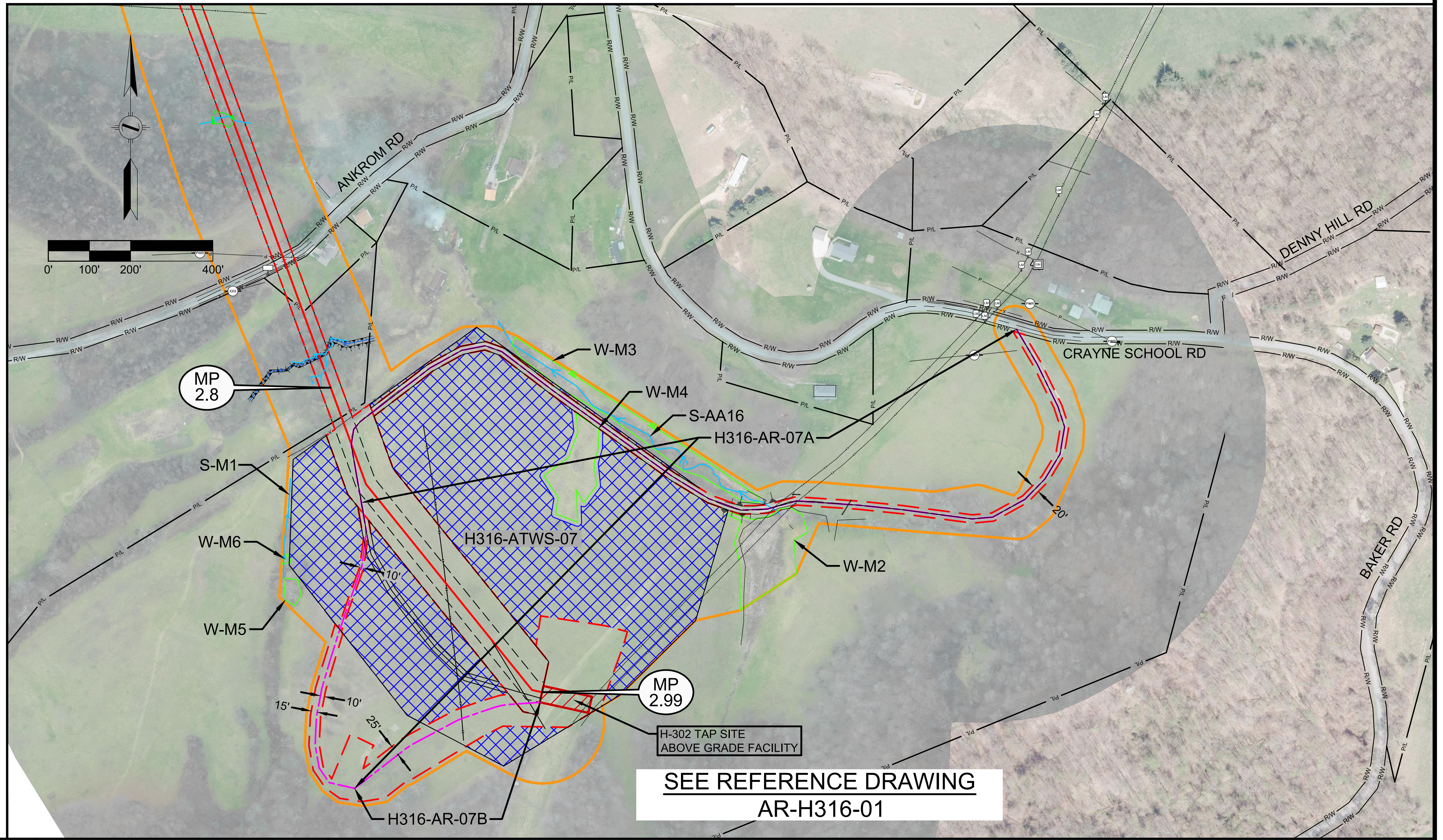
EQUITRANS

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. 3
DATE OF PLOT: 7/20/2016 9:57 PM	







LEGEND

	STUDY CORRIDOR
	ANCILLARY SITE
	PERMANENT ACCESS ROAD
	TEMPORARY ACCESS ROAD
	PROPOSED PIPELINE
	PROPOSED PERMANENT EASEMENT
	TEMPORARY WORK SPACE
	PIPELINE
X	FENCE
W	WATER LINE
P	OHP LINE
R/W	ROAD RIGHT-OF-WAY LINE
UNK	UNKNOWN UNDERGROUND UTILITY
	WETLAND
	STREAM
	ABOVE GRADE FACILITY
	ADDITIONAL TEMPORARY WORK SPACE
LM	PIPELINE MARKER
	CULVERT
GP GP	GATE - GATE POST
	BUILDING
PWR TEL	POWER/TELEPHONE POLE
WELL GW OW WW MNW	WELL - GAS/OIL/WATER/MONITORING
FH	FIRE HYDRANT & VALVE
	PEDESTAL - UTILITY
EM GM WM	ELEC/GAS/WTR METER

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
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
2	HEI	04/15/16	RESPONSE TO FERC DATA REQUEST
3	HEI	10/28/16	ISSUED FOR REVIEW

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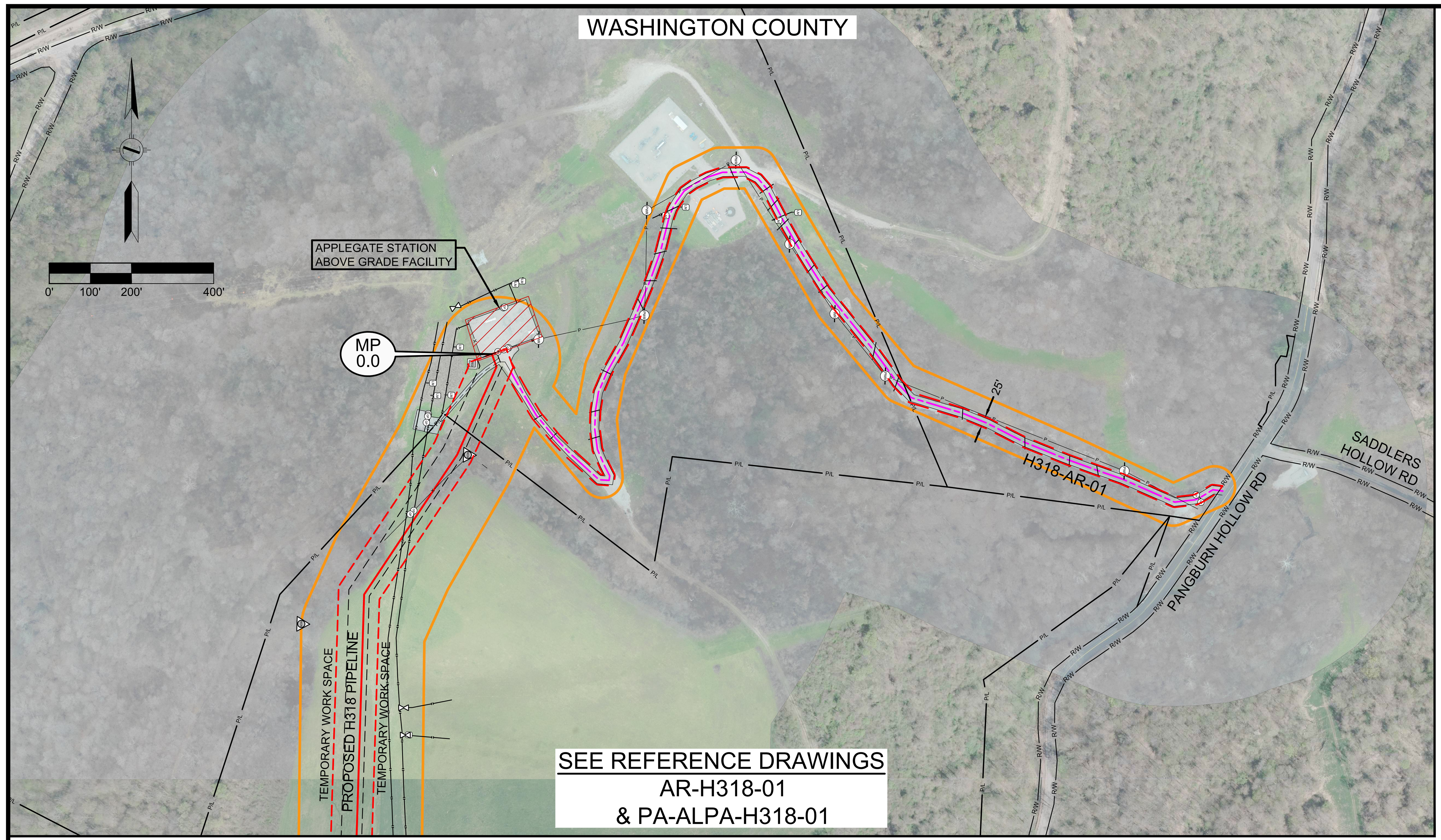
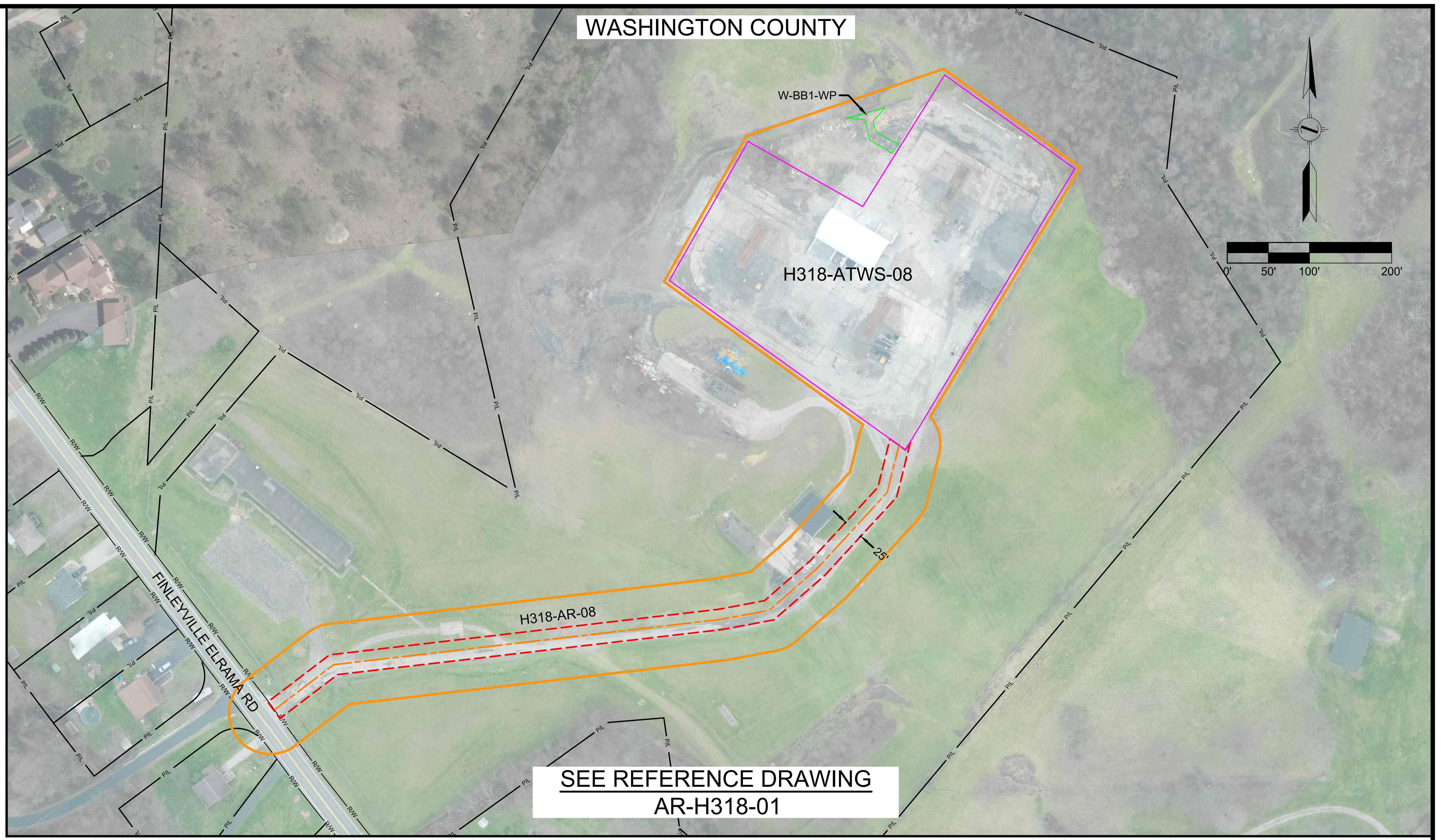
APPROVED FOR FERC			APPROVED FOR BIDDING			APPROVED FOR CONSTRUCTION		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	.	....	../../..	.	....	../../..
1	JSW	02/05/16						
2	JSW	04/15/16						

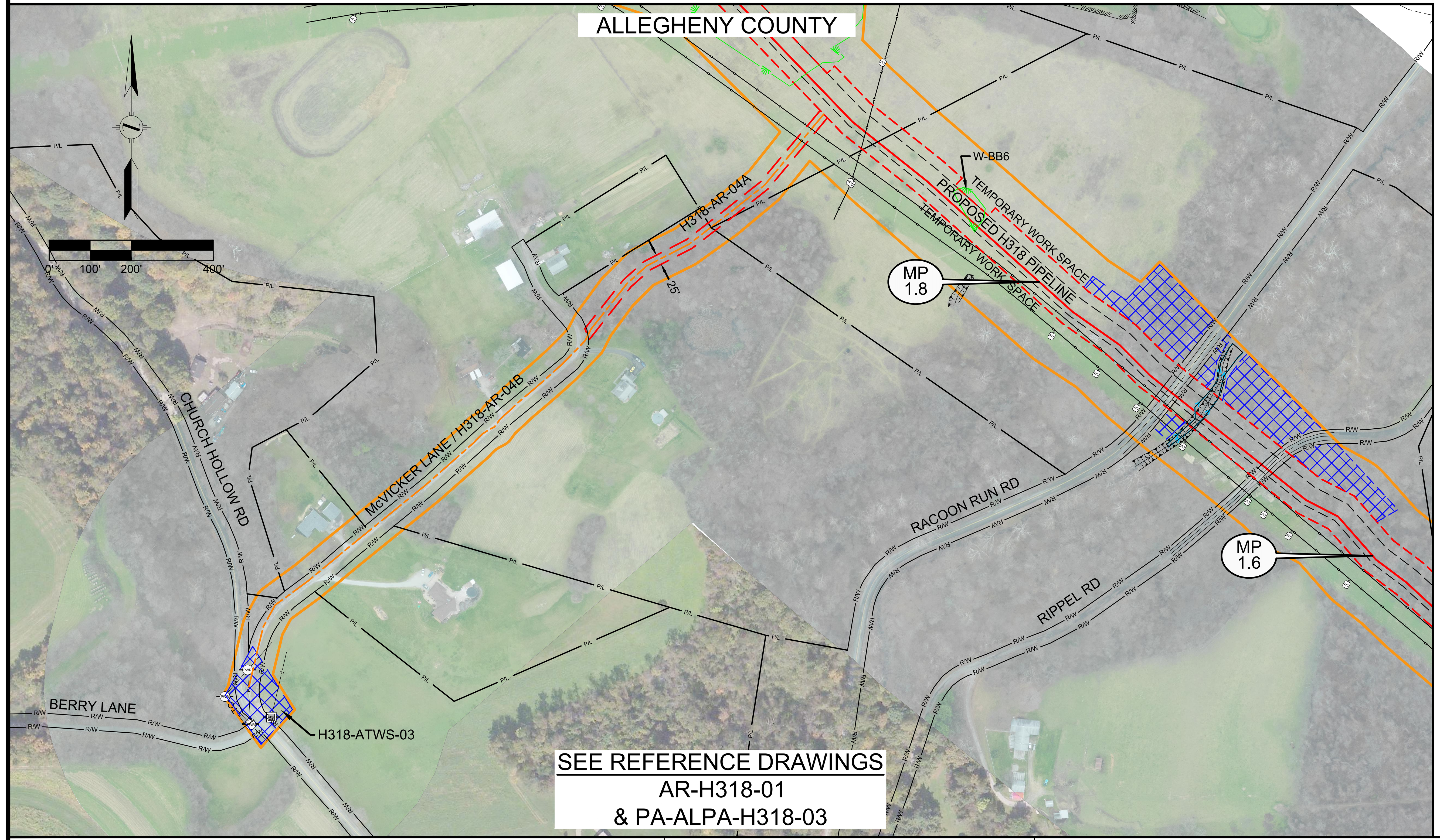
HORZ. SCALE: AS SHOWN	
DRAWN BY: HEI(JDB)	10/07/15
DRAFTING CK:	.
ENGINEERING CK:	.
UEI JOB NO.:	
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
UEI FILE NO.	
DRAWING NO.: EEP-ADAR-01	
SHEET 1 OF 3	REV. 1
DATE OF PLOT: 10/28/16 3:16 PM	

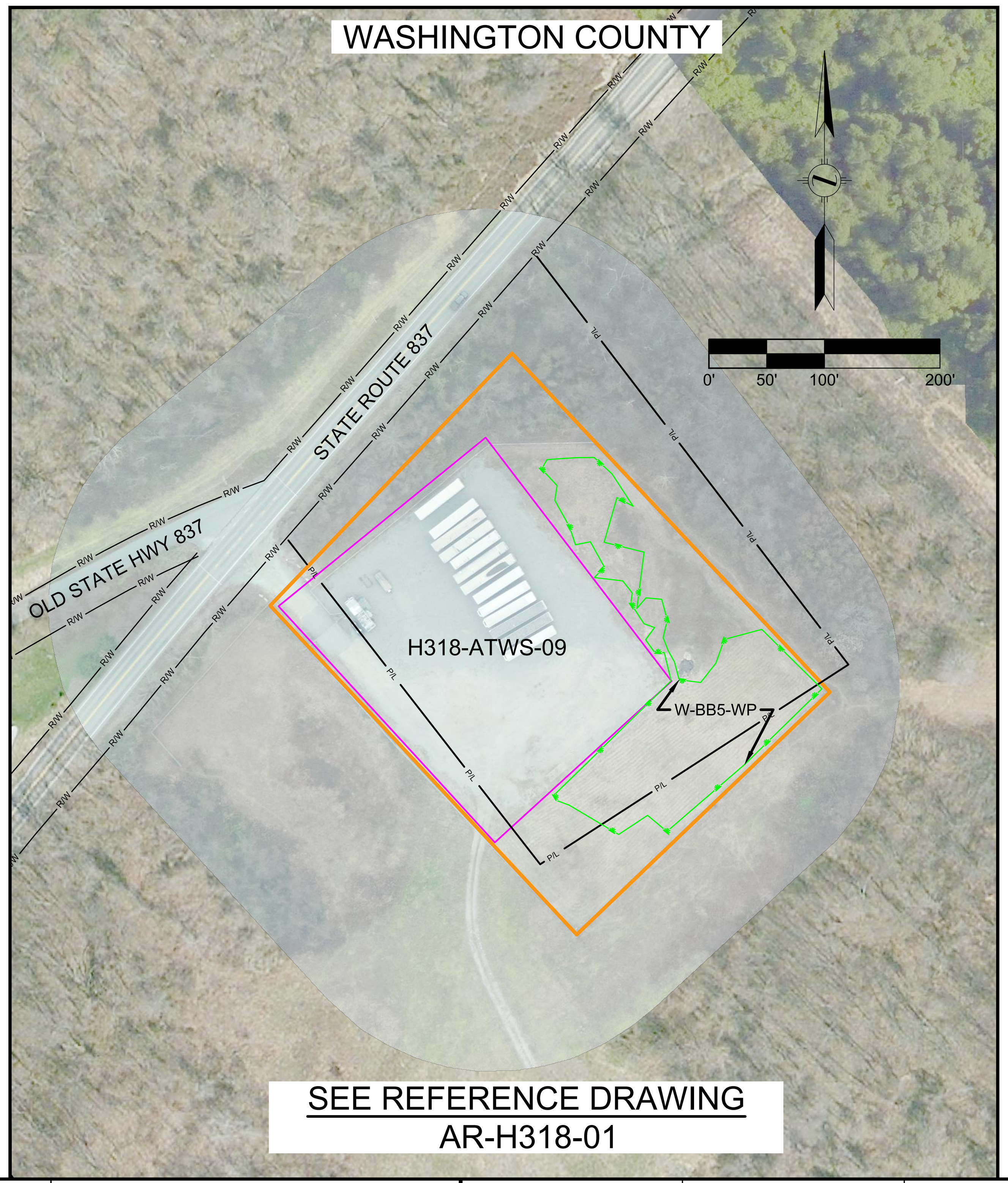
EQUITRANS

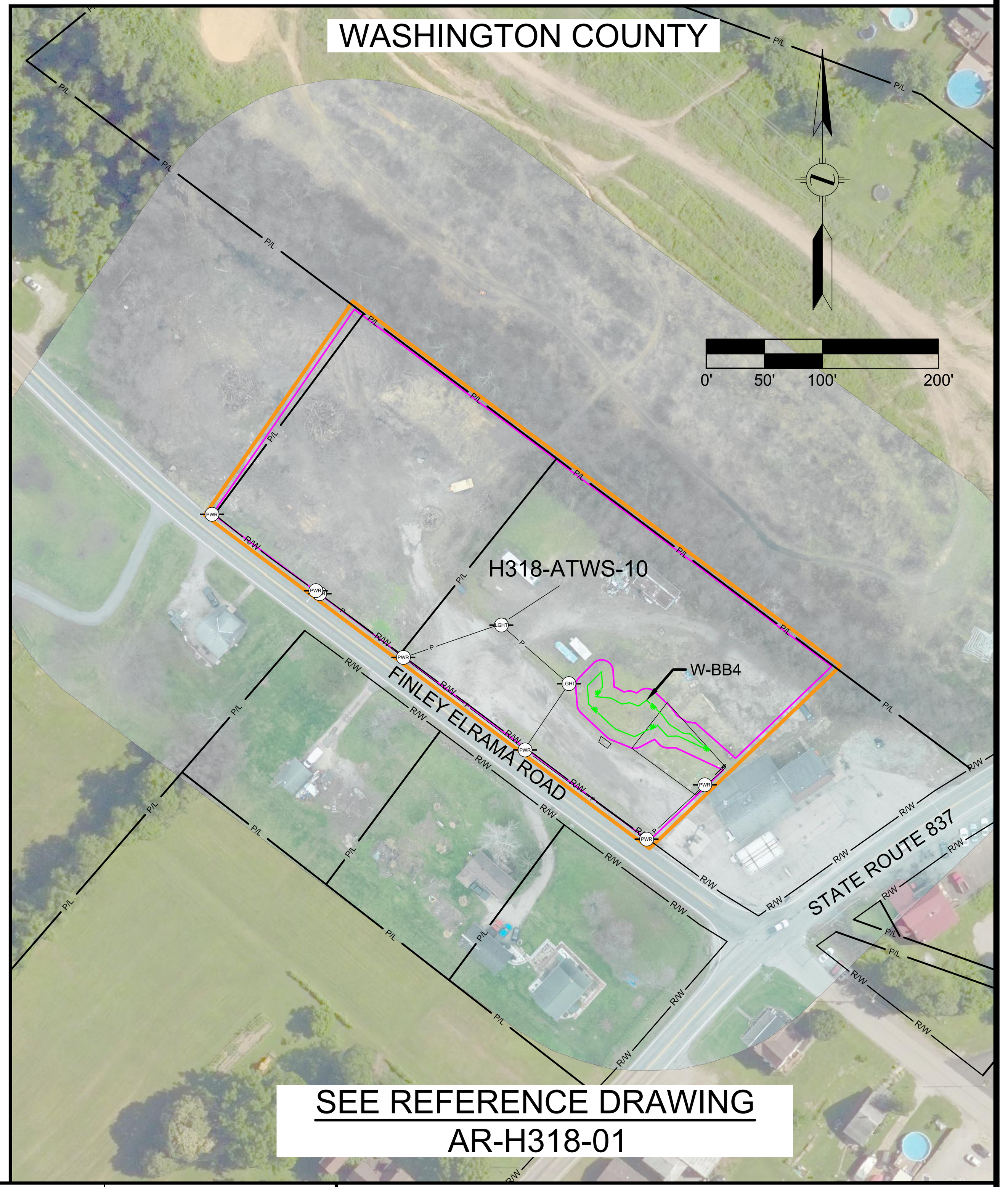
AERIAL DETAILS
PROPOSED ANCILLARY SITES & ACCESS ROADS
EQUITRANS EXPANSION PROJECT
GREENE COUNTY, PENNSYLVANIA











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

REV.	BY	DATE	DESCRIPTION
0	HEI	10/23/15	ISSUED TO FERC
1	HEI	02/05/16	RESPONSE TO FERC DATA REQUEST
3	HEI	08/03/16	ISSUED FOR REVIEW

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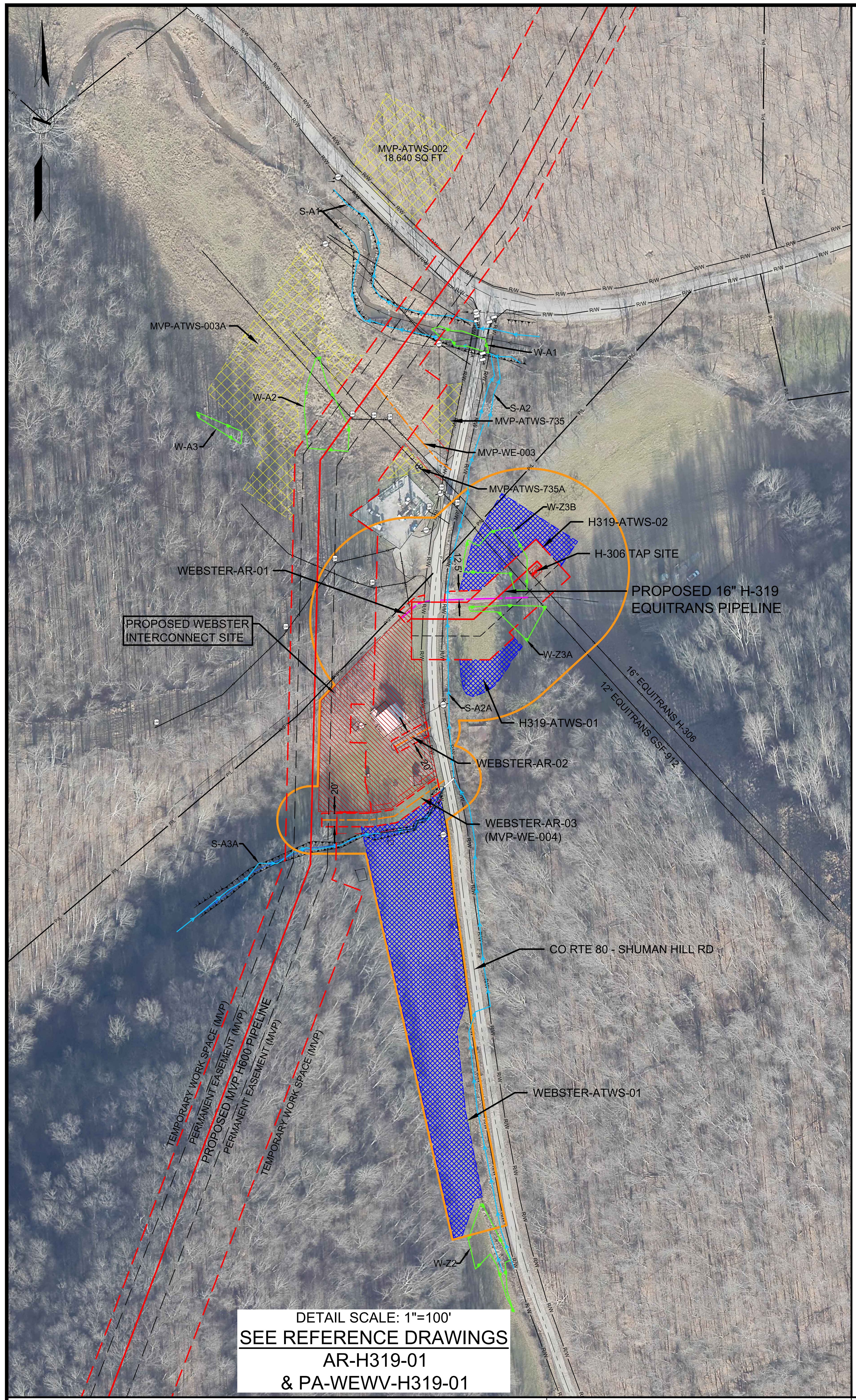
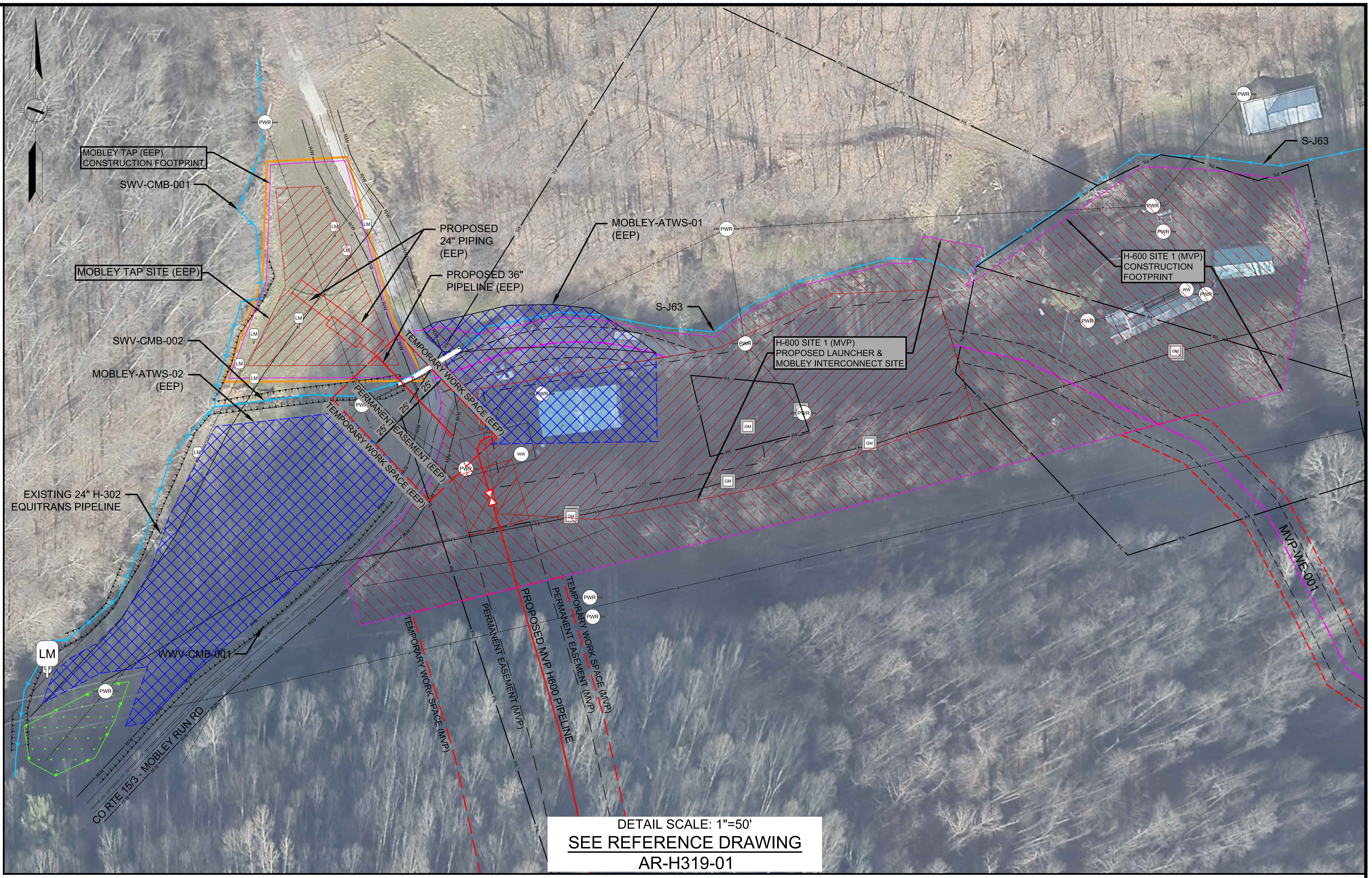
APPROVED FOR FERC			APPROVED FOR BIDDING			APPROVED FOR CONSTRUCTION		
REV.	BY	DATE	REV.	BY	DATE	REV.	BY	DATE
0	JSW	10/23/15	.	....	../../..	.	....	../../..
1	JSW	02/05/16						

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: 8/3/16 5:45 PM	

EQUITRANS

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





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
- BUILDING
- PIPELINE MARKER
- 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

REFERENCE DRAWINGS

DRAWING NUMBER	TITLE
.	....

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
3	HEI	10/28/16	ISSUED FOR REVIEW

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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	.	....	../../..	.	....	../../..
1	JSW	02/05/16						
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.: 15-03-071	
UEI FILE NO.	
DRAWING NO.: EEP-ADAR-03	
SHEET 3 OF 3	REV. 3
DATE OF PLOT: 10/28/16 3:17 PM	

EQUITRANS

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

LEGEND

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