RIGHT-OF-WAY & OWNERSHIP DATA

RIGHT-OF-WAY & OWNERSHIP DATA	12868+80	VA-RO-069 10 LF 10 SLOPE	12868+90	VA-RO-5637 299 LF 302 SLOPE	EQUATION: 12871+54 BACK = 12870+06 AHEAD 12870+41	VA-FR-001 / VA-RO-5637 39 LF 39 SLOPE	12870+80	VA-FR-001 3675 LF 3779 SLOPE	12907+55	VA-FR-001 / VA-FR-001.01 56 LF 56 SLOPE	12908+11	VA-FR-001.01 1470 LF 1507 SLOPE	12922+81

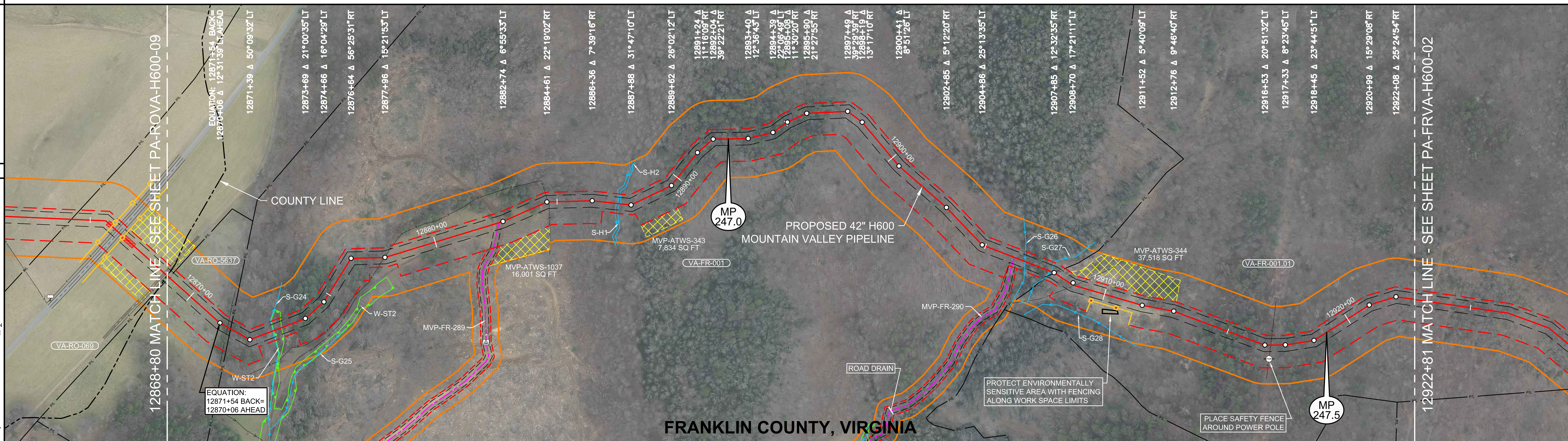
DESIGN

PIPE / COATING	12868+80	1	12872+15	4	12872+55	1	12887+18	4	12887+58	1	12906+57	4	12907+77	1	12922+81
SLOPE DISTANCE		498'		40'		1506'		40'		1947'		120'		1542'	
CLASS LOCATION / HCA		1													

ENVIRONMENTAL

CONSTRUCTION EXCLUSION					
WETLAND / STREAM	S-G24 6 LF	W-ST2 48 LF	S-H1 10 LF	S-G26 7 LF	S-G27 7 LF
.					
.					

PLAN VIEW



0' 100' 200' 400'

LEGEND

- STUDY CORRIDOR
- PROPOSED 42"PIPELINE
- NON-SURVEYED C/L
- 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
- LIMITS OF DISTURBANCE

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

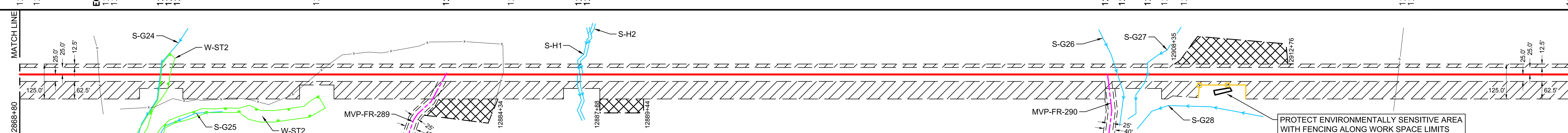
OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

HORIZONTAL STATIONING

- 12868+80 MATCH LINE, END ROANOKE CO., BEGIN FRANKLIN COUNTY
- 12868+90 PROPERTY LINE
- **EQAUTION: 12871+54 BACK = 12870+06 AHEAD**
- 12870+40 FENCE – BARBED WIRE
- 12870+53 PROPERTY LINE
- 12872+35 ℄ STREAM(S–G24)
- 12872+33 BEGIN WETLAND(W–ST2) 38'RT
- 12872+81 END WETLAND(W–ST2) 38'LT
- 12877+94 FENCE – BARBED WIRE
- 12882+58 ACCESS RD – PERMANENT (MVP–FR–289)
- 12884+66 FENCE – BARBED WIRE
- 12887+33 STREAM BANK(S–H1)
- 12887+43 STREAM BANK(S–H1)
- 12906+19 ACCESS RD – PERMANENT (MVP–FR–290)
- 12906+64 ℄ STREAM(S–G26)
- 12907+71 ℄ STREAM(S–G27)
- 12907+87 PROPERTY LINE
- 12908+78 ℄ TRAIL(DIRT)
- 12916+69 POWER POLE 53'RT
- 12916+76 OHP LINE
- 12922+81 MATCH LINE

WORK SPACE

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



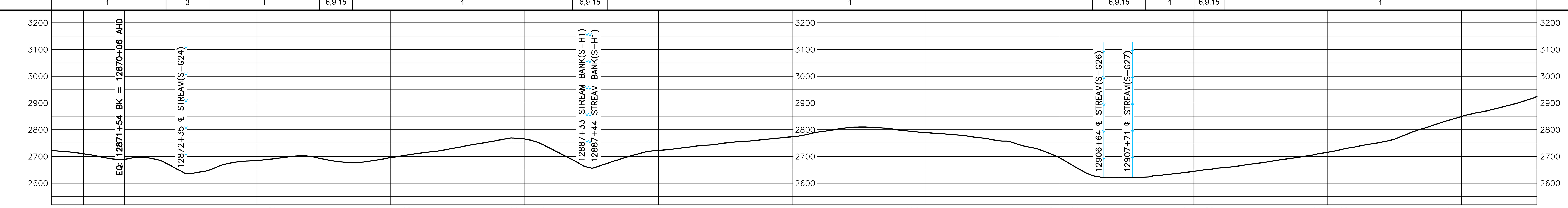
CONSTRUCTION METHOD

1	3	1	6,9,15	1	6,9,15	1	6,9,15	1	6,9,15	1

CONSTRUCTION METHOD KEY

- 1 - TYPICAL R/W WORKING SIDE RIGHT
- 1.1 - TYPICAL R/W WORKING SIDE RIGHT
- 2 - TYPICAL R/W WORKING SIDE LEFT
- 2.1 - TYPICAL R/W WORKING SIDE LEFT
- 3 - TYPICAL WETLAND X-ING
- 4 - ROAD X-ING - BORE
- 5 - RAILROAD X-ING - BORE
- 6 - WATERBODY X-ING OPEN CUT - FLUME
- 7 - PARALLEL TO POWER LINE
- 8 - RIDGE CONSTRUCTION
- 9 - WATERBODY X-ING OPEN CUT - WET DITCH
- 10 - HDD ENTRY PLAN
- 11 - HDD EXIT PLAN
- 12 - HDD CONSTRUCTION
- 13 - PARALLEL TO POWER LINE
- 14 - PARALLEL TO POWER LINE
- 15 - WATERBODY X-ING OPEN CUT - DRY/DAM & PUMP
- 33 - SIDE HILL CONSTRUCTION
- 34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5493	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
4	200	42"O.D. X 0.740"W.T., X-70, FBE & ARO
		TYPE 1 TEST STATION - PIPELINE

REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

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Mountain Valley PIPELINE

PIPELINE ALIGNMENT

MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 12868+80 TO STA. 12922+81

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -01	
SHEET 271 OF 329	REV. 4
DATE OF PLOT: 10/11/16 10:25 AM	

RIGHT-OF-WAY & OWNERSHIP DATA

12922+81	VA-FR-001.01 793 LF 842 SLOPE	12930+74	VA-FR-001.01 / VA-FR-005 110 LF 114 SLOPE	12931+84	VA-FR-005 275 LF 285 SLOPE	12934+59	VA-FR-008 / VA-FR-005 90 LF 93 SLOPE	12935+49	VA-FR-008 1807 LF 1860 SLOPE	12953+56	VA-FR-008.01 / VA-FR-008 18 LF 19 SLOPE	12953+74

12953+74	VA-FR-008.01 / VA-FR-009 / VA-FR-008 16 LF 17 SLOPE	12953+90	VA-FR-009 1384 LF 1506 SLOPE	12967+74	VA-FR-010 885 LF 971 SLOPE	12976+59

DESIGN

PIPE / COATING	12922+81	1	12976+59
SLOPE DISTANCE		5707'
CLASS LOCATION / HCA		1

ENVIRONMENTAL

CONSTRUCTION EXCLUSION	
WETLAND / STREAM	
.	
.	

PLAN VIEW

0' 100' 200' 400'

LEGEND

- STUDY CORRIDOR
- PROPOSED 42"PIPELINE
- NON-SURVEYED C/L
- 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
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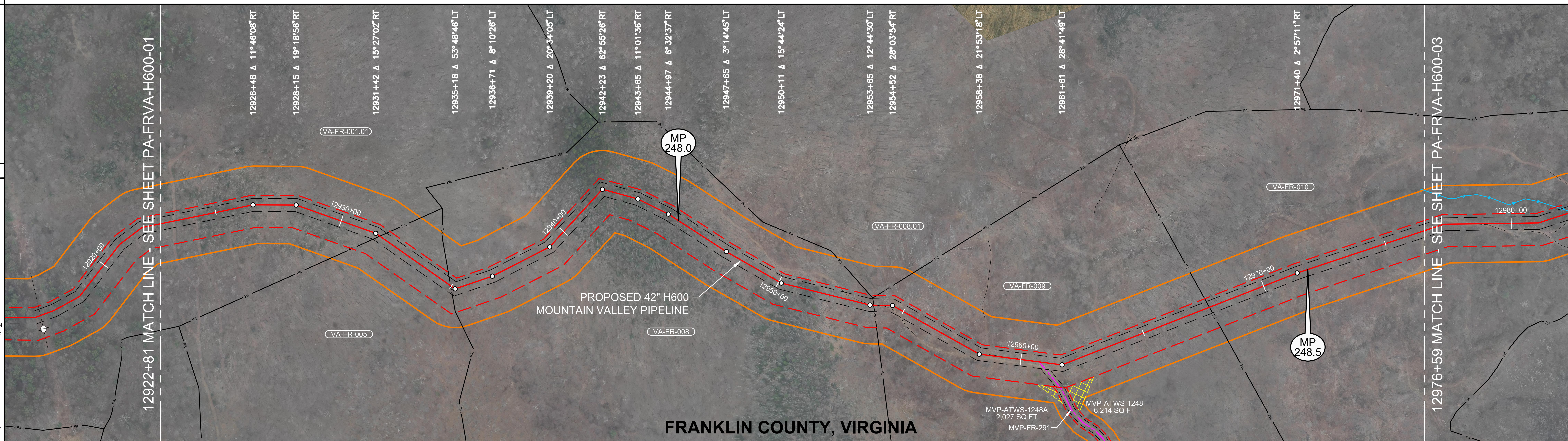
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY
- LIMITS OF DISTURBANCE



REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

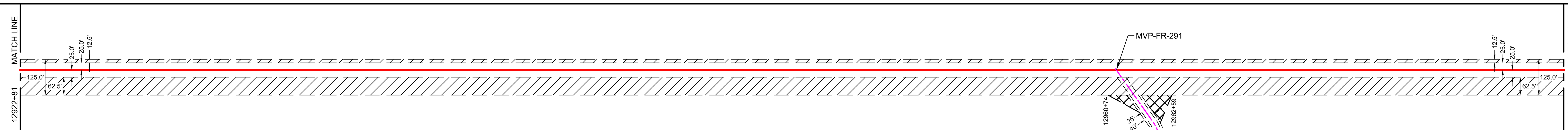
OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

HORIZONTAL STATIONING

- 12922+81 MATCH LINE
- 12931+62 PROPERTY LINE
- 12934+97 PROPERTY LINE
- 12953+79 PROPERTY LINE
- 12960+02 FENCE – HOG WIRE
- 12961+00 ACCESS RD – PERMANENT (MVP–FR–291)
- 12967+74 PROPERTY LINE
- 12976+59 MATCH LINE

WORK SPACE

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



CONSTRUCTION METHOD

1

CONSTRUCTION METHOD KEY

1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
2 - TYPICAL R/W WORKING SIDE LEFT
2.1 - TYPICAL R/W WORKING SIDE LEFT
3 - TYPICAL WETLAND X-ING
4 - ROAD X-ING - BORE
5 - RAILROAD X-ING - BORE
6 - WATERBODY X-ING OPEN CUT - FLUME
7 - PARALLEL TO POWER LINE
8 - RIDGE CONSTRUCTION
9 - WATERBODY X-ING OPEN CUT - WET DITCH
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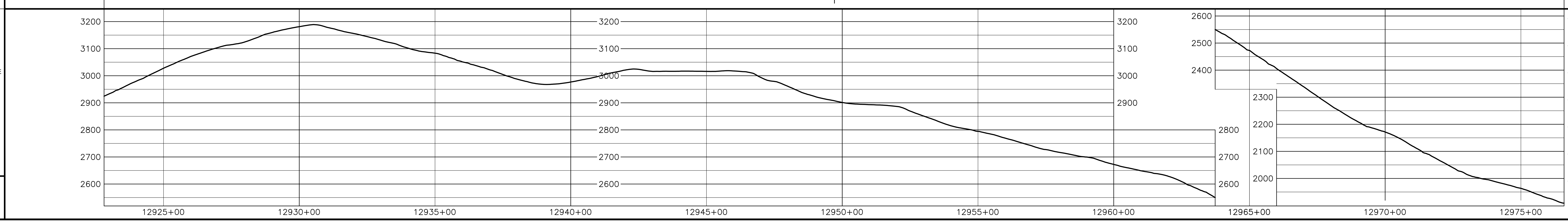
15 - WATERBODY X-ING OPEN CUT - DRY/DAM & PUMP
33 - SIDE HILL CONSTRUCTION
34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5707	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
		TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT

MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 12922+81 TO STA. 12976+59

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:.	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -02	
SHEET 272 OF 329	REV. 4
DATE OF PLOT: 10/11/16 9:49 AM	

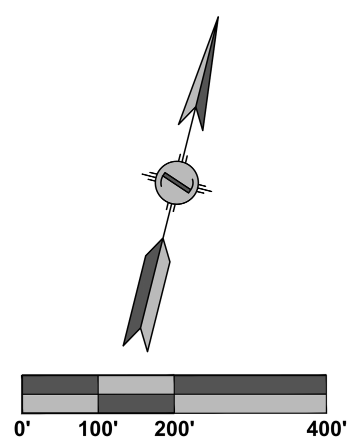
RIGHT-OF-WAY & OWNERSHIP DATA	12976+59	VA-FR-010 1583 LF 1624 SLOPE	12992+42	VA-FR-010 / VA-FR-011 56 LF 57 SLOPE	12992+98	VA-FR-011 963 LF 970 SLOPE	13002+61	VA-FR-012 304 LF 310 SLOPE	13005+65

DESIGN

PIPE / COATING	12976+59	1	12982+36	5	12986+36	1	12991+18	5	12991+58	1	13005+65
SLOPE DISTANCE		603'		400'		497'		40'		1421'	
CLASS LOCATION / HCA		1									

ENVIRONMENTAL

CONSTRUCTION EXCLUSION					
WETLAND / STREAM	S-D17 589 LF	S-D13 4 LF	W-D7 66 LF	S-D12 6 LF	TTVA-S-D11 10 LF
.					
.					



PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED 42"PIPELINE
- NON-SURVEYED C/L
- 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
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- 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
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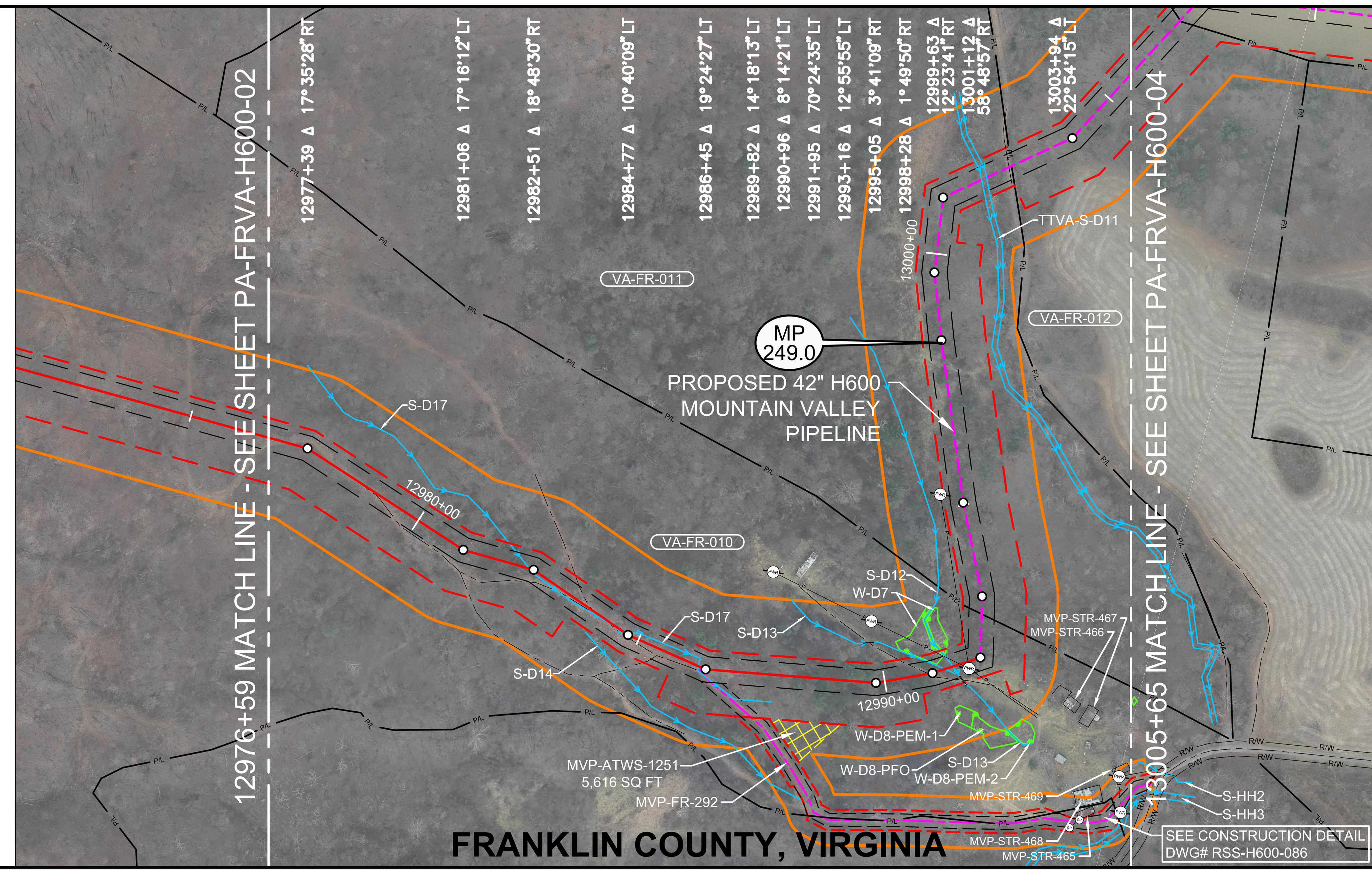
- TREE
- GUY ANCHOR
- TANK
- GAS VALVE
- WELL - GAS/OIL/WATER/ MONITORING
- POST - GATE/FENCE
- ELEC/GAS/WTR METER
- PEDESTAL - UTILITY
- MH - SANITARY/WATER
- CATCH BASIN - CULVERT
- ADDITIONAL TEMPORARY WORK SPACE(ATWS)
- ABOVE GROUND FACILITY
- LIMITS OF DISTURBANCE



AERIAL PHOTOGRAPHY DATE: APRIL 2015 & JANUARY 2016

OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

REFERENCE DRAWINGS

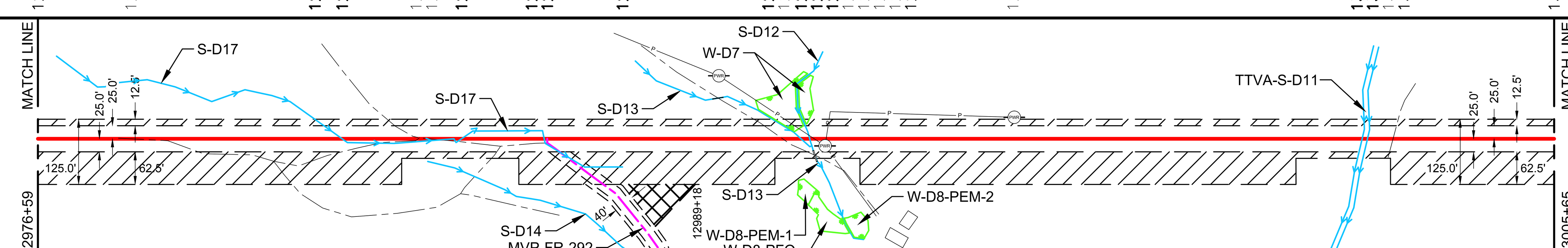
DRAWING NO.	DESCRIPTION
RSS-H600-086	RESIDENTIAL SITE SPECIFIC

HORIZONTAL STATIONING

- 12976+59 MATCH LINE
- 12978+38 ℄ TRAIL (DIRT)
- 12981+90 BEGIN ℄ STREAM(S-D17) 38'LT
- 12982+42 ℄ STREAM(S-D17)
- 12983+87 ℄ TRAIL (DIRT)
- 12984+09 ℄ TRAIL (DIRT)
- 12984+70 ℄ STREAM(S-D17)
- 12986+29 ℄ STREAM(S-D17)
- 12986+35 ACCESS ROAD - PERMANENT (MVP-FR-292)
- 12987+79 END ℄ STREAM(S-D17) 54'RT
- 12990+71 BEGIN WETLAND(W-D7) 38'LT
- 12990+88 ℄ TRAIL(DIRT)
- 12991+21 ℄ STREAM(S-D13)
- 12991+37 END WETLAND(W-D7) 38'LT
- 12991+38 ℄ STREAM(S-D12)
- 12991+45 CULVERT OPEN END 23'RT
- 12991+53 OHP LINE
- 12991+67 POWER POLE 14'RT
- 12991+69 OHP LINE
- 12992+81 PROPERTY LINE
- 12995+27 POWER POLE 43'LT
- 13001+96 STREAM BANK(TTVA-S-D11)
- 13002+06 STREAM BANK(TTVA-S-D11)
- 13002+55 ℄ DRIVEWAY(DIRT)
- 13002+61 PROPERTY LINE
- 13005+65 MATCH LINE

WORK SPACE

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



CONSTRUCTION METHOD

1	6,9,15	1	3,6,9,15	1	6,9,15	1

CONSTRUCTION METHOD KEY

1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
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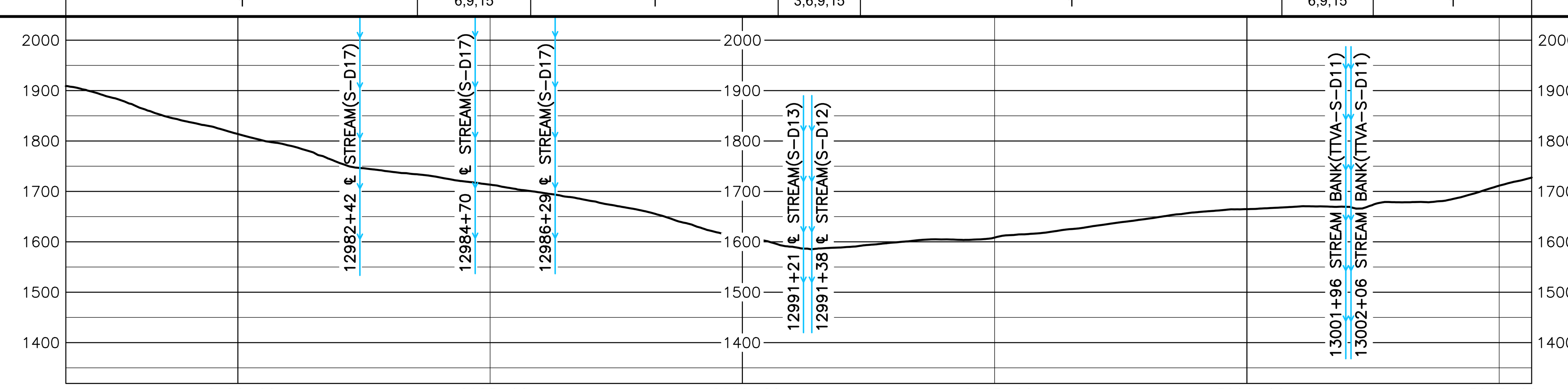
34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	2521	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
5	440	42"O.D. X 0.888"W.T., X-70, FBE & ARO
		TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT

MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 12976+59 TO STA. 13005+65

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:.	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -03	
SHEET 273 OF 329	REV. 4
DATE OF PLOT: 10/11/16 9:49 AM	

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Parcel	Length
13005+65 – 13007+08	VA-FR-012	143 LF, 145 SLOPE
13007+08 – 13009+12	VA-FR-013.01 / VA-FR-012	204 LF, 205 SLOPE
13009+12 – 13041+52	VA-FR-013.01	3240 LF, 3270 SLOPE
13041+52 – 13042+17	VA-FR-3856	64 LF, 69 SLOPE
13042+17 – 13042+57	STATE ROUTE 745	40 LF - 42 SLOPE
13042+57 – 13043+26	VA-FR-015.01	69 LF, 74 SLOPE
13043+26 – 13044+51	VA-FR-015.01 / VA-FR-014	125 LF, 135 SLOPE

DESIGN

	13005+65 – 13041+77	13041+77 – 13042+17	13042+17 – 13042+57	13042+57 – 13044+51
PIPE / COATING	1	4	5	1
SLOPE DISTANCE	3650'	40'	40'	210'
CLASS LOCATION / HCA	1			

ENVIRONMENTAL

CONSTRUCTION EXCLUSION: T.O.Y.R.: NO CONSTRUCTION OCTOBER 1ST TO JUNE 30TH WITHIN STREAM S-D8

WETLAND / STREAM: S-D8 — 18 LF

PLAN VIEW

0' 100' 200' 400'

LEGEND

STUDY CORRIDOR
PROPOSED 42"PIPELINE
NON-SURVEYED C/L
500' TICK MARK
EXISTING PIPELINE
PERMANENT EASEMENT
WORK SPACE LIMITS
PERMANENT ACCESS RD
TEMPORARY ACCESS RD
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COUNTY LINE
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ROAD RIGHT-OF-WAY
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OVERHEAD POWER
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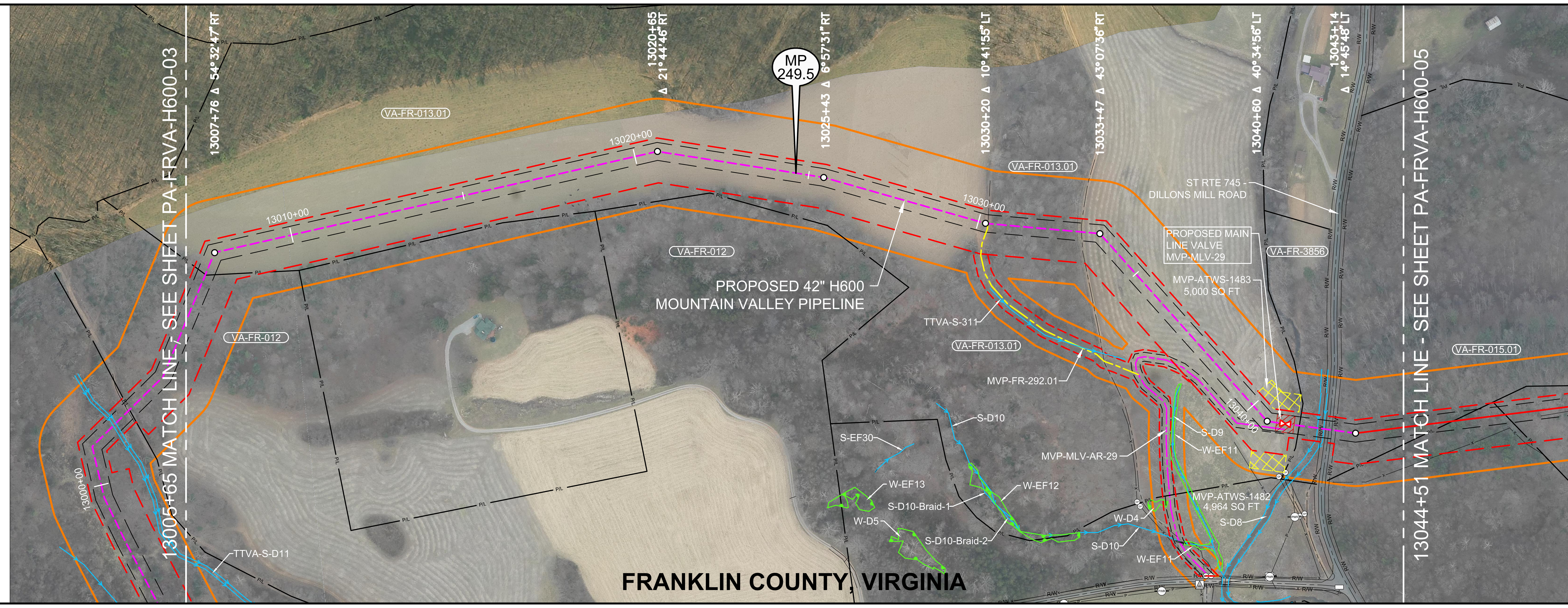
C/L ROAD
C/L RAILROAD
DELINEATED STREAM
DELINEATED WETLAND
BARRACADE FENCE
PI SYMBOL — PROPOSED TEST STATION
MAILBOX — LINE MARKER - VENT PIPE
POWER/TELE POLE
SIGN — TOWER LEG
TREE — GUY ANCHOR
TANK — GAS VALVE
WELL - GAS/OIL/WATER/MONITORING
POST - GATE/FENCE
ELEC/GAS/WTR METER
PEDESTAL - UTILITY
MH - SANITARY/WATER
CATCH BASIN - CULVERT
ADDITIONAL TEMPORARY WORK SPACE(ATWS)
ABOVE GROUND FACILITY
LIMITS OF DISTURBANCE



AERIAL PHOTOGRAPHY DATE: APRIL 2015 & JANUARY 2016

OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

REFERENCE DRAWINGS

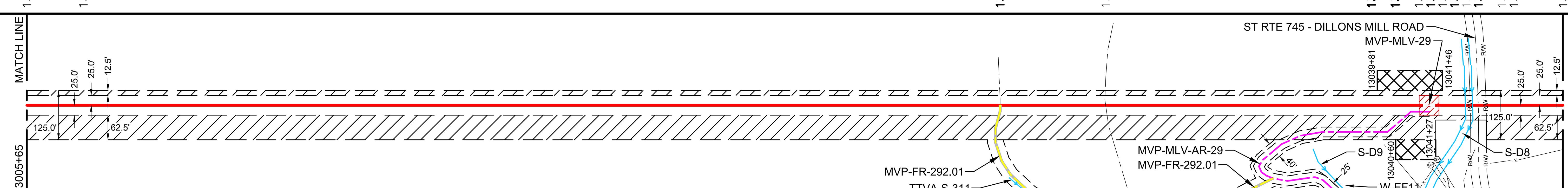
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

13005+65 MATCH LINE
13007+08 PROPERTY LINE
13030+27 ACCESS RD – TEMPORARY (MVP–FR–292.01)
13032+94 ℄ FIELD ROAD(DIRT)
13041+12 MAIN LINE VALVE–PROPOSED – (MVP–MLV–29)
13041+12 ACCESS ROAD – PERMANENT – (MVP–MLV–AR–29)17'RT
13041+52 PROPERTY LINE
13042+04 STREAM BANK(S–D8)
13042+17 RIGHT–OF–WAY
13042+22 STREAM BANK(S–D8)
13042+28 EGDE OF ASPHALT
13042+37 ℄ ST RTE 745 – DILLONS MILL ROAD
13042+46 EGDE OF ASPHALT
13042+57 RIGHT–OF–WAY
13044+51 MATCH LINE

WORK SPACE

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



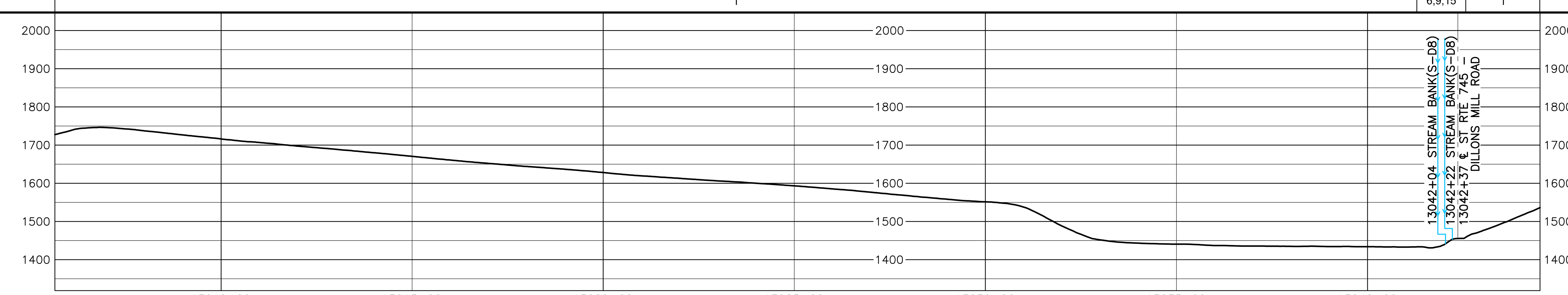
CONSTRUCTION METHOD

13005+65 – 13041+77	13041+77 – 13042+57	13042+57 – 13044+51
1	6,9,15	1

CONSTRUCTION METHOD KEY

1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
2 - TYPICAL R/W WORKING SIDE LEFT
2.1 - TYPICAL R/W WORKING SIDE LEFT
3 - TYPICAL WETLAND X-ING
4 - ROAD X-ING - BORE
5 - RAILROAD X-ING - BORE
6 - WATERBODY X-ING OPEN CUT - FLUME
7 - PARALLEL TO POWER LINE
8 - RIDGE CONSTRUCTION
9 - WATERBODY X-ING OPEN CUT - WET DITCH
10 - HDD ENTRY PLAN
11 - HDD EXIT PLAN
12 - HDD CONSTRUCTION
13 - PARALLEL TO POWER LINE
14 - PARALLEL TO POWER LINE
15 - WATERBODY X-ING OPEN CUT - DRY/DAM & PUMP
33 - SIDE HILL CONSTRUCTION
34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3860	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
4	40	42"O.D. X 0.740"W.T., X-70, FBE & ARO
5	40	42"O.D. X 0.888"W.T., X-70, FBE & ARO
		TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT

MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 13005+65 TO STA. 13044+51

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:.	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -04	
SHEET 274 OF 329	REV. 4
DATE OF PLOT: 10/12/16 11:46 AM	

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Owner(s)	Length
13044+51 – 13047+05	VA-FR-015.01 / VA-FR-014	254 LF, 275 SLOPE
13047+05 – 13047+13	VA-FR-014	8 LF, 9 SLOPE
13047+13 – 13048+07	VA-FR-015 / VA-FR-014	94 LF, 98 SLOPE
13048+07 – 13050+46	VA-FR-015	239 LF, 245 SLOPE
13050+46 – EQUATION: 13051+29 BACK= 13033+99 AHEAD – 13037+66	VA-FR-015.01 / VA-FR-015	450 LF, 471 SLOPE
13037+66 – 13043+48	VA-FR-015	582 LF, 598 SLOPE
13043+48 – 13045+78	VA-FR-015.01 / VA-FR-015	230 LF, 249 SLOPE
13045+78 – 13046+20	VA-FR-015.03 / VA-FR-015.01 / VA-FR-015	42 LF, 43 SLOPE
13046+20 – 13046+42	VA-FR-015.01 / VA-FR-015	22 LF, 22 SLOPE
13046+42 – 13048+17	VA-FR-015	175 LF, 175 SLOPE
13048+17 – 13048+27	VA-FR-016 / VA-FR-015	10 LF, 11 SLOPE
13048+27 – 13049+09	VA-FR-016 / VA-FR-015	82 LF, 82 SLOPE
13049+09 – 13052+31	VA-FR-016	322 LF, 329 SLOPE
13052+31 – 13057+95	VA-FR-016 / VA-FR-015	564 LF, 569 SLOPE
13057+95 – 13062+04	VA-FR-015	409 LF, 411 SLOPE
13062+04 – 13062+28	VA-FR-015.04	24 LF, 24 SLOPE
13062+28 – 13065+26	VA-FR-016 / VA-FR-015.04	298 LF, 301 SLOPE
13065+26 – 13069+66	VA-FR-016 / VA-FR-015.02	440 LF, 446 SLOPE
13069+66 – 13075+32	VA-FR-015.02	566 LF, 578 SLOPE
13075+32 – 13077+35	VA-FR-016 / VA-FR-015.02	203 LF, 208 SLOPE
13077+35 – 13083+18	VA-FR-016	583 LF, 619 SLOPE

DESIGN

	13044+51 – 13048+27	13048+27 – 13083+18
PIPE / COATING	1	1
SLOPE DISTANCE	2196'	3568'
CLASS LOCATION / HCA	1	1

ENVIRONMENTAL

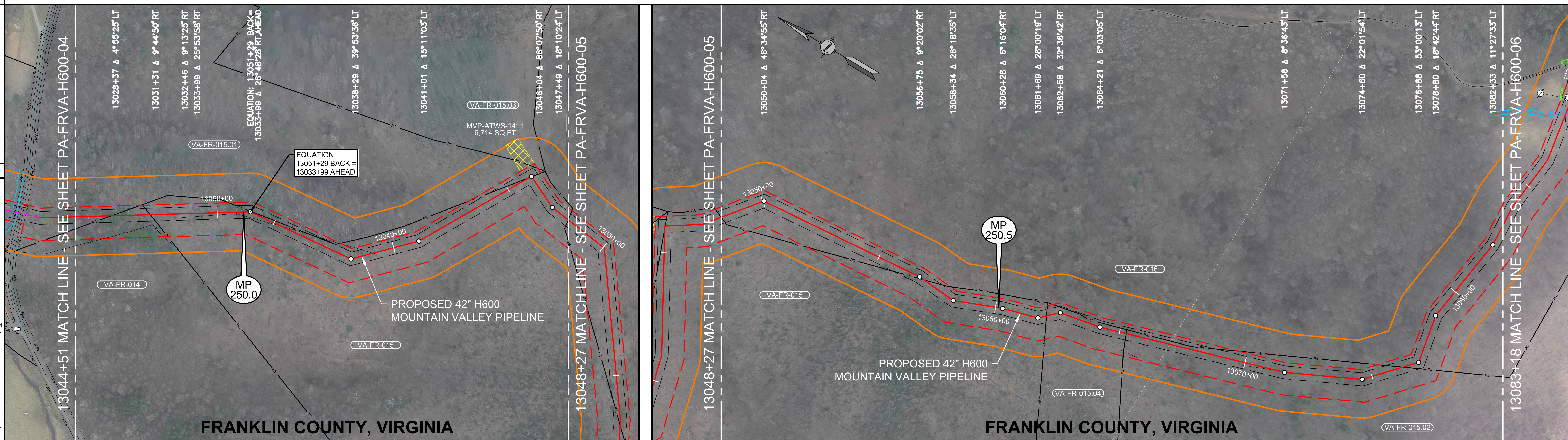
CONSTRUCTION EXCLUSION	
WETLAND / STREAM	
.	
.	

0' 100' 200' 400'

PLAN VIEW

LEGEND

STUDY CORRIDOR
PROPOSED 42"PIPELINE
NON-SURVEYED C/L
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
LIMITS OF DISTURBANCE



AERIAL PHOTOGRAPHY DATE: APRIL 2015 & JANUARY 2016

OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

REFERENCE DRAWINGS

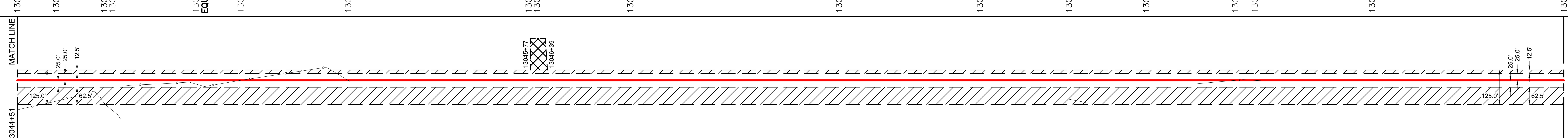
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

13044+51 MATCH LINE
13045+91 PROPERTY LINE
13047+41 PROPERTY LINE
13047+73 PROPERTY CORNER 33'RT
13050+97 PROPERTY CORNER 15'RT
EQUATION: 13051+29 BACK = 13033+99 AHEAD
13035+30 FENCE – BARBED WIRE
13039+18 FENCE – BARBED WIRE
13045+93 PROPERTY LINE
13046+21 PROPERTY CORNER 11'RT
13048+27 MATCH LINE, PROPERTY LINE
13056+94 PROPERTY LINE
13062+04 PROPERTY LINE
13065+26 PROPERTY LINE
13068+06 PROPERTY CORNER 12'RT
13071+28 FENCE – BARBED WIRE
13071+99 FENCE – BARBED WIRE
13076+23 PROPERTY LINE
13083+18 MATCH LINE

WORK SPACE

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



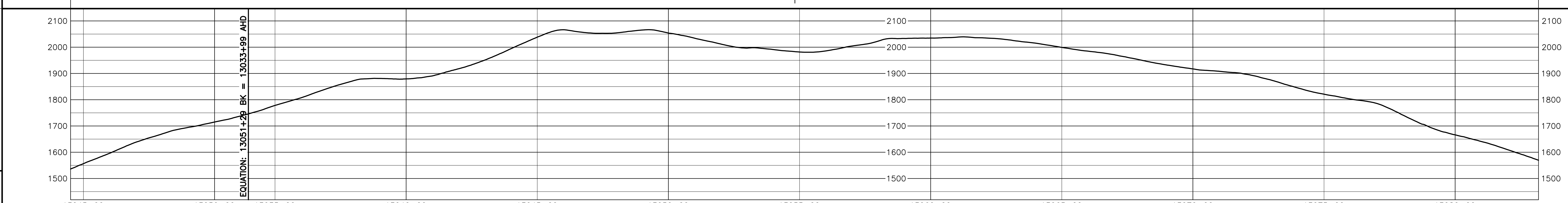
CONSTRUCTION METHOD

1

CONSTRUCTION METHOD KEY

1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
2 - TYPICAL R/W WORKING SIDE LEFT
2.1 - TYPICAL R/W WORKING SIDE LEFT
3 - TYPICAL WETLAND X-ING
4 - ROAD X-ING - BORE
5 - RAILROAD X-ING - BORE
6 - WATERBODY X-ING OPEN CUT - FLUME
7 - PARALLEL TO POWER LINE
8 - RIDGE CONSTRUCTION
9 - WATERBODY X-ING OPEN CUT - WET DITCH
10 - HDD ENTRY PLAN
11 - HDD EXIT PLAN
12 - HDD CONSTRUCTION
13 - PARALLEL TO POWER LINE
14 - PARALLEL TO POWER LINE
15 - WATERBODY X-ING OPEN CUT - DRY/DAM & PUMP
33 - SIDE HILL CONSTRUCTION
34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5764	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
		TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT

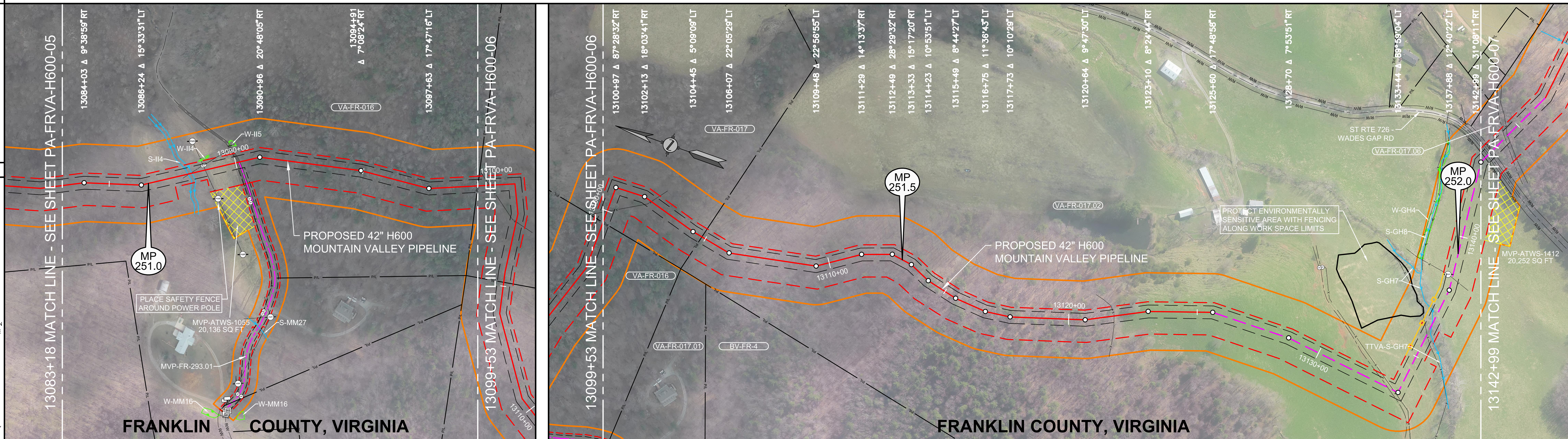
MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 13044+51 TO STA. 13083+18

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:.	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -05	
SHEET 275 OF 329	REV. 4
DATE OF PLOT: 10/11/16 9:50 AM	

RIGHT-OF-WAY & OWNERSHIP DATA		13083+18	VA-FR-016 1635 LF 1680 SLOPE	13099+53	13099+53	VA-FR-017 532 LF 538 SLOPE	13104+85	VA-FR-017.02 3814 LF 3837 SLOPE	13142+99

DESIGN										
PIPE / COATING	13083+18	1	13087+98	4	13088+38	1	13099+53	13099+53	1	13136+16 · 4 · 13136+56 · 1 · 13142+99
SLOPE DISTANCE		500'		40'		1140'			3691'	40' · 644'
CLASS LOCATION / HCA		1							1	

ENVIRONMENTAL			
CONSTRUCTION EXCLUSION			
WETLAND / STREAM	S-II4 16 LF		S-GH7 9 LF
.			
.			



PLAN VIEW

LEGEND

- STUDY CORRIDOR
- PROPOSED 42"PIPELINE
- NON-SURVEYED C/L
- 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
- LIMITS OF DISTURBANCE

AERIAL PHOTOGRAPHY DATE: APRIL 2015 & JANUARY 2016

OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

REFERENCE DRAWINGS

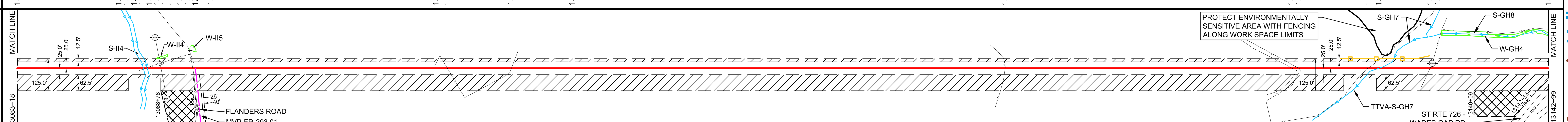
DRAWING NO.	DESCRIPTION

HORIZONTAL STATIONING

13083+18 MATCH LINE
13088+10 STREAM BANK(S-II4)
13088+18 FENCE - BARBED WIRE
13088+26 STREAM BANK(S-II4)
13088+74 GATE POST 19'LT
13088+79 OHP LINE
13088+81 GATE POST 21'LT
13089+85 CULVERT OPEN END 70'LT
13090+01 CULVERT OPEN END 70'LT
13090+03 FENCE - ELECTRIC
13090+09 EDGE OF GRAVEL
13090+13 ACCESS RD - PERMANENT (MVP-FR-293.01),
13090+17 EDGE OF GRAVEL
13099+53 MATCH LINE,PROPERTY LINE
13099+98 FENCE - BARBED WIRE
13102+46 FENCE - BARBED WIRE
13104+85 PROPERTY LINE
13121+77 FENCE - BARBED WIRE
13132+99 ℄ ROAD(DIRT)(ABANDONED)
13133+24 FENCE - ELECTRIC
13135+96 FENCE - BARBED WIRE
13136+36 ℄ STREAM(S-GH7)
13138+37 OHP LINE
13138+46 POWER POLE 19'LT
13142+99 MATCH LINE

WORK SPACE

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



CONSTRUCTION METHOD	1	6,9,15	1	6,9,15	1

CONSTRUCTION METHOD KEY
1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
2 - TYPICAL R/W WORKING SIDE LEFT
2.1 - TYPICAL R/W WORKING SIDE LEFT
3 - TYPICAL WETLAND X-ING
4 - ROAD X-ING - BORE
5 - RAILROAD X-ING - BORE
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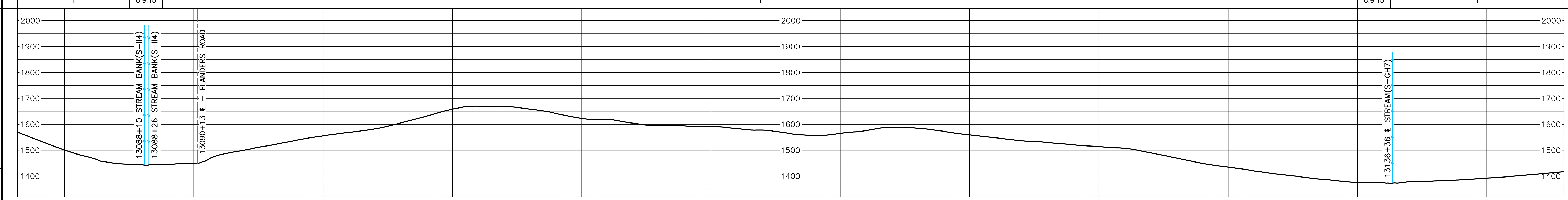
PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5975	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
		42"O.D. X 0.740"W.T., X-70, FBE & ARO
4	80	TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT
MOUNTAIN VALLEY PROJECT - H600 LINE BOWMANS PCT.,FRANKLIN CO.,VA. STA. 13083+18 TO STA. 13142+99

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:.	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -06	
SHEET 276 OF 329	REV. 4
DATE OF PLOT: 10/12/16 12:05 PM	

PIPELINE ALIGNMENT

RIGHT-OF-WAY & OWNERSHIP DATA

Station	Tract	Length / Slope
13142+99 – 13143+22	VA-FR-017.02	23 LF / 24 SLOPE
13143+22 – 13143+62	STATE ROUTE 726	40 LF - 41 SLOPE
13143+62 – 13154+37	VA-FR-017.06 (EQUATION: 13150+72 BACK = 13147+05 AHEAD)	1442 LF / 1510 SLOPE
13154+37 – 13159+37	VA-FR-017.04	500 LF / 528 SLOPE
13159+37 – 13166+01	VA-FR-017.07	664 LF / 682 SLOPE
13166+01 – 13166+56	STATE ROUTE 744	55 LF - 56 SLOPE
13166+56 – 13188+12	VA-FR-017.08	2156 LF / 2213 SLOPE
13188+12 – 13189+37	VA-FR-017.08 / VA-FR-017.10	125 LF / 129 SLOPE
13189+37 – 13189+61	VA-FR-017.09 / VA-FR-017.08 / VA-FR-017.10	24 LF / 25 SLOPE
13189+61 – 13196+48	VA-FR-017.09 / VA-FR-017.10	687 LF / 698 SLOPE

DESIGN

Station	PIPE / COATING	SLOPE DISTANCE
13142+99 – 13143+22	1	24'
13143+22 – 13143+62	4	40'
13143+62 – 13166+09	1	2730'
13166+09 – 13166+49	4	40'
13166+49 – 13171+88	1	544'
13171+88 – 13172+28	6	40'
13172+28 – 13175+64	1	340'
13175+64 – 13176+04	6	40'
13176+04 – 13182+06	1	628'
13182+06 – 13182+46	6	40'
13182+46 – 13196+48	1	1440'

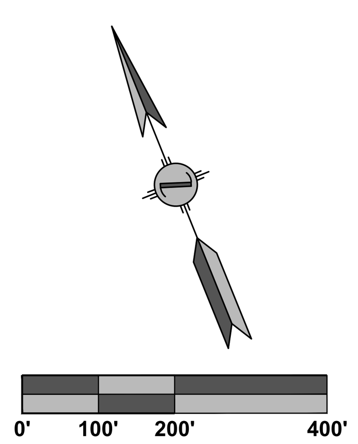
CLASS LOCATION / HCA: 1

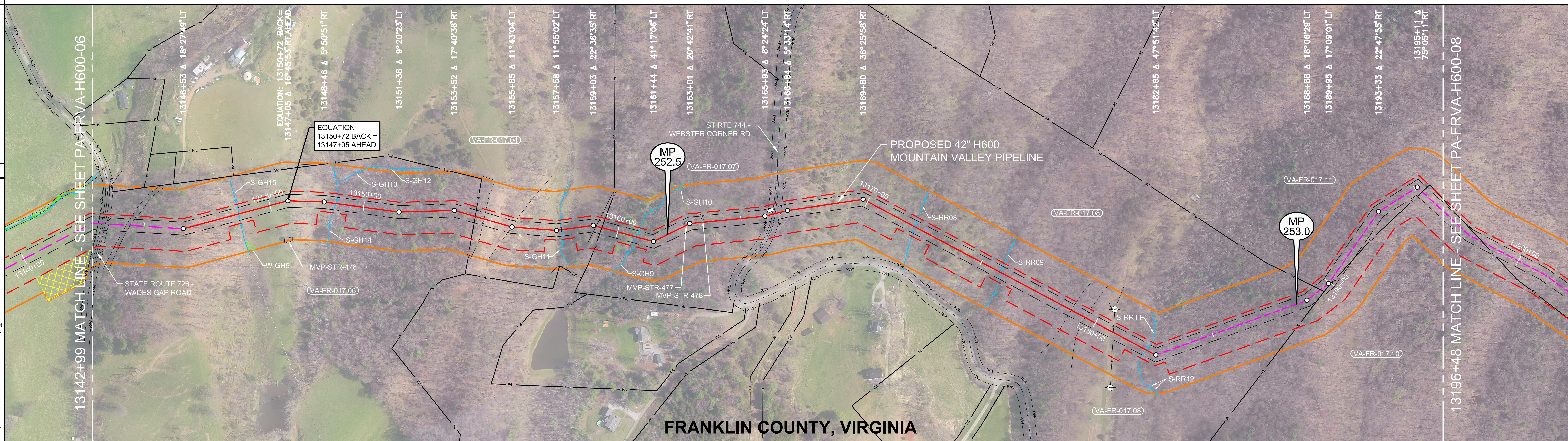
ENVIRONMENTAL

CONSTRUCTION EXCLUSION

WETLAND / STREAM	S-GH15	S-GH14	S-GH11	S-GH9	S-RR8	S-RR9	S-RR11
	4 LF	4 LF	3 LF	4 LF	7 LF	9 LF	7 LF

PLAN VIEW





LEGEND

- STUDY CORRIDOR
- PROPOSED 42"PIPELINE
- NON-SURVEYED C/L
- 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
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- MAILBOX
- LINE MARKER - VENT PIPE
- POWER/TELE POLE
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- 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
- LIMITS OF DISTURBANCE

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

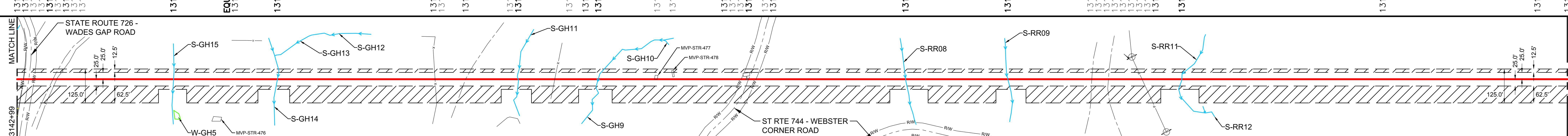
OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

HORIZONTAL STATIONING

13142+99 MATCH LINE
13143+22 RIGHT-OF-WAY
13143+23 FENCE - ELECTRIC
13143+35 EDGE OF ASPHALT
13143+42 ℄ ST RTE 726 - WADES GAP ROAD
13143+50 EDGE OF ASPHALT
13143+62 RIGHT-OF-WAY
13144+31 ℄ DRIVEWAY(GRAVEL)
13144+45 FENCE - ELECTRIC
13148+75 ℄ STREAM(S-GH15)
EQUATION: 13150+72 BACK = 13147+05 AHEAD
13147+27 BUILDING -HOUSE-ABANDONED 140'RT
13148+91 ℄ STREAM(S-GH14)
13154+37 PROPERTY LINE
13154+73 FENCE - HOG WIRE
13155+85 ℄ ROAD(DIRT)(ABANDONED)
13157+78 CULVERT
13157+79 ℄ STREAM(S-GH11)
13159+14 FENCE - HOG WIRE
13159+37 PROPERTY LINE
13160+74 ℄ STREAM(S-GH9)
13162+92 BUILDING - CONCRETE PAD 1'RT
13163+49 BUILDING - CONCRETE PAD 8'LT
13166+01 RIGHT-OF-WAY
13166+23 EDGE OF GRAVEL
13166+23 SIGN 1'RT
13166+29 ℄ ST RTE 744 - WEBSTER CORNER ROAD
13166+35 EDGE OF GRAVEL
13166+56 RIGHT-OF-WAY
13172+08 ℄ STREAM(S-RR08)
13175+84 ℄ STREAM(S-RR09)
13178+89 EDGE OF DIRT
13178+94 ℄ TRAIL(DIRT)
13178+99 EDGE OF DIRT
13179+51 EDGE OF DIRT
13179+56 ℄ TRAIL(DIRT)
13179+61 EDGE OF DIRT
13180+31 GUY ANCHOR 77'LT
13180+42 POWER POLE 81'LT
13180+79 OHP LINE
13182+26 ℄ STREAM(S-RR11)
13189+55 PROPERTY LINE
13195+38 PROPERTY LINE
13196+48 MATCH LINE

WORK SPACE

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



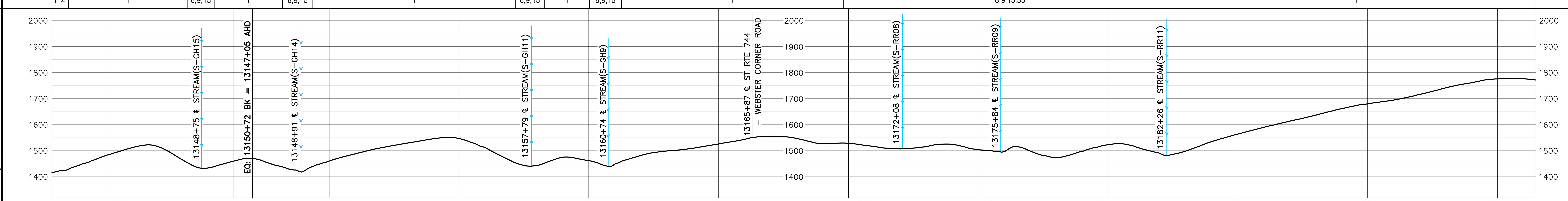
CONSTRUCTION METHOD

13142+99 – 13143+22	13143+22 – 13143+62	13143+62 – 13148+75	S-GH15	13148+75 – 13148+91	S-GH14	13148+91 – 13157+79	S-GH11	13157+79 – 13160+74	S-GH9	13160+74 – 13170+00	13170+00 – 13182+26	13182+26 – 13196+48
1	4	1	6,9,15	1	6,9,15	1	6,9,15	1	6,9,15	1	6,9,15,33	1

CONSTRUCTION METHOD KEY

1 - TYPICAL R/W WORKING SIDE RIGHT
1.1 - TYPICAL R/W WORKING SIDE RIGHT
2 - TYPICAL R/W WORKING SIDE LEFT
2.1 - TYPICAL R/W WORKING SIDE LEFT
3 - TYPICAL WETLAND X-ING
4 - ROAD X-ING - BORE
5 - RAILROAD X-ING - BORE
6 - WATERBODY X-ING OPEN CUT - FLUME
7 - PARALLEL TO POWER LINE
8 - RIDGE CONSTRUCTION
9 - WATERBODY X-ING OPEN CUT - WET DITCH
10 - HDD ENTRY PLAN
11 - HDD EXIT PLAN
12 - HDD CONSTRUCTION
13 - PARALLEL TO POWER LINE
14 - PARALLEL TO POWER LINE
15 - WATERBODY X-ING OPEN CUT - DRY/DAM & PUMP
33 - SIDE HILL CONSTRUCTION
34 - 2-TONE SIDE HILL CONSTRUCTION

PROFILE



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REVISIONS

REV.	BY	DATE	DESCRIPTION
0	HEI	10-15-15	REV. 4.0.0 ISSUED TO FERC
1	HEI	01-11-16	FERC DATA REQUEST No.1
2	HEI	04-14-16	FERC DATA REQUEST No.2
3	HEI	09-03-16	REV. 4.1.13 ISSUED FOR BID
4	HEI	10-14-16	OCTOBER 2016 PROPOSED ROUTE - ISSUED TO FERC

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5706	42"O.D. X 0.617"W.T., X-70, FUSION BONDED EPOXY
4	80	42"O.D. X 0.740"W.T., X-70, FBE & ARO
6	120	42"O.D. X 0.617"W.T., X-70, FBE & ARO
		TYPE 1 TEST STATION - PIPELINE

APPROVED FOR CONSTRUCTION

REV.	BY	DATE
.	.	.

APPROVED FOR BIDDING

REV.	BY	DATE
3	RRR	09-03-16

APPROVED FOR FERC

REV.	BY	DATE
0	RRR	10-15-15
4	RRR	10-14-16

Mountain Valley PIPELINE

PIPELINE ALIGNMENT

MOUNTAIN VALLEY PROJECT - H600 LINE
BOWMANS & BOONES MILL PCT.,FRANKLIN CO.,VA.
STA. 13142+99 TO STA. 13196+48

HORZ. SCALE: 1" = 200'	
DRAWN BY: HEI(DRF)	02/11/15
DRAFTING CK:	.
ENGINEERING CK:	.
CONSTRUCTION CK:	.
ENVIRONMENTAL CK:	.
AFE/P.O.NO.:	
HEI PROJECT NO.: 14-10-052	
DRAWING NO.: PA-FRVA-H600 -07	
SHEET 277 OF 329	REV. 4
DATE OF PLOT: 10/12/16 12:08 PM	