

**PLAN SHEET 3**  
SHEETS  
5, 9, 13, 17


**PLAN SHEET 1**  
SHEETS  
3, 7, 11, 15

**PLAN SHEET 2**  
SHEETS  
4, 8, 12, 16

**PLAN SHEET 4**  
SHEETS  
6, 10, 14, 18

TO COUNTY  
ROUTE 22



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF ABANDONED MINE LANDS AND RECLAMATION			
<b>MORGAN HIGHWALL #46 COMPOSITE SITE PLAN</b>			
PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 200' DATE: SEPTEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
		<b>PLANS PREPARED BY</b> <b>E.L. ROBINSON</b> <b>ENGINEERING</b> 5088 Washington Street, West Charleston, West Virginia, 25313 Phone: 304-776-7473 Fax: 304-776-6426	
			<b>SHEET 2</b>



**LEGEND**

- 820 —— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x - x - FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR

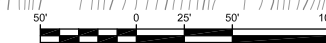
MATCHLINE PLAN SHEET 1



**NOTES**

1. CONTOUR INTERVAL IS TWO FEET
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5. MAINTAIN ROADS IN EQUAL OR BETTER CONDITION DURING CONSTRUCTION.
6. CHANNELS SHALL BE CONSTRUCTED FROM DOWNSTREAM UP. CONSTRUCTION PLAN SHALL BE SUBMITTED TO WVDEP FOR APPROVAL.

MATCHLINE PLAN SHEET 3



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 2  
EXISTING CONDITIONS**

SURVEY DATA			
DESCRIPTION	NORTHING	EASTING	ELEV.
CONTROL POINT 1	369677.93	1936604.19	1812.32
CONTROL POINT 2	370148.21	1936755.47	1813.36
CONTROL POINT 15	369550.42	1935875.84	1757.49
BASELINE STA. 8+00	370935.46	1936807.50	
BASELINE STA. 14+00	369564.12	1936525.70	
BASELINE STA. 20+50	369550.42	1935875.84	

PRESTON COUNTY WEST VIRGINIA	SCALE: DATE: 1" = 50' DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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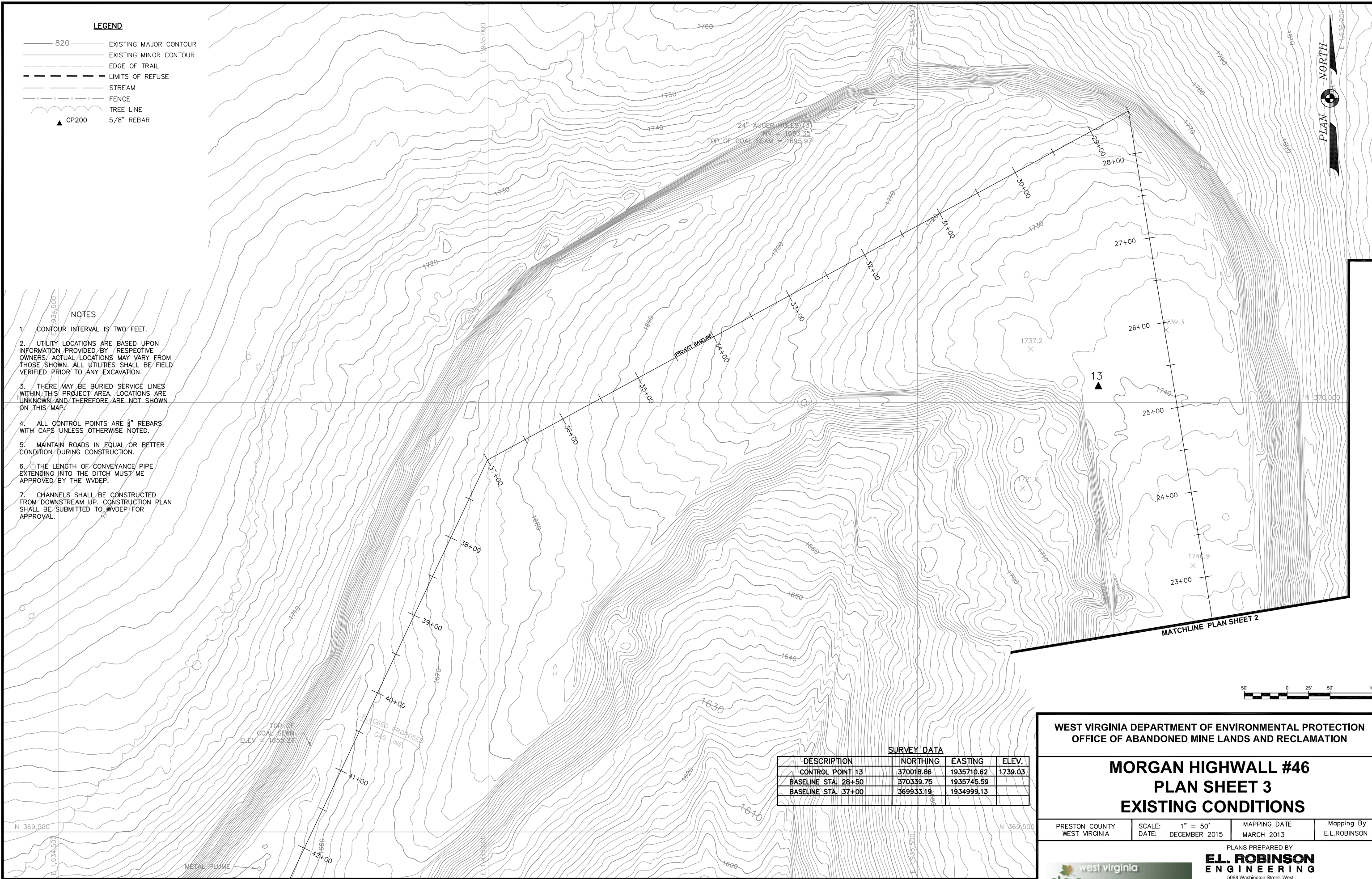


**LEGEND**

- 820 — EXISTING MAJOR CONTOUR
- — — EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
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**SURVEY DATA**

DESCRIPTION	NORTHING	EASTING	ELEV.
CONTROL POINT 13	370018.86	1935710.62	1739.03
BASELINE STA. 28+50	370339.75	1935745.59	
BASELINE STA. 37+00	369933.19	1934999.13	

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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**MORGAN HIGHWALL #46  
PLAN SHEET 3  
EXISTING CONDITIONS**

PRESTON COUNTY WEST VIRGINIA    SCALE: 1" = 50'    MAPPING DATE: DECEMBER 2015    MARCH 2013    Mapping By: E.L.ROBINSON

PLANS PREPARED BY  
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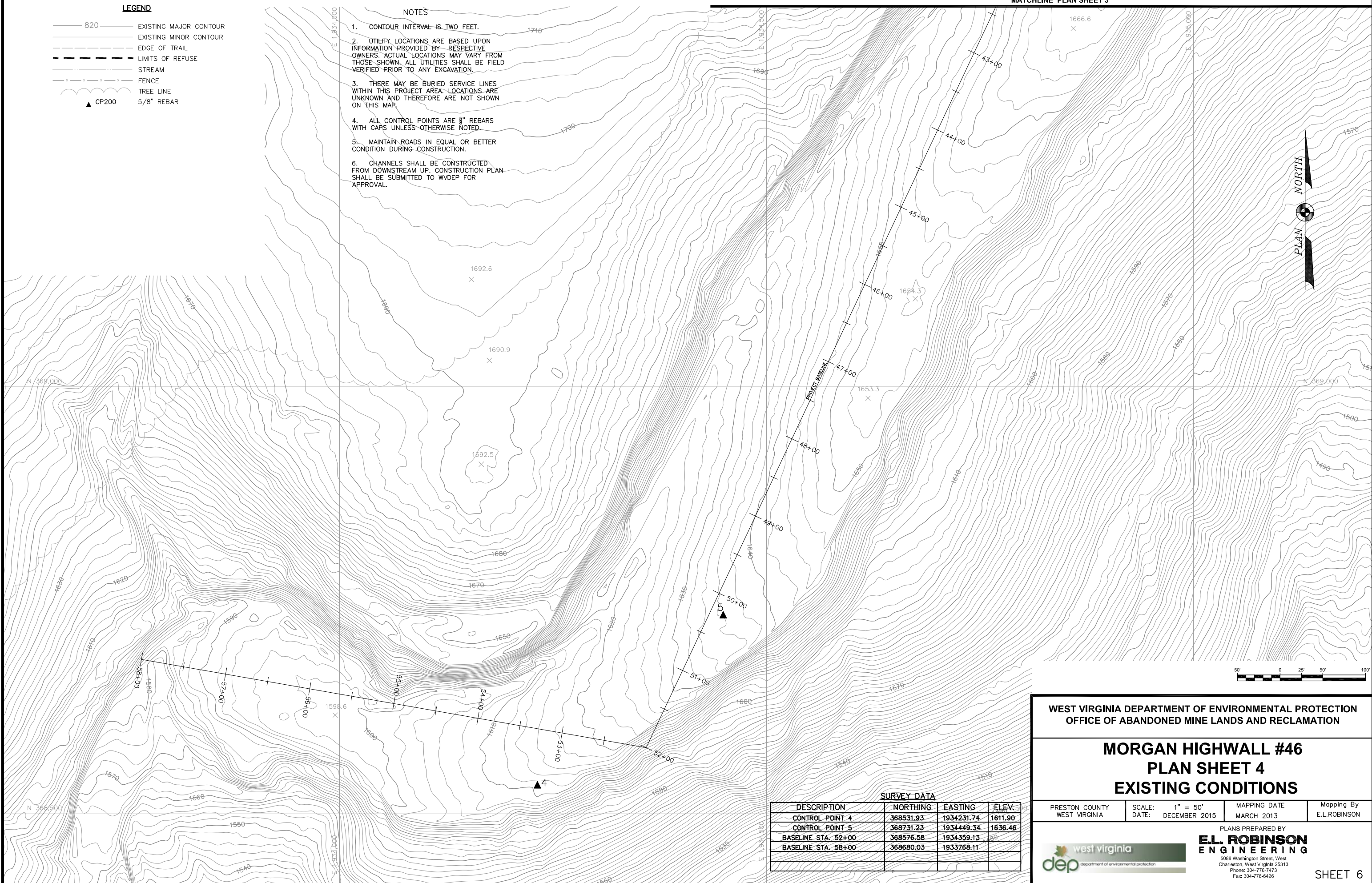


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**SURVEY DATA**

DESCRIPTION	NORTHING	EASTING	ELEV.
CONTROL POINT 4	368531.93	1934231.74	1611.90
CONTROL POINT 5	368731.23	1934449.34	1636.46
BASELINE STA. 52+00	368576.58	1934359.13	20
BASELINE STA. 58+00	368680.03	1933768.11	

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 4  
EXISTING CONDITIONS**

PRESTON COUNTY WEST VIRGINIA    SCALE: 1" = 50'    MAPPING DATE: DECEMBER 2015    MARCH 2013    Mapping By: E.L.ROBINSON

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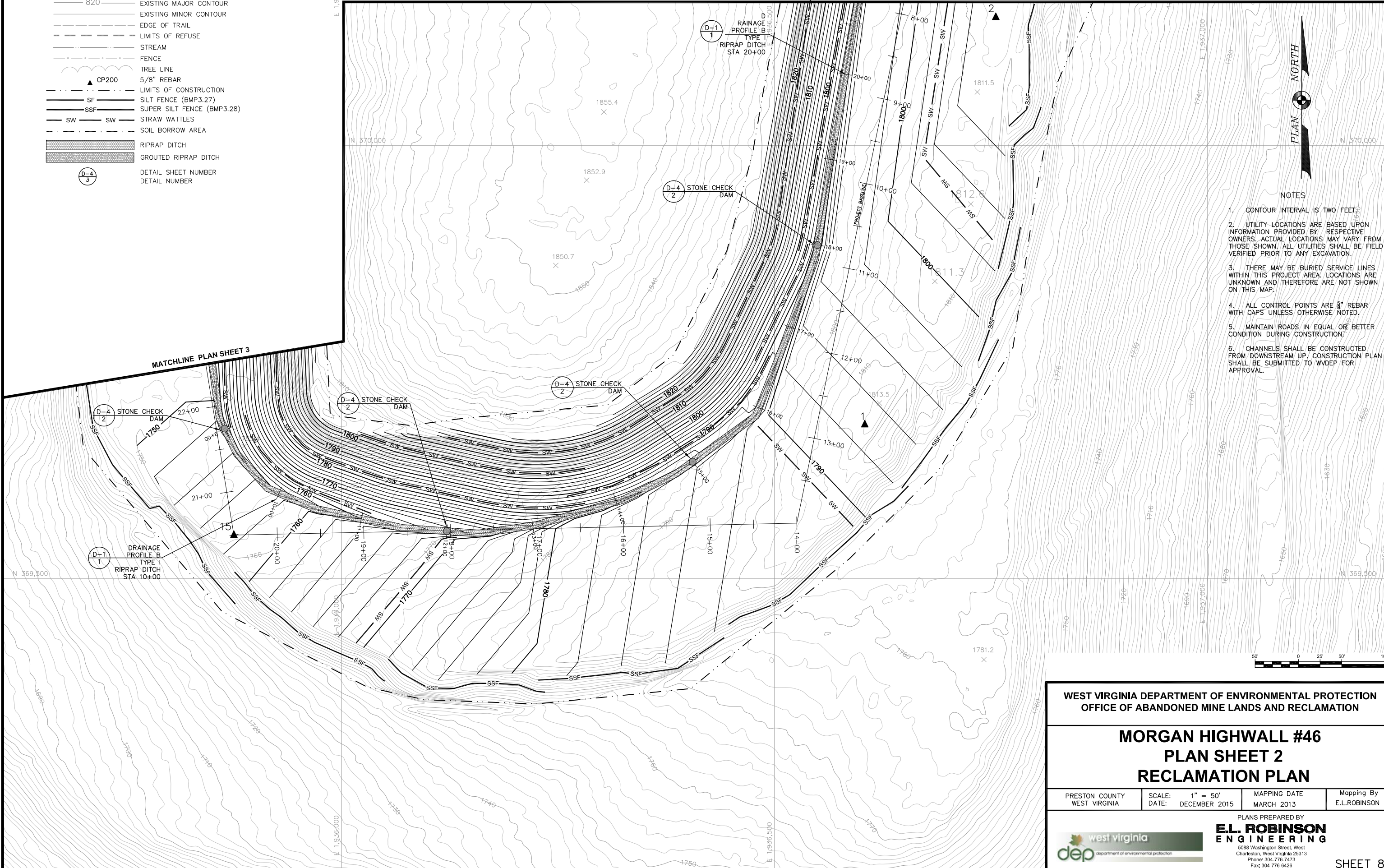


**LEGEND**

- 820 ——— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- - - - - LIMITS OF CONSTRUCTION
- - - - - SF SILT FENCE (BMP3.27)
- - - - - SSF SUPER SILT FENCE (BMP3.28)
- - - - - SW SW STRAW WATTLES
- - - - - SOIL BORROW AREA
- ▨ RIPRAP DITCH
- ▨ GROUTED RIPRAP DITCH
- Ⓧ D-4 3 DETAIL SHEET NUMBER  
3 DETAIL NUMBER

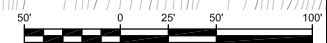
MATCHLINE PLAN SHEET 1

MATCHLINE PLAN SHEET 3



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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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**MORGAN HIGHWALL #46  
PLAN SHEET 2  
RECLAMATION PLAN**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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PLANS PREPARED BY



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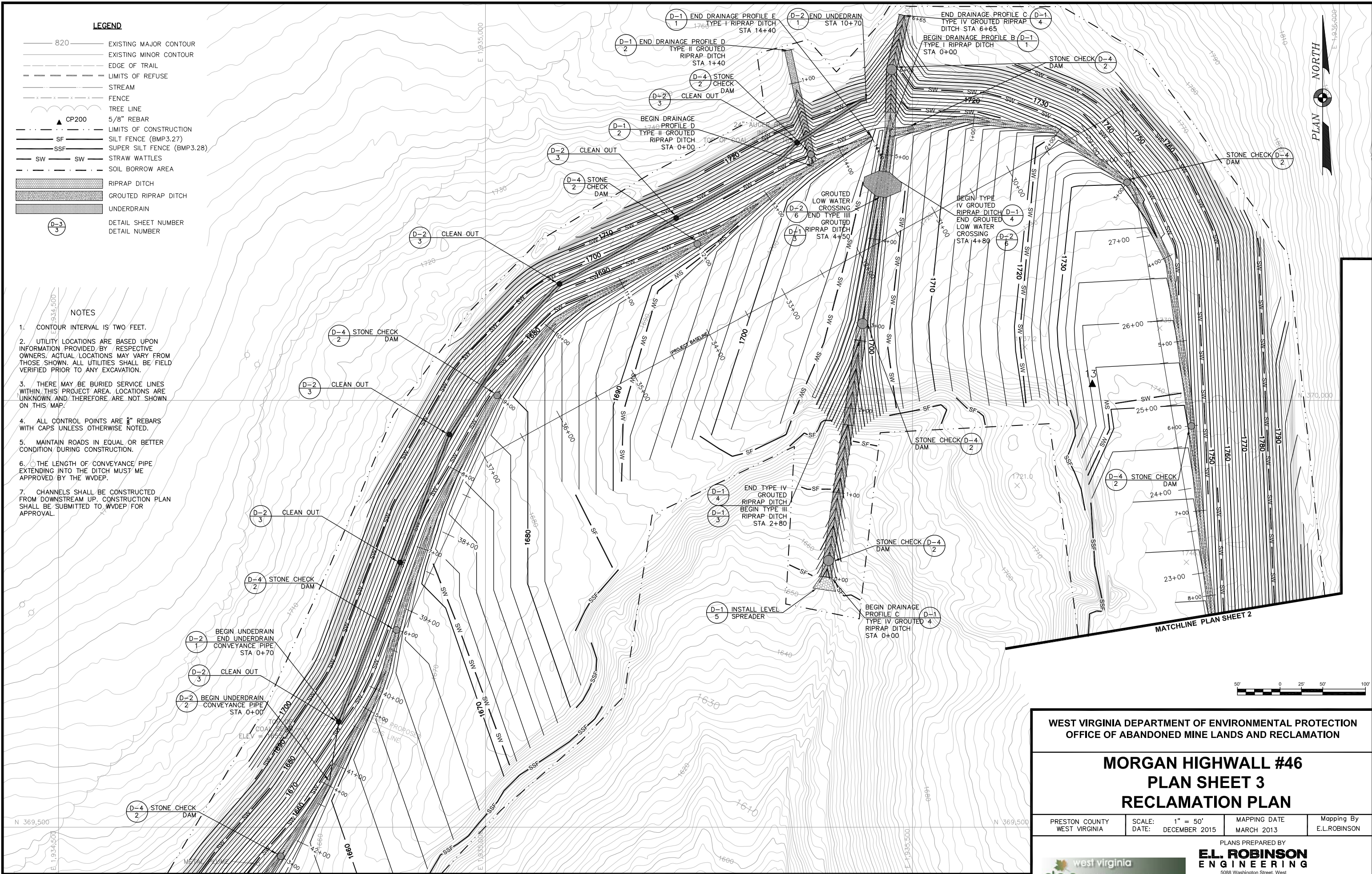


**LEGEND**

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- EXISTING MINOR CONTOUR
- EDGE OF TRAIL
- LIMITS OF REFUSE
- STREAM
- FENCE
- TREE LINE
- CP200 5/8" REBAR
- LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- SOIL BORROW AREA
- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- UNDERDRAIN
- D-3 DETAIL SHEET NUMBER
- 3 DETAIL NUMBER

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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**MORGAN HIGHWALL #46  
PLAN SHEET 3  
RECLAMATION PLAN**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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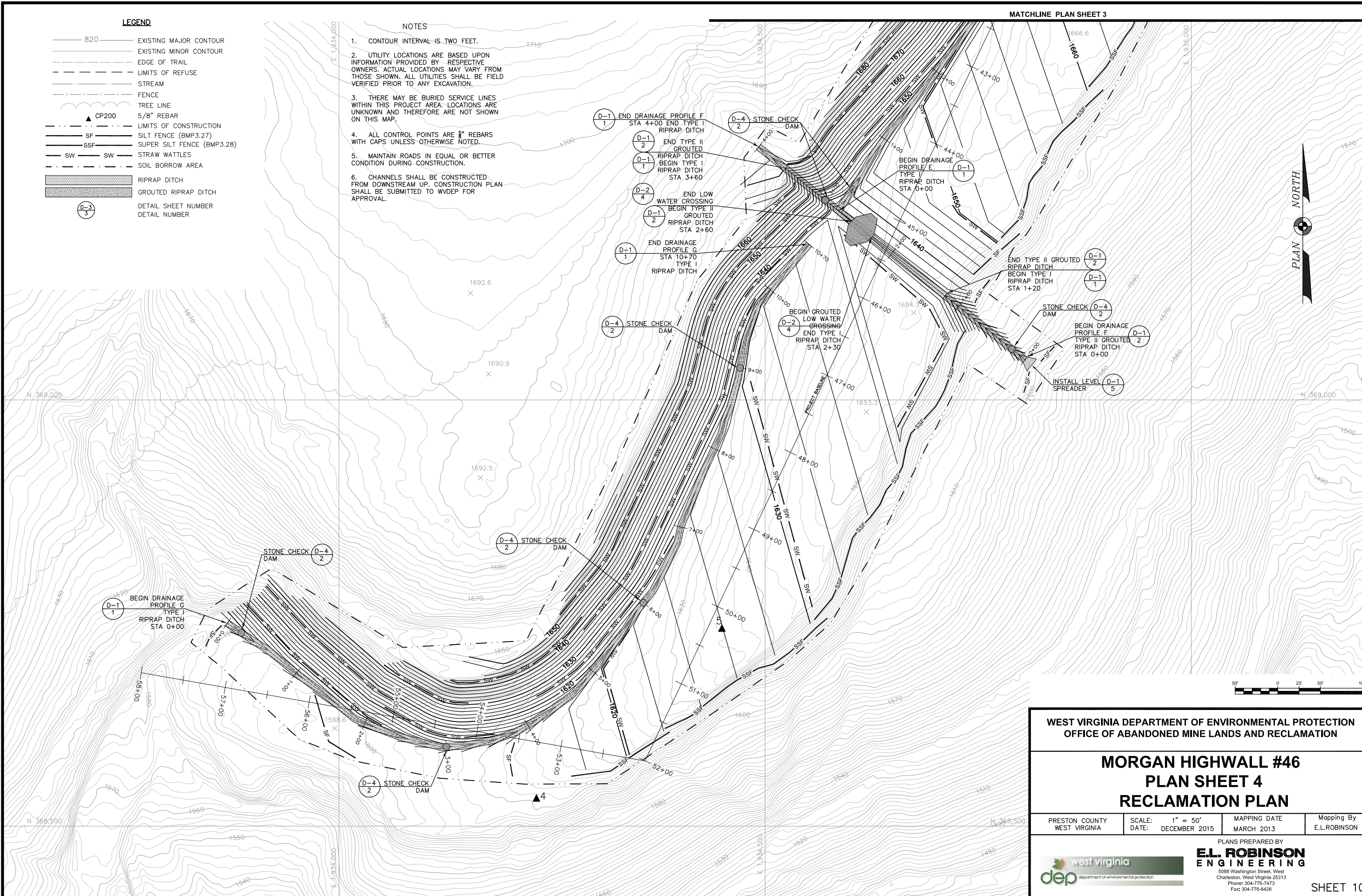
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LEGEND

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- EXISTING MINOR CONTOUR
- EDGE OF TRAIL
- LIMITS OF REFUSE
- STREAM
- FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- SOIL BORROW AREA
- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- D-3 3 DETAIL SHEET NUMBER
- 3 DETAIL NUMBER

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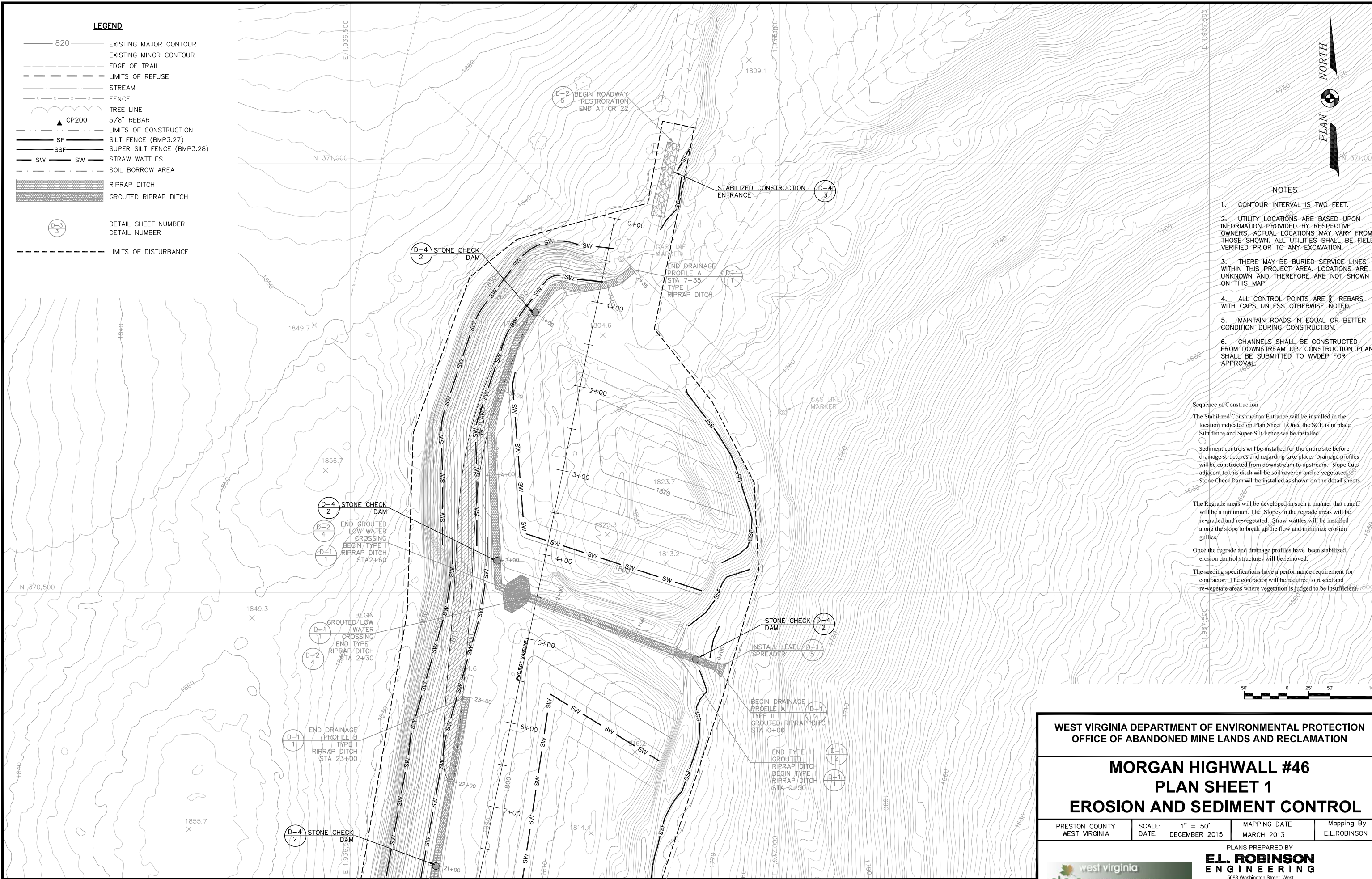
**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION**

**MORGAN HIGHWALL #46  
PLAN SHEET 4  
RECLAMATION PLAN**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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**SHEET 10**



**LEGEND**

- 820 ——— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x - x - FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- - - - - LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- - - - - SOIL BORROW AREA
- ▨ RIPRAP DITCH
- ▨ GROUTED RIPRAP DITCH
- (D-3) 3 DETAIL SHEET NUMBER
- (D-3) 3 DETAIL NUMBER
- - - - - LIMITS OF DISTURBANCE

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**Sequence of Construction**

The Stabilized Construction Entrance will be installed in the location indicated on Plan Sheet 1. Once the SCE is in place Silt fence and Super Silt Fence will be installed.

Sediment controls will be installed for the entire site before drainage structures and regarding take place. Drainage profiles will be constructed from downstream to upstream. Slope Cuts adjacent to this ditch will be soil covered and re-vegetated. Stone Check Dam will be installed as shown on the detail sheets.

The Regrade areas will be developed in such a manner that runoff will be a minimum. The Slopes in the regrade areas will be re-graded and re-vegetated. Straw wattles will be installed along the slope to break up the flow and minimize erosion gullies.

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The seeding specifications have a performance requirement for contractor. The contractor will be required to reseed and re-vegetate areas where vegetation is judged to be insufficient.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 1  
EROSION AND SEDIMENT CONTROL**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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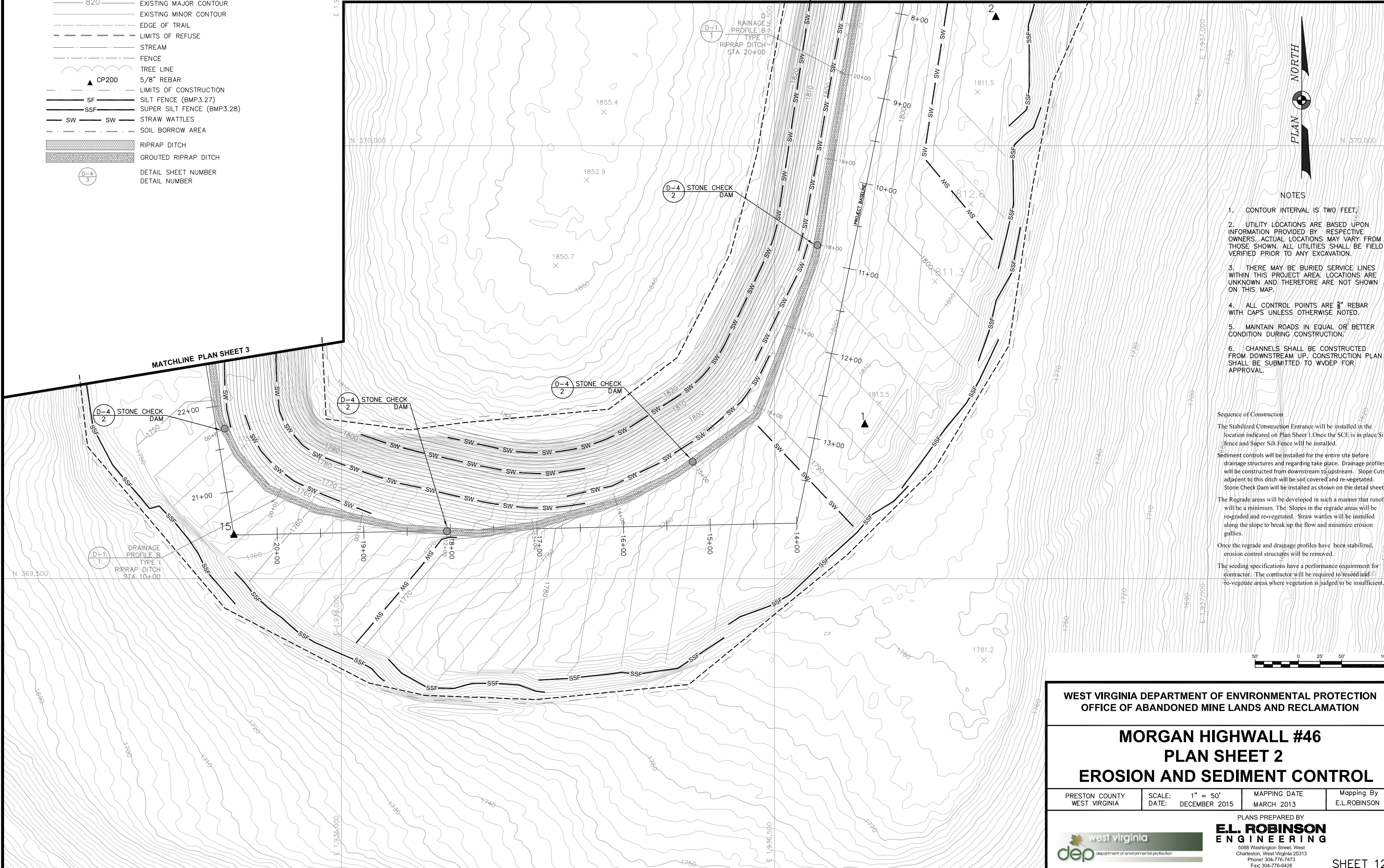
MATCHLINE PLAN SHEET 2

**LEGEND**

- 820 ——— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- - - - - LIMITS OF CONSTRUCTION
- SF — SILT FENCE (BMP3.27)
- SSF — SUPER SILT FENCE (BMP3.28)
- SW — STRAW WATTLES
- - - - - SOIL BORROW AREA
- ▨ RIPRAP DITCH
- ▨ GROUTED RIPRAP DITCH
- D-4 3 DETAIL SHEET NUMBER
- 3 DETAIL NUMBER

MATCHLINE PLAN SHEET 1

MATCHLINE PLAN SHEET 3



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**Sequence of Construction**

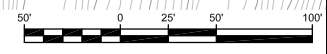
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OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 2  
EROSION AND SEDIMENT CONTROL**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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PLANS PREPARED BY

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west virginia dep department of environmental protection

**LEGEND**

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- EXISTING MINOR CONTOUR
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- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- UNDERDRAIN
- D-3 DETAIL SHEET NUMBER
- 3 DETAIL NUMBER

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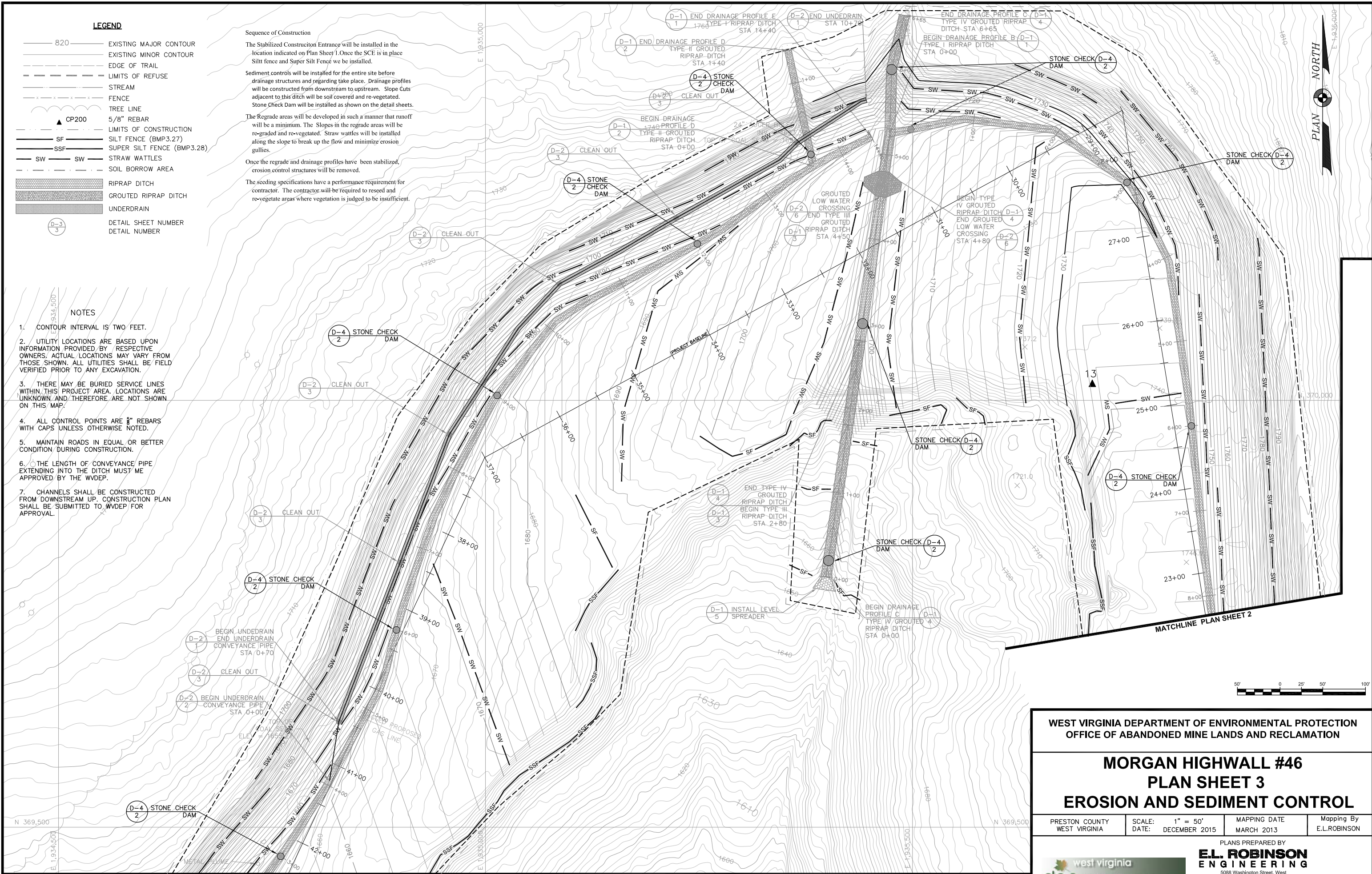
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MATCHLINE PLAN SHEET 2

MATCHLINE PLAN SHEET 4

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 3  
EROSION AND SEDIMENT CONTROL**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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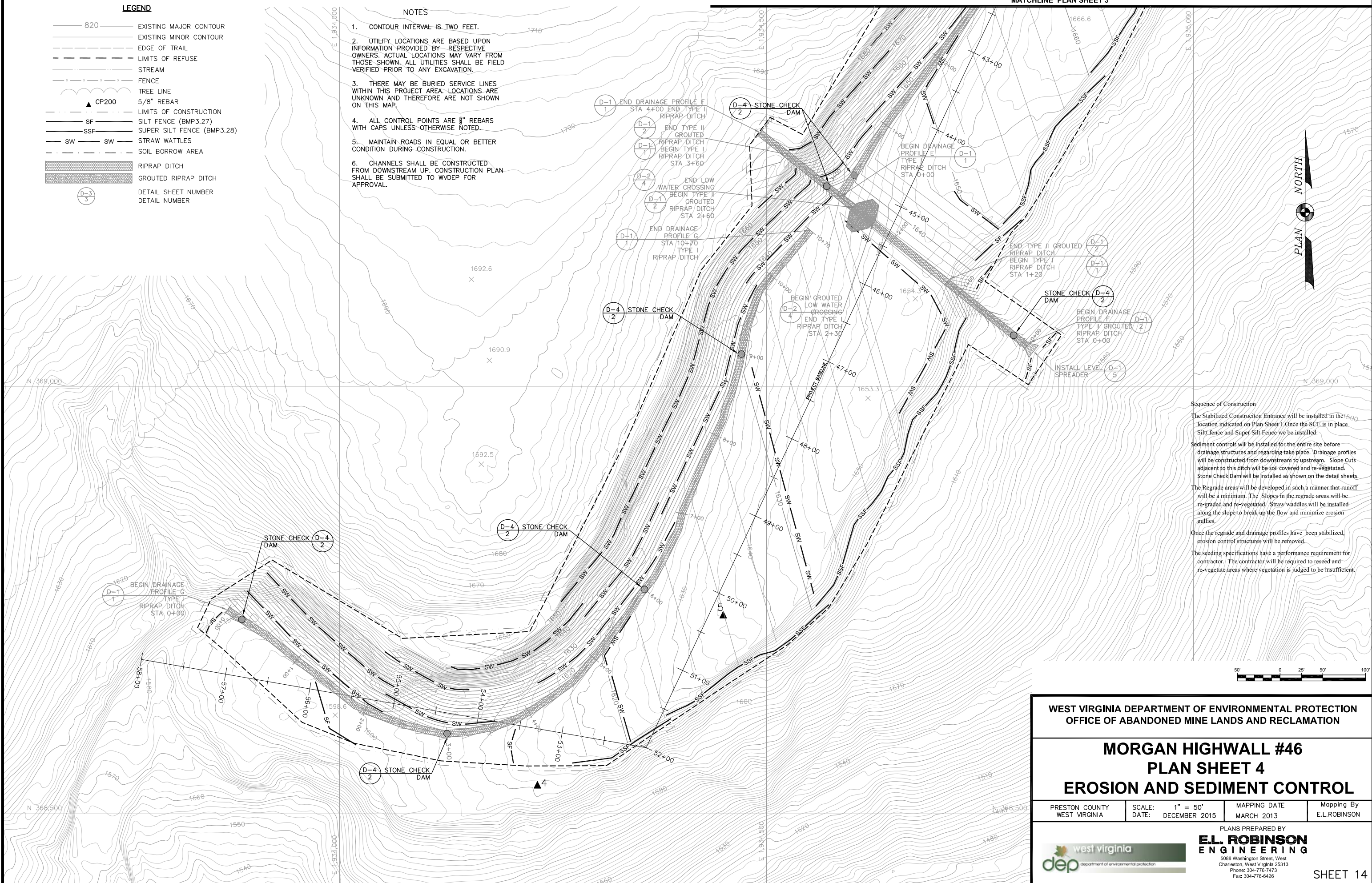


LEGEND

- 820 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
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- TREE LINE
- ▲ CP200 5/8" REBAR
- LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- SOIL BORROW AREA
- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- D-3 3 DETAIL SHEET NUMBER
- DETAIL NUMBER

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Sediment controls will be installed for the entire site before drainage structures and grading take place. Drainage profiles will be constructed from downstream to upstream. Slope Cuts adjacent to this ditch will be soil covered and re-vegetated. Stone Check Dam will be installed as shown on the detail sheets.

The Regrade areas will be developed in such a manner that runoff will be a minimum. The Slopes in the regrade areas will be re-graded and re-vegetated. Straw wattles will be installed along the slope to break up the flow and minimize erosion gullies.

Once the regrade and drainage profiles have been stabilized, erosion control structures will be removed.

The seeding specifications have a performance requirement for contractor. The contractor will be required to reseed and re-vegetate areas where vegetation is judged to be insufficient.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

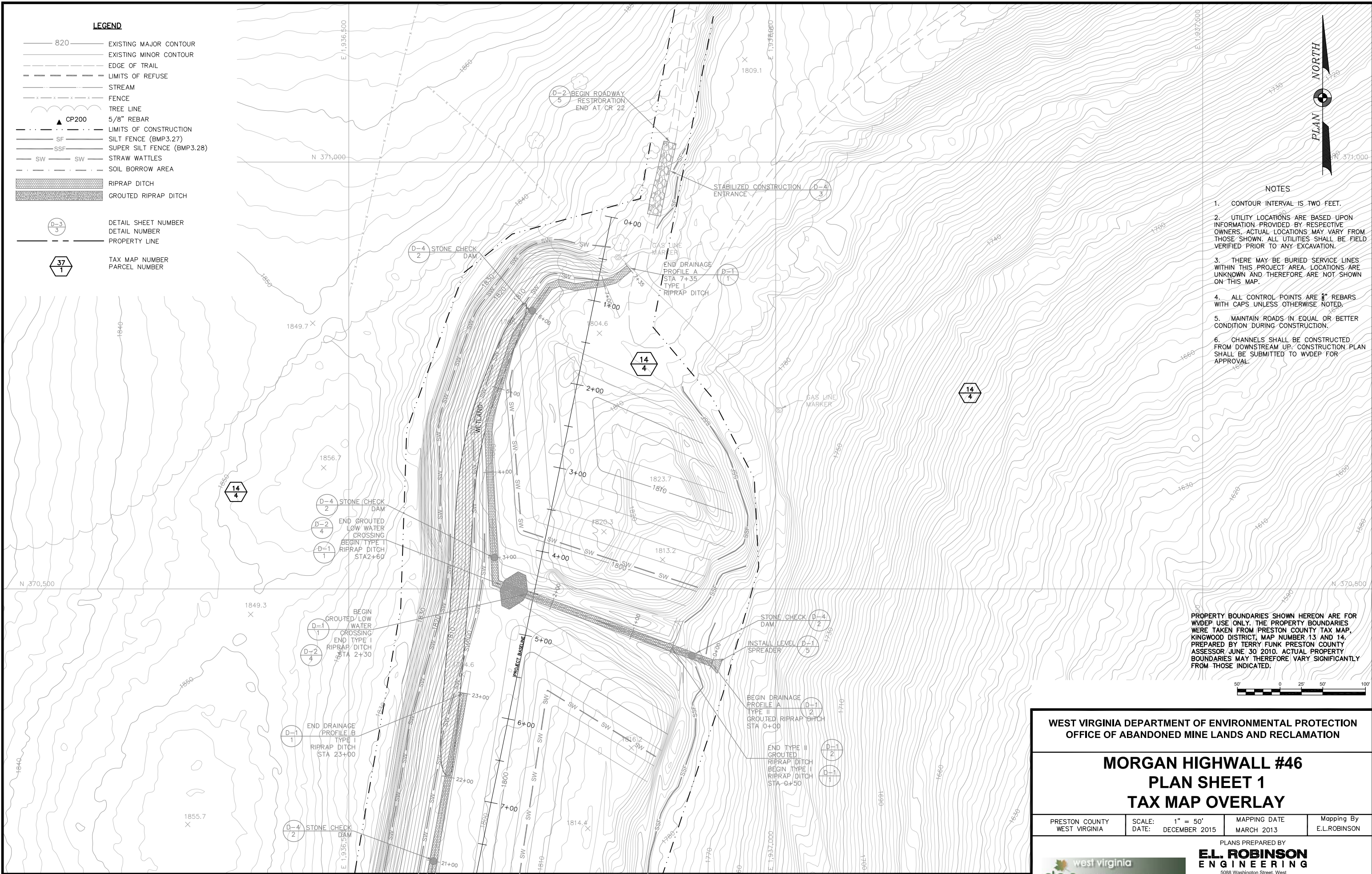
**MORGAN HIGHWALL #46  
PLAN SHEET 4  
EROSION AND SEDIMENT CONTROL**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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PLANS PREPARED BY

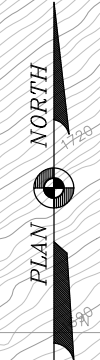
**E.L. ROBINSON ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304-776-7473  
Fax: 304-776-6428

west virginia  
dep department of environmental protection



**LEGEND**

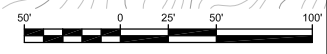
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- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x - x - FENCE
- ~~~~~ TREE LINE
- ▲ CP200 5/8" REBAR
- · - · - · - · - LIMITS OF CONSTRUCTION
- SF ——— SILT FENCE (BMP3.27)
- SSF ——— SUPER SILT FENCE (BMP3.28)
- SW — SW STRAW WATTLES
- - - - - SOIL BORROW AREA
- ▨ RIPRAP DITCH
- ▨ GROUTED RIPRAP DITCH
- D-3 3 DETAIL SHEET NUMBER
- D-3 3 DETAIL NUMBER
- - - - - PROPERTY LINE
- 37 1 TAX MAP NUMBER
- 37 1 PARCEL NUMBER



**NOTES**

1. CONTOUR INTERVAL IS TWO FEET.
2. UTILITY LOCATIONS ARE BASED UPON INFORMATION PROVIDED BY RESPECTIVE OWNERS. ACTUAL LOCATIONS MAY VARY FROM THOSE SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED PRIOR TO ANY EXCAVATION.
3. THERE MAY BE BURIED SERVICE LINES WITHIN THIS PROJECT AREA. LOCATIONS ARE UNKNOWN AND THEREFORE ARE NOT SHOWN ON THIS MAP.
4. ALL CONTROL POINTS ARE 5" REBARS WITH CAPS UNLESS OTHERWISE NOTED.
5. MAINTAIN ROADS IN EQUAL OR BETTER CONDITION DURING CONSTRUCTION.
6. CHANNELS SHALL BE CONSTRUCTED FROM DOWNSTREAM UP. CONSTRUCTION PLAN SHALL BE SUBMITTED TO WVDEP FOR APPROVAL.

PROPERTY BOUNDARIES SHOWN HEREON ARE FOR WIDE USE ONLY. THE PROPERTY BOUNDARIES WERE TAKEN FROM PRESTON COUNTY TAX MAP, KINGWOOD DISTRICT, MAP NUMBER 13 AND 14, PREPARED BY TERRY FUNK PRESTON COUNTY ASSESSOR JUNE 30 2010. ACTUAL PROPERTY BOUNDARIES MAY THEREFORE VARY SIGNIFICANTLY FROM THOSE INDICATED.



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 1  
TAX MAP OVERLAY**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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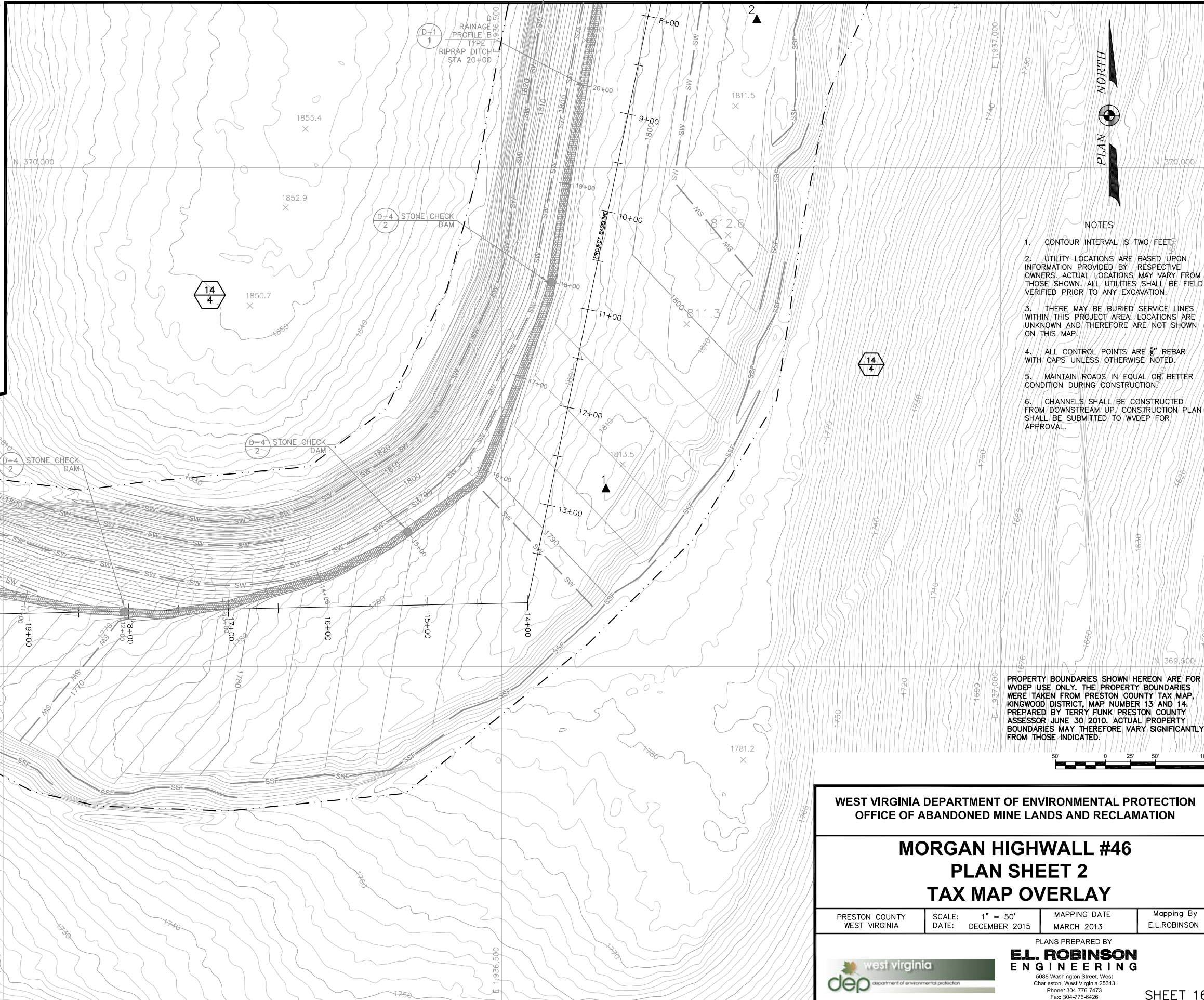
PLANS PREPARED BY  
**E.L. ROBINSON ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304-776-7473  
Fax: 304-776-6428

MATCHLINE PLAN SHEET 2

**LEGEND**

- 820 ——— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- - - - - EDGE OF TRAIL
- - - - - LIMITS OF REFUSE
- STREAM
- x - x - x - FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- - - - - LIMITS OF CONSTRUCTION
- SF ——— SILT FENCE (BMP3.27)
- SSF ——— SUPER SILT FENCE (BMP3.28)
- SW ——— STRAW WATTLES
- - - - - SOIL BORROW AREA
- ▨ RIPRAP DITCH
- ▨ GROUTED RIPRAP DITCH
- (D-4) 3 DETAIL SHEET NUMBER  
3 DETAIL NUMBER
- PROPERTY LINE
- 37 1 TAX MAP NUMBER  
1 PARCEL NUMBER

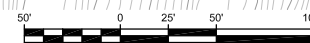
MATCHLINE PLAN SHEET 1



**NOTES**

1. CONTOUR INTERVAL IS TWO FEET.
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3. THERE MAY BE BURIED SERVICE LINES WITHIN THIS PROJECT AREA. LOCATIONS ARE UNKNOWN AND THEREFORE ARE NOT SHOWN ON THIS MAP.
4. ALL CONTROL POINTS ARE 5/8" REBAR WITH CAPS UNLESS OTHERWISE NOTED.
5. MAINTAIN ROADS IN EQUAL OR BETTER CONDITION DURING CONSTRUCTION.
6. CHANNELS SHALL BE CONSTRUCTED FROM DOWNSTREAM UP. CONSTRUCTION PLAN SHALL BE SUBMITTED TO WVDEP FOR APPROVAL.

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 2  
TAX MAP OVERLAY**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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PLANS PREPARED BY  
**E.L. ROBINSON ENGINEERING**  
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Charleston, West Virginia 25313  
Phone: 304-776-7473  
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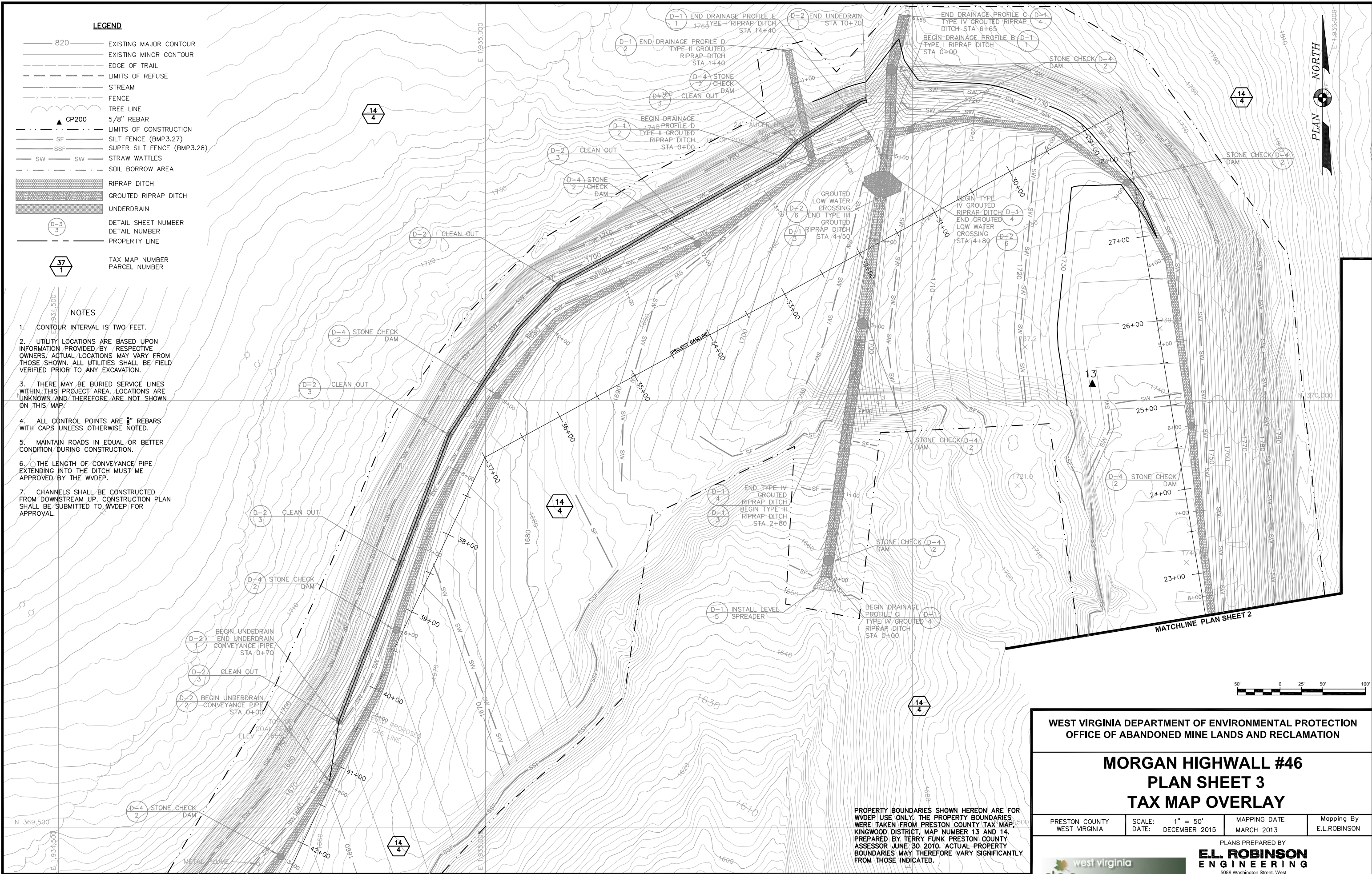


**LEGEND**

- 820 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EDGE OF TRAIL
- LIMITS OF REFUSE
- STREAM
- FENCE
- TREE LINE
- CP200 5/8" REBAR
- LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- SOIL BORROW AREA
- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- UNDERDRAIN
- D-3 DETAIL SHEET NUMBER
- 3 DETAIL NUMBER
- PROPERTY LINE
- 37 TAX MAP NUMBER
- 1 PARCEL NUMBER

**NOTES**

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4. ALL CONTROL POINTS ARE 5/8" REBARS WITH CAPS UNLESS OTHERWISE NOTED.
5. MAINTAIN ROADS IN EQUAL OR BETTER CONDITION DURING CONSTRUCTION.
6. THE LENGTH OF CONVEYANCE PIPE EXTENDING INTO THE DITCH MUST BE APPROVED BY THE WVDEP.
7. CHANNELS SHALL BE CONSTRUCTED FROM DOWNSTREAM UP. CONSTRUCTION PLAN SHALL BE SUBMITTED TO WVDEP FOR APPROVAL.



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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 3  
TAX MAP OVERLAY**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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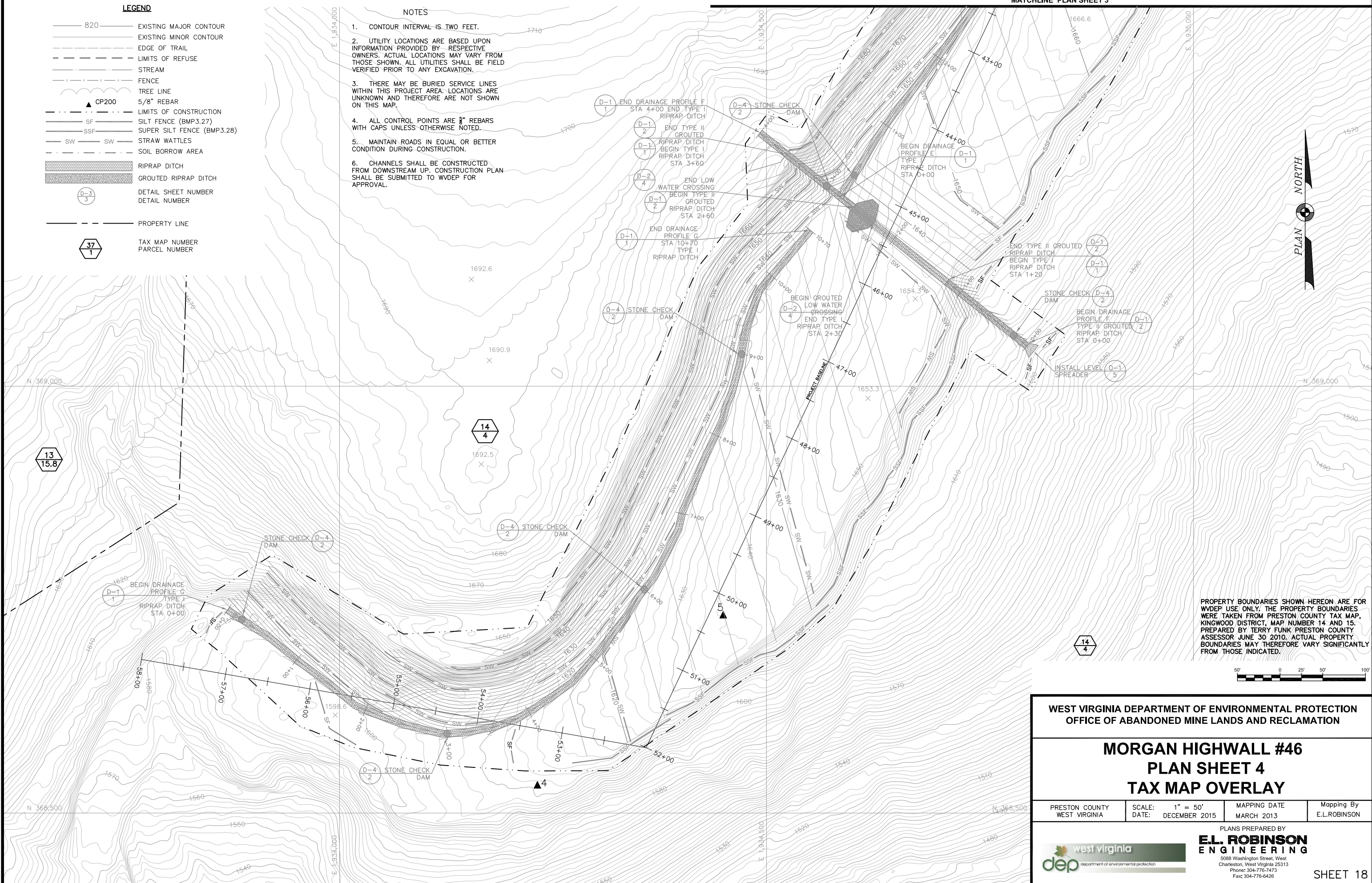
PLANS PREPARED BY  
**E.L. ROBINSON ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304-776-7473  
Fax: 304-776-6428

LEGEND

- 820 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EDGE OF TRAIL
- LIMITS OF REFUSE
- STREAM
- FENCE
- TREE LINE
- ▲ CP200 5/8" REBAR
- LIMITS OF CONSTRUCTION
- SF SILT FENCE (BMP3.27)
- SSF SUPER SILT FENCE (BMP3.28)
- SW STRAW WATTLES
- SOIL BORROW AREA
- RIPRAP DITCH
- GROUTED RIPRAP DITCH
- D-3 3 DETAIL SHEET NUMBER
- DETAIL NUMBER
- PROPERTY LINE
- 37 1 TAX MAP NUMBER
- PARCEL NUMBER

NOTES

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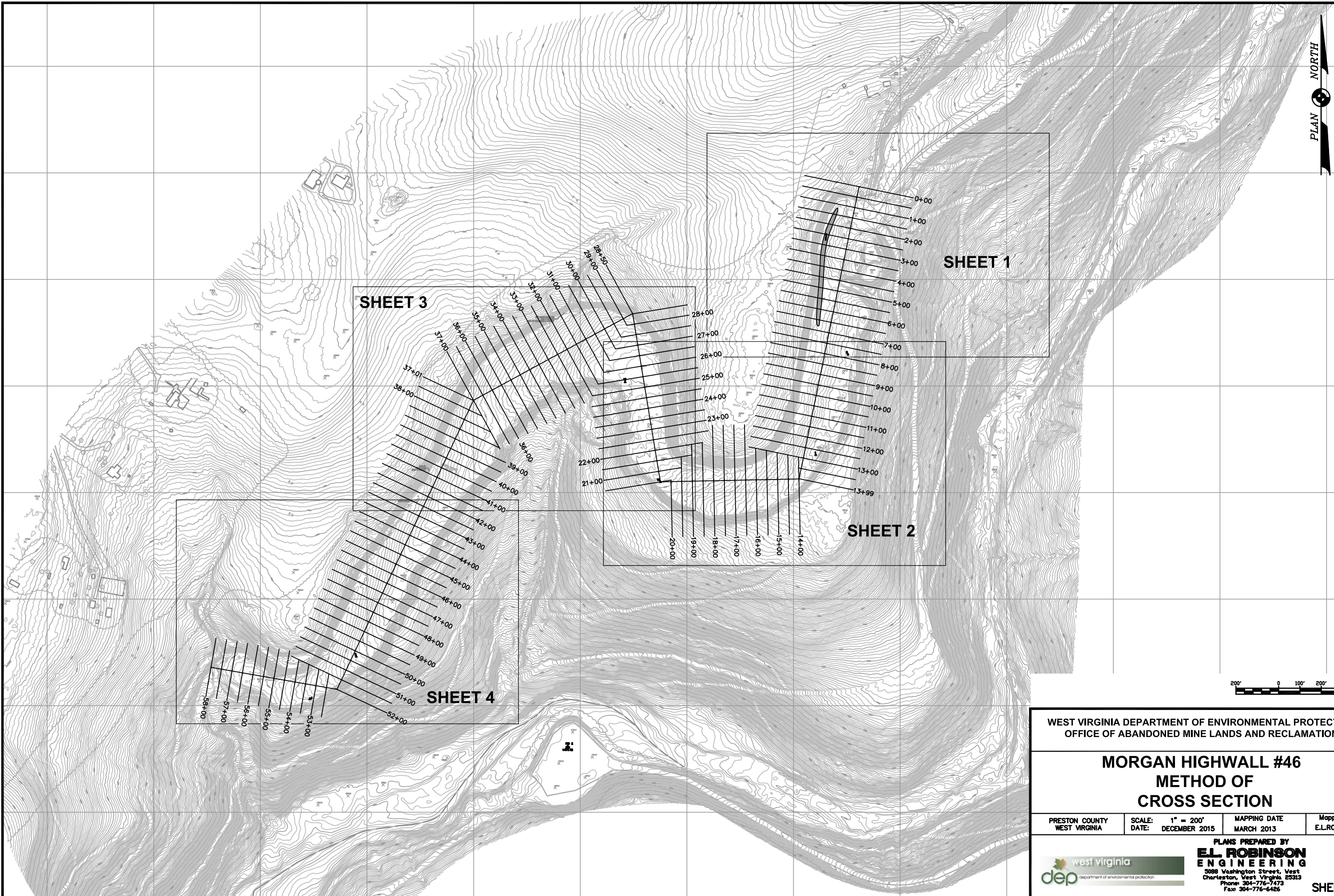
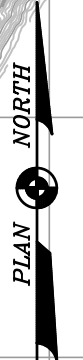
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

**MORGAN HIGHWALL #46  
PLAN SHEET 4  
TAX MAP OVERLAY**

PRESTON COUNTY WEST VIRGINIA	SCALE: 1" = 50' DATE: DECEMBER 2015	MAPPING DATE MARCH 2013	Mapping By E.L.ROBINSON
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PLANS PREPARED BY  
**E.L. ROBINSON ENGINEERING**  
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west virginia dep department of environmental protection



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

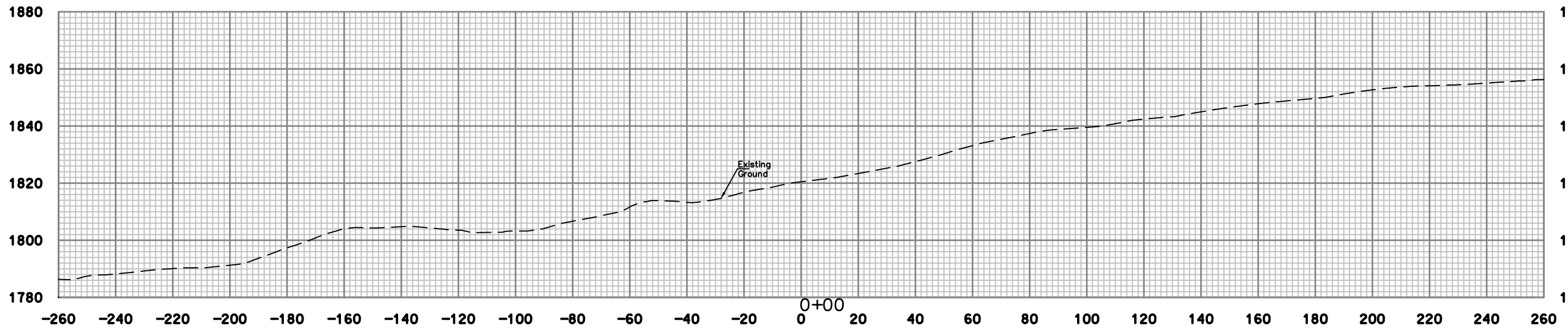
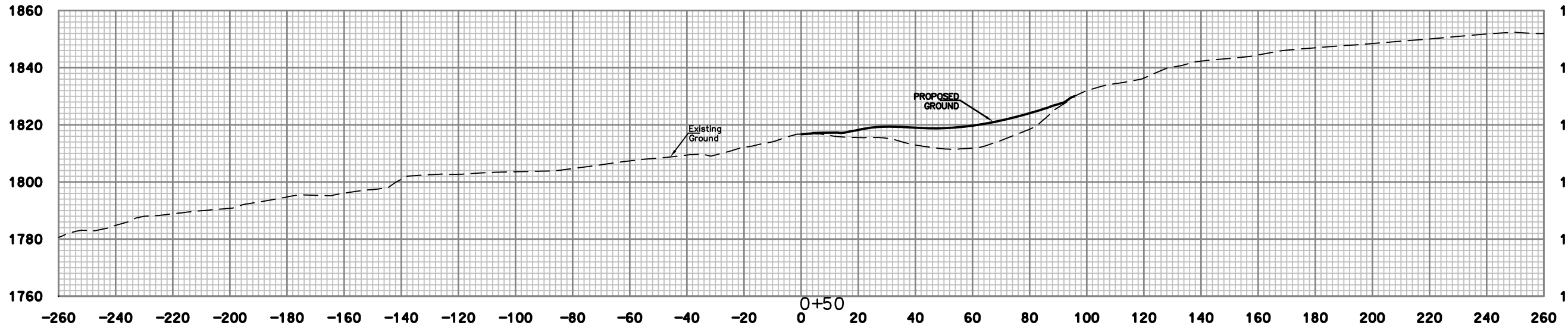
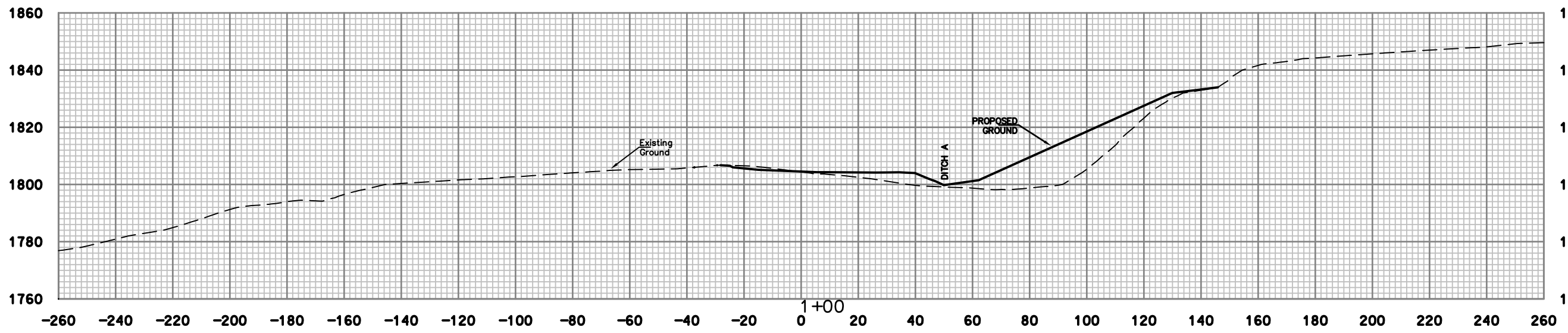
### MORGAN HIGHWALL #46 METHOD OF CROSS SECTION

PRESTON COUNTY WEST VIRGINIA    SCALE: 1" = 200'    MAPPING DATE: MARCH 2013    Mapping By: E.L.ROBINSON

PLANS PREPARED BY



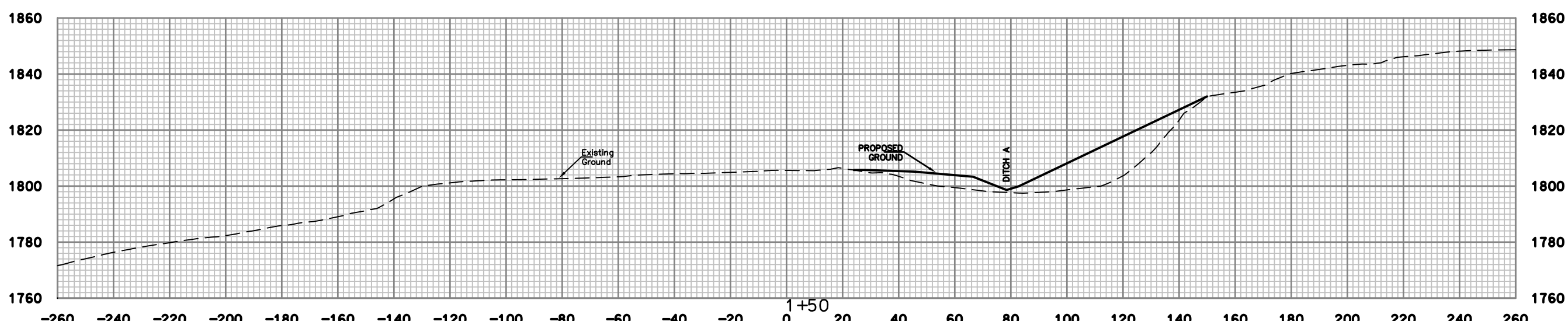
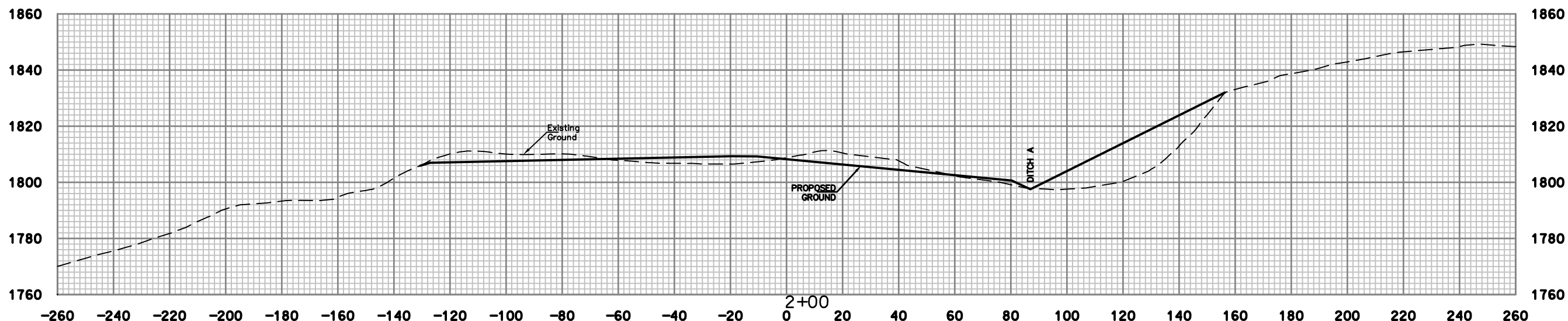
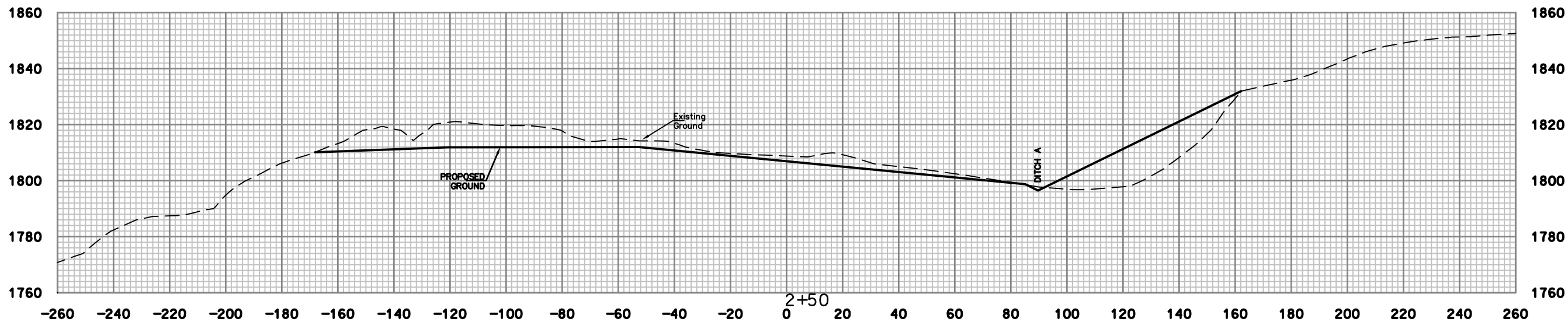

5088 Washington Street, West Charleston, West Virginia 25313  
Phone: 304-776-7473 Fax: 304-776-6426



NO.	DATE	REVISION	BY

DRAWING TITLE  
CROSS SECTIONS  
STA. 0+00 TO STA. 1+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
20



**E.L. ROBINSON  
ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304.776.4743  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
West Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 1+50 TO STA. 2+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**21**

NO.	DATE	REVISION	BY

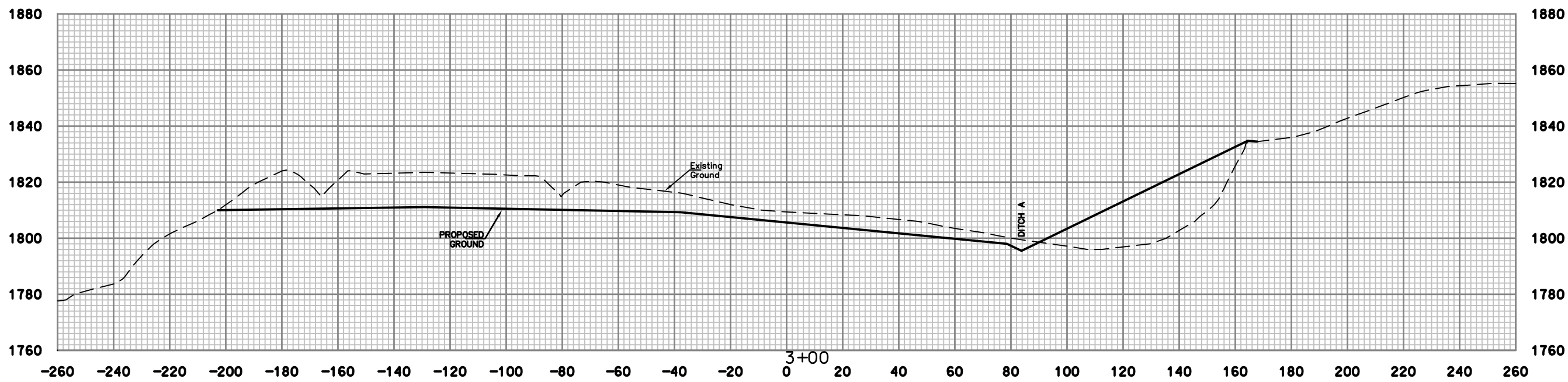
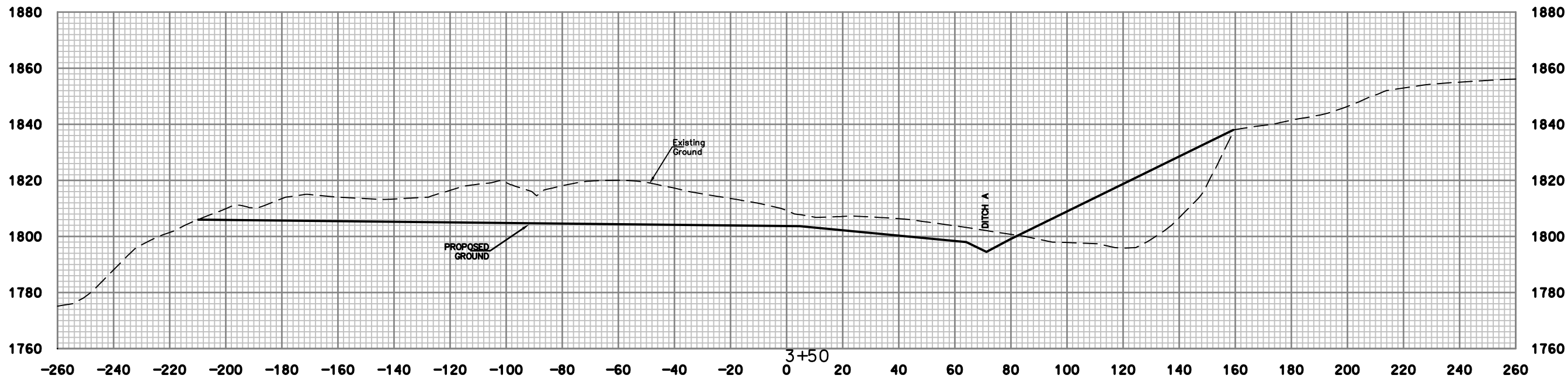


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STA. 3+00 TO STA. 3+50

DATE  
DECEMBER 2015

SCALE  
1"=20'

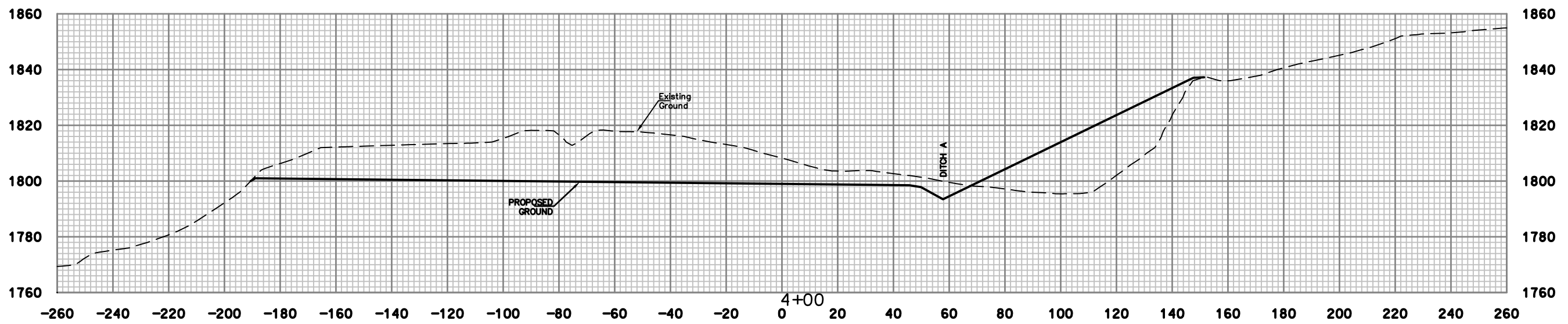
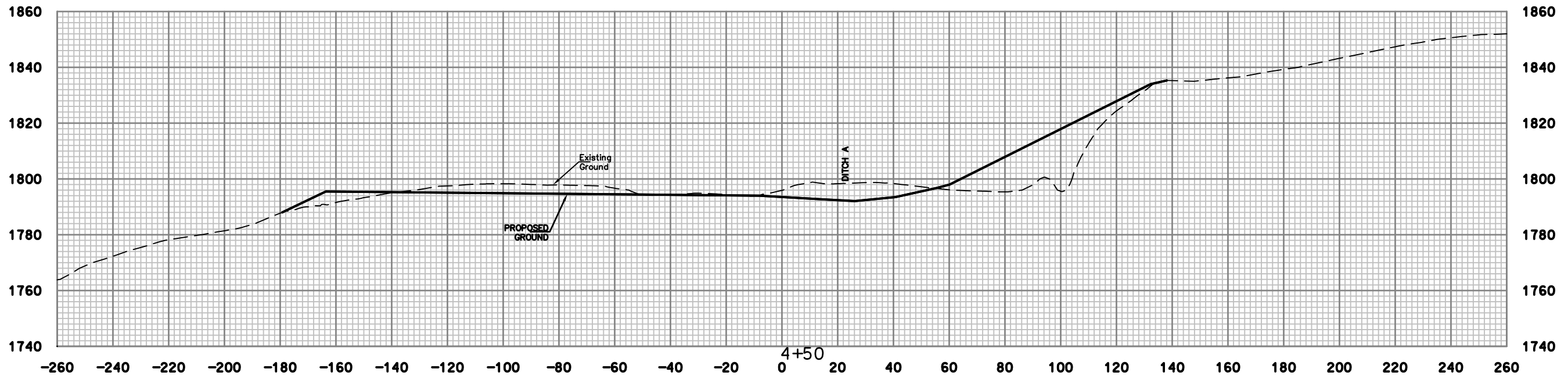
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NO.	DATE	REVISION	BY



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CROSS SECTIONS STA. 4+00 TO STA. 4+50
DATE DECEMBER 2015
SCALE 1"=20'
DRAWING NUMBER 23



NO.	DATE	REVISION	BY

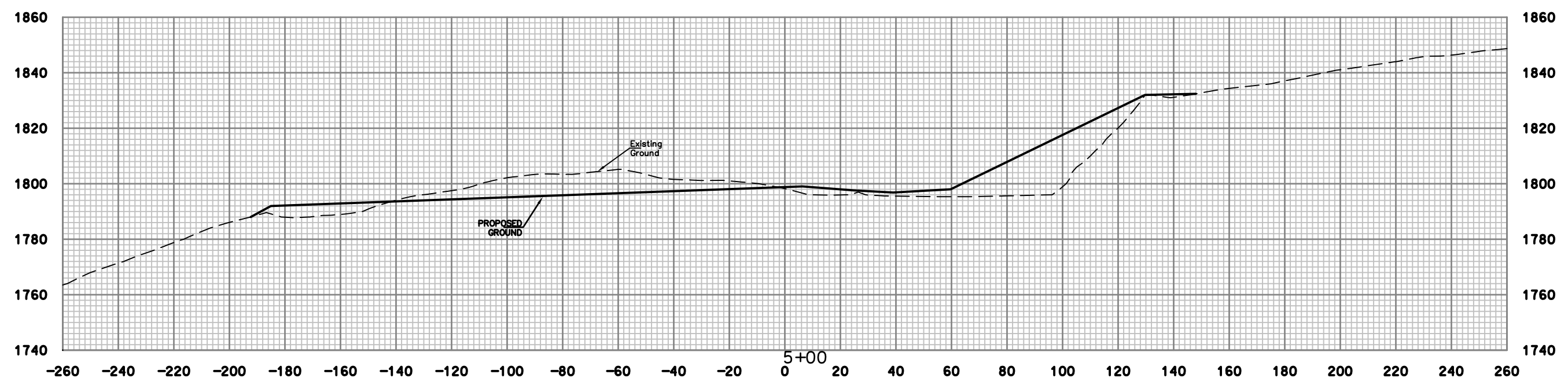
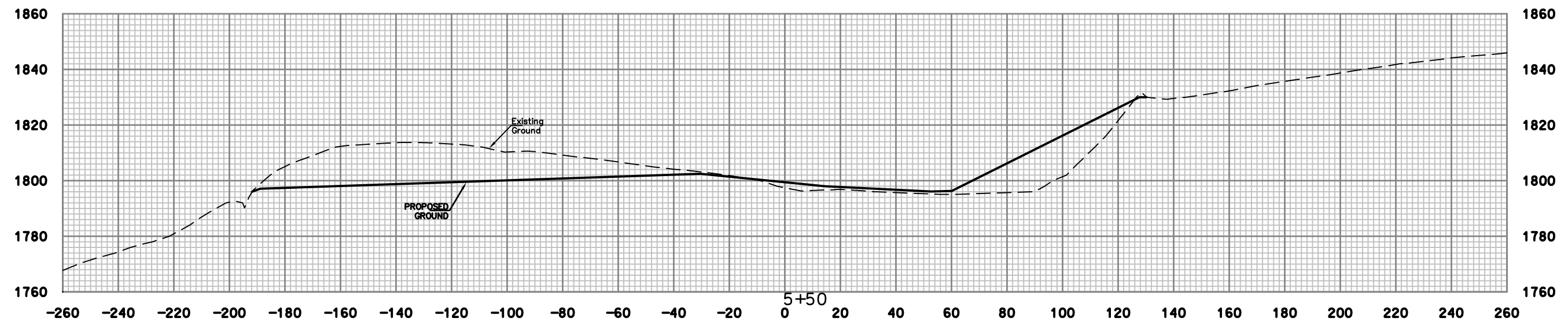


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CROSS SECTIONS  
STA. 5+00 TO STA. 5+50

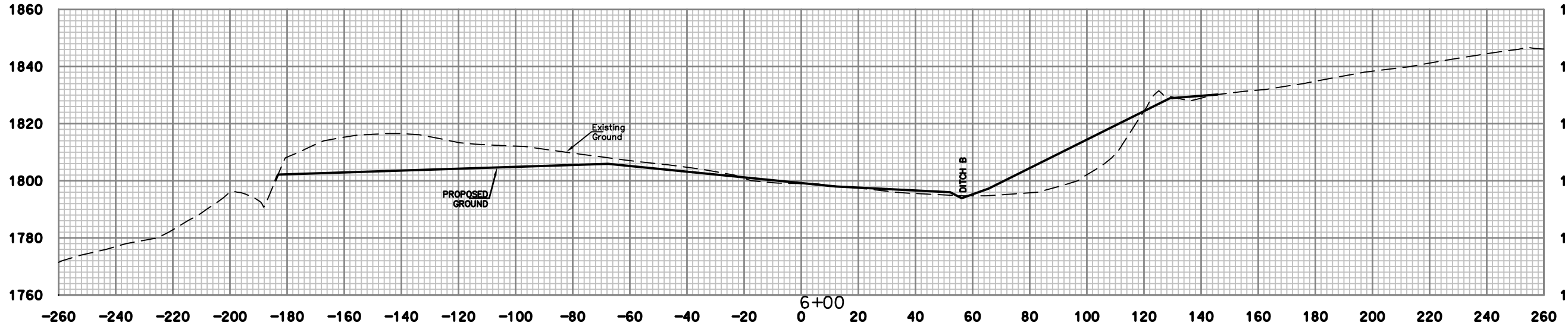
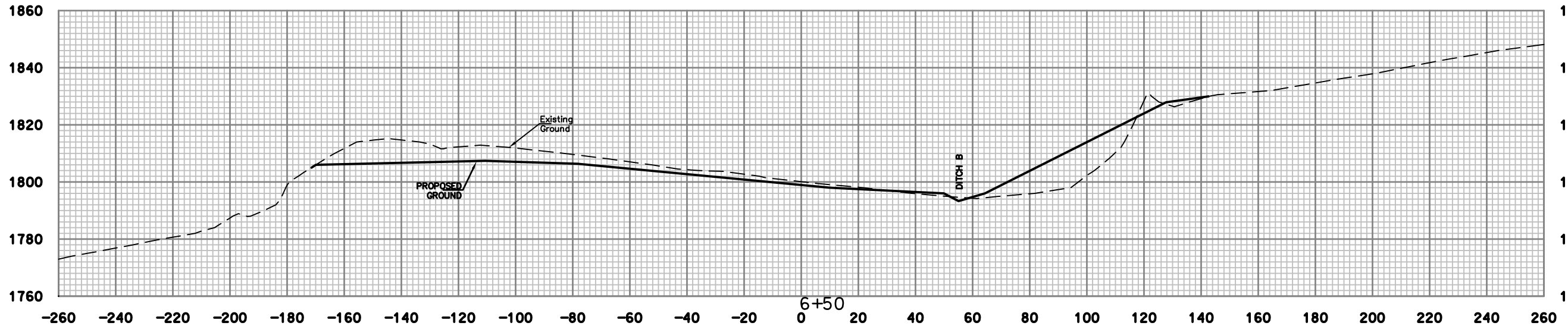
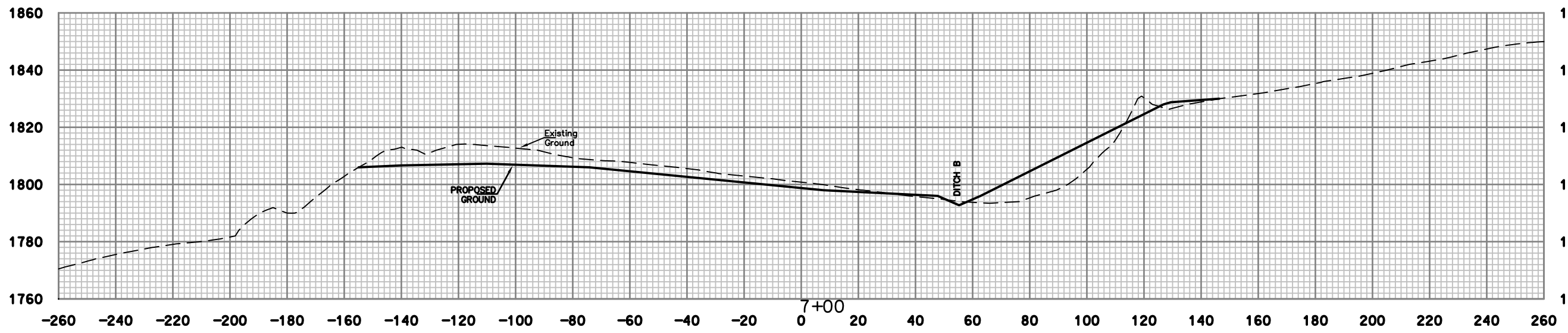
DATE  
DECEMBER 2015

SCALE  
1"=20'

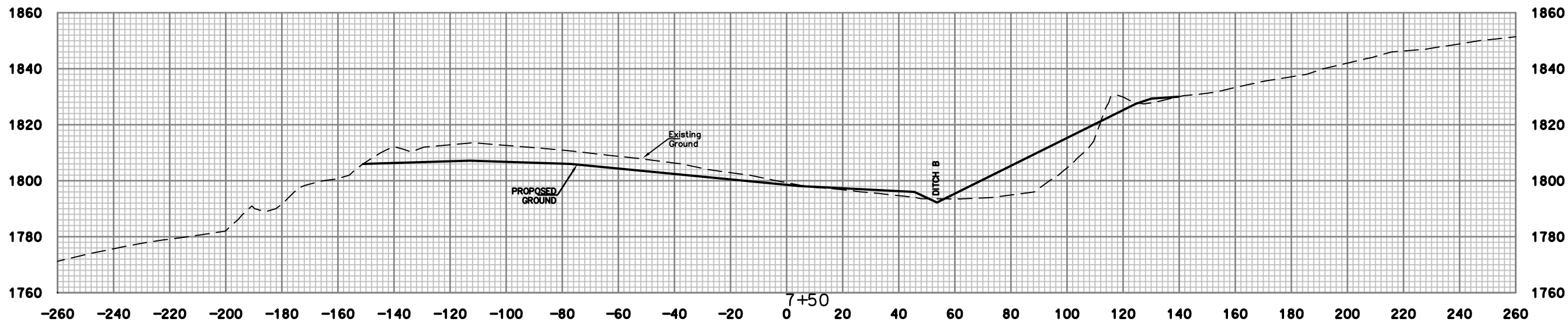
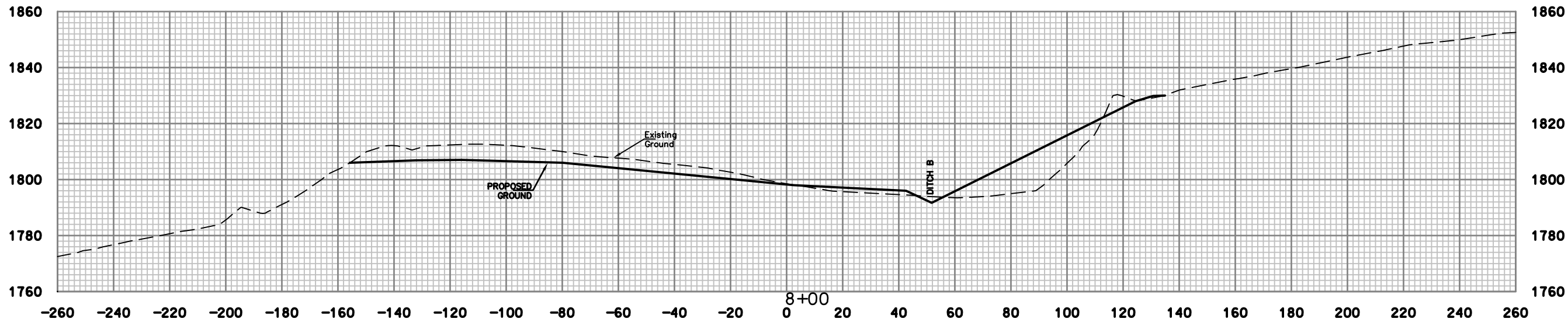
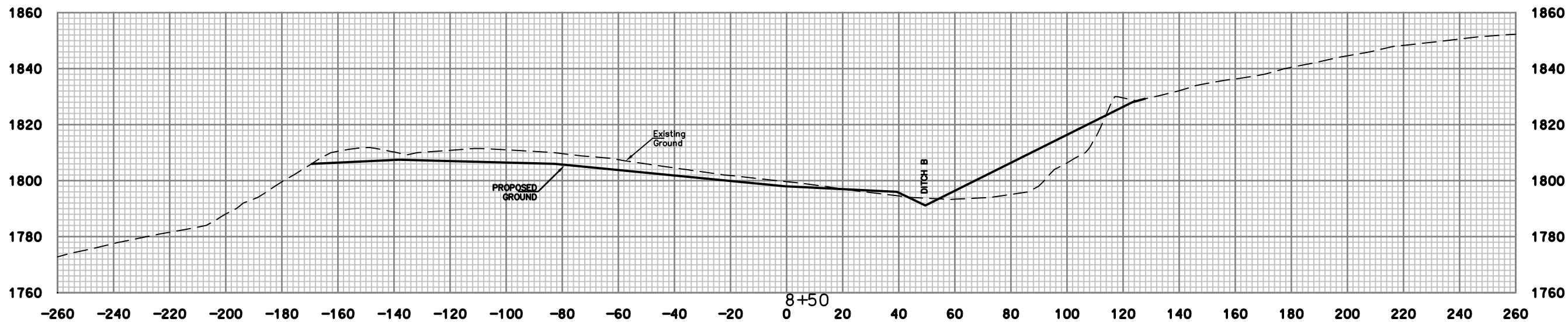
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NO.	DATE	REVISION	BY

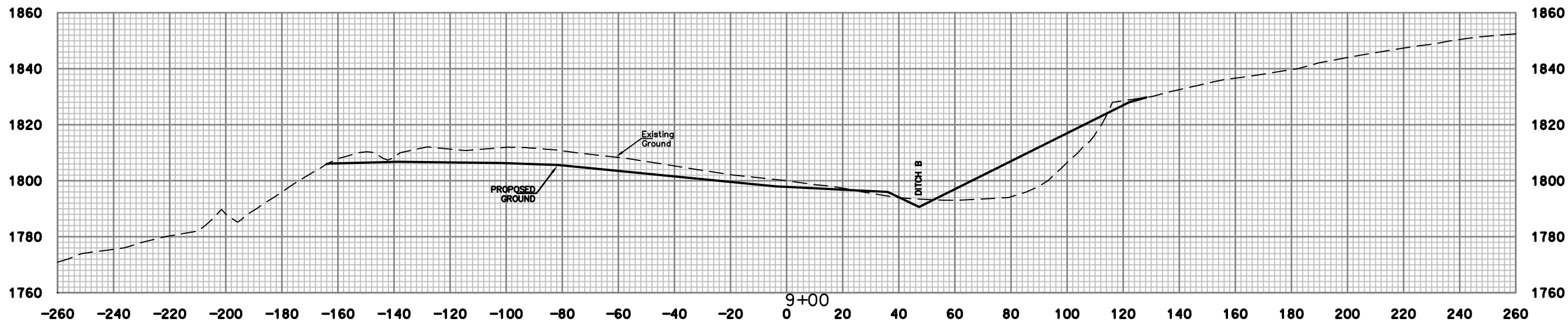
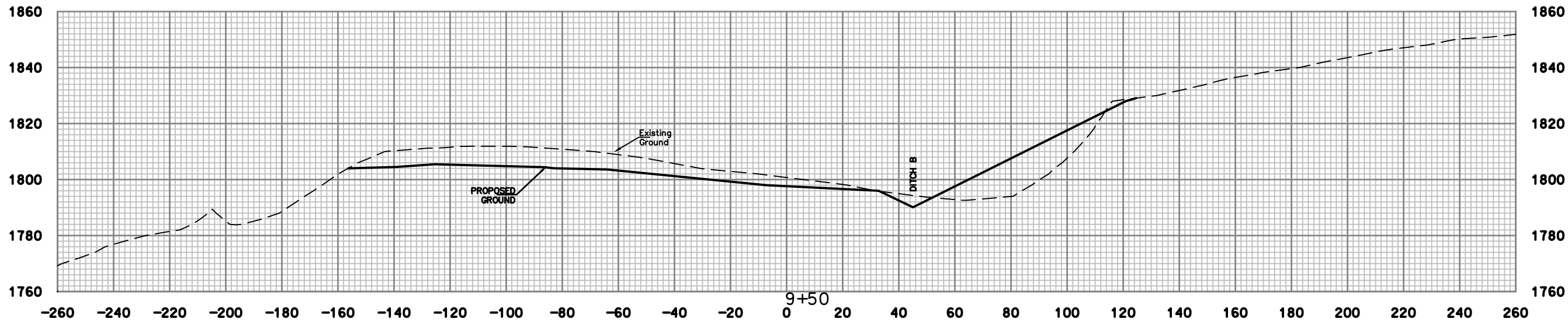
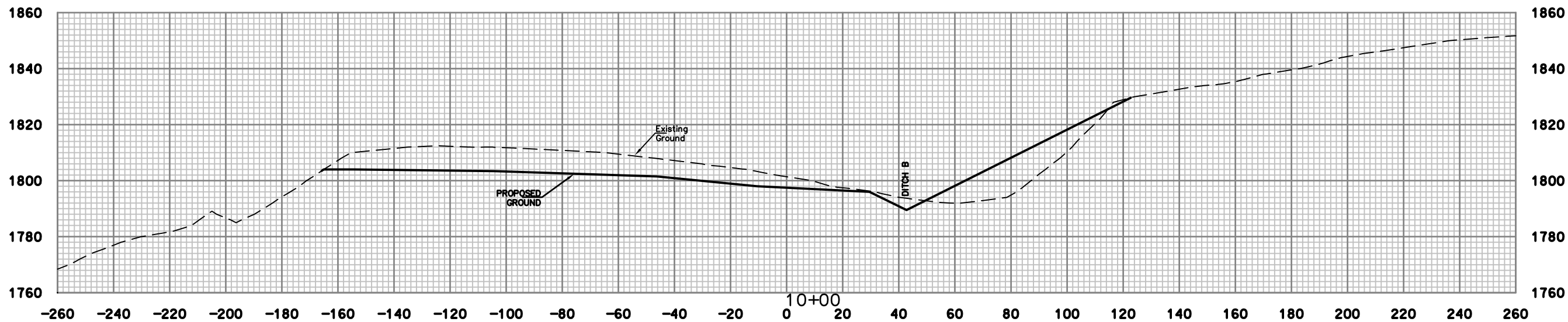


NO.	DATE	REVISION	BY

PROJECT INFORMATION  
  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 7+50 TO STA. 8+50

DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 26



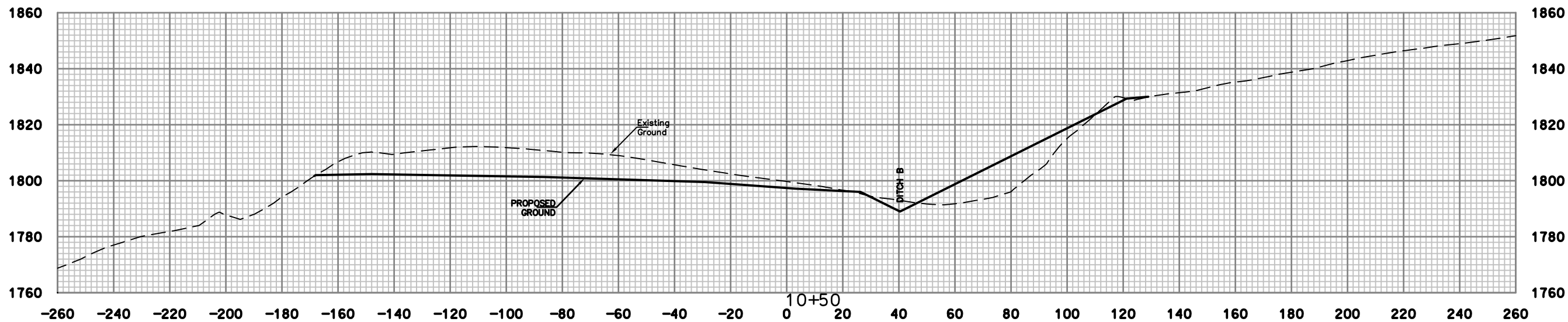
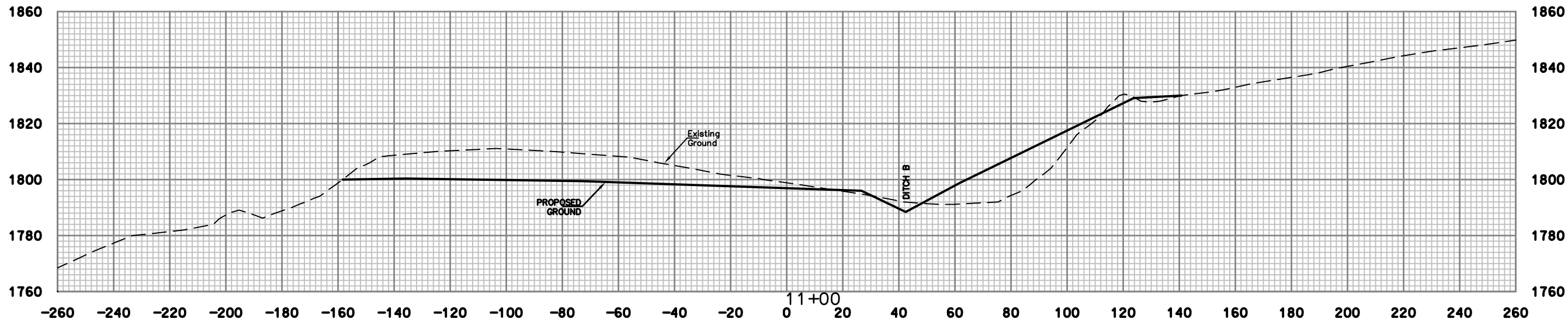
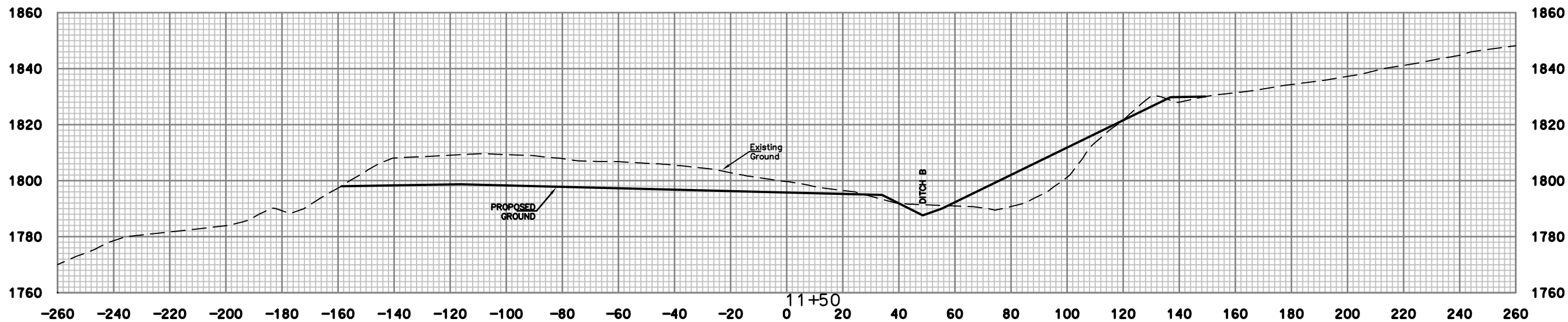
**E.L. ROBINSON  
ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304.776.4743  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
west Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 9+00 TO STA. 10+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**27**

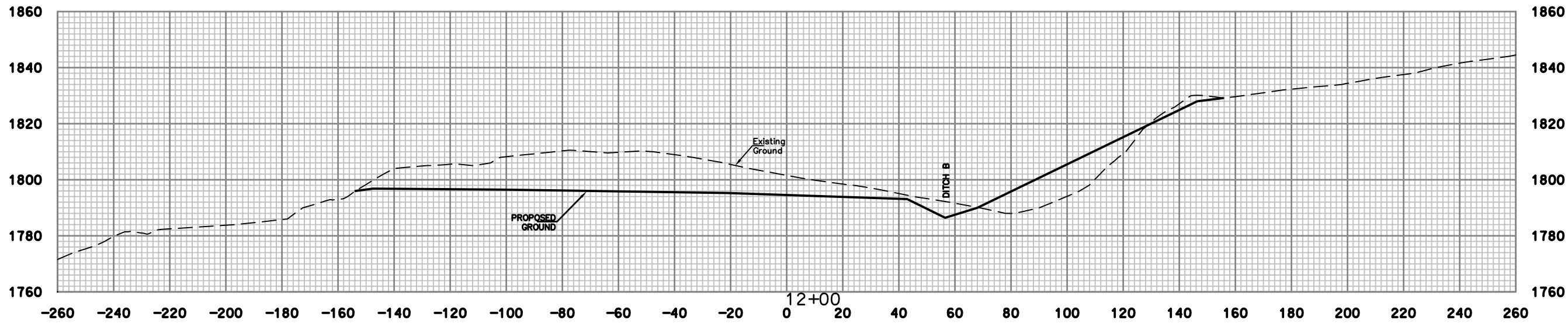
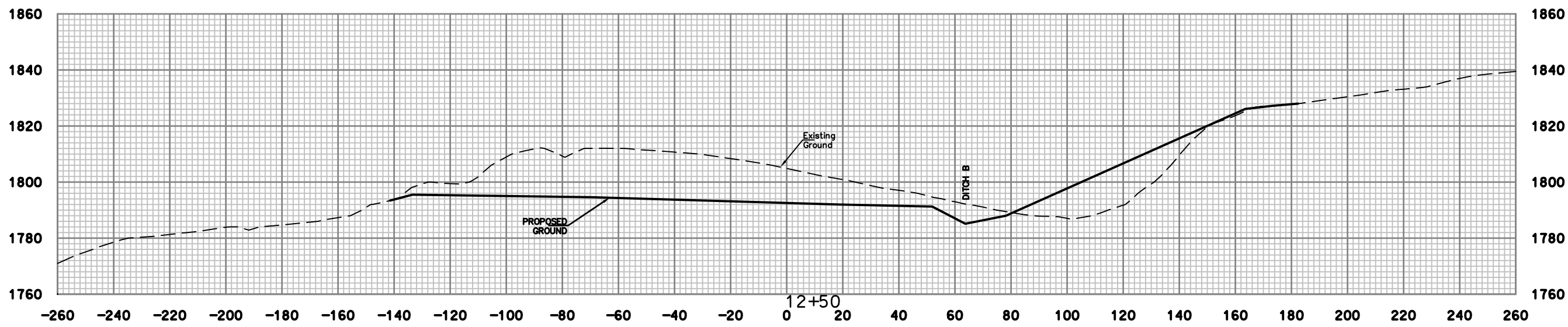
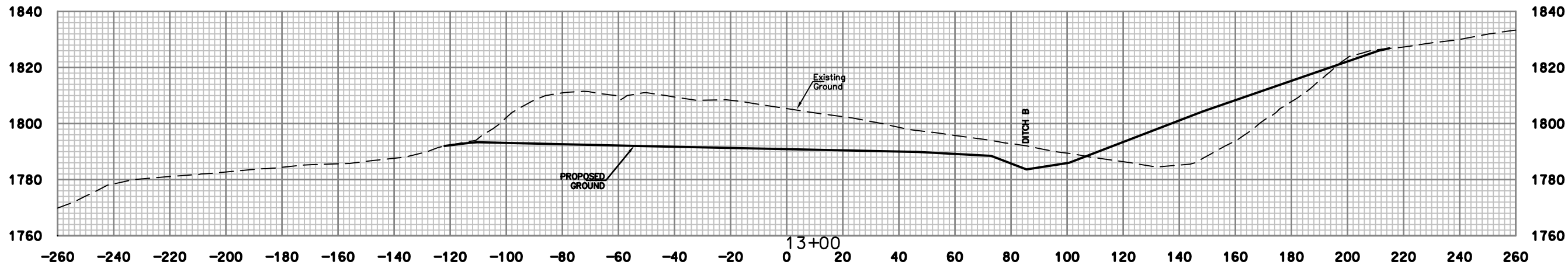


NO.	DATE	REVISION	BY

PROJECT INFORMATION  
  
 west Virginia  
 dep  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 10+50 TO STA. 11+50

DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 28

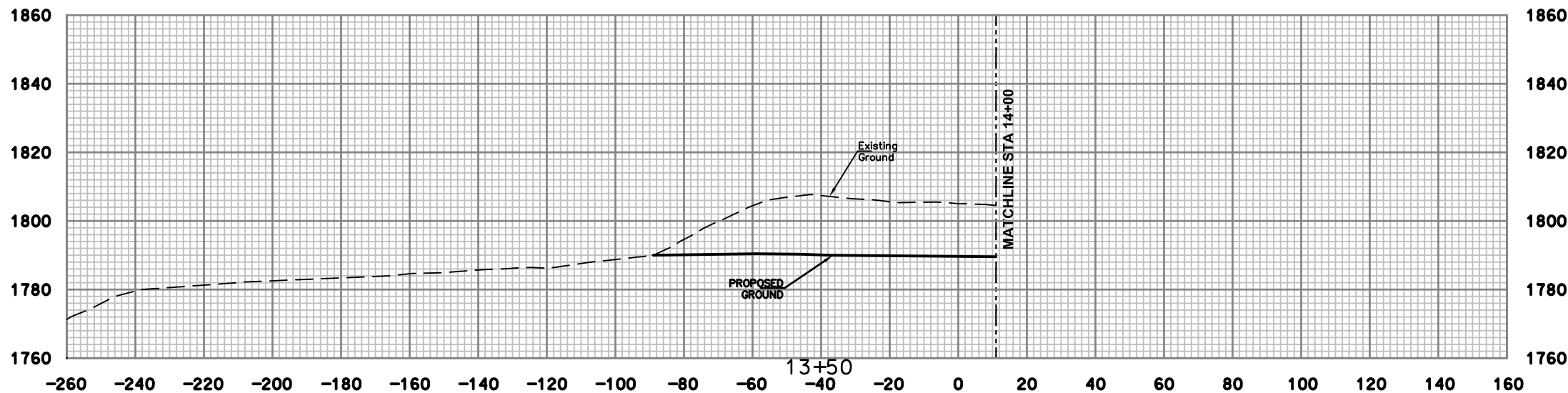
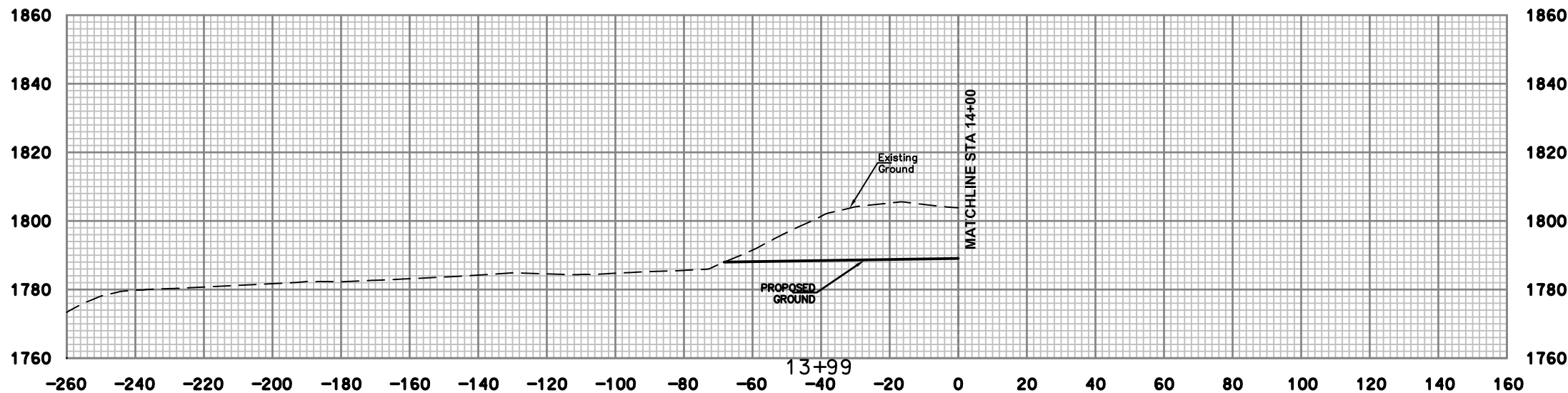
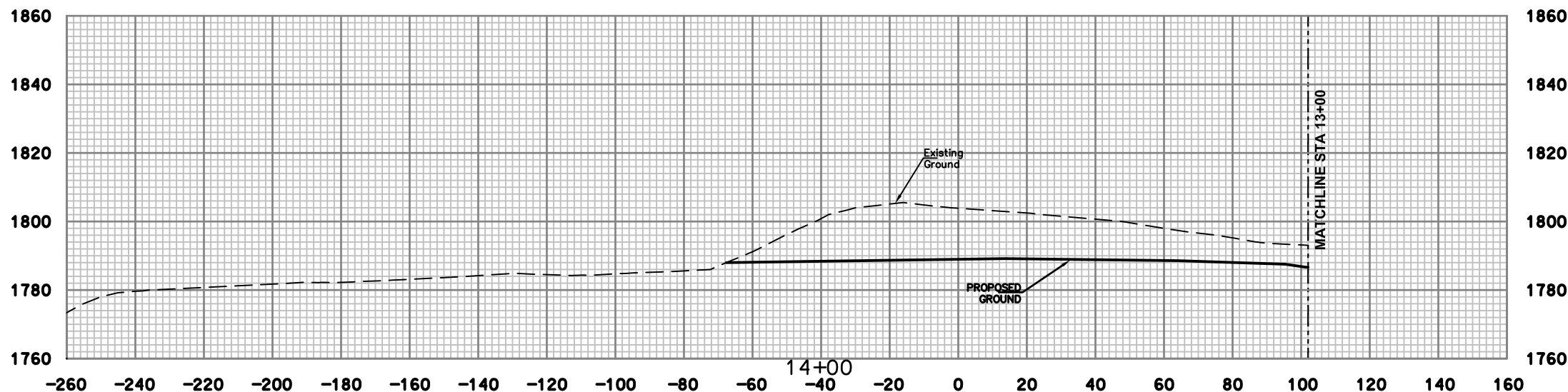


NO.	DATE	REVISION	BY

PROJECT INFORMATION  
  
 west Virginia  
 dep  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 12+00 TO STA. 13+00

DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 29

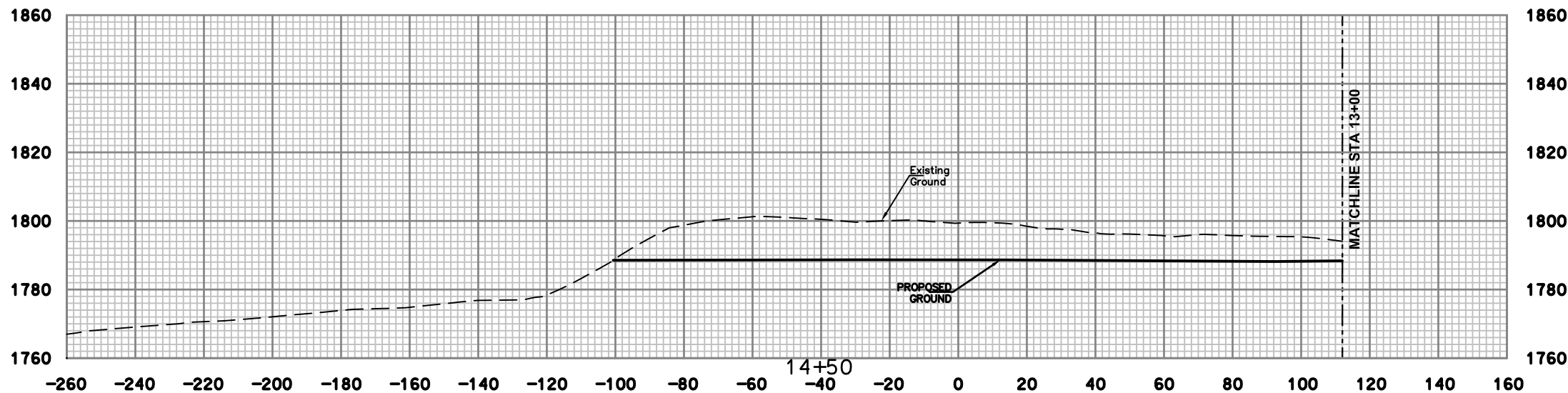
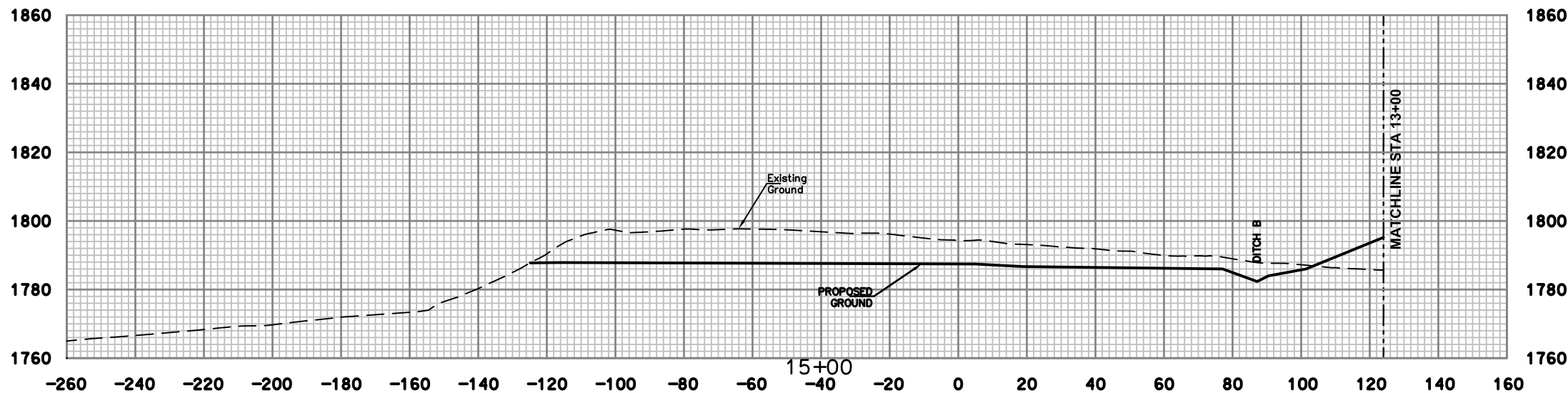
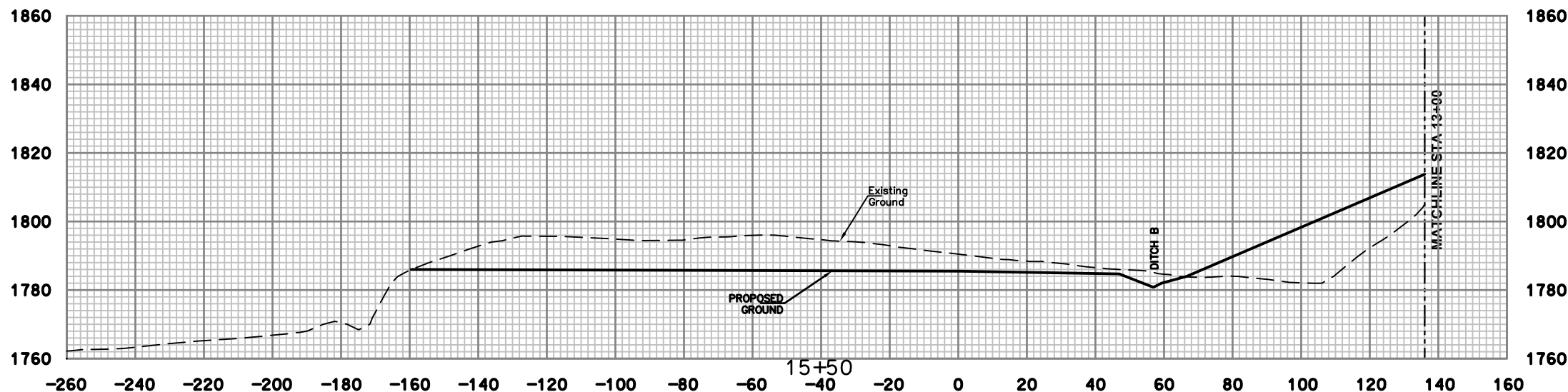


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 13+50 TO STA. 14+00

DATE  
DECEMBER 2015  
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DRAWING NUMBER  
30

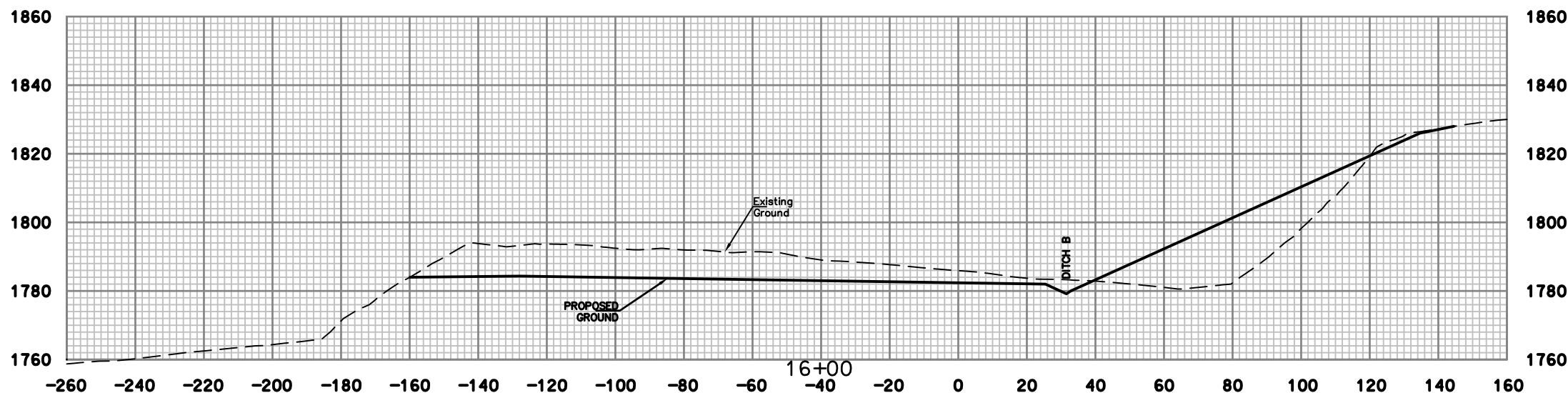
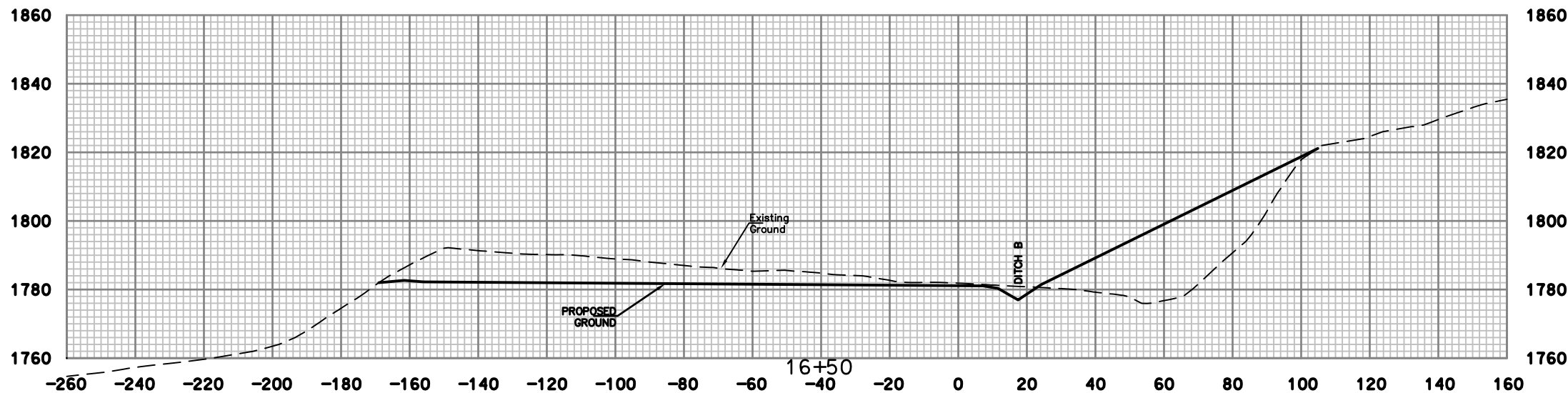
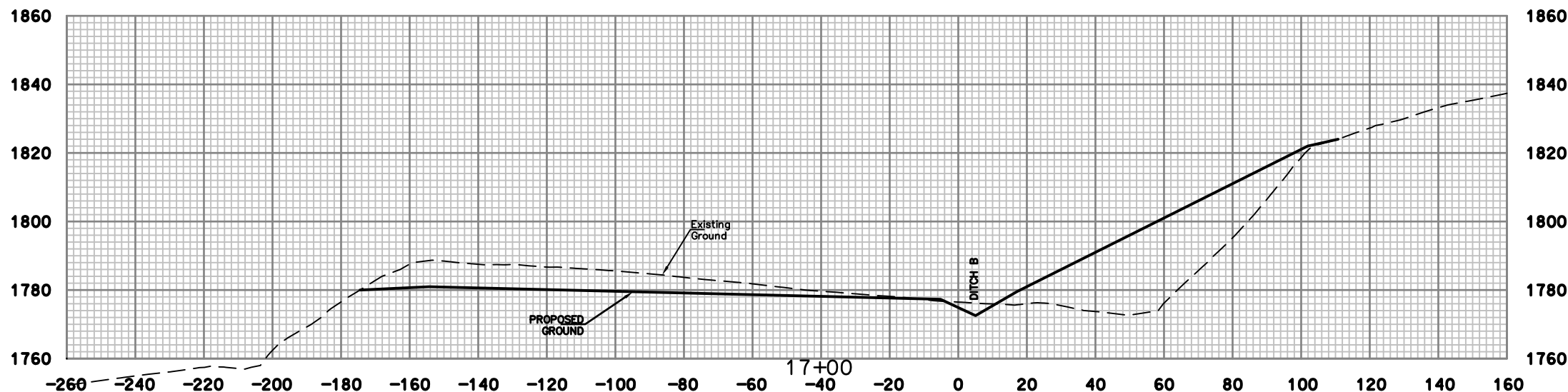


NO.	DATE	REVISION	BY



**DRAWING TITLE**  
CROSS SECTIONS  
STA. 14+50 TO STA. 15+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**31**



**E.L. ROBINSON  
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5088 Washington Street, West  
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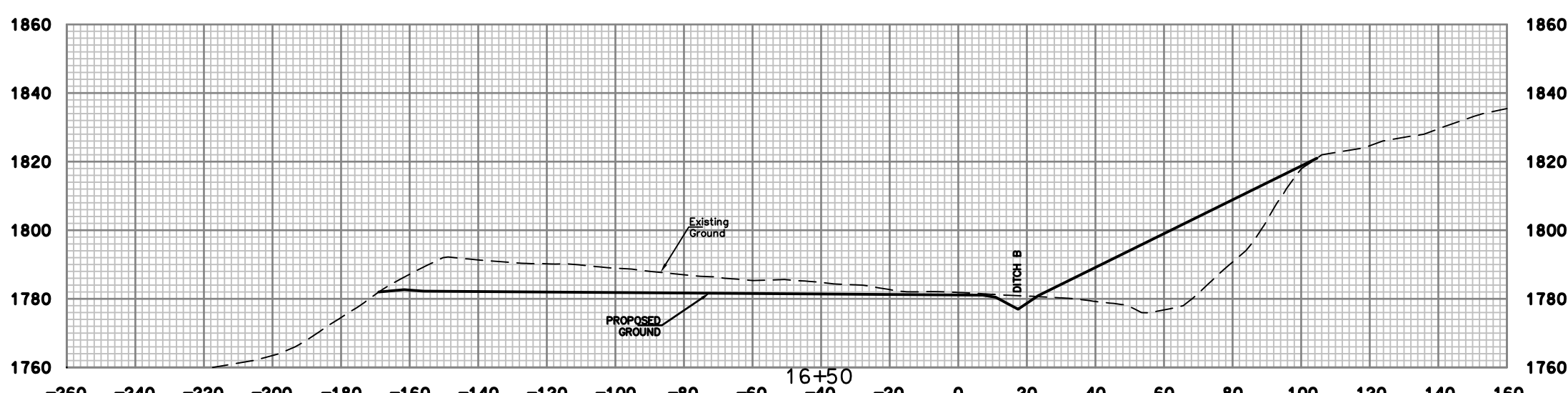
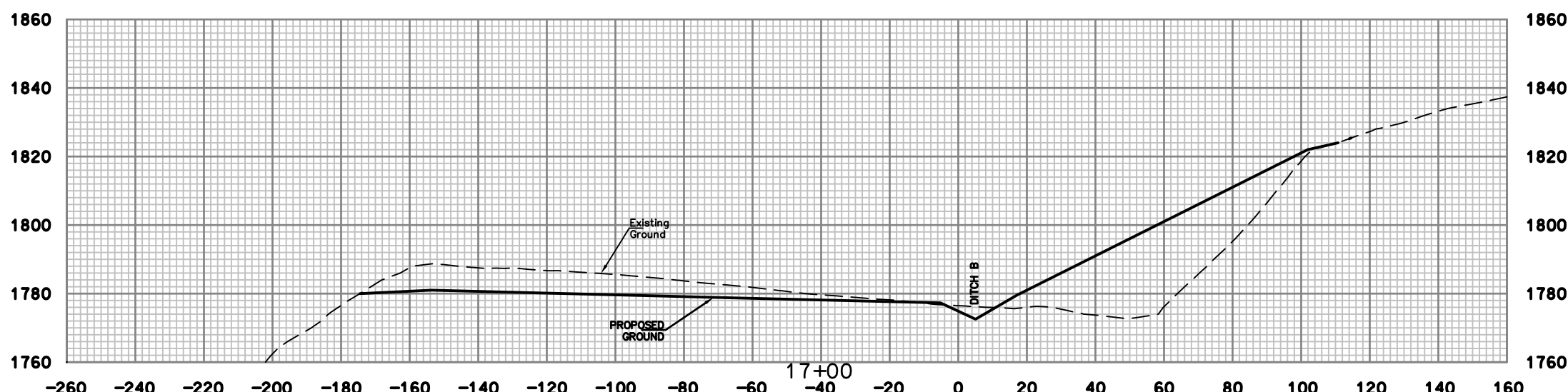
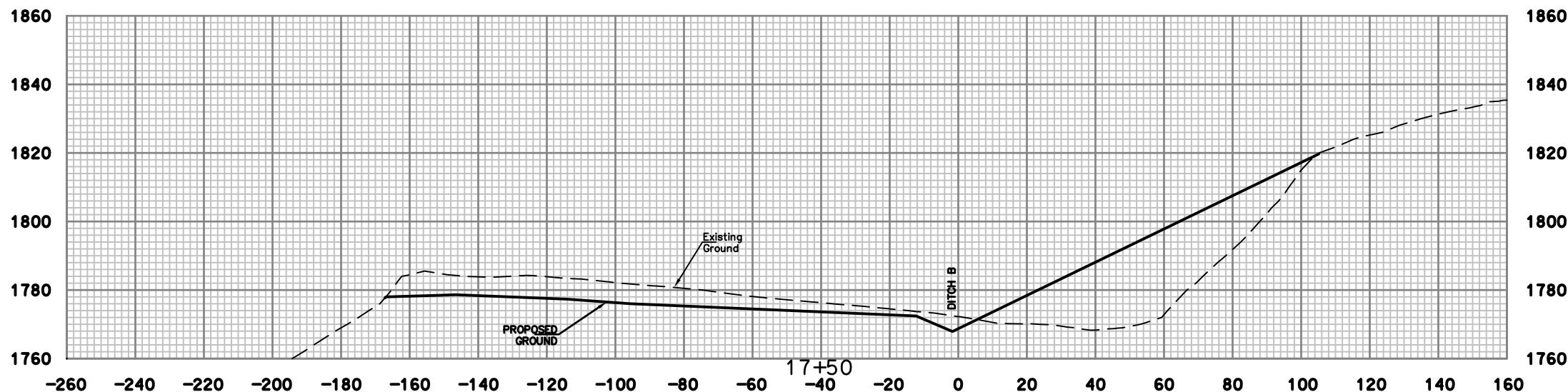
NO.	DATE	REVISION	BY

PROJECT INFORMATION  
west Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 16+00 TO STA. 17+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
32



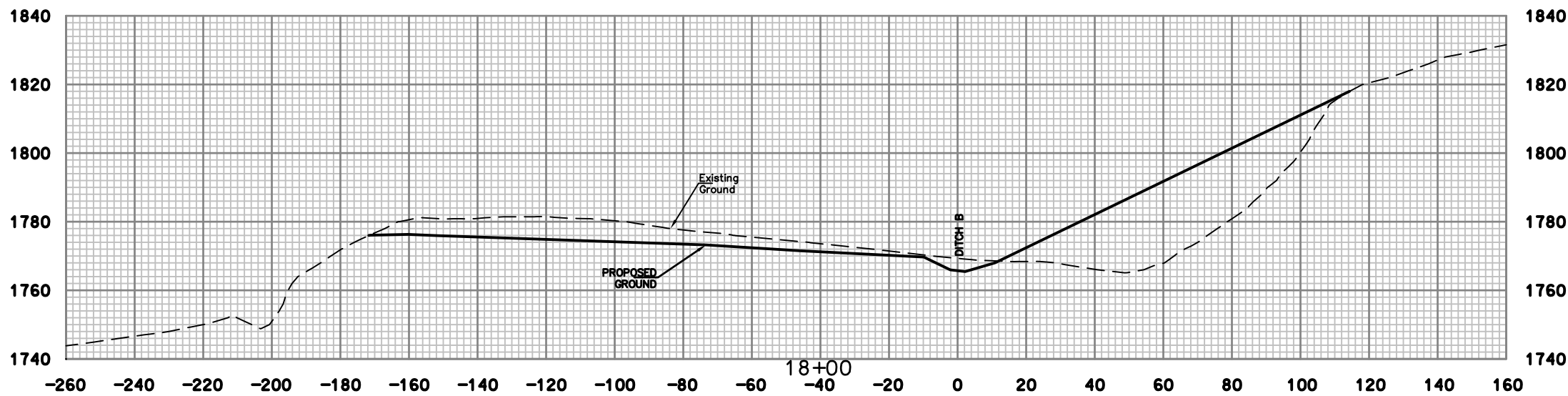
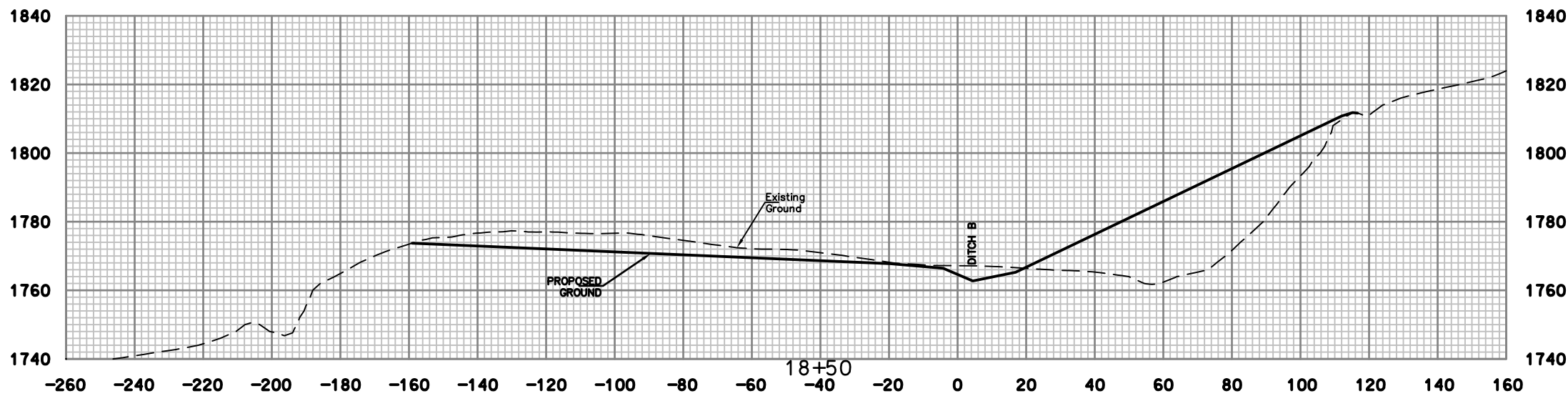
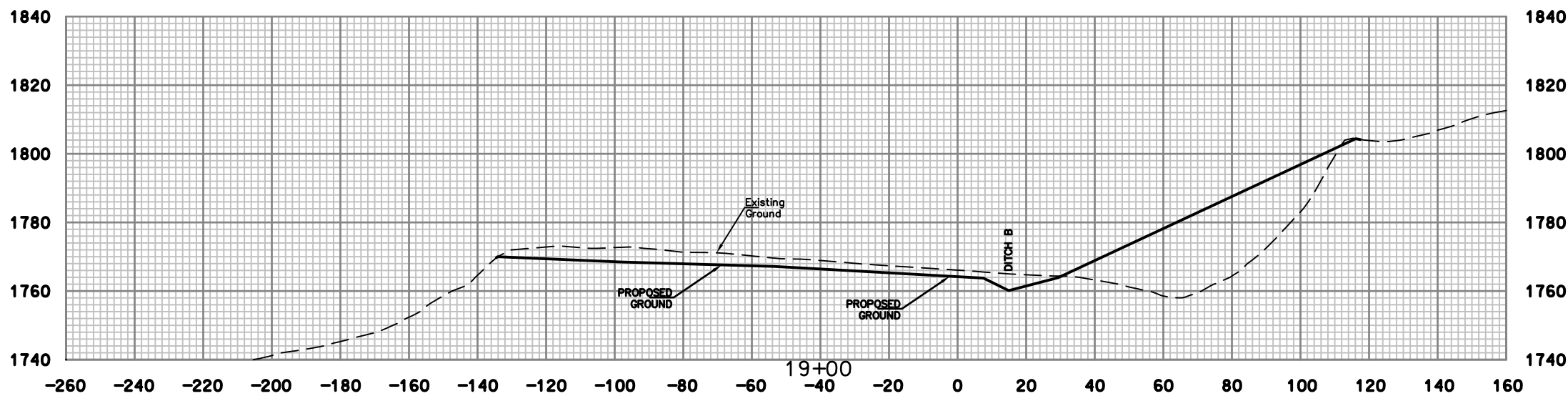


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 16+50 TO STA. 17+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**33**



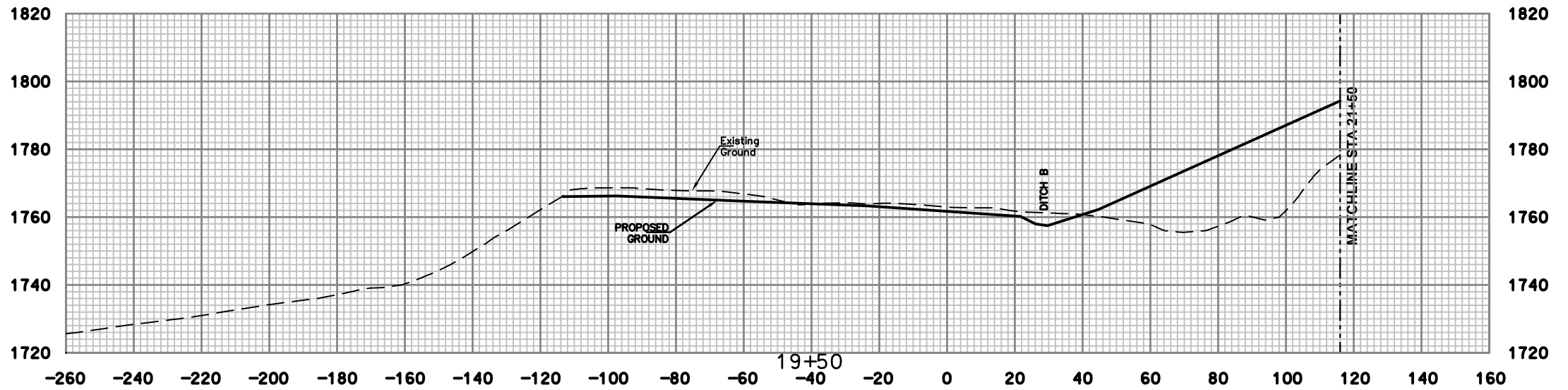
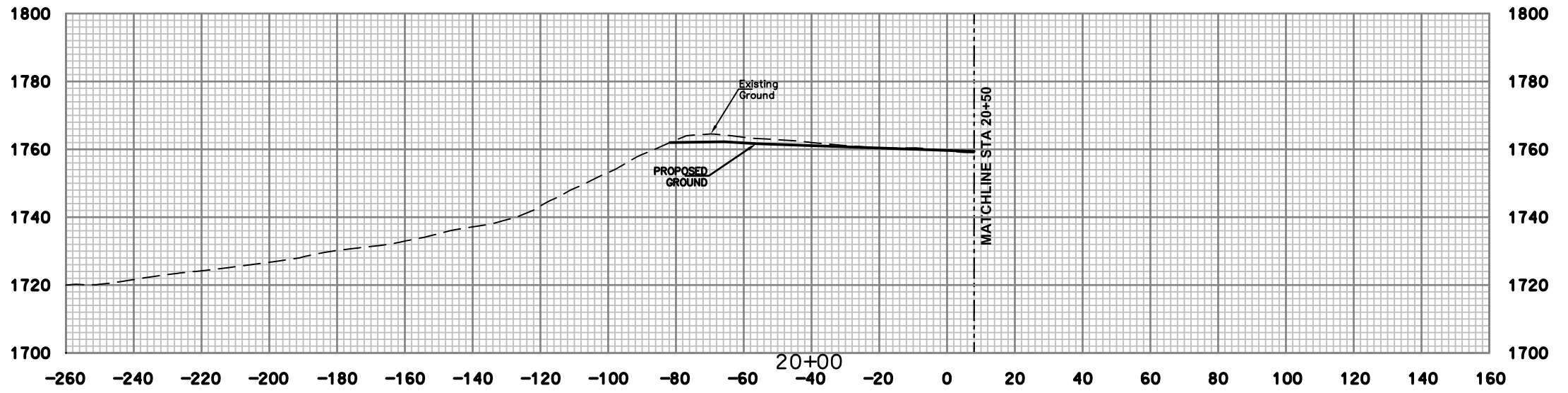
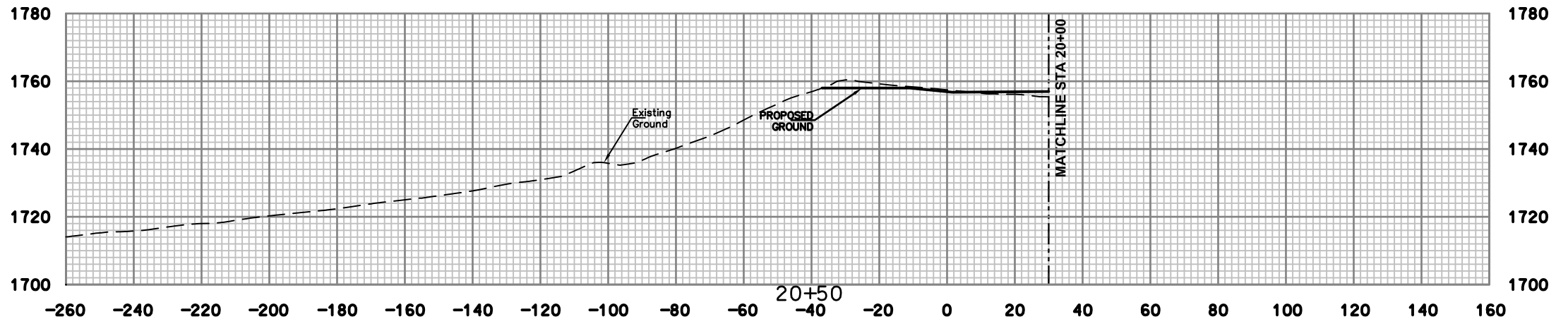
**E.L. ROBINSON  
ENGINEERING**  
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304.776.4743  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
west Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 18+00 TO STA. 19+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
34

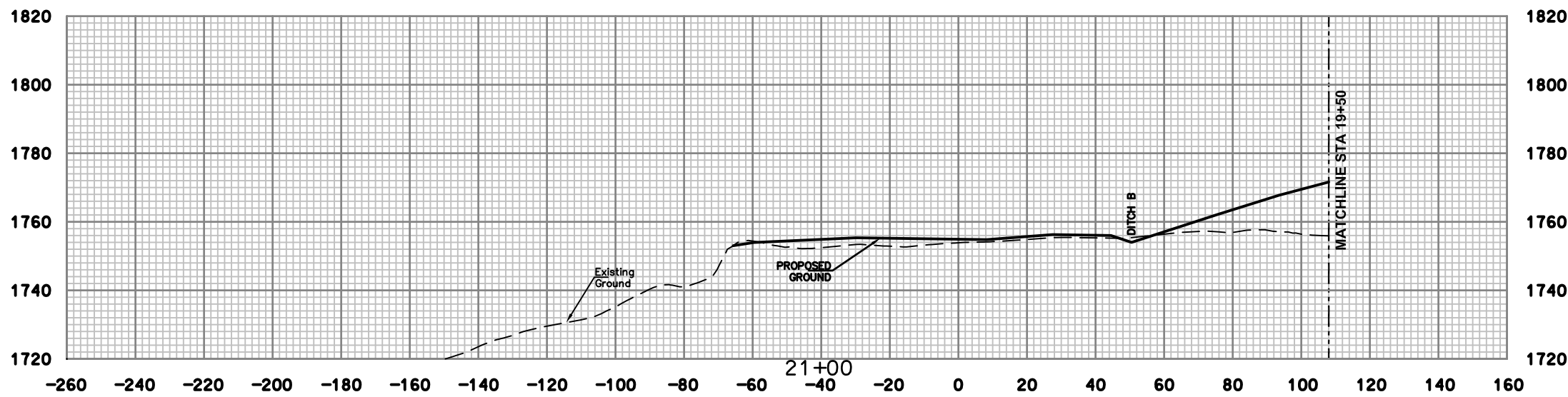
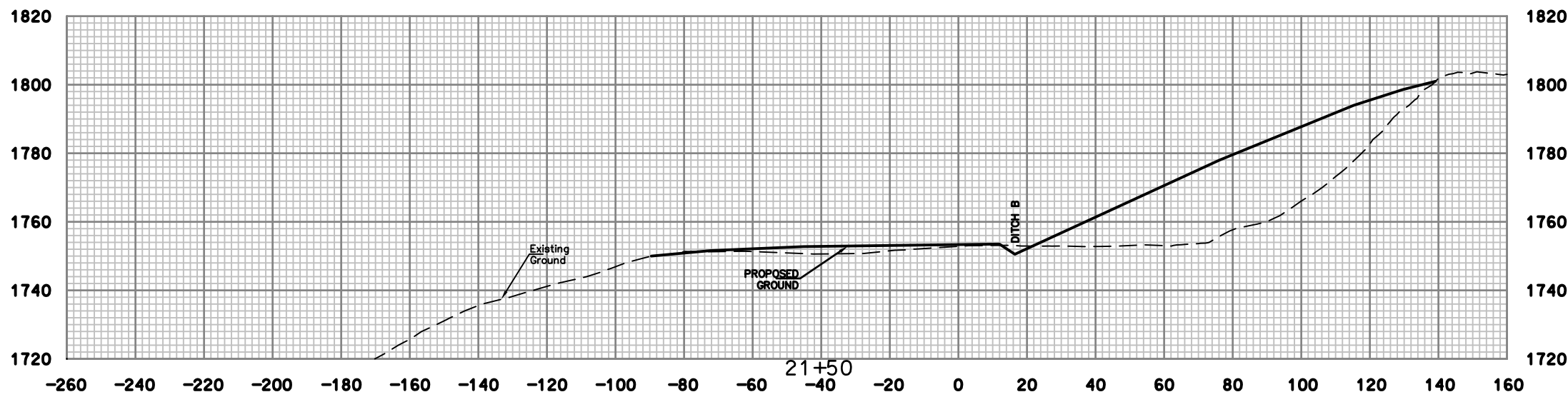
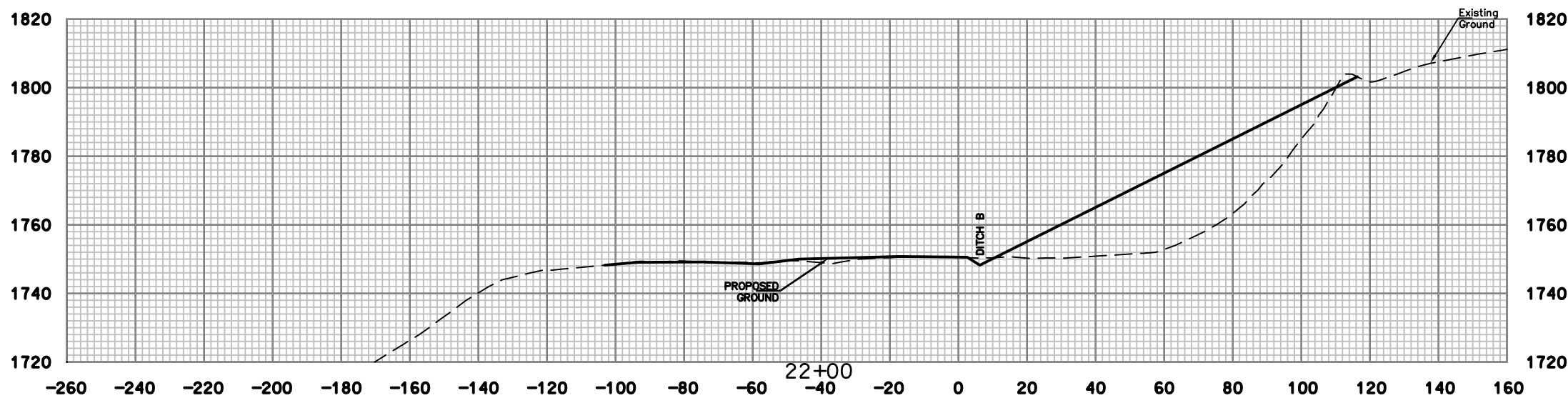


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 19+50 TO STA. 20+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**35**



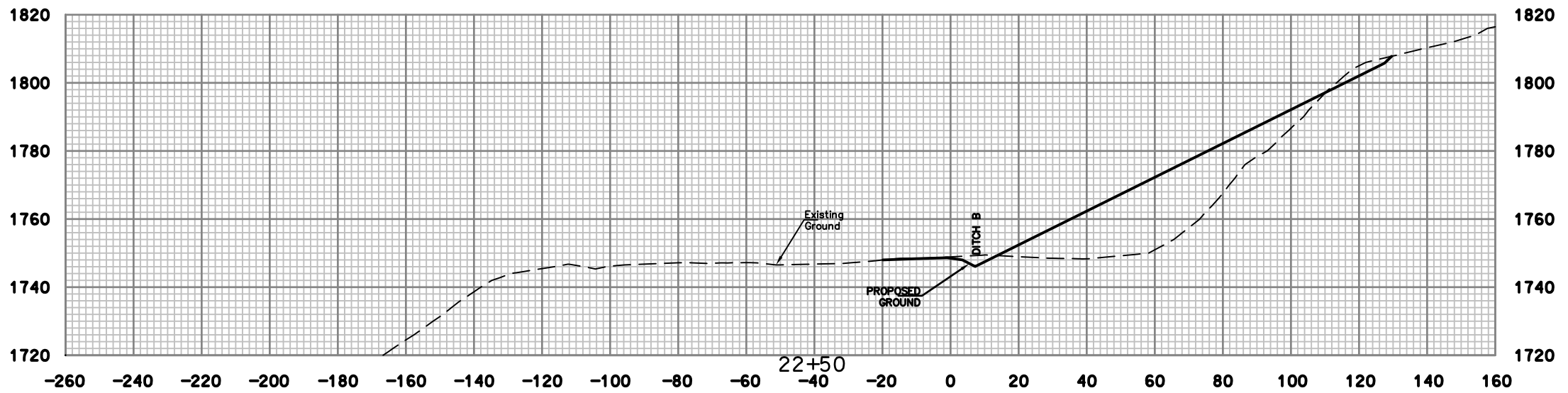
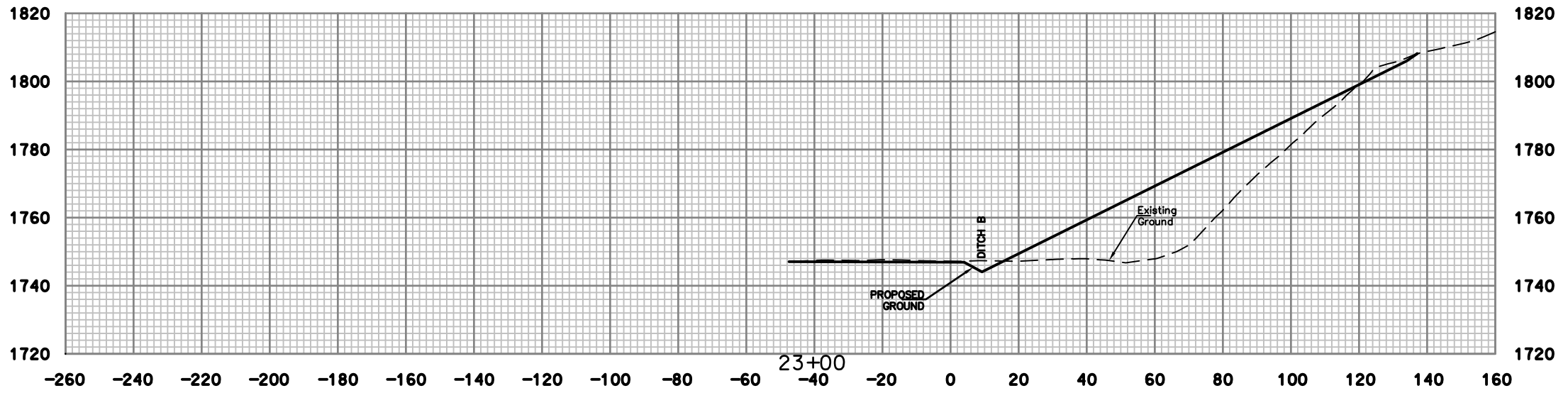
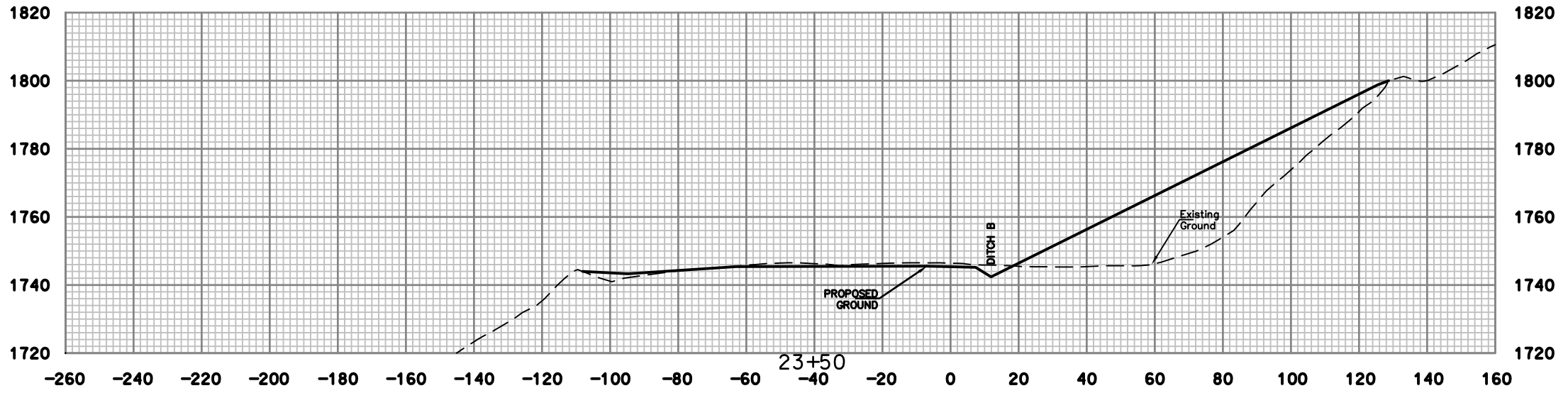
**E.L. ROBINSON  
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5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304.776.4743  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

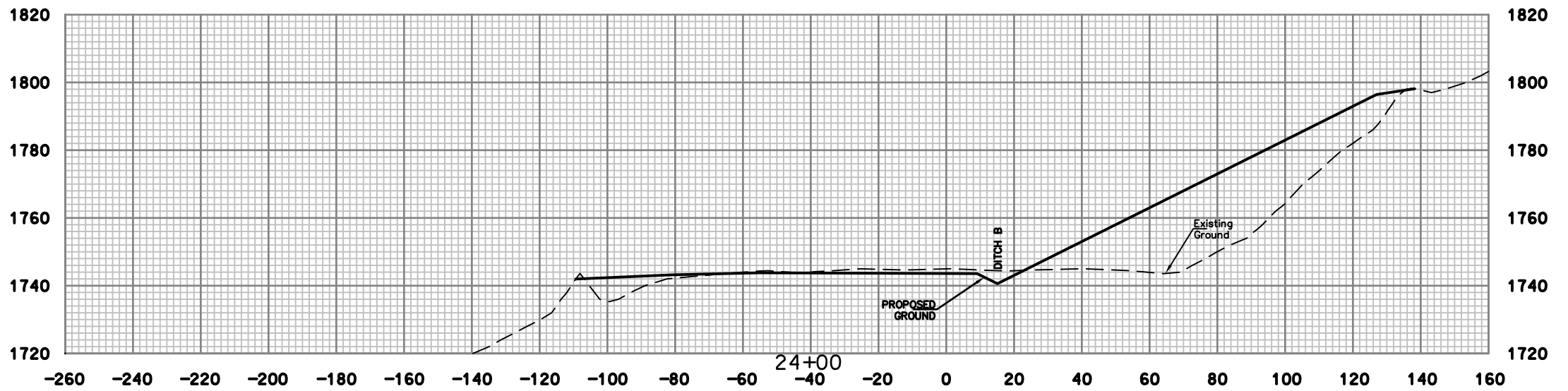
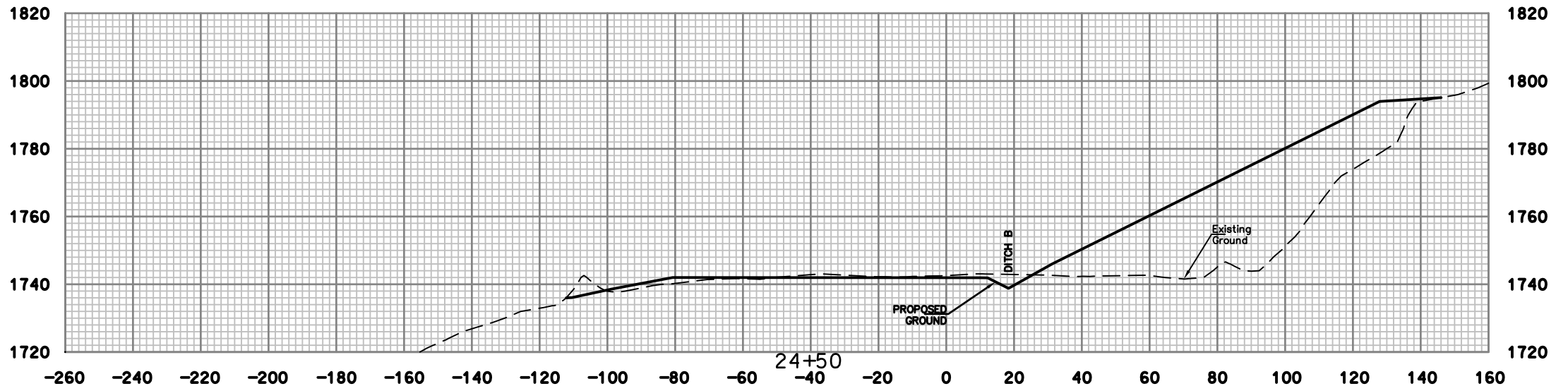
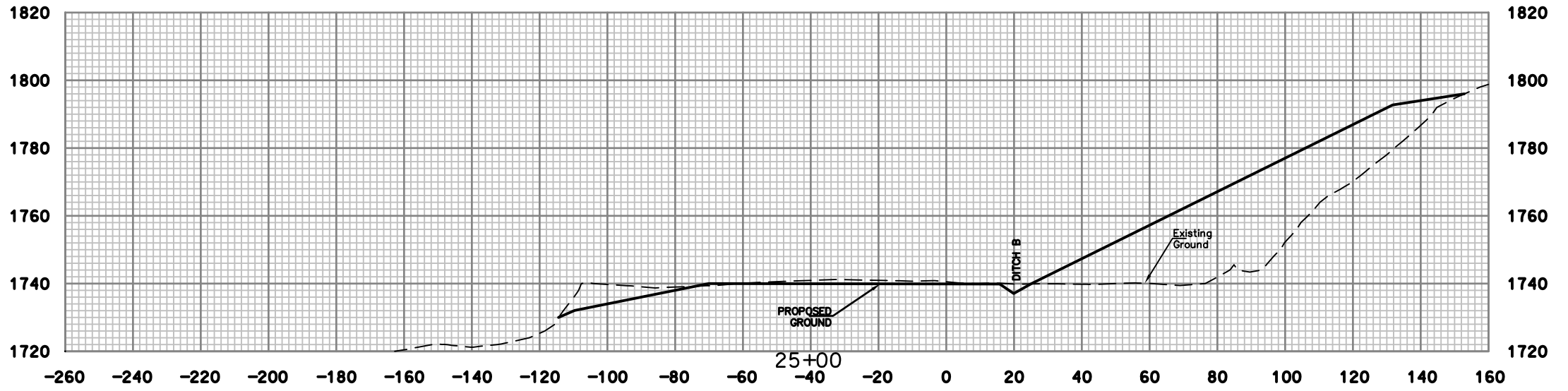
PROJECT INFORMATION  
  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 21+00 TO STA. 22+00

DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 36



NO.	DATE	REVISION	BY



**E.L. ROBINSON  
ENGINEERING**

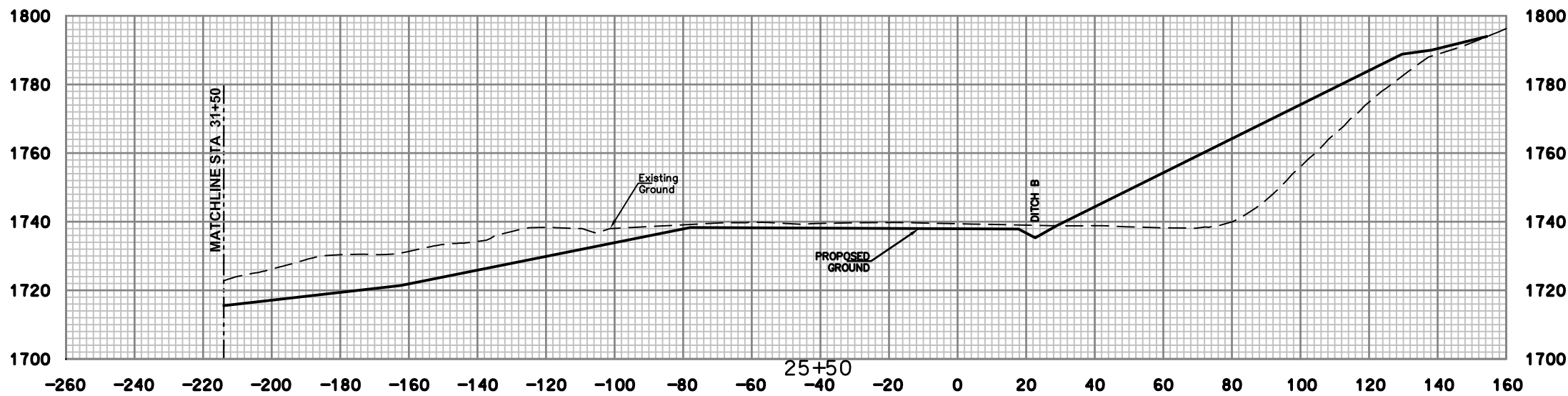
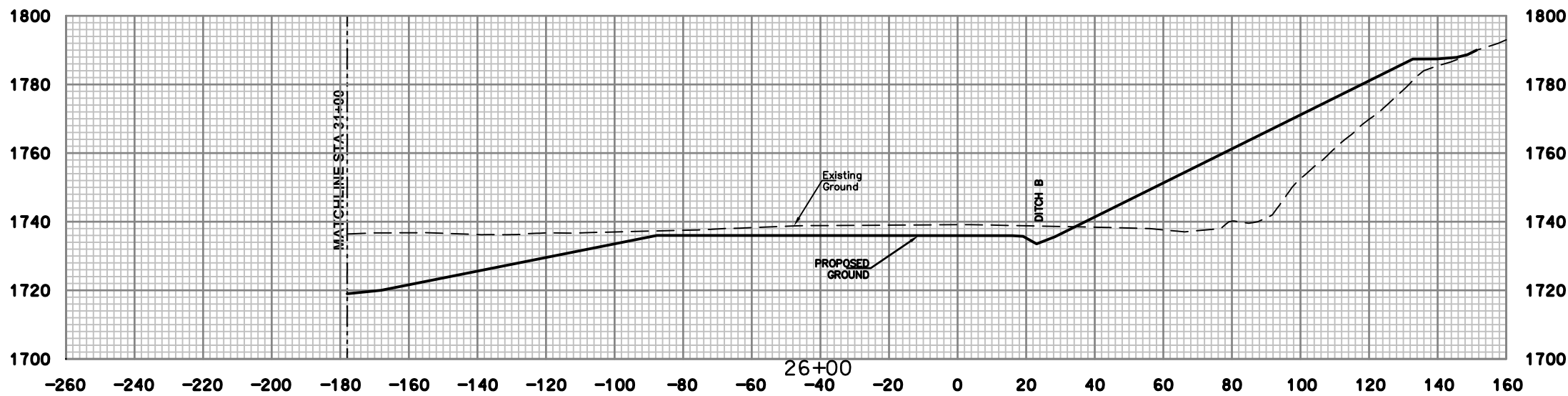
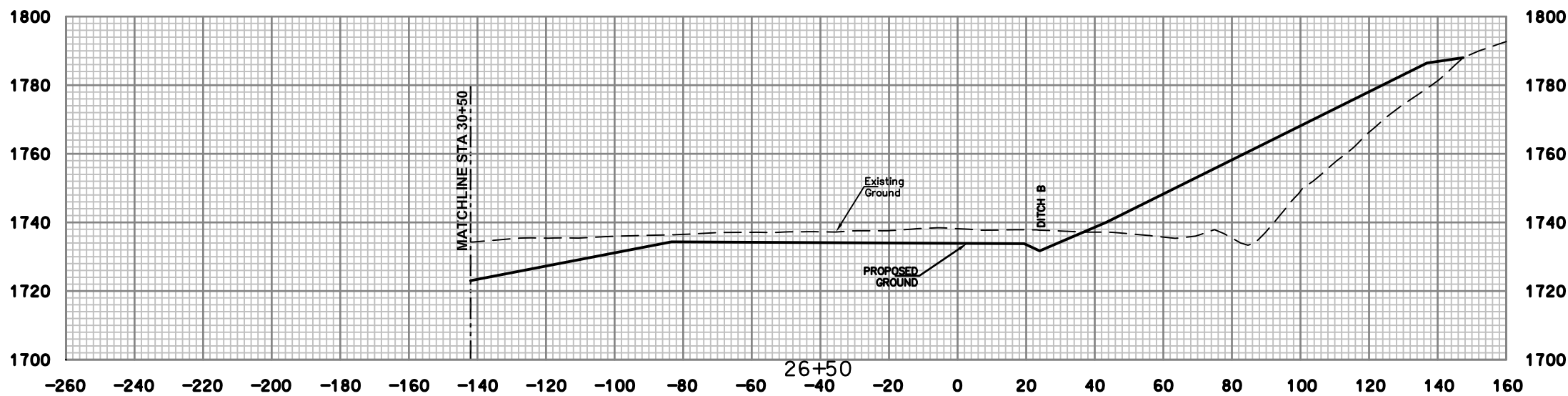
5088 Washington Street, West  
Charleston, West Virginia 25313  
Phone: 304.776.7473  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
 west Virginia  
 dep  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 24+00 TO STA. 25+00

DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 38

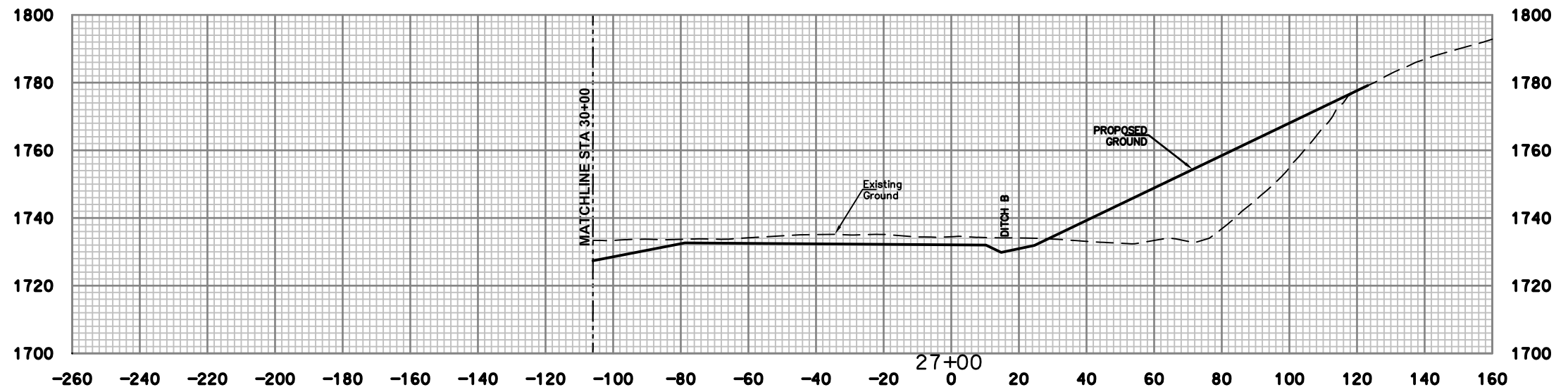
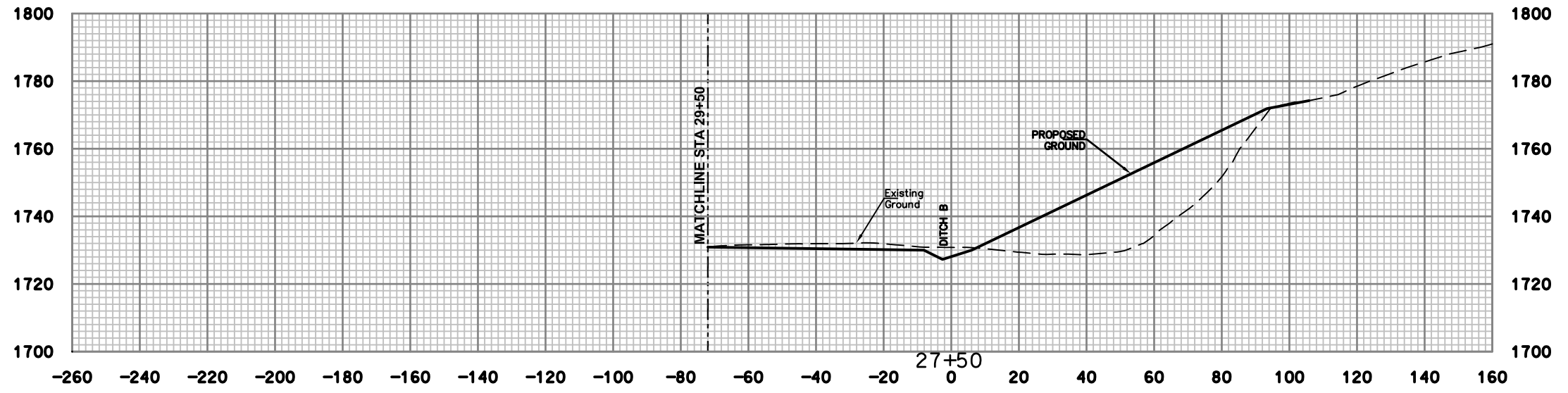
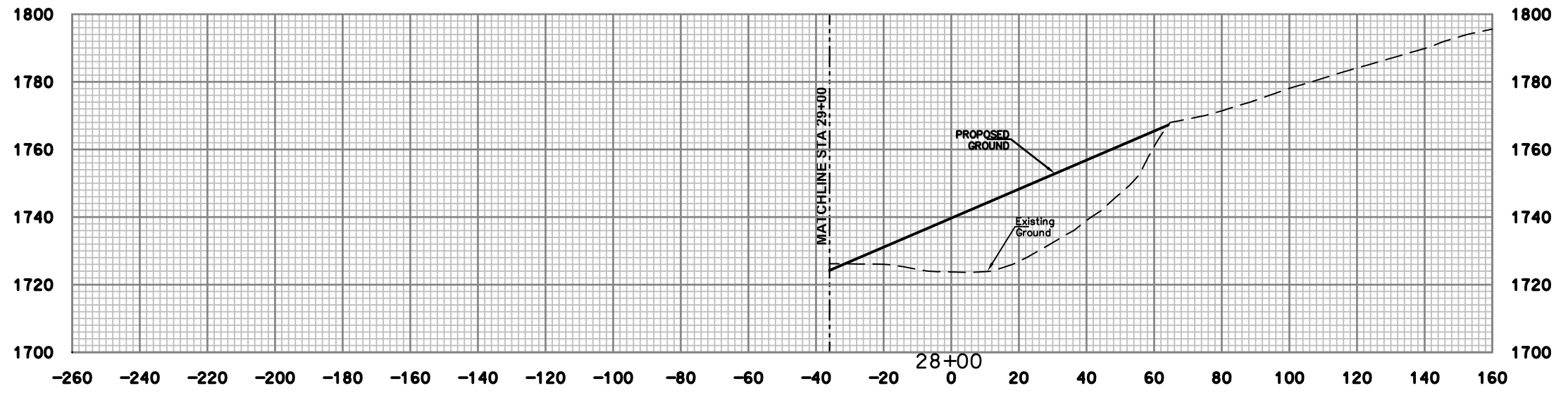


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 25+50 TO STA. 26+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**39**



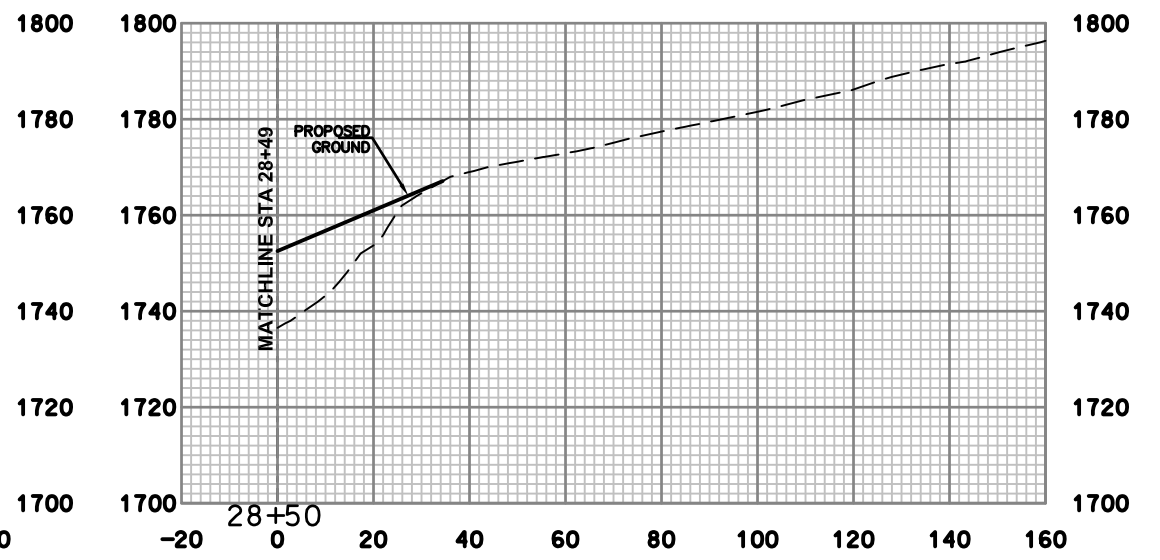
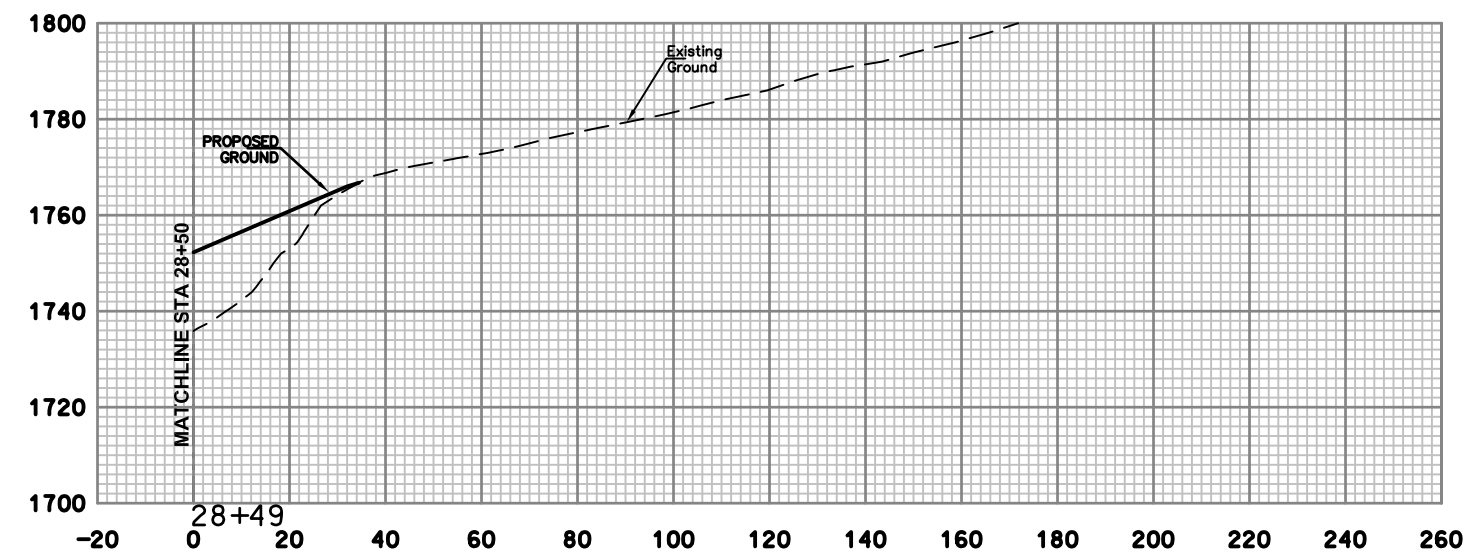
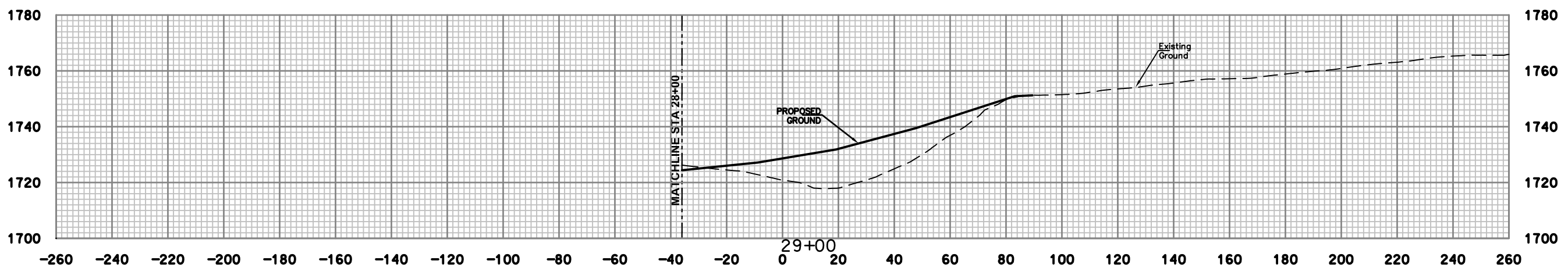
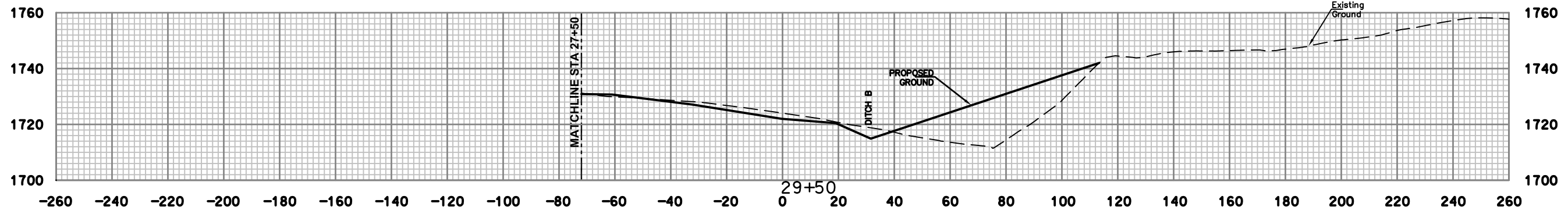
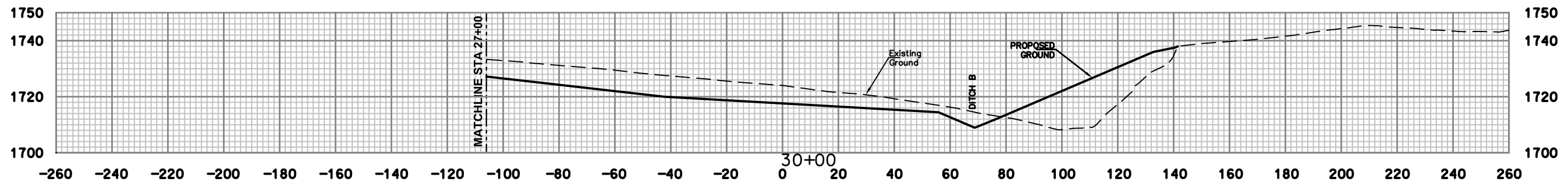
NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 27+00 TO STA. 28+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
40





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NO.	DATE	REVISION	BY

PROJECT INFORMATION  
West Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 28+49 TO STA. 30+00

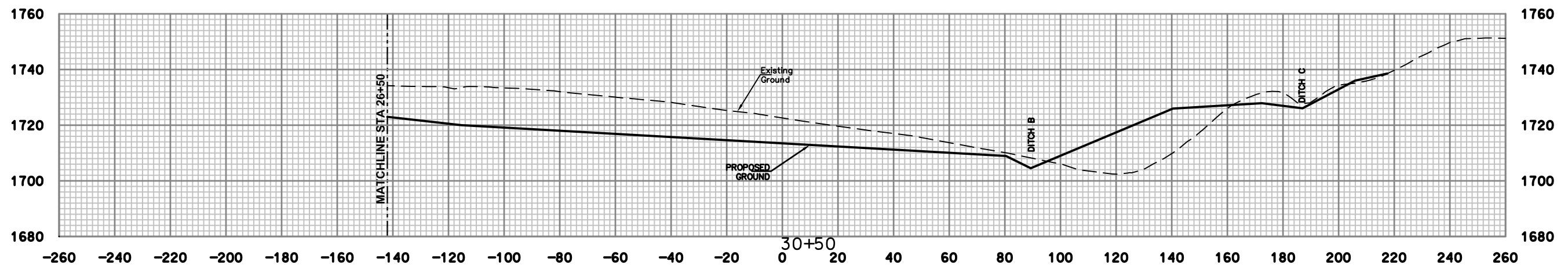
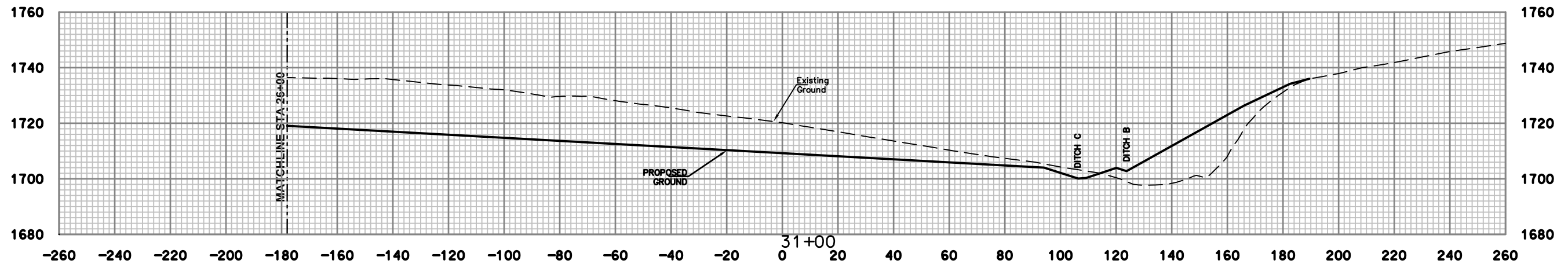
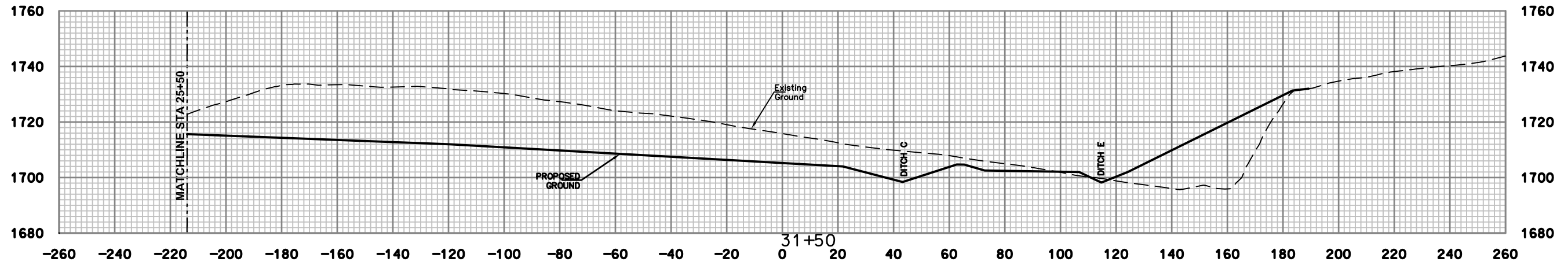
DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**41**

NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 30+50 TO STA. 31+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
42

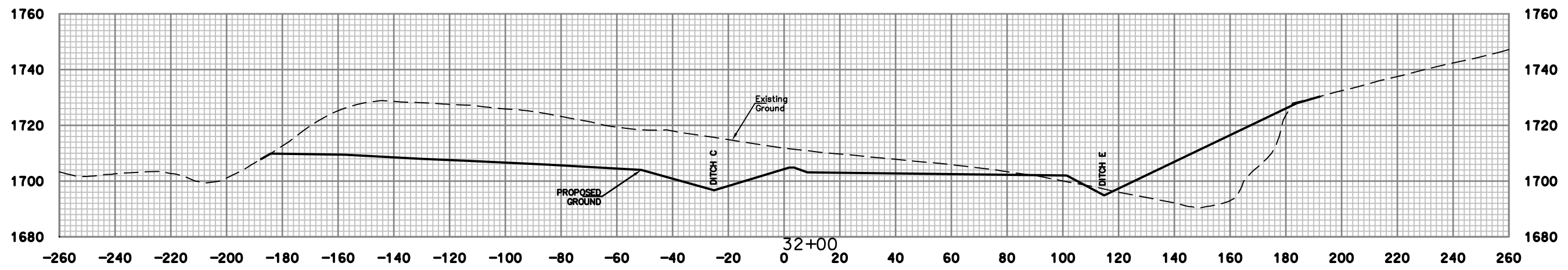
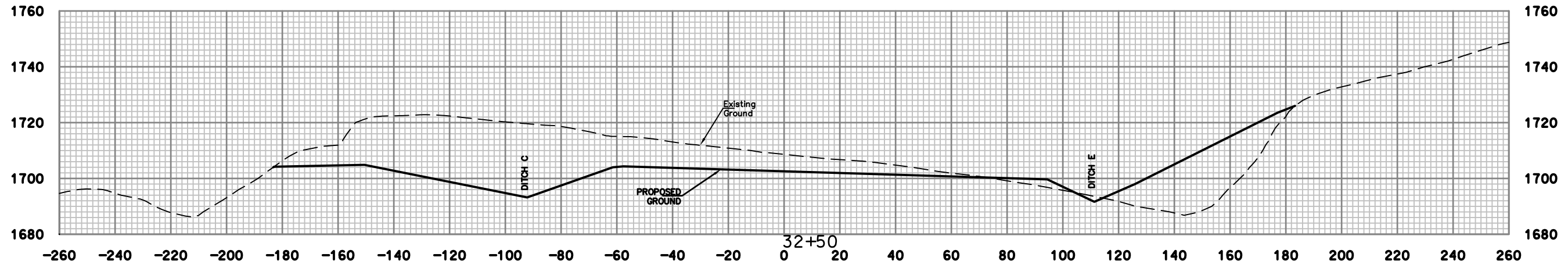
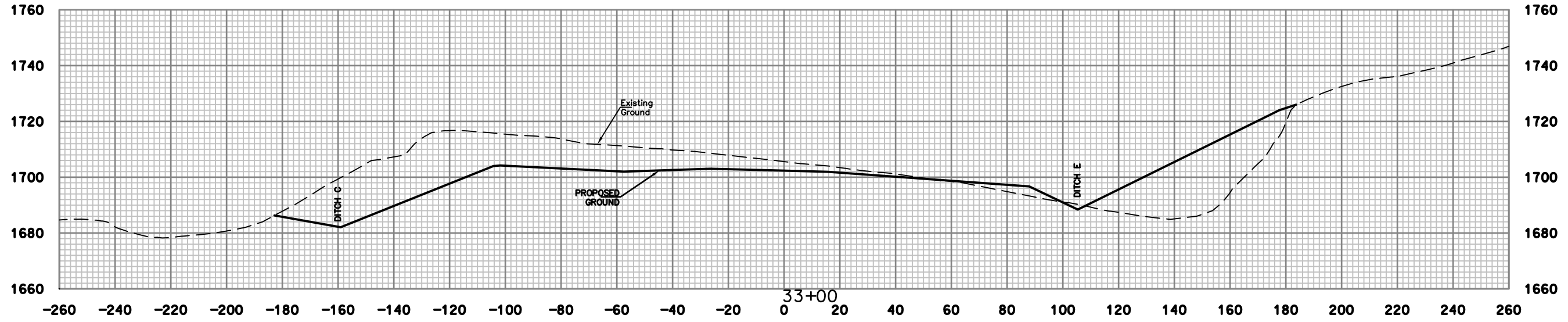


NO.	DATE	REVISION	BY

PROJECT INFORMATION  
 West Virginia  
 dep  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 32+00 TO STA. 33+00

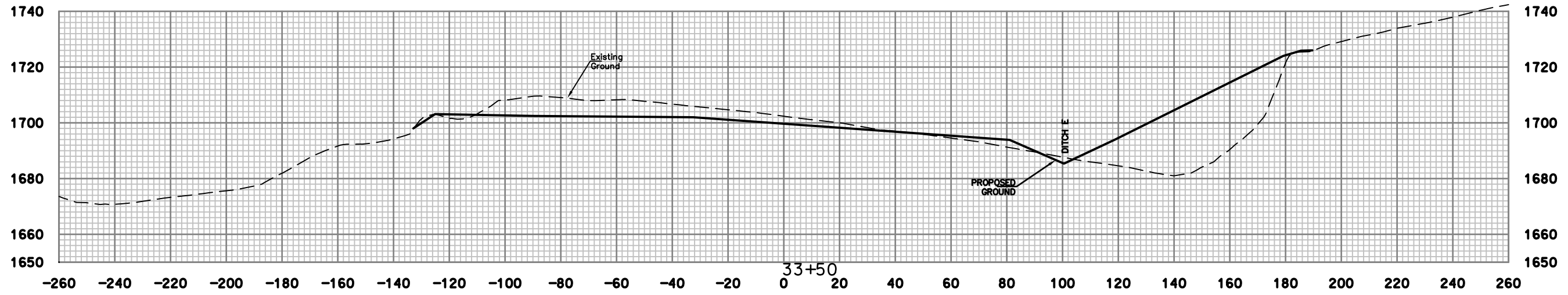
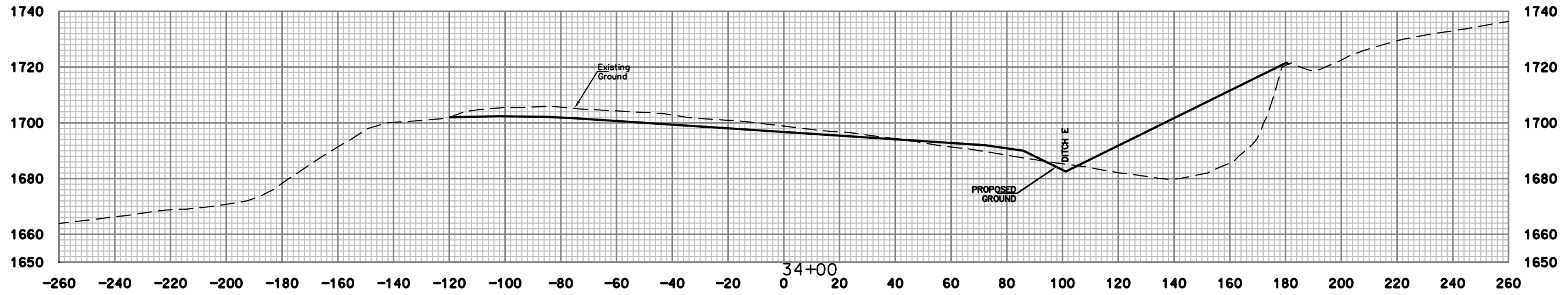
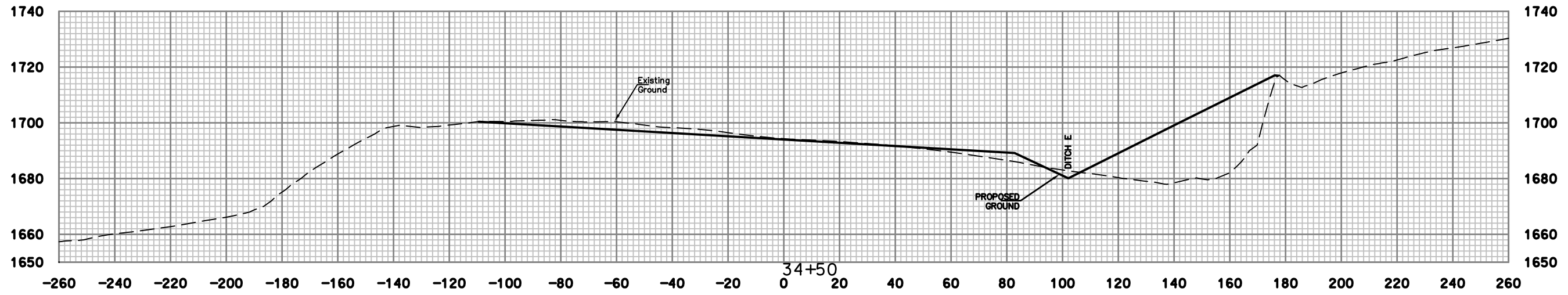
DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 43

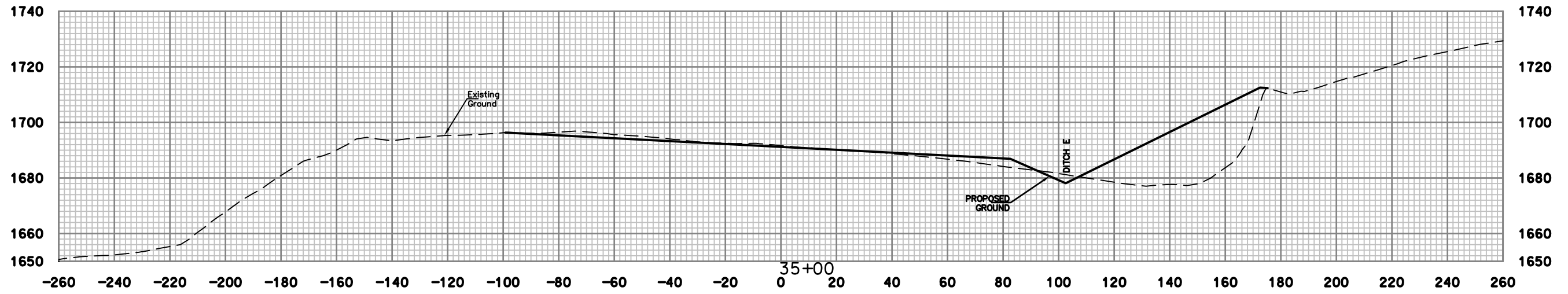
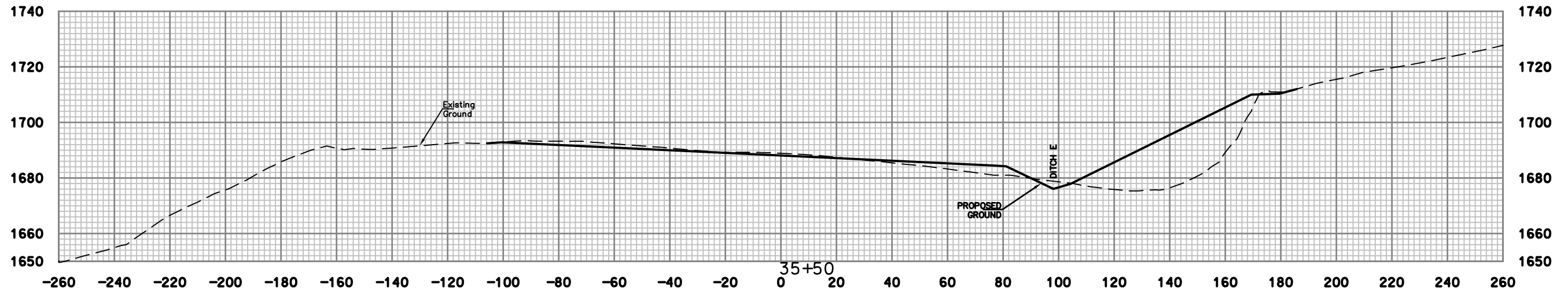
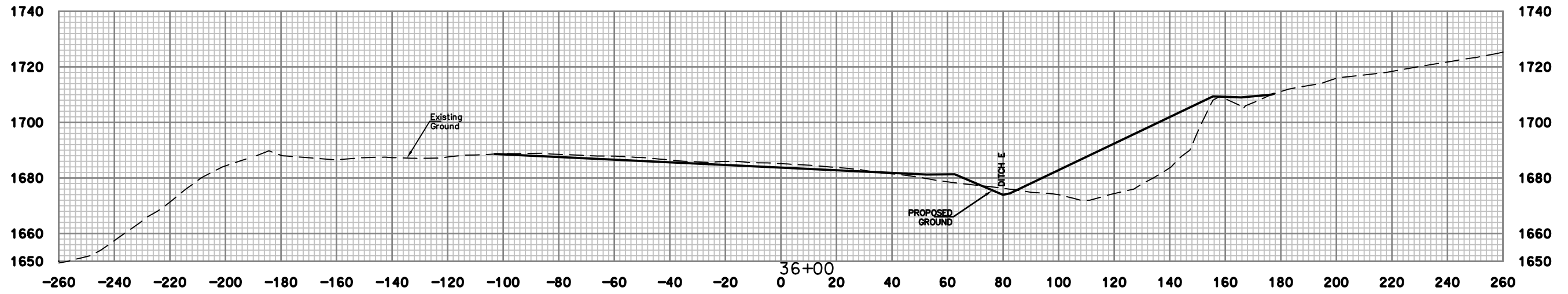


NO.	DATE	REVISION	BY



<b>DRAWING TITLE</b>
CROSS SECTIONS STA. 33+50 TO STA. 34+50
<b>DATE</b> DECEMBER 2015
<b>SCALE</b> 1"=20'
<b>DRAWING NUMBER</b> 44





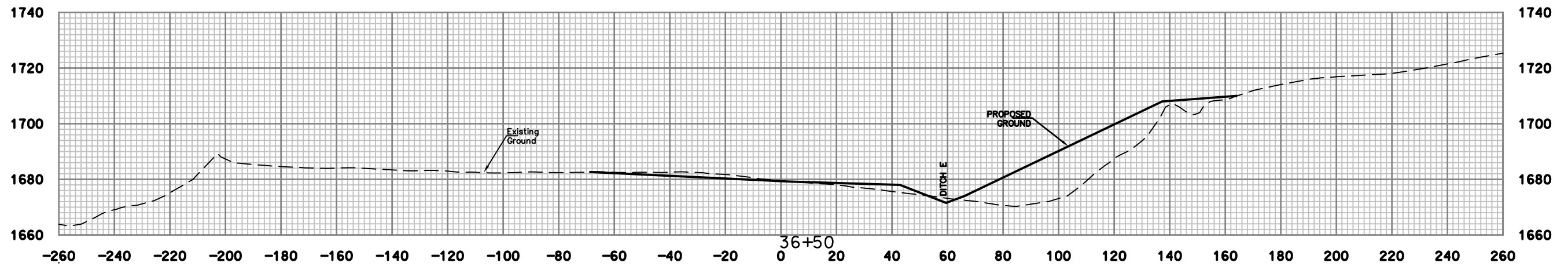
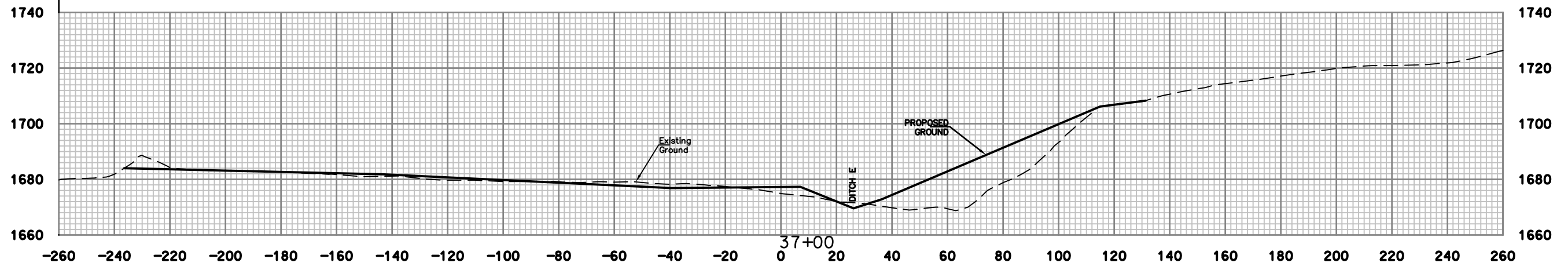
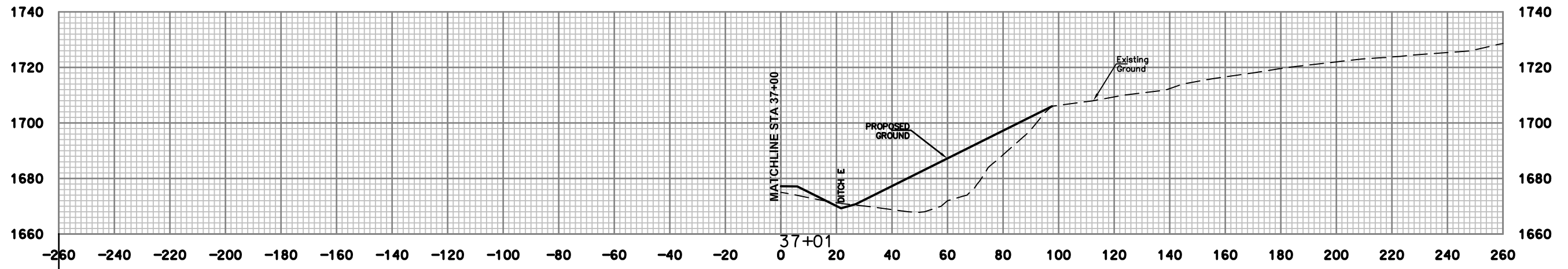
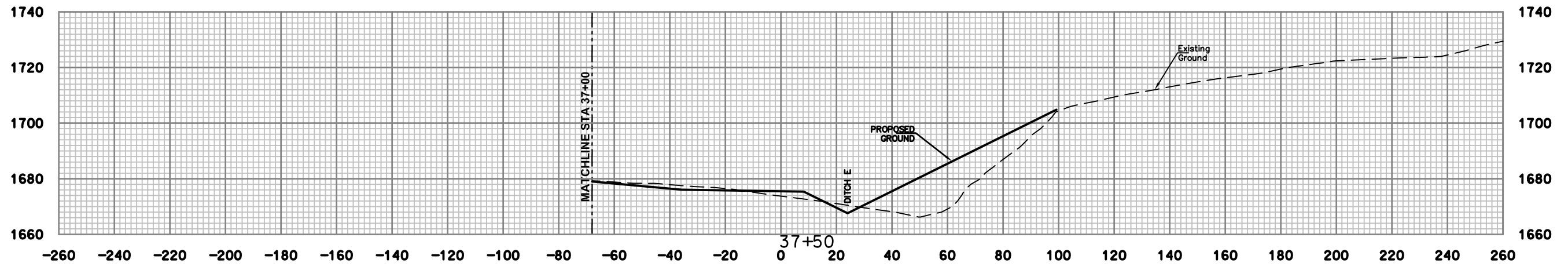
**E.L. ROBINSON**  
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5088 Washington Street, West  
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Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
West Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 35+00 TO STA. 36+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
45

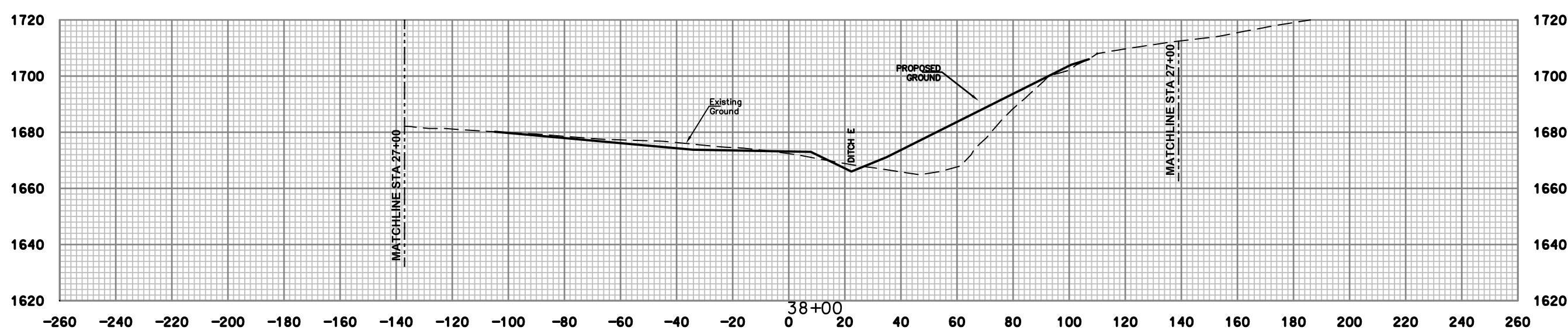
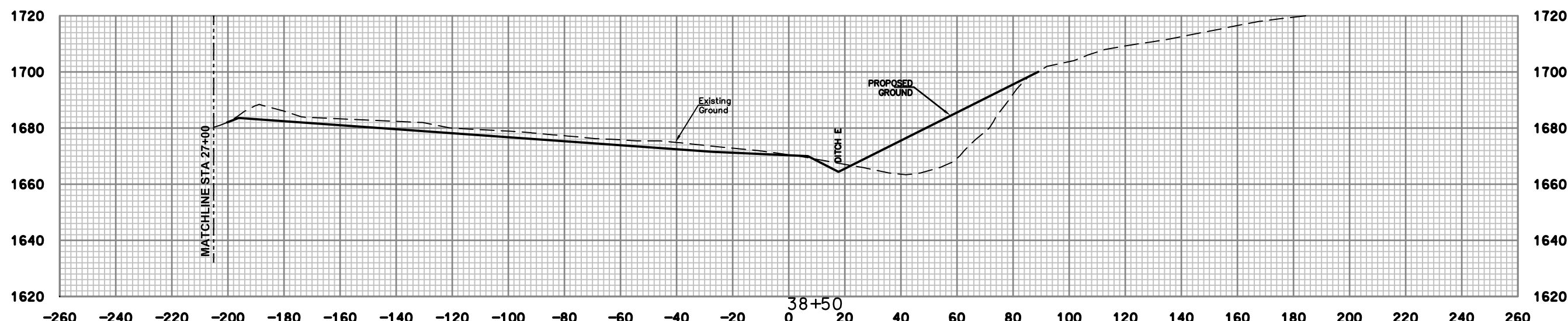
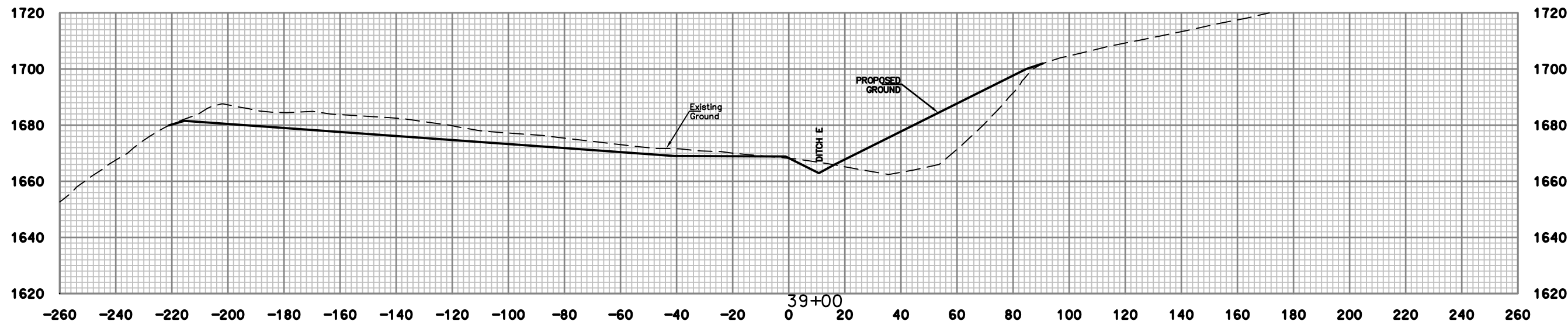


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NO.	DATE	REVISION	BY

PROJECT INFORMATION  
  
 west Virginia  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 36+50 TO STA. 37+50  
 DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 46



**E.L. ROBINSON**  
ENGINEERING

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
 west Virginia  
 dep  
 MORGAN HIGHWAY #46  
 PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
 CROSS SECTIONS  
 STA. 38+00 TO STA. 39+00

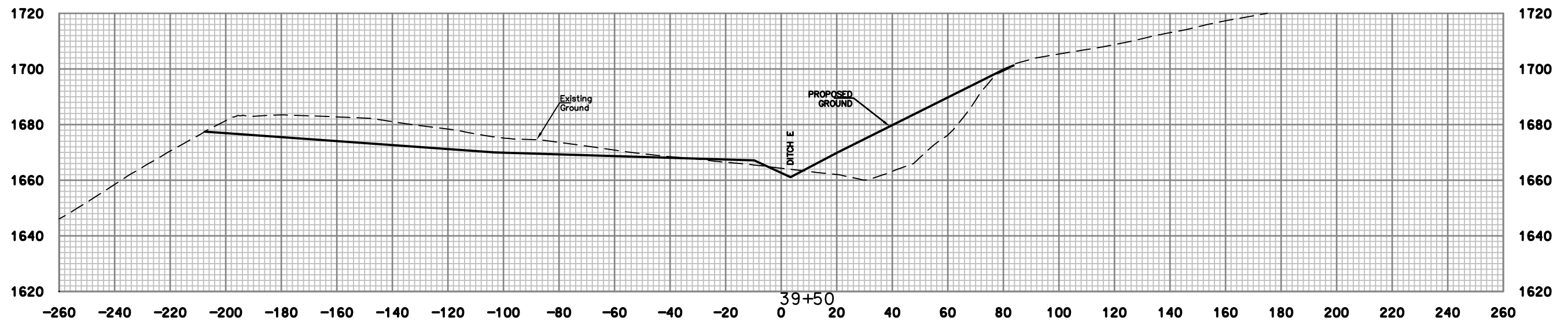
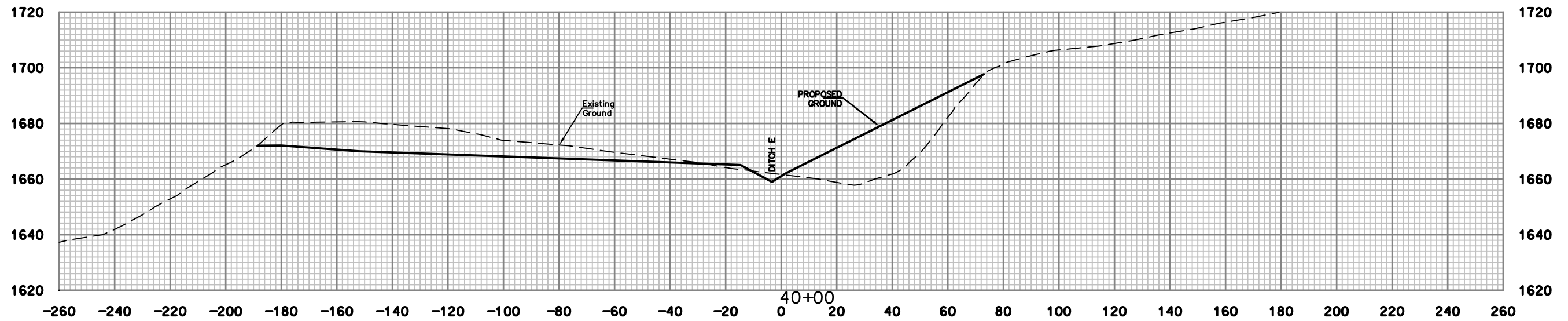
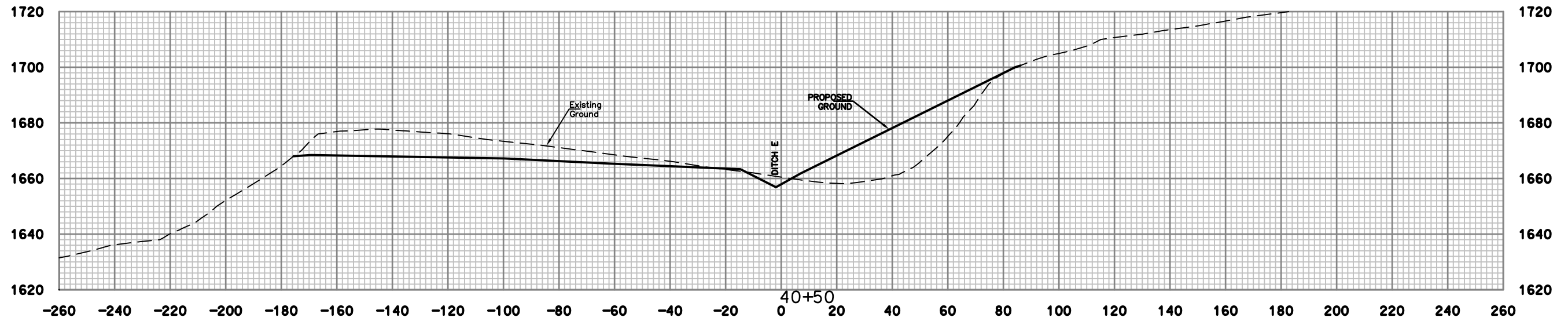
DATE  
 DECEMBER 2015  
 SCALE  
 1"=20'  
 DRAWING NUMBER  
 47

NO.	DATE	REVISION	BY

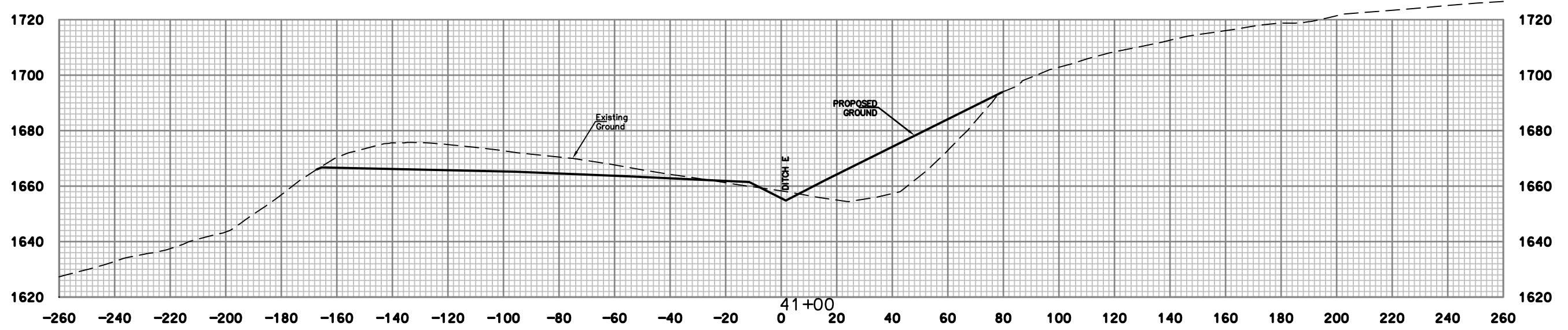
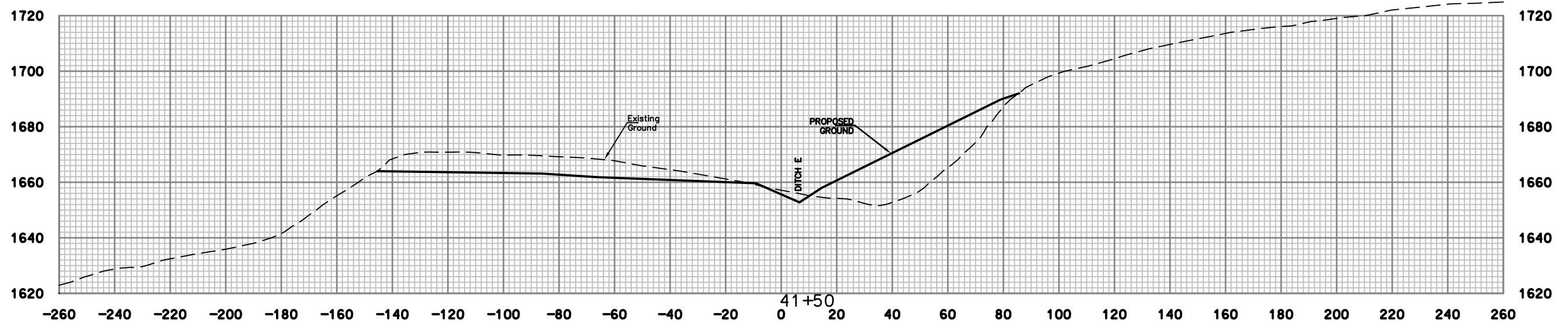
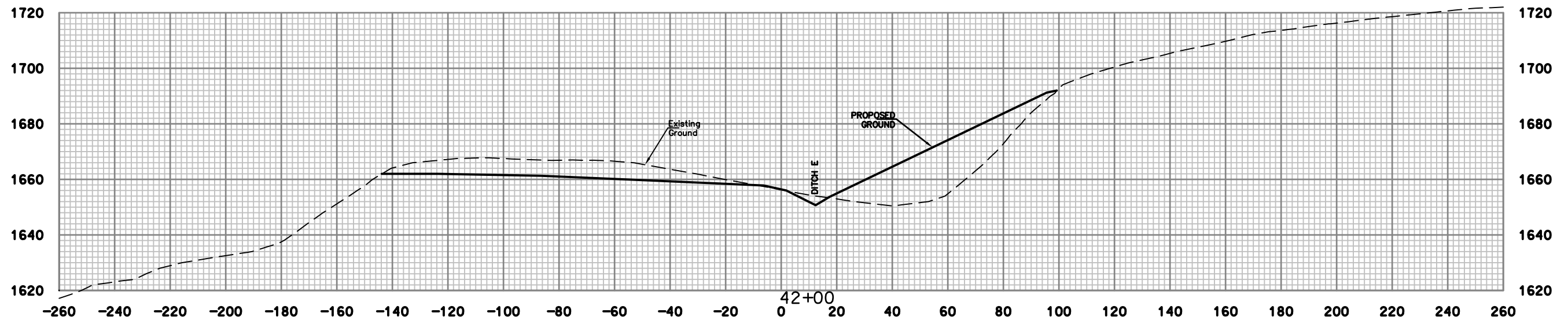


DRAWING TITLE  
CROSS SECTIONS  
STA. 39+50 TO STA. 40+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**48**







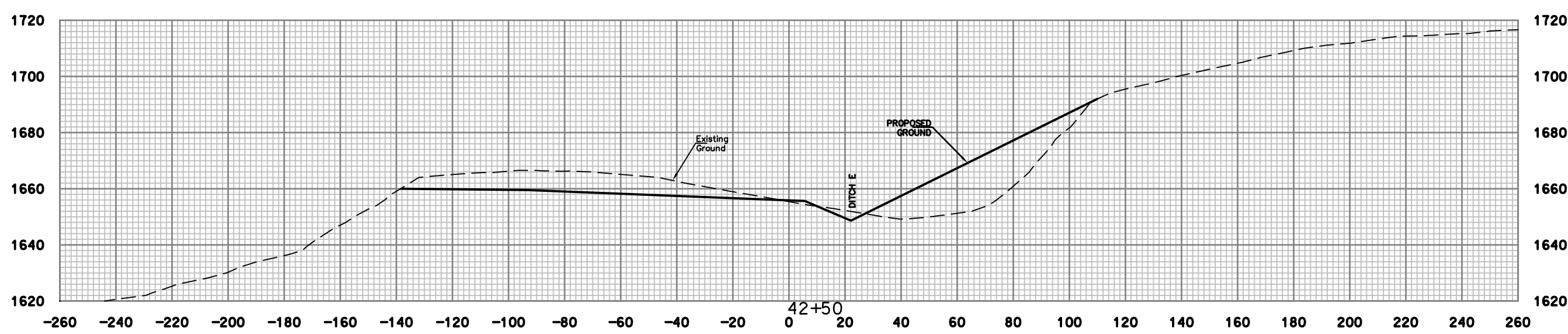
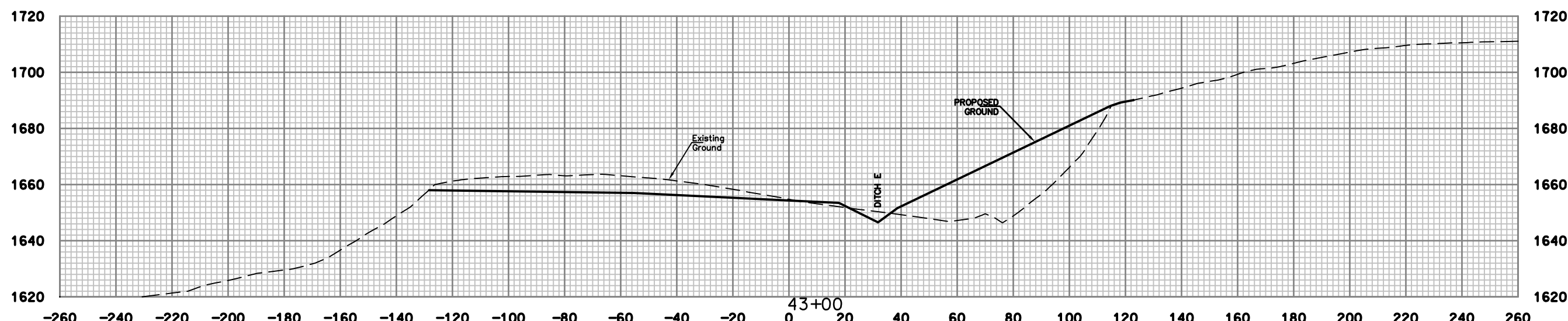
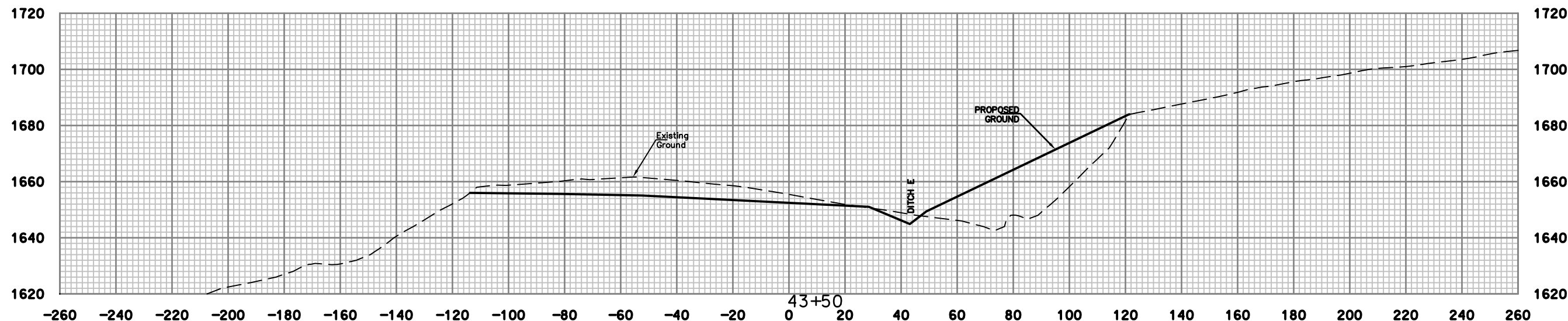
**E.L. ROBINSON  
ENGINEERING**  
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Charleston, West Virginia 25313  
Phone: 304.776.4743  
Fax: 304.776.6426

NO.	DATE	REVISION	BY

PROJECT INFORMATION  
West Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 41+00 TO STA. 42+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**49**



**E.L. ROBINSON  
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Phone: 304.776.4743  
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NO.	DATE	REVISION	BY

PROJECT INFORMATION  
West Virginia  
dep  
MORGAN HIGHWAY #46  
PRESTON COUNTY, WEST VIRGINIA

DRAWING TITLE  
CROSS SECTIONS  
STA. 42+50 TO STA. 43+50

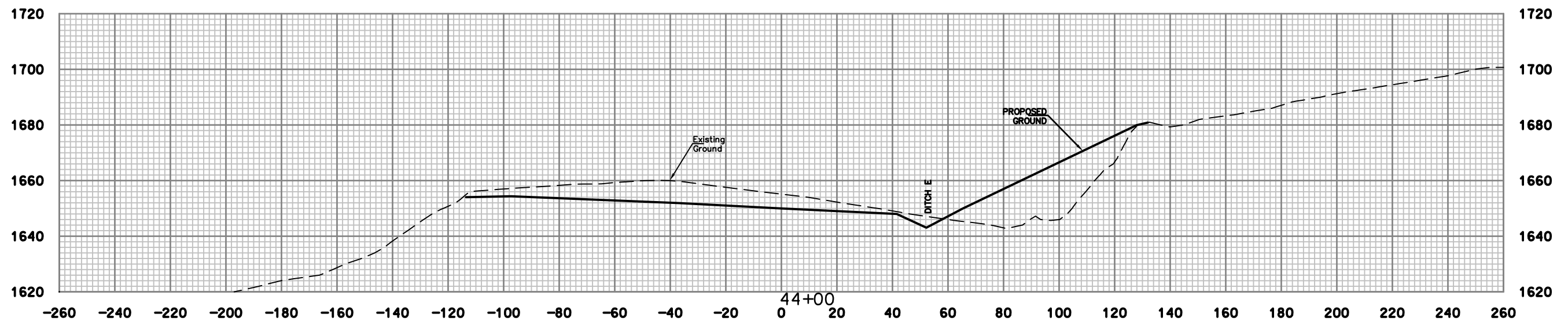
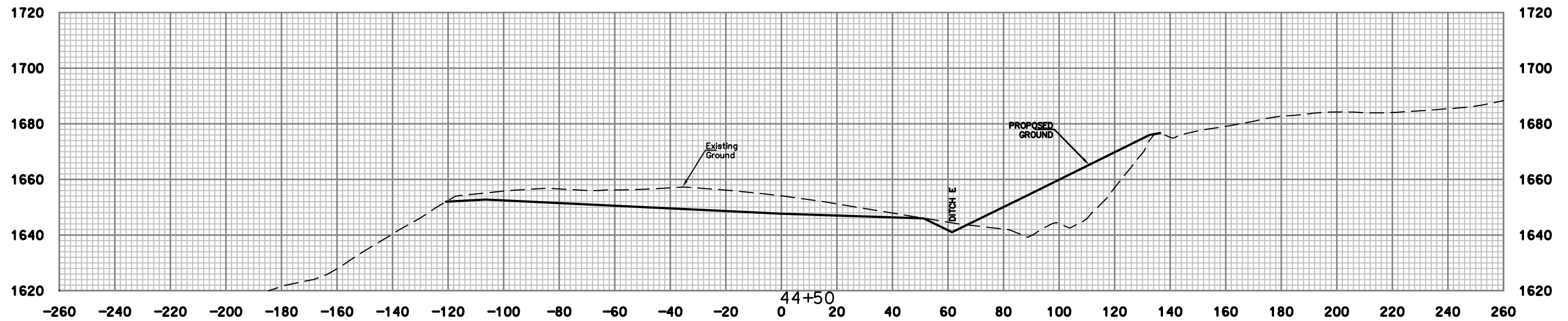
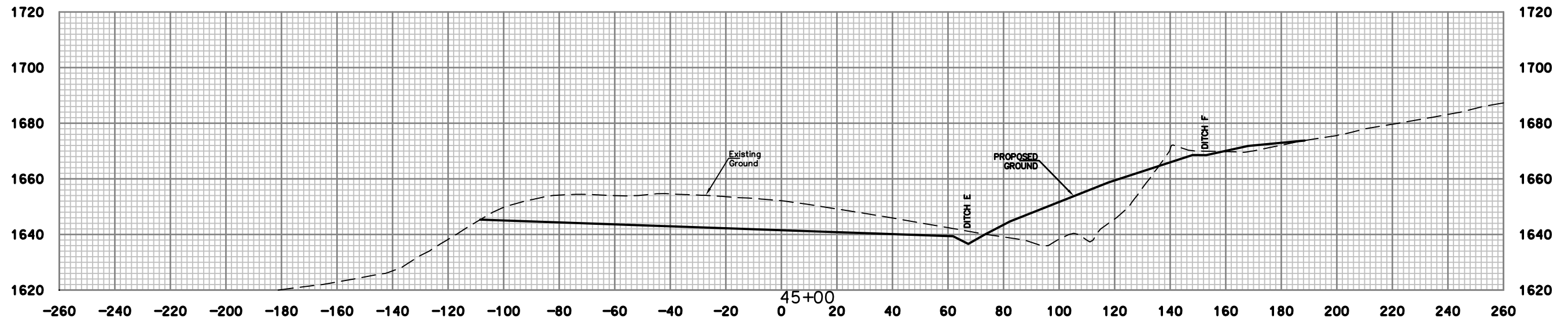
DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
50

NO.	DATE	REVISION	BY



**DRAWING TITLE**  
CROSS SECTIONS  
STA. 44+00 TO STA. 45+00

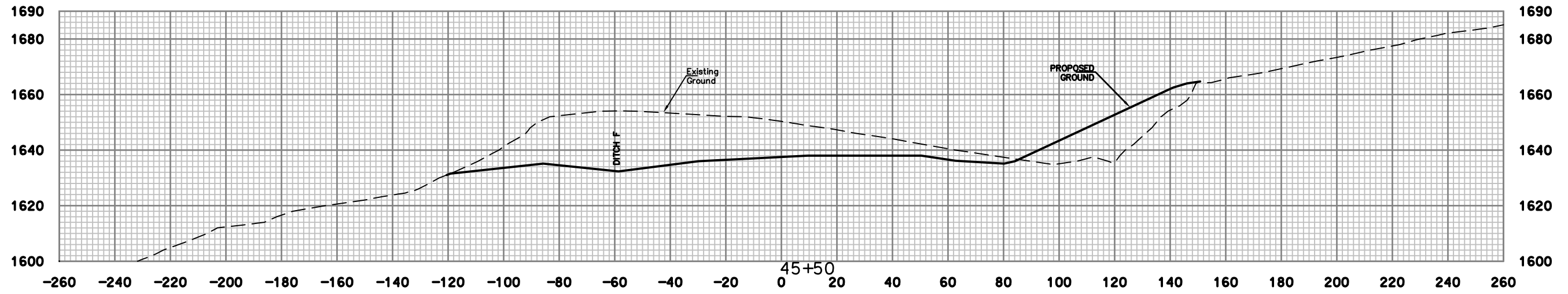
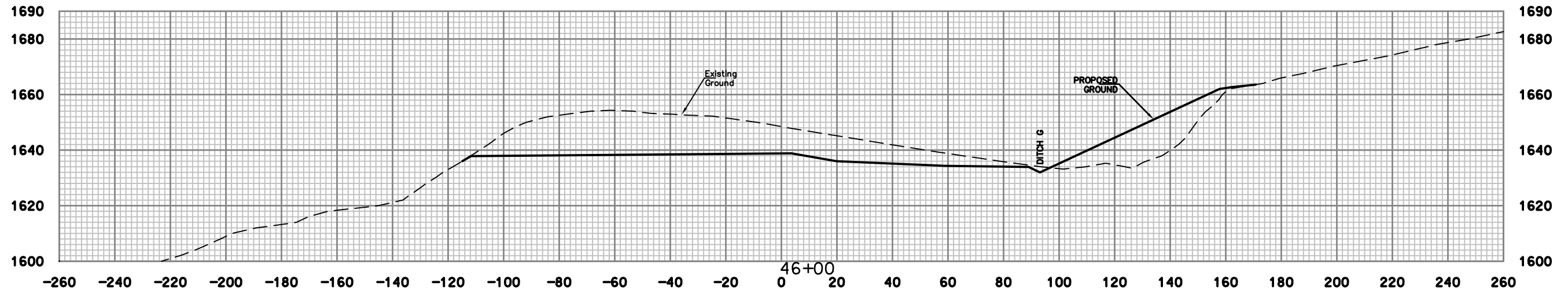
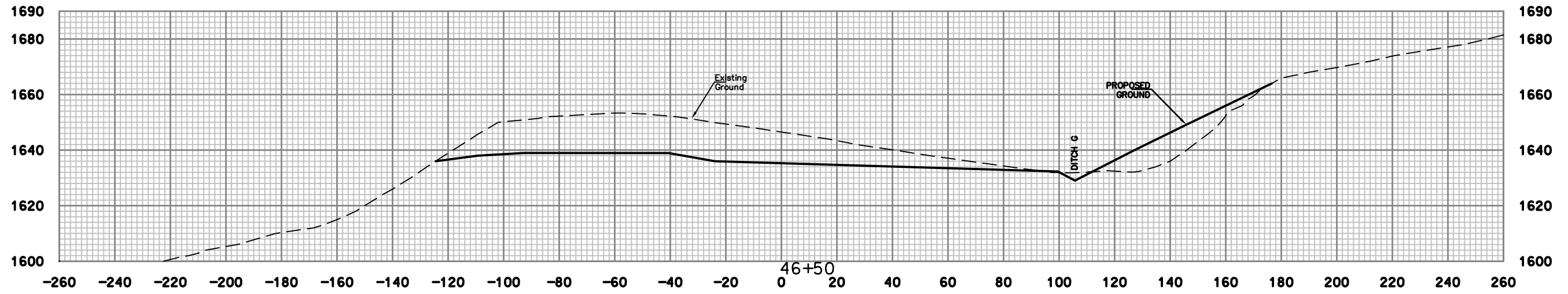
DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**51**



NO.	DATE	REVISION	BY



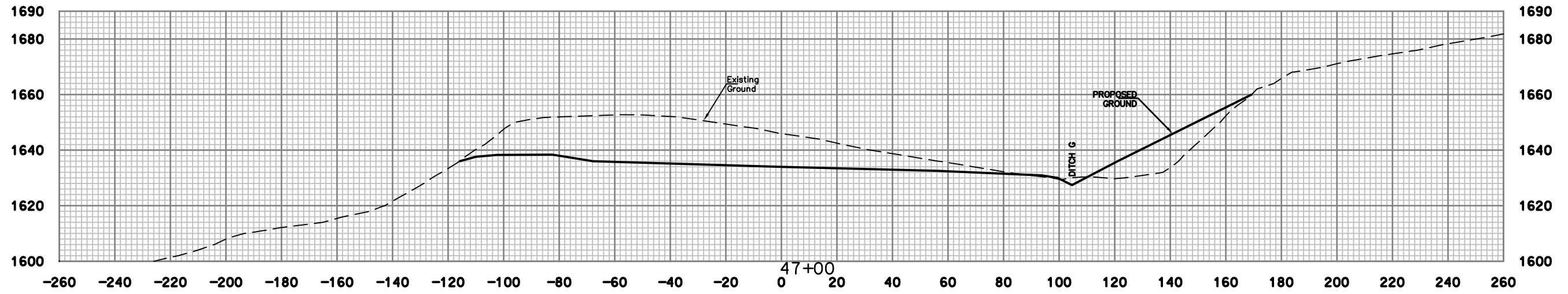
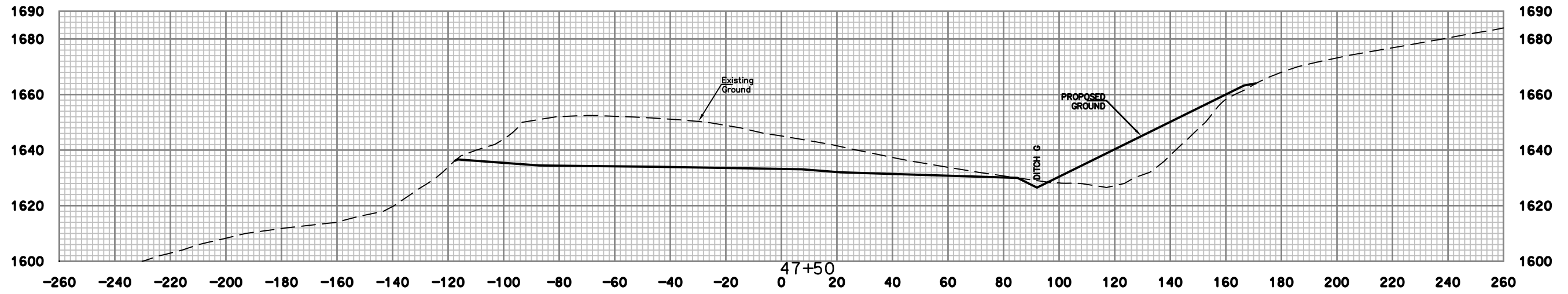
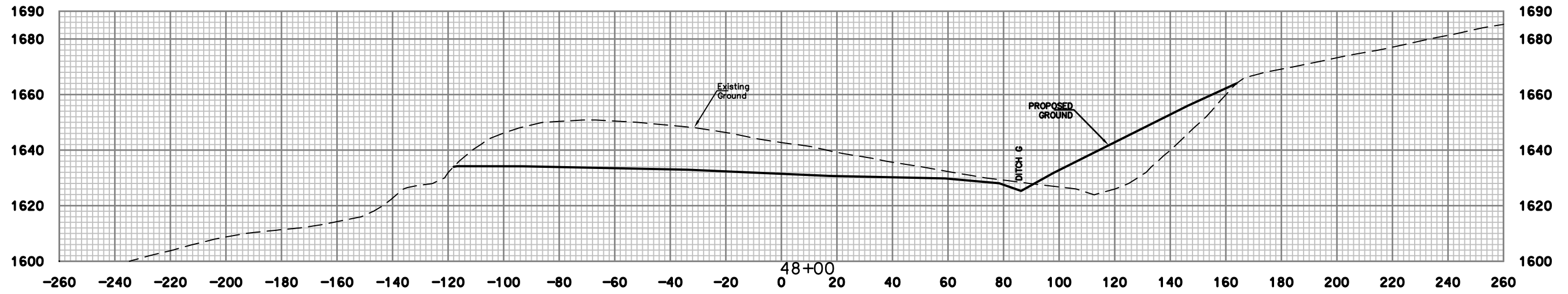
DRAWING TITLE
CROSS SECTIONS STA. 45+50 TO STA. 46+50
DATE DECEMBER 2015
SCALE 1"=20'
DRAWING NUMBER 52



NO.	DATE	REVISION	BY



DRAWING TITLE	CROSS SECTIONS STA. 47+00 TO STA. 48+00
DATE	DECEMBER 2015
SCALE	1"=20'
DRAWING NUMBER	53

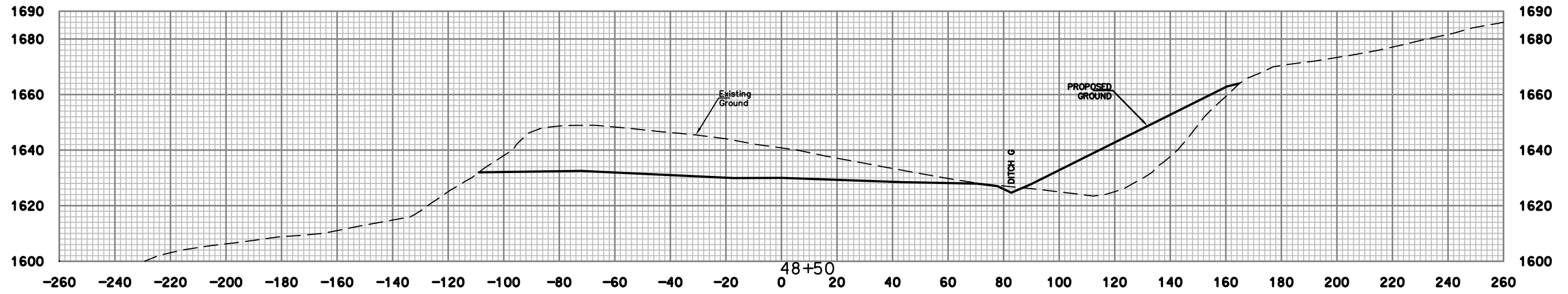
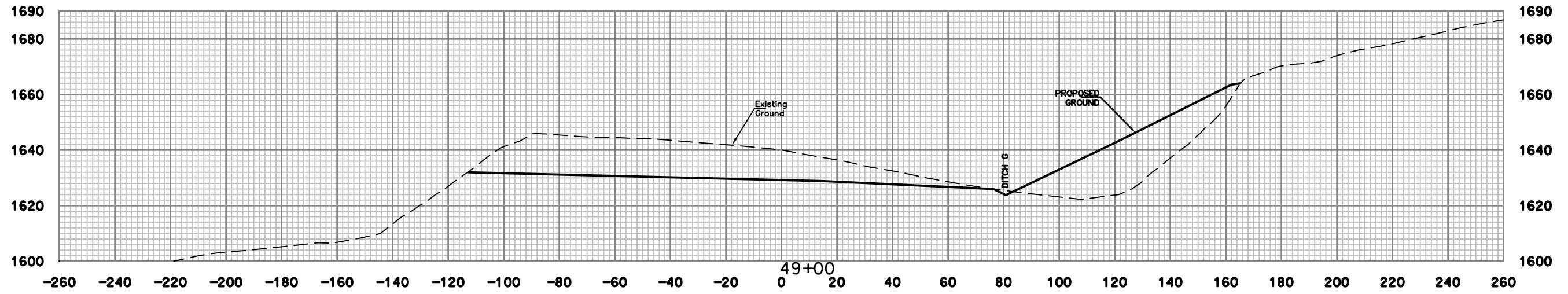
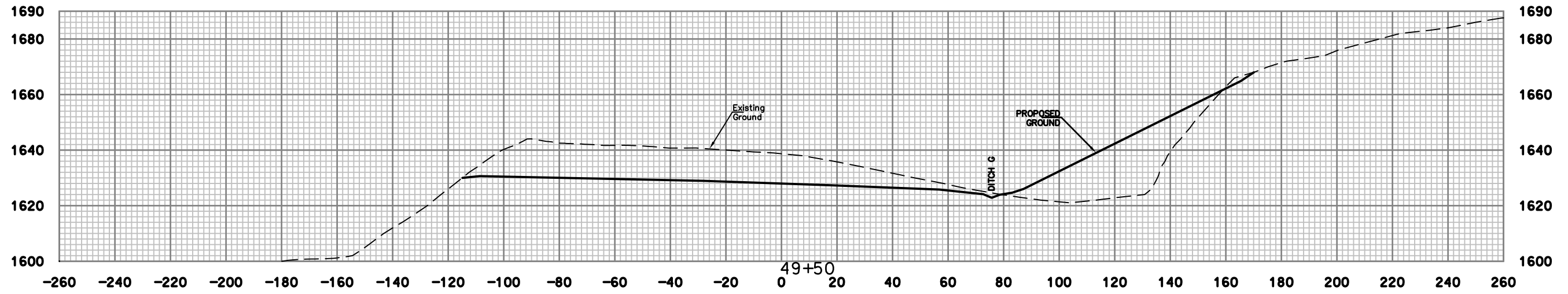


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 48+50 TO STA. 49+50

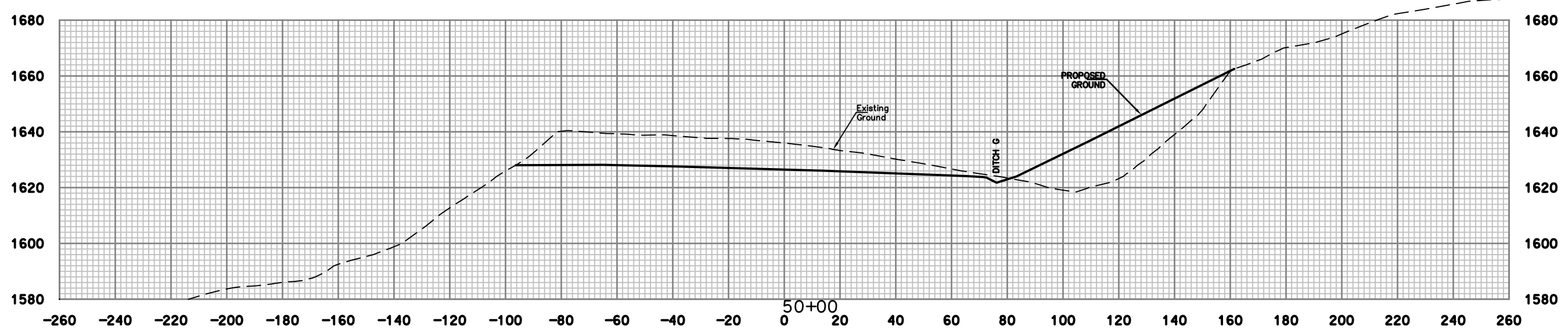
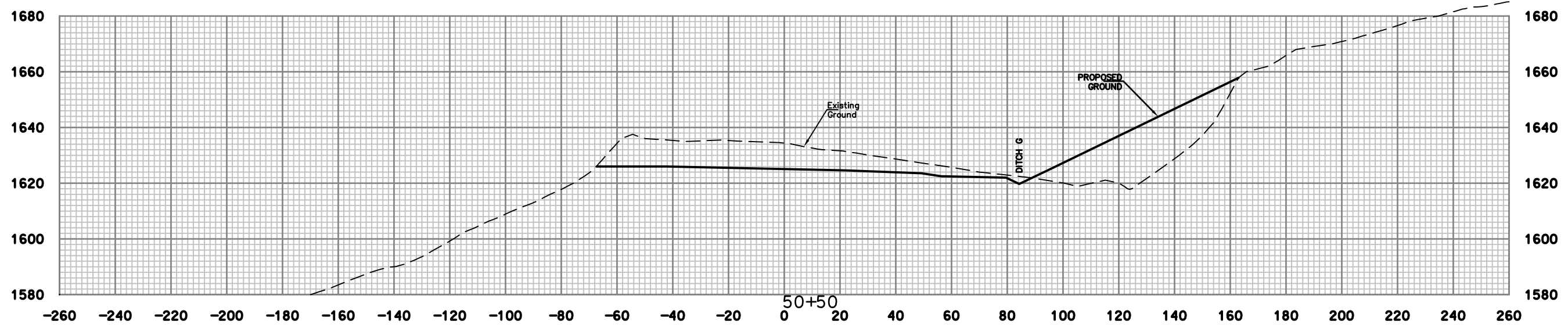
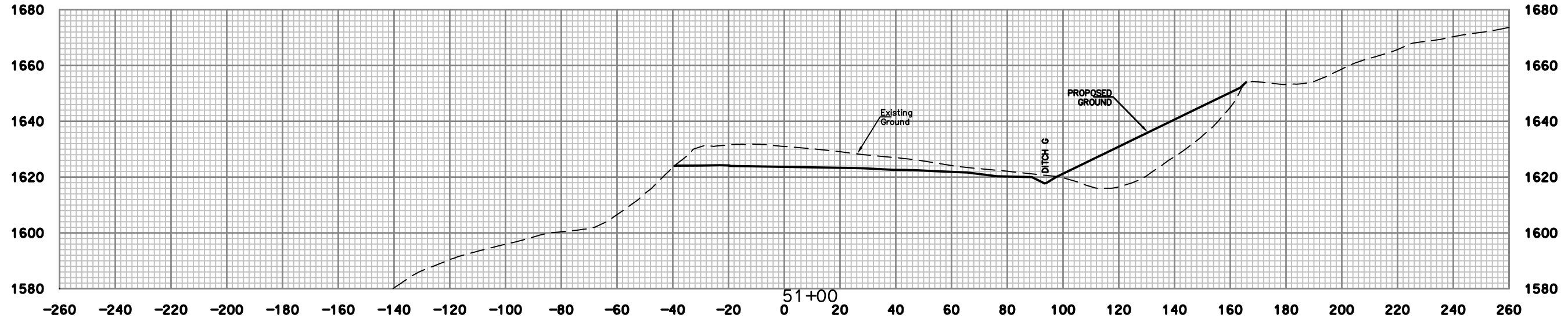
DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**54**



NO.	DATE	REVISION	BY



DRAWING TITLE
CROSS SECTIONS STA. 50+00 TO STA. 51+00
DATE DECEMBER 2015
SCALE 1"=20'
DRAWING NUMBER 55

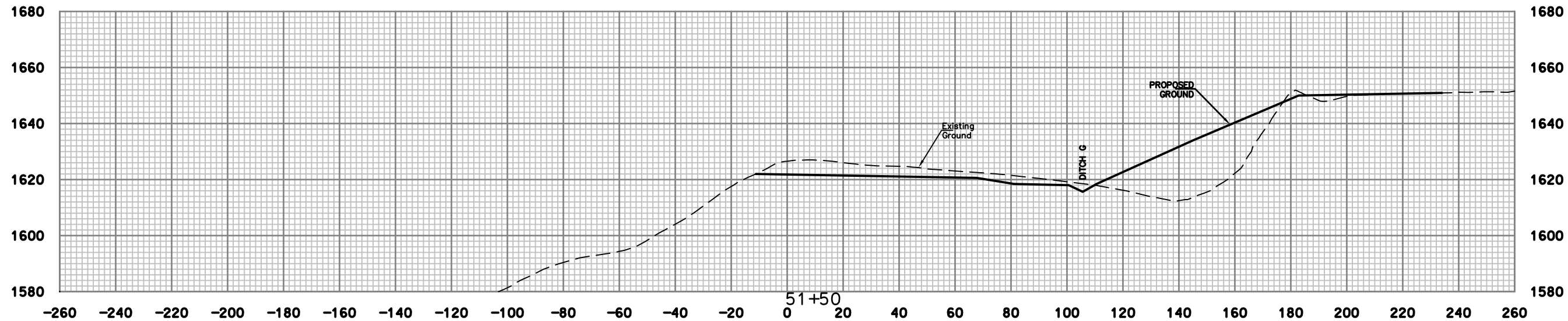
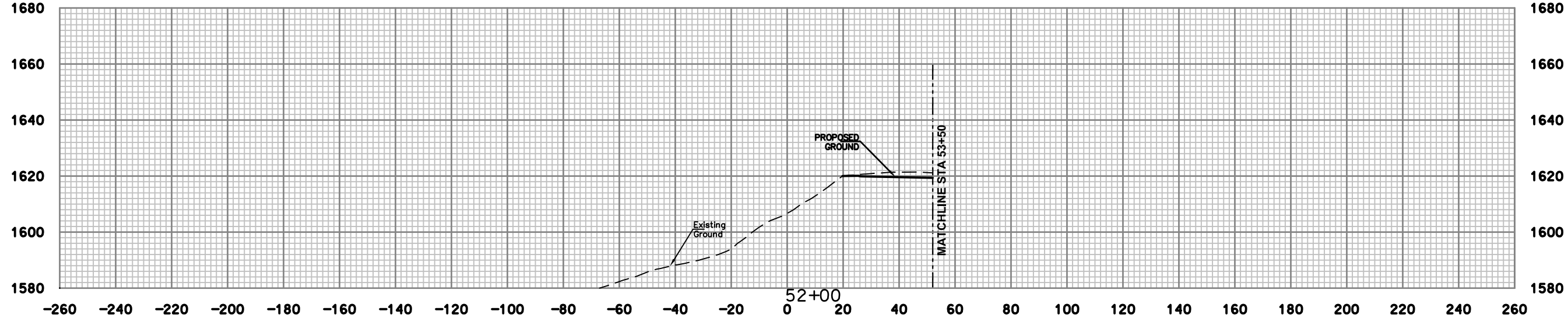
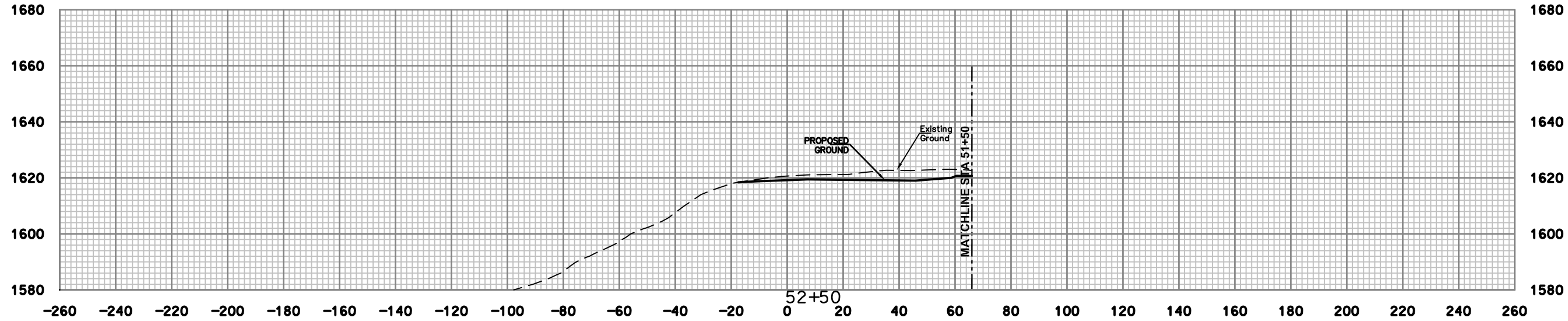


NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 51+50 TO STA. 52+50

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**56**



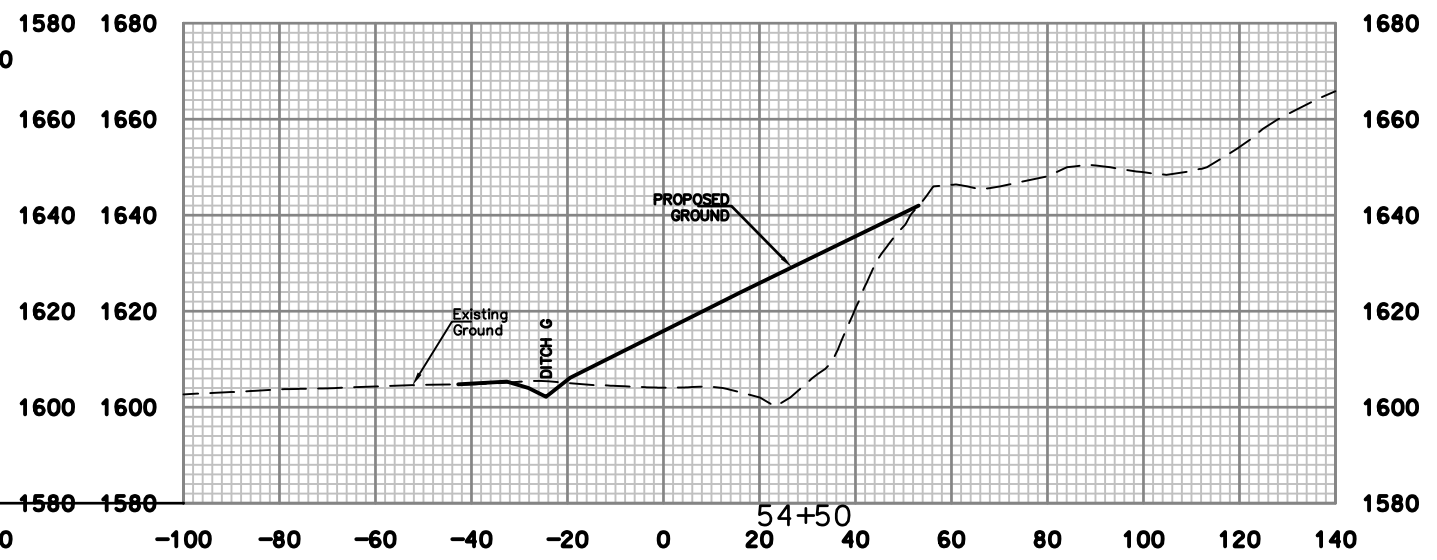
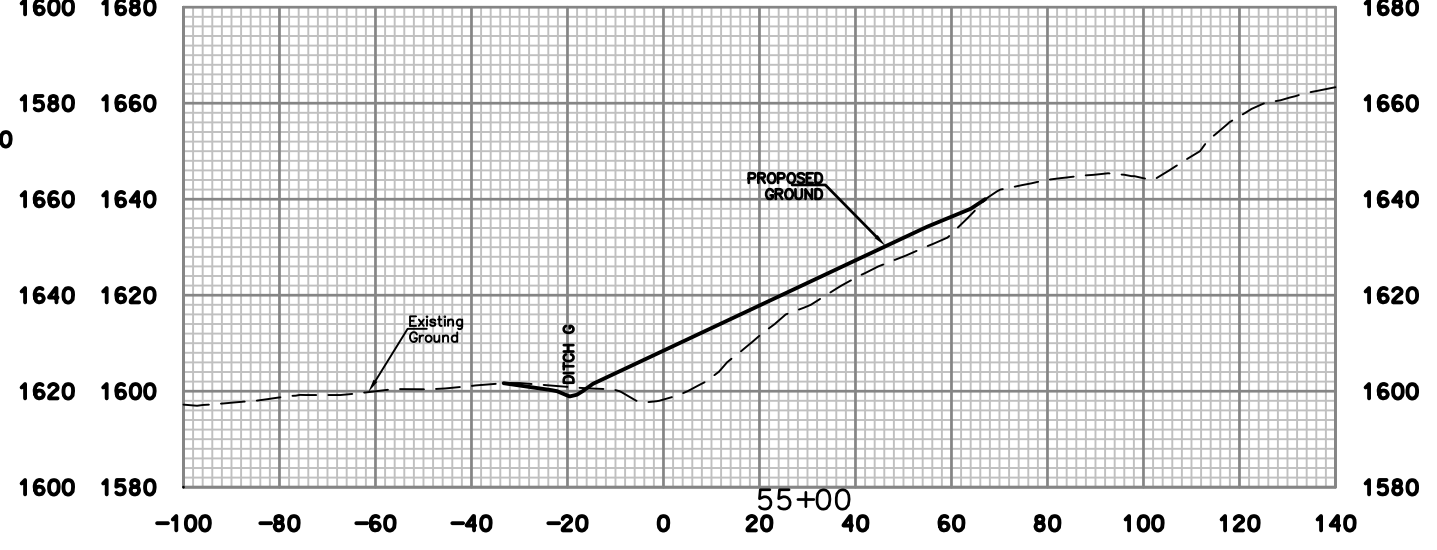
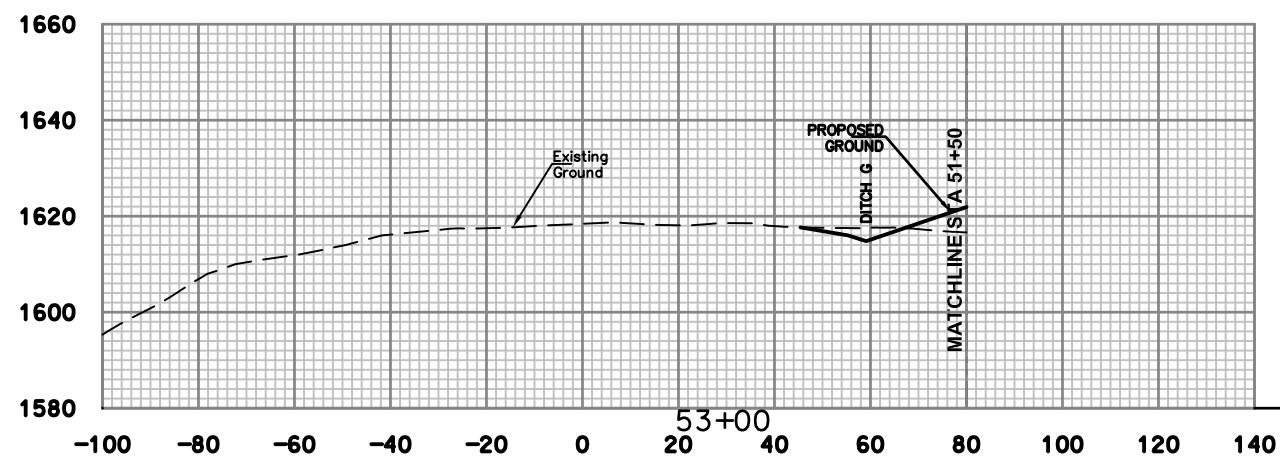
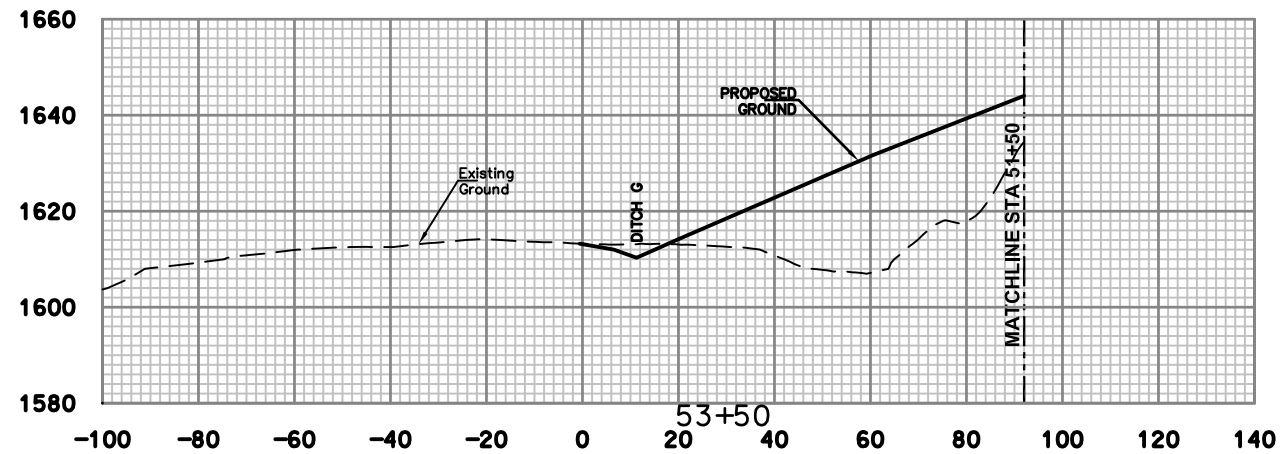
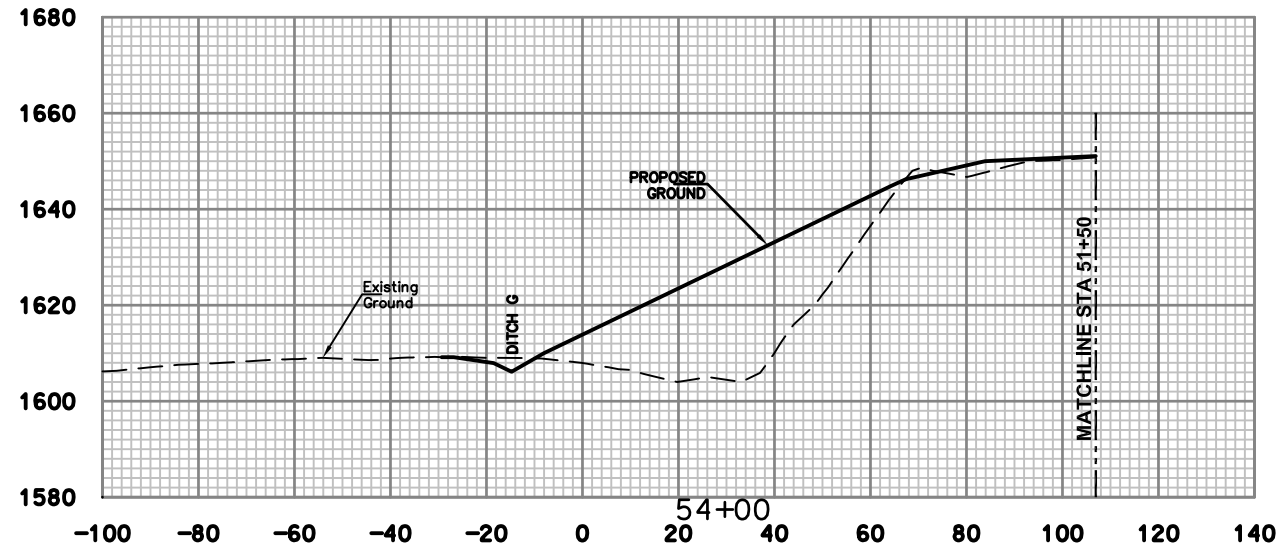


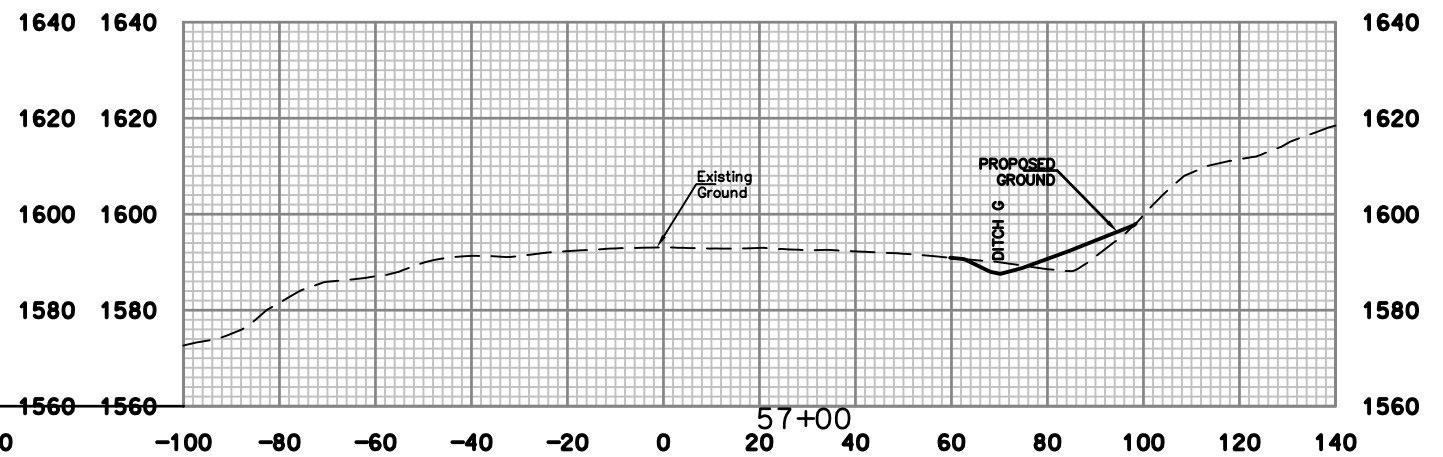
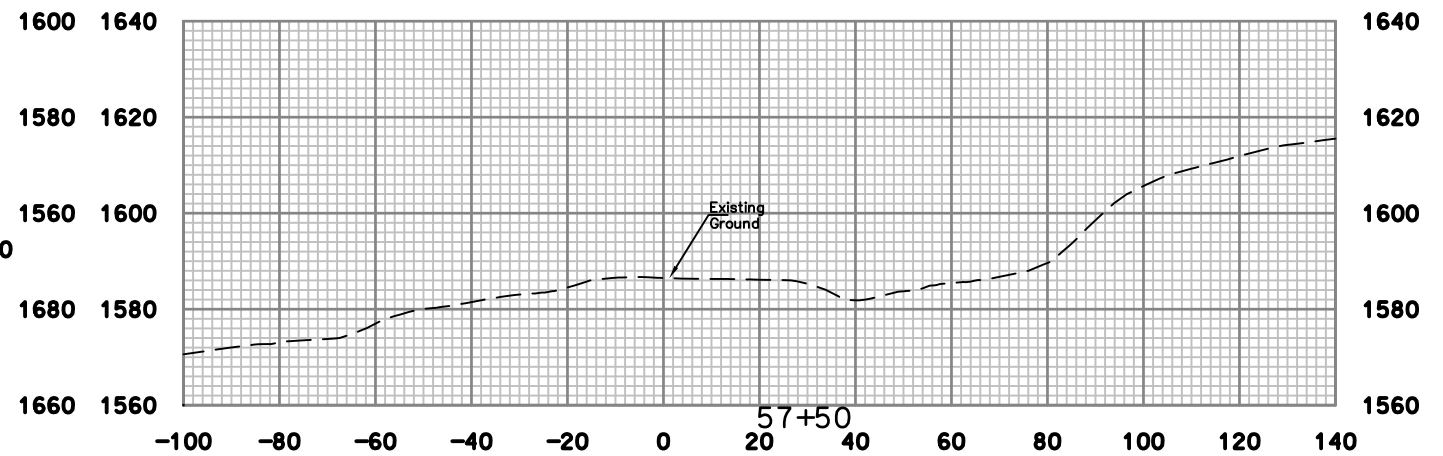
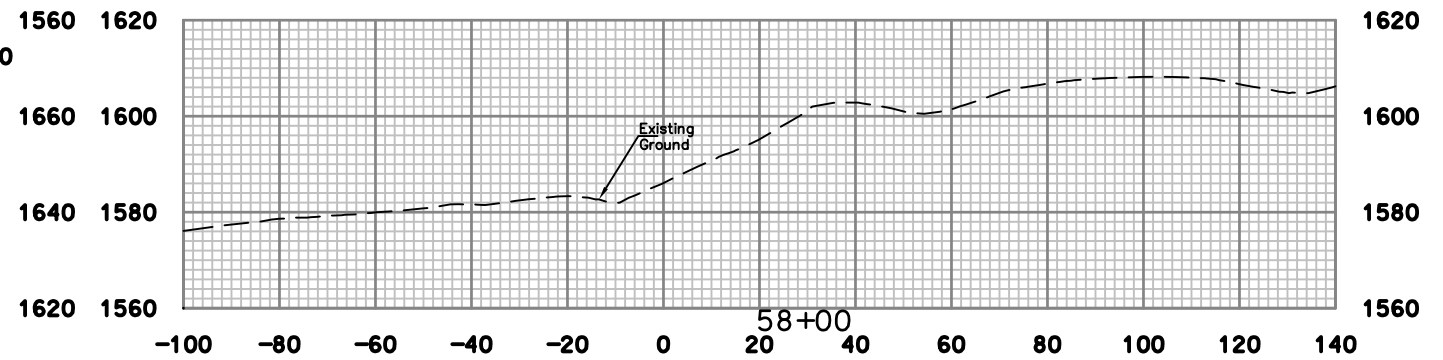
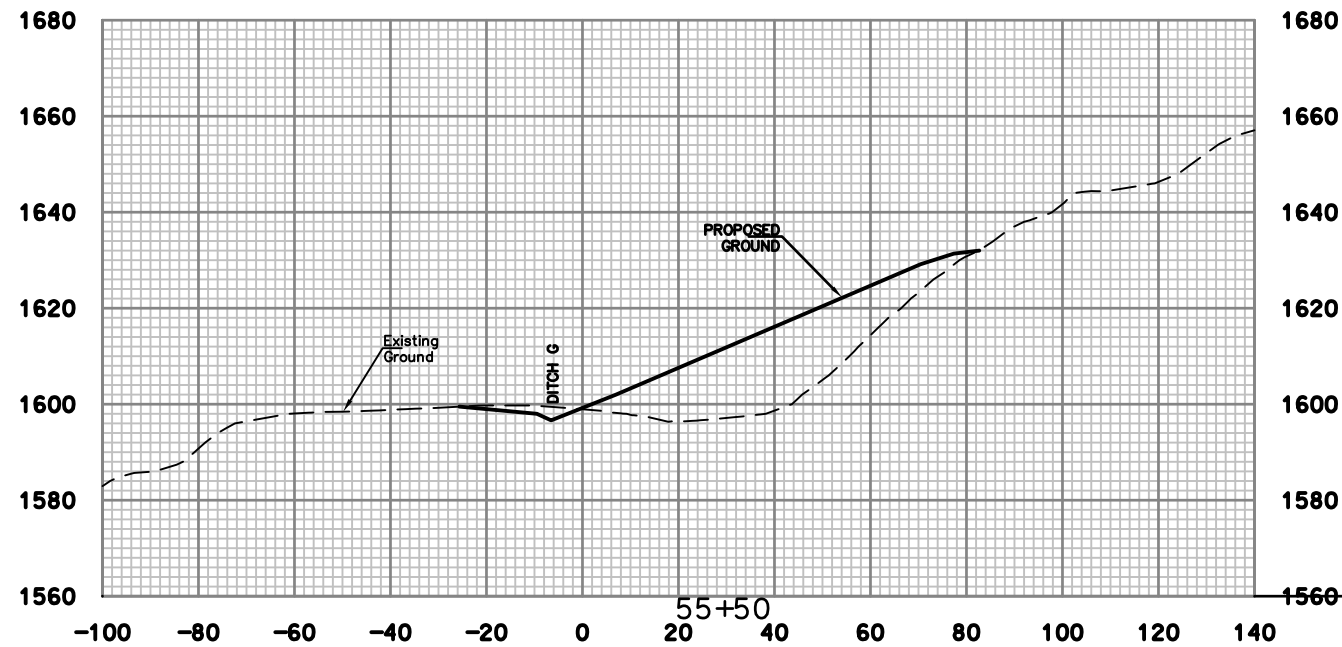
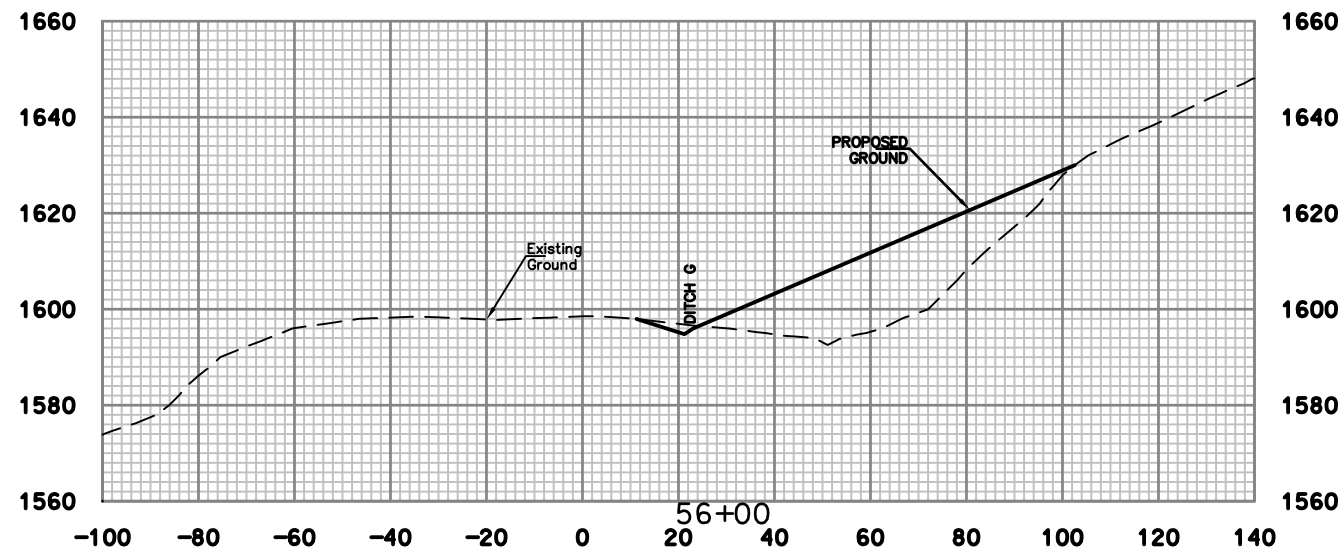
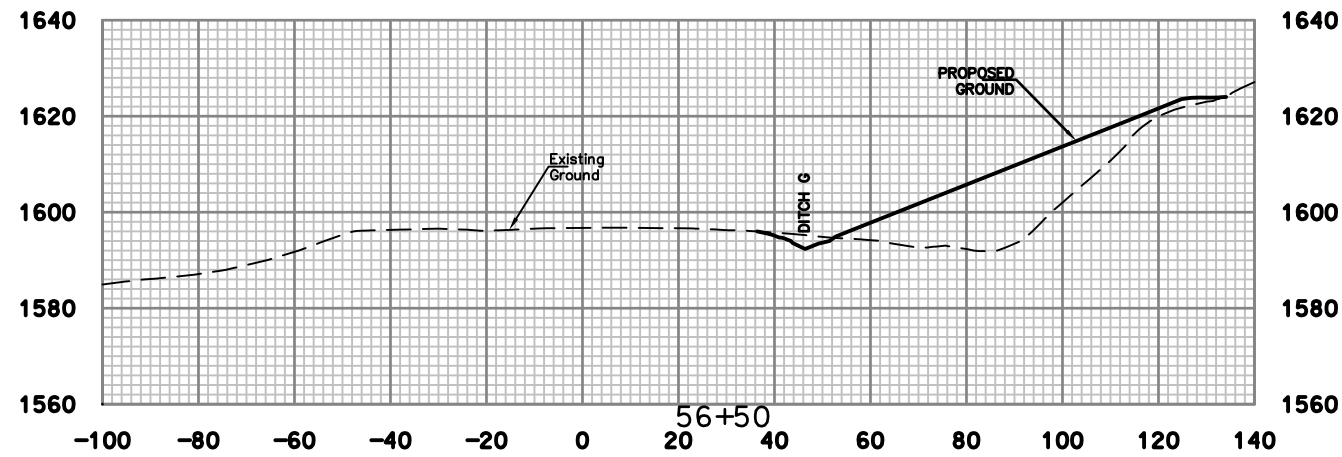
NO.	DATE	REVISION	BY



DRAWING TITLE  
CROSS SECTIONS  
STA. 53+00 TO STA. 55+00

DATE  
DECEMBER 2015  
SCALE  
1"=20'  
DRAWING NUMBER  
**57**





NO.	DATE	REVISION	BY



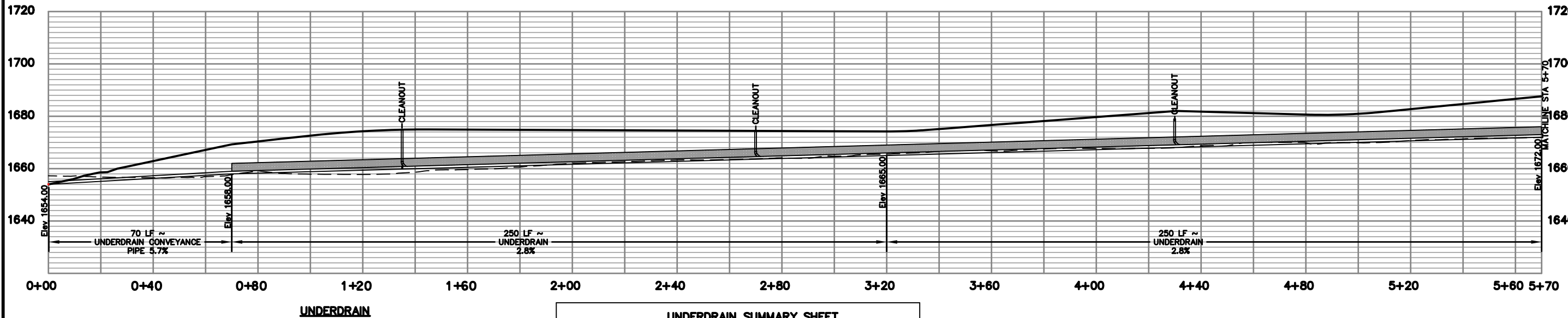
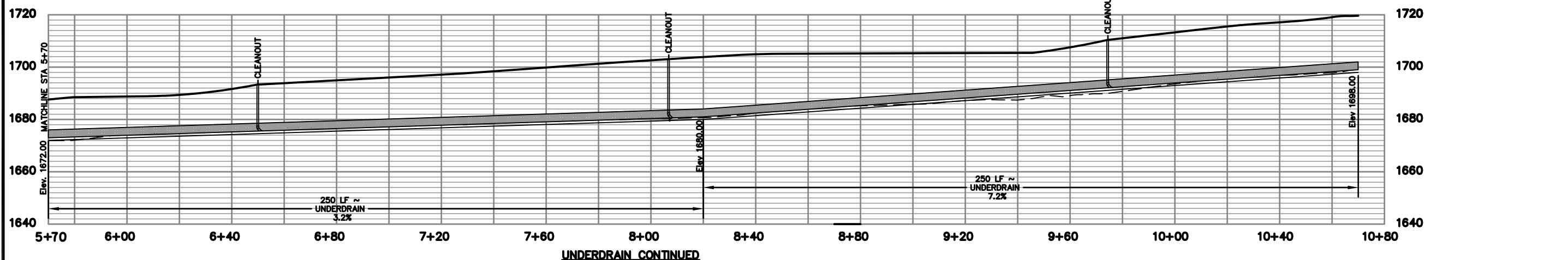
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CROSS SECTIONS  
STA. 55+50 TO STA. 58+00

DATE  
DECEMBER 2015

SCALE  
1"=20'

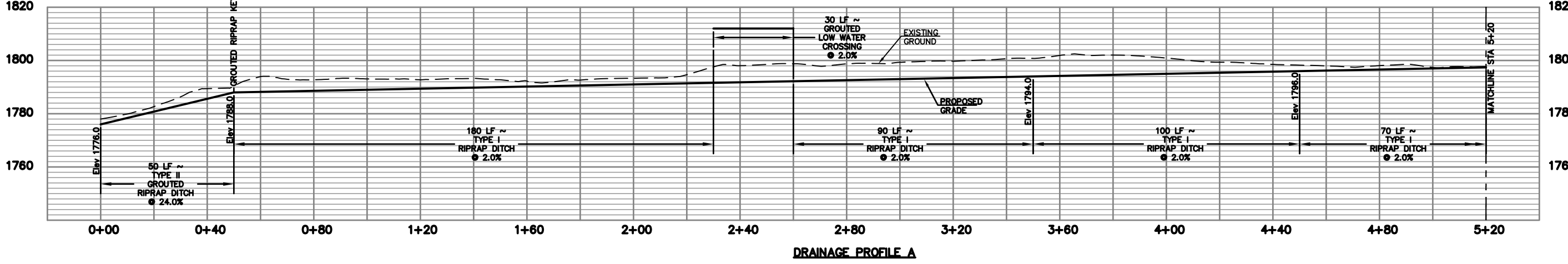
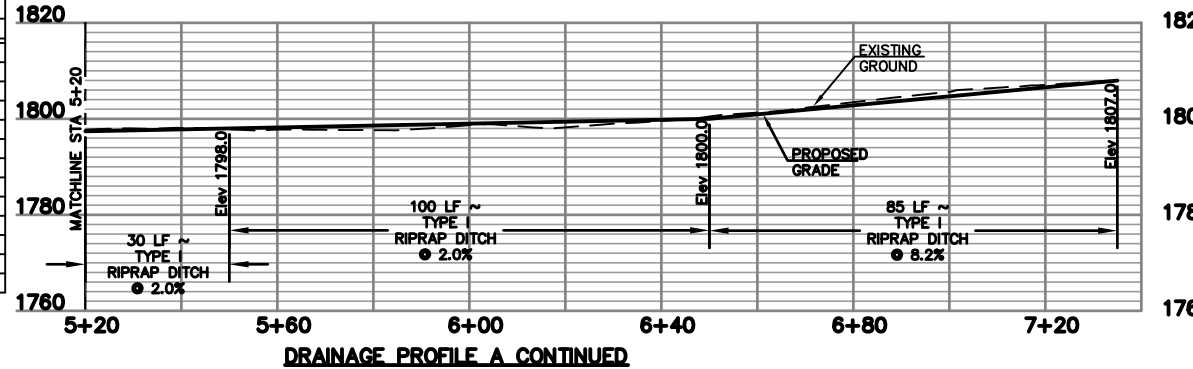
DRAWING NUMBER  
**58**

NO.	DATE	REVISION	BY



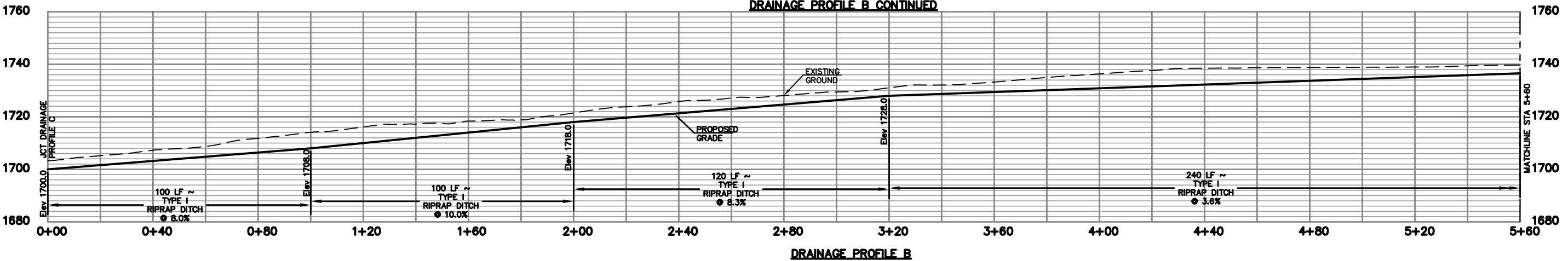
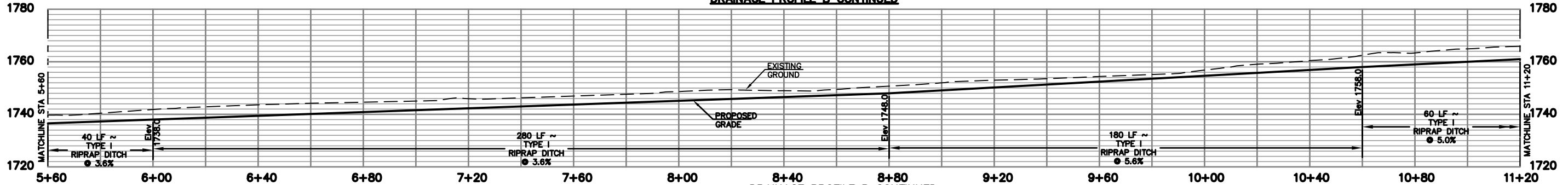
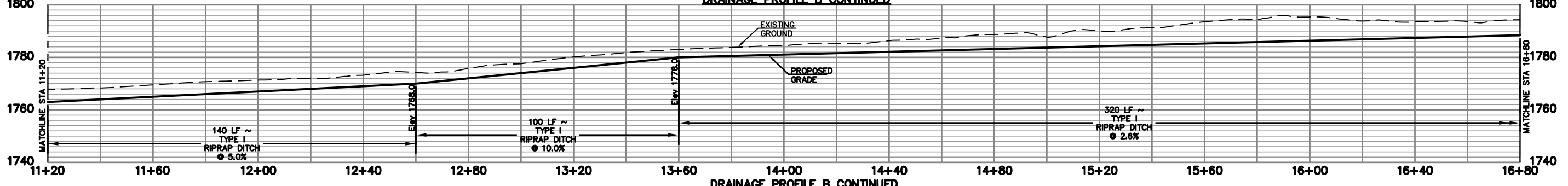
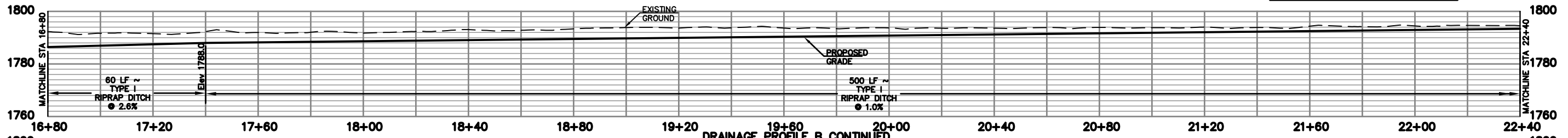
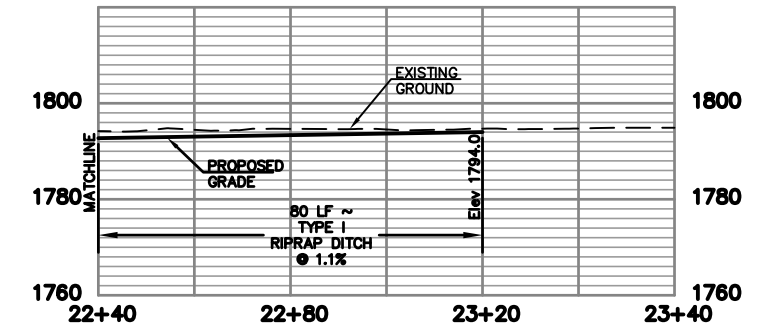
NORTHING	EASTING	STA	LINING	ELEV	SLOPE (%)	COMMENTS
<b>UNDERDRAIN SUMMARY SHEET</b>						
369554.36	1934817.38	0+00	12" CONVEYANCE PIPE	1654.0	5.7	JCT DITCH E
369623.53	1934826.52	0+70	12" CONVEYANCE PIPE	1658.0	2.8	
369810.18	1934900.00	1+35	UNDERDRAIN	1680.8	2.8	CLEANOUT
369810.18	1934900.00	2+70	UNDERDRAIN	1663.6	2.8	CLEANOUT
369856.84	1934917.96	3+20	UNDERDRAIN	1665.0	2.8	CLEANOUT
369980.07	1934957.70	4+30	UNDERDRAIN	1668.1	2.8	CLEANOUT
370076.95	1935033.65	5+70	UNDERDRAIN	1672.0	3.2	
370136.50	1935086.68	6+50	UNDERDRAIN	1674.6	3.2	CLEANOUT
370213.66	1935223.29	8+06	UNDERDRAIN	1679.4	7.2	CLEANOUT
370220.14	1935234.82	8+20	UNDERDRAIN	1680.0	7.2	
370301.84	1935364.92	9+74	UNDERDRAIN	1691.1	7.2	CLEANOUT
370352.00	1935442.68	10+70	UNDERDRAIN	1698.0		

DRAINAGE PROFILE "A" SUMMARY SHEET								
NORTHING	EASTING	STA.	TYPE	Dimensions	LINING	ELEVATION	SLOPE (%)	COMMENTS
<b>DRAINAGE PROFILE A</b>								
370413.01	1936925.29	0+00	II	2'x8'	GROUTED RIPRAP	1766.0	24.0	BEGIN TYPE I RIPRAP DITCH
370430.42	1936878.41	0+50	I	2'x8'	RIPRAP	1788.0	2.0	
370493.75	1936707.86	2+30			LOW WATER CROSSING		2.0	LOW WATER CROSSING
370504.22	1936679.67	2+60	I	2'x8'	RIPRAP		2.0	
370586.69	1936667.89	3+50	I	2'x8'	RIPRAP	1794.0	2.0	
370686.56	1936663.91	4+50	I	2'x8'	RIPRAP	1796.0	2.0	
370782.88	1936689.85	5+50	I	2'x8'	RIPRAP	1798.0	2.0	
370857.79	1936749.51	6+50	I	2'x8'	RIPRAP	1800.0	8.2	
370875.67	1936828.23	7+35	I	2'x8'	RIPRAP	1808.0		



**DRAINAGE PROFILE "B" SUMMARY SHEET**

NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
370312.66	1935473.64	0+00	I	2'x8'	DRAINAGE PROFILE B	1700.0	8.0	JCT DRAINAGE PROFILE C
370328.45	1935571.88	1+00	I	2'x8'	RIPRAP	1708.0	10.0	
370314.00	1935670.28	2+00	I	2'x8'	RIPRAP	1718.0	8.3	
370239.57	1935782.62	3+20	I	2'x8'	RIPRAP	1728.0	3.6	
369970.11	1935826.68	6+00	I	2'x8'	RIPRAP	1738.0	3.6	
369691.95	1935858.40	8+80	I	2'x8'	RIPRAP	1748.0	5.6	
369577.67	1935983.87	10+60	I	2'x8'	RIPRAP	1758.0	5.0	
369555.54	1936181.32	12+60	I	2'x8'	RIPRAP	1768.0	10.0	
369571.57	1936278.62	13+60	I	2'x8'	RIPRAP	1778.0	2.6	
369827.73	193631.78	17+40	I	2'x8'	RIPRAP	1788.0	1.1	
370377.80	1936634.87	23+00	I	2'x8'	RIPRAP	1794.0		



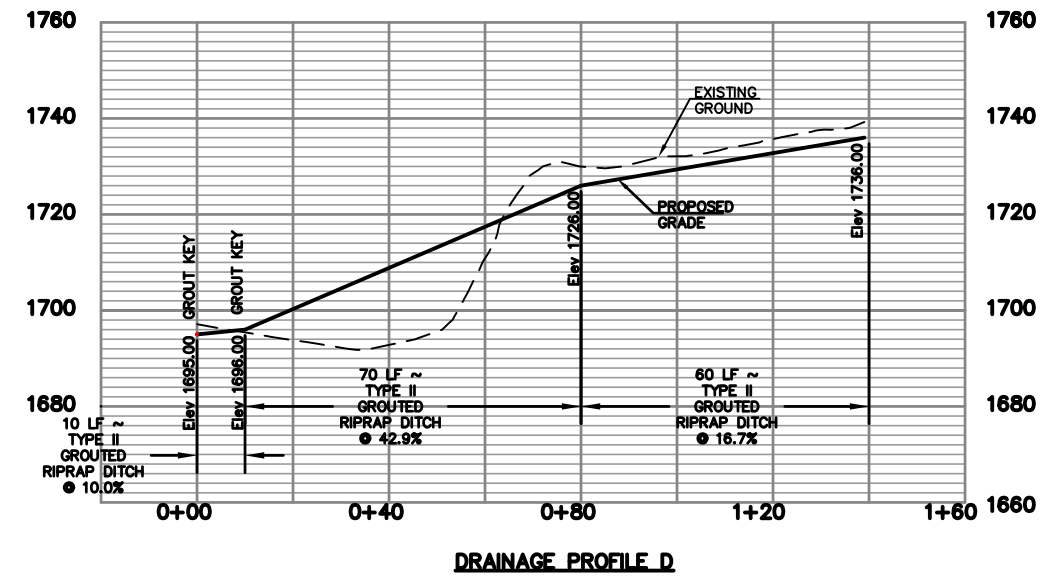
**E.L. ROBINSON ENGINEERING**  
 5088 Washington Street, West  
 Charleston, West Virginia 25313  
 Phone: 304/7767473  
 Fax: 304/7766426

NO.	DATE	REVISION	BY

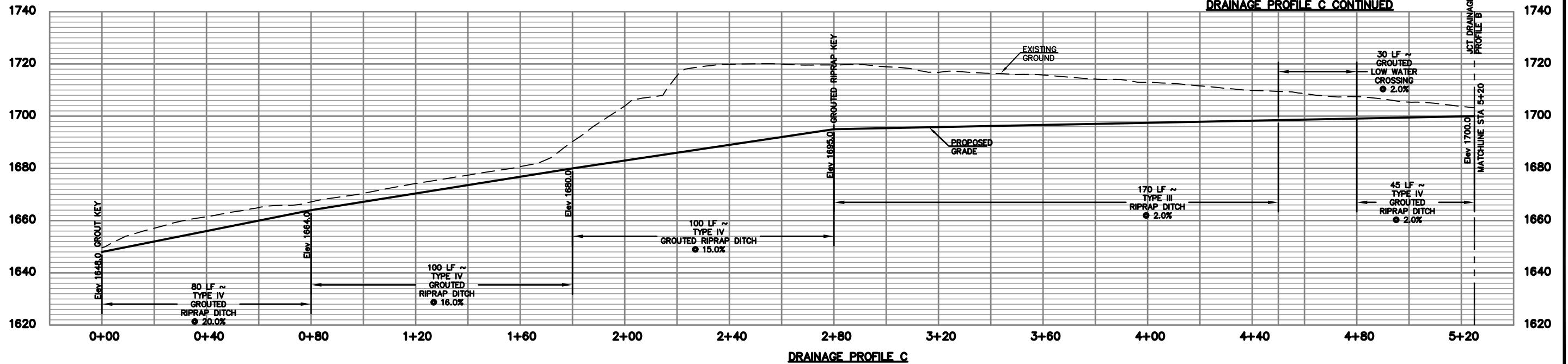
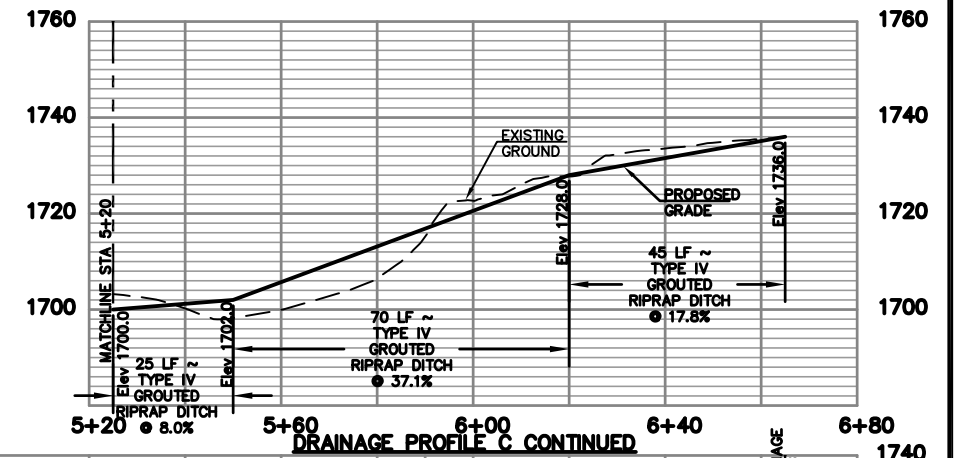
PROJECT INFORMATION  
  
**MORGAN HIGHWAY #48**  
**PRESTON COUNTY, WEST VIRGINIA**

DRAWING TITLE  
**DRAINAGE PROFILE "B"**  
 DATE  
 DECEMBER 2015  
 SCALE  
 1" = 20'  
 DRAWING NUMBER  
**60**

DRAINAGE PROFILE "D" SUMMARY SHEET								
NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
370274.35	1935384.09	0+00	II	2'x8'	DRAINAGE PROFILE D	1695.0	10.0	JCT.DRAINAGE PROFILE E
370284.12	1935381.94	0+10	II	2'x8'	GROUTED RIPRAP	1696.0	42.9	
370352.48	1935386.89	0+80	II	2'x8'	GROUTED RIPRAP	1726.0	16.7	
370410.14	1935354.20	1+40	II	2'x8'	GROUTED RIPRAP	1736.0		

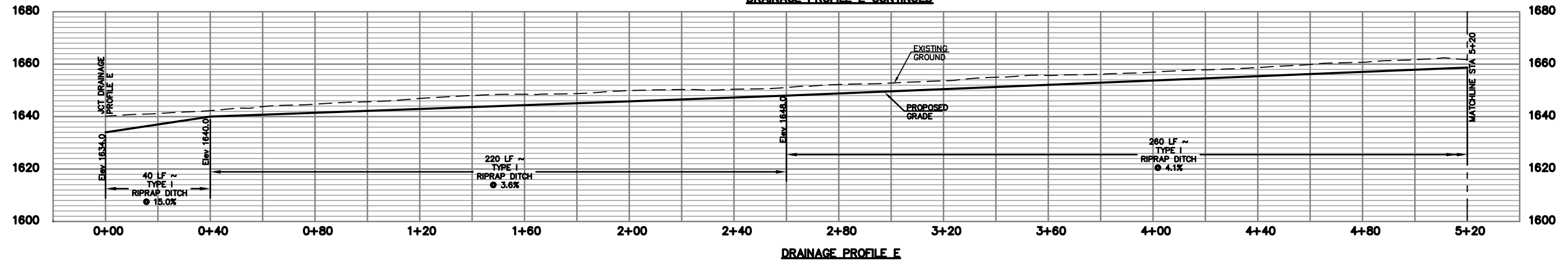
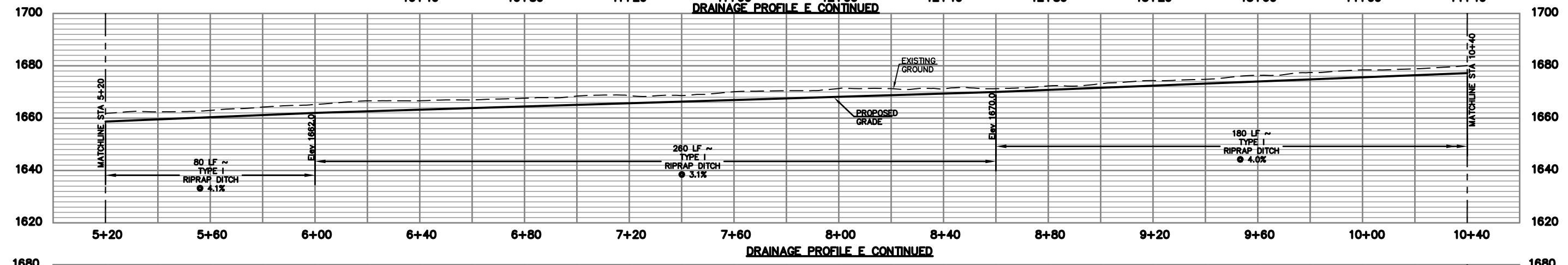
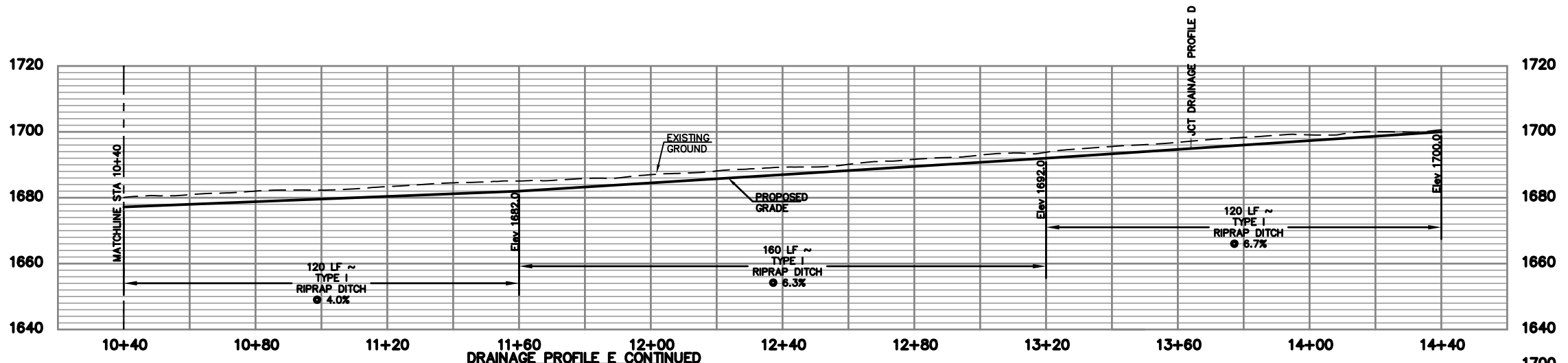


DRAINAGE PROFILE "C" SUMMARY SHEET								
NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
369793.01	1935398.89	0+00	IV	3'x12'	DRAINAGE PROFILE C	1648.0	20.0	
369872.20	1935410.28	0+80	IV	3'x12'	GROUTED RIPRAP	1664.0	16.0	
369971.18	1935424.52	1+80	IV	3'x12'	GROUTED RIP RAP	1680.0	15.0	
370070.16	1935438.76	2+80	III	3'x12'	RIPRAP	1695.0	2.0	
370238.48	1935462.99	4+50			LOW WATER CROSSING	2.0	2.0	LOW WATER CROSSING
370268.12	1935467.23	4+80	IV	3'x12'	GROUTED RIPRAP		2.0	LOW WATER CROSSING
370312.66	1935473.64	5+25	IV	3'x12'	GROUTED RIPRAP	1700.0	8.0	JCT DRAINAGE PROFILE B
370337.86	1935474.30	5+50	IV	3'x12'	GROUTED RIPRAP	1702.0	37.1	
370407.12	1935480.11	6+20	IV	3'x12'	GROUTED RIPRAP	1728.0	17.8	
370450.90	1935490.48	6+65	IV	3'x12'	GROUTED RIPRAP	1736.0		



NO.	DATE	REVISION	BY

DRAINAGE PROFILE "E" SUMMARY SHEET								
NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
				DepthxWidth	<b>DRAINAGE PROFILE E</b>			
369221.84	1934586.23	0+00	I	2'x8'	RIPRAP	1634.0	15.0	JCT DRAINAGE PROFILE F
369255.41	1934607.98	0+40	I	2'x8'	RIPRAP	1640.0	3.6	
369433.75	1934736.41	2+60	I	2'x8'	RIPRAP	1648.0	4.1	
369731.13	1934895.68	6+00	I	2'x8'	RIPRAP	1662.0	3.1	
369970.87	1934994.19	8+80	I	2'x8'	RIPRAP	1670.0	4.0	
370164.92	1935212.62	11+80	I	2'x8'	RIPRAP	1682.0	6.3	
370250.90	1935347.15	13+20	I	2'x8'	RIPRAP	1692.0	6.7	
370274.35	1935384.09	13+64	I	2'x8'	RIPRAP	1695.0	6.7	JCT DRAINAGE PROFILE D
370309.11	1935451.90	14+40	I	2'x8'	RIPRAP	1700.0		

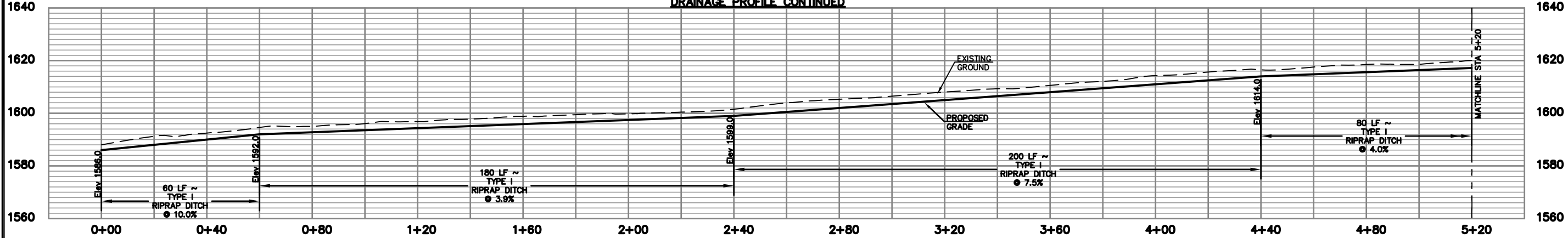
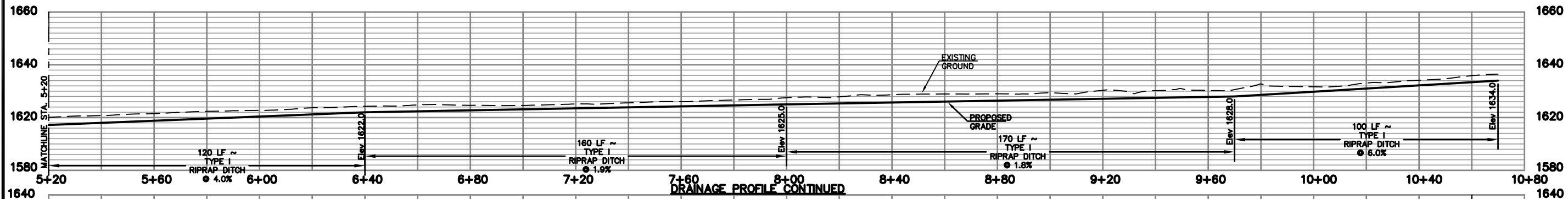


NO.	DATE	REVISION	BY



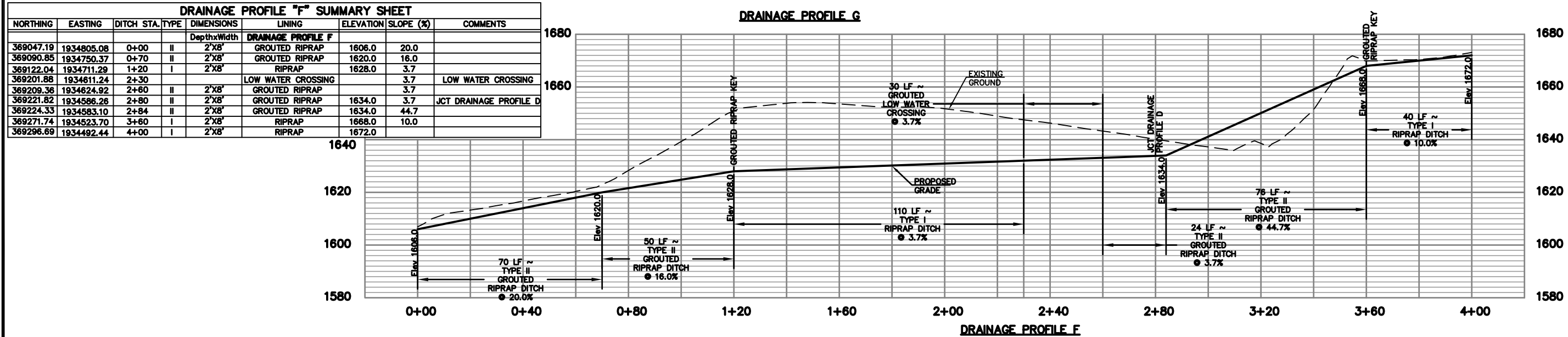
**DRAINAGE PROFILE "G" SUMMARY SHEET**

NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
				DepthxWidth	<b>DRAINAGE PROFILE G</b>			
368768.03	1933869.02	0+00	I	2'X8'	RIPRAP	1586.0	10.0	BEGIN TYPE I RIPRAP DITCH
368698.52	1933926.02	0+60	I	2'X8'	RIPRAP	1592.0	3.9	
368606.21	1934067.68	2+40	I	2'X8'	RIPRAP	1599.0	7.5	
368640.57	1934254.76	4+40	I	2'X8'	RIPRAP	1614.0	4.0	
368795.59	1934378.61	6+40	I	2'X8'	RIPRAP	1622.0	1.9	
368942.75	1934440.36	8+00	I	2'X8'	RIPRAP	1625.0	1.8	
369104.87	1934489.24	9+70	I	2'X8'	RIPRAP	1628.0	6.0	
369182.53	1934551.58	10+70	I	2'X8'	RIPRAP	1634.0		



**DRAINAGE PROFILE "F" SUMMARY SHEET**

NORTHING	EASTING	DITCH STA.	TYPE	DIMENSIONS	LINING	ELEVATION	SLOPE (%)	COMMENTS
				DepthxWidth	<b>DRAINAGE PROFILE F</b>			
369047.19	1934805.08	0+00	II	2'X8'	GROUTED RIPRAP	1606.0	20.0	
369090.85	1934750.37	0+70	II	2'X8'	GROUTED RIPRAP	1620.0	16.0	
369122.04	1934711.29	1+20	I	2'X8'	RIPRAP	1628.0	3.7	
369201.88	1934611.24	2+30			LOW WATER CROSSING		3.7	LOW WATER CROSSING
369209.36	1934624.92	2+80	II	2'X8'	GROUTED RIPRAP		3.7	
369221.82	1934586.26	2+80	II	2'X8'	GROUTED RIPRAP	1634.0	3.7	JCT DRAINAGE PROFILE D
369224.33	1934583.10	2+84	II	2'X8'	GROUTED RIPRAP	1634.0	44.7	
369271.74	1934523.70	3+60	I	2'X8'	RIPRAP	1668.0	10.0	
369296.69	1934492.44	4+00	I	2'X8'	RIPRAP	1672.0		



NO.	DATE	REVISION	BY

PROJECT INFORMATION

**MORGAN HIGHWAY #46**  
PRESTON COUNTY, WEST VIRGINIA

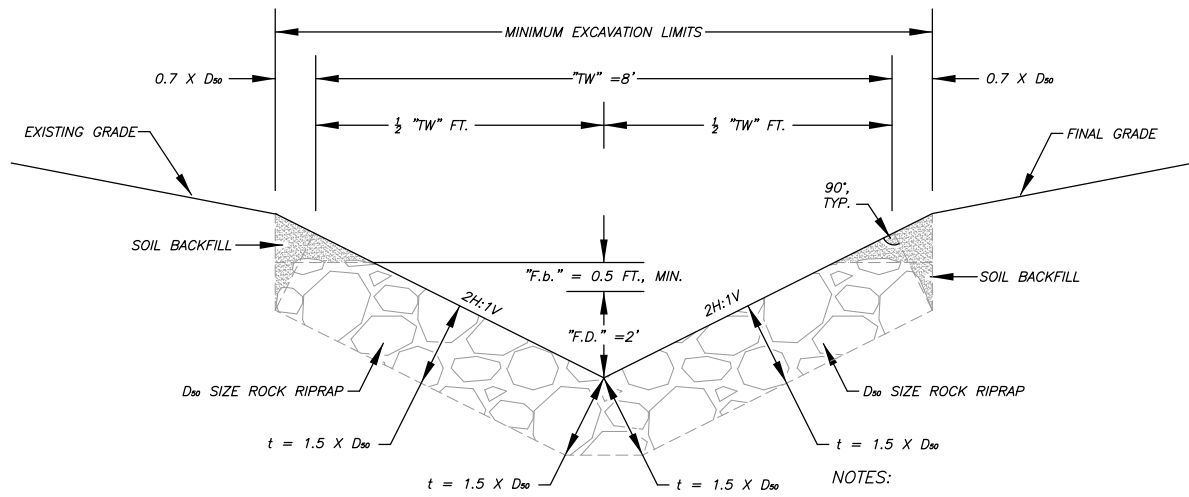
DRAWING TITLE  
**DRAINAGE PROFILES "F" AND "G"**

DATE  
DECEMBER 2015

SCALE  
1" = 20'

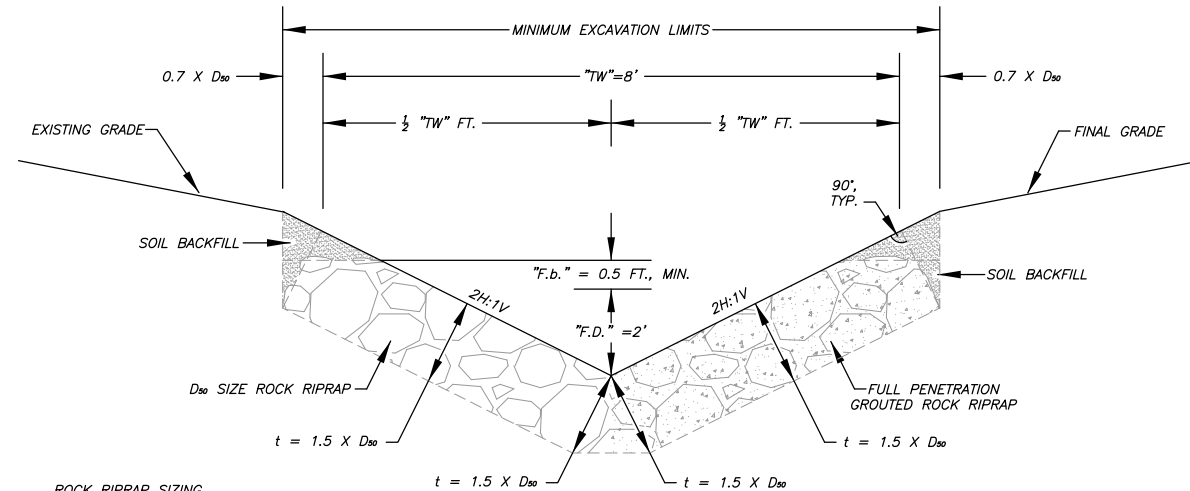
DRAWING NUMBER  
**63**

NO.	DATE	REVISION	BY



**TYPE I  
RIPRAP DITCH** ①

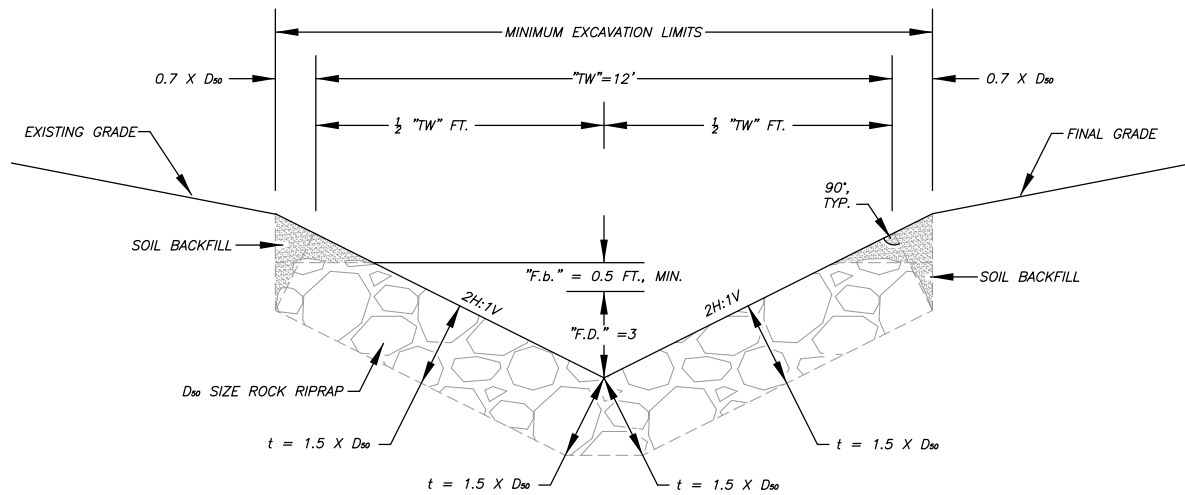
NOTES:  
PROVIDE RIPRAP LINING.  
PLACE ROCK RIPRAP FULL WIDTH OF EXCAVATION LIMITS TO THE DESIGNED FLOW DEPTH (FD).  
"TW" = TOP WIDTH  
"BW" = BOTTOM WIDTH  
"Fb" = FREEBOARD DEPTH  
"F.D." = FLOW DEPTH  
"t" = THICKNESS



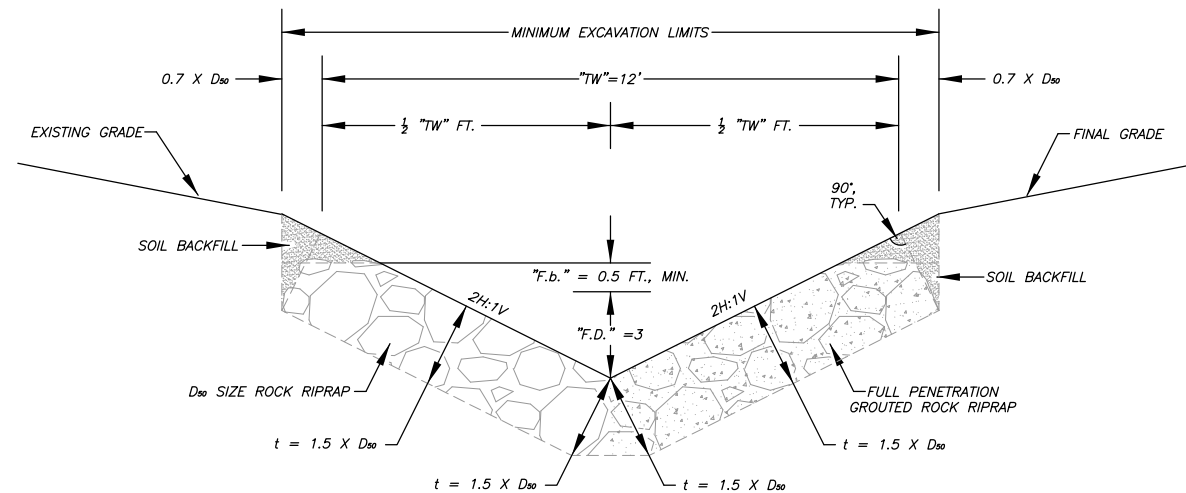
**TYPE II GROUTED  
RIPRAP DITCH** ②

ROCK RIPRAP SIZING

GRADATION	D <sub>50</sub> = 6"	D <sub>50</sub> = 12"	D <sub>50</sub> = 18"	D <sub>50</sub> = 24"
50%	6" - 9"	12" - 18"	18" - 27"	24" - 36"
35%	3" - 6"	6" - 12"	9" - 18"	12" - 24"
15%	<= 3"	3" - 6"	4.5" - 9"	6" - 12"



**TYPE III  
RIPRAP DITCH** ③

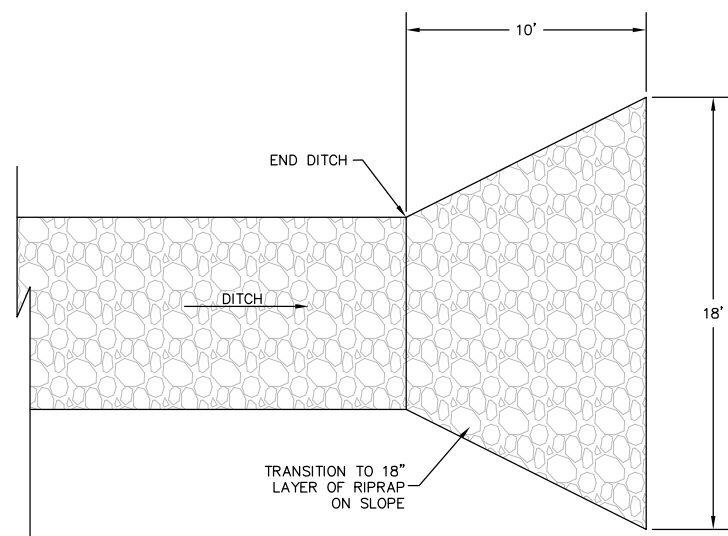


**TYPE IV GROUTED  
RIPRAP DITCH** ④

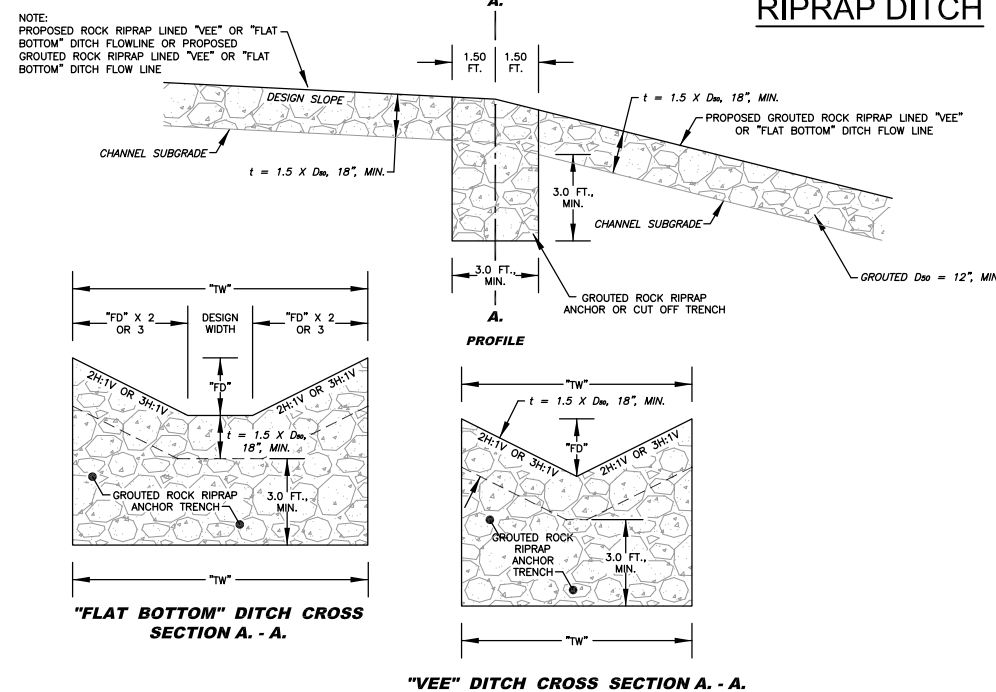
ROCK RIPRAP SIZING

GRADATION	D <sub>50</sub> =6"	D <sub>50</sub> =12"	D <sub>50</sub> =18"	D <sub>50</sub> =24"
50%	6" - 9"	12" - 18"	18" - 27"	24" - 36"
35%	3" - 6"	6" - 12"	9" - 18"	12" - 24"
15%	<= 3"	3" - 6"	4.5" - 9"	6" - 12"

- NOTES:
- EXTEND GROUT ANCHOR LATERALLY THE FULL WIDTH OF THE CHANNEL AS SHOWN IN THE CROSS SECTION VIEWS.
  - INSTALL GROUT KEY AT THE JUNCTION OF ROCK RIPRAP CHANNEL WITH GROUTED ROCK RIPRAP CHANNEL.
  - INSTALL GROUT ANCHOR AT THE JUNCTION OF CHANNEL FLOW SLOPES WITH A DOWNSTREAM GRADIENT EXCEEDING 25%.
  - AFTER EXCAVATING THE GROUT ANCHOR TO THE DIMENSIONS SHOWN, PLACE GROUT IN THE EXCAVATION TO THE CHANNEL SUB GRADE PRIOR TO PLACING THE RIPRAP.
  - "TW" = TOP WIDTH  
"Fb" = FREEBOARD DEPTH  
"F.D." = FLOW DEPTH  
"t" = THICKNESS
  - KEYWAYS TO BE PLACED AT 150 FEET (MINIMUM) ON SLOPES OR ACCORDING TO PLANS.

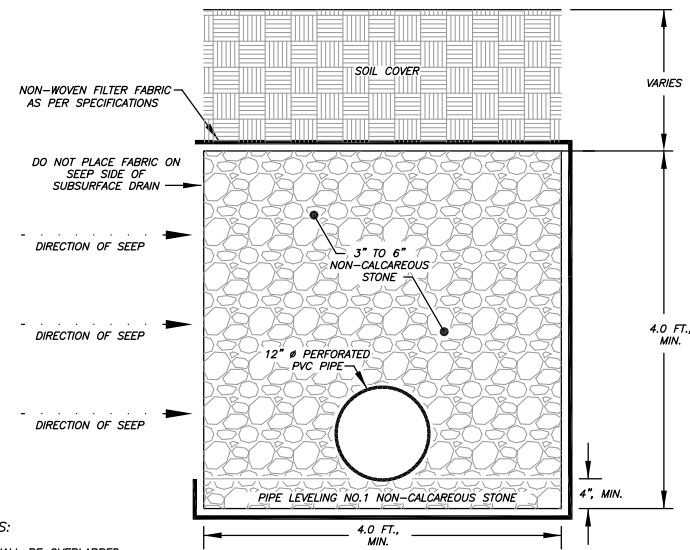


**LEVEL SPREADER** ⑤  
SCALE 1" = 2'



**TYPICAL GROUTED RIPRAP  
KEY DETAIL** ⑥  
SCALE: NTS

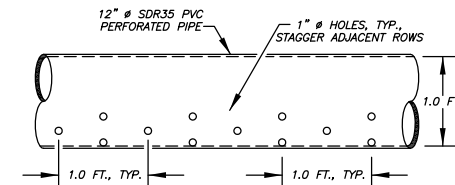
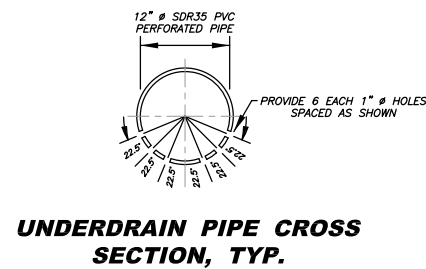




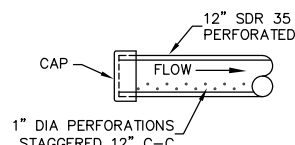
**UNDERDRAIN DETAIL**

**TYPICAL UNDERDRAIN DETAIL**

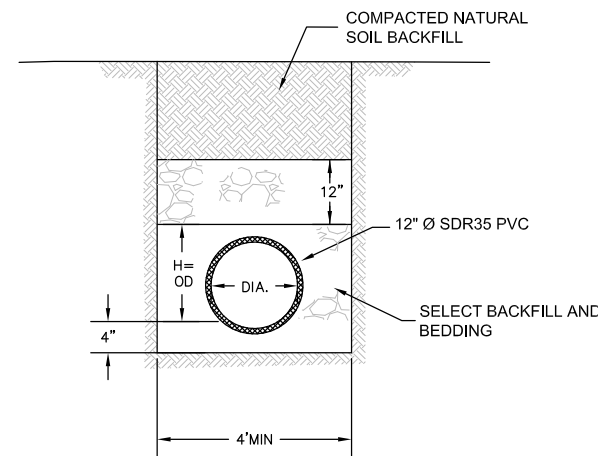
SCALE: NTS



**UNDERDRAIN PIPE LONGITUDINAL VIEW, TYP.**

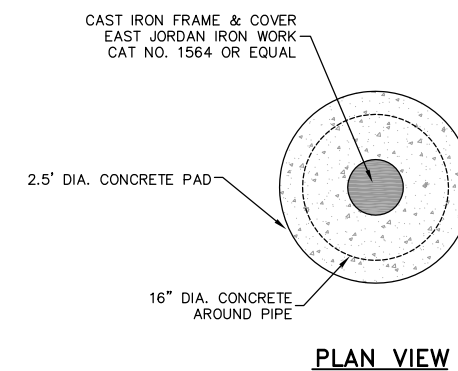


**CAP DETAIL**

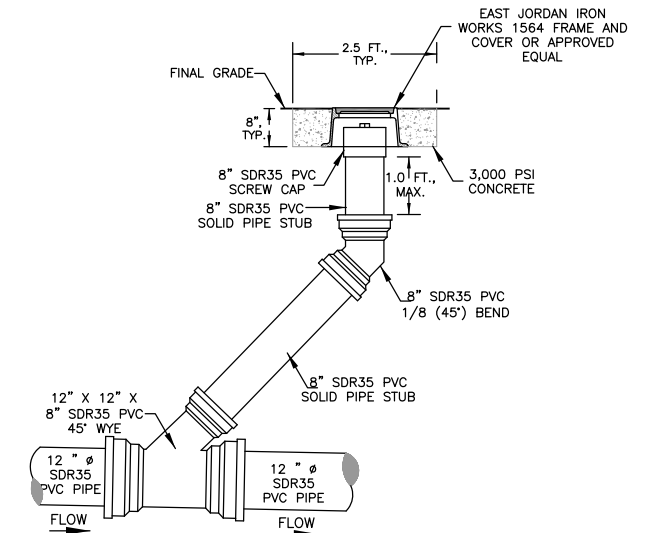


**TYPICAL UNDERDRAIN CONVEYANCE PIPE**

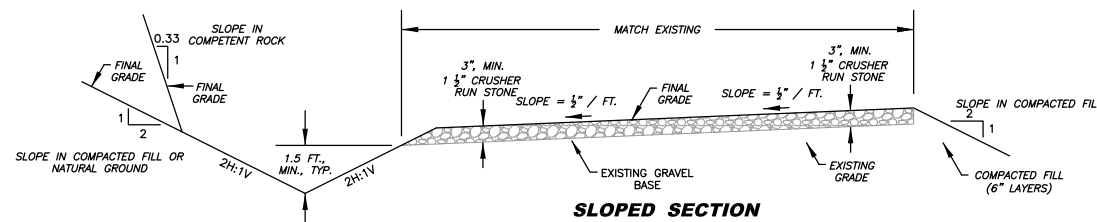
SCALE: NTS



**PLAN VIEW**



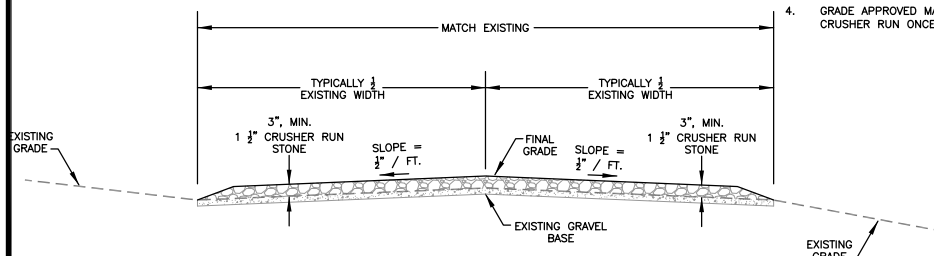
**CLEANOUT DETAIL**



**SLOPED SECTION**

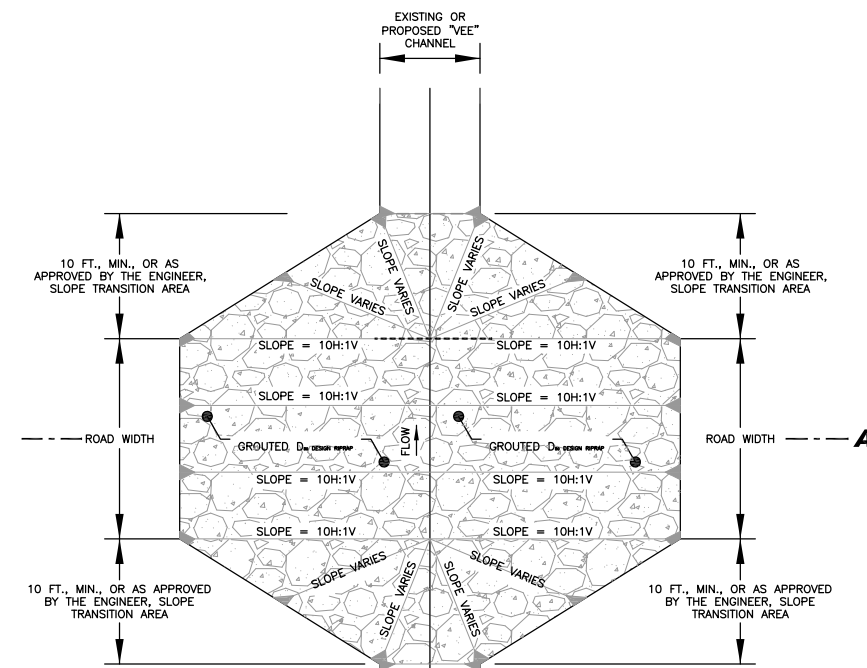
- NOTES:
- ROADWAY SURFACE MAY BE SLOPED TO EITHER SIDE AS TOPOGRAPHY AND CONDITIONS WARRANT.
  - 1 1/2" CRUSHER RUN STONE SHALL BE COMPACTED AS APPROVED BY THE ENGINEER.

- NOTES:
- PRIOR TO STONE PLACEMENT, REGRADE EXISTING ROADWAY INTO "CROWNED" OR "SLOPE TO DITCH" CONFIGURATION AS DIRECTED BY THE ENGINEER. REMOVE, REFILL, AND COMPACT SOFT SPOTS AS DIRECTED BY THE ENGINEER. ALL CUT/FILL SLOPES SHALL BE 2H:1V.
  - 1 1/2" CRUSHER RUN STONE.
  - GRADE AND COMPACT BASE JUST PRIOR TO PLACEMENT OF REHABILITATION LAYER.
  - GRADE APPROVED MATERIAL AND ROLLER COMPACT 1 1/2" CRUSHER RUN ONCE PLACED.



**CROWNED SECTION**

**TYPICAL SECTION ACCESS ROADWAY RESTORATION**



**PLAN VIEW**

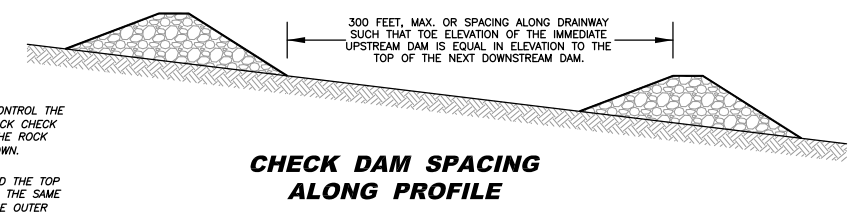
**GROUTED LOW WATER CROSSING**

- NOTES:
- "TW" = TOP WIDTH  
"Fb" = FREEBOARD DEPTH  
"F.D." = FLOW DEPTH  
"t" = THICKNESS
  - TYPE I LOW WATER CROSSING FD=2'
  - TYPE II LOW WATER CROSSING FD=3'

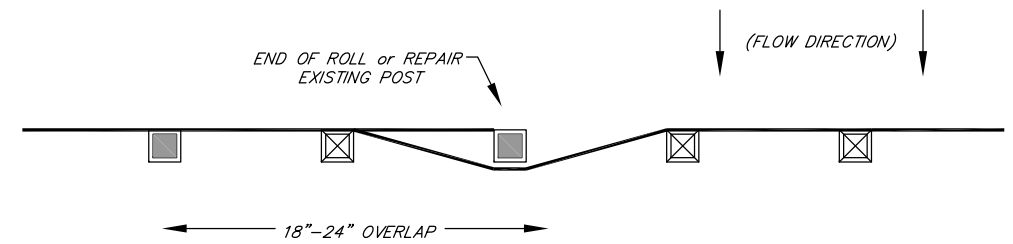
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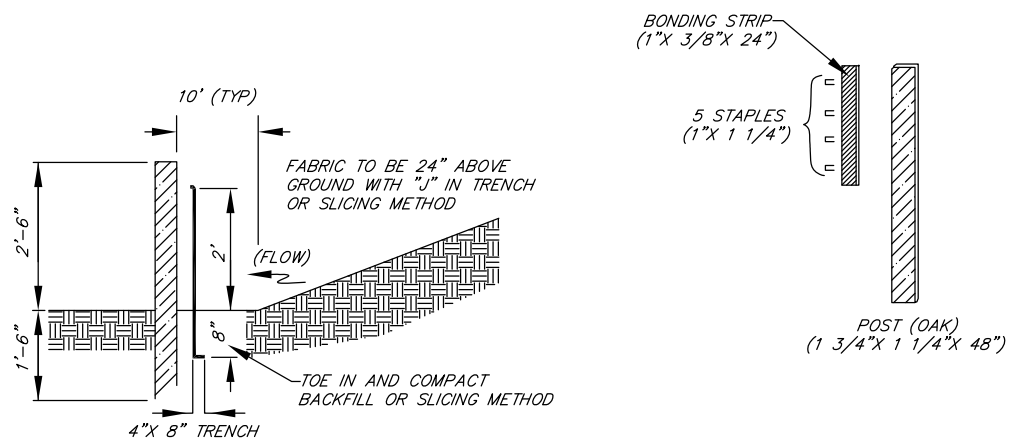
- NOTES:
1. "X" DIMENSION AS DETAILED BY THE SPECIFICATIONS, FOR SEDIMENT CONTROL THE MAXIMUM HEIGHT OF THE ROCK CHECK DAM IS 3 FEET. HOWEVER, ROCK CHECK DAMS CAN BE CONSTRUCTED IN SMALLER DITCHES. THE CENTER OF THE ROCK CHECK DAM SHALL BE 0'-6" LOWER THAN THE OUTER EDGES AS SHOWN.
  2. ROCK CHECK DAMS ARE NORMALLY INSTALLED IN EXISTING DRAINS AND THE TOP CROSS SECTION OF THE DAM SHOULD HAVE A LEVEL CENTER SECTION THE SAME WIDTH AS THE EXISTING CHANNEL BOTTOM AND 0'-6" LOWER THAN THE OUTER EDGES OF THE DAM. ROCK CHECK DAMS PLACED IN PROJECT CONSTRUCTED FLAT-BOTTOM DITCHES SHALL HAVE SIMILAR DIMENSIONS.
  3. THE CENTER OF ROCK CHECK DAMS CONSTRUCTED IN PROJECT CONSTRUCTED "VEE" SHAPED OR EXISTING "VEE" SHAPED DITCHES SHALL BE 0'-6" LOWER THAN AND SLOPED TO THE OUTER TOP EDGES OF THE DITCH SO HIGH FLOWS GO OVER THE TOP OF THE DAM AND NOT AROUND THE EDGES.
  4. ROCK CHECK DAMS SHALL BE REMOVED AFTER THE FIRST GROWING SEASON.



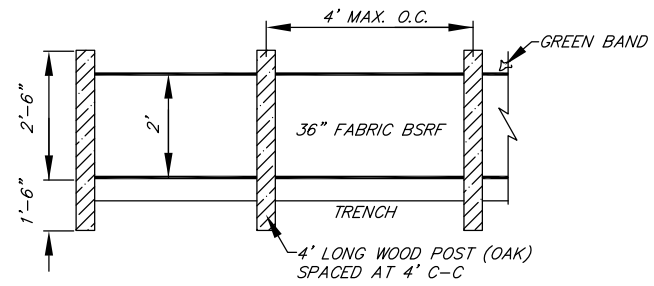
**CHECK DAM SPACING ALONG PROFILE**



**PLAN VIEW**



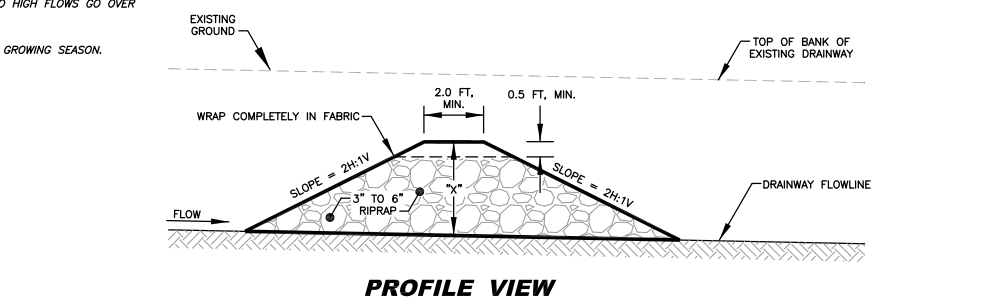
**SIDE VIEW**



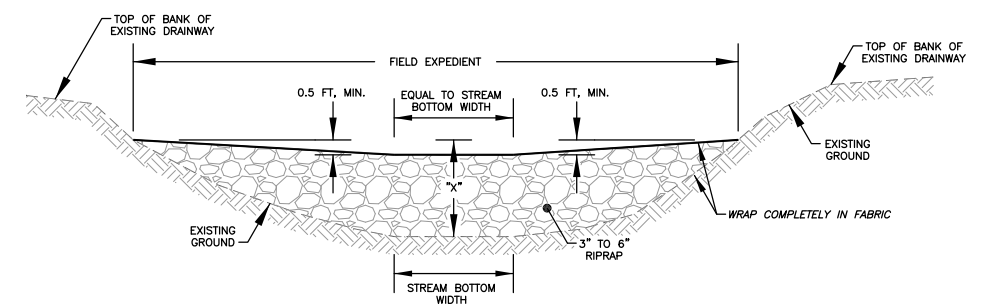
**FRONT ELEVATION SILT SAVER**

MIN. OVERLAP OF 18" IS TO BE PROVIDED AT ALL SPLICE JOINTS

1



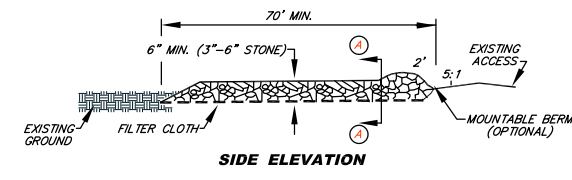
**PROFILE VIEW**



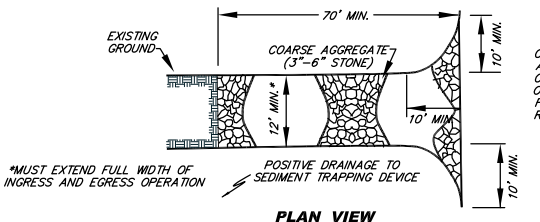
**CROSS SECTION VIEW**

**STONE CHECK DAMS** 2

SCALE NTS

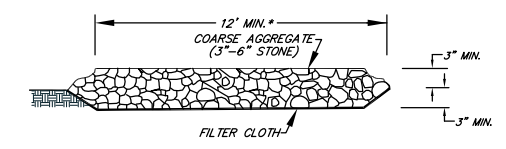


**SIDE ELEVATION**



**PLAN VIEW**

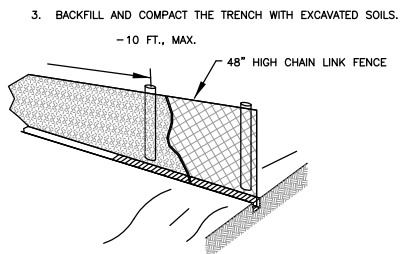
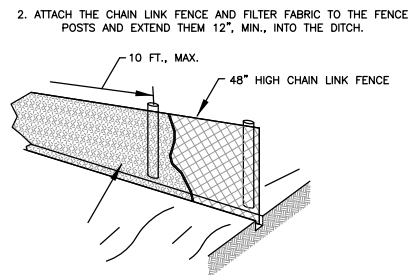
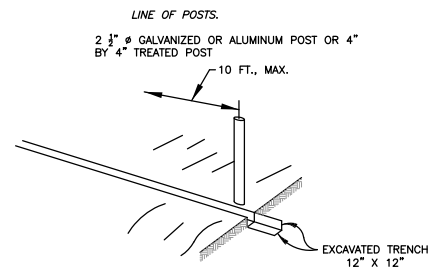
CERTAIN INSTALLATIONS SHALL WARRANT THE ADDITION OF A 3" THICK "CAP" LAYER OF 1 1/2" CLEAN STONE, WHEN INSTALLED AT THE LOCATION OF AN EXISTING DRIVEWAY OR VEHICULAR ACCESS. FOR ALL INSTALLATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF SUCH.



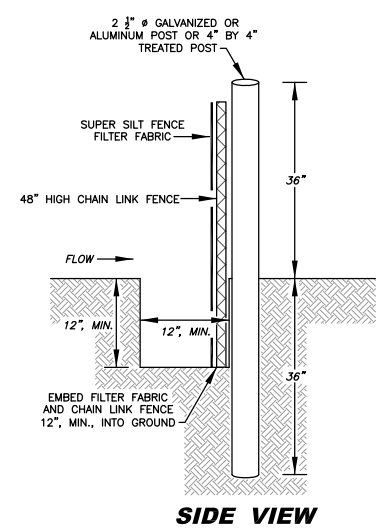
**SECTION A - A**

**STABILIZED CONSTRUCTION ENTRANCE**

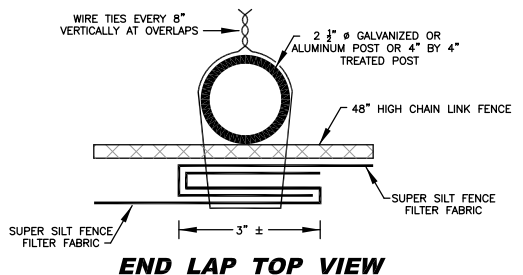
3



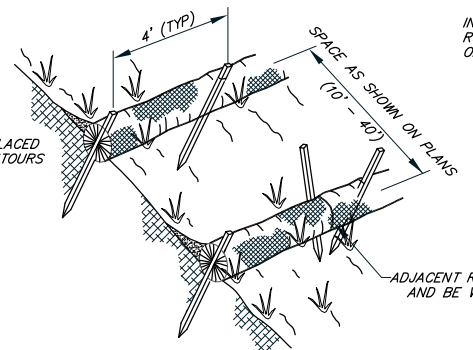
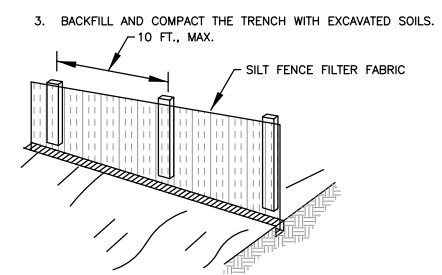
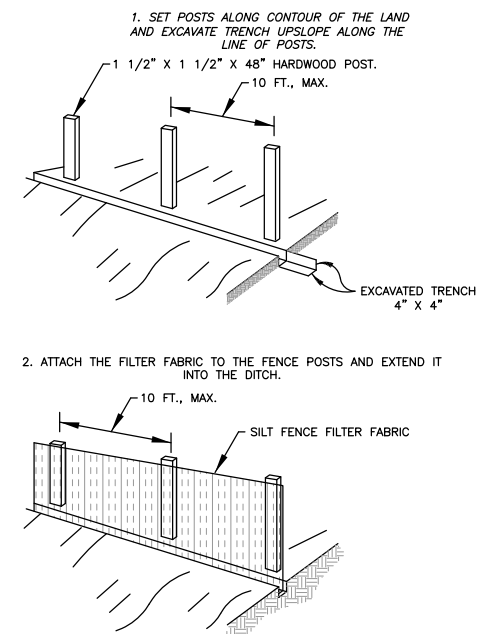
**SUPER SILT FENCE DETAIL**  
SCALE: NTS



1. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE POSTS WITH WIRE TIES OR STAPLES.
2. POSTS NEED NOT BE SET IN CONCRETE.
3. THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.
4. FABRIC AND FENCE SHALL BE EMBEDDED 12", MINIMUM, INTO THE GROUND.
5. A 6" MINIMUM OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC ADJOIN. THE OVERLAPPED FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.
6. 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.
7. THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.

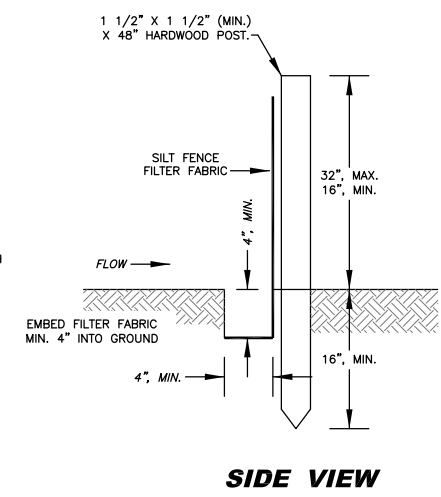
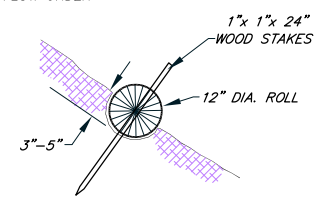


1



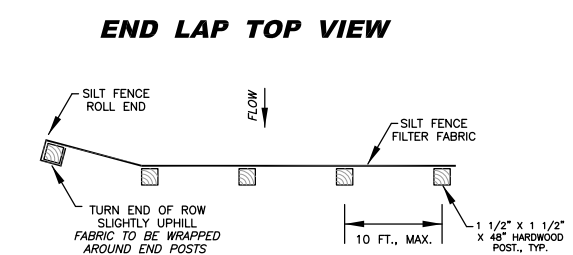
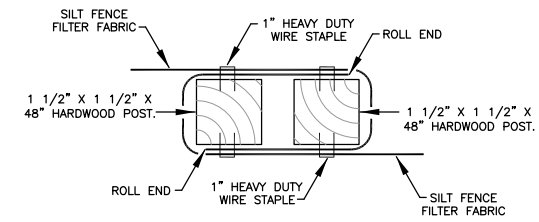
**STRAW WATTLE ANCHORING/ENTRENCHMENT DETAIL**

IN A TRENCH, 3"-5" DEEP, DUG ON CONTOURS. RUNOFF MUST NOT BE ALLOWED TO FLOW UNDER OR AROUND THE ROLLS.



**TOE OF SLOPE SILT FENCE LOCATION**  
**SILT FENCE DETAIL**  
SCALE: NTS

- SILT FENCE NOTES:**
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO ALIGNMENT LENGTH TO AVOID JOINTS. WHERE JOINTS ARE UNAVOIDABLE, THE FABRIC SHALL BE SPLICED TOGETHER AT A SUPPORT POST BY TWISTING THE POST OF EACH RUN AROUND EACH OTHER.
  2. FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE SUPPORT POSTS USING ONE INCH, MINIMUM, LONG HEAVY-DUTY WIRE STAPLES OR THE WIRES WITH EIGHT INCHES, MINIMUM, OF FABRIC EXTENDED INTO THE TRENCH. DO NOT STAPLE FABRIC TO TREES.
  3. COMPACTED SOIL BACKFILL SHALL BE PLACED IN THE 4" BY 4" TRENCH ATOP THE EXTENDED FABRIC.
  4. POSTS SHALL BE CONSTRUCTED OF 1 1/2" X 1 1/2" (MIN.) HARDWOOD OR 2" X 4" PINE BY 48" LONG.
  5. FILTER FABRIC SHALL BE NON-WOVEN "MIRAFI 100X", "EXXON GTF 180" OR EQUAL.
  6. APPROVED PREFABRICATED UNITS INCLUDE "GEOFAB", "ENVIROFENCE", OR APPROVED EQUAL.
  7. THE MAXIMUM RUN OF SLOPE ABOVE A ROW OF SILT FENCE IS 110 FEET.



2

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