PROJECT	DESIGNATION
	STRUCTURE NO. 23017

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
HAMILTON NO. 23017	STRUCTURE, REINFORCED CONCRETE, THREE SIDED STRUCTURE	SINGLE SPAN: 16'-0" SKEW 00°00'00"	UNNAMED TRIBUTARY OF STONY CREEK	℄ STRUCTURE 18+25.00 LINE 'PR-A'

HAMILTON COUNTY
HIGHWAY DEPARTMENT

TRAFFIC DATA		
A.A.D.T.	2020	1027 V.P.D.
A.A.D.T.	2040	1526 V.P.D.
DESIGN DATA		
DESIGN SPEED		55 M.P.H.
PROJECT DESIGN CRITERIA		3 R
FUNCTIONAL CLASSIFICATION		COLLECTOR
RURAL/URBAN		RURAL
TERRAIN		ROLLING
ACCESS CONTROL		NONE

INDEX

SHEET NO.	SUBJECT
1	COVER SHEET
2-3	TYPICAL SECTIONS
4	MAINTENANCE OF TRAFFIC
5-6	PLAN AND PROFILE
7-8	GENERAL PLAN
9	STRUCTURE DETAILS
10	EROSION CONTROL
11	MISCELLANEOUS TABLES
12-20	CROSS SECTIONS

UTILITIES

ELECTRIC
BILL FERRELL
DUKE ENERGY
100 S. MILL CREEK ROAD
NOBLESVILLE, IN 46062
(317) 776-5351

COMMUNICATION
MELISSA TEAGUE
CENTURYLINK
50 N. JACKSON STREET
FRANKLIN, IN 46131
(765) 656-4663

REPLACEMENT PLAN FOR SMALL STRUCTURE NO. 23017

191st STREET OVER UNNAMED TRIBUTARY OF STONY CREEK

PB 18-0004
WAYNE TOWNSHIP
HAMILTON COUNTY, INDIANA

REPLACEMENT OF STRUCTURE NO. 23017 ON 191st STREET, IN
SECTION 30, 19N, 6E, WAYNE TOWNSHIP, HAMILTON COUNTY, INDIANA

APPROVED BY:
HAMILTON COUNTY BOARD OF COMMISSIONERS

MARK HEIRBRANDT, PRESIDENT

STEVE DILLINGER, VICE PRESIDENT

CHRISTINE ALTMAN, COUNTY COMMISSIONER

ATTEST:
ROBIN M. MILLS, AUDITOR

HAMILTON COUNTY HIGHWAY DEPARTMENT

JAMES W. NEAL, PE, PMP COUNTY HIGHWAY ENGINEER
COUNTY HIGHWAY ENGINEER

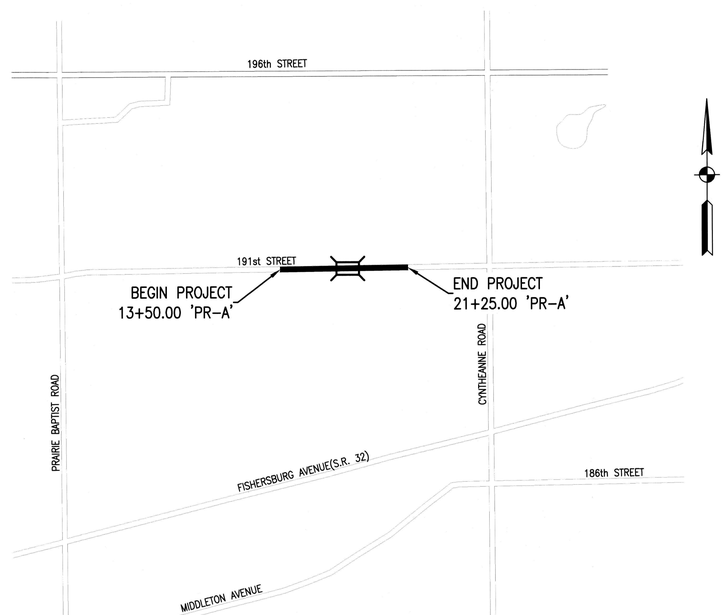
MICHAEL A. KUMMETH REGISTERED No. 910382 STATE OF INDIANA PROFESSIONAL ENGINEER
DLZ INDIANA, LLC

CERTIFIED BY: 03-19-2021
DATE
REGISTERED PROFESSIONAL ENGINEER
STATE OF INDIANA NO. 910382
COVERING STRUCTURE DESIGN

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER
DLZ INDIANA, LLC

CERTIFIED BY: 03-19-2021
DATE
REGISTERED PROFESSIONAL ENGINEER
STATE OF INDIANA NO. 10707439
COVERING CIVIL DESIGN

PLANS PREPARED BY:
DLZ
DLZ INDIANA, LLC
138 NORTH DELAWARE STREET
INDIANAPOLIS, INDIANA 46204
PHONE: (317) 633-4120
FAX: (317) 633-4177



LOCATION MAP
HAMILTON COUNTY
NOT TO SCALE

LEGEND

EXISTING		PROPOSED
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	SHRUB	
	TREE LINE	
	STREAM/DITCH	
	SIGN	
	POWER POLE	
	UTILITY POLE	
	GUARDRAIL	
200	CONTOUR	200
GAS	UNDERGROUND GAS	
CATV	UNDERGROUND CABLE	
WATER	UNDERGROUND WATER	
	UNDERGROUND SANITARY	
	FENCE	

REVISIONS

SHEET NO.	DATE	REVISED

SCALES:

PLAN — 20 10 0 20 40 — SCALE: 1" = 20'

PROFILE HORIZ. — 20 10 0 20 40 — SCALE: 1" = 20'

PROFILE VERT. — 5 2.5 0 5 10 — SCALE: 1" = 5'

LAYOUT — 30 15 0 30 60 — SCALE: 1" = 30'

INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED 2020, TO BE USED WITH THESE PLANS.

DLZ PROJECT NO. 1863-2016-90

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

Date: Mar 18, 2021, 11:42am User ID: hhill
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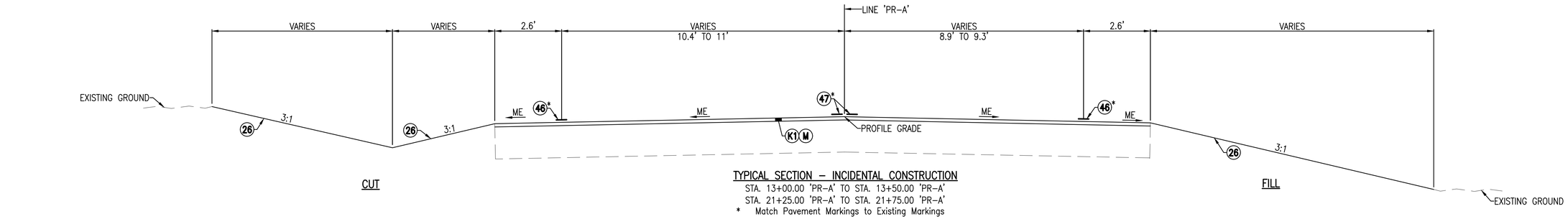
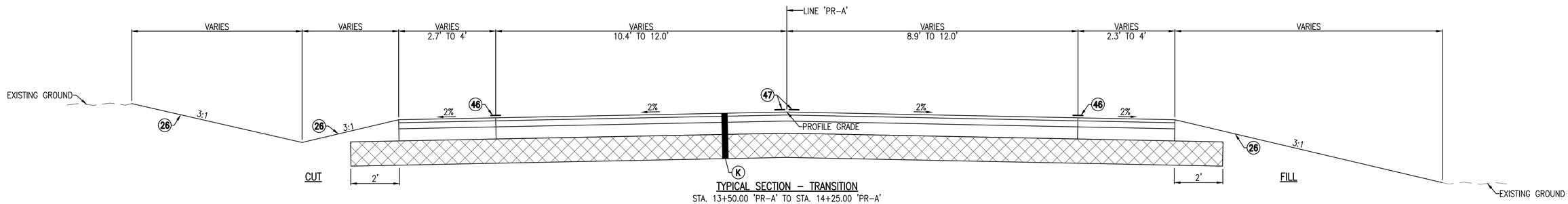
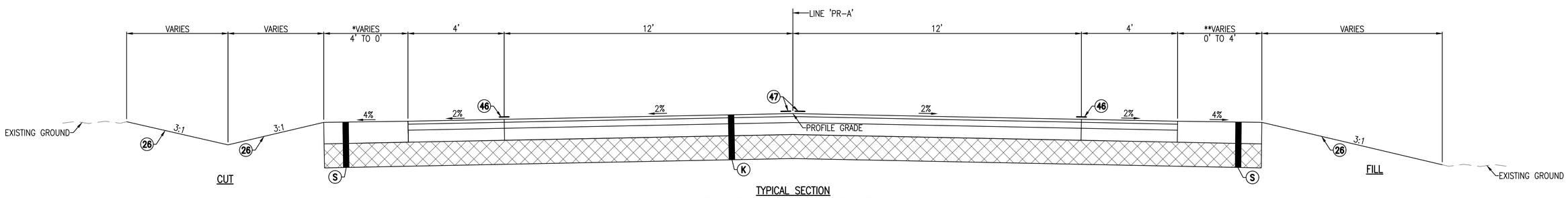


TYPICAL SECTION – INCIDENTAL CONSTRUCTION
STA. 13+00.00 'PR-A' TO STA. 13+50.00 'PR-A'
STA. 21+25.00 'PR-A' TO STA. 21+75.00 'PR-A'
* Match Pavement Markings to Existing Markings



TYPICAL SECTION – TRANSITION
STA. 13+50.00 'PR-A' TO STA. 14+25.00 'PR-A'
STA. 20+73.00 'PR-A' TO STA. 21+25.00 'PR-A'



TYPICAL SECTION
STA. 14+25.00 'PR-A' TO STA. 16+23.00 'PR-A'
STA. 20+23.00 'PR-A' TO STA. 20+73.00 'PR-A'

*0': STA. 14+25.00 'PR-A' TO STA. 16+23.00 'PR-A'
4': STA. 20+23.00 'PR-A' TO STA. 20+33.00 'PR-A'
0': STA. 20+73.00 'PR-A'

**0': STA. 14+25.00 'PR-A' TO STA. 15+73.00 'PR-A'
4': STA. 16+13.00 'PR-A' TO STA. 16+23.00 'PR-A'
0': STA. 20+23.00 'PR-A' TO STA. 20+73.00 'PR-A'

LEGEND

- (26) SEED MIXTURE, R, ON EROSION CONTROL BLANKETS (TYP.)
- (46) LINE, THERMOPLASTIC, SOLID, WHITE, 4"
- (47) LINE, THERMOPLASTIC, BROKEN, YELLOW, 4"
- (K) HMA PAVEMENT TO BE:
  165#/SYD HMA, SURFACE TYPE C, ON
  330#/SYD HMA, INTERMEDIATE TYPE C, ON
  660#/SYD HMA, BASE TYPE C, ON
  SUBGRADE TREATMENT, TYPE IC
- (S) 10.5" COMPACTED AGGREGATE, NO. 53, ON SUBGRADE TREATMENT, TYPE IC

NOTES

1. FOR LIMITS OF GUARDRAIL, SEE SHEET NOS. 5 TO 6.

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

TYPICAL SECTIONS

DRAWN: TH	CHK'D. FS		
DESIGNED: TAB	APPRV'D: FS		
DATE: MARCH 2021			
HORIZ. SCALE: 1" = 2'			
VERT. SCALE:			
PROJECT NUMBER 1863-2016-90			

NO.	REVISION	BY	DATE

03-29-2021

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER

DLZ INDIANA, LLC

SHEET 2 OF 20

DRAWING NUMBER 2016TS10

Date: March 29, 2021, 10:51am
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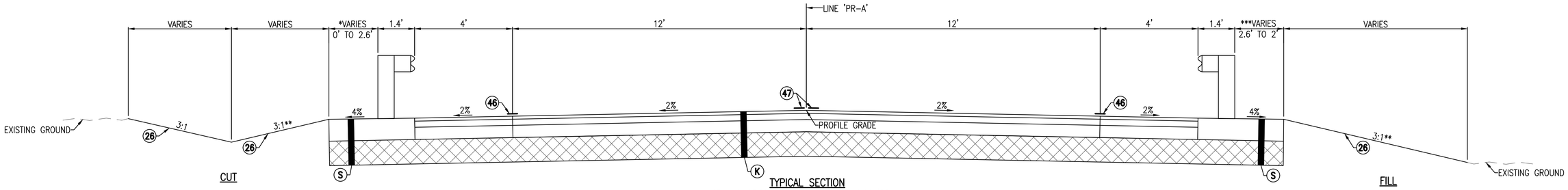
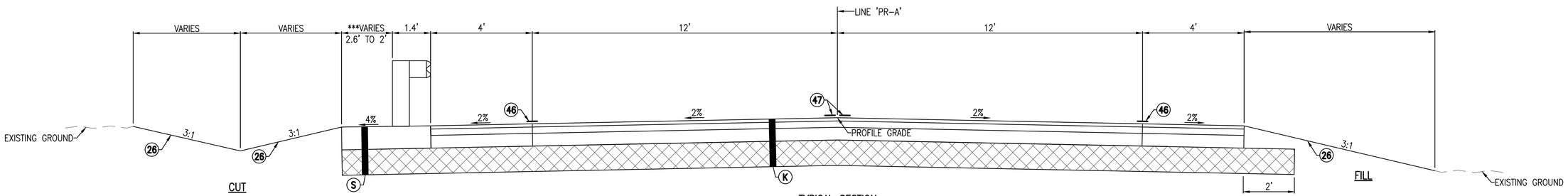


TYPICAL SECTION
STA. 16+23.00 'PR-A' TO STA. 19+10.00 'PR-A'

*0': STA. 16+23.00 'PR-A' TO STA. 16+48.00 'PR-A'
2.6': STA. 16+88.00 'PR-A' TO STA. 17+48.00 'PR-A'
0': STA. 17+58.00 'PR-A' TO STA. 19+10.00 'PR-A'

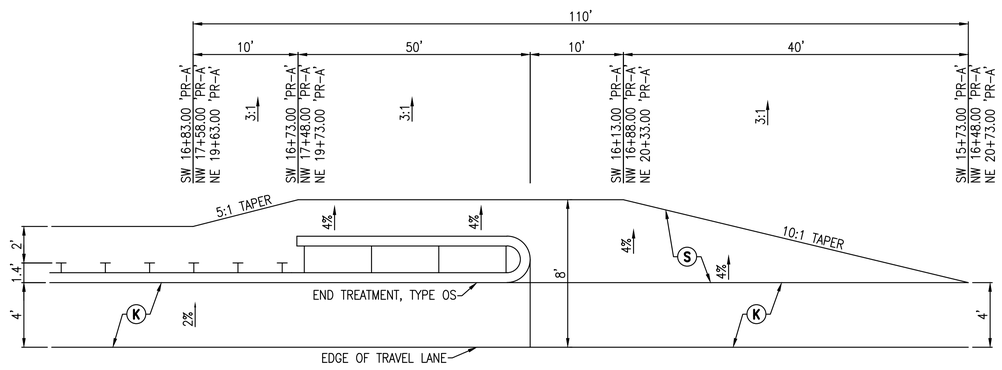
**BETWEEN STATIONS 18+00.00 AND 18+50.00, FILL SLOPE IS 4:1.

***2.6': STA. 16+23.00 'PR-A' TO STA. 16+73.00 'PR-A'
2': STA. 16+83.00 'PR-A' TO STA. 19+10.00 'PR-A'

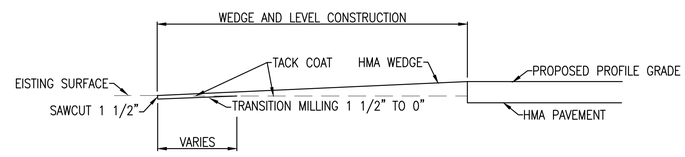


TYPICAL SECTION
STA. 19+10.00 'PR-A' TO STA. 20+23.00 'PR-A'

***2': STA. 19+10.00 'PR-A' TO STA. 19+63.00 'PR-A'
2.6': STA. 19+73.00 'PR-A' TO STA. 20+23.00 'PR-A'



GRADING DETAIL AT GUARDRAIL END TREATMENT, TYPE OS (LINE 'PR-A' E 191ST STREET)
NOT TO SCALE



HMA WEDGE DETAIL
NOT TO SCALE

NOTES
1. FOR LIMITS OF GUARDRAIL, SEE SHEET NOS. 5 TO 6.

LEGEND
(26) SEED MIXTURE, R, ON EROSION CONTROL BLANKETS (TYP.)
(46) LINE, THERMOPLASTIC, SOLID, WHITE, 4"
(47) LINE, THERMOPLASTIC, BROKEN, YELLOW, 4"
(K) HMA PAVEMENT TO BE:
165#/SYD HMA, SURFACE TYPE C, ON
330#/SYD HMA, INTERMEDIATE TYPE C, ON
660#/SYD HMA, BASE TYPE C, ON
SUBGRADE TREATMENT, TYPE IC
(S) 10.5" COMPACTED AGGREGATE, NO. 53, ON SUBGRADE TREATMENT, TYPE IC

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY
HIGHWAY DEPARTMENT

TYPICAL SECTIONS

DRAWN: TH	CHK'D. FS		
DESIGNED: TAB	APPRV'D: FS		
DATE: MARCH 2021			
HORIZ. SCALE: 1" = 2'			
VERT. SCALE:			
PROJECT NUMBER			
1863-2016-90			

NO.	REVISION	BY	DATE

03-29-2021
FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER
DLZ INDIANA, LLC

SHEET 3
OF 20
DRAWING NUMBER
2016TS11

Date: March 29, 2021, 10:51am
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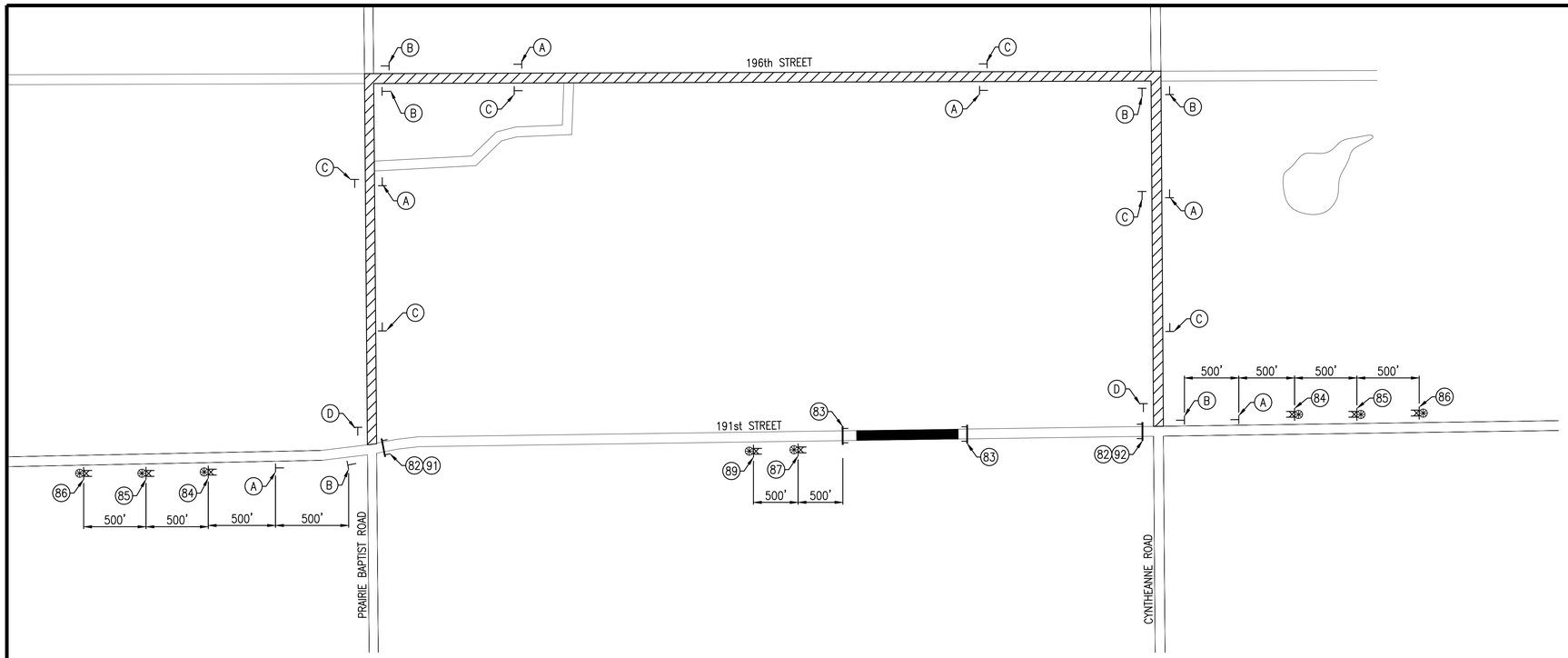
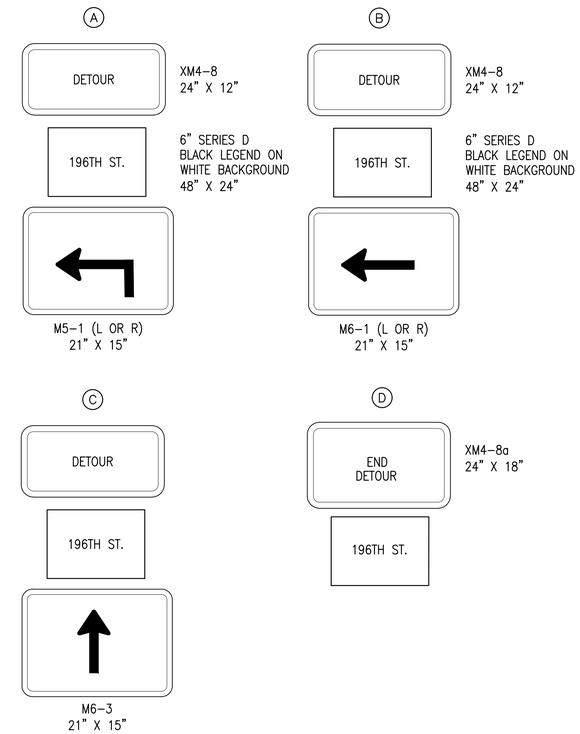
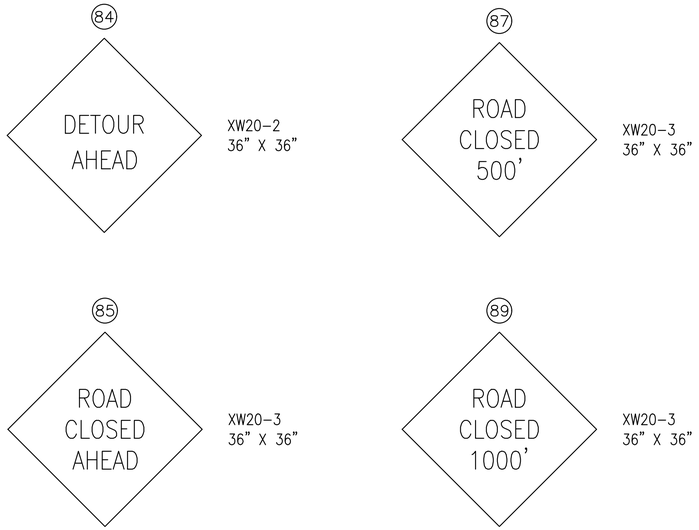
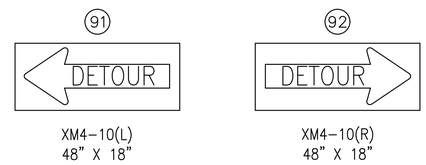


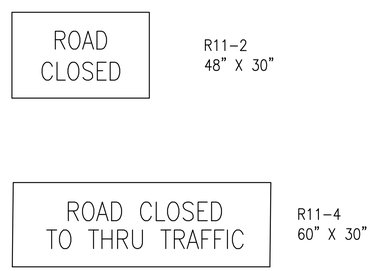
DETOUR ROUTE MARKER ASSEMBLY





CONSTRUCTION SIGNS, TYPE "A"





CONSTRUCTION SIGNS, TYPE "B"

LEGEND

- (82) ROAD CLOSURE SIGN ASSEMBLY WITH R11-4 AND 24 LFT TYPE IIIB BARRICADE
- (83) ROAD CLOSURE SIGN ASSEMBLY WITH R11-2 AND 24 LFT TYPE IIIA BARRICADE
- (84) XW20-2 "DETOUR AHEAD" SIGN
- (85) XW20-3 "ROAD CLOSED AHEAD" SIGN
- (86) XW2-6-A WORKSITE ADDED PENALTY
- (87) XW20-3 'ROAD CLOSED 500 FT' SIGN
- (89) XW20-3 'ROAD CLOSED 1000 FT' SIGN
- (91) XM4-10(L) "DETOUR ARROW LEFT" SYMBOL
- (92) XM4-10(R) "DETOUR ARROW RIGHT" SYMBOL
- (A) ADVANCE TURN DETOUR ROUTE MARKER ASSEMBLY
- (B) DIRECTIONAL DETOUR ROUTE MARKER ASSEMBLY
- (C) CONFIRMING DETOUR ROUTE MARKER ASSEMBLY
- (D) END DETOUR ROUTE MARKER ASSEMBLY
- AREA UNDER CONSTRUCTION
- TYPE 'A' CONSTRUCTION WARNING LIGHT
- TYPE 'B' CONSTRUCTION WARNING LIGHT
- CONSTRUCTION SIGN
- ROUTE MARKER ASSEMBLY
- TYPE III-_ BARRICADE
- DETOUR ROUTE

NOTES

1. ALL SIGNS, BARRICADES, PAVEMENT MARKINGS, ETC., SHALL BE PLACED AND BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. CONTRACTOR SHALL MAINTAIN A DRIVABLE ROADWAY SURFACE, I.E. ASPHALT AND/OR AGGREGATE BASE, TO ALL COMMERCIAL/INDUSTRIAL AND PRIVATE APPROACHES IN ORDER TO PROVIDE ACCESS TO LOCAL AND EMERGENCY VEHICLES AT ALL TIMES.
3. COMPACTED AGGREGATE NO. 53, TEMPORARY FOR DRIVES, SHALL BE USED TO MAINTAIN ACCESS TO PRIVATE AND COMMERCIAL PROPERTIES DURING DRIVEWAY RECONSTRUCTION AT THE DIRECTION OF THE ENGINEER. THE AGGREGATE USED FOR SUCH PURPOSES SHALL BE REUSED WITHIN THE PROJECT WHEN POSSIBLE.
4. ROAD CLOSURE SIGNS (XG20-5) SHALL BE IN PLACE A MINIMUM OF TWO WEEKS PRIOR TO THE ACTUAL ROAD CLOSURE.

CONSTRUCTION SIGN SCHEDULE

ITEM	TOTALS
TYPE 'A' SIGN	
XW2-6-A	2 EACH
XW20-2	2 EACH
XW20-3	4 EACH
TOTAL TYPE 'A' SIGN	8 EACH
TYPE 'B' SIGN	
XM4-10(L)	1 EACH
XM4-10(R)	1 EACH
TOTAL TYPE 'B' SIGN	2 EACH
DETOUR ROUTE MARKER ASSEMBLY	20 EACH
ROAD CLOSURE SIGN ASSEMBLY	4 EACH
TYPE IIIA BARRICADE	48 LFT
TYPE IIIB BARRICADE	48 LFT

SIGN LEGEND

SIGN	DESCRIPTION	SIZE (in x in)
XG20-5	"191st STREET CLOSED ON" (DATE) SIGN	60 X 36
XM4-10(L)	"DETOUR ARROW LEFT" SYMBOL	48 X 18
XM4-10(R)	"DETOUR ARROW RIGHT" SYMBOL	48 X 18
XW2-6-A	WORKSITE ADDED PENALTY	78 X 42
XW20-2	"DETOUR AHEAD" SIGN	48 X 48
XW20-3	"ROAD CLOSED AHEAD" SIGN	48 X 48

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

MAINTENANCE OF TRAFFIC DETOUR MAP

DRAWN: TH CHK'D. FS
DESIGNED: TAB APPRV'D: FS
DATE: MARCH 2021
HORIZ. SCALE: NOT TO SCALE
VERT. SCALE:
PROJECT NUMBER
1863-2016-90

NO.	REVISION	BY	DATE

03-29-2021

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER

DLZ INDIANA, LLC

SHEET 4
OF 20
DRAWING NUMBER
2016MT10

Date: March 29, 2021, 10:51am
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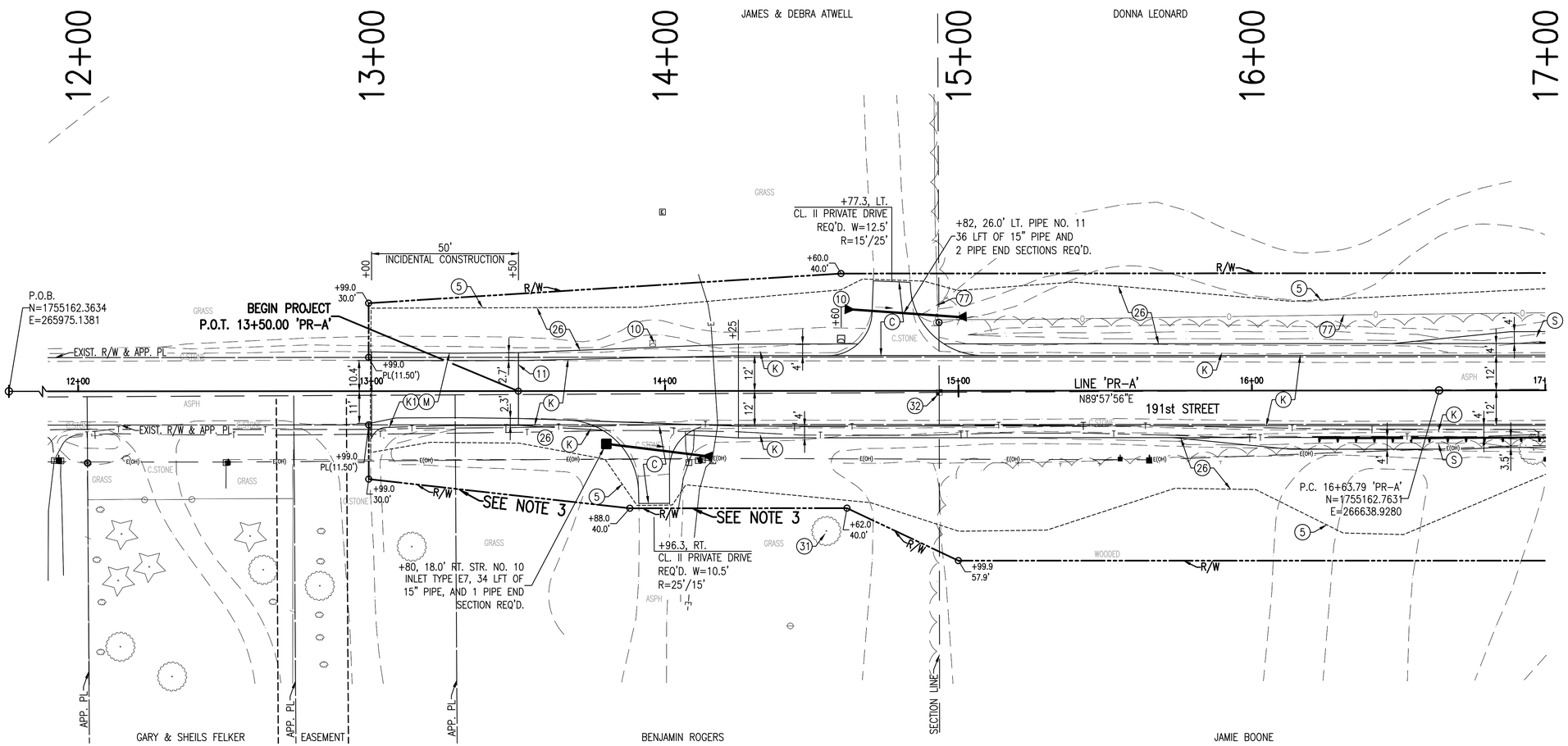

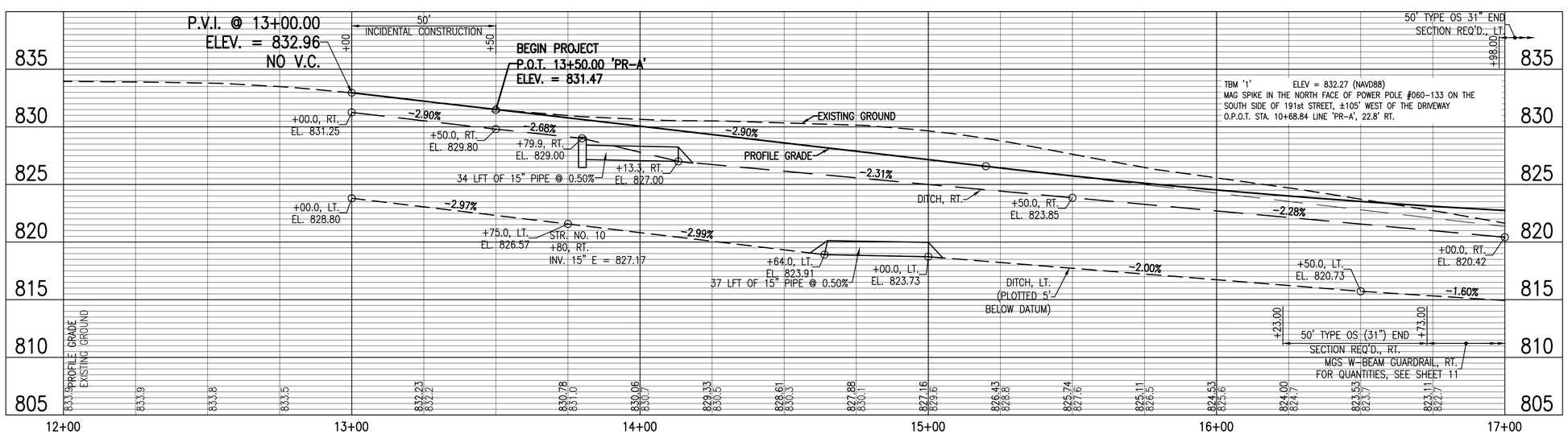

NOTES

1. LINE 'PR-A' TO BE CONSTRUCTED.
2. ALL TOPOGRAPHY AND R/W DESCRIBED FROM LINE 'PR-A' UNLESS OTHERWISE DESCRIBED
3. CONTRACTOR TO FIELD LOCATE PERIMETER DRAIN AT THIS PROPERTY. USE 4" PVC PIPE TO OUTLET DRAIN TO PROPOSED DITCH.

LEGEND

- (5) CONSTRUCTION LIMITS
- (10) MAILBOX, REPLACE
- (11) SAWCUT
- (26) SEED MIXTURE, R, ON EROSION CONTROL BLANKETS (TYP.)
- (31) DO NOT REMOVE TREE AND DO NOT DISTURB AREA AROUND TREE
- (32) MONUMENT SECTION CORNER
- (77) FENCE, REMOVE
- (C) HMA FOR APPROACHES, TYPE B, ON 165#/SYD HMA SURFACE TYPE B, ON 275#/SYD HMA INTERMEDIATE TYPE B, ON 6" COMPACTED AGGREGATE NO. 53, ON SUBGRADE TREATMENT, TYPE II
- (K) HMA PAVEMENT TO BE: 165#/SYD HMA, SURFACE TYPE C, ON 330#/SYD HMA, INTERMEDIATE TYPE C, ON 660#/SYD HMA, BASE TYPE C, ON SUBGRADE TREATMENT, TYPE IC
- (K1) 165#/SYD HMA, SURFACE TYPE C
- (M) MILLING, 1.5"
- (S) 10.5" COMPACTED AGGREGATE, NO. 53, ON SUBGRADE TREATMENT, TYPE IC

DLZ

200 N= 1755148.2036 E= 266120.4238
(pv dwy) W. Mast MB Post
Line 'PR-A'
191st St.
Mag Spike N. Face Pwp. #060-133
Mag Spike NW Face Pwp. #251-224
5/8" Rebar with DLZ Cap Set Flush
O.P.O.T. Sta 11+45.28
14.25' Rt of Line 'PR-A'

HAMILTON COUNTY INDIANA

HAMILTON COUNTY
HIGHWAY DEPARTMENT

PLAN AND PROFILE
LINE 'PR-A'

DRAWN: TH	CHK'D. FS		
DESIGNED: TAB	APPRV'D: FS		
DATE: MARCH 2021			
HORIZ. SCALE:	1" = 20'		
VERT. SCALE:	1" = 5'		
PROJECT NUMBER			
1863-2016-90			

NO.	REVISION	BY	DATE

03-29-2021

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER

DLZ INDIANA, LLC

SHEET 5
OF 20

DRAWING NUMBER
2016PP10

Date: March 29, 2021, 10:52am
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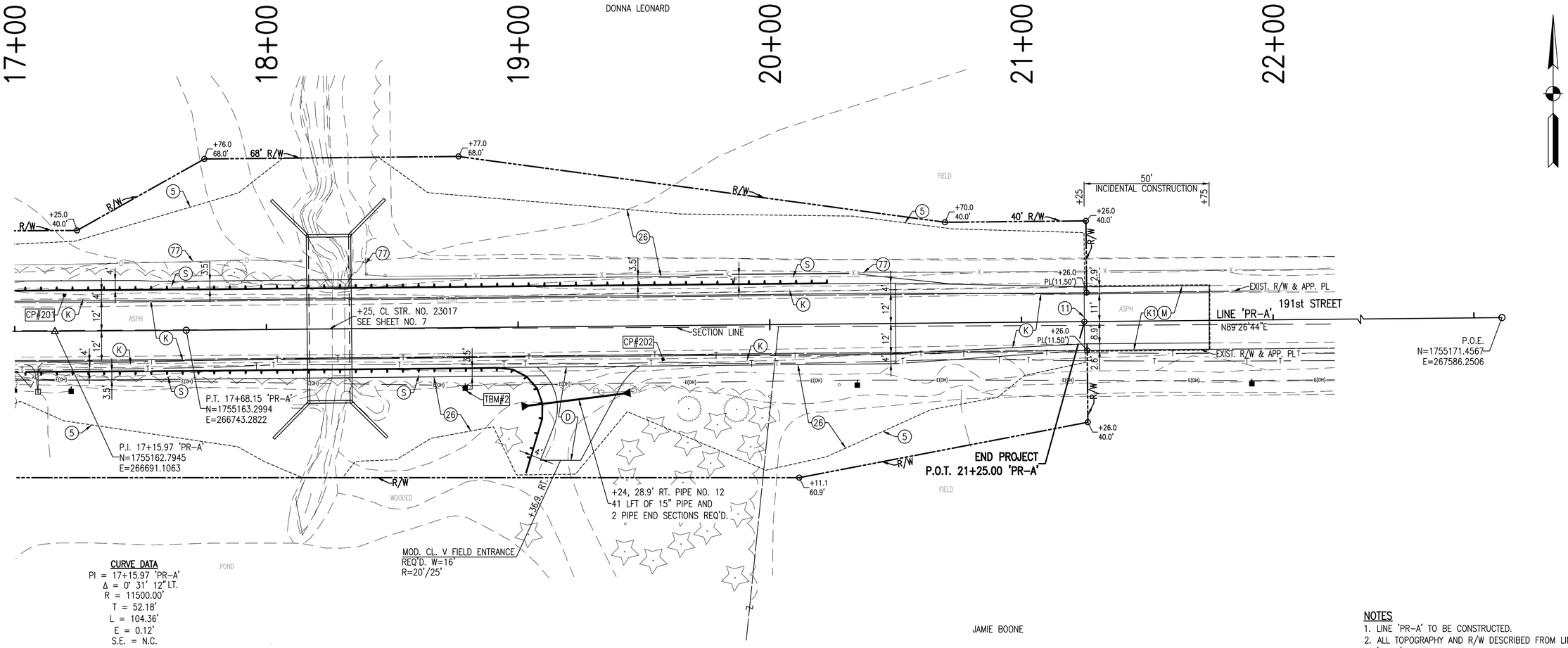
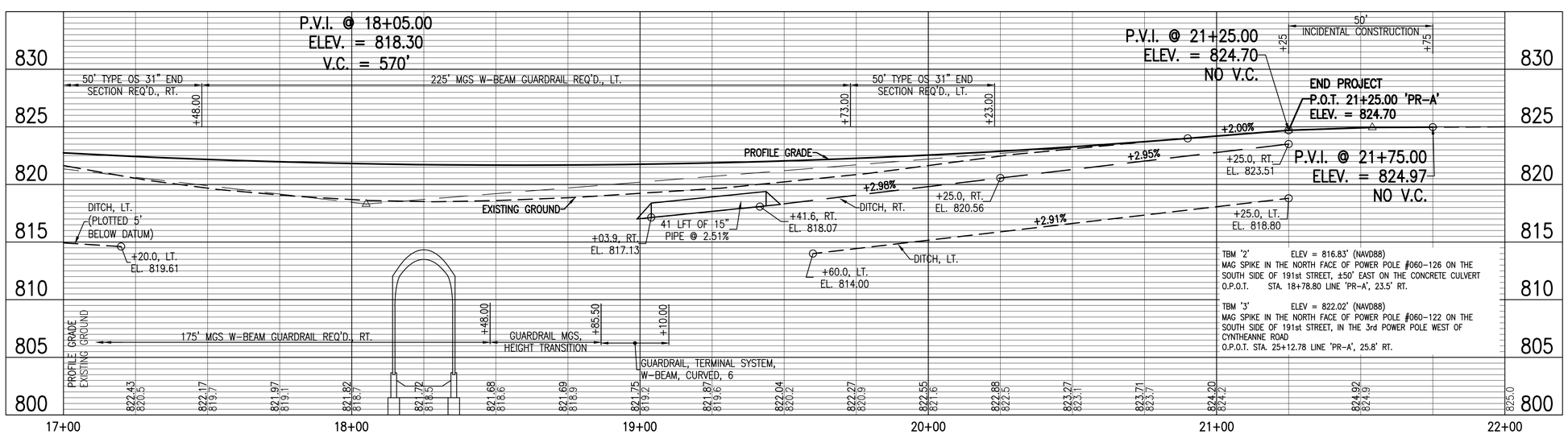


CURVE DATA

PI = 17+15.97 'PR-A'
Δ = 0° 31' 12" LT.
R = 11500.00'
T = 52.18'
L = 104.36'
E = 0.12'
S.E. = N.C.



TBM '2' ELEV = 816.83' (NAVD88)
MAG SPIKE IN THE NORTH FACE OF POWER POLE #060-126 ON THE SOUTH SIDE OF 191st STREET, ±50' EAST ON THE CONCRETE CULVERT
O.P.O.T. STA. 18+78.80 LINE 'PR-A', 23.5' RT.

TBM '3' ELEV = 822.02' (NAVD88)
MAG SPIKE IN THE NORTH FACE OF POWER POLE #060-122 ON THE SOUTH SIDE OF 191st STREET, IN THE 3rd POWER POLE WEST OF CYNTHEANNE ROAD
O.P.O.T. STA. 25+12.78 LINE 'PR-A', 25.8' RT.

NOTES

1. LINE 'PR-A' TO BE CONSTRUCTED.
2. ALL TOPOGRAPHY AND R/W DESCRIBED FROM LINE 'PR-A' UNLESS OTHERWISE DESCRIBED

LEGEND

- (5) CONSTRUCTION LIMITS
- (11) SAWCUT
- (26) SEED MIXTURE, R, ON EROSION CONTROL BLANKETS (TYP.)
- (77) FENCE, REMOVE
- (D) 12" COMPACTED AGGREGATE, NO. 73
- (K) HMA PAVEMENT TO BE: 165#/SYD HMA, SURFACE TYPE C, ON 330#/SYD HMA, INTERMEDIATE TYPE C, ON 660#/SYD HMA, BASE TYPE C, ON SUBGRADE TREATMENT, TYPE IC
- (K1) 165#/SYD HMA, SURFACE TYPE C
- (M) MILLING, 1.5"
- (S) 10.5" COMPACTED AGGREGATE, NO. 53, ON SUBGRADE TREATMENT, TYPE IC

203 N=1755155.9835 E=267398.0282
Line 'PR-A' 191st St.
Mag Nail S. Face of F.P.
Mag Spike NE Face Pwd. #060-123
Mag Spike N. Face Pwd. #060-122
5/8" Rebar with DLZ Cap Set Flush
O.P.O.T. Sta 24+22.79
13.65' Rt of Line 'PR-A'

201 N=1755177.1895 E=266694.8550
Line 'PR-A' 191st St.
Mag Nail S. Face of F.P.
Mag Nail N. Face of Flowthorn
Mag Nail N. Face of Pwd. #060-127
5/8" Rebar with DLZ Cap Set Flush
O.P.O.T. Sta 17+19.86
14.36' Lt of Line 'PR-A'

202 N=1755151.7527 E=266932.7084
Line 'PR-A' 191st St.
Mag Nail S. Face of F.P.
Mag Nail N. Face of Gate Posts
5/8" Rebar with DLZ Cap Set Flush
O.P.O.T. Sta 19+57.45
13.38' Rt of Line 'PR-A'

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

PLAN AND PROFILE LINE 'PR-A'

DRAWN: TH	CHK'D. FS		
DESIGNED: TAB	APPRV'D: FS		
DATE: MARCH 2021			
HORIZ. SCALE: 1" = 20'			
VERT. SCALE: 1" = 5'			
PROJECT NUMBER 1863-2016-90			

NO.	REVISION	BY	DATE

03-29-2021

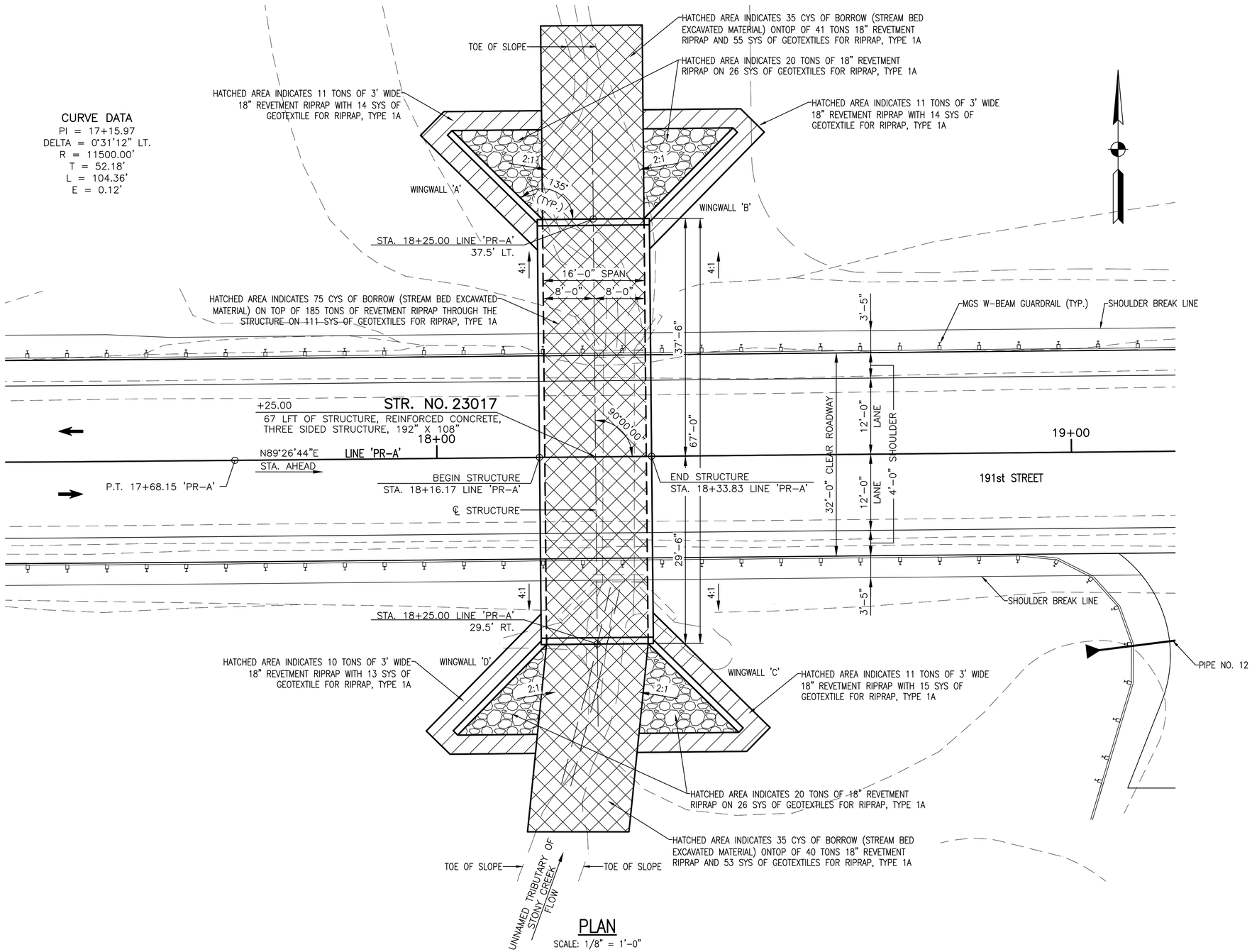
FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER

DLZ INDIANA, LLC

SHEET 6 OF 20

DRAWING NUMBER 2016PP11

Date: March 29, 2021, 2:20pm
File: X:\Projects\GFL\2018\1863\201690 hamilton ss 23017\Civil\Civil\Dwg\2016PP11.dwg Layout Tab: Plan Set

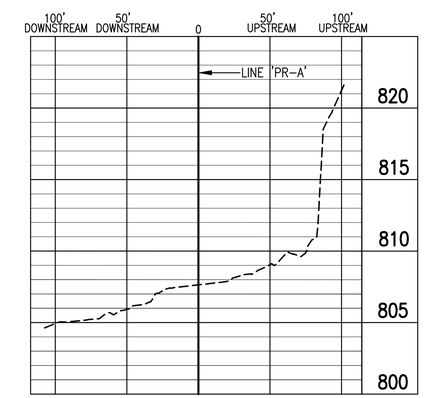


PLAN

SCALE: 1/8" = 1'-0"

HYDRAULIC DATA

DRAINAGE AREA	0.12 SQ. MI.
Q100	243 CFS
EL. @ Q100	809.88 FT.
BACKWATER @ Q100	0.00 FT.
VELOCITY @ Q100	4.50 FPS
GROSS WATERWAY OPENING REQUIRED BELOW Q100 EL. (STRUCTURE)	54.08 SFT
GROSS WATERWAY OPENING PROVIDED BELOW Q100 EL. (STRUCTURE)	58.08 SFT
PROPOSED ROAD OVERFLOW AREA	0.00 SFT
MINIMUM LOW STRUCTURE ELEV. PROVIDED	812.08 FT.
SKEW ANGLE	00°00'00"
EXISTING WATERWAY OPENING BELOW Q100 EL. (STRUCTURE)	16.90 SFT
EXISTING ROAD OVERFLOW AREA	0.00 SFT
EXISTING LOW STRUCTURE ELEV.	813.42 FT.
EXISTING BACKWATER	4.08 FT.



PROFILE OF UNNAMED TRIBUTARY OF STONY CREEK

HORIZONTAL SCALE: 1" = 50', VERTICAL SCALE: 1" = 5'

191ST STREET OVER UNNAMED TRIBUTARY OF STONY CREEK
REINFORCED CONCRETE THREE SIDED STRUCTURE, 192 IN X 108 IN
SKEW: 0°00'00"
CLEAR ROADWAY WIDTH 32'-0"
HAMILTON COUNTY

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN

DRAWN: CJF	CHK'D. JFM		
DESIGNED: JFM	APPRV'D: MAK		
DATE: MARCH 2021			
HORIZ. SCALE: AS NOTED			
VERT. SCALE: AS NOTED			
PROJECT NUMBER 1863-2016-90			

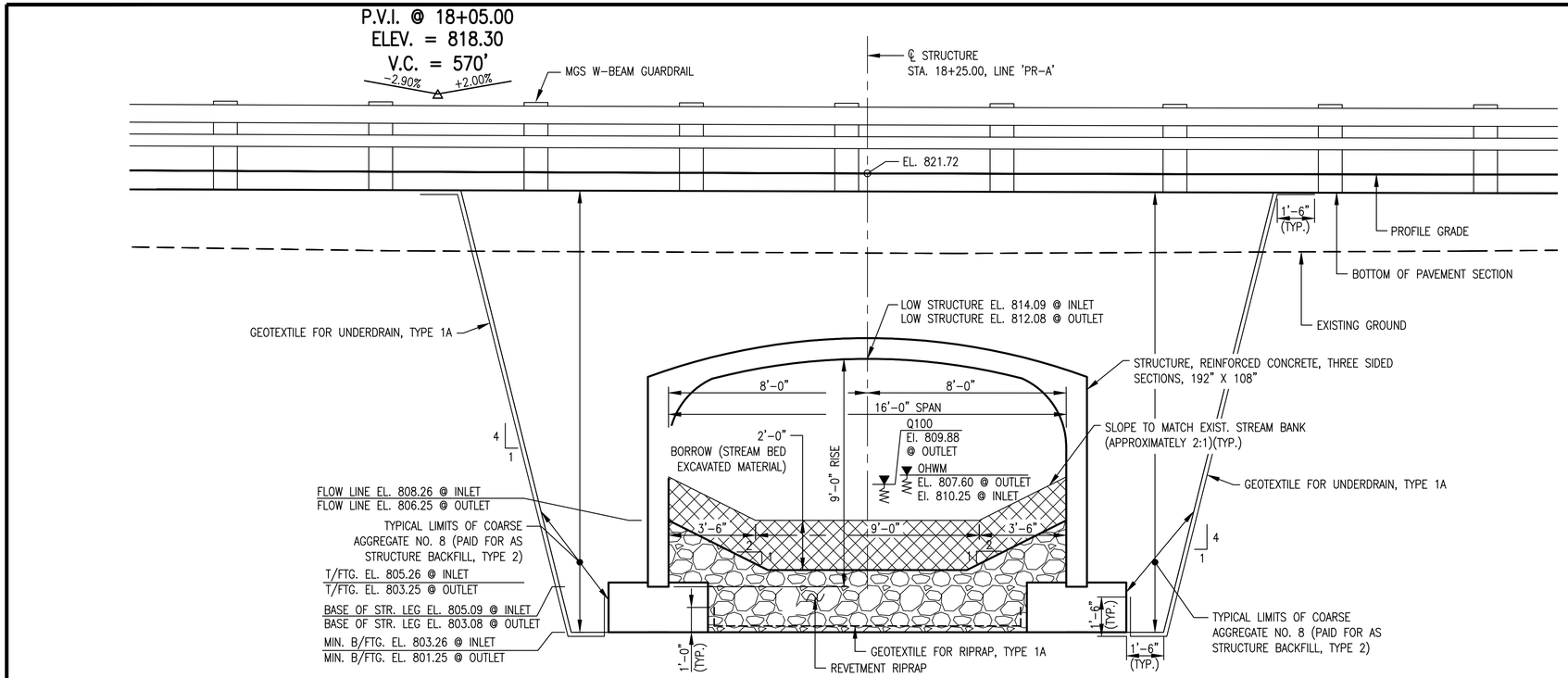
NO.	REVISION	BY	DATE

MICHAEL A. KUMMETH REGISTERED No. 910382 STATE OF INDIANA PROFESSIONAL ENGINEER
03-29-2021
Michael A Kummeth
DLZ INDIANA, LLC

SHEET 7 OF 20

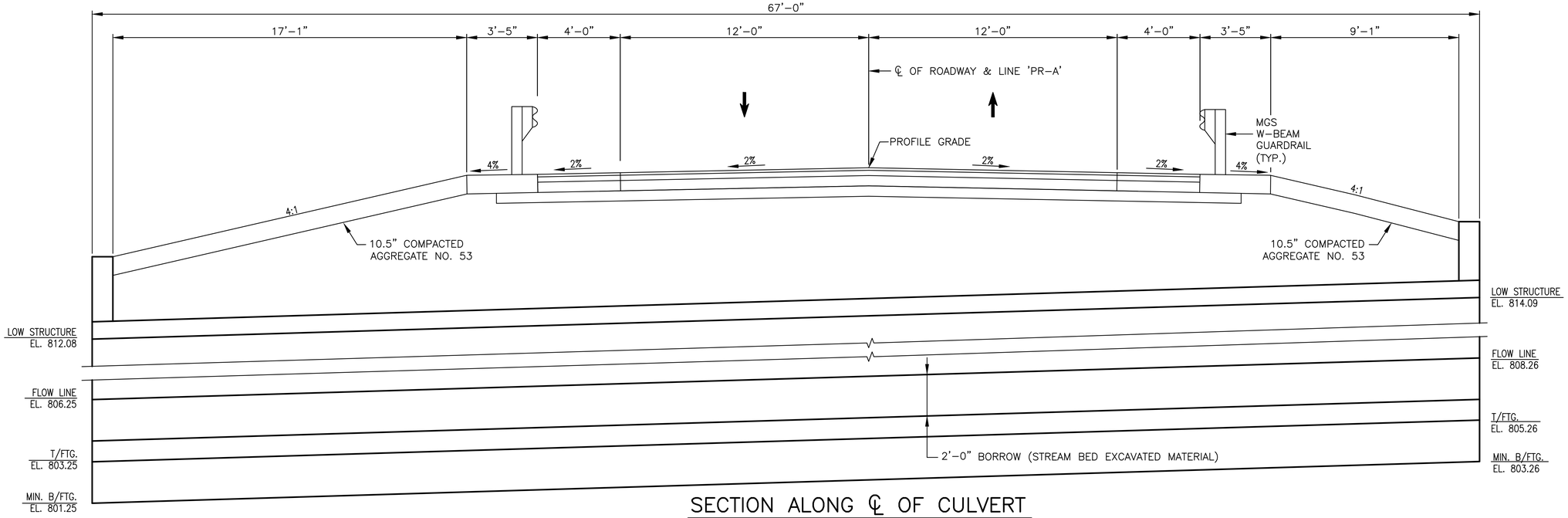
DRAWING NUMBER 2016GP01

Date: March 29, 2021, 10:52am
File: X:\Projects\GFL\2018\1863\201690 hamilton ss 23017\Bridge\Dwg\2016GP01.dwg Layout Tab: Plan Set



SECTION ⊥ TO STRUCTURE

SCALE: 3/8" = 1'-0"



SECTION ALONG ℄ OF CULVERT

SCALE: 3/8" = 1'-0"

DESIGN DATA

ALLOWABLE DESIGN STRESSES:

PRECAST CULVERT

PRECAST CONCRETE	F'C= 5,000 PSI
REINFORCING STEEL (GRADE 60)	FY= 60,000 PSI

CAST-IN-PLACE CONCRETE

REINFORCING STEEL (GRADE 60)	FY= 60,000 PSI
CLASS 'A' CONCRETE	F'C= 3,500 PSI
CLASS 'B' CONCRETE	F'C= 3,000 PSI
CLASS 'C' CONCRETE	F'C= 4,000 PSI

LIVE LOAD:
DESIGNED FOR HL-93 LOADING IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE SPECIFICATIONS 8TH EDITION, 2017 AND ITS SUBSEQUENT INTERIMS.

DEAD LOAD:
ACTUAL DEAD LOAD WILL CONSIST OF THE CULVERT, 7'-11" MAX. OF EARTH COVER, PLUS 35 PSF FUTURE WEARING SURFACE.

GENERAL NOTES

1. PRESENT STRUCTURE AT PROPOSED SITE TO BE REMOVED.
2. AN ALTERNATE THREE SIDED FLAT TOP STRUCTURE WITH A 16'-0" PERPENDICULAR SPAN AND A 9-0" RISE MAY BE SUBSTITUTED FOR THE STRUCTURE SHOWN ON THE PLANS.
3. ALLOWABLE FACTORED SOIL BEARING RESISTANCE FOR FOOTING IS 8,600 PSF.
4. FOR ADDITIONAL SCOUR PROTECTION DETAILS, SEE INDOT STANDARD DRAWING E 723-CCSP-01 AND E 723-CCSP-02.
5. CONTRACTOR SHALL VERIFY THE EXISTING FLOW LINE ELEVATION TO SET THE APPROPRIATE SUMP DEPTH.
6. REINFORCING STEEL COVERING SHALL BE 3" IN FOOTING EXCEPT BOTTOM STEEL WHICH SHALL BE 4" AND 2" IN OTHER PARTS UNLESS NOTED OTHERWISE.
7. WHERE UNSTABLE OR UNSUITABLE SOILS ARE OBSERVED AT THE FOUNDATION OF THE STRUCTURE, UNDERCUT UNSUITABLE SOILS AND REPLACE WITH A MAX OF 18" OF COMPACTED AGGREGATE NO. 53. THE UNDER CUTTING SHOULD EXTEND AWAY FROM THE FOOTING 1/2 THE DEPTH OF UNDERCUTTING.

191ST STREET OVER UNNAMED TRIBUTARY OF STONY CREEK
REINFORCED CONCRETE THREE SIDED STRUCTURE, 192 IN X 108 IN
SKEW: 0°00'00"
CLEAR ROADWAY WIDTH 32'-0"
HAMILTON COUNTY

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN

DRAWN: CJF	CHK'D. JFM		
DESIGNED: JFM	APPRV'D: MAK		
DATE: MARCH 2021			
HORIZ. SCALE: 3/8" = 1'-0"			
VERT. SCALE: 3/8" = 1'-0"			
PROJECT NUMBER 1863-2016-90			

NO.	REVISION	BY	DATE

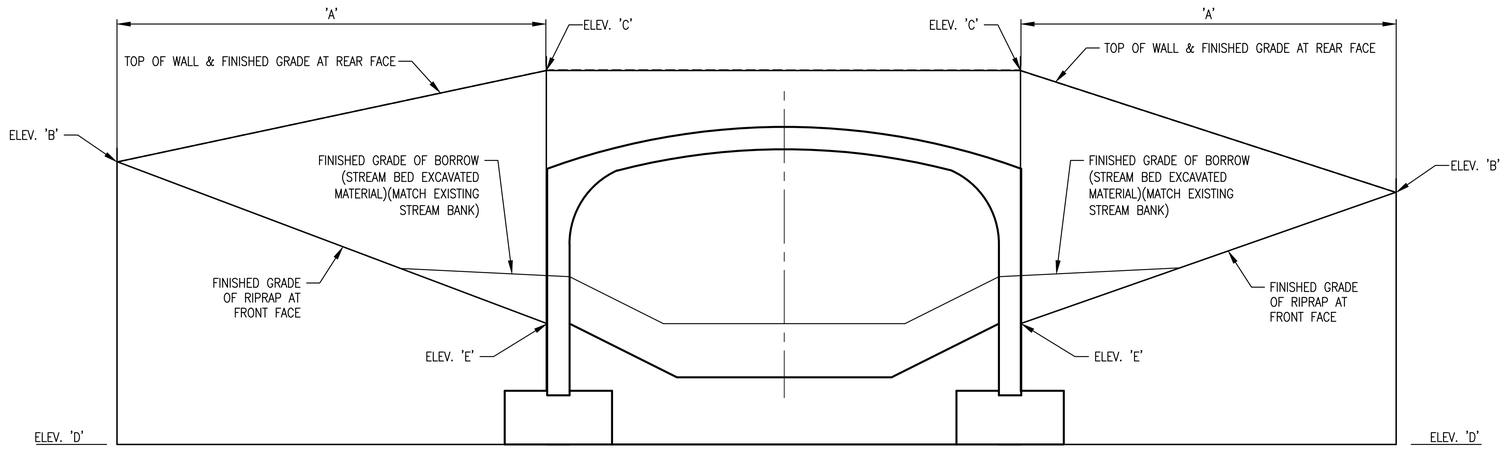
03-29-2021
MICHAEL A. KUMMETH REGISTERED No. 910382 STATE OF INDIANA PROFESSIONAL ENGINEER
DLZ INDIANA, LLC

SHEET 8 OF 20

DRAWING NUMBER 2016GP01

Date: March 29, 2021, 10:53am
File: X:\Projects\GFL\2018\1863\201690 hamilton ss 23017\Bridge\Dwg\2016GP01.dwg Layout Tab: 2016GP01 Gen Plan2

SOIL PARAMETERS FOR WINGWALL DESIGN	
FRICTION ANGLE OF THE BACKFILL (δ)	22°
COHESION OF FOUNDATION SOIL (c)	3,750 PSF
ADHESION BETWEEN FOUNDATION AND CONCRETE (Ca)	2,500 PSF
FACTORED BEARING RESISTANCE (qr)	8,600 PSF
INTERNAL FRICTION ANGLE OF FOUNDATION SOIL	N/A

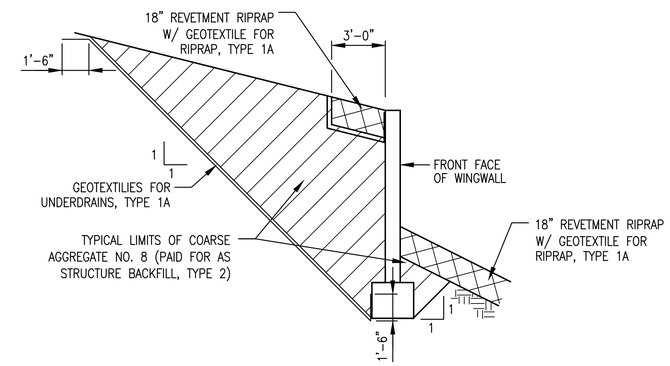


WINGWALL 'B' OR 'D'

WINGWALL 'A' OR 'C'

WINGWALL ELEVATION

SCALE: 3/8" = 1'-0"



WINGWALL BACKFILL LIMITS

SCALE: 1/4" = 1'-0"

WINGWALL ELEVATIONS						
	DIMENSION 'A'	ELEV. 'B'	ELEV. 'C'	ELEV. 'D'	ELEV. 'E'	AREA
WINGWALL 'A'	20'	813.46	817.02	801.25	806.25	280 SFT
WINGWALL 'B'	20'	813.46	817.02	801.25	806.25	280 SFT
WINGWALL 'C'	20'	815.47	819.03	803.26	808.26	280 SFT
WINGWALL 'D'	20'	815.47	819.03	803.26	808.26	280 SFT

RIPRAP AND GEOTEXTILE SUMMARY TABLE

LOCATION						GEOTEXTILE			RIPRAP, REVENTMENT
FROM STATION	TO STATION	DESCRIPTION	LEFT	CROSS	RIGHT	FOR SUBGRADE, TYPE 2	FOR RIPRAP, TYPE 1A	FOR UNDERDRAIN, TYPE 1A	
						SYS	SYS	SYS	TON
Line 'PR-A'									
Undistributed for Unsuitable Soil Under Roadway				X		159			
17+97.91	18+17.00	Behind Wingwall A	X				14		11
17+97.91	18+16.17	Behind Wingwall D			X		13		10
18+33.00	18+52.09	Behind Wingwall B	X				14		11
18+31.09	18+52.09	Behind Wingwall C			X		15		11
18+02.86	18+17.00	In Front of Wingwall A	X				13		10
18+02.86	18+17.00	In Front of Wingwall D			X		13		10
18+33.00	18+47.14	In Front of Wingwall B	X				13		10
18+31.42	18+47.14	In Front of Wingwall C			X		13		10
18+13.71	18+33.00	Stream Bed at Inlet			X		53		40
18+17.00	18+33.00	Stream Bed Throgh Str.		X			111		185
18+17.00	18+33.00	Stream Bed at Outlet	X				55		41
		Under Fill for Structure		X				335	
		Under Fill for Wingwall A	X					51	
		Under Fill for Wingwall B	X					51	
		Under Fill for Wingwall C			X			50	
		Under Fill for Wingwall D			X			50	
TOTALS						159	327	537	349

DLZ

HAMILTON COUNTY — INDIANA

HAMILTON COUNTY HIGHWAY DEPARTMENT

STRUCTURE DETAILS

DRAWN: CJF	CHK'D. JFM		
DESIGNED: JFM	APPRV'D: MAK		
DATE: MARCH 2021			
HORIZ. SCALE:	AS NOTED		
VERT. SCALE:	AS NOTED		
PROJECT NUMBER			
1863-2016-90			

NO.	REVISION	BY	DATE

03-29-2021

MICHAEL A. KUMMETH REGISTERED No. 910382 STATE OF INDIANA PROFESSIONAL ENGINEER

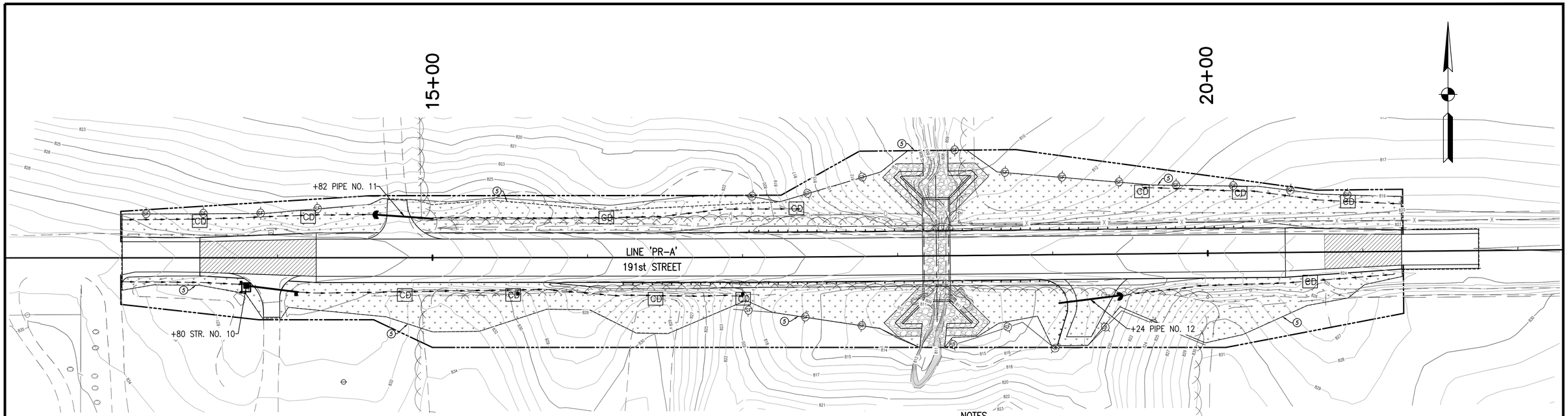
Michael A Kummeth

DLZ INDIANA, LLC

SHEET 9 OF 20

DRAWING NUMBER 2016GP01

Date: March 29, 2021, 10:53am
File: X:\Projects\GFL\2018\1863\201690 hamilton ss 23017\Bridge\Dwg\2016GP01.dwg Layout Tab: 2016BD01 STRUCTURE DETAILS



LEGEND

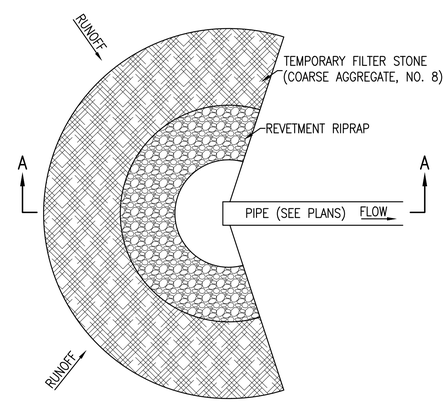
- (5) CONSTRUCTION LIMITS
- (SF) TEMPORARY PERIMETER PROTECTION, SILT FENCE (SEE INDOT STANDARD DWG. NO. 205-TECD-11)
- TEMPORARY INLET PROTECTION, FILTER BAG INSERT (SEE INDOT STANDARD DWG. NO. 205-TECD-04)
- CD TEMPORARY CHECK DAM, REVETMENT RIPRAP (SEE STANDARD DRAWING NO. E205-TECD-06)
- SEDIMENT CONTROL ROCK HORSESHOE (SEE DETAIL, THIS SHEET)
- TEMPORARY EROSION CONTROL PERIMETER CONSTRUCTION ENTRANCE (SEE STANDARD DRAWING NO. E205-TECD-12)
- TEMPORARY EROSION CONTROL BLANKET
- PERMANENT 18" REVETMENT RIPRAP
- DITCH FLOW LINE

NOTES

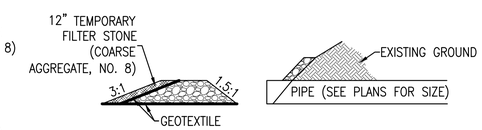
1. THE CONTRACTOR SHALL INSTALL ALL CHECK DAMS AND SILT FENCES SHOWN ON THE PLANS PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. CONTRACTOR SHALL SEED/MULCH BANKS OF PROPOSED DITCH AS SOON AS GRADE IS ESTABLISHED.
3. CONTRACTOR SHALL KEEP AN UP-TO-DATE RECORD ONSITE OF ANY ALTERATIONS TO THE STORM WATER POLLUTION PREVENTION PLAN.
4. CONTRACTOR SHALL NOTIFY THE HAMILTON COUNTY SOIL AND WATER CONSERVATION DISTRICT AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.
5. THE CONTRACTOR HAS FULL RESPONSIBILITY OF INSPECTING THE EROSION CONTROL MEASURES ON A DAILY BASIS. AT A MINIMUM, PRACTICES NEED TO BE INSPECTED WEEKLY, WITHIN 24 HOURS AFTER EACH STORM EVENT OVER 1/2" AND DAILY DURING PROLONGED STORM EVENTS. FAILING PRACTICES SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
6. ANY SEDIMENT TRACKED OUT OF PROJECT AREA ONTO PUBLIC STREETS MUST BE CLEANED UP THE SAME DAY IT OCCURS.
7. CONTRACTOR SHALL SUBMIT CONSTRUCTION STAGING PLAN DETAILING ALL VEHICLE AND EQUIPMENT PARKING AREAS, FUELING LOCATIONS, CONSTRUCTION TRAILER PLACEMENT, AND DESIGNATED CONCRETE TRUCK WASHOUT AREAS.
8. A CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ANY STAGING AREAS FOR THE PROJECT. (SEE STANDARD DRAWING NO. E205-TECD-12 FOR CONSTRUCTION ENTRANCE DETAILS)
9. IF CONSTRUCTION WINDOW EXTENDS THROUGH WINTER, TEMPORARY MULCHING AS SPECIFIED IN CHAPTER 7 OF THE INDIANA STORM WATER QUALITY MANUAL SHALL BE REQUIRED.
10. TEMPORARY SEEDING SHALL BE INSTALLED ON ANY CLEARED AREA THAT WILL BE UNDISTURBED FOR 15 DAYS OR MORE.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND CONTAIN CONCRETE WASHOUT AREAS AND STAGING AREAS.
12. CONTRACTOR IS REQUIRED TO PROVIDE A SPILL PREVENTION AND CONTAINMENT PLAN PRIOR TO BEGINNING CONSTRUCTION.
13. CONTRACTOR IS REQUIRED TO SUBMIT A CONSTRUCTION SEQUENCE PLAN TO HAMILTON COUNTY SOIL AND WATER CONSERVATION DISTRICT PRIOR TO ANY LAND DISTRIBUTING ACTIVITIES.
14. PERMANENT STABILIZATION IS REQUIRED 7 DAYS AFTER FINAL GRADE.

EROSION CONTROL TABLE

STATION		LOCATION LEFT	LOCATION MEDIAN	LOCATION RIGHT	Silt Fence	SEDIMENT REMOVE	TEMPORARY, REVETMENT RIPRAP	TEMPORARY FILTER STONE	TEMPORARY SEED	TEMPORARY MULCH	TEMPORARY FERTILIZER	NO 2 STONE	TEMPORARY GEOTEXTILE	INLET PROTECTION	REMARKS
					LFT	CYS	TON	TON	LBS	TON	TON	TON	SYS	EACH	
Line 'PR-A'															
13+50.		X				10	7	3					20		
13+80.				X		1.5								1	Filter Sock
14+20.		X				10	7	3					20		
14+64.						10	11	5					28		Temporary Culvert Protection
14+82.				X		10	7	3					20		
15+52.				X		10	7	3					20		
16+12.		X				10	7	3					20		
16+44.				X		10	7	3					20		
17+00.				X		10	7	3					20		
17+15.		X				10	7	3					20		
19+60.		X				10	7	3					20		
19+60.				X		10	11	5					28		Temporary Culvert Protection
20+25.		X				10	7	3					20		
20+66.				X		10	7	3					20		
20+90.		X				10	7	3					20		
Construction Entrance			X									100.00	235		At 13+20 and 20+75
13+00.	14+71.	X			176										
17+20.	18+18.	X			112										
18+24.	21+25.	X			307										
17+00.	18+13.5			X	118										
18+23.	19+76.			X	187										
TOTAL COLUMN THIS SHEET					900	142	106	46	225	4	1	100	531	1	



PLAN VIEW



SECTION A-A

NOTES

1. THE ROCK HORSESHOE IS A SEDIMENT CONTROL PROTECTION METHOD USED AROUND A CULVERT INLET TO ALLOW SEDIMENTS FROM ON-SITE RUNOFF TO DROP OUT
2. CULVERT PROTECTION SHALL NOT BE USED IN STREAMS OR OTHER NATURAL WATER RESOURSES.
3. CULVERT PROTECTION SHOULD NOT BE USED AT THE CULVERT OUTLET.
4. ONE LAYER OF GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE AGGREGATE LAYER AND RIPRAP LAYER AND ANOTHER LAYER OF GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE ENTIRE AREA COVERED RIPRAP.

SEDIMENT CONTROL ROCK HORSESHOE DETAIL

DLZ

HAMILTON COUNTY — HAMILTON COUNTY HIGHWAY DEPARTMENT — INDIANA

EROSION CONTROL PLAN

DRAWN: TH CHK'D. FS
DESIGNED: TAB APPRV'D: FS
DATE: MARCH 2021
HORIZ. SCALE: 1" = 40'
VERT. SCALE: N/A
PROJECT NUMBER 1863-2016-90

NO.	REVISION	BY	DATE

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER
03-29-2021
DLZ INDIANA, LLC

SHEET 10 OF 20
DRAWING NUMBER 2016EC10

Date: March 29, 2021, 10:53am
File: X:\Projects\GFL\2018\1863\201690 hamilton ss 23017\Civil\Civil\Dwg\2016EC10.dwg Layout Tab: Plan Set

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	Concrete sidewalk	HMA FOR APPROACHES, TYPE B		MILLING, ASPHALT	HMA FOR ROADWAY PAVEMENT: HMA Surface, Type C	HMA Intermediate, Type C	HMA Base, Type C	HMA FOR SHOULDERS: HMA Surface, Type C	HMA Intermediate, Type C	HMA Base, Type C	ASPHALT FOR TACK COAT	JOINT ADHESIVE, SURFACE	JOINT ADHESIVE, INTERMEDIATE	LIQUID ASPHALT SEALANT	COMPACTED AGGREGATE NO. 53		COMPACTED AGGREGATE NO. 73	SUBGRADE TREATMENT, TYPE IC	SUBGRADE TREATMENT, TYPE II	REMARKS
								DEPTH											DEPTH		DEPTH			
		'W'	'L'	'R'	4"	165#/SYD	275#/SYD	1.5"	165#/SYD	330#/SYD	660#/SYD	165#/SYD	330#/SYD	660#/SYD					6"	10.5"	12"			
		FEET	FEET	FEET	SYS	TONS	TONS	SYS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	LFT	LFT	LFT	CYS	TON	TON	SYS	SYS	
LINE "PR-A"																								
13+00 to 13+50	Mainline, Milling	Varies						141	10			3				50		50						
13+50 to 14+25	Mainline	Varies							16	32	64					75	75	75						
14+25 to 20+50	Mainline	24							145	289	578	55	110	220	2	625	625	625		194		3179		
20+50 to 21+25	Mainline	Varies							16	32	64					75	75	75						
21+25 to 21+75	Mainline, Milling	Varies						140	10			2				50		50						
DRIVES																								
LINE "PR-A"																								
13+96.3, Rt.	Class II Private Drive	10.5	27.9	25'/15'		5	8												9				33	
14+77.3, Lt.	Class II Private Drive	12.5	25.7	15'/25'		5	8												10				35	
19+36.9, Rt.	Mod. Class V Field Entrance	14	38.8	20'/25'																	62			
TOTAL					0	10	16	281	197	353	706	60	110	220	2	875	775	875	19	194	62	3179	68	

PIPE MATERIAL TABLE

			10	11	12
	STRUCTURE NUMBER - **LINE PR-A**		**10**	**11**	**12**
	PIPE TYPE / SHAPE (CIR or DEF)		**2 / Cir.**	**2 / Cir.**	**2 / Cir.**
INT. DES.	SMOOTH PIPE SIZE		**15"**	**15"**	**15"**
	CORRUGATED PIPE SIZE				
	SEMI-SMOOTH PIPE SIZE				
CONC.	RCP/RCHEP (S)	CLASS	II	II	II
		$D_{0.01}$ RATING	1000	1000	1000
	NON-REINFORCED CONCRETE PIPE, CLASS 3 (S)		X		X
PLASTIC PIPE	CORRUGATED PE PIPE, TYPE S (S)*		X		X
	PROFILE WALL (RIBBED) PE PIPE (S)*				
	PROFILE WALL (CLOSED) PE PIPE (S)*				
	SMOOTH WALL PE PIPE (S)* / MAXIMUM DR		26		26
	CORRUGATED PP PIPE (S)				
	PROFILE WALL PVC PIPE (S)		X		X
	SMOOTH WALL PVC PIPE (S)*		X		X
CLAY	VITRIFIED CLAY PIPE, EXTRA STRENGTH (S)		X		X
CORRUGATED STEEL PIPE / PIPE-ARCH	FULLY BIT. PAVED & LINED (S)	CORR.PROFILE			
		THICKNESS			
	ZINC COATED (C)	CORR. PROFILE			
		THICKNESS			
	ZINC COATED W/ BPI (C)	CORR. PROFILE			
		THICKNESS			
	ALUM. COATED TYPE 2 (C)	CORR. PROFILE			
		THICKNESS			
	POLYMER PRECOATED GALVANIZED (C)	CORR. PROFILE			
		THICKNESS			
	POLYMER PRECOATED GALVANIZED CORRUGATED STEEL PIPE TYPE 1A (S)	CORR. PROFILE			
		THICKNESS			
COR. ALUM. PIPE/ P-ARCH	CORRUGATED ALUM. ALLOY (C)	CORR. PROFILE			
		THICKNESS			
	CORRUGATED ALUM. ALLOY W/ BPI (C)	CORR. PROFILE			
		THICKNESS			
SPIRAL RIB STEEL PIPE	ZINC COATED (SS)	RIB PROFILE			
		THICKNESS			
	ZINC COATED W/ BPI (SS)	RIB PROFILE			
		THICKNESS			
	ALUM. COATED TYPE 2 (SS)	RIB PROFILE			
		THICKNESS			
	POLYMER PRECOATED GALVANIZED (SS)	RIB PROFILE			
		THICKNESS			
STRUCTURAL PLATE PIPE / PIPE-ARCH	STR. PLATE ALUMINUM ALLOY (C)	CORR. PROFILE			
		THICKNESS			
	STR. PLATE ALUMINUM ALLOY W/ CFP (C)	CORR. PROFILE			
		THICKNESS			
	STR. PLATE STEEL (C)	CORR. PROFILE			
		THICKNESS **			
	STR. PLATE STEEL W/ CFP (C)	CORR. PROFILE			
		THICKNESS **			

STRUCTURE DATA TABLE

NOTES:
1. CONTRACTOR TO FIELD VERIFY UPSTREAM INVERT BEFORE PLACING.

* TOP OF CASTING ELEVATIONS FOR CASTINGS IN CURB LINE ARE CALCULATED 0.02 FT BELOW THE GUTTER LINE ELEVATION.

STRUCTURE NUMBER	LOCATION: STATION	LEFT	RIGHT	CROSS	OFFSET	SIZE	PIPE TYPE	DESCRIPTION: MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE	LENGTH	SKEW	FLOWLINE: COVER	UPSTREAM INVERT	DOWNSTREAM INVERT	TOP OF CASTING	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL		FLOWABLE BACKFILL		REVETMENT RIP-RAP	CONCRETE, CLASS A, FOR STR.	VIDEO INSPECTION	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION		CONNECT TO STR.	NOTES/REMARKS
					FT	IN			LFT		FT	ELEV.	ELEV.	ELEV.	YR				TYPE	CYS	TYPE	CYS	TON	EA	LFT	EA	TYPE	SLOPE	EA	SLOPE	EA		
LINE	PRA																																
10	13+80		X		20	15	2	INLET TYPE E-7	34		1.2	827.17	827.00	829.11	75	NA	7.0	2	1	3						1						OUT	
11	14+82	X			26	15	2	CULVERT	36		1.1	823.91	823.73		75	NA	7.0	2	1	3						2						OUT	
23017	18+25			X		192 x 108		3-SIDED BOX	67		7.1	808.26	806.25		75	NA	7.0		2	1180													
12	19+28		X		30	15	2	CULVERT	40		2.0	817.60	816.00		75	NA	7.0	2	1	4						2						OUT	
Total																			1	10						5							

R/W MARKERS

STATION	OFFSET ft	EACH
LINE 'PR-A'		
12+99, Rt & Lt	30.00	2
13+88, Rt	40.00	1
14+60, Lt	40.00	1
14+62, Rt	40.00	1
14+99, Rt	57.90	1
17+25, Lt	40.00	1
14+76, Lt	68.00	1
18+77, Lt	68.00	1
20+11.1, Rt	60.90	1
20+70, Lt	40.00	1
21+26, Rt & Lt	40.00	2
TOTAL		13

GUARDRAIL SUMMARY TABLE

STATION		LOCATION: LEFT	MEDIAN	RIGHT	MGS W-BEAM GUARDRAIL: STANDARD POST AT 6.25 FEET SPACING	TIMBER GUARDRAIL	TYPE OS 31" END TREATMENT	GUARDRAIL MGS, HEIGHT TRANSITION	CURVED END TREATMENT	CURVED W-BEAM GUARDRAIL SYSTEM: TERMINAL END		CONNECTOR SYSTEM		REMARKS
					LFT	LFT	EACH	EACH	LBS	TYPE	EACH	TYPE	EACH	
Line 'PR-A'														
16+23.0	16+73.0			X			1.00							
1673.0	1848.0			X	175									
1848.0	1885.5			X				1						
1885.5	1910.0			X						6	1			
1898.0	1748.0	X					1.00							
1748.0	1973.0	X			225									
1973.0	2023.0	X					1.00							
Totals					400	0	3	1	0	6	1	0	0	

MAILBOXES

LT./RT.	C/L BOX STATION	DESCRIPTION	ASSEMBLY REQ'D.: SINGLE	DOUBLE	
LT	13+96		1		
LT	14+60		1		
		TOTAL	2	0	

SURVEY MONUMENTS

STATION	EACH: Type B	Type C	SECTION CORNER
LINE 'PR-A'			
P.C. 16+63.79	1		
P.I. 17+15.97	1		
P.T. 17+68.15	1		
14+93.43			1
TOTAL	3		1

EARTHWORK SUMMARY TABLE

Common Excavation		
LINE 'PR-A' 191st Street (Sta. 13+00 to 21+50)	2,117	CYS
Additional Asphalt Pavement Removed Outside of Excavation Limits	139	CYS
Subtotal Common Excavation	2,256	CYS
Common Excavation (Undistributed)**	40	CYS
Total Common Excavation	**2,296**	**CYS**
Fill		
LINE 'PR-A' 191st Street (Sta. 13+00 to 21+50)	2,070	CYS
Additional Fill for Asphalt Pavement Removed Outside of Excavation Limits	139	CYS
Fill for Structure Sump (No Direct Payment)*	145	CYS
Subtotal Fill	2,210	CYS
Subtotal + 25% Swell	2,763	CYS
Less Usable Common Excavation (Assumed 50% of Total Common Excavation)	1,148	CYS
Total Borrow Required	**1,615**	**CYS**
Structure Backfill Type 1	10	CYS
Structure Backfill Type 2 (Coarse Aggregate No. 8)	1,180	CYS
Benching (No Direct Payment)	570	CYS
Compacted Aggregate, No. 53 (Undistributed)***	14	CYS
Compacted Aggregate, No. 5 (Undistributed)**	40	CYS
Geotextile for Subgrade, Type 2B (Undistributed)**	159	SYS

*This fill shall consist of the material excavated from the stream bed.
**Per Geotechnical Report for unsuitable soil under roadway. Approximately 5% of subgrade area.
***Per Geotechnical Report for unsuitable soil under structure footings.

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MISCELLANEOUS TABLES

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DATE: MARCH 2021
HORIZ. SCALE: N/A
VERT. SCALE: N/A
PROJECT NUMBER 1863-2016-90

NO.	REVISION	BY	DATE

FAISAL SALEEM REGISTERED No. 10707439 STATE OF INDIANA PROFESSIONAL ENGINEER
03-29-2021
DLZ INDIANA, LLC

SHEET 11 OF 20
DRAWING NUMBER 2016MC10

Date: March 29, 2021, 10:53am
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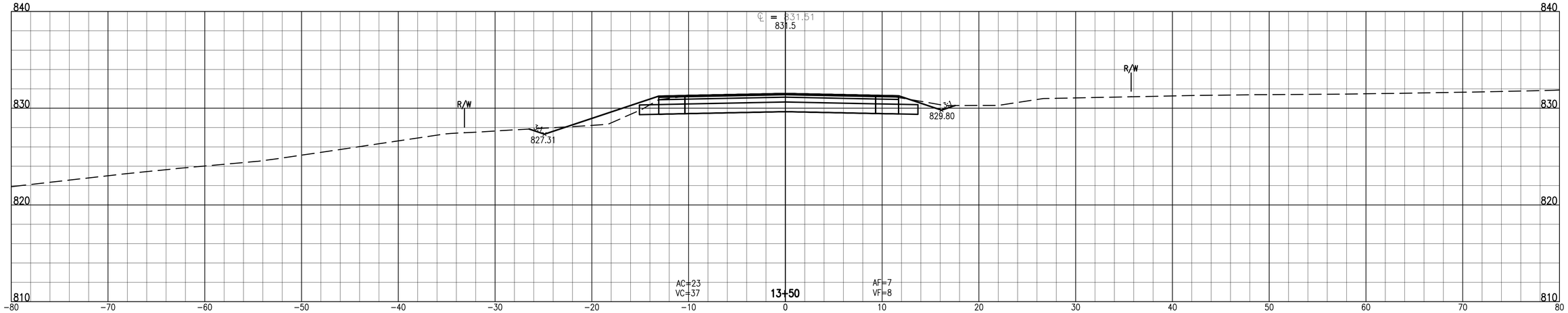

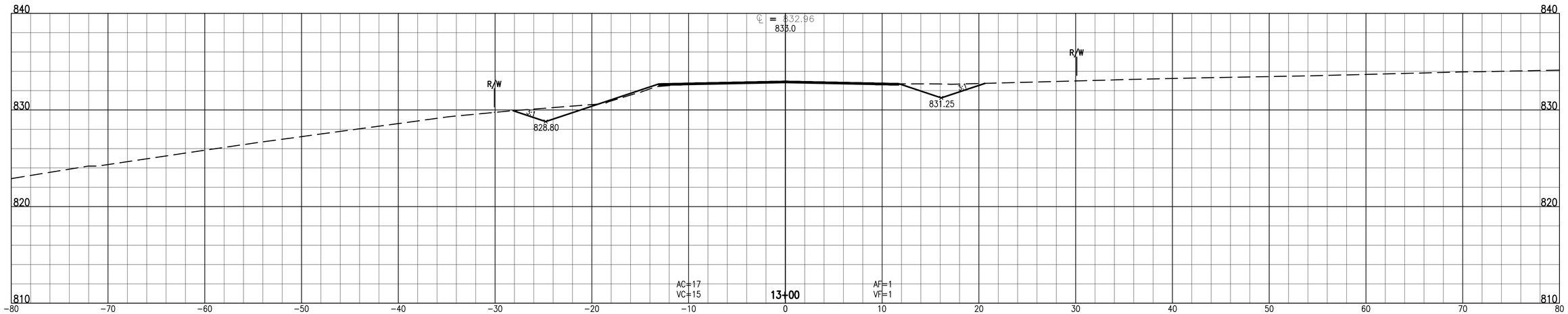

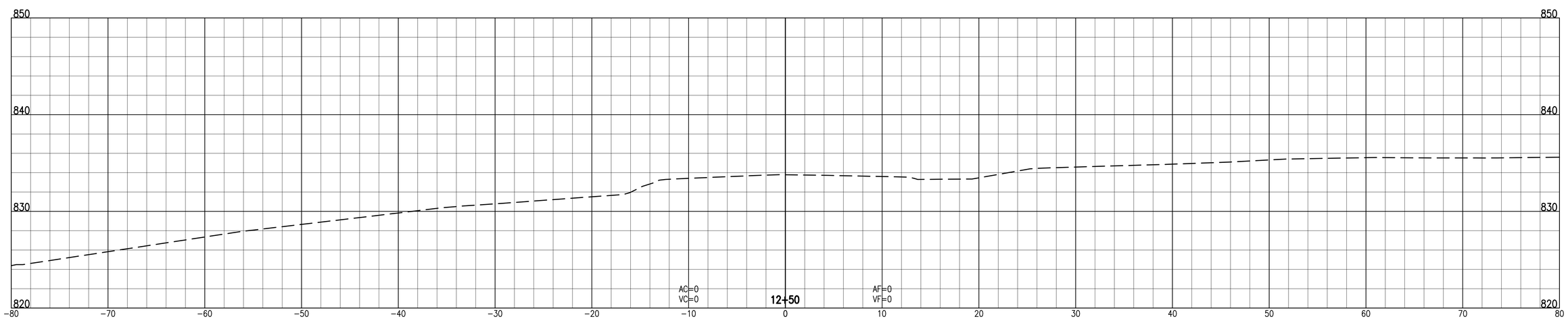

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INDIANA

CROSS SECTIONS
LINE 'PR-A'

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2016CS10

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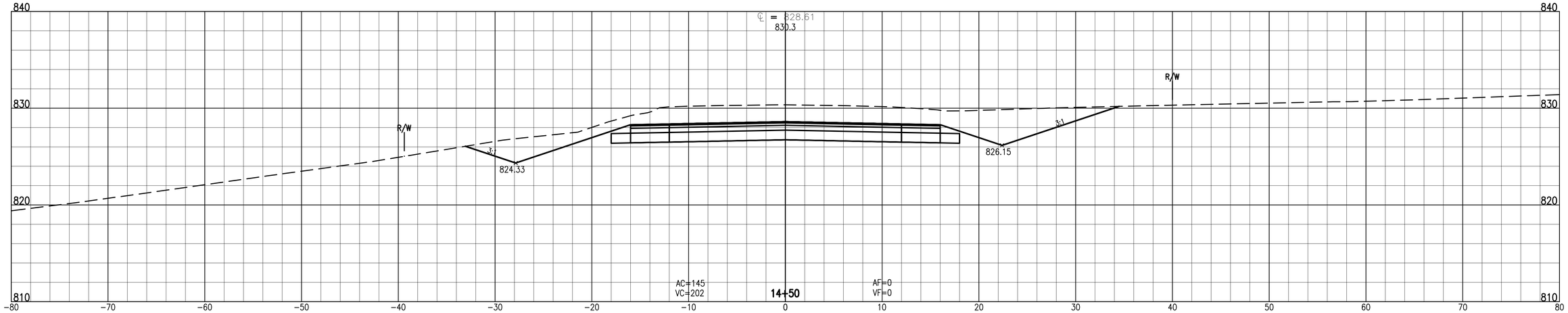

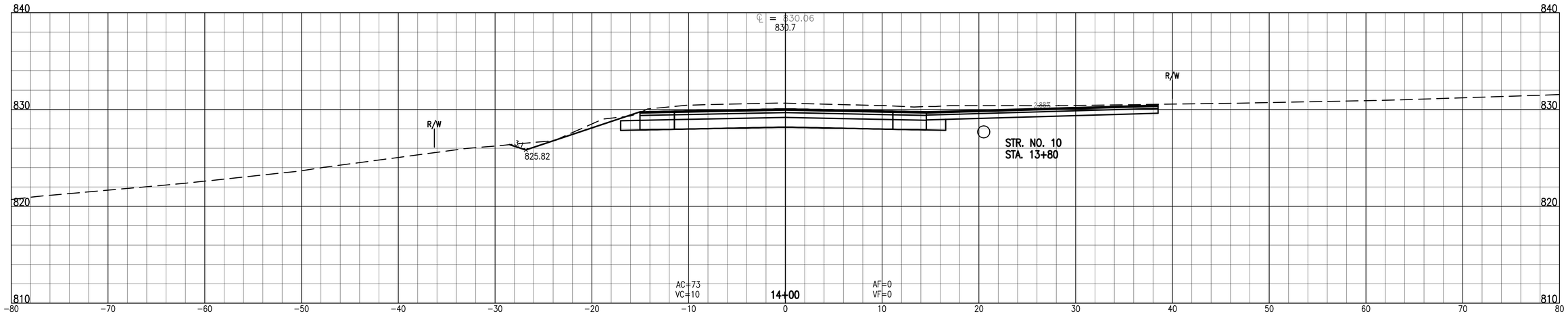

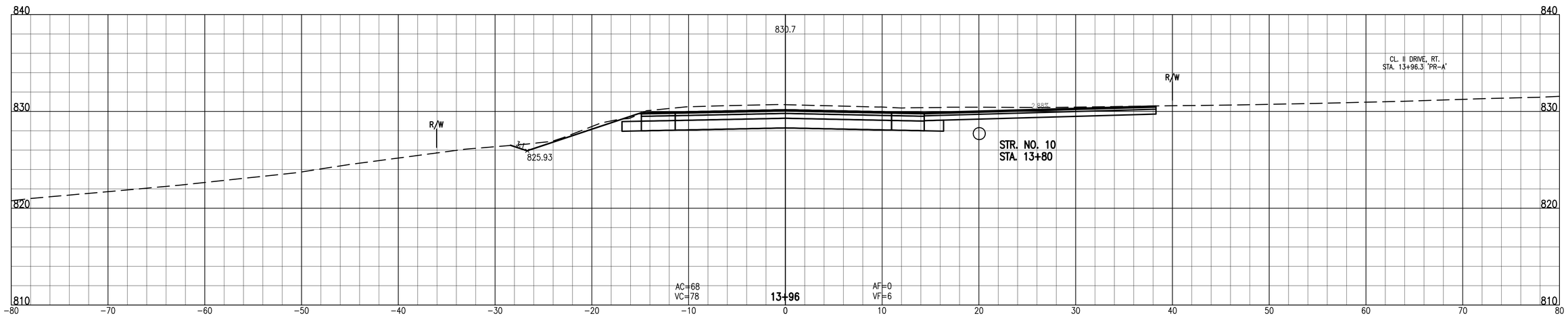

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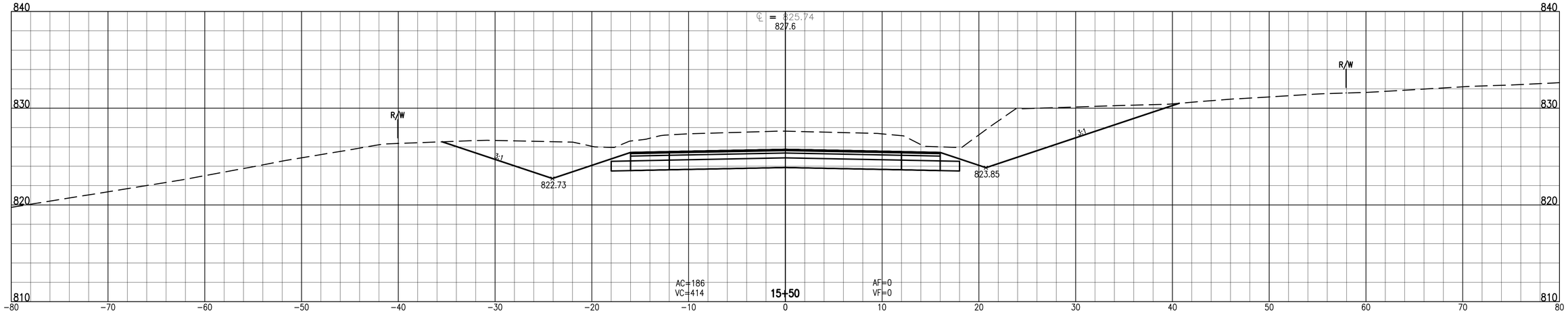

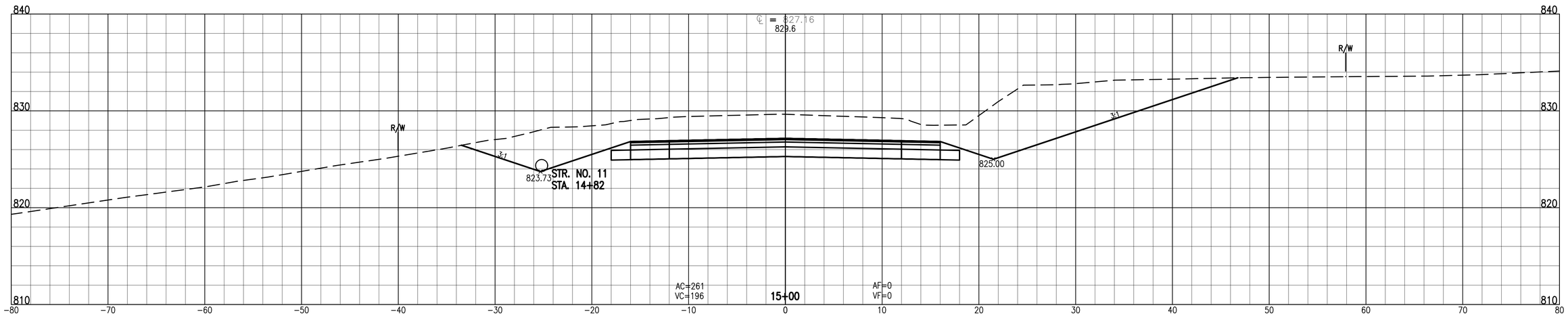

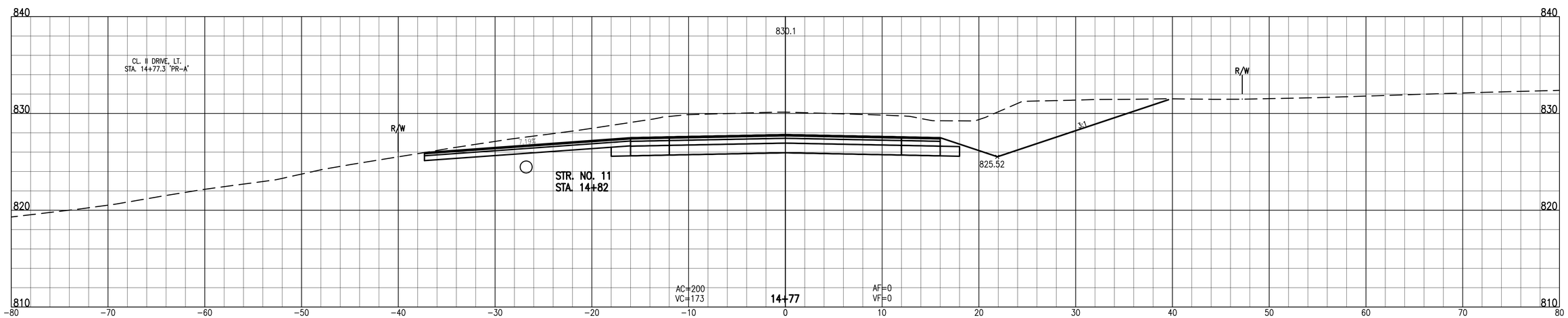

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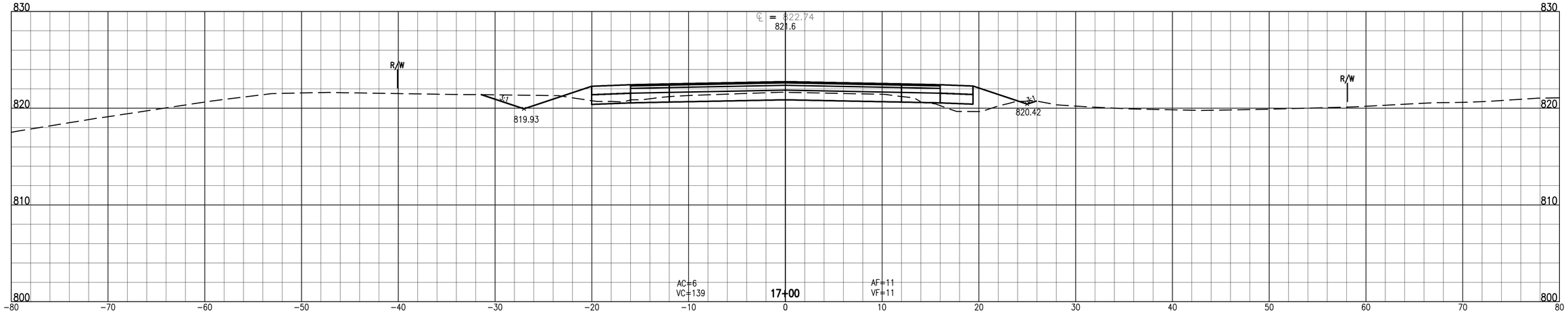

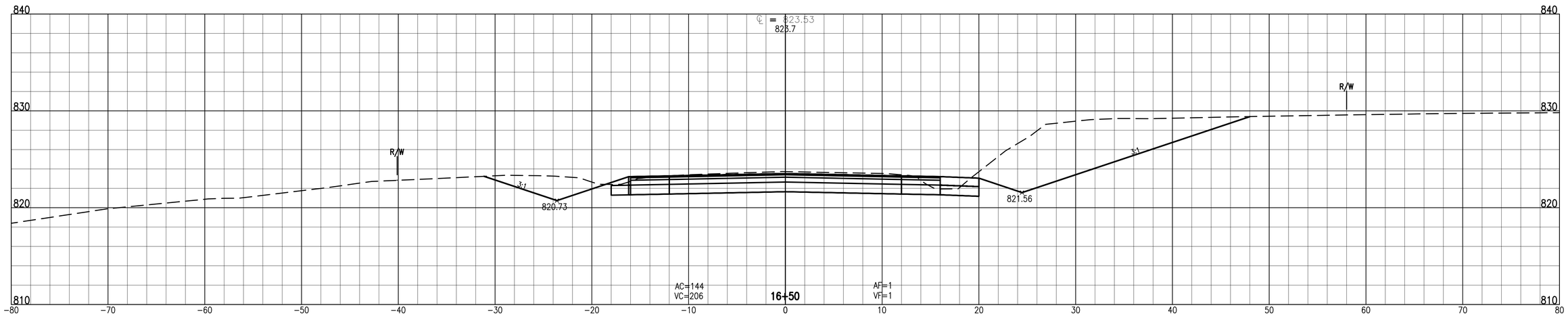

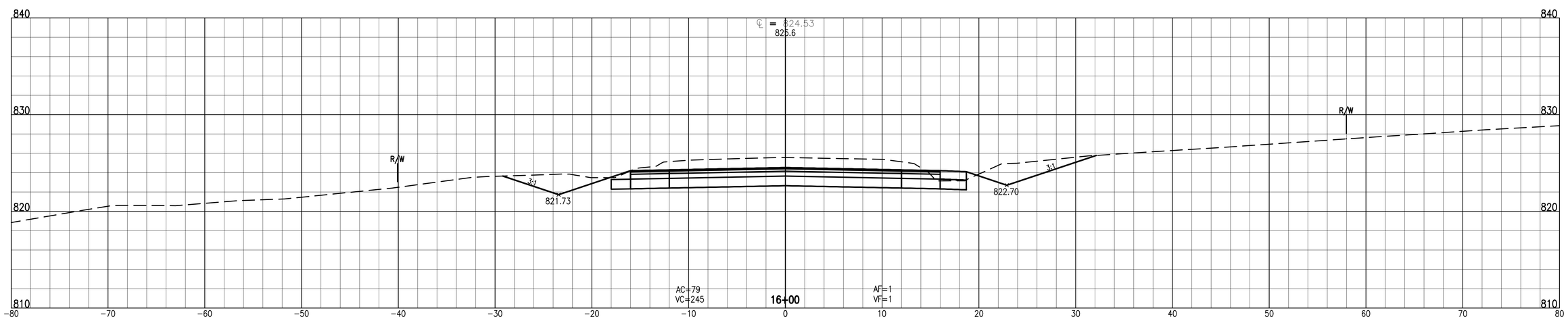

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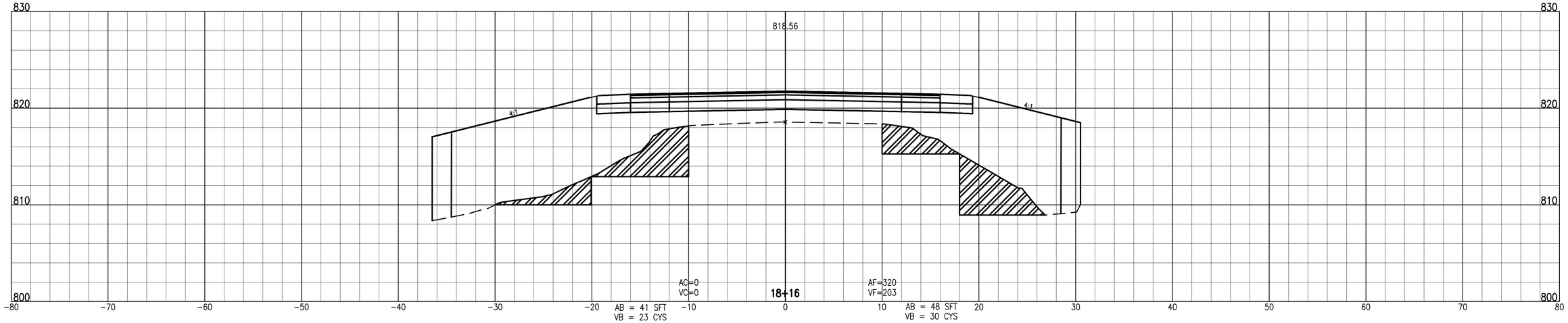

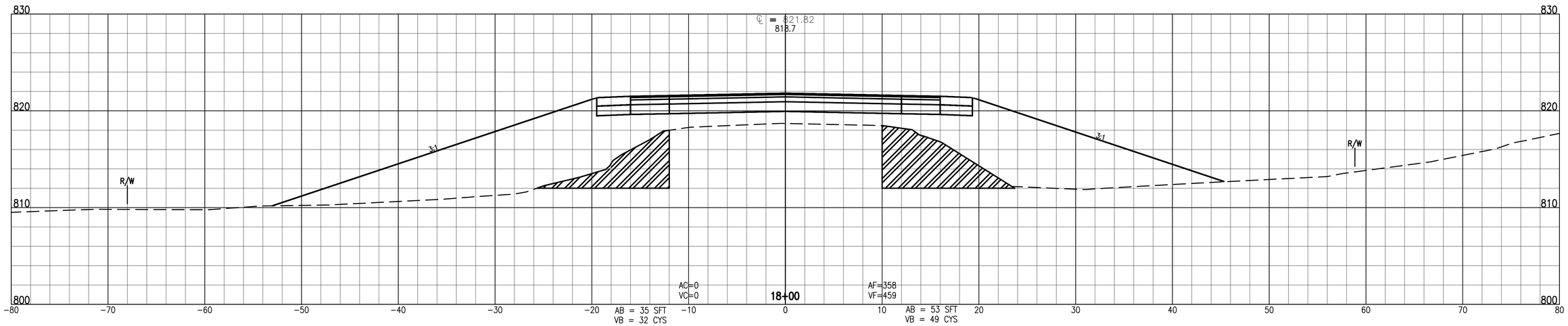

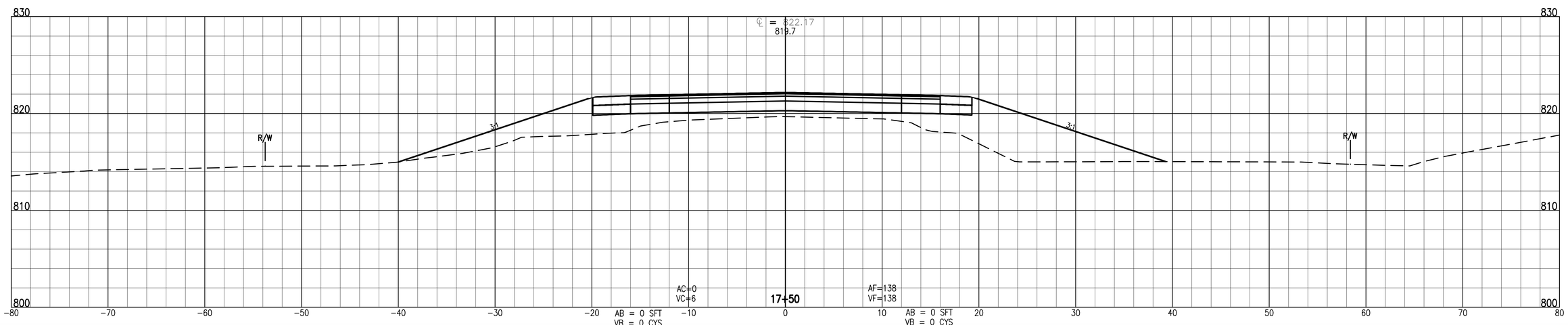

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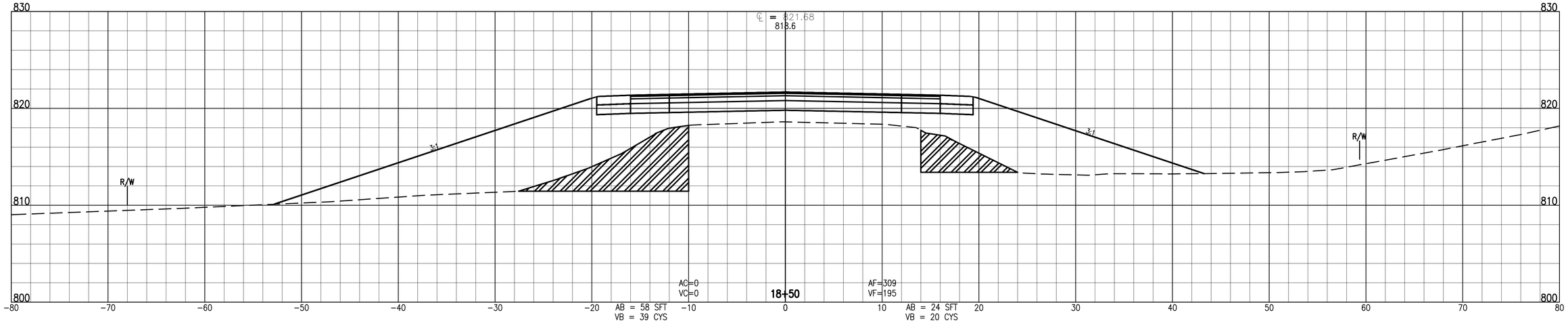

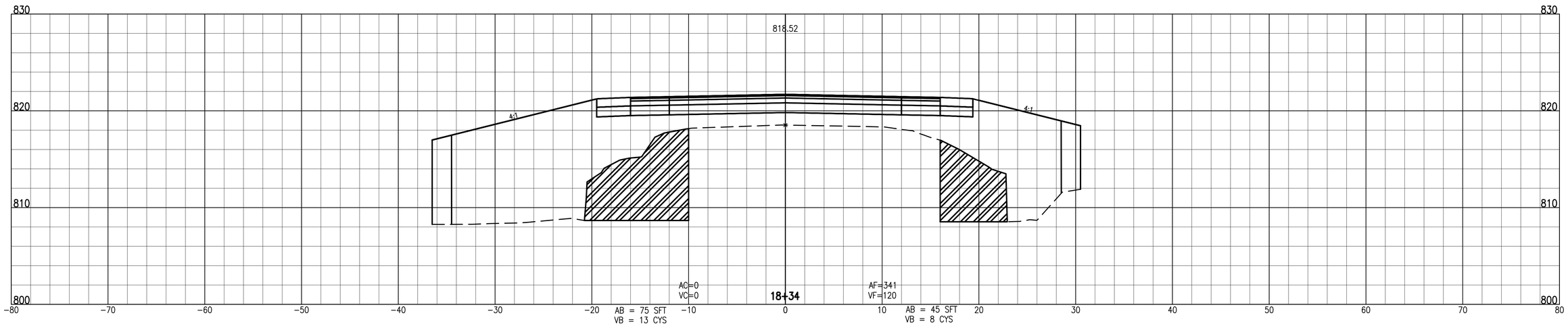

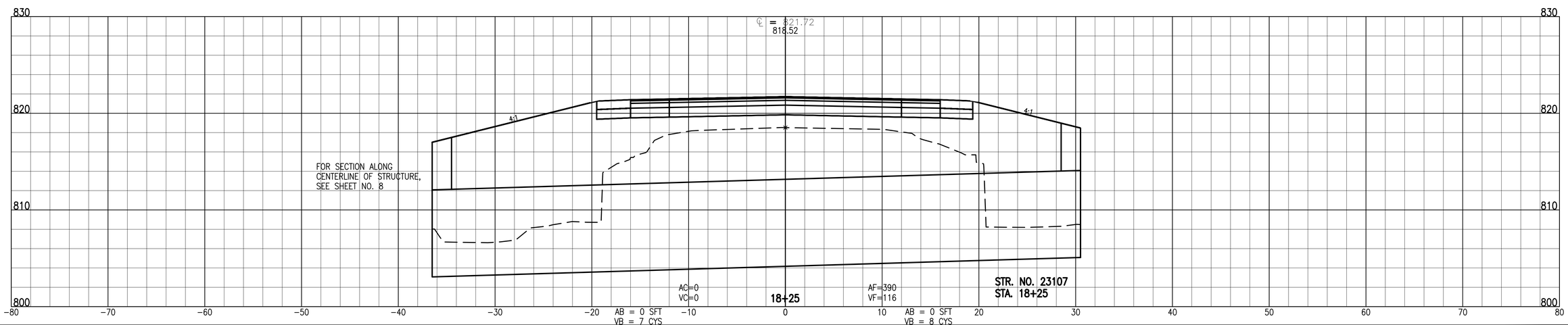

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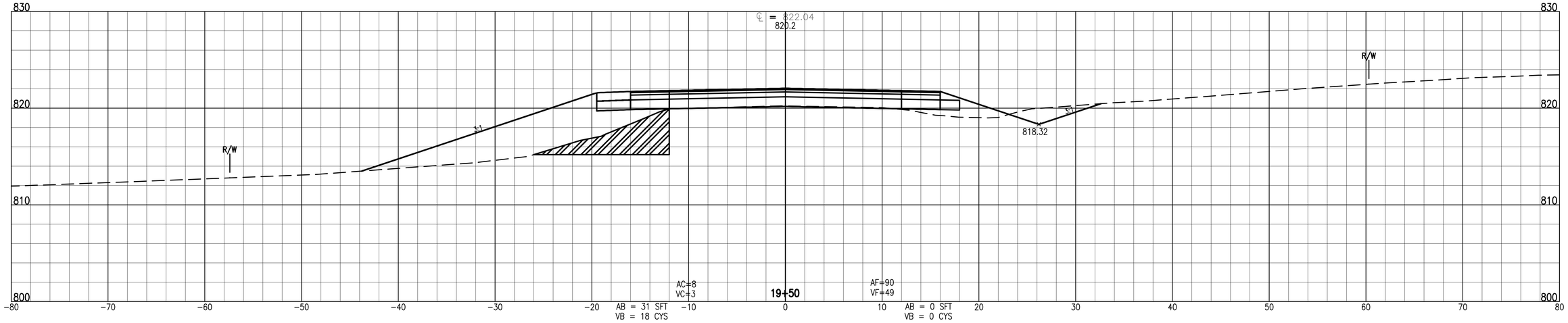

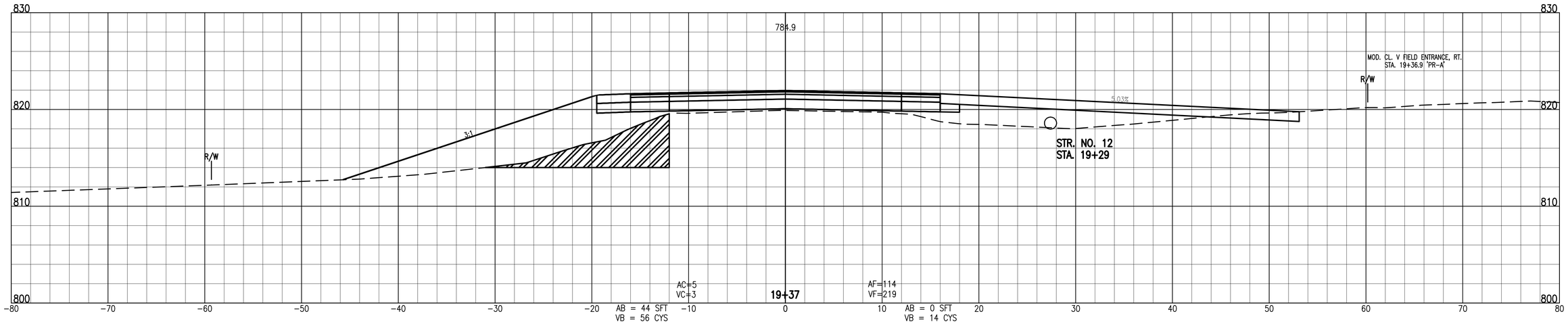

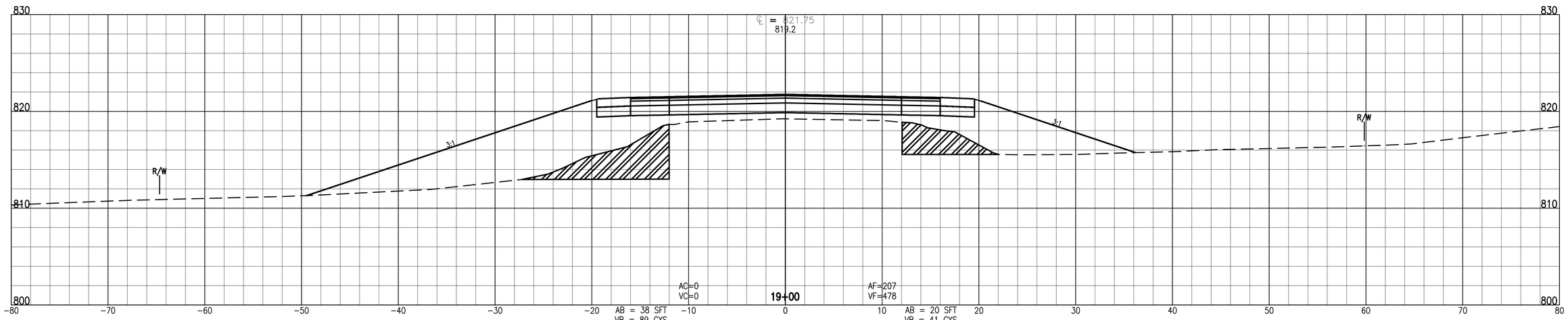

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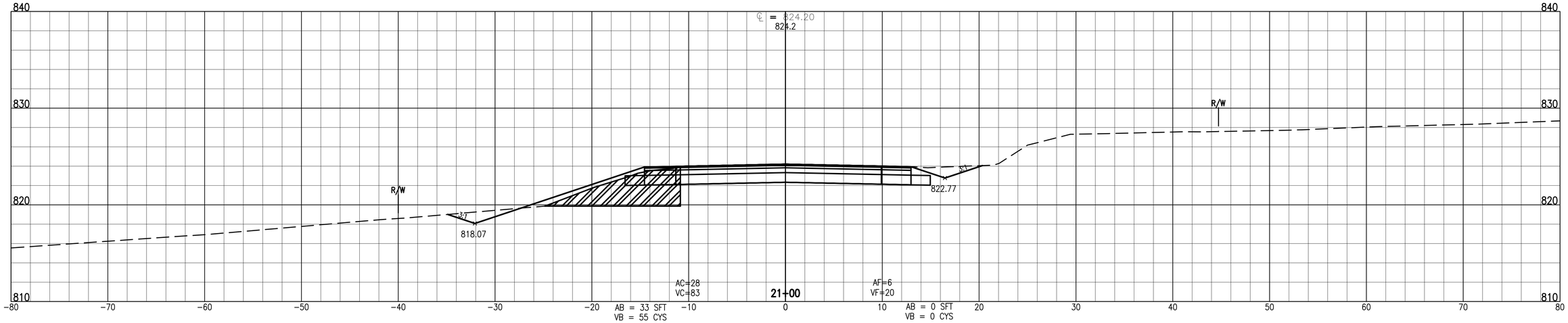

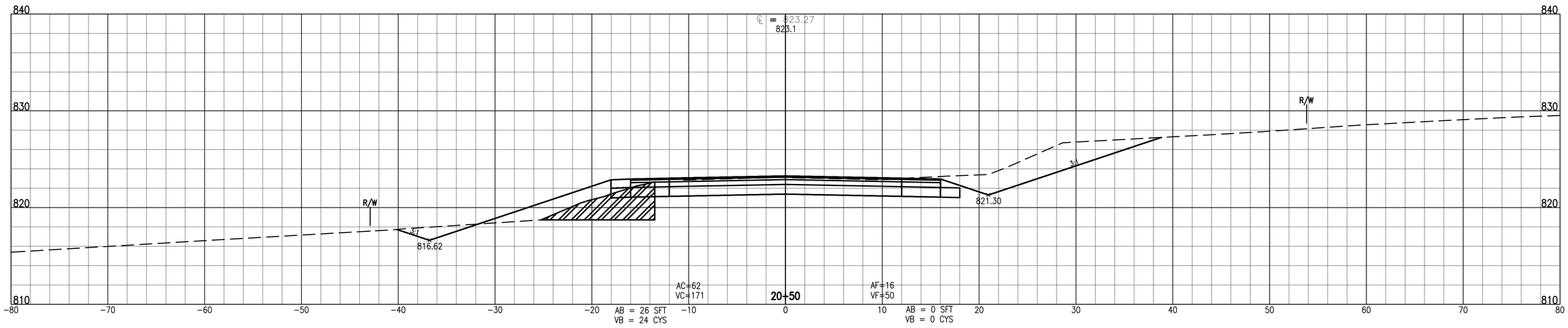

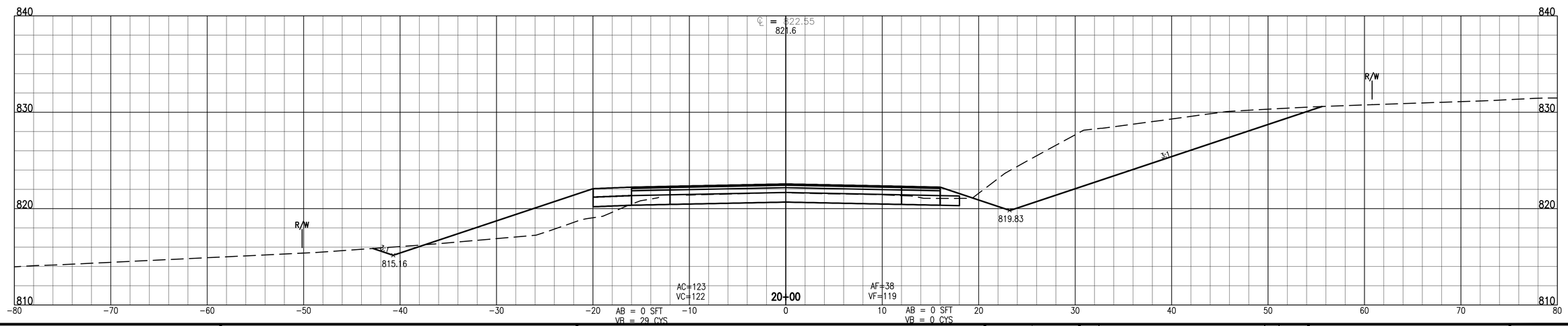

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HIGHWAY DEPARTMENT

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OF 20

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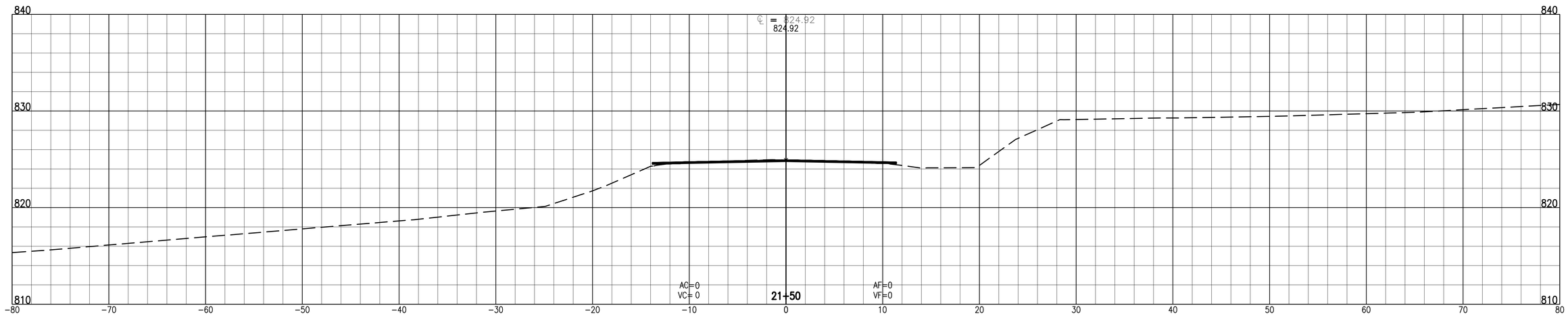

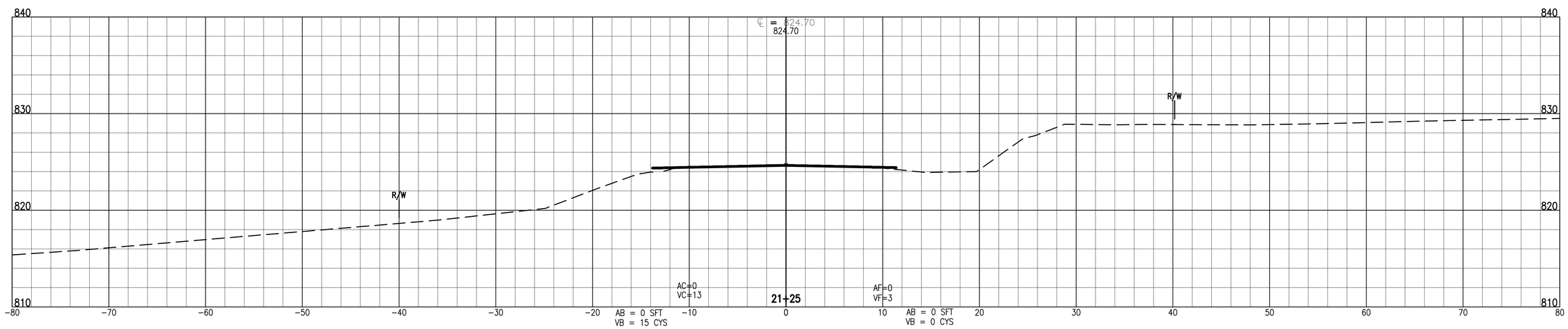

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