PROJECT	DESIGNATION
1600486	1600486
CONTRACT	BRIDGE FILE
B-39896	011-31-10182

INDIANA DEPARTMENT OF TRANSPORTATION

STRUCTURE INFORMATION

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
011-31-10182	Reinforced Concrete Slab Bridge	1 Span @ 38'-9⅞" Skew: 15° Lt.	South Fork Buck Creek	Sta. 131+24.00 Line "A"

TRAFFIC DATA

A.A.D.T.	(2021)	3180 V.P.D.
A.A.D.T.	(2041)	3656 V.P.D.
D.H.V		366 V.P.H.
DIRECTIONAL DISTRIBUTION		50/50 %
TRUCKS		10 % A.A.D.T.
		10 % D.H.V.

DESIGN DATA

DESIGN SPEED	50 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR
RURAL/URBAN	RURAL
TERRAIN	ROLLING
ACCESS CONTROL	NONE

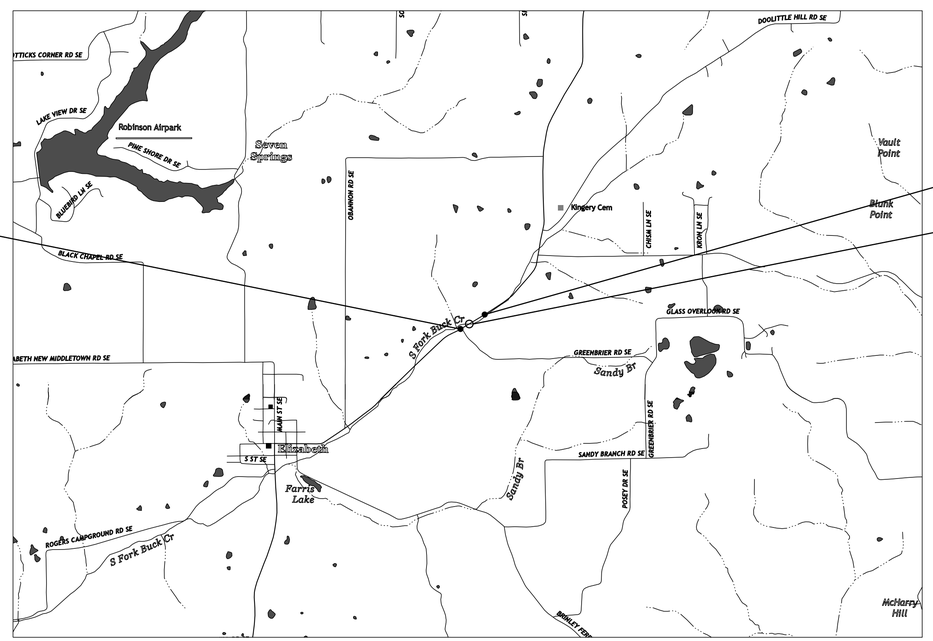
BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: SR 11 AT: RP 19+76

PROJECT NO. 1600486 P.E
1600486 R/W
1600486 CONST.

Bridge Replacement on SR 11 over South Fork Buck Creek located 0.51 miles southwest of SR 211 in Section 27, T-4-S, R-5-E, Posey Township, Harrison County, Indiana



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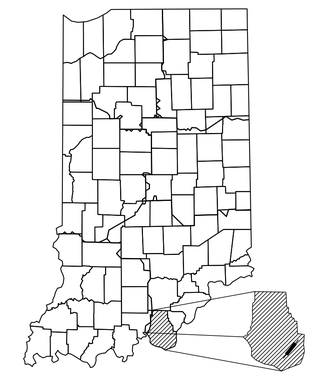

PROJECT LOCATION SHOWN BY ▬
HARRISON COUNTY

LATITUDE: 38° 07' 47" N LONGITUDE: 85° 57' 23" W

BRIDGE LENGTH:	0.006	MI.
ROADWAY LENGTH:	0.158	MI.
TOTAL LENGTH:	0.164	MI.
MAX. GRADE:	1.46	%

HARRISON COUNTY

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

gai consultants

PLANS PREPARED BY: GAI Consultants Inc. (317) 436-9150
PHONE NUMBER

CERTIFIED BY: _____ DATE

APPROVED FOR LETTING: _____ INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE
011-31-10182
DESIGNATION
1600486

DRAWING NUMBER	SHEETS		
	1	of	22
CONTRACT	PROJECT		
B-39896	1600486		

Plot: 9/11/2019 3:49:14 PM By: thomatm Pen: Transportation.tbl

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UTILITIES

Service Area	Contact	Phone	Address
Harrison County REMC (Electric)	Kevin Burch kburch@harrisonremc.com	(812) 738-4115	1165 Old Forest Road Corydon, IN 47112
Centurylink	Xan Marie Rypkema xan.rypkema@centurylink.com	(720) 888-1089	1025 Eldorado Blvd. Broomfield, CO 80021
Indiana Utilities Corporation (Gas)	Kevin Kinney iucop@portative.net	(812) 738-3235	123 W. Chestnut Street Corydon, IN 47112
Frontier Communications (Telephone)	Scott Shields scott.d.shields@ftr.com (812) 639-1835 (Cell)	(812) 634-0335	505 Newton Street Jasper, IN 47546
Town of Elizabeth Water Utility (Water)	John Hall bjhj17@frontier.com	(812) 972-0296	8128 Hurricane Street Elizabeth, IN 47117

GENERAL NOTES

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All disturbed areas shall be mulch seeded unless noted otherwise.

INDEX

SHEET NO.	DRAWINGS INDEX
1	TITLE SHEET
2	INDEX SHEET
3	TYPICAL CROSS SECTION
4-5	MAINTENANCE OF TRAFFIC
6-8	PLAN AND PROFILE LINE "A"
9	SUPERELEVATION TRANSITION
10	SOIL BORINGS
11	LAYOUT
12	GENERAL PLAN
13	BRIDGE SUMMARY
14-22	CROSS SECTIONS

REVISIONS

SHEET NO.	DATE	REVISED

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: NRT DRAWN: RLJ

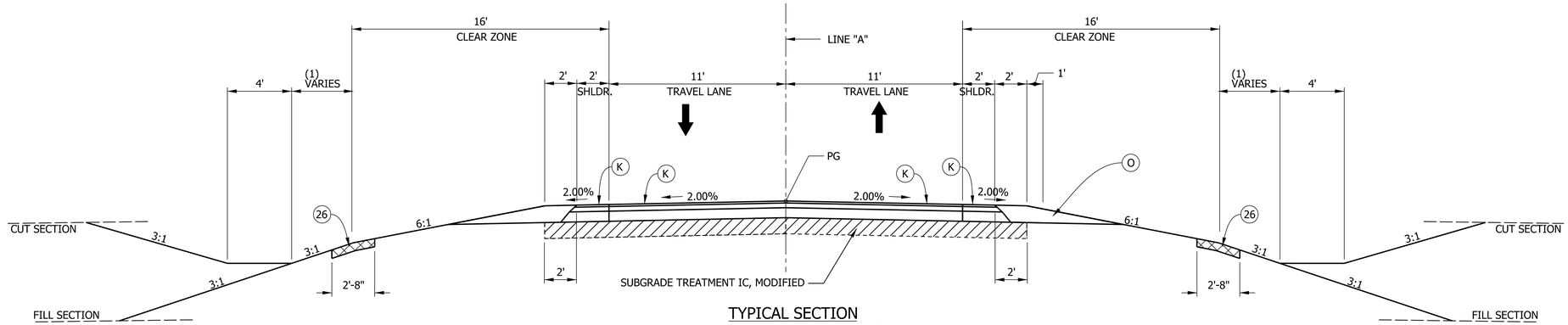
CHECKED: MJM CHECKED: NRT

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX SHEET

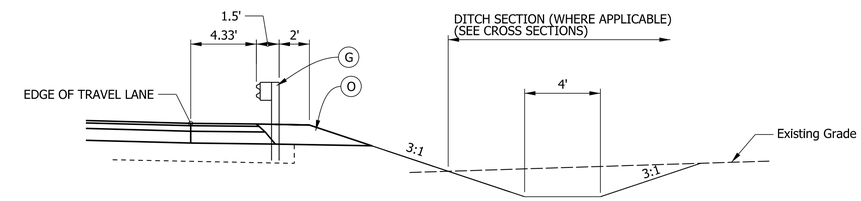
BRIDGE FILE
011-31-10182
DESIGNATION
1600486

DRAWING NUMBER	SHEETS
	2 of 22
CONTRACT	PROJECT
B-39896	1600486



TYPICAL SECTION

STA. 129+50.00 TO 133+75.00 LINE "A"



SHOULDER SECTION W/ GUARDRAIL

STA. 129+67.06 TO 132+53.86 LINE "A" (RIGHT SIDE)
STA. 129+94.13 TO 132+89.58 LINE "A" (LEFT SIDE)

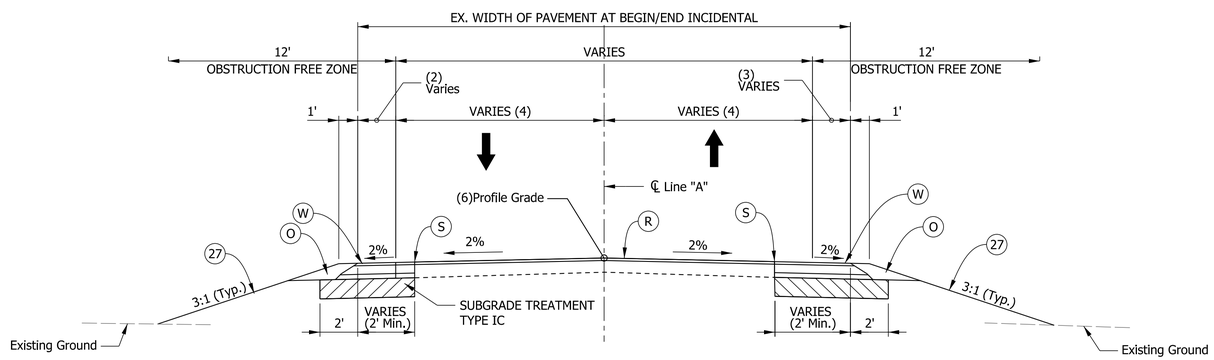
NOTES:

(1) EQUALS 0'-0" FOR STANDARD DITCH. VARIES ACCORDING TO DITCH ELEVATION AND GRADE FOR SPECIAL DITCHES. (SEE PLAN & PROFILE AND CROSS SECTIONS)

(2) VARIES EXISTING SHOULDER WIDTH TO 2.93', STA. 129+05.00 TO 129+65.00 LINE "A" = 0'-0", STA. 133+80.00 TO 134+40.00 LINE "A"

(3) = 0'-0", STA. 129+05.00 TO 129+65.00 LINE "A" VARIES 2.0' TO EXISTING SHOULDER WIDTH, STA. 133+80.00 TO 134+40.00 LINE "A"

(4) VARIES EXISTING LANE WIDTH TO 11'-0".



INCIDENTAL TYPICAL SECTION

Sta. 129+05.00 Line "A" to Sta. 129+65.00 Line "A"
Sta. 133+80.00 Line "A" to Sta. 134+40.00 Line "A"

LEGEND

(26) SEEDING, TYPE R

(27) SEEDING, TYPE R

(K) 165 LBS/SY HMA SURFACE, TYPE B ON
330 LBS/SY HMA INTERMEDIATE, TYPE B ON
825 LBS/SY HMA BASE, TYPE B, ON

(O) COMPACTED AGGREGATE, No. 53 (10 IN. MAX.)

(R) MILLING, ASPHALT, 1½IN. AND
VARIABLE DEPTH (165 LBS/SYS Min.) QC/QA-HMA, 3, 70, SURFACE, 9.5 MM

(S) SAWCUT

(W) VARIABLE DEPTH (165 LBS/SYS Min.) QC/QA-HMA, 3, 70, SURFACE, 9.5 MM ON
WIDENING WITH HMA, TYPE B:
330 LBS/SYS HMA INTERMEDIATE, 19.0 MM ON
7.5" COMPACTED AGGREGATE, No. 53
(HMA SURFACE LAYER TO MATCH RESURFACE THICKNESS)

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RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: ECL DRAWN: KTH
CHECKED: BWC CHECKED: BWC

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION CROSS SECTIONS
SR 11

SCALE	BRIDGE FILE
	011-31-10182
VERTICAL SCALE	DESIGNATION
	1600486
DRAWING NUMBER	SHEETS
of	3 of 22
CONTRACT	PROJECT
B-39896	1600486

Plot: 9/12/2019 3:20:58 PM By: huynhkt Pen: Transportation.tbl

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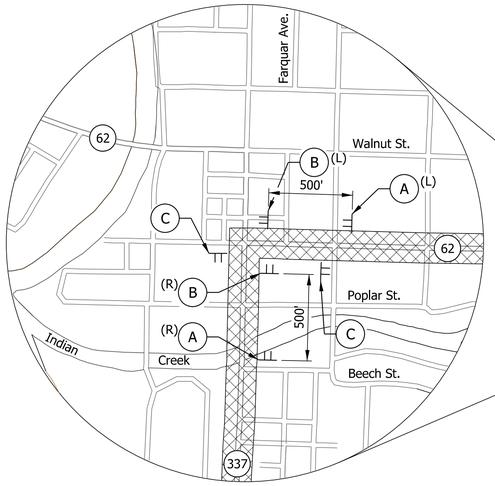
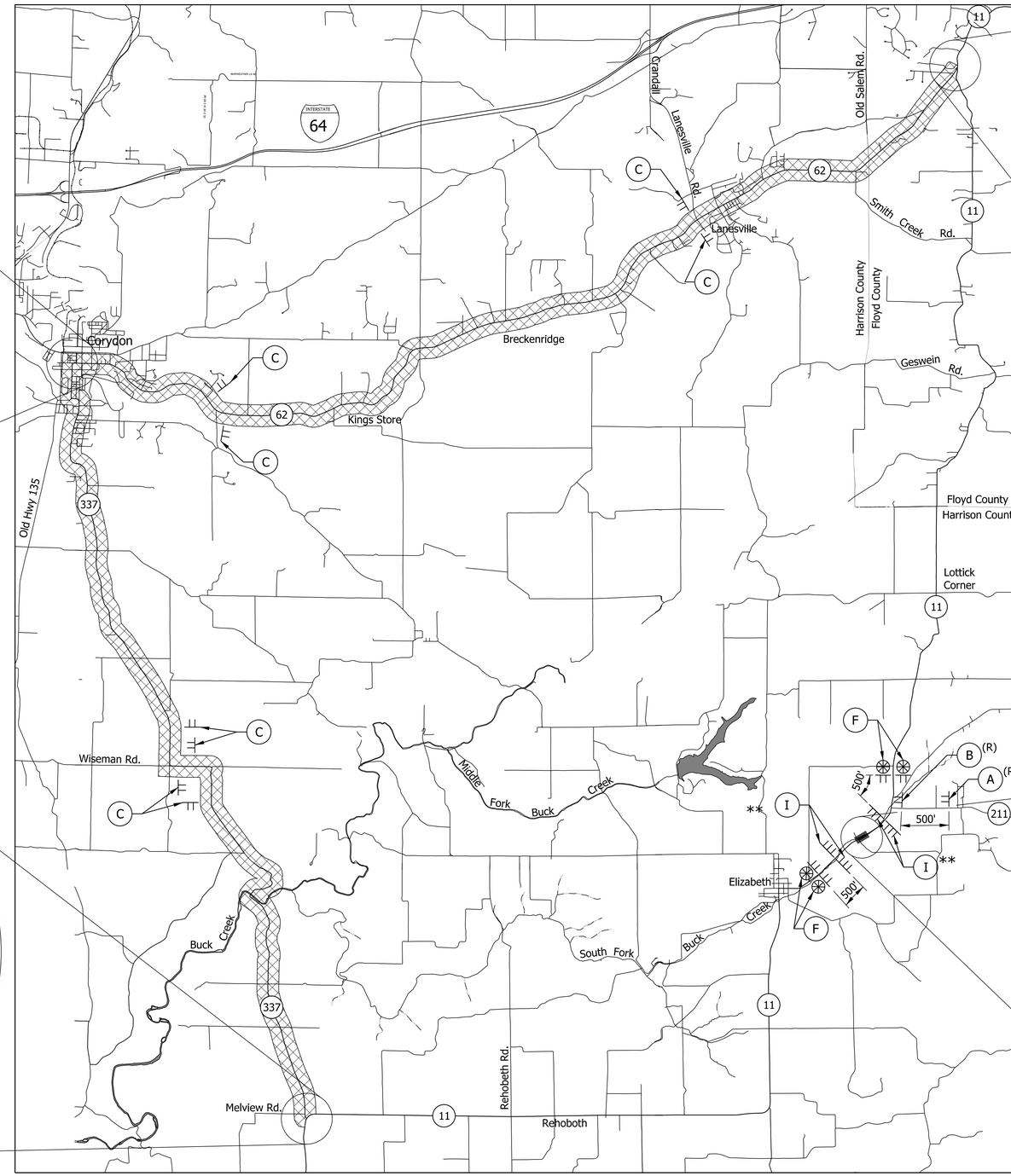
Model:Roadway Typical



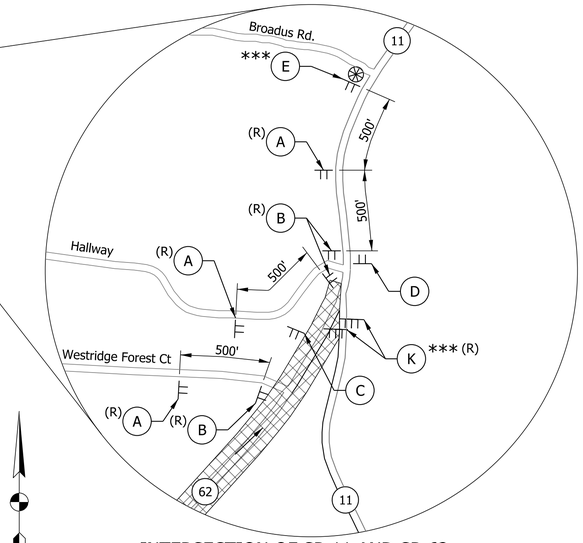
INTERSECTION OF SR 337 AND SR 62

Scale: 1"=500'



DETOUR PLAN

Scale: 1"=4000'

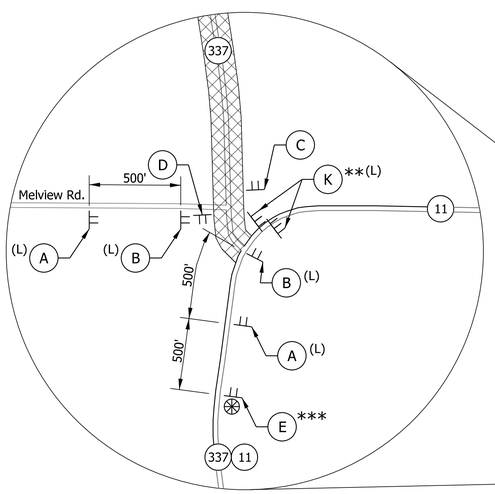


INTERSECTION OF SR 11 AND SR 62

Scale: 1"=500'

LEGEND

- Detour Route
- Construction Sign
- Low Intensity Construction Warning Light, Type A
- Type III-A Barricades
- Closure Area
- * With 24 Lft. of Type III-A Barricade
- ** With 8 Lft. of Type III-B Barricade
- *** With State Road (11) Sign (M1-5) Cardinal Direction (North, M3-2(N)) or (South, M3-4(S))



INTERSECTION OF SR 11 AND SR 337

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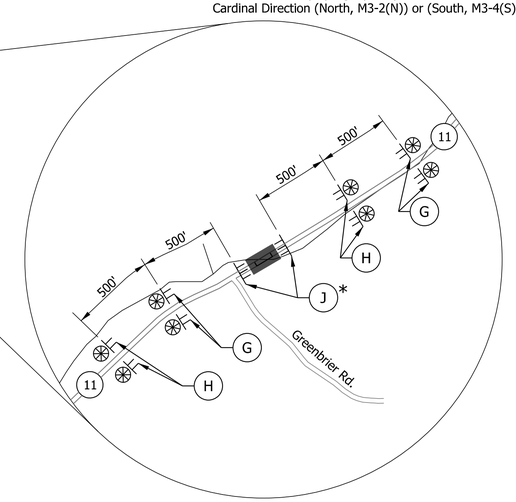

PROJECT WORKSITE

Scale: 1"=500'

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CLF DRAWN: CLF

CHECKED: JAS CHECKED: JAS

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

SCALE	BRIDGE FILE
AS NOTED	011-31-10182
	DESIGNATION
	1600486
DRAWING NUMBER	SHEETS
	4 of 22
CONTRACT	PROJECT
B-39896	1600486

Plot: 9/11/2019 11:46:51 AM By: huynhkt Pen: Transportation.tbl

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SIGN LEGEND:

(A) Advance Turn Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
State Route (11) (M1-5)
Advance Turn Arrow (M5-1 or M5-2) (L or R)

(B) Directional Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
State Route (11) (M1-5)
Directional Arrow (M6-1 or M6-2) (L or R)

(C) Confirming Detour Route Marker Assembly
Detour (XM4-8)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
State Route (11) (M1-5)
Directional Arrow (M6-3)

(D) End Detour Route Marker Assembly
End Detour (XM4-8a)
Cardinal Direction (North, M3-1(S)) or (South, M3-3(S))
State Route (11) (M1-5)

(E) DETOUR AHEAD
XW20-2
36"x36"

(F) ROAD CLOSED AHEAD
XW20-3
36"x36"

(G) ROAD CLOSED 500 FT
XW20-3
36"x36"

(H) ROAD CLOSED 1000 FT
XW20-3
36"x36"

(I) Road Closure Sign Assembly
"Road Closed __ Miles Ahead" (R11-3a)

(J) Road Closure Sign Assembly
"Road Closed" (R11-2)

(K) Road Closure Sign Assembly
"Road Closed __ Miles Ahead" (R11-3a)
"Detour Arrow" (XM4-10 (L or R))

NOTES:

1. Refer to INDOT Standard Drawing E 801-TCDT-01 for placement of signs and devices in a rural detour and E 801-TCDT-04 for Detour Route Marker Assembly Details.
2. Two - "Route Number Closed On or After ___" Signs (XG20-5) to be placed as directed by the engineer prior to construction.
3. Upon completion of the project restripe the double yellow centerline and solid white edge lines and replace snowplowable raised pavement markers (SRPM).
4. Install R11-2 Road Closure sign assemblies on Type III-A barricades. Install R11-3a Road Closure sign assemblies on Type III-B barricades.

CONSTRUCTION SIGN SUMMARY TABLE

DESCRIPTION	SIGN TYPE	MAX TOTAL
ROUTE NUMBER CLOSED ON OR AFTER __ (XG20-5)	A	2
ADVANCE DETOUR (XW20-2)	A	2
ROAD CLOSED 500 FT (XW20-3)	A	4
ROAD CLOSED 1000 FT (XW20-3)	A	4
ROAD CLOSED AHEAD (XW20-3)	A	4
CARDINAL DIRECTION (NORTH) (M3-2)	B	1
CARDINAL DIRECTION (SOUTH) (M3-4)	B	1
STATE ROUTE (SR 11) (M1-5)	B	2

PAVEMENT MARKINGS TABLE

LOCATION	LINE, MULTI-COMPONENT			SNOWPLOWABLE RAISED PAVEMENT MARKER
	SOLID YELLOW 4 IN.	SOLID WHITE 4 IN.	BROKEN YELLOW 4 IN.	
UNIT	LFT	LFT	LFT	EACH
TOTALS	840	1,680	210	21

MAINTENANCE OF TRAFFIC QUANTITIES

ITEM	UNITS	QUANTITY TOTAL
CONSTRUCTION SIGN, A	EACH	16
CONSTRUCTION SIGN, B	EACH	4
ROAD CLOSURE SIGN ASSEMBLY	EACH	10
DETOUR ROUTE MARKER ASSEMBLY	EACH	30
BARRICADE, III-A	LFT	48
BARRICADE, III-B	LFT	64

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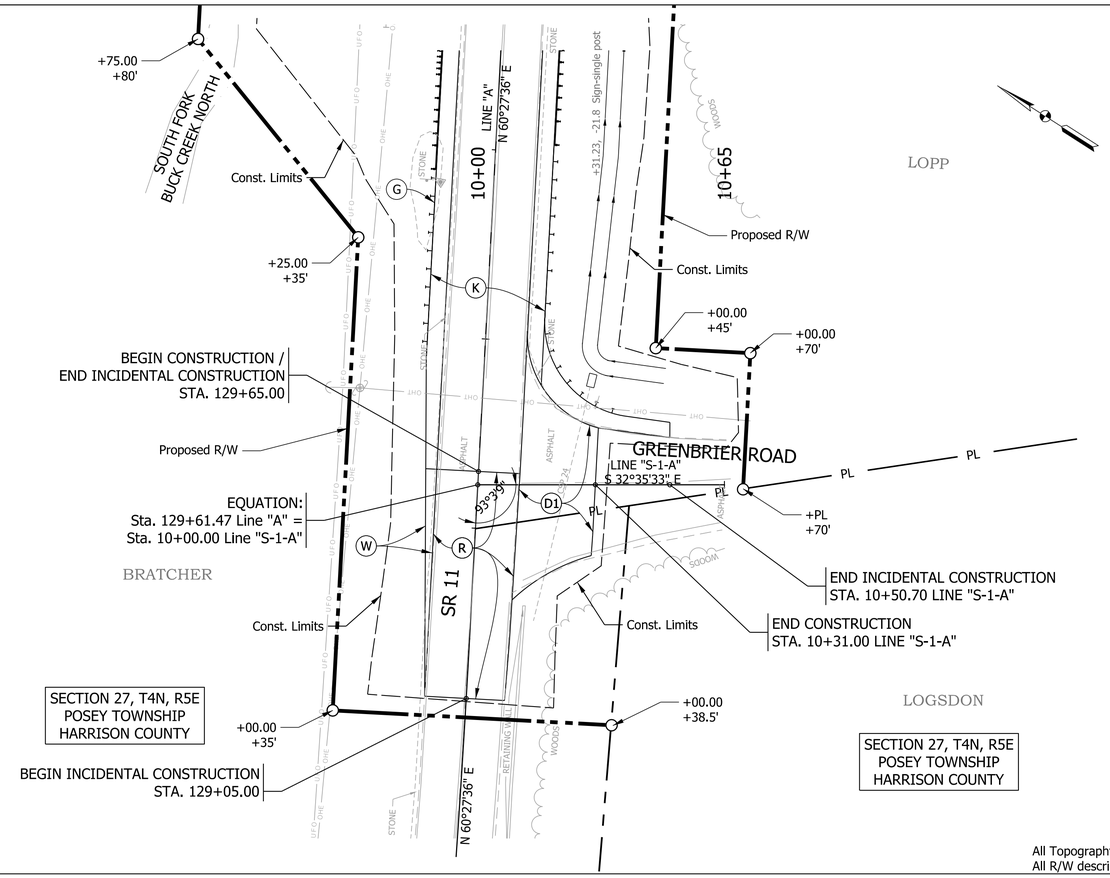
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: CLF
DRAWN: CLF
CHECKED: JAS
CHECKED: JAS

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

SCALE	BRIDGE FILE
AS NOTED	011-31-10182
	DESIGNATION
	1600486
DRAWING NUMBER	SHEETS
	5 of 22
CONTRACT	PROJECT
B-39896	1600486



All Topography described from Line "S-1-A"
All R/W described from Line "A" except as shown

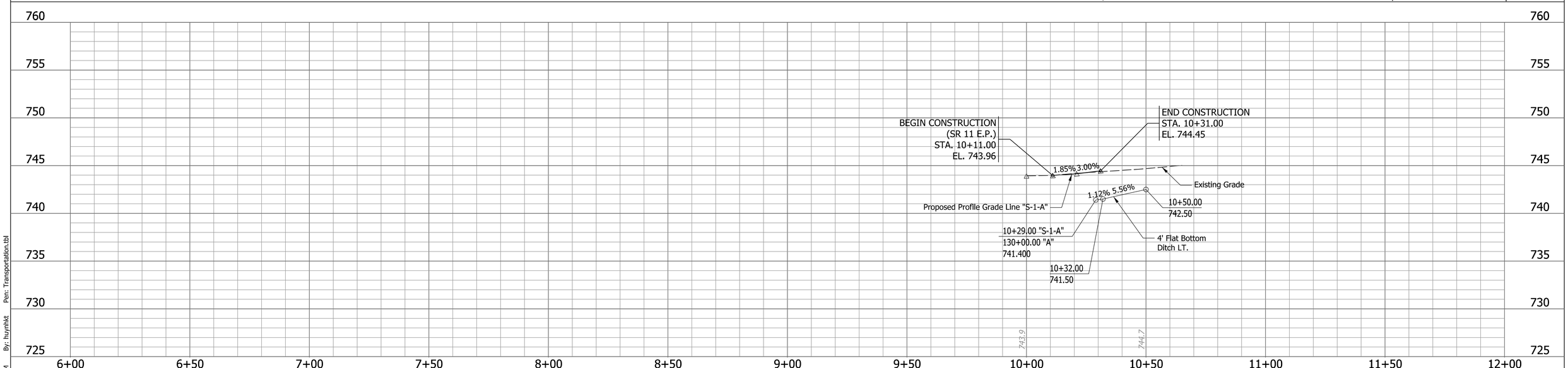
LEGEND

(D1) HMA FOR APPROACHES, TYPE B:
165 LBS/SY HMA SURFACE, TYPE B ON
275 LBS/SY HMA INTERMEDIATE, TYPE B ON
825 LBS/SY HMA BASE, TYPE B, ON
SUBGRADE TREATMENT TYPE IC, MODIFIED

(G) GUARDRAIL (SEE PROFIFE VIEW FOR TYPE)

(K) FULL DEPTH HMA PAVEMENT (SEE TYPICAL SECTIONS)

(R) MILLING, ASPHALT, 1.5 IN. AND
VARIABLE DEPTH (165 LBS/SYS MIN.) QC/QA-HMA, 3, 70 SURFACE, 9.5MM



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RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: ECL DRAWN: KTH
CHECKED: BWC CHECKED: BWC

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "S-1-A"

SCALE	BRIDGE FILE
1" = 20'	011-31-10182
VERTICAL SCALE	DESIGNATION
1" = 5'	1600486
DRAWING NUMBER	SHEETS
	6 of 22
CONTRACT	PROJECT
B-39896	1600486

Plot: 9/12/2019 3:21:21 PM By: huynhkt Pen: Transportation.tbl

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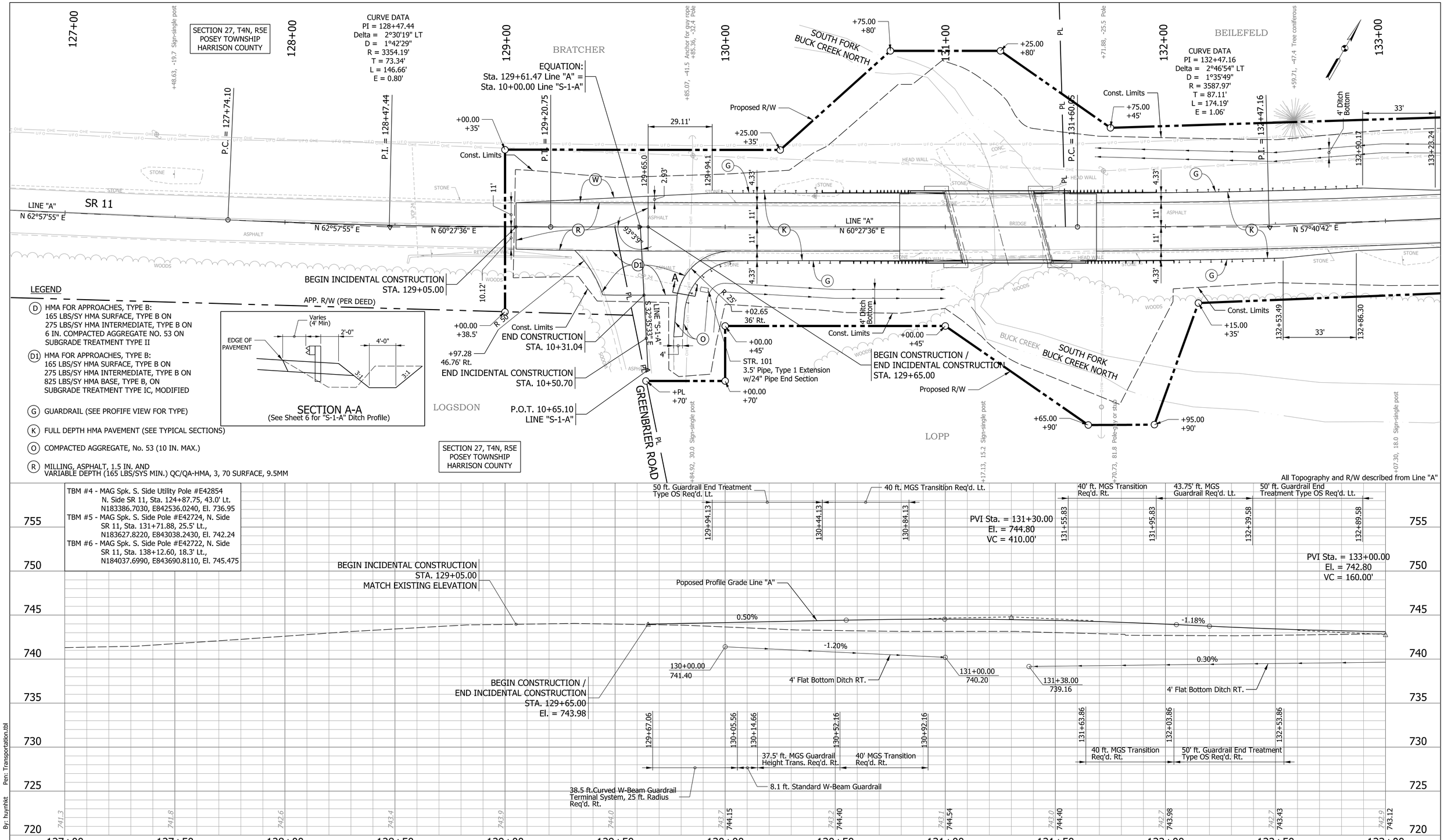
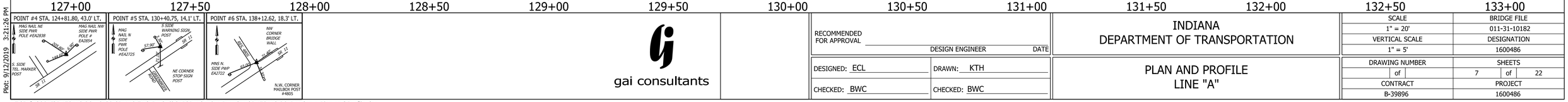
Model:Greenbrier Road Sheet 1



LEGEND

- (D) HMA FOR APPROACHES, TYPE B: 165 LBS/SY HMA SURFACE, TYPE B ON 275 LBS/SY HMA INTERMEDIATE, TYPE B ON 6 IN. COMPACTED AGGREGATE NO. 53 ON SUBGRADE TREATMENT TYPE II
- (D1) HMA FOR APPROACHES, TYPE B: 165 LBS/SY HMA SURFACE, TYPE B ON 275 LBS/SY HMA INTERMEDIATE, TYPE B ON 825 LBS/SY HMA BASE, TYPE B, ON SUBGRADE TREATMENT TYPE IC, MODIFIED
- (G) GUARDRAIL (SEE PROFIFE VIEW FOR TYPE)
- (K) FULL DEPTH HMA PAVEMENT (SEE TYPICAL SECTIONS)
- (O) COMPACTED AGGREGATE, No. 53 (10 IN. MAX.)
- (R) MILLING, ASPHALT, 1.5 IN. AND VARIABLE DEPTH (165 LBS/SYS MIN.) QC/QA-HMA, 3, 70 SURFACE, 9.5MM



gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: ECL DRAWN: KTH

CHECKED: BWC CHECKED: BWC

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

SCALE	BRIDGE FILE
1" = 20'	011-31-10182
VERTICAL SCALE	DESIGNATION
1" = 5'	1600486
DRAWING NUMBER	SHEETS
of	7 of 22
CONTRACT	PROJECT
B-39896	1600486

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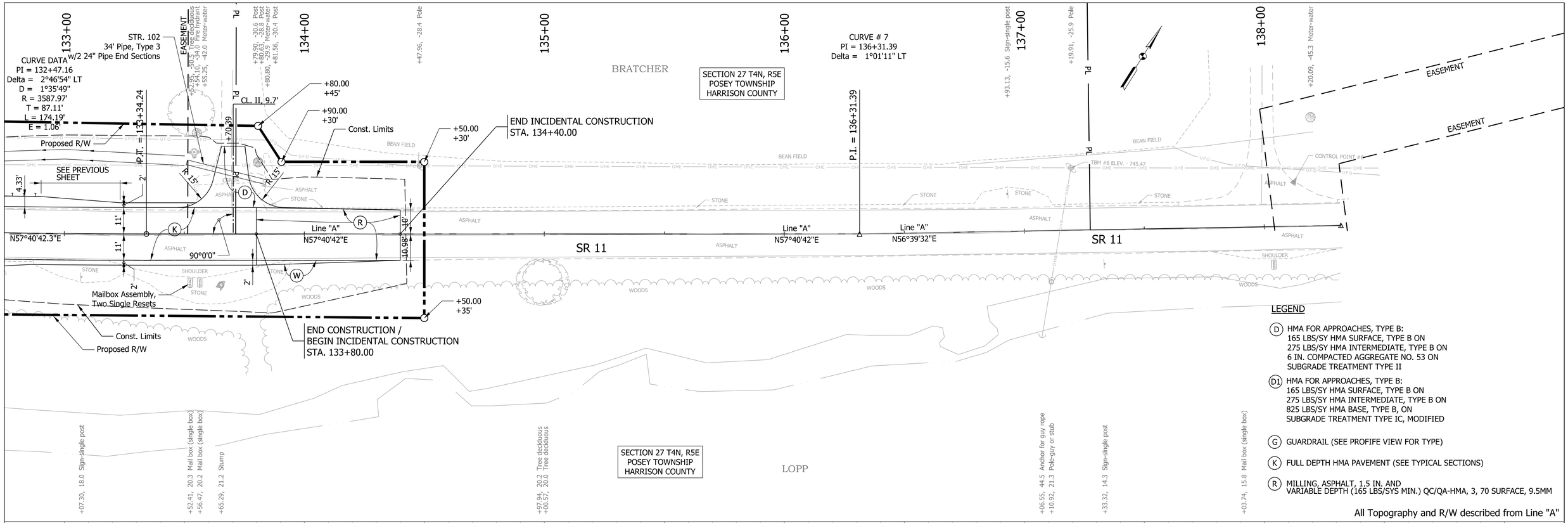

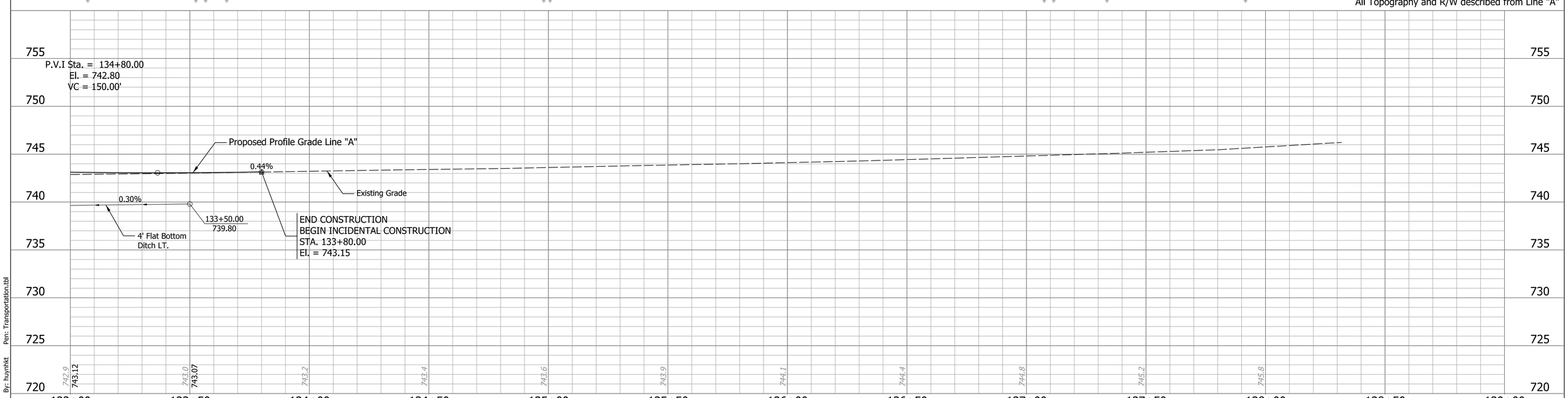

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ECL DRAWN: KTH

CHECKED: BWC CHECKED: BWC

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "A"

SCALE	BRIDGE FILE
1" = 20'	011-31-10182
VERTICAL SCALE	DESIGNATION
1" = 5'	1600486
DRAWING NUMBER	SHEETS
of	8 of 22
CONTRACT	PROJECT
B-39896	1600486

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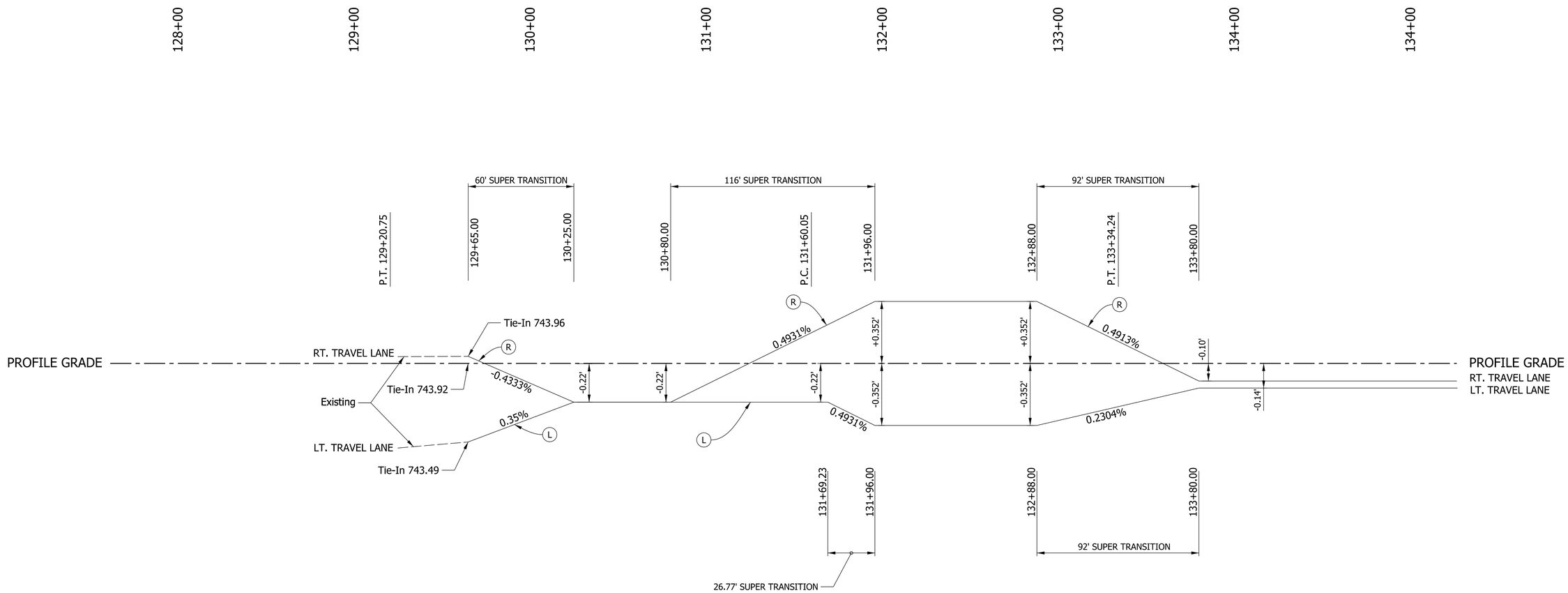

LEGEND

(L) LEFT TRAVEL LANE

(R) RIGHT TRAVEL LANE

Plot: 9/11/2019 11:47:25 AM By: huynhkt Pen: Transportation.tbl

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ECL DRAWN: KTH

CHECKED: BWC CHECKED: BWC

INDIANA
DEPARTMENT OF TRANSPORTATION

SUPER ELEVATION DIAGRAM
LINE "A"

SCALE	BRIDGE FILE
N/A	011-31-10182
VERTICAL SCALE	DESIGNATION
	1600486
DRAWING NUMBER	SHEETS
of	9 of 22
CONTRACT	PROJECT
B-39896	1600486

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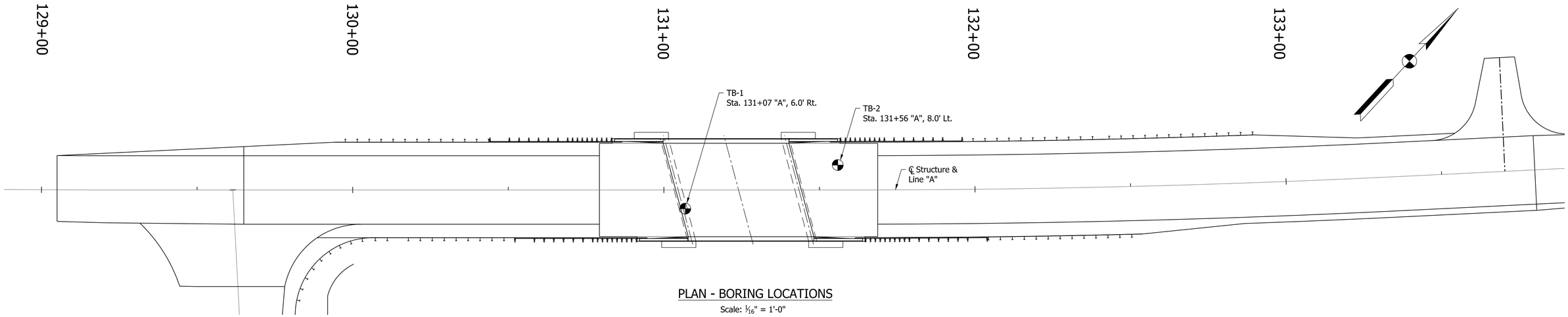

PLAN - BORING LOCATIONS

Scale: 1/16" = 1'-0"

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: **TB-1**
SHEET 1 OF 1
NORTHING: 183643.465
EASTING: 843105.515
DATUM: NAD 83
DATE STARTED: 05-07-19
DATE COMPLETED: 05-07-19

ROUTE #: SR 11 COUNTY: Harrison
PROJECT TYPE: Bridge Replacement
LOCATION: SR 11 over South Fork Buck Creek (RP 19+76)
DES NO.: 1600486 RII PROJECT NO.: I-19-013

ELEVATION	744.0 ft	BORING METHOD	4.5" - CFA	HAMMER	Automatic
STATION	131+07	RIG TYPE	Mobile 53 Truck Rig	DRILLER/INSP	L.K./C.H.
OFFSET	6.0 ft Right	CASING DIA.	NA	TEMPERATURE	62 °F
LINE	'A'	CORE SIZE	2.4 in	WEATHER	Sunny
DEPTH	18.0 ft				

GROUNDWATER: Encountered at Dry; At completion 5.1 ft; 5.1 ft After 25 hours; Caved in at 7.5 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., tsf
743.3		**8.5" - Asphalt**. 0.7											
742.8		**6.0" - Aggregate Base**. 1.2											
	1–3	**Silty Loam A-4**, Brown, Moist to Very Moist, Very Soft To Hard, (Same as Lab-1).	SS 1	4 15 17	50	32	16					2.25	
	4–5		SS 2	1 1 1	17	2						1.00	
			2S 2A	5	100		18					0.75	
737.5		**Gravel (Weathered limestone/augered rock)**, Brownish Gray, Wet, Very Dense, (Visual). 6.5	SS 3	1 14 50/4"	50		28					1.25	
736.0		Auger Refusal @ 8.0'. 8.0	SS 4	50/0"	0								
	9–18	**Limestone** (Carbonate Mudstone) Dark Gray And Gray, Slightly Weathered, Hard, Crystalline, Thin to Medium Bedded, Moderately fractured, Horizontal Joints, Close To Moderately Close Spacing, Argillaceous, Cherty. -Weathered joint @ 8.25'. -Shaley zone from 9.1-10.0'. -Shale laminae @ 11.3'. -@ 13.6' - 0.25" brown clay seam. -@ 13.7' - 0.5" brown clay seam. -@ 13.9 becoming lighter gray in color. -@14.3' - pitted slightly. -Stylolites present @ 14.7'. 18.0	RC 1 RQD= 85%		100							
			RC 2 RQD= 49%		84								
726.0		Bottom of Boring at 18.0 ft											
	19–21	Set 18.0' slotted well screen at completion of drilling and then removed and grouted with 47 lbs cement, 12.5 lbs bentonite powder, 17 gal water. Pavement patched with asphalt cold patch.											

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: **TB-2**
SHEET 1 OF 1
NORTHING: 183679.419
EASTING: 843141.923
DATUM: NAD 83
DATE STARTED: 05-06-19
DATE COMPLETED: 05-07-19

ROUTE #: SR 11 COUNTY: Harrison
PROJECT TYPE: Bridge Replacement
LOCATION: SR 11 over South Fork Buck Creek (RP 19+76)
DES NO.: 1600486 RII PROJECT NO.: I-19-013

ELEVATION	744.0 ft	BORING METHOD	4.5" - CFA	HAMMER	Automatic
STATION	131+56	RIG TYPE	Mobile 53 Truck Rig	DRILLER/INSP	L.K./C.H.
OFFSET	8.0 ft Left	CASING DIA.	NA	TEMPERATURE	75 °F
LINE	'A'	CORE SIZE	2.4 in	WEATHER	Sunny
DEPTH	17.5 ft				

GROUNDWATER: Encountered at 6.0 ft; At completion NA; Caved in at 3.0 ft

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., tsf
743.3		**8.5" - Asphalt**. 0.7											
742.8		**6.0" - Aggregate Base**. 1.2											
	1–6	**Sand and Gravel A-1-b (0)**, Brown And Brownish Gray, Very Moist to Wet, Medium Dense To Very Dense, (Lab-2).	SS 1	7 9 11	44	20	10						
			SS 2	3 6 7	50	13							
737.0		**Gravel (Weathered limestone/augered rock)**, Gray, Very Dense, (Visual). 7.0	SS 3	3 8 50/4"	81		11		NP	NP	NP	2.25	
736.5		Auger Refusal @ 7.5'. 7.5	SS 4	50/1"	0								
	9–17	**Limestone** (Carbonate Mudstone) Dark Gray And Gray, Slightly Weathered, Hard, Crystalline, Thin to Medium Bedded, Moderately fractured, Horizontal Joints, Close To Moderately Close Spacing, Cherty, Shaley. -Shaley zone from 8.3'-10.5'. -QR @ 10.7' = 4,824 psi. -Light gray and yellow coloring from 12.5'-14.3'/weathered zone. -@ 13.1-13.5' - vertical joint, weathered face. -Thin clay laminae @ 13.9'. -Chert nodule @ 14.0-14.3'. -@ 15.6-15.9' - steeply angled, healed fracture. -Thinly healed fractures between 15.0-16.5'. 17.5	RC 1 RQD= 90%		98							
			RC 2 RQD= 32%		100								
726.5		Bottom of Boring at 17.5 ft											
	18–21	Grouted with 47 lbs cement, 12.5 lbs bentonite powder, 17 gal water. Pavement patched with asphalt cold patch.											

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RLJ DRAWN: RLJ
CHECKED: KMP CHECKED: KMP

INDIANA
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS

BRIDGE FILE	011-31-10182
DESIGNATION	1600486
DRAWING NUMBER	
SHEETS	10 of 22
CONTRACT	B-39896
PROJECT	1600486

Plot: 9/11/2019 3:49:22 PM By: thomatm Pen: Transportation.tbl

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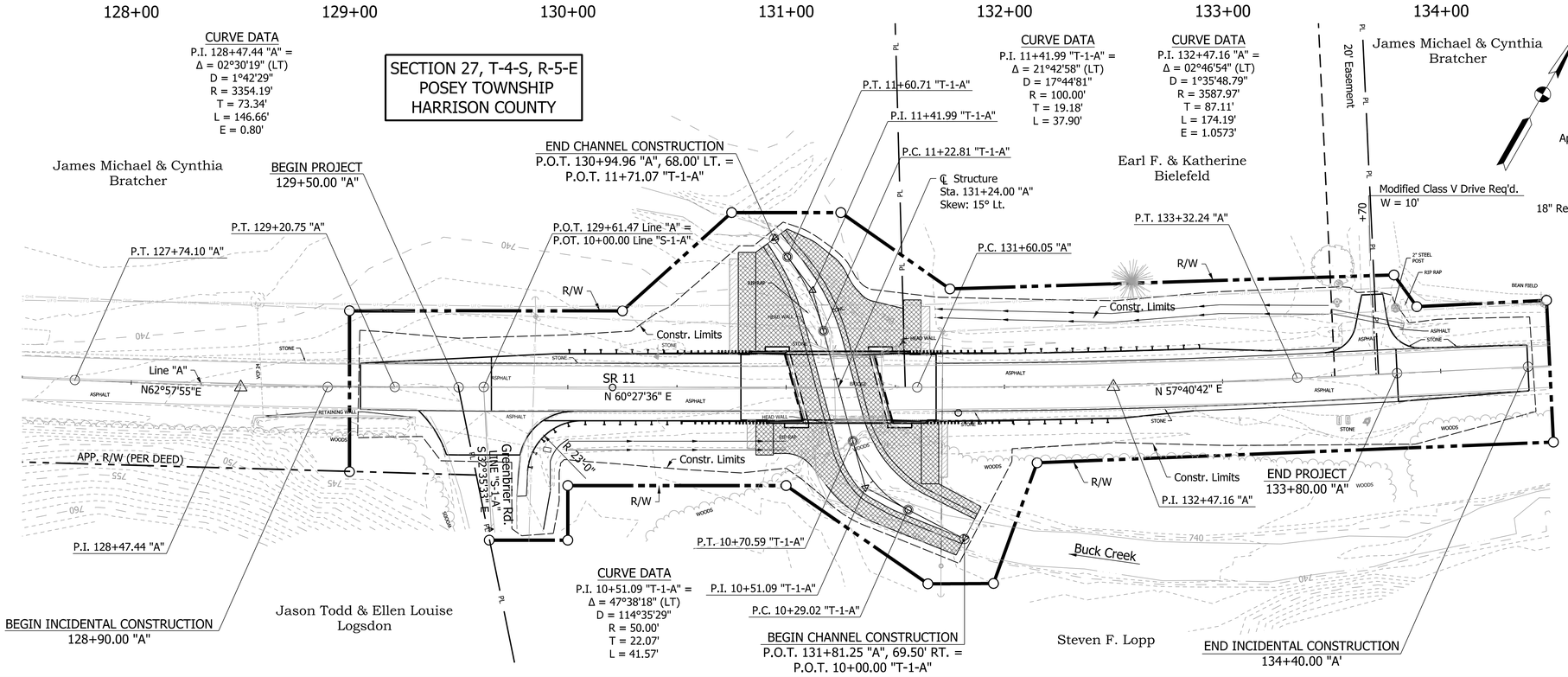
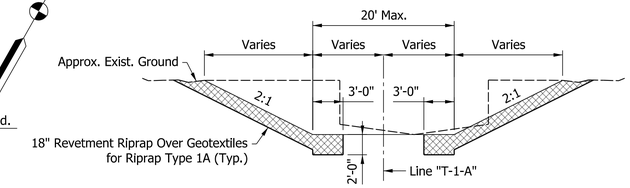
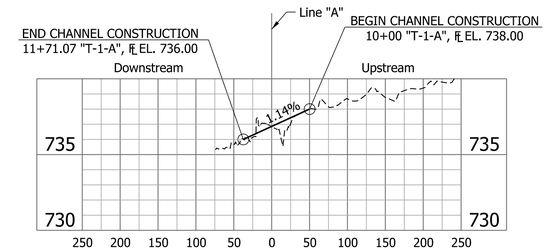


EXISTING STRUCTURES

The existing structure is a single span, precast concrete bridge built in 1966 with 1 span of 22'-0" and a 28'-0" clear roadway. Existing structure to be removed.



TYPICAL CHANNEL SECTION



EXISTING STREAM PROFILE

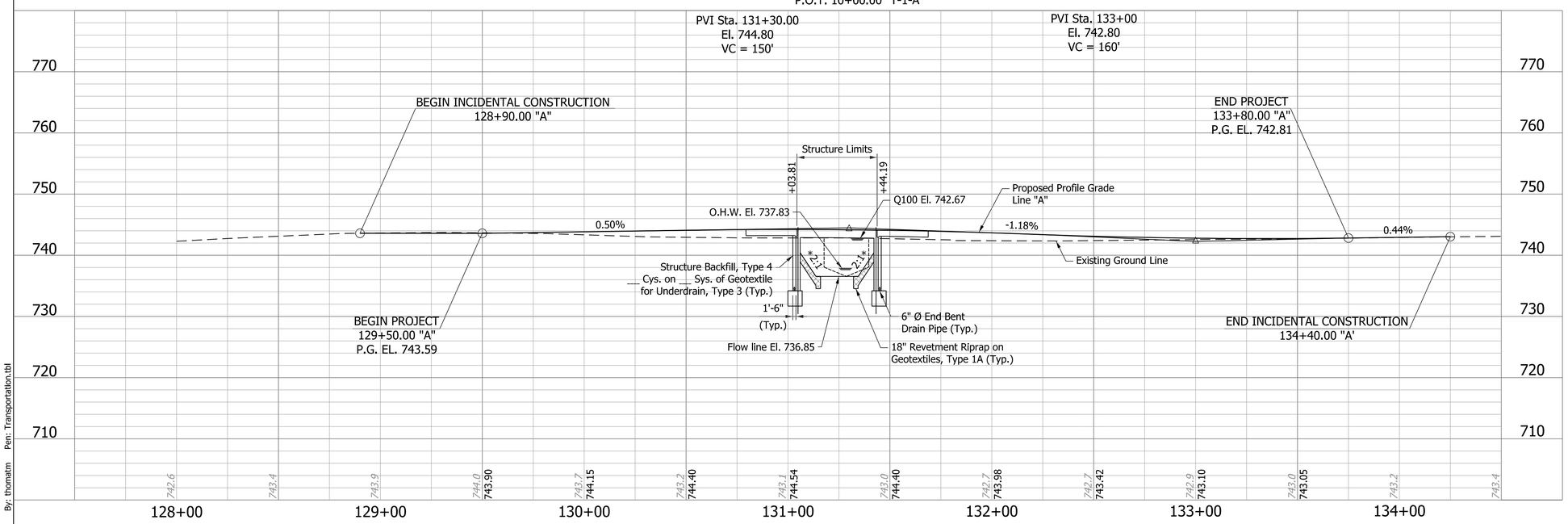
Scales: 1" = 100'-0" Horizontal, 1" = 5'-0" Vertical

HYDRAULIC DATA

Waterway Opening Required =	729.92 sq.ft.
Waterway Opening Provided =	169.71 sq.ft.
Existing Road Overflow Waterway Area =	0 sq.ft.
Drainage Area =	1.59 sq.mi.
Design Discharge =	1400 cfs
Velocity Existing=	3.76 ft/s
Velocity Proposed=	5.06 ft/s
Q_{100} Elevation =	742.67 ft.
Existing Backwater at Q_{100} =	1.05 ft.
Proposed Backwater at Q_{100} =	0.50 ft.
Existing Q_{100} Headwater Elevation =	743.72 ft.
Proposed Q_{100} Headwater Elevation =	743.17 ft.
Existing Low Structure Elevation =	740.84 ft.
Proposed Low Structure Elevation =	742.83 ft.

HYDRAULIC SCOUR DATA

Q_{100} Discharge =	1400 cfs
Q_{100} Elevation =	742.67 ft.
Maximum Velocity at Q_{100} =	5.76 ft/sec
Scour Depth (Contraction) =	1.65 ft.
Scour Depth (Total) =	1.65 ft.
Low Scour Elevation =	735.20 ft.
Q_{500} Discharge =	1960 cfs
Q_{500} Elevation =	743.39 ft.
Maximum Velocity at Q_{500} =	5.71 ft/sec
Scour Depth (Contraction) =	2.72 ft.
Scour Depth (Total) =	2.72 ft.
Low Scour Elevation =	734.13 ft.



NOTES:

All R/W on this sheet is described from Line "A".

For guardrail limits and side ditch grades, see Road Plan and Profile Sheet.

For alignment references, benchmarks and topo references, see Index.

Cross-Hatched areas indicate limits of 18" Revetment Riprap over Geotextiles. (Est. Qty. = * Tons of 18" Revetment Riprap over * Sys. of Geotextiles)

Hatched areas indicate limits of 4' wide sodding strip. (Est. Qty. = * Sys.)

* ⊥ To Abutment

REINFORCED CONCRETE SLAB BRIDGE

SR 11 OVER SOUTH FORK BUCK CREEK

1 SPAN: 38'-9⅞" SKEW: 15° LT. CLEAR ROADWAY: 30'-0"

HARRISON COUNTY

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: NRT DRAWN: TMT

CHECKED: KMP CHECKED: KMP

INDIANA
DEPARTMENT OF TRANSPORTATION

LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1"=30'-0", U.N.	011-31-10182
VERTICAL SCALE	DESIGNATION
1"=10'-0", U.N.	1600486
	SHEETS
	11 of 22
CONTRACT	PROJECT
B-39896	1600486

Plot: 9/11/2019 3:49:48 PM By: thomatm Pen: Transportation.tbl

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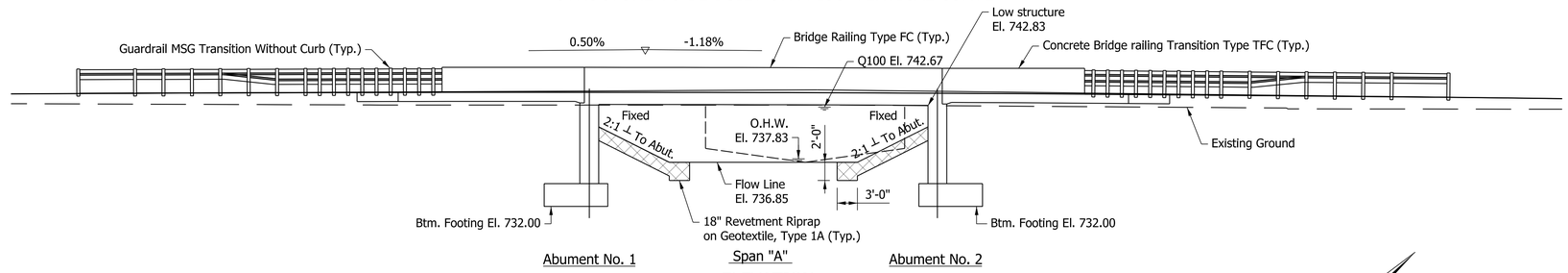
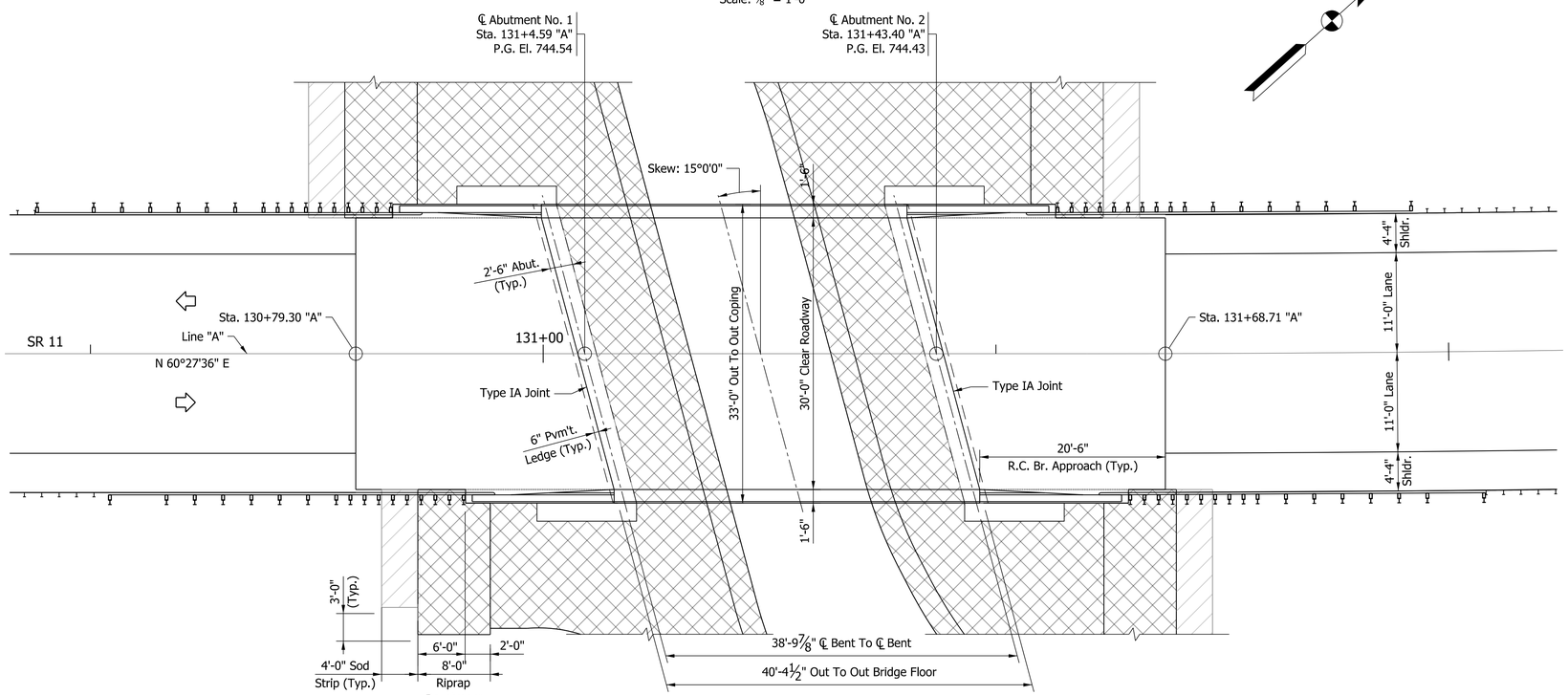
STRUCTURE TO BE BUILT ON A 150' VERTICAL CURVE



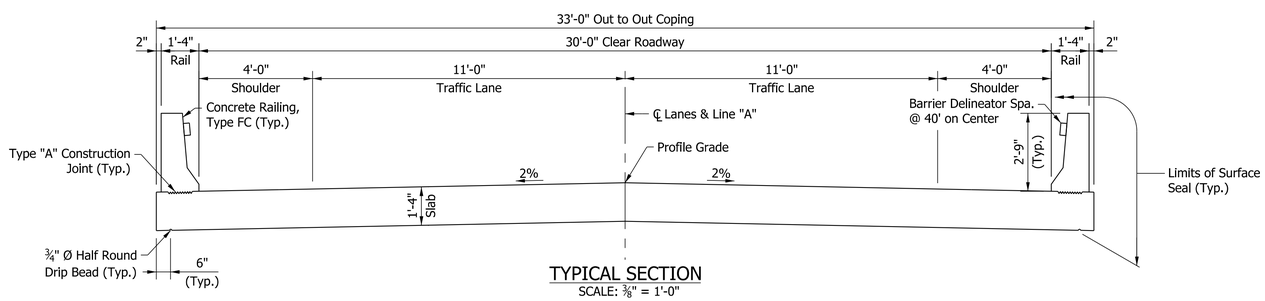
ELEVATION

Scale: ⅛" = 1'-0"



PLAN

Scale: ⅛" = 1'-0"



TYPICAL SECTION

SCALE: ⅜" = 1'-0"

GENERAL NOTES

Reinforcing steel cover shall be 2 1/2"in top and 1" minimum in bottom of floor slab, 3" in footings, except bottom steel which shall be 4", and 2" in all other parts, unless noted.

DESIGN DATA

Superstructure and Substructure designed for HL-93 loading in accordance with AASHTO LRFD Bridge Design Specifications for Highway Bridges 8th Edition, 2019 and its subsequent interims .

DEAD LOAD

Actual weight plus 35 psf (composite) for future wearing surface and 15 (non-componsite) for permanent metal deck forms.

FLOOR SLAB

Designed with a 7 1/2" structural depth plus a 1/2" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class "A" Concrete:	f'c = 3,500 psi
Class "B" Concrete:	f'c = 3,000 psi
Class "C" Concrete:	f'c = 4,000 psi

REINFORCING STEEL

Grade 60 Fy = 60,000 psi

CONSTRUCTION LOADING

The exterior beam has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. Finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom of overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

DECK FALSEWORK LOADS

Designed for 15 lb/ft2 for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkways.

CONSTRUCTION LIVE LOAD

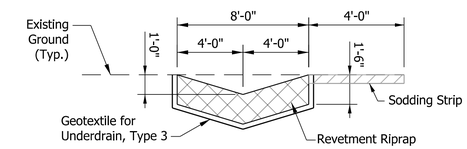
Designed for 20 lb/ft2 extending 2 ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine.

FINISHING MACHINE LOAD

4500 lb distributed over 10 ft along the coping.

WIND LOAD

Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.



RIPRAP TURNOUT TYPICAL SECTION

No Scale

REINFORCED CONCRETE SLAB BRIDGE

SR 11 OVER SOUTH FORK BUCK CREEK
1 SPAN: 38'-9⅞" SKEW: 15° LT. CLEAR ROADWAY: 30'-0"
HARRISON COUNTY

gai consultants

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: NRT DRAWN: RLJ
CHECKED: KMP CHECKED: KMP

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

BRIDGE FILE	
011-31-10182	
DESIGNATION	
1600486	
DRAWING NUMBER	SHEETS
	12 of 22
CONTRACT	PROJECT
B-39896	1600486

Plot: 9/11/2019 3:49:51 PM By: thomatm Pen: Transportation.tbl

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SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	CONC. BRIDGE RAILING TRAN.,TBT	RAILING, PS-2	REINF. CONC. BRIDGE APPR., 10"	REINF. CONC. BRIDGE APPR., 12"	DENSE GRADED SUBBASE	REINF. STEEL	EPOXY COATED REINF. STEEL	STRUC-TURAL STEEL ***	ANCHOR PLATE	PILES												EXP. JOINT TYPE SS	CONC. STR. MEMBERS		ANCHOR BOLT	BARRIER DELIN-EATOR	FIELD DRILLED HOLES IN CONCRETE	CONDUIT, PVC, 4"	SURFACE SEAL *	THREADED TIE BAR ASSEMBLY	FIELD DRILLED HOLES	CAST IRON, GRATES, BASINS & FITTINGS	INTEGRAL CONC. CURB
	CLASS C SUPERSTR.	CLASS A SUBSTR.	CLASS B FOOTINGS	CLASS C SUBSTR.											EPOXY COATED SHELLS		TEST, DYNAMIC, PRODUCTION		CONC., STEEL SHELL ENCASED		STEEL H		SHOE, HP ??x??	SLEEVES	TEST PILE, DYNAMIC, RESTRIKE	CORED HOLE IN ROCK, 18"			BOX BEAM TYPE & SIZE	I BEAM TYPE & SIZE								
	CYS.	CYS.	CYS.	CYS.	CYS.	EACH	LFT.	SYS.	SYS.	CYS.	LBS.	LBS.	LBS.	EACH	NO.	LFT.	NO.	LFT.	NO.	LFT.	NO.	LFT.	EACH	EACH	EACH	NO.	LFT.	LFT.	LFT.	LFT.	EACH	EACH	EACH	LFT.	SFT.	EACH	EACH	LBS.	SFT.
TOTALS																																						

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: TMT

CHECKED: TDJ CHECKED: KMP

INDIANA
DEPARTMENT OF TRANSPORTATION

BRIDGE SUMMARY

SCALE	BRIDGE FILE
AS NOTED	011-31-10182
	DESIGNATION
	1600486
	SHEETS
	13 of 22
CONTRACT	PROJECT
B-39896	1600486

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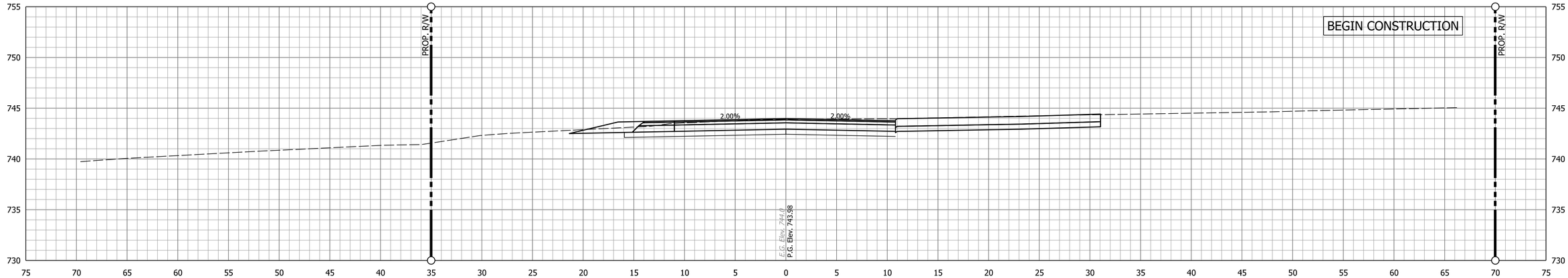
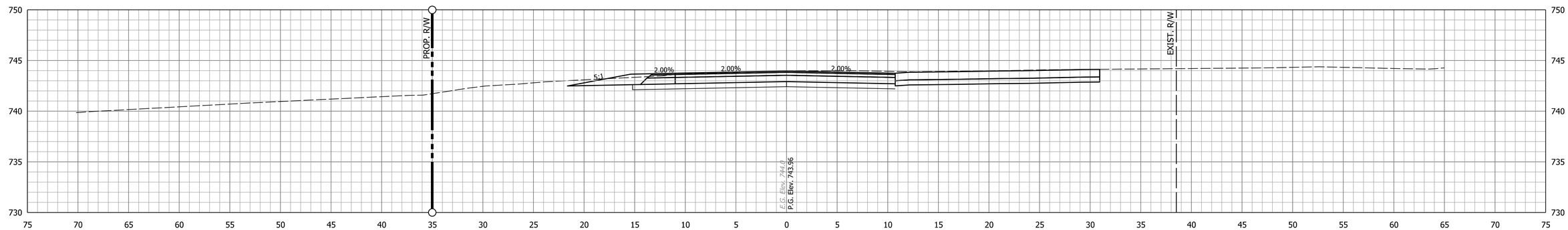


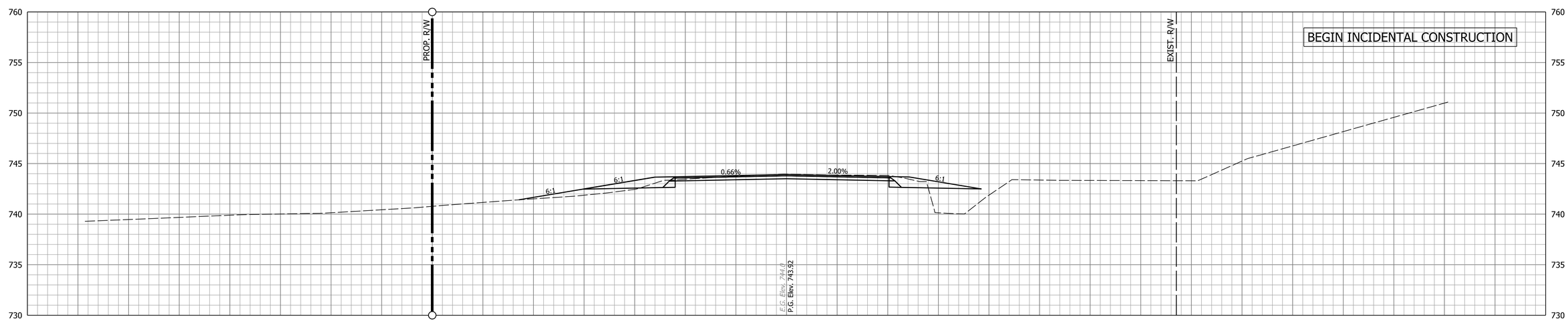
Ac = 55.5 SFT Af = 0.0 SFT
Vc = 64.0 CYS Vf = 7.4 CYS

129+65.00



Ac = 70.0 SFT Af = 0.0 SFT
Vc = 34.9 CYS Vf = 0.0 CYS

129+50.00



Ac = 13.2 SFT Af = 19.2 SFT
Vc = 69.3 CYS Vf = 16.0 CYS

129+05.00

STA. 129+05.02 TO STA. 129+50.00

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS 14 of 22
CONTRACT	PROJECT

Plot: 9/12/2019 12:15:17 PM By: huynhkt Pen: Transportation.tbl

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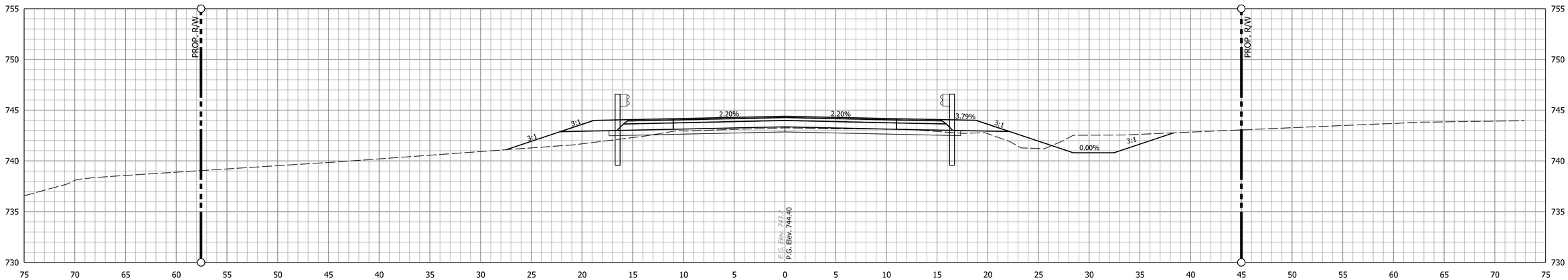
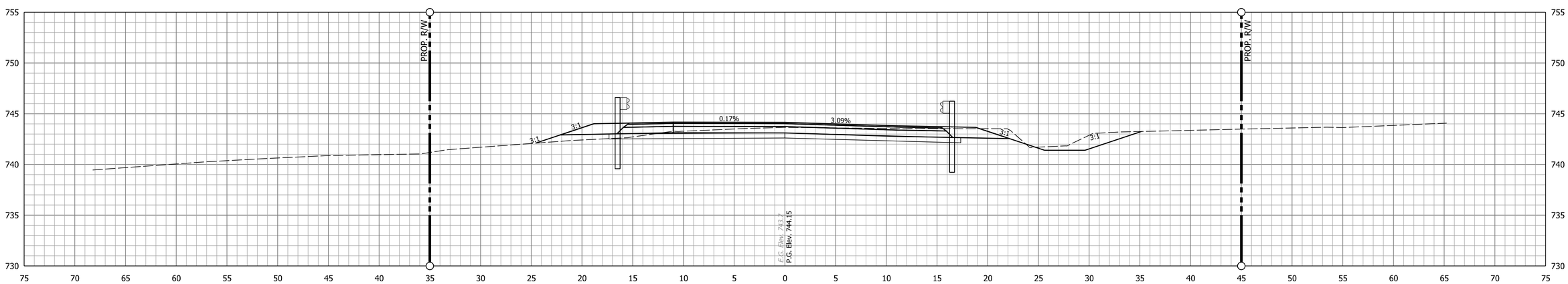


Ac = 27.9 SFT Af = 26.2 SFT
Vc = 47.6 CYS Vf = 30.7 CYS

130+50.00



Ac = 47.6 SFT Af = 11.4 SFT
Vc = 69.9 CYS Vf = 34.8 CYS

130+00.00

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
	15 of 22
CONTRACT	PROJECT

Plot: 9/12/2019 12:15:19 PM By: huynhkt Pen: Transportation.tbl

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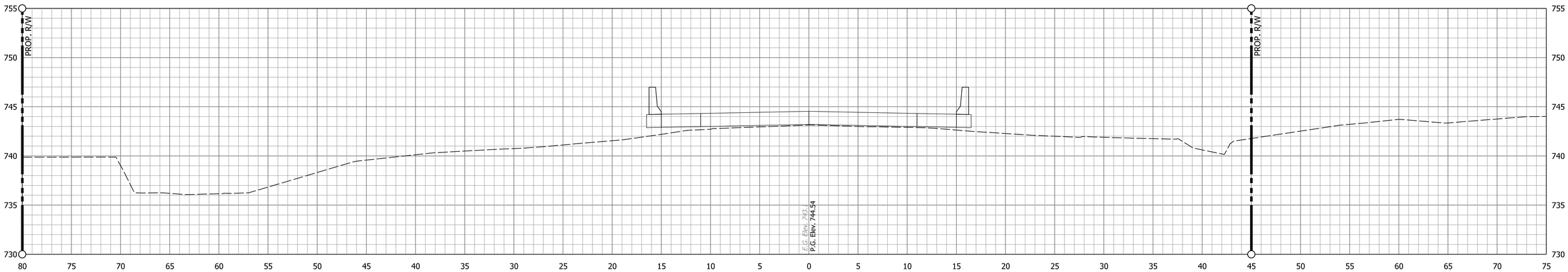
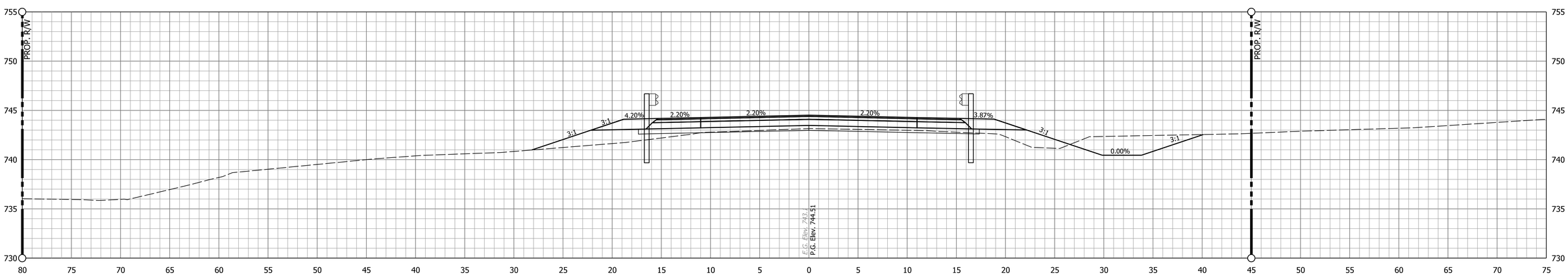
STA. 130+00.00 TO STA. 130+50.00



131+00.00



Ac = 24.6 SFT Af = 43.0 SFT
Vc = 32.3 CYS Vf = 63.1 CYS

130+79.30

STA. 130+79.30 TO STA. 131+00.00

Plot: 9/12/2019 12:15:20 PM By: huynhkt Pen: Transportation.tbl

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
	16 of 22
CONTRACT	PROJECT

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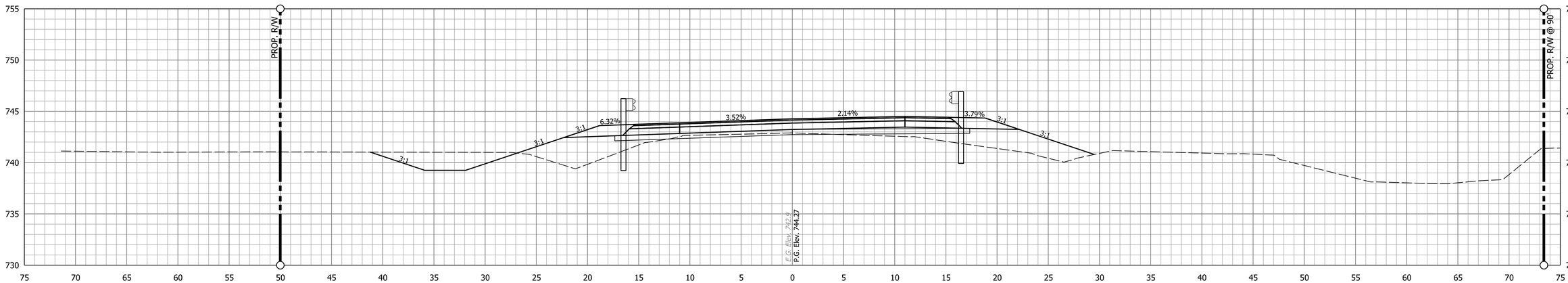
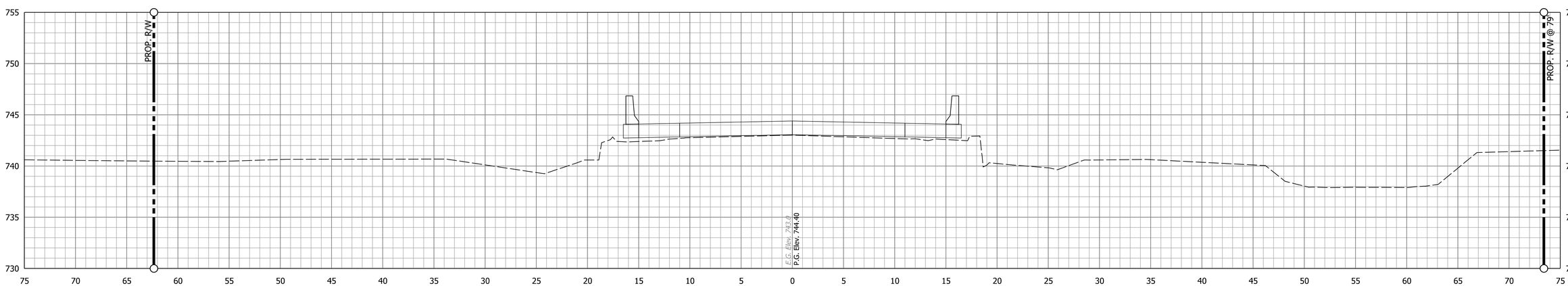


Ac = 20.0 SFT Af = 70.7 SFT
Vc = 35.8 CYS Vf = 74.8 CYS

131+68.71



131+50.00

STA. 131+50.00 TO STA. 131+68.71

Plot: 9/12/2019 12:15:22 PM By: huynhkt Pen: Transportation.tbl

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
	17 of 22
CONTRACT	PROJECT

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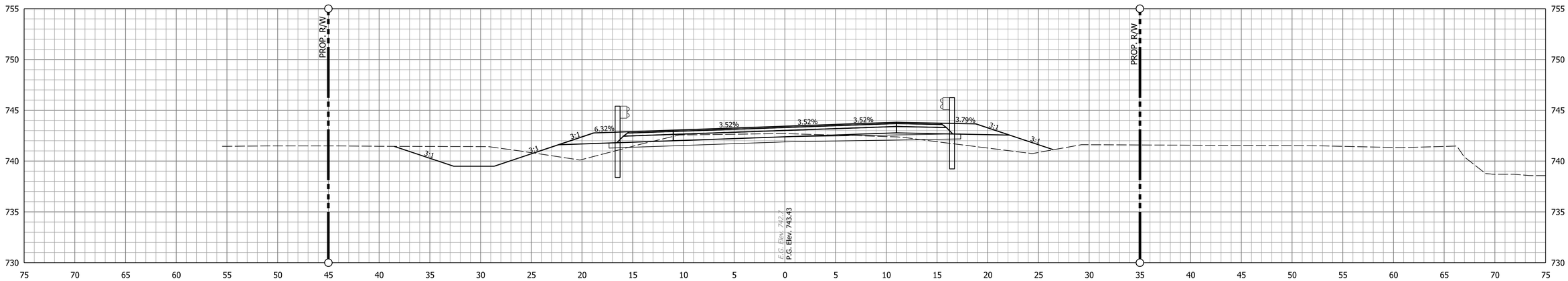
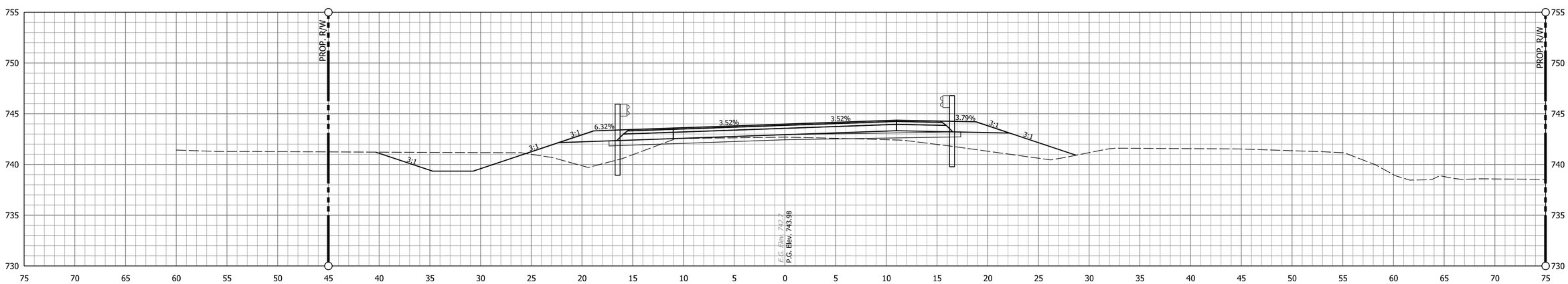


Ac = 38.4 SFT Af = 38.8 SFT
Vc = 84.2 CYS Vf = 61.5 CYS

132+50.00



Ac = 41.7 SFT Af = 58.4 SFT
Vc = 74.2 CYS Vf = 90.0 CYS

132+00.00

Plot: 9/12/2019 12:15:24 PM By: huynhkt Pen: Transportation.tbl

STA. 132+00.00 TO STA. 132+50.00

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

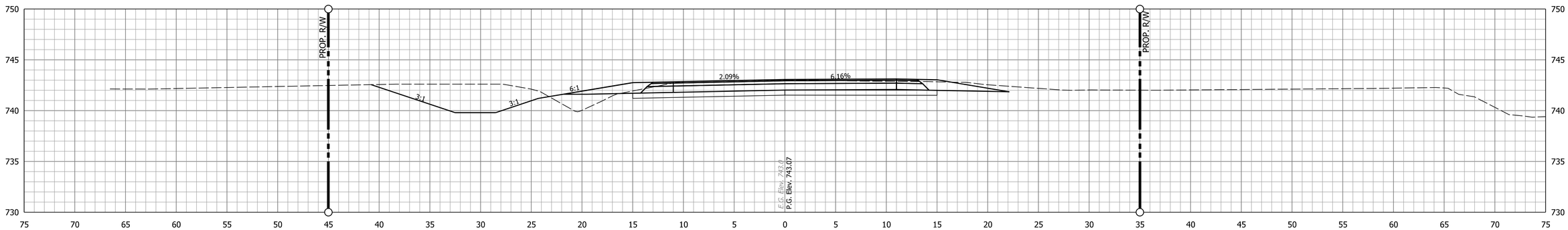
CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

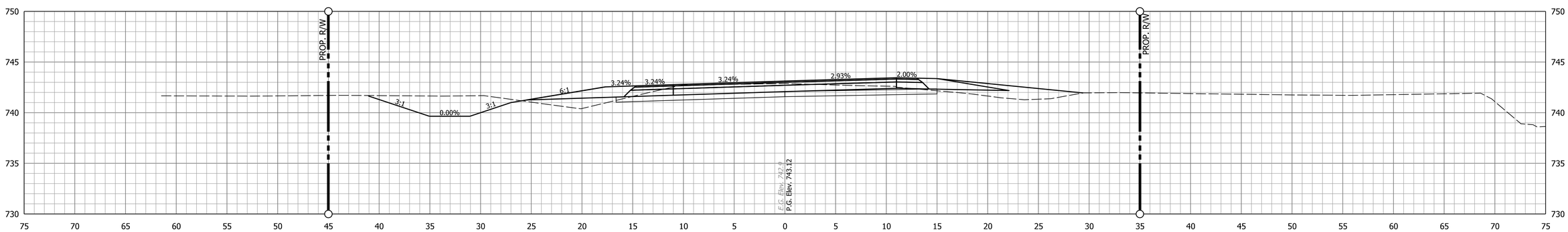
SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
	18 of 22
CONTRACT	PROJECT

Z:\Infra\2017\D170118.06 - 6120 SR 11S Fork Buck C\CAD\Production Drawings\D170118.06 Cross Sections.dgn



Ac = 78.7 SFT Af = 6.2 SFT
Vc = 72.4 CYS Vf = 2.9 CYS

133+50.00



Ac = 52.2 SFT Af = 27.6 SFT
Vc = 121.5 CYS Vf = 31.3 CYS

133+00.00

STA. 133+00.00 TO STA. 133+50.00

Plot: 9/12/2019 12:15:25 PM By: huynhkt Pen: Transportation.tbl

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DESIGNED: _____ DRAWN: _____

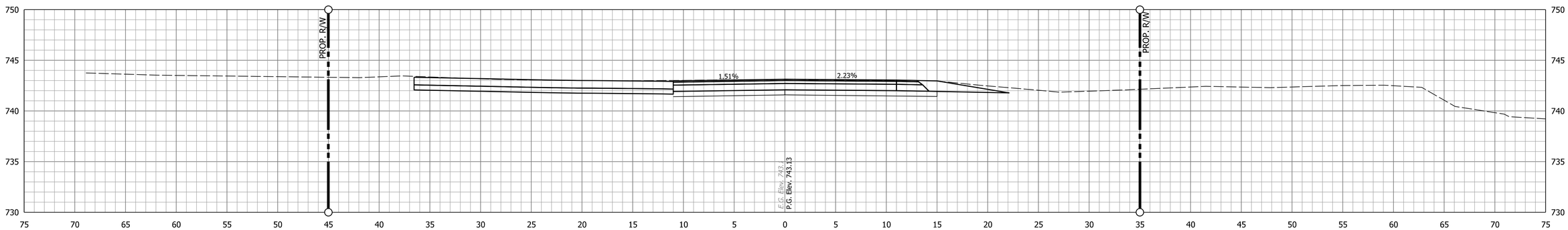
CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS 19 of 22
CONTRACT	PROJECT

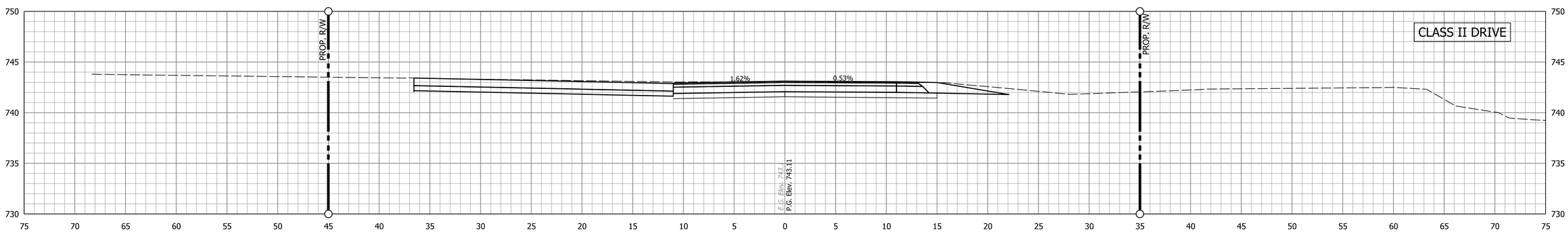
Z:\Infra\2017\D170118.06 - 6120 SR 11S Fork Buck C\CAD\Production Drawings\D170118.06 Cross Sections.dgn



Ac = 77.7 SFT
Vc = 9.5 CYS

Af = 0.0 SFT
Vf = 0 CYS

133+75.00



133+70.39

STA. 133+70.39 TO STA. 133+75.00

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INDIANA
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CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS 20 of 22
CONTRACT	PROJECT

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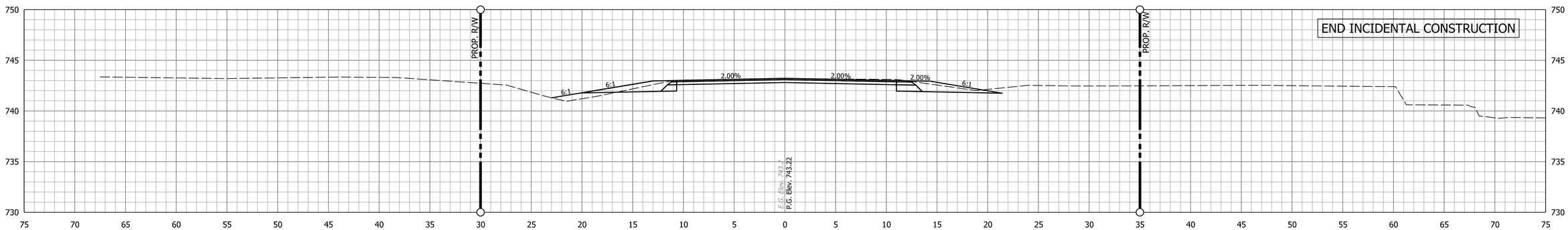
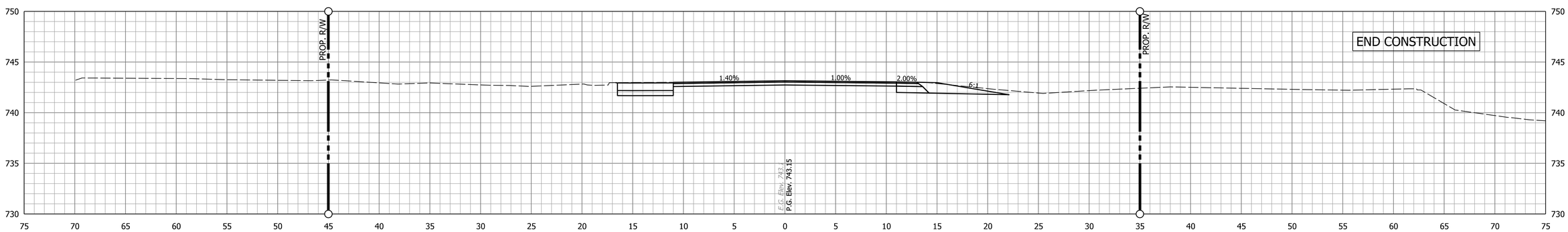


Ac = 19.2 SFT Af = 4.8 SFT
Vc = 29.3 CYS Vf = 3.5 CYS

134+00.00



Ac = 25.1 SFT Af = 0.0 SFT
Vc = 16.4 CYS Vf = 1.8 CYS

133+80.00

STA. 133+80.00 TO STA. 134+00.00

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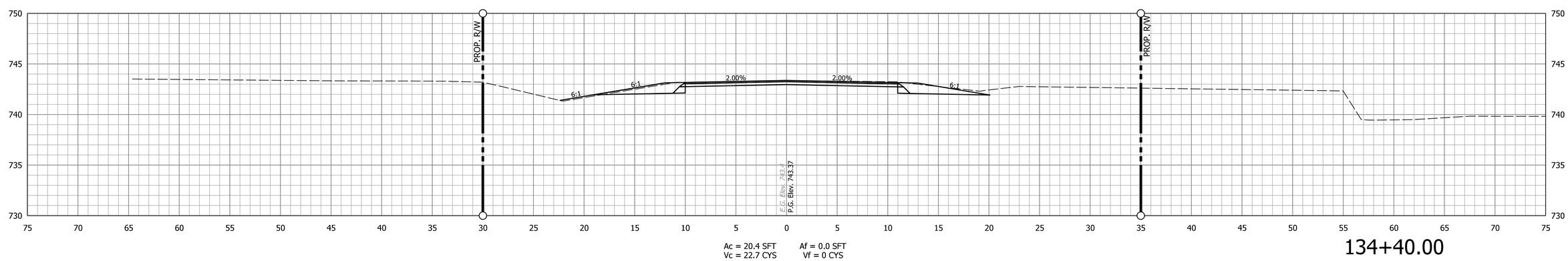
INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS 21 of 22
CONTRACT	PROJECT

Z:\Infra\2017\D170118.06 - 6120 SR 11S Fork Buck C\CAD\Production Drawings\D170118.06 Cross Sections.dgn



Ac = 20.4 SFT
Vc = 22.7 CYS

Af = 0.0 SFT
Vf = 0 CYS

134+40.00

STA. 134+39.99 TO STA. 134+39.99

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DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
	22 of 22
CONTRACT	PROJECT

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