

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	1
ILLINOIS			CONTRACT NO. 70B95	

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

PROPOSED HIGHWAY PLANS

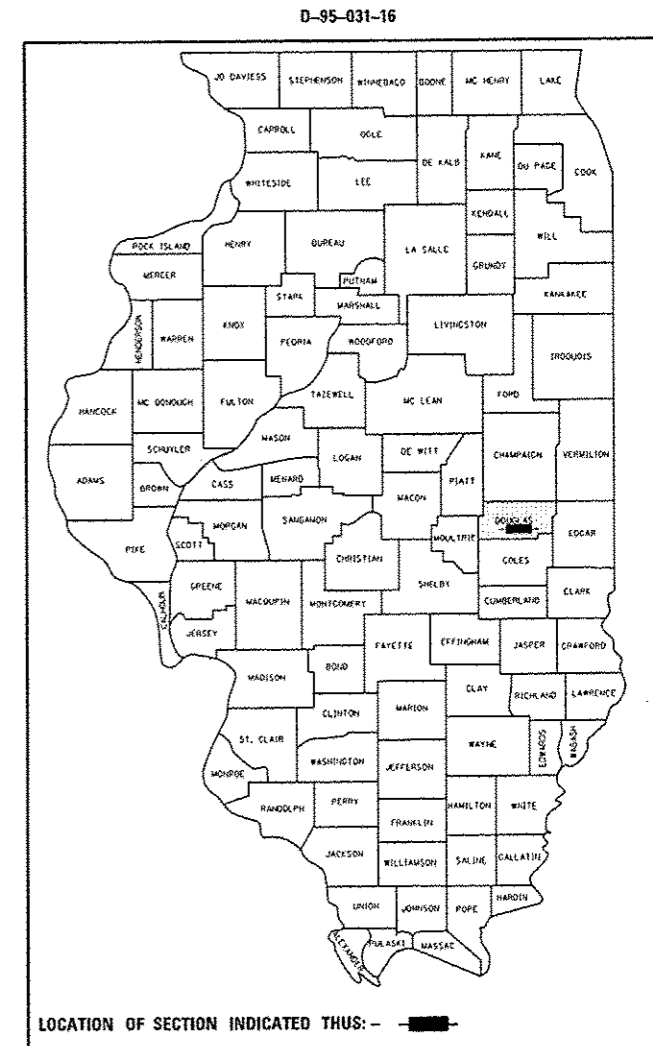
FAP ROUTE 749 (IL 133)
SECTION 121CR
PROJECT: ACF-0749(027)
CULVERT REPLACEMENT
DOUGLAS COUNTY

C-95-031-16

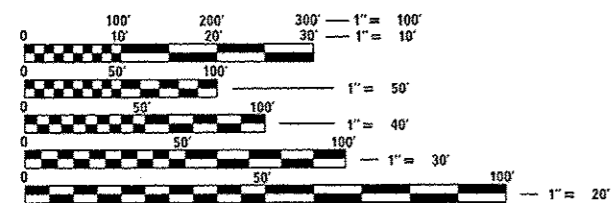
DITCH 0.4 & 2.7 MI W OF IL 130

CURRENT TRAFFIC DATA	
MINOR ARTERIAL	
2016 ADT	2050
PU + PC%	79.8%
SU%	8.0%
MU%	12.2%

DESIGN DESIGNATION
N/A



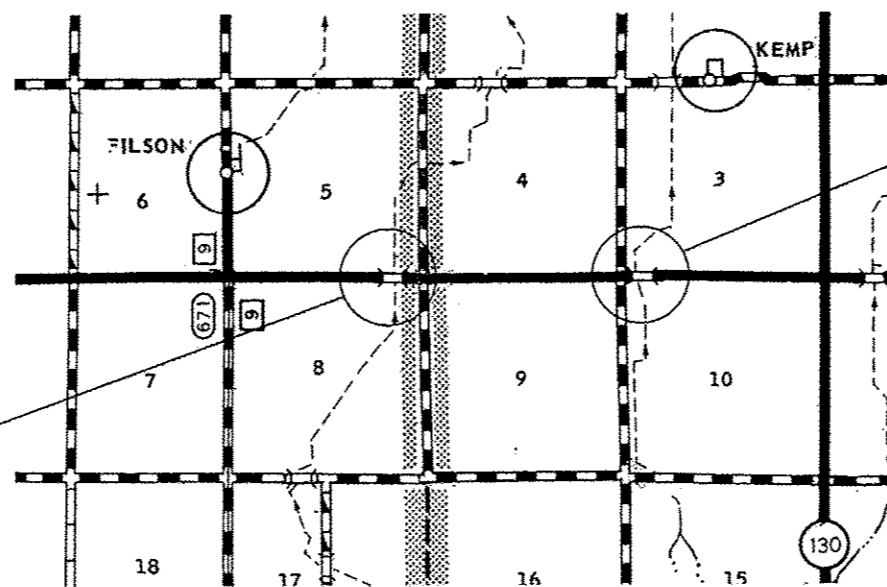
LOCATION OF SECTION INDICATED THUS: — ■ —



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.

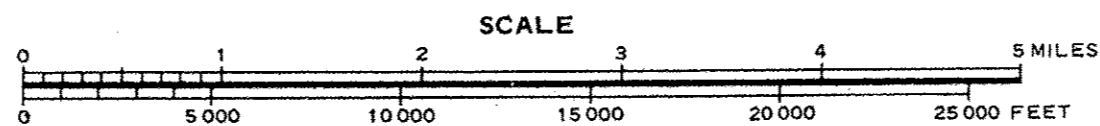
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811
ARCOLA TOWNSHIP

CULVERT NO.1
EXIST. S.N. 021-8028
PROP. S.N. 021-2030
PROP. PCC BOX CULVERT
2 @ 12'X2'



CULVERT NO. 2
EXIST. S.N. 021-8800
PROP. S.N. 021-2031
PROP. PCC BOX CULVERT
2 @ 12'X3'

T 14 N
N



GROSS LENGTH = 750 FT. = 0.142 MILE
NET LENGTH = 750 FT. = 0.142 MILE

PROJECT ENGINEER: NANCY FASIG (217) 465-4181
DESIGNER: TODD BLACK

CONTRACT NO. 70B95

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED AUGUST 11 2016
Kensil A. Samath
REGIONAL ENGINEER

Sept 20 2016
Mousoon M. Adis P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

Sept 20 2016
Michael J. ...
DIRECTOR OF PROGRAM DEVELOPMENT

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

1	COVER SHEET
2	INDEX OF SHEETS
2	HIGHWAY STANDARDS
3	GENERAL NOTES
4 - 7	SUMMARY OF QUANTITIES
8	EXISTING TYPICAL SECTION
9	TIE POINTS
10-14	CULVERT NO. 1
15-22	CULVERT NO. 2
23-26	DETOUR SIGNING
27 - 29	DISTRICT DETAILS
30 - 38	CROSS SECTIONS

LIST OF HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-08	PAVEMENT JOINTS
420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
442201-03	CLASS C AND D PATCHES
515001-03	NAME PLATE FOR BRIDGES
542406-02	METAL END SECTION FOR PIPE CULVERTS
630001-10	STEEL PLATE BEAM GUARDRAIL
630101-09	GUARDRAIL MOUNTED ON EXISTING CULVERTS
630301-06	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
701001-02	OFF-ROAD OPERATIONS, 2L, 2W MORE THAN 15' (4.5 M) AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY FOR SPEEDS >= 45 MPH
701301-04	LANE CLOSURE, 2L, 2W SHORT TIME OPERATIONS FOR SPEEDS >=
701901-05	TRAFFIC CONTROL DEVICES
725001	OBJECT AND TERMINAL MARKERS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

FILE NAME =	USER NAME = pserenbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS /LIST OF HIGHWAY STANDARDS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
pw\N\108468IDINTEG\Illinois.gov\1007\De	Documents\DOT Offices\District 5\Projects\057	DRAWN	REVISED			749	121CR	DOUGLAS	38	2	
	PLOT SCALE = 48.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 70895					
#MODELNAME#	PLOT DATE = 8/12/2016	DATE -	REVISED -			SCALE:	SHEET	OF	SHEETS	STA.	TO STA.

GENERAL NOTES

G.N.-100
ENGLISH UNITS OF MEASUREMENT SHALL GOVERN OVER AND SUPERSEDE ANY METRIC UNITS SHOWN IN THIS CONTRACT. WHERE INCLUDED, METRIC UNITS ARE FOR INFORMATION ONLY.

G.N.-100A
ELECTRONIC FILES AND/OR ELECTRONIC SURVEY INFORMATION INCLUDING CADD FILES WILL NOT BE AVAILABLE TO THE CONTRACTOR.

G.N.-105.09A
ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

G.N.-107.37
UTILITY LINES WERE PLOTTED FROM INFORMATION FURNISHED BY THE VARIOUS UTILITY COMPANIES INVOLVED (QUALITY LEVEL C &/OR QUALITY LEVEL D) AND THE ACCURACY SHOULD BE CONSIDERED APPROXIMATE ONLY.

UTILITY COMPANIES MAY BE ADJUSTING THEIR FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH THESE ORGANIZATIONS WHILE THESE ADJUSTMENTS ARE BEING PERFORMED. J.U.L.I.E. - JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS SYSTEM (800) 892-0123 OR 811.

G.N.-250C
SEEDING, CLASS 7 AND MULCH, METHOD 2 IS INCLUDED IN THIS CONTRACT TO SEED NEW EARTH SHOULDERS DURING TIME PERIODS WHEN PERMANENT SEEDING IS NOT ALLOWED. SOME OR ALL OF THE CLASS 7 SEEDING AND MULCH WILL BE DELETED IF IT IS POSSIBLE TO PLACE PERMANENT SEEDING ON EARTH SHOULDERS AT THE TIME OF THEIR COMPLETION.

G.N.-280
TEMPORARY EROSION CONTROL SEEDING IS INCLUDED IN THIS CONTRACT TO SEED DISTURBED EARTH DURING TIME PERIODS WHEN PERMANENT SEEDING IS NOT ALLOWED. SOME OR ALL OF THE TEMPORARY EROSION CONTROL SEEDING WILL BE DELETED IF IT IS POSSIBLE TO PLACE PERMANENT SEEDING ON EARTH AT THE TIME OF THEIR COMPLETION.

G.N.-280A
THE VARIOUS MULCH PAY ITEMS IN THE PLANS INCLUDE QUANTITIES FOR TEMPORARY MULCH FOR EROSION CONTROL. THE TEMPORARY MULCH INCLUDES MAINTENANCE AND REMOVAL IF NECESSARY, PER THE REQUIREMENTS OF ARTICLE 280 OF THE STANDARD SPECIFICATIONS, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. SOME OR ALL OF THE MULCH USED AS TEMPORARY EROSION CONTROL WILL BE DELETED IF IT IS NOT NECESSARY DUE TO ESTABLISHMENT OF PERMANENT SEEDING.

G.N.-540
THE CONTRACTOR SHALL ASSEMBLE AND MATCH-MARK THE PRECAST BOX CULVERT SECTIONS AND END SECTIONS PRIOR TO SHIPMENT OF THESE COMPONENTS FROM THE MANUFACTURER, AND AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER FIT ON EACH JOINT. ANY SECTIONS OR END SECTIONS WHICH DO NOT PROVIDE A PROPER FIT AT THE JOINT SHALL BE REJECTED BY THE ENGINEER AND REPLACED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION BEING ALLOWED.

THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER FOOT FOR PRECAST CONCRETE BOX CULVERTS OF THE SIZE SPECIFIED.

G.N.-542
BEFORE ORDERING PIPE CULVERTS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR THE EXACT LENGTHS.

G.N.-780 (SPL)
PAVEMENT MARKING FOR THIS PROJECT IS TO BE PERFORMED BY OTHERS. FIELD PERSONNEL SHALL NOTIFY GARY SIMS, DISTRICT 5 TRAFFIC OPERATIONS ENGINEER AT (217) 465-4181 WHEN THE PROJECT IS COMPLETE AND READY FOR PAVEMENT MARKINGS.

G.N.-1004.01
COARSE AGGREGATE GRADATION CA-10 MAY BE USED WHENEVER COARSE AGGREGATE CA-6 IS SPECIFIED IN THE STANDARD SPECIFICATIONS.

G.N.-Z0038
AN ALUMINUM TABLET OF THE TYPE SHOWN ON STANDARD 667101 SHALL BE PLACED ON THE PROPOSED STRUCTURE AS DIRECTED BY THE ENGINEER. THE BENCH MARK ELEVATION WILL BE ESTABLISHED AND MARKED BY THE DEPARTMENT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR PERMANENT BENCH MARKS.

FILE NAME #	USER NAME # pserenbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
p:\IL08\EBID\INTEG\illinois.gov\PI\DOT\Documents\1007\Office\District 5\Projects\057\RD\Drawings\Design\Alternate A\0570045-REVISED.dgn	PLANNED	CHECKED -	REVISED -			749	121CR	DOUGLAS	38	3
PLANNED	CHECKED -	REVISED -								
CONTRACT NO. 70B95	PLANNED	CHECKED -	REVISED -			SCALE:	SHEET OF SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT	

LOCATION OF WORK: FAP 749 (IL 133)
RURAL 2-LANE
SN 021-2030 & 021-2031
DOUGLAS COUNTY
80% FEDERAL/20% STATE

FUNDING BREAKOUT:
CONSTRUCTION TYPE CODE: 0004

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	190.0
20400800	FURNISHED EXCAVATION	CU YD	128.0
20700220	POROUS GRANULAR EMBANKMENT	CU YD	160.0
21301052	EXPLORATION TRENCH 52" DEPTH	FOOT	1,285.00
21400100	GRADING AND SHAPING DITCHES	FOOT	1,425.0
25000210	SEEDING, CLASS 2A	ACRE	0.75
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	52.0
25000500	PHOSPHOROUS FERTILIZER NUTRIENT	POUND	52.0
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	52.0
25100115	MULCH, METHOD 2	ACRE	0.25
25100635	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	1,500.0
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	60.0
28000305	TEMPORARY DITCH CHECKS	FOOT	80.0
28000400	PERIMETER EROSION BARRIER	FOOT	690.0
* DENOTES SPECIALTY ITEM			

14

FILE NAME *	USER NAME *	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw\112884EBID\INTEG\illinois.gov\PKWIDOT\	plmante\DOT Office\District 5\Projects\057	DRABIN	REVISED						749	121CR	Douglas	38	4
MODELNAME#	PLOT SCALE * 48.0000' / 1"	CHECKED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	CONTRACT NO. 70B95		
	PLOT DATE * 8/12/2016	DATE -	REVISED -								ILLINOIS FED. AID PROJECT		

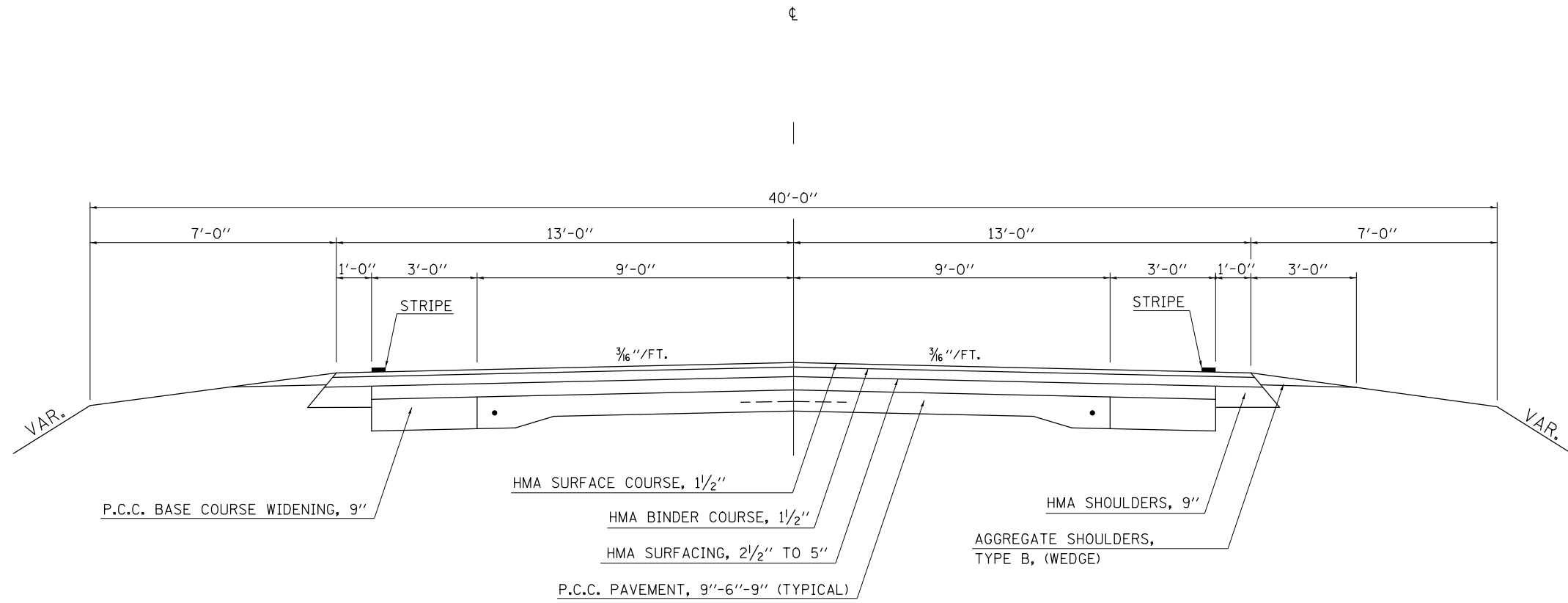
LOCATION OF WORK: FAP 749 (IL 133)
RURAL 2-LANE
SN 021-2030 & 021-2031
DOUGLAS COUNTY
80% FEDERAL/20% STATE

FUNDING BREAKOUT:
CONSTRUCTION TYPE CODE: 0004

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
54011202	PRECAST CONCRETE BOX CULVERTS 12' X 2'	FOOT	80.0
54011203	PRECAST CONCRETE BOX CULVERTS 12' X 3'	FOOT	80.0
54214293	END SECTIONS, EQUIVALENT ROUND-SIZE 18"	EACH	2.0
542D5473	PIPE CULVERTS, CLASS D, TYPE 1 EQUIVALENT ROUND SIZE 18"	FOOT	44.0
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	175.0
* 63000025	STEEL PLATE BEAM GUARDRAIL ATTACHED TO STRUCTURES	FOOT	50.0
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4.0
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	3.0
67100100	MOBILIZATION	LSUM	1.0
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1.0
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.0
* 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	60
X0326767	PROFILE DIAMOND GRINDING CONCRETE PAVEMENT	SQ YD	250.0
Z0013798	CONSTRUCTION LAYOUT	LSUM	1.0
* DENOTES SPECIALTY ITEM			

EXISTING TYPICAL CROSS SECTION

<u>STATION</u>	<u>TO</u>	<u>STATION</u>
147+14.29		255+00.00
323+79.28		382+00.00

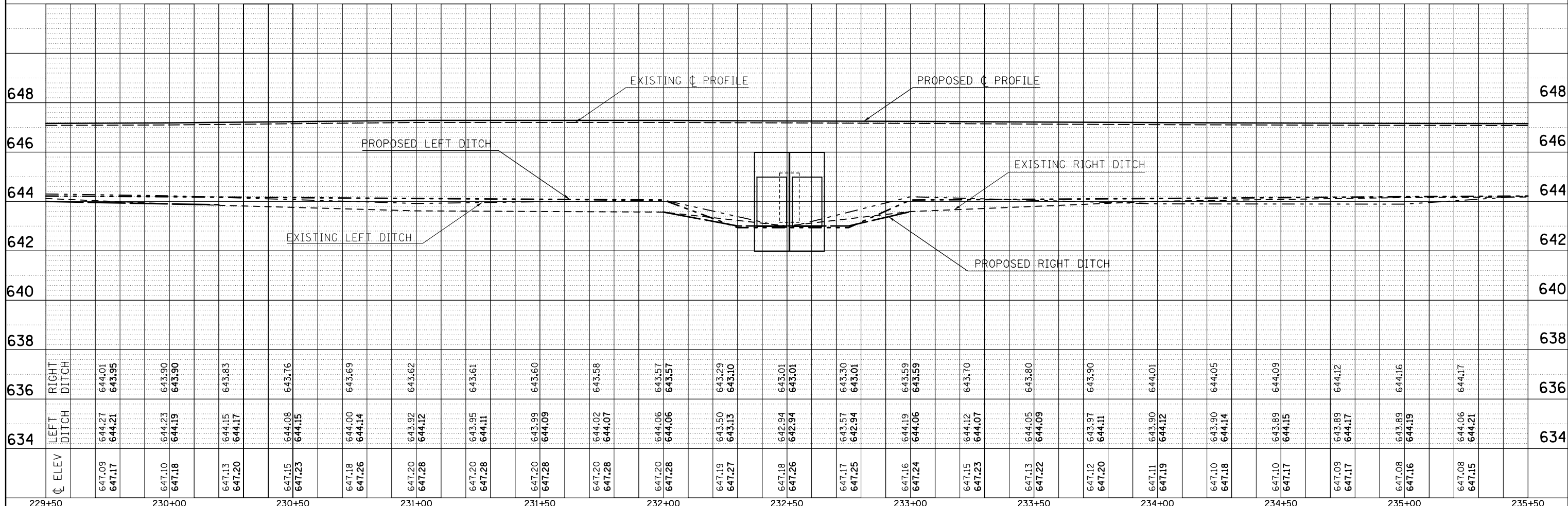
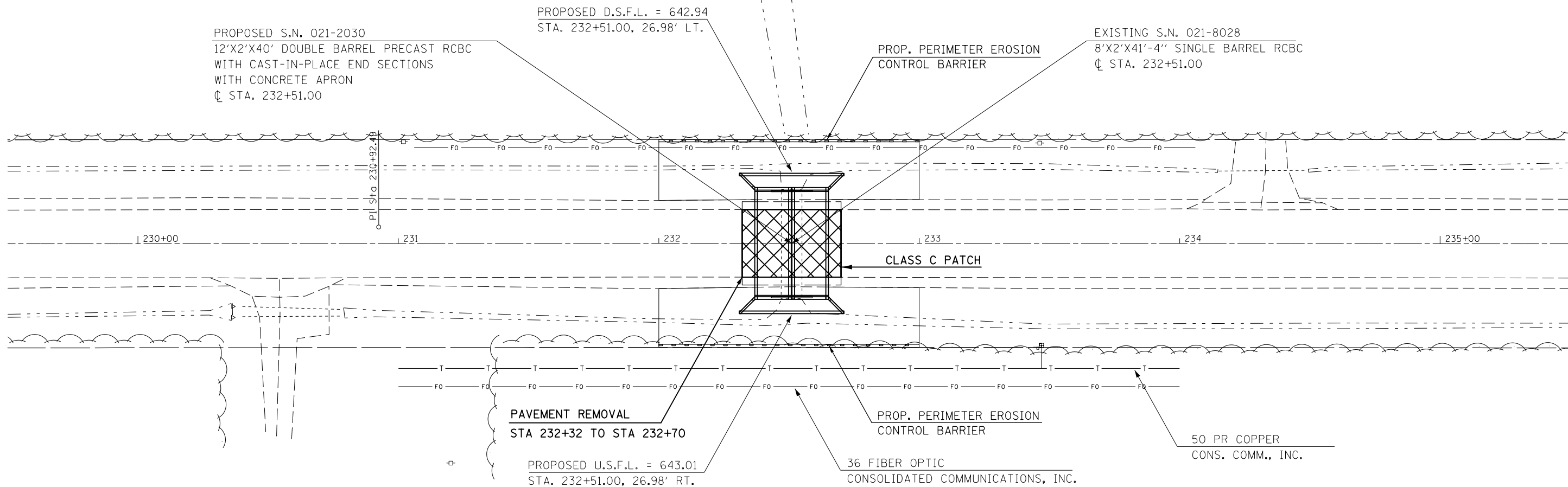


FILE NAME =	USER NAME = ppersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
p:\11\084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0572\Drawings\Design\Alternate A\0570895-5\REVISED.dgn								749	121CR	Douglas	38	8
PLOT SCALE = 40.0000' / in.					CHECKED -	REVISED -	CONTRACT NO. 70B95					
PLOT DATE = 8/12/2016					DATE -	REVISED -	ILLINOIS FED. AID PROJECT					



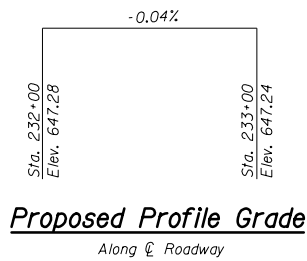
PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNED	
	CHECKED	
	DESIGNED	
	NOTED	
	FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATIONS	
	CHPND	
	NO.	



FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION				CULVERT NO 1 PLAMPROF STA 232 + 51 SN021-8028 EX /SN021-2030 PR				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -					SCALE:	SHEET NO.	OF	SHEETS	STA.	TO	STA.	749	121CR
		DATE -	REVISED -					ILLINOIS FED. AID PROJECT				CONTRACT NO. 70B95				

BENCHMARK ELEV. = USE CENTERLINE PROFILE TO ESTABLISH A TEMPORARY BENCHMARK.



Proposed Profile Grade
Along ϕ Roadway

STATION 232+51.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 749 SEC. 121RS-7 & 121CR
LOADING HL-93
STRUCTURE NO. 021-2030

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. Box Culvert End Section Details
3. Porous Granular Embankment Detail
4. Dynamic Cone Penetrometer
5. Existing Structure Plans
6. Staging Details

DESIGN SPECIFICATIONS

AASHTO LRFD
BRIDGE DESIGN SPECIFICATION
2004 EDITION W/2005 INTERIM

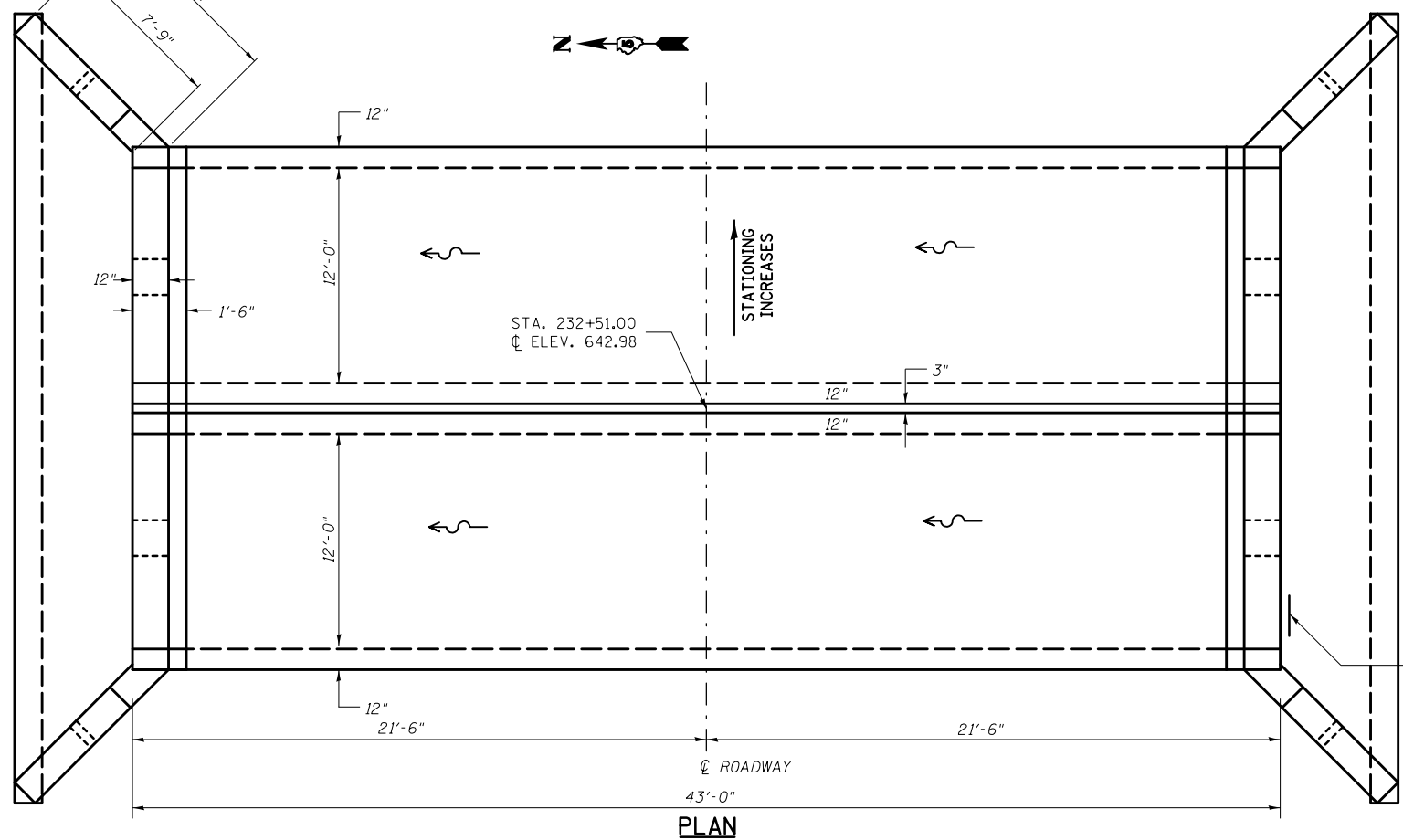
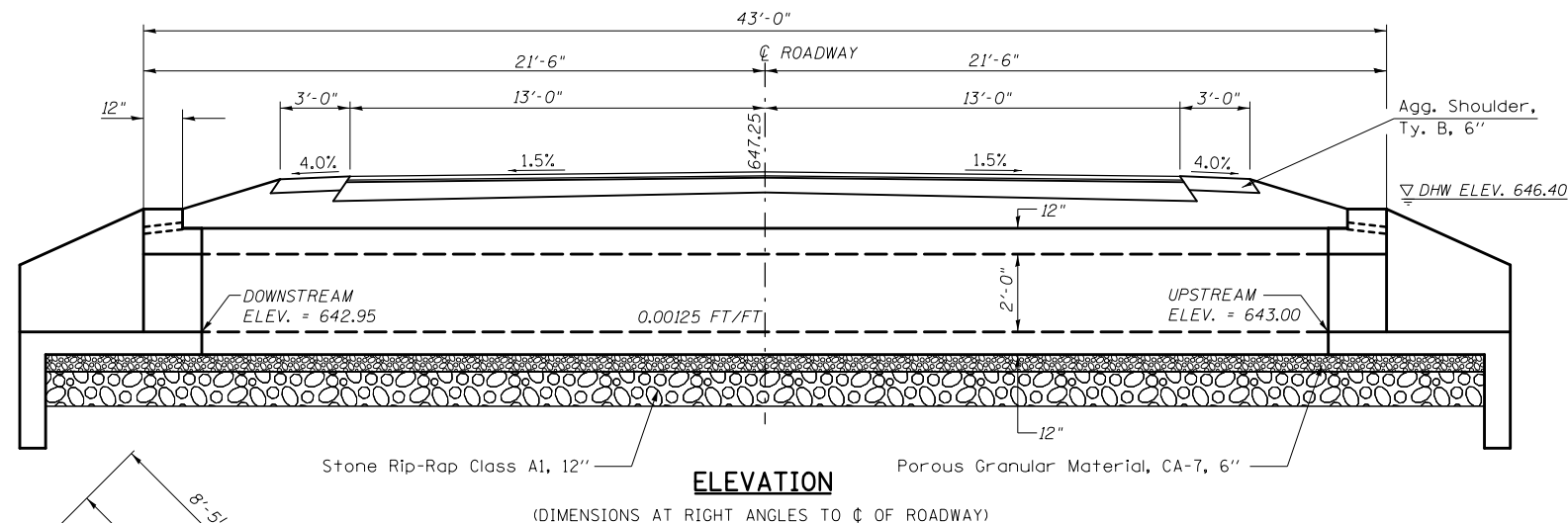
LOADING HL-93

Allow 50#/sq.ft. for future wearing surface

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 65,000 psi (welded wire fabric)

PRECAST UNITS
f'c = 5,000 psi
fy = 65,000 psi (welded wire fabric)



PLAN

STRUCTURE LOCATION SKETCH



SECTIONS 5&8-T14N-R9E 3rd PM

General Notes

- Build tops of headwalls parallel to the grade lines.
- All construction joints shall be bonded according to Article 503.09 of the Standard Specifications.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
- All bars should be rounded and conform to the requirements of Article 1006.10 of the Standard Specification.
- The 6" Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Sections and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.
- When lapping sheets of welded wire fabric, the overlap measured between the outermost cross wires of each fabric sheet shall not be less than 8"
- End Sections will be paid for at the contract unit price per each for BOX CULVERT END SECTIONS, as outlined in Section 540 of the Standard Specifications.
- Class SI Concrete shall be used throughout.
- Concrete, Rebar, and Welded Wire Fabric quantities and lengths calculated for the cast-in-place End Sections may vary based on the precast box culverts supplied.
- Drain holes shall be provided in accordance with Article 503.11 and 502.10 of the Standard Specifications.

The precast manufacturer shall design and detail a connection/construction joint between the precast concrete box sections and the cast-in-place apron and wingwall. The minimum area of reinforcement passing through these construction joints shall be 0.20 sq. in./lineal ft. of welded wire fabric. The design shall be detailed in the shop drawings. The cost of the connection is included in the cost of the end section.

The box culvert end section shall be built in the field and a precast option is not allowed. Cut-off walls shall be monolithic. Shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval. See Special Provisions.

The ends of the precast box sections adjacent to the end section shall be formed without the male and female shapes specified in Article 8.1 of ASTM C1577. See Sections B-B, D-D, E-E and F-F on Sheet 2.

The design fill height for this box is less than 2 feet. The Precast Concrete Box Culvert Sections shall conform to the requirements of ASTM C1577.

The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

All dimensions are in FEET (') - INCHES (") unless otherwise noted.

Drawings not to scale.

NAME PLATE

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 1	Each	1
Precast Concrete Box Culverts 12'x2'	Foot	80
Box Culvert End Sections, Culvert No. 1	Each	2
Name Plates	Each	1
Porous Granular Embankment	Cu Yd	21.5
STONE RIP-RAP CLASS A-1, 12"	Sq Yd	- - -

END SECTION DETAILS

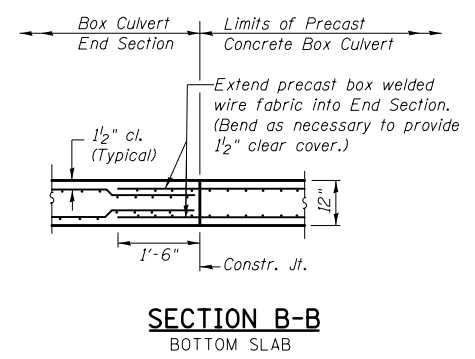
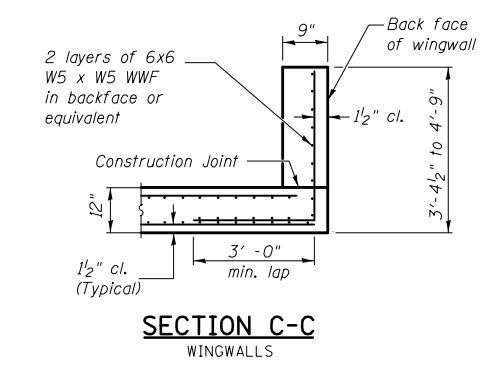
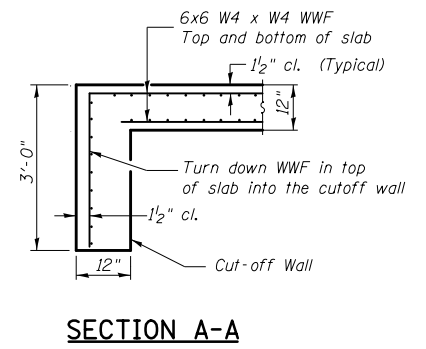
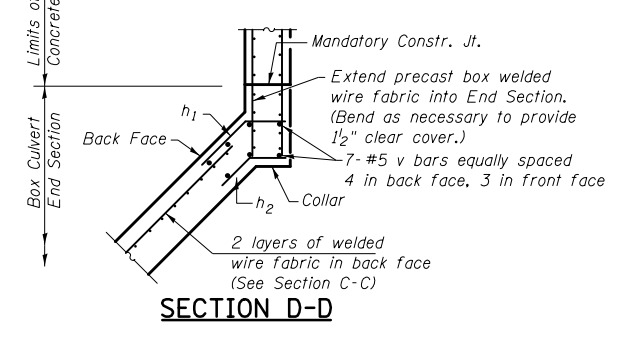
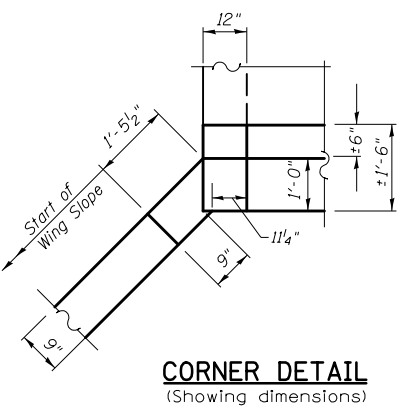
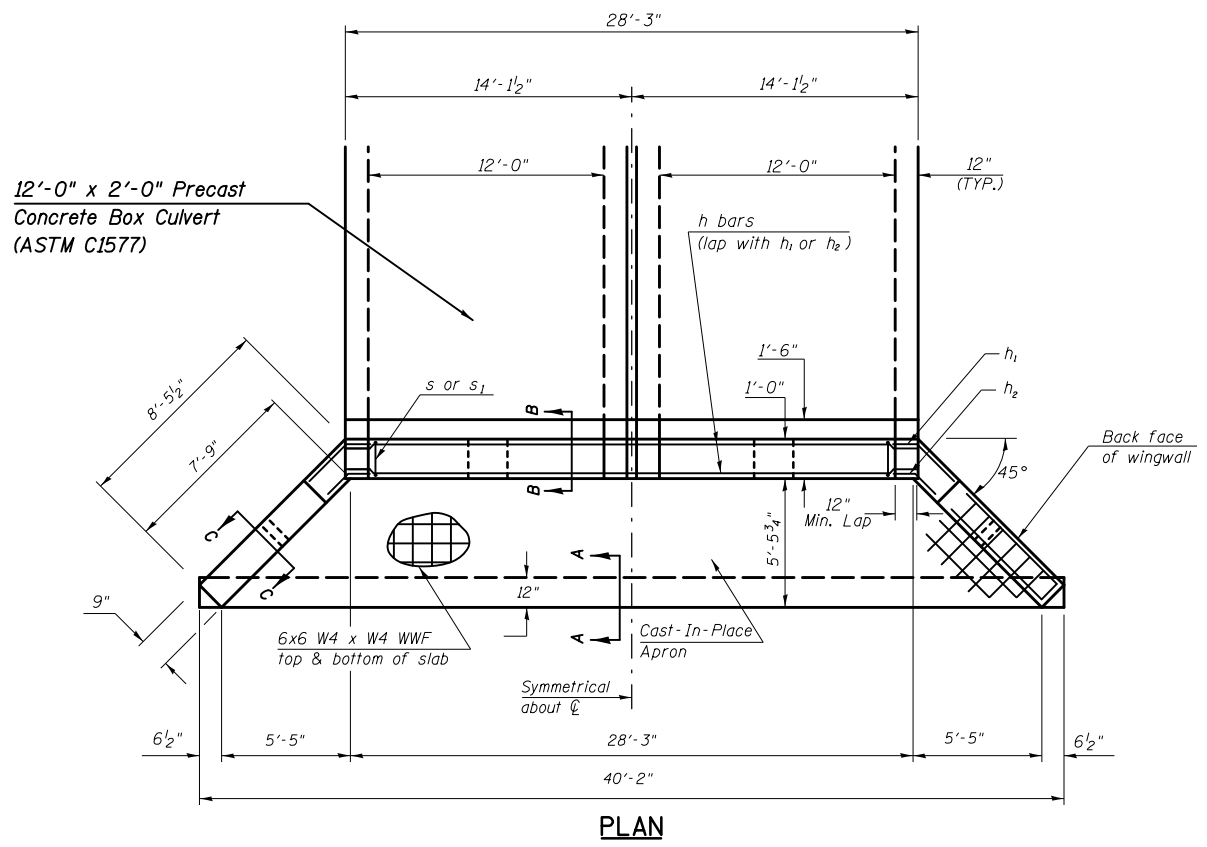
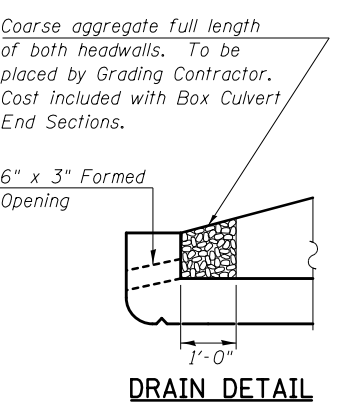
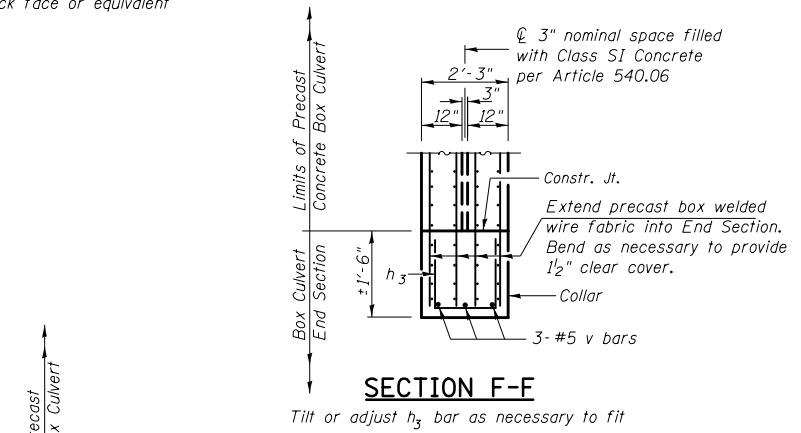
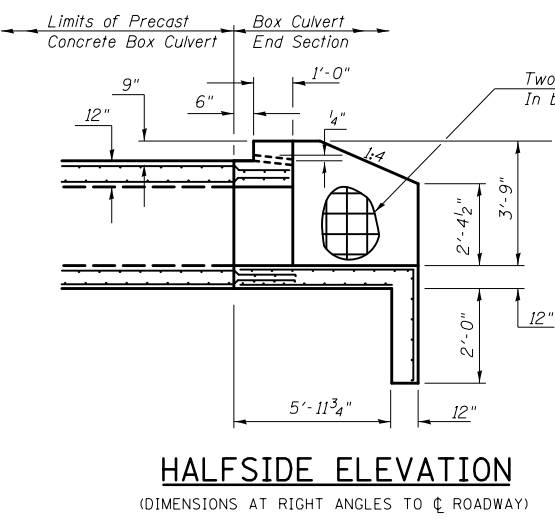
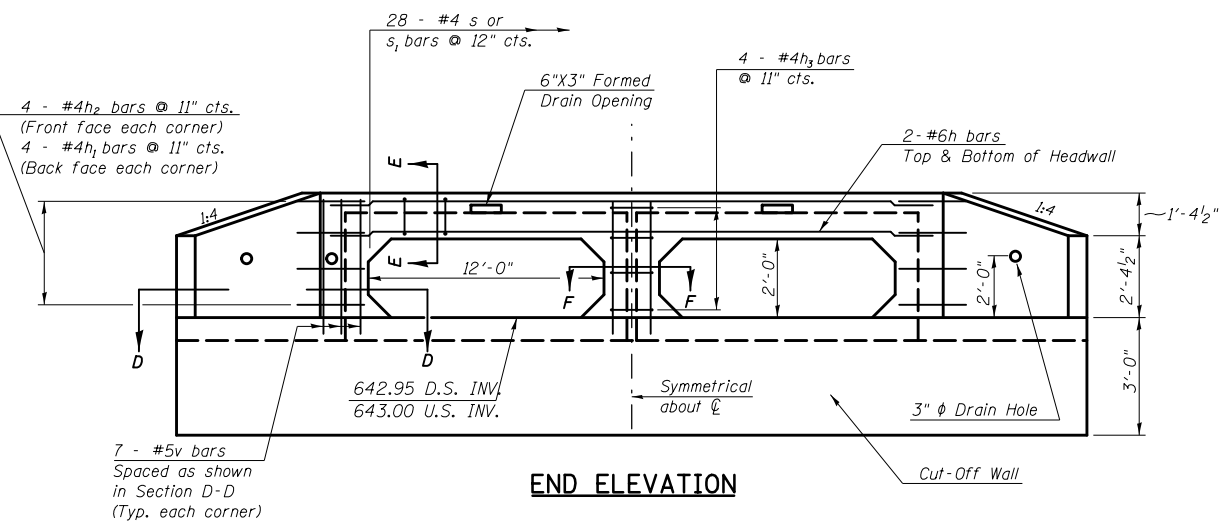
DOUBLE 12'x2' PRECAST BOX CULVERT
F.A.P. ROUTE 749 - SECTION 121CR
DOUGLAS COUNTY
STATION 232+51.00, S.N. 021-2030
CULVERT NO. 1

Drainage Area = 0.8 mi. ²		Existing Low Grade Elev. = 647.02 ft. @ Sta. 238+50		Proposed Lo 647.02 ft. @ Sta. 238+50		Head - Ft.		Headwater Elevation	
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Existing	Opening Sq. Ft. Proposed	Natural H.W.E.	Existing	Proposed	Existing	Proposed
	10	214	16	48				Overtopped	645.2
Design	50	350	16	48				Overtopped	646.4
Base	100	412	16	48				Overtopped	Overtopped
Overtopping									
Max. Calc.	500	561	16	48				Overtopped	Overtopped

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = UNKNOWN
10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 5.31 ft/s
ALL-TIME H.W.E. & DATE: UNKNOWN
Information provided using the USGS SOONG METHOD

Design Scour Elevation Table

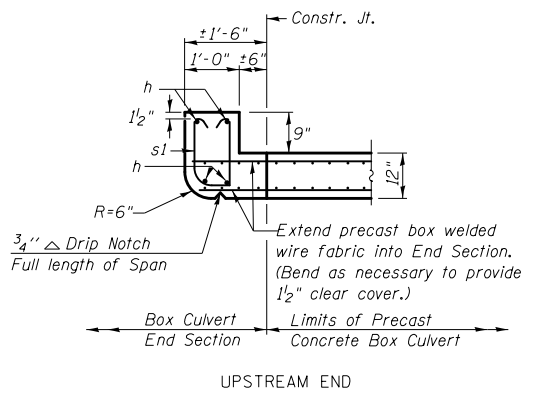
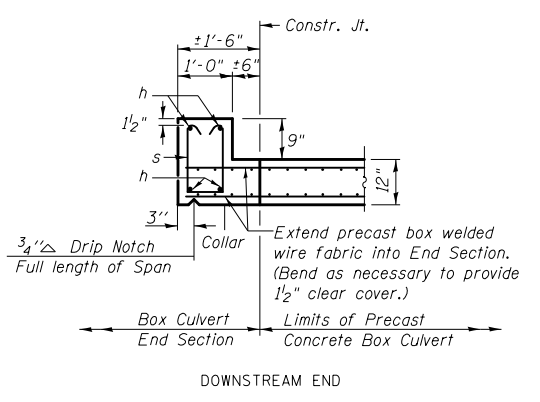
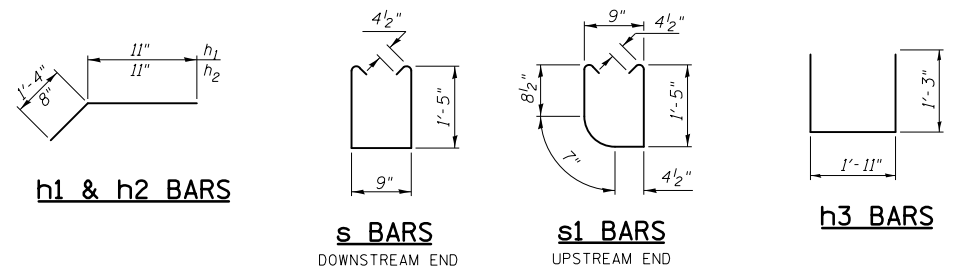
Design Scour Elevation (ft.)	Upstream	Downstream
	640.00	639.95



BILL OF MATERIAL
For Information Only (One End Section)

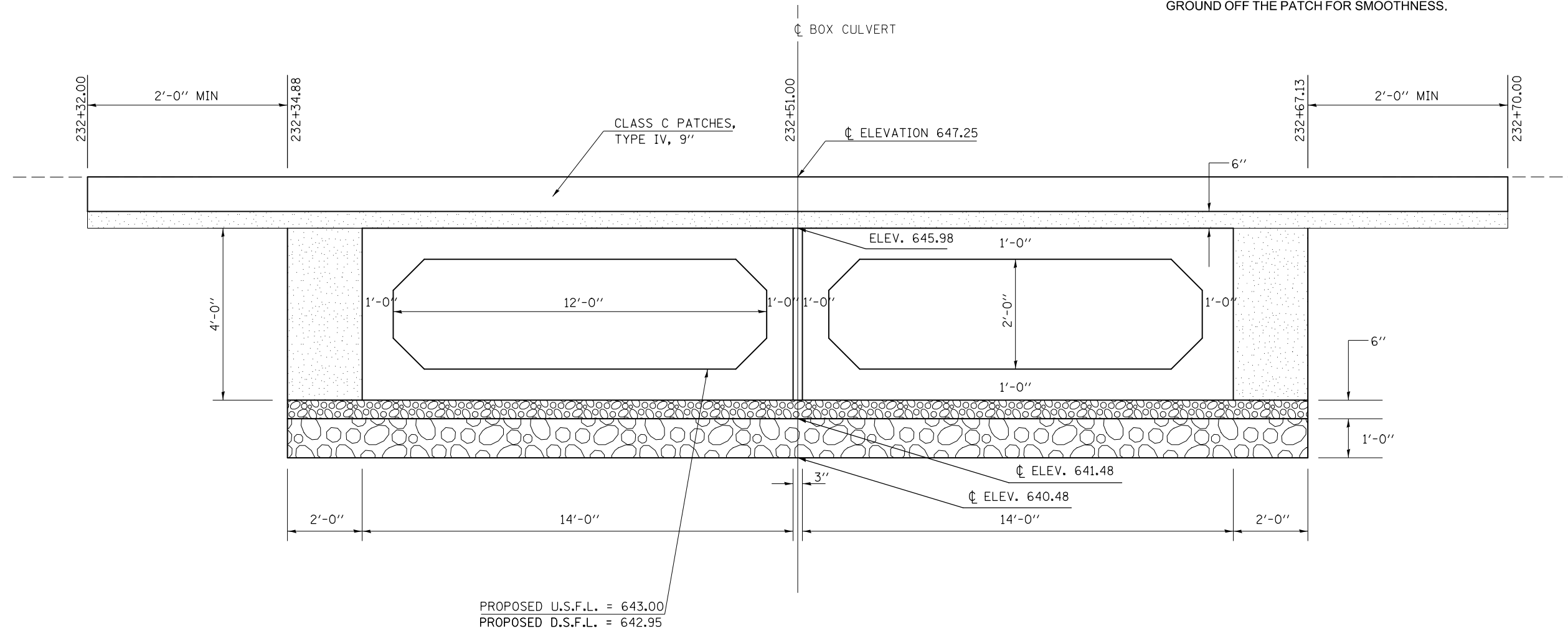
Bar	No.	Size	Length	Shape
h	4	#6	28'-0"	
h ₁	8	#4	2'-3"	
h ₂	8	#4	1'-7"	
h ₃	4	#4	4'-5"	
s or s ₁	28	#4	4'-1" *	
v	17	#5	4'-6"	
Item		Unit	Total	
Concrete Box Culverts		Cu. Yd.	16.5	
Reinforcement Bars		Pound	356.6	
Welded Wire Fabric W4 x W4		Sq. Ft.	601.7	
Welded Wire Fabric W5 x W5		Sq. Ft.	210.8	

* Average Length of s & s₁ Bars
Length s = 4'-4"
Length s₁ = 3'-10"



END SECTION DETAILS
DOUBLE 12'x2' PRECAST BOX CULVERT
F.A.P. ROUTE 749 - SECTION 121CR
DOUGLAS COUNTY
STATION 232+51.00, S.N. 021+2030
CULVERT NO. 1

*FINAL NOMINAL THICKNESS. THE PATCH SHALL BE POURED 9-1/4" (PAID FOR AS CLASS C PATCH 9"). UP TO 1/4" WILL BE GROUND OFF THE PATCH FOR SMOOTHNESS.



DRAWING NOT TO SCALE.

LEGEND	
	POROUS GRANULAR EMBANKMENT
	POROUS GRANULAR MATERIAL - CA-7 (6") INCLUDED IN PAY ITEM FOR BOX CULVERT
	STONE RIP RAP, CLASS A-1

POROUS GRANULAR EMBANKMENT

- ① POROUS GRANULAR EMBANKMENT SHALL EXTEND 2 FT. BEYOND THE AGGREGATE SHOULDER. THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR POROUS GRANULAR EMBANKMENT.
- ② WORK SHOWN IN THE DETAIL SHALL BE DONE ACCORDING TO THE APPLICABLE PORTIONS OF ARTICLE 207 AND ARTICLE 540 OF THE STANDARD SPECIFICATIONS.
- ③ THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERT AND CLASS D PATCH SHALL NOT BE MEASURED FOR PAYMENT. THE COST OF THE EXCAVATION SHALL BE CONSIDERED AS INCLUDED IN THE COST OF PRECAST CONCRETE BOX CULVERTS AND BOX CULVERT END SECTIONS.

STONE RIPRAP, CLASS A1

- ① STONE RIPRAP, CLASS A1 SHALL BE USED WHERE A.R. CULVERTS ARE REQUIRED TO BE UNDERCUT DUE TO UNSTABLE SOIL CONDITIONS.
- ② WORK SHOWN IN THE DETAIL SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 281 AND SECTION 282 OF THE STANDARD SPECIFICATIONS.
- ③ THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR STONE RIPRAP, CLASS A1.
- ④ THE EXCAVATION AND REMOVAL OF THE UNSUITABLE MATERIAL UNDER THE STRUCTURE WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE PAY ITEM FOR STONE RIPRAP, CLASS A1.

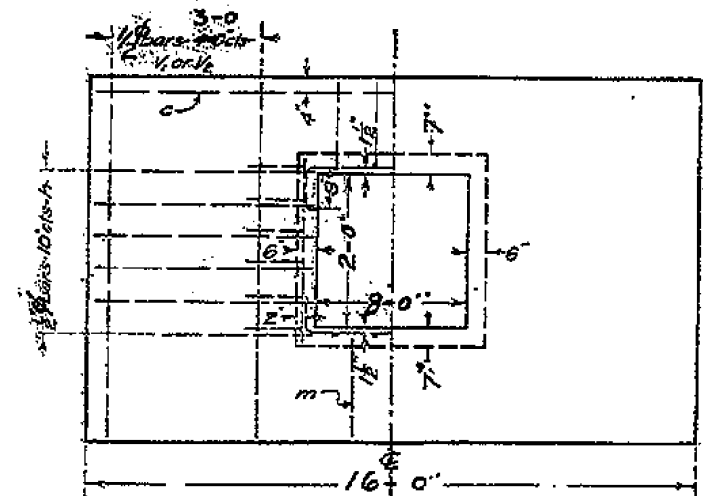
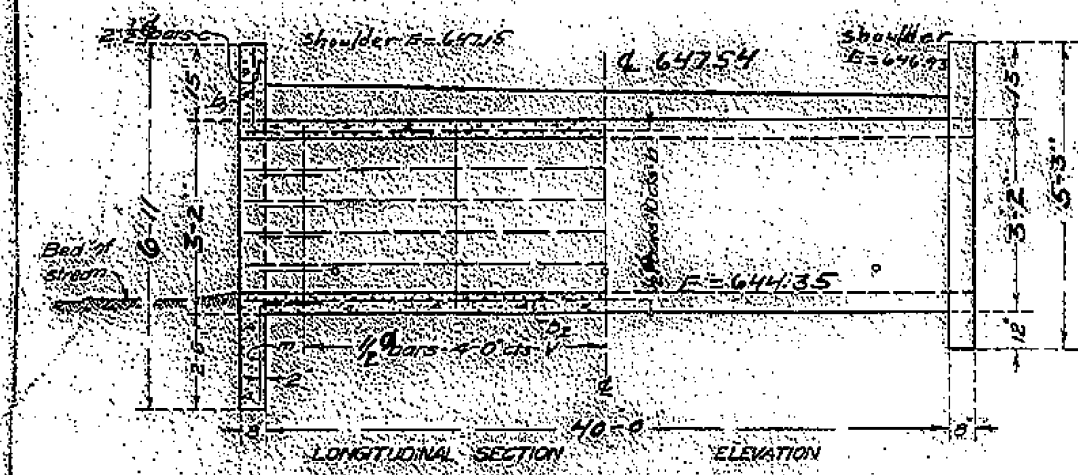
FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	POROUS GRANULAR EMBANKMENT DETAILS CULVERT NO.1, SN021-8028(E), SN021-2030(P) STA. 232 + 51.00	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
p:\11\084EBIDINTEG.illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\0579\Drawings\Design\Alternate A\0570895-REVISED.dgn	PLotted	CHECKED -	REVISED -			749	121CR	DOUGLAS	38	13
PLOT SCALE = 40.0000' / in.	DATE -	REVISED -	REVISED -			CONTRACT NO. 70B95				
PLOT DATE = 8/12/2016	DATE -	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT				

AS-BUILT PLANS – FOR INFORMATION ONLY

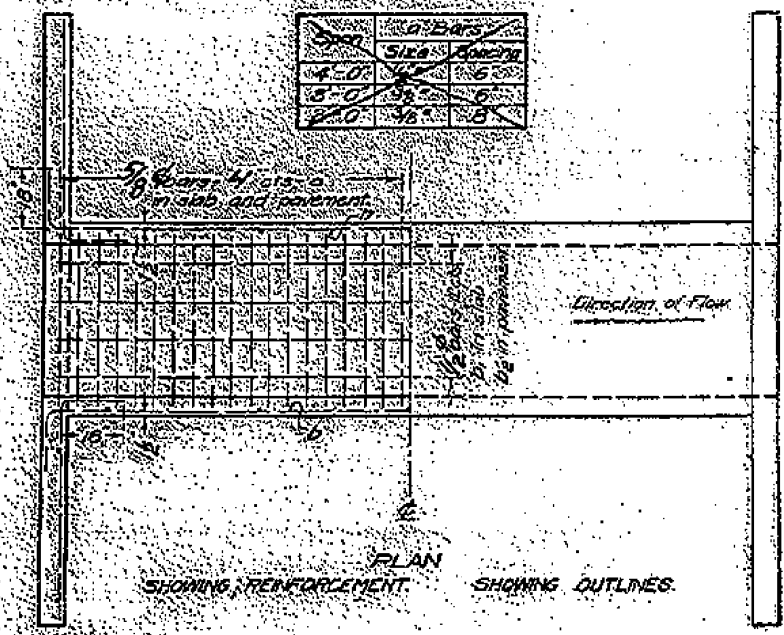
DETAIL OF EXISTING REINFORCED BOX CULVERT SN 021-8028

STATE OF ILLINOIS
STATE HIGHWAY DEPARTMENT
REINFORCED CONCRETE BOX CULVERT

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
133	121	Douglas	64	51
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				



END ELEVATION
SHOWING REINFORCEMENT. SHOWING OUTLINES.



PLAN
SHOWING REINFORCEMENT. SHOWING OUTLINES.

Note:
Fill over box should be limited to 4'-0"
Maximum Clearance = 4'-0"
Use "m" bars in downstream headwall only.

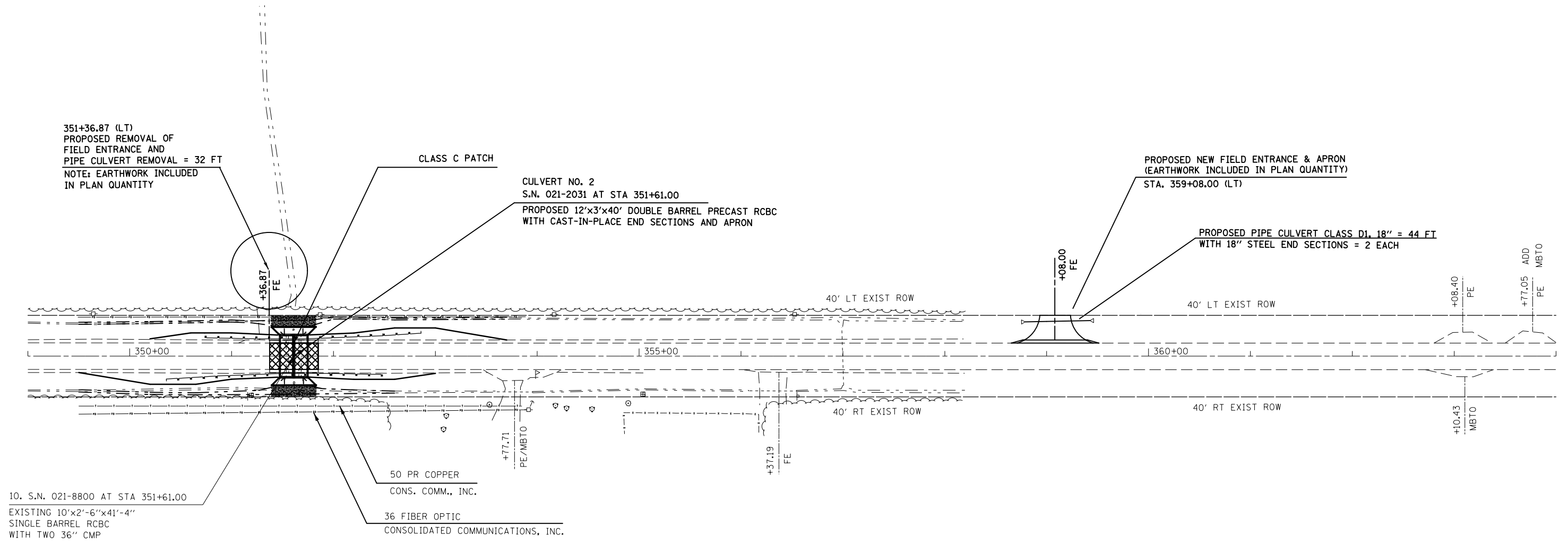
BILL OF MATERIAL

Bars	No	Size	Length
v	27	1/2" Ø	35'-0"
1/2	4	1/2" Ø	16'-9"
1/2	4	1/2" Ø	5'-0"
h	16	1/2" Ø	5'-0"
a	248	3/8" Ø	10'-3"
b	16	1/2" Ø	23'-0"
b ₁	16	1/2" Ø	22'-6"
b ₂	16	1/2" Ø	21'-6"
c	4	1/2" Ø	15'-6"
m	2	1/2" Ø	5'-0"
Steel - Lbs			3540
Concrete - Cu Yds			22.5

Use ~~100%~~ concrete to be used throughout
Proportions ~~100%~~

SPECIAL CULVERT DESIGN
S.B.I. RT.133, CON. SEC.121,
DOUGLAS CO.
STA. 232+56

Michael J. Rasch
 Engineer



351+36.87 (LT)
 PROPOSED REMOVAL OF
 FIELD ENTRANCE AND
 PIPE CULVERT REMOVAL = 32 FT
 NOTE: EARTHWORK INCLUDED
 IN PLAN QUANTITY

CLASS C PATCH

CULVERT NO. 2
 S.N. 021-2031 AT STA 351+61.00
 PROPOSED 12'x3'x40' DOUBLE BARREL PRECAST RCBC
 WITH CAST-IN-PLACE END SECTIONS AND APRON

PROPOSED NEW FIELD ENTRANCE & APRON
 (EARTHWORK INCLUDED IN PLAN QUANTITY)
 STA. 359+08.00 (LT)

PROPOSED PIPE CULVERT CLASS D1, 18" = 44 FT
 WITH 18" STEEL END SECTIONS = 2 EACH

10. S.N. 021-8800 AT STA 351+61.00
 EXISTING 10'x2'-6"x41'-4"
 SINGLE BARREL RCBC
 WITH TWO 36" CMP

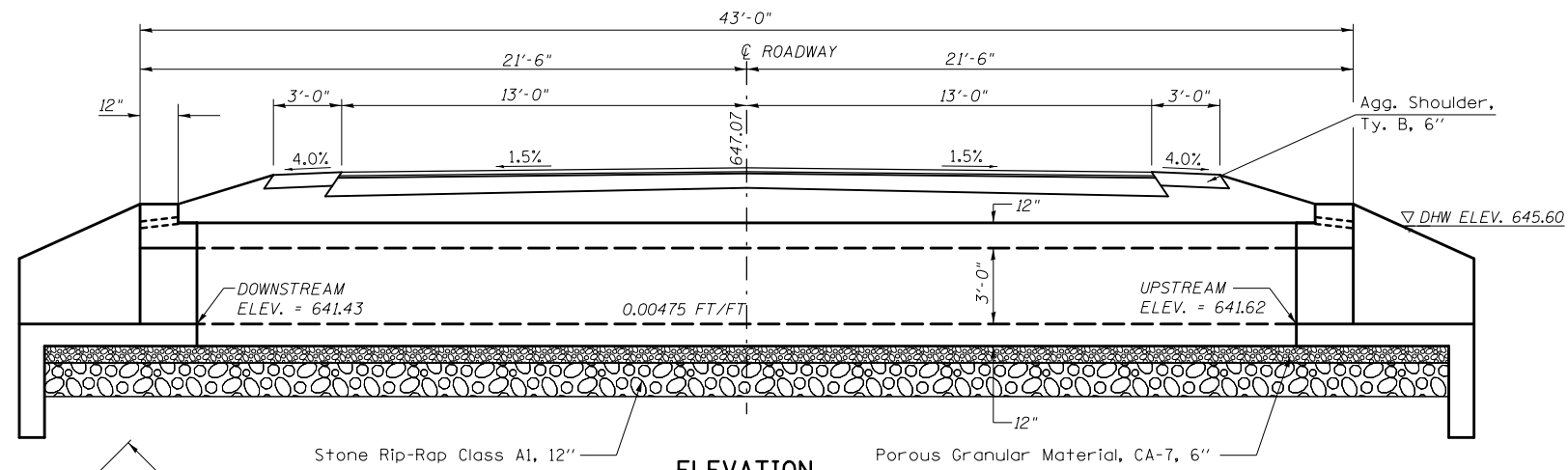
50 PR COPPER
 CONS. COMM., INC.
 36 FIBER OPTIC
 CONSOLIDATED COMMUNICATIONS, INC.

NOTE:
 EXISTING STATIONING, CENTERLINE,
 EOP, EOS, ENTRANCES, SIDEROADS, AND
 SN 021-8800 TOPO ARE BASED ON
 SURVEY. ADDITIONAL EXISTING
 ROADWAY INFORMATION IS BASED
 ON AS-BUILT PLANS.

 RIP RAP CLASS A4

FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN SHEET			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw:\IL084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\Drawings\Design\Alternate A\0570895-1\Design -	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -					749	121CR	Douglas	38	16
\$MODELNAME\$	PLOT DATE = 8/12/2016	DATE -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.			CONTRACT NO. 70B95				
							ILLINOIS FED. AID PROJECT					

BENCHMARK ELEV. = USE CENTERLINE PROFILE TO ESTABLISH A TEMPORARY BENCHMARK.



General Notes

- Build tops of headwalls parallel to the grade lines.
- All construction joints shall be bonded according to Article 503.09 of the Standard Specifications.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
- All bars should be rounded and conform to the requirements of Article 1006.10 of the Standard Specification.
- The 6" Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Sections and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.
- When lapping sheets of welded wire fabric, the overlap measured between the outermost cross wires of each fabric sheet shall not be less than 8"
- End Sections will be paid for at the contract unit price per each for BOX CULVERT END SECTIONS, as outlined in Section 540 of the Standard Specifications.
- Class SI Concrete shall be used throughout.
- Concrete, Rebar, and Welded Wire Fabric quantities and lengths calculated for the cast-in-place End Sections may vary based on the precast box culverts supplied.
- Drain holes shall be provided in accordance with Article 503.11 and 502.10 of the Standard Specifications.

The precast manufacturer shall design and detail a connection/construction joint between the precast concrete box sections and the cast-in-place apron and wingwall. The minimum area of reinforcement passing through these construction joints shall be 0.20 sq. in./lineal ft. of welded wire fabric. The design shall be detailed in the shop drawings. The cost of the connection is included in the cost of the end section.

The box culvert end section shall be built in the field and a precast option is not allowed. Cut-off walls shall be monolithic. Shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval. See Special Provisions.

The ends of the precast box sections adjacent to the end section shall be formed without the male and female shapes specified in Article 8.1 of ASTM C1577. See Sections B-B, D-D, E-E and F-F on Sheet 2.

The design fill height for this box is less than 2 feet. The Precast Concrete Box Culvert Sections shall conform to the requirements of ASTM C1577.

The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

All dimensions are in FEET (') - INCHES (") unless otherwise noted.

Drawings not to scale.

NAME PLATE

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 2	Each	1
Precast Concrete Box Culverts 12'x3'	Foot	80
Box Culvert End Sections, Culvert No. 2	Each	2
Name Plates	Each	1
Porous Granular Embankment	Cu Yd	46.5
STONE RIP-RAP CLASS A-1, 12"	Sq Yd	---

END SECTION DETAILS
DOUBLE 12'x3' PRECAST BOX CULVERT
F.A.P. ROUTE 749 - SECTION 121CR
DOUGLAS COUNTY
STATION 351+61.00, S.N. 021-2031
CULVERT NO. 2

Proposed Profile Grade
Along ϕ Roadway

STATION 351+61.00
BUILT 2011 BY
STATE OF ILLINOIS
F.A.P. RT. 749 SEC. 121RS-7 & 121CR
LOADING HL-93
STRUCTURE NO. 021-2031

NAME PLATE
See Std. 515001

INDEX OF SHEETS

- General Plan and Elevation
- Box Culvert End Section Details
- Porous Granular Embankment Detail
- Dynamic Cone Penetrometer
- Existing Structure Plans
- Staging Details

DESIGN SPECIFICATIONS

AASHTO LRFD
BRIDGE DESIGN SPECIFICATION
2004 EDITION W/2005 INTERIM

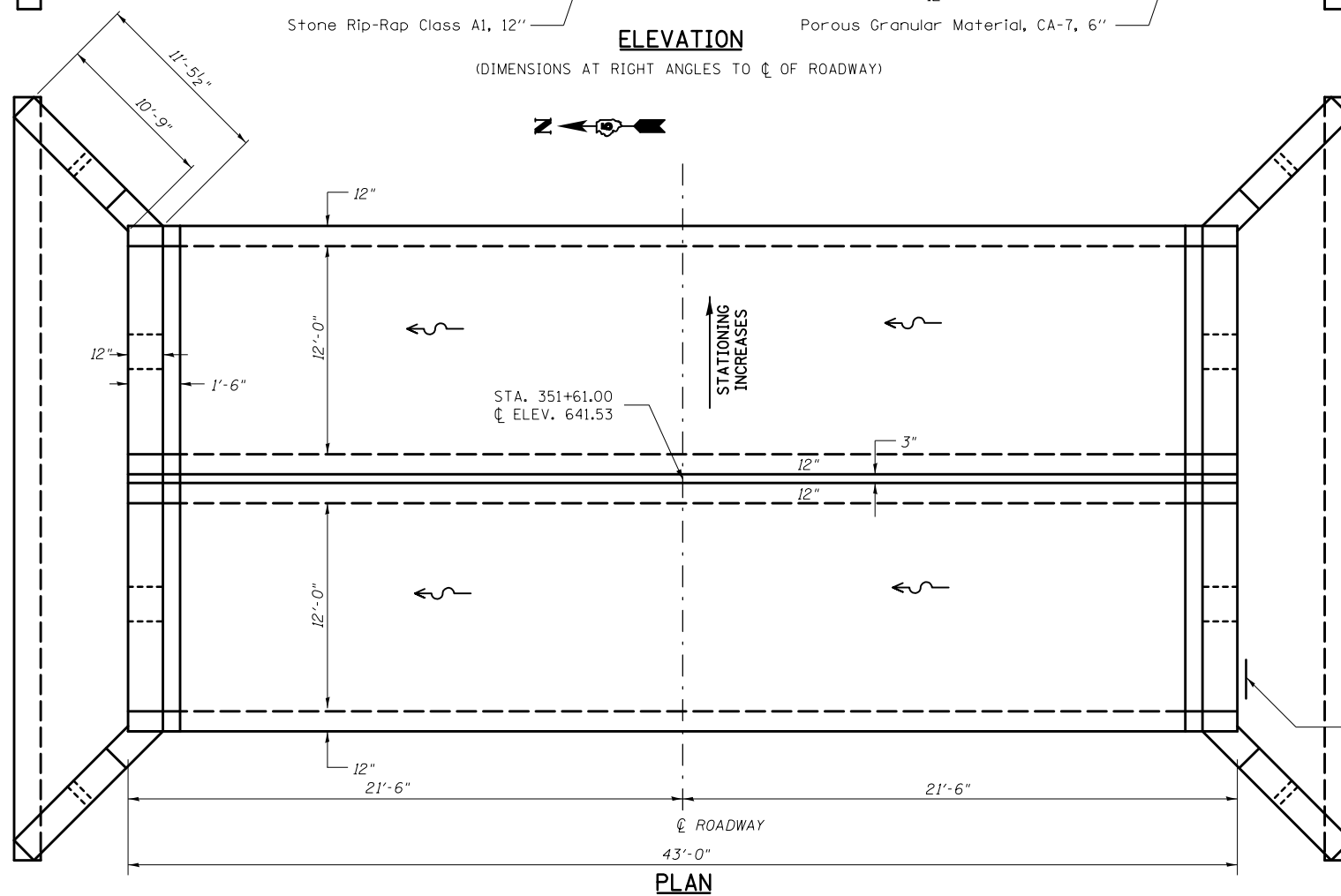
LOADING HL-93

Allow 50#/sq.ft. for future wearing surface

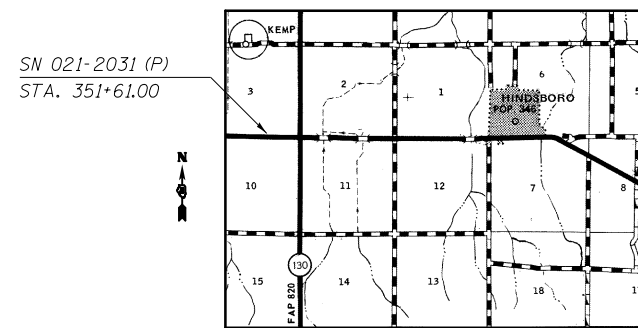
DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 65,000$ psi (welded wire fabric)

PRECAST UNITS
 $f'_c = 5,000$ psi
 $f_y = 65,000$ psi (welded wire fabric)



STRUCTURE LOCATION SKETCH



SECTIONS 3&10-T14N-R9E 3rd PM

Existing Low Grade Elev. = 646.98 ft. @ Sta. 351+61

Proposed Lo 646.98 ft. @ Sta. 351+61

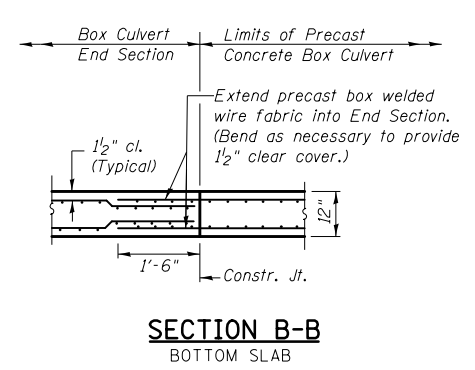
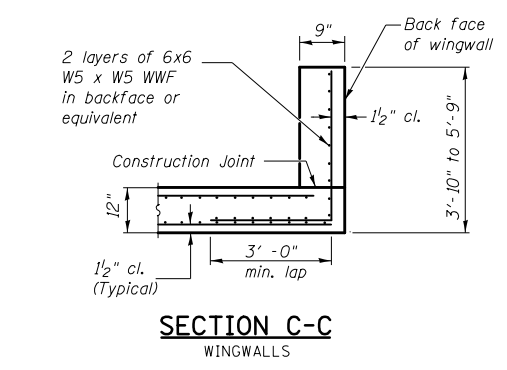
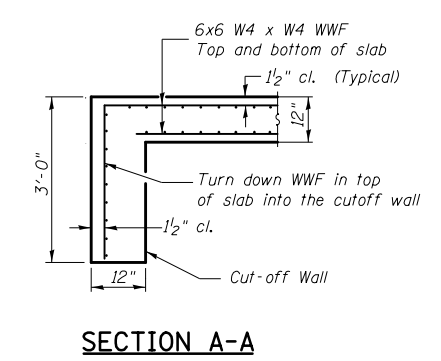
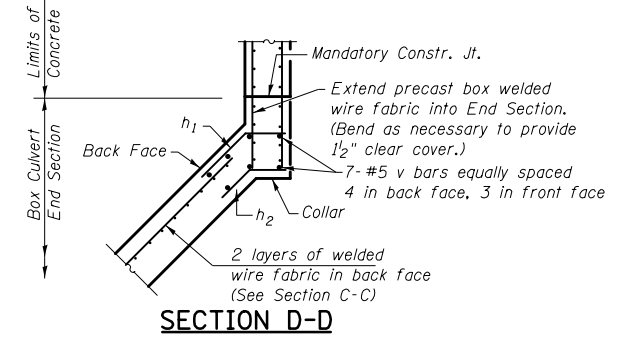
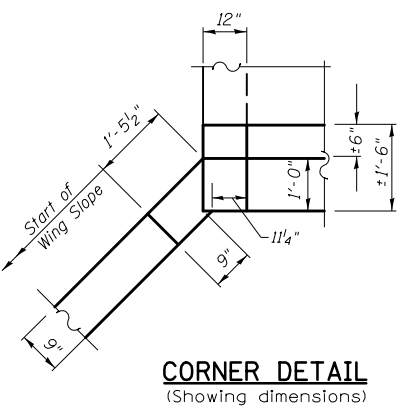
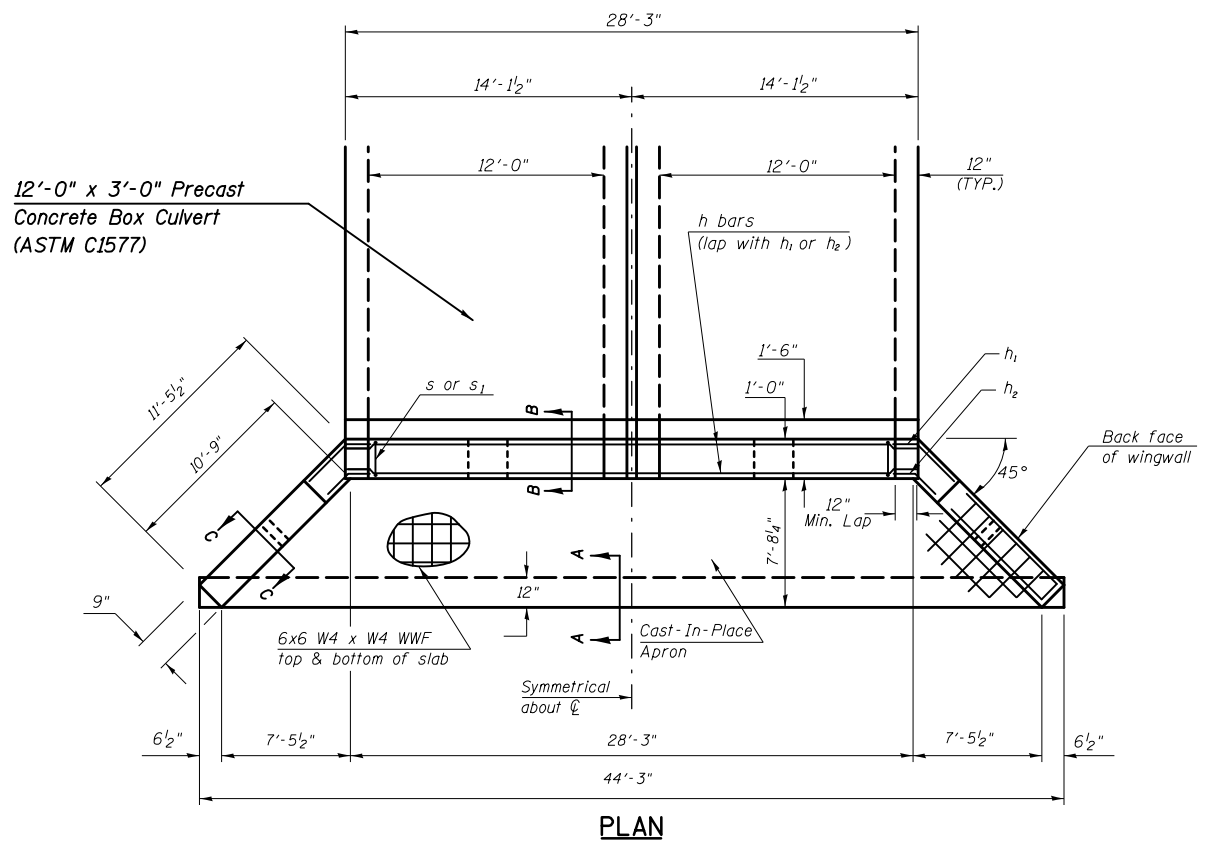
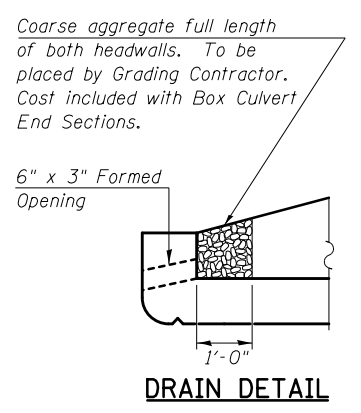
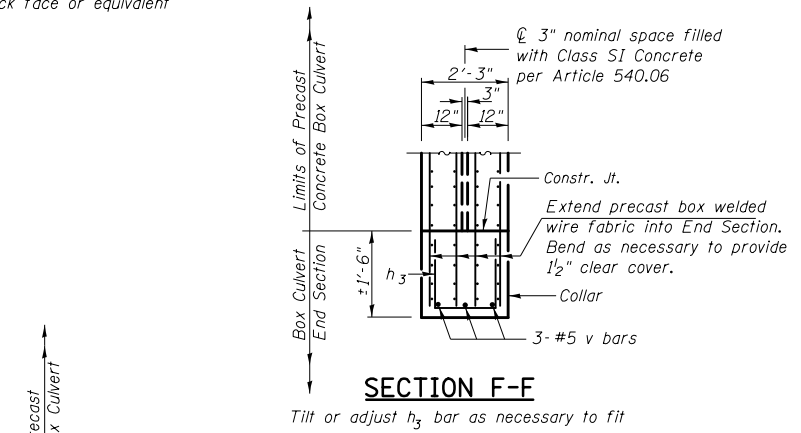
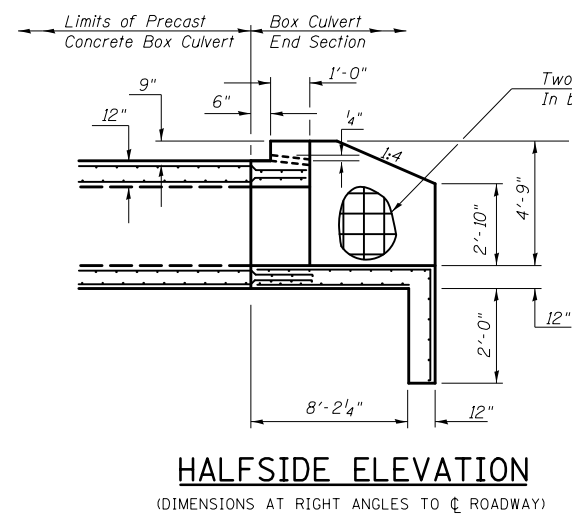
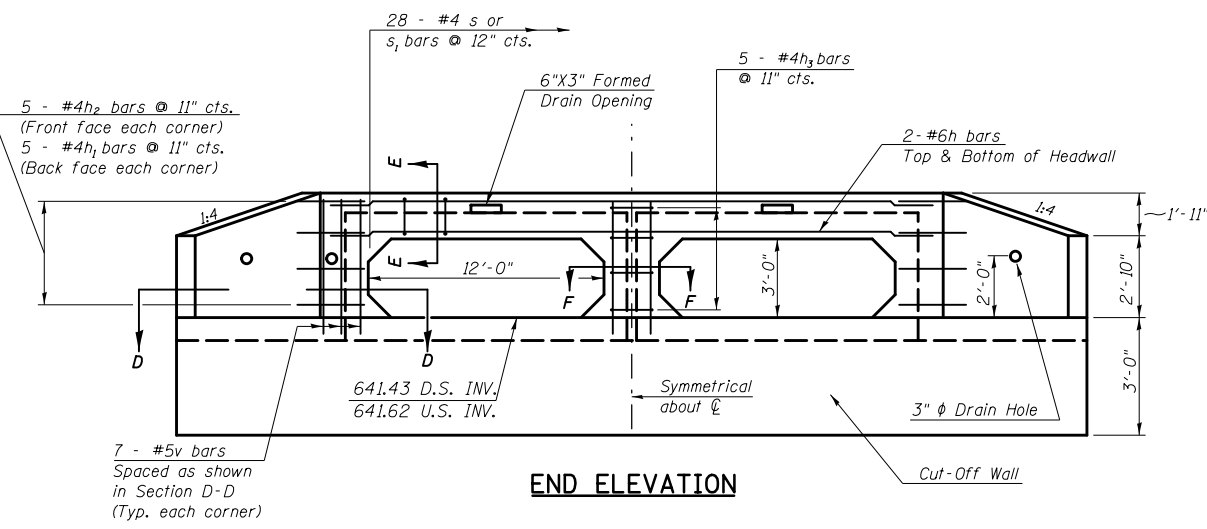
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater Elevation	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
	10	302	35	66				Overtopped	644.4
Design	50	499	35	72				Overtopped	645.6
Base	100	588	35	72				Overtopped	646.4
Overtopping									
Max. Calc.	500	806	35	72				Overtopped	Overtopped

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = UNKNOWN
ALL-TIME H.W.E. & DATE: UNKNOWN
Information provided using the USGS STREAMSTATS METHOD

10 YEAR VELOCITY THROUGH PROPOSED BRIDGE = 5.3 ft/s

Design Scour Elevation Table

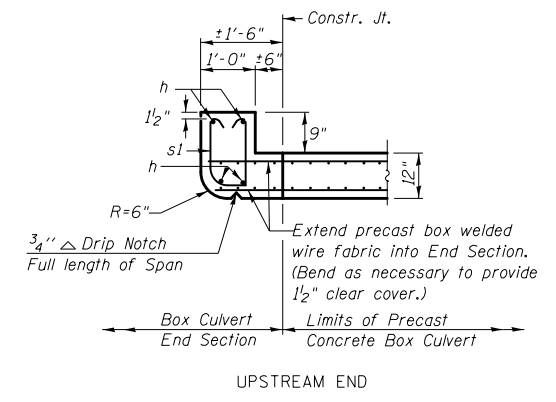
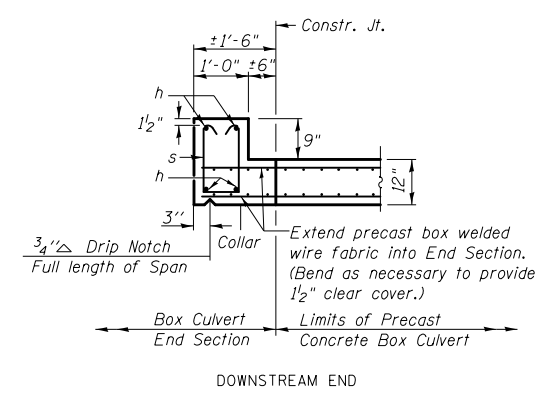
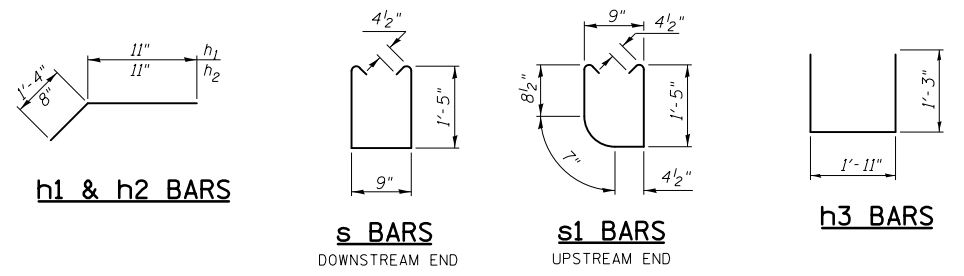
Design Scour Elevation (ft.)	Upstream	Downstream
	638.62	638.43



BILL OF MATERIAL
For Information Only
(One End Section)

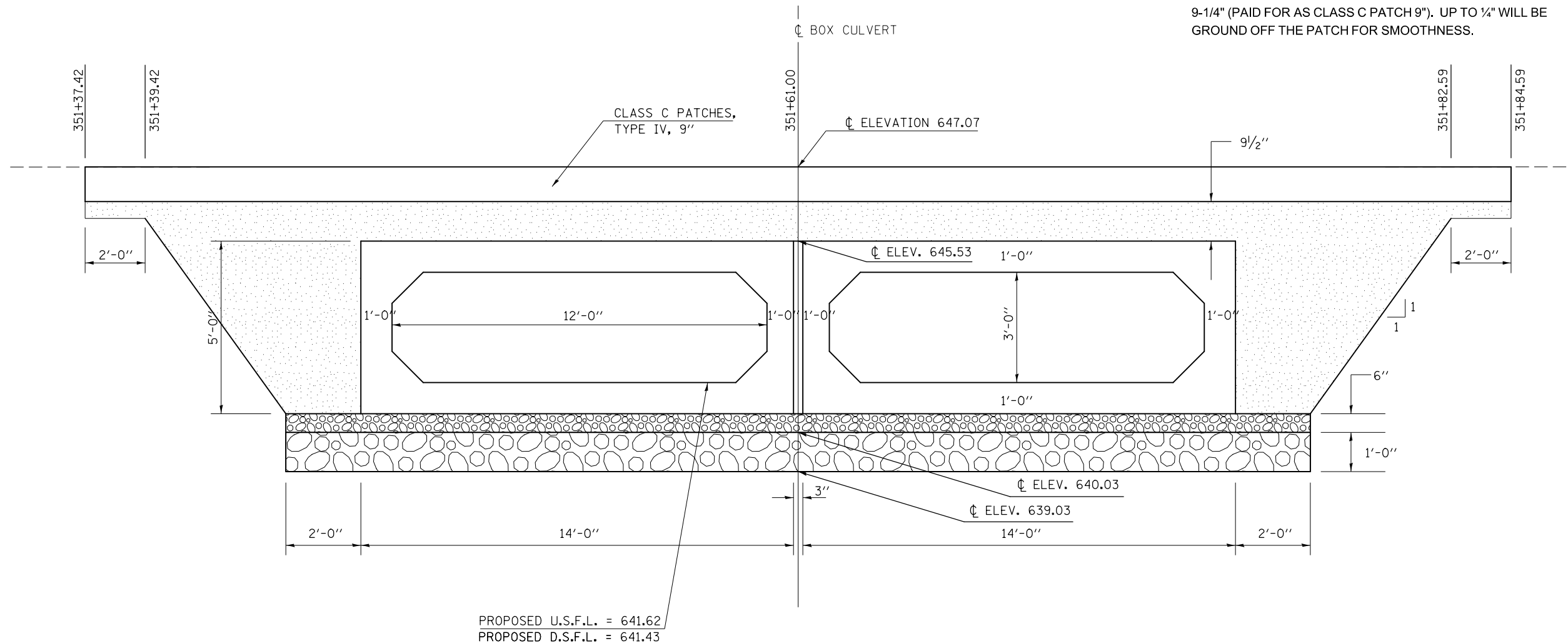
Bar	No.	Size	Length	Shape
h	4	#6	28'-0"	
h ₁	10	#4	2'-3"	
h ₂	10	#4	1'-7"	
h ₃	5	#4	4'-5"	
s or s ₁	28	#4	4'-1" *	
v	17	#5	5'-6"	
Item		Unit	Total	
Concrete Box Culverts		Cu. Yd.	21.2	
Reinforcement Bars		Pound	382.3	
Welded Wire Fabric W4 x W4		Sq. Ft.	800.1	
Welded Wire Fabric W5 x W5		Sq. Ft.	318.1	

* Average Length of s & s₁ Bars
Length s = 4'-4"
Length s₁ = 3'-10"



END SECTION DETAILS
DOUBLE 12'x3' PRECAST BOX CULVERT
F.A.P. ROUTE 749 - SECTION 121CR
DOUGLAS COUNTY
STATION 351+61.00, S.N. 021-2031
CULVERT NO. 2

*FINAL NOMINAL THICKNESS. THE PATCH SHALL BE POURED 9-1/4" (PAID FOR AS CLASS C PATCH 9"). UP TO 1/4" WILL BE GROUND OFF THE PATCH FOR SMOOTHNESS.



DRAWING NOT TO SCALE.

LEGEND	
	POROUS GRANULAR EMBANKMENT
	POROUS GRANULAR MATERIAL - CA-7 (6') INCLUDED IN PAY ITEM FOR BOX CULVERT
	STONE RIP RAP, CLASS A-1

- POROUS GRANULAR EMBANKMENT**
- POROUS GRANULAR EMBANKMENT SHALL EXTEND 2 FT. BEYOND THE AGGREGATE SHOULDER. THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR POROUS GRANULAR EMBANKMENT.
 - WORK SHOWN IN THE DETAIL SHALL BE DONE ACCORDING TO THE APPLICABLE PORTIONS OF ARTICLE 207 AND ARTICLE 540 OF THE STANDARD SPECIFICATIONS.
 - THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERT AND CLASS D PATCH SHALL NOT BE MEASURED FOR PAYMENT. THE COST OF THE EXCAVATION SHALL BE CONSIDERED AS INCLUDED IN THE COST OF PRECAST CONCRETE BOX CULVERTS AND BOX CULVERT END SECTIONS.

- STONE RIPRAP, CLASS A1**
- STONE RIPRAP, CLASS A1 SHALL BE USED WHERE A.R. CULVERTS ARE REQUIRED TO BE UNDERCUT DUE TO UNSTABLE SOIL CONDITIONS.
 - WORK SHOWN IN THE DETAIL SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 281 AND SECTION 282 OF THE STANDARD SPECIFICATIONS.
 - THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR STONE RIPRAP, CLASS A1.
 - THE EXCAVATION AND REMOVAL OF THE UNSUITABLE MATERIAL UNDER THE STRUCTURE WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE PAY ITEM FOR STONE RIPRAP, CLASS A1.

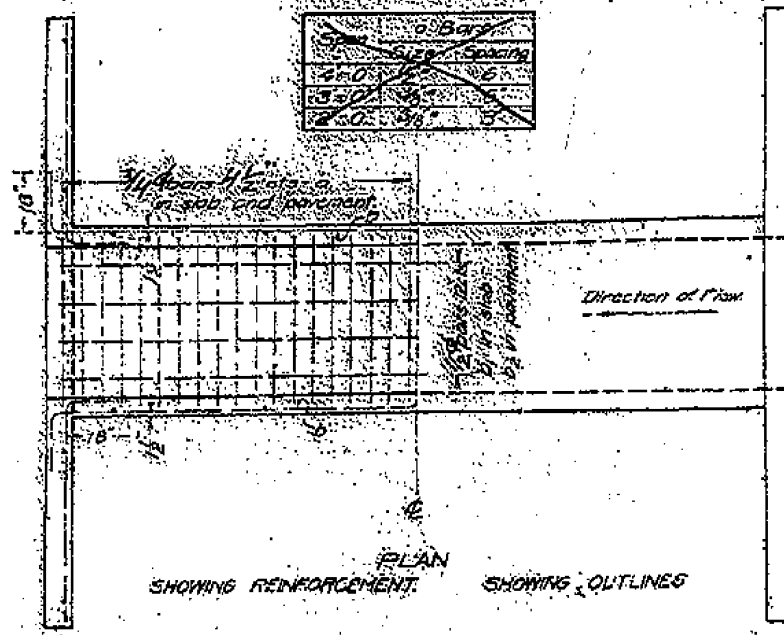
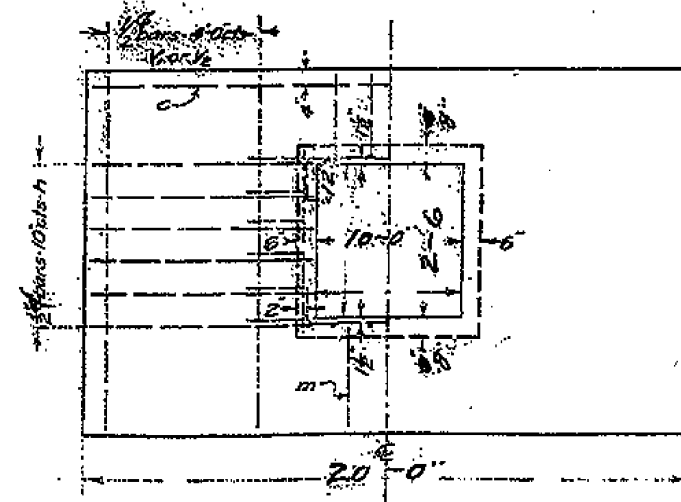
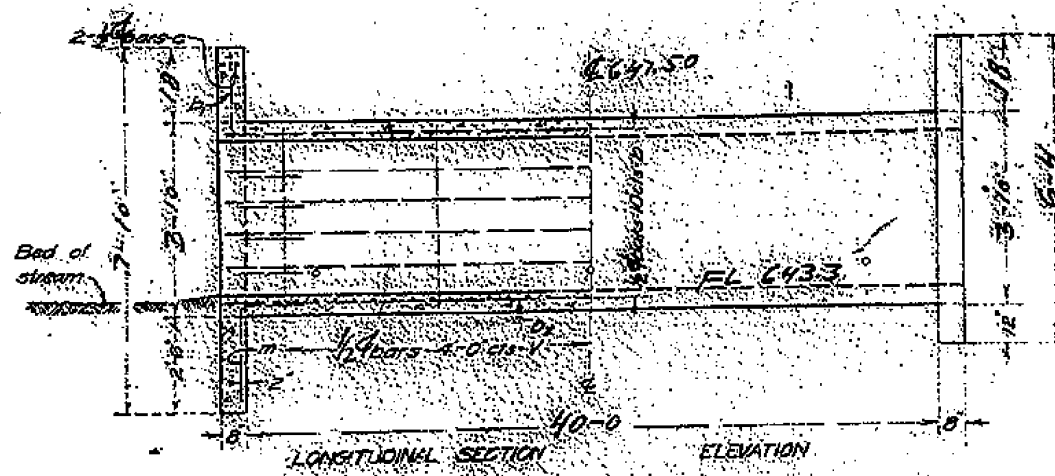
FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	POROUS GRANULAR EMBANKMENT DETAILS CULVERT NO.2, SN021-8800(E), SN021-2031(P) STA. 351 + 61.00	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw:\IL\084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\Drawings\Design\Alternate A\0570895-REVISED.dgn	DESIGNED BY	CHECKED -	REVISED -			749	121CR	DOUGLAS	38	19
PLOT SCALE = 40.0000' / in.	DATE	DATE	REVISED -			CONTRACT NO. 70B95			ILLINOIS FED. AID PROJECT	
PLOT DATE = 8/12/2016				SCALE:	SHEET 3 OF 4 SHEETS	STA. 349+00.00 TO STA. 354+50.00				

AS-BUILT PLANS - FOR INFORMATION ONLY

DETAIL OF EXISTING REINFORCED BOX CULVERT SN 021-8800

STATE OF ILLINOIS
STATE HIGHWAY DEPARTMENT
REINFORCED CONCRETE BOX CULVERT

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
133	121	Douglas	64	53
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				



Note:
Fill over box should be limited to 4'-0"
Maximum Clearance = 4'-0"
Use "m" bars in downstream headwall only.

BILL OF MATERIAL

Bars	No.	Size	Length
V	22	1/2"	3-9
V2	4	1/2"	7-6
V2	4	1/2"	6-0
h	16	1/2"	6-0
a	220	3/4"	12-9
b	16	1/2"	23-0
b2	20	1/2"	23-0
b2	20	1/2"	21-6
c	4	1/2"	19-6
m	5	1/2"	5-0
Steel - Lbs.			5200
Concrete - Cu. Yds.			31.2

Class X concrete to be used throughout
Proportion 4

SPECIAL CULVERT DESIGN
SBI. RT 133, Con. Sec 121
Douglas Co.
Sta. 351+71

DESIGNED	DATE
CHECKED	DATE
APPROVED	DATE

Assad
[Signature]

FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -
pw\11084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\057\DRAWING\Design\Alternate AN0570895-REVIS01.dgn		CHECKED -	REVISED -
PLOT SCALE = 48.0000' / in.		DATE -	REVISED -
PLOT DATE = 8/12/2016			

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DETAIL OF EXISTING CULVERT
SN021-8800, STA. 351+61.00**

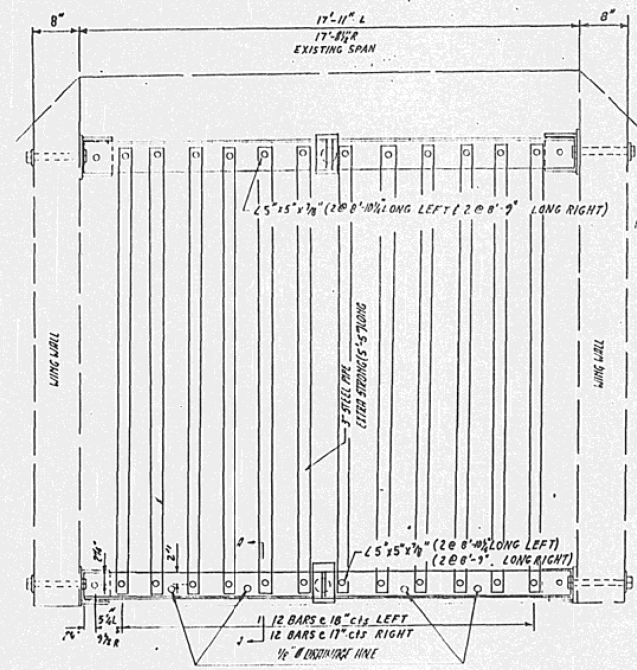
SCALE: SHEET 4 OF 4 SHEETS STA. 349+00.00 TO STA. 354+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	DOUGLAS	38	20
CONTRACT NO. 70B95			ILLINOIS FED. AID PROJECT	

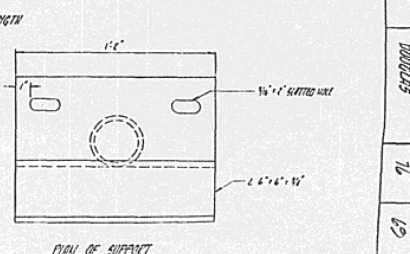
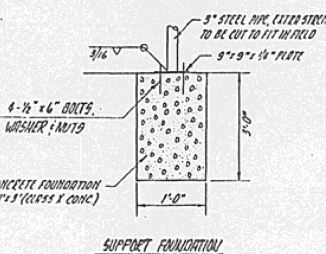
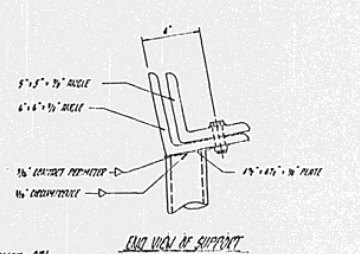
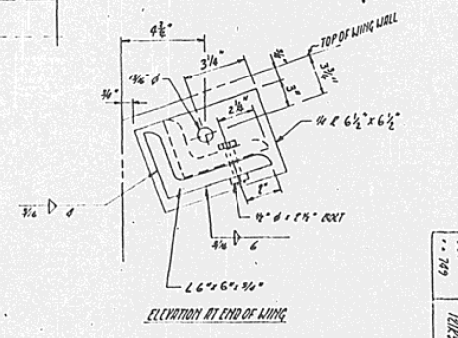
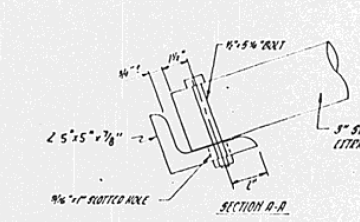
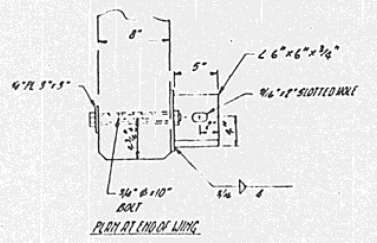
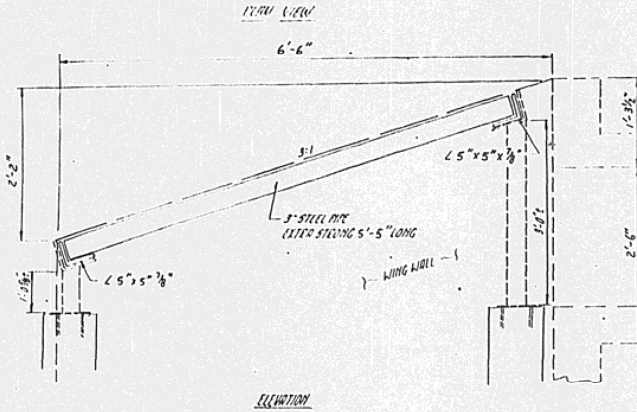
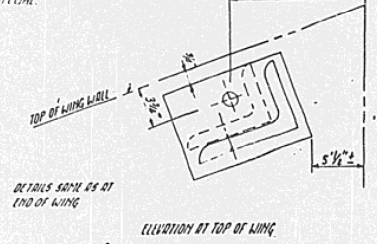
FOR INFORMATION ONLY

BOX CULVERT SN 021-8800

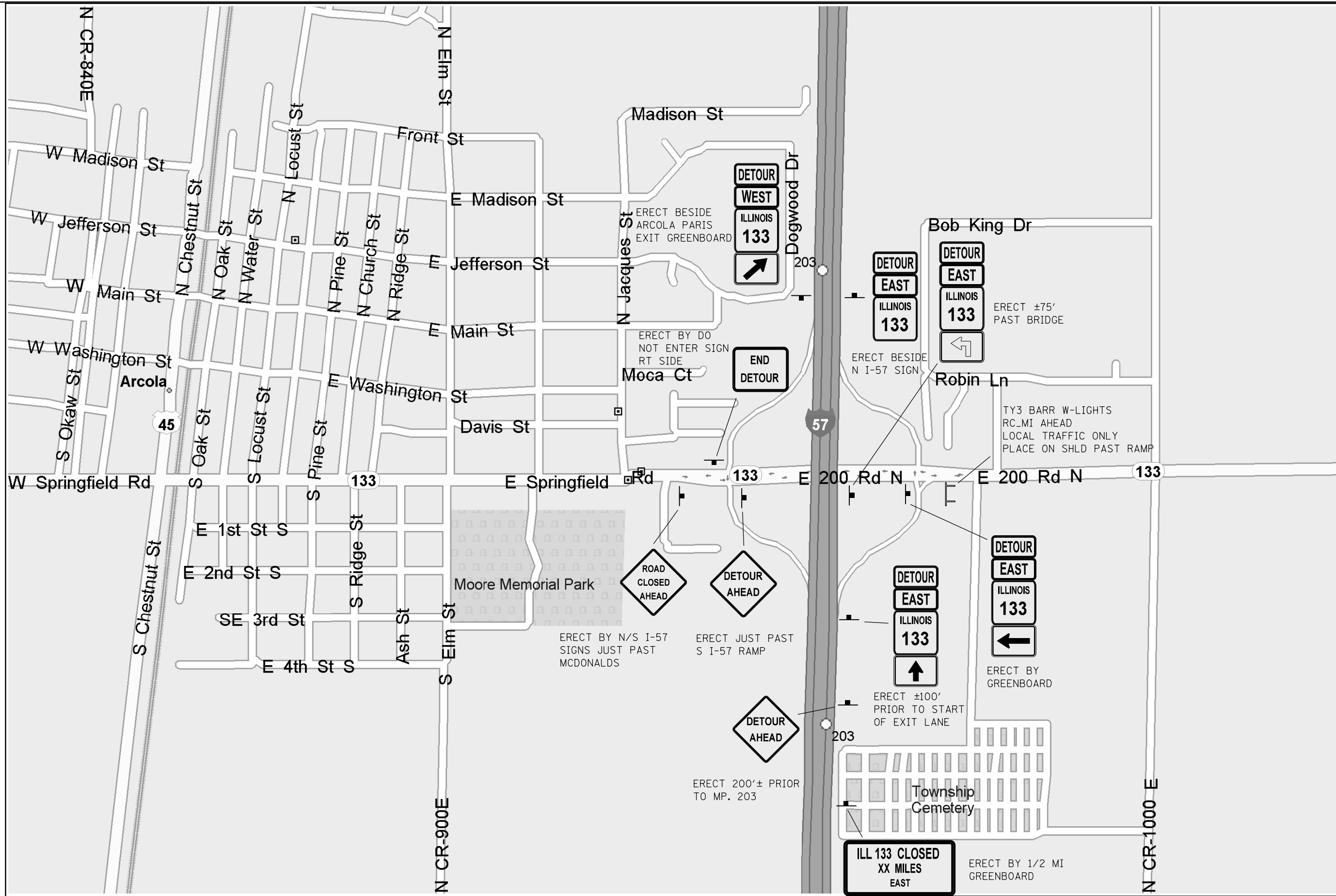
DETAIL OF GRATING (SPECIAL)
 AT STATION 351+61



GENERAL NOTES
 BOLTS AND NUTS SHALL CONFORM TO ASTM A 307, AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 153E. ALL BOLTS SHALL HAVE WASHERS AT EACH END UNLESS OTHERWISE NOTED EXCEPT IN CONCRETE WHICH SHALL BE 1/4" OVERSIZE. ANGLES AND STEEL PLATES SHALL CONFORM TO AASHTO M 153. STEEL PIPES SHALL CONFORM TO ASTM A 53 GRADE B. STEEL PIPES, ANGLES, AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 153-III. THE APPROPRIATE ALLOY OF STEEL IS 515 POUNDS THIS TOTAL INCLUDES PLATES, ANGLES AND PIPES. BOLTS, NUTS AND WASHERS ARE NOT INCLUDED. THE CONTRACT UNIT PRICE "EROM" FOR GRATING, SPECIAL, IN PLACE, SHALL INCLUDE FABRICATION, GALVANIZING AND INSTALLATION OF THE GRATING AS DETAILLED. THE CONTRACTOR SHALL VERIFY THE PIPE LENGTHS AND MAKE ADJUSTMENTS TO CUTTING THE PIPES TO LENGTH OF DRILLING HOLES. THE CONTRACTOR SHALL PROVIDE 2" x 2" HOLES AROUND THE CENTER OF IRON ANGLE FOR CLEARANCE OF THE CONCRETE UNIT PRICE "EROM" FOR GRATING, SPECIAL SPOT TOXAM-UPS OF ANCHOR REBAR/RODS, WELDS, SHALL BE 1/2" x 1/2" x 1/2" SHALL BE COATED WITH A LEAD-ZINC CHROMIUM PRIMER. THE CONTRACT UNIT PRICE "EROM" FOR GRATING, SPECIAL.



DATE	BY	CHKD	APP'D
8-12-2016	piersonbr		

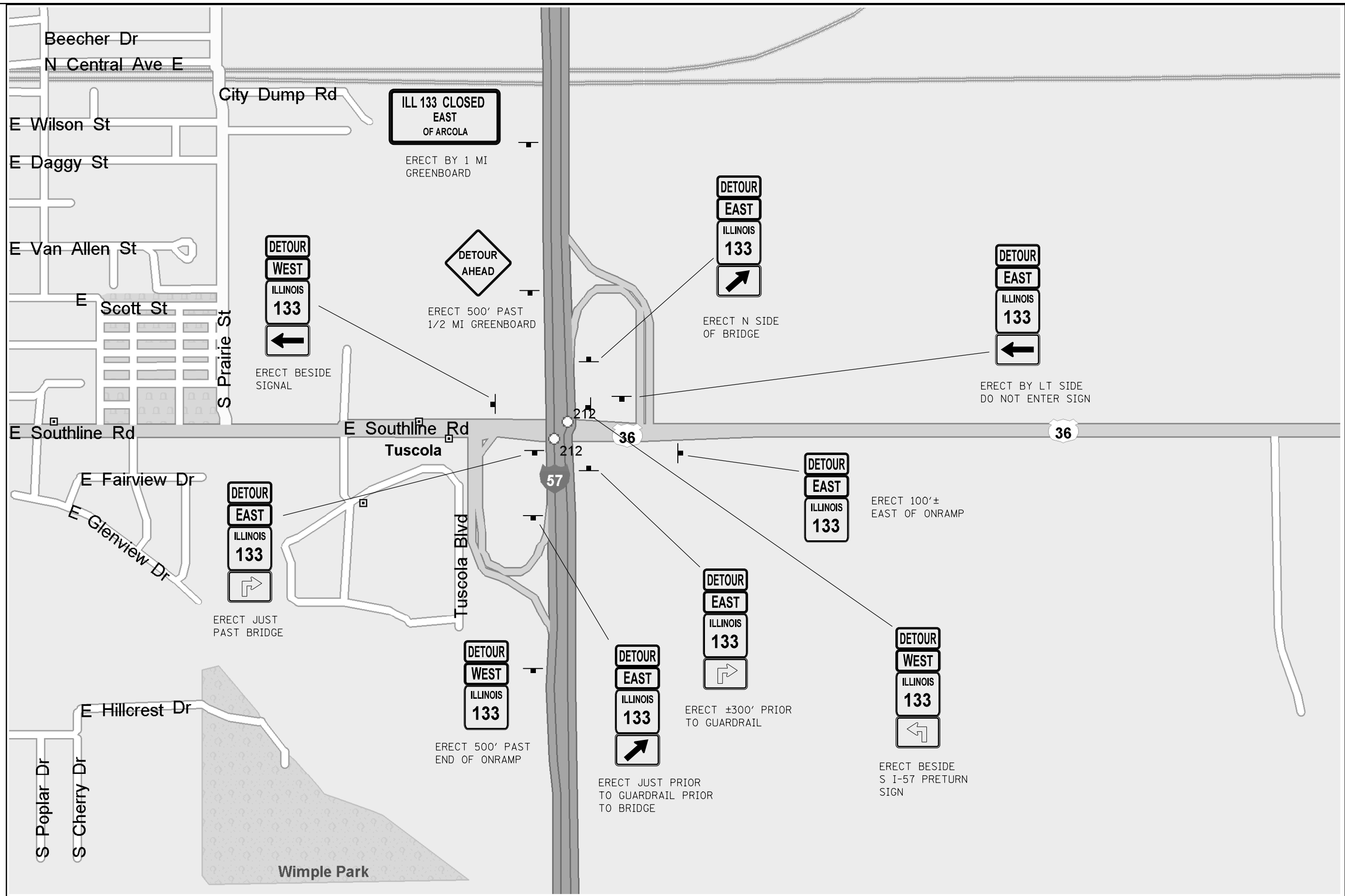


FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -
p:\1\084EBID\INTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\057\DRAWING\Design\Alternate A\0570895-5\REVISED.dgn		DRAWN BY -	REVISED -
\$MODELNAME\$	PLOT DATE = 8/12/2016	CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

ARCOLA DETOUR SIGNING DETAIL			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	23
CONTRACT NO. 70B95				
ILLINOIS FED. AID PROJECT				

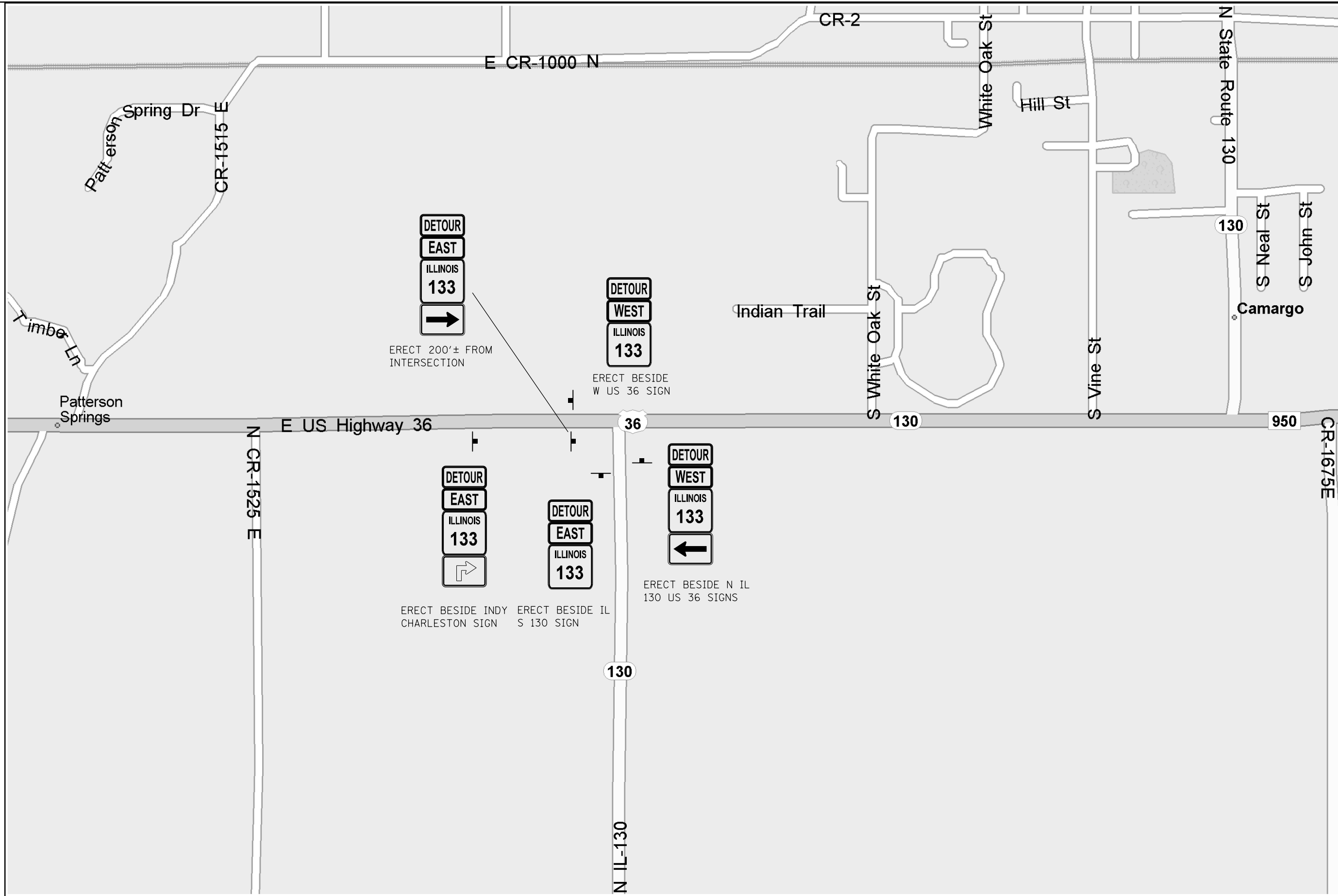


FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -
p:\11\084EBID\INTEG.illinois.gov\PIWIDOT\Documents\IDOT Offices\District 5\Projects\057\Drawings\Design\Alternate A\0570895-5\REVISED.dgn		CHECKED -	REVISED -
		DATE -	REVISED -
MODELNAME	PLOT DATE = 8/12/2016		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TUSCOLA DETOUR SIGNING DETAIL			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	24
CONTRACT NO. 70B95			ILLINOIS FED. AID PROJECT	



FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -
p:\IL\084EBID\INTEG\Illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\0579\Drawings\Design\Alternate A\0570895-5\REVISED.dgn		DRAWN -	REVISED -
MODELNAME	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 8/12/2016	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

US 36 & IL 130 DETOUR SIGNING DETAIL			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	25
CONTRACT NO. 70B95			ILLINOIS FED. AID PROJECT	

W Kemp St

Kemp

N State Route 130

130

133

E 200 Rd N

N CR-1675E

END
DETOUR

ERECT UNDER W/E
ILL 133 S ILL 130
SIGN

DETOUR
WEST
ILLINOIS
133

ERECT 200'± PRIOR
TO MP. 203

DETOUR
AHEAD

ERECT 100'± PRIOR
TO CHARLESTON/
URBANA SIGN

ROAD
CLOSED
AHEAD

ERECT BY STOP
AHEAD SIGN

TY3 BARR W LIGHTS
& RD CLOSED... MI
AHEAD, LOCAL TRAFFIC
ONLY

DETOUR
WEST
ILLINOIS
133
→

ERECT BY STOP
SIGN & IL 130/133
SIGNS

0 mi 0.2 0.4 0.6

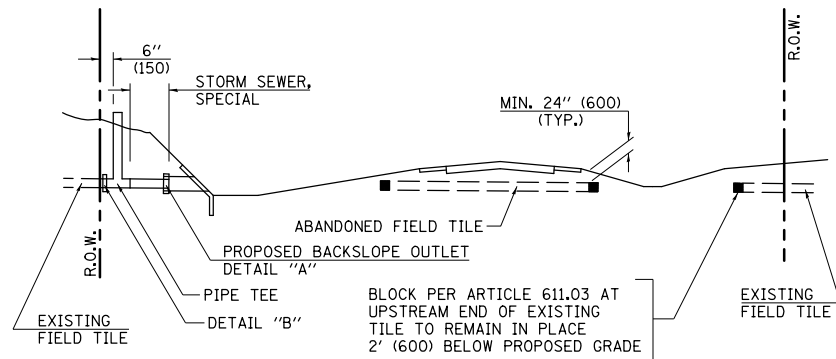
FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -
p:\IL\084EBID\INTEG.illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\057\Drawings\Design\Alternate A\0570895-5\REVISED.dgn		DRAWN -	REVISED -
MODELNAME	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 8/12/2016	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

KEMP
DETOUR SIGNING DETAIL

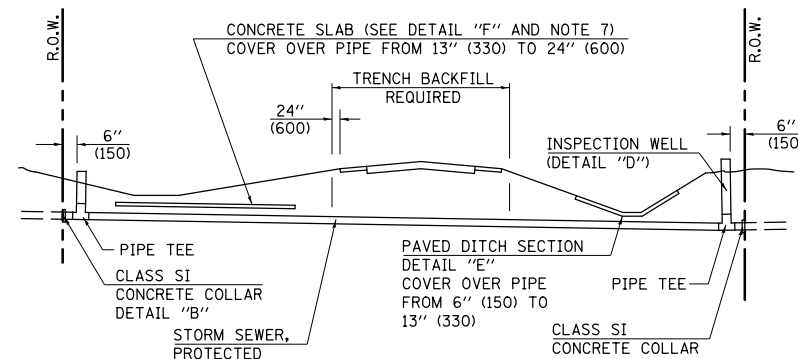
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	26
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B95	



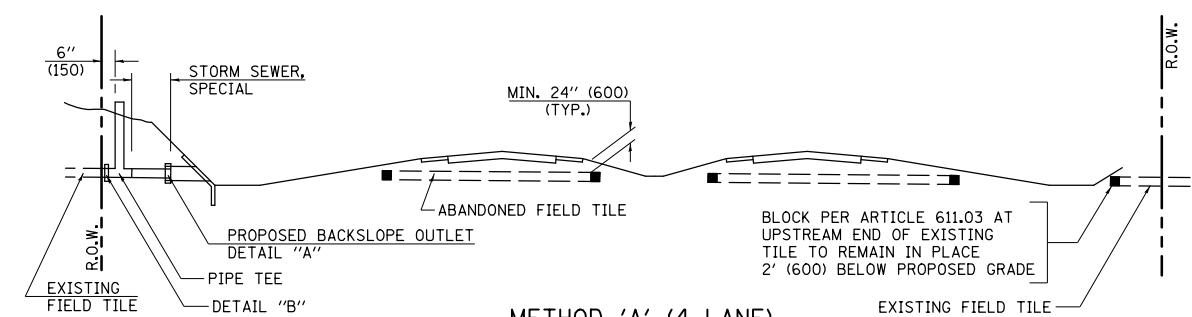
METHOD 'A' (2 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



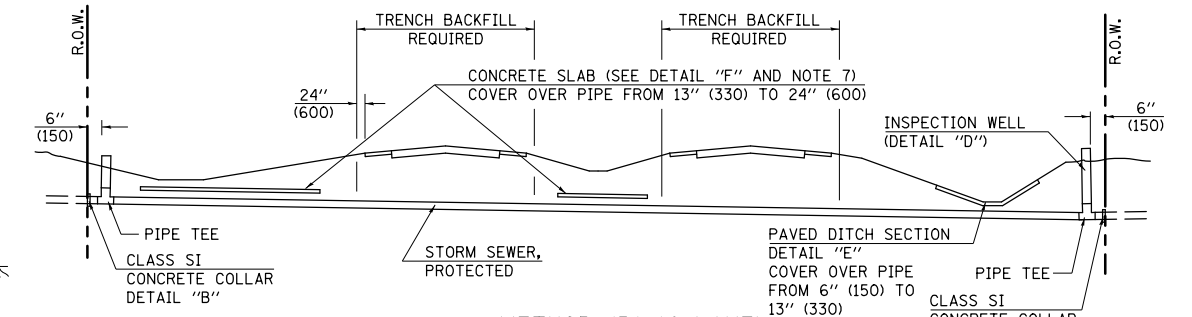
METHOD 'B' (2 LANE)

STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENT AND PAVED DITCH



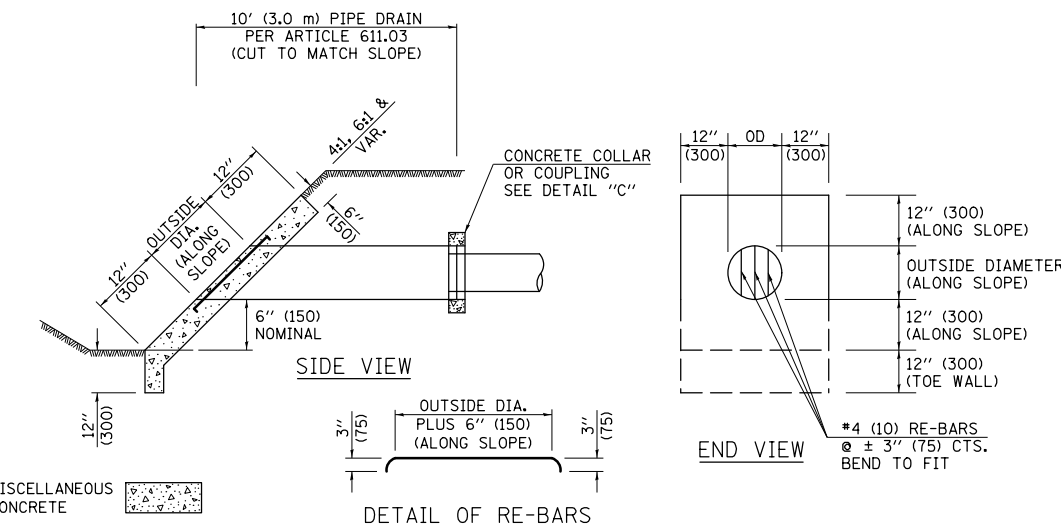
METHOD 'A' (4 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE

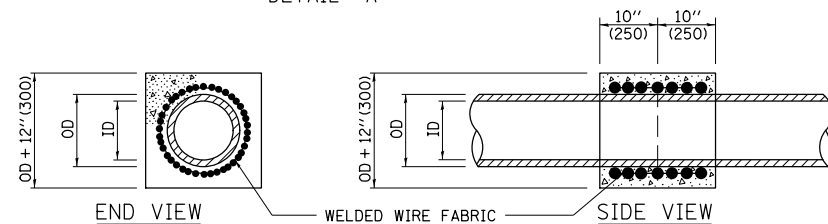


METHOD 'B' (4 LANE)

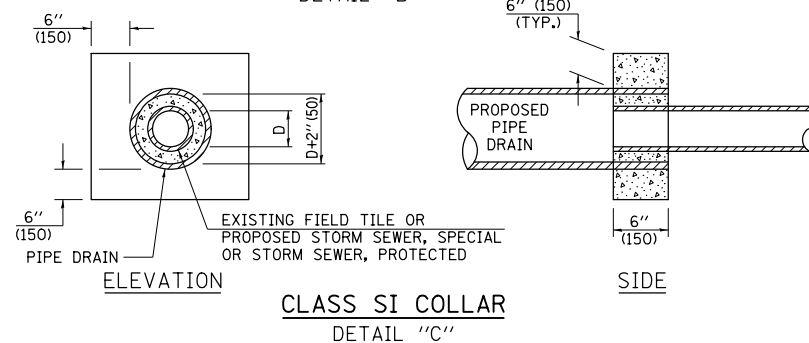
STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENTS AND PAVED DITCHES



HEADWALL FOR BACKSLOPE OUTLET
DETAIL "A"



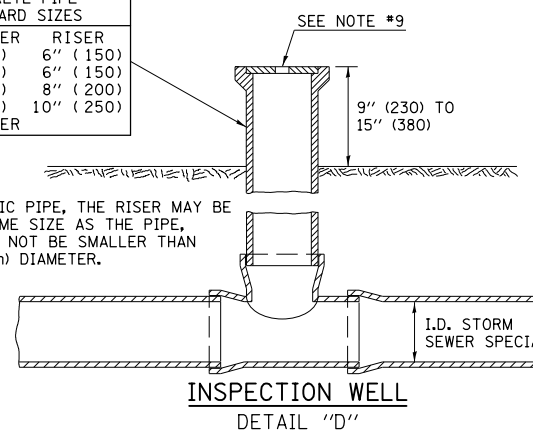
CONCRETE COLLAR
DETAIL "B"



CLASS SI COLLAR
DETAIL "C"

CONCRETE PIPE STANDARD SIZES	
STORM SEWER	RISER
6" (150)	6" (150)
8" (200)	6" (150)
10" (250)	8" (200)
12" (300)	10" (250)
OR GREATER	

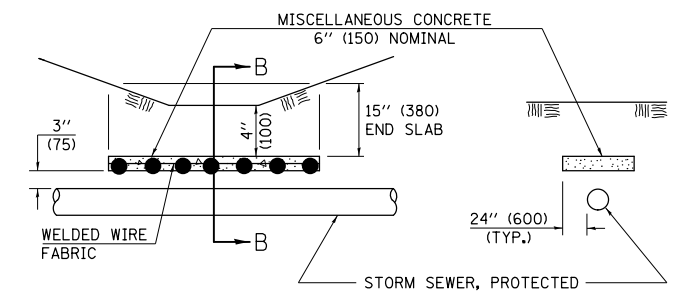
FOR PLASTIC PIPE, THE RISER MAY BE OF THE SAME SIZE AS THE PIPE, BUT SHALL NOT BE SMALLER THAN 4" (100 mm) DIAMETER.



INSPECTION WELL
DETAIL "D"

GENERAL NOTES

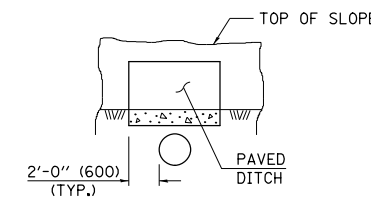
- EXISTING FIELD TILE ENCOUNTERED BY EXPLORATION TRENCH SHALL BE INSPECTED BY THE ENGINEER FOR UNOBSTRUCTED FLOW WITHIN THE LIMITS OF THE RIGHT-OF-WAY.
- ONLY FIELD TILE THAT DOES NOT HAVE SATISFACTORY FLOW AND OR HAS VISIBLE SIGNS OF DETERIORATION (SINK HOLES, ETC.) SHALL BE REPLACED WITHIN THE LIMITS OF THE RIGHT-OF-WAY IN ACCORDANCE WITH METHOD "B".
- INSPECTION WELLS SHALL BE CONSTRUCTED APPROXIMATELY 6" (150 mm) INSIDE OF BOTH RIGHT-OF-WAY LINES AT ALL FIELD TILE LOCATIONS.
- EXISTING FIELD TILE ABANDONED UNDER EXISTING PAVEMENTS OR PAVED SHOULDERS SHALL BE FILLED WITH FLOWABLE GROUT AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR ACCORDING TO ARTICLE 109.04.
- NON-CIRCULAR FIELD TILE SHALL BE REPLACED WITH STORM SEWER, SPECIAL OF AT LEAST THE SAME CROSS SECTIONAL AREA. ALL EXISTING FIELD TILE SHALL BE REPLACED WITH STORM SEWER OF THE TYPE REQUIRED FOR THE MINIMUM DEPTH OF COVER.
- THE 6" (150 mm) CONCRETE SLAB OR DITCH LINING SHALL BE POURED THE LENGTH OF THE TRENCH AT ALL DITCH FLOW LINE LOCATIONS WITHIN THE RIGHT-OF-WAY WITH LESS THAN 2' (600 mm) OF EARTH COVER. MISCELLANEOUS CONCRETE SHALL BE USED ACCORDING TO SECTION 611.
- ALL MISCELLANEOUS SLABS, APRONS AND DITCH LININGS SHALL BE REINFORCED WITH WELDED WIRE FABRIC AS SHOWN FOR PAVED DITCH IN STANDARD 606401.
- HEADWALL FOR BACKSLOPE OUTLET MAY BE USED FOR PIPE DRAIN DIAMETERS UP TO 10" (250 mm). SPECIAL DESIGNS WILL BE REQUIRED FOR LARGER SIZES.
- THE INSPECTION WELL LID FOR P.C.C. PIPE SHALL BE CONSTRUCTED OF 3/8" (10 mm) CAST IRON AND PROVIDED WITH A 1" (25 mm) DIAMETER HOLE IN CENTER. THE LID FOR THE OTHER PIPE MATERIALS SHALL BE A GRATE ASSEMBLY PREFABRICATED FOR AND COMPATIBLE WITH THE PIPE SYSTEM.



SLAB ELEVATION

CONCRETE SLAB

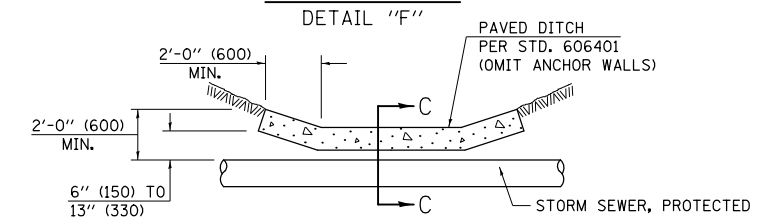
SECTION B-B



SECTION C-C

PAVED DITCH

DETAIL "E"



PAVED DITCH ELEVATION

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 61101011A

FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED - 11/06
pw:\11084EBIDINTEG.illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\057\Design\Design\Alternate A\0570895-REVISED.dgn		CHECKED -	REVISED -
PLOT SCALE = 40.0000' / in.		DATE -	REVISED -
PLOT DATE = 8/12/2016			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIELD TILE SYSTEMS (TREATMENT OF EXISTING)

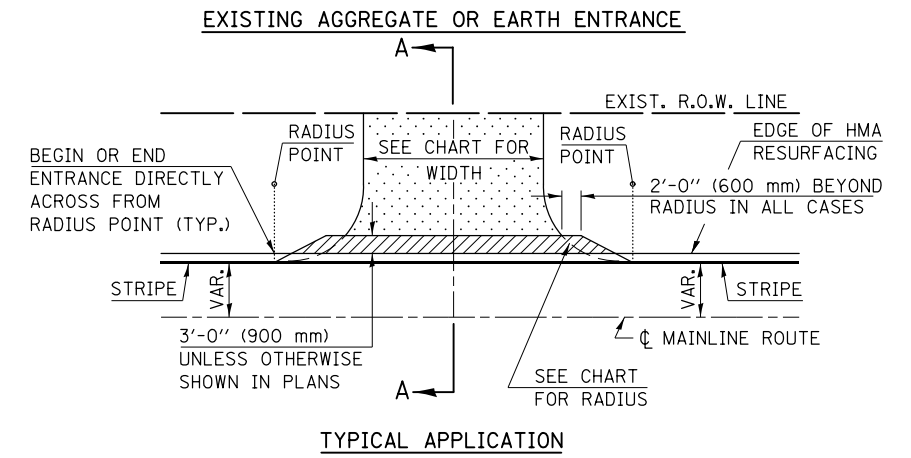
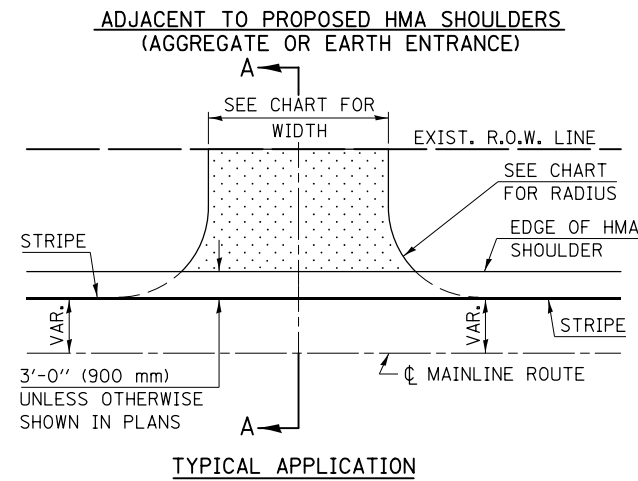
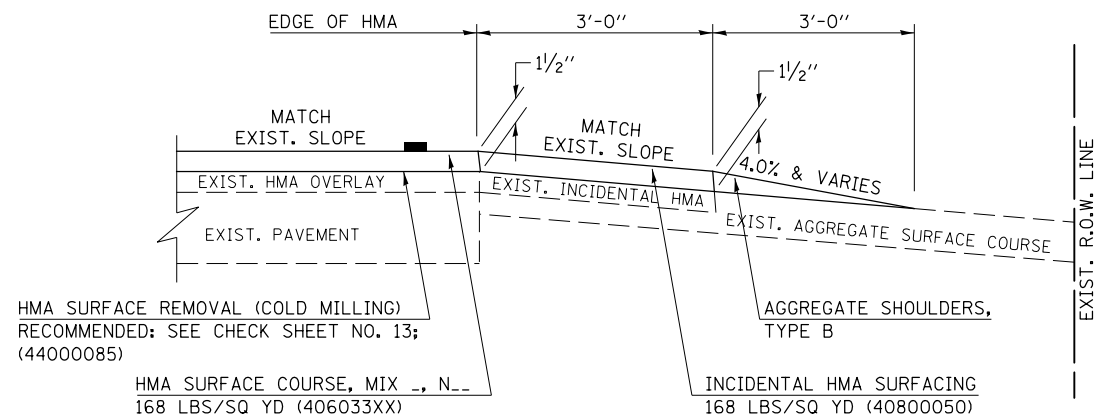
SCALE:	SHEET NO.	OF	SHEETS	STA.	TO	STA.
--------	-----------	----	--------	------	----	------

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	DOUGLAS	38	27
CONTRACT NO. 70B95				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

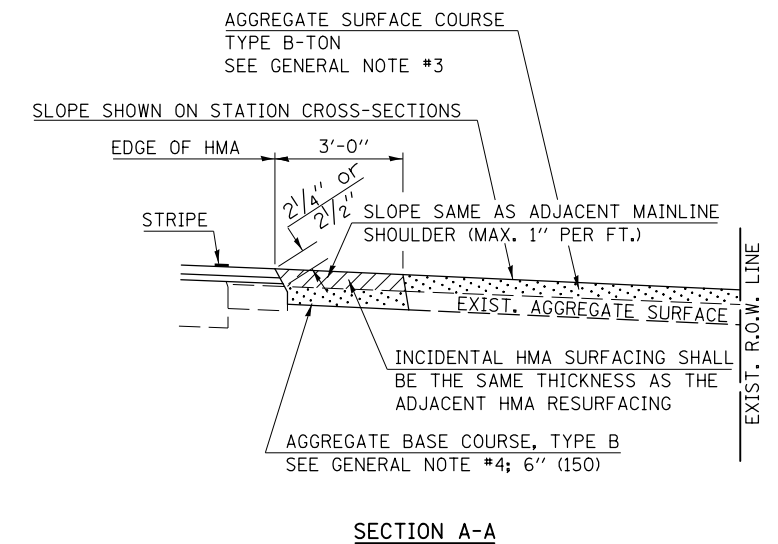
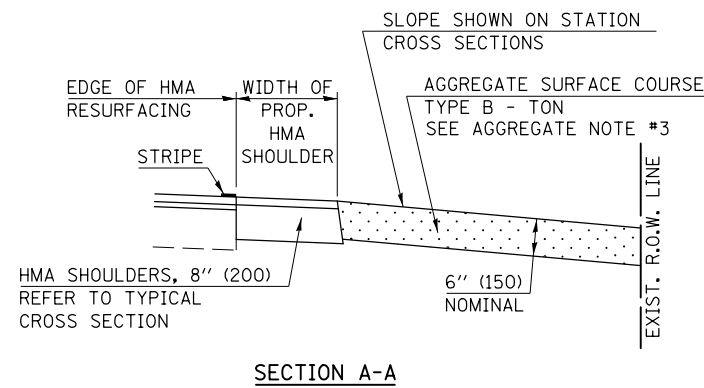
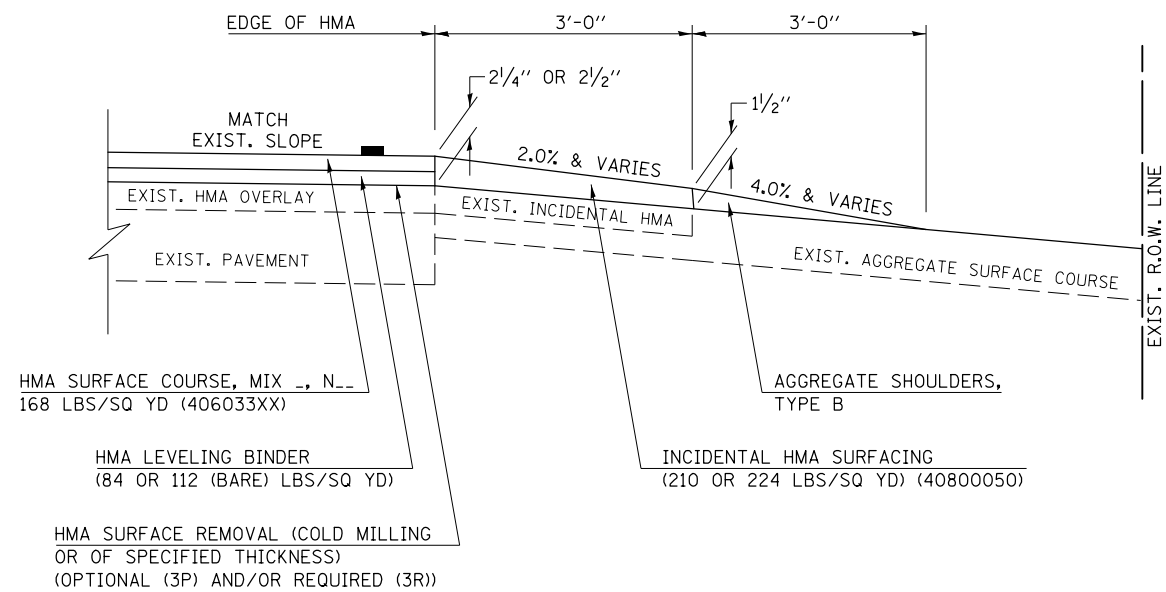
PROJECTS WITHOUT RECONSTRUCTION
 ("3R" WITHOUT RECONSTRUCTION, 3P, SMART AND CM)

PROJECTS WITH RECONSTRUCTION
 ("3R" IMPROVEMENTS AND SMART/3P "SPOT" LOCATIONS)

S.M.A.R.T. IMPROVEMENTS
 (POLICY RESURFACING; BDE 53-4.03; 1/2")



"3P" OR "3R" IMPROVEMENTS
 (POLICY RESURFACING; BDE 53-4.02; 2/4" OR 2/2" ON BARE CONCRETE)



Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 40800050A

FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED - 12/01/06 TJB
p:\11\084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\BID\Design\Alternate A\0570895-REVISED.dgn		DRAWN -	REVISED - 09/21/07 KAG
		CHECKED -	REVISED - 04/30/08 KJT
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIELD ENTRANCES (NONCOMMERCIAL RURAL)			
SCALE: NA	SHEET NO. 1 OF 2 SHEETS	STA.	TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	DOUGLAS	38	28
CONTRACT NO. 70B95				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

GENERAL NOTES

1. THE EXISTING SURFACE SHALL BE PREPARED IN ACCORDANCE WITH SECTION 408 OF THE STANDARD SPECIFICATIONS.
2. ANY NECESSARY WORK BEHIND THE HMA SHOULDER OR THE INCIDENTAL HMA SURFACING SHALL BE AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.
3. EARTH EXCAVATION REQUIRED FOR THE CONSTRUCTION OF THE AGGREGATE SURFACE COURSE SHALL BE INCLUDED IN THE COST OF AGGREGATE SURFACE COURSE.
4. AGGREGATE BASE COURSE, TYPE B, 6" (150 mm) MIN. SHALL BE USED WHERE IN THE OPINION OF THE ENGINEER THERE IS NOT SUFFICIENT BASE MATERIAL FOR THE PROPOSED ENTRANCES. THIS MATERIAL SHALL GENERALLY BE USED TO WIDEN ANY EXISTING RETURN OR TO CONSTRUCT NEW ENTRANCES WHERE NONE NOW EXISTS.
5. THE AGGREGATE BASE COURSE SHALL BE CONSTRUCTED 12" (300 mm) WIDER THAN THE SURFACE DIMENSIONS AS SHOWN ABOVE.
6. EXISTING FIELD ENTRANCES OF AGGREGATE OR EARTH WITH NO HMA APRON SHALL NOT RECEIVE A NEW HMA APRON WITHOUT PROPER APPROVAL THROUGH THE BUREAU OF OPERATIONS "POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS".
7. TO ASSURE APPROPRIATE ACCESS POLICIES ARE FOLLOWED ALL NEW ACCESS SHALL BE APPLIED FOR THROUGH THE BUREAU OF OPERATIONS PERMIT APPLICATION PROCESS. PLAN PREPARATION MEMORANDUMS 40-09 AND 40-11 ALONG WITH DISTRICT CONSTRUCTION MEMORANDUM 03/14 DISCUSS THIS PROCEDURE.

RURAL ENTRANCE DESIGN STANDARDS (PPM 40-09)																
DESIGN ELEMENT	NEW CONSTRUCTION & 3R with RECONSTRUCTION						3R w/out RECONSTRUCTION, 3P, SMART & CM									
	NONCOMMERCIAL			FIELD W/ FARM IMPLEMENTS			COMMERCIAL			NONCOMMERCIAL			COMMERCIAL			
	PRIVATE & FIELD			FIELD W/ FARM IMPLEMENTS			COMMERCIAL			PRIVATE & FIELD			COMMERCIAL			
	min.	des.	max.	min.	max.	min.	des.	max.	min.	des.	max.	min.	des.	max.		
SURFACE WIDTH (FT)							1 LANE, 1 WAY						1 LANE, 1 WAY			
							14 16 24									
							2 LANE, 2 WAY						2 LANE, 2 WAY			
							24 30 35									
RADIUS (FT)	15	25	40	30		20	30	50	resurface existing configuration; existing aggregate or earth entrances shall have the continuation of aggregate shoulders placed behind them							
SHOULDER WIDTH (FT)	2	2		2		1	3									
SHOULDER SLOPE (%)	2	4	6	4		2	4	6								
ENTRANCE GRADE (%)	0	2 to 5	10 or 12	2 to 5	10 or 12	0	2 to 5	8 or 10								
SIDE SLOPE (FT)	1:4	1:6	1:10	1:4	1:6	1:4	1:6	1:10								
SURFACE TYPE																
INCIDENTAL HMA SURFACING (INCH)		2		2		3 or 4			taper from hma resurfacing thickness (2 1/2", 2 1/4" or 1 1/2") to 1 1/2" to minimize aggregate shoulder							
AGGREGATE SURFACE COURSE, TYPE B (INCH)		6		6		8			if applicable use items: Preparation of Base & Aggregate Base Repair; see PPM 30-02							
PCC DRIVEWAY PAVEMENT (INCH)		6						6 or 8								

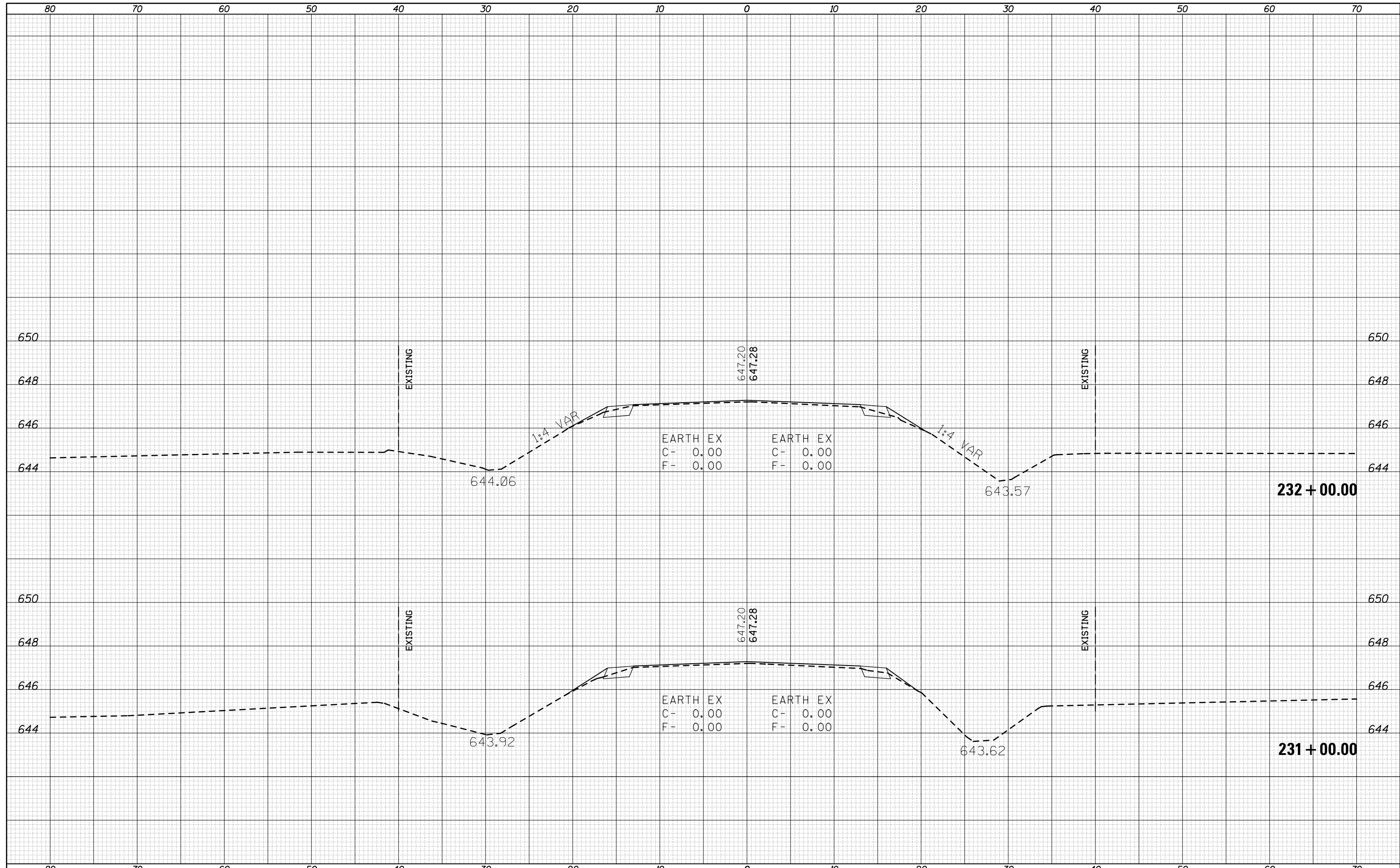
Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 5 DETAIL NO. 40800050A

FILE NAME =	USER NAME = ppersonbr	DESIGNED -	REVISED - 12/01/06 TJB	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FIELD ENTRANCES (NONCOMMERCIAL RURAL)	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
p:\11\084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\Drawings\Design\Alternate A\0570895-1-1.dgn	DRAWN -	09/21/07 KAG	749			121CR	DOUGLAS	38	29	
PLOT SCALE = 40.0000' / in.	CHECKED -	04/30/08 KJT	CONTRACT NO. 70B95							
PLOT DATE = 8/12/2016	DATE -	REVISED -	SCALE: NA			SHEET NO. 2 OF 2 SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

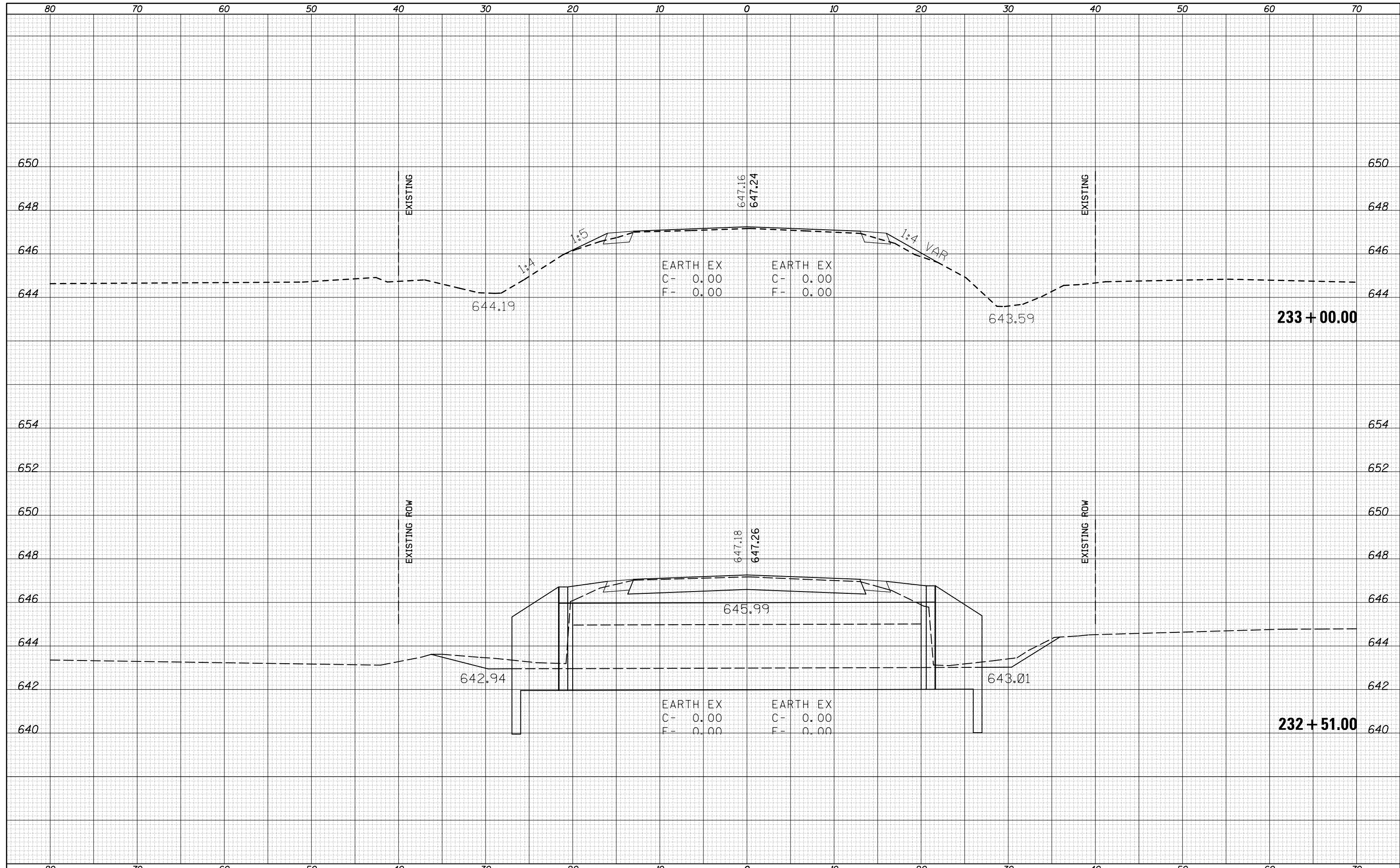
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS FOR STRUCTURE REPLACEMENT & EARTHWORK CULVERT NO.1 SN021-8028(E),SN021-2030(P) STA. 232 + 51.00	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
\\IL084EBIDINTEG.Illinois.gov\PIWIDOT\Documents\IDOT Offices\District 5\Projects\0570895\CAD\Drawn\Design\Alternate A\0570895-XS-5-8028-1.dgn	DRAWN	ALTERNATE	REVISED			749	121CR	Douglas	38	30
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISED -	REVISED -			CONTRACT NO. 70B95				
MODELNAME	PLOT DATE = 8/12/2016	DATE -	REVISED -	SCALE: SHEET 1 OF 3 SHEETS STA. 230+00.00 TO STA. 235+00.00			ILLINOIS FED. AID PROJECT			

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



FILE NAME = p:\11084EBIDINTEG\Illinois.gov\PIDOT\Documents\IDOT Offices\District 5\Projects\0570895\CAD\Drawn\Design\Alternate A\0570895-XS-5-802\REVISED.dwg

USER NAME = piersonbr	DESIGNED -	REVISED -
PLLOT SCALE = 10.0000' / in.	CHECKED -	REVISED -
PLLOT DATE = 8/12/2016	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

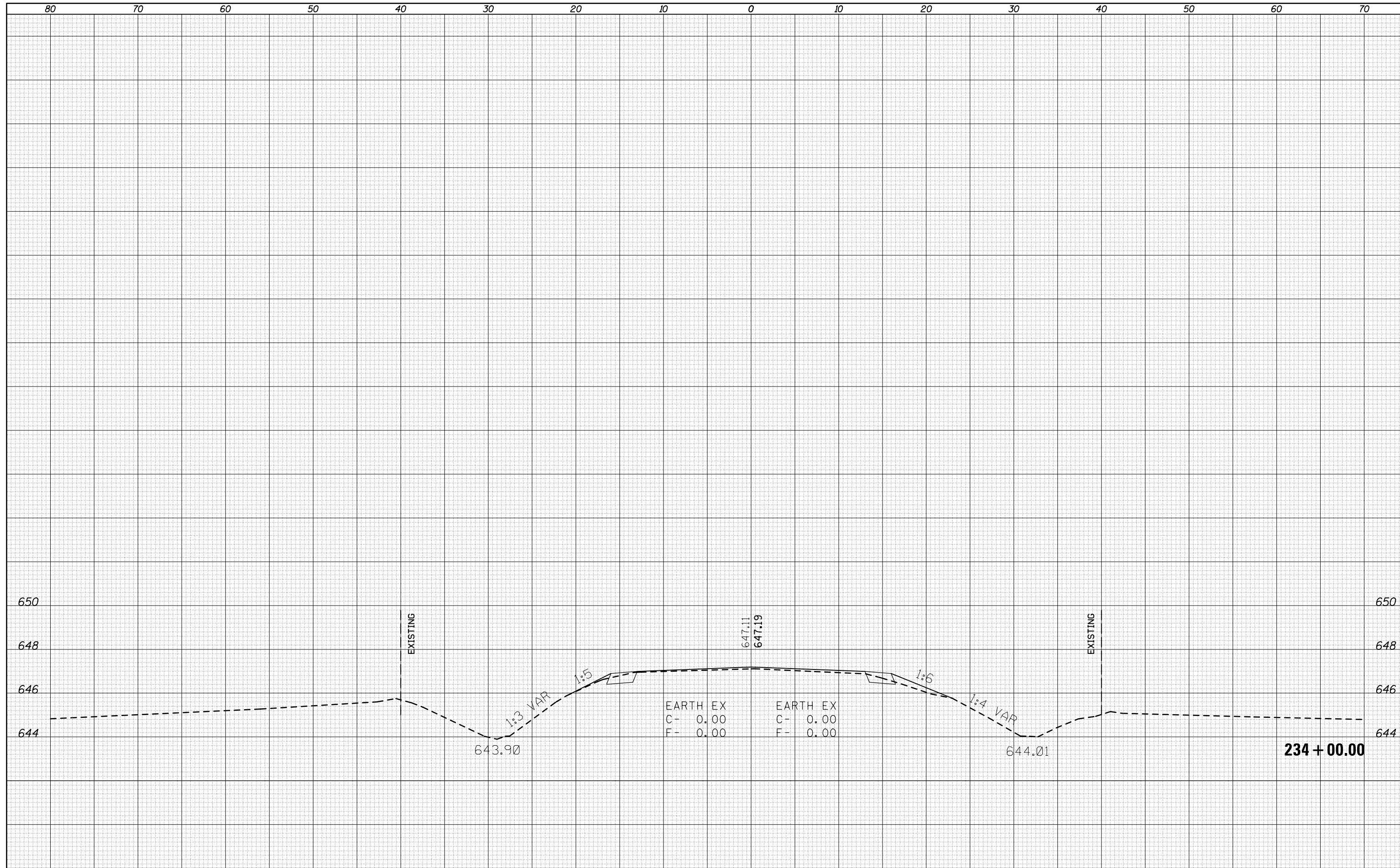
**CROSS SECTIONS FOR STRUCTURE REPLACEMENT & EARTHWORK
CULVERT NO.1 SN021-8028(E),SN021-2030(P) STA. 232 + 51.00**

SCALE: SHEET 2 OF 3 SHEETS STA. 230+00.00 TO STA. 235+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	31
CONTRACT NO. 70B95				
ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

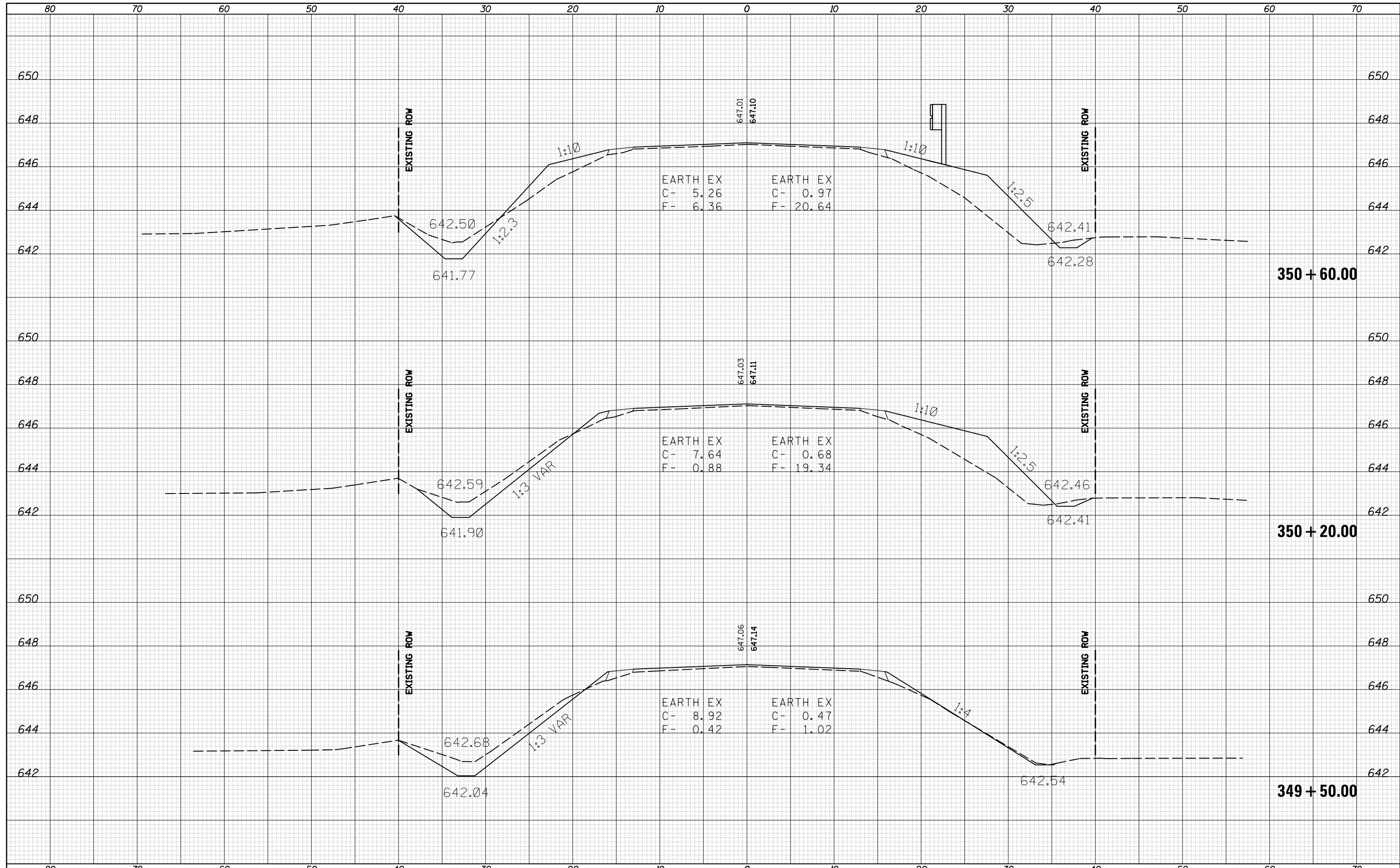
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS FOR STRUCTURE REPLACEMENT & EARTHWORK CULVERT NO.1 SN021-8028(E),SN021-2030(P) STA. 232 + 51.00	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw:\IL084EBIDINTEG.Illinois.gov\PIDOT\Documents\NIDOT Offices\District 5\Projects\0570895\CAD\Drawn\Design\Alternate A\0570895-XS-5-8028.dwg	DRAWN	ALTERNATE	REVISED			749	121CR	Douglas	38	32
PLOT SCALE = 10.0000 / in.	CHECKED -	REVISED -	REVISED -			CONTRACT NO. 70B95				
\$MODELNAME\$	PLOT DATE = 8/12/2016	DATE -	REVISED -	SCALE:	SHEET 3 OF 3 SHEETS	STA. 230+00.00 TO STA. 235+00.00	ILLINOIS FED. AID PROJECT			

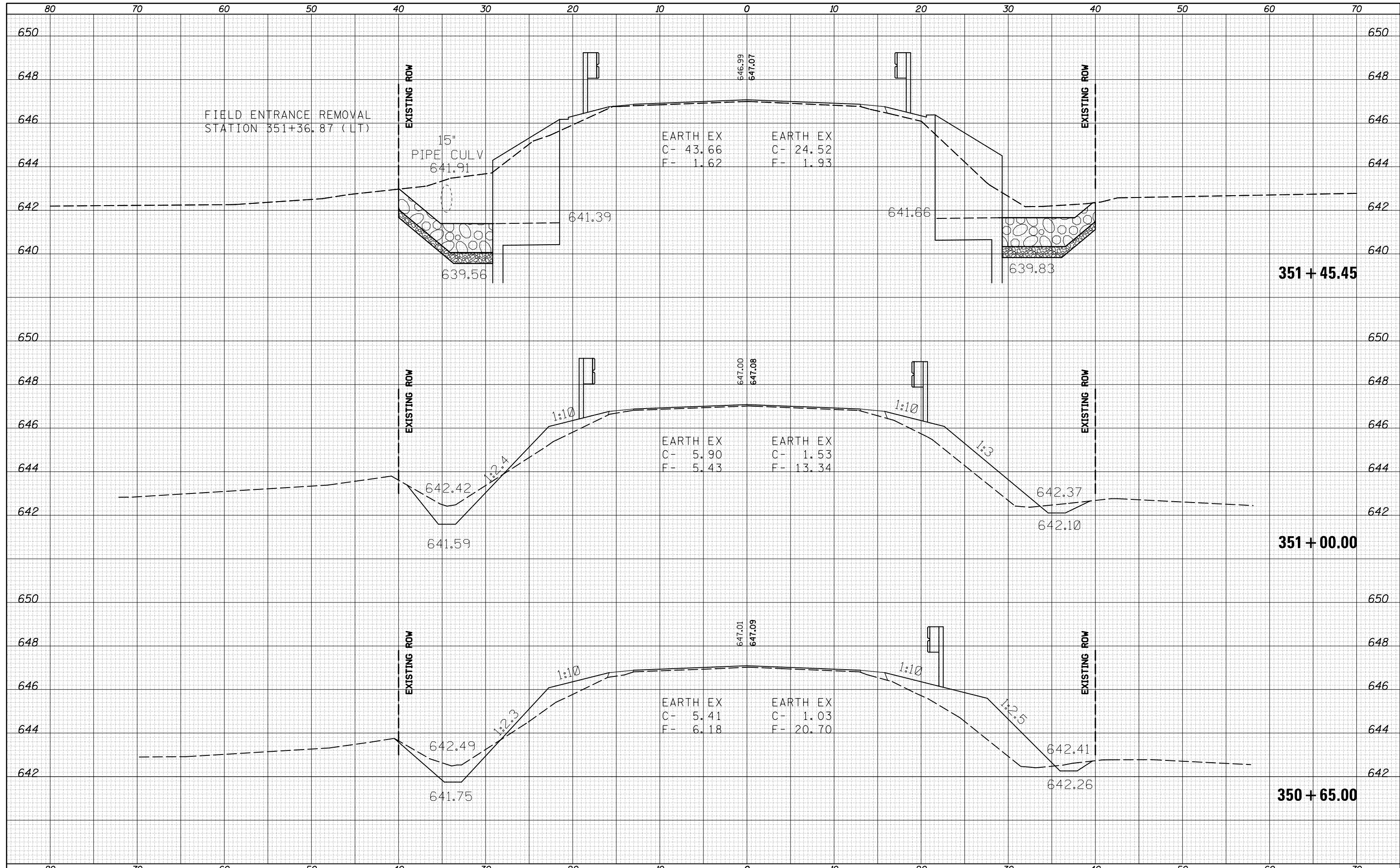
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



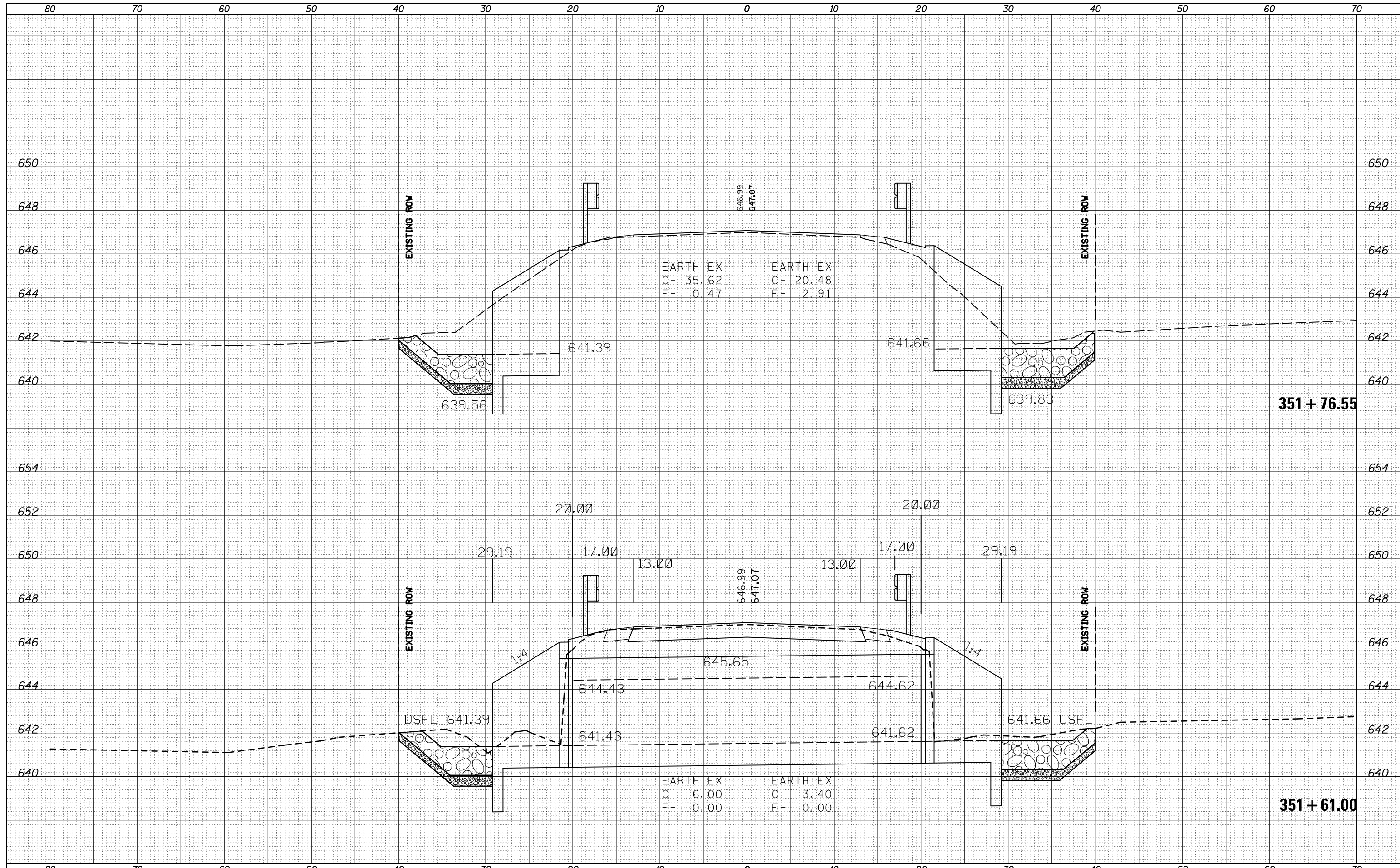
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



DATE	
BY	
FINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	



FILE NAME =
 USER NAME = piersonbr
 DESIGNED -
 REVISIONS
 PLOT SCALE = 10.0000" / in.
 CHECKED -
 DATE -
 PLOT DATE = 8/12/2016

DESIGNED -
 REVISIONS
 CHECKED -
 DATE -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

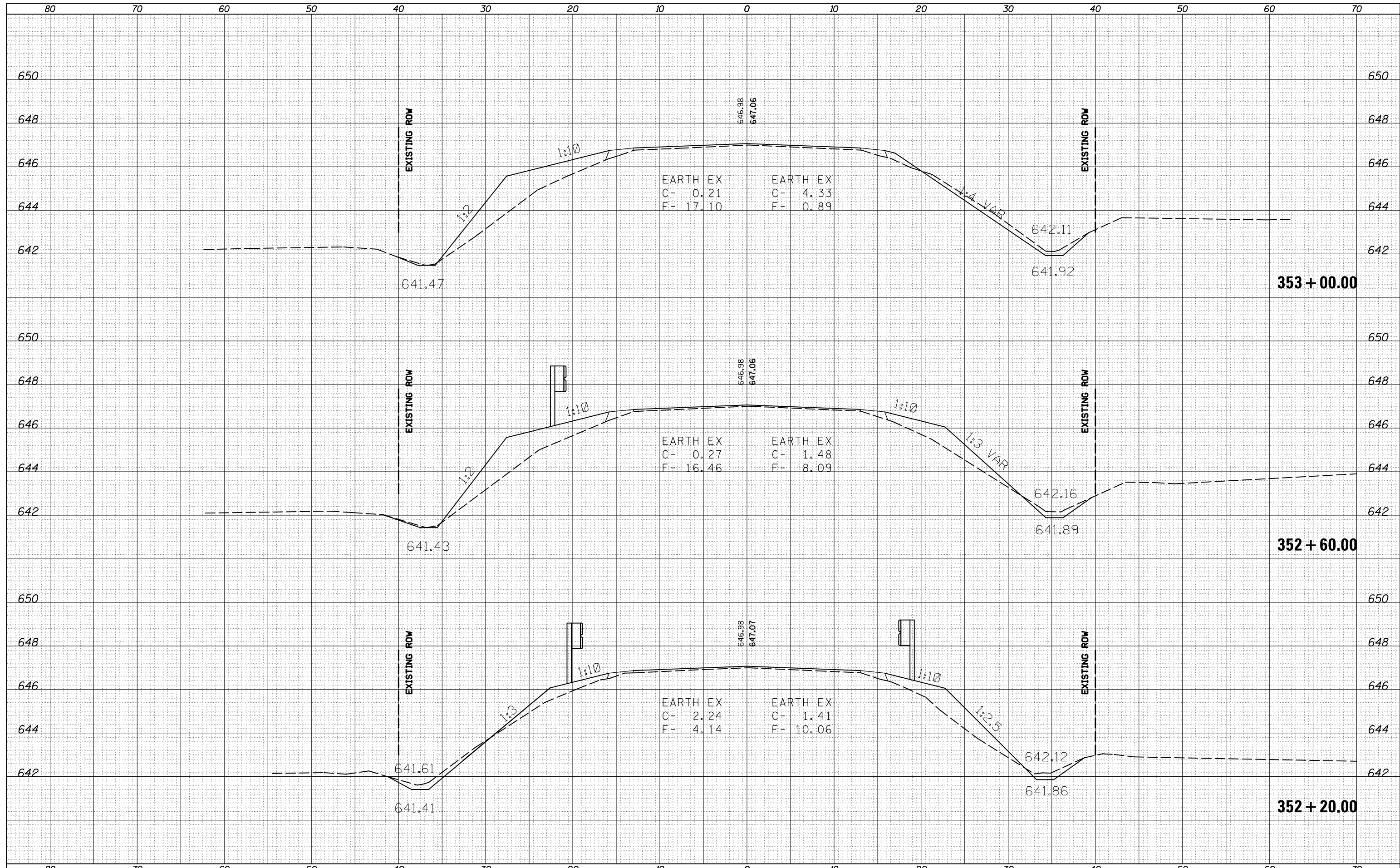
CROSS SECTIONS ALONG S.N. 021-2030

SCALE: SHEET 3 OF 5 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
749	121CR	Douglas	38	35
CONTRACT NO. 70B95				
ILLINOIS FED. AID PROJECT				

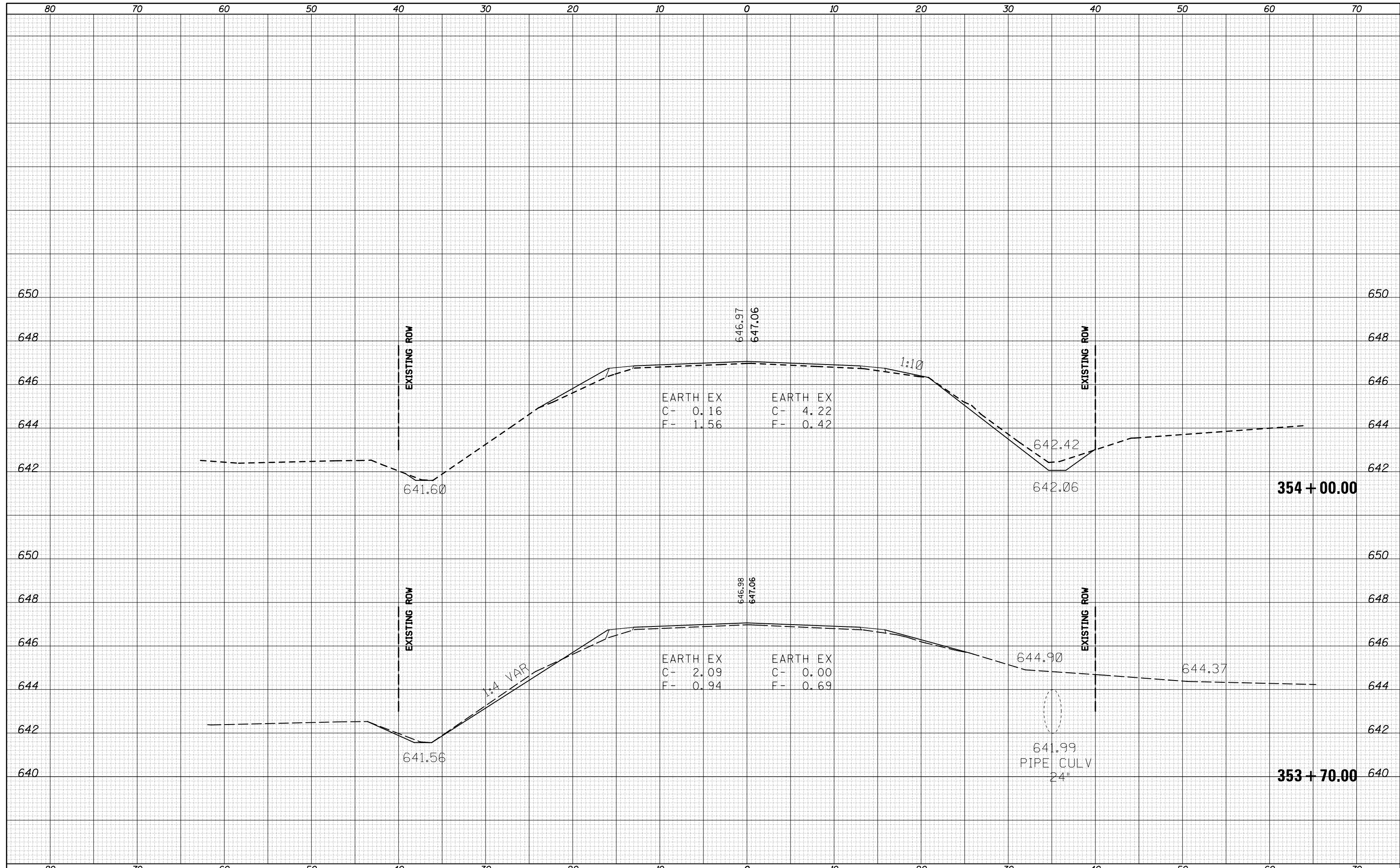
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



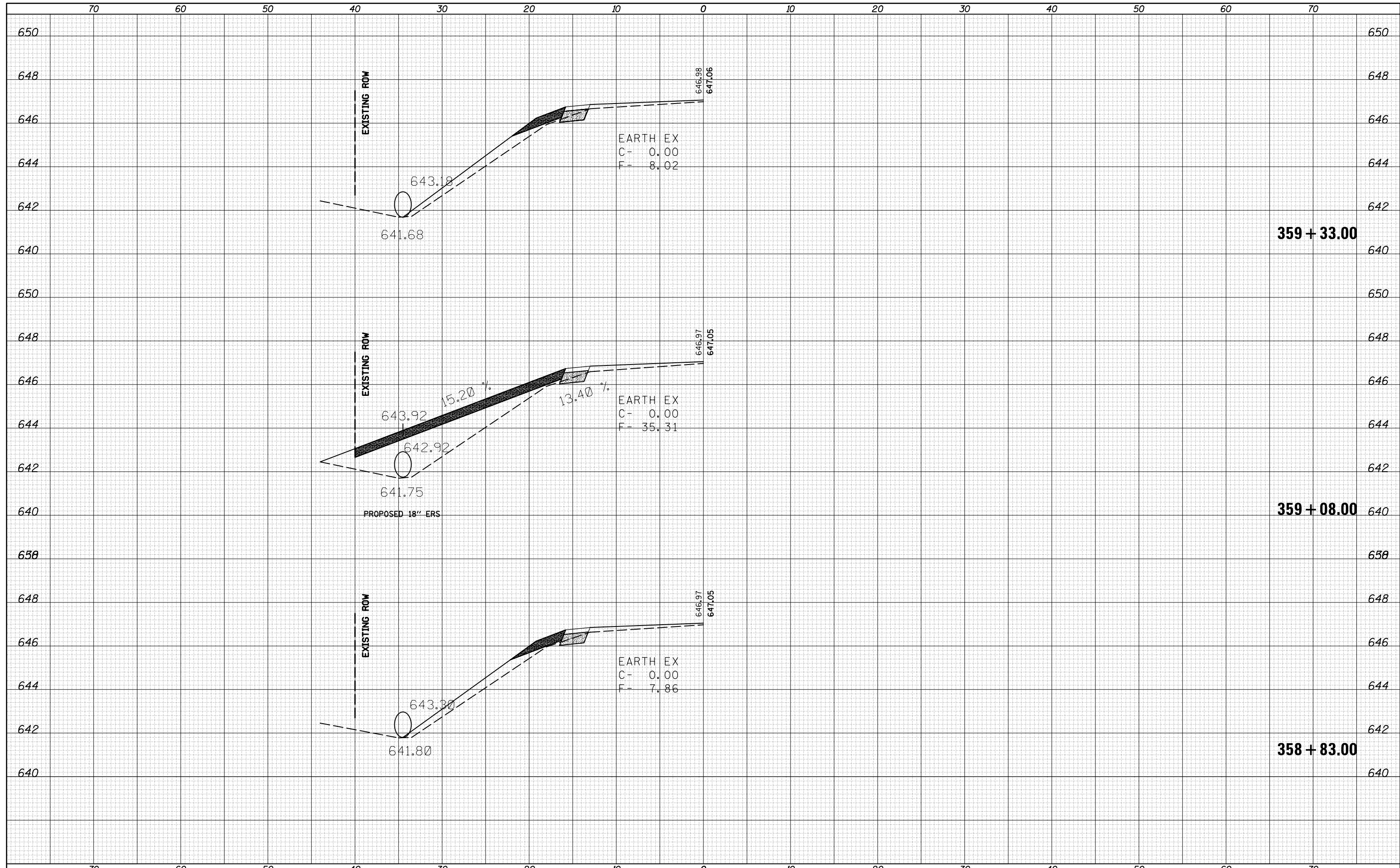
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



FILE NAME =	USER NAME = piersonbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS FOR PROPOSED NEW FIELD ENTRANCE STATION 359+08.00 (LT)				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
\\IL084EBIDINTEG...	DOT Offices\District 5\Projects\0570895\CAD\DRAWN	DESIGNED -	REVISED -		749	121CR	DOUGLAS	38	38				
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISED -	REVISED -		CONTRACT NO. 70B95								
DATE = 8/12/2016	DATE -	REVISED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	ILLINOIS FED. AID PROJECT	