

FOR INDEX OF SHEETS, SEE SHEET NO. 2
 FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4 THROUGH 6

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
323	145CR	DOUGLAS	24	1
		ILLINOIS	CONTRACT NO. 70A85	

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

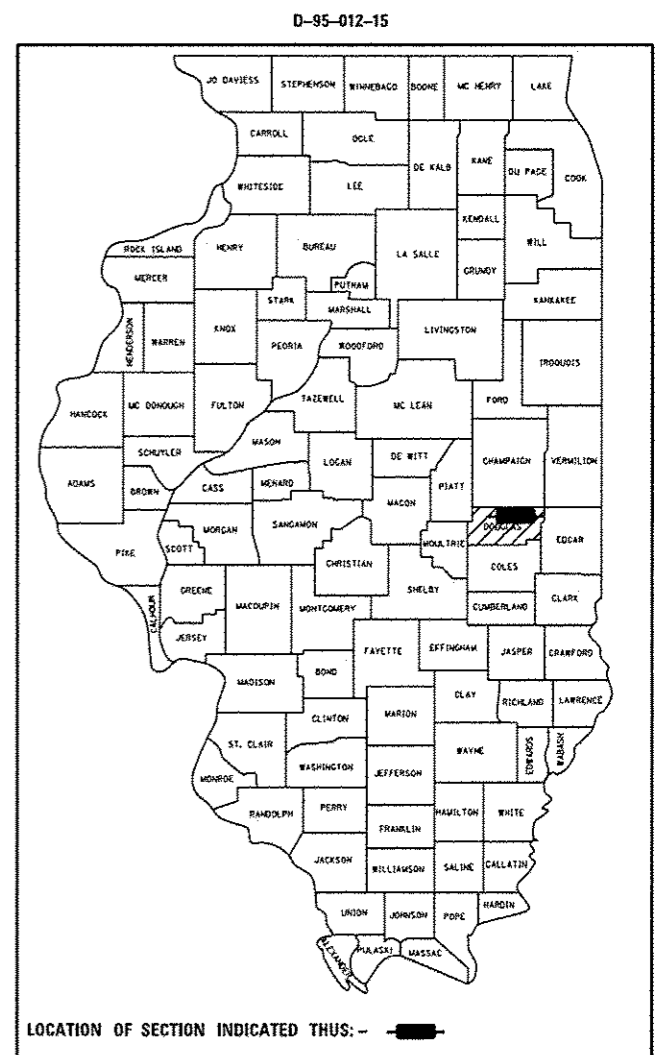
FAP ROUTE 323 (US 36)
 SECTION 145CR
 PROJECT ACNHPP-0323(035)
 CULVERT REPLACEMENT
 DOUGLAS COUNTY

C-95-012-15

CURRENT TRAFFIC DATA

2016 ADT	3,800
P.U. %	75.3
S.U. %	6.1
M.U. %	18.6

DESIGN DESIGNATION: N/A

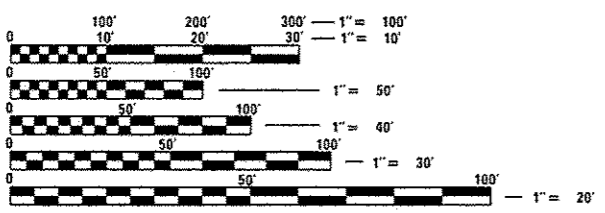
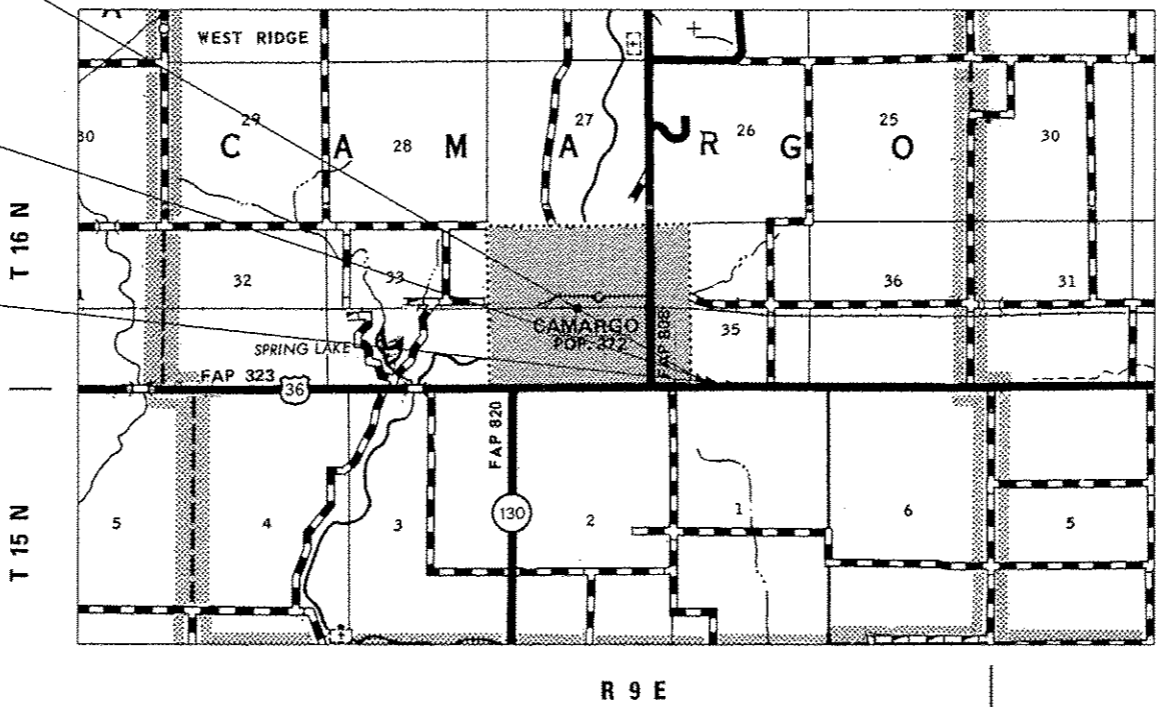


F.A.P. 323 SECTION 145CR
 BEGINS: STATION 345+89.00

EAST OF CAMARGO

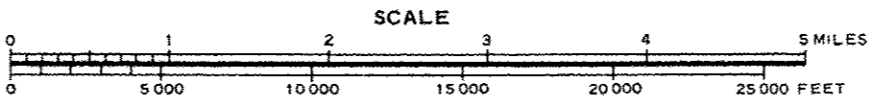
CULVERT REPLACEMENT
 EXISTING S.N. 021-8019 AT STA. 346+00.00
 SINGLE 6' X 1.5' REINFORCED CONCRETE BOX CULVERT
 PROPOSED S.N. 021-8057 AT STA. 346+00.00
 SINGLE 12' x 2' PRECAST BOX CULVERT WITH
 PRECAST WELDED WIRE FABRIC END SECTIONS

F.A.P. 323 SECTION 145CR
 ENDS: STATION 346+11.00



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 CAMARGO TOWNSHIP



GROSS LENGTH = 14.00 FT. = 0.003 MILE
 NET LENGTH = 14.00 FT. = 0.003 MILE

PROJECT ENGINEER: NANCY FASIG
 SQUAD LEADER: BRIAN J. HOGAN
 DESIGNERS: ANDREW J. BERGAN & BENJAMIN J. DETERS
 CONTRACT NO. 70A85

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED MARCH 18, 2016
Kenneth G. Barnett
 REGION THREE ENGINEER *CRS*

May 6, 2016
Maurice M. Addis P.E.
 ENGINEER OF DESIGN AND ENVIRONMENT

May 6, 2016
Omer Osman P.E.
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

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HIGHWAY STANDARDS

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420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
442201-03	CLASS C AND D PATCHES
515001-03	NAME PLATES FOR BRIDGES
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701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
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701206-03	LANE CLOSURE, 2L, 2W, NIGHT ONLY, FOR SPEEDS \geq 45 MPH
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701901-05	TRAFFIC CONTROL DEVICES

FILE NAME #	USER NAME # bergensj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS & HIGHWAY STANDARDS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
pu\11884EBIDINTEG.illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\057\DRAWING\Design\0570885-ahc\index.dgn	DRAWN	REVISED	REVISED			323	145CR	DOUGLAS	24	2	
PLOT SCALE = 48,0000 "/ in.	CHECKED -	REVISED -	REVISED -			CONTRACT NO. 70A85					
#MODELNAME#	PLOT DATE # 3/3/2016	DATE -	REVISED -			SCALE:	SHEET 1 OF 1 SHEETS	STA.	TD STA.	ILLINOIS FED. AID PROJECT	

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.-550
BEFORE ORDERING STORM SEWERS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR THE EXACT LENGTHS.

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 687101 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.

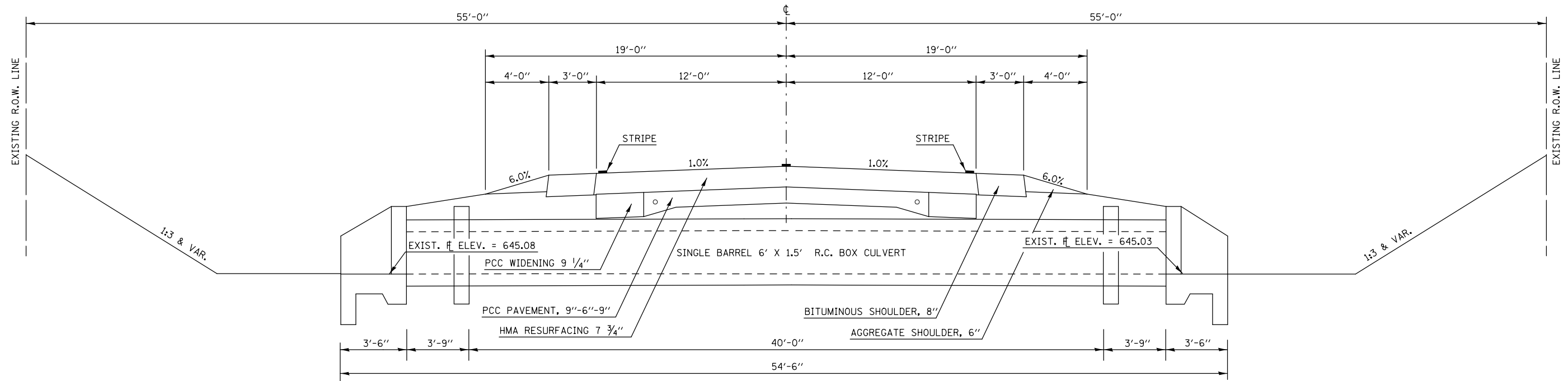
NO COMMITMENTS

FILE NAME =	USER NAME = hoganbj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
per\\IL064ERID\INTEG\illinois.gov\VIDD\O	Documents\1007 Offices\District 5\Projects\057	ORANGE	REVISED -			323	145CR	DOUGLAS	24	3	
MODELNAME4	PLOT SCALE = 48,0000' / in.	CHECKED -	REVISED -			SCALE:		SHEET 1 OF 1 SHEETS		STA. TO STA.	
	PLOT DATE = 3/7/2016	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

EXISTING TYPICAL CROSS SECTION

STATION 345+91.00 TO STATION 346+09.00

EXISTING SN 021-8019 @ STA. 346+00.00

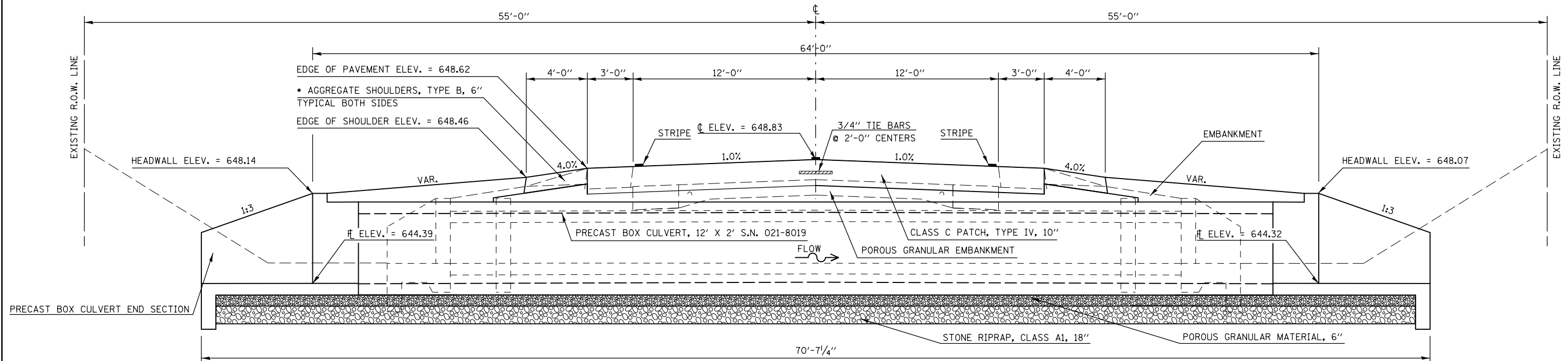


PROPOSED TYPICAL CROSS SECTION

STATION 345+91.00 TO STATION 346+09.00

PROPOSED SN 021-8057 @ STA. 346+00.00

• AGGREGATE SHOULDERS, TYPE B, 6" SHALL EXTEND FROM STA. 345+00 TO STA. 347+00. TYPICAL ON BOTH SIDES OF ROADWAY.

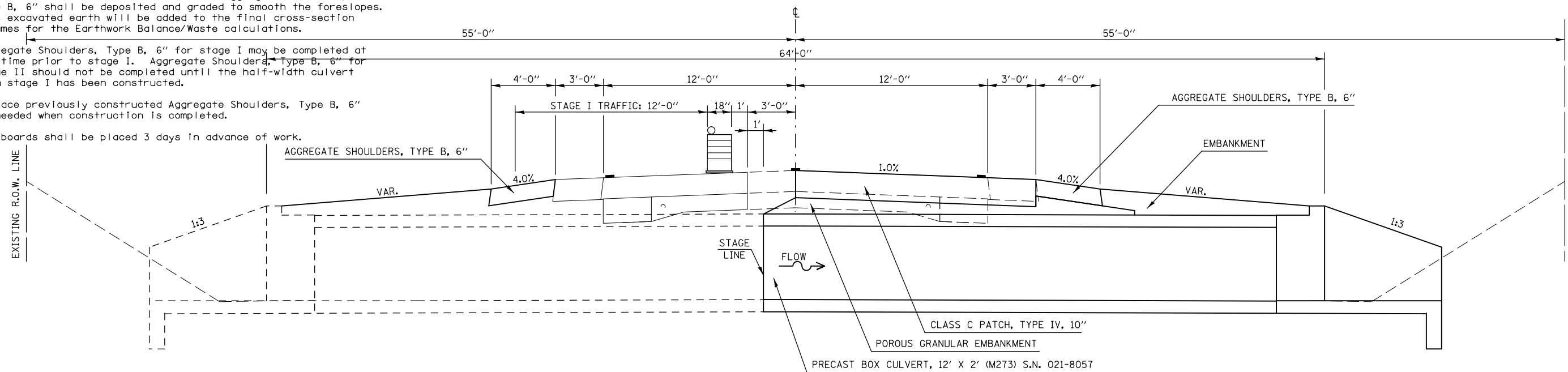


FILE NAME =	USER NAME = bergena.j	DESIGNED - BJD 10/15/2015	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL CROSS SECTION (SN 021-8057)		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pw:\IL\084EBID\INTEG.illinois.gov\PIWIDOT\Documents\IDOT Offices\District 5\Projects\0579\DRAWING\Design\0579A85-shr-typical.dwg	DRAWN	REVISIONS	323				145CR	DOUGLAS	24	7	
PLOT SCALE = 40.0000' / in.	CHECKED -	REVISIONS	CONTRACT NO. 70A85								
#MODELNAME#	DATE -	REVISIONS	SCALE:		SHEET 1 OF 1 SHEETS	STA. 345+91.00 TO STA. 346+09.00	ILLINOIS FED. AID PROJECT				

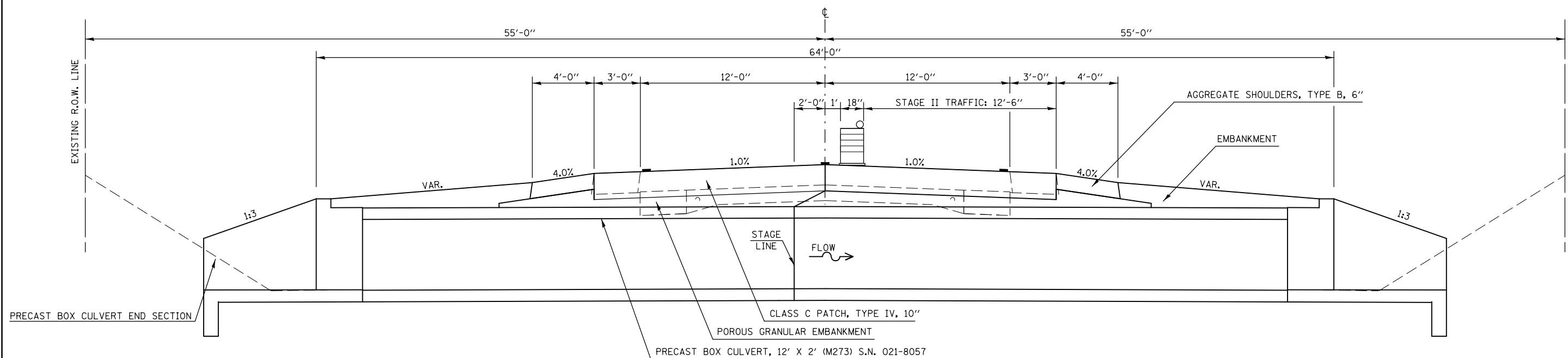
NOTES

1. Refer to Special Provisions for TRAFFIC CONTROL AND PROTECTION, STANDARD 701206 and STAGE CONSTRUCTED ACROSS ROAD STRUCTURES for additional information.
2. The Engineer may reduce or eliminate lengths or locations of Aggregate Shoulders, Type B, 6" and Earth Excavation based on field conditions.
3. Construct downstream end of across road (A.R.) culvert first.
4. Earth excavated for the construction of Aggregate Shoulders, Type B, 6" shall be deposited and graded to smooth the foreslopes. This excavated earth will be added to the final cross-section volumes for the Earthwork Balance/Waste calculations.
5. Aggregate Shoulders, Type B, 6" for stage I may be completed at any time prior to stage I. Aggregate Shoulders, Type B, 6" for stage II should not be completed until the half-width culvert from stage I has been constructed.
6. Replace previously constructed Aggregate Shoulders, Type B, 6" as needed when construction is completed.
7. CMS boards shall be placed 3 days in advance of work.

STAGE I TYPICAL STAGING DETAILS



STAGE II TYPICAL STAGING DETAILS



FILE NAME =	USER NAME = bergena.j	DESIGNED - BJD 10/15/2015	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL STAGING DETAILS (SN 021-8057)	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\0579A85-sh1-typical.dwg	DRAWN	DATE	REVISED -			323	145CR	DOUGLAS	24	8
PLOT SCALE = 40.0000' / in.	CHECKED -	DATE	REVISED -			CONTRACT NO. 70A85				
MODELNAME	PLOT DATE = 3/3/2016	DATE	REVISED -			ILLINOIS FED. AID PROJECT				

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

SCHEDULE OF QUANTITIES

AGGREGATE SHOULDERS, TYPE B 6"

	STATION	LENGTH (FOOT)	WIDTH (FOOT)	AVERAGE WIDTH (FOOT)	AGGREGATE SHOULDERS, TYPE B 6" 48101500 (SQ YD)
EB	345+00.00		3.9		
		50.00		4.0	22.2
EB	345+50.00		4.0		
		100.00		4.0	44.4
EB	346+50.00		4.0		
		50.00		4.0	22.2
EB	347+00.00		4.0		
WB	345+00.00		4.0		
		50.00		4.0	44.4 *
WB	345+50.00		4.0		
		100.00		4.0	88.9 *
WB	346+50.00		4.0		
		50.00		3.8	42.2 *
WB	347+00.00		3.6		
				TOTAL	264.3
				ROUNDED	270.0

* - AGGREGATE SHOULDERS IN THE WB LANE WILL BE PLACED AT TWO SEPARATE TIMES (ONCE PRE-STAGE 1 & ONCE DURING STAGE 2).

CHANGEABLE MESSAGE SIGN

	CHANGEABLE MESSAGE SIGN X7015005 (CAL DAYS)
EB	3.0
WB	3.0
TOTAL	6.0

STONE RIPRAP

	STATION	TO	STATION	LENGTH (FOOT)	WIDTH (FOOT)	AREA MEASURED IN CADD (SQ YD)	STONE RIPRAP, CLASS A1 28100101 (SQ YD)	STONE RIPRAP, CLASS A1 (TON)	STONE RIPRAP, CLASS A4 28100107 (SQ YD)	STONE RIPRAP, CLASS A4 (TON)	BEDDING STONE (TON)	FILTER FABRIC 28200200 (SQ YD)
EB	345+91.00		346+09.00	18.00	34.30	-	68.6	61.7	0.0	0.0	0.0	0.0
WB	345+91.00		346+09.00	18.00	34.30	-	68.6	61.7	0.0	0.0	0.0	0.0
WB	348+19.05		348+86.94	-	-	139.2	0.0	0.0	232.1	154.3	46.3	232.1
						TOTAL	137.2	123.5	232.1	154.3	46.3	232.1
						ROUNDED	140.0	130.0	240.0	160.0	50.0	240.0

NOTES:

1. STONE RIP RAP & BEDDING STONE TONNAGE QUANTITIES ARE AN ESTIMATE & FOR INFORMATION ONLY.
2. STONE RIP RAP, CLASS A4 IS ESTIMATED BASED ON 1.5 TONS/CU YD.
3. STONE RIP RAP, CLASS A1 & BEDDING STONE IS ESTIMATED BASED ON 1.8 TONS/CU YD.

EARTHWORK

DESCRIPTION	EARTH EXCAVATION 20200100 (CU YD)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (CU YD)	EMBANKMENT (CU YD)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) (CU YD)
LEFT (NORTH) SIDE	273.0	204.8	22.6	182.2
RIGHT (SOUTH) SIDE	40.3	30.2	24.4	5.8
TOTAL	313.3	235.0	47.0	188.0
ROUNDED	320.0	240.0	50.0	190.0

NOTES:

1. THE SHRINKAGE FACTOR USED IS 25%.
2. SHRINKAGE, EMBANKMENT, AND BALANCE IS FOR INFORMATION ONLY.
3. NO PAYMENT WILL BE ALLOWED FOR OVERHAUL.
4. EARTH EXCAVATION CALCULATIONS DO NOT INCLUDE THE AREA BEING PAID FOR AS THE RIP RAP PAY ITEM(S). THIS EXCAVATION IS INCLUDED IN THE BID PRICE FOR THE RIP RAP PAY ITEM.

CLASS C PATCHES

	STATION	TO	STATION	LENGTH (FOOT)	WIDTH (FOOT)	CLASS C PATCHES TYPE IV, 10 INCH 44201359 (SQ YD)	WELDED WIRE REINF 44200050 (SQ YD)	PAVEMENT GRINDING 20037200 (SQ YD)
EB	345+89.00		346+11.00	22.00	15.0	36.7	36.7	36.7
WB	345+89.00		346+11.00	22.00	15.0	36.7	36.7	36.7
						TOTAL	73.3	73.3
						ROUND TO	75.0	75.0

SCHEDULE OF QUANTITIES

TEMPORARY DITCH CHECKS

	STATION	TEMPORARY DITCH CHECKS 28000305 (FOOT)
LEFT	345+75.00	14.0
LEFT	346+25.00	13.5
RIGHT	345+75.00	16.5
RIGHT	346+00.00	30.0
RIGHT	346+25.00	13.5
	TOTAL	87.5
	ROUND TO	90.0

SEEDING

	STATION	TO	STATION	SEEDING CLASS 2 25000210 (ACRE)	SEEDING CLASS 7 25000350 (ACRE)	NITROGEN FERTILIZER NUTRIENT 25000400 (POUND)	PHOSPHORUS FERTILIZER NUTRIENT 25000500 (POUND)	POTASSIUM FERTILIZER NUTRIENT 25000600 (POUND)	MULCH METHOD 2 25100115 (ACRE)	EROSION CONTROL BLANKET 25100630 (SQ YD)
LEFT	344+50.00		347+50.00	0.320	0.960	28.800	28.800	28.800	0.960	1,548.80
RIGHT	344+50.00		347+50.00	0.129	0.387	11.610	11.610	11.610	0.387	624.36
			TOTAL	0.449	1.347	40.41	40.41	40.41	1.35	2,173.16
			ROUNDED	0.50	1.50	50.0	50.0	50.0	1.50	2,180.0

EXPLORATION TRENCH 52" DEPTH

	STATION	TO	STATION	EXPLORATION TRENCH 52" DEPTH 61100500 (FOOT)
LEFT	345+85.00		346+15.00	30.0
RIGHT	345+85.00		346+15.00	30.0
			TOTAL	60.0

FIELD TILE SYSTEMS

CONCRETE COLLAR PURPOSE	STATION	OFFSET	CONCRETE COLLAR 54248510 (CU YD)	INSPECTION WELLS Z0030900 (EACH)
COLLAR CONNECTING 8" PLASTIC TILE TO 6" STORM SEWER SPECIAL	345+85.00*	40.0' LT*	0.16	0.0
	345+85.00*	54.5' LT*	0.0	1.0
COLLAR CONNECTING 8" PLASTIC TILE TO 6" CLAY TILE	**	54.5' RT*	0.16	1.0
		TOTAL	0.32	2.0
		ROUND TO	0.4	2.0

- * LOCATIONS ARE APPROXIMATE AND MAY VARY IN FIELD.
- ** LOCATIONS ARE UNKNOWN AND TO BE DETERMINED IN FIELD.

STORM SEWERS

STATION	OFFSET	TO	STATION	OFFSET	STORM SEWERS (SPECIAL), 6" 61139900 (FOOT)
345+85.58*	54.5' LT*		345+85.58	39.5' LT	15.0
			TOTAL		15.0

- * LOCATIONS ARE APPROXIMATE AND MAY VARY IN FIELD.

Benchmark: 648.27, chiseled square in center of North headwall at S.N. 021-8019, Sta. 346+00.46, 23.95' LT.

Existing Structure: S.N. 021-8019, Sta. 346+00, 6.0' x 1.5' Concrete Box Culvert.

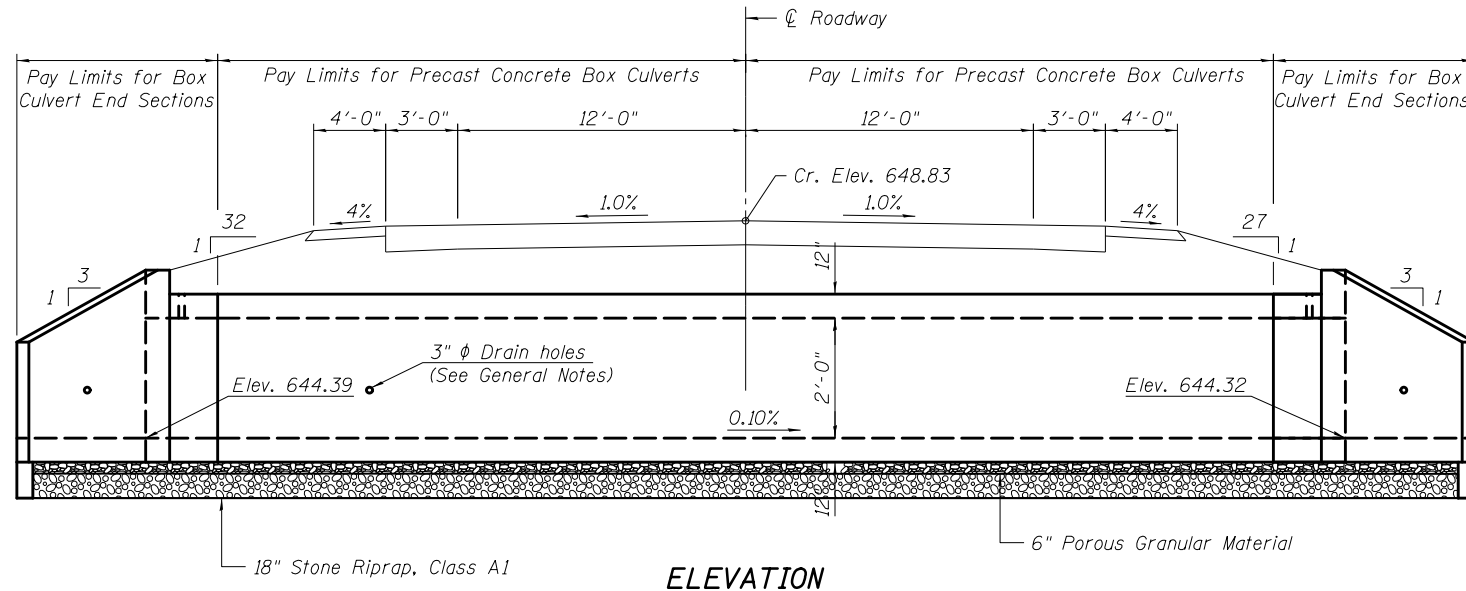
INDEX OF SHEETS

1. Plan & Profile Sheet
- 2-3. Precast Concrete Box Culvert Apron End Section Details
- 4-5. Existing Structure Details
6. Porous Granular Embankment Details

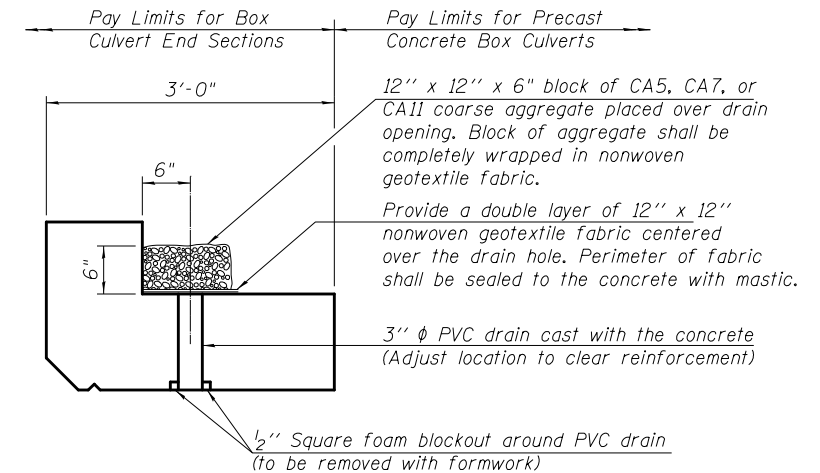
GENERAL NOTES

The design fill height for this box is < 2 feet. The precast box culvert sections shall conform to the requirements of AASHTO C 1577.
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

All exposed edges shall be chamfered 3/4" per article 503.06 of the Standard Specifications.

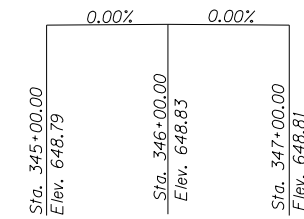


ELEVATION



DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain details will not be measured for payment but shall be included in the contract unit price for the end section.)



PROFILE GRADE

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications
6th Edition

LOADING HL-93

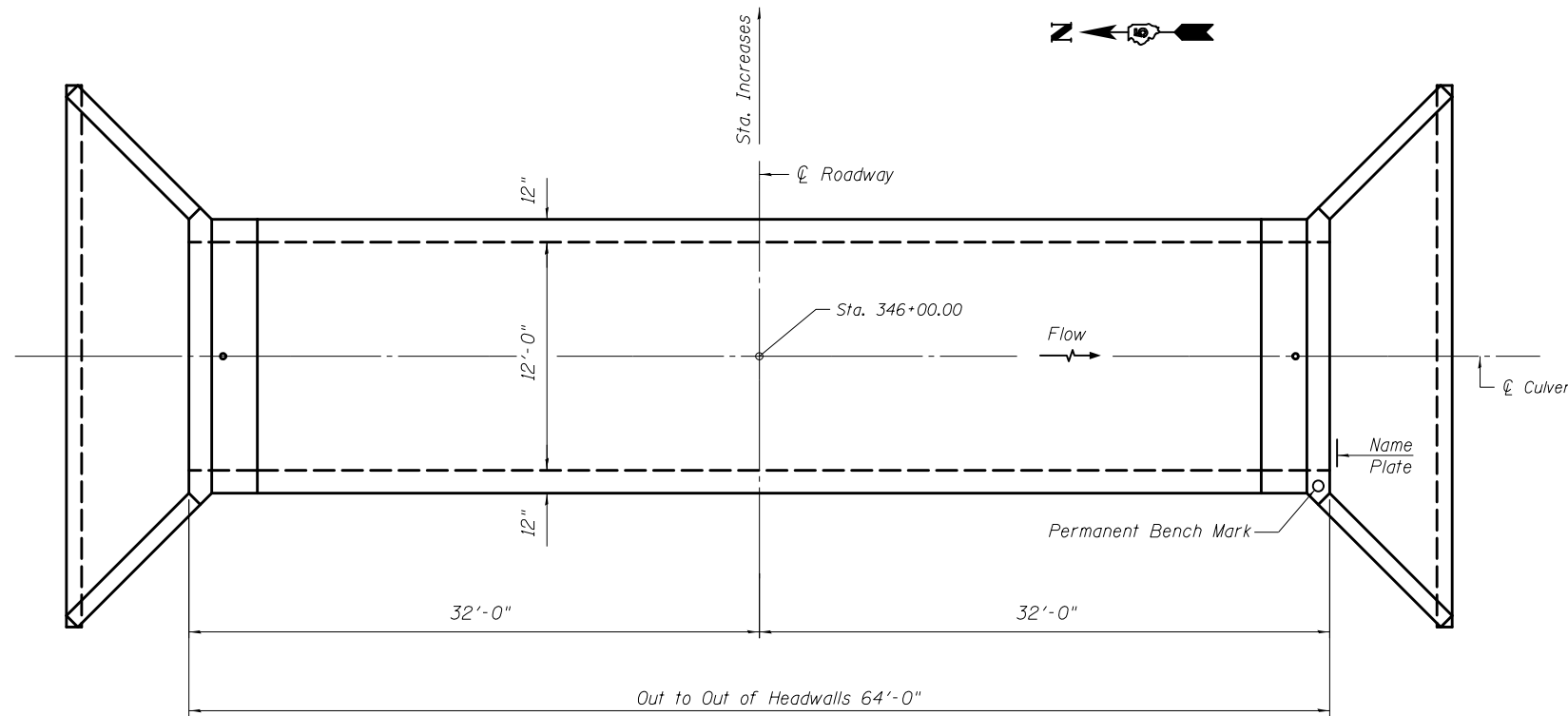
DESIGN STRESSES

PRECAST UNITS

f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Fabric)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Name Plates	Each	1.0
Box Culvert End Sections, Culvert No. 1	Each	2.0
Precast Concrete Box Culverts, 12x2	Foot	58.0
Permanent Bench Marks	Each	1.0
Stone Riprap, Class A1	Sq. Yd.	140.0
Porous Granular Embankment	Cu. Yd.	50.0



PLAN

WATERWAY INFORMATION

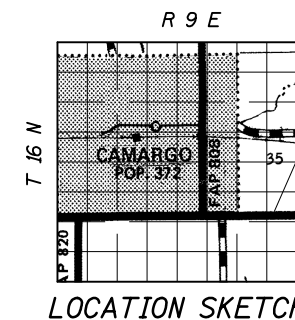
Flood		Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	165	9	24						
Base	100									
Overtopping										
Max. Calc.	500									

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	640.72	640.67

STATION 346+00.00
BUILT 2014 BY
STATE OF ILLINOIS
F.A.P. RT. 323 US 36
SEC. 145CR
LOADING HL-93
STR. NO. 021-8057

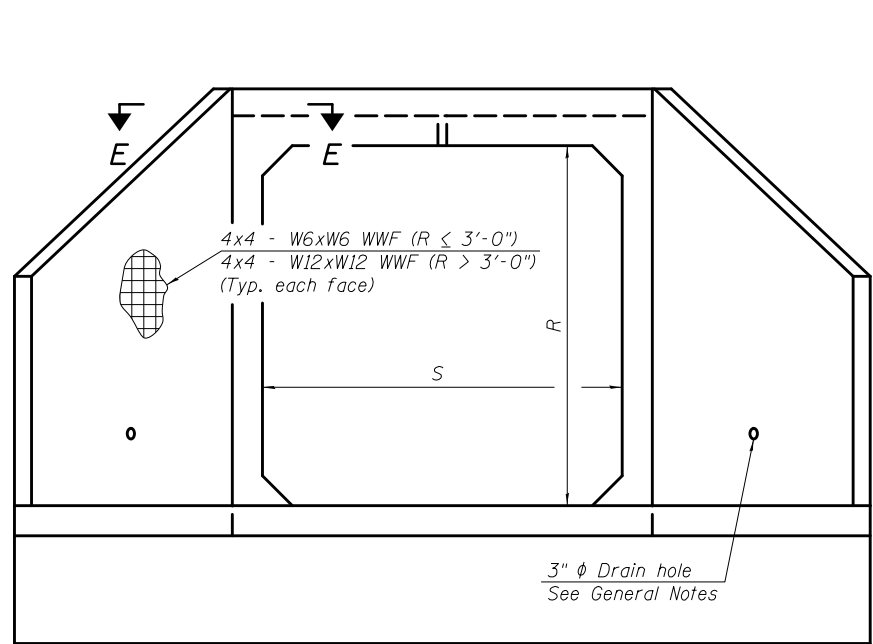
NAME PLATE
See Std. 515001



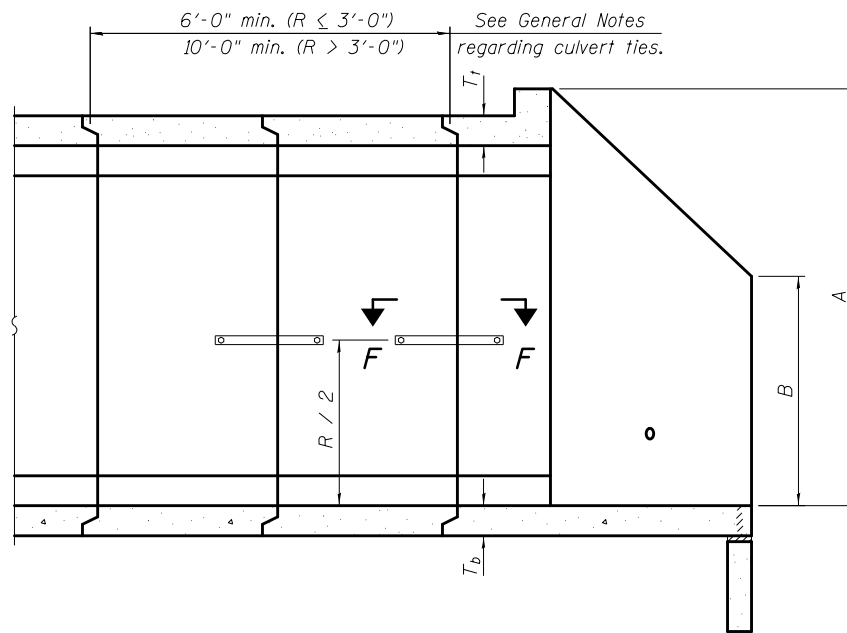
LOCATION SKETCH

PROP. S.N. 021-8057
STA. 346+00.00

**GENERAL PLAN AND ELEVATION
SINGLE 12'x2' PRECAST BOX CULVERT
F.A.P. ROUTE 323 (US 36)
SECTION 145CR
DOUGLAS COUNTY
STATION 346+00.00, S.N. 021-8057**



END VIEW



SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire fabric (WWF). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in area of reinforcement equal to or greater than that provided by the WWF. Minimum lap lengths detailed herein are applicable to WWF and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.

Reinforcement bars designated (E) shall be epoxy coated.

Bonded construction joints shall be prepared according to Article 503.09 of the Standard Specifications.

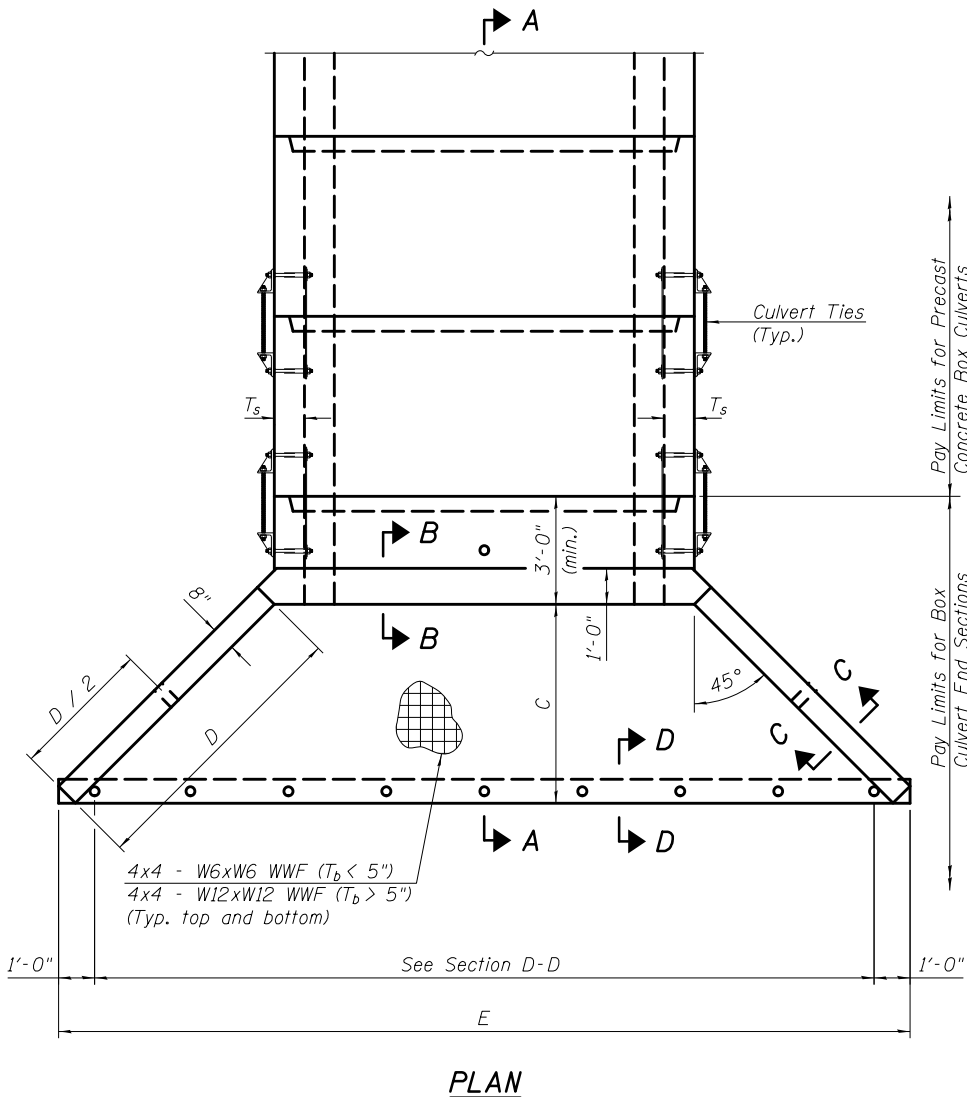
One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	T _t	T _b	T _s	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 ⁵ / ₈ "	4'-1"	10'-4 ⁵ / ₈ "	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 ⁷ / ₈ "	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 ⁵ / ₈ "	5'-6"	12'-4 ⁵ / ₈ "	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 ⁷ / ₈ "	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 ¹ / ₂ "	2'-2 ¹ / ₂ "	2'-11 ³ / ₈ "	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 ¹ / ₂ "	3'-10"	11'-2 ³ / ₈ "	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 ¹ / ₂ "	2'-8 ¹ / ₂ "	3'-11 ³ / ₈ "	5'-7"	13'-8 ¹ / ₈ "	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 ¹ / ₂ "	5'-3"	13'-2 ³ / ₈ "	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 ¹ / ₂ "	3'-2 ¹ / ₂ "	4'-11 ³ / ₈ "	7'-0"	15'-8 ¹ / ₈ "	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 ⁵ / ₈ "	6'-8"	15'-2 ¹ / ₂ "	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 ³ / ₈ "	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 ¹ / ₄ "	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 ³ / ₈ "	5'-7"	14'-10 ¹ / ₈ "	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 ¹ / ₄ "	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 ³ / ₈ "	7'-0"	16'-10 ¹ / ₈ "	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 ¹ / ₄ "	6'-9"	16'-5 ⁷ / ₈ "	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 ³ / ₈ "	8'-5"	18'-10 ¹ / ₈ "	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 ¹ / ₄ "	8'-2"	18'-5 ⁷ / ₈ "	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11 ³ / ₈ "	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 ⁵ / ₈ "	4'-1"	13'-10 ⁵ / ₈ "	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 ³ / ₈ "	5'-7"	16'-0 ¹ / ₈ "	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 ⁵ / ₈ "	5'-6"	15'-10 ⁵ / ₈ "	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 ³ / ₈ "	7'-0"	18'-0 ¹ / ₈ "	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 ³ / ₄ "	6'-11"	17'-10 ³ / ₄ "	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11 ³ / ₈ "	8'-5"	20'-0 ¹ / ₈ "	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 ³ / ₄ "	8'-4"	19'-10 ³ / ₄ "	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 ¹ / ₂ "	9'-10"	22'-0 ¹ / ₄ "	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 ³ / ₄ "	9'-9"	21'-10 ³ / ₄ "	9.3	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 ³ / ₈ "	7'-0"	19'-2 ¹ / ₈ "	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 ³ / ₈ "	8'-5"	21'-2 ¹ / ₈ "	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 ¹ / ₂ "	9'-10"	23'-2 ¹ / ₄ "	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 ³ / ₈ "	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 ³ / ₈ "	5'-7"	18'-2 ¹ / ₈ "	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 ³ / ₈ "	7'-0"	20'-2 ¹ / ₈ "	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 ³ / ₈ "	8'-5"	22'-2 ¹ / ₈ "	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 ¹ / ₂ "	9'-10"	24'-2 ¹ / ₄ "	11.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 ⁷ / ₈ "	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 ¹ / ₈ "	9'-11"	25'-5 ⁵ / ₈ "	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 ¹ / ₂ "	4'-5"	18'-10 ¹ / ₄ "	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 ¹ / ₂ "	5'-10"	20'-10 ¹ / ₄ "	8.6	No
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 ¹ / ₂ "	8'-8"	24'-10 ³ / ₈ "	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 ¹ / ₂ "	10'-1"	26'-10 ³ / ₈ "	13.9	Yes
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 ¹ / ₄ "	7'-4"	24'-1 ³ / ₄ "	11.5	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 ¹ / ₄ "	10'-2"	28'-1 ⁷ / ₈ "	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 ⁵ / ₈ "	4'-8"	21'-6 ¹ / ₂ "	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 ⁵ / ₈ "	6'-1"	23'-6 ¹ / ₂ "	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 ⁵ / ₈ "	7'-6"	25'-6 ⁵ / ₈ "	13.0	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 ⁵ / ₈ "	10'-4"	29'-6 ⁵ / ₈ "	17.4	Yes

Note:

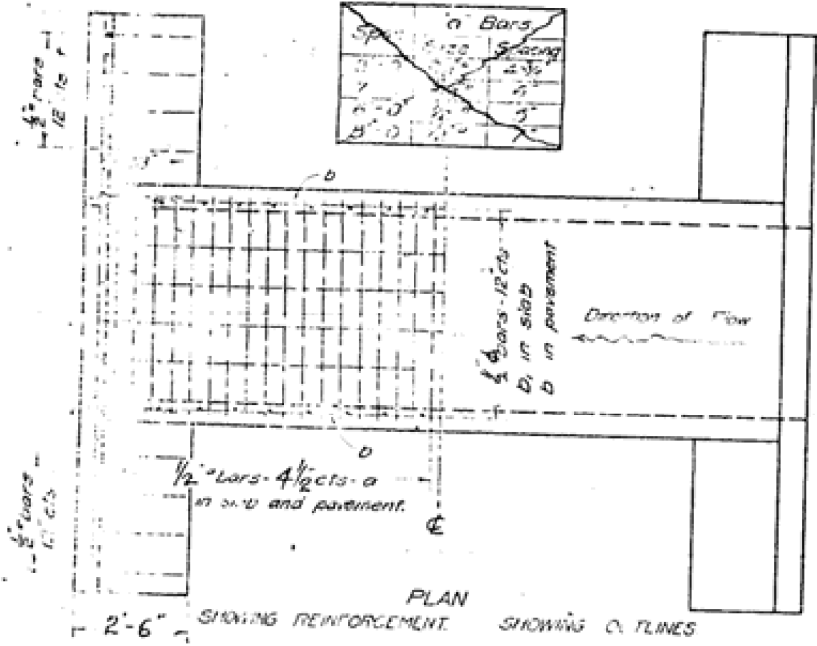
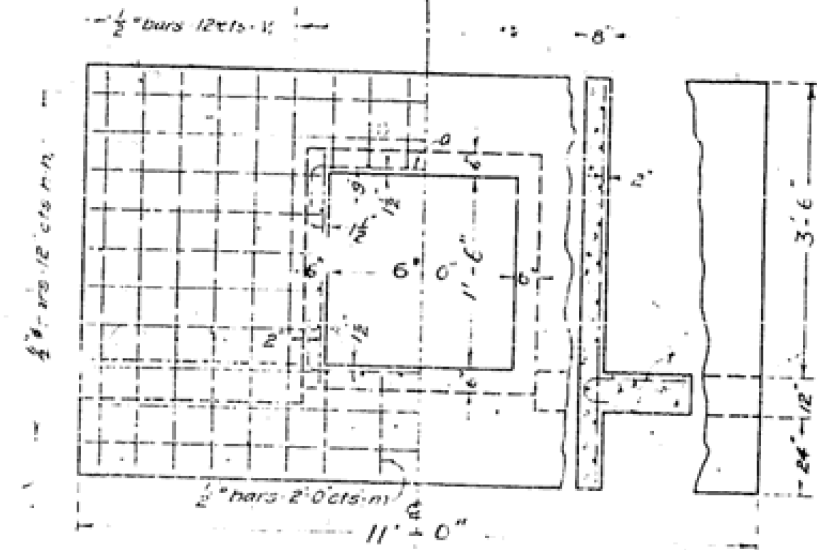
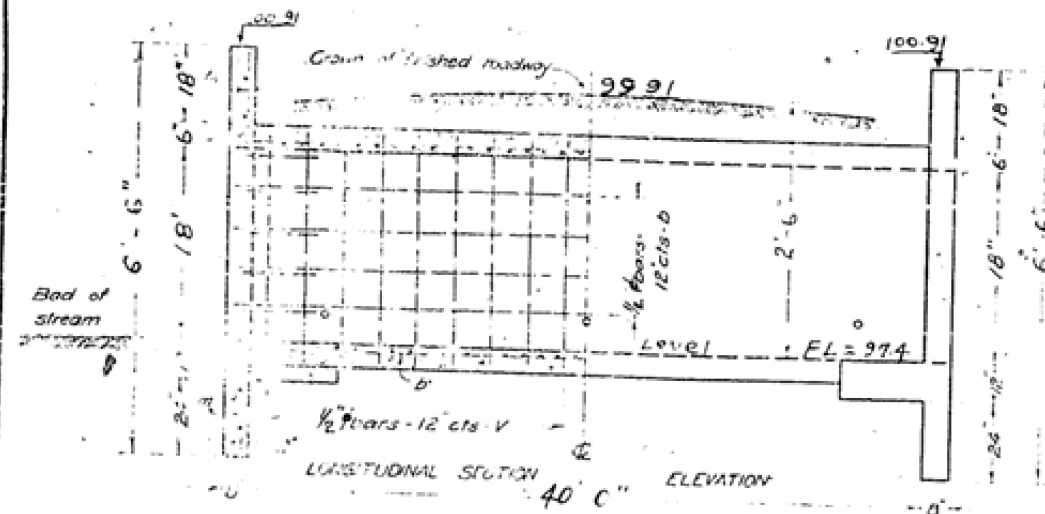
Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.



PLAN

FILE NAME =	USER NAME = bergena.j	DESIGNED -	REVISED -	<p align="center">STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</p>	<p align="center">PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS</p>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
p:\11\084EBIDINTEG.illinois.gov\PI\DOT\Documents\DOT Offices\District 5\Projects\0577\DRAWING\Design\0577\084EBIDINTEG.sht-structures	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -			323	145CR	DOUGLAS	24	13
MODELNAME	PLOT DATE = 3/3/2016	DATE -	REVISED -			CONTRACT NO. 70A85			ILLINOIS FED. AID PROJECT	
						SCALE:	SHEET 1 OF 2 SHEETS	STA.	TO STA.	

STATE OF ILLINOIS
STATE HIGHWAY DEPARTMENT
REINFORCED CONCRETE BOX CULVERT



Note - Use #3 bars in downstream headwall only
Box is designed for no fill
Minimum clearance 7'-6"

BILL OF MATERIAL

Bars	No	Size	Length
V	80	1/2"	2'-3"
V	12	1/2"	6'-0"
H	8	1/2"	10'-6"
H	8	1/2"	3'-6"
a	220	1/2"	8'-0"
b	22	1/2"	2'-6"
c	14	1/2"	22'-6"
f	12	1/2"	3'-0"
m	3	1/2"	5'-0"
Steel - Lbs			2320
Concrete - Cu Yds			16.2

Class A concrete to be used throughout
Proportions 1 - 2 1/4 - 4

SPECIAL CULVERT DESIGN
S.B.I. RT. 121 CONST. SEC. 145
DOUGLAS CO
STA. 346+00.

619

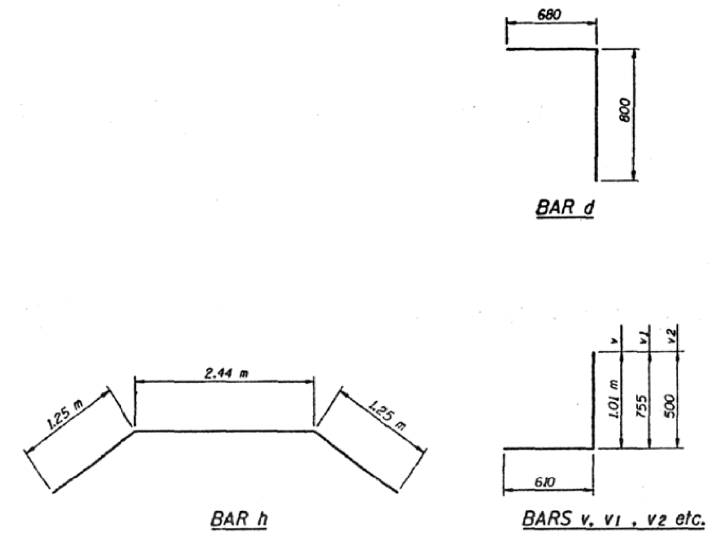
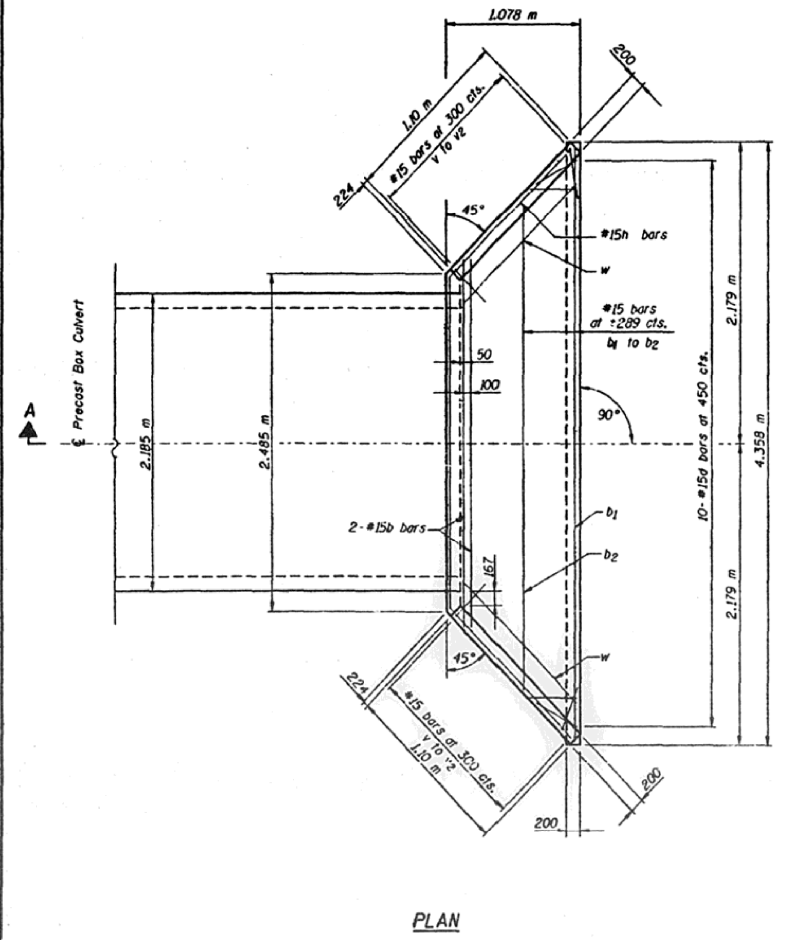
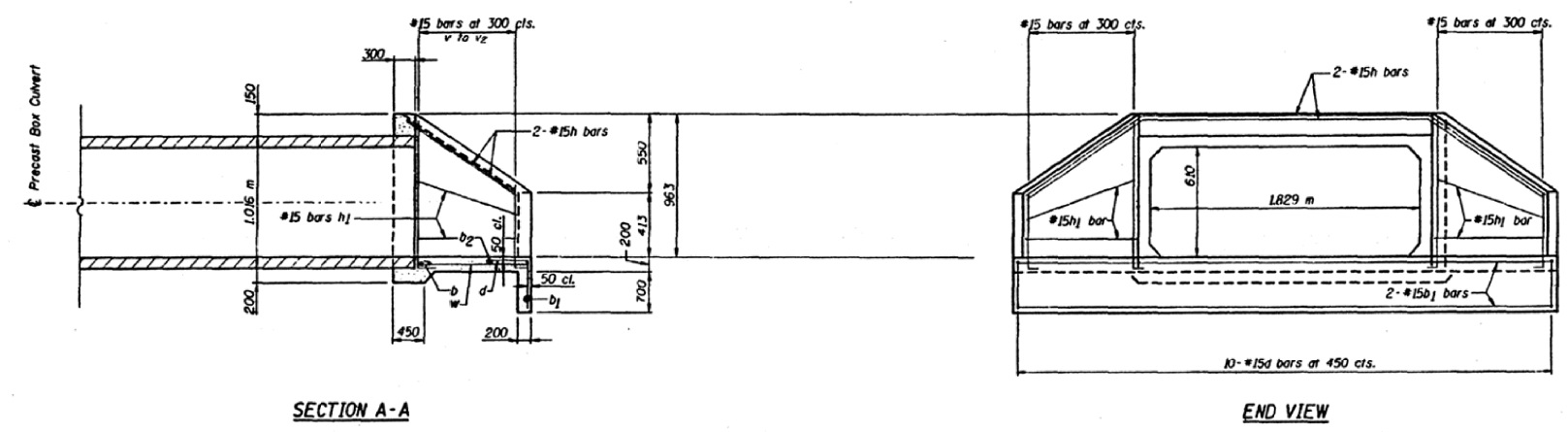
FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 323	*	**	188	90A
STA.		TO STA.		
FED. RD. DIST. NO.	ILLINOIS	PROJECT		

* (145, 146) RS-2 & 147 RS-4
 ** DOUGLAS & EDGAR

NOTES

All bars shall be round and shall conform to the requirements of Art. 1006.10 of the Standard Specifications.
 Class SI Concrete Headwalls shall be used throughout.
 Build tops of headwalls parallel to grade line.
 The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M259.
 All dimensions are in millimeters (mm) unless otherwise noted.



BILL OF MATERIAL (ONE HEADWALL)

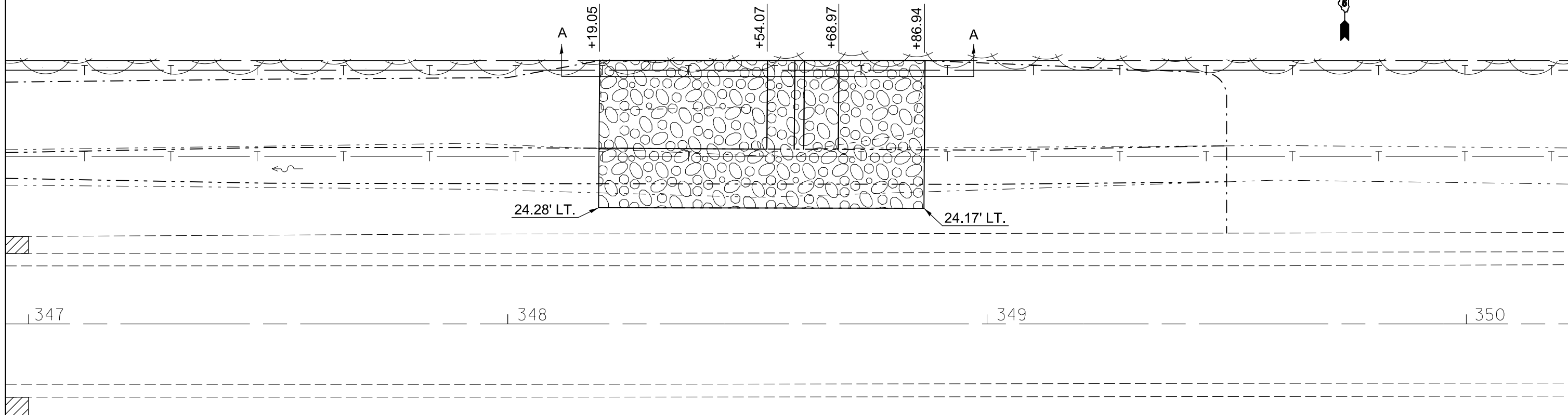
Bar	No.	Size	Length (m)	Shape
b	2	#15	3.05	—
b1	2	#15	4.25	—
b2	1	#15	3.82	—
d	10	#15	1.48	⌋
h	2	#15	4.94	⌋
h1	4	#15	1.30	—
v	4	#15	1.62	⌋
v1	2	#15	1.37	⌋
v2	2	#15	1.11	⌋
w	2	#15	1.30	—
Reinforcement Bars			kg	100
Class SI Conc Headwalls			Cu. m	2.2

BOX CULVERT END SECTIONS (CAST IN PLACE)
 STA. 27+649.645, 28+589.276, 36+732.454
 0° SKEW

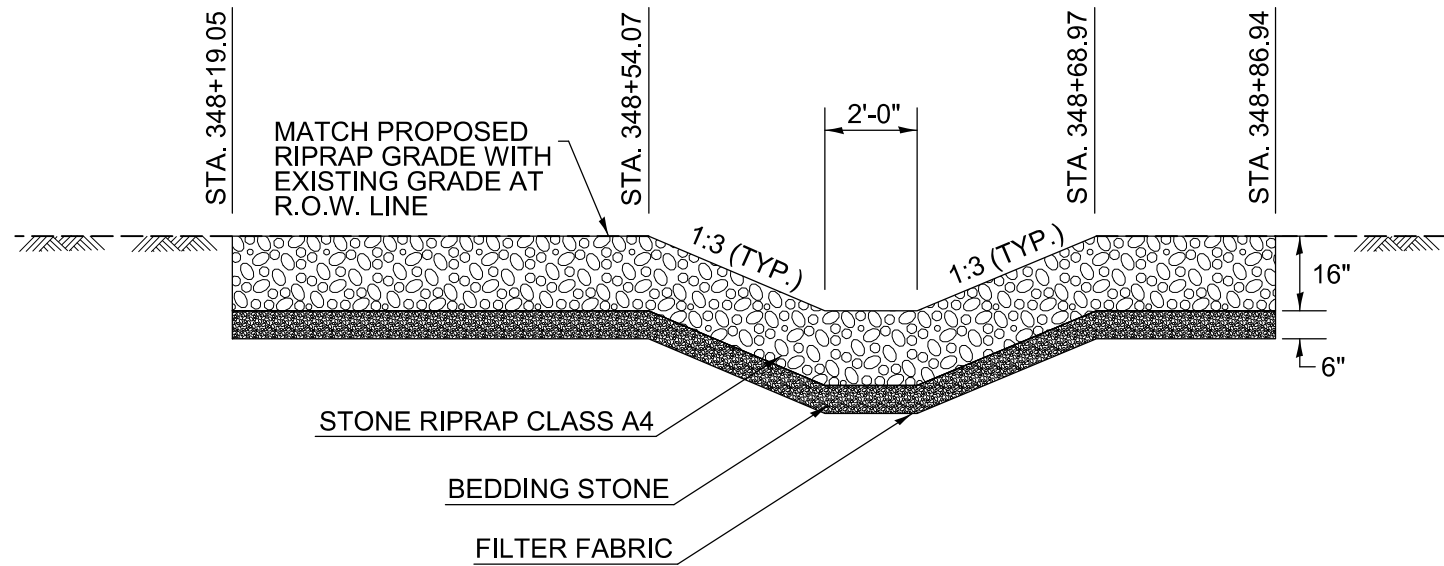
REVISIONS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS		DESIGNED BY DATE
1	DATE / PRINTS	DESIGNED BY	DATE	REB 12-99
2		PROJECT NO.		
3		SHEET NO.		
4				
5				
6				
7				
8				

FOR INFORMATION ONLY

PROPOSED STONE RIPRAP CLASS A4 BACK SLOPE PROFILE

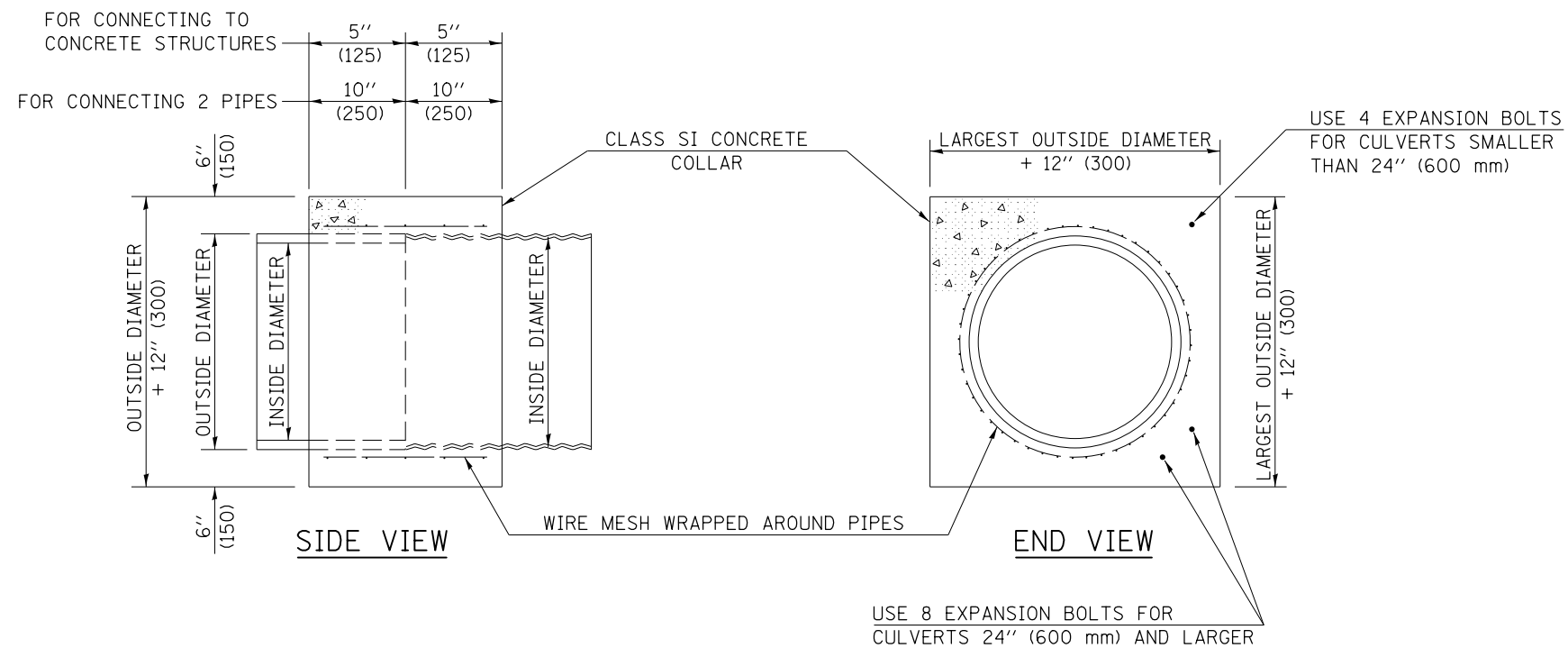


PLAN



SECTION A - A

FILE NAME =	USER NAME = bergena.j	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STONE RIPRAP CLASS A4 DETAIL	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
p:\11\084EBIDINTEG.illinois.gov\PIWIDOT\Documents\DOT Offices\District 5\Projects\0579\DRAWING\Design\0579A85-shr-details.dwg						323	145CR	DOUGLAS	24	18		
PLOT SCALE = 40.0000' / in.						CONTRACT NO. 70A85						
PLOT DATE = 3/3/2016						ILLINOIS FED. AID PROJECT						



GENERAL NOTES

1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
2. WHEN CONCRETE COLLARS ARE USED TO CONNECT PIPES OF DIFFERENT OUTSIDE DIAMETERS, THE CONCRETE COLLAR SHALL BE FORMED USING THE LARGEST OUTSIDE DIAMETER (SEE END VIEW).
3. THE WIRE MESH SHALL WEIGH NOT LESS THAN 54#/100 SQ. FT. (2.63 kg/m²).
4. WHEN CONCRETE COLLARS ARE CONSTRUCTED ADJACENT TO AN EXISTING CONCRETE STRUCTURE (HEADWALLS, ETC.) EXPANSION BOLTS, SHALL BE USED AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, FOR EXPANSION BOLTS OF THE SIZE SPECIFIED IN THE PLANS.
5. CONCRETE COLLARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, PER CUBIC YARD (CUBIC METER), FOR CONCRETE COLLARS INCLUDING ALL MATERIAL AND LABOR SPECIFIED TO COMPLETE THE WORK IN PLACE.

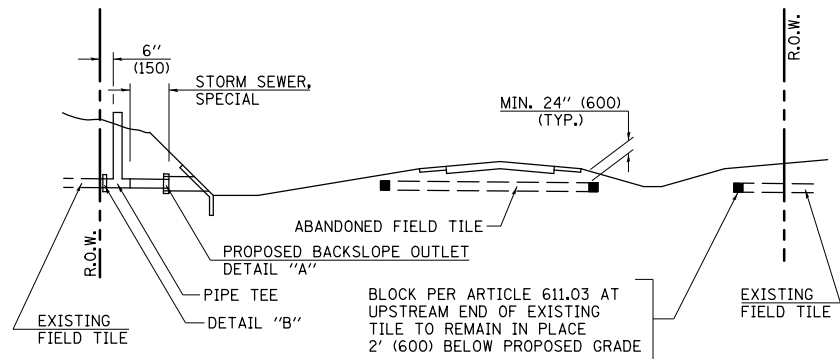
QUANTITIES FOR CONCRETE PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU. YD. (m ³)
4" (100)	0.14 (0.11)
6" (150)	0.16 (0.12)
8" (200)	0.19 (0.14)
10" (250)	0.22 (0.17)
12" (300)	0.25 (0.19)
15" (375)	0.30 (0.23)
18" (450)	0.35 (0.27)
24" (600)	0.45 (0.35)
30" (750)	0.57 (0.43)
36" (900)	0.69 (0.53)
42" (1050)	0.83 (0.63)
48" (1200)	0.97 (0.74)
54" (1350)	1.12 (0.86)
60" (1500)	1.28 (0.98)

QUANTITIES FOR METAL PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH (mm)	20" (500 mm) WIDTH CU. YD. (m ³)
4" (100)	0.12 (0.09)
6" (150)	0.14 (0.11)
8" (200)	0.16 (0.12)
10" (250)	0.19 (0.14)
12" (300)	0.21 (0.16)
15" (375)	0.25 (0.19)
18" (450)	0.29 (0.22)
24" (600)	0.38 (0.29)
30" (750)	0.47 (0.36)
36" (900)	0.59 (0.45)
42" (1050)	0.69 (0.53)
48" (1200)	0.81 (0.62)
54" (1350)	0.93 (0.71)
60" (1500)	1.05 (0.81)

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

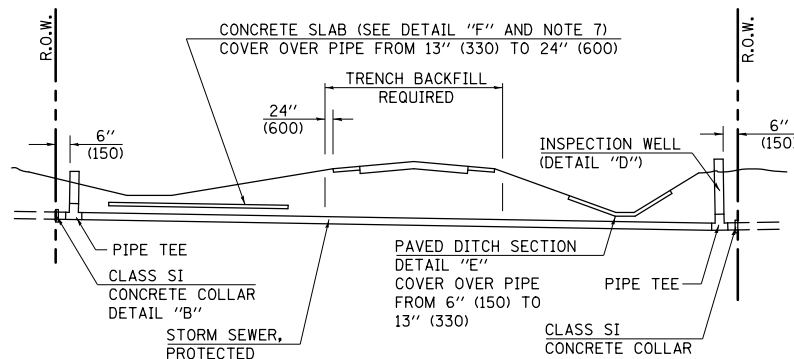
DISTRICT 5 DETAIL NO. 54248510

FILE NAME =	USER NAME = bergena.j	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CONCRETE COLLAR	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\0579A85-shd-details.dwg	PLotted	CHECKED -	REVISED -			323	145CR	DOUGLAS	24	19	
\$MODELNAME\$	PLLOT SCALE = 40.0000' / in.	DATE -	REVISED -			CONTRACT NO. 70A85					
	PLLOT DATE = 3/3/2016					SCALE:	SHEET 1 OF 1 SHEETS	STA.	TO STA.		ILLINOIS FED. AID PROJECT



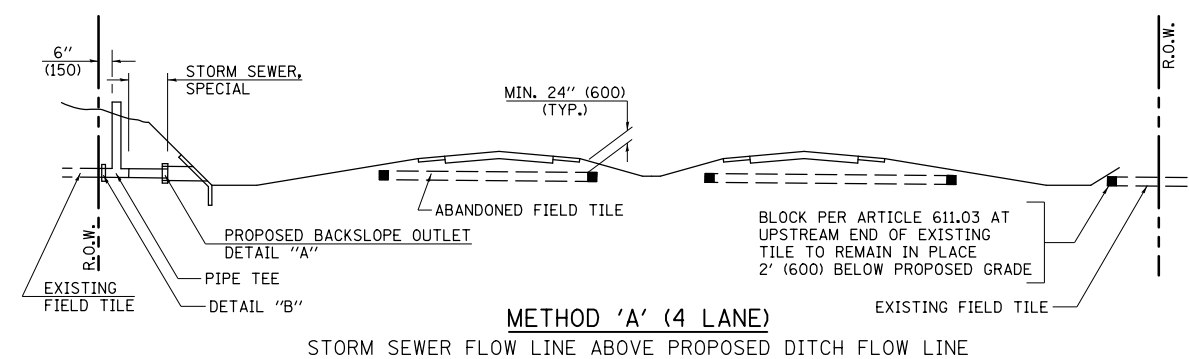
METHOD 'A' (2 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



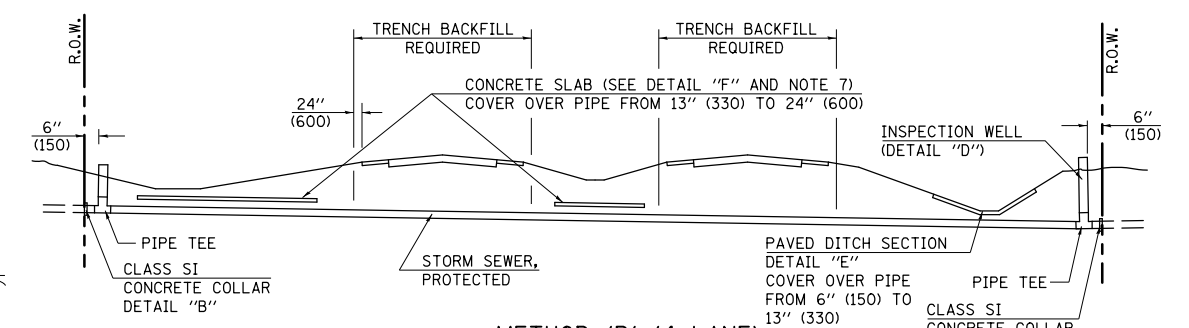
METHOD 'B' (2 LANE)

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



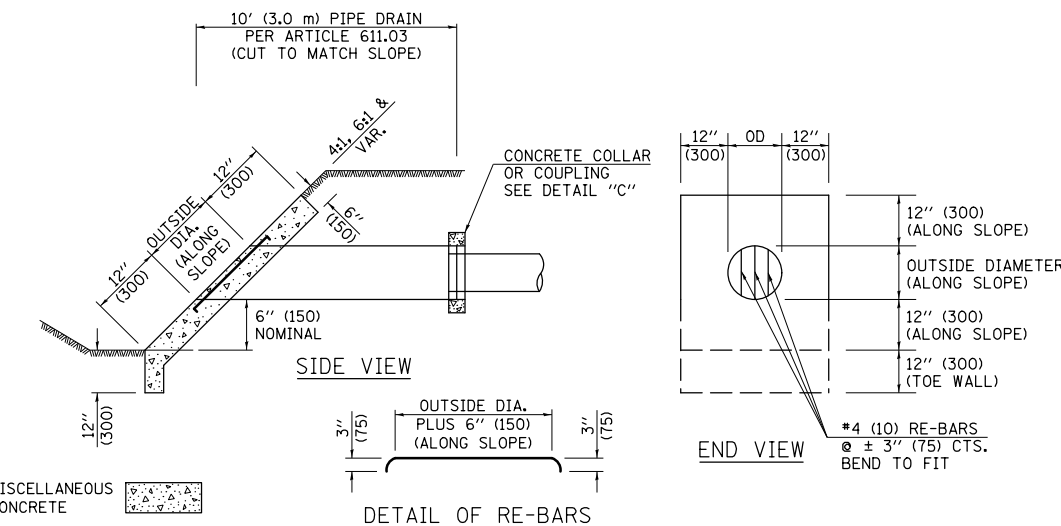
METHOD 'A' (4 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE

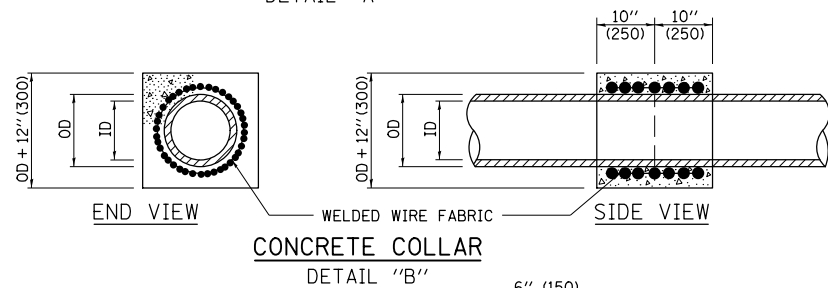


METHOD 'B' (4 LANE)

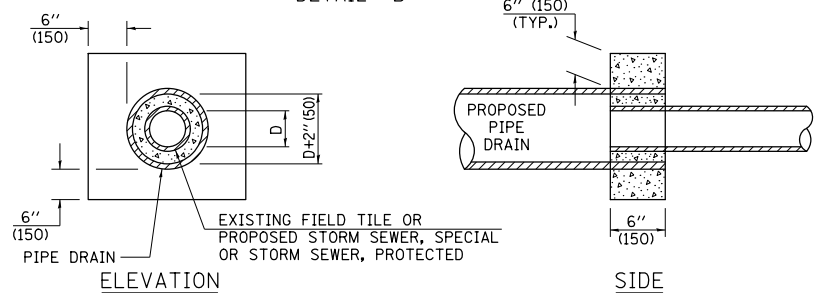
STORM SEWER LESS THAN 2' (600 mm) BELOW DITCH FLOW LINE AND STORM SEWERS CROSSING UNDER PAVEMENTS AND PAVED DITCHES



**HEADWALL FOR BACKSLOPE OUTLET
DETAIL "A"**



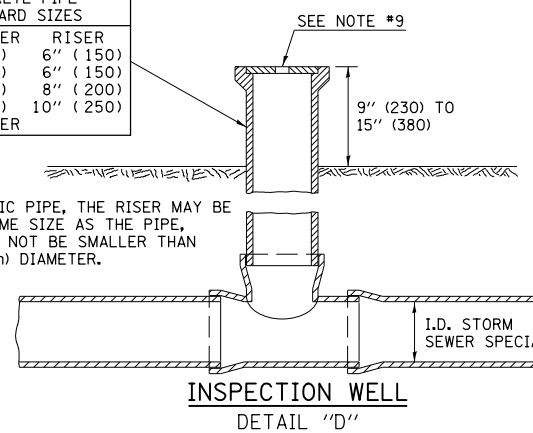
**CONCRETE COLLAR
DETAIL "B"**



**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	

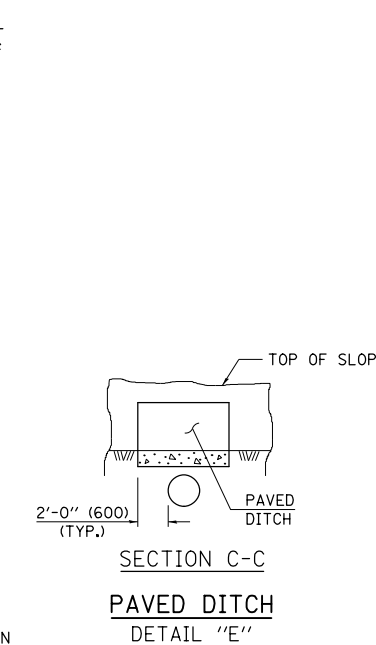
FOR PLASTIC PIPE, THE RISER MAY BE OF THE SAME SIZE AS THE PIPE, BUT SHALL NOT BE SMALLER THAN 4" (100 mm) DIAMETER.



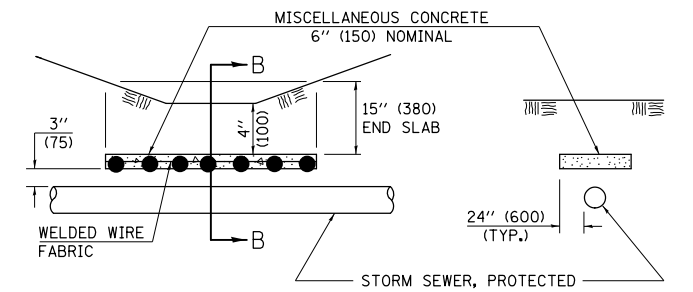
**INSPECTION WELL
DETAIL "D"**

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.



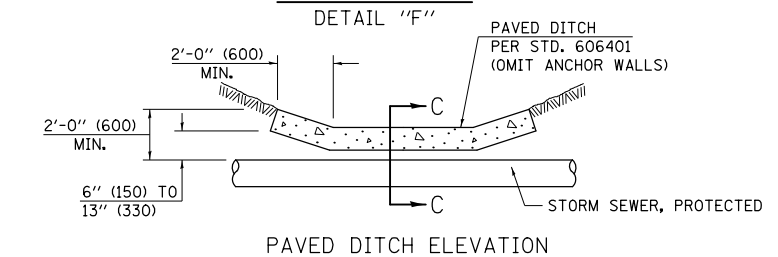
**SECTION C-C
PAVED DITCH
DETAIL "E"**



SLAB ELEVATION

**CONCRETE SLAB
DETAIL "F"**

SECTION B-B



PAVED DITCH ELEVATION

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

FILE NAME =	USER NAME = bergena.j	DESIGNED -	REVISED - 11/06
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		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

FIELD TILE SYSTEMS (TREATMENT OF EXISTING)

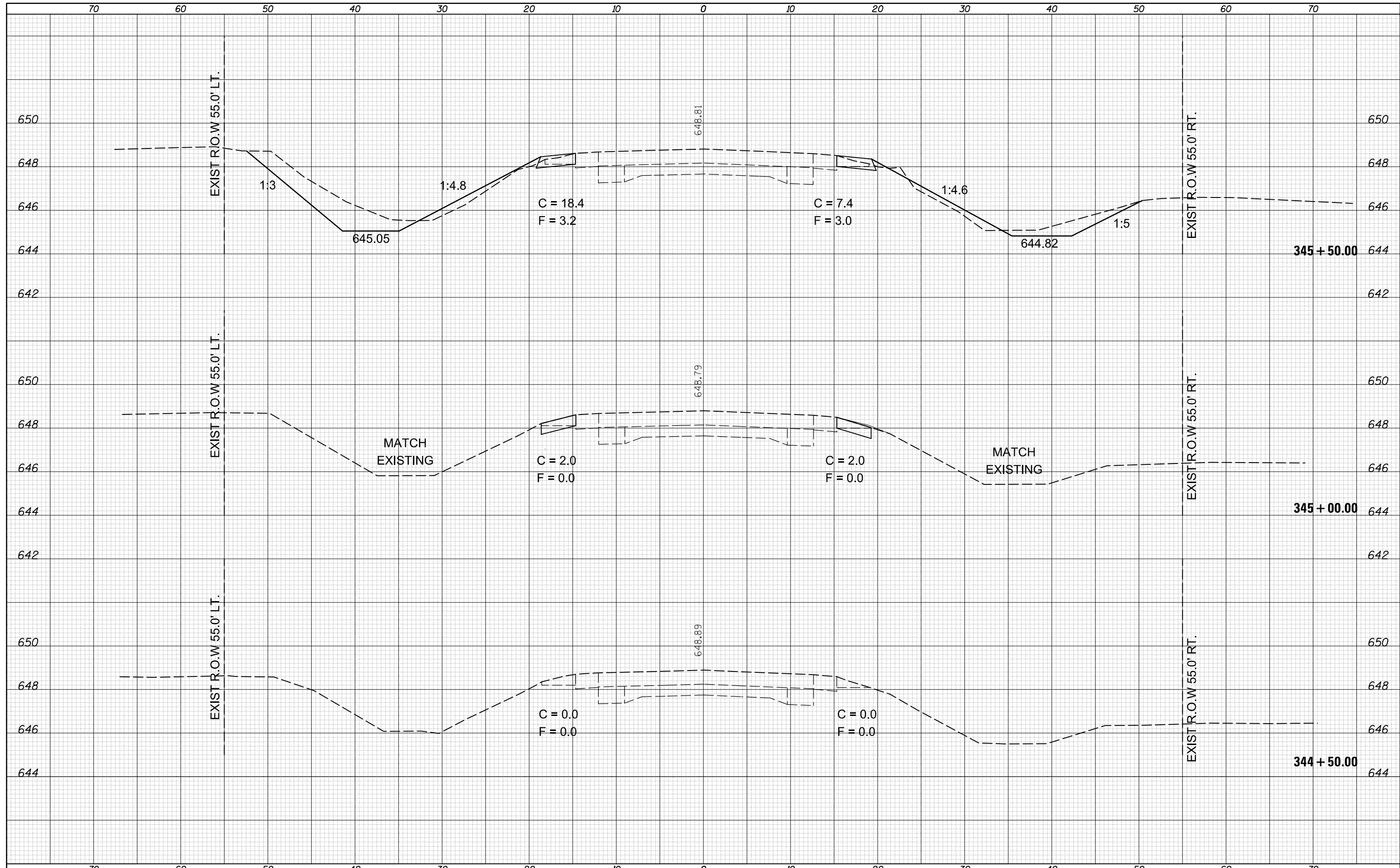
SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

DISTRICT 5 DETAIL NO. 61101011A

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 70A85				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

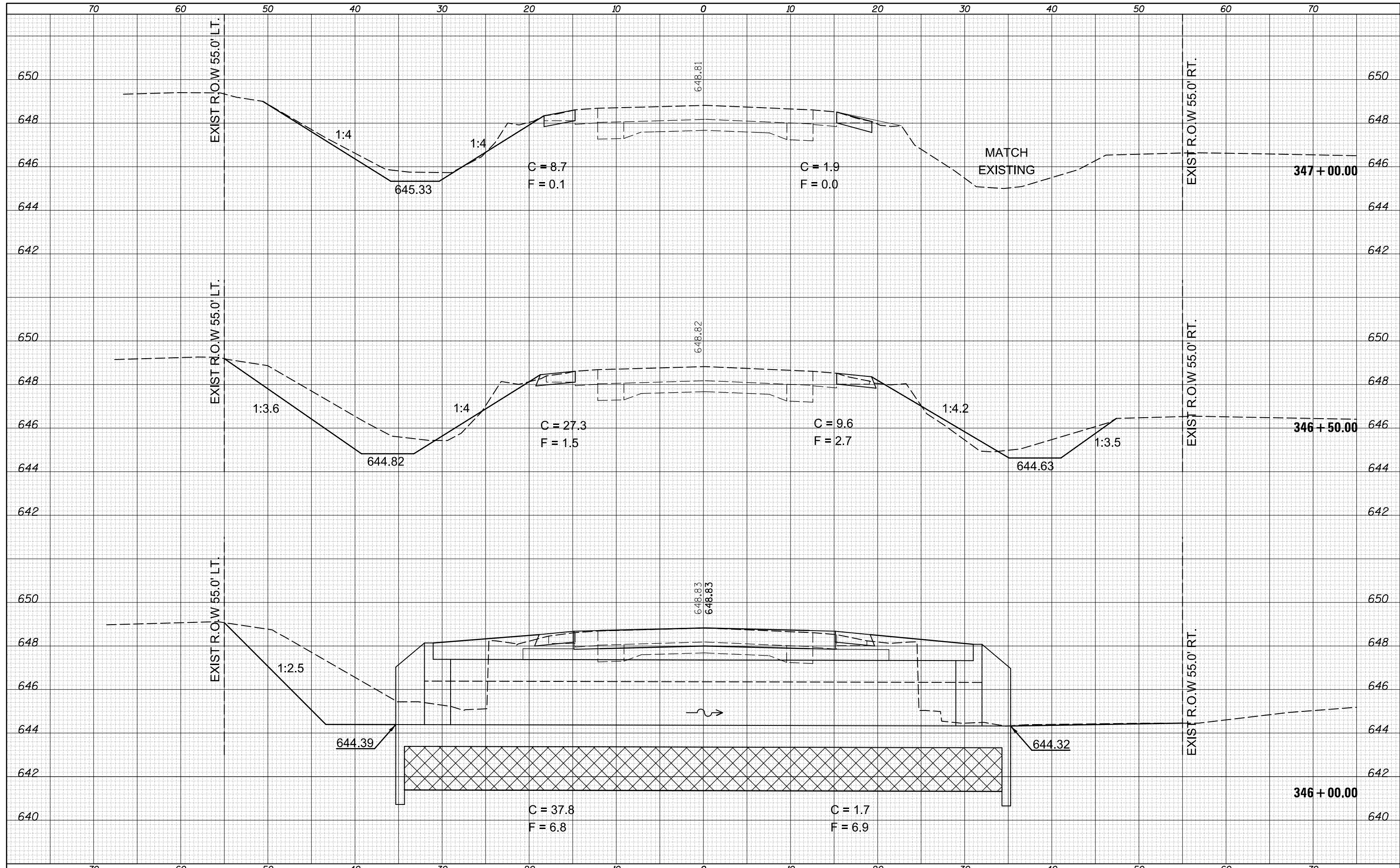
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BY	
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NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

DATE	
BY	
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NOTE BOOK	PLOTTED
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