STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

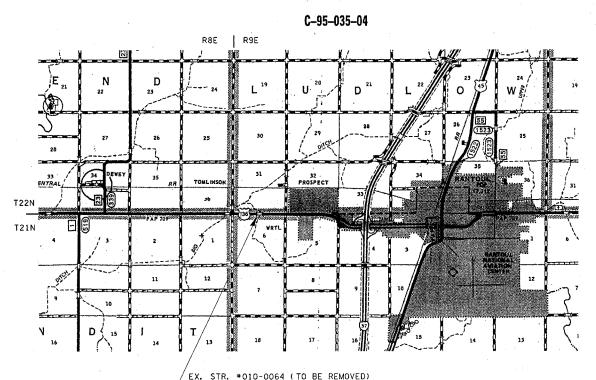
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY IMPROVEMENT

F.A.P. ROUTE 709 (U.S. 136) **SECTION 105BR CHAMPAIGN COUNTY**

BRIDGE REPLACEMENT SOUTH BRANCH OF BIG DITCH 1 MILE WEST OF RANTOUL

> PROJECT F-0709 (018)



2 @11' -0" X 11' -0" X 43' -6" R.C. BOX CULVERT

NET LENGTH OF SECTION & PROJECT = 250.0 FEET = 0.047 MILES

PROP. STR. #010-2030

W/ CAST IN PLACE END SECTIONS

STA 2112+00 TO STA 2114+50

ADT: US-136

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4&5

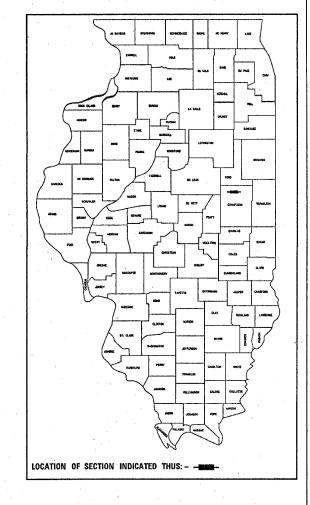
DESIGN DESIGNATION N/A

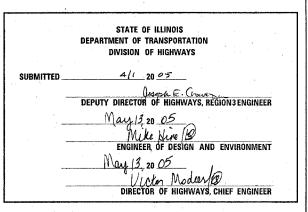
70391

F.A.P. ROUTE 709 SECTION 105BR

CHAMPAIGN COUNTY

CONTRACT NO. 70391 D-95-034-04





FOR UNDERGROUND UTILITY LOCATIONS CALL TOLL FREE J.U.L.I.E. TELEPHONE NO 1-800-892-0123 LUDLOW & RANTOUL TOWNSHI

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c:\projects\d503404\design.m32

FUNCTIONAL CLASSIFICATION: RURAL MINOR ARTERIAL

TOTAL LENGTH OF SECTION & PROJECT = 250.0 FEET = 0.047 MILES

HIGHWAY STANDARDS

STANDARD NUMBER	NAME OF STANDARD
000001-04	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001006	DECIMAL OF AN INCH AND A FOOT
001001	AREAS OF REINFORCEMENT BARS
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
442202-01	CLASS C & D PATCHES
515001-02	NAME PLATE FOR BRIDGES
630001-0 5	STEEL PLATE BEAM GUARDRAIL
630101-05	GUARDRAIL MOUNTED ON EXISTING CULVERT
630301-0 3	SHOULDER WIDENING FOR TYPE 1, (SPECIAL) GUARDRAIL TERMINALS
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
667101	PERMANENT SURVEY MARKERS
701001-01	TRAFFIC CONTROL AND PROTECTION
701006-02	TRAFFIC CONTROL AND PROTECTION
701101-01	TRAFFIC CONTROL AND PROTECTION
701301-02	TRAFFIC CONTROL AND PROTECTION
701311-02	TRAFFIC CONTROL AND PROTECTION
701306-01	TRAFFIC CONTROL AND PROTECTION
702001-05	TRAFFIC CONTROL DEVICES
780001-01	TYPICAL PAVEMENT MARKINGS
781001-02	TYPICAL APPLICATION OF RAISED REFLECTIVE PAVEMENT MARKERS

INDEX OF SHEETS

PAGE DESCRIPTION

RTE. SECTION COUNTY TOTAL SHEET NO. 709 105BR CHAMPAIGN 36 2

1	COVER SHEET
2	INDEX OF SHEETS
2	HIGHWAY STANDARDS
3	GENERAL NOTES
4&5	SUMMARY OF QUANTITIES
6-8	TYPICAL CROSS SECTIONS
9	SCHEDULE OF QUANTITIES
10	PLAN AND PROFILE SHEET
11	PROPOSED WINGWALL DESIGN DETAIL
12&13	DETAIL OF BOX CULVERT END SECTION
14	DETAIL OF POROUS GRANULAR BACKFILL DETAIL, EXPANSION BOLT& FIELD ENTRANCE,
15	SIGNING FOR ROAD CLOSURE DETAIL
16	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR ROAD CLOSURE
17-19	TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS
20-36	CROSS SECTIONS

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. -105. 09A ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988, (NAVD 88)

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.

UTLILITY 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.

THE FOLLOWING UTILITY COWNERS MARKED WITH AN '*' BELONG TO J.U.L.I.E.: NAME & ADDRESS OF UTILITY TYPE & LOCATION Buried telephone along North and South ROW. Jackie Roelfs *Verizon North 212 E. Grove St. Rantoul, IL 61866 (217) 892-3467

Mr. Dale Shaver Fiber optic, cable TV along North ROW. *Mediacom, LLC 903 E. Howard St. Pontiac, IL 61764 (815)844-5478 Cell: (630) 330-8518

THE QUANTITIES INCLUDED IN THE PLANS FOR BITUMINOUS CONCRETE RESURFACING ARE INTENDED TO GIVE THE COVERAGE SHOWN ON THE TYPICAL CROSS SECTIONS. IT IS NOT INTENDED TO INCREASE THE THICKNESS OF THE BITUMINOUS MIXTURE IN ORDER TO USE ALL OF THE QUANTITIES INCLUDED IN THE CONTRACT. DESIGN THICKNESS CAN BE BACK CALCULATED USING THE CONVERSION FACTOR OF 1IN THICKNESS = 112 POUNDS/SQUARE YARD.

ALL LEVELING BINDER OR BINDER SHALL BE GIVEN A FOG COAT OF PRIME BEFORE THE SURFACE COURSE IS PLACED WHEN DIRECTED BY THE ENGINEER, THE FOG COAT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER GALLON FOR BITUMINOUS MATERIAL (PRIME COAT) AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

G. N. -406H MIXTURE REQUIREMENTS

The following mixture requirements are applicable for this project:

Location(s):		05 136	
Mixture Use(s):	SURFACE	LEVEL BINDER	CLASS D PATCH
AC/PG:	PG 64-22	PG 64-22	PG 64-22
RAP% (MAX):	15%	25%	25%
Design Air Volds:	4.0%@ Ndes=50	4.0%@ Ndes=50	4.0%@ Ndes=50
Mixture Composition: (Gradation Mixture)	IL 9.5	IL 9.5	IL 19.0
Friction Aggregate:	MIX C	MIX C	N. A.

G. N. -442B -- PATCHING SCHEDULES THE PATCHING SCHEDULES INCLUDED IN THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TIME OF COMPLETION OF THE PLANS FOR LETTING. VARIATIONS IN LOCATION AND SIZES OF BOTH FULL-DEPTH AND PARTIAL-DEPTH PATCHES MAY OCCUR.

G. N. -502, 10 THE CUBICAL DEPOSIT OF COARSE AGGREGATE SHALL BE COMPLETELY ENCLOSED IN A FABRIC ENVELOPE. THE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE PORTIONS OF SECTION 1080 AND SECTION 282 WITH EITHER THE 6 OZ. OR 8 OZ. PER SQUARE YARD MATERIAL ALLOWED. FREE EDGES SHALL OVERLAP BY 12 Inches. THIS REQUIREMENT WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED AS INCLUDED IN THE VARIOUS ITEMS REQUIRING PLACEMENT OF THE CUBICAL DEPOSITS OF COARSE AGGREGATE.

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.

CAST IN PLACE END SECTIONS, HEADWALLS, AND COLLARS ARE REQUIRED FOR PRECAST BOX CULVERTS. SHOP PLANS WILL NOT BE REQUIRED WITH CAST IN PLACE ITEMS CONSTRUCTED AS SHOWN IN THE PLANS. SHOP PLANS SHALL BE SUBMITTED FOR CHANGED OR MODIFIED CAST IN PLACE DETAILS IN ACCORDANCE WITH ARTICLE 540.06.

SHORT TERM PAVEMENT MARKING SHALL BE APPLIED TO THE PAVEMENT AFTER ANY OF THE FOLLOWING: COLD MILLING AND/OR PLACING BITUMINOUS MATERIALS (PRIME COAT), LEVELING BINDER (MACHINE METHOD), BINDER AND SURFACE COURSES. SHORT TERM PAVEMENT MARKING PLACED ON THE SURFACE, SHALL COINCIDE WITH THE FINAL PAVEMENT STRIPING. SHORT TERM PAVEMENT MARKING PLACED PRIOR TO THE SURFACE SHALL COINCIDE WITH THE EXISTING PAVEMENT MARKINGS. USE 4 FEET PER 40 FEET (OR 10% PER STATION).

G.N.-761 RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED IN ACCORDANCE WITH STANDARD 781001, AND THE DETAILS SHOWN IN THE PLANS. IF THERE IS ANY DISCREPENCY BETWEEN THE STANDARD AND THE DETAILS IN THE PLANS, THE DETAILS IN THE PLANS SHALL GOVERN. THE FINAL PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO PLACING THE RAISED REFLECTIVE PAVEMENT MARKERS AND THE RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED MIDWAY IN THE 30 FOOT (9 m) SPACE BETWEEN THE DASHED CENTERLINE STRIPES (WHEN APPLICABLE).

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

REVISE ARTICLE 1004.03 (c) NOTE 5/ OF THE STANDARD SPECIFICATIONS TO READ:

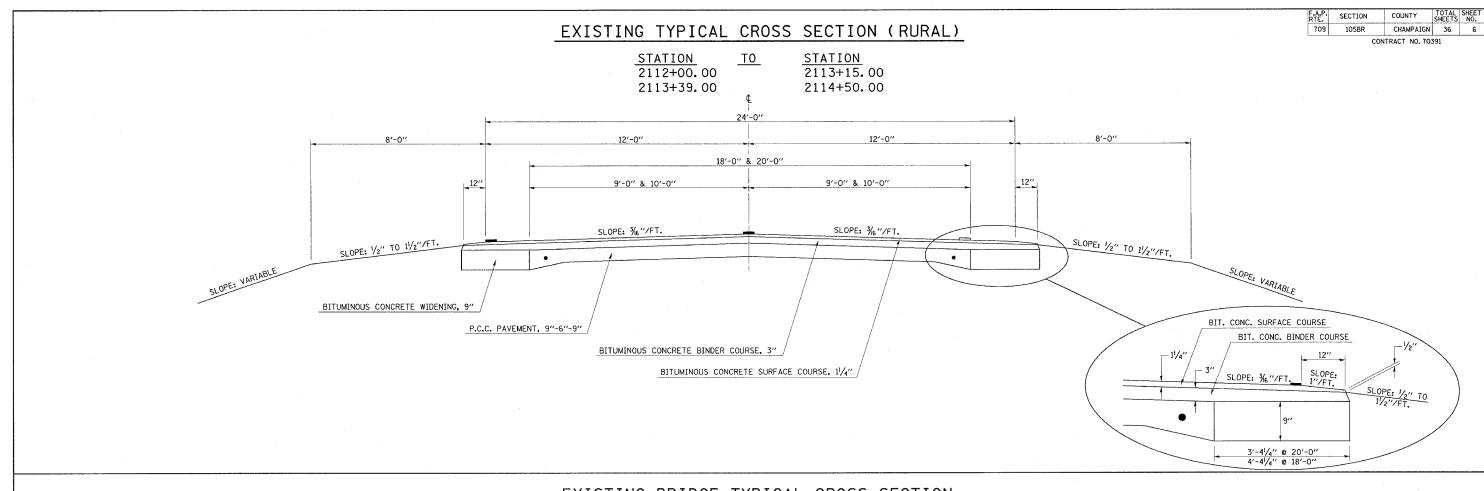
'5/ GRADATION CA-16 SHALL BE USED IN LIEU OF CA-13 WHEN THE SURFACE COURSE IS LESS THAN 1 3/4 INCHES IN THICKNESS. CA-13 OR CA-16 MAY BE USED WHEN THE SURFACE COURSE IS 1 3/4 INCHES OR MORE IN THICKNESS.'

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.

				F.A.P. SECTION	COUNTY TOTAL SHEET NO.
SUMMARY OF QUANTITIES	LOCATION OF WORK:			709 105BR	CHAMPAIGN 36 4 ONTRACT NO. 70391
		2112+00 TO		3	
		2114+50 80% FEDERAL			
	RI	20% STATE URAL TWO LANE			
	CONSTRUCTION TYPE CODE		*		
CODE NO ITEM	UNIT	QUANTITY			
20200100 EARTH EXCAVATION	CU YD	275.0			
20900110 POROUS GRANULAR BACKFILL	CU YD	288.0			36 P
25000200 SEEDING, CLASS 2	ACRE	1.0			
25000400 NITROGEN FERTILIZER NUTRIENT	POUND	90.0			
25000500 PHOSPHORUS FERTILIZER NUTRIENT	POUND	90.0			
25000600 POTASSIUM FERTILIZER NUTRIENT	POUND	90.0			
25100115 MULCH, METHOD 2	ACRE	1.0			
28000250 TEMPORARY EROSION CONTROL SEEDING	POUND	100.0			
28000300 TEMPORARY DITCH CHECKS	EACH	8. 0			
28000400 PERIMETER EROSION BARRIER	FOOT	400.0			
28000500 INLET AND PIPE PROTECTION	EACH	5.0		4.	
28100107 STONE RIPRAP, CLASS A4	SQ YD	97.0			
28200200 FILTER FABRIC	SQ YD	97.0			
40200800 AGGREGATE SURFACE COURSE, TYPE B	TON	9.0			
40600100 BITUMINOUS MATERIALS (PRIME COAT)	GALLON	37.0			
40600990 TEMPORARY RAMP	SQ YD	55.0			
40800010 BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1.0			
44000008 BITUMINOUS SURFACE REMOVAL 2 1/2"	SQ YD	723.0			
44000025 BITUMINOUS SURFACE REMOVAL (SPECIAL)	SQ YD	19.0			
44201821 CLASS D PATCHES, TYPE IV, 14 INCH	SQ YD	174.0		,	
48101200 AGGREGATE SHOULDERS, TYPE B	TON	20.0			
50100100 REMOVAL OF EXISTING STRUCTURES	EACH	1.0			
51500100 NAME PLATES	EACH	1.0			

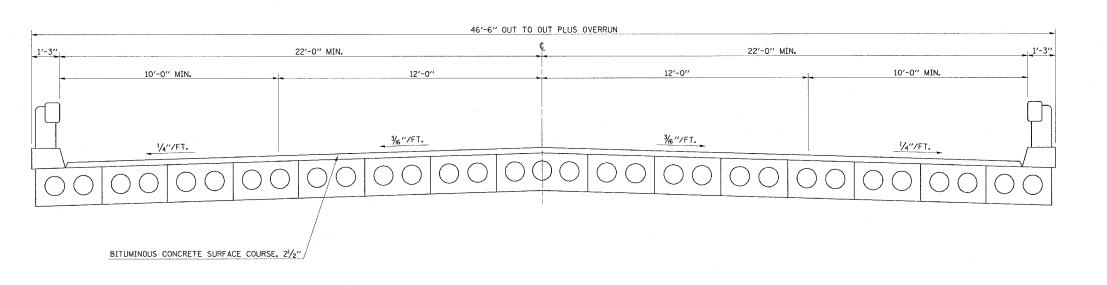
	OLIMATERA DV. OF OLIA DITITIO		*	RTE. SECTION COUNTY TOTAL SHEET NO. 709 1058R CHAMPAIGN 36 5
- 1 	SUMMARY OF QUANTITIES	LOCATION OF WORK:	FAP 709	CONTRACT NO. 70391
			2112+00 T0	
			2114+50	
			80% FEDERA 20% STATE	
			TWO LANE	
		CONSTRUCTION TYPE CODE:	XO28-2A TOTAL	
CODE NO	ITEM	UNIT	QUANTITY	
54001000	BOX CULVERT END SECTIONS	EACH	2.0	
54002020	EXPANSION BOLTS 3/4 INCH	EACH	120.0	
54021111	PRECAST CONCRETE BOX CULVERT 11' X 11' (M273)	FOOT	88.0	
*6300000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	487.5	
*63000025	STEEL PLATE BEAM GUARD RAIL, ATTACHED TO STRUCTURES	FOOT	50.0	
*63100169	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (FLARED)	EACH	4.0	
63200310	GUARDRAIL REMOVAL	FOOT	587.5	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4.0	
67100100	MOBILIZATION	L SUM	1.0	
70100460	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	L SUM	1.0	
70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1.0	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	563.0	
*78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	563.0	
*78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	4.0	
*78200405	GUARDRAIL MARKERS	EACH	7.0	
*78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4.0	
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	4.0	
X0322752	WORK ZONE PAVEMENT MARKING REMOVAL	FOOT	563.0	
X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N	N50 TON	63.0	
X4066765	LEVELING BINDER (MACHINE METHOD), SUPERPAVE N50	TON	41.0	
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	42.0	
Z0038700 * SPECIALI	PERMANENT BENCH MARKS TY ITEMS	EACH	1.0	

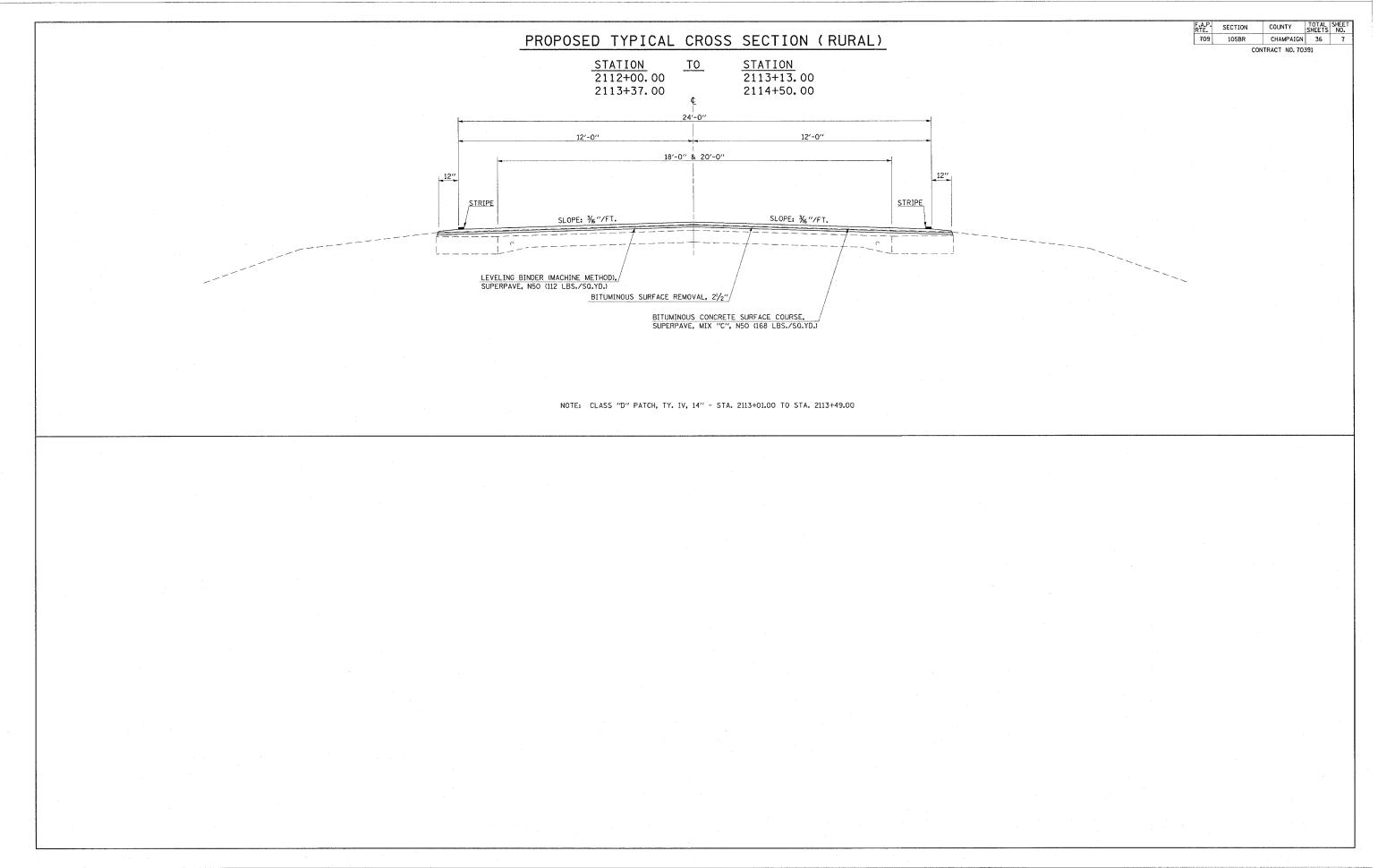


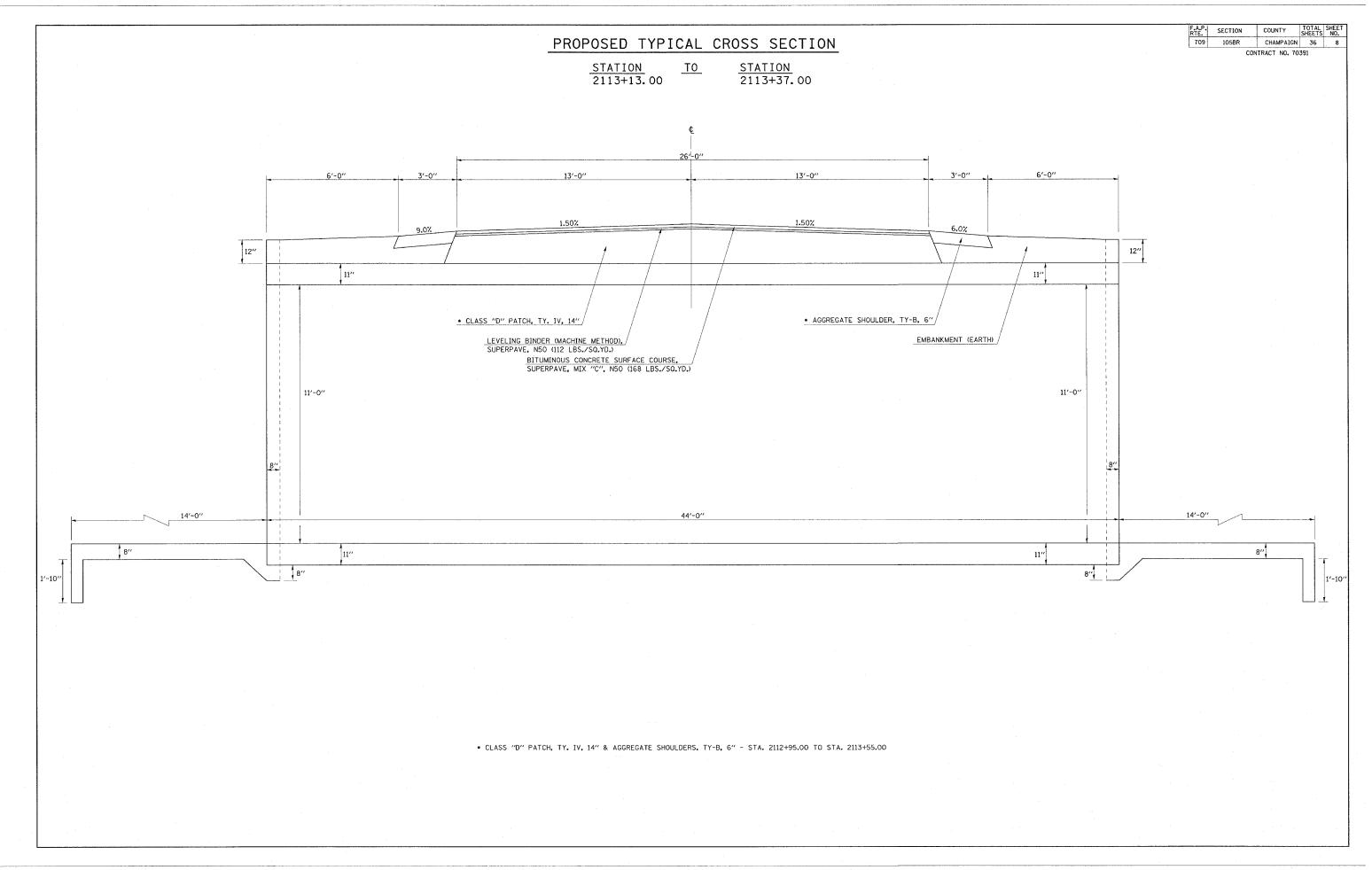
EXISTING BRIDGE TYPICAL CROSS SECTION

 STATION
 TO
 STATION

 2113+15.00
 2113+39+00







SCHEDULE OF QUANTITIES

EARTH WORK SCHEDULE

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR	EMBANKMENT	EARTHWORK BALANCE
		SHRINKAGE		WASTE (+)
				SHORTAGE (-)
	(CU YD)	(CU YD)	(CU YD)	(CU YD)
LT STA. 2111+50 TO 2115+63	0.0	0.0	65.0	-65.0
RT STA. 2110+63 TO 2115+13	2.0	1.5	115.0	-113.5
CUT FO STRUCTURE PG BACKFILL	268.3	201.2	0.0	201.2
SUB-TOTAL	270.3	202. 7	180.0	22.7
TOTAL QUANTITY	= 275.0	<u></u>		20.0
	(CU YD)	(CU YD)	(CU YD)	(CU YD)

NOTES:

- 1- NO SHRINKAGE FACTOR APPLIED TO THE EMBANKMENT QUANTITY
- 2- A 25% EXPANSION FACTOR WAS USED IN COMPUTING BORROW QUANTITY

EARTH EXCAVATION 275.0 CUYDS

POROUS GRANULAR BACKFILL

STA.	TO	STA.	WIDTH	(CU YD)
2112+97		2113+12	36.0'	144.0
2113+38		2113+53	36.0	144.0
		TOTAL	QUANTITY	= 288.0 CUYD

PERIMETER EROSION BARRIER

LT OR RT	STA.	ТО	STA.		(FT)	
LT	2111+50		2112+50		100.0	
LT	2113+63		2115+63		200.0	
RT	2111+63		2112+13		50.0	
RT	2114+50		2115+00		50.0	
		TOTAL	QUANTITY	=	400.0	FEET

INLET AND PIPE PROTECTION

LT	OR RT	0/S		STATION
	LT	40′		2112+00
	RT	20'		2112+00
	RT	45′		2113+55
	LT	45′		2113+55
	RT	32′		2113+70
	TOTAL	QUANTITY	=	5 EACH

CLASS D PATCH, TYPE IV, 14"

STA.	TO	STA.	WIDTH	(SQ YD)
2112+95		2113+55	26.0		173.0
		TOTAL	QUANTITY	=	174.0 SQYD

AGGREGATE SHOULDERS TYPE B

L	T OR RT	STA.	то	STA.	(TONS)
	RT	2112+00		2112+95	1.7
	LT	2112+00		2112+95	1.7
	RT	2113+55		2114+50	1.7
	LT	2113+55		2114+50	1.7
			TOTAL	QUANTITY	= 20.0 TON

FILTER FABRIC FOR RIPRAP

NORTH SIDE OF CULVERT = 49.0 SQ YDS SOUTH SIDE OF CULVERT = 48.0 SQ YDS TOTAL QUANTITY = 97.0 SQ YDS

STONE RIPRAP CLASS A-4

NORTH SIDE OF CULVERT = 49.0 SQ YDS
SOUTH SIDE OF CULVERT = 48.0 SQ YDS

TOTAL QUANTITY = 97.0 SQ YDS

AGGREGATE SURFACE COURSE TYPE B

O/S STA. TO STA. WIDTH (FT) (TON)
LT 2112+57 2113+10 21.0 9.0
TOTAL QUANTITY = 9.0 TON

BITUMINOUS SURFACE REMOVAL (SPECIAL)

LT OR RT STA. TO STA. WIDTH (SQ YD)

LT 2112+57 2113+10 4.0 19.0

TOTAL QUANTITY = 19.0 SQYD

STEEL PLATE BEAM GUARDRAIL, TYPE A

LT OR RT	STA.	TO	STA.	SECTIONS	(FT)
LT	2112+25.	0	2112+50.	0	25.0
LT	2112+80.	5	ENTRANCE	RADII	50.0
LT.	2113+07.	5	2114+95.	0	187.5
ATT	ACHED TO	STRUCT	URE		-25.0
			NORTH	QUANTITY	237.5

LT OR	RT STA.	TO	STA.	SECTIONS	(FT)
LT	2111+59	5.0	2114+30.	0	275.0
	ATTACHED	TO STE	RUCTURE		-25.0
			SOUTH	QUANTITY	250.0
			TOTAL	QUANTITY	487.5

STEEL PLATE BEAM GUARDRAIL. ATTACHED TO STRUCTURE

LT OR RT	STA. TO	STA.	(FT)
LT	2113+12	2113+37	25.0
RT	2113+12	2113+37	25.0
	TOTAL	QUANTITY =	50.0 FEET

TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL (FLARED)

0/5	STA.	то	STA.	EAC	Н	
LT	2111+7	'5	2112+25		1.0	
LT	2114+9	35	2115+45		1.0	
RT	2111+0)5	2111+55		1.0	
RT	2114+3	30	2114+80		1.0	
			IATOT	=	4. 0	FACE

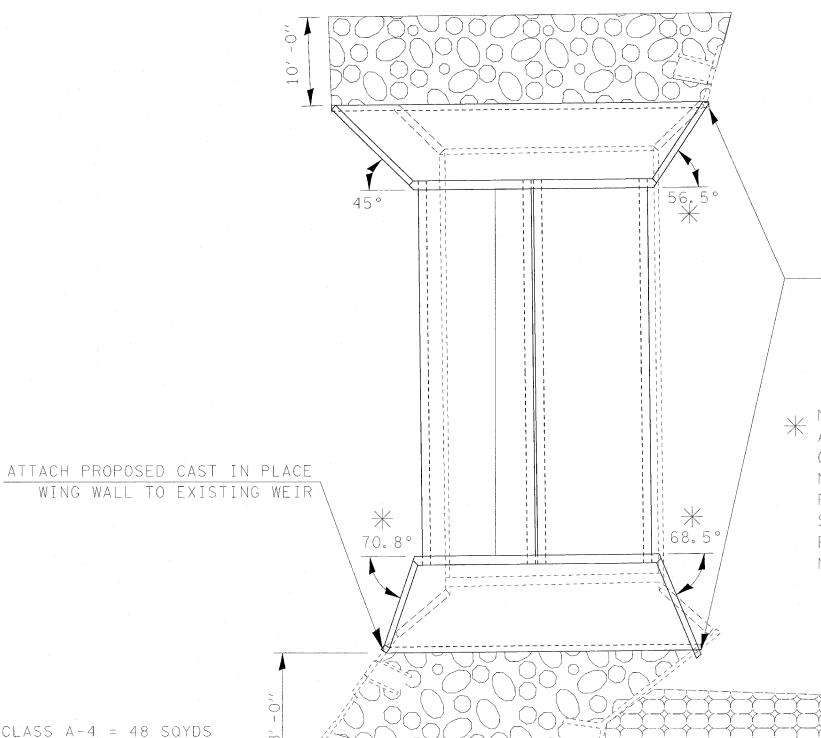
TERMINAL MARKER - DIRECT APPLIED

0/S	STA.		EAC	H
LT	2111+75		1	
LT	2115+45		1	
RT	2111+05		1	
RT	2114+80		1	
	TOTAL	=	4	EACH

F.A.P. SECTION COUNTY TOTAL SHEET NO.

709 105BR CHAMPAIGN 36 11

PROPOSED WING WALL DESIGN



NORTH END STONE RIPRAP CLASS A-4 = 49 SQYDS FILTER FABRIC = 49 SQYDS

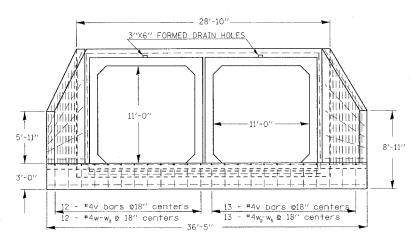
ATTACH PROPOSED CAST IN PLACE WING WALL TO EXISTING WEIR

NOTE: WING WALL ANGLES ARE APPROXIMATE,
ACTUAL ANGLES SHALL BE FOUND WHEN
CONNECTING TO EXISTING WEIRS.
NOTE: ALL WORK ASSCOIATED WITH ATTACHING
PROPOSED WINGWALLS TO EXISTING WEIRS
SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE
FOR BOX CULVERT END SECTION,
NO ADDITIONAL COMPENSATION WILL BE ALLOWED

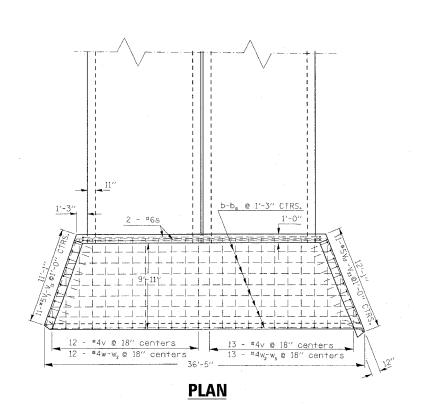
SOUTH END STONE RIPRAP CLASS A-4 = 48 SQYDS FILTER FABRIC = 48 SQYDS

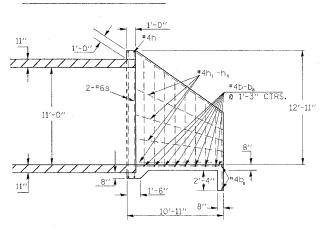


DETAIL OF BOX CULVERT END SECTION SOUTH END

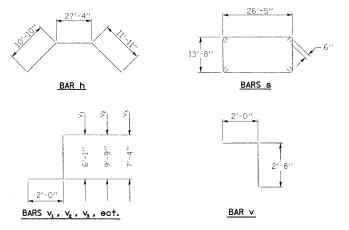


SECTION A - A





END VIEW



NOTES NOTES

- All bars should be rounded and shall conform to the requirements of Art. 1006.10 of Standard Specs.
- Class SI Concrete shall be used throughout.
- The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M273.
- All dimensions are in FEET (')-INCHES (") unless otherwise noted.
- Concrete and Rebar quantities and lengths calculated for the cast-in-place End Sections will vary based on the precast box culverts supplied.
- End Sections will be paid for at the contract unit price each for BOX CULVERT END SECTION CULVERT NO.as outlined in Art, 540.08, which prices shall include all concrete, rebar, and all other items necessary to complete the proposed work. Work required to attach the proposed wingwalls to the existing welrs shall be included in the unit price for BOX CULVERT END SECTION and no additional compensation will be allowed.
- Drain holes shall be provided in accordance with Art. 503.12.
- Drawings not to scale.

BILL OF MATERIAL (ONE HEADWALL)

DILL	. 01 14		<u> </u>	THE HEAD	INEL(
Bar	No.	Size	Len	gth (ft)	Shape
Ь	1	#4		8'-5"	
b _i	1	#4	2	9'-6"	
D ₂	1	#4	3	0'-5"	
b₃	1	#4	-	31'-4''	
Ď₄	1	#4	-	32'-3''	
b ₅	1	#4		33'-3''	
	1	#4	-	34'-3''	
D ₆	1	# 4		35-1"	
D ₇		74	-	32-1.	
D _B	2	#4	L	35-4"	
		·			
h	2	#4		50'-1''	
h,	2	#4	1	2'-0"	
h₂	2	#4		11'-8''	
h ₃	2	#4		1'-4"	
h,	2	#4		11'-0''	
. 74		· ·			
S	2	#6	1 1	4'-8"	
	~	#6		27'-6"	
Sı				4'-9''	
S ₂	2 2 2	#6			
53		#6		27'-6''	·
	25 2 2	#4		4'-8''	
V _i	2	#5		8'-1'' 8'-9''	
V ₂	2	#5	1	8'-9''	
V ₃	2	#5		9'-4"	
V4	2	#5		9'-11"	
V ₅	2	#5	1	0'-7"	
	2	#5	1	10'-7'' 11'-2''	
V ₆	2	#5	1	1'-9'''	
Vy				12'-5"	
V _B		#5	-	Z -5.	
V ₉	2	#5	1 1	3'-0''	
V ₁₀	2	#5		13-8"	
V ₁₁	2	#5		14-3'' 4'-10''	
V ₁₂	2	#5	1	4′-10′′	
V ₁₃	2	#5		14'-3'' 3'-10''	
V ₁₄	2	#5	1	3'-10"	
V ₁₅	2	#5		13'-3''	
	2	#5	+	12'-8"	
V ₁₆	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	#5	-	12'-1''	
V ₁₇		#5		12'-1'' 11'-6''	
V ₁₈	2		 	116.	
V ₁₉	2	#5		0'-11''	
V ₂₀	2	#5		10'-4"	
V ₂₁	2	#5	1	9'-9"	
V22	2 2	#5		9'-2"	
- V ₂₃	2	#5	T	8'-7''	
	•				
W	1	#4		2'-6"	
W	1	#4	1 1	6'-10''	
	18	#4	1-	10'-3''	
W ₂	1	#4	+	9/_9//	
W ₃		#4	+	9'-9'' 6'-1'' 2'-3''	 -
W4	1		-	D -1	
W ₅	11	#4		2'-3"	
Reinf	orcem	ent B	ars	LB.	1055
Class		nc. Ho		CU. YD.	21.8

-	ITE	М		UNIT	QUANT.
Вох			-,		
201	201401			EACH	1

.

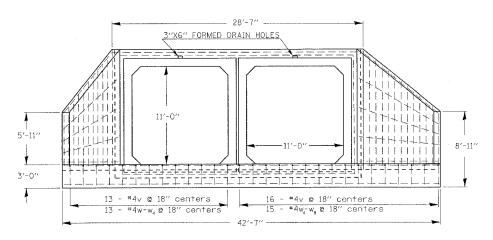
End Section

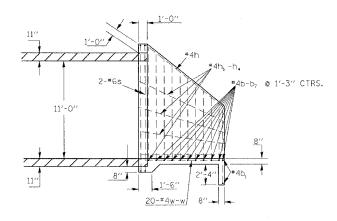
BOX CULVERT END SECTIONS (CAST IN PLACE) 2 @ 11.0' X 11.0'

CULVERT DETAIL SOUTH

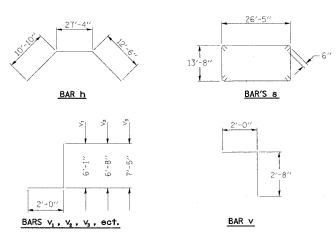
| F.A.P. | SECTION | COUNTY | TOTAL | SHEET | NO. | 709 | 105BR | CHAMPAIGN | 36 | 13 | CONTRACT NO. | 70391

DETAIL OF BOX CULVERT END SECTION NORTH END





END VIEW



NOTES

- All bars should be rounded and shall conform to the requirements of Art. 1006.10 of Standard Specs.
- Class SI Concrete shall be used throughout.
- The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M273.
- All dimensions are in FEET (')-INCHES (") unless otherwise noted.
- Concrete and Rebar quantities and lengths calculated for the cast-in-place End Sections will vary based on the precast box culverts supplied.
- End Sections will be paid for at the contract unit price each for BOX CULVERT END SECTION CULVERT, as outlined in Art, 540.08, which prices shall include all concrete, rebar, and all other items necessary to complete the proposed work. Work required to attach the proposed wingwalls to the existing weirs shall be included in the unit price for BOX CULVERT END SECTION and no additional compensation will be allowed.
- \bullet Drain holes shall be provided in accordance with Art. 503.12.
- Drawings not to scale.

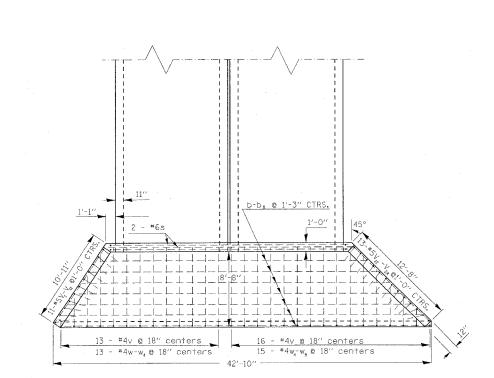
BILL OF MATERIAL (ONE HEADWALL)

Bar	No.	Size	Length (ft) 28'-5" 30'-11"	Sha
ь	1	#4	28'-5"	10000000
bı	11	#4	30′-11′′	
b ₂	1	#4	32'-12'' 35'-0''	
Ď₃	1	#4	35'-0''	versane
b₄	1	#4	35'-0'' 37'-1'' 39'-2'' 41'-3''	
D _s	1	#4	39'-2"	
<u> </u>	1	#4	41'-3''	
	2	#4	41'-11''	-
b ₇		4	41.11	
h	2	#4	50'-8''	
	1	#4	11'-4"	
h,			11'-8"	
h ₂	11	#4	11,-8,,	
h ₃	11	#4	12'-0''	
h,	1	#4	12'-4''	
h_5	1	#4	13'-0''	
h _e	1	#4	13'-4"	
h,	1	#4	13′-8″	
h,	1	#4	14'-0''	
	·	L	1	
s	2	#6	14'-9"	
	2	#6	27'-6"	-
S ₁		#6	14/ 0//	
Sz	2		14'-9"	-
S ₃	2	#6	27'-6''	
		+ 4	1 00	
V	29	#4	4-8"	
V ₁	1	#5	8′-1′′	
V ₂	1	#5	8'-8''	
∨3	1	#5	9′-5′′ 10′-1′′	-
V4	1	#5	10'-1''	
V ₅	1	#5	10'-9"	_
V ₆	1	#5	11'-5"	
	1	#5	11'-5'' 12'-1''	
V _I	1	#5	12'-10''	
V _B			1210.	
V ₉	1	#5	13'-6'' 14'-2'' 15'-1''	-
Vio	1	#5	14'-2''	
V ₁₁	1	#5	15'-1"	_
V ₁₂	1	#5	14'-11''	
. V ₁₃	1	#5	14'-4''	_
V ₁₄	1	#5	13'-9''	
V ₁₅	1	#5	13'-2"	
V(5	1	#5	13'-2'' 12'-7''	
V ₁₆	1	#5	12/ 1//	
V ₁₇		#5	12'-1" 11'-6"	
V ₁₈	1	#5	116	
V ₁₉	1	#5	10'-11''	
· V ₂₀	1	#5	10'-4''	
V ₂₁	1	#5	9'-9''	L
V ₂₂	1	#5	9'-9"	l -
V ₂₃	1	#5	8'-7''	
V ₂₄	1	#5	8'-1''	_
47				
W	1	#4	1'-5''	
W	1	#4	3'-8"	
Wz	1	#4	5'-12"	-
	20	#4	81-311	
W ₃		#4	5'-12" 8'-3" 9'-0"	
W ₄	1	#4	3 -0	
W ₅	1	#4	8'-0"	
W ₆	1	#4	6'-6'' 5'-0''	
Wh	1	#4	5′-0′′	
W ₈	1	#4	3'-6"	-
W ₉	1	#4	1'-10''	I -
	·			-
Reinfo	orcem	ent R	ars LB.	11
				+
Class	SI Co	no Ho	dwall. CU. YD.	21

ITEM	UNIT	QUAN
Box Culvert End Section	EACH	1
Expansion bolts,¾"	EACH	58

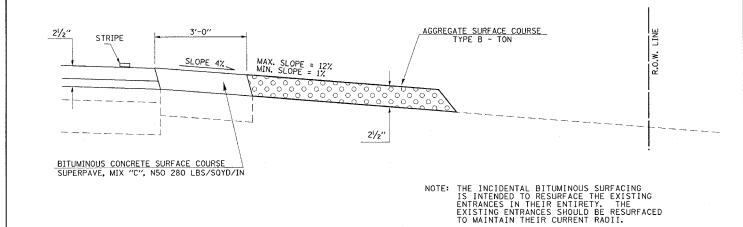
BOX CULVERT END SECTIONS (CAST IN PLACE)
2 @ 11.0' X 11.0'

CULVERT DETAIL NORTH

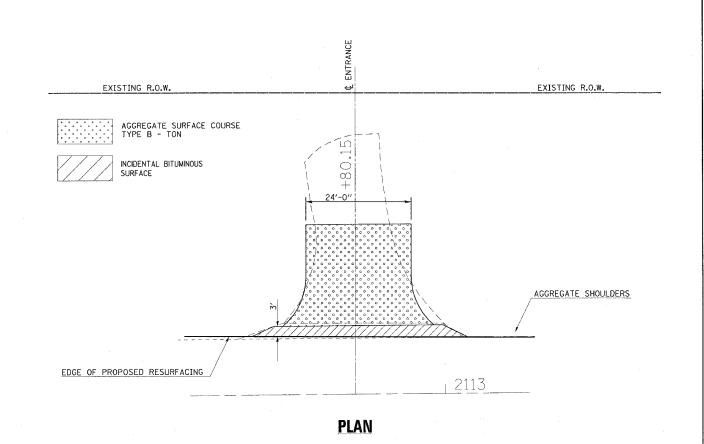


<u>DETAIL OF</u> RURAL FIELD ENTRANCES

ADJACENT TO PROPOSED RESURFACING, 2 1/2" (AGGREGATE)



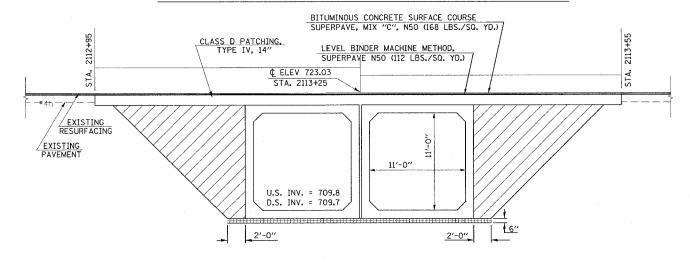
PROFILE



F.A.P. SECTION COUNTY TOTAL SHEET NO. 709 1058R CHAMPAIGN 36 14

CONTRACT: 70391

DETAIL OF POROUS GRANULAR BACKFILL PAY LIMITS



PAY LIMITS OF POROUS GRANULAR BACKFILL - CA 6
NOTE: POROUS GRANULAR BACKFILL SHALL EXTEND
18'-0" EACH SIDE OF F.A.F. 709 CENTERLINE
PLAN TOTAL = 288.0 CUYDS

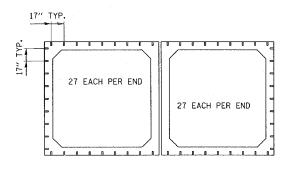
₱ PROPOSED DOUBLE 11'-0" x 11'-0" x 43'-6"

PRECAST CONCRETE BOX CULVERT

A.R. STATION 2113+25

POROUS GRANULAR MATERIAL - CA 7 (6")
(INCLUDED IN PAY ITEM FOR PRECAST BOX CULVERT)

DETAIL OF EXPANSION BOLT, 3/4" LAYOUT

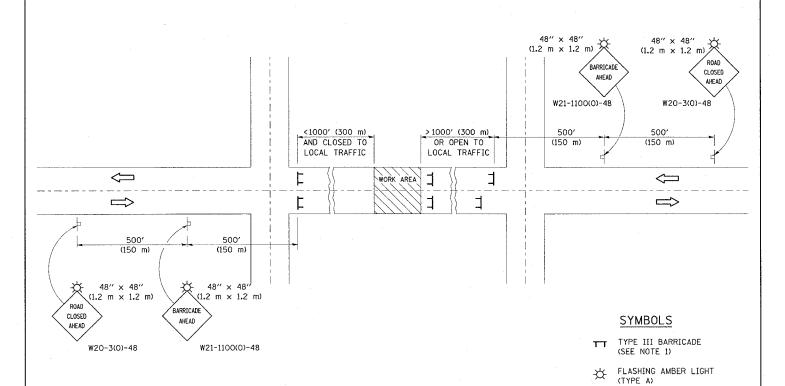


27 EACH PER END X 4 ENDS = 108 EACH

ATTACHING TO EXISTING WEIRS
USE 4 EACH X 3 WEIRS = 12 EACH

TOTAL QUANTITIY
EXPANSION BOLTS, 3/4" = 120 EACH

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR ROAD CLOSURE



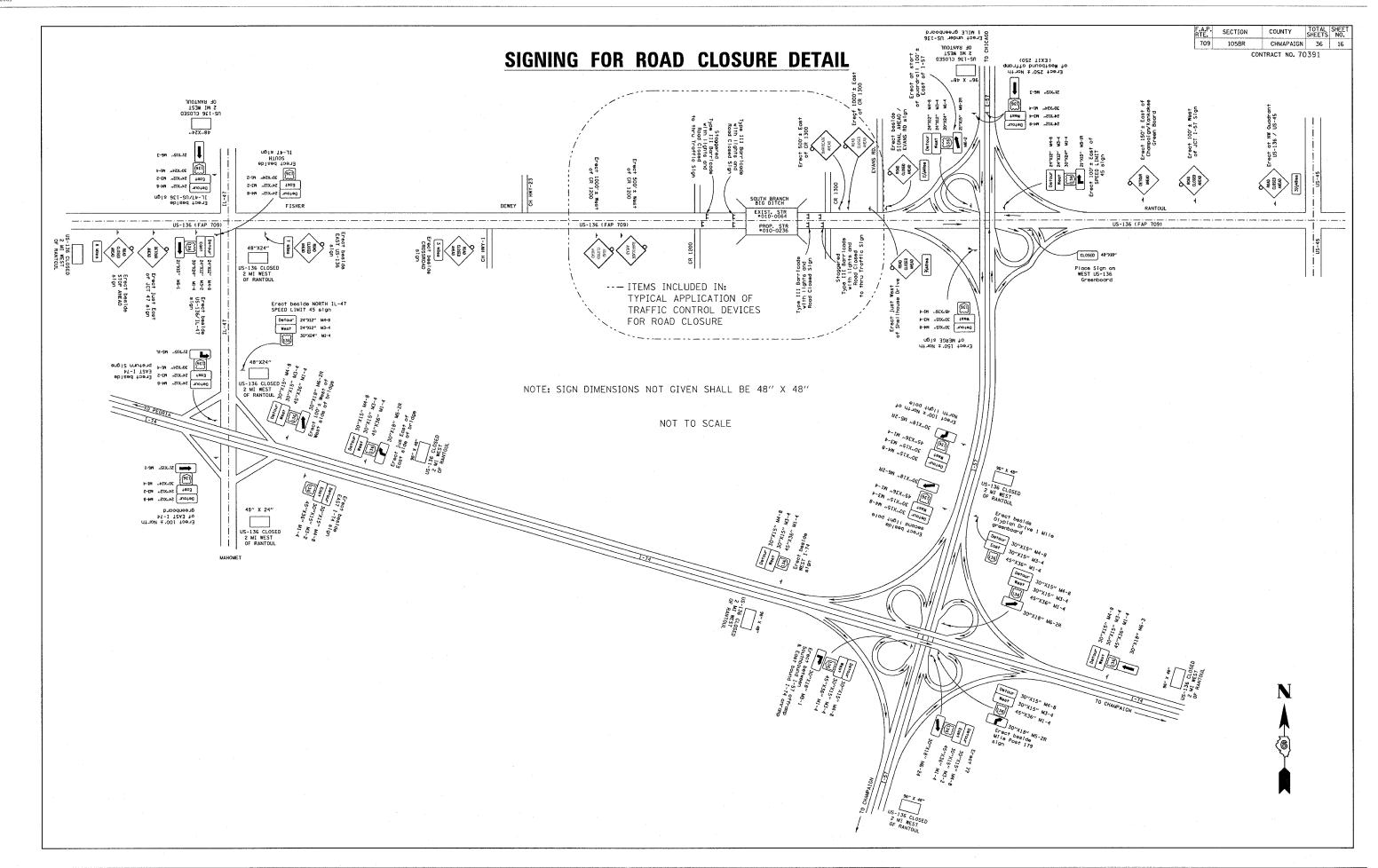
GENERAL NOTES

- 1. TYPE III BARRICADES SHALL BE AS SHOWN ON STANDARD 702001 "TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD". EACH TYPE III BARRICADE SHALL HAVE TWO FLASHING AMBER LIGHTS MOUNTED ABOVE IT.
- IF THE ROAD IS OPEN TO LOCAL TRAFFIC OR EXCEEDS 1000' (300 m), ANOTHER SET OF TYPE III BARRICADES, EQUIPPED AS IN NOTE 1 ABOVE, SHALL BE PLACED AT EACH END OF THE WORK AREA.
- 3. WHEN A STOP CONDITION EXISTS, NO SIGNS ARE REQUIRED IN ADVANCE OF THE "STOP" SIGN WHEN THE ROAD IS CLOSED WITHIN 100' (30 m) OF THE INTERSECTION.
- 4. STANDARD 702001 SHALL APPLY FOR THE PLACEMENT & DESIGN OF TYPE III BARRICADES.
- 5. IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON AN NCHRP 350 TEMPORARY SIGN SUPPORT DIRECTLY IN FRONT OF THE BARRICADE.

- 6. REFLECTORIZED STRIPING SHALL APPEAR ON BOTH SIDES OF THE TY III BARRICADES IF ROAD IS OPEN
- 7. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
- 8. A MINIMUM OF TWO FLASHING LIGHTS SHALL BE USED AT NIGHT ON EACH APPROACH IN ADVANCE OF THE WORK AREA. FLASHING LIGHTS SHALL BE INSTALLED ABOVE THE FIRST TWO SIGNS IN THE SERIES
- 9. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.
- 10. FORMS BT. 725 AND BT. 726 ARE REQUIRED.
- 11. WHEN A SIDEROAD INTERSECTS THE HIGHWAY ON WHICH WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC DEVICES SHALL BE ERECTED AND PROVIDED AS DIRECTED BY THE ENGINEER.
- 12. AN ADDITIONAL SIGN MAY BE REQUIRED AT A MAJOR INTERSECTING ROAD IN ADVANCE OF THE CLOSURE. THE ADDITIONAL SIGN SHALL GIVE THE DISTANCE TO THE BARRICADE IN MILES OR FRACTIONS OF A MILE.

- 3						_
1		NAME	DATE	REVISIONS]
	DESIGNED	J.H.M.	8-11-87	NAME	DATE	
	CHECKED	P.E.K.	8-25-87	R₊M₊H.	12/97	
	CADD NO.	F-5	5.03	C.P./K.A.G.	01/05	Ľ

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
UNLESS OTHERWISE SHOWN.

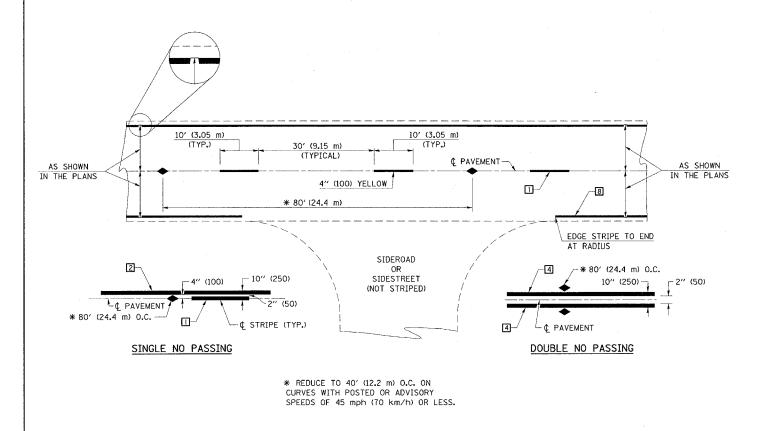


F.A.P. SECTION COUNTY TOTAL SHEETS NO.

709 105BR CHAMPAIGN 36 17

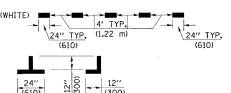
CONTRACT NO. 70391

TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS



TYPICAL PAVEMENT MARKING LEGEND

- 1 4" (100) SKIP-DASH (YELLOW) (3.05 m) (9.15 m)
- 2 4" (100) SOLID (YELLOW)
- 3 12" (300) DIAGONAL (YELLOW)
- 4 4" (100) DOUBLE YELLOW (NARROW)
- 5 RESERVED
- 6 RESERVED
- 7 4" (100) SKIP-DASH (WHITE)
- 8 4" (100) SOLID (WHITE)
- 9 12" (300) DIAGONAL (WHITE)
- 10 6" (150) CROSS WALK (WHITE)
- 11 24" (600) STOP BAR (WHITE)
- 12 8" (200) SOLID (WHITE)
- 13 4" (100) LANE LINE EXTENSIONS (WHITE)
- 14 4" (100) PARKING WHITE

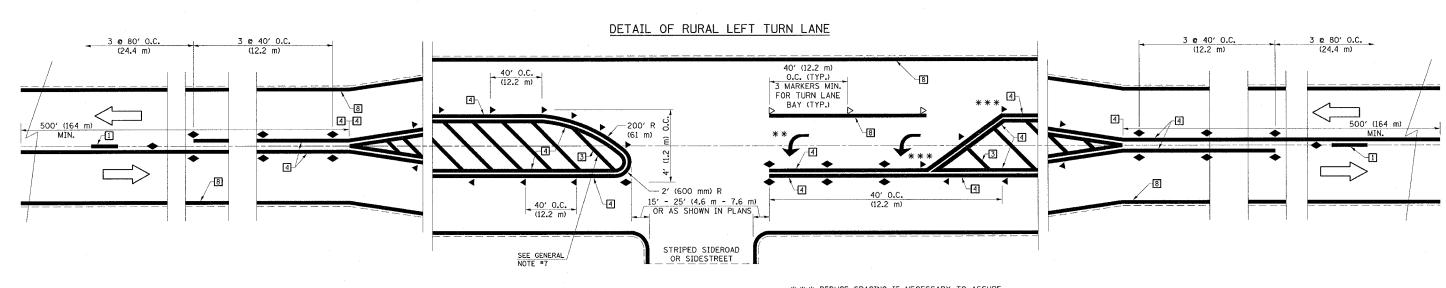


TRAFFIC

🚍 6" (150) CTS.

TYPICAL PAVEMENT MARKERS LEGEND

- ◆ TWO-WAY AMBER MARKER
- ▶ ONE-WAY AMBER MARKER
- ONE-WAY CRYSTAL MARKER



SHEET 1 OF 3

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
UNLESS OTHERWISE SHOWN.

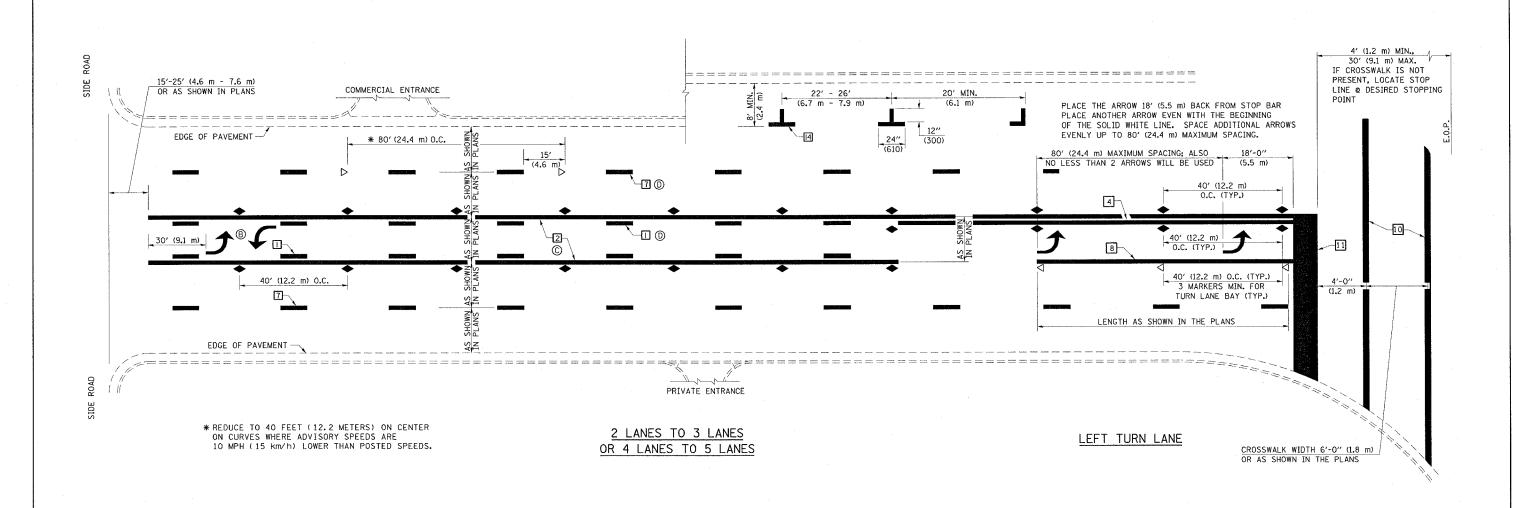
*** REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNER POINTS.

** TURN ARROWS SHALL BE PLACED AS SHOWN ON SHEET #2.

SECTION COUNTY TOTAL SHEET NO. F.A.P. RTE. 709 105B CHAMPAIGN 36 18

CONTRACT NO. 70391

TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS

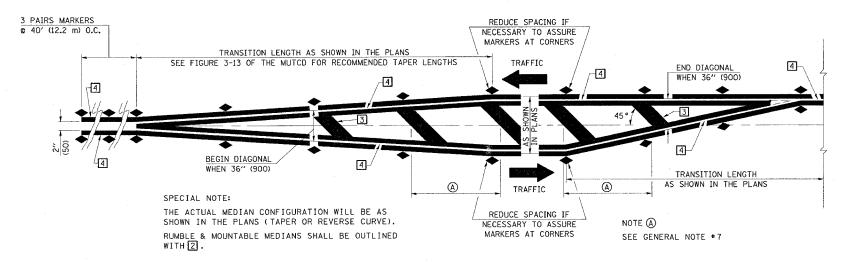


SHEET 2 OF 3

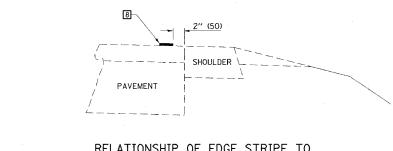
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

F.A.S. RTE. 709 COUNTY TOTAL SHEET NO. SECTION 105B CHAMPAIGN 36 19 CONTRACT NO. 70319

TYPICAL APPLICATIONS OF PAVEMENT MARKINGS AND MARKERS



TYPICAL MEDIAN TRANSITIONS



RELATIONSHIP OF EDGE STRIPE TO SAFETY SHOULDER OR PAVED SURFACE

MIN. MARKER STRIPE(S) AVOID RESURFACING OR PAVING JOINTS SEE ARTICLES 780.04 AND 781.03 RELATIONSHIP OF STRIPES, MARKERS AND JOINTS

- B TURN ARROW PAIRS SHALL BE PLACED AT 250'
 (75 m) INTERVALS AND SHALL BE EVENLY SPACED
 BETWEEN BOTH ENDS OF THE BIDIRECTIONAL
 LEFT TURN LANE.
- THE SOLID YELLOW PAVEMENT MARKINGS [2]
 SHOULD GENERALLY START OR END NEAR THE
 RADIUS POINT OF EACH STREET RETURN EXCEPT
 WHERE ONE OR BOTH ENDS WOULD INCLUDE
- ① THE SKIP-DASH PAVEMENT MARKINGS 1 OR 7 SHOULD BE CENTERED BETWEEN BOTH ENDS OF EACH CITY BLOCK AND SHALL BE PLACED SO THEY LINE UP ACROSS FROM EACH OTHER. SEE EXAMPLE ON SHEET 2 OF 3.

SPECIAL NOTES:

- TURN ARROW SIZE DEPENDS ON THE LOCATION. RURAL LOCATION LARGE ARROW SIZE URBAN LOCATION SMALL ARROW SIZE

GENERAL NOTES

- 1. WHEN MEDIANS ARE PRESENT, PAVEMENT MARKINGS ARE TO BE PLACED ADJACENT TO MEDIANS.
- 2. SCALE: NONE
- 3. SOME OF THE INFORMATION INCLUDED WITH THIS DETAIL MAY NOT BE APPLICABLE TO THIS IMPROVEMENT.
- 4. PAVEMENT MARKINGS ARE TO BE EXTENDED THROUGH OMÍSSIONS WHEN APPLICABLE.
- 5. A STRIPING KEY IS AVAILABLE ELSEWHERE AND SHALL BE SHOWN WHERE THE QUANTITIES ARE LISTED.
- 6. FINAL PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO PLACING ANY RAISED REFLECTIVE PAVEMENT MARKERS.
- 7. THE FOLLOWING CRITERIA SHALL BE USED FOR SELECTING THE DIAGONAL PAVEMENT MARKING SPACING, <30 MPH USE 15' (<50 km/h USE 4.5 m) 30-45 MPH USE 20' (50-75 km/h USE 6.0 m) >45 MPH USE 30' (>75 km/h USE 9.0 m)

(660) 8'-0" 🖲

(2.4 m)

TYPICAL DOUBLE TURN ARROWS (WHITE)

(2.4 m)

(660)

LEFT ARROW REVERSE FOR RIGHT ARROW AREA = 15.6 SQ. FT. (1.47 m^2) (WHITE)

SHEET 3 OF 3

	NAME	DATE	REVISIONS		
DESIGNED	J.M.H.	5/85 6/88	NAME	DATE	
CHECKED	FMS CTD	6/85 6/88	GEOMETRICS/K.A.G.	07/0	
CADD NO.	F-5	.25	K.A.G.	08/0	

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

8'-0" E

(2.4 m)

