

CONTRACT NO. 70529				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	102X0BR, BR-3	MCLEAN	42	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 315 (US 136)
SECTION (102X)BR, BR-3
PROJECT
MCLEAN COUNTY

C-95-049-06

BRIDGE REPLACEMENT INTERSECTION IMPROVEMENT
SALT CREEK 3.2 MI & STREAM 1.1 MI W OF I-74

PROJECT ENGINEER: KEVIN TRAPP

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 7-10

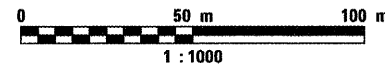
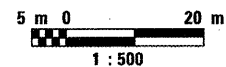
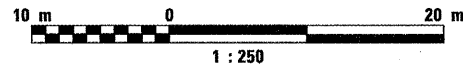
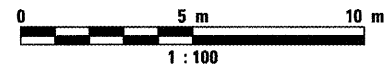
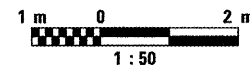
FUNCTIONAL CLASSIFICATION: OTHER PRINCIPAL
ARTERIAL

LOCATION 1 **
ADT = 1300 (2001)
PV = 68.0%
MU = 20.0%
SU = 12.0%

LOCATION 2 **
ADT = 1275 (2001)
PV = 68.0%
MU = 20.0%
SU = 12.0%

** LOCATION 1 IS FROM STA. 40+500 TO STA. 40+675
LOCATION 2 IS FROM STA. 43+975 TO STA. 44+150

METRIC RATIOS



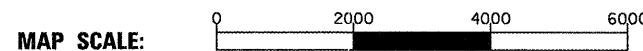
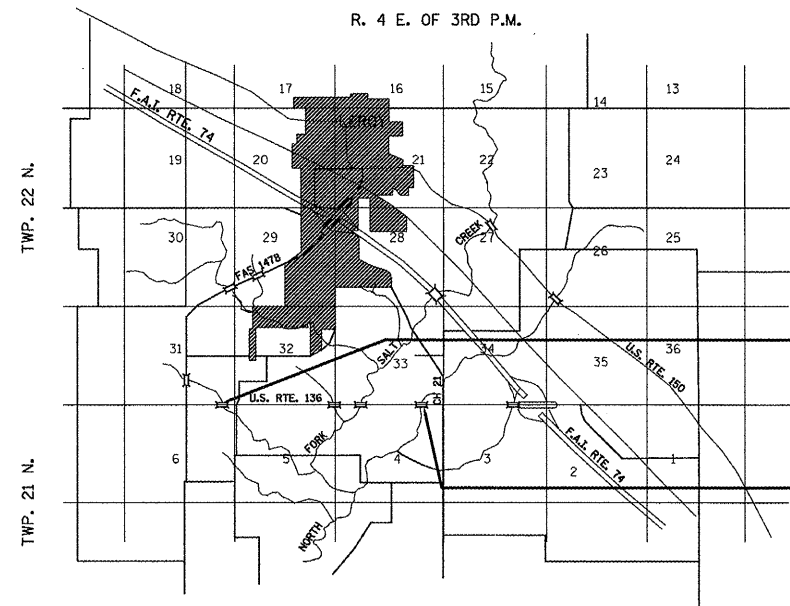
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

CONTRACT NO. 70529

SQUAD LEADER: JEFF M. SHERER

DESIGNER: JEFF M. SHERER

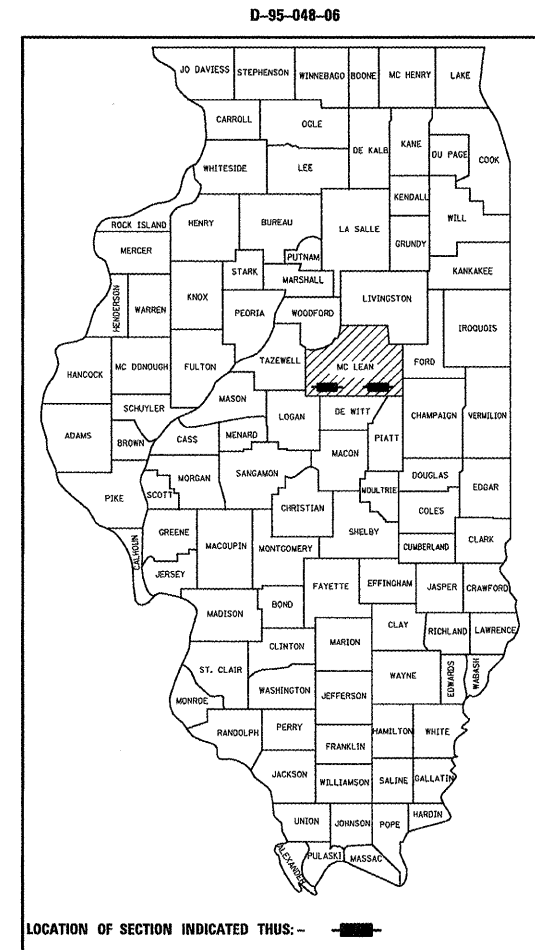


** LOCATION 1 NET LENGTH OF SECTION 175 m
GROSS LENGTH OF SECTION 175 m

** LOCATION 2 NET LENGTH OF SECTION 175 m
GROSS LENGTH OF SECTION 175 m

LOCATION 1
STA. 40 + 618.180
SN 057-8302(P)
SN 057-0151(E)
2 @ 2.4m X 2.1m X 19.1m
PCBC (M259) W/CIP
SOLDIER PILE WING WALLS

LOCATION 2
STA. 44 + 045.000
SN 057-2039(P)
SN 057-0096(E)
2 @ 2.4m X 3.3m X 23.1m
PCBC (M259) W/CIP
SOLDIER PILE WING WALLS



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 1/28 20 10

Joseph W. Cowles
DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER

March 19 20 10

Scott E. Stitt, P.E./E
AREA ENGINEER OF DESIGN AND ENVIRONMENT

March 19 20 10

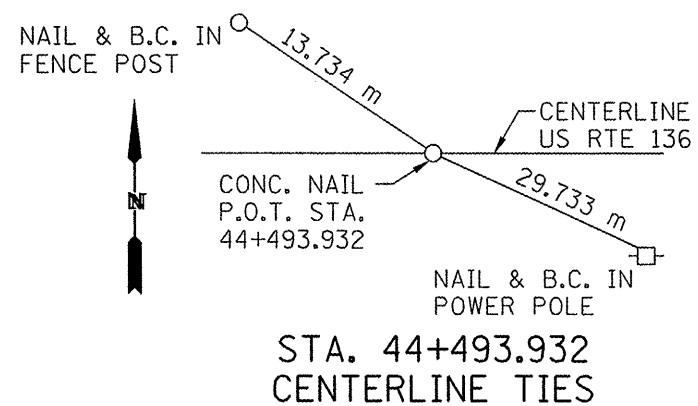
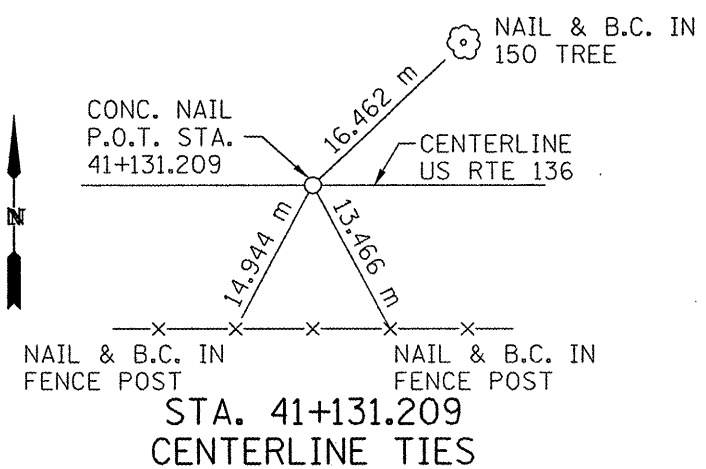
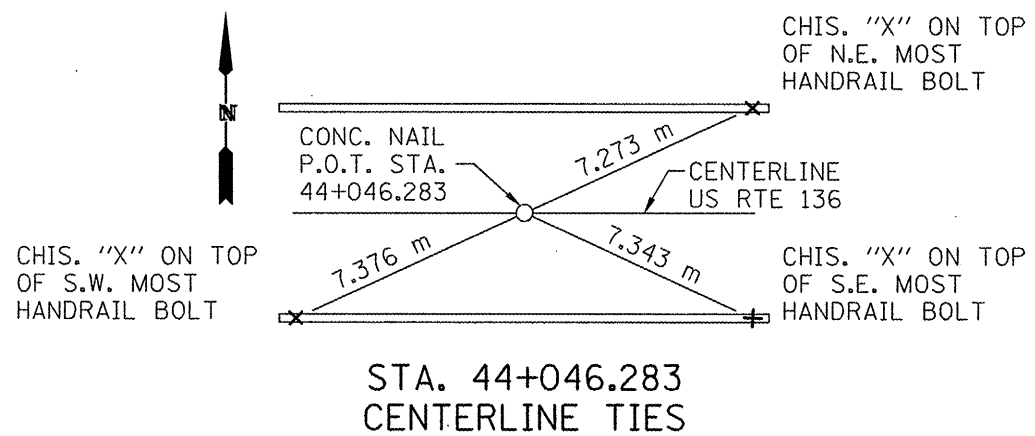
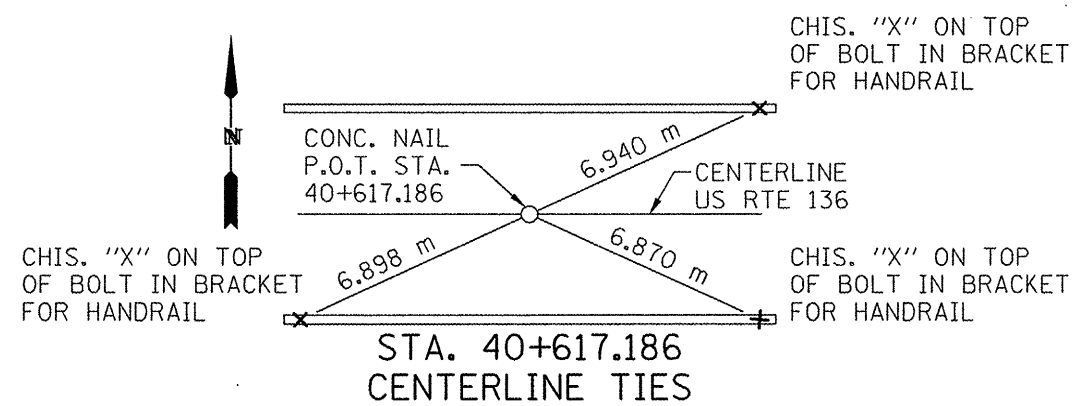
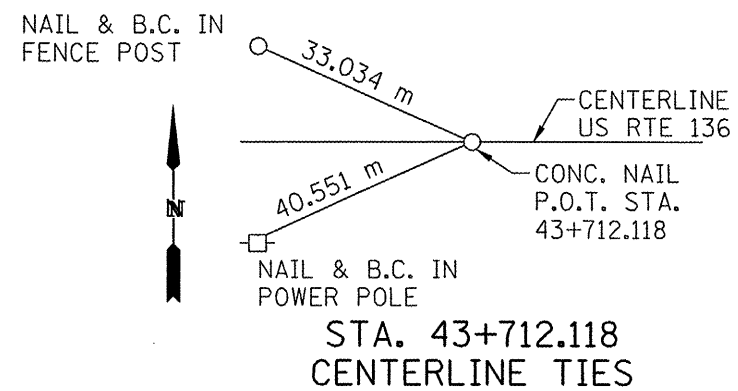
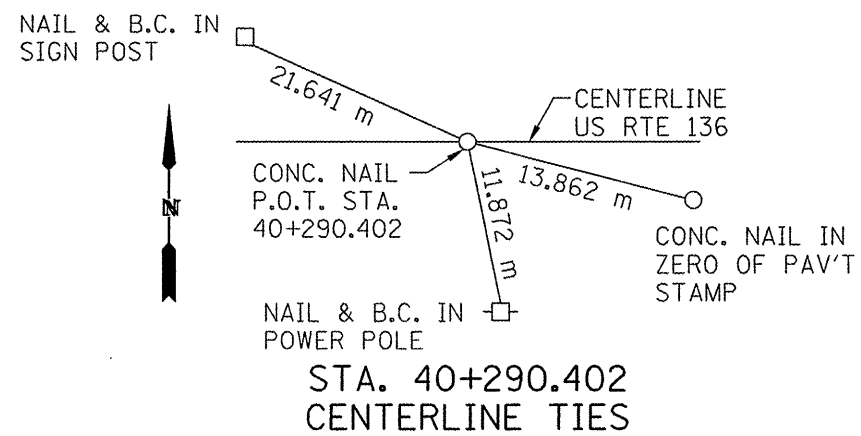
Christine M. Reed/BE
DIRECTOR, DIVISION OF HIGHWAYS

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

SURVEY CROSS-TIES

CONTRACT NO. 70529

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	6
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		



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 USER NAME = asher-jm

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION ALIGNMENT TIES & BENCHMARKS
NAME	DATE	
		F.A.P. ROUTE 315 SECTION (102X)BR, BR-3 MCLEAN COUNTY DRAWN BY CHECKED BY
DATE		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	102X1BR, BR-3	MCLEAN	42	8
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

LOCATION OF WORK: ROADWAY LOCATION 1 LOCATION 2
 CONSTRUCTION TYPE CODE: 80/20 FED/ST S.N. 057-8302 S.N. 057-2039
 TOTAL QUANTITY 1000 STA. 40+618.180 44+045.000
 X028-2A X028-2A

CODE NO	ITEM	UNIT	TOTAL QUANTITY	1000	LOCATION 1	LOCATION 2
* M2500210	SEEDING, CLASS 2A	HA	0.70	0.70		
* M2500400	NITROGEN FERTILIZER NUTRIENT	KG	74.0	74.0		
* M2500500	PHOSPHORUS FERTILIZER NUTRIENT	KG	74.0	74.0		
* M2500600	POTASSIUM FERTILIZER NUTRIENT	KG	74.0	74.0		
M2510630	EROSION CONTROL BLANKET	SQ M	7,380.0	7,380.0		
M2800305	TEMPORARY DITCH CHECKS	METER	60.0	60.0		
M2800400	PERIMETER EROSION BARRIER	METER	200.0	200.0		
M2810201	STONE RIPRAP, CLASS A1	M TON	318.0		182.0	136.0
M2820200	FILTER FABRIC	SQ M	682.0	682.0		
M2830400	AGGREGATE DITCH	M TON	497.0	497.0		
M3110100	SUB-BASE GRANULAR MATERIAL, TYPE A 100MM	SQ M	1,104.0	1,104.0		
M3550570	HOT-MIX ASPHALT BASE COURSE, 270MM	SQ M	358.0	358.0		
M3560570	HOT-MIX ASPHALT BASE COURSE WIDENING, 270MM	SQ M	534.0	534.0		
M4021010	AGGREGATE SURFACE COURSE, TYPE B	M TON	22.0	22.0		
M4060100	BITUMINOUS MATERIALS (PRIME COAT)	LITER	2,072.0	2,072.0		
M4060300	AGGREGATE (PRIME COAT)	M TON	5.9	5.9		
M4060982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ M	360.0	360.0		
M4060990	TEMPORARY RAMP	SQ M	92.4	92.4		
M4062125	LEVELING BINDER (MACNINE METHOD), N50	M TON	30.0	30.0		
M4063310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	M TON	413.0	413.0		
M4080500	INCIDENTAL HOT-MIX ASPHALT SURFACING	M TON	5.1	5.1		

* SPECIALTY ITEMS

CONT'D NEXT SHEET

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		SUMMARY OF QUANTITIES F.A.P. ROUTE 315 SECTION 102X1BR, BR-3 MCLEAN COUNTY
		DRAWN BY
		CHECKED BY
		DATE

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	10
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

CODE NO	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LOCATION 1 S.N. 057-8302 STA. 40+618.180 X028-2A	LOCATION 2 S.N. 057-2039 44+045.000 X028-2A
M6110222	STORM SEWERS PROTECTED, CLASS A, 250MM	METER	60.0	60.0		
M6110320	STORM SEWERS, SPECIAL 250MM	METER	100.0	100.0		
M6320030	GUARDRAIL REMOVAL	METER	267.2	267.2		
M7030100	SHORT-TERM PAVEMENT MARKING	METER	30.0	30.0		
M7031000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ M	3.0	3.0		
* M7800205	PAINT PAVEMENT MARKING - LINE 100MM	METER	903.9	903.9		
* M7800215	PAINT PAVEMENT MARKING - LINE 150MM	METER	97.7	97.7		
* M7800240	PAINT PAVEMENT MARKING - LINE 600MM	METER	17.9	17.9		
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	28.0	28.0		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.0		0.5	0.5
Z0038700	PERMANENT BENCH MARKS	EACH	2.0		1.0	1.0

80/20 FED/ST

* SPECIALTY ITEMS

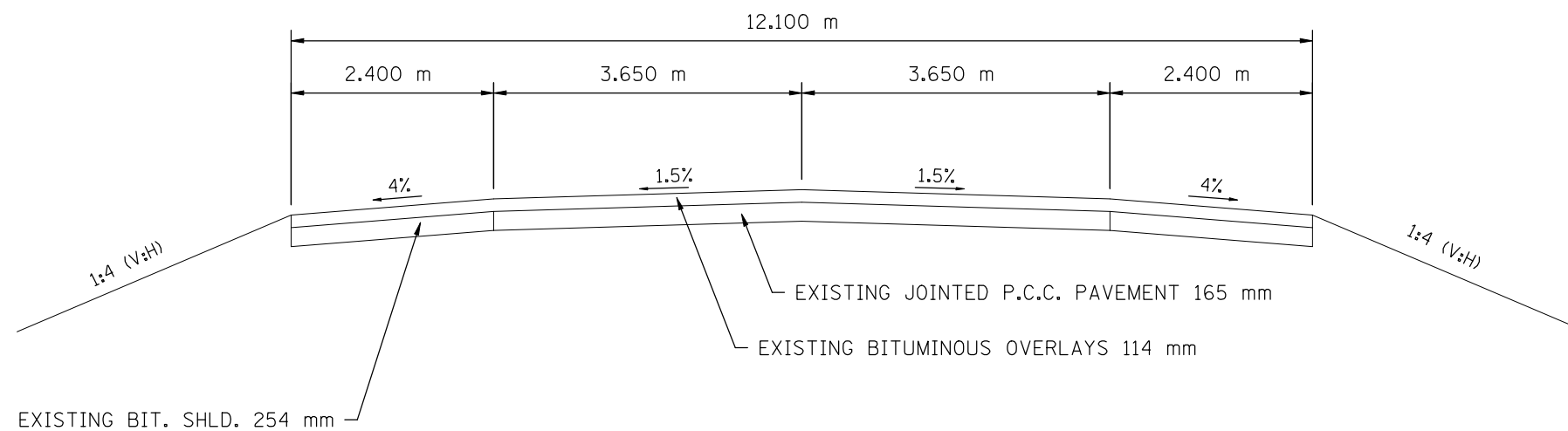
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NAME	DATE	
		DRAWN BY CHECKED BY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	11
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

EXISTING TYPICAL SECTION (US 136)

STATION	TO	STATION
40+500		40+675
43+975		44+150



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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	13
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

PROPOSED TYPICAL SECTION (C.H. 21)

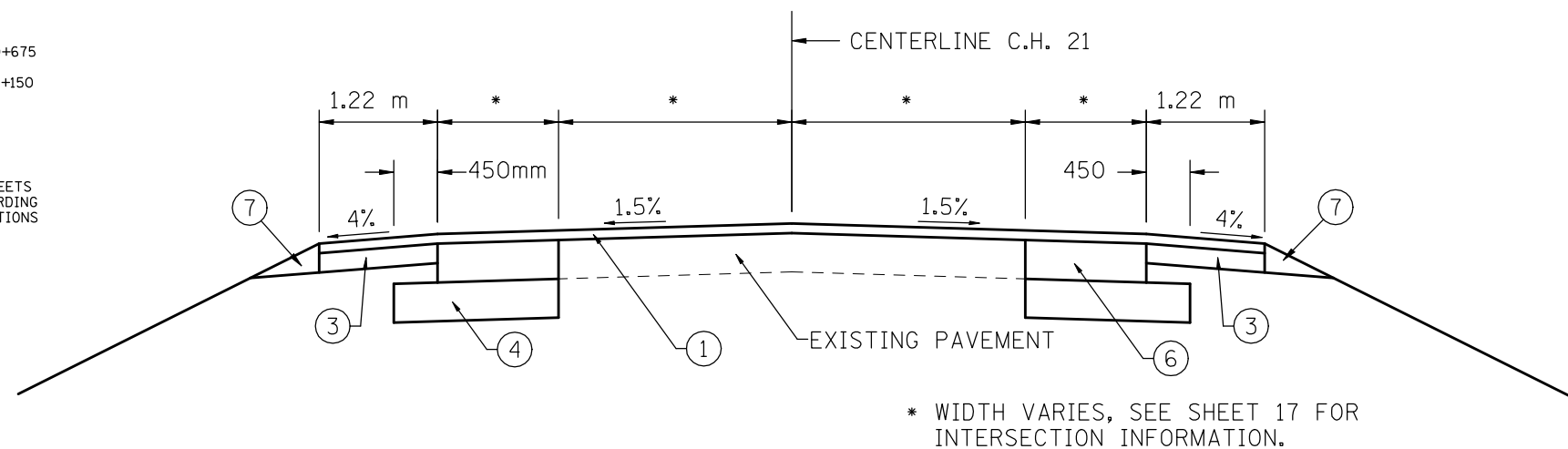
- ① HOT-MIX ASPHALT SURFACE COURSE MIXTURE C, 38 mm (91 kg/sq m)
- ② LEVELING BINDER (MACHINE METHOD), N50, 19 mm (46 kg/sq m) & VARIABLE
- ③ HOT-MIX ASPHALT SHOULDERS, 150 mm
- ④ SUB-BASE GRANULAR MATERIAL, TYPE A, 100 mm
- ⑤ HOT-MIX ASPHALT BASE COURSE, 270 mm
- ⑥ HOT-MIX ASPHALT BASE COURSE WIDENING 270 mm
- ⑦ AGGREGATE SHOULDERS, TYPE B
- ⑧ HOT-MIX ASPHALT SHOULDER M TON, 57 mm (137 kg/sq m)
- ⑨ HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH (USE AS NEEDED TO ENSURE 38mm RESURFACING ACCORDING TO PROPOSED PROFILE.)

LOCATION 1 IS FROM STA. 40+500 TO STA. 40+675

LOCATION 2 IS FROM STA. 43+975 TO STA. 44+150




NOTE:
SEE SHEET 24 FOR INTERSECTION WIDENING AT LOCATION 2.

WHERE INDICATED ON THE PLAN & PROFILE SHEETS DITCH SHALL BE LINED WITH AGGREGATE ACCORDING TO SECTION 283 OF THE STANDARD SPECIFICATIONS AND THE DETAIL ON THIS SHEET.



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	*	McLEAN	42	17
STA. TO STA.		FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT		

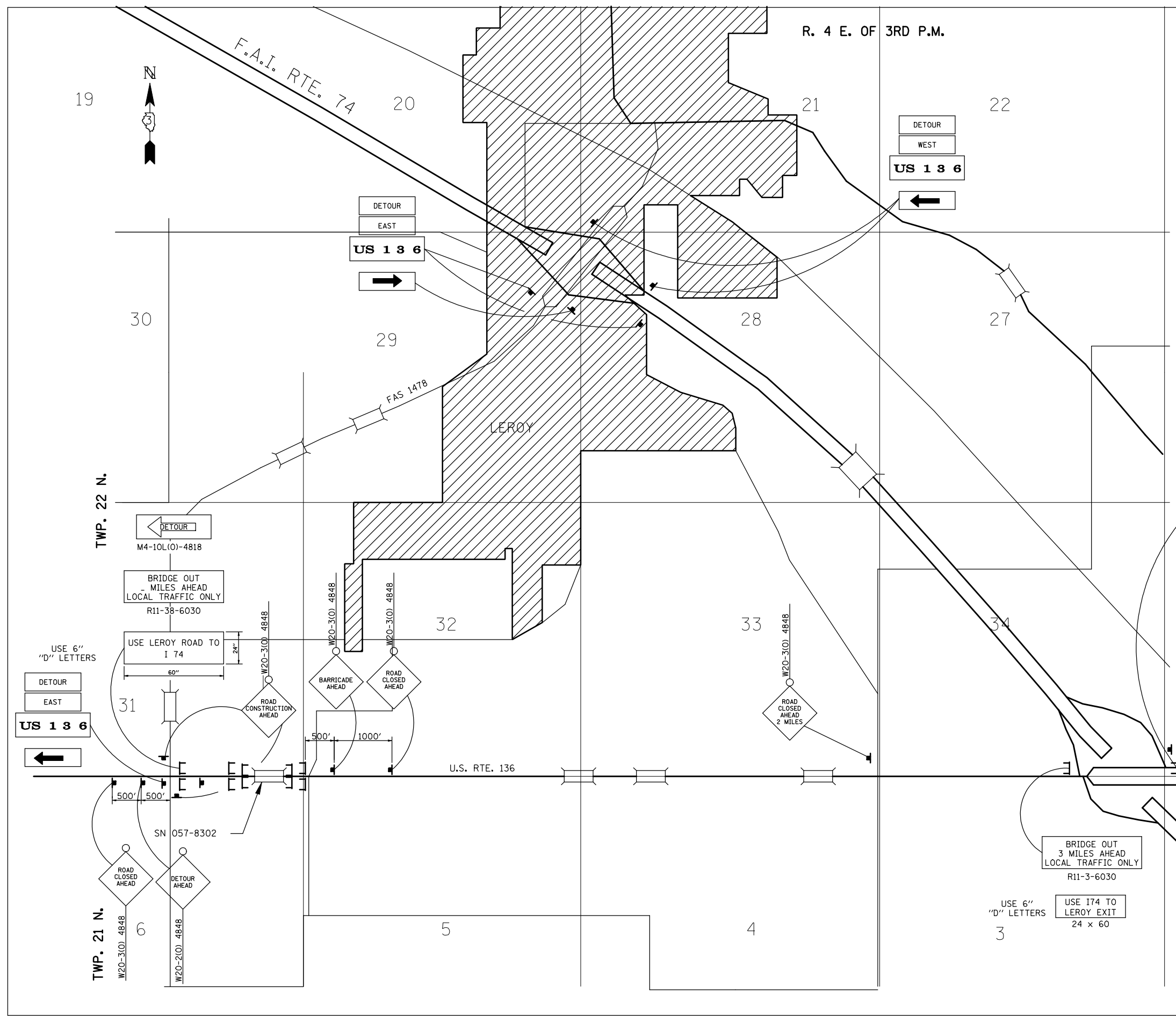
- * (102X)BR-2, BR-3
- ⌈ INDICATES TYPE III BARRICADE
- INDICATES FLASHING LIGHT ABOVE SIGN
- ⌈ STANDARD 702001 "ROAD CLOSED TO ALL TRAFFIC" APPLICATION
- ⌈ STANDARD 702001 "ROAD CLOSED TO THRU TRAFFIC" APPLICATION

- M4-8(O)  24 X 12 (BLACK/ ORANGE)
- M1-4  30 X 24 (BLACK/ WHITE)
- M6-1  21 X 15 (BLACK/ WHITE)

STATE FURNISHED SIGNS THAT WILL BE INSTALLED AND REMOVED BY THE CONTRACTOR

ALL TRAFFIC CONTROL DEVICES SHOWN SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR, UNLESS OTHERWISE INDICATED

REQUIRES TYPE III BARRICADES CONFORMING TO STD. 702001 WITH 2 FLASHING LIGHTS PER BARRICADE (BI-DIRECTIONAL ON SPLIT OR HALF BARRICADES)



- NOTES
- 1.) WHEN WORK IS UNDERWAY AT THE INTERSECTION OF US RTE. 136 AND CH 21 TRAFFIC CONTROL SHALL BE ACCORDING TO HIGHWAY STANDARDS 701201 AS APPROPRIATE.
 - 2.) TRAFFIC CONTROL SHOULD FOLLOW THE DETAIL FOR TRAFFIC CONTROL AND PROTECTION DEVICES (ROAD & SIDEROAD/SIDESTREET CLOSURES)

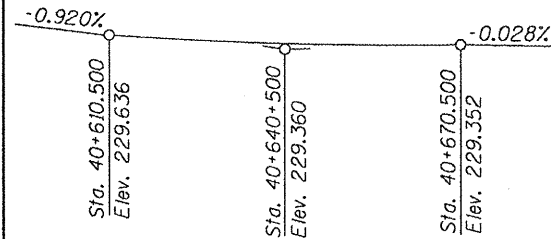
**TRAFFIC CONTROL PLAN
STAGE I / DETOUR
F.A.P. ROUTE 315 (US 136)
SECTIONS (102X)BR, BR-3
McLEAN COUNTY**

Benchmark: Chiseled Square on the top of the N.W. wingall at 6.841 m Lt. at Sta. 40+614.311 Elev. 229.323 and a Railroad Spike in power pole at 13.13 m Rt. at Sta. 40+565.55 Elev. 228.959.

Existing Structure: S.N. 057-0151 was built in 1936 as S.B.I. Route 119, Sec. 102-x-b WPH at Sta. 40+617.196. The structure is a single span RC Slab Bridge with Steel Rail on Closed Abutments and Wingwalls. 5.49 m F. to F. Abutments. 13.1 m O. to O. Deck with no skew. The structure shall be removed and replaced with a Double 2.4 m x 2.1 m Precast Box Culvert with no skew. Traffic shall be maintained utilizing a road closed detour.

No Salvage.

Note: All dimensions are in millimeters (mm) except as noted.



Profile Grade

Along ϕ Roadway

STATION 40+618.100
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 315 SEC. (102X)BR, BR-3
LOADING HS 20
STRUCTURE NO. 057-8302

NAME PLATE

See Std. 515001

INDEX OF SHEETS

- General Plan and Elevation
- & 3. End Section Details
- Bar Splicer Assembly and Porous Granular Embankment Details
- Boring Logs

DESIGN SPECIFICATIONS

2002 AASHTO

LOADING HS20-44

Allow 2.4 kN/m² for future wearing surface

DESIGN STRESSES

FIELD UNITS

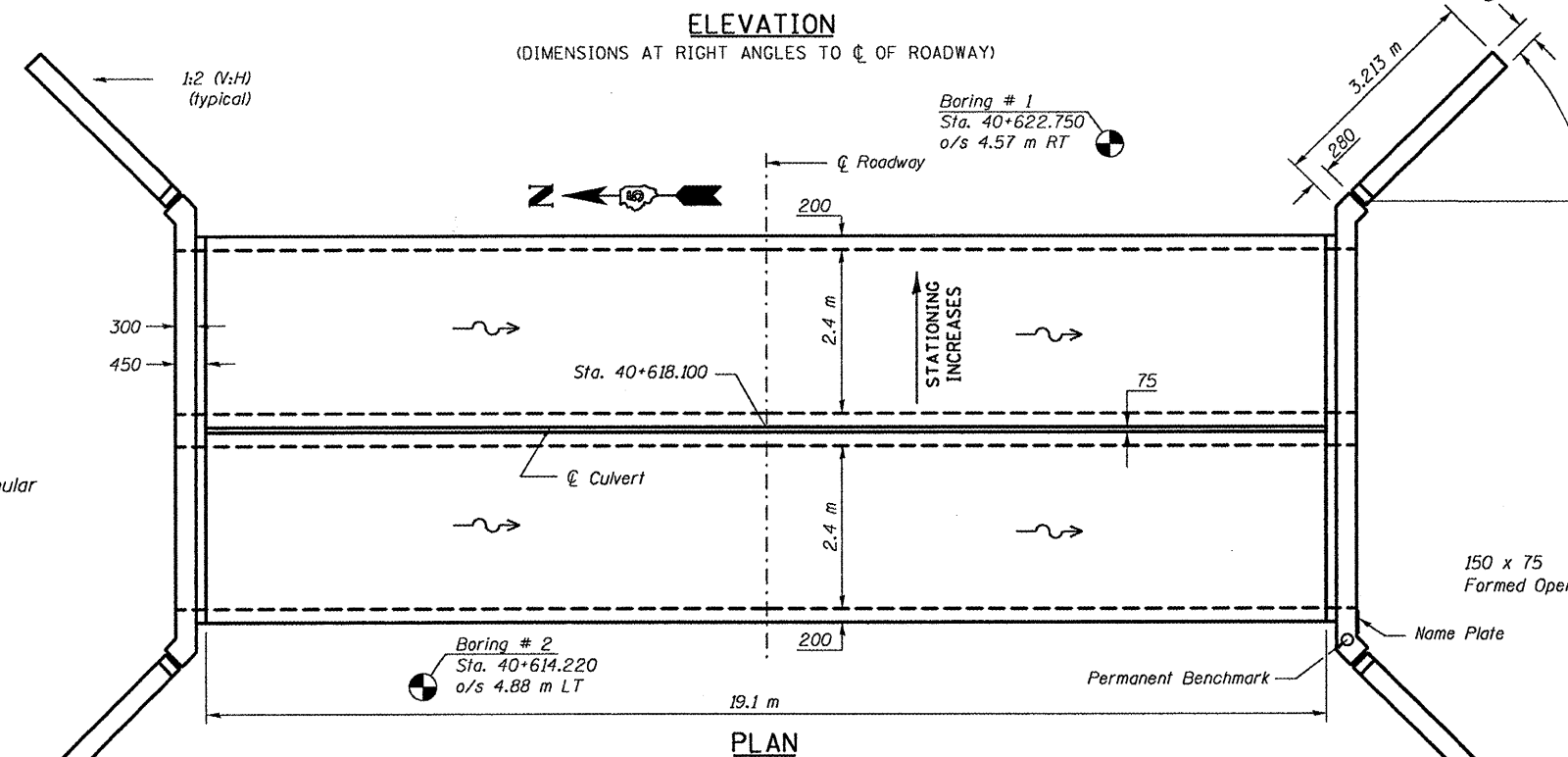
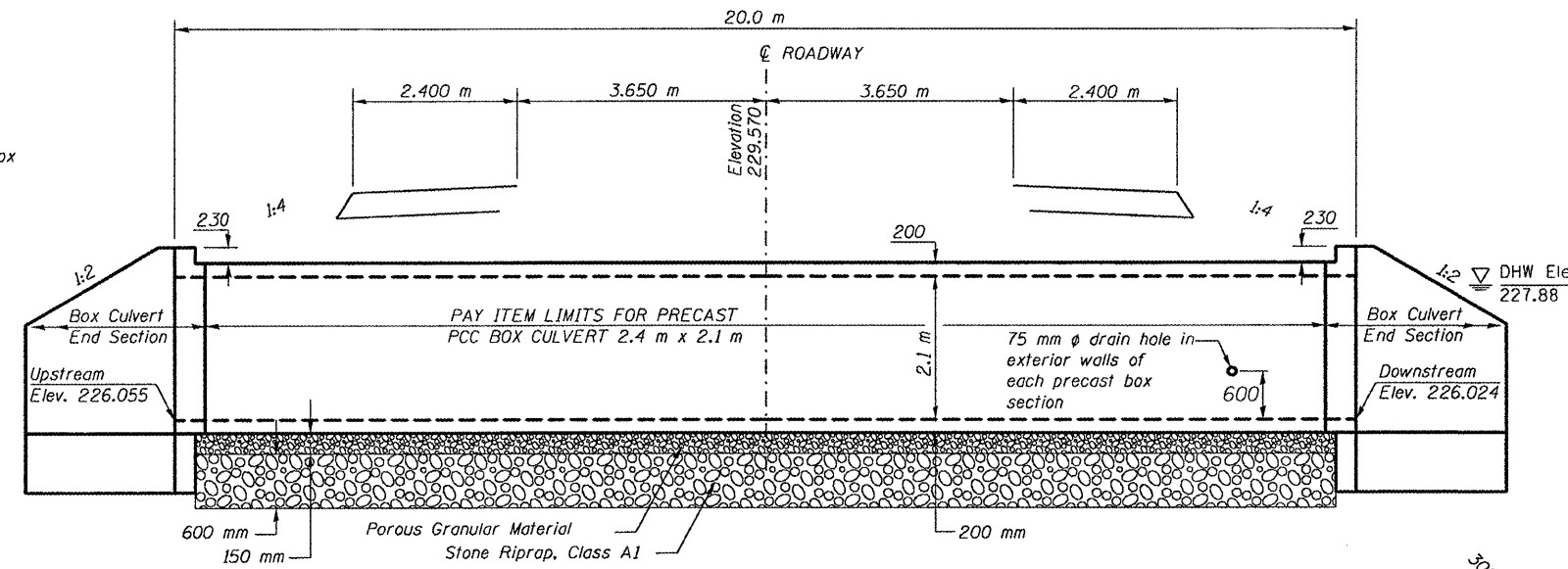
$f'_c = 24$ MPa
 $f_y = 420$ MPa (reinforcement)
 $f_y = 445$ MPa (welded wire fabric)

PRECAST UNITS

$f'_c = 35$ MPa
 $f_y = 445$ MPa (welded wire fabric)



EXPIRES 11-30-2010



Design Scour Elevation Table

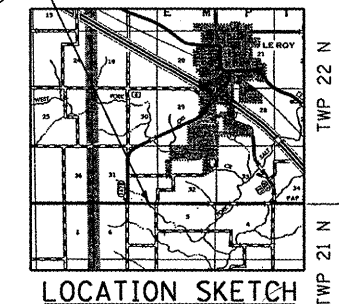
Design Scour Elevation (m)	Upstream	Downstream
	225.155	225.124

WATERWAY INFORMATION

Drainage Area = 5.44 sq. km. Low Grade Elev. 229.35 @ Sta. 40+675

Flood	Freq. Yr.	Q m ³ /s	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	50	15.1	7.0	8.9	227.88	0.47	0.11	228.35	227.99	
Base	100	17.5	7.2	9.1	227.93	0.59	0.17	228.52	228.10	
Overtopping										
Max. Calc.	500	23.1	7.8	9.7	228.03	0.91	0.32	228.94	228.35	

PR. STR. 057-8302
STA. 40+618.100
RNG 4E, 3RD P.M.



LOCATION SKETCH

General Notes

Excavation behind the existing abutment walls shall be performed to balance front and back soil pressure before removing the superstructure.

Build tops of headwalls parallel to the grade lines.

Reinforcement bars shall conform to the requirements of ASTM A706M Gr 420. See Special Provisions.

The 150 mm Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Section to the back face of the cut off wall and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

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.

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 of the Standard Specifications.

The design fill height for the precast boxes is 0.9 meters. The precast concrete box culvert sections shall conform to the requirements of AASHTO M 259M.

The welded wire fabric extending from the outside face of the vertical walls of the precast box sections shall be a minimum of 2x3 W4.5xW4.0 (English) or equivalent. Substitution of reinforcement bar for welded wire fabric is not allowed.

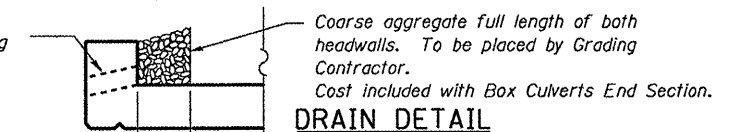
For End Section only, 38 mm cover unless otherwise noted.

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 AASHTO M 259M. See Sections A-A through D-D on sheet 3 of 5.

All portions of the precast box culverts in contact with cast-in-place concrete shall be bonded according to Article 503.09(b). The surface shall be prepared by sandblasting.

The box culvert end section shall be built in the field and a precast option is not allowed except the cut-off wall may be precast. If the contractor elects to use a precast cut-off wall, shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval.

The joints between the precast box sections shall be sealed and all void filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 330 mm wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.



DRAIN DETAIL

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 1	Each	1
Precast Concrete Box Culverts 2.4 m x 2.1 m	Meter	38.2
Box Culvert End Section, Culvert No. 1	Each	2
Name Plates	Each	1
Permanent Benchmark	Each	1
Porous Granular Embankment	Cu. M.	365
Stone Riprap, Class A-1	M. Ton	182

GENERAL PLAN AND ELEVATION
DOUBLE 2.4 x 2.1 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 40+618.100, S.N. 057-8302
CULVERT NO. 1

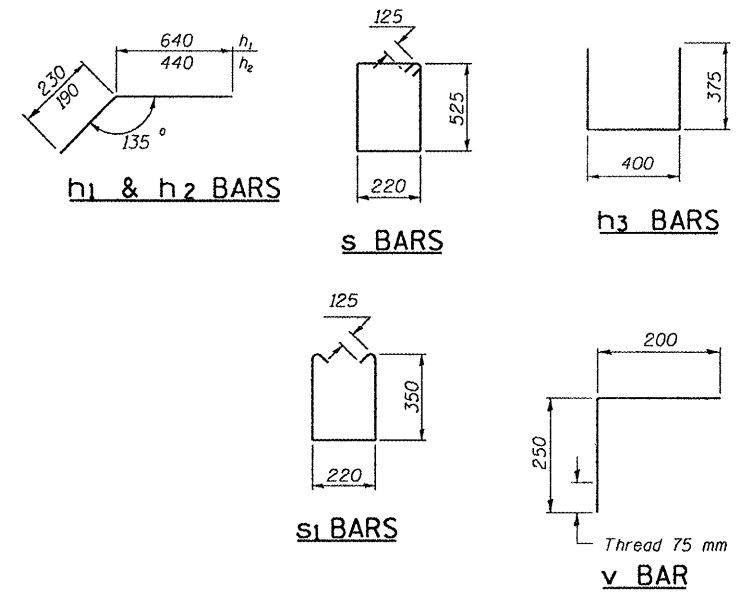
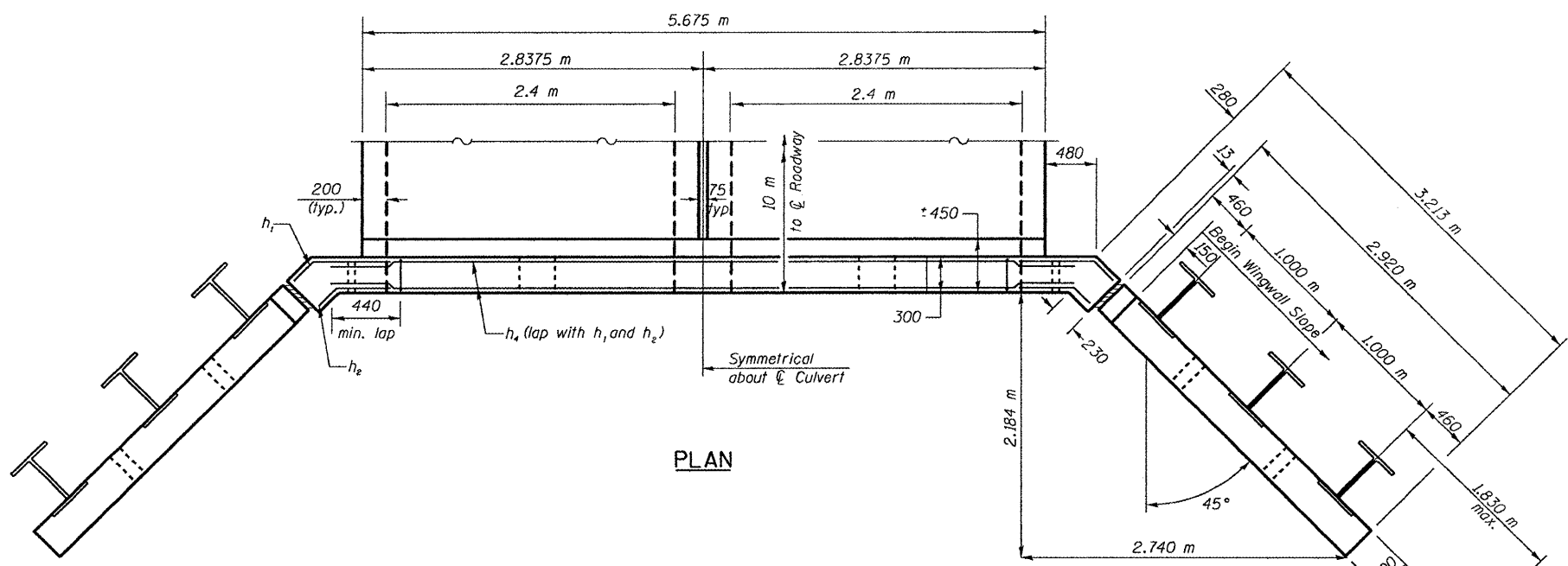
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FILE	*USER*	R. CARROLL	D. GREIFZU
		R. CARROLL	D. GREIFZU
		D. GREIFZU	S. MOYNIHAN
		01/22/2010	03/03/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
S.N. 057-8302
SCALE: SHEET NO. 1 OF 5 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	18

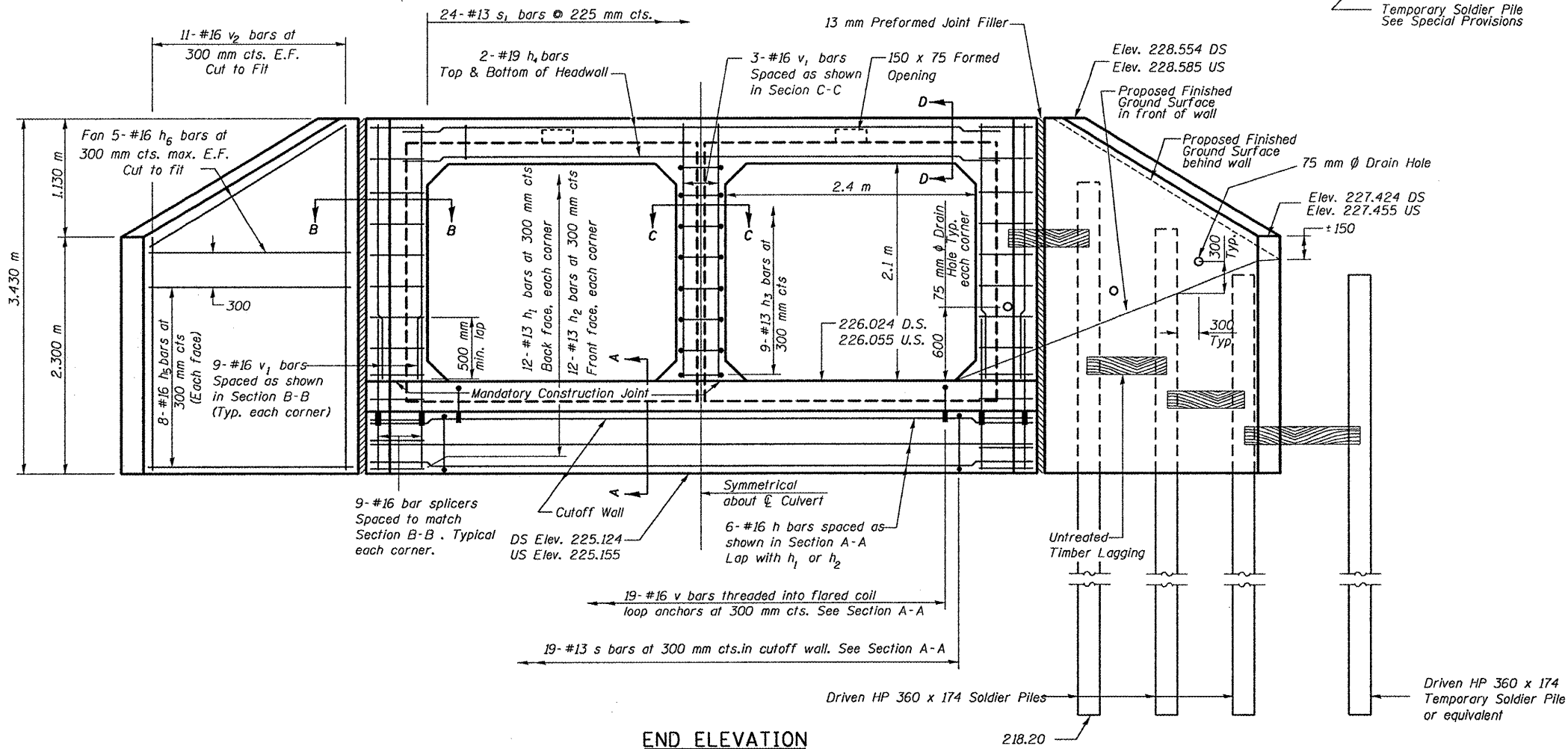
CONTRACT NO. 70529
ILLINOIS FED. AID PROJECT



BILL OF MATERIAL
For Information Only
(One End Section)

Bar	No.	Size	Length	Shape
h	6	#16	6.175 m	—
h ₁	24	#13	0.870 m	┌
h ₂	24	#13	0.630 m	└
h ₃	9	#13	1.150 m	U
h ₄	4	#19	6.325 m	—
h ₅	32	#16	2.845 m	—
h ₆	20	#16	2.960 m	—
s	24	#13	1.740 m	□
s ₁	19	#13	1.170 m	□
v	19	#16	0.450 m	└
v ₁	21	#16	2.455 m	—
v ₂	44	#16	3.355 m	—

ITEM	UNIT	TOTAL
Furnishing Soldier Piles (HP Section)	Meter	73.8
Driving Soldier Piles	Meter	73.8
Untreated Timber Lagging	Sq. M.	22
Geocomposite Wall Drain	Sq. M.	8
Stud Shear Connectors	Each	54
Concrete Box Culverts	Cu. M.	9.8
Reinforcement Bars	Kg.	780
Bar Splicers	Each	18



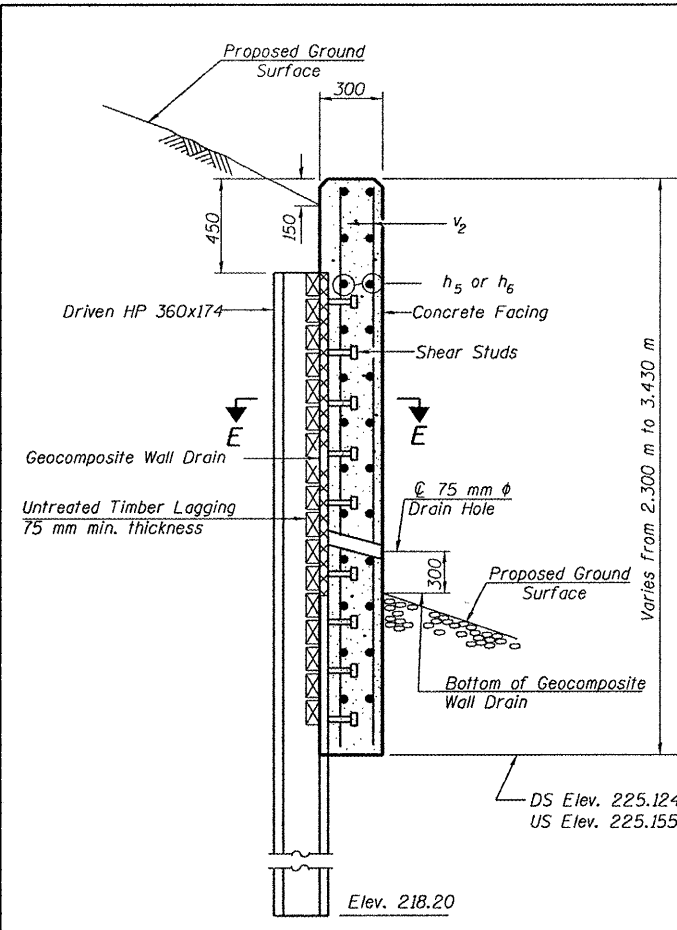
END SECTION DETAILS
DOUBLE 2.4 x 2.1 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 40+618.10, S.N. 057-8302
CULVERT NO. 1

FILE NAME =	USER NAME = #USER#	DESIGNED - R. CARROLL	REVISED -
#FILE#		DRAWN - R. CARROLL	REVISED -
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -
	PLOT DATE = #DATE#	DATE -	REVISED -

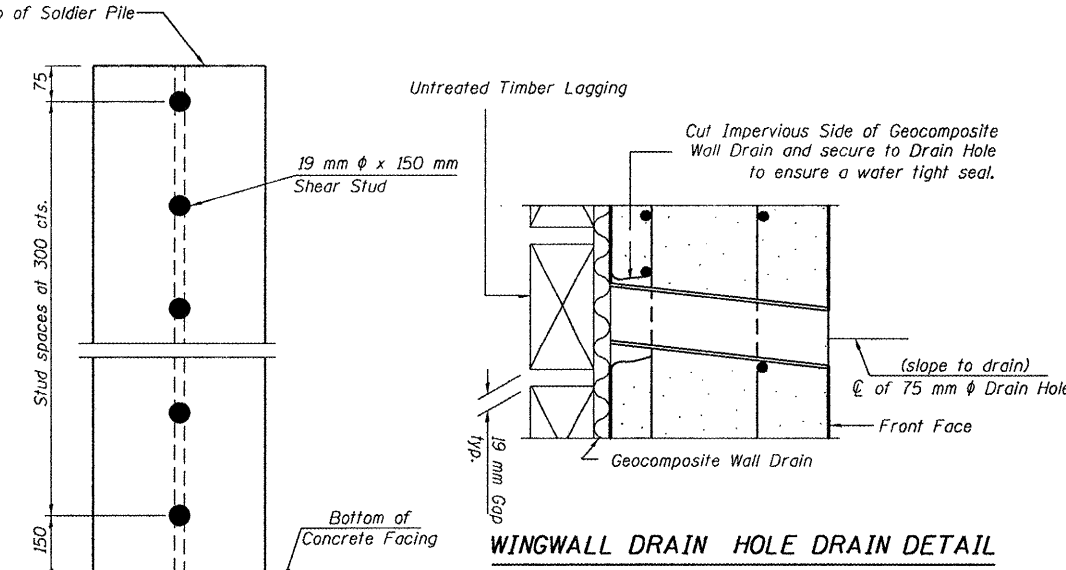
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

END SECTION DETAIL
S.N. 057-8302

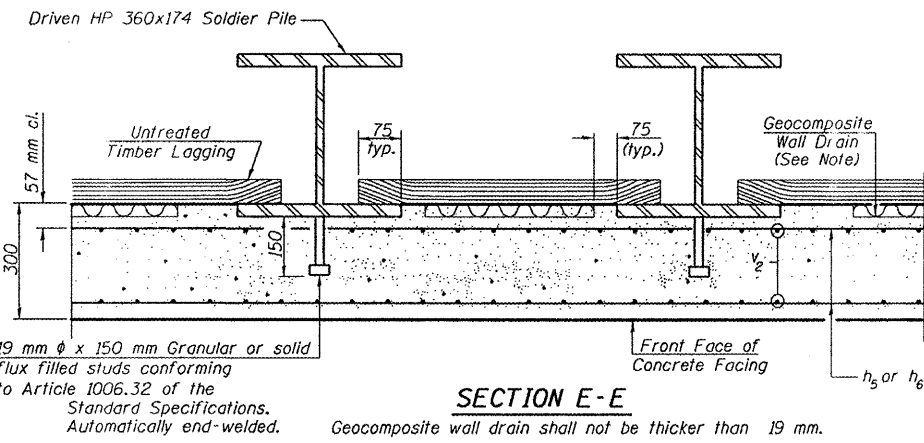
F.A.P. RTE. 315	SECTION (102X)BR, BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 19
SCALE: SHEET NO. 2 OF 5 SHEETS STA. TO STA.			CONTRACT NO. 70529	
ILLINOIS FED. AID PROJECT				



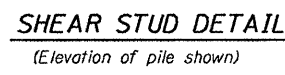
SECTION THRU WALL



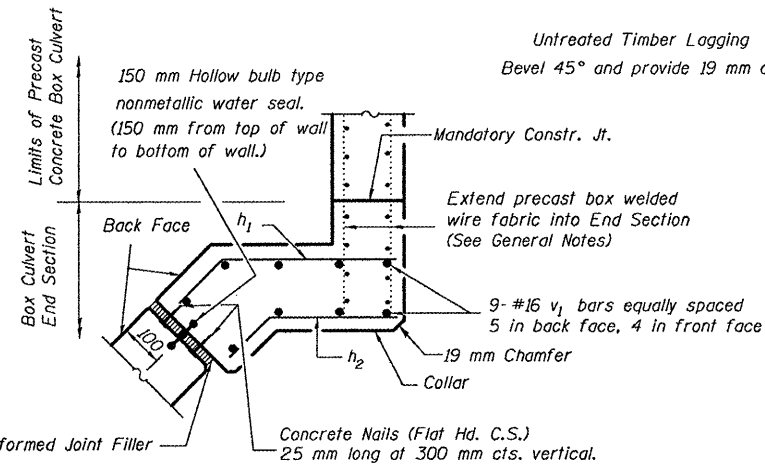
WINGWALL DRAIN HOLE DRAIN DETAIL



SECTION E-E



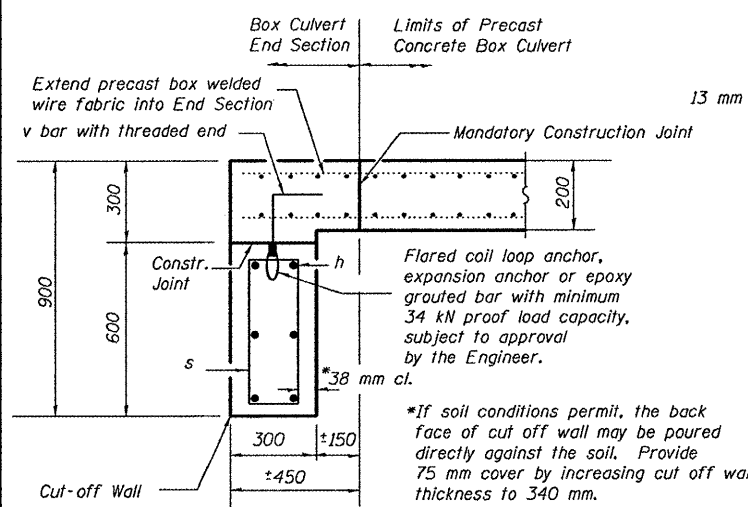
SHEAR STUD DETAIL
(Elevation of pile shown)



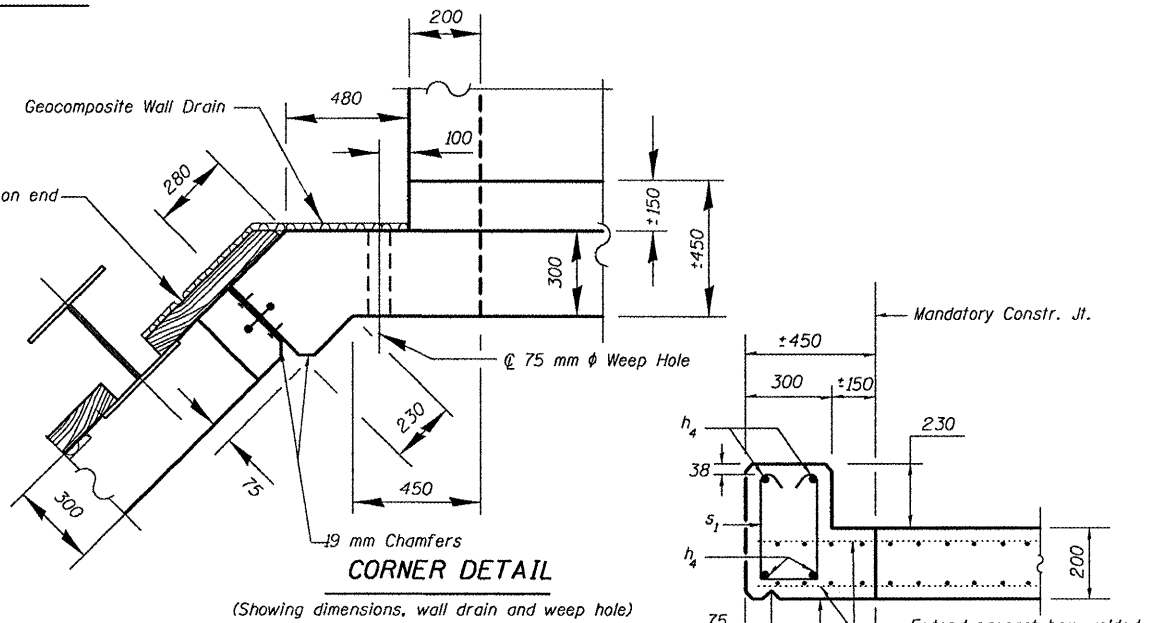
SECTION B-B
(Showing reinforcement and seal)

SEQUENCE OF WALL CONSTRUCTION

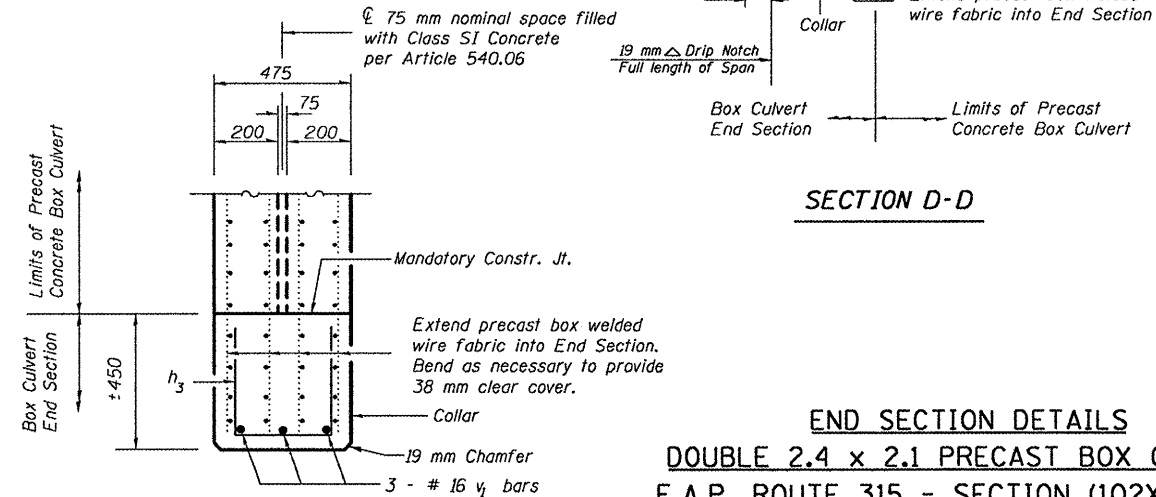
1. Build the cut-off wall
2. Place precast box sections
3. Drive soldier piles (may be driven prior to placing the boxes)
4. Install Untreated Timber Lagging
5. Place Geocomposite Wall Drain
6. Place and compact backfill behind wall
7. Install Stud Shear Connectors
8. Place rebar and form concrete face
9. Cast concrete face
10. Remove temporary soldier pile and associated timber lagging.
11. Place remainder of backfill to proposed finished ground surface in front and back of wall.



SECTION A-A



CORNER DETAIL
(Showing dimensions, wall drain and weep hole)



SECTION C-C

END SECTION DETAILS
DOUBLE 2.4 x 2.1 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 40+618.10, S.N. 057-8302
CULVERT NO. 1

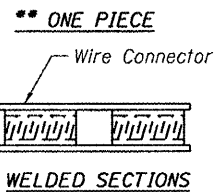
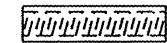
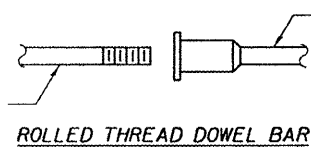
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*FILE#		DRAWN - R. CARROLL	REVISED -
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -
	PLOT DATE = #DATE#	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

END SECTION DETAIL	
S.N. 057-8302	
SCALE:	TO STA.
SHEET NO. 3 OF 5 SHEETS	STA.

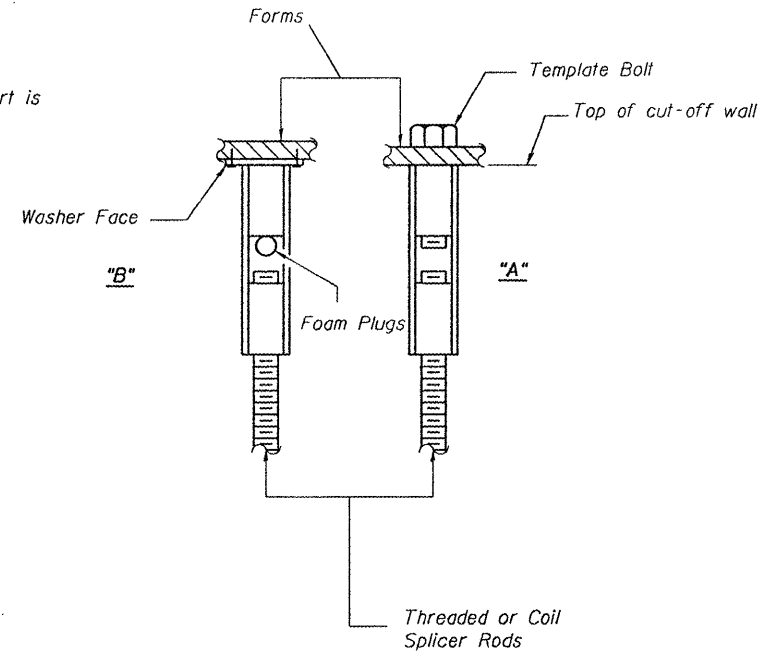
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	20
CONTRACT NO. 70529			ILLINOIS FED. AID PROJECT	

The diameter of this part is the same as the diameter of the bar spliced.



BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" Set bar splicer assembly by means of a template bolt.
 "B" Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

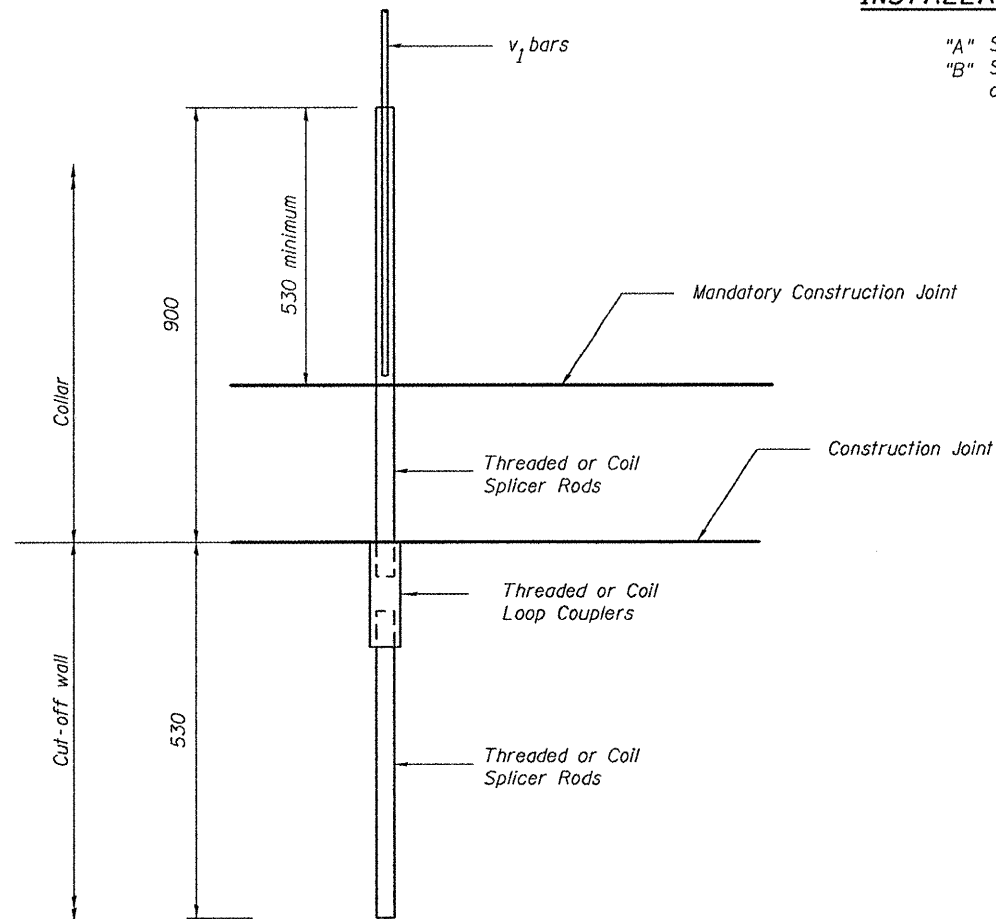
Splicer rods shall be of minimum 420 MPa yield strength, threaded or coiled full length.

All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

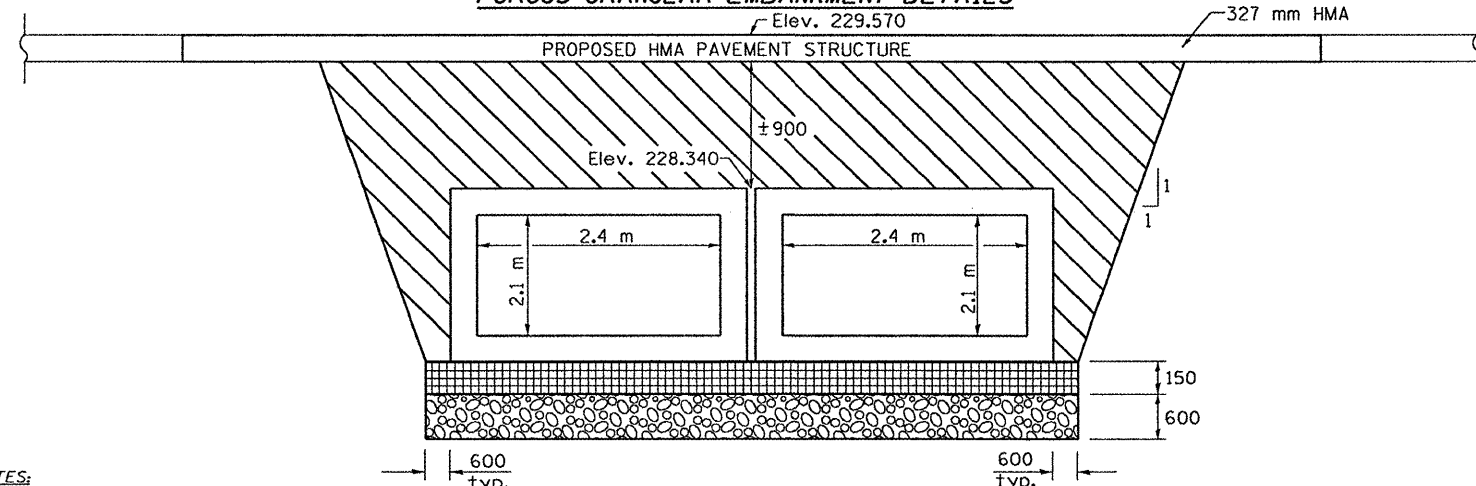
- ① Minimum Capacity = $1.25 \times f_y \times A_l$
(Tension in kN)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_l$
(Tension in kN)
- Where f_y = Yield strength of lapped reinforcement bars in MPa.
 A_l = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

Bar Splicer for #16 bar	
Min. Capacity = 103 kN - tension	
Min. Pull-out Strength = 54.7 kN - tension	
No. Required = 36	



FOR BOX CULVERT END SECTIONS

POROUS GRANULAR EMBANKMENT DETAILS



NOTES:

1. POROUS GRANULAR EMBANKMENT SHALL EXTEND 600 MM BEYOND THE AGGREGATE OR EARTH SHOULDER.
2. WORK SHOWN IN THIS DETAIL SHALL BE PERFORMED ACCORDING TO THE APPLICABLE PORTIONS OF ARTICLES 207 AND 540 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER FOR POROUS GRANULAR EMBANKMENT AND SHALL ALSO BE PERFORMED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 281 AND SECTION 282 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER METRIC TON FOR STONE RIPRAP, CLASS A-1.
3. THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERTS SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS ASSOCIATED WITH BOX CULVERT CONSTRUCTION.
4. THIS DETAIL IS NOT TO SCALE.
5. THE EXCAVATION AND REMOVAL OF THE UNSUITABLE MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR STONE RIPRAP, CLASS A-1. THE STONE RIPRAP, CLASS A-1 SHALL EXTEND BEYOND THE BARREL FROM BACK TO BACK OF CUTOFF WALLS.
6. THE FILTER FABRIC WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR STONE RIPRAP, CLASS A-1.

- PAY LIMITS OF POROUS GRANULAR EMBANKMENT - CA-6 (SEE SPECIAL PROVISIONS)
- POROUS GRANULAR MATERIAL - CA 7 (150) INCLUDED IN PAY ITEM FOR BOX CULVERT
- STONE RIPRAP, CLASS A1

FILE NAME =	USER NAME = #USER*	DESIGNED - R. CARROLL	REVISED -
*FILE#		DRAWN - R. CARROLL	REVISED -
	PLOT SCALE = #SCALE*	CHECKED -	REVISED -
	PLOT DATE = #DATE*	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY & POROUS GRANULAR EMBANKMENT DETAIL
S.N. 057-8302

F.A.P. RTE. 315	SECTION (102X)BR-BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 21
SCALE: SHEET NO. 4 OF 5 SHEETS STA. TO STA.			CONTRACT NO. 70529	
ILLINOIS FED. AID PROJECT				

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Three Materials
NE 1/4 SECTION 6 T21N R4E 3PM

Bridge Foundation
Boring Log

PROJECT BRIDGE 057-0151 EXISTING Date 07/13/98 Sh. 1 of 1

ROUTE FAS 315(US136) OVER SALT CREEK Bored By K Whittington

SEC. (102)BR STA. 40+618.180 Checked By T. McCleary

COUNTY McLean

Boring No. 1
Sta 40+622.75
O/S 4.57m RT

El.	N	Qu kPa	W %	Surf Wat El. 226.49 Grndwater El. at Compl WASH At Hrs	El.	N	Qu kPa	W %
Ground Surface 229.39				Medium Brown SAND & GRAVEL				
BITUMINOUS & GRAVEL				222.38	-7	8	-	22
BASE Over Black				Hard Gray		11	450	
SILTY CLAY				SILTY CLAY LOAM TILL		15	S	10
228.63				221.92				
-1	1	20	32	Medium Gray SAND & GRAVEL		12	-	16
	1	P		221.47		21	-	20
						33	-	20
Soft Black & Dark Gray SILTY CLAY (FILL)	1	20	30			25		
	1	P				35		
						48	-	19
	1							
	2	20	35	Dense Gray SILT & Fine SAND		30		
	2	B				41		
226.49						66	-	21
-3	2							
	2	50	23					
	4	B						
225.73								
	1							
	2	10	36			23		
	1	B				43		
224.97						54	-	21
	WOH							
	1	10	19					
	1	B						
224.07								
	2							
	3	320	14			23		
	5	B				34	-	17
						36	-	17
223.29								
	6							
	15	-	15					
	8							

N 50 mm OD Sampler
63.5Kg Hammer, 760 mm Fall (Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Three Materials
NE 1/4 SECTION 6 T21N R4E 3PM

Bridge Foundation
Boring Log

PROJECT BRIDGE 057-0151 EXISTING Date 07/13/98 Sh. 1 of 1

ROUTE FAS 315(US136) OVER SALT CREEK Bored By K Whittington

SEC. (102)BR STA. 40+618.180 Checked By T. McCleary

COUNTY McLean

Boring No. 2
Sta 40+614.22
O/S 4.88m LT

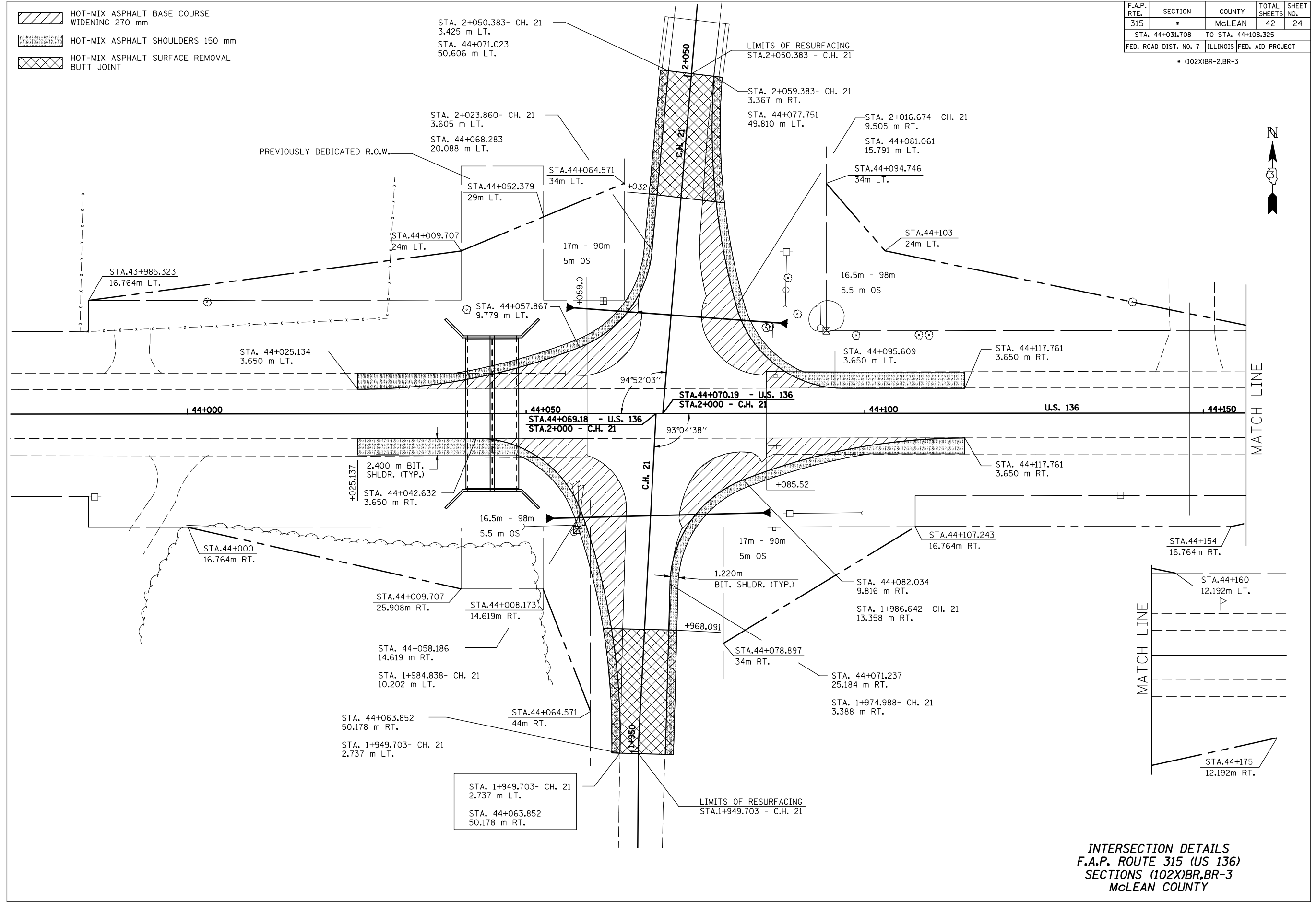
El.	N	Qu kPa	W %	Surf Wat El. 226.49 Grndwater El. at Compl 226.57 At Hrs	El.	N	Qu kPa	W %
Ground Surface 229.47				Loose Gray SAND & Coarse GRAVEL with FREE WATER				
BITUMINOUS & GRAVEL				222.31	-7	6	-	14
BASE Over Black & Brown SILTY CLAY						3	-	250P 11
228.71				Very Stiff Gray SILTY CLAY LOAM TILL				
-1	1	70	30	221.55		11	150P	13
	3	P				26	-	22
	2							
	2	210	19	Dense Gray Fine Well-Graded SAND		21		
	2	B				30		
						31	-	22
	2							
	2	50	28			22		
	3	P				38		
226.57						51	-	20
-3	2							
	2	70	27			28		
	3	B				50	-	21
						84	-	
	1							
	2	20	24	Dense Gray SILT & Fine SAND		29		
	2	B				62		
225.20						100/	-	17
						112mm		
	WOH							
	1	5	25			20		
	1	P				28	-	17
						48	-	
	WOH							
	1	-	18			12	-	16
						20		
						28	-	14
223.53								
	WOH							
	4							
	3	-	19					

N 50 mm OD Sampler
63.5Kg Hammer, 760 mm Fall (Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

FILE NAME =	USER NAME = *USER*	DESIGNED - R. CARROLL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS S.N. 057-8302			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#		DRAWN - R. CARROLL	REVISED -		SCALE:	SHEET NO. 5 OF 5 SHEETS	STA.	TO STA.	315	(102)BR, BR-3	MCLEAN	42	22
		CHECKED -	REVISED -		CONTRACT NO. 70529								
		DATE -	REVISED -		ILLINOIS FED. AID PROJECT								

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	*	McLEAN	42	24
STA. 44+031.708 TO STA. 44+108.325				
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

• (102)BR-2, BR-3



MATCH LINE

MATCH LINE

INTERSECTION DETAILS
F.A.P. ROUTE 315 (US 136)
SECTIONS (102)BR, BR-3
McLEAN COUNTY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	*	McLEAN	42	25
STA. TO STA.		FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT		

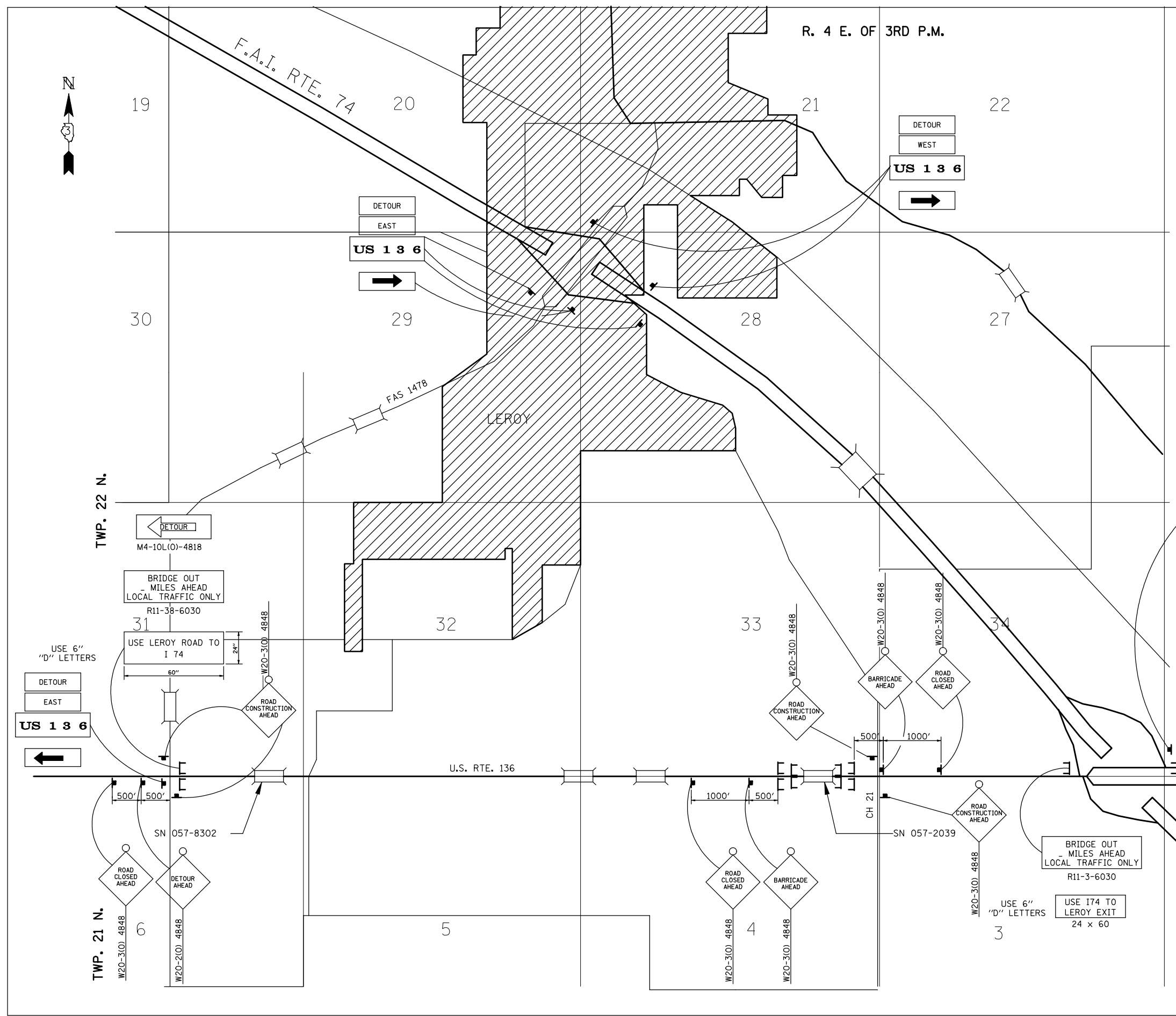
- * (102X)BR-2, BR-3
- INDICATES TYPE III BARRICADE
- INDICATES FLASHING LIGHT ABOVE SIGN
- STANDARD 702001 "ROAD CLOSED TO ALL TRAFFIC" APPLICATION
- STANDARD 702001 "ROAD CLOSED TO THRU TRAFFIC" APPLICATION

- M4-8(O) DETOUR 24 X 12 (BLACK/ ORANGE)
- M1-4 136 30 X 24 (BLACK/ WHITE)
- M6-1 21 X 15 (BLACK/ WHITE)

STATE FURNISHED SIGNS THAT WILL BE INSTALLED AND REMOVED BY THE CONTRACTOR

ALL TRAFFIC CONTROL DEVICES SHOWN SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR, UNLESS OTHERWISE INDICATED

REQUIRES TYPE III BARRICADES CONFORMING TO STD. 702001 WITH 2 FLASHING LIGHTS PER BARRICADE (BI-DIRECTIONAL ON SPLIT OR HALF BARRICADES)



- NOTES
- 1.) WHEN WORK IS UNDERWAY AT THE INTERSECTION OF US RTE. 136 AND CH 21 TRAFFIC CONTROL SHALL BE ACCORDING TO HIGHWAY STANDARDS 701201 AS APPROPRIATE.
 - 2.) TRAFFIC CONTROL SHOULD FOLLOW THE DETAIL FOR TRAFFIC CONTROL AND PROTECTION DEVICES (ROAD & SIDEROAD/SIDESTREET CLOSURES)

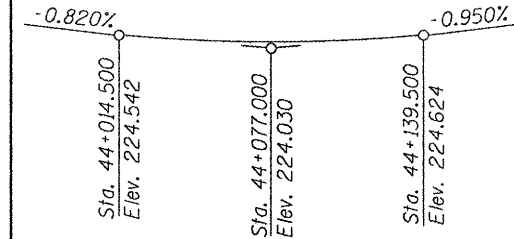
**TRAFFIC CONTROL PLAN
STAGE II / DETOUR
F.A.P. ROUTE 315 (US 136)
SECTIONS (102X)BR, BR-3
McLEAN COUNTY**

Benchmark: Chisled square on the top of the S.E. wingall, 6.90 m Rt. at Sta. 44+050.200 Elev. 224.102 and a Railroad spike in power pole at 12.3 m Rt. at Sta. 43+986.300 Elev. 225.010.

Existing Structure: S.N. 057-0096 was built in 1938 as S.B.I. route 119 as Sec. 102-S-B WPH at Sta. 44+046.283. The structure is a single span RC Slab Bridge with Steel Rail on Closed Abutments and Wingwalls. 7.32 m F. to F. Abutments. 13.14 m O. to O. Deck with no skew. The structure shall be removed and replaced with a 3.3 m x 2.4 m Double Precast Box Culvert at 0° skew. Traffic will be maintained utilizing a detour.

No Salvage.

Note: All dimensions are in millimeters (mm) except as noted.



Profile Grade
Along Centerline of Roadway

STATION 44+045.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 315 SEC. (102X)BR, BR-3
LOADING HS 20
STRUCTURE NO. 057-2039

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. & 3. End Section Details
4. Bar Splicer Assembly and Porous Granular Embankment Details
5. Boring Logs

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44

Allow 2.4 kN/m² for future wearing surface

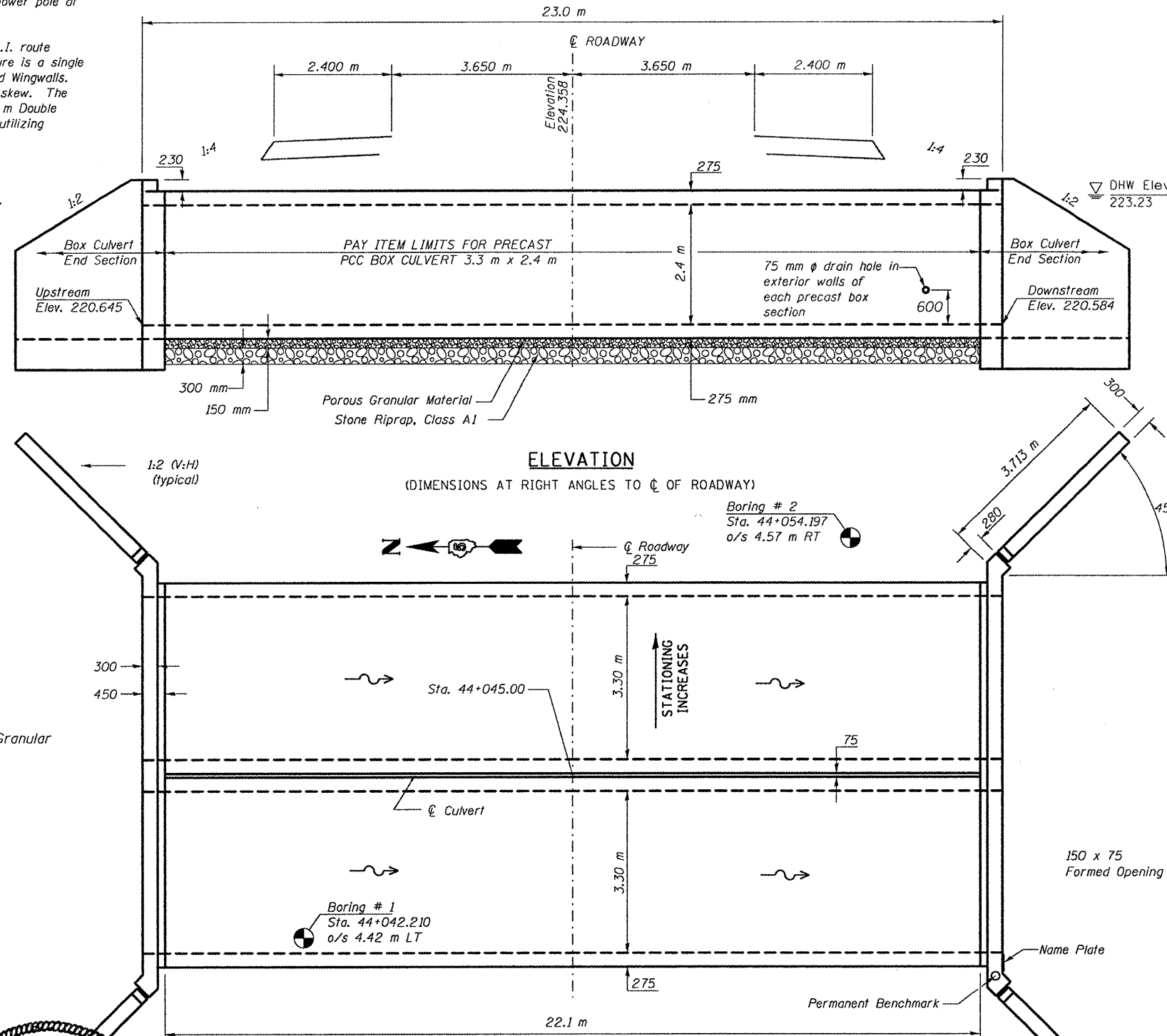
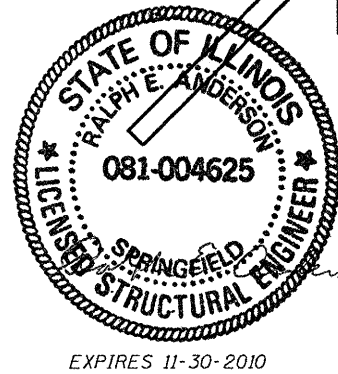
DESIGN STRESSES

FIELD UNITS

f'_c = 24 MPa
f_y = 420 MPa (reinforcement)
f_y = 445 MPa (welded wire fabric)

PRECAST UNITS

f'_c = 35 MPa
f_y = 445 MPa (welded wire fabric)



Design Scour Elevation Table

Design Scour Elevation (m)	Upstream	Downstream
	219.745	219.684

WATERWAY INFORMATION

Drainage Area = 15.80 sq. km. Low Grade Elev. 224.30 @ Sta. 44+072.410

Flood	Freq. Yr.	Q m ³ /s	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	24.8	15.6	16.4	223.10	0.15	0.13	223.25	223.23
Base	100	28.8	16.2	16.4	223.18	0.18	0.21	223.36	223.39
Overtopping									
Max. Calc.	500	37.6	17.5	16.4	223.35	0.22	0.33	223.57	223.68



General Notes

Excavation behind the existing abutment walls shall be performed to balance front and back soil pressure before removing the superstructure.

Build tops of headwalls parallel to the grade lines.

Reinforcement bars shall conform to the requirements of ASTM A706M Gr 420. See Special Provisions.

The 150 mm Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Section to the back face of the cut off wall and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

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.

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 of the Standard Specifications.

The design fill height for the precast boxes is 0.9 meters. The precast concrete box culvert sections shall conform to the requirements of AASHTO M 259M.

The welded wire fabric extending from the outside face of the vertical walls of the precast box sections shall be a minimum of 2x3 W4.5xW4.0 (English) or equivalent. Substitution of reinforcement bar for welded wire fabric is not allowed.

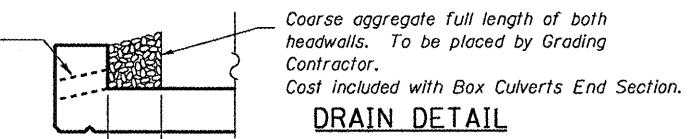
For End Section only, 38 mm cover unless otherwise noted.

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 AASHTO M 259M. See Sections A-A through D-D on sheet 3 of 5.

All portions of the precast box culverts in contact with cast-in-place concrete shall be bonded according to Article 503.09(b). The surface shall be prepared by sandblasting.

The box culvert end section shall be built in the field and a precast option is not allowed except the cut-off wall may be precast. If the contractor elects to use a precast cut-off wall, shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval.

The joints between the precast box sections shall be sealed and all void filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 330 mm wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

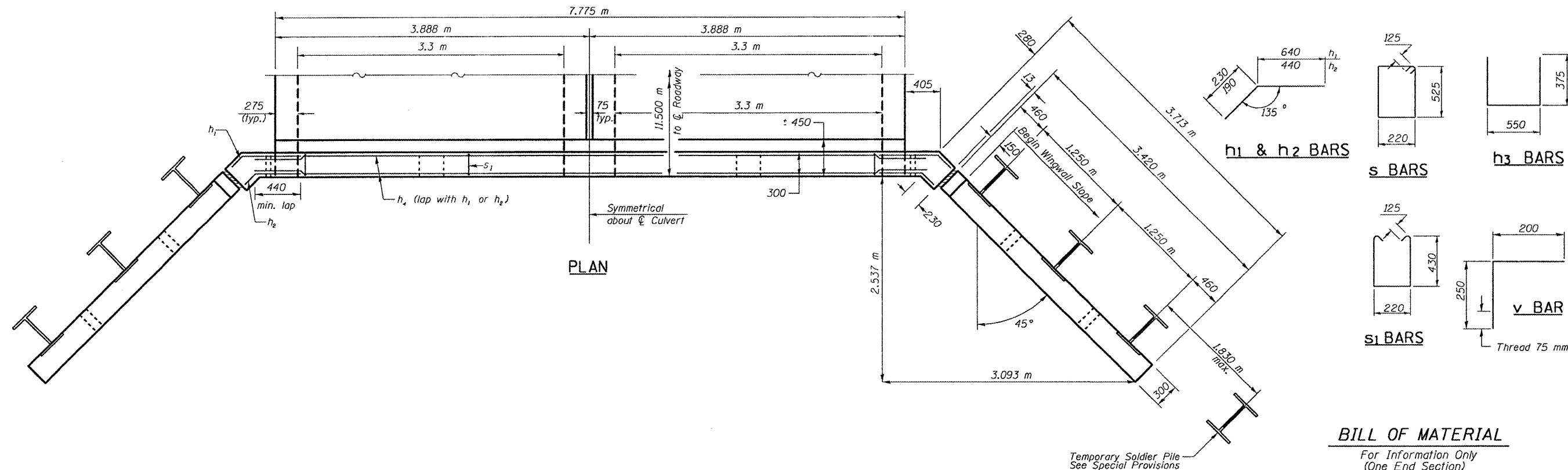


TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 2	Each	1
Precast Concrete Box Culverts 3.3 m x 2.4 m	Meter	44.2
Box Culvert End Section, Culvert No. 2	Each	2
Name Plates	Each	1
Permanent Benchmark	Each	1
Porous Granular Embankment	Cu. M.	400
Stone Riprap, Class A-1	M. Ton	136

GENERAL PLAN AND ELEVATION
DOUBLE 3.3 x 2.4 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 44+045.00, S.N. 057-2039
CULVERT NO. 2

FILE NAME =	USER NAME = *USER*	DESIGNED - R. CARROLL	REVISED - D. GREIFZU	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION S.N. 057-2039	F.A.P. RTE. 315	SECTION (102X)BR, BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 26
FILEL	PLOT SCALE = *SCALE*	DRAWN - R. CARROLL	REVISED - D. GREIFZU			SCALE:	SHEET NO. 1 OF 5 SHEETS	STA.	TO STA.	CONTRACT NO. 70529
	PLOT DATE = *DATE*	CHECKED - D. GREIFZU	REVISED - S. MOYNIHAN							
		DATE - 01/22/2010	REVISED - 03/03/2010							

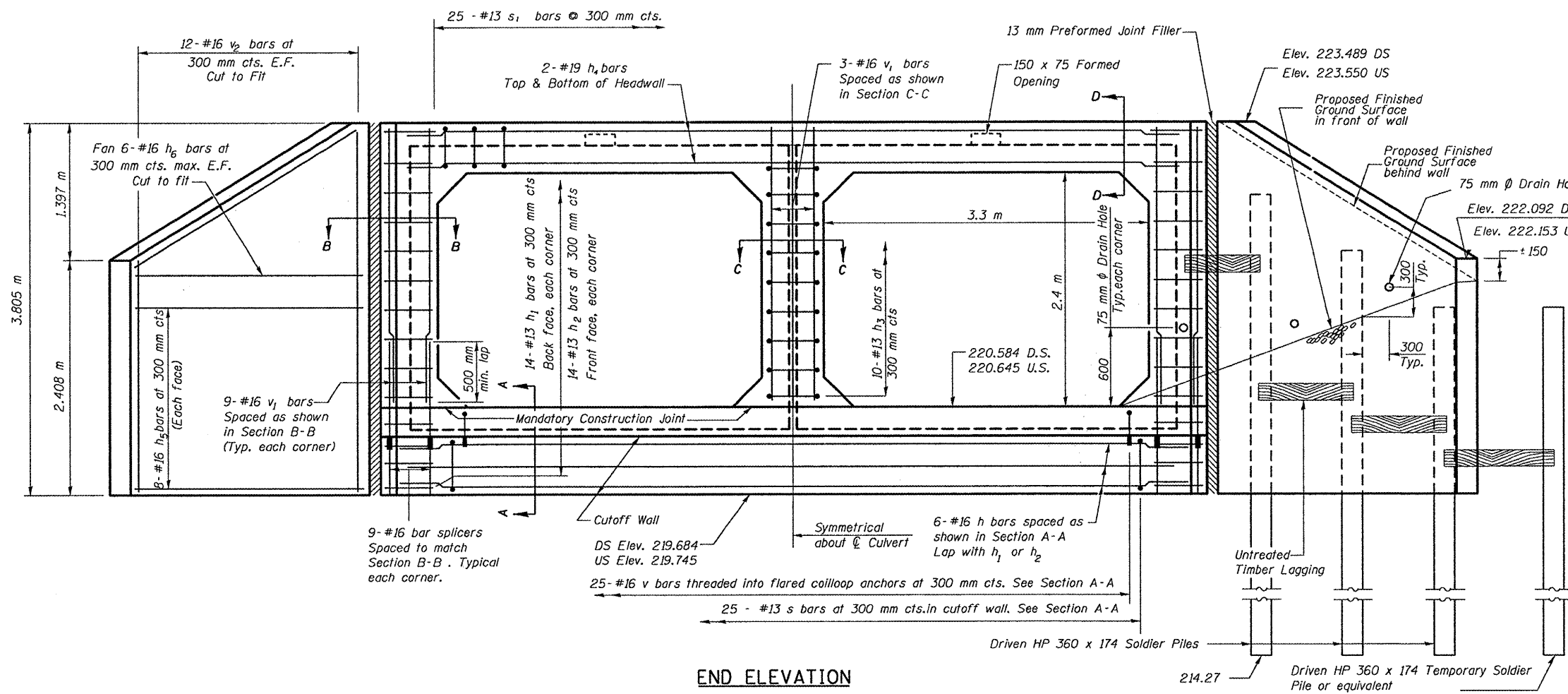


BILL OF MATERIAL
For Information Only
(One End Section)

Bar	No.	Size	Length	Shape
h	6	#16	8.135 m	—
h ₁	28	#13	0.870 m	—
h ₂	28	#13	0.630 m	—
h ₃	10	#13	1.300 m	U
h ₄	4	#19	8.275 m	—
h ₅	32	#16	3.345 m	—
h ₆	24	#16	3.450 m	—
s	25	#13	1.740 m	□
s ₁	25	#13	1.320 m	□
v	25	#16	0.450 m	┌
v ₁	21	#16	2.835 m	—
v ₂	48	#16	3.735 m	—

ITEM	UNIT	TOTAL
Furnishing Soldier Piles (HP Section)	Meter	62.6
Driving Soldier Piles	Meter	62.6
Untreated Timber Lagging	Sq. M.	26
Geocomposite Wall Drain	Sq. M.	11
Stud Shear Connectors	Each	58
Concrete Box Culverts	Cu. M.	13.0
Reinforcement Bars	Kg.	960
Bar Splicers	Each	18

END SECTION DETAILS
DOUBLE 3.3 x 2.4 PRECAST BOX CULVERT
F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
MCLEAN COUNTY
STATION 44+045.00, S.N. 057-2039
CULVERT NO. 2

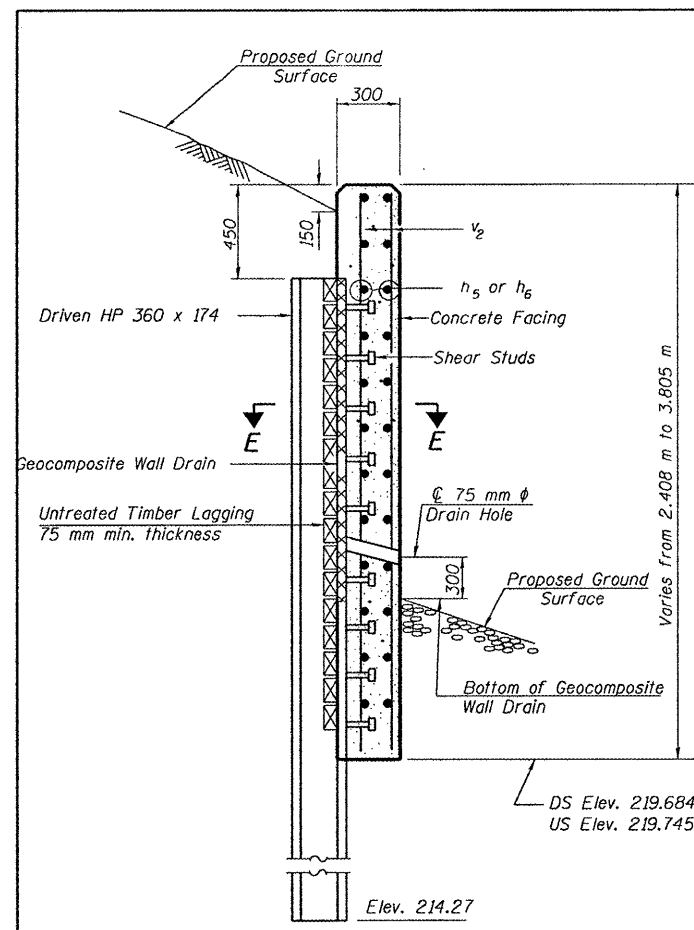


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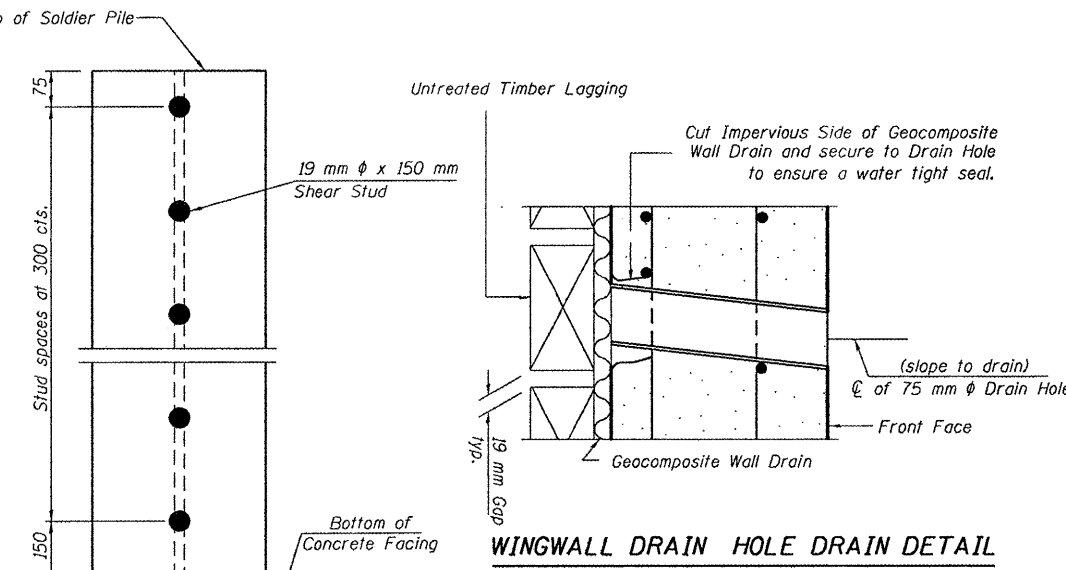
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

END SECTION DETAIL	
S.N. 057-2039	
SCALE:	SHEET NO. 2 OF 5 SHEETS
STA.	TO STA.

F.A.P. RTE. 315	SECTION (102X)BR, BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 21
			CONTRACT NO. 70529	
ILLINOIS FED. AID PROJECT				

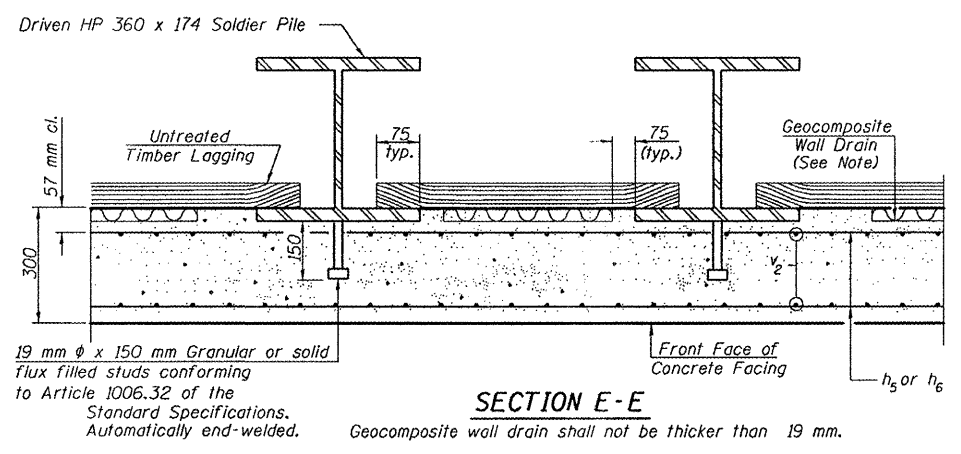


SECTION THRU WALL

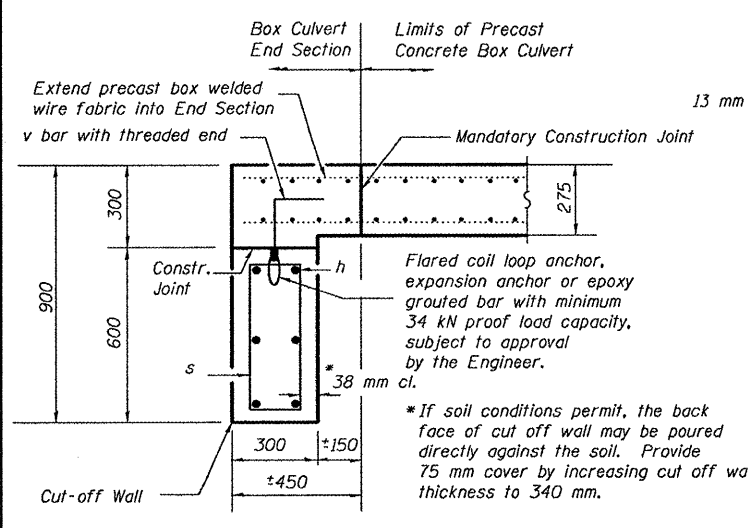


SHEAR STUD DETAIL

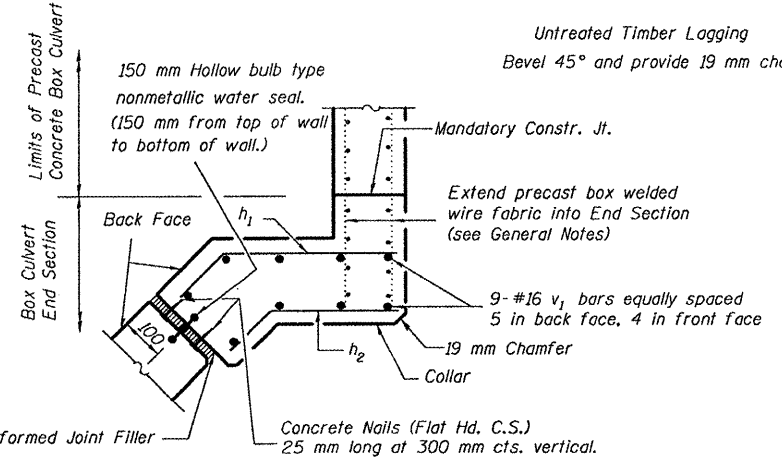
WINGWALL DRAIN HOLE DRAIN DETAIL



SECTION E-E



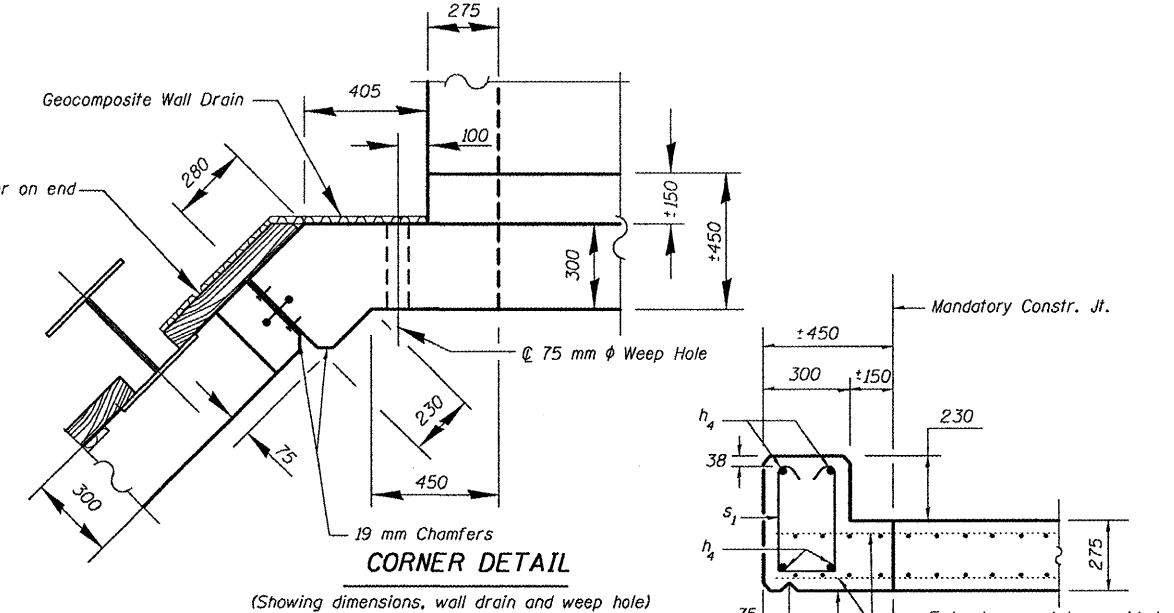
SECTION A-A



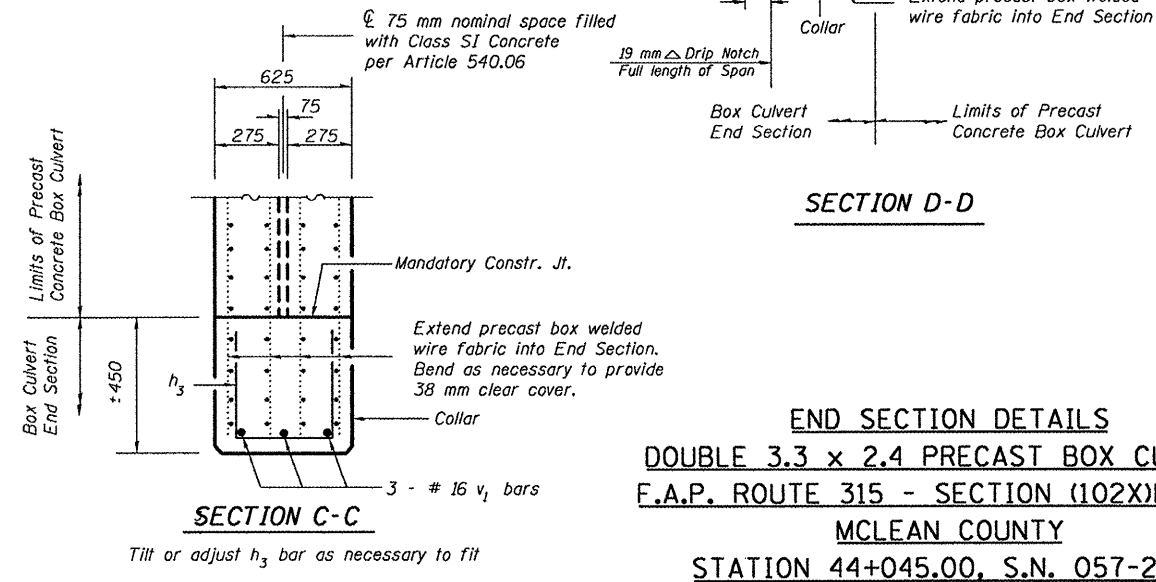
SECTION B-B

SEQUENCE OF WALL CONSTRUCTION

1. Build the cut-off wall
2. Place precast box sections
3. Drive soldier piles (may be driven prior to placing the boxes)
4. Install Untreated Timber Lagging
5. Place Geocomposite Wall Drain
6. Place and compact backfill behind wall
7. Install Stud Shear Connectors
8. Place rebar and form concrete face
9. Cast concrete face
10. Remove temporary soldier pile and associated timber lagging.
11. Place remainder of backfill to proposed finished ground surface in front and back of wall.



CORNER DETAIL



SECTION C-C

SECTION D-D

END SECTION DETAILS
 DOUBLE 3.3 x 2.4 PRECAST BOX CULVERT
 F.A.P. ROUTE 315 - SECTION (102X)BR, BR-3
 MCLEAN COUNTY
 STATION 44+045.00, S.N. 057-2039
 CULVERT NO. 2

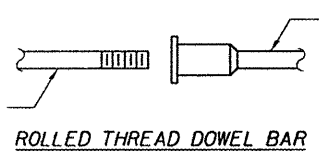
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

END SECTION DETAILS	
S.N. 057-2039	
SCALE:	TO STA.
SHEET NO. 3 OF 5 SHEETS	STA.

F.A.P. RTE. 315	SECTION (102X)BR, BR-3	COUNTY MCLEAN	TOTAL SHEETS 42	SHEET NO. 28
CONTRACT NO. 70529			ILLINOIS FED. AID PROJECT	

The diameter of this part is the same as the diameter of the bar spliced.

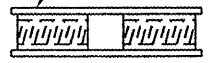


ROLLED THREAD DOWEL BAR



**** ONE PIECE**

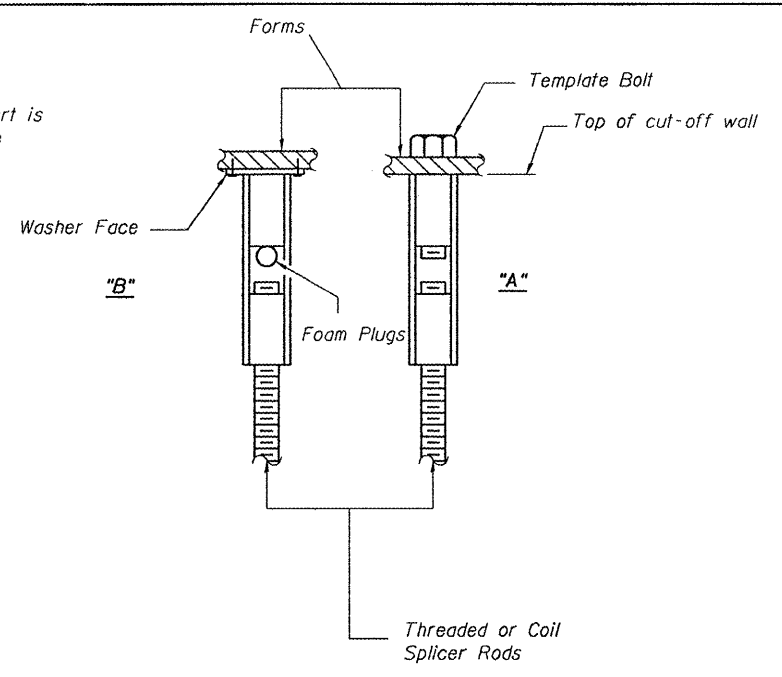
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

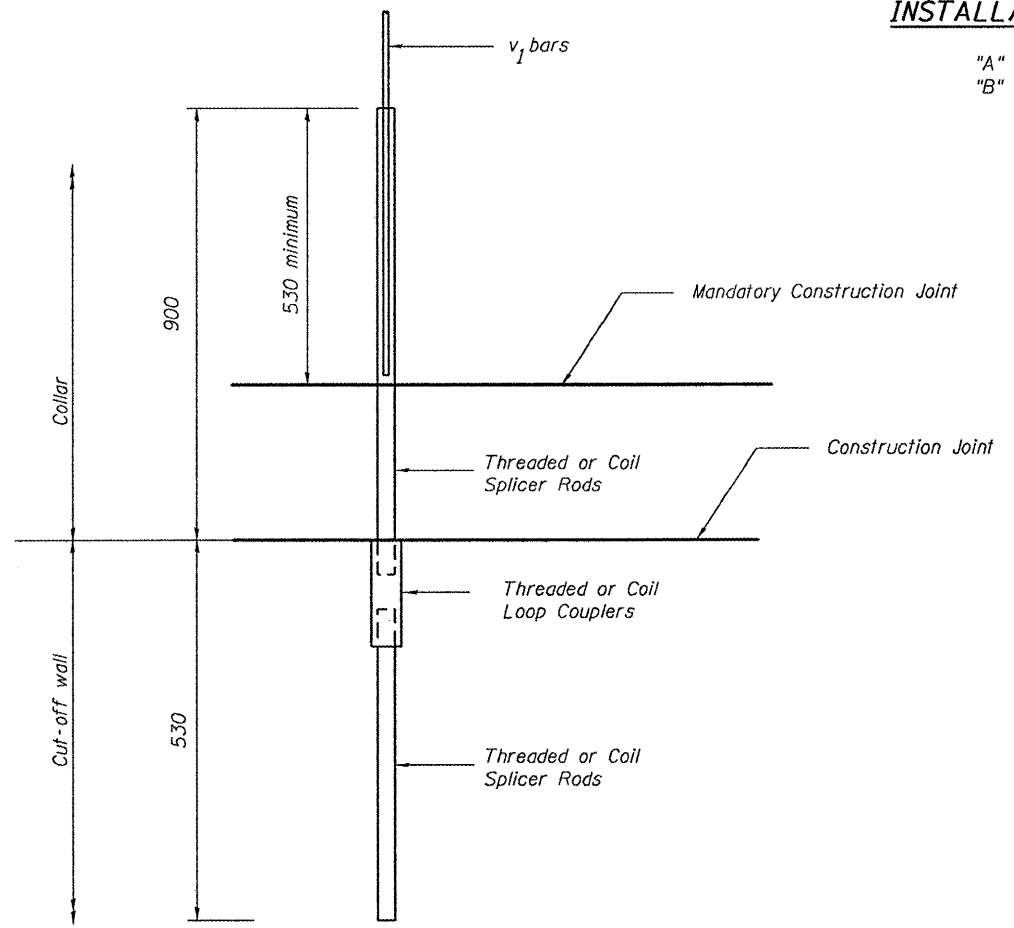
"A" Set bar splicer assembly by means of a template bolt.
 "B" Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 420 MPa yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

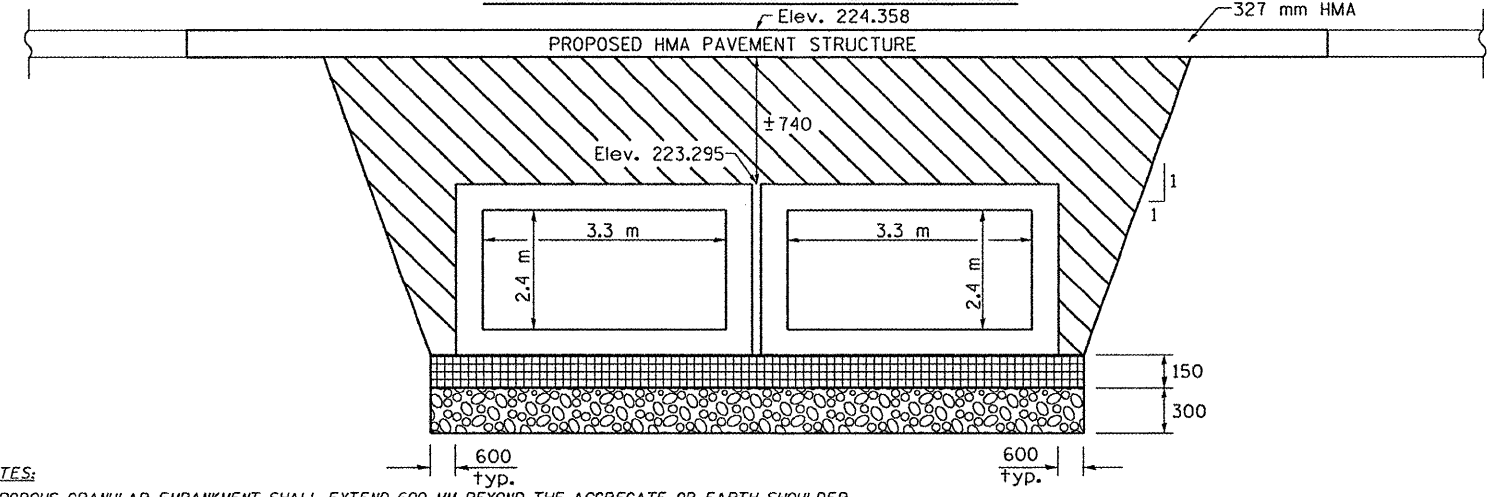
- ① Minimum Capacity = $1.25 \times f_y \times A_l$
 (Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_l$
 (Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_l = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

Bar Splicer for #16 bar	
Min. Capacity =	103.0 kN - tension
Min. Pull-out Strength =	54.7 kN - tension
No. Required =	36



FOR BOX CULVERT END SECTIONS

POROUS GRANULAR EMBANKMENT DETAILS



- NOTES:**
- POROUS GRANULAR EMBANKMENT SHALL EXTEND 600 MM BEYOND THE AGGREGATE OR EARTH SHOULDER.
 - WORK SHOWN IN THIS DETAIL SHALL BE PERFORMED ACCORDING TO THE APPLICABLE PORTIONS OF ARTICLES 207 AND 540 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER FOR POROUS GRANULAR EMBANKMENT AND SHALL ALSO BE PERFORMED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 281 AND SECTION 282 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER METRIC TON FOR STONE RIPRAP, CLASS A-1.
 - THE AREA TO BE EXCAVATED FOR THE PROPOSED BOX CULVERTS SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS ASSOCIATED WITH BOX CULVERT CONSTRUCTION.
 - THIS DETAIL IS NOT TO SCALE.
 - THE EXCAVATION AND REMOVAL OF THE UNSUITABLE MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR STONE RIPRAP, CLASS A-1. THE STONE RIPRAP, CLASS A-1 SHALL EXTEND BEYOND THE BARREL FROM BACK TO BACK OF CUTOFF WALLS.
 - THE FILTER FABRIC WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR STONE RIPRAP, CLASS A-1.

- PAY LIMITS OF POROUS GRANULAR EMBANKMENT - CA-6 (SEE SPECIAL PROVISIONS)
- POROUS GRANULAR MATERIAL - CA 7 (150) INCLUDED IN PAY ITEM FOR BOX CULVERT
- STONE RIPRAP, CLASS A1

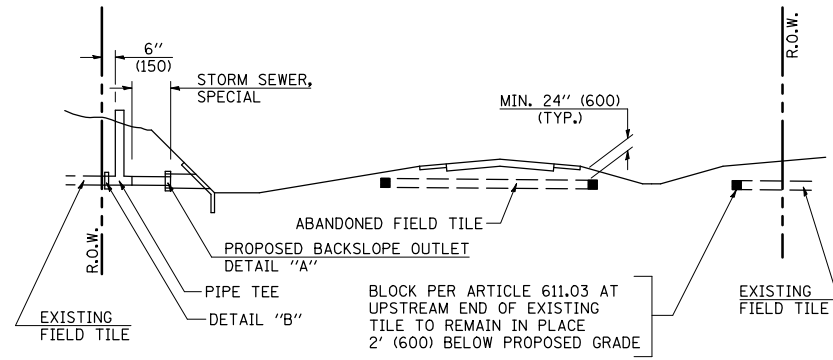
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

BAR SPLICER ASSEMBLY & POROUS GRANULAR EMBANKMENT DETAIL	
S.N. 057-2039	
SCALE:	SHEET NO. 4 OF 5 SHEETS
STA.	TO STA.

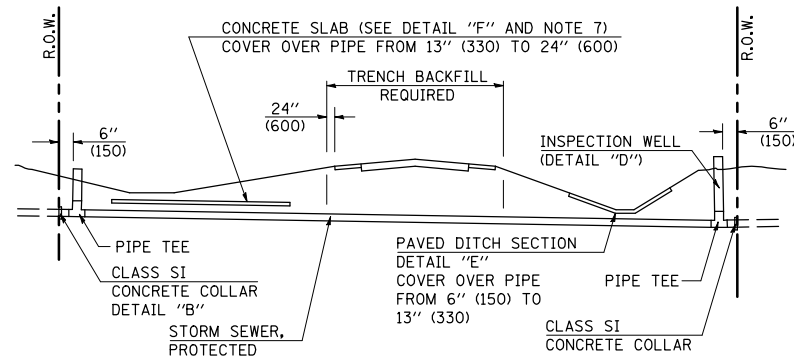
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR-BR-3	MCLEAN	42	29
CONTRACT NO. 70529			ILLINOIS FED. AID PROJECT	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	33



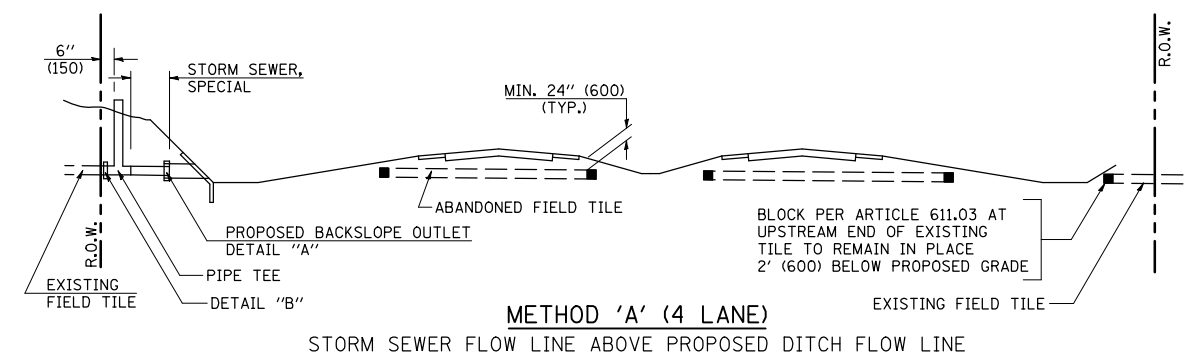
METHOD 'A' (2 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



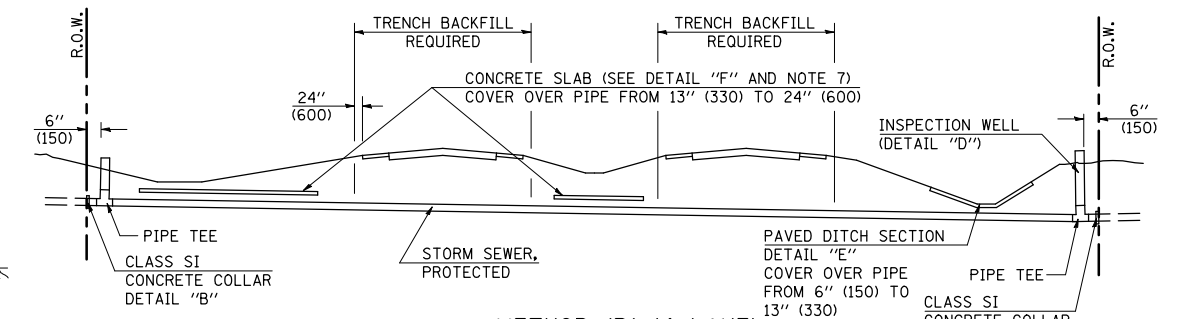
METHOD 'B' (2 LANE)

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



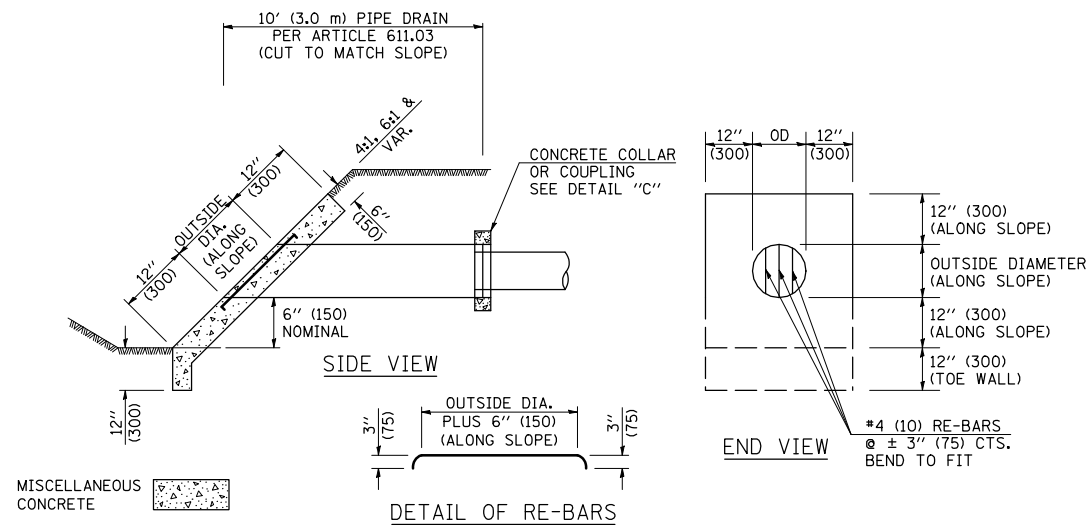
METHOD 'A' (4 LANE)

STORM SEWER FLOW LINE ABOVE PROPOSED DITCH FLOW LINE



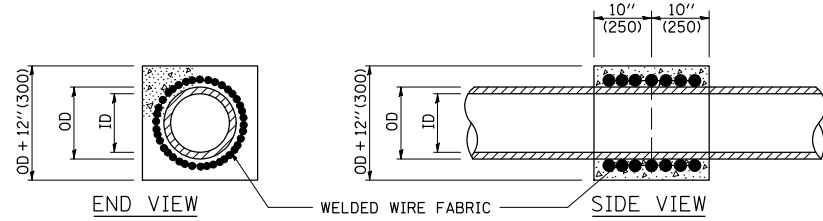
METHOD 'B' (4 LANE)

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



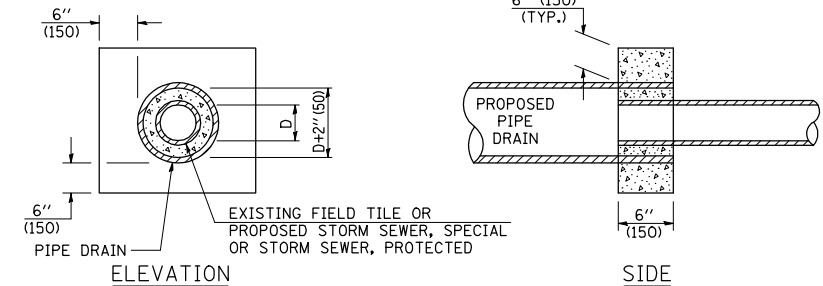
HEADWALL FOR BACKSLOPE OUTLET

DETAIL "A"



CONCRETE COLLAR

DETAIL "B"

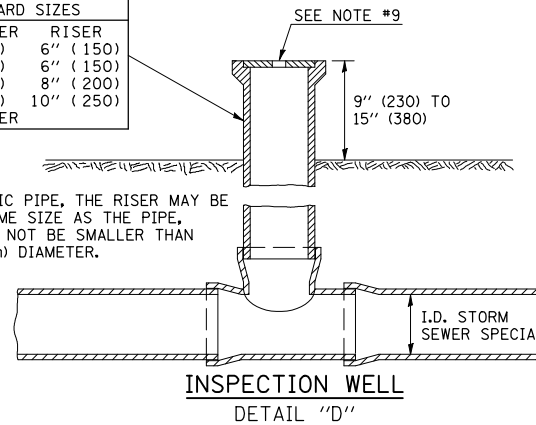


CLASS SI COLLAR

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.

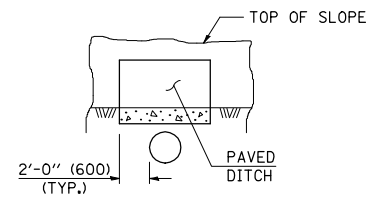


INSPECTION WELL

DETAIL "D"

GENERAL NOTES

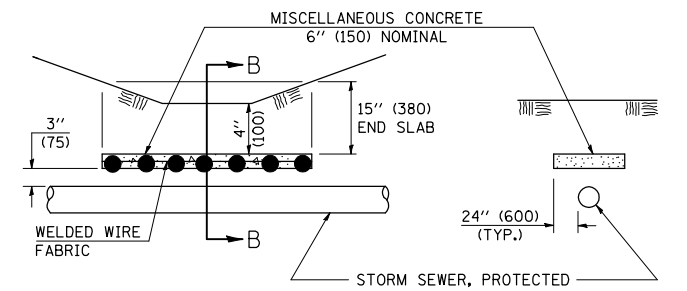
- EXISTING FIELD TILE ENCOUNTERED BY EXPLORATION TRENCH SHALL BE INSPECTED BY THE ENGINEER FOR UNOBSTRUCTED FLOW WITHIN THE LIMITS OF THE RIGHT-OF-WAY.
- ONLY FIELD TILE THAT DOES NOT HAVE SATISFACTORY FLOW AND OR HAS VISIBLE SIGNS OF DETERIORATION (SINK HOLES, ETC.) SHALL BE REPLACED WITHIN THE LIMITS 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

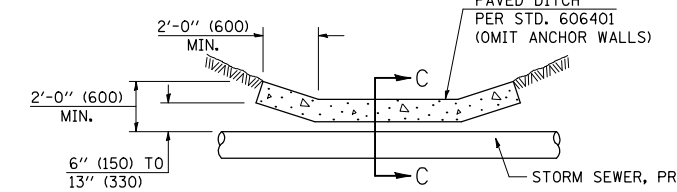
DETAIL "E"



SLAB ELEVATION

CONCRETE SLAB

DETAIL "F"



PAVED DITCH ELEVATION

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

DATE	REVISIONS	NAME
11/06	REPLACED DETAIL A-18.02	TJB

ILLINOIS DEPARTMENT OF TRANSPORTATION

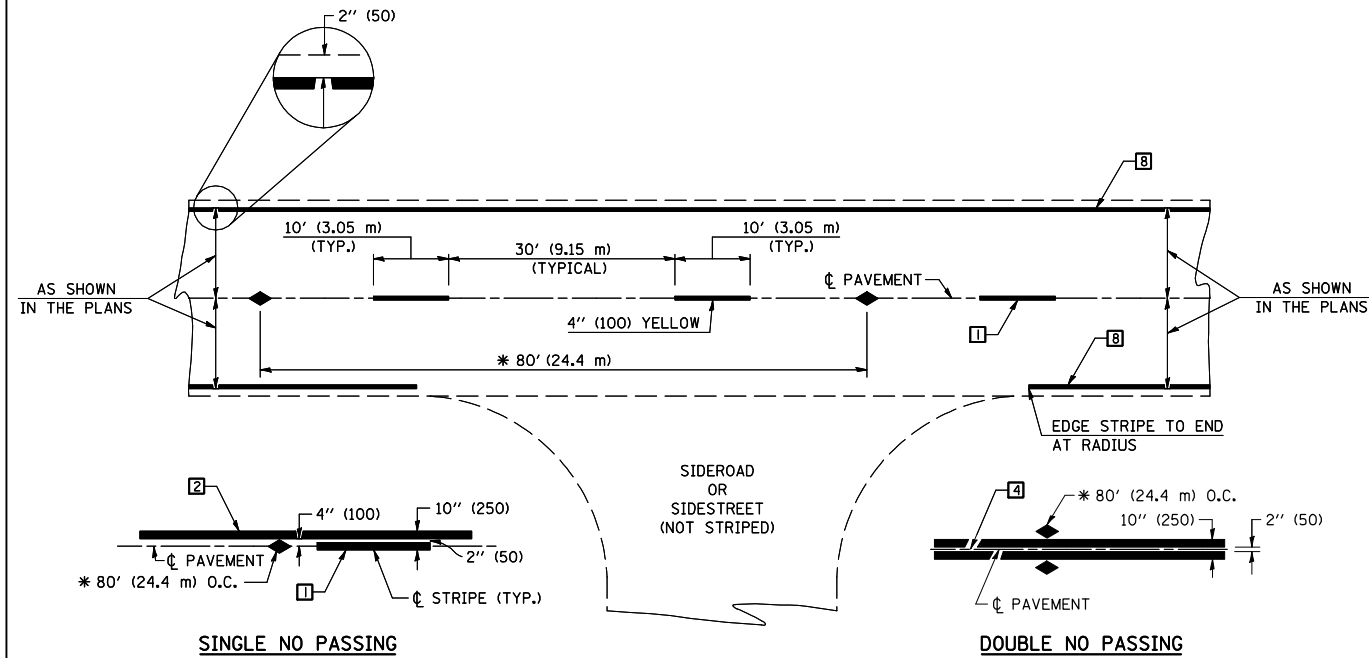
FIELD TILE SYSTEMS
(TREATMENT OF EXISTING)

DISTRICT 5 DETAIL NO. 61101011A

DESIGNER NOTE:

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USER NAME = sharer_jm

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	35



* REDUCE TO 40' (12.2 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEEDS OF 45 mph (70 km/h) OR LESS.

TWO LANE/TWO WAY

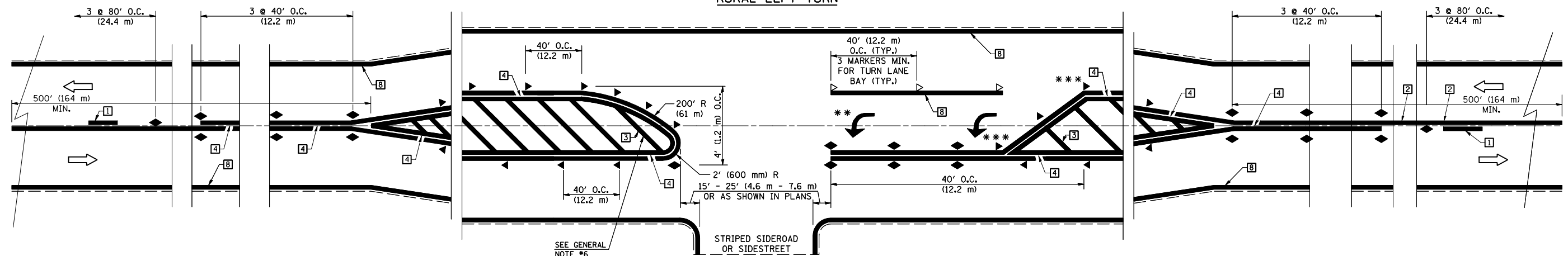
TYPICAL PAVEMENT MARKING LEGEND

- 1 4" (100) SKIP-DASH (YELLOW)
 - 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) SOLID (WHITE)
 - 11 24" (600) STOP BAR (WHITE)
 - 12 8" (200) SOLID (WHITE)
 - 13 4" (100) LANE LINE EXTENSIONS (WHITE)
 - 14 4" (100) PARKING WHITE
-

TYPICAL PAVEMENT MARKERS LEGEND

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

RURAL LEFT TURN



*** REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNER POINTS.
 ** TURN ARROWS SHALL BE PLACED AS SHOWN ON SHEET #2.

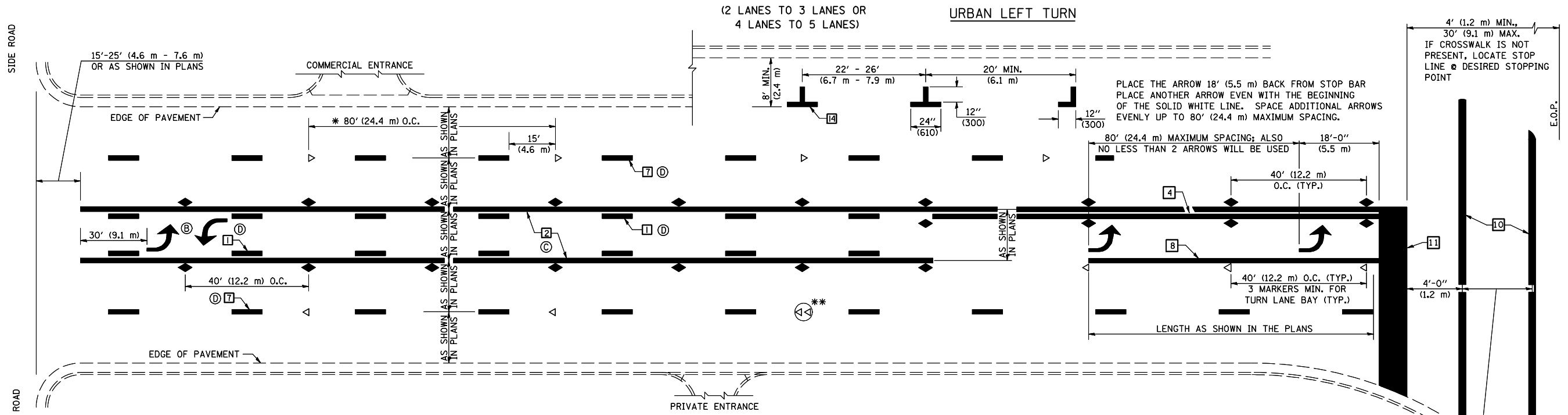
Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DATE	REVISIONS	NAME	ILLINOIS DEPARTMENT OF TRANSPORTATION
11/06	REPLACED DETAIL F-5.25	TJB	PAVEMENT MARKING AND MARKERS (RURAL & URBAN APPLICATIONS)
09/2009	REVISED STRIPING	KJT	
			DISTRICT 5 DETAIL NO. 7800AAAA

DESIGNER NOTE:

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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
315	(102X)BR, BR-3	MCLEAN	42	36

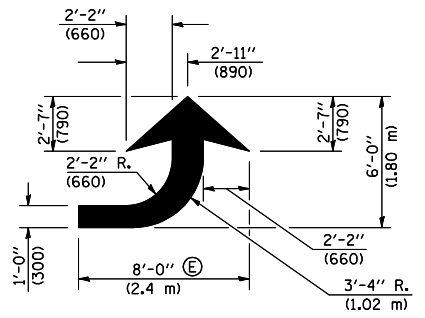


* REDUCE TO 40 FEET (12.2 METERS) ON CENTER ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH (15 km/h) LOWER THAN POSTED SPEEDS.

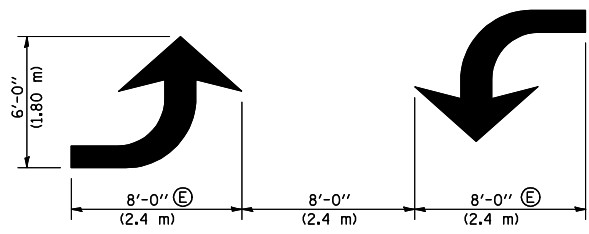
** DOUBLE LANE LINE MARKERS SHALL BE SPECIFIED AND SPACED AS SHOWN IN HIGHWAY STANDARD 781001 FOR MULTI-LANE DIVIDED AND UNDIVIDED HIGHWAYS.

GENERAL NOTES:

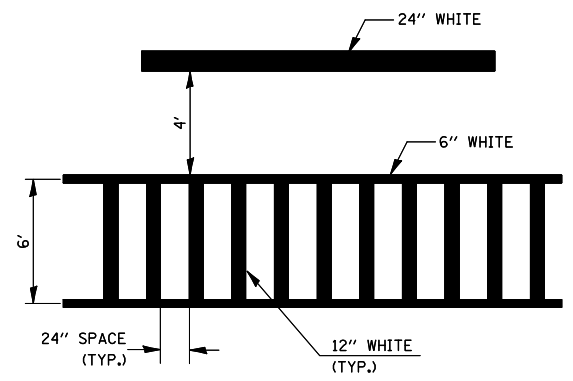
- ⓑ TURN ARROW PAIRS SHALL BE PLACED AT 250' (75 m) INTERVALS AND SHALL BE EVENLY SPACED BETWEEN BOTH ENDS OF THE BIDIRECTIONAL LEFT TURN LANE.
- ⓒ THE SOLID YELLOW PAVEMENT MARKINGS [2] SHOULD GENERALLY START OR END NEAR THE RADIUS POINT OF EACH STREET RETURN EXCEPT WHERE ONE OR BOTH ENDS WOULD INCLUDE STOP BARS.
- ⓓ 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.
- ⓔ USE LARGE ARROW SIZE FOR BOTH RURAL AND URBAN LOCATIONS. (SEE LAST PAGE OF SECTION 780X FOR SYMBOLS TABLE)



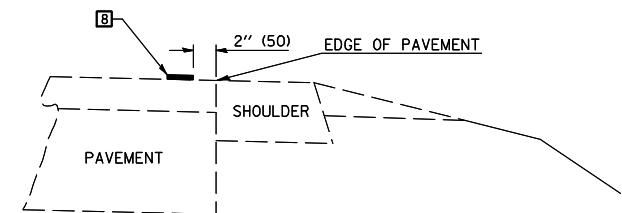
LEFT ARROW



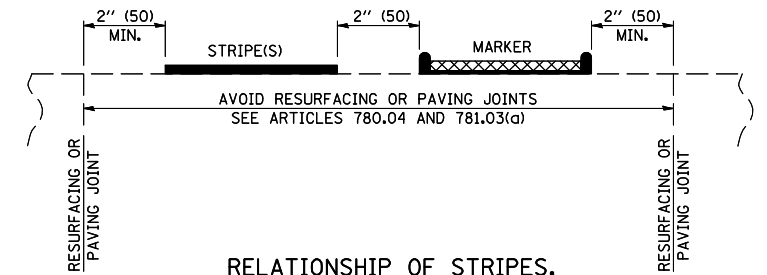
TYPICAL DOUBLE TURN ARROWS (WHITE)



TYPICAL SPACING FOR CROSSWALKS & STOP BARS



RELATIONSHIP OF EDGE LINE TO EDGE OF PAVEMENT (SAFETY SHOULDER OR PAVED SURFACE) SEE ARTICLE 780.04



RELATIONSHIP OF STRIPES, MARKERS AND JOINTS

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

DATE	REVISIONS	NAME
11/06	REPLACED DETAIL F-5.25	TJB
09/2009	REVISED STRIPING	KJT

ILLINOIS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING AND MARKERS (RURAL & URBAN APPLICATIONS)

DISTRICT 5 DETAIL NO. 7800AAAA

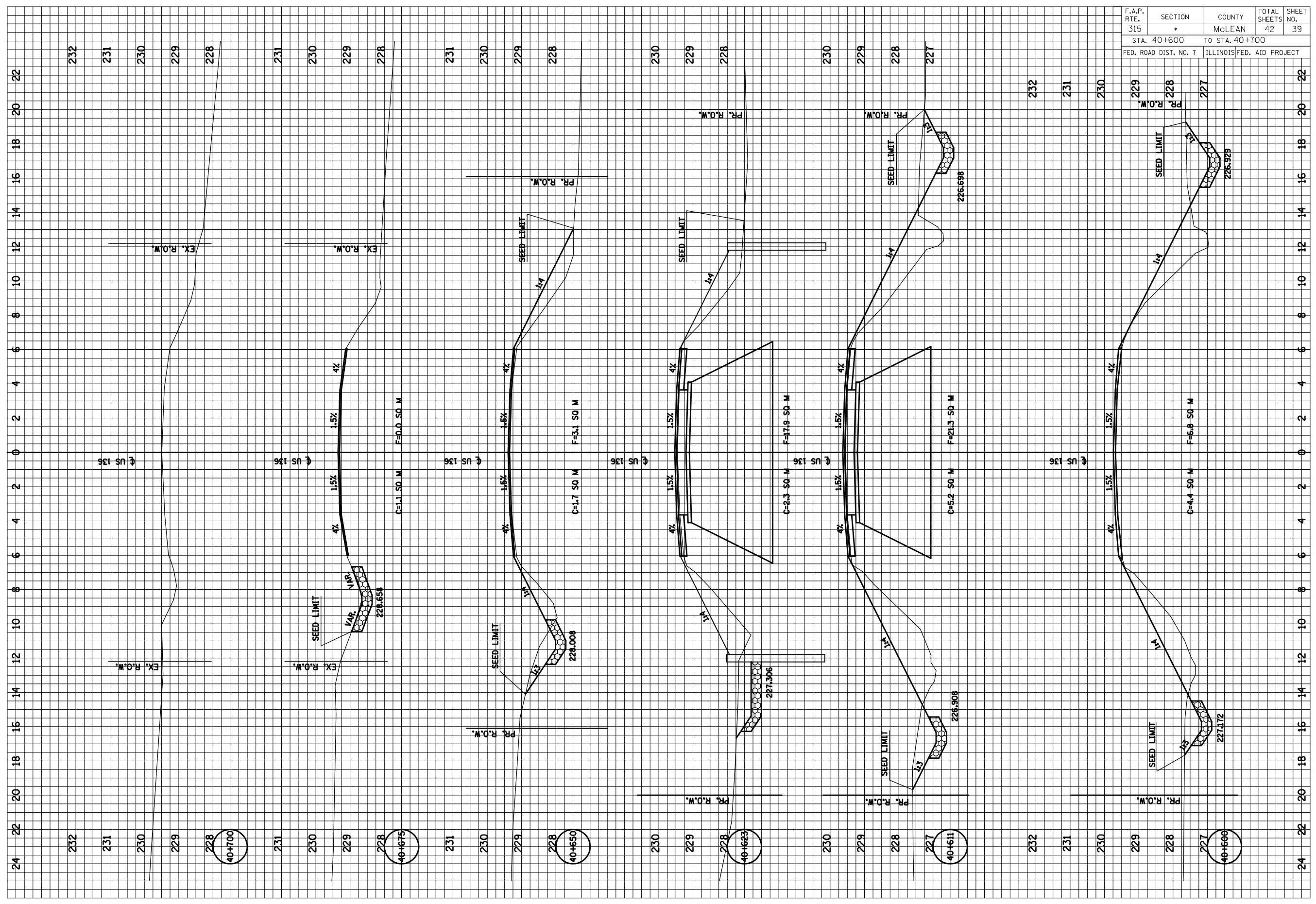
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
315	*	McLEAN	42
STA. 40+600 TO STA. 40+700			
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT	

FINAL SURVEY	SUBMITTED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	

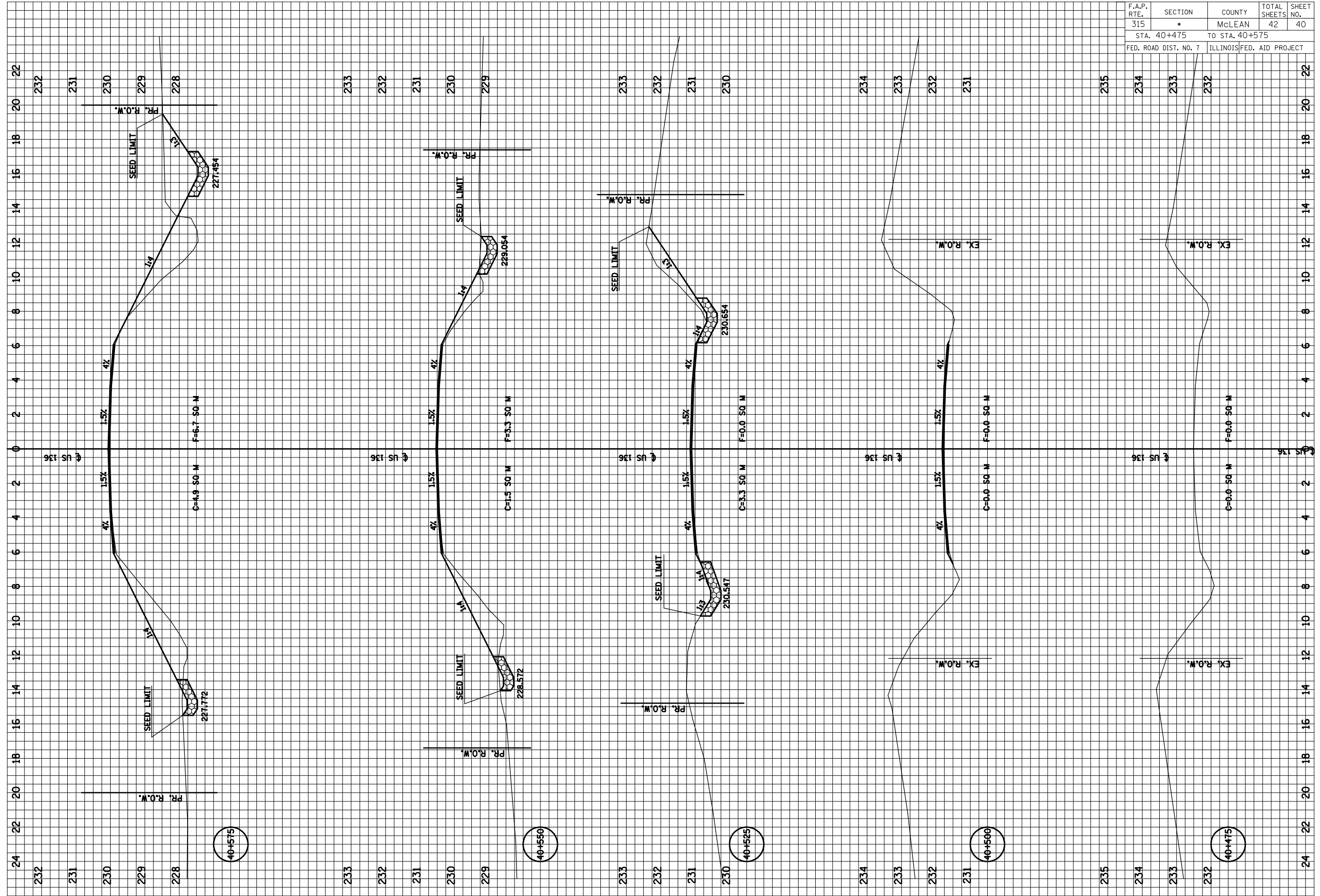
ORIGINAL SURVEY	SUBMITTED	DATE
NOTE BOOK NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
315	*	McLEAN	42	40
STA. 40+475		TO STA. 40+575		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NO.	SUBMITTED	BY	DATE
	NO.		
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

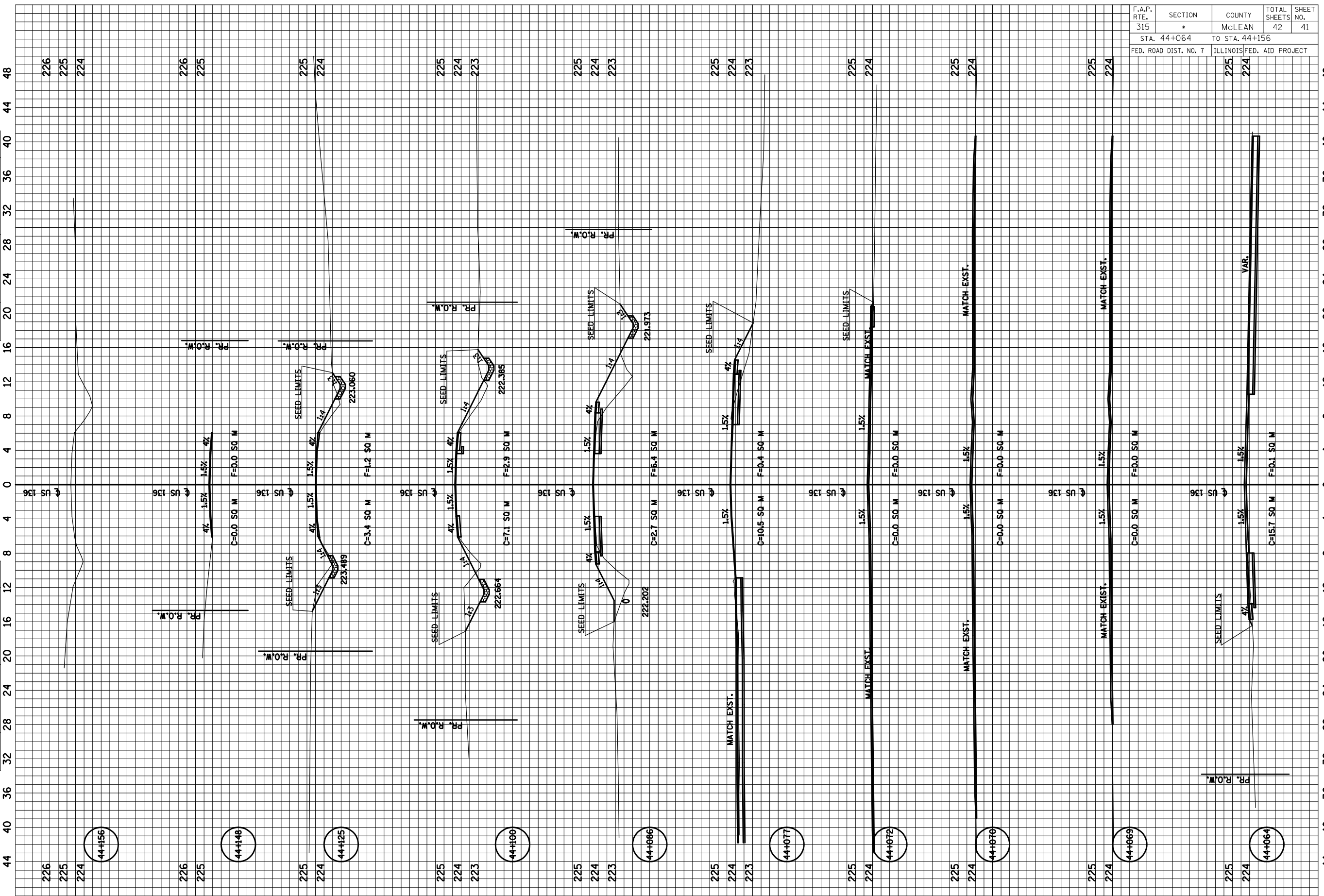
ORIGINAL SURVEY NO.	SUBMITTED	BY	DATE
	NO.		
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
315	*	McLEAN	42	41
STA. 44+064		TO STA. 44+156		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NOTE BOOK NO.	DATE	BY

ORIGINAL SURVEY NOTE BOOK NO.	DATE	BY



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
315	*	McLEAN	42	42
STA. 43+950		TO STA. 44+058		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

FINAL SURVEY NOTE BOOK NO. _____

SUBMITTED _____ PLOTTED _____

TEMPLATE _____ AREAS CHECKED _____

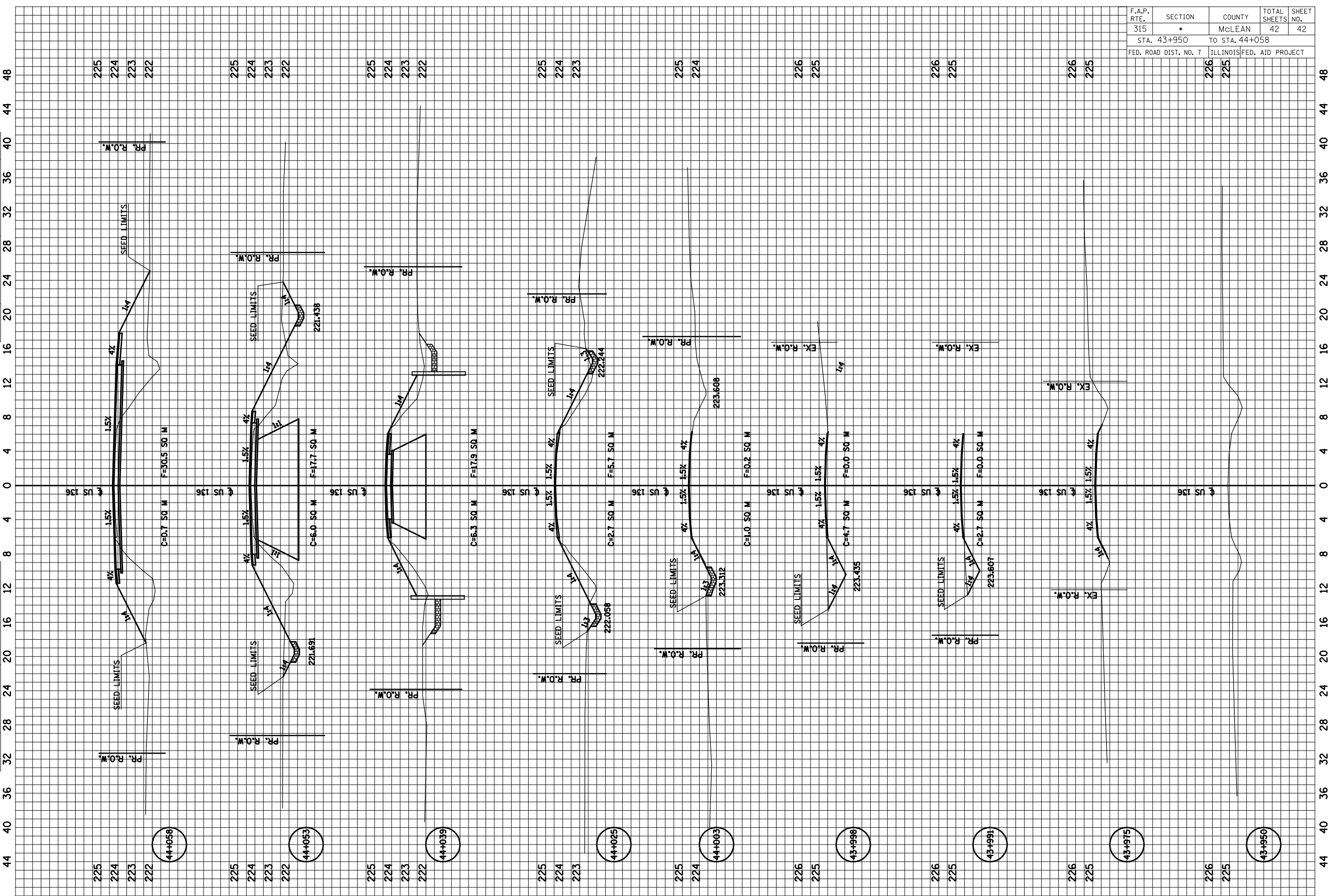
BY: _____ DATE: _____

ORIGINAL SURVEY NOTE BOOK NO. _____

SUBMITTED _____ PLOTTED _____

TEMPLATE _____ AREAS CHECKED _____

BY: _____ DATE: _____



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