

CONSULTANT SERVICES: COREY STOUT 815-965-6400  
email: coreys@missman.com

PROJECT MANAGER: (WINNEBAGO CO.) DAVID TOWNSEND 815-319-4035  
email: dtownsend@co.winnebago.il.us

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- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL HIGHWAYS

**UTILITY CONTACTS**

American Transmission Company  
c/o Julie Purves  
2 Fen Oak Court  
Madison, WI 53718-8810  
(608) 877-3631

Frontier Communications  
c/o Don Belmore  
2239 Newburg Road  
Belvidere, IL 61008  
(815) 544-6171

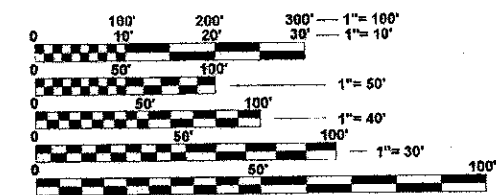
Charter Communications  
c/o Tom Phillips  
1348 Plainfield Ave  
Janesville, WI 53547  
(608) 373-7537

PAETEC  
c/o Paul Baumann  
1815 S. Meyers Road, Suite  
900  
Oak Brook Terrace, IL 60181  
(630) 925-4751

North Park Public Water  
c/o Ed Rice  
1350 Turret Drive  
Machesney Park, IL 61115  
(815) 633-5461

Rock Energy Cooperative  
c/o Rod Magnuson  
15229 Willow Brook Road  
South Beloit, IL  
61080-0126  
(866) 752-4550

Rock River Water Reclamation  
3333 Kishwaukee Street  
P.O. Box 7480  
Rockford, IL 61126-7480  
(815) 387-7400



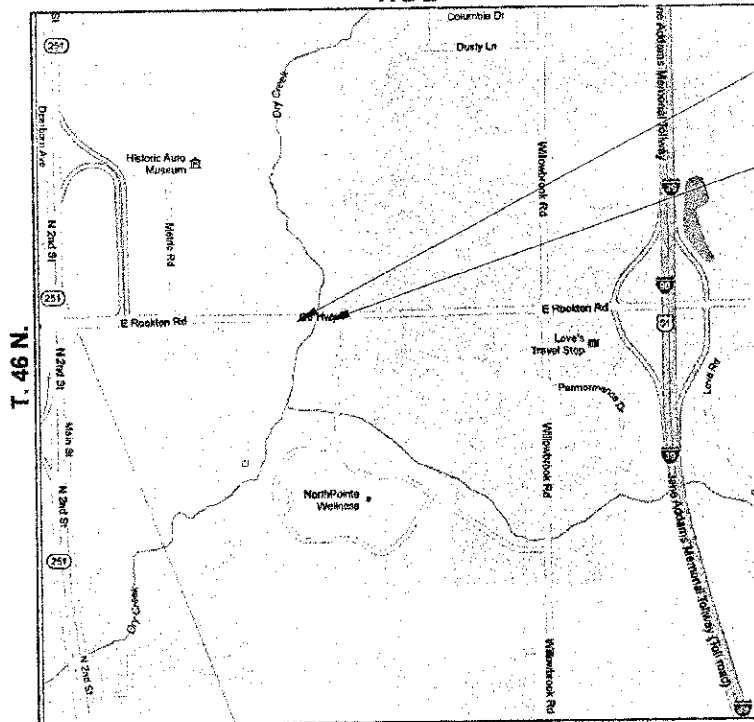
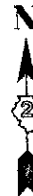
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

03-08-13 LETTING ITEM 111

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM**

FAU 9878 C.H. 9 (ROCKTON ROAD)  
OVER DRY RUN CREEK  
SECTION 12-00356-01-BR  
PROJECT BRM-5291 (018)  
JOB NUMBER C-92-114-12  
CONTRACT NO. 85577  
WINNEBAGO COUNTY



**LOCATION MAP**  
(NOT TO SCALE)

**PROJECT LENGTH**

GROSS LENGTH = 160 FT. = 0.03 MILE  
NET LENGTH = 160 FT. = 0.03 MILE



I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ILLINOIS.

Corey J. Stout  
DATE 1/16/13  
REC. NO. 062-052830 RENEWAL DATE 11/30/2013

PROJECT BEGINS  
STA 124+83  
PROJECT ENDS  
STA 126+43

**TRAFFIC DATA:**  
FUNCTIONAL CLASSIFICATION: RURAL ARTERIAL  
2032 ADT: 11,100 88% PU, 7% SU, 5% MU  
DESIGN SPEED: 60 MPH  
CLASS II TRUCK ROUTE

PREPARED BY:  
**Missman, Inc.**  
Professional Engineers & Land Surveyors  
ILLINOIS DESIGN FIRM No. 184-000843

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	18	1
ILLINOIS CONTRACT NO. 85577				



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

APPROVED: *January 16, 2013*  
COUNTY ENGINEER  
PASSED: *January 22, 2013*  
DISTRICT ENGINEER OF LOCAL ROADS & STREETS  
RELEASED FOR BID SET ON LIMITED REVIEW: *January 22, 2013*  
DEPUTY DIRECTOR OF HIGHWAYS/REGION 2 ENGINEER

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OF THE STATE OF ILLINOIS**

# GENERAL NOTES

See cross sections for special ditches and backlopes.

The removal of Bituminous Surfacing less than 6 inches thickness not on a rigid type base removed in conjunction with the base shall be removed as EARTH EXCAVATION. The removal of Bituminous Surfacing on a rigid type base or a thickness of 6 inches or more on a flexible base removed in conjunction with the base shall be included in the contract unit price for PAVEMENT REMOVAL.

The topsoil excavation quantities have been adjusted to allow for 25% shrinkage of topsoil between removal and replacement.

All Borrow/Waste/Use sites must be approved by the Department prior to removing any material from the project or initiating any earthmoving activities, including temporary stockpiling outside the limits of construction.

A Nationwide 404 Permit has been issued for this project and the conditions of that permit must be adhered to.

The boring logs for this structure indicate that groundwater levels may encroach on the construction limits of this culvert. It shall be the responsibility of the contractor to control the ground water and divert the stream flow during construction in order to keep the construction area free of water. The method of controlling the water shall be subject to approval of the Engineer and the cost shall be included in the contract unit price for CONCRETE BOX CULVERTS.

The additional embankment required to build up the shoulder for the Traffic Barrier Terminal, as shown on the plans, shall be hauled from excess earth excavation from within the project and shall be placed prior to the installation of the terminal. The cost of this work shall be included in the contract unit price per cubic yard of EARTH EXCAVATION. An estimated 14.5 Cubic Yards of embankment is required at each terminal location.

The Contractor shall be responsible for collecting and maintaining an electronic log of all stakeout survey that is performed on the job, either by him/her or any sub-contractor performing the stakeout. Upon request, all logs shall be submitted to the Engineer. No additional compensation will be allowed for this work, but shall be considered included in the cost for CONSTRUCTION LAYOUT.

Pavement Marking shall be done according to Standard 78000, except as follows:

1. All words, such as ONLY, shall be 8 feet high.
2. All non-freeway arrows shall be the large size.
3. The distance between yellow no-passing lines shall be 8", not 7" shown in the detail of Typical Lane and Edge Lines.

Beyond the limits of this Project (12-00356-01-BR) is a separate & MFT funded project. Due to different funding for the two projects, IDOT required the creation of two separate projects (04-00356-00-PW and 12-00356-01-BR). This project (12-00356-01-BR) is a federally funded RBP project to replace the existing box culvert on Rockton Road over Dry Run Creek. The 04-00356-00-PW is MFT funded and is just for the widening and resurfacing for the intersection improvement at Rockton Road and Campus Drive.

The Highway Department has coordinated the letting of both projects with the exception that both projects will be coordinated in such a way that the two projects function as one. Should the letting process result in two contractors, there will be one pre-construction meeting and representatives from both contractors shall be required to attend. In preparation for this meeting, it is expected that both contractors shall have consulted the other and have jointly worked through their respective schedules so that both contracts are coordinate and that the road closure is kept to an absolute minimum.

The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours advance notice is required for non-emergency work. The JULIE number is 800-892-0123. The following listed utilities located within the project limits or immediately adjacent to the project construction limits are members of JULIE:

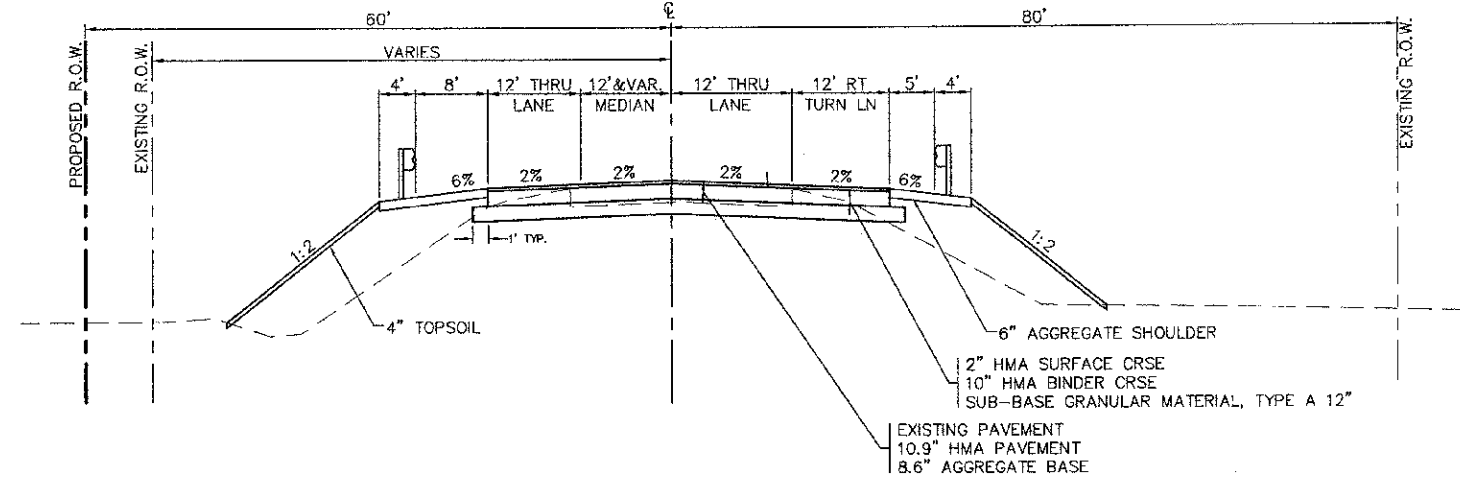
American Transmission Company    Charter Communications    North Park Public Water  
 Frontier Communications            Paetec                                      Rock Energy Cooperative  
 Rock River Water Reclamation

The applicable portions of Article 105.07 of the Standard Specification shall apply except for the following: The Contractor shall be responsible to locate the vertical depths of the underground utilities which may interfere with construction operations. This work will not be measured or paid for separately, but shall be considered as included in the unit bid price for the item of construction involved.

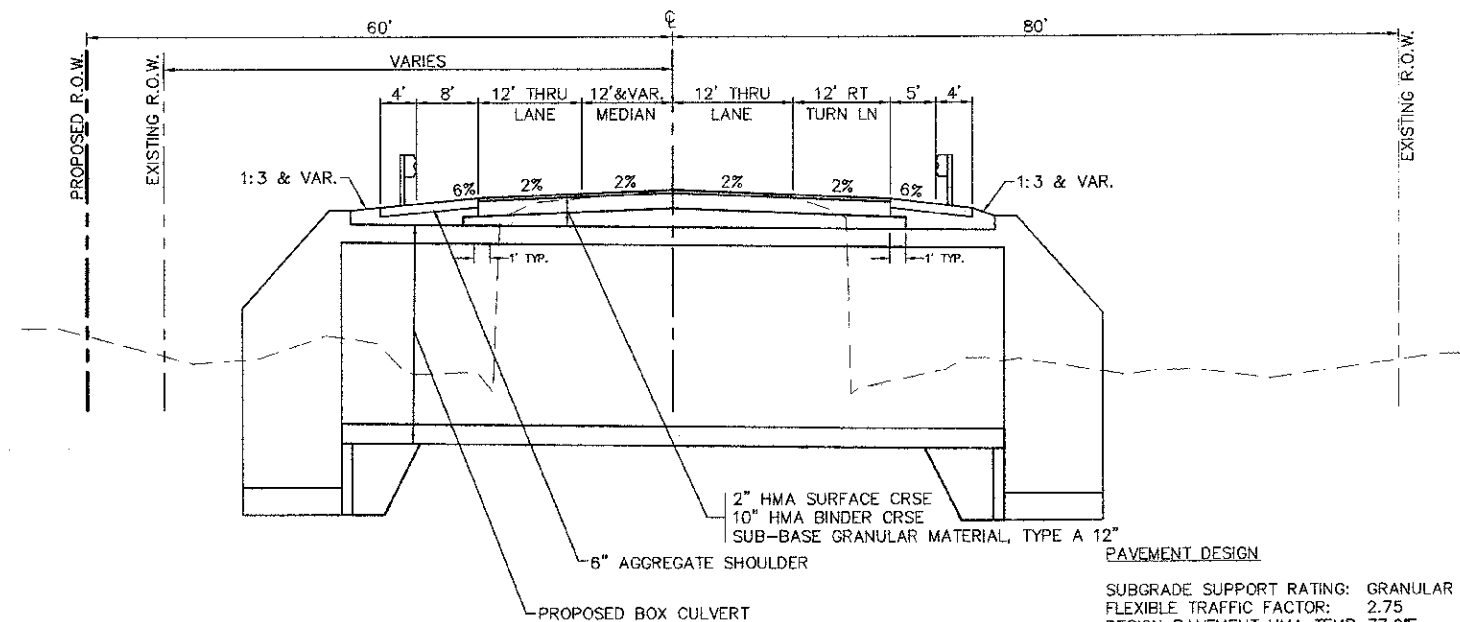
## HMA MIXTURE CHART

MIXTURE USE (S):	SURFACE TOP LIFT FULL DEPTH	BINDER, BASE COURSE, & FULL DEPTH
PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION (GRADATION MIXTURE:)	IL-9.5	IL-19.0
FRICTION AGGREGATE:	MIX D	N/A
20 YEAR ESAL:	0.52	0.52
MIX UNIT WEIGHT:	112 LBS/SY/IN	112 LBS/SY/IN

### ROCKTON ROAD STA. 124+83 TO 125+33 STA. 125+93 TO 126+43



### ROCKTON ROAD STA. 125+33 TO 125+93



**PAVEMENT DESIGN**  
 SUBGRADE SUPPORT RATING: GRANULAR  
 FLEXIBLE TRAFFIC FACTOR: 2.75  
 DESIGN PAVEMENT HMA TEMP. 77.0°F  
 DESIGN HMA MODULUS (Eac): 550 ksi  
 DESIGN HMA MICROSTRAIN: 76.5  
 PAVEMENT THICKNESS: 12"  
 2" HMA SURF CRSE, 10" HMA BINDER

FILE NAME: _____	USER NAME: _____	DESIGNED: CJS	REVISED: _____	 Rock Island, IL (309) 788-7244    Bettendorf, IA (563) 344-2689    Rockford, IL (815) 955-8400    Sycamore, IL (815) 895-3825 www.missman.com	<b>GENERAL NOTES, TYPICALS &amp; PAVEMENT DESIGN</b> STRUCTURE NO. 101-5158		F.A.U. RTE. 9878	SECTION 12-00356-01-BR	COUNTY WINNEBAGO	TOTAL SHEETS 16	SHEET NO. 2
PLOT SCALE: _____	CHECKED: CJS	REVISED: _____			SHEET NO. 1 OF 1 SHEETS		SN 101-515B	CONTRACT NO. 85577			
PLOT DATE: _____	DATE: _____	REVISED: _____					FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

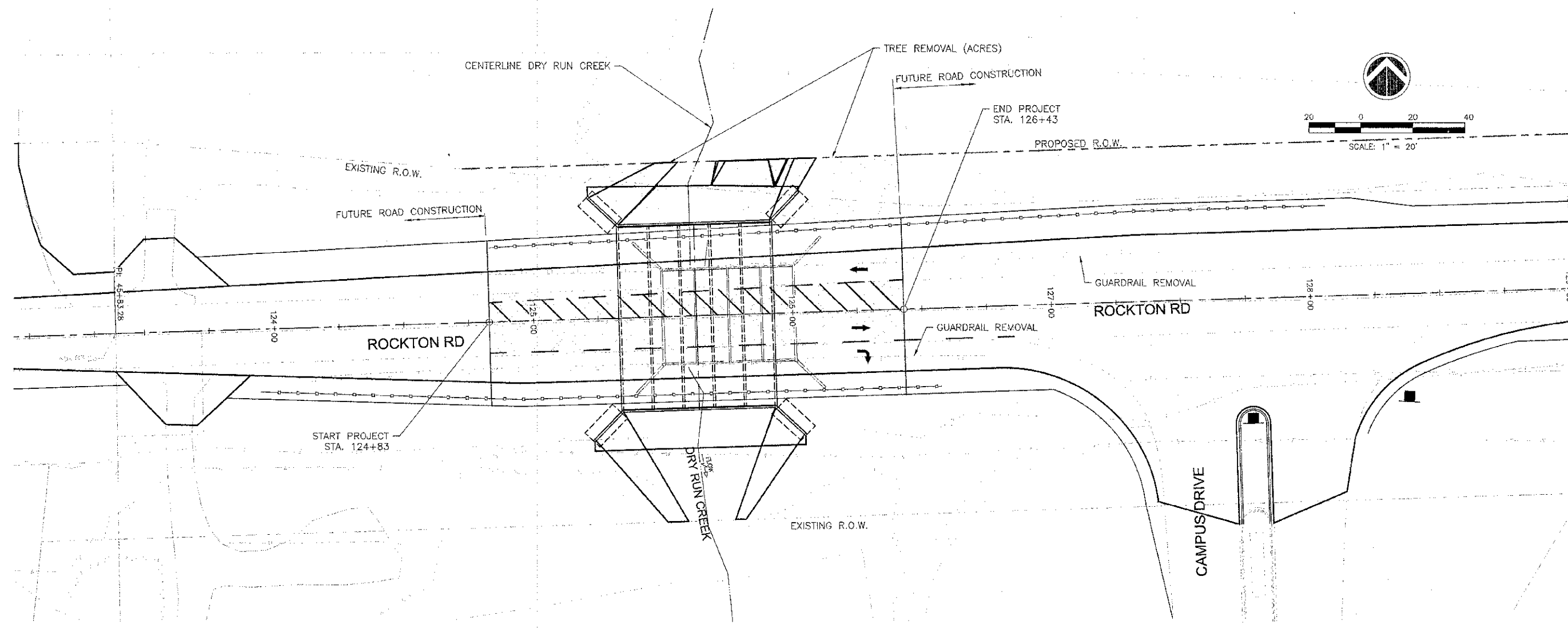
SUMMARY OF QUANTITIES			
CONSTRUCTION TYPE CODE: 0011			
CODE NO.	DESCRIPTION	UNIT	TOTAL QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	290
20400800	FURNISHED EXCAVATION	CU YD	173
20700110	POROUS GRANULAR EMBANKMENT	TON	1,177
20300100	CHANNEL EXCAVATION	CU YD	141
21101815	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	1,351
* 25000110	SEEDING, CLASS 1A	ACRE	0.18
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	17
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	17
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	17
25100630	EROSION CONTROL BLANKET	SQ YD	540
28000305	TEMPORARY DITCH CHECKS	FOOT	10
28000400	PERIMETER EROSION BARRIER	FOOT	200
* 28100107	STONE RIPRAP, CLASS A4	SQ YD	240
28200200	FILTER FABRIC	SQ YD	240
31101810	SUBBASE GRANULAR MATERIAL, TYPE B 12"	SQ YD	844
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	490
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	457
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	92
* 44000100	PAVEMENT REMOVAL	SQ YD	427
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	374
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1
50800105	REINFORCEMENT BARS	POUND	50,530
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	33,660
51200958	FURNISHING METAL SHELL PILES 14" X 0.250"	FOOT	540
51202305	DRIVING PILES	FOOT	540
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
54003000	CONCRETE BOX CULVERTS	CU YD	548.8

SUMMARY OF QUANTITIES			
CONSTRUCTION TYPE CODE: 0011			
CODE NO.	DESCRIPTION	UNIT	TOTAL QUANTITY
Δ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	263
Δ 63000025	STEEL PLATE BEAM GUARDRAIL, ATTACHED TO STRUCTURES	FOOT	120
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	534
67100100	MOBILIZATION	L SUM	1
Δ 78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	47
Δ 78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	1,113
Δ 78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	80
Δ 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	8
Δ 78200410	GUARDRAIL MARKERS, TYPE A	EACH	8
Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
* XX006821	CONCRETE TRUCK WASHOUT	L SUM	1
Z0013798	CONSTRUCTION LAYOUT	L SUM	1

\* SEE SPECIAL PROVISIONS OR DETAILS  
 Δ SPECIALTY ITEMS

EARTHWORK QUANTITIES				
LOCATION	20200100 EARTH EXCAVATION (CY)	EXCAVATION TO BE USED IN EMBANKMENT (25% SHRINKAGE) (CY)	EMBANKMENT (CY)	EARTH BALANCE WASTE (+) OR SHRINKAGE (-) (CY)
Sta. 124+83 TO 126+43	290	218	390	-173
TOTAL	290	218	390	-173

PAVEMENT MARKING SCHEDULE							
LOCATION			78000100 THERMO PAVEMENT MARKING - LETTERS & SMYBOLS	78000400 THERMO PAVEMENT MARKING - LINE 6"	78000600 THERMO PAVEMENT MARKING - LINE 12"	78100100 RAISED REFLECTIVE PAVEMENT MARKER	NOTE
BEGIN STATIO	END STATIO	OFFSET	SQ FT	FOOT	FOOT	EACH	
126+25		18' LT	15.6				THRU ARROW
126+25		6' RT	15.6				THRU ARROW
126+25		18' RT	15.6				RT ARROW
WHITE							
124+83	126+43	WB EOP		160			SOLID EDGE LINE
124+83	124+94	EB EOP		4			SKIP DASH
124+94	126+43	EB EOP		149			SOLID
124+83	126+43	EB EOP		160			SOLID EDGE LINE
YELLOW							
124+83	126+43	WB MED		320			DBL MEDIAN EDGE
124+83	126+43	EB MED		320			DBL MEDIAN EDGE
124+83	126+43	MEDIAN			80		DBL MEDIAN DIAGONAL
124+83	126+43	LT & RT				8	MEDIAN EDGE
TOTAL			47	1,113	80	8	



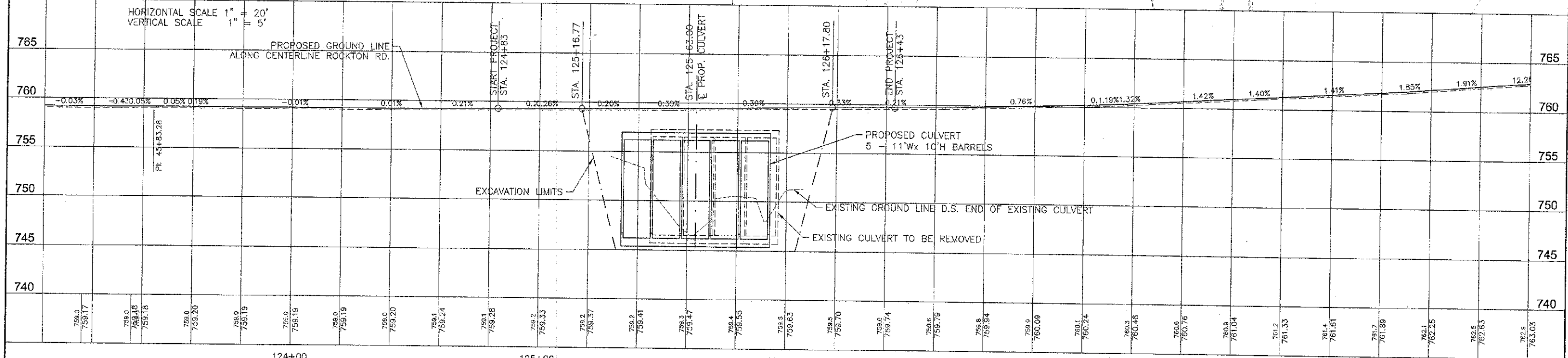
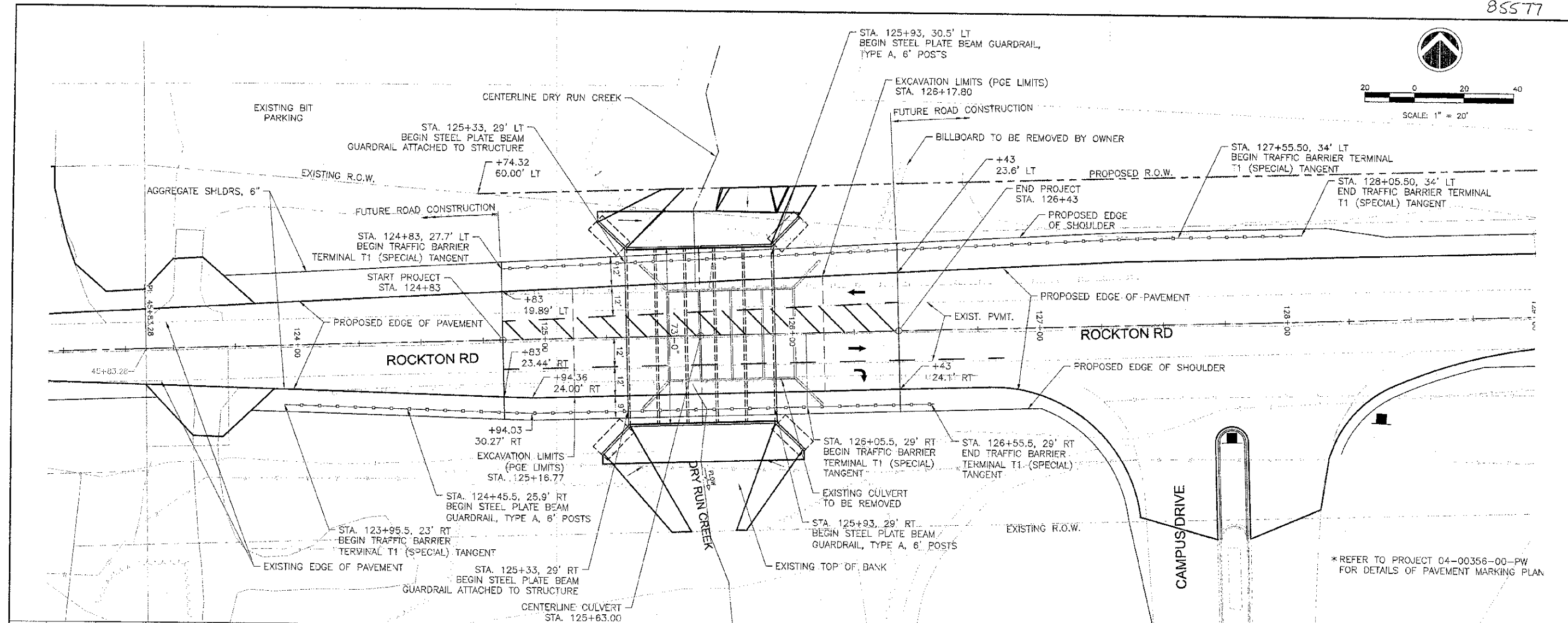
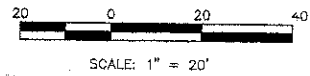
BENCHMARK				
BENCHMARK	STATION	OFFSET	DESCRIPTION	ELEVATION
BM #400	124+56±		1ST FIRE HYDRANT WEST OF DRY RUN CREEK & SOUTH OF ROCKTON RD. BOLT IN MUELLER	754.69
BM #401	126+00±	42' LT ±	CHISELED "□" AT NE CORNER OF HEADWALL AT DRY RUN CREEK.	757.73
BM #402			1ST FIRE HYDRANT EAST OF ENTRANCE TO NORTH POINT E WELLNESS SOUTH SIDE OF ROCKTON RD.	761.63

CONTROL POINTS			
POINT	NORTHING	EASTING	ELEVATION
CP 110208	2111039.6730	2609378.6470	761.02
CP 1	2111046.5120	2609121.6370	758.98
CP 2	2111092.9340	2608547.0480	759.77

LEGEND

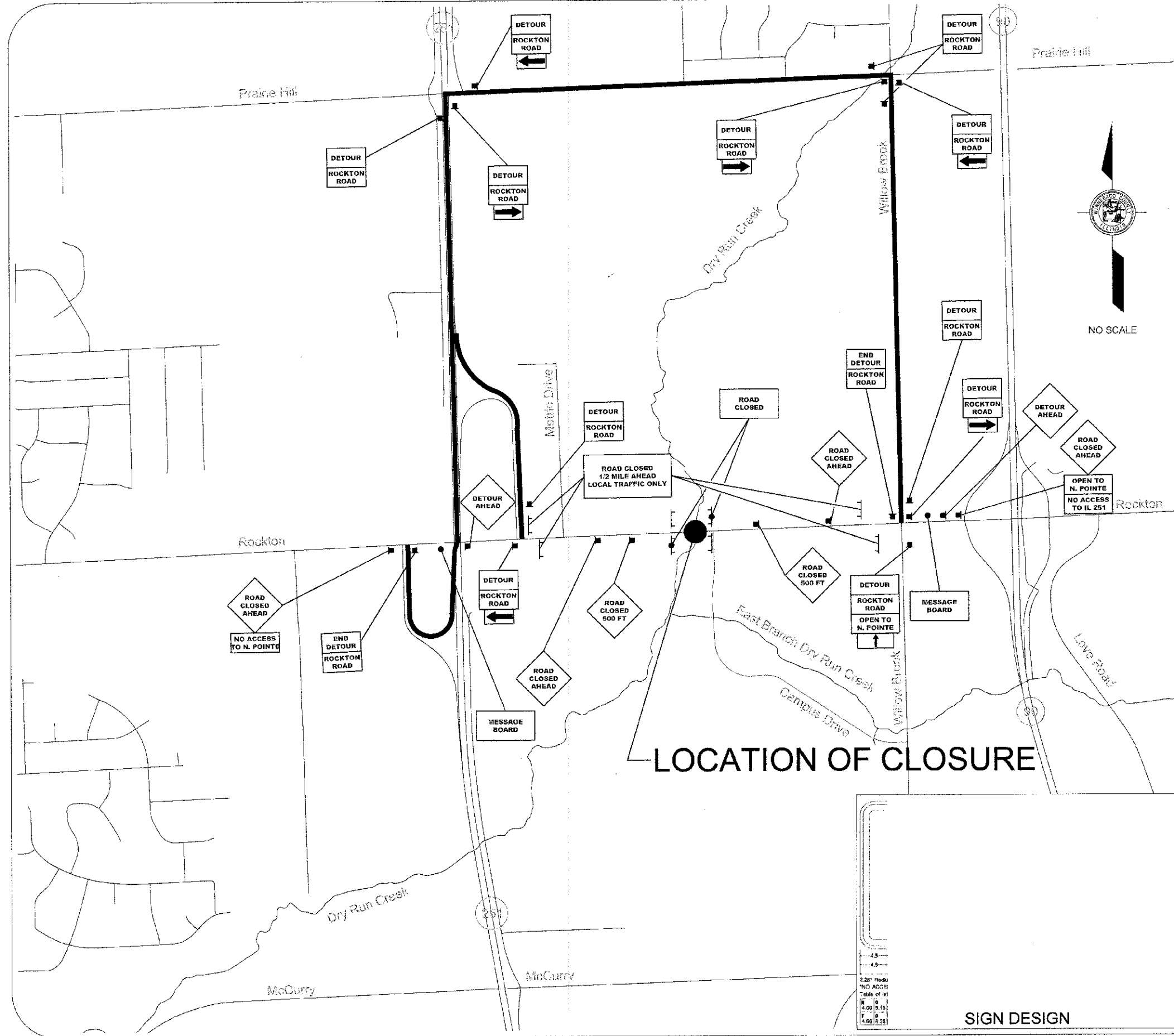
	PAVEMENT REMOVAL
	TREE REMOVAL (ACRES)

FILE NAME # _____	USER NAME # _____	DESIGNED -- CJS	REVISED -- _____	 Rock Island, IL (815) 786-7664    Beltsford, IA (815) 244-0280    Rockford, IL (815) 695-2400    Sycamore, IL (815) 285-3825 www.missman.com	ALIGNMENT, TIES, BENCHMARKS AND REMOVAL PLAN STRUCTURE NO. 101-5158 SHEET NO. 1 OF 1 SHEETS	F.A.J. RTE. # _____	SECTION _____	COUNTY _____	TOTAL SHEETS _____	SHEET NO. _____
PLOT SCALE = _____	CHECKED -- CJS	REVISED -- _____	9878			12-00356-01-BR	WINNEBAGO	16	4	
PLOT DATE # _____	DATE -- _____	REVISED -- _____	SN 101-5158			CONTRACT NO. 85577				
						FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				



FILENAME =	USER NAME =	DESIGNED -- MHM/MAM	REVISED --		<b>PLAN &amp; PROFILE</b> <b>STRUCTURE NO. 101-5158</b>		F.A.U. RTE. 987B	SECTION 12-00356-01-BR	COUNTY WINNEBAGO	TOTAL SHEETS 16	SHEET NO. 5
PLOT SCALE =	CHECKED -- CJS	REVISOR --	REVISOR --		SHEET NO. 1 OF 1 SHEETS		SN 101-5158		CONTRACT NO. 85577		
PLOT DATE =	DATE --	REVISOR --	REVISOR --		Rock Island, IL (309) 798-7884 Bettendorf, IA (563) 344-0260 www.missman.com		Rockford, IL (815) 855-6400 Gycamore, IL (815) 855-3225		FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT		
124+00 125+00 126+00 127+00 128+00 129+00											






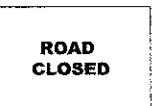
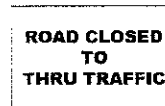
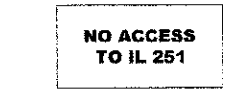


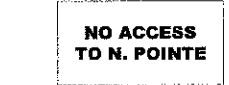



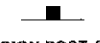

MISSMAN, INC. 1211 1/2 AVENUE, SUITE 100, ROCKFORD, ILLINOIS 61103-3636



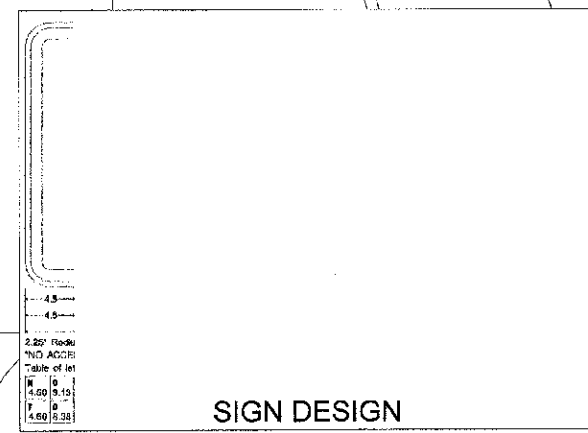
**GENERAL NOTES**

- 1) WORK ON THIS PROJECT WILL BE IN PROGRESS AT THE SAME TIME AS WORK ON COUNTY SECTION 04-00356-00-PW. WORK ON THESE PROJECTS SHALL BE SCHEDULED TO KEEP INTERFERENCE BETWEEN BOTH PROJECTS TO A MINIMUM. THE CONTRACTORS SHALL INFORM EACH OTHER OF PROGRESS OF THE PROJECTS AND GIVE FAIR WARNING TO THE OTHER CONTRACTORS WHEN A PROBLEM MIGHT BE ENCOUNTERED.
- 2) IT IS ANTICIPATED THAT MUCH OF THE GRADING AND WIDENING FOR COUNTY SECTION 04-00356-00-PW WILL OCCUR UNDER THE 12-00356-01-BR CLOSURE. HOWEVER, ANY TRAFFIC CONTROL REQUIRED TO COMPLETE THE REMAINING WORK FOR COUNTY SECTION 04-00356-00-PW WILL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR SECTION 04-00356-00-PW.
- 3) CLOSURE SIGNAGE, BARRICADES AND SPACING SHALL COMPLY WITH IDOT STANDARD B.L.R. 21-9.
- 5) ALL TYPE I & III BARRICADES SHALL BE EQUIPPED WITH TYPE A FLASHERS.
- 6) SEE STANDARD DRAWINGS FOR SIGN & BARRICADE SPACING.
- 6) TRAILER MOUNTED MESSAGE BOARDS SHALL BE SET UP A MINIMUM OF 10 DAYS PRIOR TO THE CLOSING OF ROCKTON ROAD. THE MESSAGE BOARDS WILL NOTIFY THE PUBLIC OF THE DATE OF THE CLOSURES. AFTER THE DETOUR IS IN PLACE AND THE ROADS ARE CLOSED, THE MESSAGE BOARDS CAN BE TAKEN DOWN.

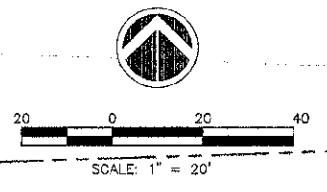
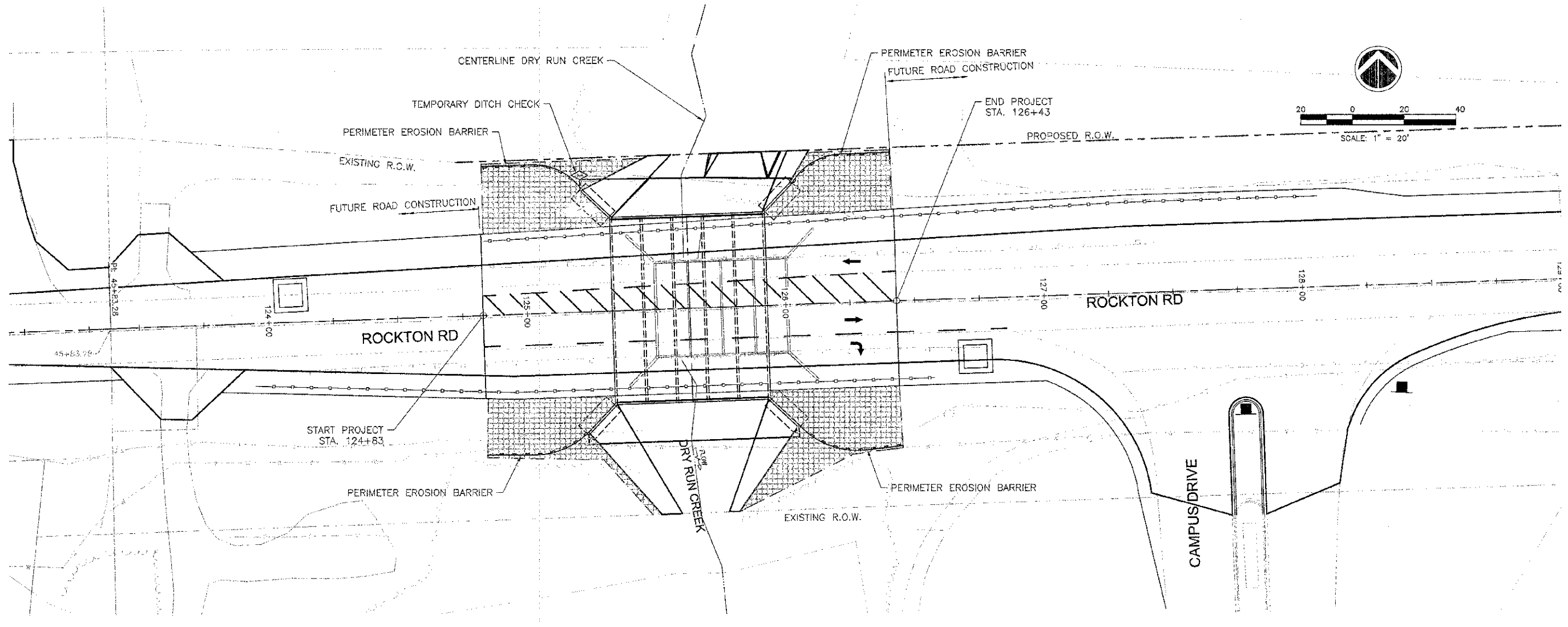
**LEGEND**

				
W4-8 (24 x 12)	M6-1L (21 x 15)	M6-1R (21 x 15)	M6-3 (21 x 15)	24 x 24 6" LETTERING C SERIES
				
R11-2 (48 x 30)	R11-4 (48 x 30)	48 x 24 6" LETTERS C SERIES		
				
W20-2 (48)	48 x 24 6" LETTERS C SERIES	48 x 24 6" LETTERS C SERIES		
				
W20-3(0)-48	W20-3 (48)			
				
TYPE II BARRICADES OR DRUM	SIGN POST & ASSEMBLY	TYPE III BARRICADES		

**LOCATION OF CLOSURE**



**ROCKTON ROAD DETOUR PLAN**



**LEGEND**

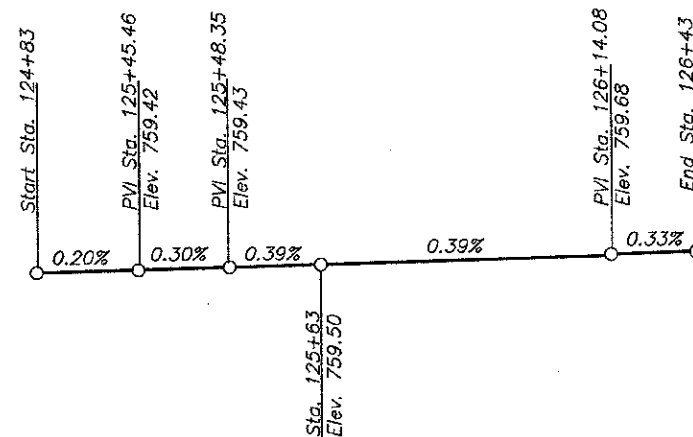
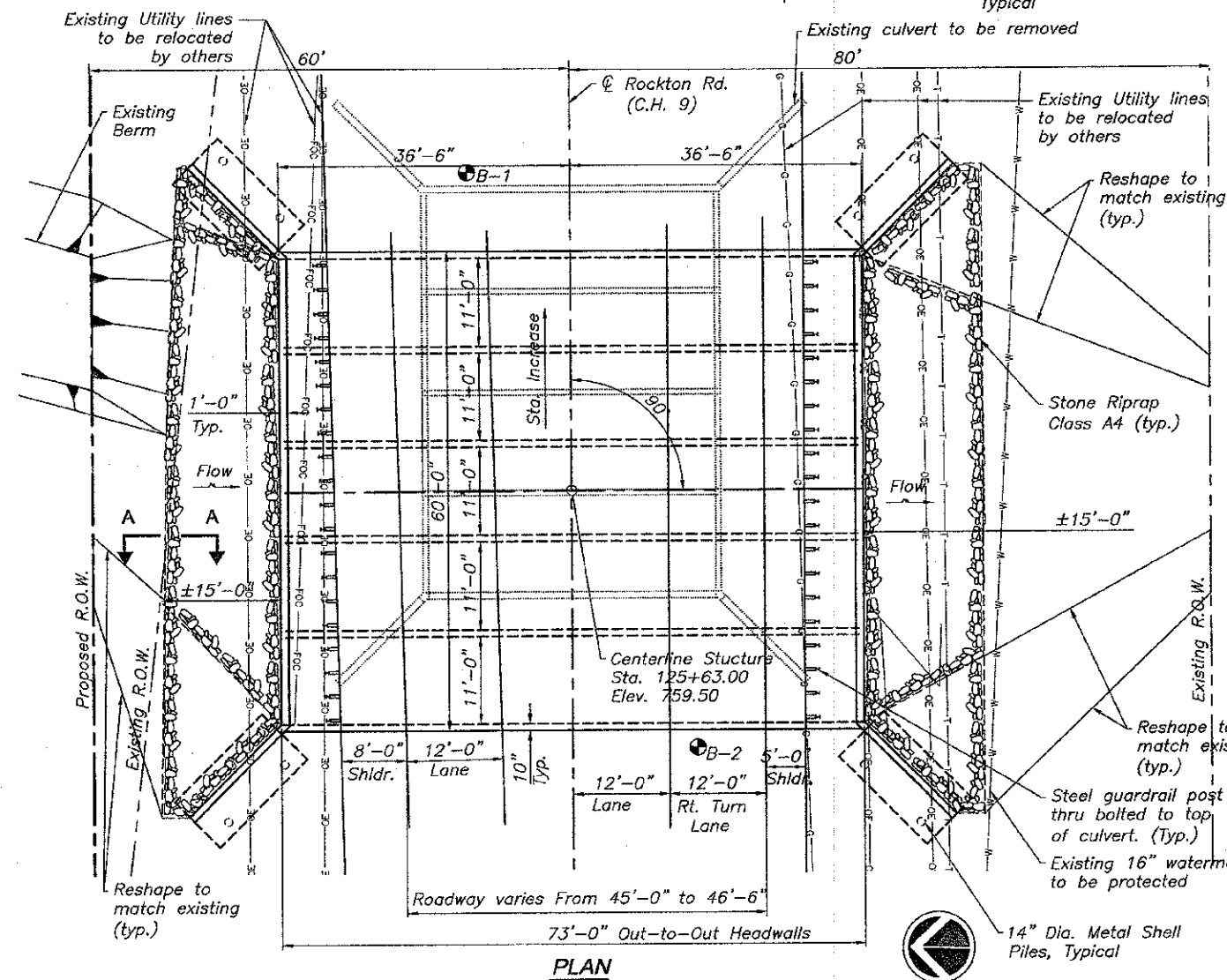
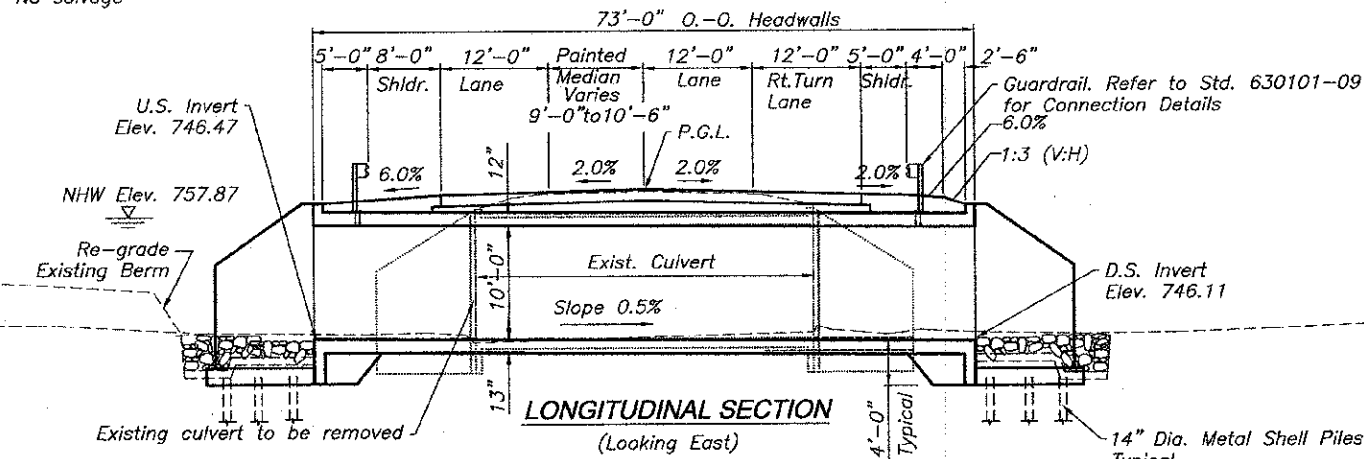
	CONSTRUCTION LIMITS
	EROSION CONTROL BLANKET
	TEMPORARY DITCH CHECKS
	PERIMETER EROSION BARRIER
	CONCRETE TRUCK WASH OUT

FILE NAME =	USER NAME =	DESIGNED -- TSG	REVISED --	<p>Missman, Inc. Professional Engineers &amp; Land Surveyors</p> <p>Rock Island, IL (309) 798-7844    Bettendorf, IA (563) 344-0260    Rockford, IL (815) 965-4900    Sycamore, IL (815) 895-5825</p> <p>www.missman.com</p>	<p><b>EROSION CONTROL PLAN</b> <b>STRUCTURE NO. 101-5158</b></p> <p>SHEET NO. 1 OF 1 SHEETS</p>	F.A.U. RTE. 9878	SECTION 12-00356-01-BR	COUNTY WINNEBAGO	TOTAL SHEETS 16	SHEET NO. 7
PLOT SCALE =	CHECKED -- CJS	REVISED --	SN 101-5158			CONTRACT NO. 85577				
PLOT DATE =	DATE --	REVISED --	ILLINOIS FED. AID PROJECT							

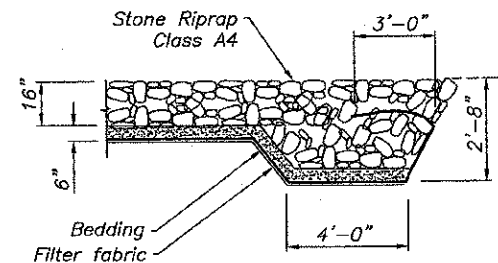
Bench Mark: BM#400 1st Fire hydrant west of creek and south of Rockton Rd. Bolt in mueller Sta. 124+56 Elev. 754.69  
 BM#401 Chiseled "□" at NE corner of headwall on n. side of Rockton Rd. ±42' Lt., Sta. 126+00, Elev. 757.73

Existing Structure: S.N. 101-5022, built in 1954 under section 91B MFT, is a 4-barrel 12'x10' reinforced box culvert with a length of 51'-8", 37'-4" in width. The south headwall was repaired in 2003. The existing structure will be removed and replaced with a 5-barrel 11'-0"x 10'-0" reinforced concrete box culvert with a length of 73'-0", 60'-0" in width.

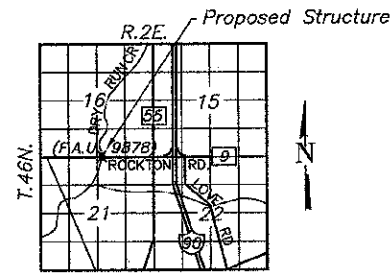
No salvage



PROFILE GRADE  
(Along & roadway)



SECTION A-A



LOCATION SKETCH

Drainage Area = 31.6 sq. mi. Low Grade Elev. 758.80 (E.O.P.) @ Sta. 125+75.43

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	2,500	194.5	555.0	755.29	0.58	0.00	755.87	755.29
Base	100	4,030	194.5	555.0	757.87	1.11	0.13	758.98	758.00
Overtopping		4,710	194.5	555.0	758.33	1.41	0.53	759.74	758.86
Max. Calc.	500	6,410	194.5	555.0	759.24	1.99	1.21	761.23	760.45

10 Yr. velocity thru existing bridge = 12 ft/s  
 10 Yr. velocity thru proposed bridge = 4.3 ft/s

DRY RUN CREEK  
 BUILT 20 BY  
 WINNEBAGO COUNTY  
 SECTION 12-00356-01-BR  
 C.H. 9 (F.A.U. 9878), STA. 125+63  
 STR. NO. 101-5158, LOADING HL93

NAME PLATE

Refer to Stand. 515001



I certify that to the best of my knowledge, information and belief this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the 2012 AASHTO LRFD Bridge Design Specifications.

John B. Fellman  
 John B. Fellman, S.E.  
 License expires 11-30-2014

1-15-2013  
 Date

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	742.11	742.47

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi  
 fy = 60,000 psi (reinforcement)

GENERAL PLAN & ELEVATION

ROCKTON ROAD, C.H. 9 (F.A.U. 9878)

OVER DRY RUN CREEK

SECTION 12-00356-01-BR

WINNEBAGO COUNTY

STA. 125+63

STRUCTURE NO. 101-5158

FILE NAME	USER NAME	DESIGNED	REVISIONS	DATE	PROJECT	SHEET NO.	TOTAL SHEETS
		MHM/MAM			GENERAL PLAN AND ELEVATION	1	8
		RAP			STRUCTURE NO. 101-5158		
		JBF					



GENERAL PLAN AND ELEVATION  
 STRUCTURE NO. 101-5158

SHEET NO. 1 OF 7 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	8
	SN 101-5158			

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT  
 IL DESIGN FIRM NO. 184-00843



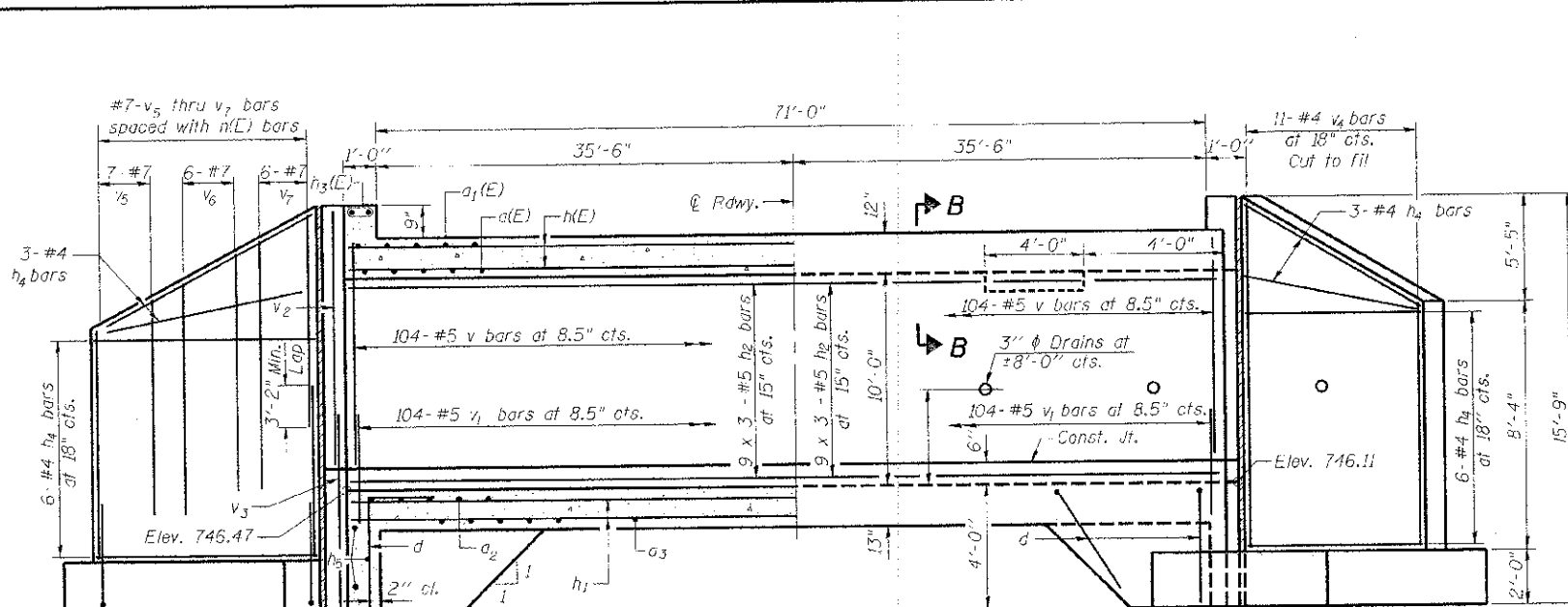
**PILE DATA**

Type: Metal Shell - 14 in. dia. x 0.25 in wall  
 Nominal Required Bearing: 151 k  
 Factor of Resistance Available: 83 k  
 Estimated Pile Length: 30 ft  
 Number of Production Piles: 18  
 Number of Test Piles: 2

Notes:  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Cost of Preformed Joint Filler, Hollow Bulb Type Nonmetallic Water Seal & Concrete Nails Included with Concrete Box Culverts.  
 Bars indicated thus 12x4-#5 etc. indicates 12 lines of bars with 4 lengths per line.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	208	#7	32'-3"	C
a <sub>1</sub> (E)	208	#7	31'-5"	C
a <sub>2</sub>	208	#7	32'-3"	C
a <sub>3</sub>	208	#7	31'-5"	C
d	154	#4	5'-6"	J
h(E)	294	#4	25'-3"	—
h <sub>1</sub>	294	#4	25'-3"	—
h <sub>2</sub>	162	#4	25'-3"	—
h <sub>3</sub> (E)	8	#6	31'-1"	—
h <sub>4</sub>	72	#4	14'-10"	—
h <sub>5</sub>	12	#6	31'-1"	—
n(E)	76	#7	8'-1"	U
t	76	#6	7'-8"	—
l <sub>1</sub>	76	#5	7'-8"	—
v	624	#5	10'-4"	—
v <sub>1</sub>	624	#5	3'-5"	—
v <sub>2</sub>	8	#6	11'-1"	—
v <sub>3</sub>	8	#6	6'-9"	—
v <sub>4</sub>	44	#4	13'-5"	—
v <sub>5</sub>	28	#7	8'-0"	—
v <sub>6</sub>	24	#7	10'-1"	—
v <sub>7</sub>	24	#7	11'-10"	—
w	88	#5	14'-10"	—
Concrete Box Culverts	Cu. Yd.		548.8	
Reinforcement Bars, Epoxy Coated	Pound		33,660	
Reinforcement Bars	Pound		50,530	

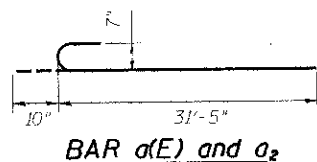


**HALF LONG SECTION**  
 Showing bars in Inside Walls

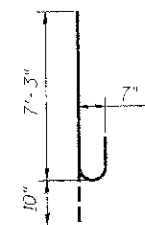
**HALF ELEVATION**  
 Showing bars in Outside Walls

**REINFORCEMENT FRONT FACE**

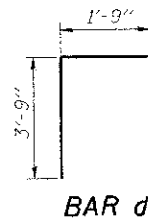
**REINFORCEMENT BACK FACE**



**BAR a(E) and a<sub>2</sub>**



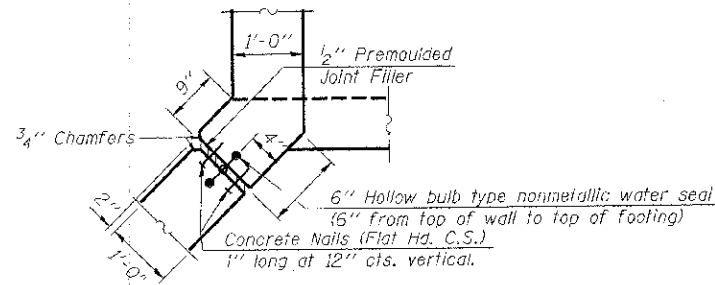
**BARS n(E)**



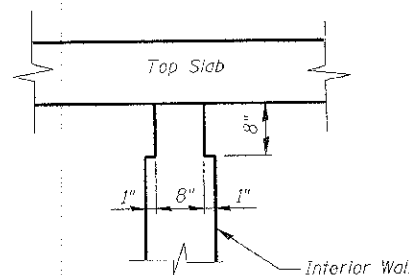
**BAR d**

**BAR LAPS**

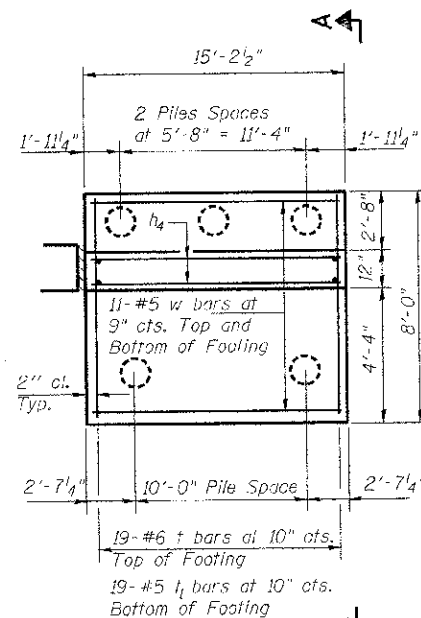
Size	Lap
#4	1'-7"
#5	2'-0"
#6	2'-5"
#7	3'-2"



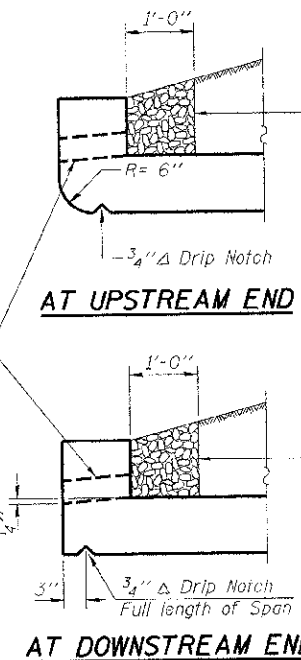
**CORNER DETAIL**



**SECTION B-B**  
 (Phoebe Nesting Site)



**WINGWALL BAR AND PILE DETAIL**



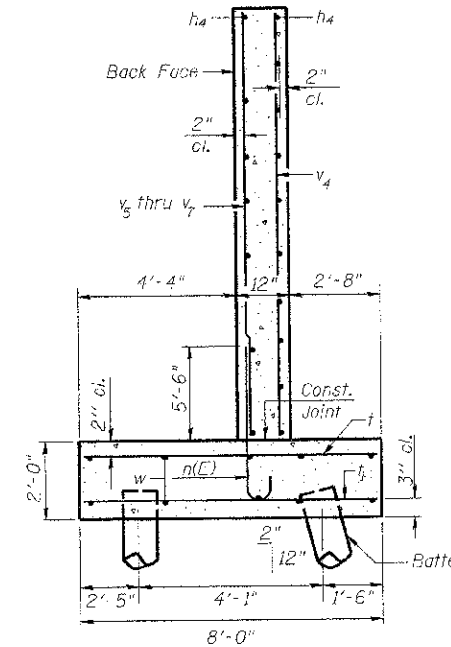
**DRAIN DETAIL**

**AT DOWNSTREAM END**

**AT UPSTREAM END**

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.

**SECTION A-A**



**SECTION A-A**

DB-T-0

7-1-10

FILE NAME =	USER NAME =	DESIGNED <i>MHM/MAM</i>	REVISIONS
		CHECKED <i>JBF</i>	REVISIONS
		DRAWN	REVISIONS
		DATE	REVISIONS

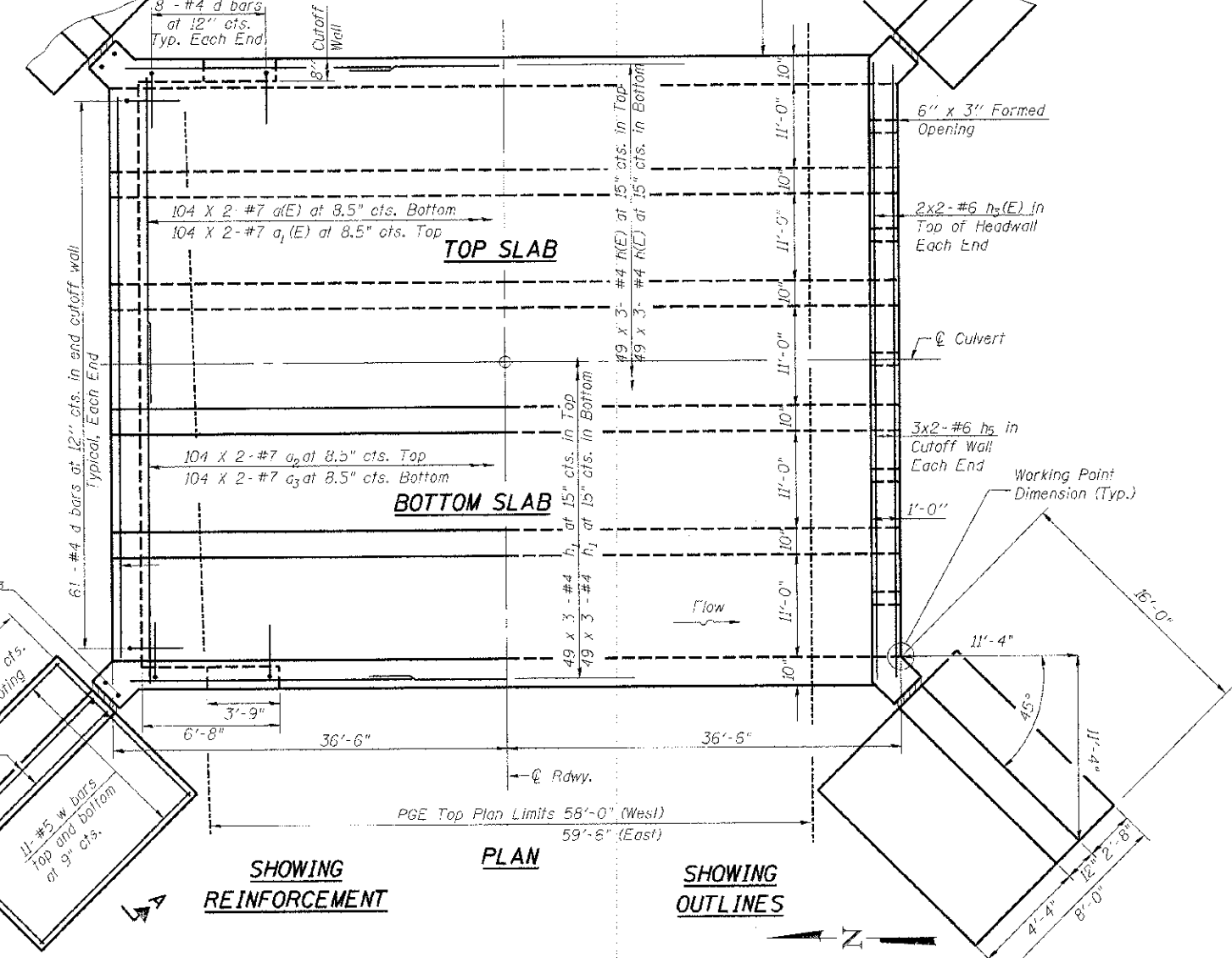
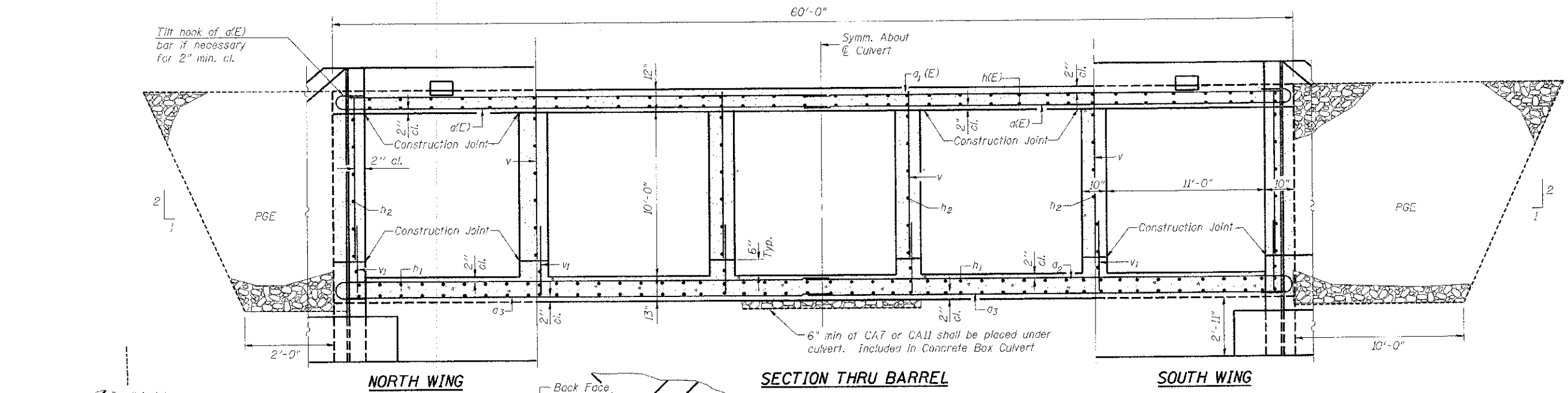


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CULVERT DETAILS  
 STRUCTURE NO. 101-5158

SHEET NO. 2 OF 7 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	9
	SN. 101-5158		CONTRACT NO. 85577	
ILLINOIS FED. AID PROJECT				



NOTES:  
 PGE shall be placed from shoulder to shoulder of the roadway, at the top of culvert.  
 The limits of PGE are shown in the Section view, this sheet. Remaining culvert areas to be backfilled shall be included in the cost of Concrete Box Culverts per Section 540 of the Standard Specifications.

DB-T-0

7-1-17

FILE NAME =	USER NAME =	DESIGNED <i>MHM/MAJM</i>	REVISED -
		CHECKED <i>JBF</i>	REVISED -
		DRAWN	REVISED -
		DATE	REVISED -

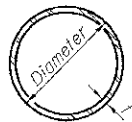
**Missman, inc.**  
 Professional Engineers & Land Surveyors

PH(309)788-7644      ROCK ISLAND, ILLINOIS      FAX(309)788-7691

**CULVERT DETAILS**  
 STRUCTURE NO. 101-5158

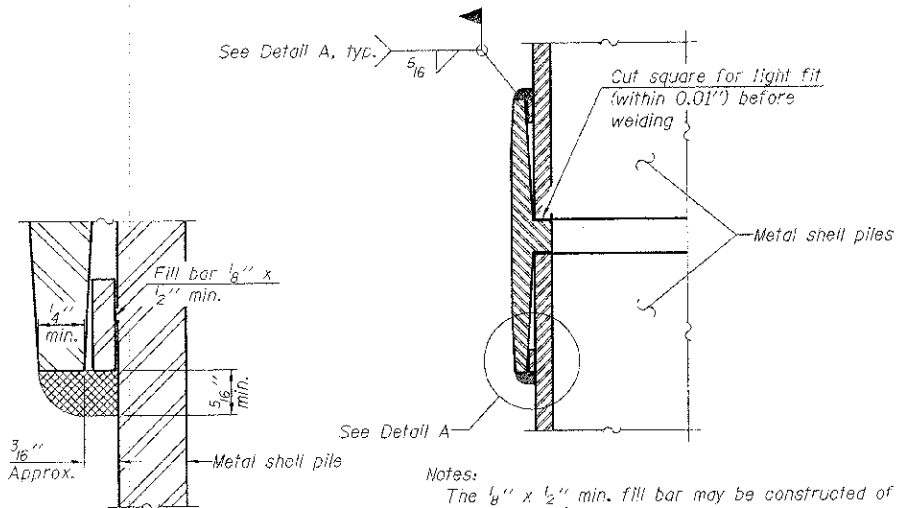
SHEET NO. 3 OF 7 SHEETS

F.A.D. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	10
SN 101-5158		CONTRACT NO. 85577		
ILLINOIS FED. AID PROJECT				



**METAL SHELL PILE TABLE**

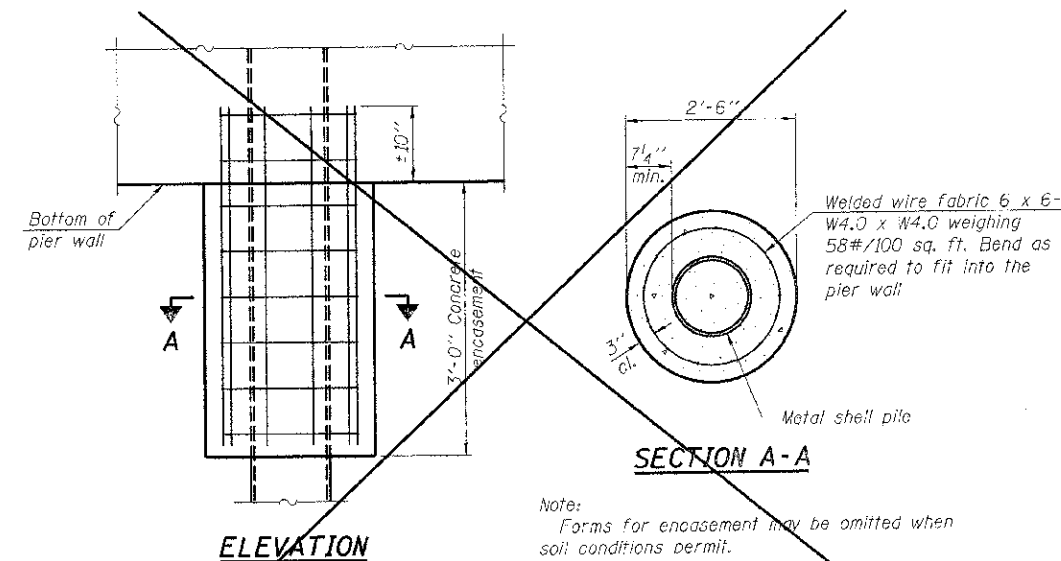
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



**DETAIL A**

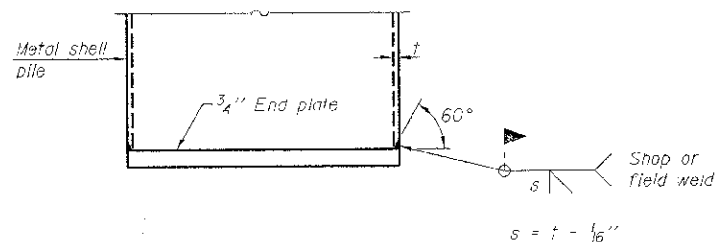
**WELDED COMMERCIAL SPLICE**

Notes:  
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

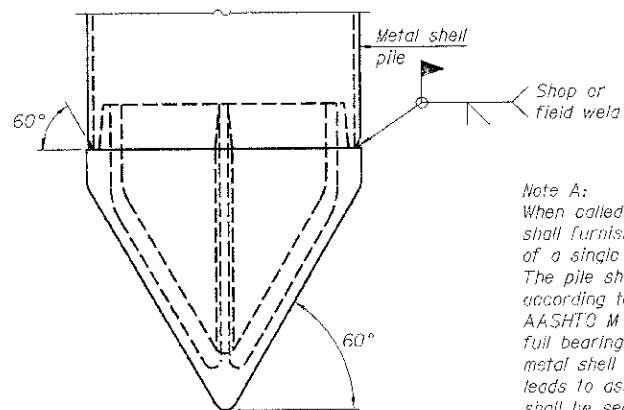


**CONCRETE ENCASEMENT AT PIERS**

Note:  
 Forms for encasement may be omitted when soil conditions permit.



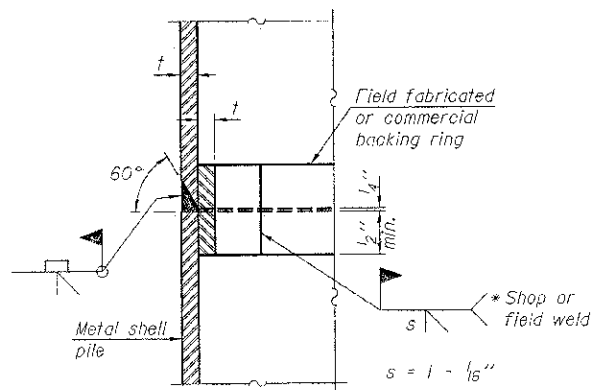
**END PLATE ATTACHMENT**



**METAL SHELL PILE SHOE ATTACHMENT**

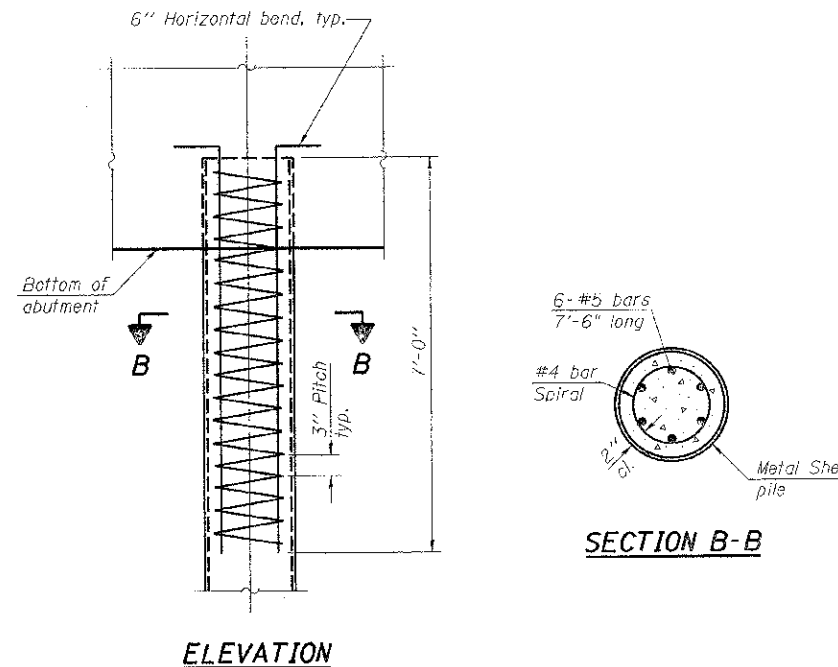
(See Note A)

Note A:  
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.



**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



**METAL SHELL REINFORCEMENT AT WINGWALL FOOTING**

Note:  
 The metal shell piles shall be according to ASTM A 252 Grade 3.

F-MS

7-1-10

FILE NAME =	USER NAME =	DESIGNED <i>MHM</i>	REVISED
		CHECKED <i>JBK</i>	REVISED
		DRAWN <i>RAP</i>	REVISED
		DATE	REVISED

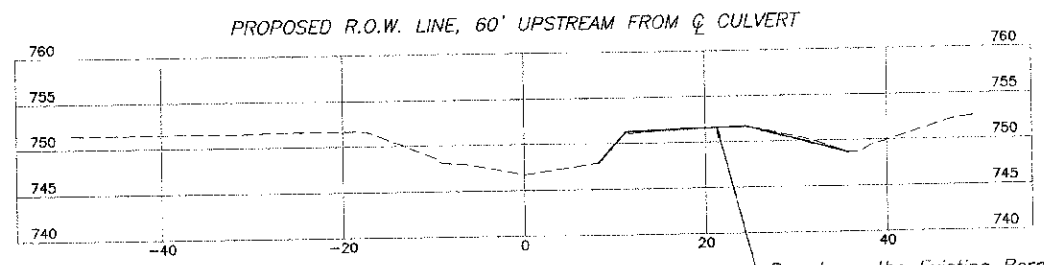
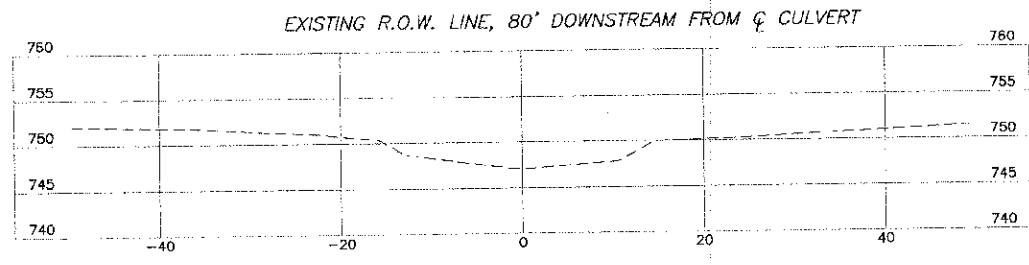


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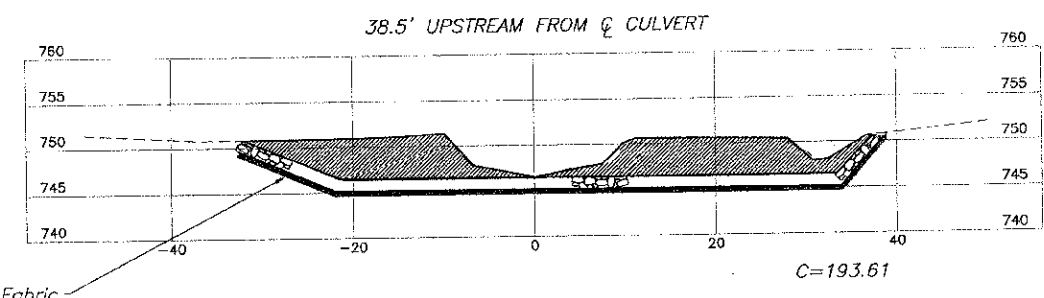
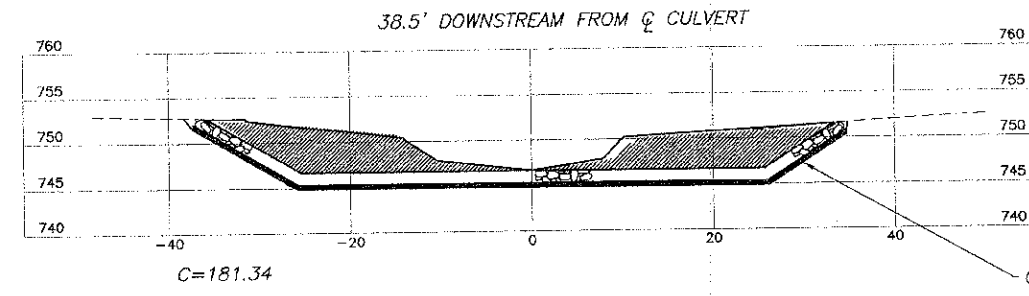
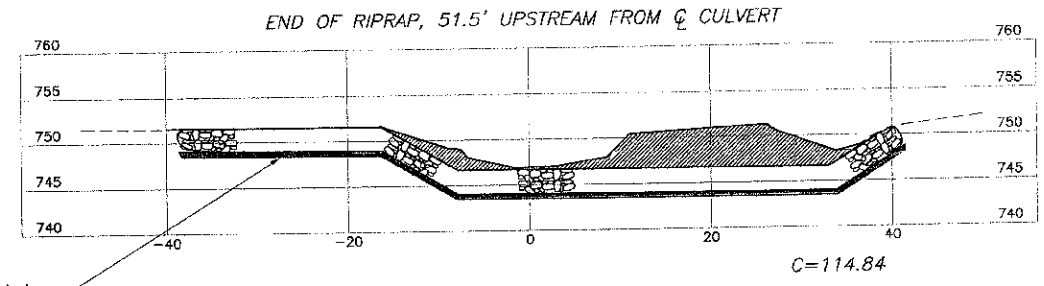
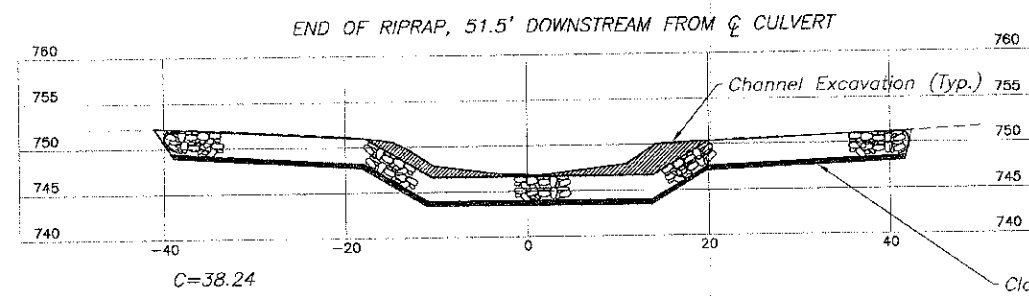
METAL SHELL PILES  
 STRUCTURE NO. 101-5158

SHEET NO. 4 OF 7 SHEETS

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	11
SN. 101-5158			CONTRACT NO. 85577	
ILLINOIS FED. AID PROJECT				

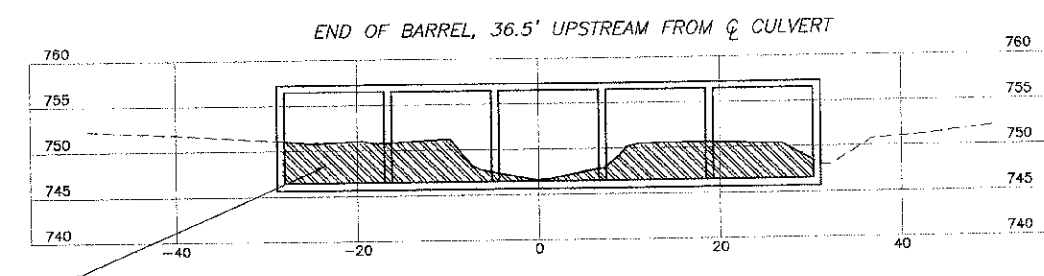
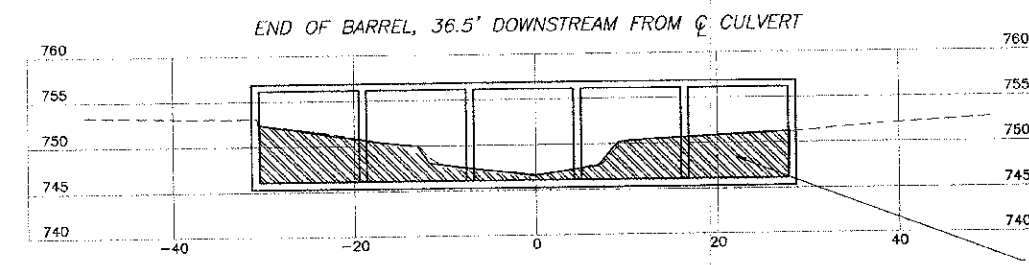


Re-shape the Existing Berm  
From R.O.W. to the End of the Riprap



Class A4 Riprap w/ Geotech Fabric and Bedding (Typ.) (at Toe location)

Class A4 Riprap w/ Geotech Fabric and Bedding (Typ.)



Structure Excavation (Typ.)  
(Included in "Concrete Box Culvert")

FILE NAME	USER NAME	DESIGNED — MHM/MAM	REVISED —
		DRAWN — RAP	REVISED —
		CHECKED — JBF	REVISED —
		DATE —	REVISED —

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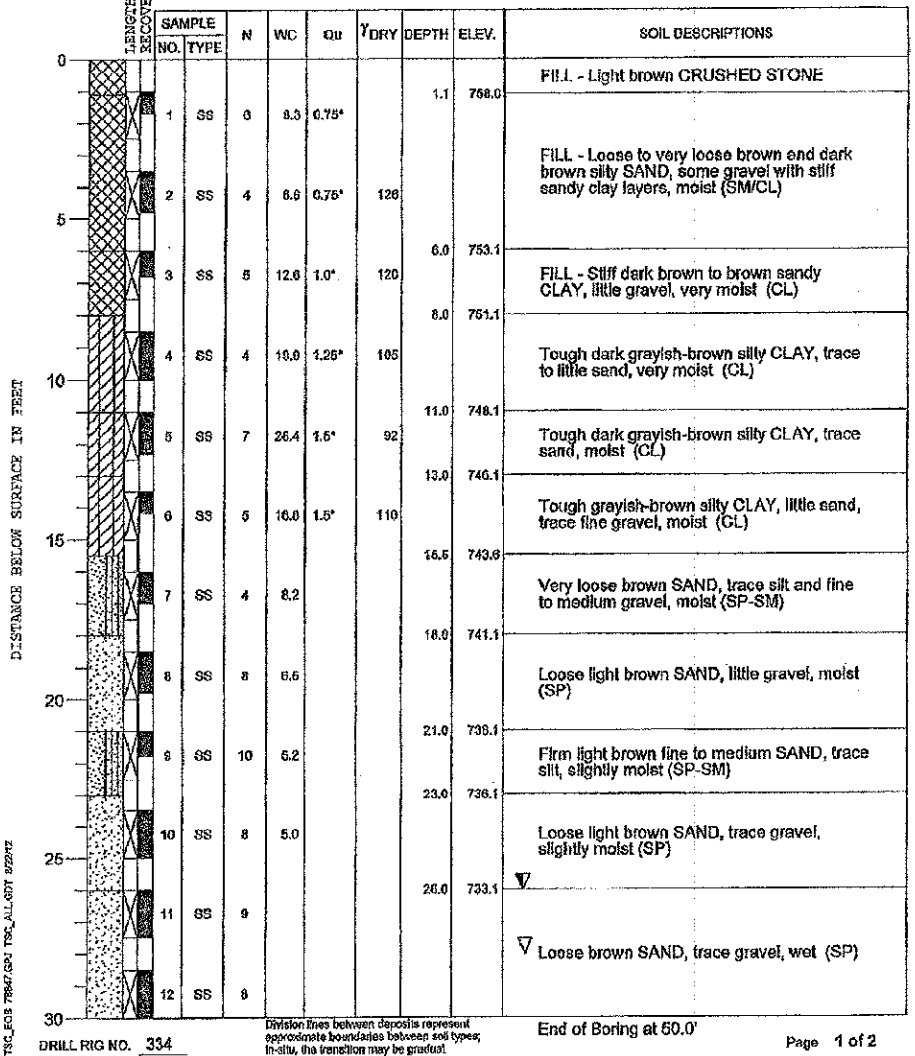
**CHANNEL CROSS SECTIONS**  
**STRUCTURE NO. 101-5158**

SHEET NO. 5 OF 7 SHEETS

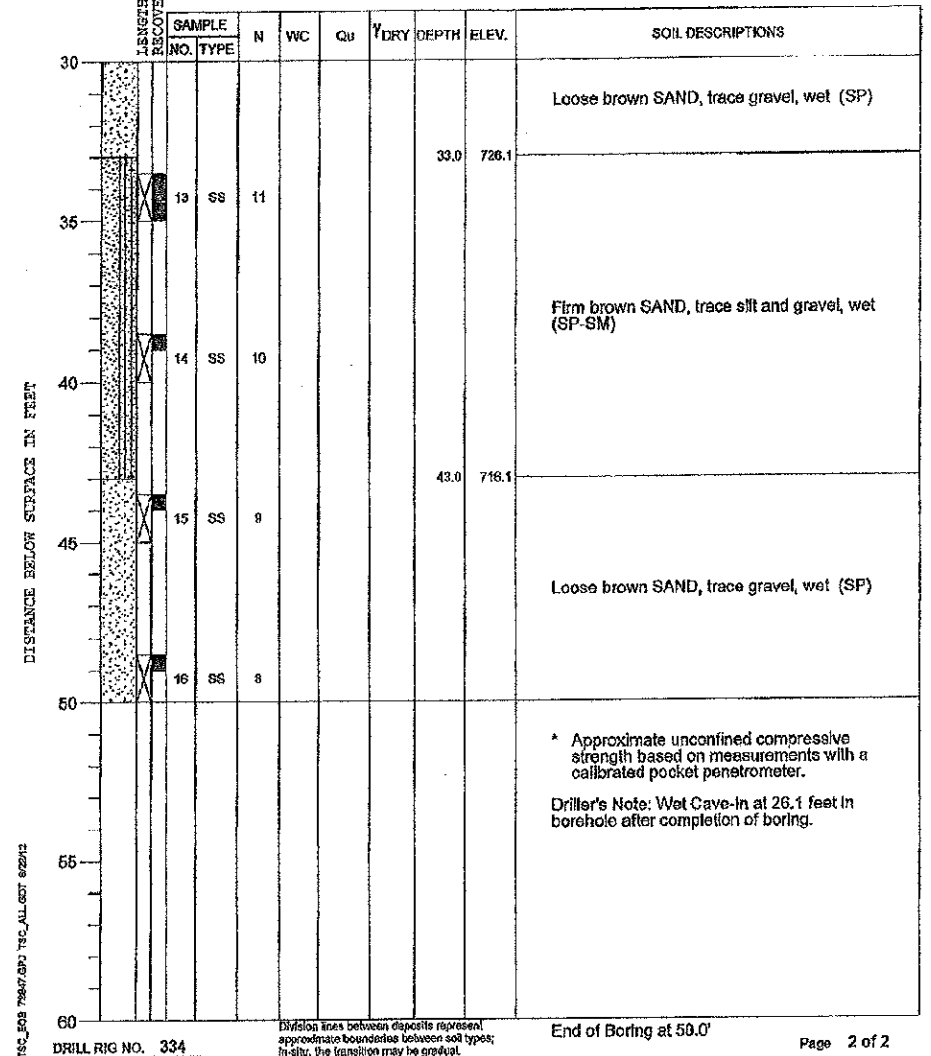
P.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	12
	SN 101-5158			CONTRACT NO. 85577
FED. ROAD DIST. NO. ... ILLINOIS FED. AID PROJECT				
I. DESIGN FIRM NO. 184-000843				

# SOIL BORINGS

PROJECT **Box Culvert Replacement, Rockton Road over Dry Run Creek, Winn. Co., Illinois**  
 CLIENT **Missman, Inc., Rockford, Illinois**  
 BORING **1** DATE STARTED **8-8-12** DATE COMPLETED **8-8-12** JOB **L-78,847**  
 ELEVATIONS WATER LEVEL OBSERVATIONS  
 GROUND SURFACE **759.1** WHILE DRILLING **28.0'**  
 END OF BORING **709.1** AT END OF BORING **28.0'**  
 24 HOURS

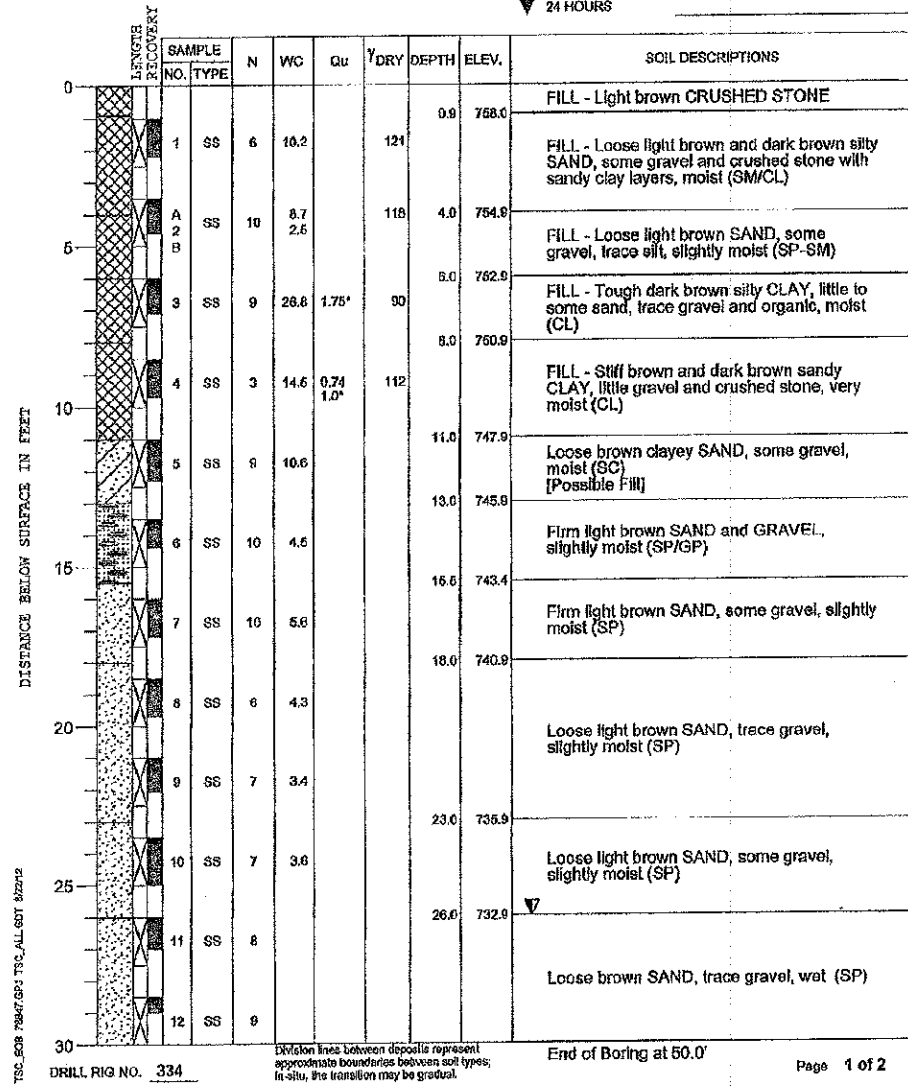


PROJECT **Box Culvert Replacement, Rockton Road over Dry Run Creek, Winn. Co., Illinois**  
 CLIENT **Missman, Inc., Rockford, Illinois**  
 BORING **1** DATE STARTED **8-8-12** DATE COMPLETED **8-8-12** JOB **L-78,847**  
 ELEVATIONS WATER LEVEL OBSERVATIONS  
 GROUND SURFACE **769.1** WHILE DRILLING **26.0'**  
 END OF BORING **709.1** AT END OF BORING **28.0'**  
 24 HOURS

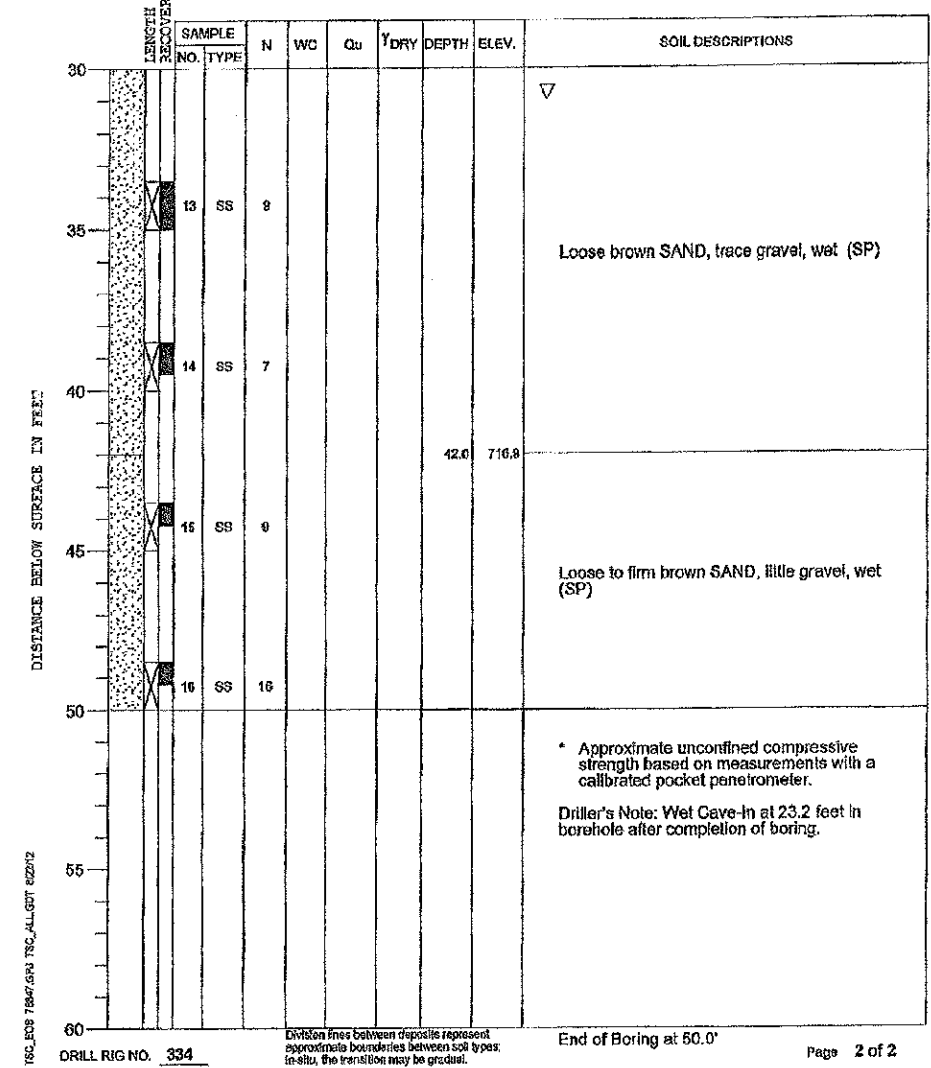


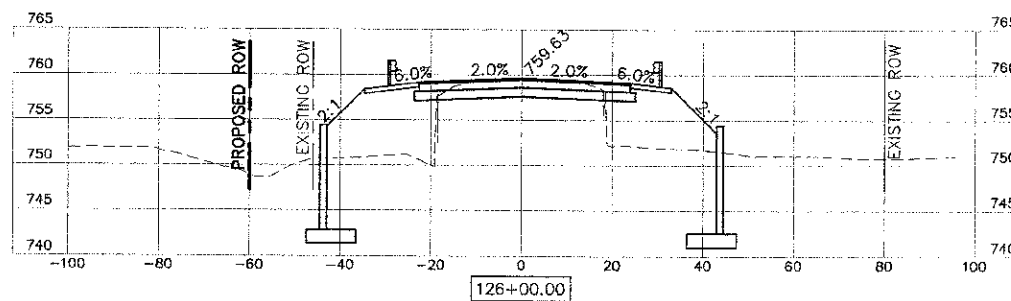
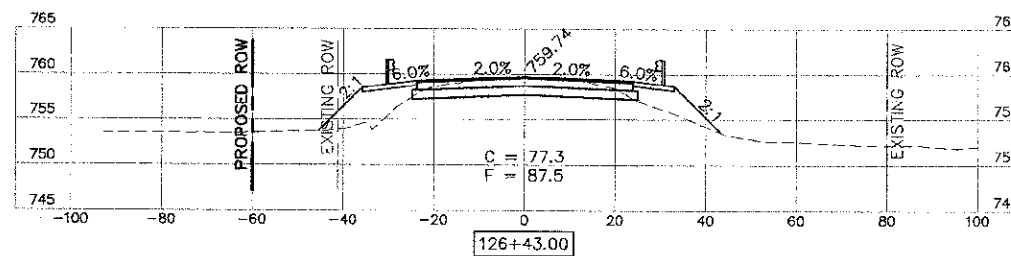
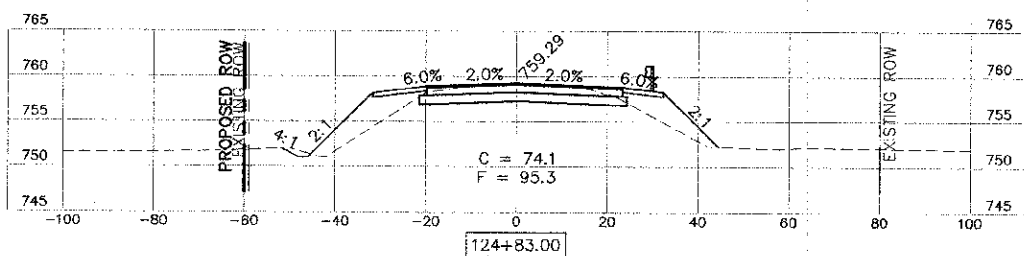
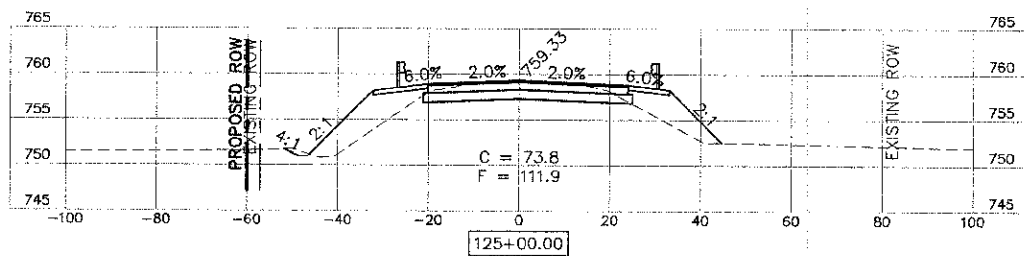
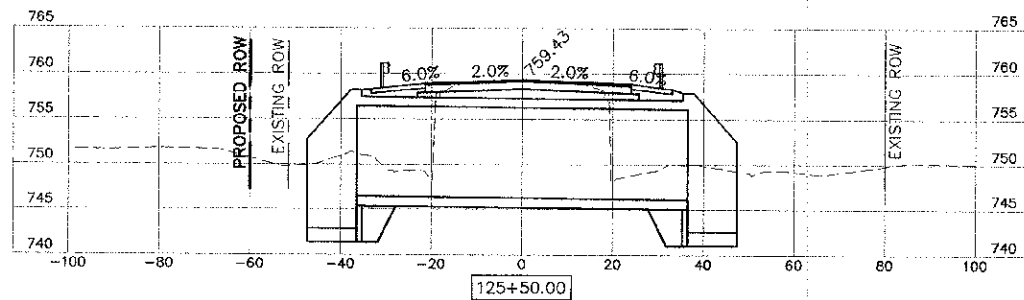
# SOIL BORINGS

PROJECT **Box Culvert Replacement, Rockton Road over Dry Run Creek, Winn. Co., Illinois**  
 CLIENT **Missman, Inc., Rockford, Illinois**  
 BORING **2** DATE STARTED **8-8-12** DATE COMPLETED **8-8-12** JOB **L-78,847**  
 ELEVATIONS WATER LEVEL OBSERVATIONS  
 GROUND SURFACE **758.9** WHILE DRILLING **26.0'**  
 END OF BORING **708.9** AT END OF BORING **31.0'**  
 24 HOURS



PROJECT **Box Culvert Replacement, Rockton Road over Dry Run Creek, Winn. Co., Illinois**  
 CLIENT **Missman, Inc., Rockford, Illinois**  
 BORING **2** DATE STARTED **8-8-12** DATE COMPLETED **8-8-12** JOB **L-78,847**  
 ELEVATIONS WATER LEVEL OBSERVATIONS  
 GROUND SURFACE **758.9** WHILE DRILLING **26.0'**  
 END OF BORING **708.9** AT END OF BORING **31.0'**  
 24 HOURS





FILE NAME =	USER NAME =	DESIGNED — CJS	REVISED —
		DRAWN — CJS	REVISED —
		CHECKED — CJS	REVISED —
		DATE —	REVISED —



Rock Island, IL (309) 728-7644    Bettendorf, IA (563) 344-0280    Rockford, IL (815) 955-6400    Sycamore, IL (815) 696-3825

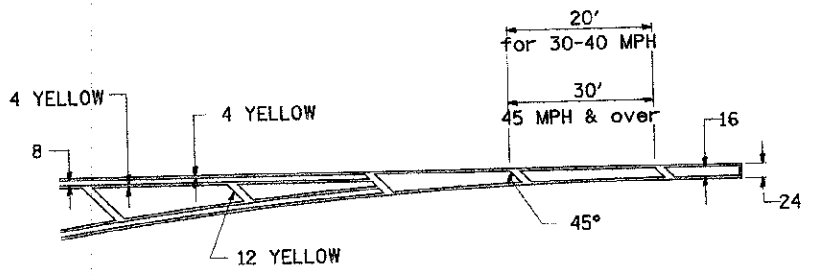
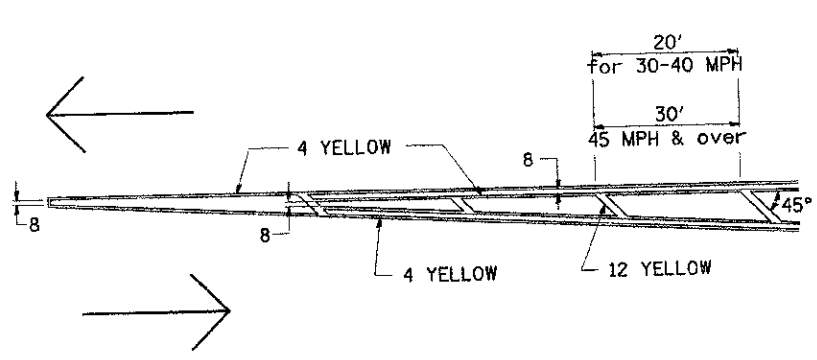
CROSS SECTIONS  
ROCKTON ROAD

SHEET NO. 1 OF 1 SHEETS

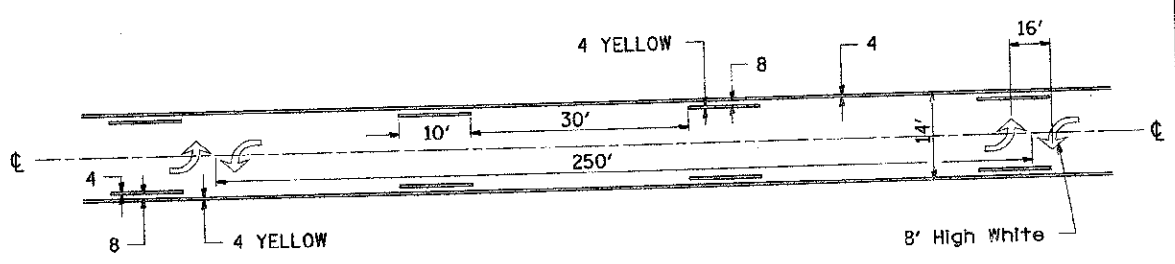
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
987B	12-00356-01-8R	WINNEBAGO	16	15
SN 101-5158		CONTRACT NO. 85577		
FED. ROAD DIST. NO. — ILLINOIS FED. AID PROJECT				

# TYPICAL PAVEMENT MARKINGS

## TYPICAL PAVEMENT MARKING FOR FLUSH MEDIAN AT LEFT TURN LANE

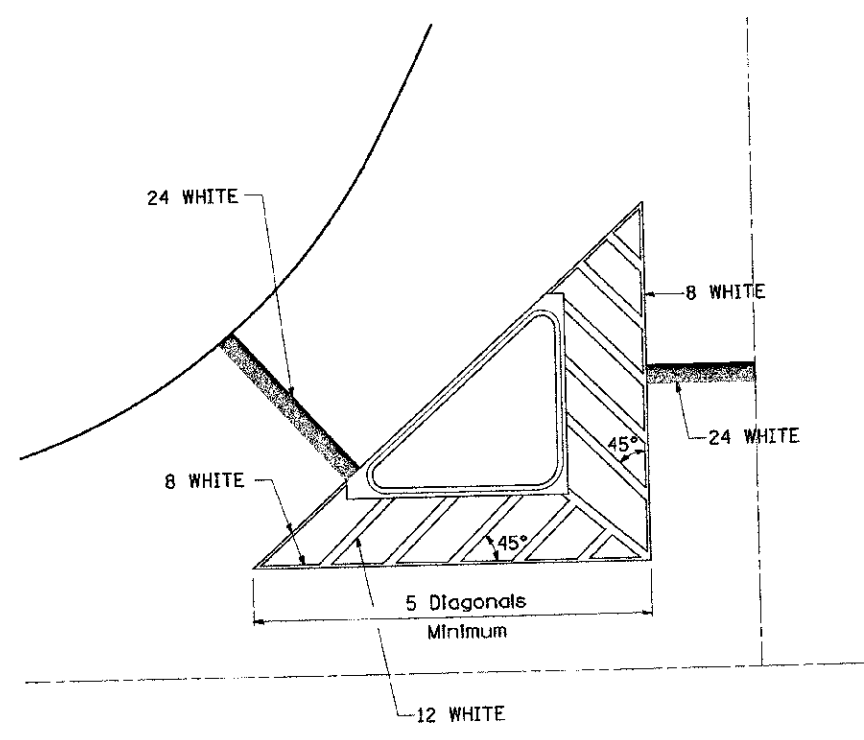


## MEDIAN PAVEMENT MARKING

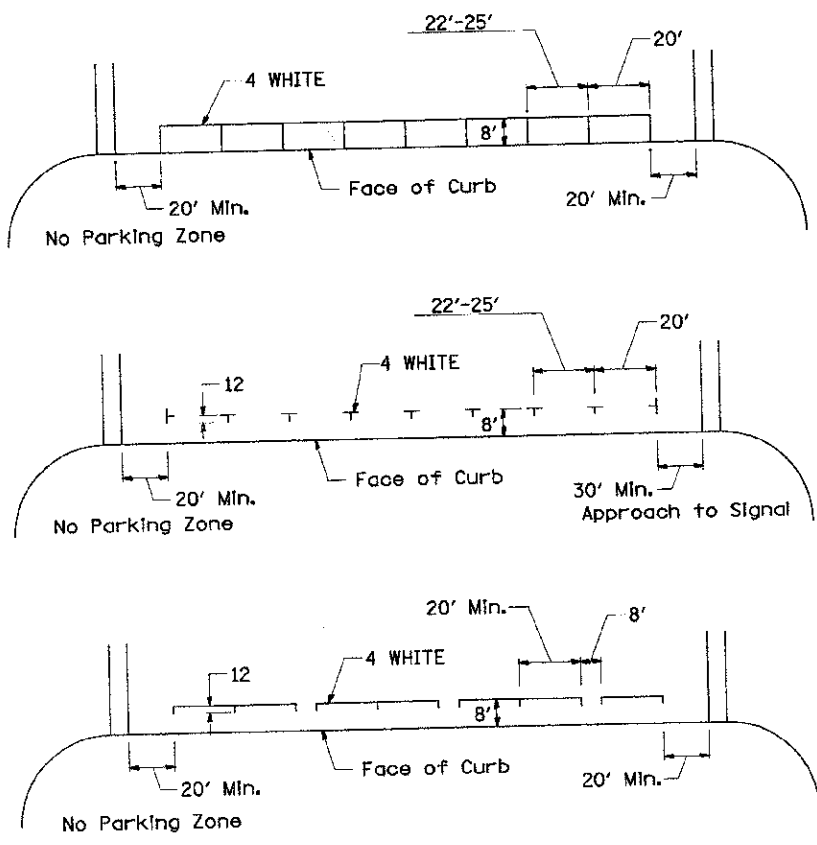


•• ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

## TYPICAL ISLAND OFFSET SHOULDER WIDTH

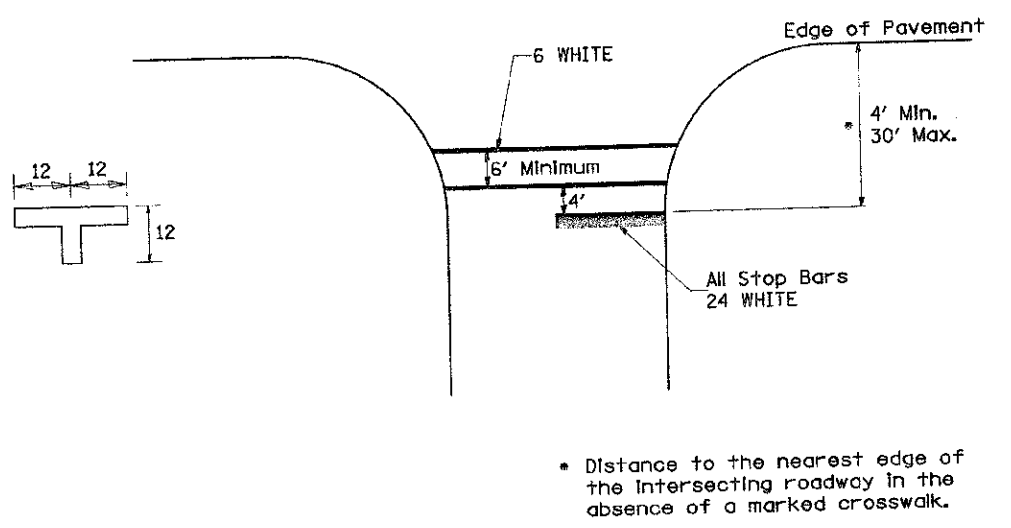


## TYPICAL PARKING SPACING



## STANDARD CROSSWALK MARKING

See Schedules for Locations



FILE NAME =	USER NAME = tammyg	DESIGNED -	REVISED - 10-18-11
W:\Tammie\0\atd41.1.dgn		DRAWN -	REVISED -
	PLOT SCALE = 1/8" = 1'-0"	CHECKED -	REVISED -
	PLOT DATE = 1/16/2013	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

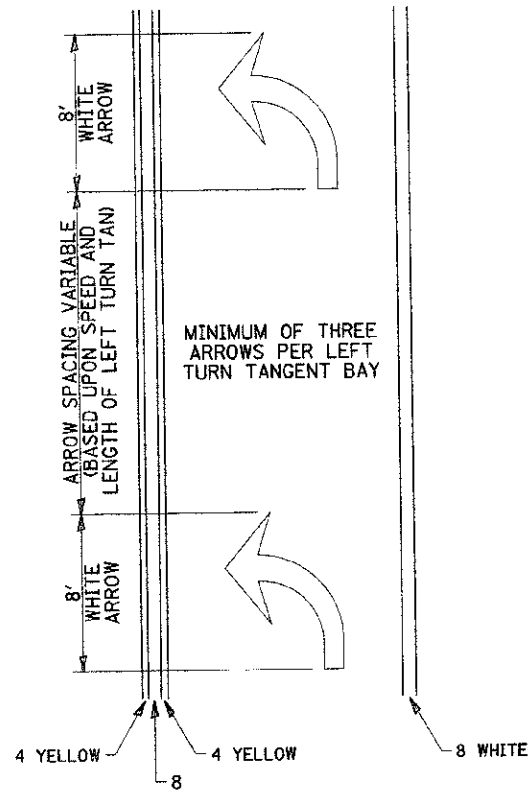
SCALE: \_\_\_\_\_ SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9878	12-00356-01-BR	WINNEBAGO	16	16
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT			CONTRACT NO. 85577	



# TYPICAL PAVEMENT MARKINGS

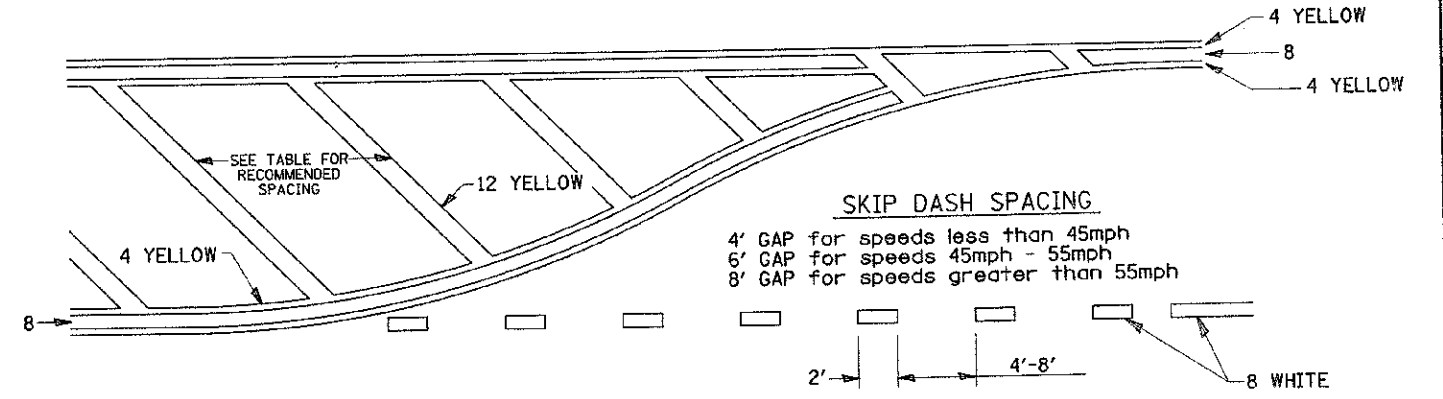
## ARROW LAYOUT



- ◁ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER
- ◇ TWO-WAY AMBER MARKER

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

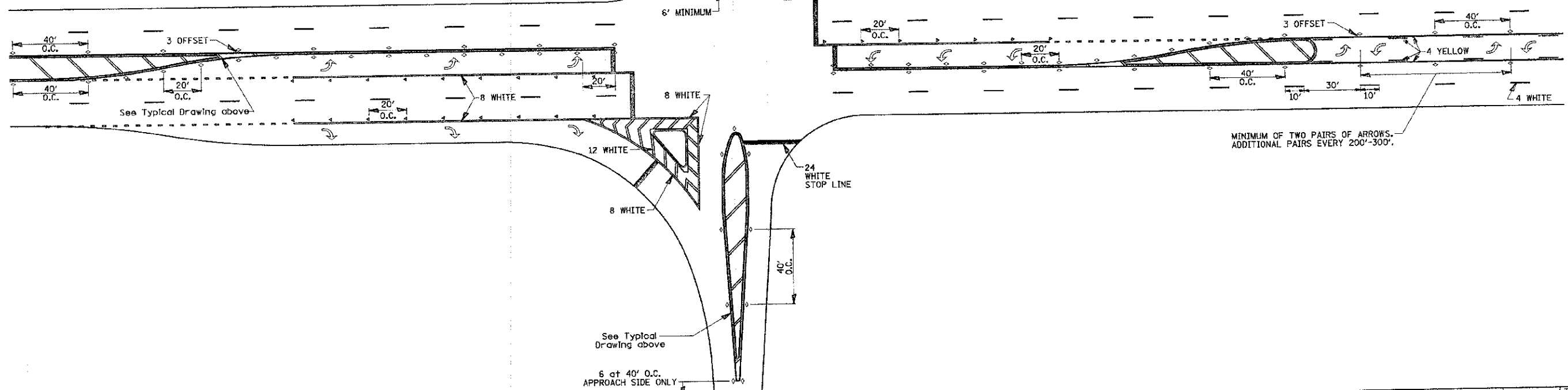
## TYPICAL PAVEMENT MARKING FOR FLUSH MEDIAN



### RECOMMENDED SPACING BETWEEN DIAGONALS (IN FEET)

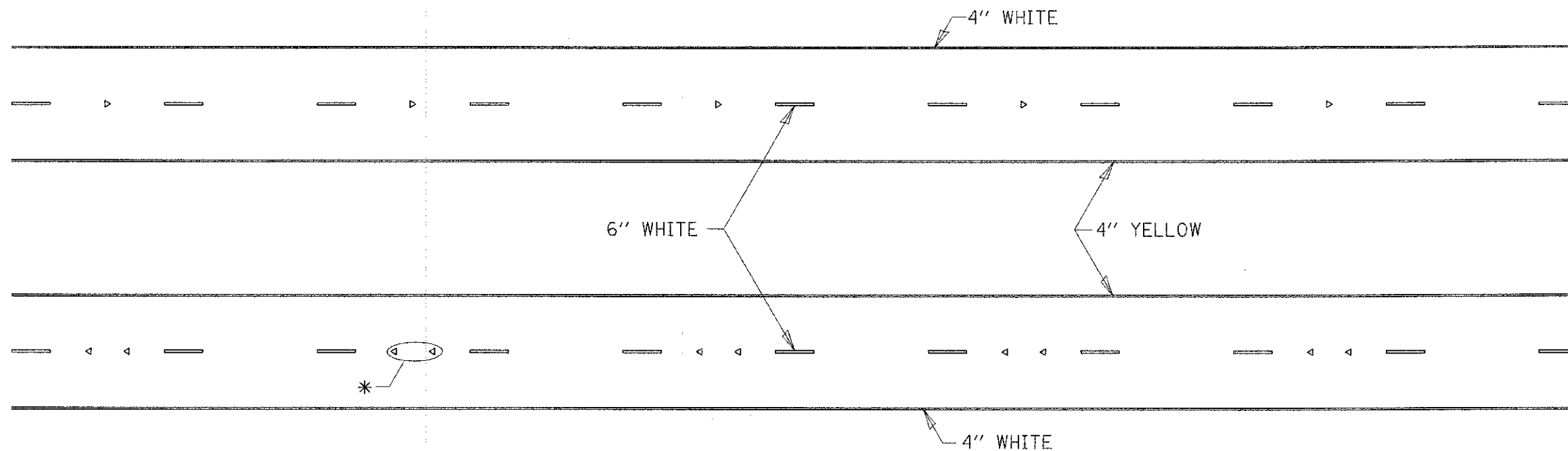
Speed Limit Range	Continuous Median Area	Intersection Channelization	Objects (Islands)
less than 30MPH	50'	15'	10'
30-40MPH	75'	20'	15'
45MPH & over	75'	30'	20'

NOTE: If the spacing recommended in the Table does not permit at least five diagonal lines in the area being marked, the spacing from the next lowest speed range should be used. The recommended spacing is measured parallel to the pavement center line.

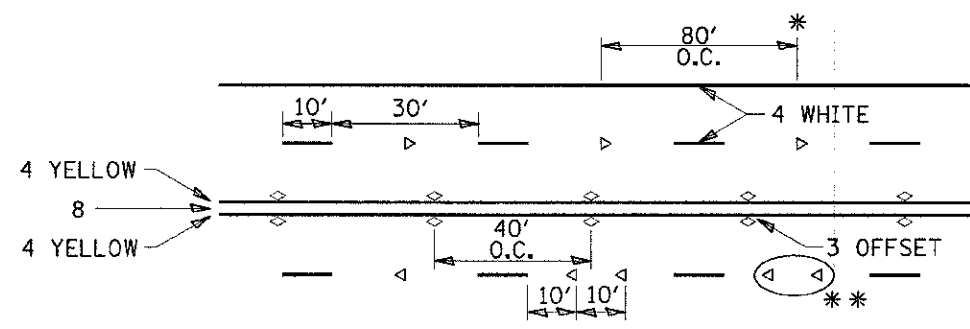


FILE NAME =	USER NAME = tam10g	DESIGNED -	REVISED - 10-10-11	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>REGION 2 / DISTRICT 2 STANDARD</b>	F.A.I. RTE. 9878	SECTION 12-00356-01-BR	COUNTY WINNEBAGO	TOTAL SHEETS 16	SHEET NO. 16A	
PLOT SCALE = 50,000' / 1" =					SCALE: _____ SHEET NO. _____ OF _____ SHEETS STA. _____ TO STA. _____		CONTRACT NO. 85577				
PLOT DATE = 1/16/2013							FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				
					<b>TYPICAL PAVEMENT MARKINGS</b>		<b>SHEET 2 OF 3</b>		<b>41.1</b>		
<p style="text-align: center;">6 at 40' O.C. APPROACH SIDE ONLY</p>											

# TYPICAL PAVEMENT MARKINGS

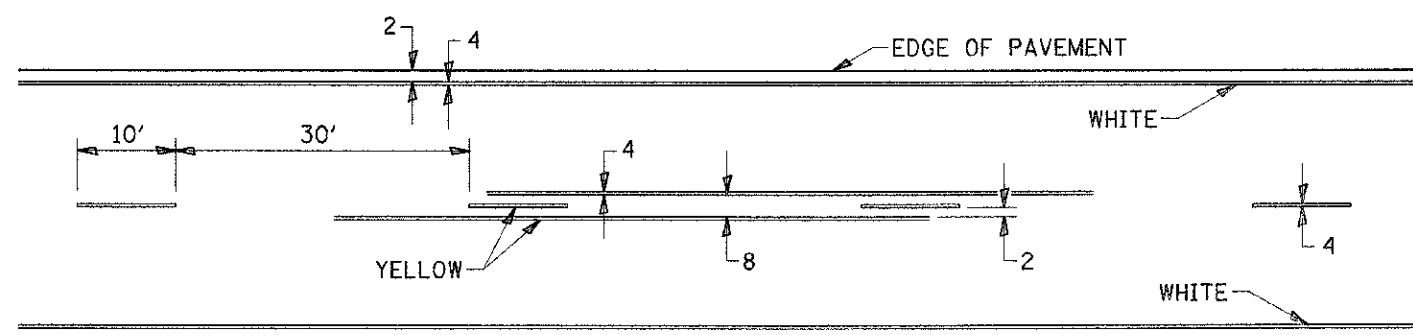


## MULTI-LANE / DIVIDED



### SYMBOLS

## TYPICAL PAVEMENT MARKING FOR TWO LANE SECTION – NO PASSING ZONES



## MULTI-LANE / UNDIVIDED

(FOR MULTI-LANE UNDIVIDED HIGHWAYS USE THIS  
DETAIL NOT HIGHWAY STANDARD 781001)

FILE NAME = M:\Tomatis\0\904041.dgn	USER NAME = tomalog	DESIGNED -	REVISD - 10-18-11	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>REGION 2 / DISTRICT 2 STANDARD</b>	F.A.D. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN -	REVISD -			9878	12-00356-01-BR	WINNEBAGO	16	16	
		CHECKED -	REVISD -			SCALE: SHEET NO. OF SHEETS STA. TO STA.		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			
		DATE -	REVISD -			CONTRACT NO. 85577					