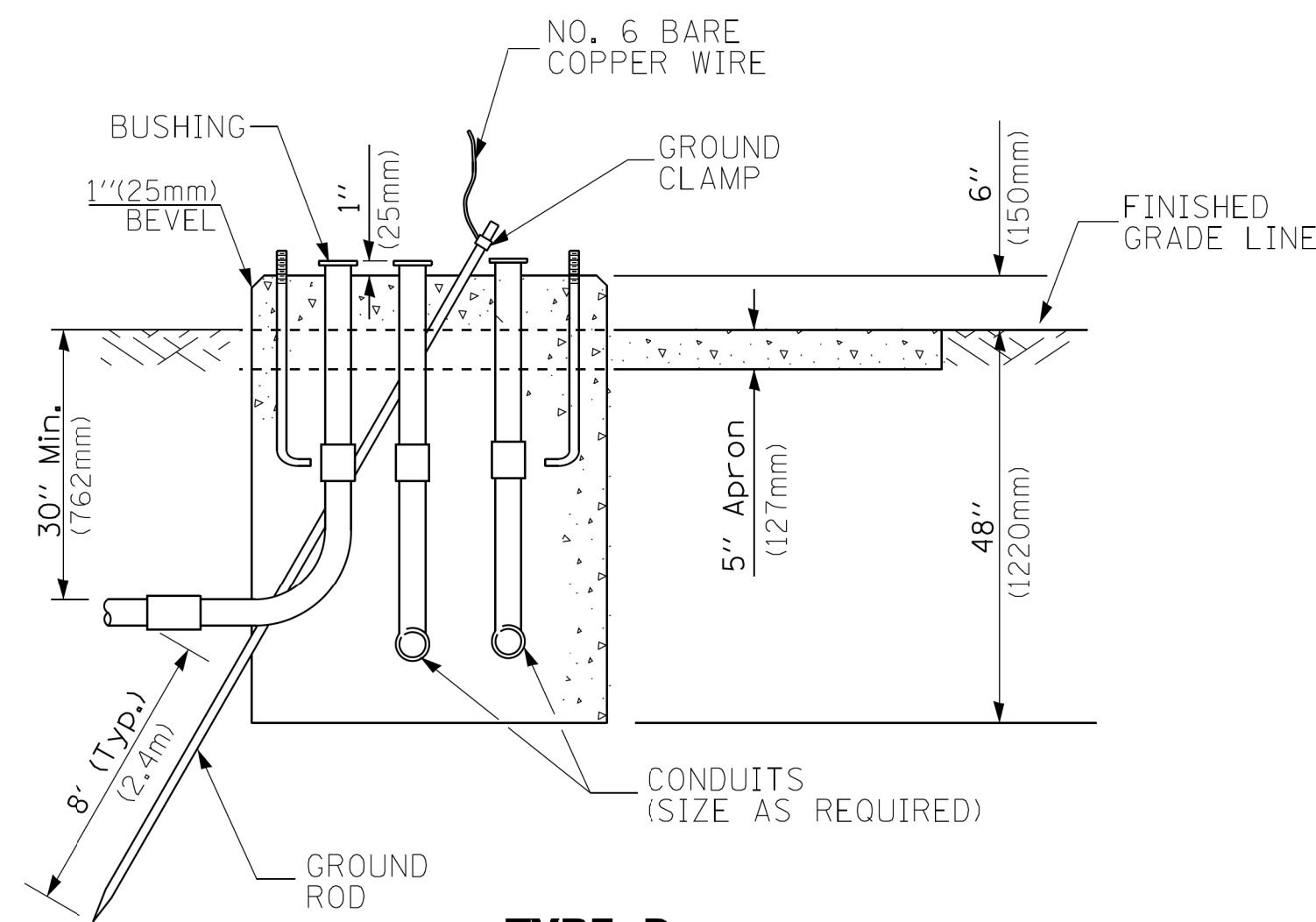
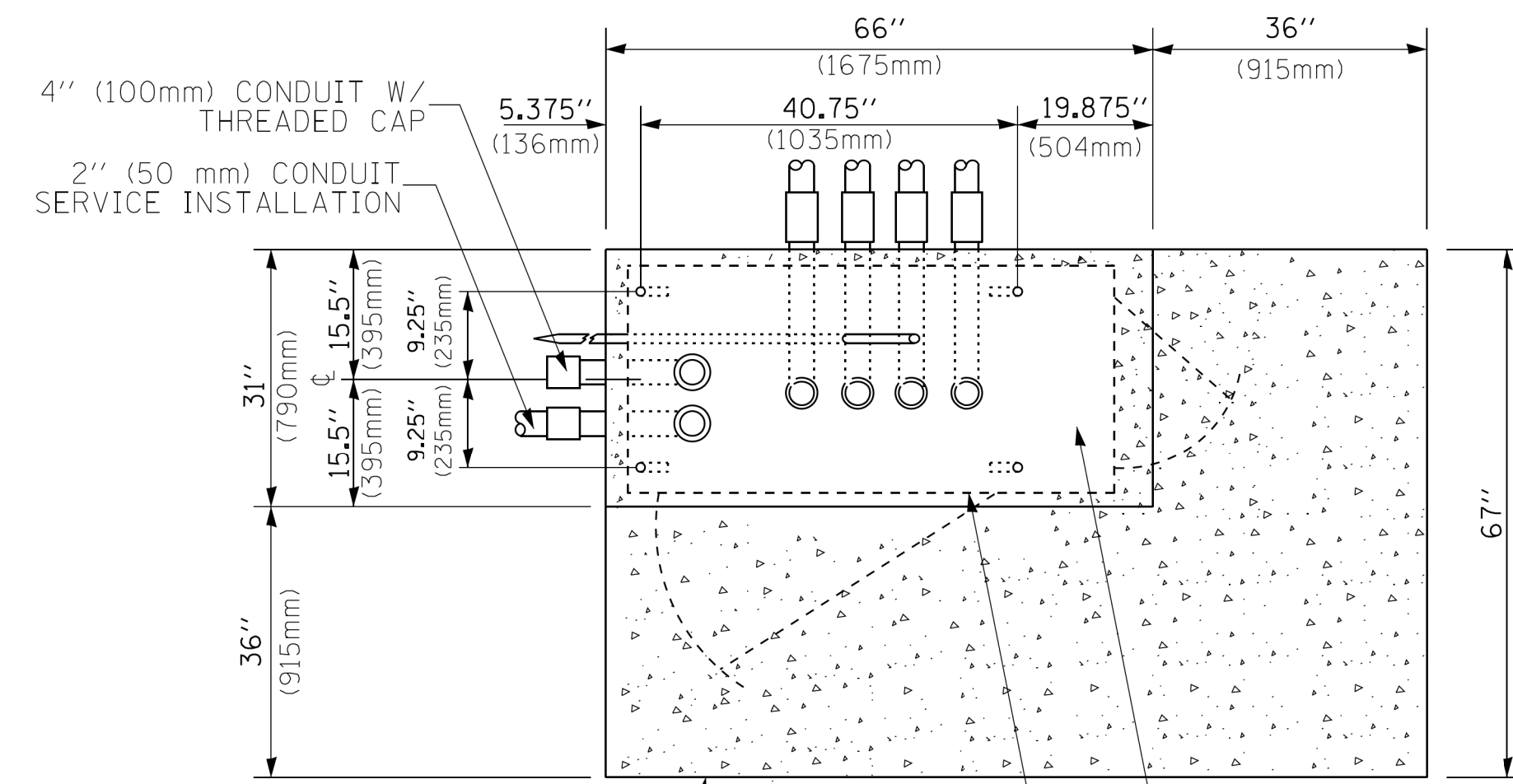


TOP VIEW



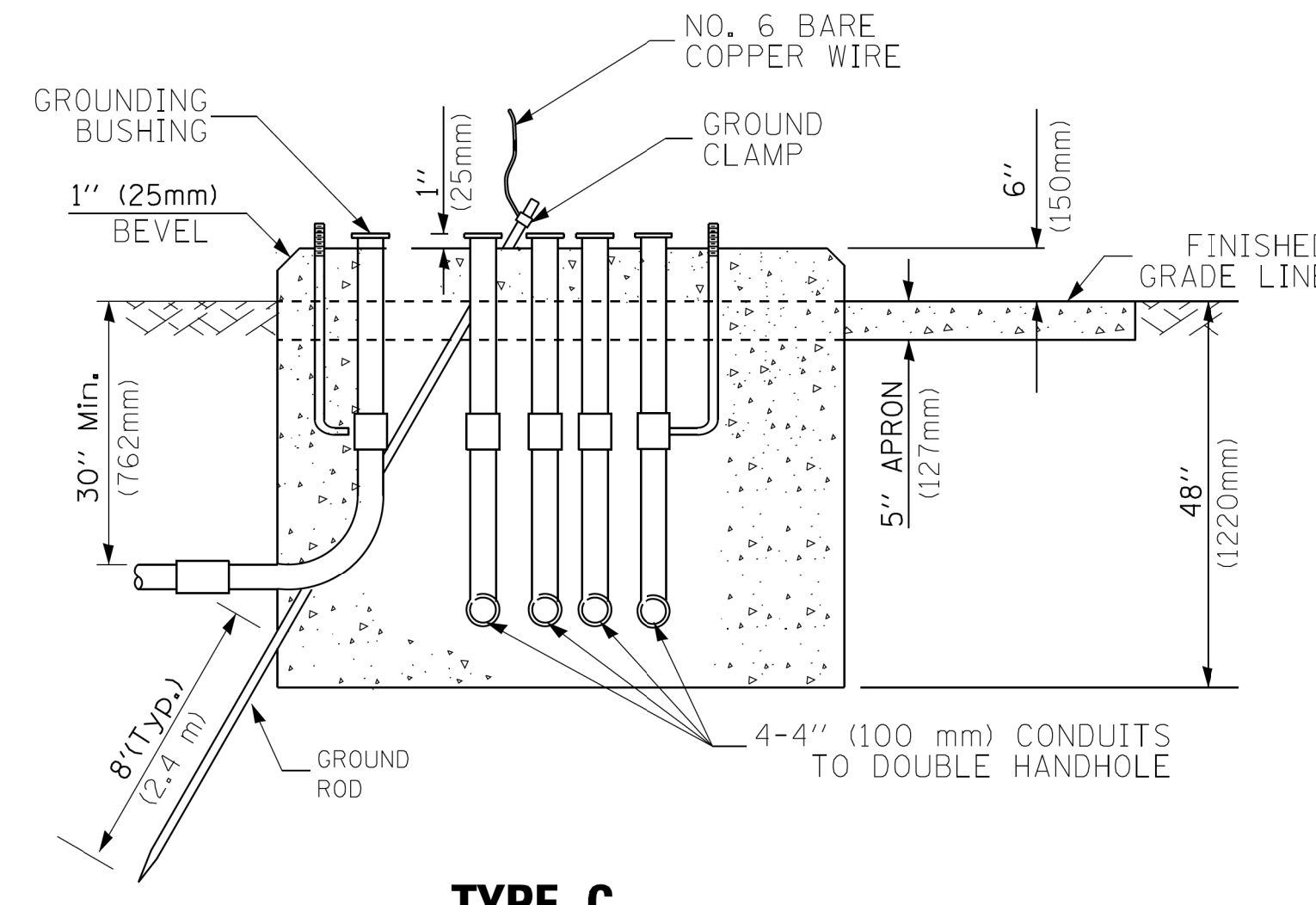
**TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET**



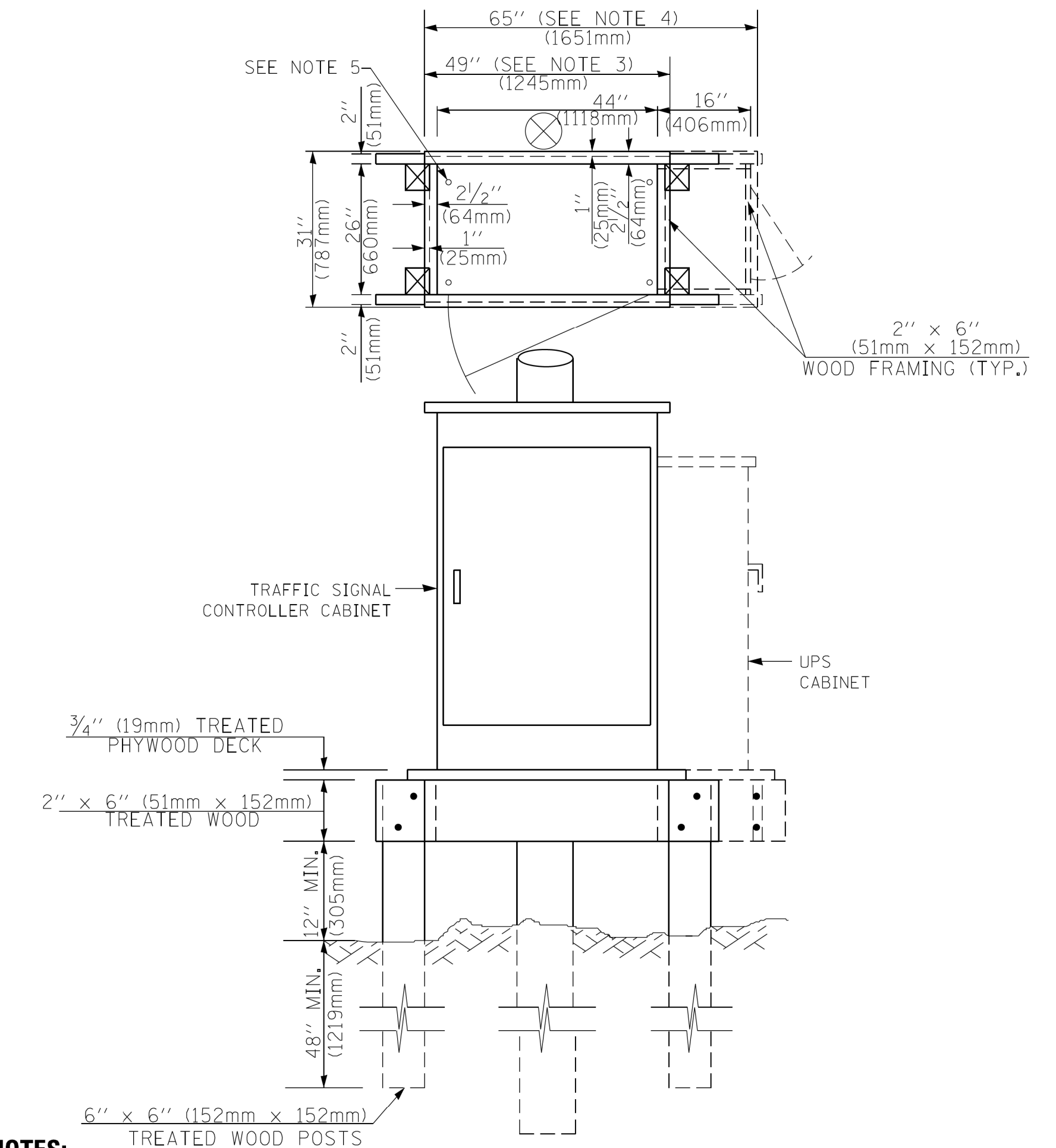
TOP VIEW

NOTE:

TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE



**TYPE C
FOR GROUND MOUNTED
SUPER P (TYPE IV) AND SUPER R (TYPE V)
CONTROLLER CABINETS**



NOTES:

1. BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
2. BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
3. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
4. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
5. DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
6. FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION..

**TEMPORARY SIGNAL CONTROLLER
WOOD SUPPORT PLATFORM**

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

CABLE SLACK

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

VERTICAL CABLE LENGTH

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

DEPTH OF FOUNDATION

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	24" (600mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 55' (16.8 m) and less than 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and less than 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

NOTES:

1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average unconfined compressive strength (qu) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
4. For mast arm assemblies with dual arms refer to state standard 878001..

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

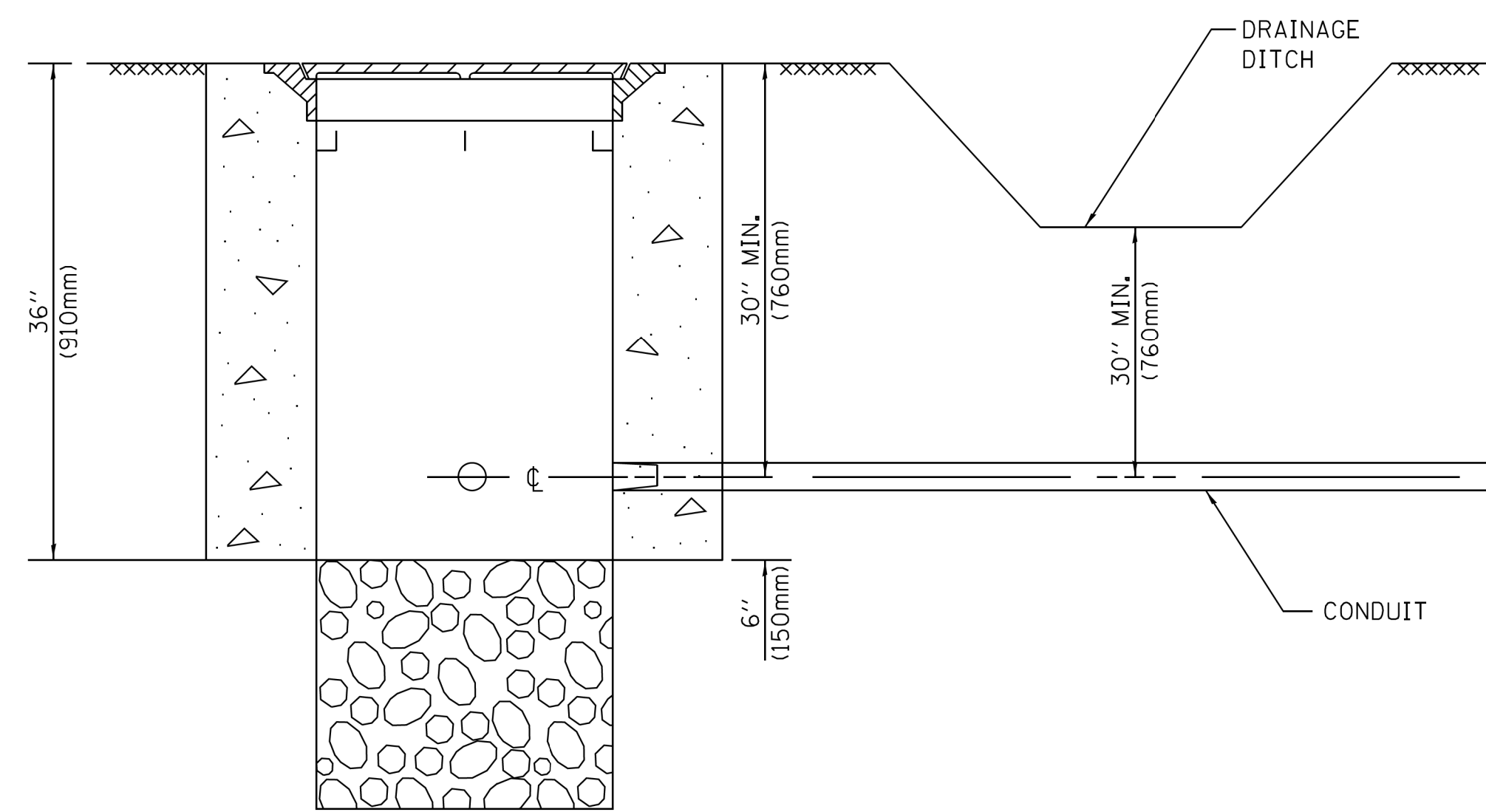
TS SHT NO. 06

FILE NAME =	USER NAME = footemj	DESIGNED - DAD	REVISED - DAG 1-1-14
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PLOT SCALE = 50.0000' / 1"		CHECKED - DAD	REVISED -
PLOT DATE = 1/13/2014		DATE - 10-28-09	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT ONE	
STANDARD TRAFFIC SIGNAL DESIGN DETAILS	
SCALE: NONE	SHEET NO. 5 OF 7 SHEETS STA. TO STA.

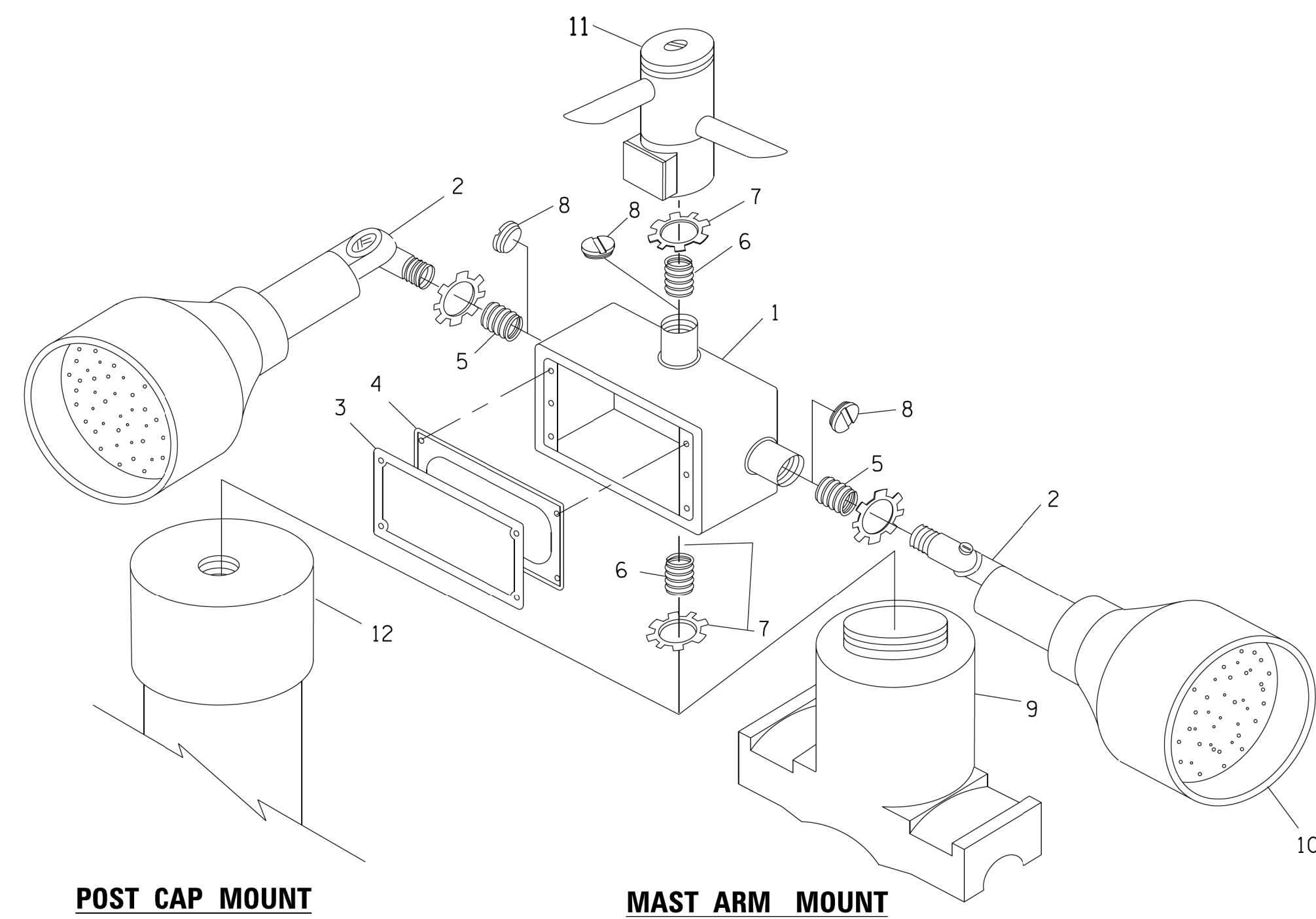
F.A. RTE. 344	SECTION 39R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 301
TS-05		CONTRACT NO. 60T25		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



NOTES:

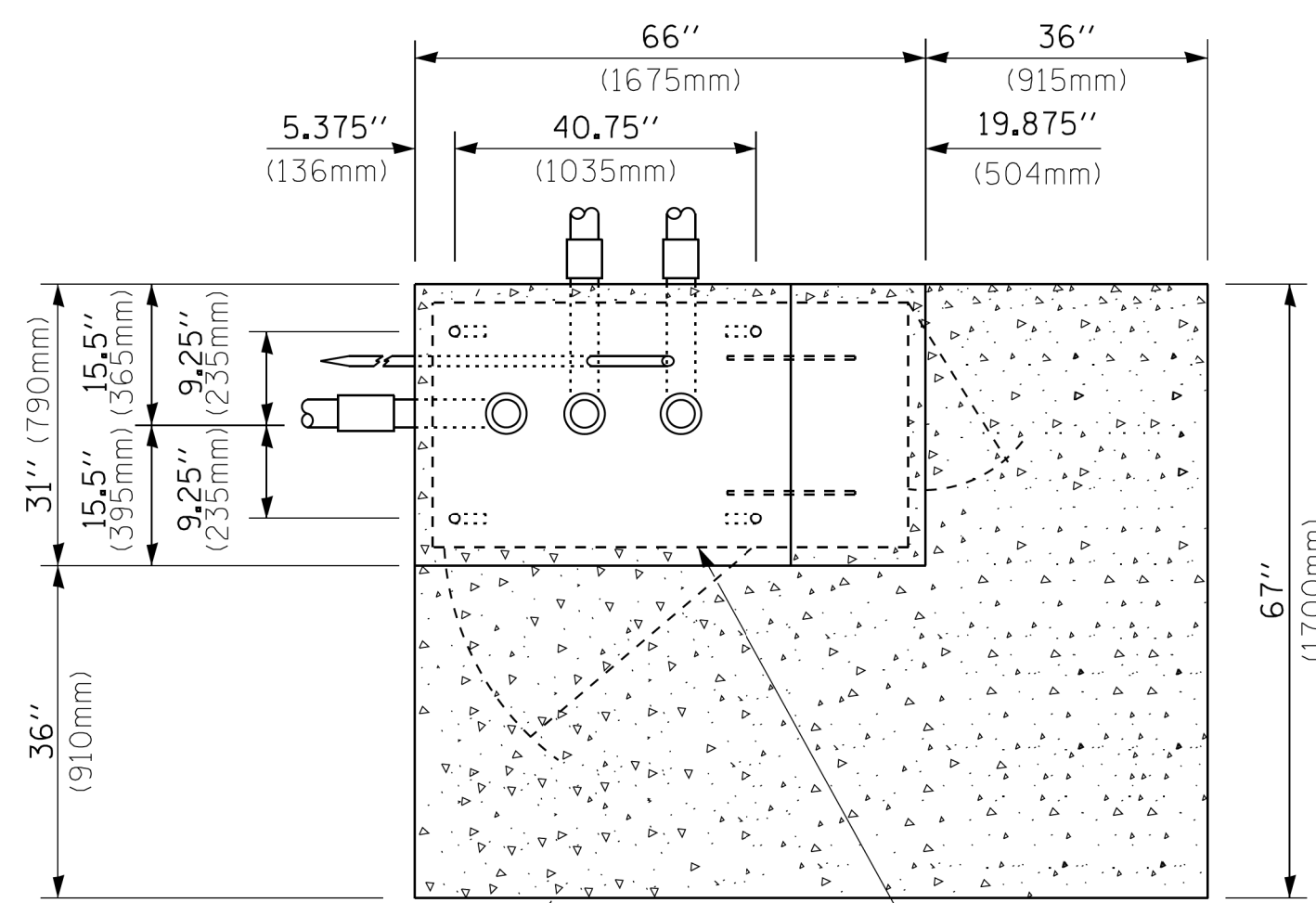
1. CONDUIT DEPTH SHALL BE A MINIMUM OF 30" (760mm) BELOW THE BOTTOM OF THE DRAINAGE DITCH OR ANY SLOPING GROUND
2. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL CONDUIT PLACED UNDER ROADWAY PAVEMENT, MULTI-USE PATHS, SIDEWALKS AND SOIL SURFACES.
3. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL HANDHOLES, HEAVY DUTY HANDHOLES AND DOUBLE HANDHOLES.

HANDHOLE WITH MINIMUM CONDUIT DEPTH
(NOT TO SCALE)

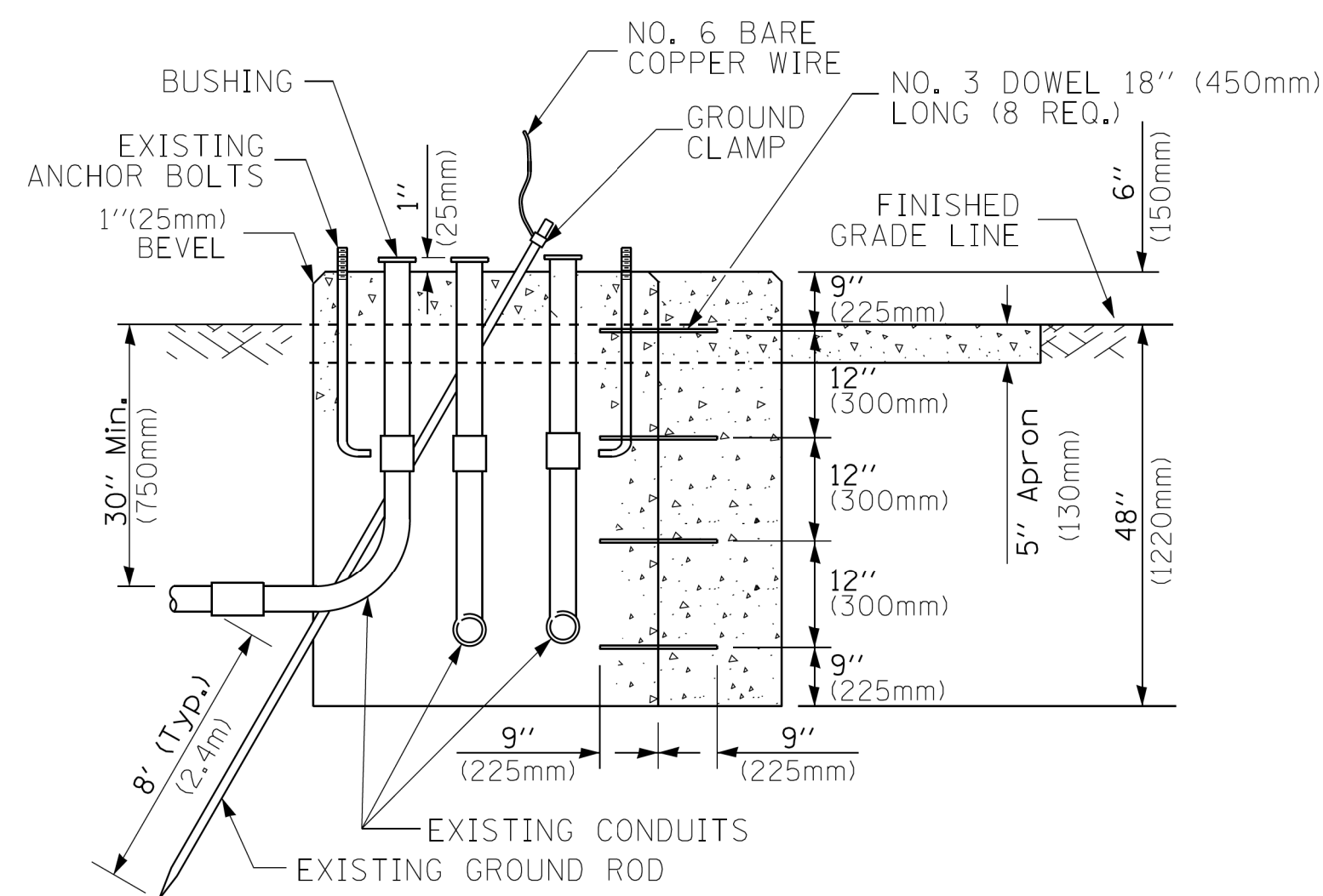


EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

TS SHT NO. 07



TOP VIEW
(NOT TO SCALE)

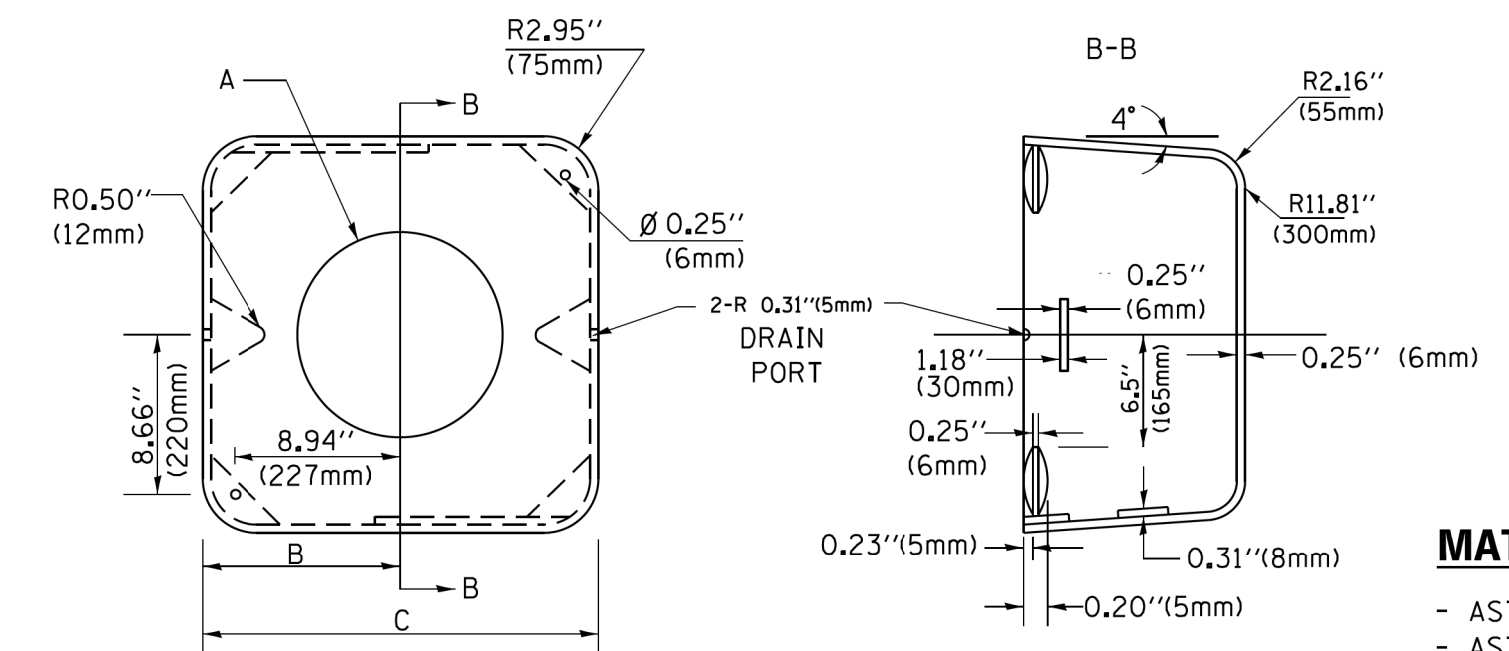


MODIFY EXISTING TYPE "D" FOUNDATION TO TYPE "C" FOUNDATION
(NOT TO SCALE)

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0,000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4" (19 mm) CLOSE NIPPLE
7	3/4" (19 mm) LOCKNUT
8	3/4" (19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
ITEM #2- MULBERRY CON-0-SHADE LAMP SHIELD OR EQUIVALENT
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4" (19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



MATERIAL:
- ASTM A36 STEEL
- ASTM A-123 HOT DIPPED GALVANIZED

A	B	C	HEIGHT	WEIGHT
VARIABLES	9.5" (241mm)	19" (483mm)	7" (178mm) - 12" (300mm)	53 lbs (24kg)
VARIABLES	10.75" (273mm)	21.5" (546mm)	7" (178mm) - 12" (300mm)	68 lbs (31 kg)
VARIABLES	13.0" (330mm)	26" (660mm)	7" (178mm) - 12" (300mm)	81 lbs (37 kg)
VARIABLES	18.5" (470mm)	37" (940mm)	7" (178mm) - 12" (300mm)	126 lbs (57 kg)

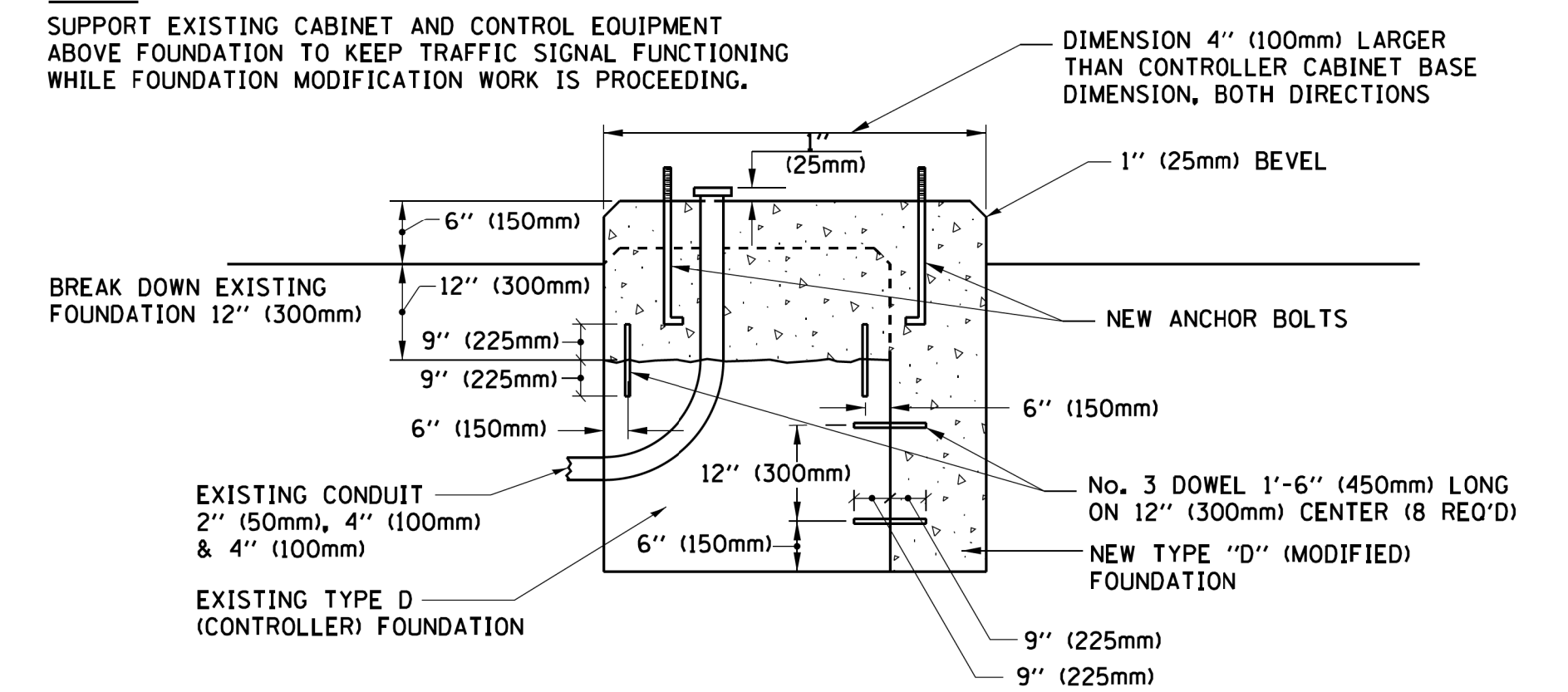
SHROUD

NOTES:

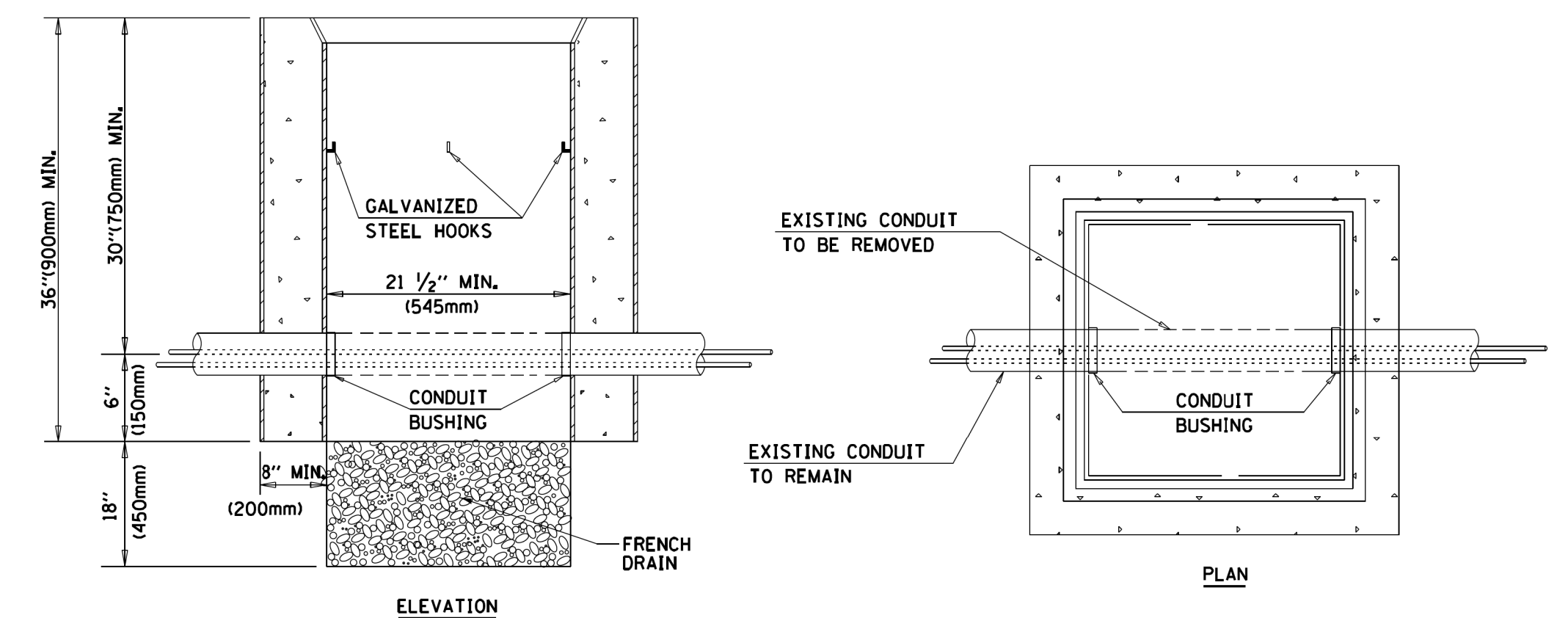
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

NOTE:

SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.



MODIFY EXISTING TYPE "D" FOUNDATION



NOTES:

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCLUDED WITH THE COST OF THE HANDHOLE.

HANDHOLE TO INTERCEPT EXISTING CONDUIT

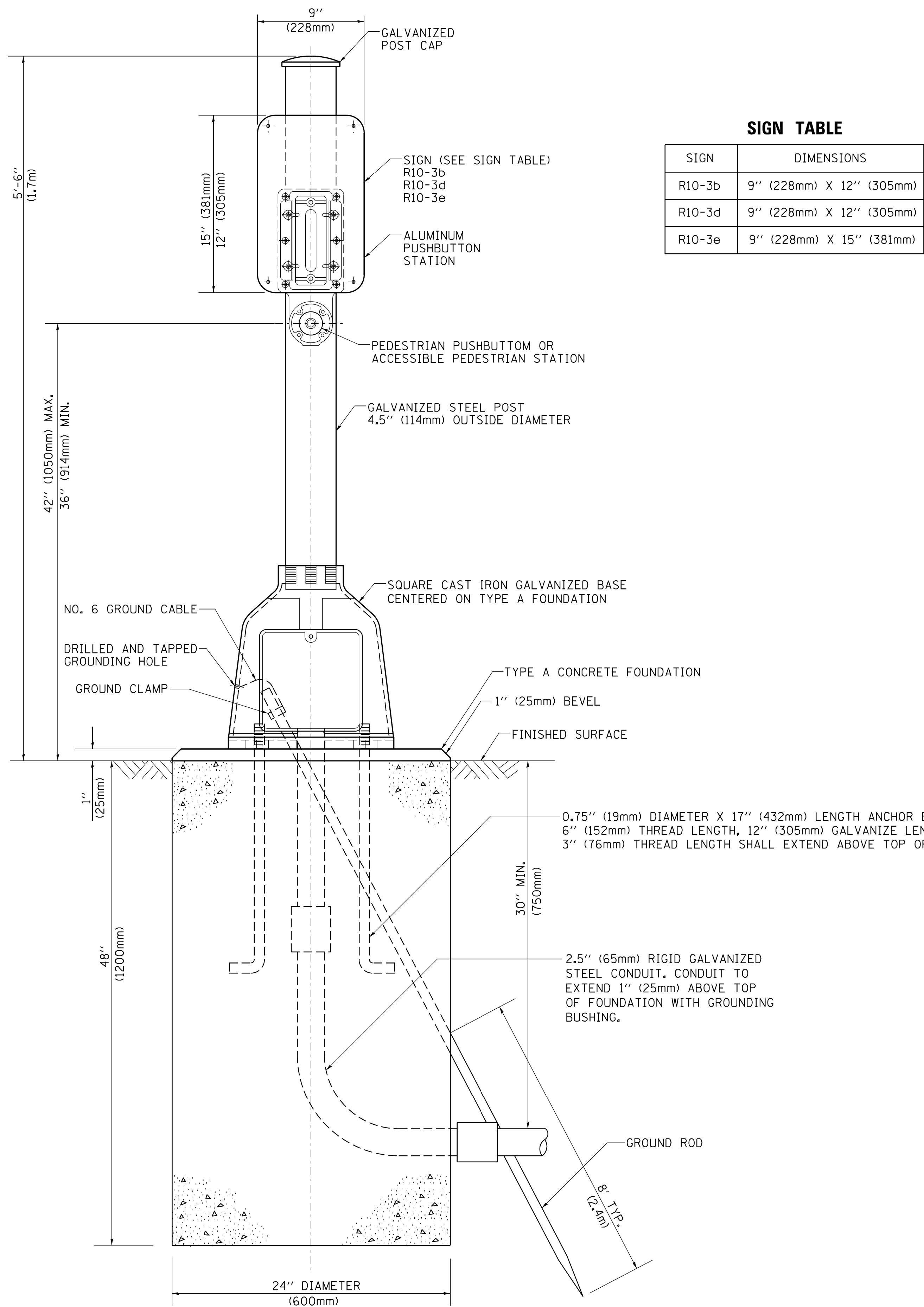
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PLOT DATE = 1/13/2014		DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

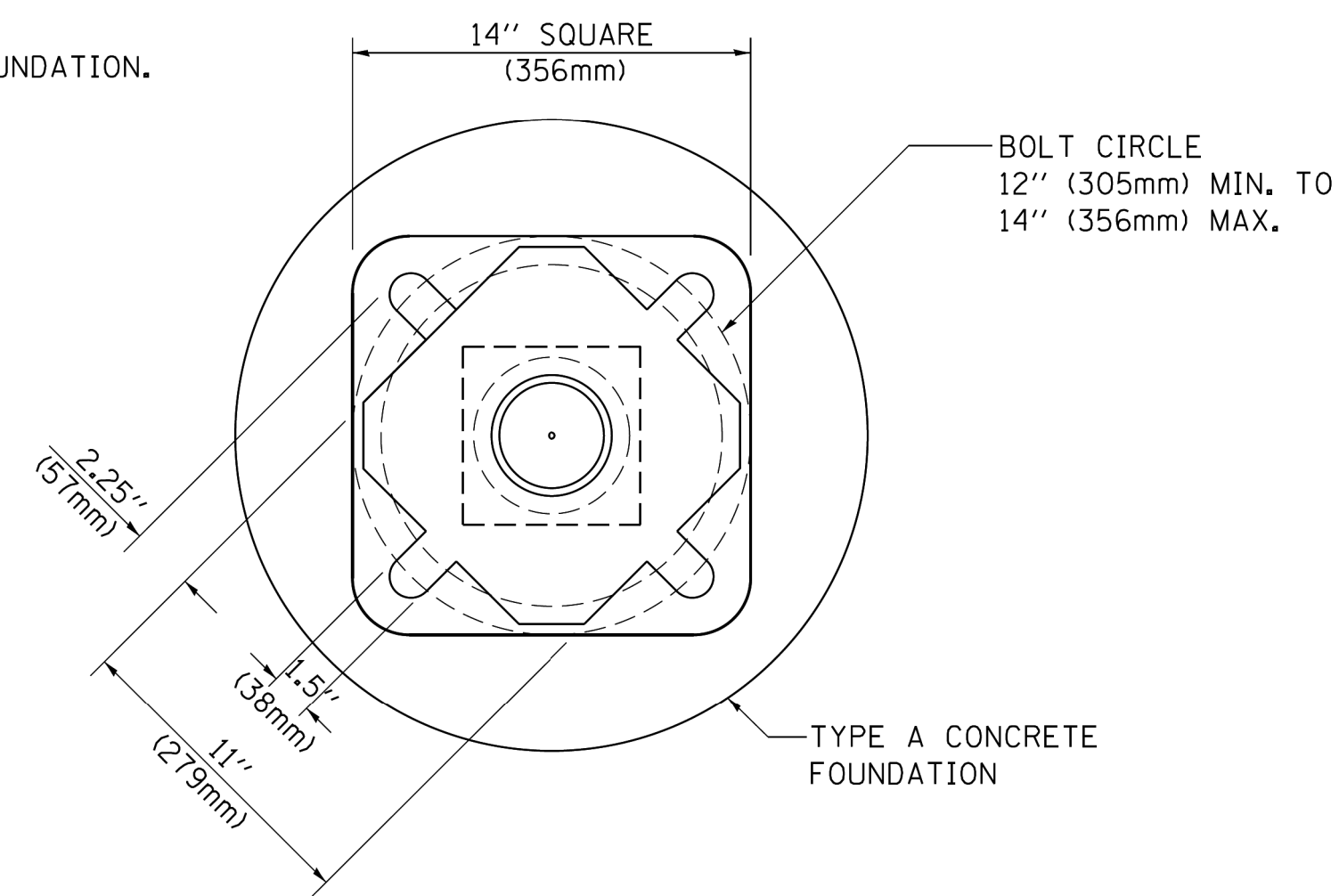
SCALE: NONE SHEET NO. 6 OF 7 SHEETS STA. TO STA.

F.A. RTE. 344	SECTION 39R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 302
TS-05		CONTRACT NO. 60T25		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



SIGN TABLE

SIGN	DIMENSIONS
R10-3b	9" (228mm) X 12" (305mm)
R10-3d	9" (228mm) X 12" (305mm)
R10-3e	9" (228mm) X 15" (381mm)



BOLT PATTERN

PEDESTRIAN PUSH BUTTON POST, TYPE A

TS SHT NO. 08

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PLOT DATE = 1/13/2014		DATE - 10/1/2012	REVISED -

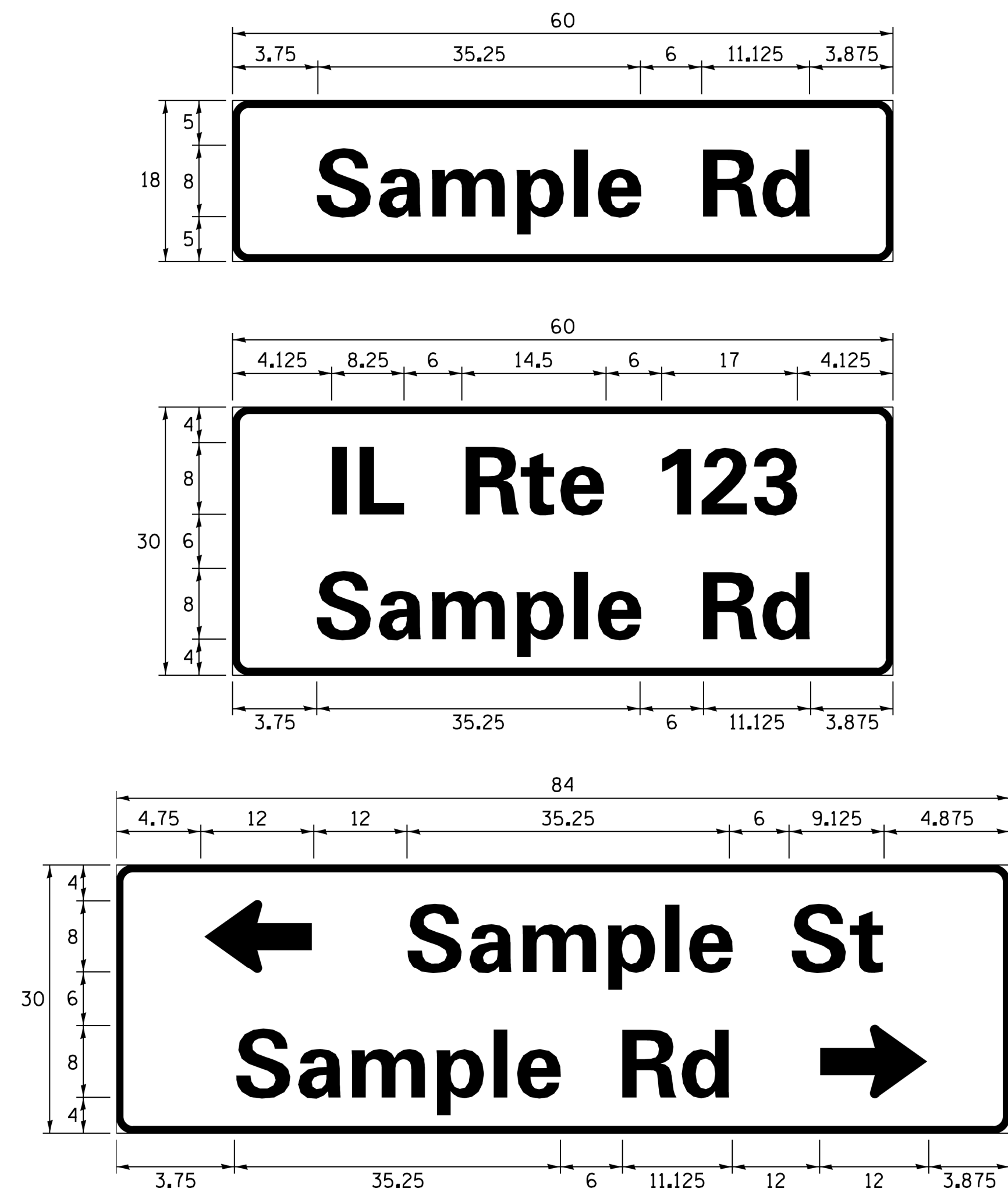
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

SCALE: NONE SHEET NO. 7 OF 7 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39R	LAKE	510	303
TS-05			CONTRACT NO. 60T25	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SIGN PANEL – TYPE 1 OR TYPE 2



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D OR C	-	1 OR 2	ZZ	-

COMMON STREET NAME ABBREVIATIONS AND WIDTHS

NAME	ABBREVIATION	WIDTH (INCH)	
		SERIES "C"	SERIES "D"
AVENUE	Ave	15.000	18.250
BOULEVARD	Blvd	17.125	20.000
CIRCLE	Cir	11.125	13.000
COURT	Ct	8.250	9.625
DRIVE	Dr	8.625	10.125
HIGHWAY	Hwy	18.375	22.000
ILLINOIS	IL	7.000	8.250
LANE	Ln	9.125	10.750
PARKWAY	Pkwy	23.375	27.375
PLACE	Pl	7.125	7.750
ROAD	Rd	9.625	11.125
ROUTE	Rte	12.625	14.500
STREET	St	8.000	9.125
TERRACE	Ter	12.625	14.625
TRAIL	Tr	7.750	9.125
UNITED STATES	US	10.375	12.250

GENERAL NOTES

- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
- ALL SIGNS SHALL CONSIST OF A WHITE LEGEND AND BORDER (TYPE ZZ SHEETING) ON A GREEN BACKGROUND (TYPE ZZ SHEETING)
- THE SIGN LENGTH SHALL BE IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHALL NOT EXCEED 8'-0". ALL BORDERS SHALL BE 3/4" WIDE. CORNER RADIUS SHALL BE 1-7/8". THE SPACING BETWEEN THE WORDS SHOULD BE 6", IF POSSIBLE, BUT MAY BE REDUCED TO 5" WHEN SPACING IS CRITICAL. A MINIMUM OF 2-1/2" SHALL BE INCLUDED BETWEEN THE WORD AND THE RIGHT AND LEFT EDGES OF THE SIGN.
- A PREFERRED METHOD FOR THE SIGN DESIGN IS TO USE SERIES "D" LETTER ON A ONE-LINE SIGN 18" IN HEIGHT AND A MAXIMUM OF 8'-0" IN WIDTH. IF SERIES "D" DOES NOT FIT ON A 8'-0" SIGN, THEN SERIES "C" SHOULD BE TRIED. IF SERIES "C" DOES NOT FIT ON A 8'-0" SIGN, A 30" HIGH TWO-LINE SIGN CAN BE USED. THE CROSSROAD DESIGNATION AS TO STREET, AVENUE, ETC. SHOULD BE SPELLED OUT ON THE SECOND LINE, IF THERE IS SPACE AVAILABLE.
- LED ILLUMINATED STREET NAME SIGNS CAN BE USED IN PLACE OF REGULAR SIGN PANELS BUT ANY SPECIAL WORDING AND SYMBOLGY MUST BE APPROVED BY THE DEPARTMENT. GENERAL DESIGN REQUIREMENT AS LISTED ABOVE (COLOR, FONT, SIZE, ETC.) MUST BE FOLLOWED.
- SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS.

LOCAL SUPPLIERS:

- J.O. HERBERT COMPANY, INC
MIDLOTHIAN, VA
- WESTERN REMAC, INC.
WOODRIDGE, IL

PARTS LISTING:

- SIGN CHANNEL PART *HPN053 (MED. CHANNEL)
SIGN SCREWS 1/4" x 14 x 1" H.W.H. #3
SELF TAPPING WITH NEOPRENE WASHER
- BRACKETS PART *HPN034 (UNIVERSAL)
CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

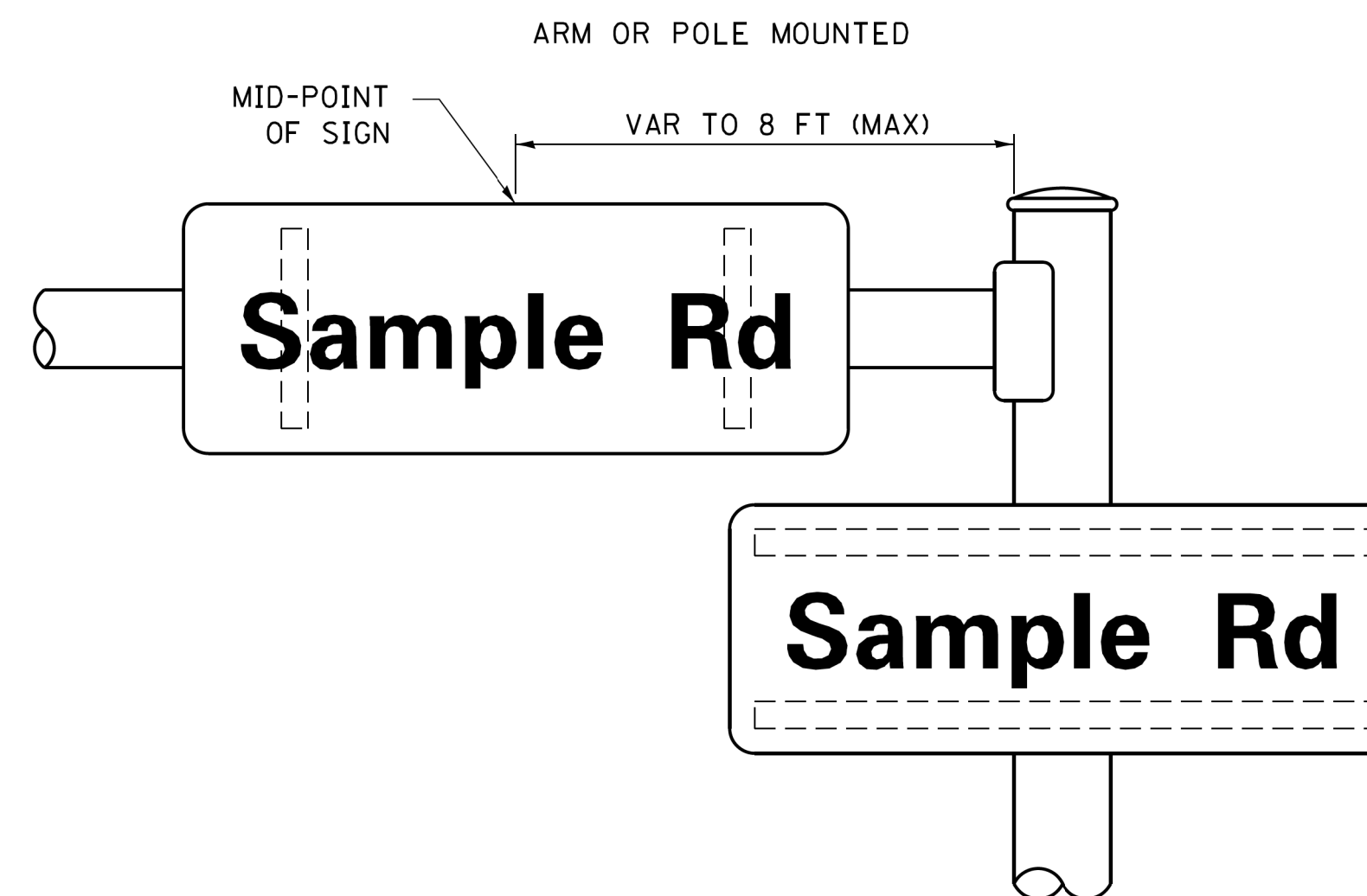
OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.

STANDARD ALPHABETS SPACING CHART

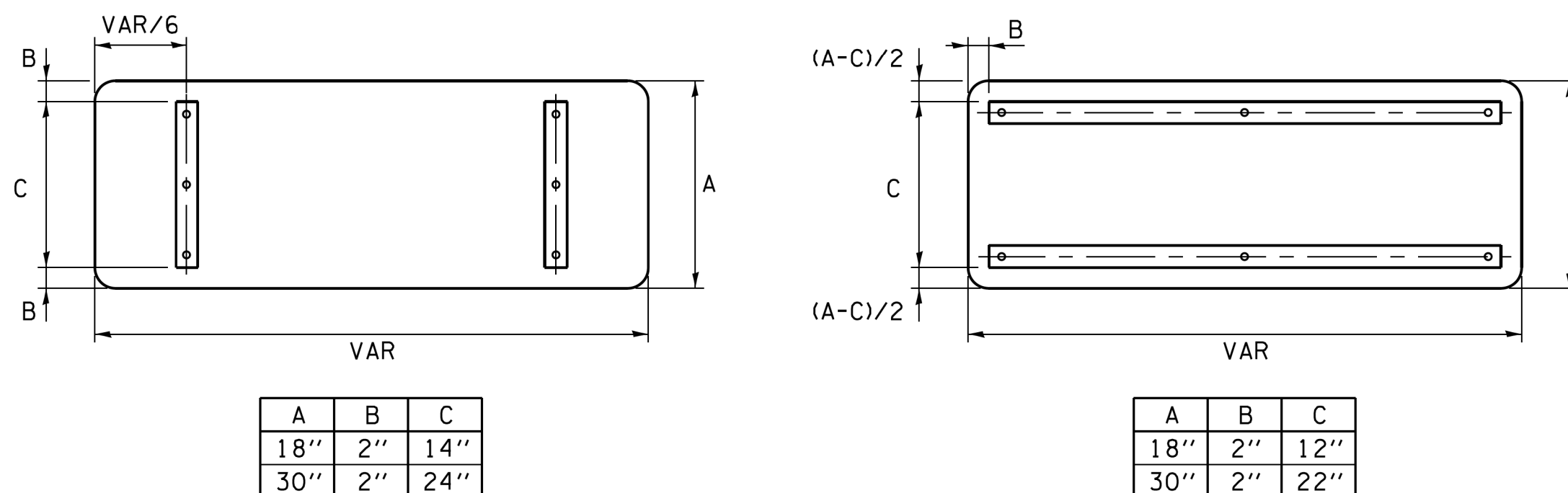
(8") UPPER CASE AND (6") LOWER CASE

FHWA SERIES "C"				FHWA SERIES "D"			
CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)	CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)
A	0.240	5.122	0.240	A	0.240	6.804	0.240
B	0.880	4.482	0.480	B	0.960	5.446	0.400
C	0.720	4.482	0.720	C	0.800	5.446	0.800
D	0.880	4.482	0.720	D	0.960	5.446	0.800
E	0.880	4.082	0.480	E	0.960	4.962	0.400
F	0.880	4.082	0.240	F	0.960	4.962	0.240
G	0.720	4.482	0.720	G	0.800	5.446	0.800
H	0.880	4.482	0.880	H	0.960	5.446	0.960
I	0.880	1.120	0.880	I	0.960	1.280	0.960
J	0.240	4.082	0.880	J	0.240	5.122	0.960
K	0.880	4.482	0.480	K	0.960	5.604	0.400
L	0.880	4.082	0.240	L	0.960	4.962	0.240
M	0.880	5.284	0.880	M	0.960	6.244	0.960
N	0.880	4.482	0.880	N	0.960	5.446	0.960
O	0.720	4.722	0.720	O	0.800	5.684	0.800
P	0.880	4.482	0.720	P	0.960	5.446	0.240
Q	0.720	4.722	0.720	Q	0.800	5.684	0.800
R	0.880	4.482	0.480	R	0.960	5.446	0.400
S	0.480	4.482	0.480	S	0.400	5.446	0.400
T	0.240	4.082	0.240	T	0.240	4.962	0.240
U	0.880	4.482	0.880	U	0.960	5.446	0.960
V	0.240	4.962	0.240	V	0.240	6.084	0.240
W	0.240	6.084	0.240	W	0.240	7.124	0.240
X	0.240	4.722	0.240	X	0.400	5.446	0.400
Y	0.240	5.122	0.240	Y	0.240	6.884	0.240
Z	0.480	4.482	0.480	Z	0.400	5.446	0.400
a	0.320	3.842	0.640	a	0.400	4.562	0.720
b	0.720	4.082	0.480	b	0.800	4.802	0.480
c	0.480	4.002	0.240	c	0.480	4.722	0.240
d	0.480	4.082	0.720	d	0.480	4.802	0.800
e	0.480	4.082	0.320	e	0.480	4.722	0.320
f	0.320	2.480	0.160	f	0.320	2.882	0.160
g	0.480	4.082	0.720	g	0.480	4.802	0.800
h	0.720	4.082	0.640	h	0.800	4.722	0.720
i	0.720	1.120	0.720	i	0.800	1.280	0.800
j	0.000	2.320	0.720	j	0.000	2.642	0.800
k	0.720	4.322	0.160	k	0.800	5.122	0.160
l	0.720	1.120	0.720	l	0.800	1.280	0.800
m	0.720	6.724	0.640	m	0.800	7.926	0.720
n	0.720	4.082	0.640	n	0.800	4.722	0.720
o	0.480	4.082	0.480	o	0.480	4.882	0.480
p	0.720	4.082	0.480	p	0.800	4.802	0.480
q	0.480	4.082	0.720	q	0.480	4.802	0.800
r	0.720	2.642	0.160	r	0.800	3.042	0.160
s	0.320	3.362	0.240	s	0.320	3.762	0.240
t	0.080	2.882	0.080	t	0.080	3.202	0.080
u	0.640	4.082	0.720	u	0.720	4.722	0.800
v	0.160	4.722	0.160	v	0.160	5.684	0.160
w	0.160	7.524	0.160	w	0.160	9.046	0.160
x	0.000	5.202	0.000	x	0.000	6.244	0.000
y	0.160	4.962	0.160	y	0.160	6.004	0.160
z	0.240	3.362	0.240	z	0.240	4.004	0.240
1	0.720	1.680	0.880	1	0.800	2.000	0.960
2	0.480	4.482	0.480	2	0.800	5.446	0.800
3	0.480	4.482	0.480	3	1.440	5.446	0.800
4	0.240	4.962	0.720	4	0.160	6.004	0.960
5	0.480	4.482	0.480	5	0.800	5.446	0.800
6	0.720	4.482	0.720	6	0.800	5.446	0.800
7	0.240	4.482	0.720	7	0.560	5.446	0.560
8	0.480	4.482	0.480	8	0.800	5.446	0.800
9	0.480	4.482	0.480	9	0.800	5.446	0.800
0	0.720	4.722	0.720	0	0.800	5.684	0.800
-	0.240	2.802	0.240	-	0.240	2.802	0.240

MOUNTING LOCATION



SUPPORTING CHANNELS



TS SHT NO. 09

FILE NAME =	USER NAME = poc1eoch1	DESIGNED - LP/IP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		DISTRICT ONE MAST ARM MOUNTED STREET NAME SIGNS			F.A. RTE. 344	SECTION 39R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 304
Default	Default	DRAWN - LP	REVISED -			SCALE:			SHEET	OF SHEETS	STA.	TO STA.	CONTRACT NO. 60T25
		CHECKED - IP	REVISED -										ILLINOIS FED. AID PROJECT
		DATE - 10/01/2014	REVISED -										

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

CODE NO.	ITEM DESCRIPTION	UNITS	US RTE 45 & MILLBURN RD EXISTING SIGNAL	US RTE 45 & MILLBURN RD TEMPORARY SIGNAL	US RTE 45 & GRASS LAKE RD	TOTAL QTY.
72000100	SIGN PANEL - TYPE 1	SQ FT			43.5	43.5
72000200	SIGN PANEL - TYPE 2	SQ FT			19.5	19.5
X1400150	SERVICE INSTALLATION - GROUND MOUNTED, METERED	EACH			1	1
X8050015	SERVICE INSTALLATION, POLE MOUNT	EACH		1		1
81028200	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT			816	816
81028210	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	FOOT			119	119
81028220	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT			143	143
81028240	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT			663	663
81400100	HANDHOLE	EACH			4	4
81400200	HEAVY-DUTY HANDHOLE	EACH			4	4
81400300	DOUBLE HANDHOLE	EACH			2	2
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2			2
85700200	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH		1		1
86000100	MASTER CONTROLLER	EACH		1		1
87200400	SPAN WIRE	FOOT		351		351
87200500	TETHER WIRE	FOOT		351		351
87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT			1,787	1,787
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT			2,297	2,297
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT			2,158	2,158
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT			2,729	2,729
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN NO. 14 1-PAIR	FOOT			2,753	2,753
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT			55	55
87301900	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT			801	801
87302212	ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 2C	FOOT		340		340
87302225	ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 3C	FOOT		508		508
87302245	ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 5C	FOOT		444		444
87302255	ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 7C	FOOT		841		841
87302505	ELECTRIC CABLE AERIAL SUSPENDED, SERVICE, NO. 6 2C	FOOT		130		130
87302705	ELECTRIC CABLE AERIAL SUSPENDED, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT		150		150
87502500	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH			2	2
87601200	PEDESTRIAN PUSH-BUTTON POST, GALVANIZED STEEL, TYPE II	EACH			7	7
87700190	STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH			2	2
87700290	STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	EACH			1	1
87700300	STEEL MAST ARM ASSEMBLY AND POLE, 52 FT.	EACH			1	1
87700340	STEEL MAST ARM ASSEMBLY AND POLE, 58 FT.	EACH			1	1
87700404	STEEL MAST ARM ASSEMBLY AND POLE, 62 FT.	EACH			1	1
87800100	CONCRETE FOUNDATION, TYPE A	FOOT			40	40
87800150	CONCRETE FOUNDATION, TYPE C	FOOT			4	4
87800400	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT			27	27
87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT			30	30
87800420	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER	FOOT			42	42
88030020	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH			8	8
88030050	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH			1	1
88030100	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH			3	3
88030110	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH			7	7
88102717	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH		4	8	12
88200410	TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC	EACH			15	15
88500100	INDUCTIVE LOOP DETECTOR	EACH			11	11
88600100	DETECTOR LOOP, TYPE I	FOOT			103	103
88600700	PREFORMED DETECTOR LOOP	FOOT			1,312	1,312
* 88700200	LIGHT DETECTOR	EACH		2	3	5
* 88700300	LIGHT DETECTOR AMPLIFIER	EACH		1	1	2
88800100	PEDESTRIAN PUSH-BUTTON	EACH		4	8	12
89502300	REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	4,368			4,368
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1			1
89502380	REMOVE EXISTING HANDHOLE	EACH	5			5
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	8			8
* MX033306	EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT		200	727	927
X0326884	TRAFFIC SIGNAL WOOD POLE, 45 FT, CLASS 5	EACH		4		4
X0326885	VIDEO DETECTION SYSTEM	EACH		1		1
X0326356	TEMPORARY WIRELESS INTERCONNECT	EACH		1		1
X1400107	FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET	EACH			1	1
X8620200	UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH		1	1	2
X8800025	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, SPAN WIRE MOUNTED	EACH		6		6
X8800046	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, SPAN WIRE MOUNTED	EACH		6		6
Z0073510	TEMPORARY TRAFFIC SIGNAL TIMING	EACH		1		1

* 100% COST TO VILLAGE OF LINDENHURST

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

PLAN	SURVEYED	DATE
NO.	PLOTTED	BY
	GRADES CHECKED	
	ALIGNMENT CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	FILE NAME	

PROFILE	SURVEYED	DATE
NO.	PLOTTED	BY
	GRADES CHECKED	
	ALIGNMENT CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	FILE NAME	

TS SHT NO. 01

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = *USER*	DESIGNED AS	REVISED -
	DRAWN SR	REVISED
PLOT SCALE = *SCALE*	CHECKED MSA/TM	REVISED
PLOT DATE = *DATE*	DATE	REVISED

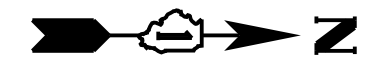
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	305
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60T75	

**TS 21756
ECON 209**



REMOVAL AND RELOCATION NOTES:

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH UNINTERRUPTABLE POWER SUPPLY
- 1 EACH CONTROLLER AND CABINET (COMPLETE)
- 1 EACH MASTER CONTROLLER
- 2 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 5 EACH TRAFFIC SIGNAL POST
- 6 EACH 3-SECTION SIGNAL HEAD
- 4 EACH 5-SECTION SIGNAL HEAD
- 2 EACH PEDESTRIAN SIGNAL HEAD
- 2 EACH PEDESTRIAN PUSH-BUTTON
- 1 EACH SERVICE INSTALLATION
- 4 EACH TRAFFIC SIGNAL BACKPLATE

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR THE PICK UP OF ALL THE EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY.

NAME OF AGENCY : LAKE VILLA FIRE PROTECTION DISTRICT
 CONTACT PERSON : DOUG SLAZES
 PHONE NUMBER : (224) 444-8330

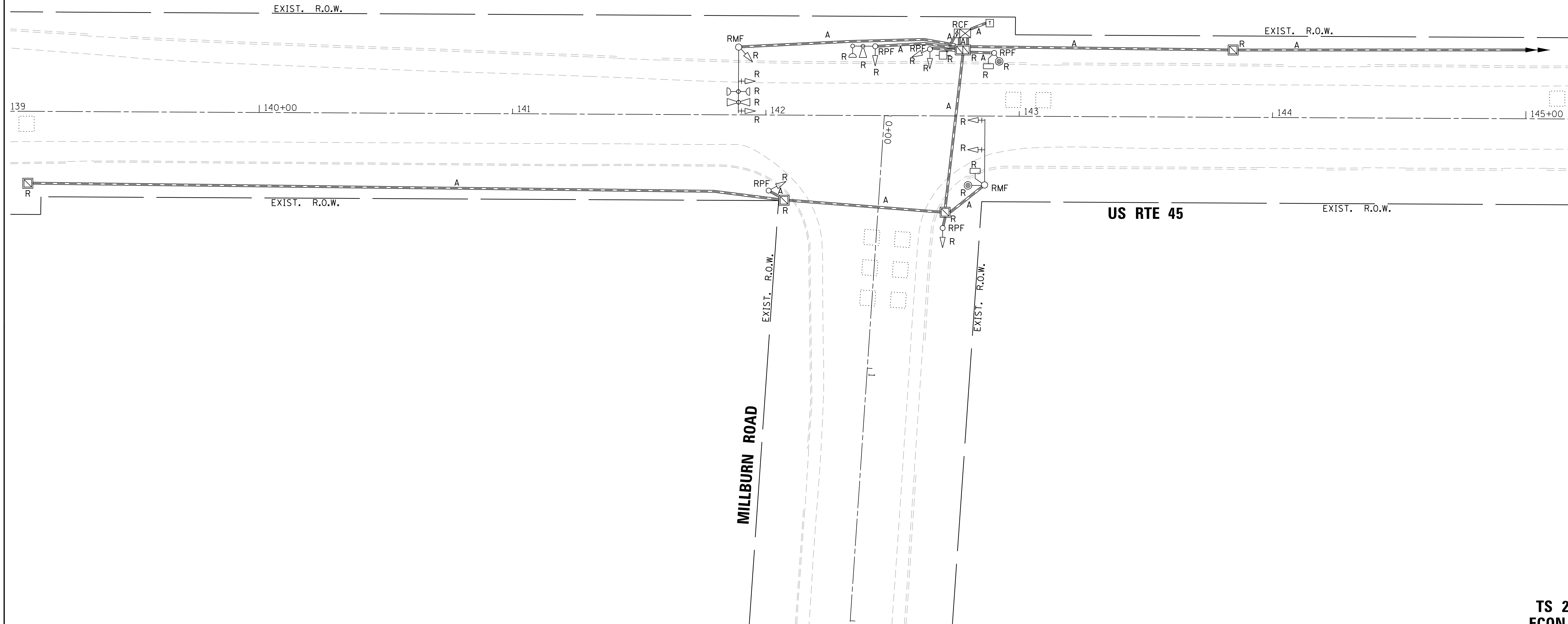
- 2 EACH CONFIRMATION BEACON
- 2 EACH LIGHT DETECTOR
- 1 EACH LIGHT DETECTOR AMPLIFIER

SCHEDULE OF QUANTITIES

ITEM DESCRIPTION	UNIT	TOTAL QTY.
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2
REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	4,368
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING HANDHOLE	EACH	5
REMOVE EXISTING CONCRETE FOUNDATION	EACH	8

PLAN	SURVEYED	DATE
NOTE BOOK NO.	ALIGNMENT CHECKED	
	RT. OF WAY CHECKED	
	ROAD FILE NAME	

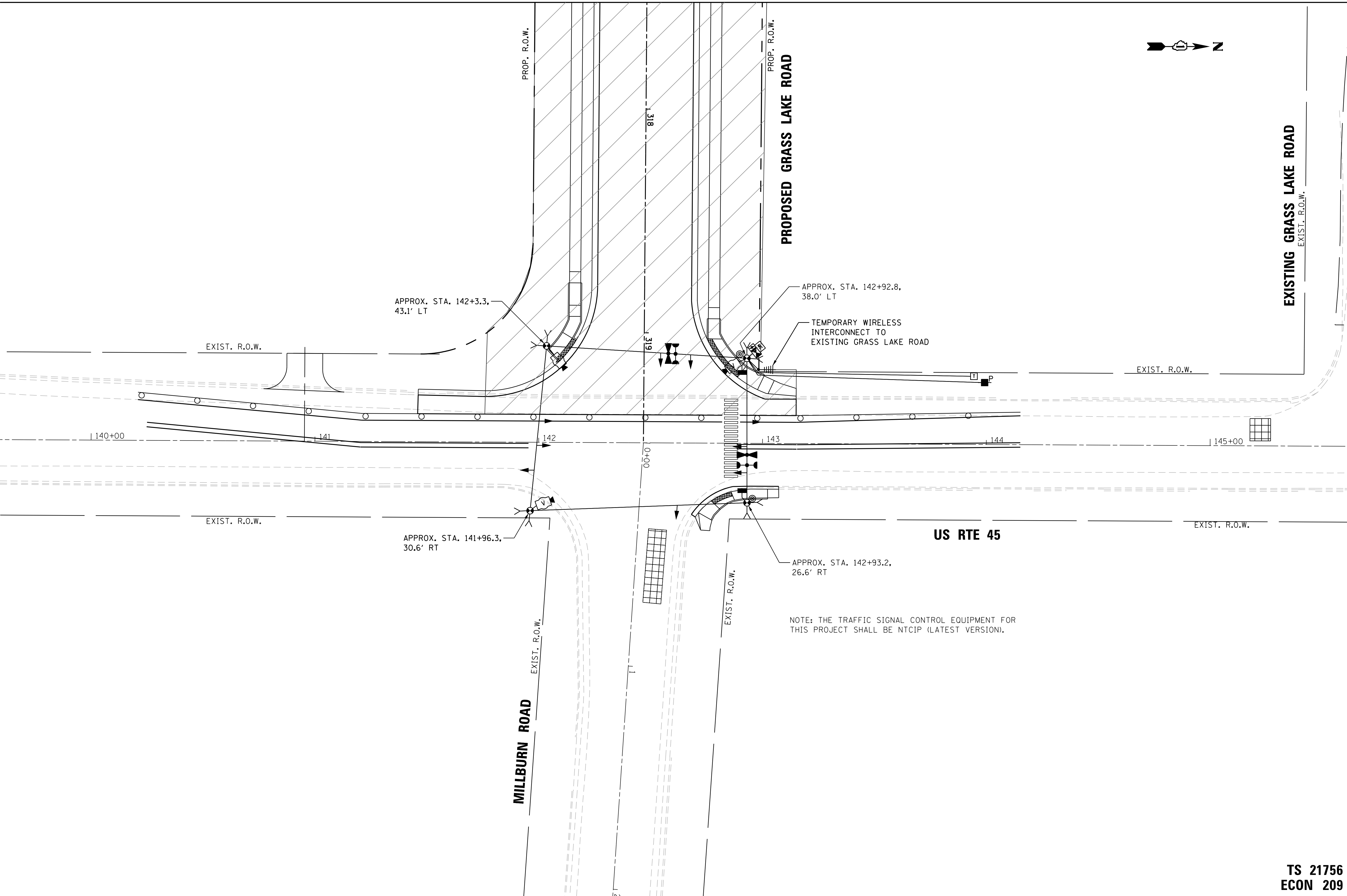
PROFILE	SURVEYED	DATE
NOTE BOOK NO.	GRADES CHECKED	
	B.M. NOTED	
	STRUCTURE NOTATIONS CRKD	



TS SHT NO. 10

**TS 21756
ECON 209**

<p>AMES Engineering, Inc. CONSULTING ENGINEERS 5413 Walnut Avenue, Suite 2F Downers Grove, IL 60515</p>	USER NAME = 35361	DESIGNED AS	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT PLAN US RTE 45 AND MILLBURN ROAD	F.A.P. RTE. 344	SECTION 39 R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 306
	PLOT SCALE = 20,0000' / 1" =	CHECKED MSA/TM	REVISED			REVISED	CONTRACT NO. 60T75			ILLINOIS FED. AID PROJECT
	PLOT DATE = 9/14/2017	DATE	REVISED	SCALE: 1"=20'		SHEET OF SHEETS		STA. TO STA.		



NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

**TS 21756
ECON 209**

Engineering, Inc. ENGINEERS Avenue, Suite 2F ave, IL 60515	USER NAME = 35361	DESIGNED AS	REVISED
		DRAWN SR	REVISED
	PLOT SCALE = 20.0000' / 1" =	CHECKED MSA/TM	REVISED
	PLOT DATE = 9/14/2017	DATE	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGE 1 TEMPORARY TRAFFIC SIGNAL INSTALLATION PLAN
EXISTING US RTE 45 AND PROPOSED GRASS LAKE RD/MILLBURN RD**

SCALE: SHEET OF SHEETS STA. TO STA.

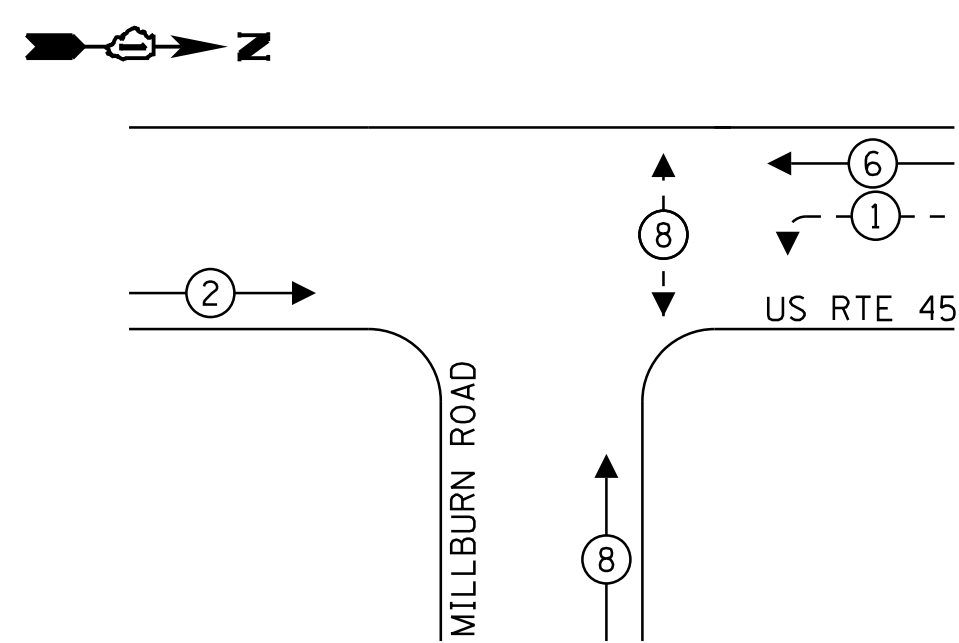
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	307
CONTRACT NO. 60T75			ILLINOIS FED. AID PROJECT	

PLAN	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
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	AT	
	WORK	
	FILE	
	NAME	

PROFILE	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
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	WORK	
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	NAME	

TS SHT NO. 12

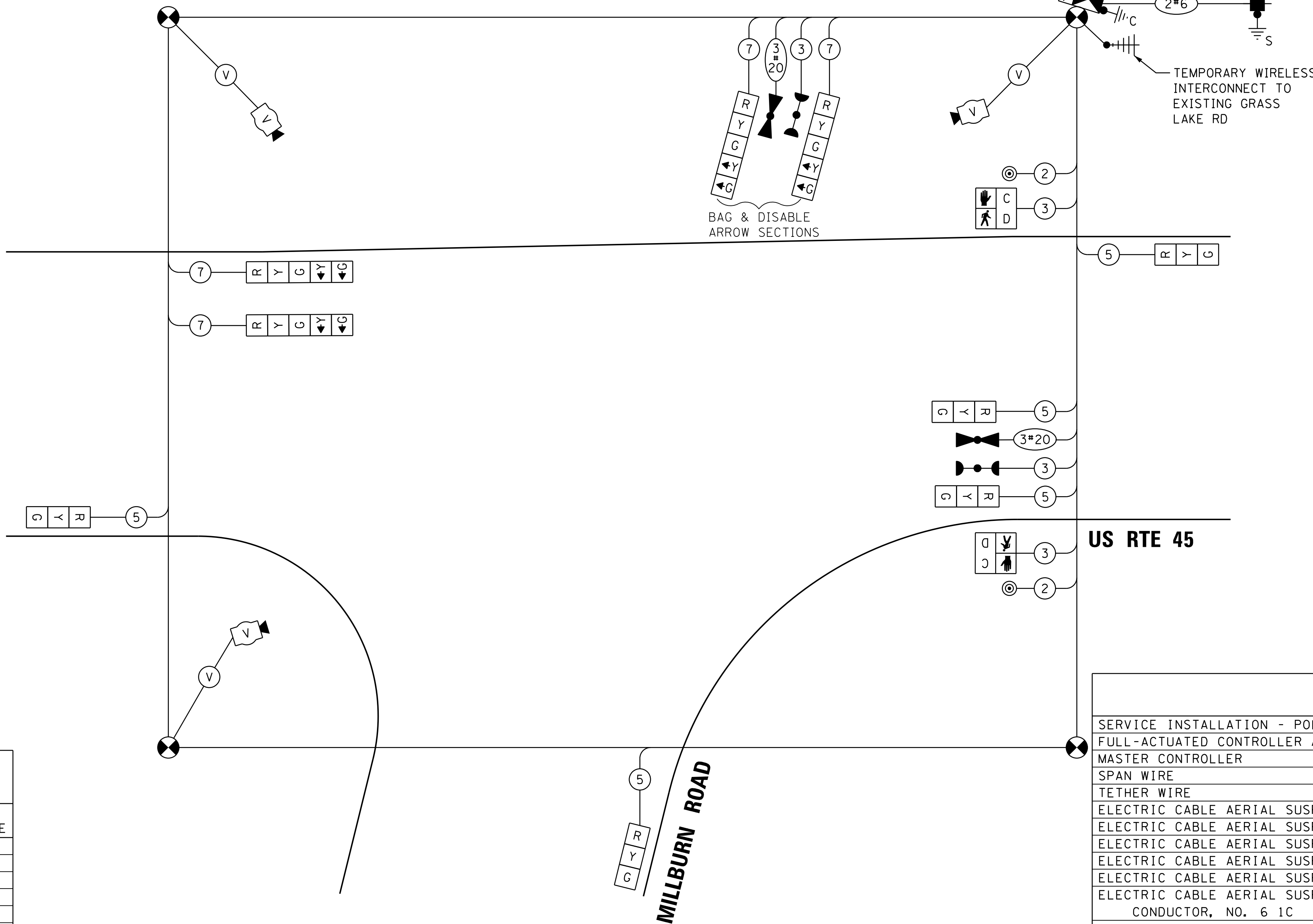
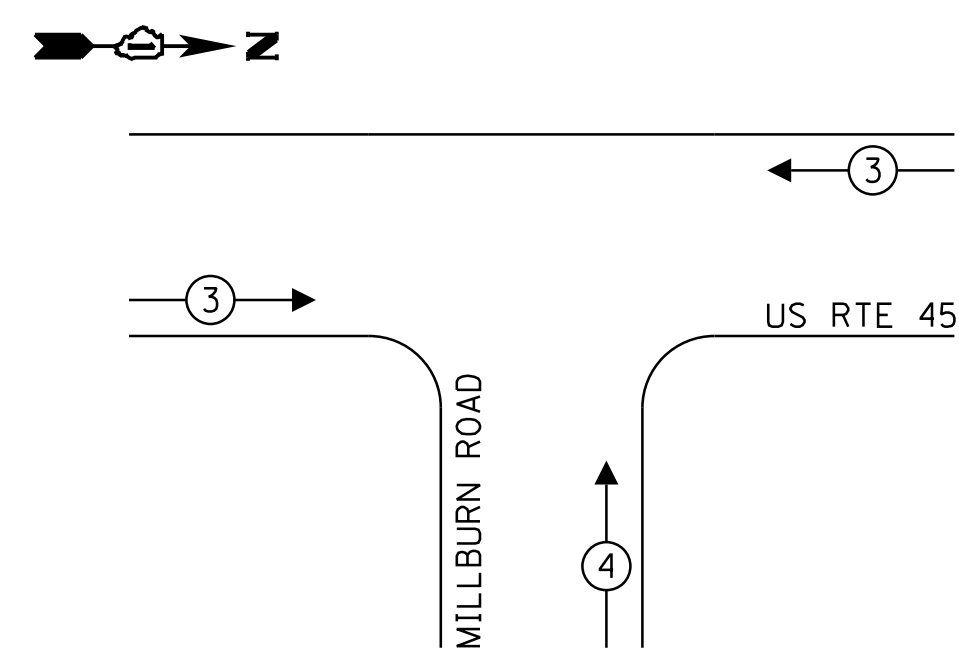
**STAGE 1
TEMPORARY CONTROLLER SEQUENCE**



LEGEND:

- ← ⊛ → PROTECTED PHASE
- ← ⊛ - - PROTECTED/PERMITTED PHASE
- ← ⊛ → PEDESTRIAN PHASE
- ⊛ OL OVERLAP

**STAGE 1
TEMPORARY EMERGENCY VEHICLE
PREEMPTION SEQUENCE**



TEMPORARY CABLE PLAN
(NOT TO SCALE)

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

**TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	49.5
(YELLOW)	9	20	5	9.0
(GREEN)	9	12	45	48.6
PERMISSIVE ARROW	4	10	10	4.0
PED. SIGNAL	2	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
VIDEO SYSTEM	1	150	100	150.0
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	-	-	-
TOTAL =				426.1

ENERGY COSTS TO:

VILLAGE OF LINDENHURST
2301 EAST SAND LAKE ROAD
LINDENHURST, IL 60046

ENERGY SUPPLY: CONTACT: THERESA SIERZEGA
PHONE: (847) 816-5458
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 5188040025

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME =	35361
DESIGNED AS	SR
DRAWN	MSA/TM
CHECKED	DATE
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1	REVIS
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**STAGE 1 TEMPORARY CABLE PLAN, TEMPORARY PHASE DESIGNATION
DIAGRAM, & TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE
EXISTING US RTE 45 AND PROPOSED GRASS LAKE RD/MILLBURN RD**

SCALE: SHEET OF SHEETS STA. TO STA.

SCHEDULE OF QUANTITIES

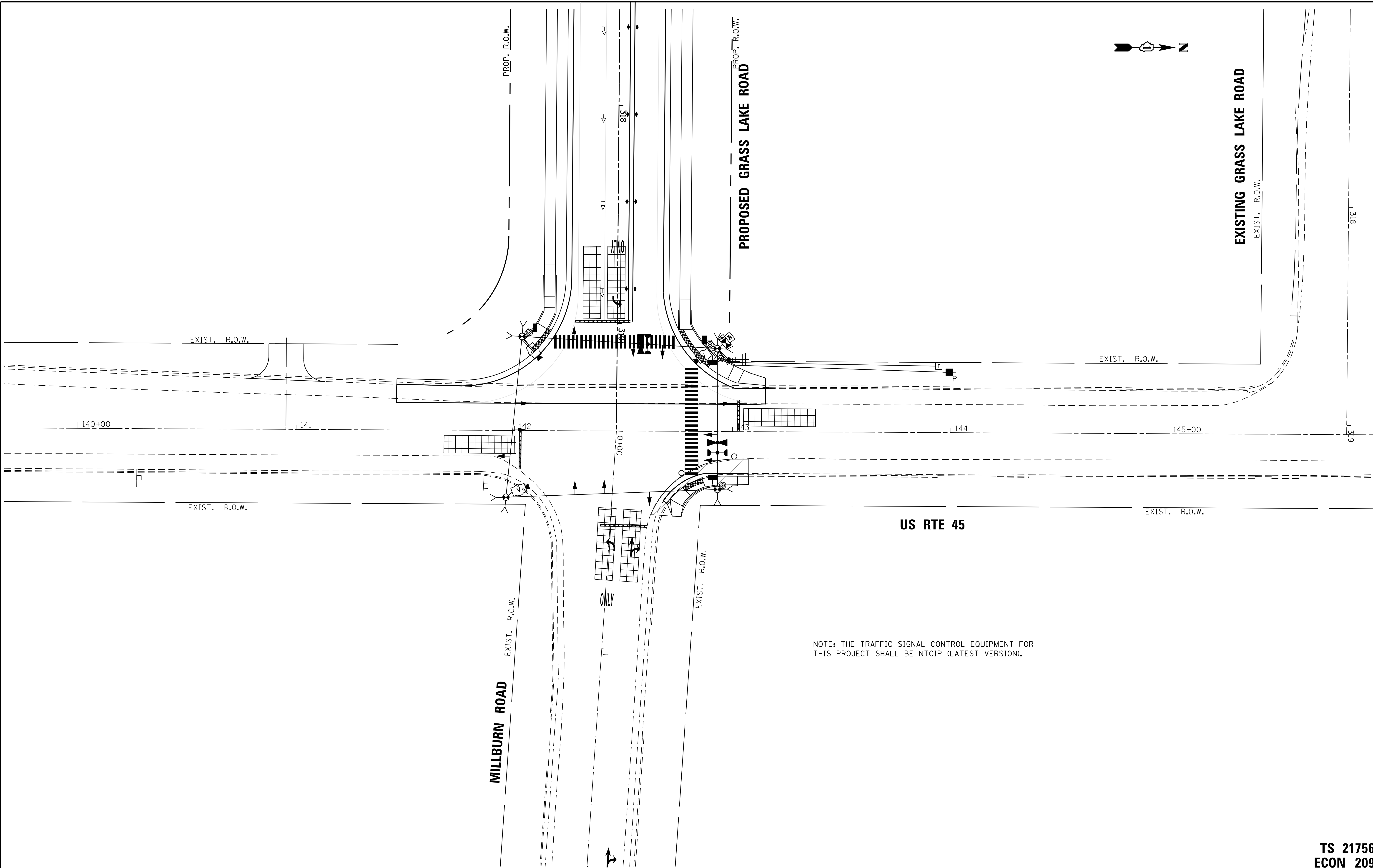
ITEM DESCRIPTION	UNITS	TOTAL QTY.
SERVICE INSTALLATION - POLE MOUNTED	EACH	1
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1
MASTER CONTROLLER	EACH	1
SPAN WIRE	FOOT	351
TETHER WIRE	FOOT	351
ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 2C	FOOT	340
ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 3C	FOOT	508
ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 5C	FOOT	444
ELECTRIC CABLE AERIAL SUSPENDED, SIGNAL, NO. 14 7C	FOOT	841
ELECTRIC CABLE AERIAL SUSPENDED, SERVICE, NO. 6 2C	FOOT	130
ELECTRIC CABLE AERIAL SUSPENDED, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	150
PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	4
LIGHT DETECTOR	EACH	2
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	4
EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	200
TRAFFIC SIGNAL WOOD POLE, 45 FT, CLASS 5	EACH	4
VIDEO DETECTION SYSTEM	EACH	1
TEMPORARY WIRELESS INTERCONNECT	EACH	1
UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	1
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, SPAN WIRE MOUNTED	EACH	6
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, SPAN WIRE MOUNTED	EACH	6
TEMPORARY TRAFFIC SIGNAL TIMING	EACH	1

**TS 21756
ECON 209**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	308
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	BY
	CHECKED	
	ALIGNED	
	FIELD	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
NOTE BOOK NO.	GRADES CHECKED	BY
	STRUCTURE	
	NOT AT THIS OFFICE	



NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

TS SHT NO. 13

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = 35361	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = 20.0000' / 1" =	CHECKED MSA/TM	REVISED
PLOT DATE = 9/14/2017	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGES 2 & 3 TEMPORARY TRAFFIC SIGNAL INSTALLATION PLAN
US RTE 45 AND PROPOSED GRASS LAKE RD/MILLBURN RD

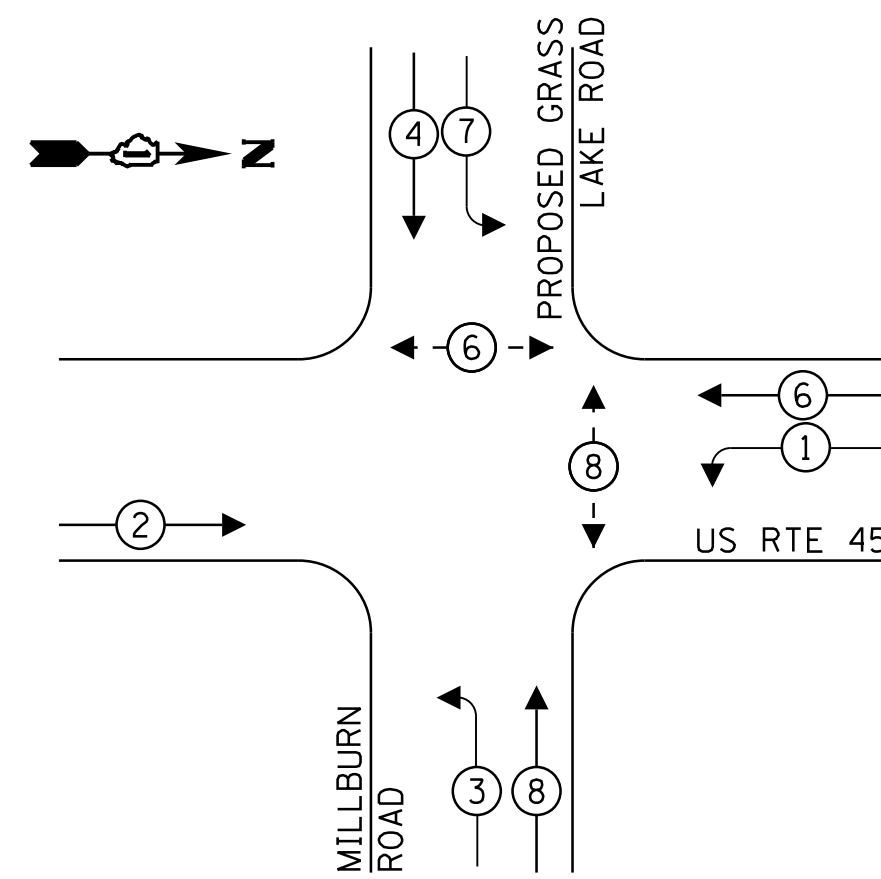
SCALE: 1"=20' SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	309
				CONTRACT NO. 60T75
ILLINOIS FED. AID PROJECT				

TS 21756
ECON 209



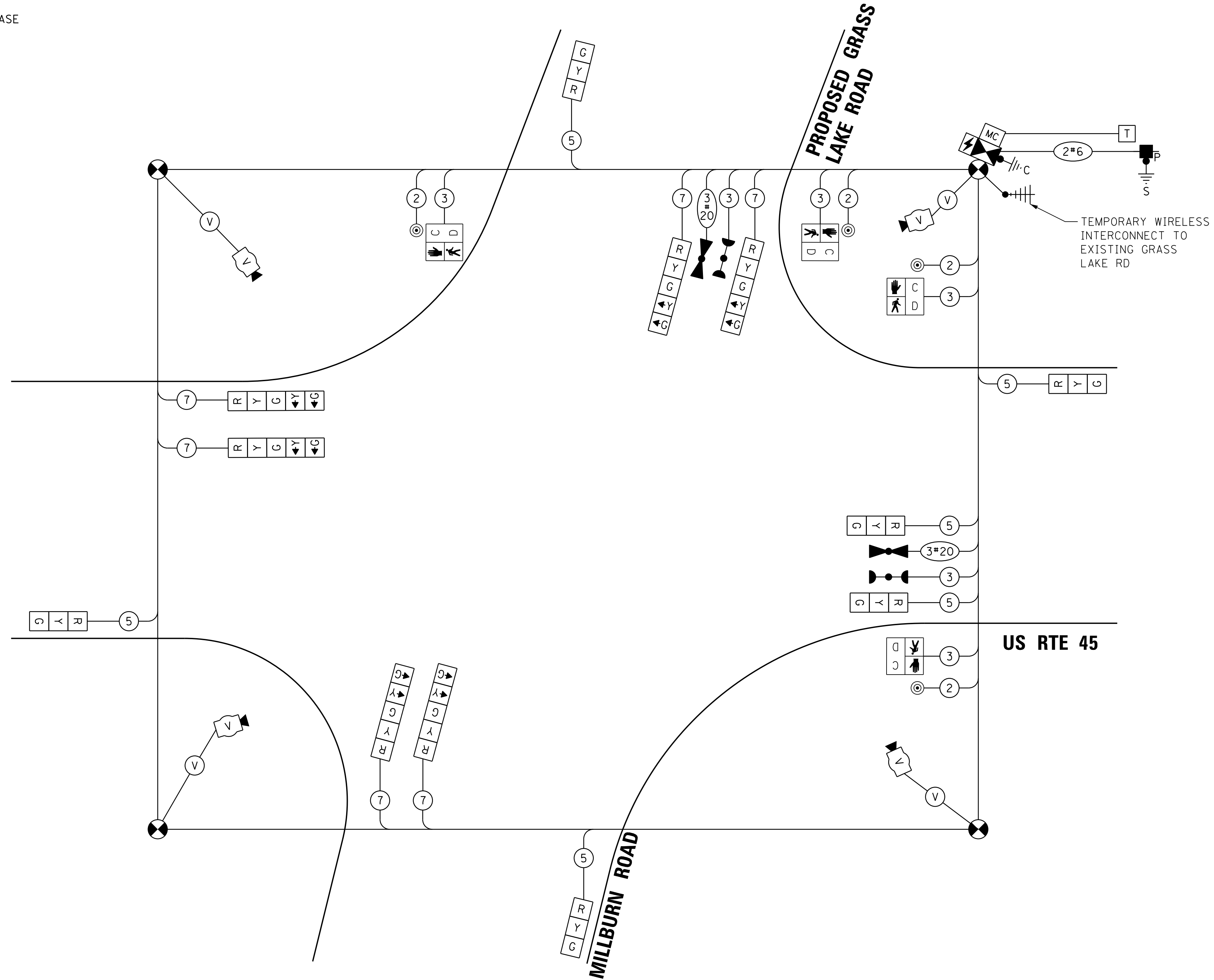
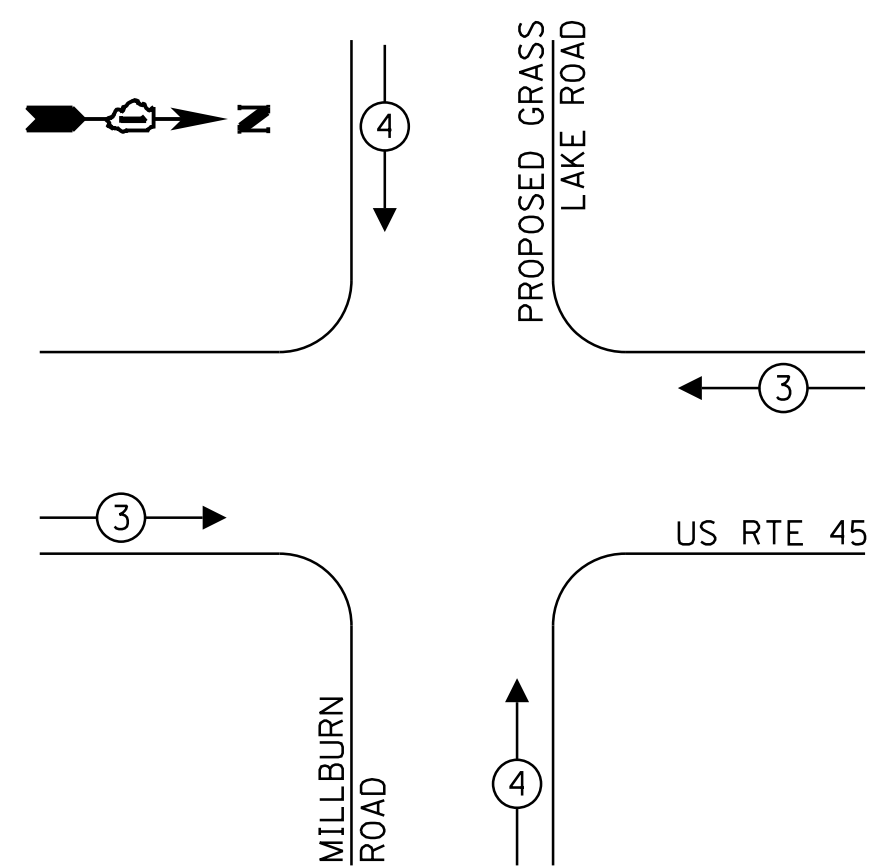
**STAGES 2 & 3
TEMPORARY CONTROLLER SEQUENCE**



LEGEND:

- ← ⊙ ← PROTECTED PHASE
- ← ⊙ - - PROTECTED/PERMITTED PHASE
- ← ⊙ → PEDESTRIAN PHASE
- ← ⊙ OL OVERLAP

**STAGES 2 & 3
TEMPORARY EMERGENCY VEHICLE
PREEMPTION SEQUENCE**



TEMPORARY WIRELESS INTERCONNECT TO EXISTING GRASS LAKE RD

TEMPORARY CABLE PLAN

(NOT TO SCALE)

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

**TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PERMISSIVE ARROW	12	10	10	12.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
VIDEO SYSTEM	1	150	100	150.0
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	-	-	-
TOTAL =				509.8

ENERGY COSTS TO:

VILLAGE OF LINDENHURST
2301 EAST SAND LAKE ROAD
LINDENHURST, IL 60046

ENERGY SUPPLY: CONTACT: THERESA SIERZEGA
PHONE: (847) 816-5458
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 5188040025

PLAN	SURVEYED	DATE
NOTE BOOK NO.	PLOTTED	
	CHECKED	
	DATE	

PROFILE	SURVEYED	DATE
NOTE BOOK NO.	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

TS SHT NO. 14

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = 35361	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = 20.0000' / 1"	CHECKED MSA/TM	REVISED
PLOT DATE = 9/14/2017	DATE	REVISED

DESIGNED AS	REVISED
DRAWN SR	REVISED
CHECKED MSA/TM	REVISED
DATE	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGES 2 & 3 TEMPORARY CABLE PLAN, TEMPORARY PHASE DESIGNATION
DIAGRAM, & TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE
EXISTING US RTE 45 AND PROPOSED GRASS LAKE RD/MILLBURN RD**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE. 344	SECTION 39 R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 310
				CONTRACT NO. 60T75
ILLINOIS FED. AID PROJECT				

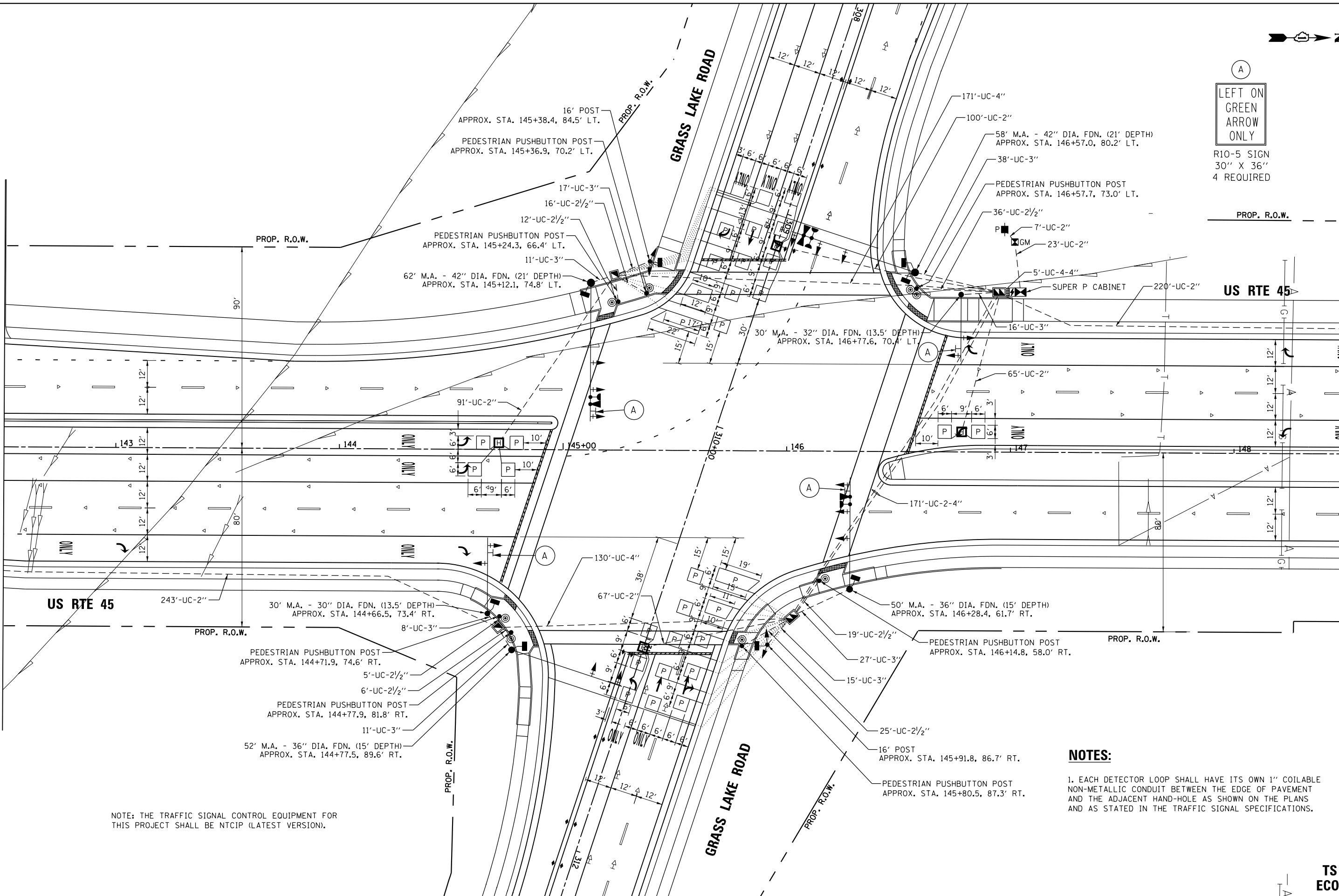
**TS 21756
ECON 209**

PLAN	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	FILE NAME	

MATCH LINE STA. 142+50
SEE TS SHT NO. 17

MATCH LINE STA. 148+50
SEE TS SHT NO. 17



(A)
LEFT ON GREEN
ARROW
ONLY
R10-5 SIGN
30" X 36"
4 REQUIRED

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

NOTES:
1. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALLIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND THE ADJACENT HAND-HOLE AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC SIGNAL SPECIFICATIONS.

TS SHT NO. 16

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

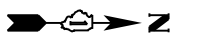
USER NAME = *USER*	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = *SCALE*	CHECKED MSA/TM	REVISED
PLOT DATE = *DATE*	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL INSTALLATION PLAN (SHEET 1 OF 2)
US RTE 45 AND GRASS LAKE ROAD
SCALE: 1" = 20' SHEET OF SHEETS STA. TO STA.

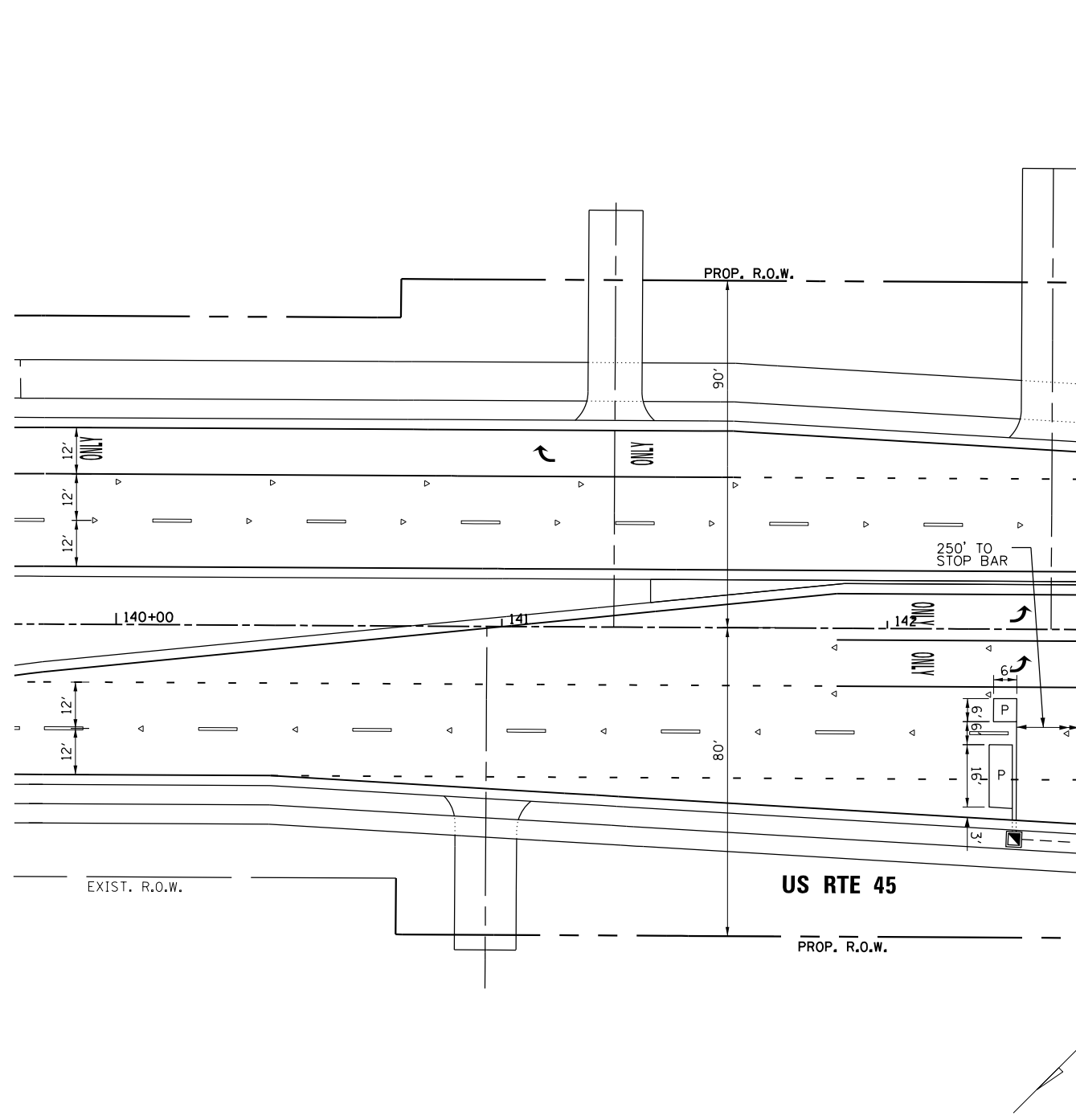
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	311
				CONTRACT NO. 60T75
ILLINOIS FED. AID PROJECT				

TS 21756
ECON 209

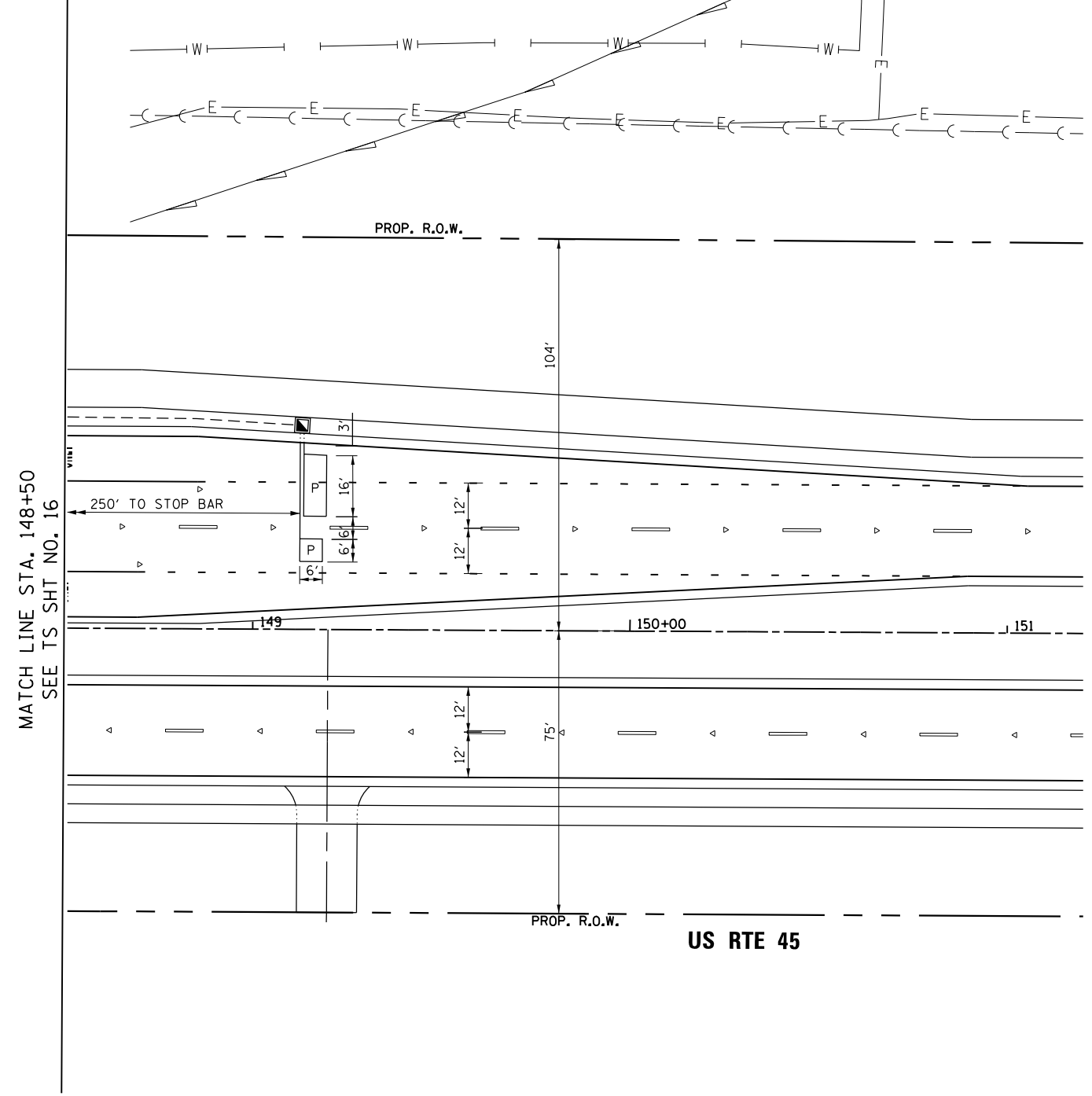


PLAN	SURVEYED	BY	DATE
	PLOTTED		
	ALIGNED		
	CHECKED		
	FILED		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE		
	NOT AT THIS OFFICE		
	NO.		



MATCH LINE STA. 142+50
SEE TS SHT NO. 16



MATCH LINE STA. 148+50
SEE TS SHT NO. 16

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

TS SHT NO. 17

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = *USER*	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = *SCALE*	CHECKED MSA/TM	REVISED
PLOT DATE = *DATE*	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL INSTALLATION PLAN (SHEET 2 OF 2)
US RTE 45 AND GRASS LAKE ROAD

SCALE: 1"=20' SHEET OF SHEETS STA. TO STA.

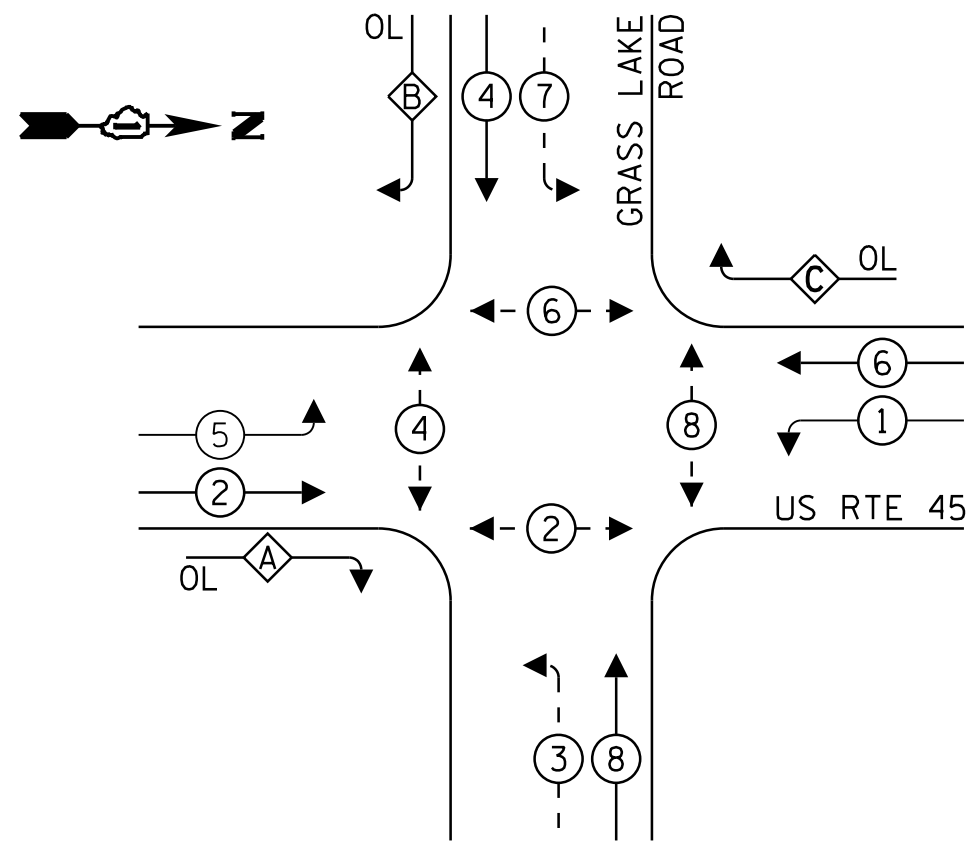
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	312
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

TS 21756
ECON 209

DATE	
BY	
REVIEWED	
PLANNED	
NOTED	
NO.	

DATE	
BY	
REVIEWED	
PLANNED	
NOTED	
NO.	

PROPOSED CONTROLLER SEQUENCE



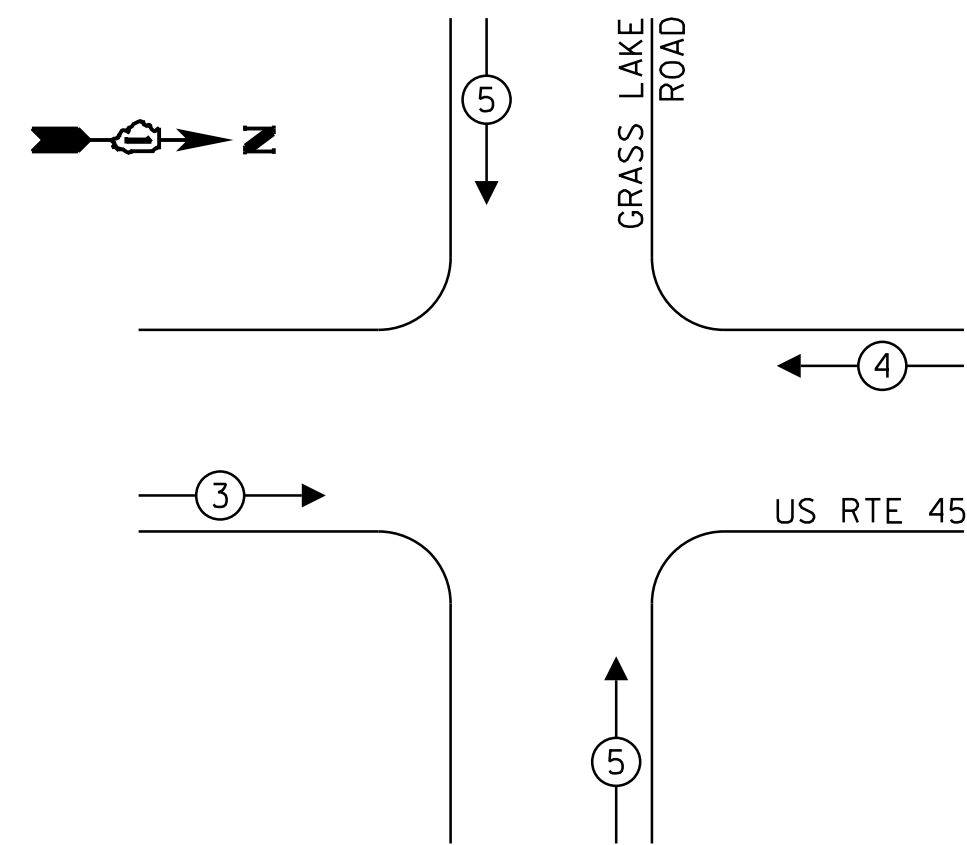
LEGEND:

- ← ⊙ ← PROTECTED PHASE
- ← ⊙ ← PROTECTED/PERMITTED PHASE
- ← ⊙ → PEDESTRIAN PHASE
- ← ⊙ ← OL OVERLAP

RIGHT TURN OVERLAP PHASE DESIGNATION:

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
A	2	3
B	4	5
C	6	7

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



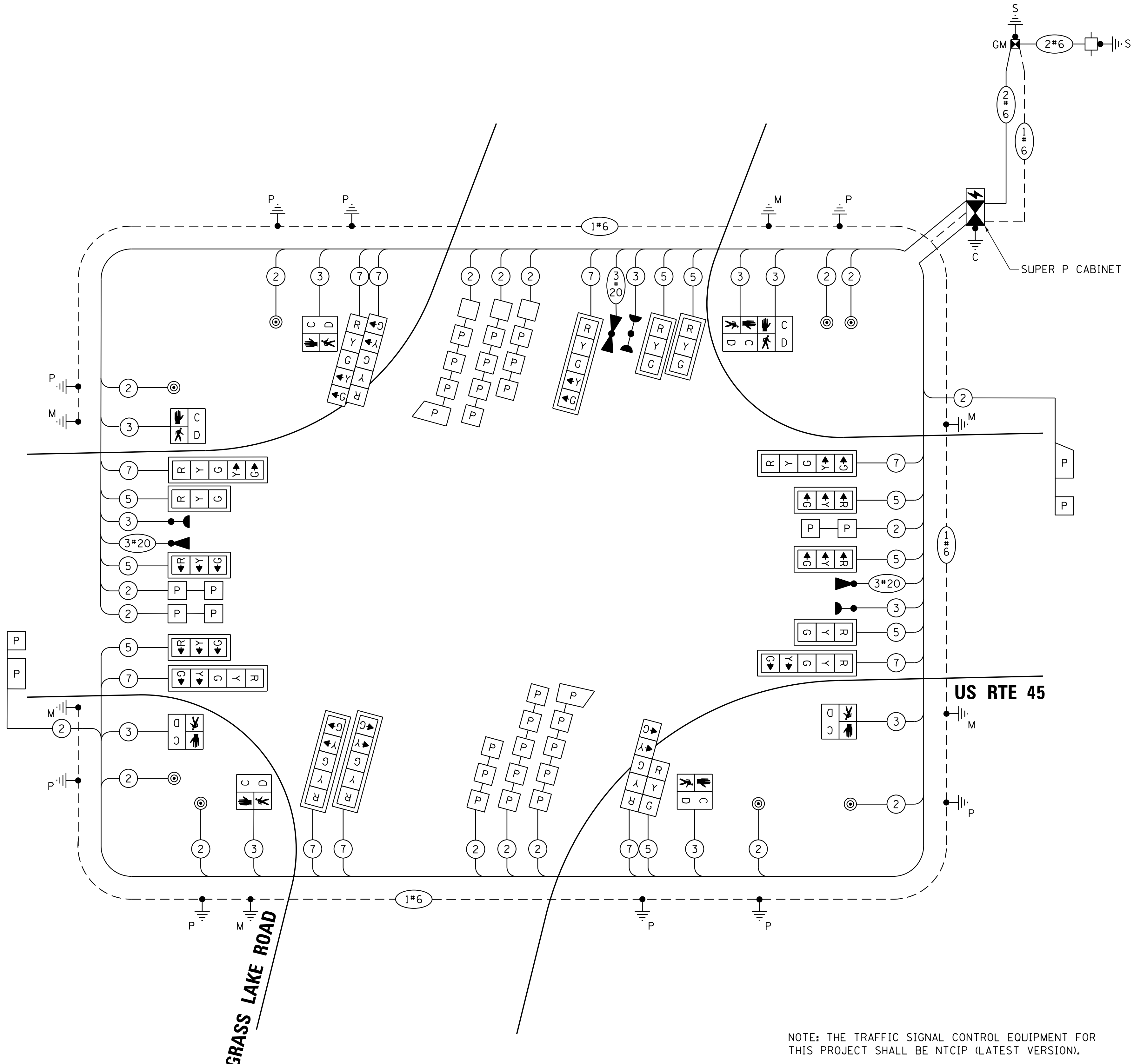
TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	19	11	50	104.5
(YELLOW)	19	20	5	19.0
(GREEN)	19	12	45	102.6
PERMISSIVE ARROW	20	10	10	20.00
PED. SIGNAL	8	20	100	160.00
CONTROLLER	1	100	100	100.00
UPS	1	25	100	25.00
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	-	-	-
TOTAL =				531.1

ENERGY COSTS TO:

VILLAGE OF LINDENHURST
2301 EAST SAND LAKE ROAD
LINDENHURST, ILLINOIS 60046

ENERGY SUPPLY: CONTACT: THERESA SIERZEGA
PHONE: (847) 816-5458
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 5188040025



CABLE PLAN
(NOT TO SCALE)

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

TS SHT NO. 18

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = 35361	DESIGNED AS	REVISED
PLOT SCALE = 20.0000' / 1" =	DRAWN SR	REVISED
PLOT DATE = 9/14/2017	CHECKED MSA/TM	REVISED
	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE US RTE 45 AND GRASS LAKE ROAD

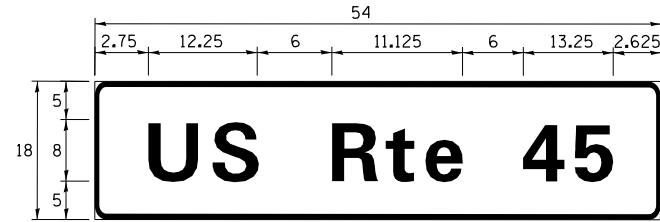
SCALE: N.T.S. SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	313
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

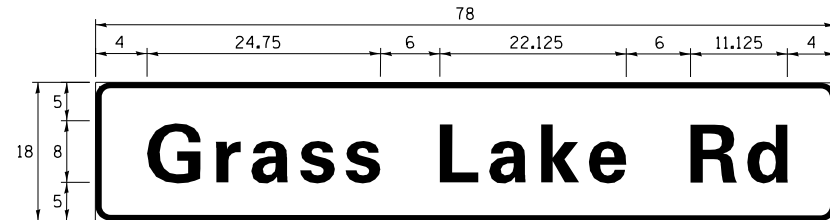
**TS 21756
ECON 209**

SIGN PANEL – TYPE 1 OR TYPE 2

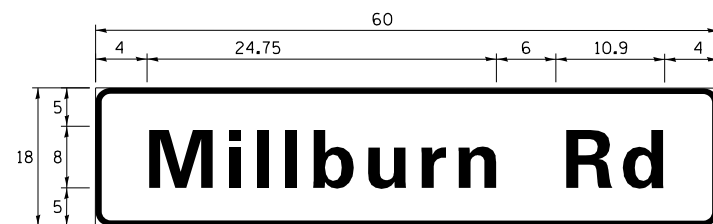
ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D	6.75	1	ZZ	2



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D	9.75	2	ZZ	2



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D	7.5	2	ZZ	2

NOTE: FOR ADDITIONAL DESIGN AND INSTALLATION INFORMATION PLEASE SEE DISTRICT ONE MAST ARM MOUNTED STREET NAME SIGNS DETAIL.

SCHEDULE OF QUANTITIES

ITEM DESCRIPTION	UNIT	TOTAL QTY.
SIGN PANEL - TYPE 1	SQ FT	43.5
SIGN PANEL - TYPE 2	SQ FT	19.5
SERVICE INSTALLATION - GROUND MOUNTED, METERED	EACH	1
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	816
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	FOOT	119
UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	143
UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	663
HANDHOLE	EACH	4
HEAVY-DUTY HANDHOLE	EACH	4
DOUBLE HANDHOLE	EACH	2
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	1,787
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	2,297
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2,158
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	2,729
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	2,753
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	55
ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	801
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	2
PEDESTRIAN PUSH-BUTTON POST, GALVANIZED STEEL, TYPE II	EACH	7
STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH	2
STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 52 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 58 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 62 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	40
CONCRETE FOUNDATION, TYPE C	FOOT	4
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	27
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	30
CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER	FOOT	42
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	8
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	3
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	7
PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	8
TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC	EACH	15
INDUCTIVE LOOP DETECTOR	EACH	11
DETECTOR LOOP, TYPE I	FOOT	103
PREFORMED DETECTOR LOOP	FOOT	1,312
* LIGHT DETECTOR	EACH	3
* LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	8
* EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	727
FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET	EACH	1
UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	1

* 100% COST TO VILLAGE OF LINDENHURST

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE NTCIP (LATEST VERSION).

DATE	
BY	
SURVEYED	
PLOTTED	
GRADES CHECKED	
ALIGNMENT CHECKED	
STAKEOUT	
FIELD FILE NAME	
PLAN	
NOTE BOOK NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
GRADES CHECKED	
ALIGNMENT CHECKED	
STAKEOUT	
FIELD FILE NAME	
PROFILE	
NOTE BOOK NO.	

TS SHT NO. 19

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = P0027446	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = 48.0000' / in.	CHECKED MSA/TM	REVISED
PLOT DATE = 3/13/2018	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS
AND SCHEDULE OF QUANTITIES
US RTE 45 AND GRASS LAKE ROAD

SCALE: SHEET OF SHEETS STA. TO STA.

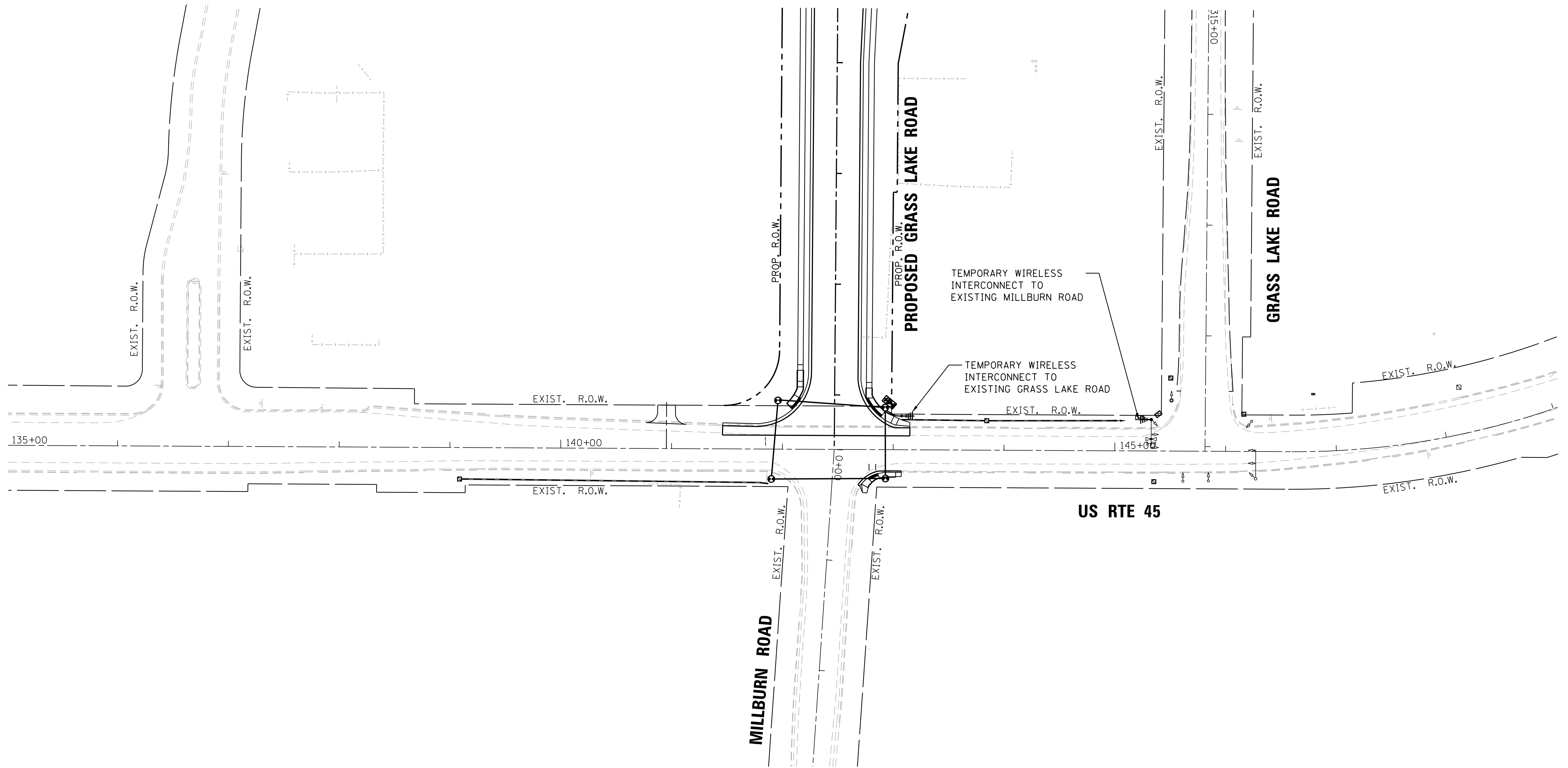
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	314
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

TS 21756
ECON 209



PLAN	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	CHECKED		
	ALIGNED		
	PAID FILE NAME		

PROFILE	SURVEYED	BY	DATE
NOTE BOOK NO.	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		



TS SHT NO. 15

AMES Engineering, Inc.
CONSULTING ENGINEERS
5413 Walnut Avenue, Suite 2F
Downers Grove, IL 60515

USER NAME = 35361	DESIGNED AS	REVISED
	DRAWN SR	REVISED
PLOT SCALE = 50.0000' / 1" =	CHECKED MSA/TM	REVISED
PLOT DATE = 9/14/2017	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY INTERCONNECT PLAN
US RTE 45 AND MILLBURN ROAD/GRASSLAKE ROAD

SCALE: 1"=50' SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	315
CONTRACT NO. 60T75			ILLINOIS FED. AID PROJECT	

ECON 209

TOTAL BILL OF MATERIAL

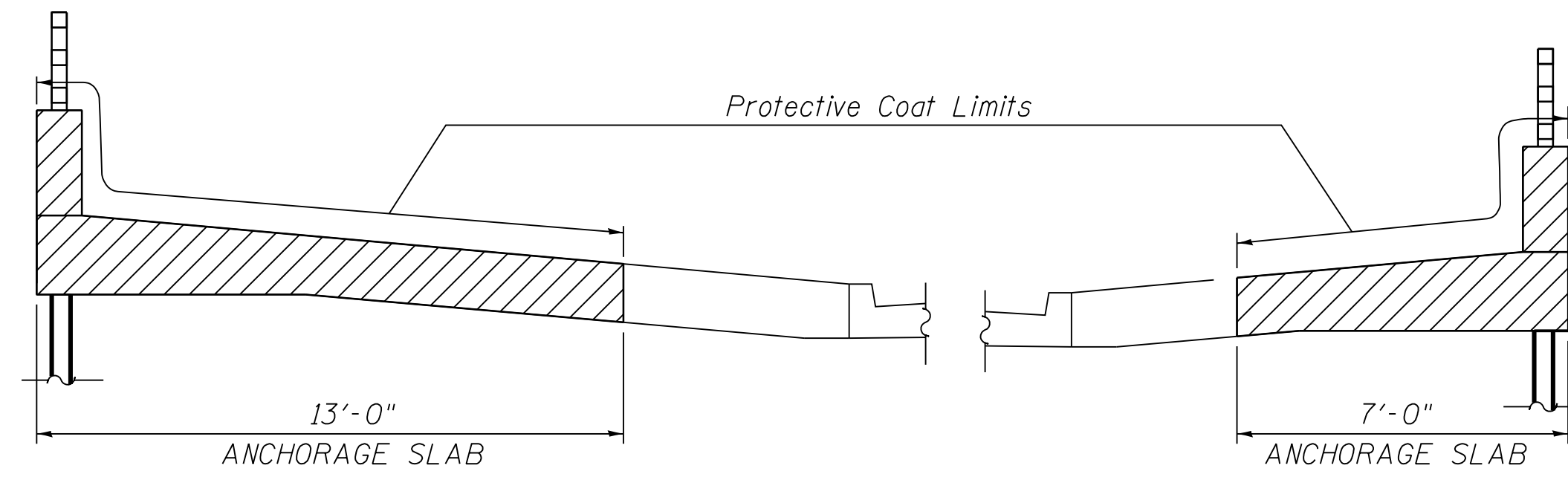
ITEM	UNIT	SUPER	SUB	TOTAL
Removal And Disposal Of Unsuitable Material	CU YD	58		58
Porous Granular Embankment	CU YD	1359		1359
Geotechnical Fabric For Ground Stabilization	SQ YD	375		375
Aggregate Subgrade Improvement	CU YD	58		58
Structure Excavation	CU YD	1168		1168
Concrete Superstructure	CU YD	133.5		133.5
Protective Coat	SQ YD	321		321
Reinforcement Bars, Epoxy Coated	POUND	19410		19410
Parapet Railing	FOOT	232		232
Name Plates	EACH	1		1
Mechanically Stabilized Earth Retaining Wall	SQ FT	235		235
Three-Sided Precast Concrete Structures (Special), 42 ft	FT	106		106
Membrane Waterproofing For Buried Structures	SQ YD	575		575

①

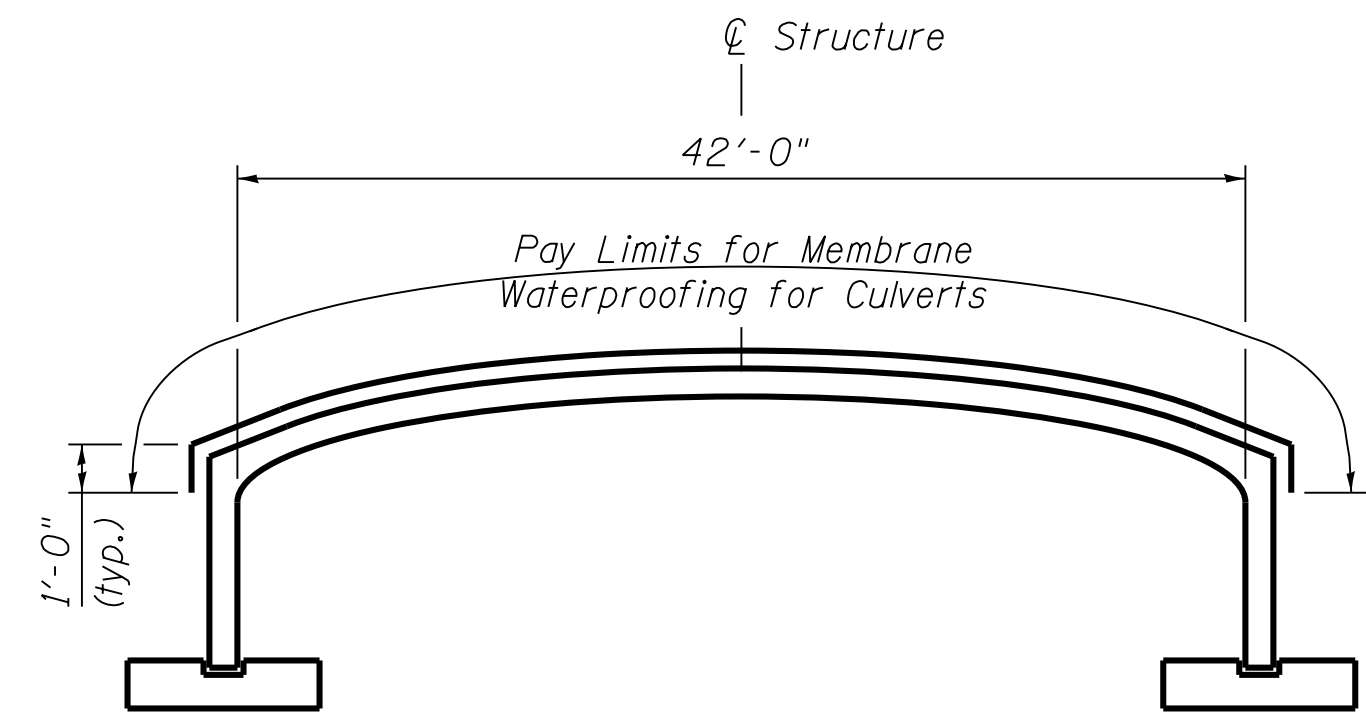
Including 113.2 Cu. Yd. for anchorage slab and 20.3 Cu. Yd. for concrete parapets.

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 General Notes, Total Bill of Material
- 3 MSE Wall Plan and Elevation, Elevation Tables
- 4 Anchorage Slab Plan and Details
- 5 Parapet Elevations
- 6 Anchorage Slab and Parapet Details
- 7 Parapet Railing
- 8-11 Boring Log



PROTECTIVE COAT LIMITS



WATERPROOFING LIMITS

(At Right Angle to Structure)

* Wall thickness and shape may vary as per manufacturer's design.

GENERAL NOTES:

Reinforcement bars designated (E) shall be epoxy coated.
 The gradations and capping of the Aggregate Subgrade Improvement used to replace the Unsuitable Material shall be approved by the Engineer.
 M.S.E. wall supplier to provide internal stability design for load transfer system to accommodate the posts for the traffic barrier terminals at the north end of the southeast wall. See Roadway Plans for exact location of traffic barrier terminals and IDOT Highway Standards 630301-06 and 631031-11 for details. Coordinate with Contractor installing the traffic barrier terminals. Cost included with Mechanically Stabilized Earth Retaining Wall.
 See the latest GBSP90 for Three-Sided Precast Concrete Structure design and construction requirements.
 Foundation will be designed by the Contractor/Supplier. Refer to SGR dated July 15, 2015 (by Wang Engineering) for geotechnical information.
 Protective coat shall not be applied to which Waterproofing Membrane System is applied.
 Slipforming of the parapets is not allowed.

STATION 128+24.00
 BUILT BY
 STATE OF ILLINOIS
 F.A.P. RT. 344 SEC. 39R
 LOADING HL-93
 STRUCTURE NO. 049-0610

NAME PLATE
 See Std. 515001

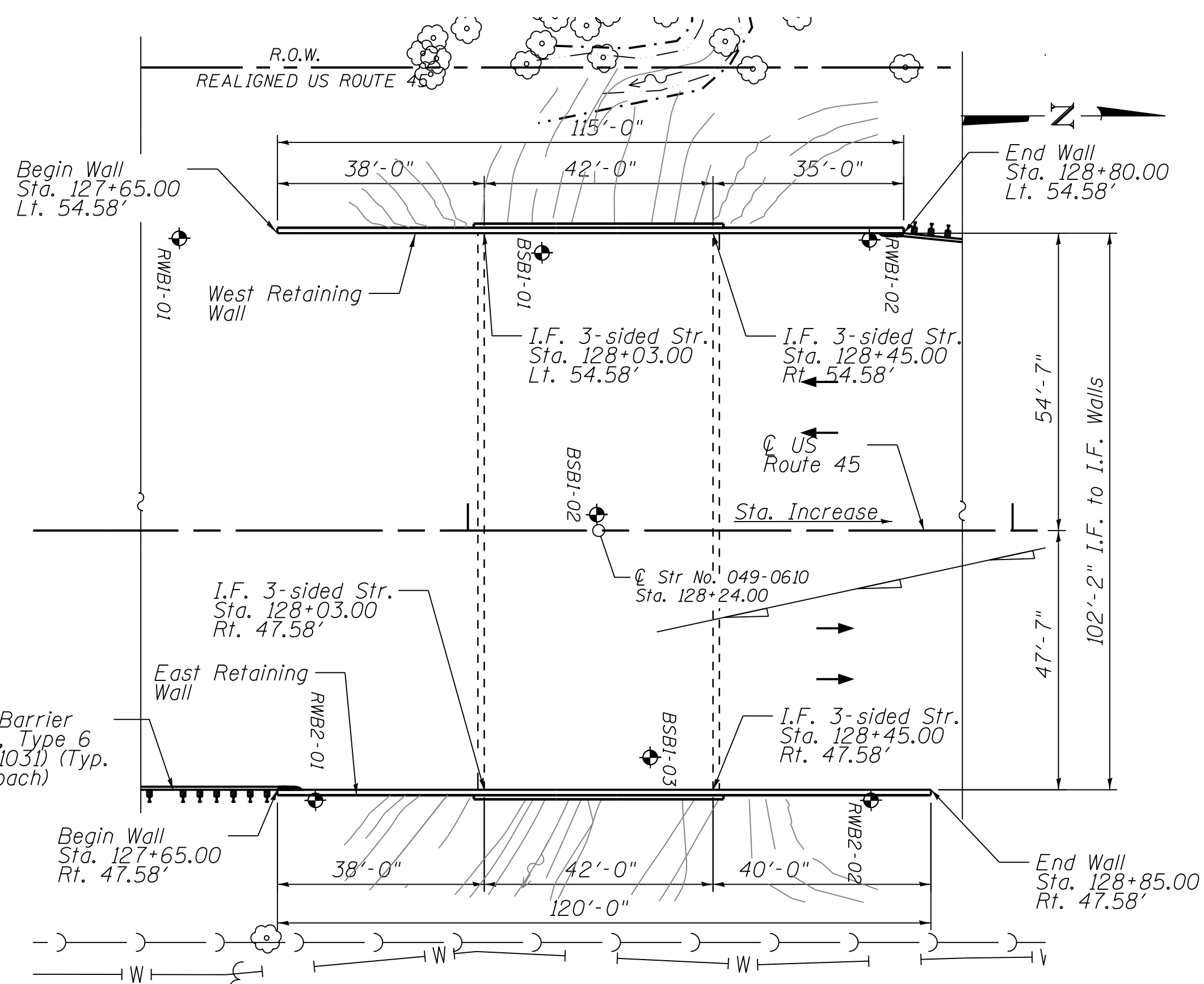
PAY ITEM LEGEND

 Paid as Concrete Superstructure

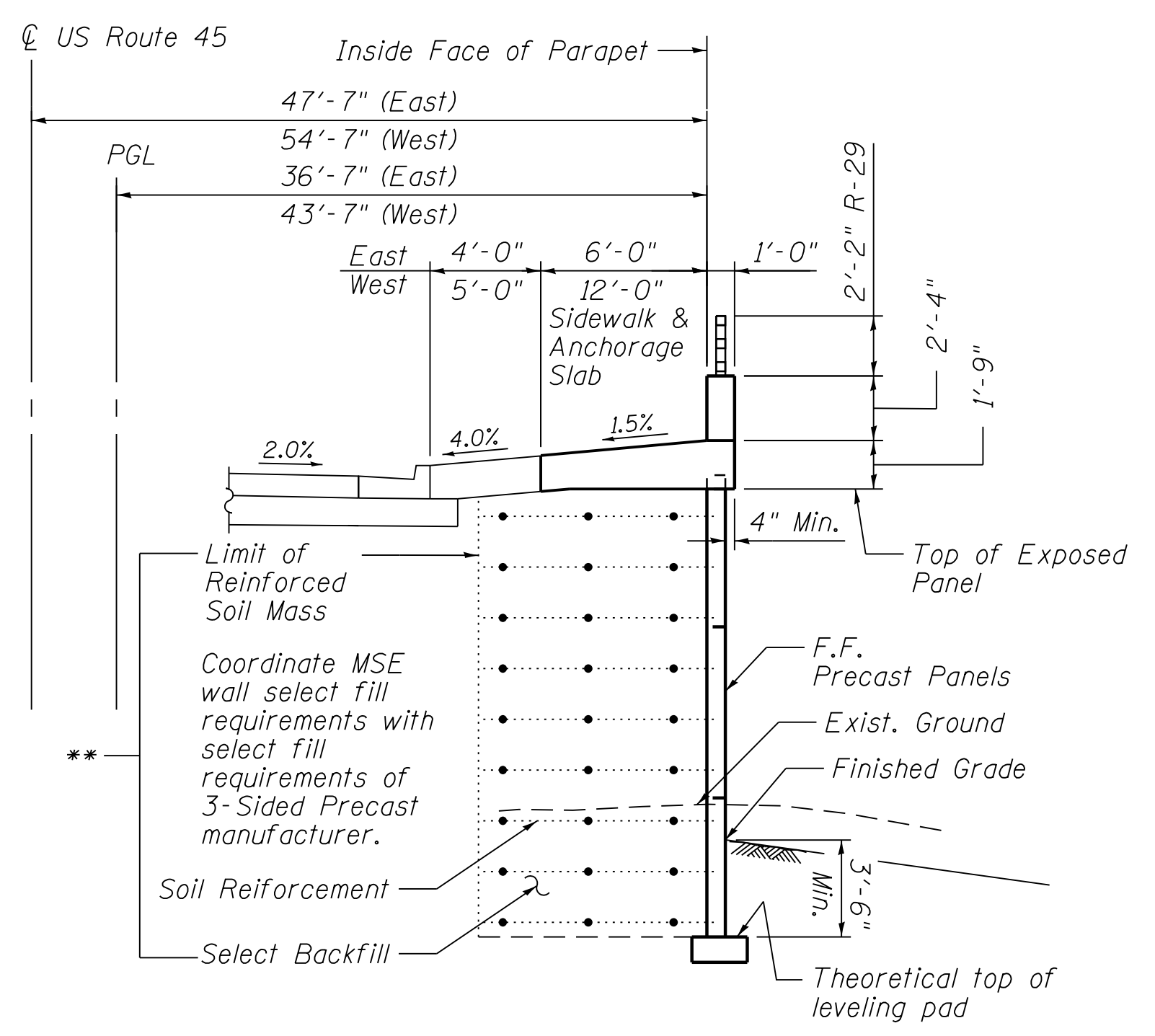
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FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES AND TOTAL BILL OF MATERIAL STRUCTURE NO. 049-0610	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PARSONS	CHECKED - RL	REVISIED -				344	39 R	LAKE	510	317
PLOT SCALE =	DRAWN - JZ	REVISIED -				CONTRACT NO. 60T75				
PLOT DATE =	CHECKED - RL	REVISIED -				ILLINOIS FED. AID PROJECT				
						SHEET NO. 2 OF 11 SHEETS				

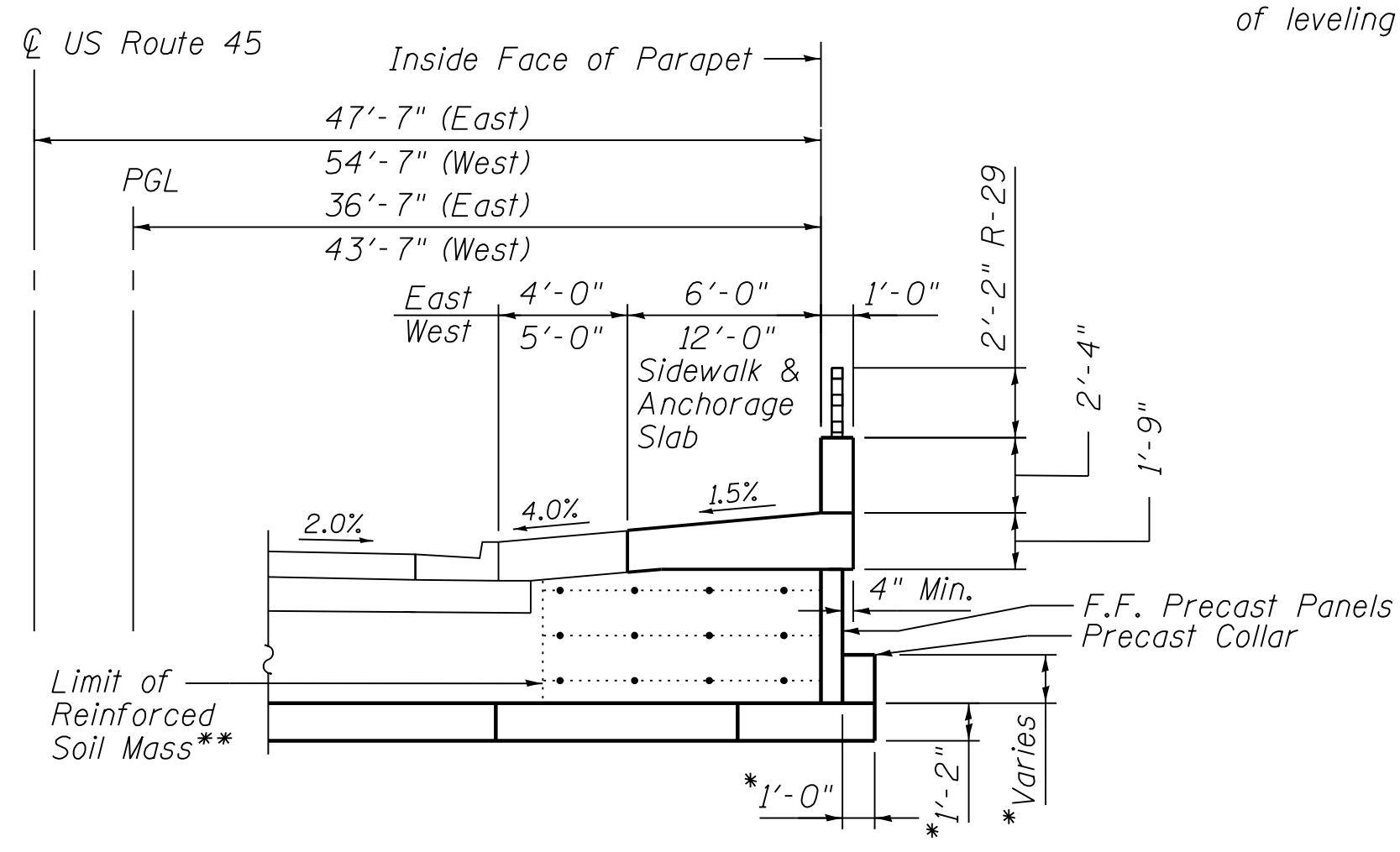
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PLAN
 Note: Wall offsets are measured from
 @ US 45 to inside face of concrete parapet.

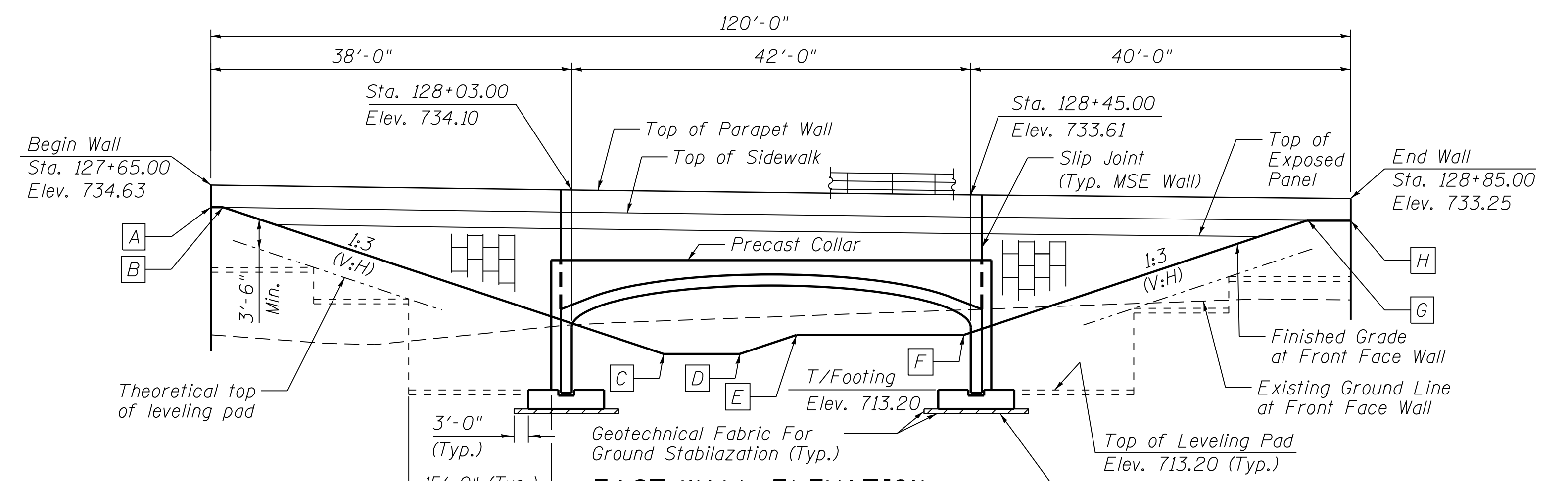


TYPICAL WALL SECTION
 East wall shown.
 West wall similar except as noted
 in Longitudinal Section.

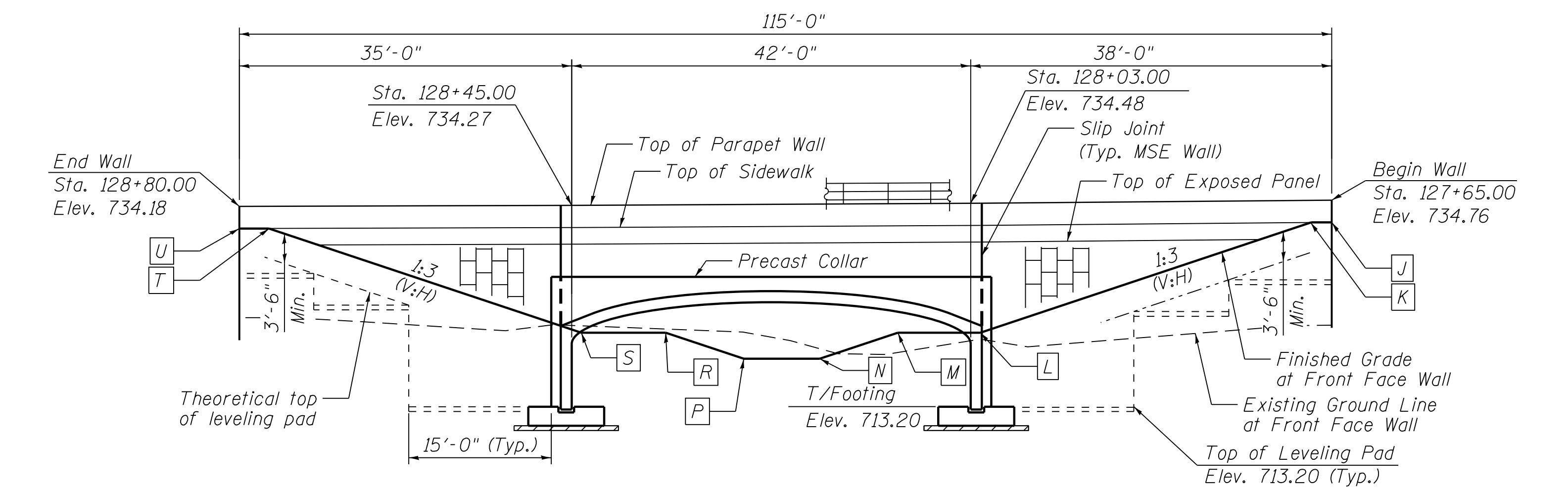


**TYPICAL WALL SECTION AT
 THREE SIDED PRECAST**
 East wall shown.
 West wall similar except as noted
 in Longitudinal Section.

* Dimensions may vary as per 3-sided structure manufacturer's design.
 ** To be designed and detailed by MSW Supplier.



EAST WALL ELEVATION
 (Looking West)



WEST WALL ELEVATION
 (Looking East)

TABLE OF CONTROL POINTS
 (Finished Grade)

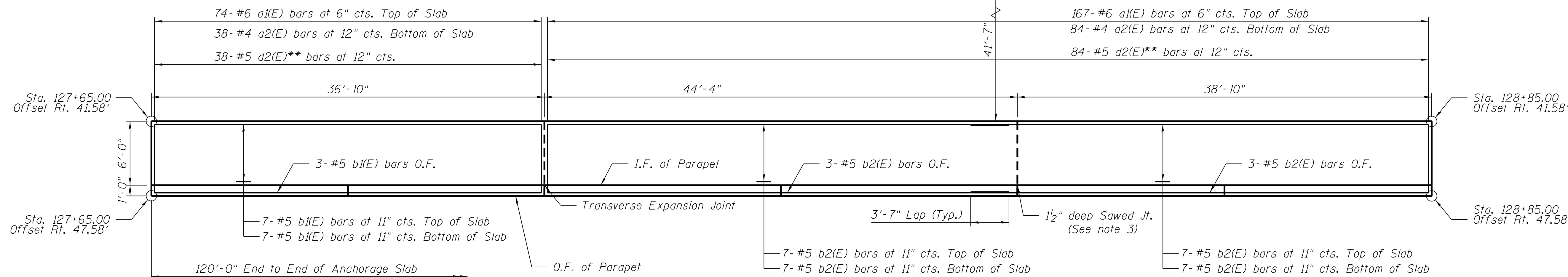
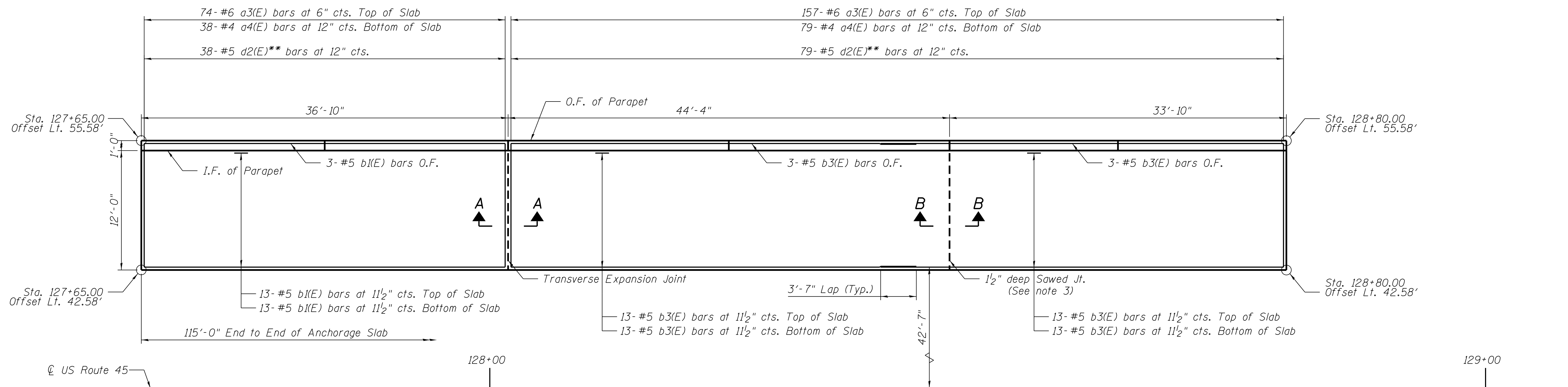
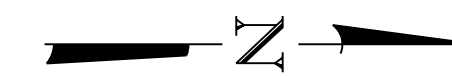
POINT	STA. @ US ROUTE 45	ELEVATION	POINT	STA. @ US ROUTE 45	ELEVATION
A	127+65.00	732.46	J	127+65.00	732.61
B	127+66.29	732.46	K	127+67.13	732.61
C	128+12.67	717.00	L	128+01.97	721.00
D	128+20.67	717.00	M	128+10.66	721.00
E	128+26.67	719.00	N	128+18.87	718.27
F	128+44.26	719.00	P	128+26.87	718.27
G	128+80.37	731.03	R	128+35.09	721.00
H	128+85.00	731.03	S	128+43.97	721.00
			T	128+76.85	731.96
			U	128+80.00	731.96

FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -
PARSONS		CHECKED - RL	REVISED -
	PLOT SCALE =	DRAWN - JZ	REVISED -
	PLOT DATE =	CHECKED - RL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WALL PLAN AND ELEVATION, ELEVATION TABLES
STRUCTURE NO. 049-0610
 SHEET NO. 3 OF 11 SHEETS

F.A.P. RTE. 344	SECTION 39 R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 318
CONTRACT NO. 60775				
ILLINOIS FED. AID PROJECT				



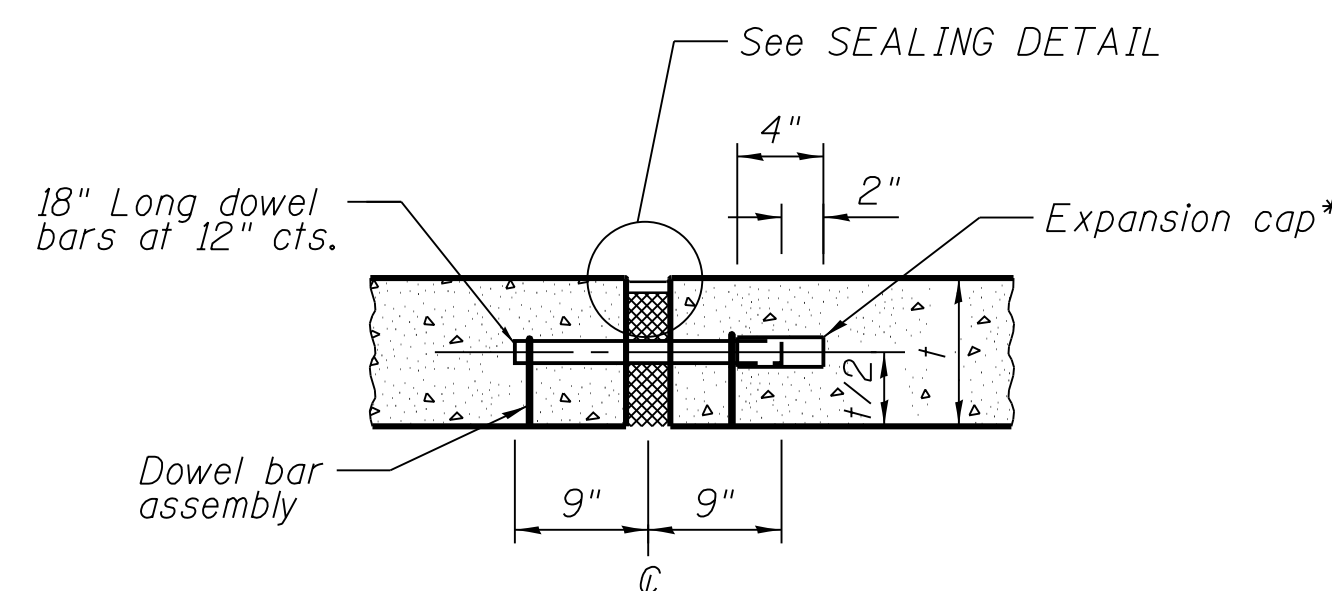
ANCHORAGE SLAB PLAN

NOTES:

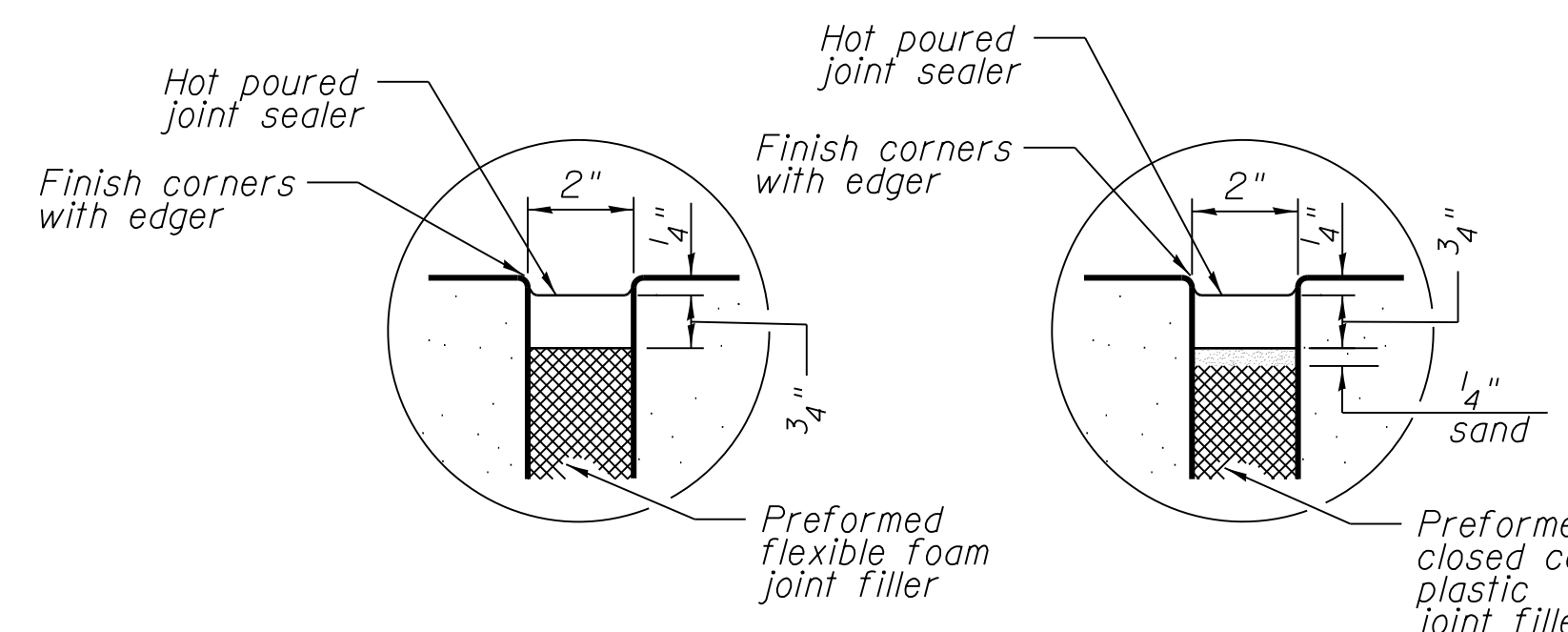
1. See Sheet 6 of 11 for Anchorage Slab Details, bar details, and Bill of Material
2. O.F. indicates outside face, I.F. indicates inside face
3. Sawn joint at top of slab only. Terminate sawed joint at I.F. of parapet
4. Provide minimum 1/2" clear unless otherwise noted.

* Expansion caps shall be installed on the exposed end of each dowel bar once the header has been removed and the joint filler material has been installed.

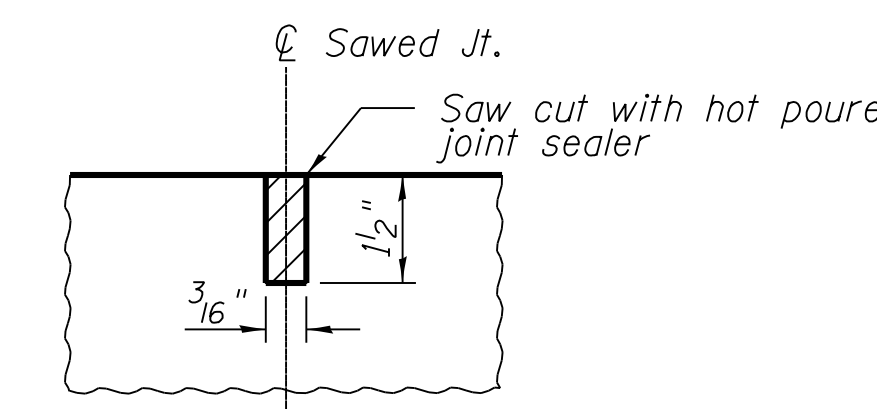
** To lap with every other a3(E) or a1(E) bars



TRANSVERSE EXPANSION JOINT



SEALING DETAIL



SECTION B-B

SECTION A-A

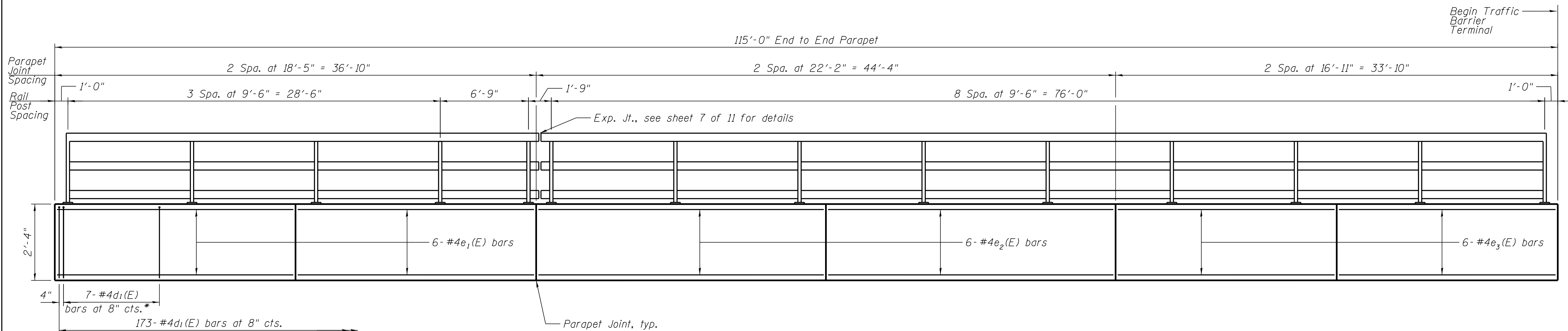
(Cost of Dowel bar, dowel bar assembly, expansion cap and hot poured joint sealer are included with Concrete Superstructure)

(Cost of saw cut and hot poured joint sealer are included with Concrete Superstructure)

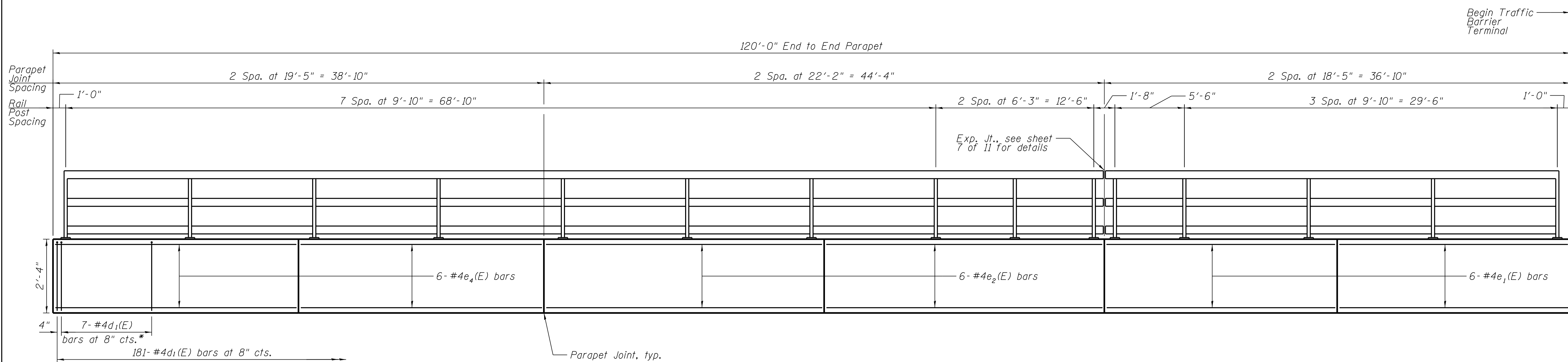
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FILE NAME =	USER NAME =	DESIGNED - RL	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ANCHORAGE SLAB PLAN AND DETAILS STRUCTURE NO. 049-0610	F.A.P. RTE. = 344	SECTION = 39 R	COUNTY = LAKE	TOTAL SHEETS = 510	SHEET NO. = 319	
PARSONS	PLOT SCALE =	DRAWN - RL	REVISD -			CONTRACT NO. 60775					
	PLOT DATE =	CHECKED - PY	REVISD -			SHEET NO. 4 OF 11 SHEETS					
ILLINOIS FED. AID PROJECT											

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WEST PARAPET ELEVATION
(Looking West)



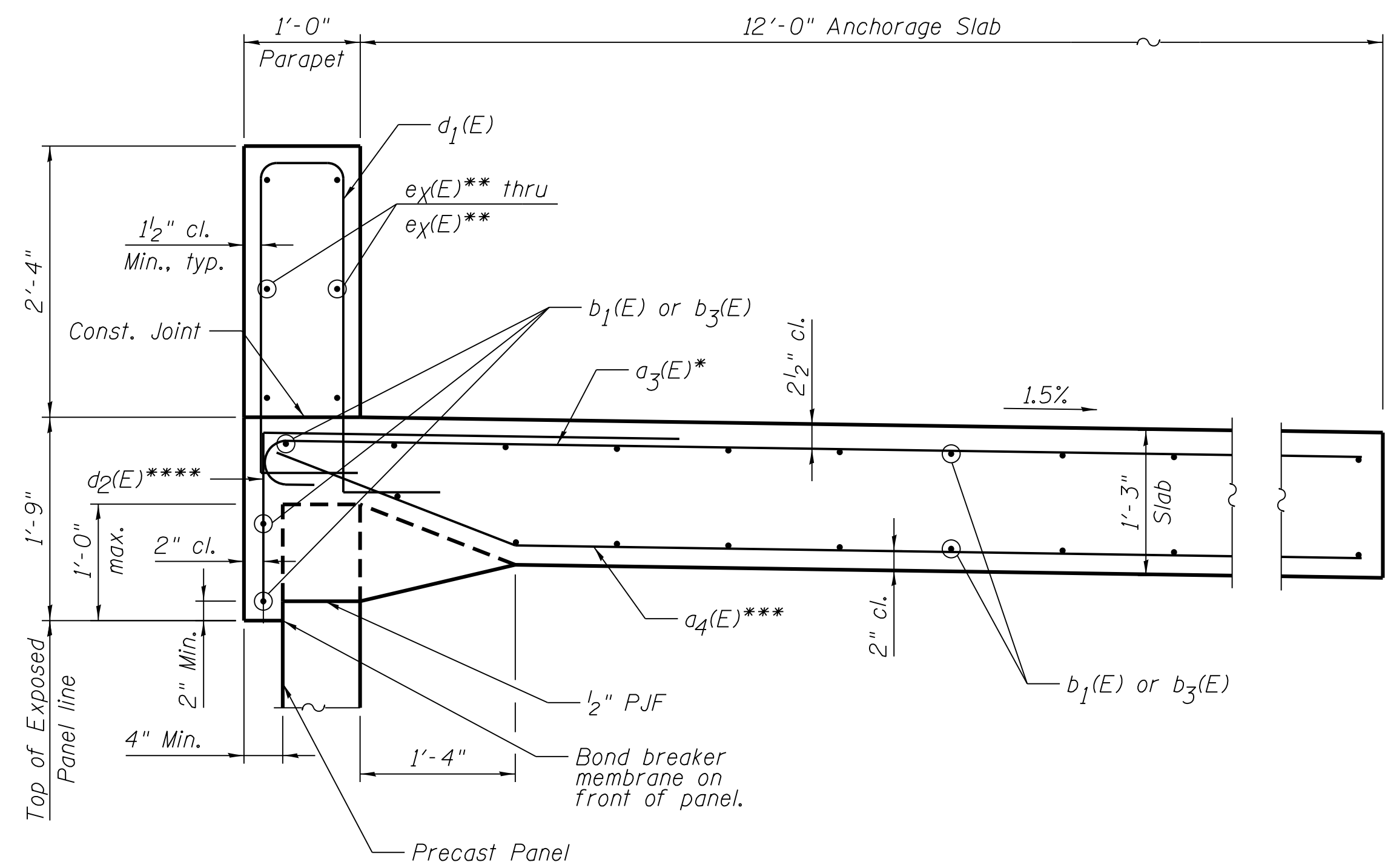
EAST PARAPET ELEVATION
(Looking East)

* Typical at parapet ends and each side of parapet joints.

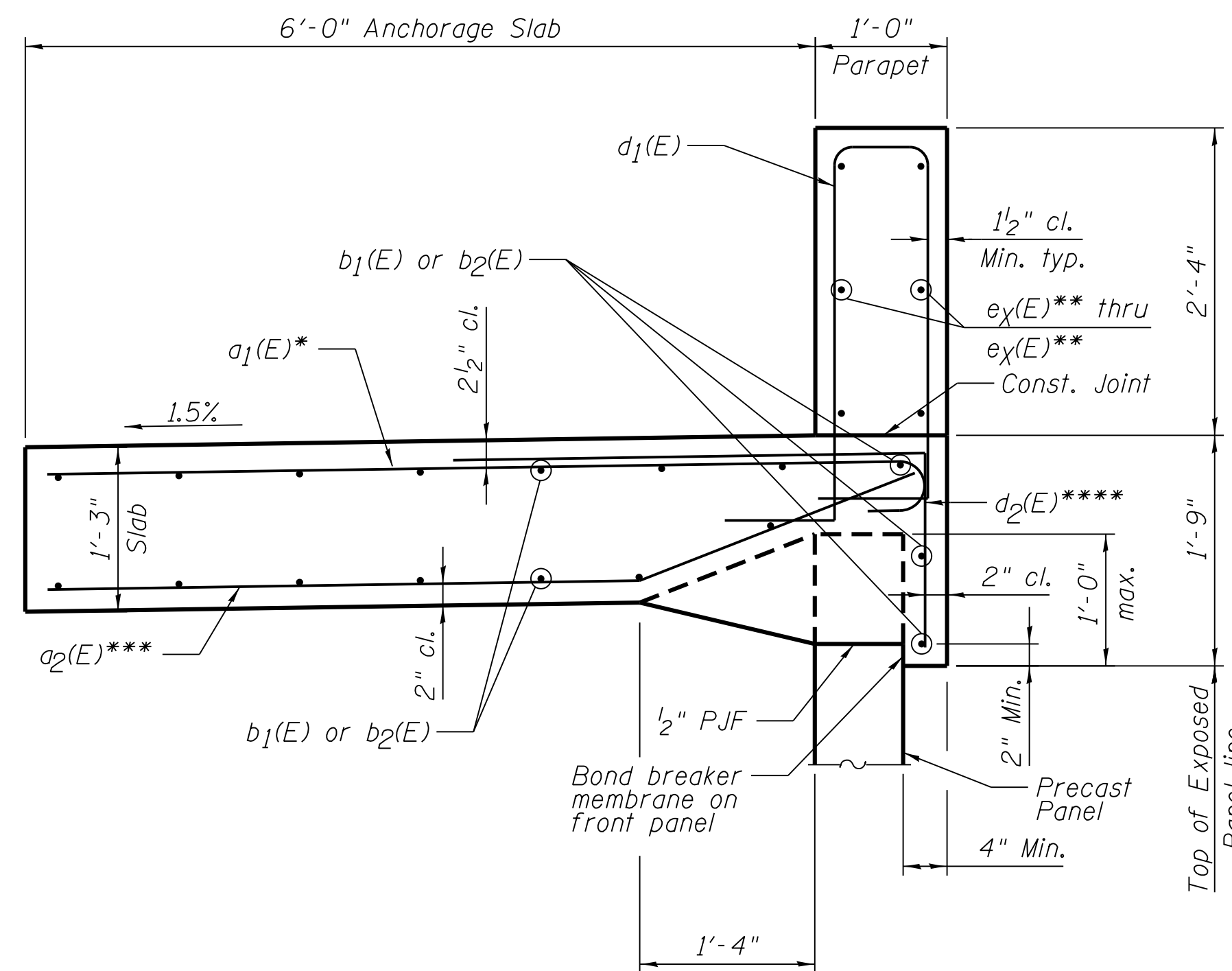
Notes:
 For Bar Details and Bill of Material, see sheet 6 of 11.
 For Parapet Railing details, see sheet 7 of 11.
 Parapet Joint Spacing to align with Anchorage slab joint spacing. Joint spacing is determined assuming 1'-2" wall thickness on three sided precast structure.

PARSONS	USER NAME =	DESIGNED - JC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PARAPET ELEVATIONS STRUCTURE NO. 049-0610	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	DRAWN - MS	REVISED -			344	39 R	LAKE	510	320
	PLOT DATE =	CHECKED - PY	REVISED -			CONTRACT NO. 60775		ILLINOIS FED. AID PROJECT		

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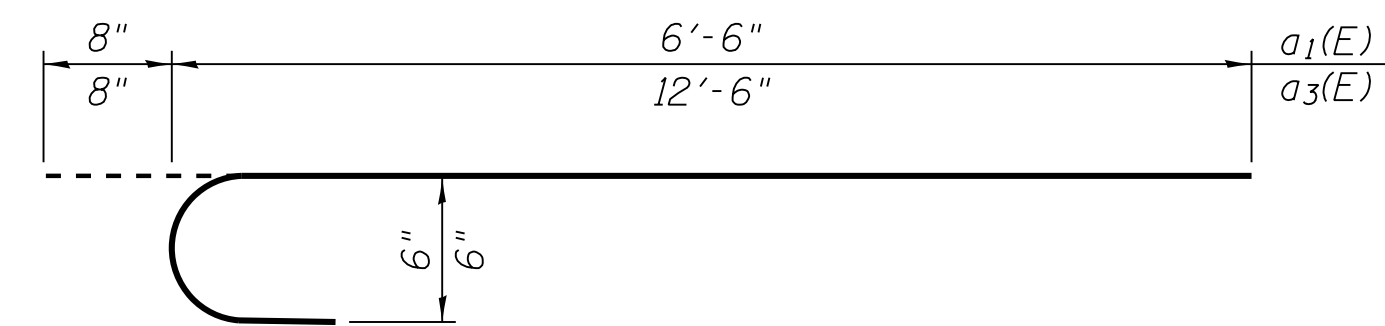


WEST ANCHORAGE SLAB SECTION
(Parapet Railing not shown)

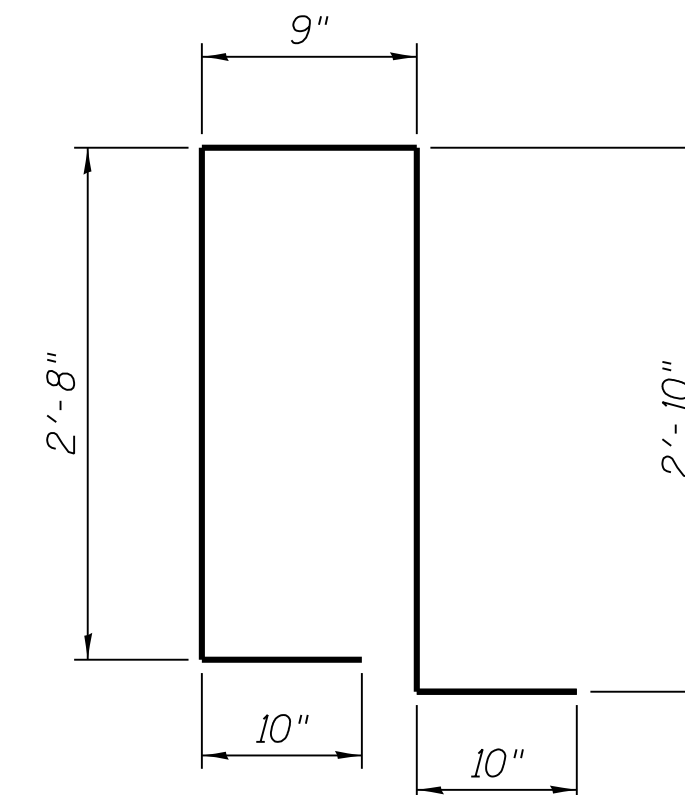


EAST ANCHORAGE SLAB SECTION
(Parapet Railing not shown)

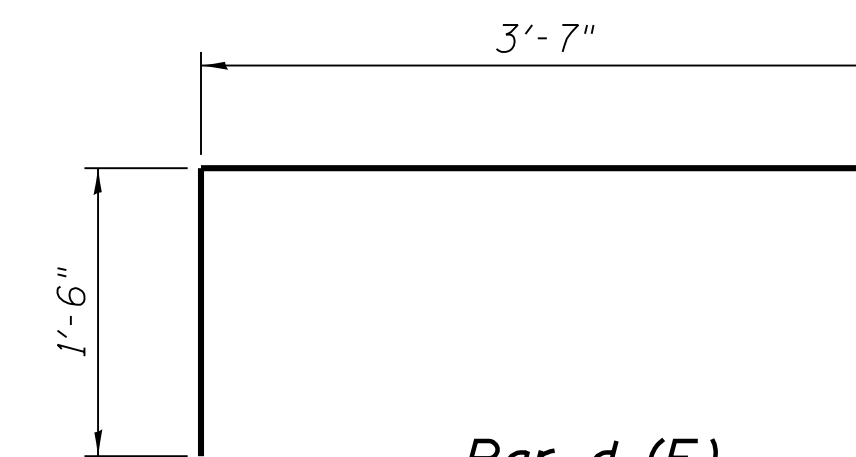
- * Tilt bar as required to maintain 1/2" cl. at top of precast panel.
- ** For bar designations, see sheet 5 of 11.
- *** Bend bar a4 in field to maintain 1/2" clear at top of precast panel.
- **** Bend bar d2 in field to maintain 2 1/2" clear at top of anchorage slab.



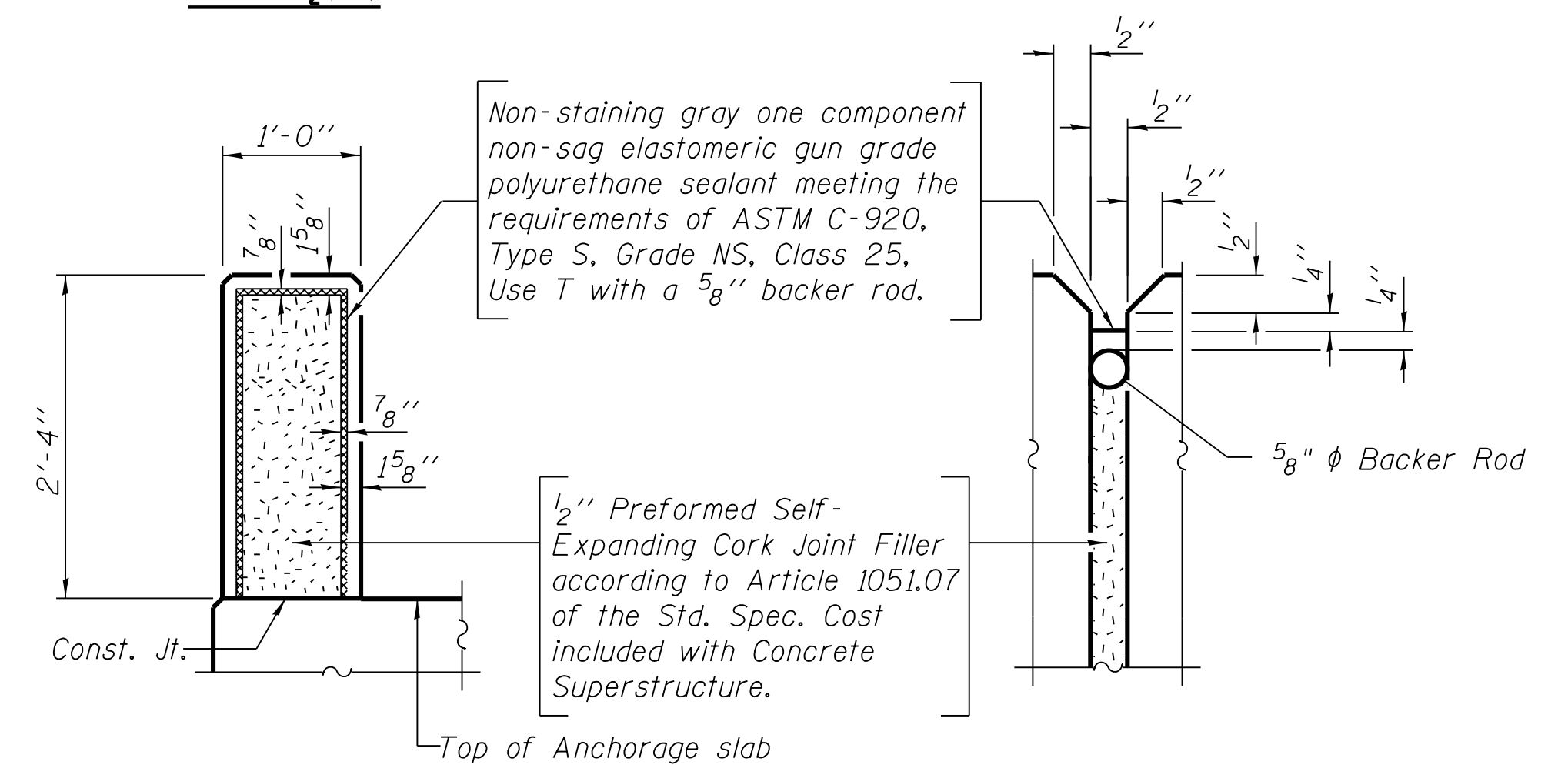
Bar a₁(E) & a₃(E)



Bar d₁(E)



Bar d₂(E)



PARAPET JOINT DETAILS

BAR LIST

Bar	No.	Size	Length	Shape
a ₁ (E)	241	#6	7'-2"	
a ₂ (E)	122	#4	6'-9"	
a ₃ (E)	231	#6	13'-2"	
a ₄ (E)	117	#4	12'-9"	
b ₁ (E)	46	#5	36'-6"	
b ₂ (E)	34	#5	43'-2"	
b ₃ (E)	58	#5	40'-8"	
d ₁ (E)	522	#4	7'-11"	
d ₂ (E)	239	#5	5'-1"	
e ₁ (E)	24	#4	18'-1"	
e ₂ (E)	24	#4	21'-10"	
e ₃ (E)	12	#4	16'-7"	
e ₄ (E)	12	#4	19'-1"	
Concrete Superstructure			Cu. Yd.	133.5
Reinforcement Bars, Epoxy Coated			Pound	19410

NOTES:

1. For Protective Coat limits see sheet 2 of 11.
2. All edges shall have standard 3/4" chamfer, except as noted.
3. Reinforcement bar designated (E) shall be epoxy coated.
4. For Parapet Railing details see sheet 7 of 11.
5. Concrete Superstructure quantity includes 113.2 Cu.Yd. for anchorage Slab and 20.3 Cu.Yd. for concrete parapets.

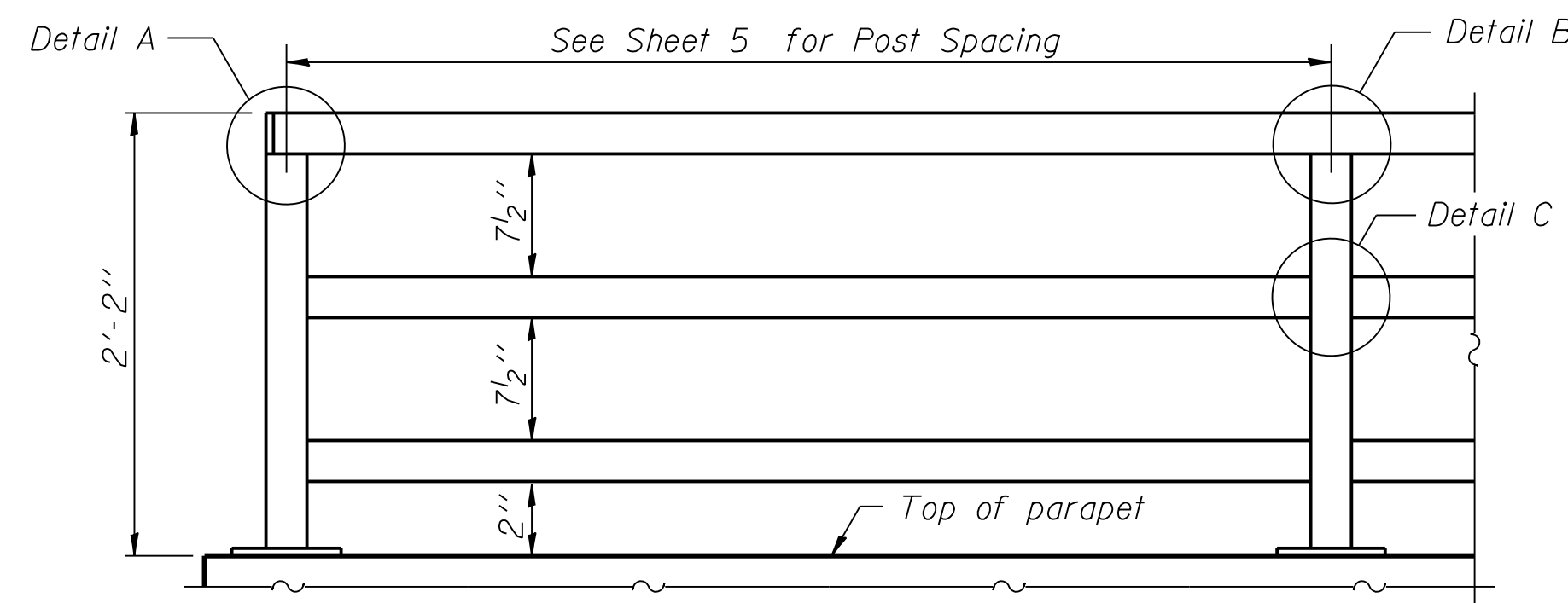
FILE NAME =	USER NAME =	DESIGNED - RL/JC	REVISED -
PARSONS		CHECKED - JZ	REVISED -
		DRAWN - MS	REVISED -
		CHECKED - PY	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ANCHORAGE SLAB AND PARAPET DETAILS
STRUCTURE NO. 049-0610**

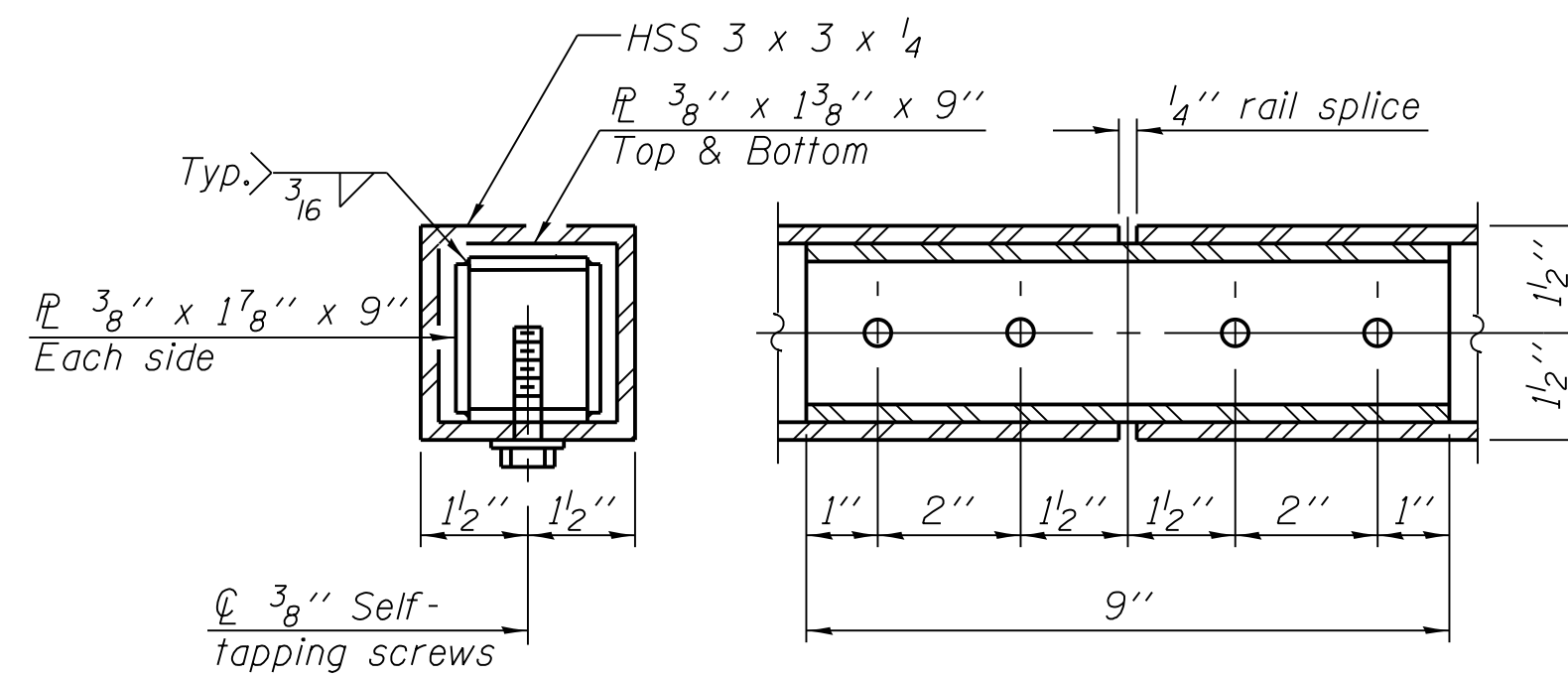
SHEET NO. 6 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	321
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				



**PARAPET RAILING
ELEVATION**

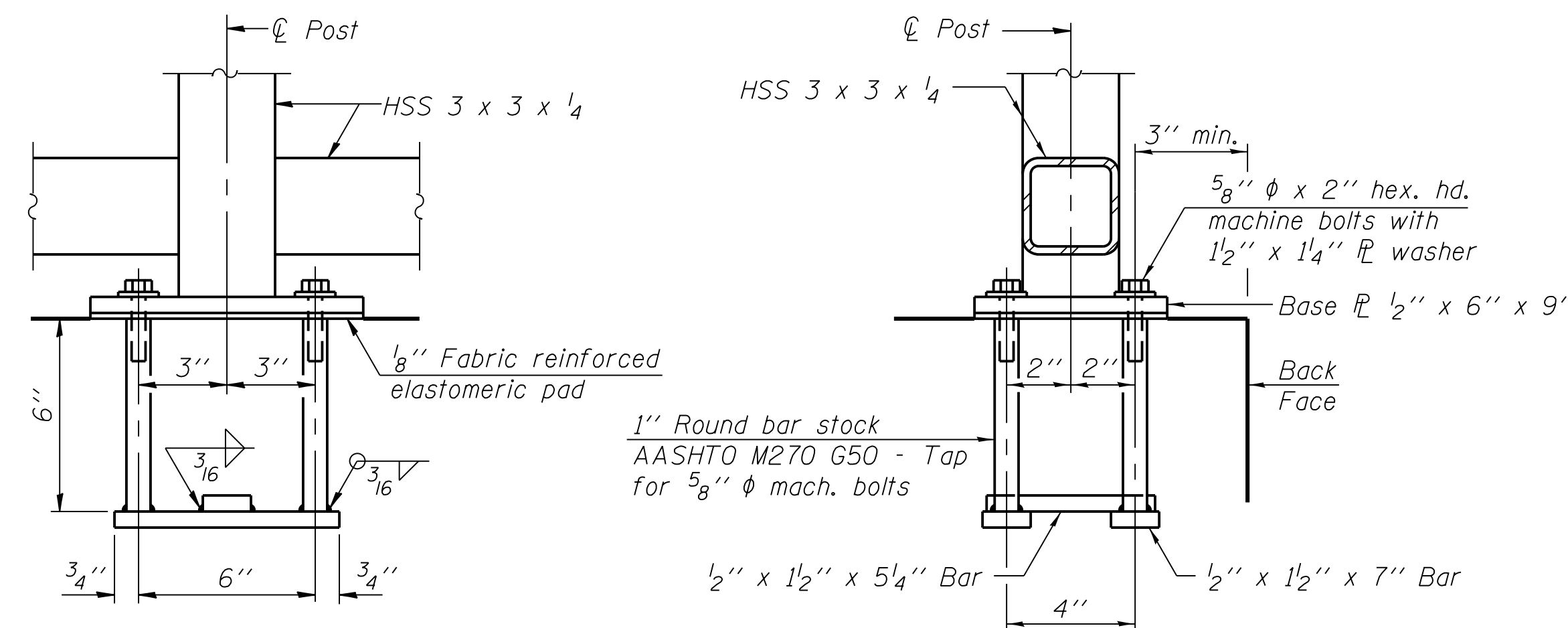
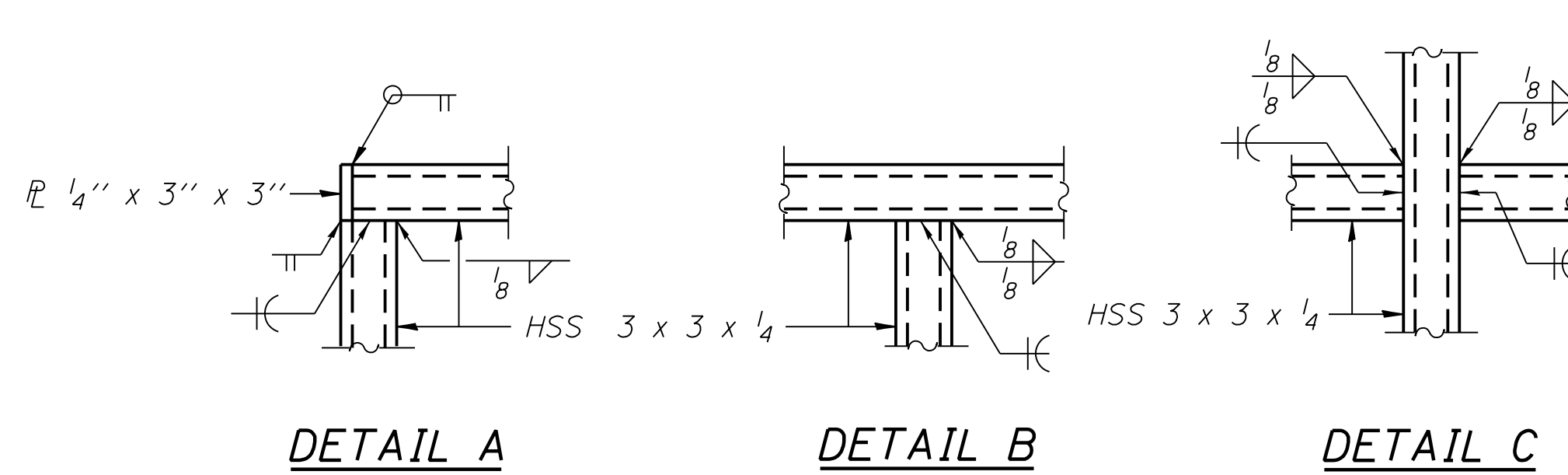
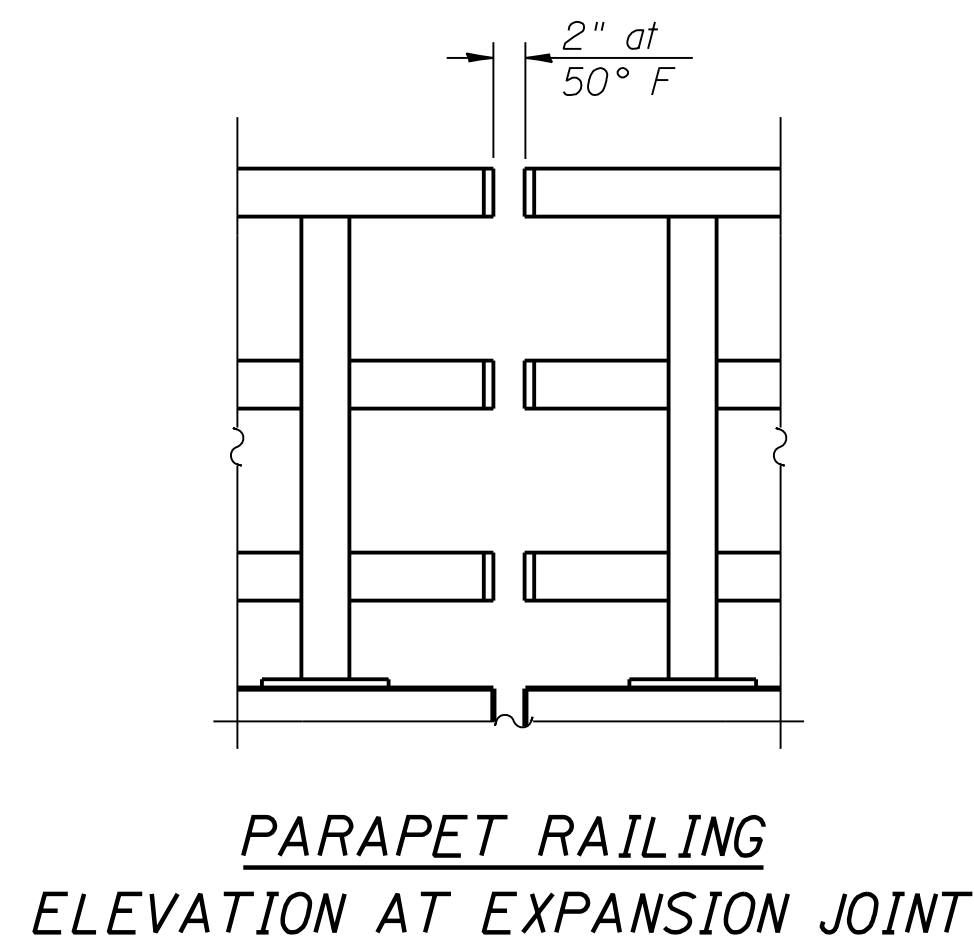
(Inside Face of Three Element Rail)



RAIL SPLICE

Notes:

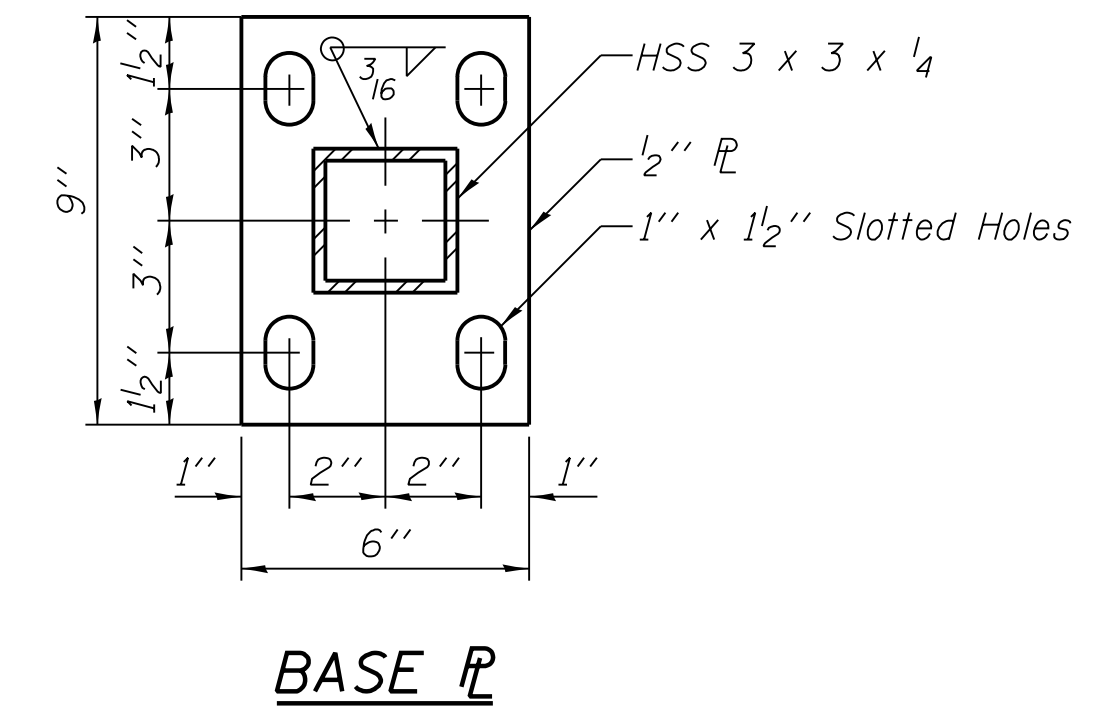
All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.



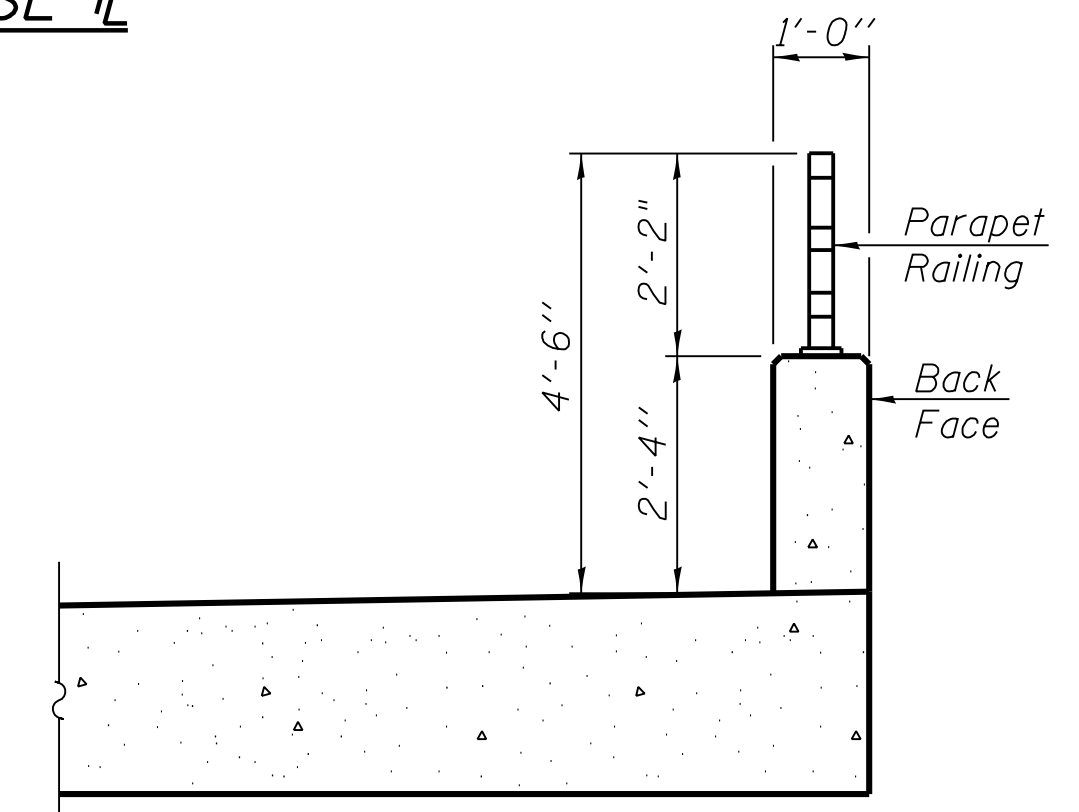
ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



BASE PLATE



SECTION THRU SIDEWALK

BILL OF MATERIAL

Item	Unit	Quantity
Parapet Railing	Foot	232

R-29 (MODIFIED) 11-22-2016 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -
PARSONS		CHECKED - JZ	REVISED -
	PLOT SCALE =	DRAWN - SC	REVISED -
	PLOT DATE =	CHECKED - JC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PARAPET RAILING
STRUCTURE NO. 049-0610**

SHEET NO. 7 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	322
CONTRACT NO. 60T75				

ILLINOIS FED. AID PROJECT

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BORING LOG BSB1-01
 WEI Job No.: 342-08-01
 Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

Datum: NGVD
 Elevation: 721.46 ft
 North: 2096102.41 ft
 East: 1072596.82 ft
 Station: 128+12.81
 Offset: 47.27 LT

Page 1 of 2

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)			
720.0	17-inch thick, black LOAM, with roots --TOPSOIL-- Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	0																
		1	2	3	4	2.00	P	26				11	2	3	5	2.62	B	24
		2	2	2	4	1.80	B	33				12	2	3	4	1.80	B	25
		3	2	4	6	3.28	B	19				13	3	4	5	2.21	B	24
		4	3	4	7	2.46	B	21				14	4	5	6	2.30	B	26
710.0	Medium dense, gray SILT --Moist--	5	2	4	8	2.30	B	22				15	4	5	6	2.30	B	26
707.5	Stiff to very stiff, gray CLAY to SILTY CLAY, trace gravel	6	2	4	5	1.56	B	21				16	4	5	7	2.87	B	21
	--L _c (%)=38, P _c (%)=18-- --%Gravel=0.5-- --%Sand=2.7-- --%Silt=48.7-- --%Clay=48.1-- --A-6 (20)--	7	2	4	5	2.54	B	22				17	5	10	NP	19		
		8	3	4	6	2.21	B	23				18	5	10	NP	14		
	--Interbedded SILT-- --Moist--	9	2	3	4	1.48	B	24				19	5	14	NP	14		
		10	2	4	6	2.38	B	23				20	2	4	6	2.38	B	24
676.0	Medium dense, gray GARVELLY SANDY LOAM --Saturated-- --%Gravel=45.3-- --%Sand=41.5-- --%Silt=9.8-- --%Clay=3.3-- --A-1-b (0)--	11	2	3	4	1.48	B	24				21	2	4	6	2.38	B	24
		12	2	4	6	2.38	B	23				22	2	4	6	2.30	B	25
		13	2	3	4	1.48	B	23				23	2	4	6	2.62	B	19
		14	2	4	6	2.62	B	19				24	2	4	6	2.38	B	24
		15	2	4	6	2.62	B	19				25	2	4	6	2.38	B	24
		16	2	4	6	2.38	B	23				26	2	4	6	2.38	B	24
		17	2	3	4	1.64	B	21				27	2	3	4	1.64	B	21
		18	2	4	6	2.21	B	24				28	2	4	6	2.46	B	28
		19	2	4	6	2.30	B	23				29	2	4	6	2.30	B	23
		20	2	4	6	2.62	B	19				30	2	4	5	2.21	B	23
		21	2	4	6	2.62	B	19				31	2	4	6	2.62	B	19
		22	2	4	6	2.30	B	23				32	2	4	6	2.30	B	23
		23	2	4	6	2.62	B	19				33	2	4	6	2.62	B	19
		24	2	4	6	2.38	B	23				34	2	4	6	2.38	B	24
		25	2	4	6	2.38	B	23				35	2	4	6	2.38	B	24
		26	2	4	6	2.38	B	23				36	2	4	6	2.38	B	24
		27	2	4	6	2.38	B	23				37	2	4	6	2.38	B	24
		28	2	4	6	2.38	B	23				38	2	4	6	2.38	B	24
		29	2	4	6	2.38	B	23				39	2	4	6	2.38	B	24
		30	2	4	6	2.38	B	23				40	2	4	6	2.38	B	24
		31	2	4	6	2.38	B	23				41	2	4	6	2.38	B	24
		32	2	4	6	2.38	B	23				42	2	4	6	2.38	B	24
		33	2	4	6	2.38	B	23				43	2	4	6	2.38	B	24
		34	2	4	6	2.38	B	23				44	2	4	6	2.38	B	24
		35	2	4	6	2.38	B	23				45	2	4	6	2.38	B	24
		36	2	4	6	2.38	B	23				46	2	4	6	2.38	B	24
		37	2	4	6	2.38	B	23				47	2	4	6	2.38	B	24
		38	2	4	6	2.38	B	23				48	2	4	6	2.38	B	24
		39	2	4	6	2.38	B	23				49	2	4	6	2.38	B	24
		40	2	4	6	2.38	B	23				50	2	4	6	2.38	B	24
		41	2	4	6	2.38	B	23				51	2	4	6	2.38	B	24
		42	2	4	6	2.38	B	23				52	2	4	6	2.38	B	24
		43	2	4	6	2.38	B	23				53	2	4	6	2.38	B	24
		44	2	4	6	2.38	B	23				54	2	4	6	2.38	B	24
		45	2	4	6	2.38	B	23				55	2	4	6	2.38	B	24
		46	2	4	6	2.38	B	23				56	2	4	6	2.38	B	24
		47	2	4	6	2.38	B	23				57	2	4	6	2.38	B	24
		48	2	4	6	2.38	B	23				58	2	4	6	2.38	B	24
		49	2	4	6	2.38	B	23				59	2	4	6	2.38	B	24
		50	2	4	6	2.38	B	23				60	2	4	6	2.38	B	24

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-29-2014	Complete Drilling	09-29-2014	While Drilling	▽	45.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	38.00 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson			Depth to Water	▽	NA	
Drilling Method	3.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG BSB1-01
 WEI Job No.: 342-08-01
 Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

Datum: NGVD
 Elevation: 721.46 ft
 North: 2096102.41 ft
 East: 1072596.82 ft
 Station: 128+12.81
 Offset: 47.27 LT

Page 2 of 2

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
669.7	Gray, medium SAND --Saturated--	0													
667.2	Medium dense, gray SILT to very fine SAND --Saturated--	5													
664.7	Medium dense, gray, fine SAND --Saturated--	10													
661.5	Boring terminated at 60.00 ft	60													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-29-2014	Complete Drilling	09-29-2014	While Drilling	▽	45.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	38.00 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson			Depth to Water	▽	NA	
Drilling Method	3.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG BSB1-02
 WEI Job No.: 342-08-01
 Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

Datum: NGVD
 Elevation: 722.77 ft
 North: 2096133.14 ft
 East: 1072627.55 ft
 Station: 128+23.57
 Offset: 5.17 LT

Page 1 of 2

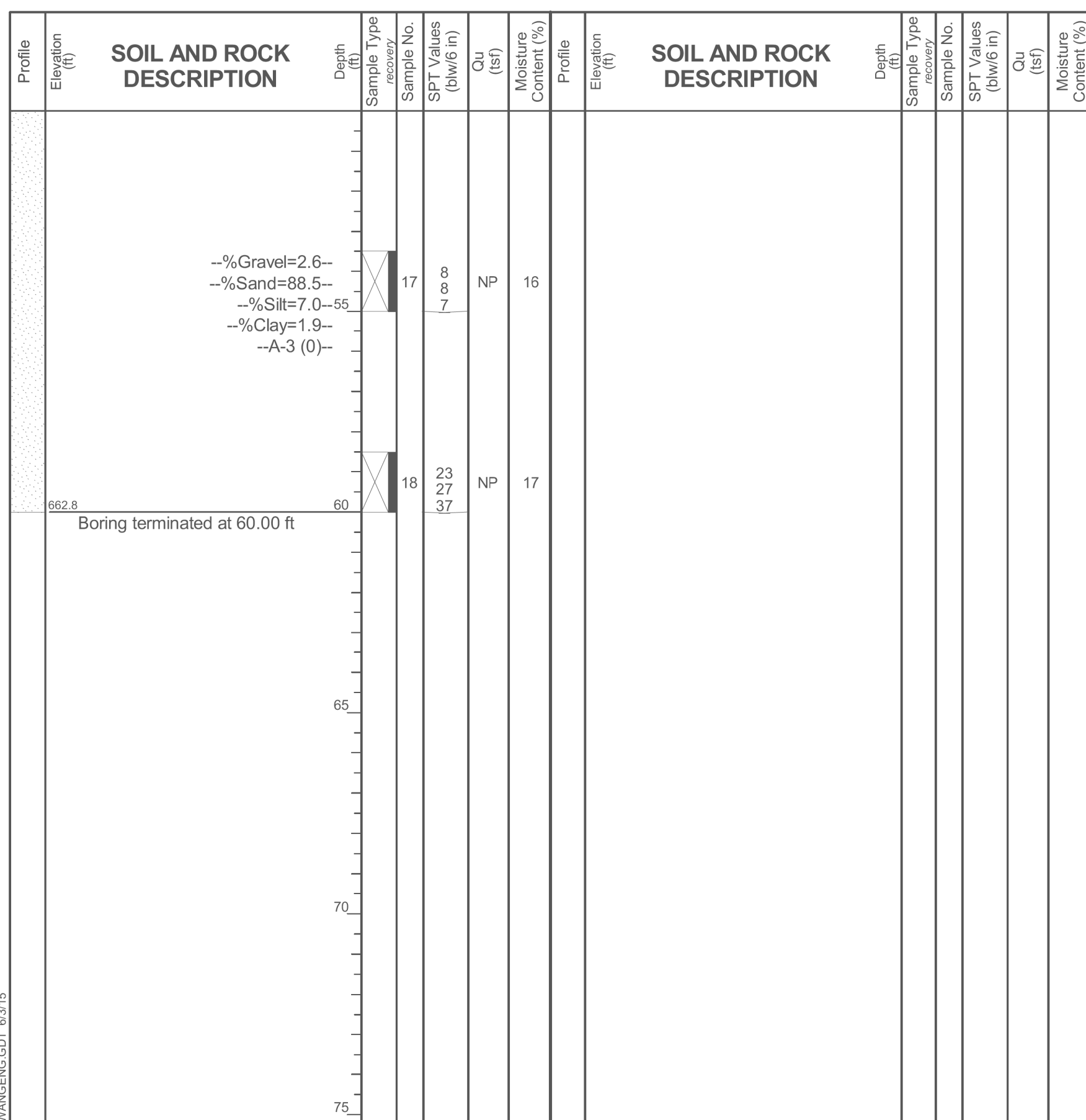
Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)			
721.8	12-inch thick, black LOAM, trace gravel --TOPSOIL-- Stiff to hard, grayish brown, brown and gray SILT CLAY to SILTY CLAY LOAM, trace gravel	0																
		1	2	3	4	1.64	B	21				11	2	4	6	1.97	B	22
		2	2	4	6	6.81	S	17				12	2	4	5	2.21	B	23
		3	2	4	6	6.56	B	20				13	2	3	4	1.97	B	25
	--Interbedded SAND--	4	4	4	11	4.18	S	19				14	2	4	6	2.30	B	25
		5	2	4	6	2.30	B	23				15	2	4	6	2.30	B	25
		6	2	4	6	2.62	B	19				16	2	4	6	2.30	B	25
		7	2	3	4	1.48	B	23				17	2	4	6	2.30	B	25
		8	2	4	6	2.21	B	23				18	2	4	6	2.30	B	25
		9	3	5	7	2.13	B	23				19	2	4	6	2.30	B	25
		10	2	4	6	2.38	B	24				20	2	4	6	2.38	B	24
		11	2	4	6	2.38	B	24				21	2	4	6	2.38	B	24
		12	2	4	6	2.38	B	24				22	2	4	6	2.38	B	24
		13	2	4	6	2.38	B	24				23	2	4	6	2.38	B	24
		14	2	4	6	2.38	B	24				24	2	4	6	2.38	B	24
		15	2	4	6	2.38	B	24				25	2	4	6			

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BORING LOG BSB1-02
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 722.77 ft
 North: 2096133.14 ft
 East: 1072627.55 ft
 Station: 128+23.57
 Offset: 5.17' LT

Page 2 of 2



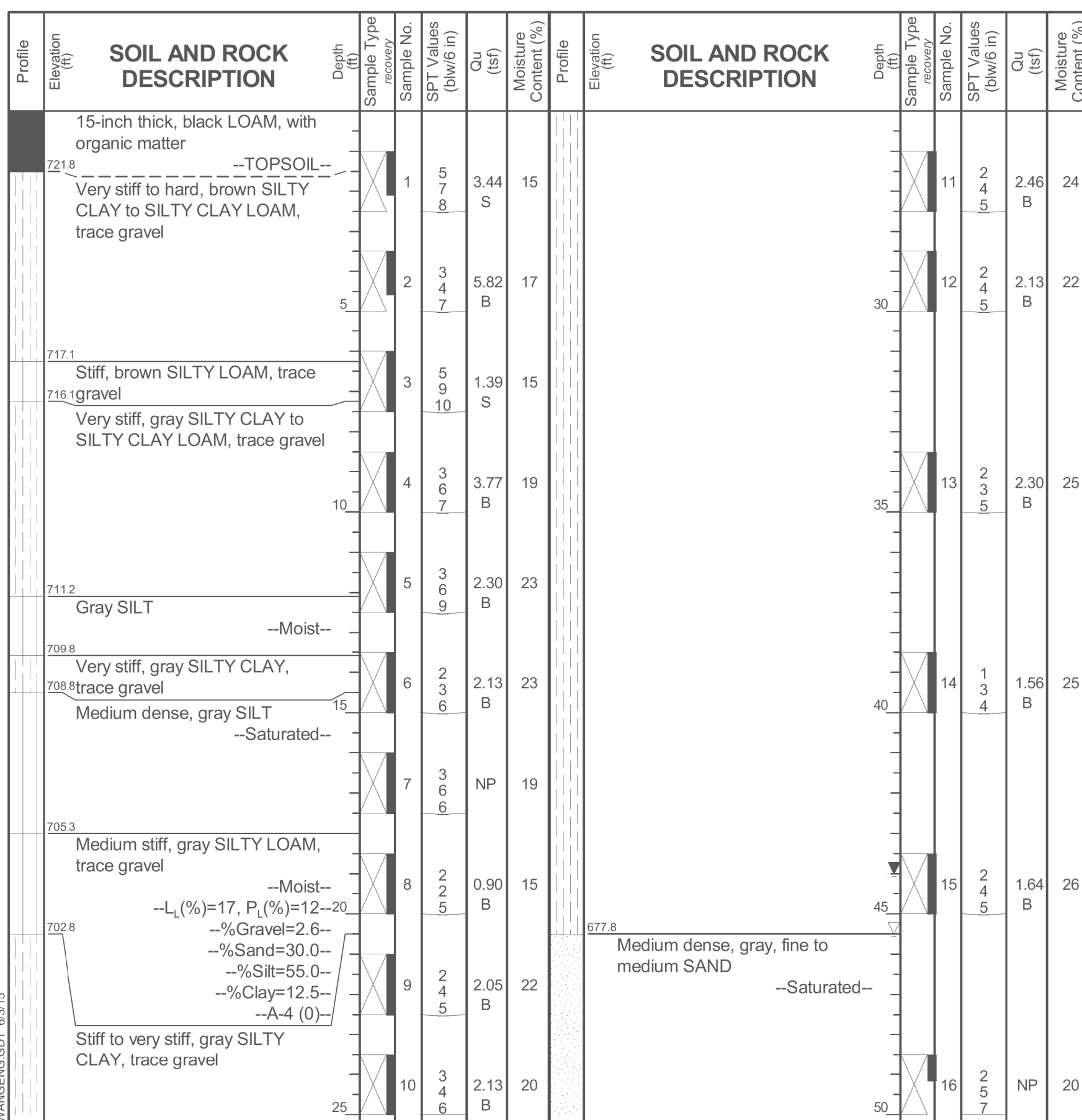
GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-26-2014	Complete Drilling	09-26-2014	While Drilling	▽	47.00 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	45.00 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	3.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG BSB1-03
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 723.33 ft
 North: 2096174.67 ft
 East: 1072658.11 ft
 Station: 128+43.71
 Offset: 42.30' RT

Page 1 of 2



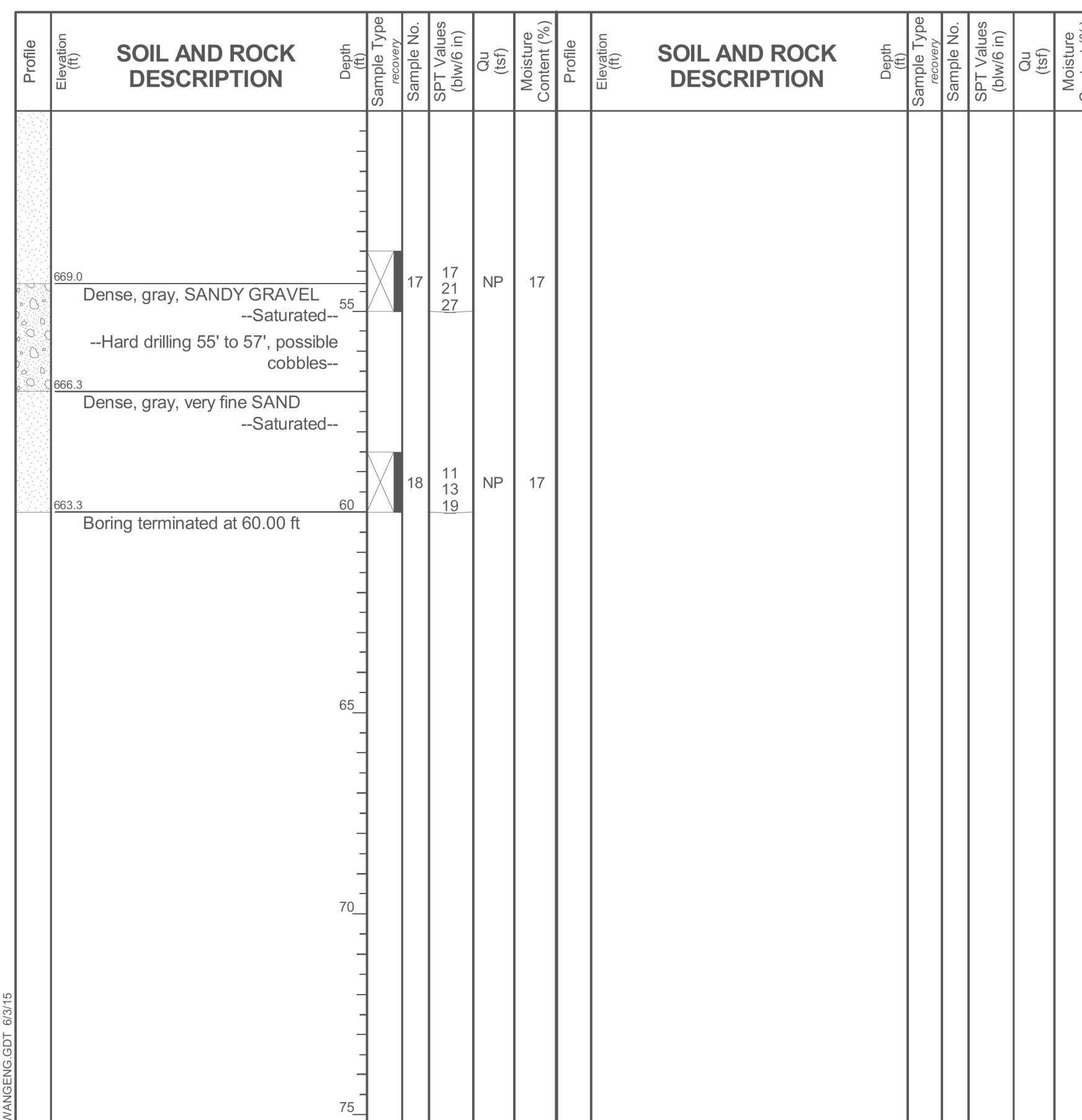
GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-29-2014	Complete Drilling	09-29-2014	While Drilling	▽	45.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	44.00 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	3.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG BSB1-03
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 723.33 ft
 North: 2096174.67 ft
 East: 1072658.11 ft
 Station: 128+43.71
 Offset: 42.30' RT

Page 2 of 2



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-29-2014	Complete Drilling	09-29-2014	While Drilling	▽	45.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	44.00 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	3.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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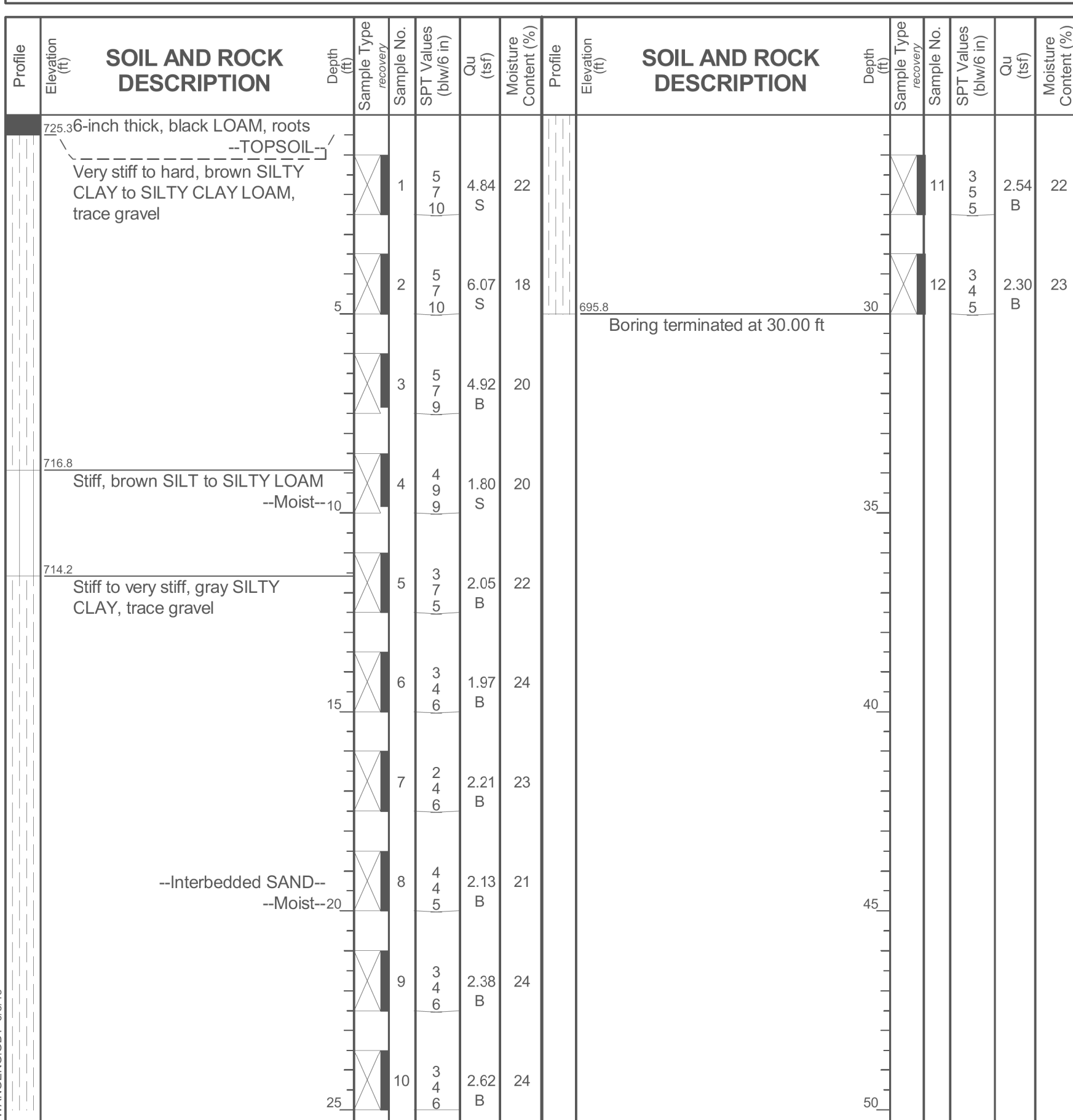
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	PLOT SCALE =	DRAWN - SC	REVISED -			344	39 R	LAKE	510	324
	PLOT DATE =	CHECKED - JC	REVISED -			CONTRACT NO. 60T75				
						ILLINOIS FED. AID PROJECT				

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 wangeng@wangeng.com
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 Telephone: 630 953-9928
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BORING LOG RWB1-01 Page 1 of 1

WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 725.75 ft
 North: 2096040.28 ft
 East: 1072633.92 ft
 Station: 127+40.44
 Offset: 47.04' LT



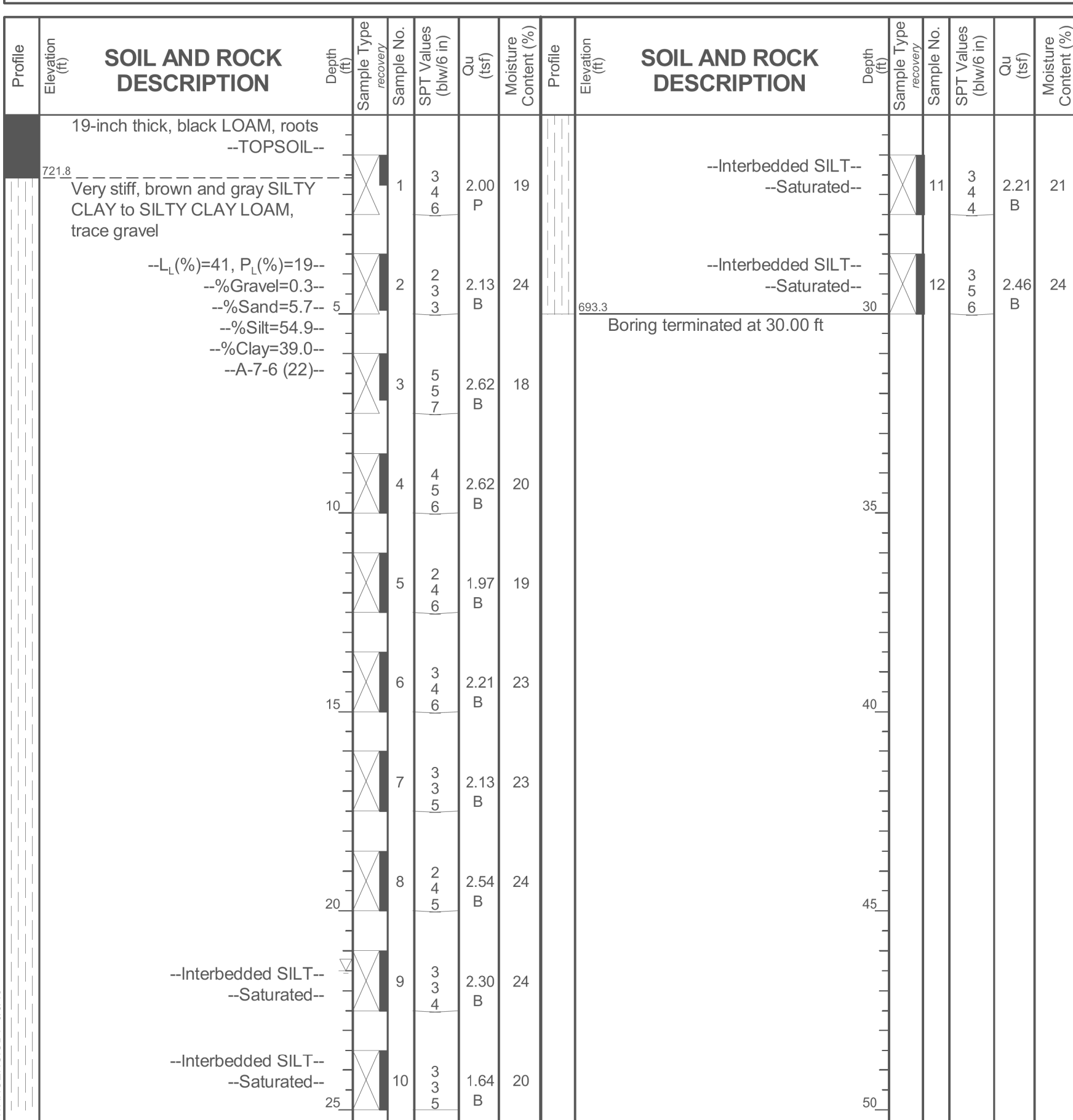
GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-30-2014	Complete Drilling	09-30-2014	While Drilling	▽	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	DRY	
Driller	K&K	Logger	S. Woods	Time After Drilling		NA	
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	2.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG RWB1-02 Page 1 of 1

WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 723.34 ft
 North: 2096158.84 ft
 East: 1072562.25 ft
 Station: 128+76.98
 Offset: 48.23' LT



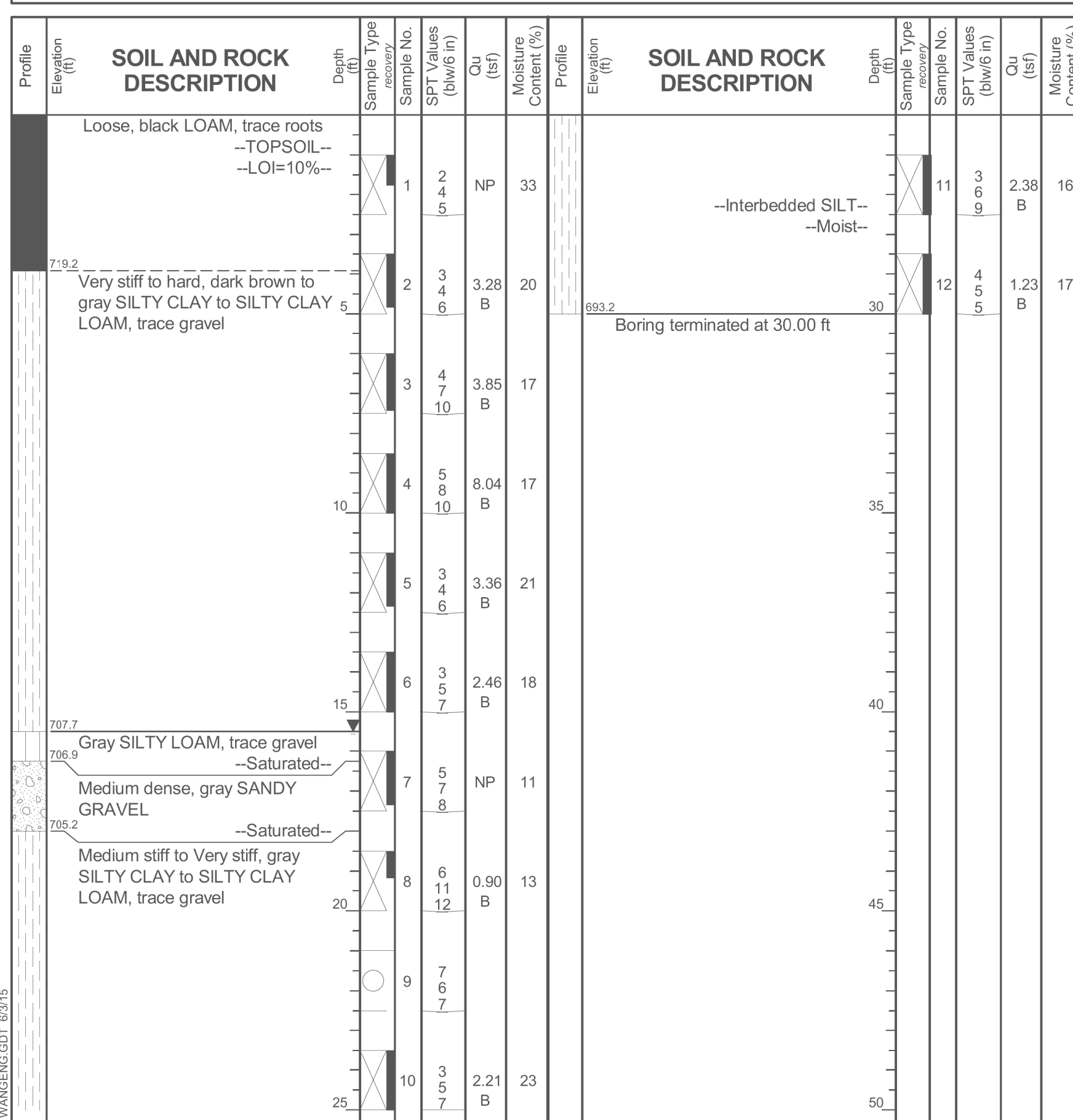
GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-26-2014	Complete Drilling	09-26-2014	While Drilling	▽	21.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	DRY	
Driller	K&K	Logger	S. Woods	Time After Drilling		NA	
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	2.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG RWB2-01 Page 1 of 1

WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 723.16 ft
 North: 2096102.48 ft
 East: 1072702.85 ft
 Station: 127+58.80
 Offset: 43.97' RT



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-30-2014	Complete Drilling	09-30-2014	While Drilling	▽	15.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	15.50 ft	
Driller	K&K	Logger	S. Woods	Time After Drilling		NA	
Checked by	B. Wilson	Depth to Water	▽	NA			
Drilling Method	2.25" HSA; Boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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PARSONS	USER NAME =	DESIGNED - JZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOG STRUCTURE NO. 049-0610	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	DRAWN - SC	REVISED -			344	39 R	LAKE	510	325
	PLOT DATE =	CHECKED - JC	REVISED -			CONTRACT NO. 60T75				

SHEET NO. 10 OF 11 SHEETS
ILLINOIS FED. AID PROJECT

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BORING LOG RWB2-02 Page 1 of 1

WEI Job No.: 342-08-01
 Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

Datum: NGVD
 Elevation: 723.48 ft
 North: 2096210.96 ft
 East: 1072648.07 ft
 Station: 128+80.05
 Offset: 52.17 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)
	721.7	21-inch thick, black LOAM, trace roots --TOPSOIL--															
		Stiff to very stiff, orange brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	5	1	B	3.12	21			695.5	Soft, gray CLAY, trace gravel	30	11	B	1.48	25	
			5	2	B	3.69	19			691.7	Stiff, gray SILTY CLAY, trace gravel	35	12	B	0.33	33	
			10	3	B	3.44	11			688.5	Boring terminated at 35.00 ft	40	13	B	1.39	27	
			15	4	B	2.05	19					45					
			20	5	B	1.56	25					50					
			25	6	B	1.48	23										
				7	B	1.64	24										
				8	B	2.05	26										
				9	B	2.05	17										
				10	B	1.15	27										

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-25-2014	Complete Drilling	09-25-2014	While Drilling	▽	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	DRY	
Driller	K&K	Logger	S. Woods	Time After Drilling	NA		
Checked by	B. Wilson	Drilling Method	2.25" HSA; Boring backfilled upon completion	Depth to Water	▽	NA	

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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PARSONS USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - JZ CHECKED - JC DRAWN - SC CHECKED - JC	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOG STRUCTURE NO. 049-0610	F.A.P. RTE. = 344 SECTION = 39 R COUNTY = LAKE TOTAL SHEETS = 510 SHEET NO. = 326 CONTRACT NO. 60T75
					SHEET NO. 11 OF 11 SHEETS ILLINOIS FED. AID PROJECT

Benchmark: LAK45 1A
 Station is located 2.8 mi North of Lindenhurst, 1.9 mi Northwest Old Mill Creek in Section 24, T46N, R10E.
 To reach from the junction of US Rt 45 and IL Rt 173 proceed south on US Rt 45 for 1.10 mi to the station
 located 53.5 ft east of the centerline of US Rt 45. Station is located 0.1 mi north of Miller Rd. 369.1 ft
 southeast of end of guardrail, 123.9 ft north of power pole (PP), 119.4 ft south of PP, 111.7 ft east of PP,
 and 2 ft west of orange fiberglass witness post. Note - Access to datum point is 0.50 ft below cap. PK
 nails were set in wood physical ties. Elevation: 759.13

Existing Structure: None

HIGHWAY CLASSIFICATION

F.A.P. Route 344, US Route 45
 Functional Class: Other Principal Arterial
 ADT: 16000 (2009) 34000 (2040)
 ADTT : 2890 (2040)
 DHV: 3400 (2040)
 Design Speed: 50 mph
 Posted Speed 45 mph
 2-Way Traffic
 Directional Distribution: NB:44 : SB:56

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design
 Specifications, 7th Edition with 2015 Interims

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

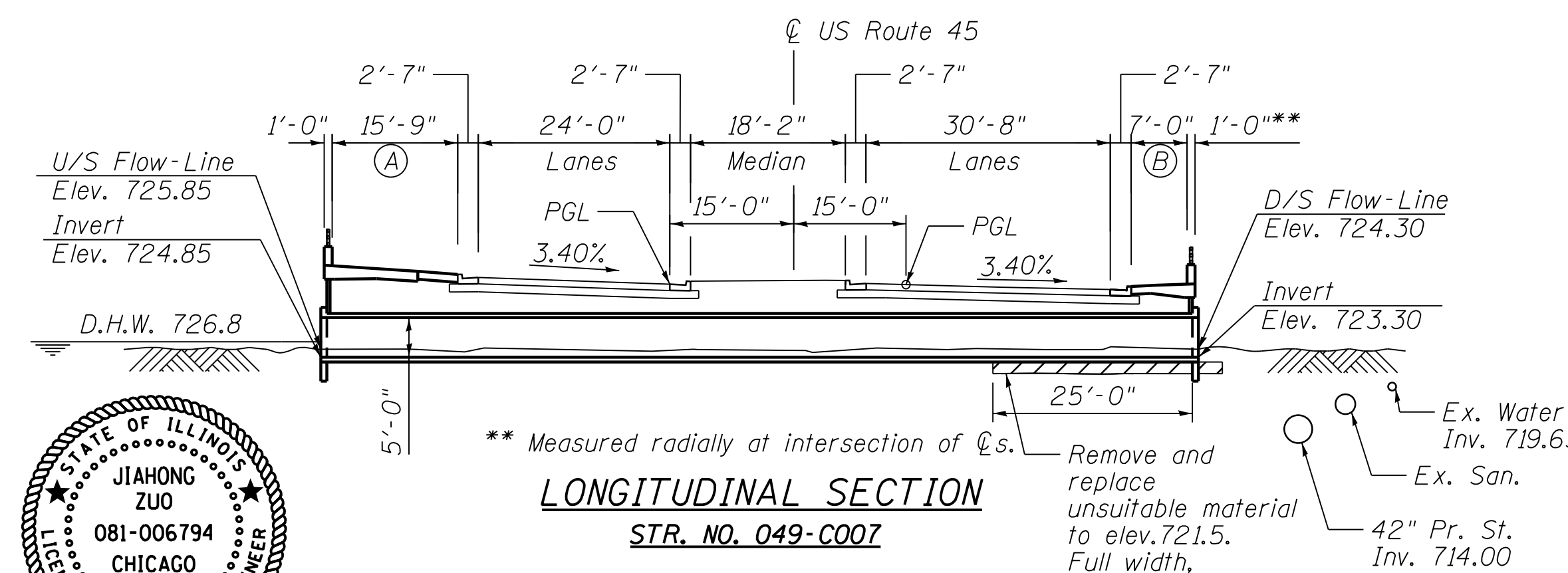
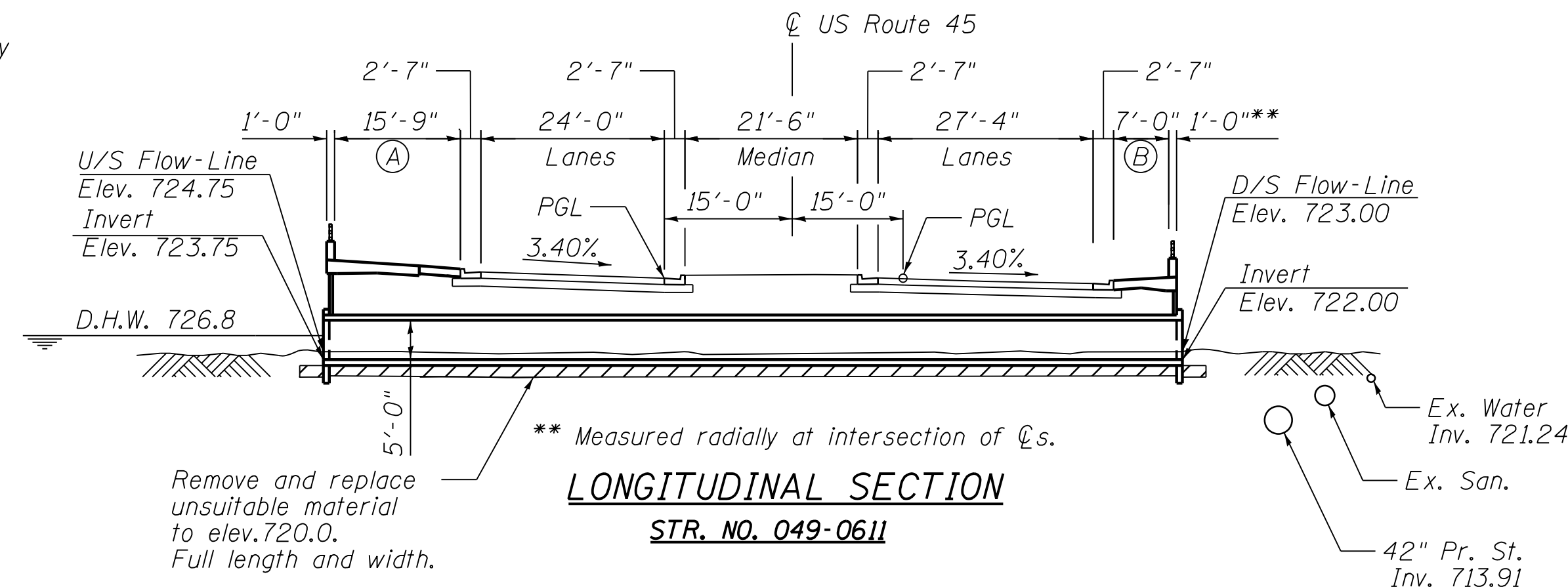
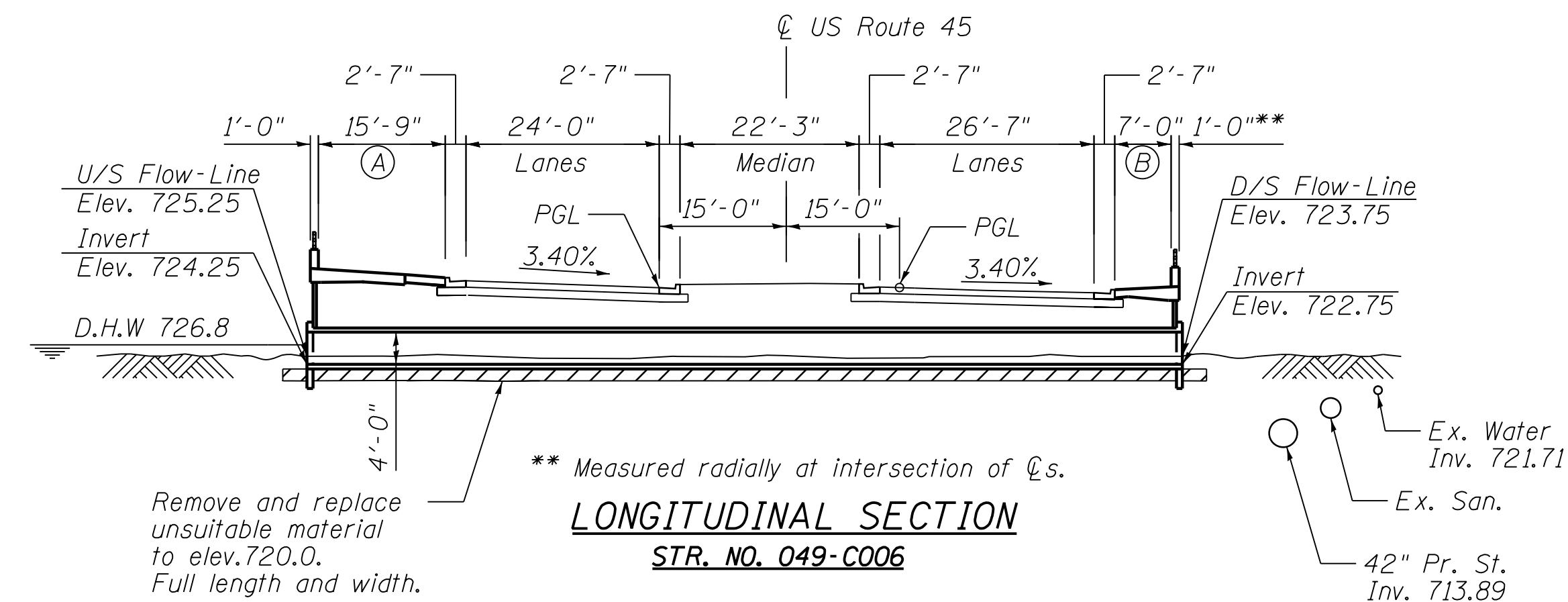
PRECAST UNITS

$f'_c = 4,500$ psi (Precast Panels)

TABLE OF ELEVATIONS

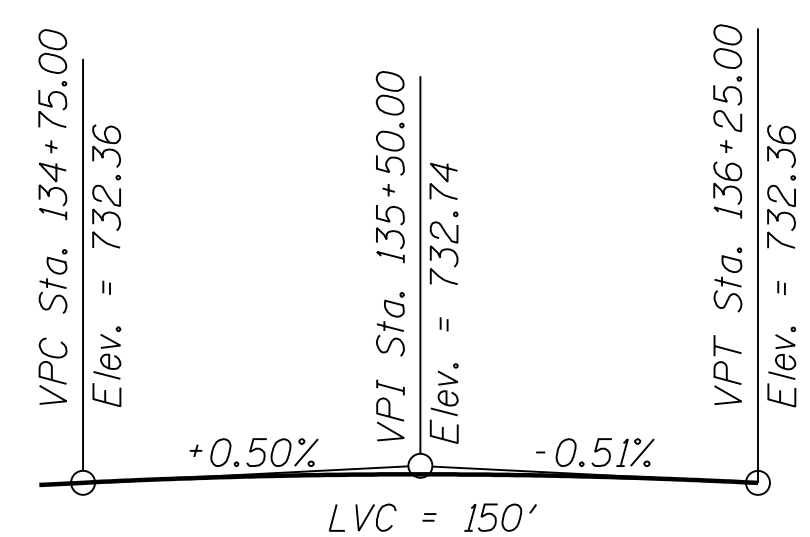
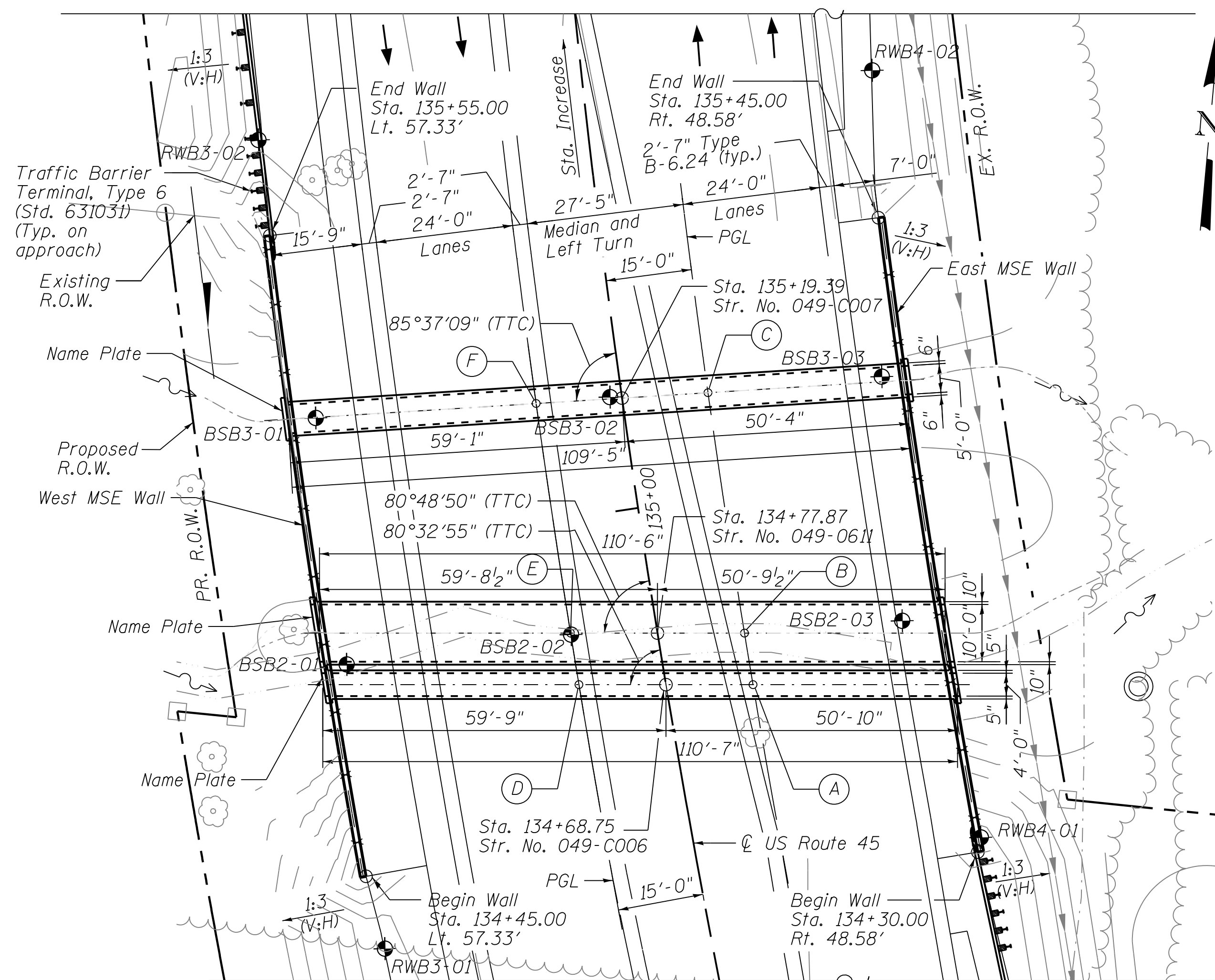
PT.	STA.	ELEV.
A	134+66.23	732.32
B	134+75.43	732.37
C	135+18.23	732.52
D	134+71.23	732.35
E	134+80.28	732.39
F	135+20.53	732.52

- (A) 10'-9" Anchorage & sidewalk slab @ 1.5% and 5'-0" parkway @ 2%
- (B) 7'-0" Anchorage slab @ 1.5%



Notes:
 See General Note sheet for Waterway Information table.
 See Unsuitable Material Removal sheet for unsuitable material removal and replacement limits.

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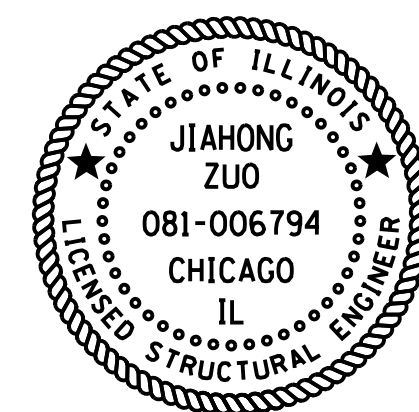


LEGEND

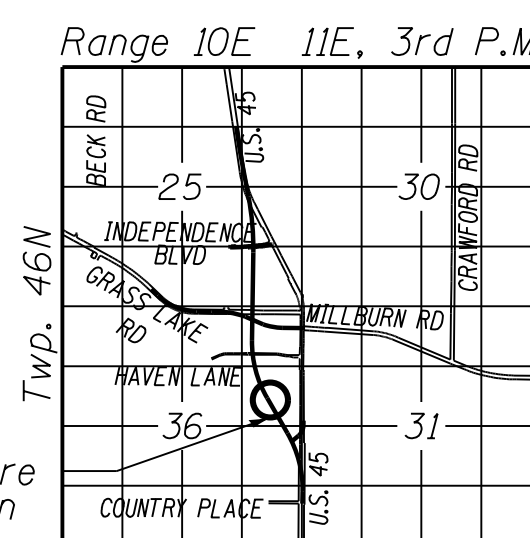
- TTC To Tangent on Curve
- Prop. St. Sewer
- Exist. San. Sewer
- Exist. Water
- Exist. Creek
- SOIL BORING

CURVE DATA
 US RTE 45 - PR 45-2

P.I. Sta. 134+63.95
 $\Delta = 30^\circ 52' 52''$ (RT)
 $D = 2^\circ 54' 39''$
 $R = 1968.40'$
 $T = 543.69'$
 $L = 1060.92'$
 $E = 73.71'$
 P.C. Sta. 129+20.61
 P.T. Sta. 139+81.18

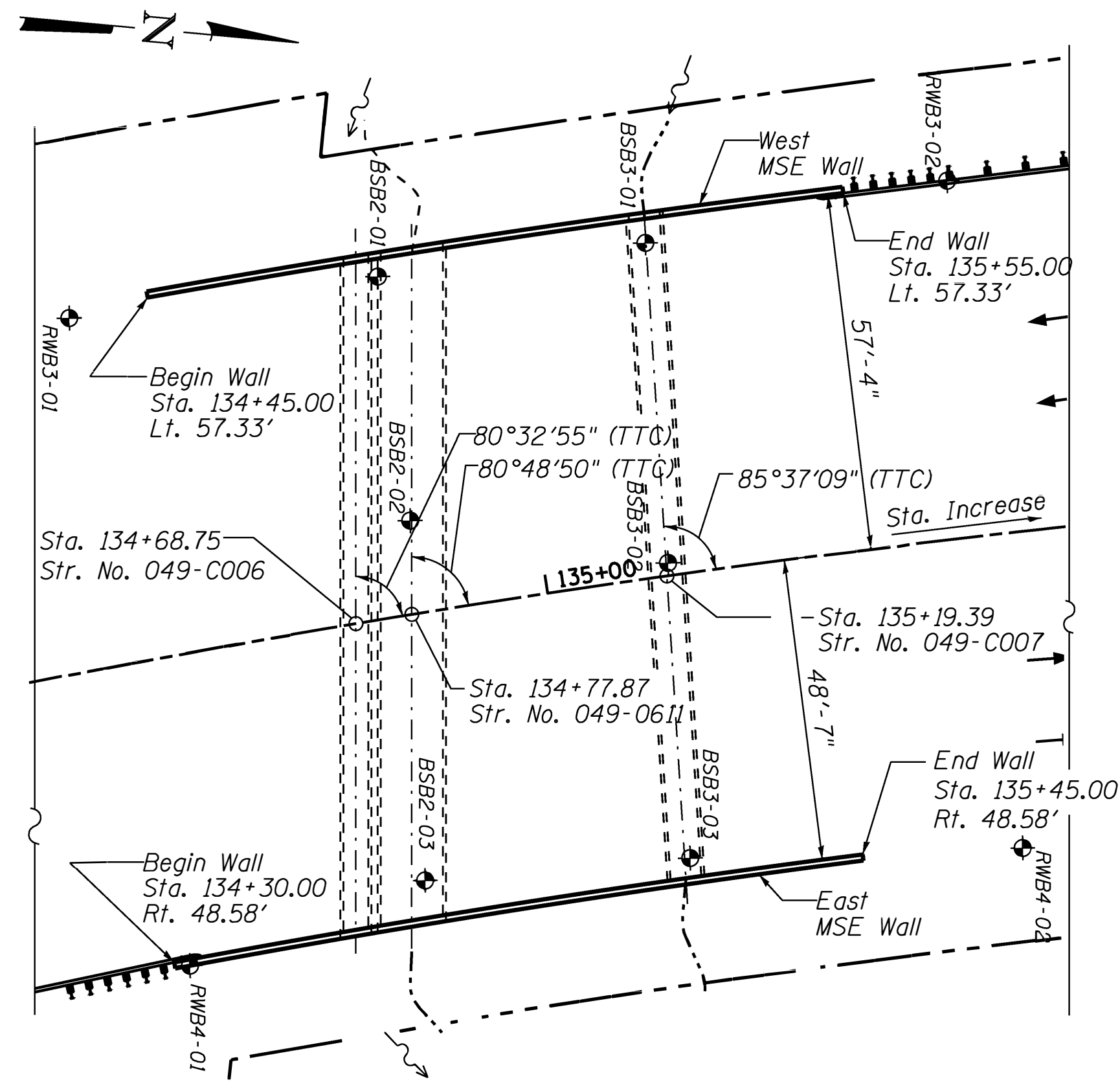


Sheets 1 to 17.

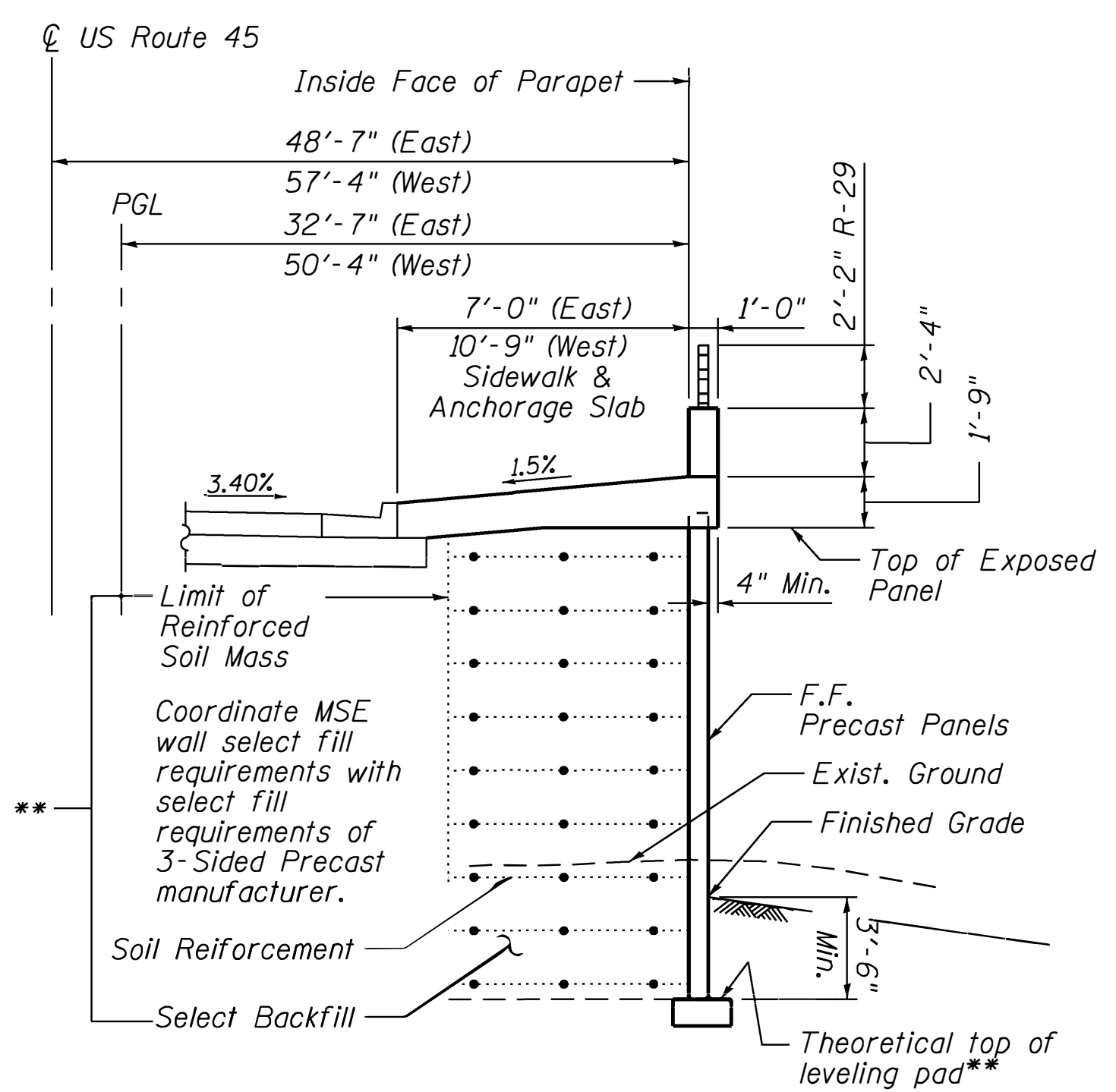


GENERAL PLAN
 US RTE 45 OVER
 TRIBUTARY TO MILLBURN CREEK
 F.A.P. RTE 344 - SEC 39 R
 LAKE COUNTY
 STATION 135+00
 STRUCTURE NO. 049-C006,
 049-0611 AND 049-C007

PARSONS FILE NAME = USER NAME = PLOT SCALE = PLOT DATE =	DESIGNED - JZ CHECKED - RL DRAWN - SC CHECKED - RL	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE. 344 SECTION 39 R COUNTY LAKE TOTAL SHEETS 510 SHEET NO. 327	CONTRACT NO. 60775 ILLINOIS FED. AID PROJECT
	SHEET NO. 1 OF 17 SHEETS					

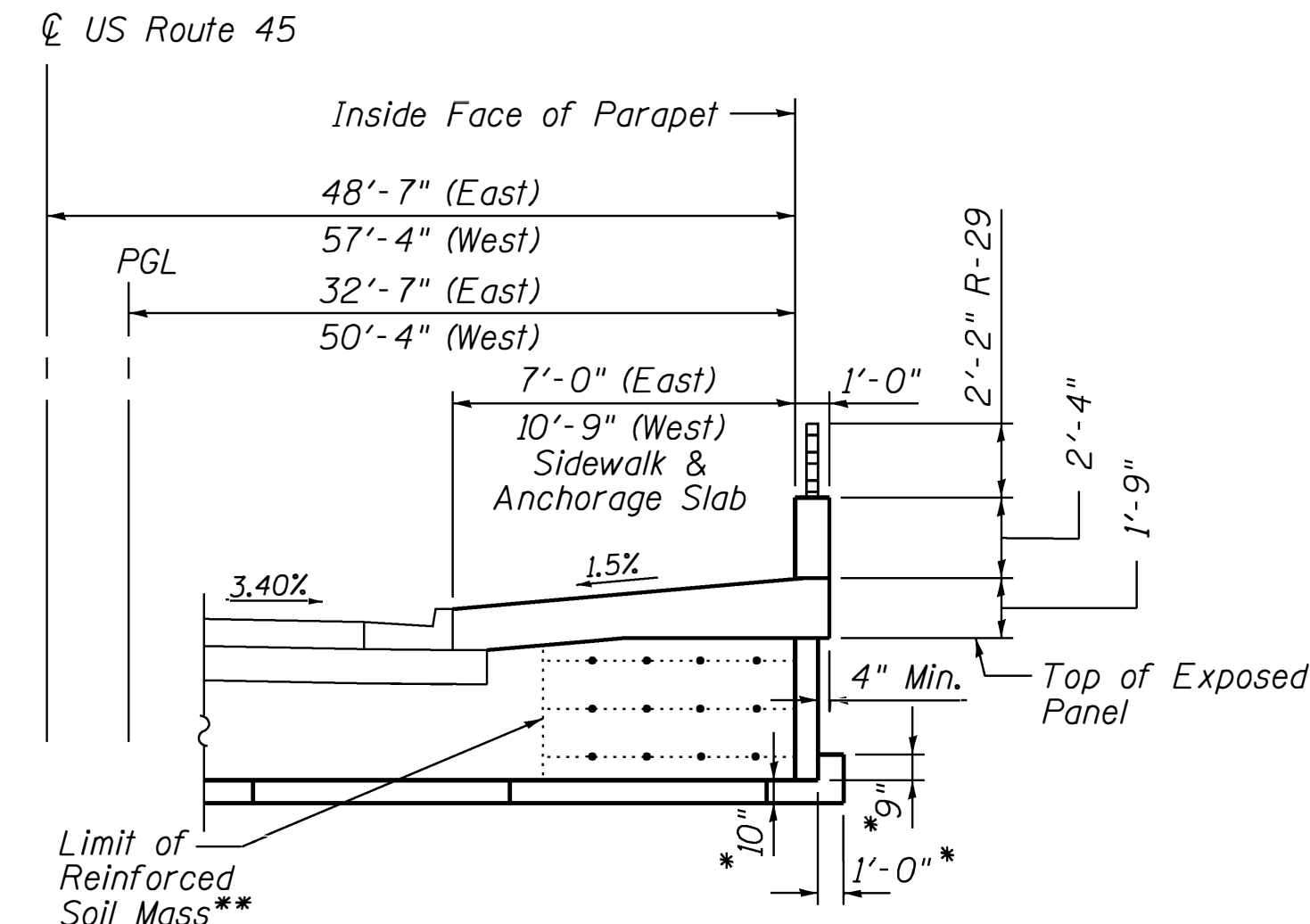


PLAN Note: Wall offsets are measured from \odot US Rte 45 to inside face of concrete parapet.



TYPICAL WALL SECTION

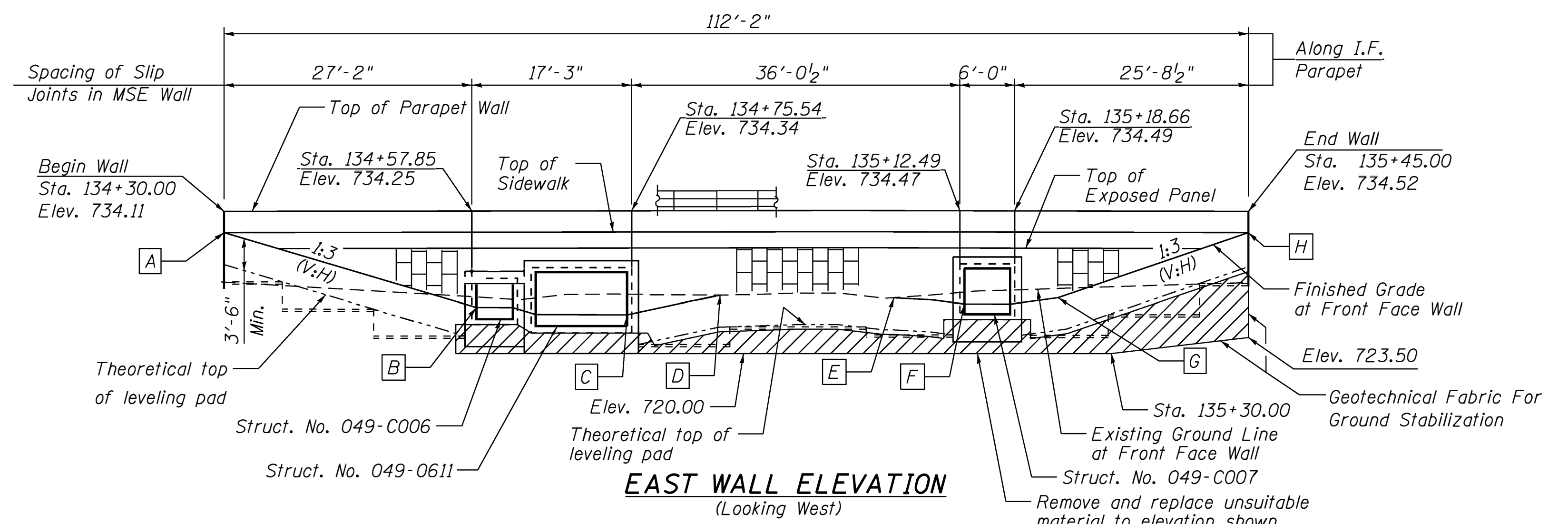
East wall shown. West wall similar except as noted in Longitudinal Section.



TYPICAL WALL SECTION AT CULVERT BARREL

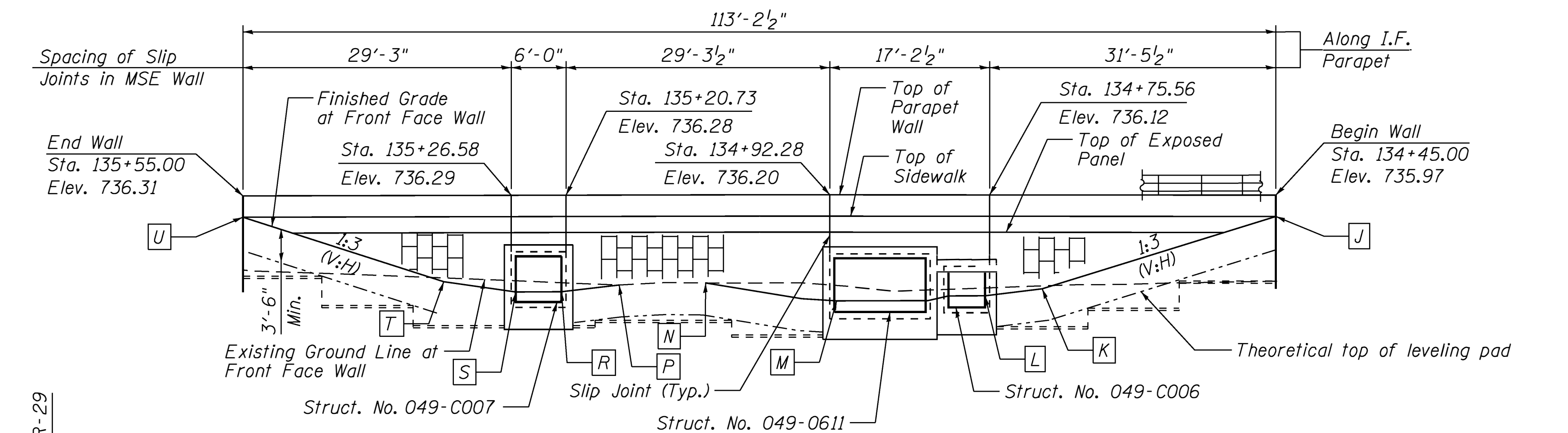
East wall shown. West wall similar except as noted in Longitudinal Section.

* May vary as per Precast manufacturer's design.
 ** To be designed and detailed by MSW Supplier.



EAST WALL ELEVATION
(Looking West)

Remove and replace unsuitable material to elevation shown. See Unsuitable Material Removal sheet for plan limits.



WEST WALL ELEVATION
(Looking East)

Note: Elevation of Remove and Replace Unsuitable Material not shown for clarity

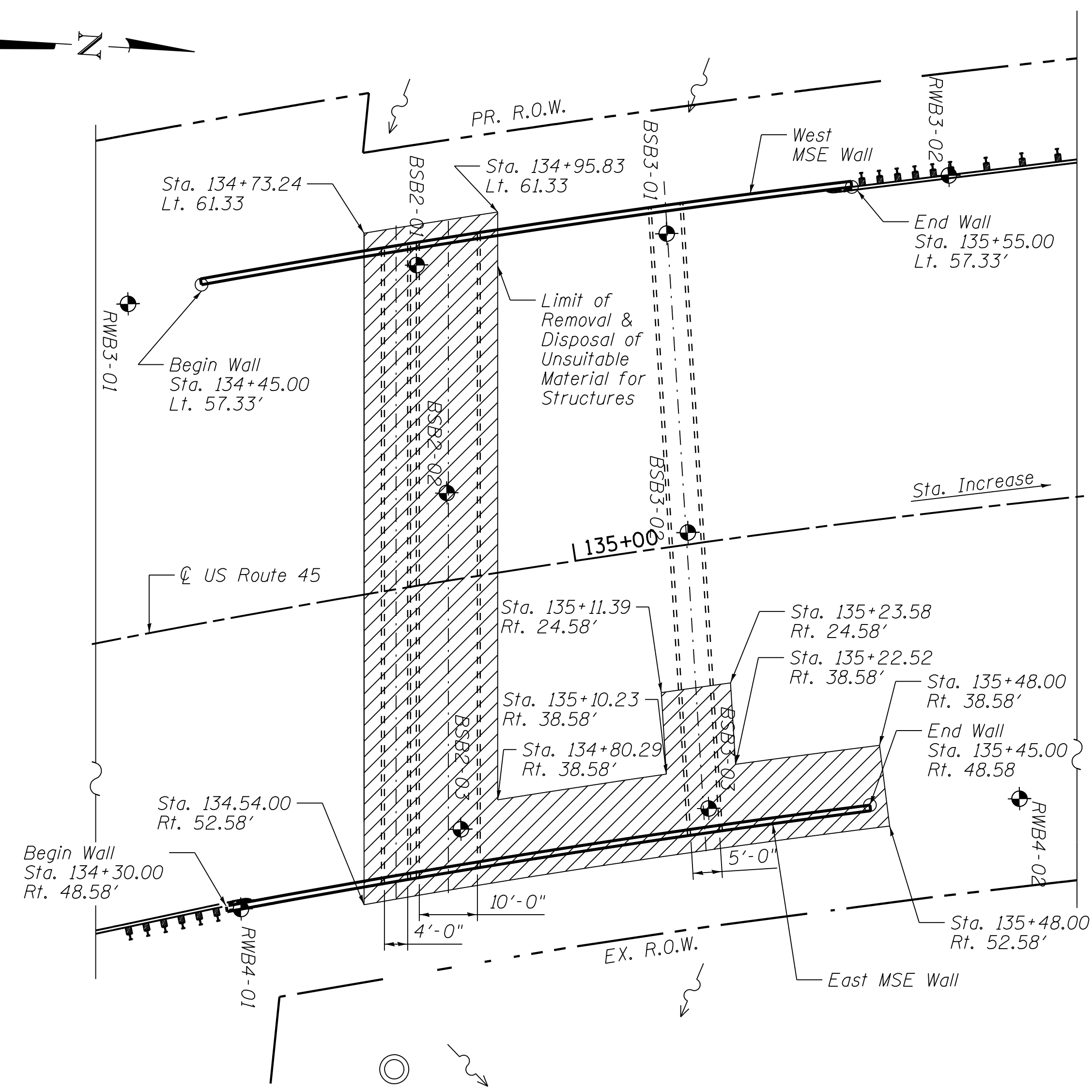
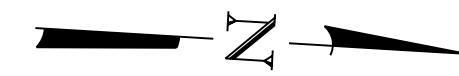
TABLE OF CONTROL POINTS
(Finished Grade)

POINT	STA. \odot US ROUTE 45	ELEVATION	POINT	STA. \odot US ROUTE 45	ELEVATION
A	134+30.00	731.83	J	134+45.00	733.83
B	134+57.62	723.75	K	134+63.08	726.00
C	134+73.64	723.00	L	134+69.33	725.25
D	134+84.32	725.93	M	134+85.58	724.75
E	135+03.34	724.99	N	134+99.94	726.71
F	135+11.56	724.30	P	135+09.40	726.60
G	135+21.14	725.00	R	135+16.21	725.85
H	135+45.00	732.21	S	135+20.21	725.85
			T	135+28.60	727.00
			U	135+55.00	734.13

Notes:

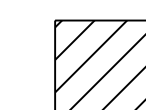
Work this sheet with Unsuitable Material Removal sheet. Stations shown in Wall Elevations are taken at the intersection of inside face of MSE wall and outside face of box culvert, based on assumed culvert wall thickness. Coordinate East Wall construction with installation of 42" storm sewer. See Drainage Plans for drainage details.

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PLAN

LEGEND



Limits of Removal and Disposal of Unsuitable Material for Structures, Backfill with Aggregate Subgrade Improvement.

Note:

The limits and quantity of removal and replacement of unsuitable material for structures shown are based on the boring data and may be modified by the Engineer for variable subsurface conditions encountered in the field.

See MSE Wall Plan and Elevation sheet for cross section limits of Removal and Disposal Unsuitable Material and replacement and placement of Aggregate Subgrade Improvement.

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FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -
PARSONS		CHECKED - JC	REVISED -
	PLOT SCALE =	DRAWN - JZ	REVISED -
	PLOT DATE =	CHECKED - JC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**UNSUITABLE MATERIAL REMOVAL AND BACKFILL LAYOUT
STRUCTURE NO. 049-C006, 049-0611 AND 049-C007**

SHEET NO. 4 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	330
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

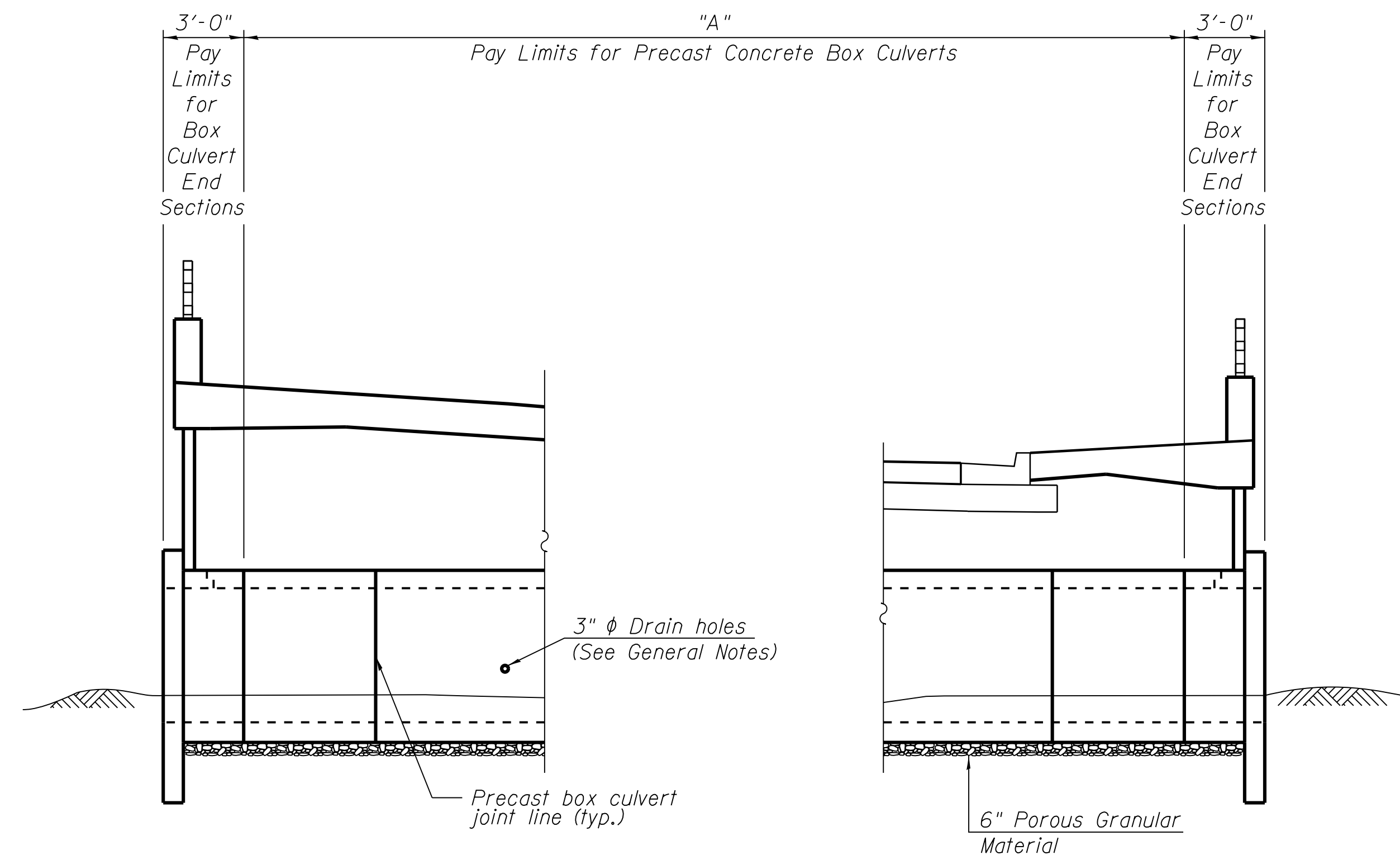
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.

The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.

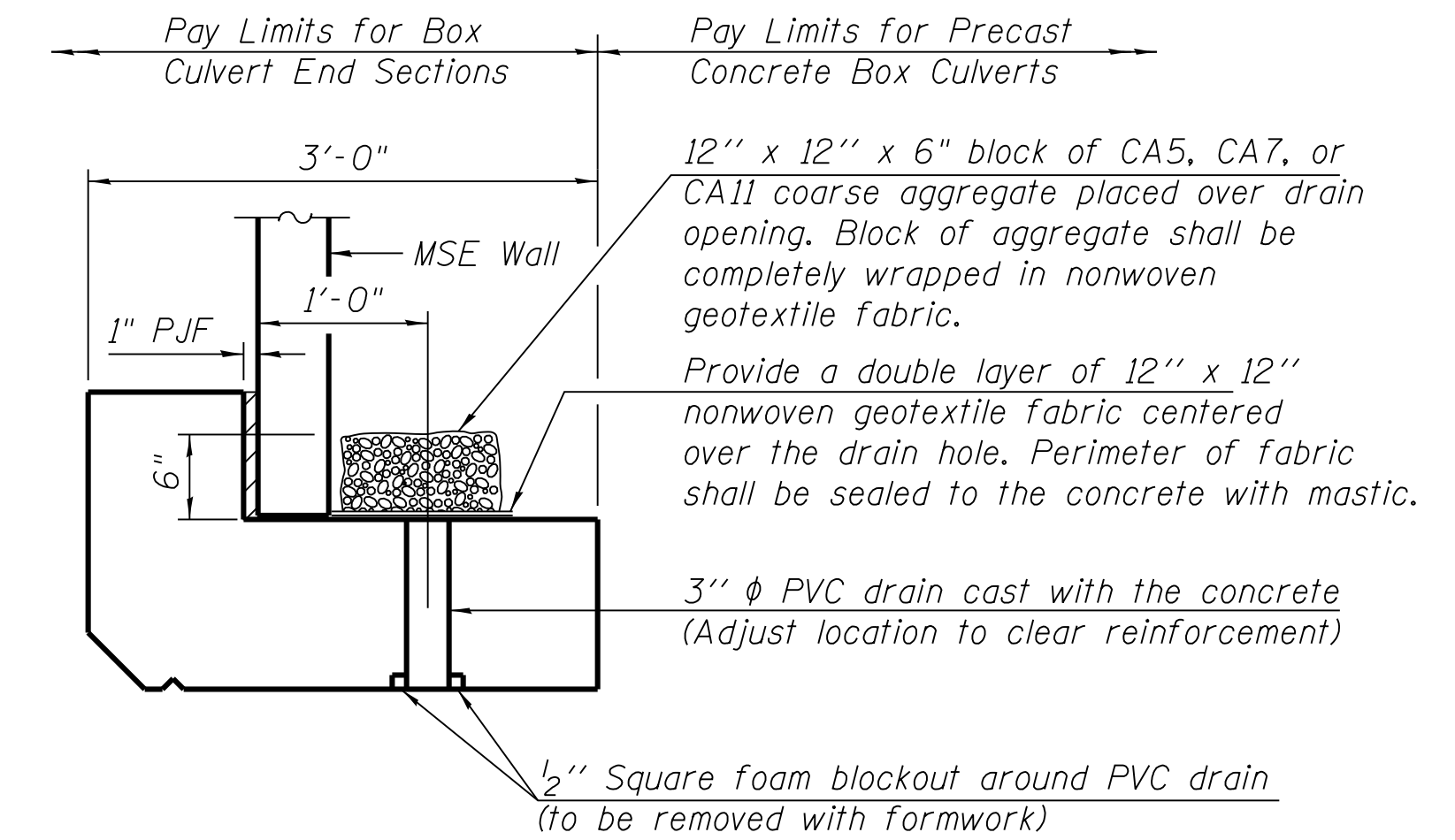
Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.

CULVERT NO.	"A"
049-C006	104'-7"
049-0611	104'-6"
049-C007	103'-5"

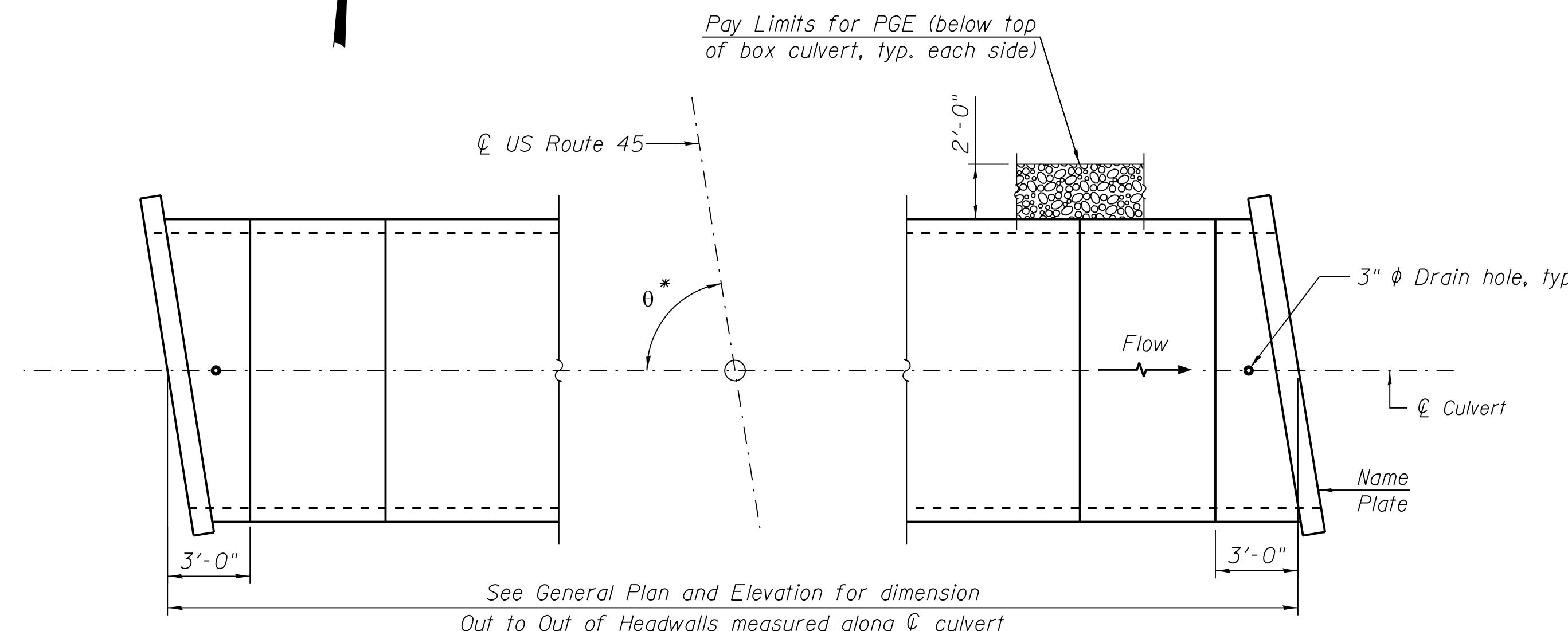


PARTIAL ELEVATION



DRAIN DETAIL

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



PARTIAL PLAN

* See General Plan and Elevation for angles.

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FILE NAME =	USER NAME =	DESIGNED - PY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST BOX CULVERT END SECTION DETAILS STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PARSONS	CHECKED - JZ	REVISIED -				344	39 R	LAKE	510	331
PLOT SCALE =	DRAWN - MS	REVISIED -				CONTRACT NO. 60T75				
PLOT DATE =	CHECKED - JZ	REVISIED -				ILLINOIS FED. AID PROJECT				
						SHEET NO. 5 OF 17 SHEETS				

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. This work will be measured for payment as each, with each end of each culvert being one each. End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.

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

Number of segments shown in Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

See roadway plans for embankment slope (V:H).

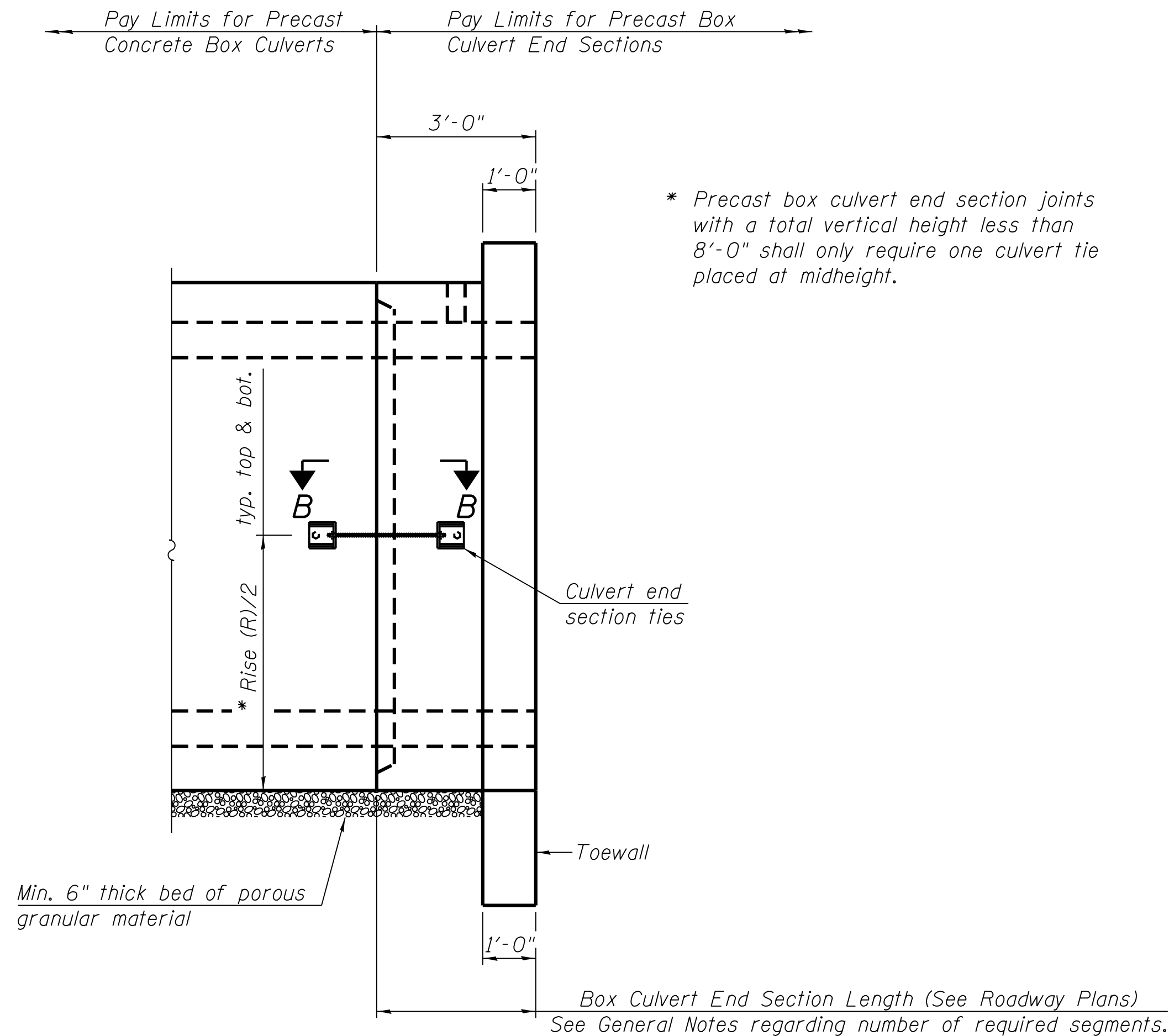
1" ϕ anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

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

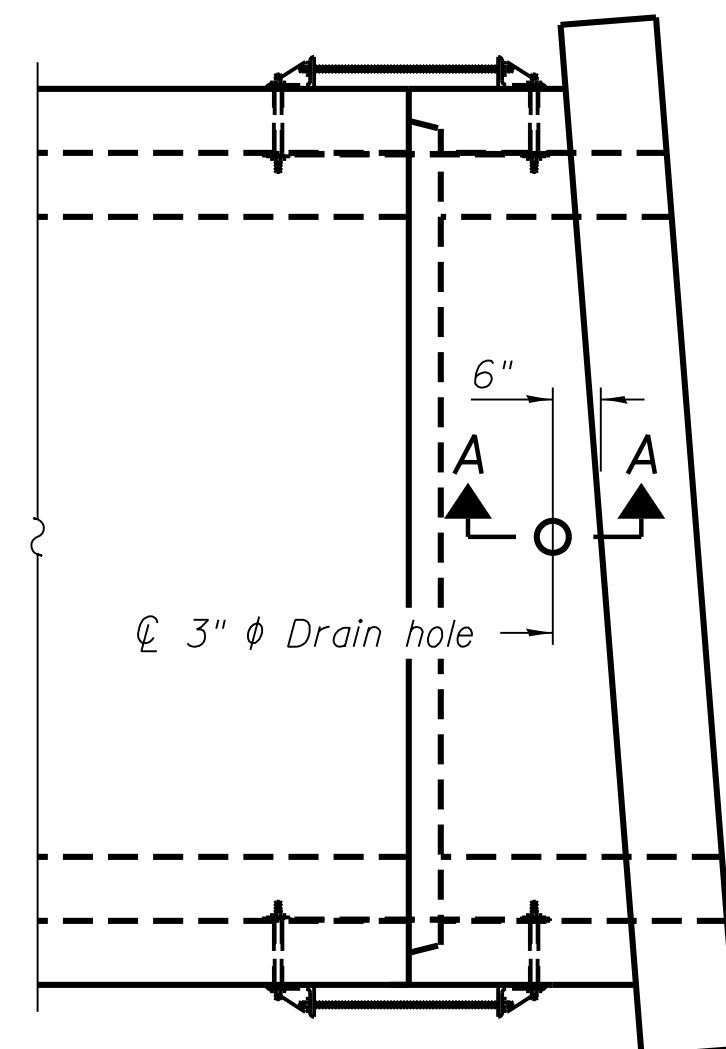
Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01. The minimum weight of the fabric shall be 6 oz. / sq. yd..

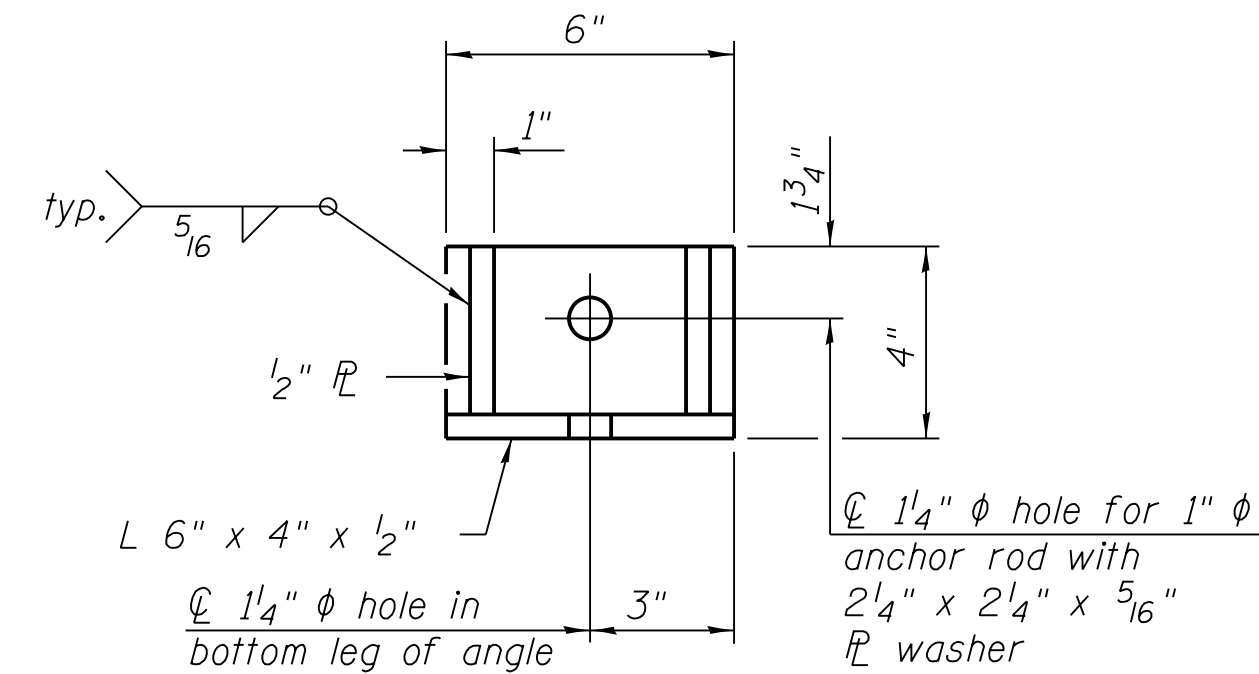
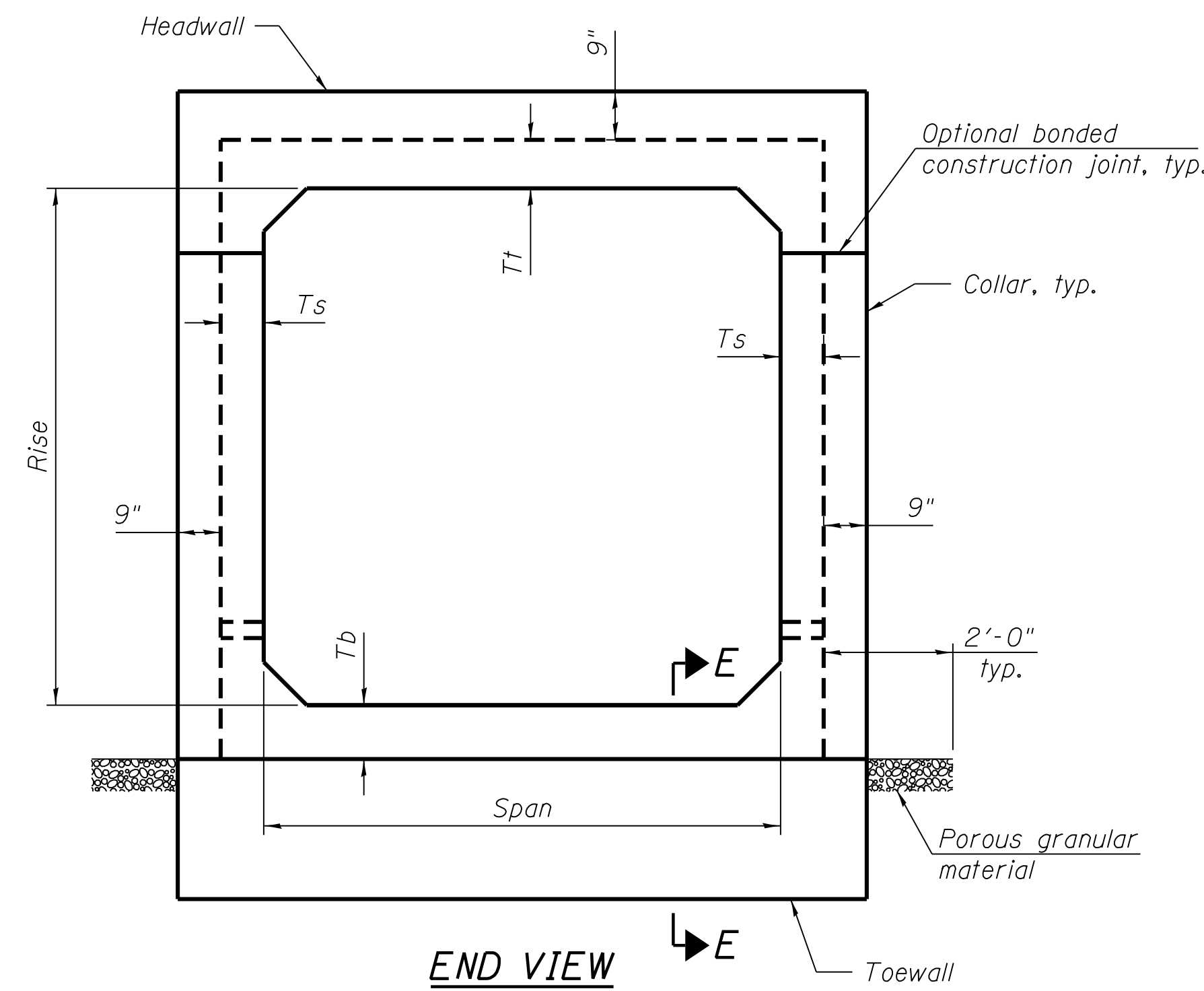
For Dimensions of culverts, see sheet 1 thru 3 of 17.
See sheet 7 of 17 for Section E-E.



ELEVATION



PLAN



RESTRAINT ANGLE DETAIL

12" x 12" x 6" block of CA5, CA7, or CA11 coarse aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

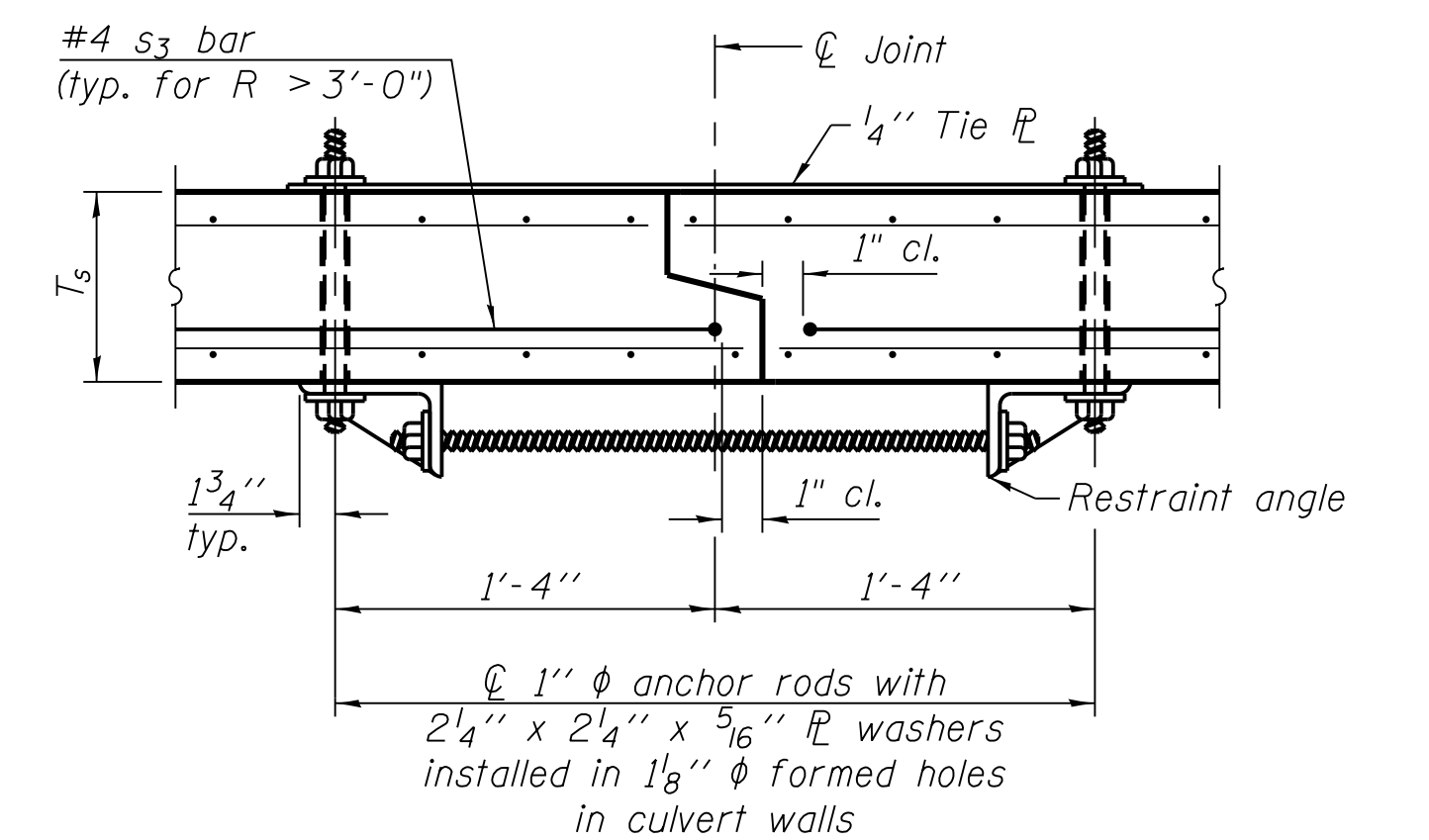
Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Fabric shall be sealed to the concrete with mastic.

3" ϕ PVC drain cast with the concrete (Adjust location to clear reinforcement).

1/2" Square foam blockout around PVC drain (to be removed with formwork)

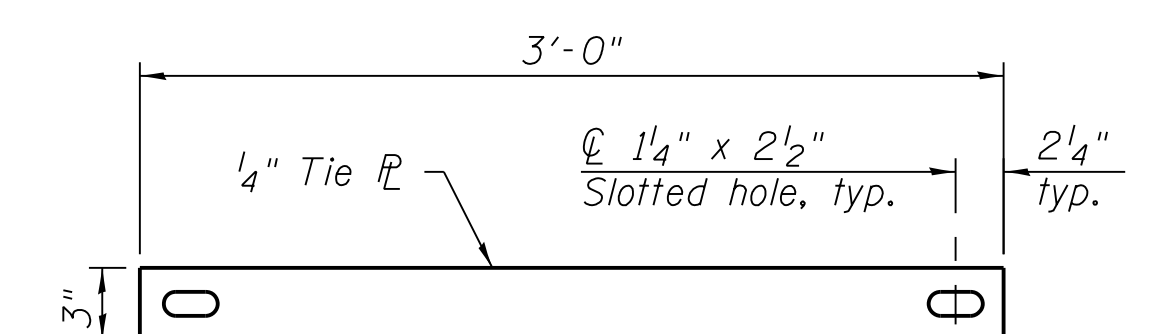
SECTION A-A

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



SECTION B-B

(Showing end section tie details)



TIE PLATE DETAIL

9/14/2017 9:40:16 AM 35361 p:\t\p\102p\int01\parsons.com\illinois State Documents\US45 - 647965\40 - Design\CAD\Bridges\Final Design\Sheets\049-0611.C006 & C007\0160775-sh-t-PrecastBoxCulvert-Details-2.dgn

FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -
PARSONS	CHECKED - PY	CHECKED - PY	REVISED -
PLOT SCALE =	DRAWN - MS	DRAWN - MS	REVISED -
PLOT DATE =	CHECKED - PY	CHECKED - PY	REVISED -

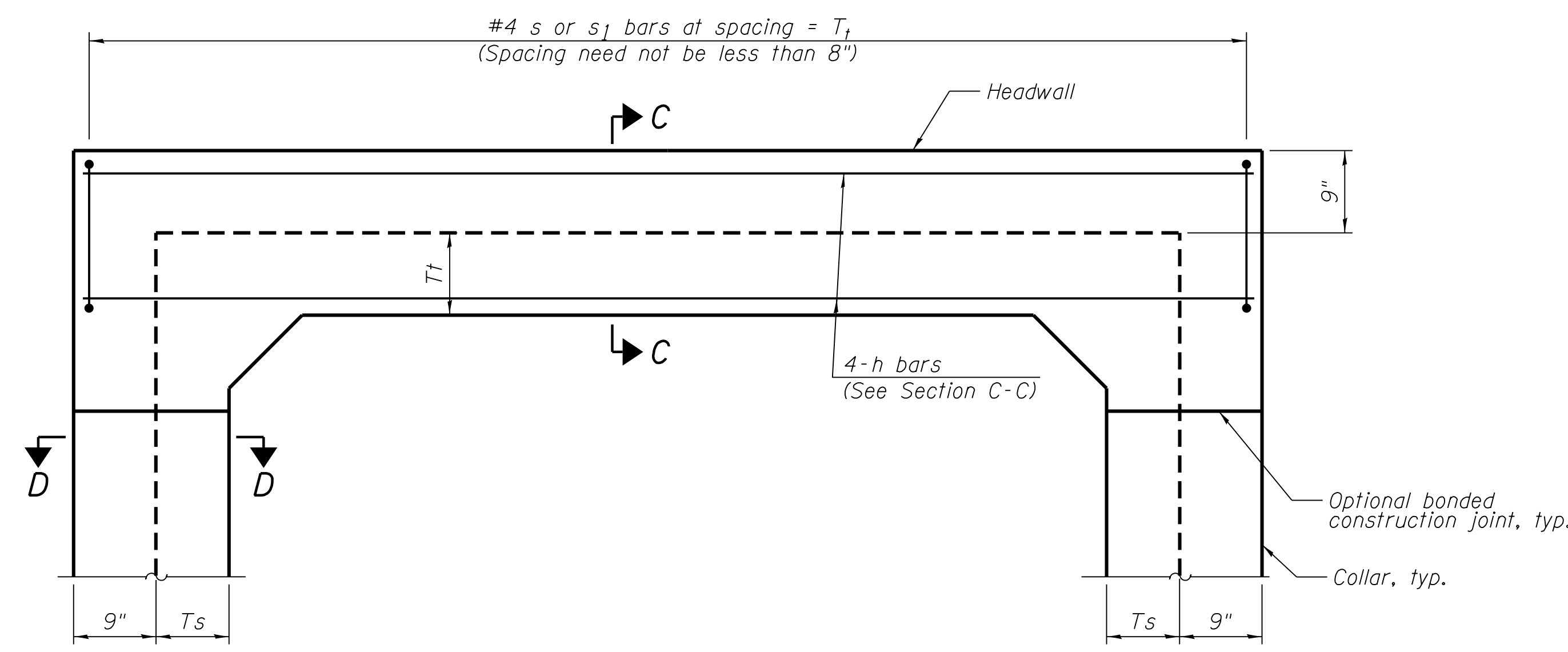
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PRECAST BOX CULVERT END SECTION DETAILS
STRUCTURE NO. 049-C006, 049-0611 AND 049-C007**

SHEET NO. 6 OF 17 SHEETS

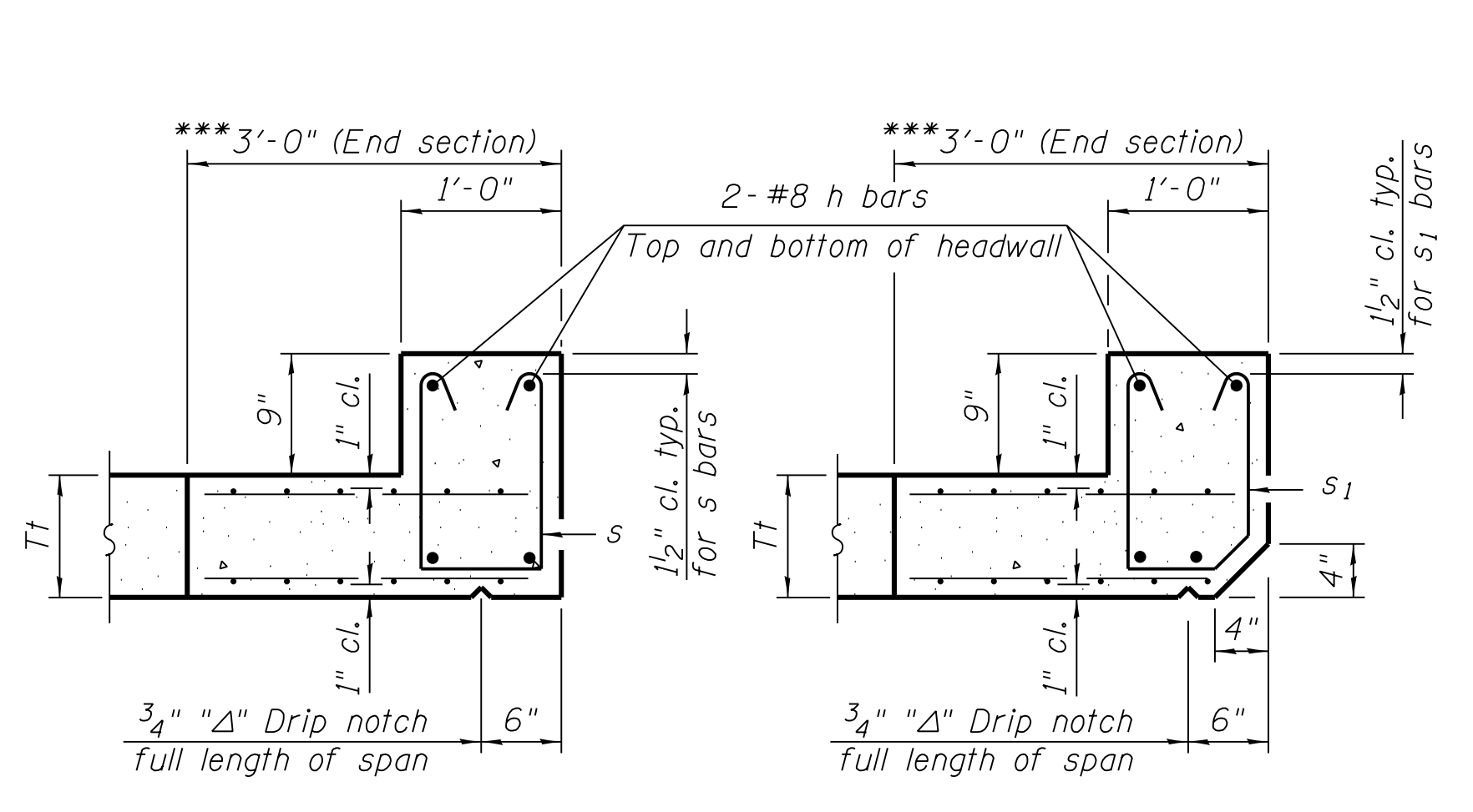
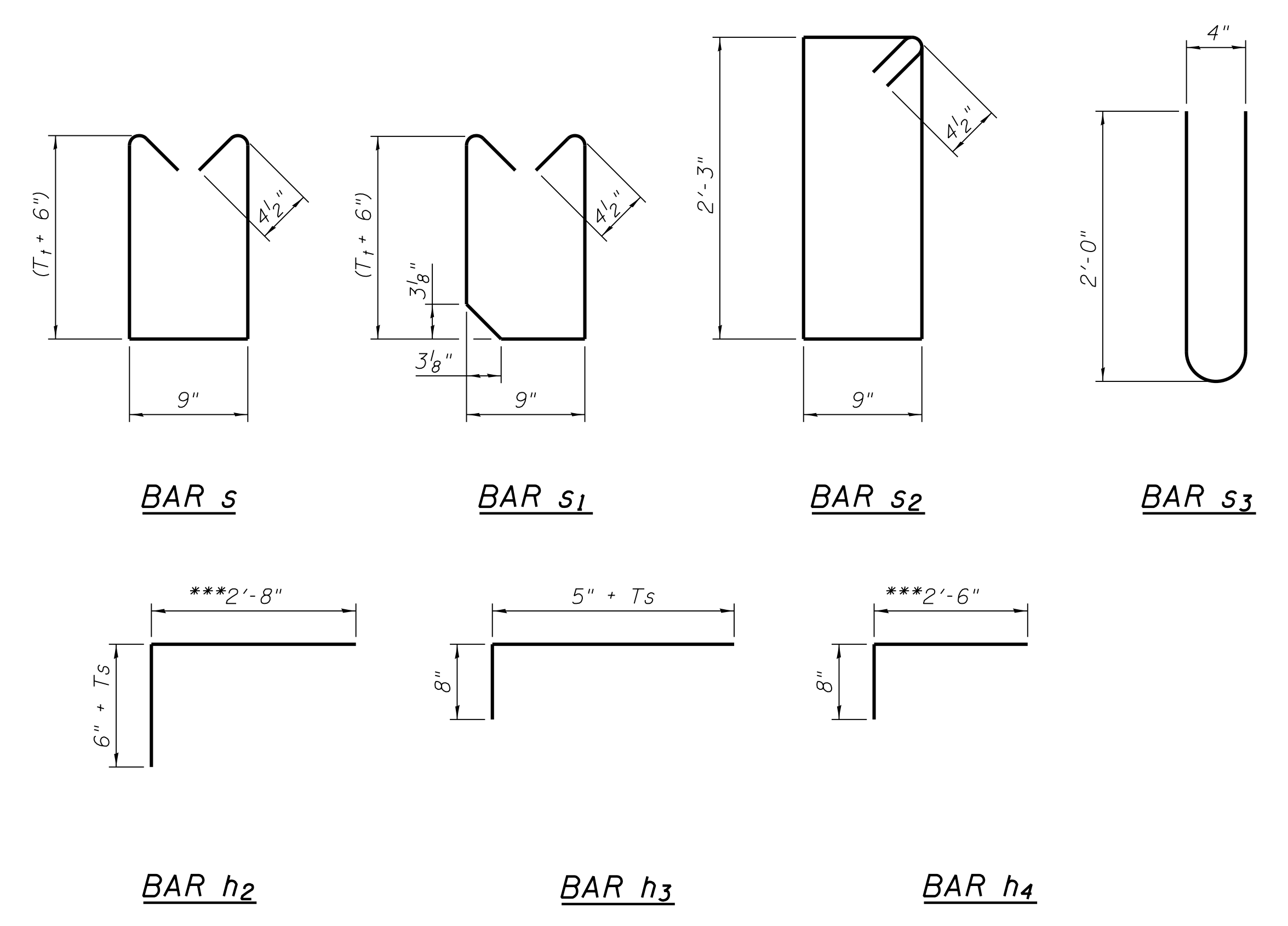
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	332
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				

9/14/2017 9:40:27 AM 35361 p:\t\expla02p\int01\parsons.com\illinois State Documents\US45 - 647965\40 - Design\CAD\Bridges\Final Design\Sheets\049-0611, C006 & C007\0160775-sh-PrecastBoxCulvert-Details-3.dgn

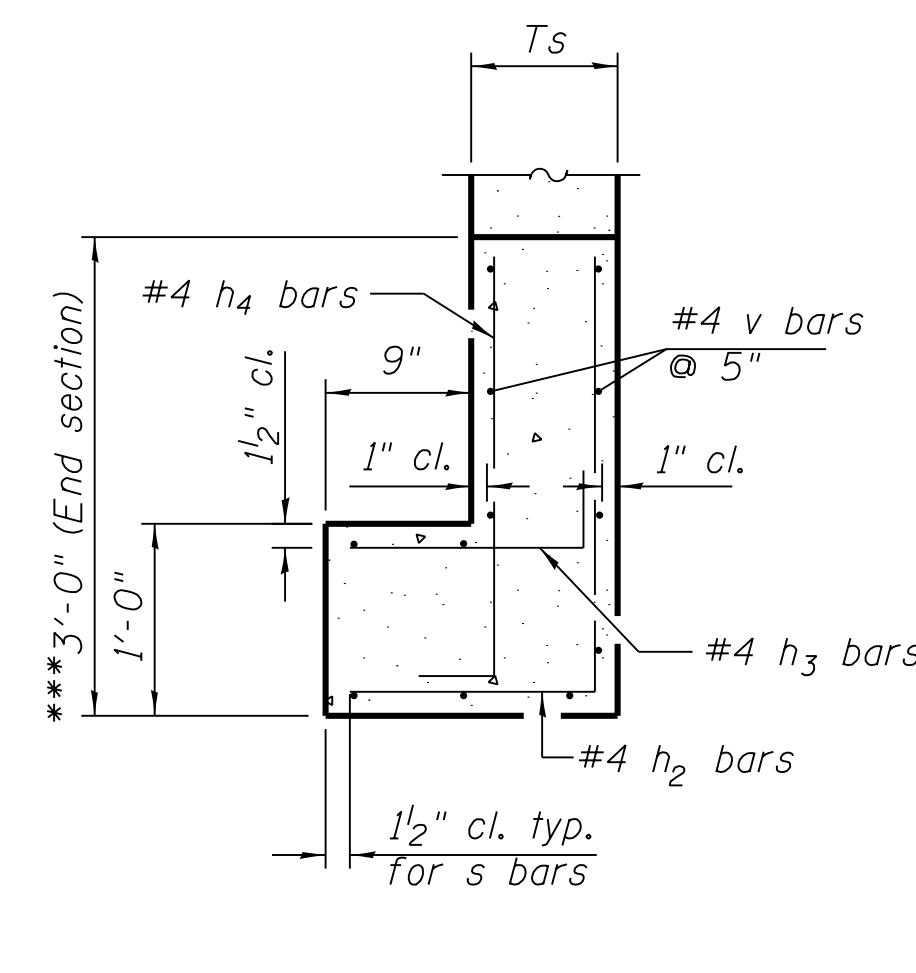


HEADWALL ELEVATION
(Allow sidewall reinforcement to extend into end of headwall.)

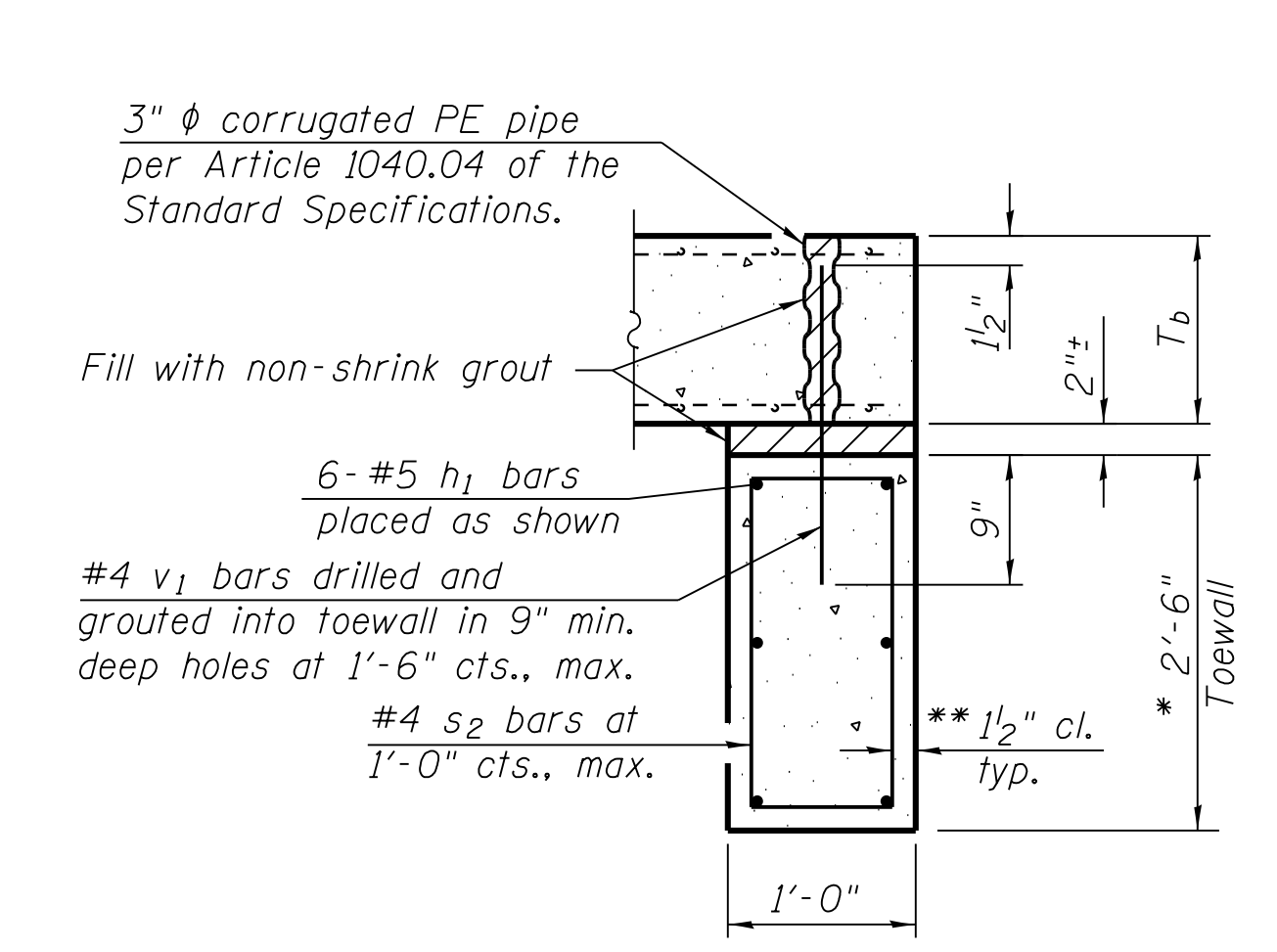
Notes:
Bonded construction joints shall be prepared according to Article 503.09 of the Standard Specifications.



SECTION C-C (Top slab at downstream end)
SECTION C-C (Top slab at upstream end)



SECTION D-D (Collar detail)



SECTION E-E (Toewall detail)

TOEWALL CONSTRUCTION SEQUENCE

1. Perform excavation and construct toewall.
2. Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

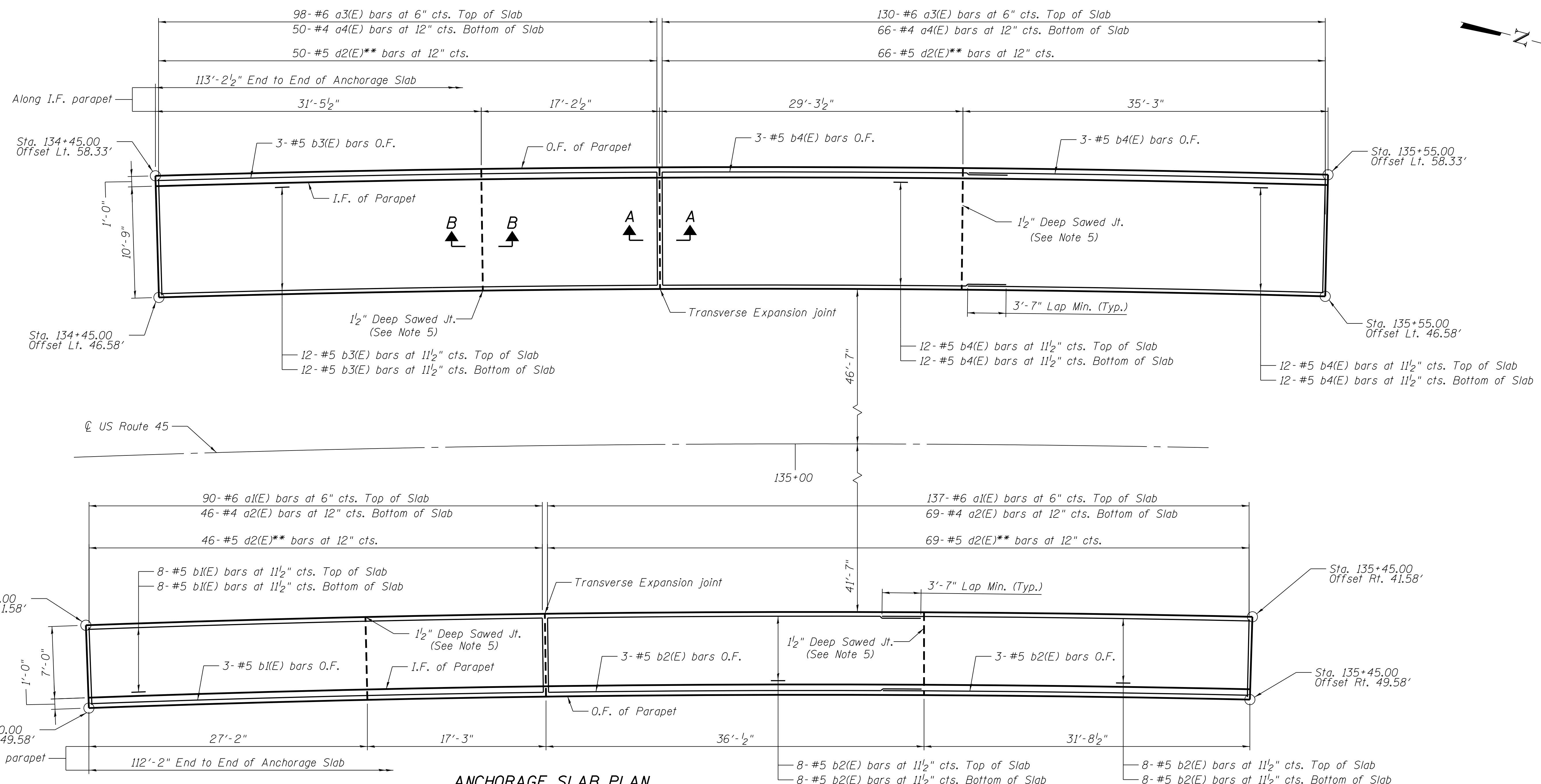
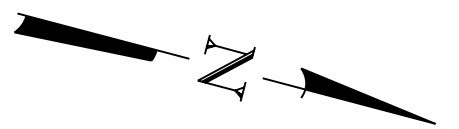
* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling the method.

** If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

Notes:
Work this sheet with Sheet 6 of 17.

*** At \mathcal{C} of Box Culvert

PARSONS	USER NAME =	DESIGNED - JZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST BOX CULVERT END SECTION DETAILS STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - PY	REVISED -			344	39 R	LAKE	510	333
	PLOT DATE =	DRAWN - MS	REVISED -			CONTRACT NO. 60775				
		CHECKED - PY	REVISED -			ILLINOIS FED. AID PROJECT				
						SHEET NO. 7 OF 17 SHEETS				



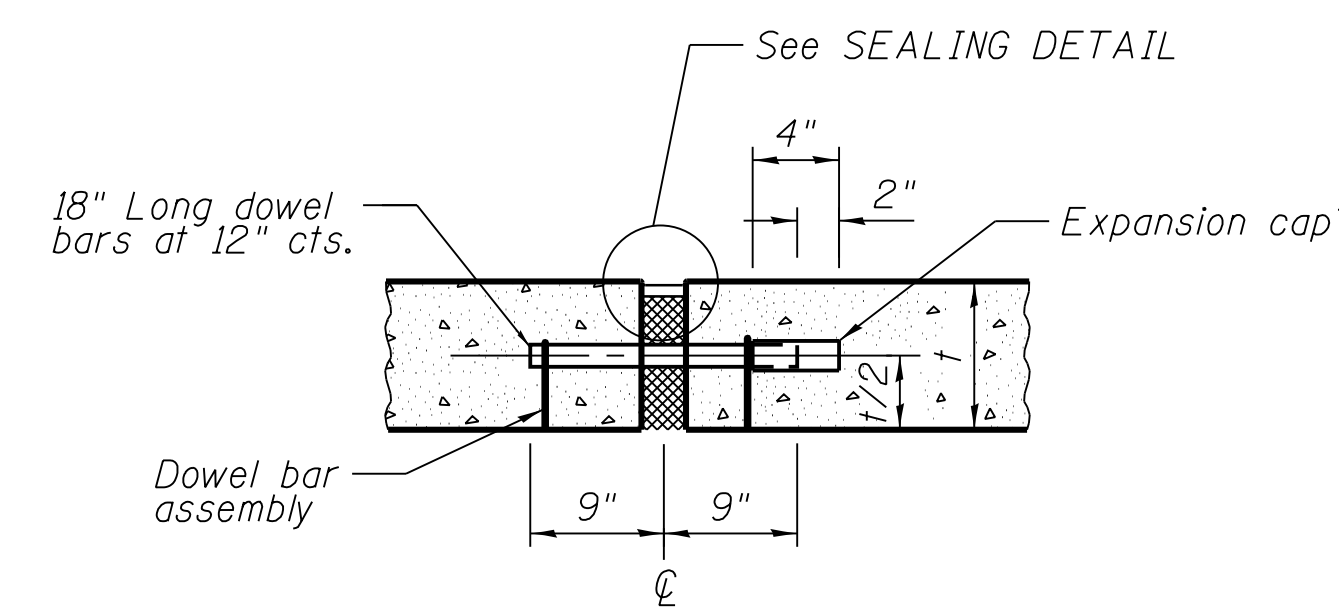
ANCHORAGE SLAB PLAN

NOTES:

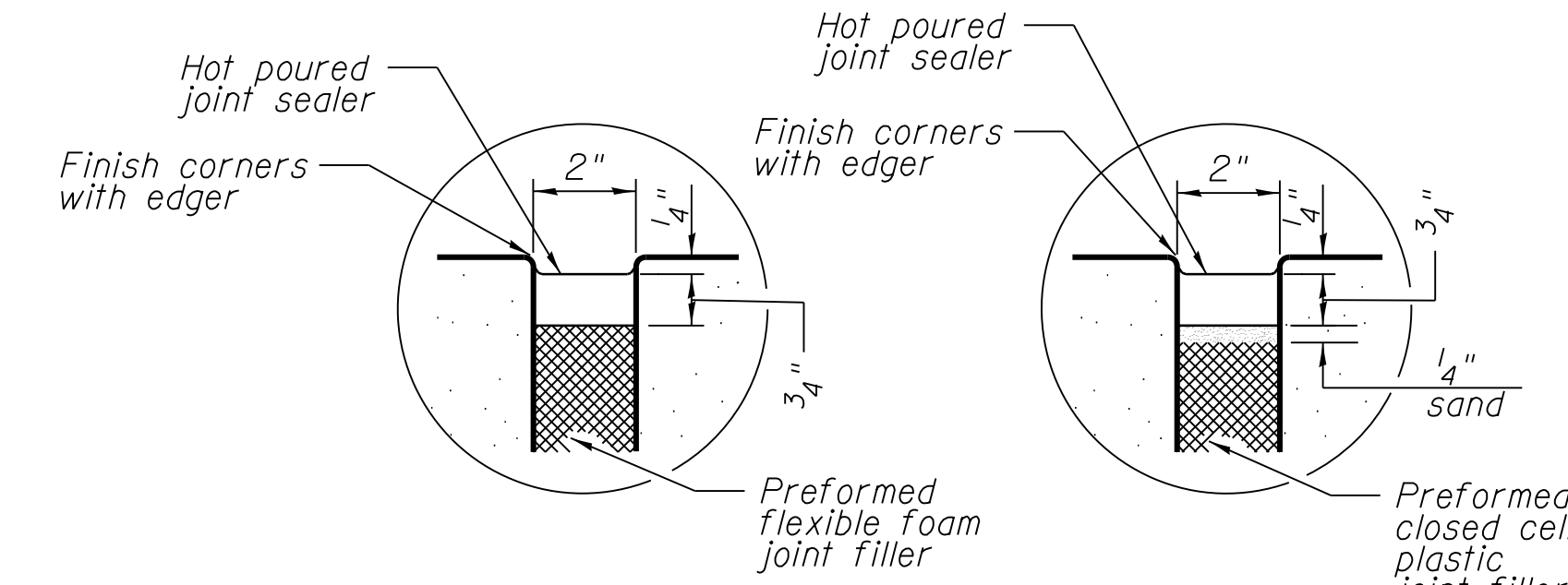
1. See sheet 10 of 17 for Anchorage Slab Details, bar details, and Bill of Material
2. O.F. indicates outside face and I.F. indicates inside face
3. Transverse bars a1(E), a2(E), a3(E), a4(E), and d2(E) shall be placed radially. Spacing shall be measured at west face of slab
4. Longitudinal bars shall be sprung into place to be concentric at the spacing noted
5. Sawed joint top of slab only. Terminate at I.F. of Parapet
6. Provide a minimum 1/2" clear unless otherwise noted

* Expansion caps shall be installed on the exposed end of each dowel bar once the header has been removed and the joint filler material has been installed

** To lap with every other a3(E) or a1(E) bars



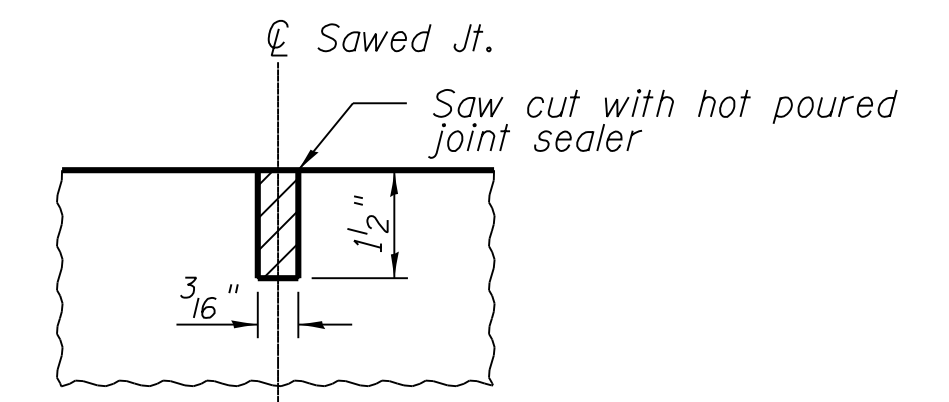
TRANSVERSE EXPANSION JOINT



SEALING DETAIL

SECTION A-A

(Cost of Dowel bar, dowel bar assembly, expansion cap and hot poured joint sealer are included with Concrete Superstructure)



SECTION B-B

(Cost of saw cut and hot poured joint sealer are included with Concrete Superstructure)



FILE NAME =	USER NAME =	DESIGNED - RL	REVISIONS -
		CHECKED - JC	REVISIONS -
		DRAWN - RL	REVISIONS -
		CHECKED - JC	REVISIONS -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ANCHORAGE SLAB PLAN AND DETAILS
STRUCTURE NO. 049-C006, 049-0611 AND 049-C007**

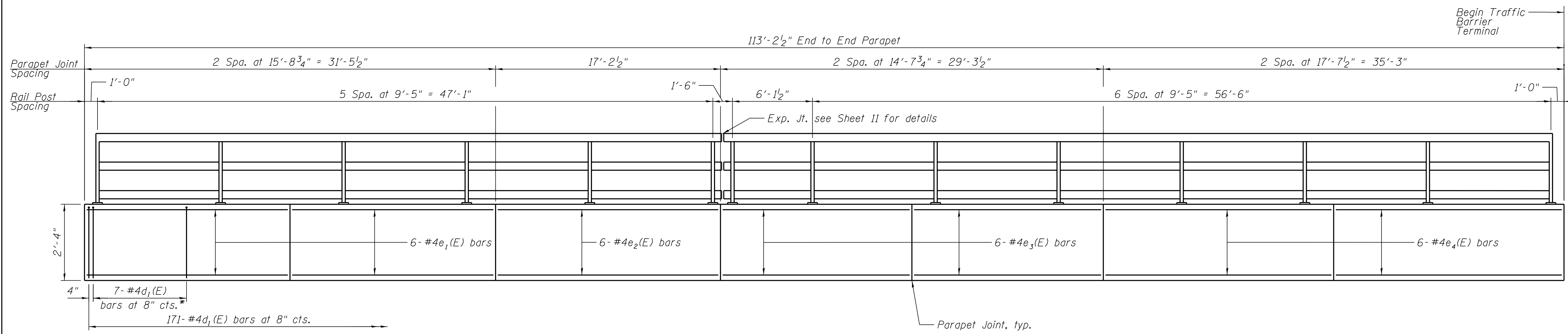
SHEET NO. 8 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	334
CONTRACT NO. 60775				

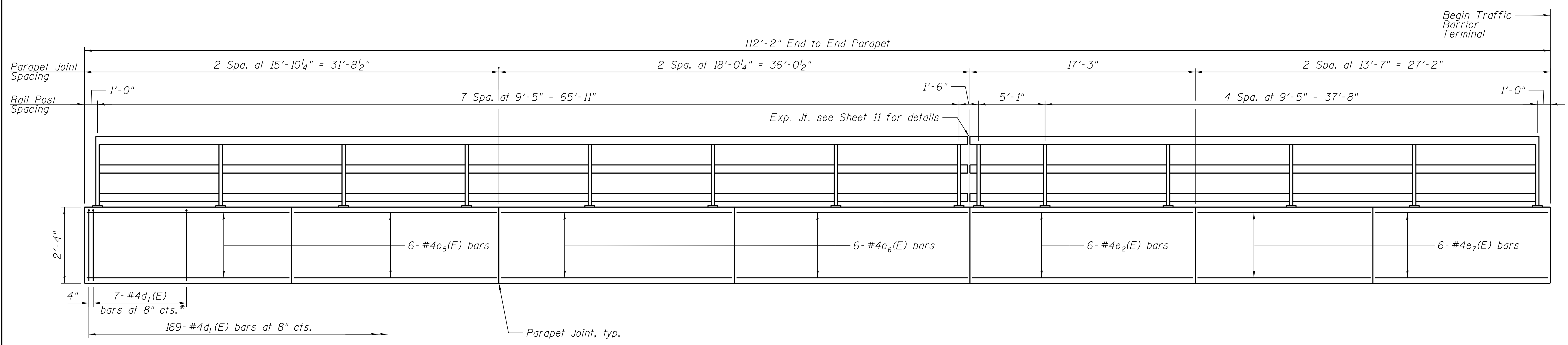
ILLINOIS FED. AID PROJECT

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WEST PARAPET ELEVATION
(Looking West)



EAST PARAPET ELEVATION
(Looking East)

* Typical at parapet ends and each side at parapet joints.

Notes:
 For Bar Details and Bill of Material, see sheet 10 of 17.
 For Parapet Railing details, see sheet 11 of 17.
 Parapet joint spacing to align with anchorage slab joint spacing.
 Dimensions shown are measured along inside face of parapet.

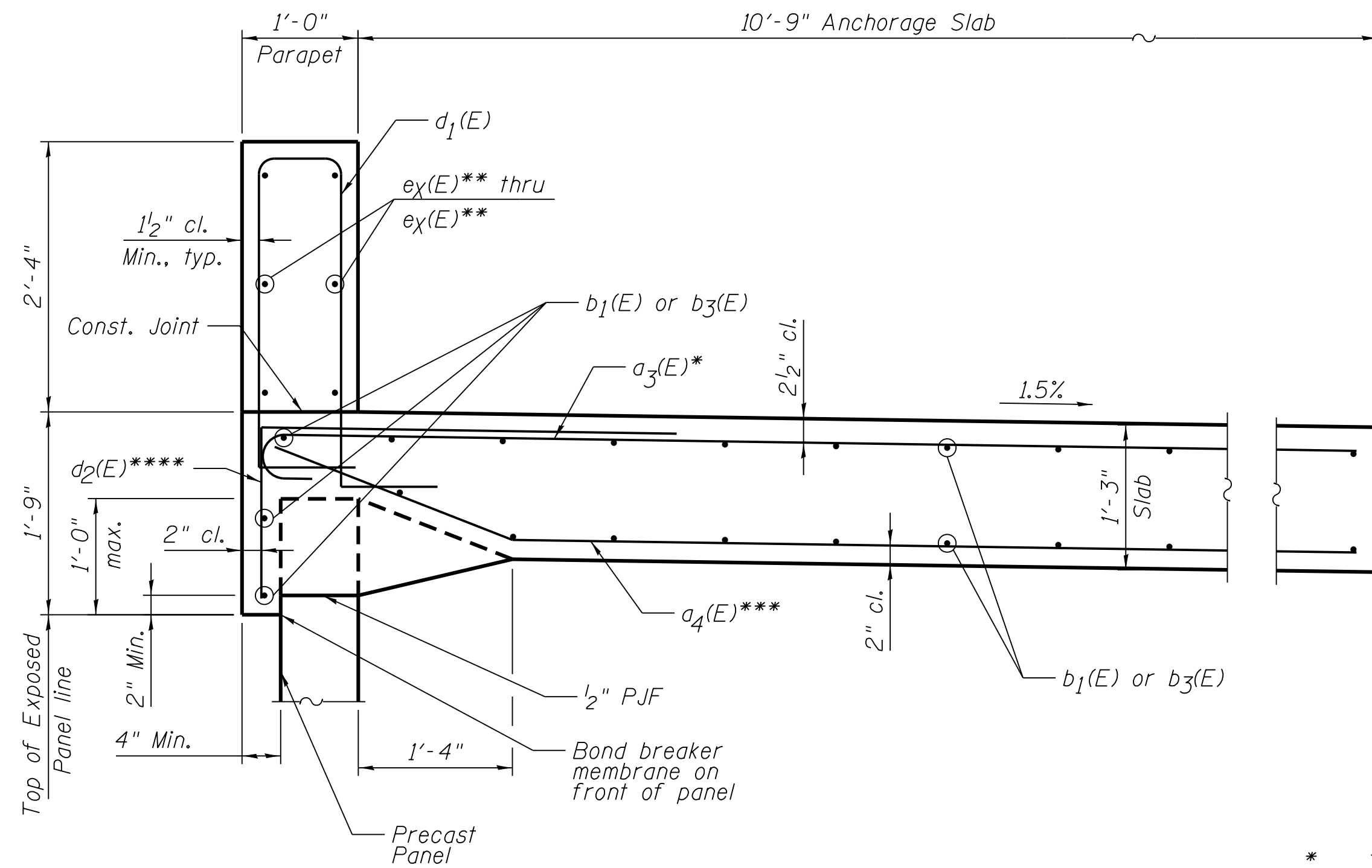
PARSONS	USER NAME =	DESIGNED - JC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PARAPET ELEVATIONS STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
	PLOT SCALE =	DRAWN - MS	REVISED -			344	39 R	LAKE	510	335
	PLOT DATE =	CHECKED - PY	REVISED -			CONTRACT NO. 60T75		ILLINOIS FED. AID PROJECT		

BAR LIST

Bar	No.	Size	Length	Shape
a ₁ (E)	227	#6	8'-2"	
a ₂ (E)	115	#4	7'-9"	
a ₃ (E)	228	#6	11'-11"	
a ₄ (E)	116	#4	11'-6"	
b ₁ (E)	19	#5	44'-1"	
b ₂ (E)	38	#5	35'-9"	
b ₃ (E)	27	#5	48'-1"	
b ₄ (E)	54	#5	33'-11"	
d ₁ (E)	536	#4	7'-11"	
d ₂ (E)	231	#5	5'-1"	
e ₁ (E)	12	#4	15'-4"	
e ₂ (E)	12	#4	16'-10"	
e ₃ (E)	12	#4	14'-3"	
e ₄ (E)	12	#4	17'-3"	
e ₅ (E)	12	#4	15'-6"	
e ₆ (E)	12	#4	17'-8"	
e ₇ (E)	12	#4	13'-3"	
Concrete Superstructure			Cu. Yd.	127.5
Reinforcement Bars, Epoxy Coated			Pound	18850

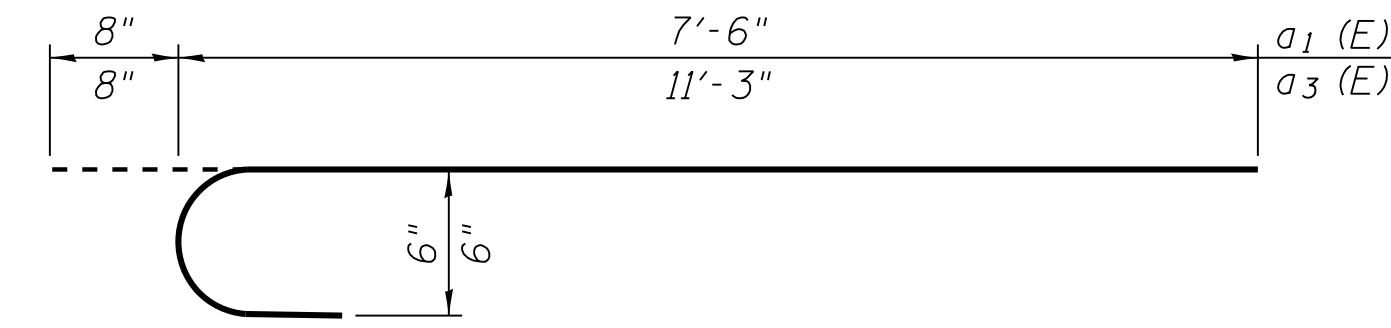
NOTES:

- For Protective Coat limits see sheet 2 of 17.
- All edges shall have standard 3/4" chamfer, except as noted.
- Reinforcement bar designated (E) shall be epoxy coated.
- For Parapet Railing details see sheet 11 of 17.
- Concrete Superstructure quantity includes 108.0 Cu.Yd. for anchorage Slab and 19.5 Cu.Yd. for concrete parapets.

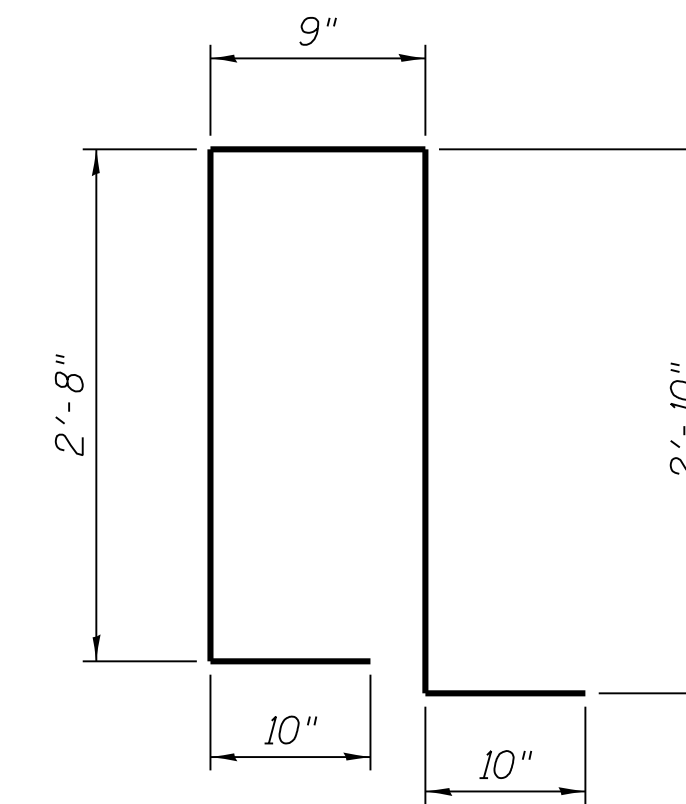


WEST ANCHORAGE SLAB SECTION
(Parapet Railing not shown)

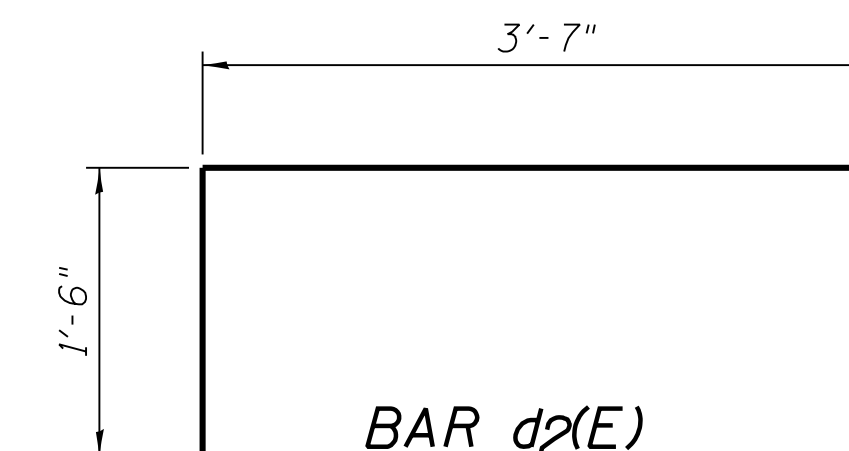
- * Tilt bar as required to maintain 1/2" cl. at top of precast panel.
- ** For bar designations, see sheet 9 of 17.
- *** Bend bar a₄ in field to maintain 1/2" clear at top of precast panel.
- **** Bend bar d₂ in field to maintain 2 1/2" clear at top of anchorage slab.



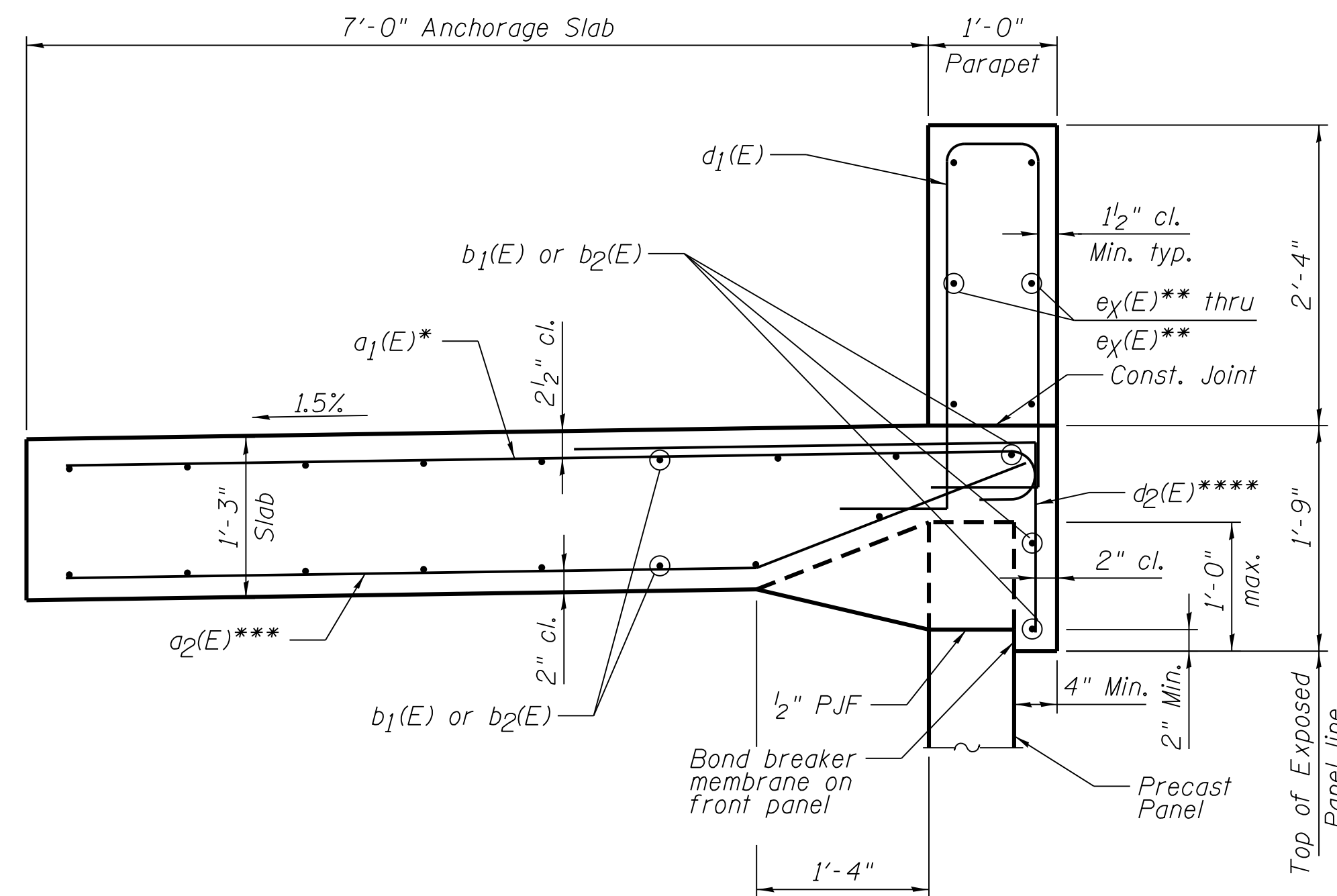
BAR a₁(E) & a₃(E)



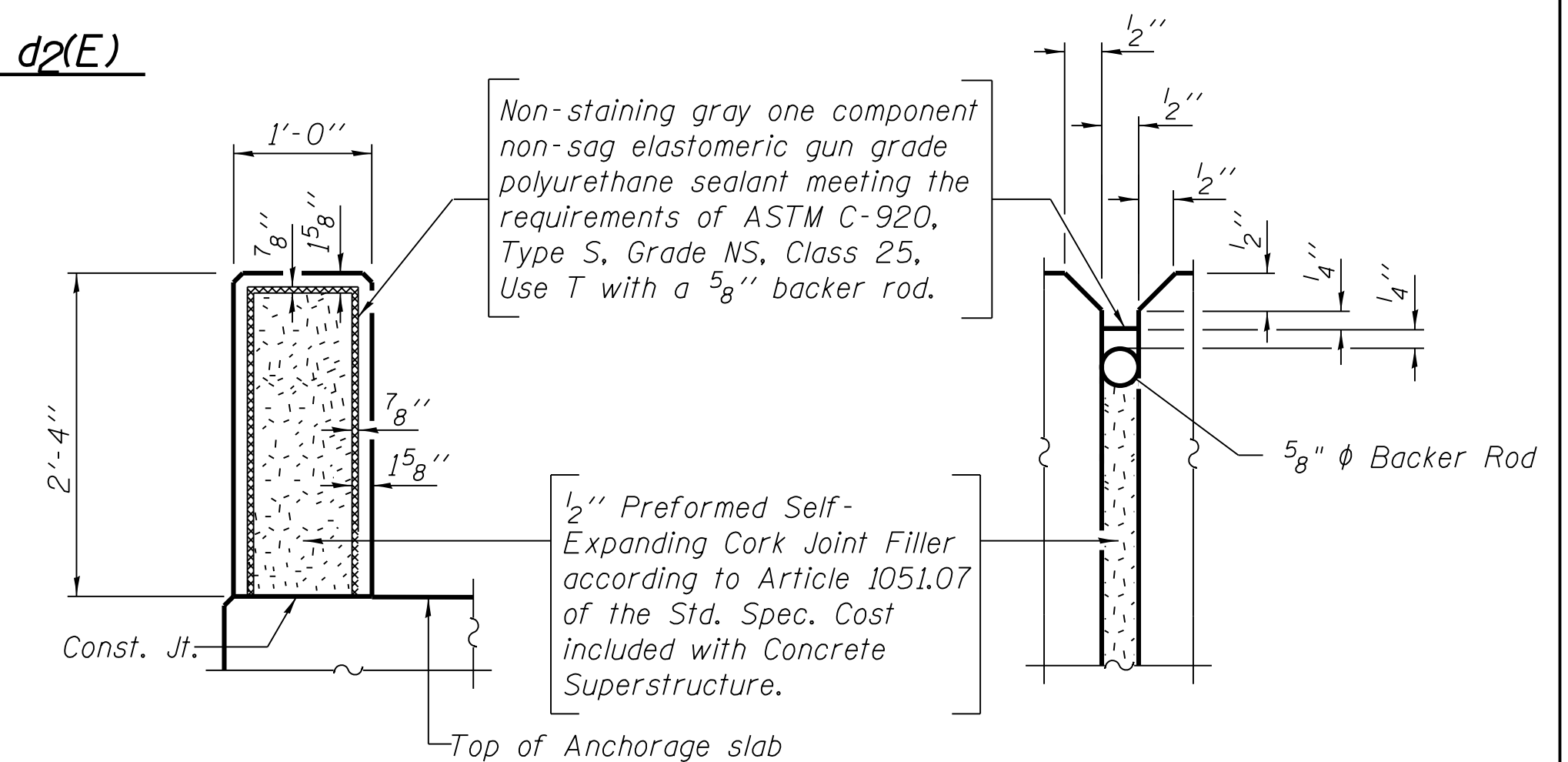
BAR d₁(E)



BAR d₂(E)



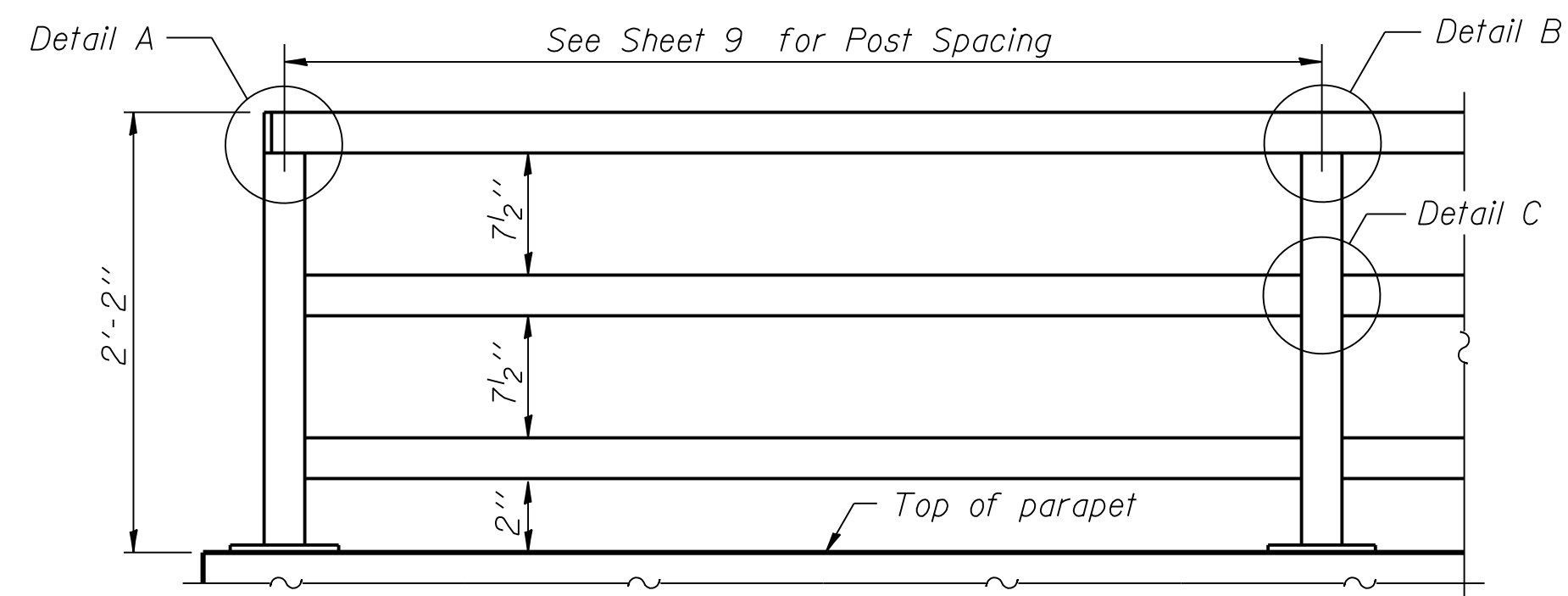
EAST ANCHORAGE SLAB SECTION
(Parapet Railing not shown)



PARAPET JOINT DETAILS

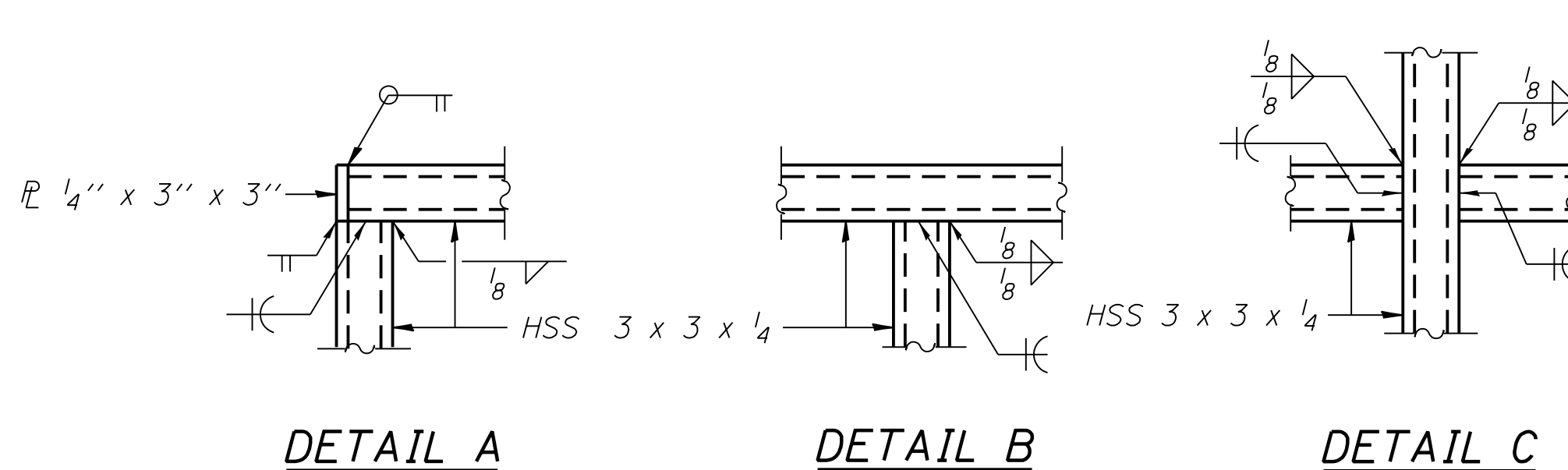
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FILE NAME =	USER NAME =	DESIGNED - RL/JC	REVISD -	<p align="center">STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</p>	<p align="center">ANCHORAGE SLAB AND PARAPET DETAILS STRUCTURE NO. 049-C006, 049-0611 AND 049-C007</p>	F.A.P. RTE. = 344	SECTION = 39 R	COUNTY = LAKE	TOTAL SHEETS = 510	SHEET NO. = 336	
PARSONS	PLOT SCALE =	CHECKED - JZ	REVISD -			CONTRACT NO. 60T75					
	PLOT DATE =	DRAWN - MS	REVISD -			ILLINOIS FED. AID PROJECT					
		CHECKED - PY	REVISD -			SHEET NO. 10 OF 17 SHEETS					



**PARAPET RAILING
ELEVATION**

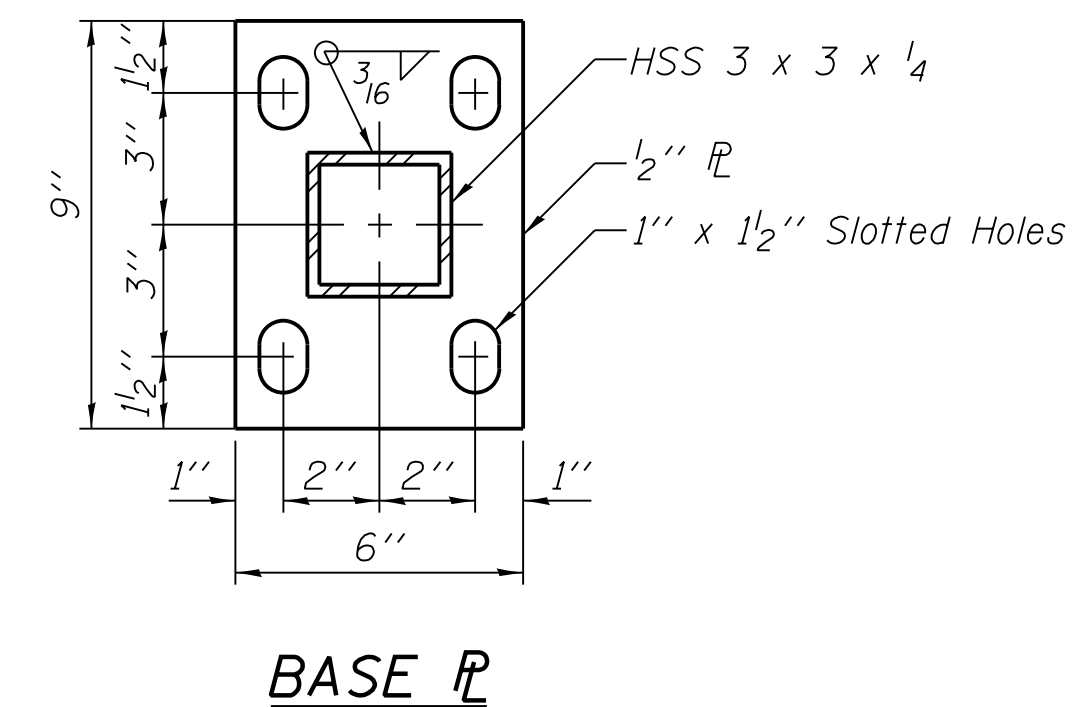
(Inside Face of Three Element Rail)



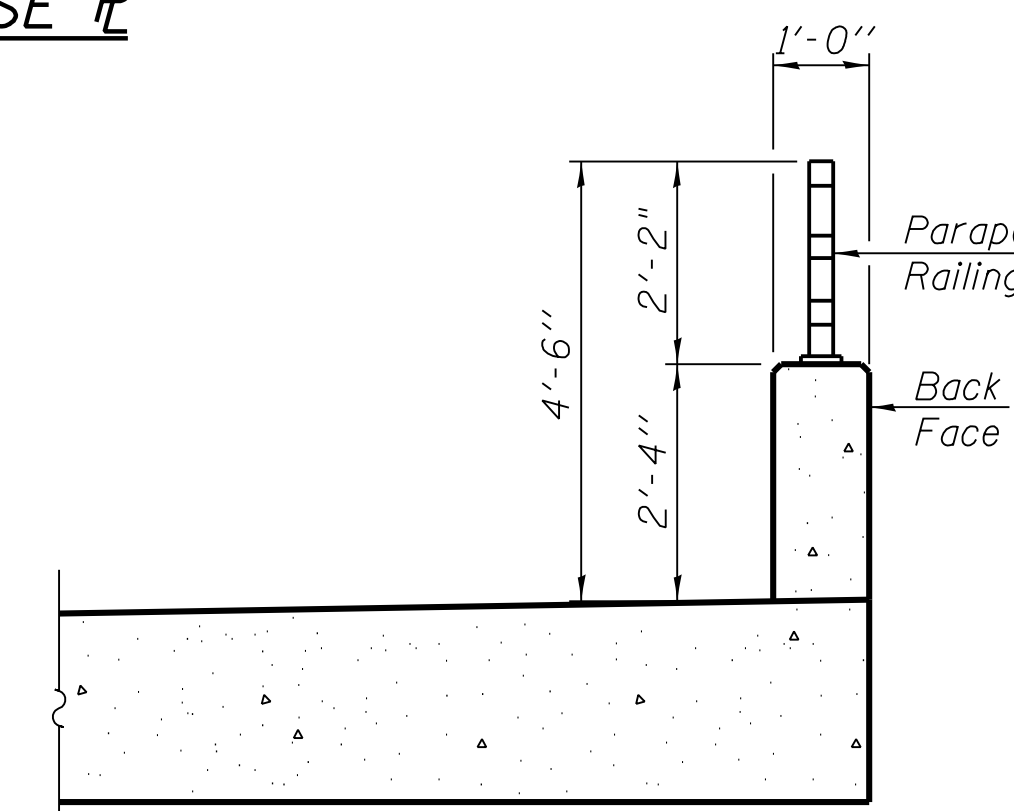
DETAIL A

DETAIL B

DETAIL C



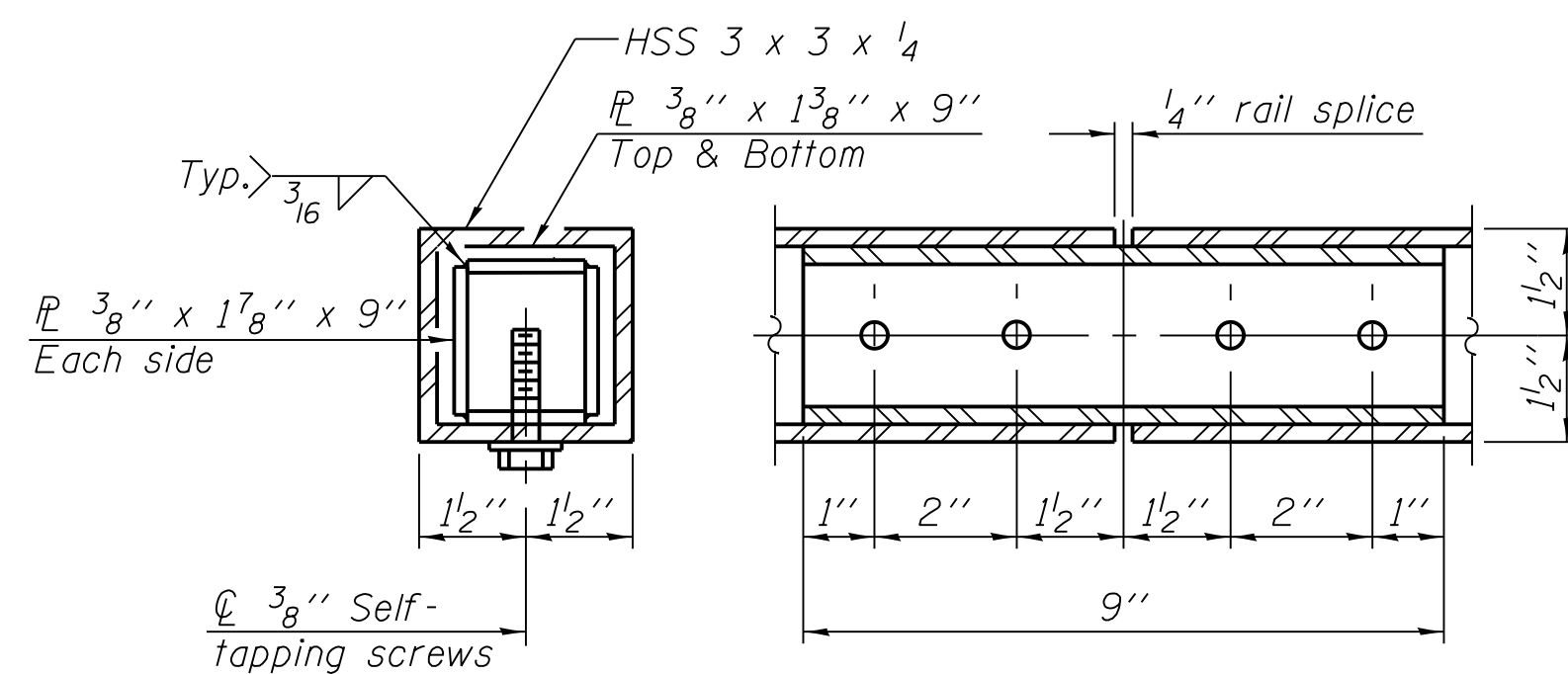
BASE PL



SECTION THRU SIDEWALK

BILL OF MATERIAL

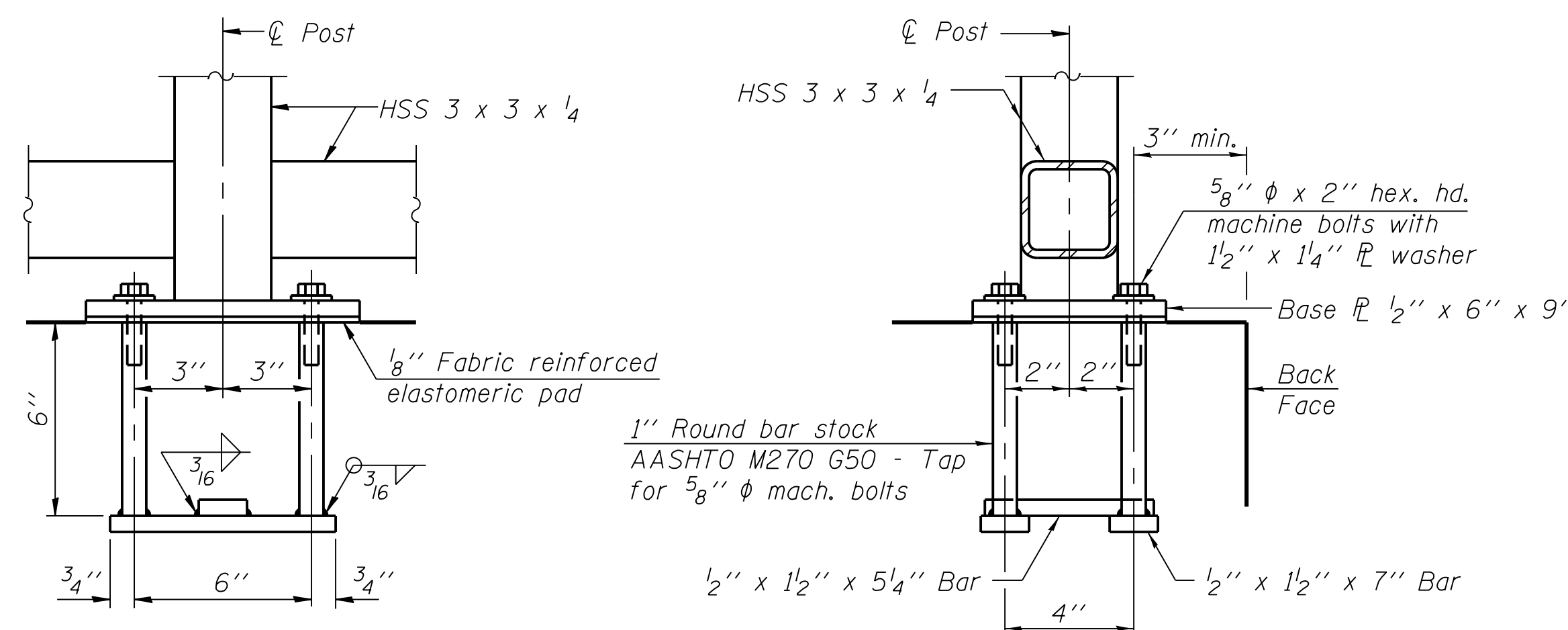
Item	Unit	Quantity
Parapet Railing	Foot	222



RAIL SPLICE

Notes:

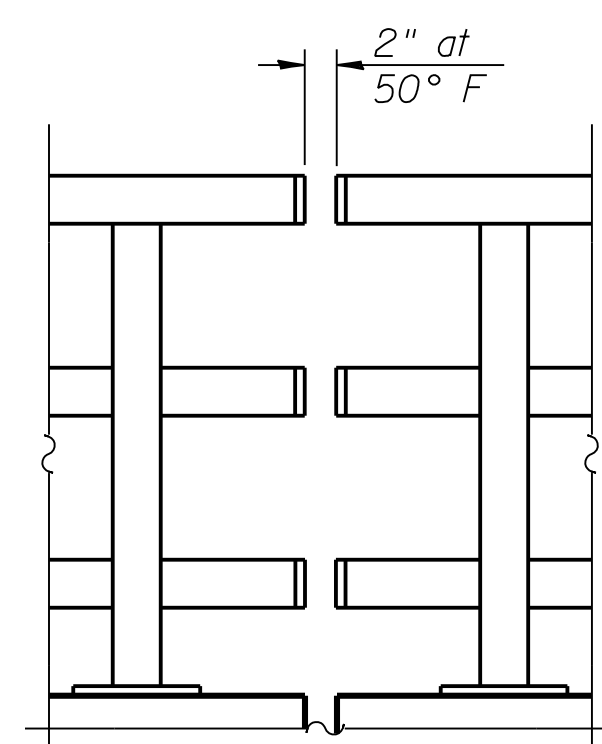
All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



**PARAPET RAILING
ELEVATION AT EXPANSION JOINT**

R-29 (MODIFIED) 11-22-2016 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -
PARSONS		CHECKED - JC	REVISED -
	PLOT SCALE =	DRAWN - SC	REVISED -
	PLOT DATE =	CHECKED - JC	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PARAPET RAILING
STRUCTURE NO. 049-C006, 049-0611 AND 049-C007**

SHEET NO. 11 OF 17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	337
CONTRACT NO. 60T75				

ILLINOIS FED. AID PROJECT

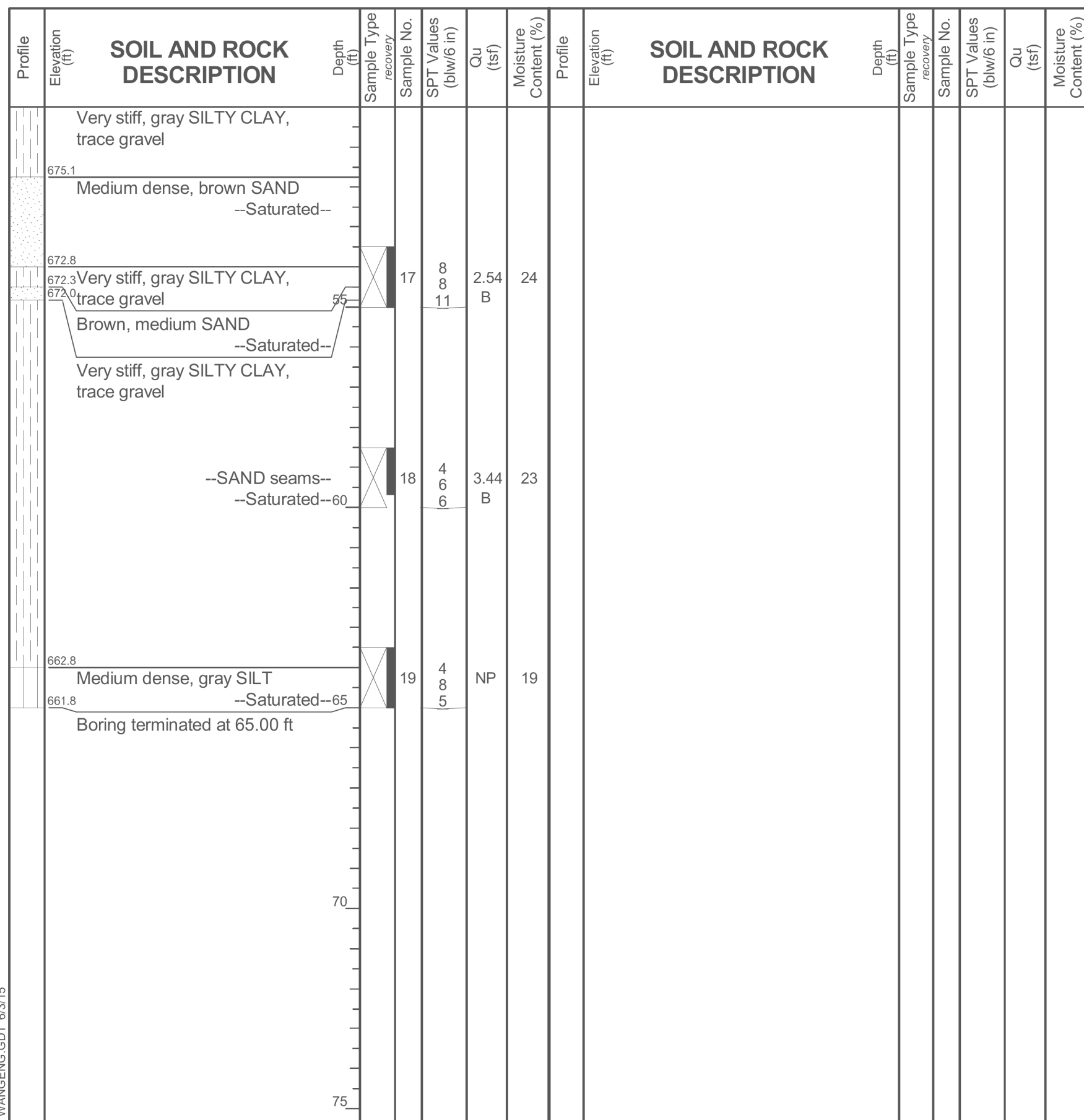
9/14/2017 9:41:54 AM 35361 p:\exp\p\02p\int01\parsons.com\illinois State\Documents\US45 - 647965\40 - Design\CAD\Bridges\Final Design\Sheets\049-0611.C006 & C007\0160775-shr-railing-001.dgn

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 Fax: 630 953-9938

BORING LOG BSB2-02
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 726.82 ft
 North: 2096719.95 ft
 East: 1072358.65 ft
 Station: 134+68.77
 Offset: 13.76' LT

Page 2 of 2



GENERAL NOTES
 Begin Drilling: 09-17-2014 Complete Drilling: 09-17-2014
 Drilling Contractor: Wang Testing Services Drill Rig: D-50 ATV
 Driller: K&K Logger: S. Woods Checked by: B. Wilson
 Drilling Method: 3.25" HSA; Boring backfilled upon completion

WATER LEVEL DATA
 While Drilling: 43.00 ft
 At Completion of Drilling: 18.00 ft
 Time After Drilling: NA
 Depth to Water: NA

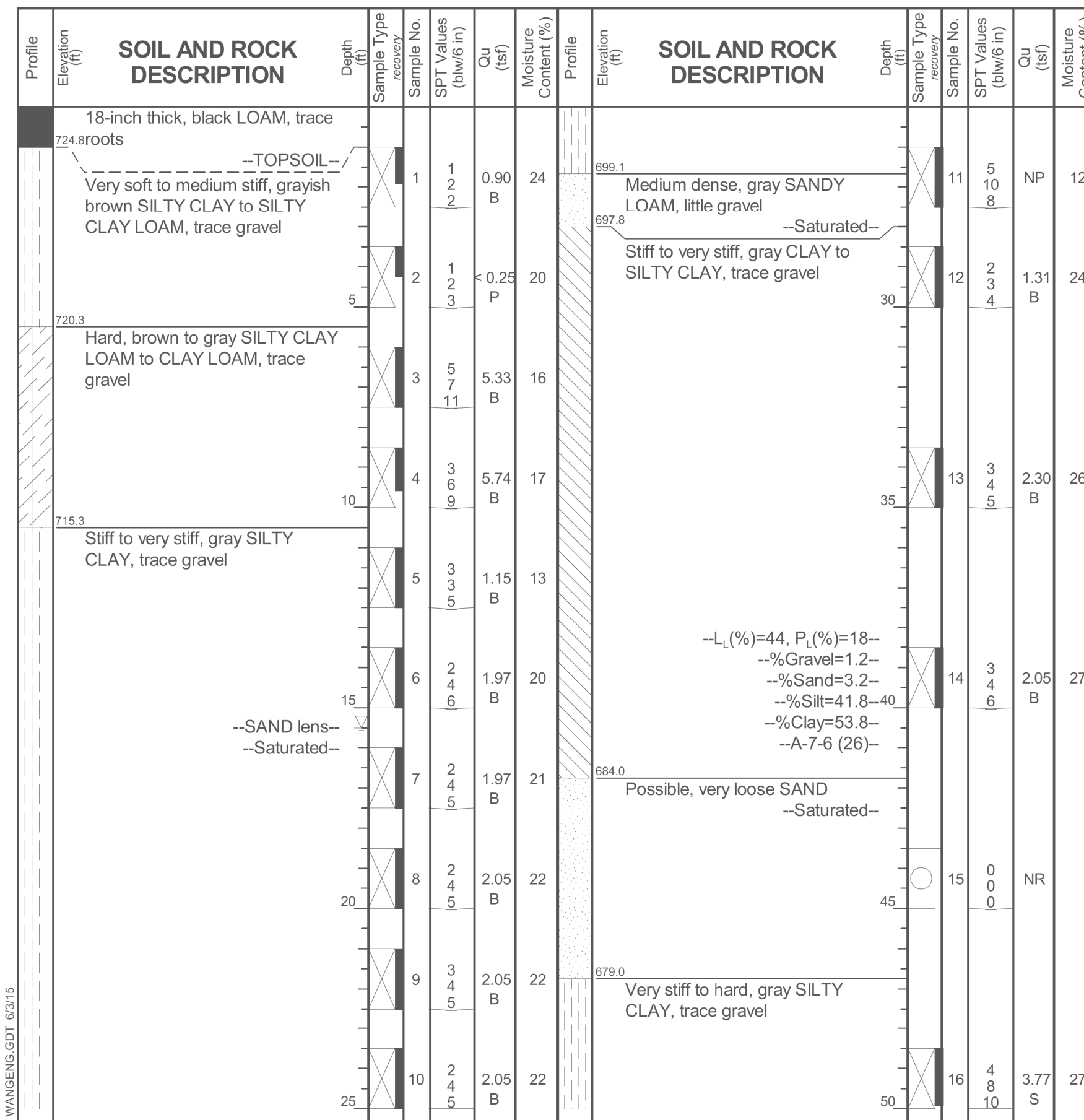
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BSB2-03
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 725.76 ft
 North: 2096751.09 ft
 East: 1072415.81 ft
 Station: 134+84.80
 Offset: 49.37' RT

Page 1 of 2



GENERAL NOTES
 Begin Drilling: 09-22-2014 Complete Drilling: 09-22-2014
 Drilling Contractor: Wang Testing Services Drill Rig: D-50 ATV
 Driller: K&K Logger: S. Woods Checked by: B. Wilson
 Drilling Method: 3.25" HSA; Boring backfilled upon completion

WATER LEVEL DATA
 While Drilling: 15.50 ft
 At Completion of Drilling: NA
 Time After Drilling: NA
 Depth to Water: NA

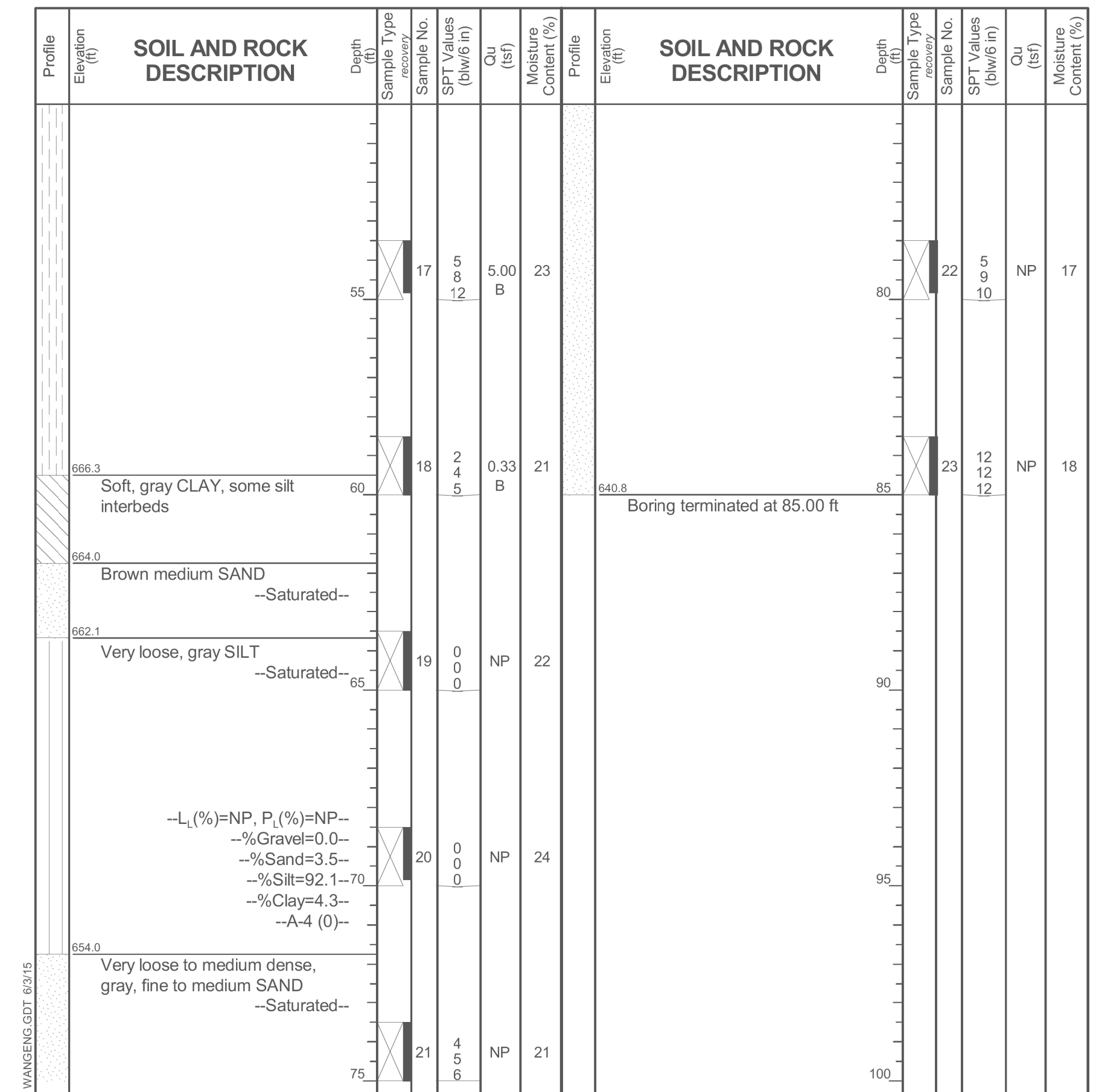
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BSB2-03
 WEI Job No.: 342-08-01
 Client: Parsons Transportation Group, Inc.
 Project: US 45 - Millburn Bypass
 Location: Lake County, Illinois

Datum: NGVD
 Elevation: 725.76 ft
 North: 2096751.09 ft
 East: 1072415.81 ft
 Station: 134+84.80
 Offset: 49.37' RT

Page 2 of 2



GENERAL NOTES
 Begin Drilling: 09-22-2014 Complete Drilling: 09-22-2014
 Drilling Contractor: Wang Testing Services Drill Rig: D-50 ATV
 Driller: K&K Logger: S. Woods Checked by: B. Wilson
 Drilling Method: 3.25" HSA; Boring backfilled upon completion

WATER LEVEL DATA
 While Drilling: 15.50 ft
 At Completion of Drilling: NA
 Time After Drilling: NA
 Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

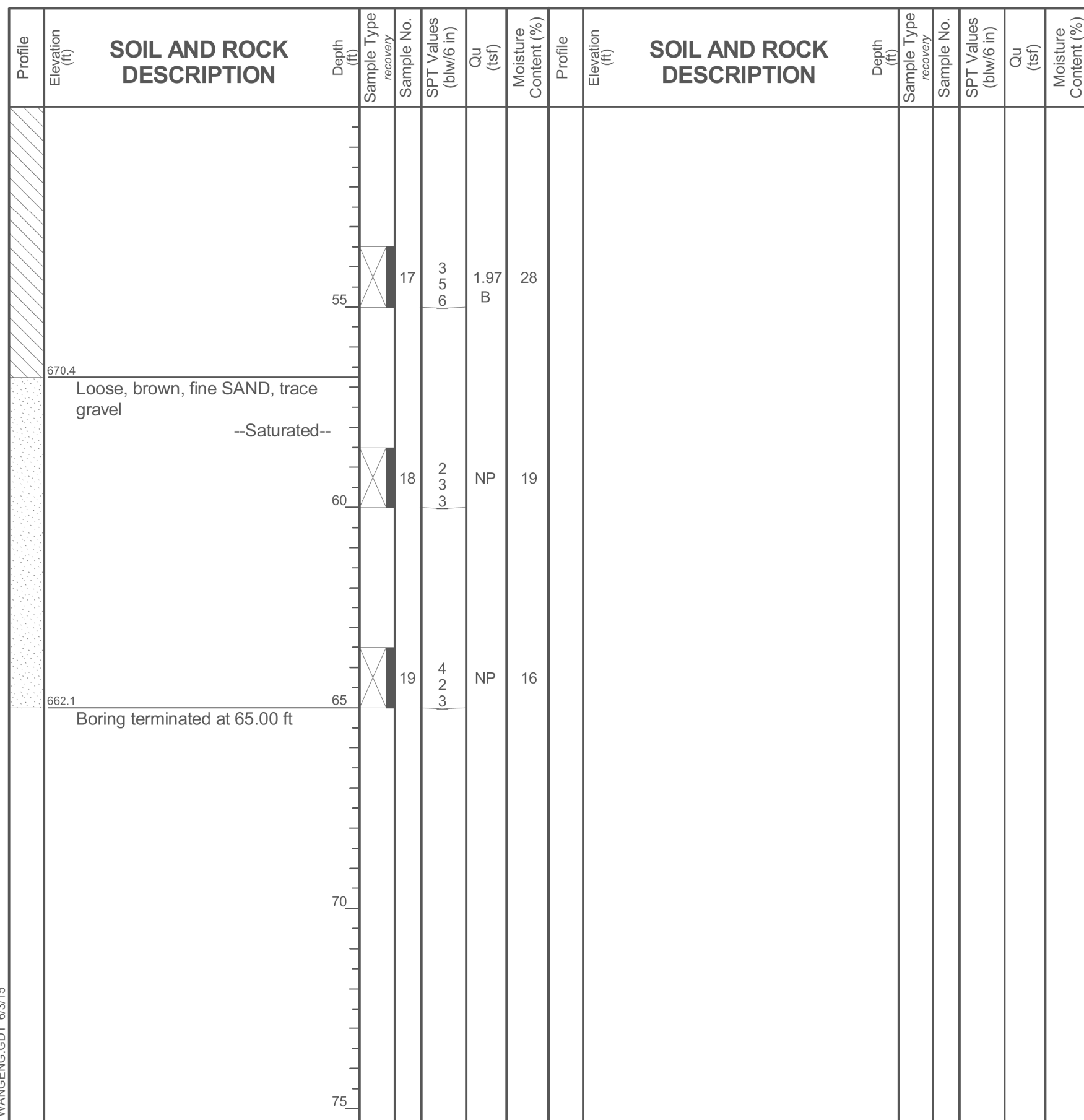
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FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOG STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE. = 344	SECTION = 39 R	COUNTY = LAKE	TOTAL SHEETS = 510	SHEET NO. = 339	
PARSONS	PLOT SCALE =	DRAWN - SC	REVISED -			CONTRACT NO. 60775					
	PLOT DATE =	CHECKED - JC	REVISED -			SHEET NO. 13 OF 17 SHEETS					
						ILLINOIS FED. AID PROJECT					

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BORING LOG BSB3-02
 WEI Job No.: 342-08-01
 Datum: NGVD
 Elevation: 727.14 ft
 North: 2096769.99 ft
 East: 1072363.56 ft
 Station: 135+16.01
 Offset: 3.12' RT

Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

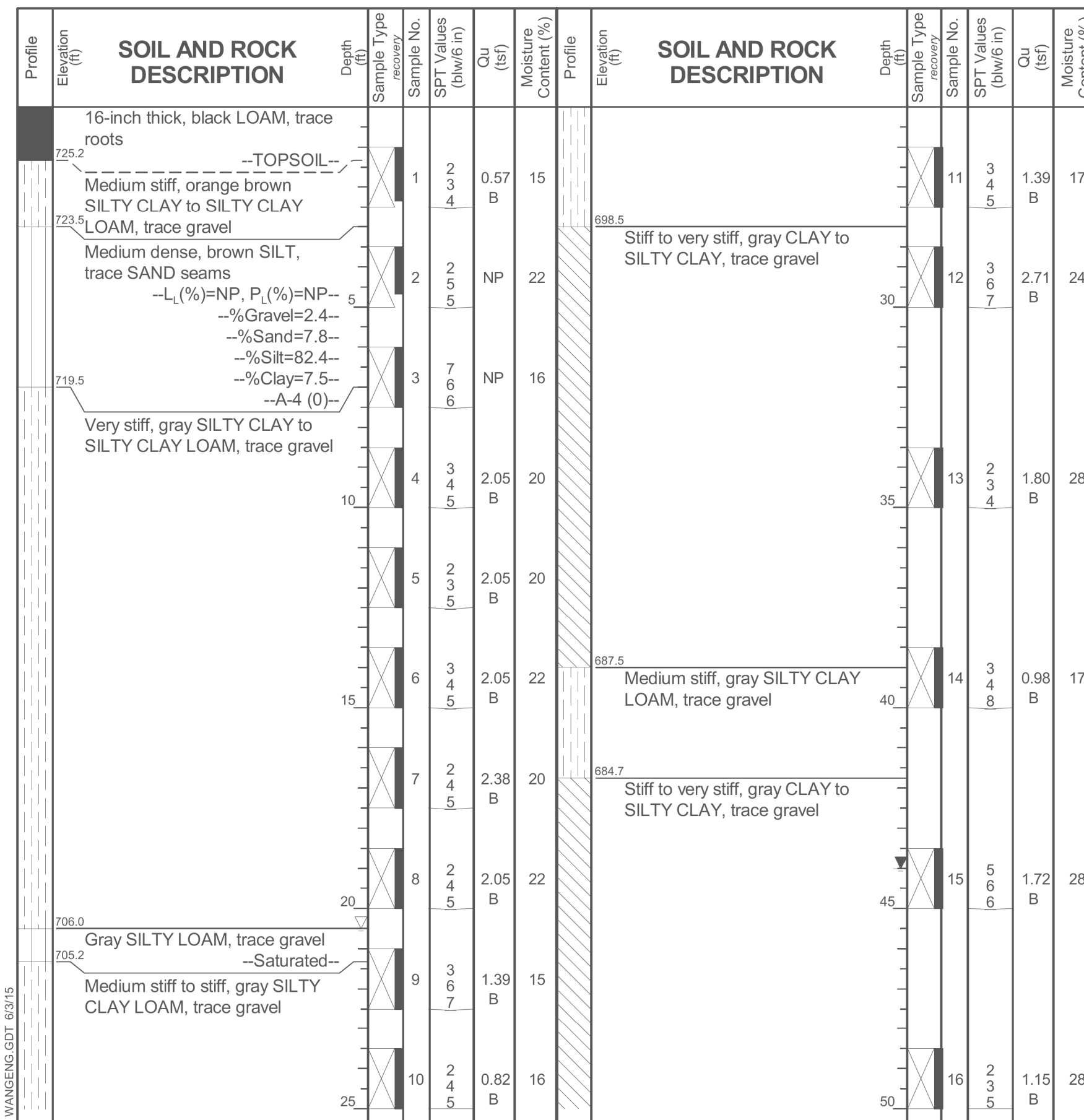


GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-19-2014	Complete Drilling	09-19-2014
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV
Driller	K&K	Logger	S. Woods
Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	3.25" HSA; Boring backfilled upon completion	Depth to Water	NA
		While Drilling	43.00 ft
		At Completion of Drilling	47.00 ft

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BORING LOG BSB3-03
 WEI Job No.: 342-08-01
 Datum: NGVD
 Elevation: 726.49 ft
 North: 2096786.33 ft
 East: 1072404.54 ft
 Station: 135+22.63
 Offset: 46.75' RT

Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**

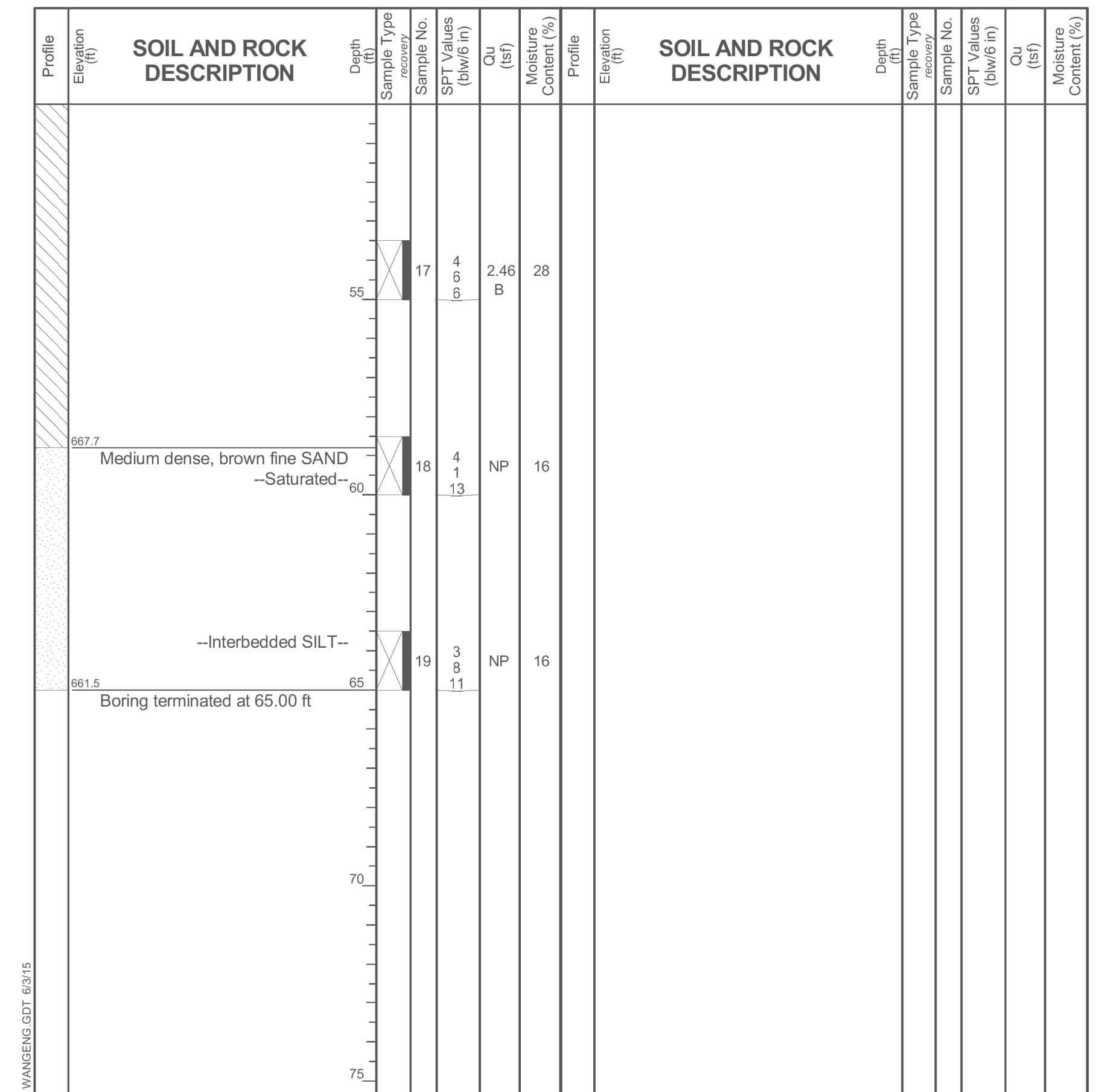


GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-23-2014	Complete Drilling	09-23-2014
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV
Driller	K&K	Logger	S. Woods
Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	3.25" HSA; Boring backfilled upon completion	Depth to Water	NA
		While Drilling	20.50 ft
		At Completion of Drilling	44.00 ft

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 Fax: 630 953-9938

BORING LOG BSB3-03
 WEI Job No.: 342-08-01
 Datum: NGVD
 Elevation: 726.49 ft
 North: 2096786.33 ft
 East: 1072404.54 ft
 Station: 135+22.63
 Offset: 46.75' RT

Client: **Parsons Transportation Group, Inc.**
 Project: **US 45 - Millburn Bypass**
 Location: **Lake County, Illinois**



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-23-2014	Complete Drilling	09-23-2014
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV
Driller	K&K	Logger	S. Woods
Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	3.25" HSA; Boring backfilled upon completion	Depth to Water	NA
		While Drilling	20.50 ft
		At Completion of Drilling	44.00 ft

9/14/2017 9:44:11 AM 35361 p:\expl\02p\int01\parsons.com\illinois State Documents\US45 - 647965\10 - Design\CAD\Boring\Boring\Final Design\Sheets\049-0611, C006 & C007\0160775-shr-boring-log-02.dgn

FILE NAME =	USER NAME =	DESIGNED - JZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOG STRUCTURE NO. 049-C006, 049-0611 AND 049-C007	F.A.P. RTE. = 344	SECTION = 39 R	COUNTY = LAKE	TOTAL SHEETS = 510	SHEET NO. = 341	
PARSONS	PLOT SCALE =	DRAWN - SC	REVISED -			CONTRACT NO. 60T75					
	PLOT DATE =	CHECKED - JC	REVISED -			SHEET NO. 15 OF 17 SHEETS					
ILLINOIS FED. AID PROJECT											

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)
726.1	12-inch thick, black LOAM --TOPSOIL-- Stiff, grayish brown to brown SILTY CLAY to SILTY CLAY LOAM, trace gravel	1	1	1	1.64	24									
723.1	Loose, grayish brown SILT to SILTY LOAM	2	2	1	NP	21									
721.6	Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	3	3	3	3.20	13									
		4	4	4	4.02	16									
		5	5	3	1.97	22									
		6	6	3	1.23	16									
		7	7	3	1.72	24									
		8	8	3	2.38	22									
	--Possible SAND lens-- --Saturated--	9	9	3	1.64	26									
702.1	Boring terminated at 25.00 ft	10	10	3	1.64	28									

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-17-2014	Complete Drilling	09-17-2014	While Drilling	▽	21.00 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	17.00 ft	
Driller	K&K	Logger	S. Woods	Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	2.25" HSA; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)
728.1	18-inch thick, black LOAM, trace roots --TOPSOIL-- Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	1	1	5	3.50	18									
		2	2	4	3.53	18									
		3	3	6	5.33	19									
		4	4	3	4.10	20									
		5	5	4	2.62	23									
		6	6	2	2.05	15									
		7	7	3	2.30	25									
710.2	Gray SILT --Saturated--	8	8	2	NP	17									
707.8	Very stiff, gray SILTY CLAY, trace gravel	9	9	7	1.64	21									
704.6	Boring terminated at 25.00 ft	10	10	2	2.71	26									

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-19-2014	Complete Drilling	09-19-2014	While Drilling	▽	19.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	DRY	
Driller	K&K	Logger	S. Woods	Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	3.25" HSA; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)
725.3	16-inch thick, black LOAM, trace roots --TOPSOIL-- Medium stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	1	1	3	2.95	18									
		2	2	4	4.92	18									
		3	3	3	3.77	15									
		4	4	4	2.46	14									
		5	5	3	0.82	14									
		6	6	3	1.23	17									
		7	7	2	1.97	22									
		8	8	4	1.23	19									
706.6	Boring terminated at 20.00 ft														

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-23-2014	Complete Drilling	09-23-2014	While Drilling	▽	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 ATV	At Completion of Drilling	▽	DRY	
Driller	K&K	Logger	S. Woods	Checked by	B. Wilson	Time After Drilling	NA
Drilling Method	3.25" HSA; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG RWB4-02

Page 1 of 1

WEI Job No.: 342-08-01

Client: **Parsons Transportation Group, Inc.**
Project: **US 45 - Millburn Bypass**
Location: **Lake County, Illinois**

Datum: NGVD
Elevation: 727.67 ft
North: 2096838.41 ft
East: 1072392.87 ft
Station: 135+77.29
Offset: 46.46' RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (ksf)	Moisture Content (%)
726.2	18-inch thick, black LOAM, trace roots --TOPSOIL-- Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	0		1	4 5 8	2.50 P	26								
		5		2	5 5 7	5.58 B	18								
		10		3	3 5 5	2.38 B	16								
		15		4	3 4 6	NR									
		20		5	4 4 6	3.69 B	20								
		25		6	2 4 6	3.28 B	20								
		30		7	3 4 5	2.46 B	21								
		35		8	3 4 7	2.54 B	21								
707.7	Boring terminated at 20.00 ft	20													

GENERAL NOTES

Begin Drilling: 09-23-2014 Complete Drilling: 09-23-2014
Drilling Contractor: Wang Testing Services Drill Rig: D-50 ATV
Driller: K&K Logger: S. Woods Checked by: B. Wilson
Drilling Method: 3.25" HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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FILE NAME = **PARSONS**

USER NAME =
PLOT SCALE =
PLOT DATE =

DESIGNED - JZ
CHECKED - JC
DRAWN - SC
CHECKED - JC

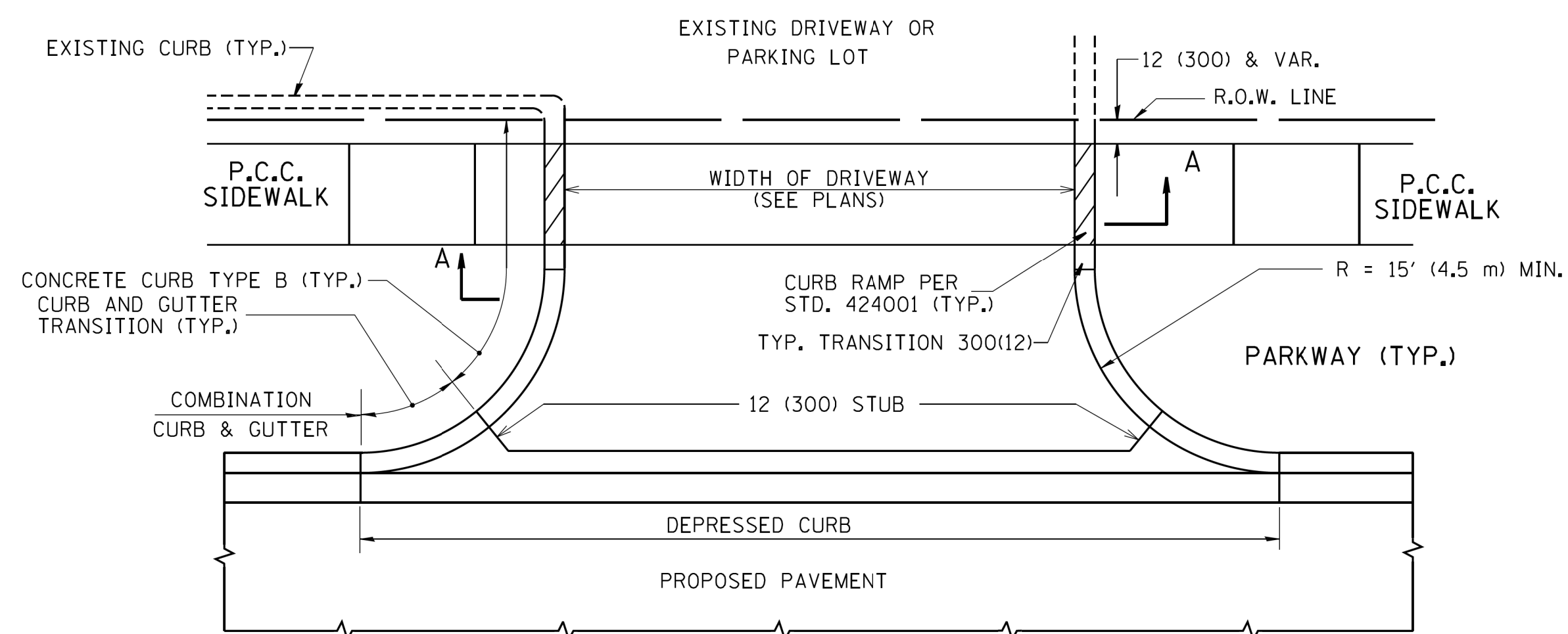
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

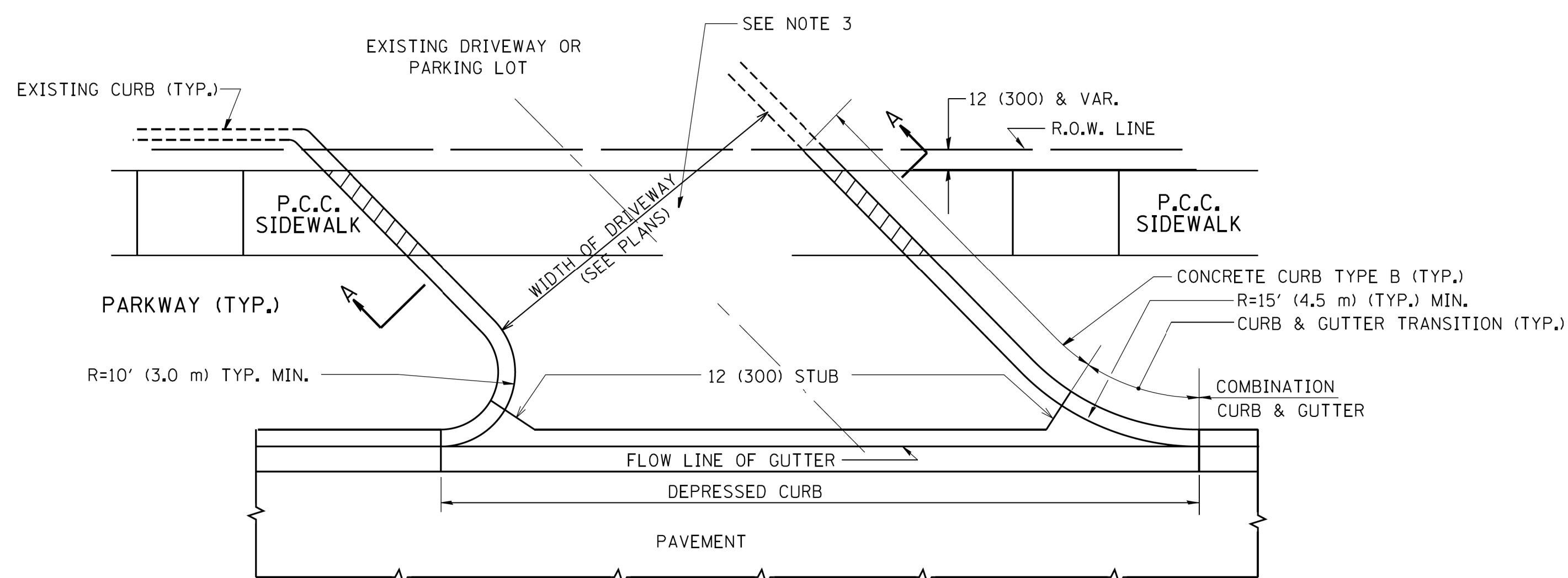
**BORING LOG
STRUCTURE NO. 049-C006, 049-0611 AND 049-C007**

SHEET NO. 17 OF 17 SHEETS

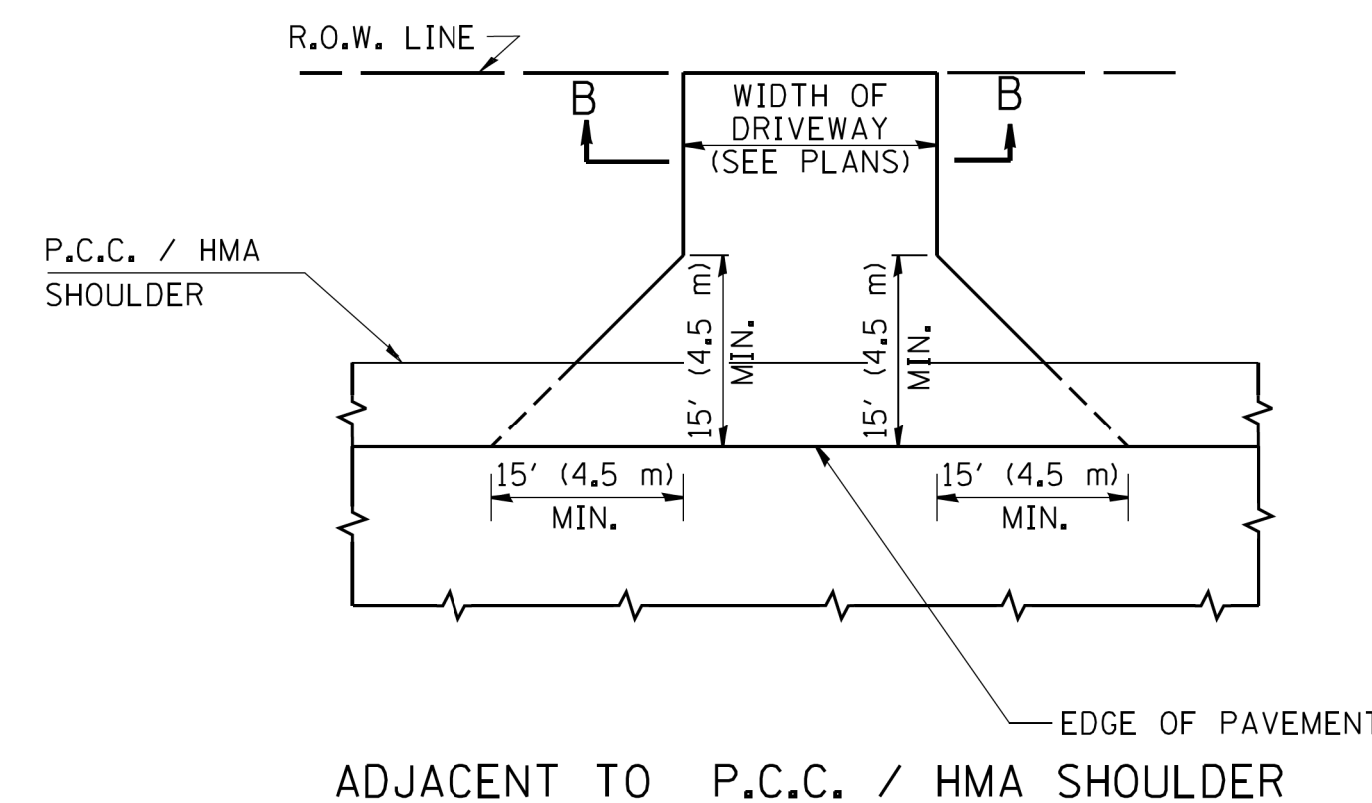
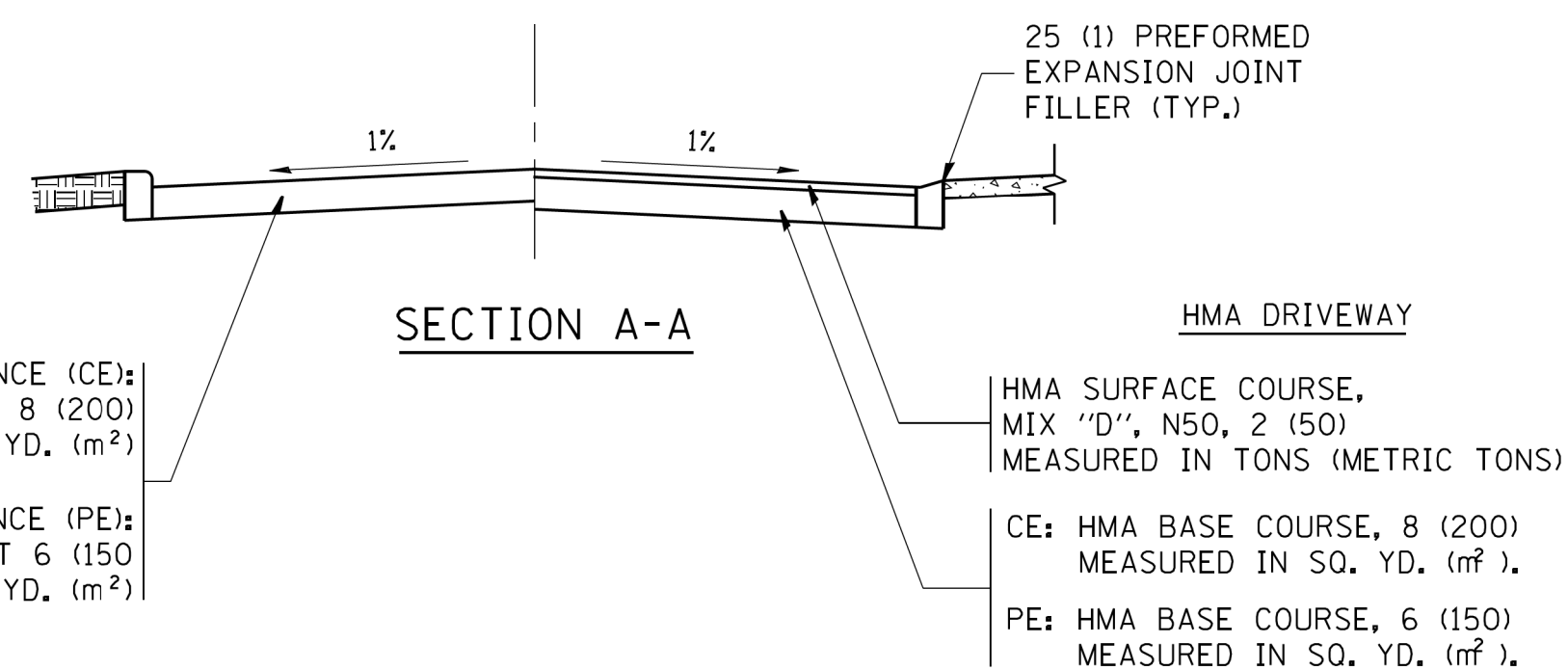
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	343
CONTRACT NO. 60T75				
ILLINOIS FED. AID PROJECT				



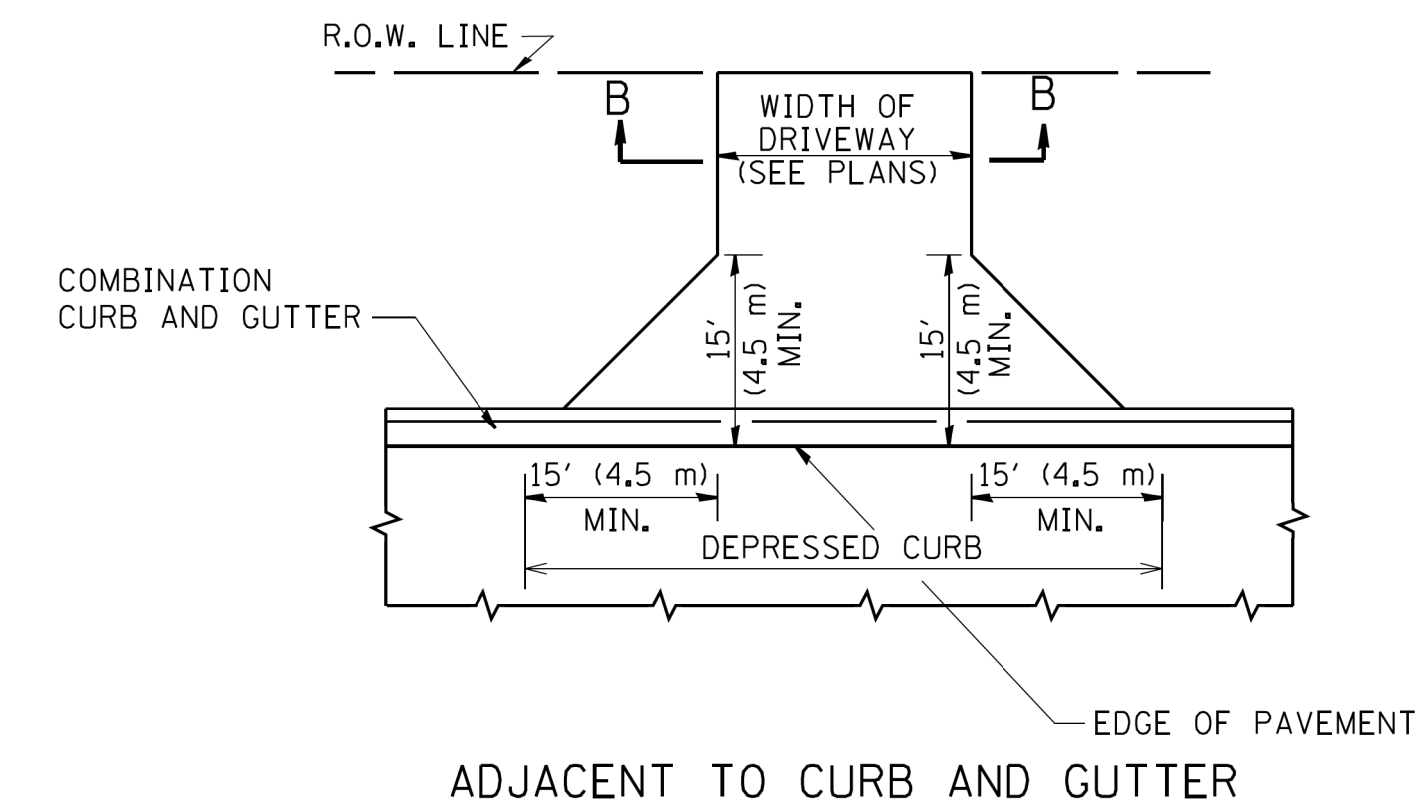
WITH CONCRETE CURB, TYPE B



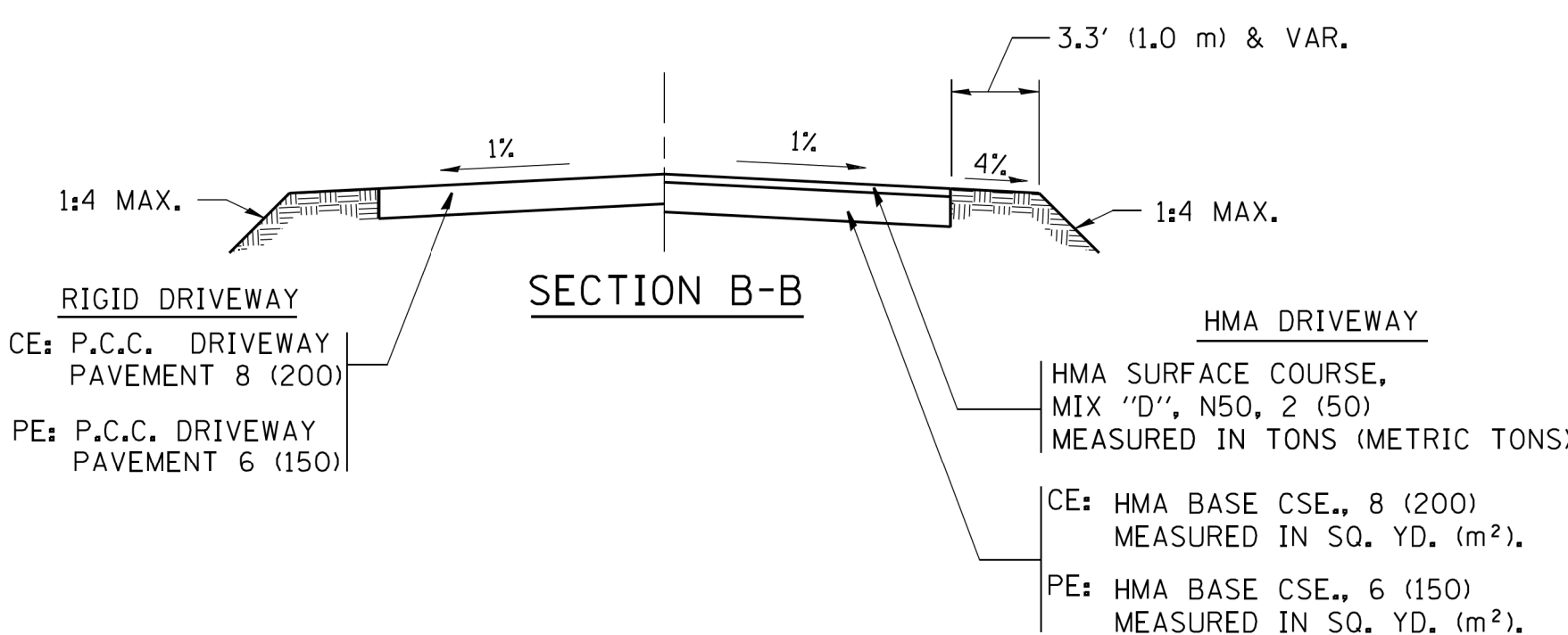
WITH CONCRETE CURB, TYPE B



ADJACENT TO P.C.C. / HMA SHOULDER



ADJACENT TO CURB AND GUTTER



SECTION B-B

RURAL FIELD ENTRANCE (FE)

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

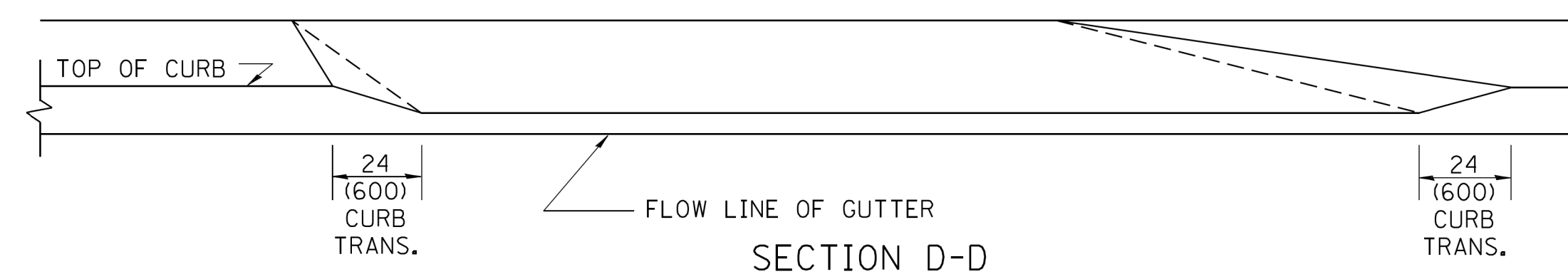
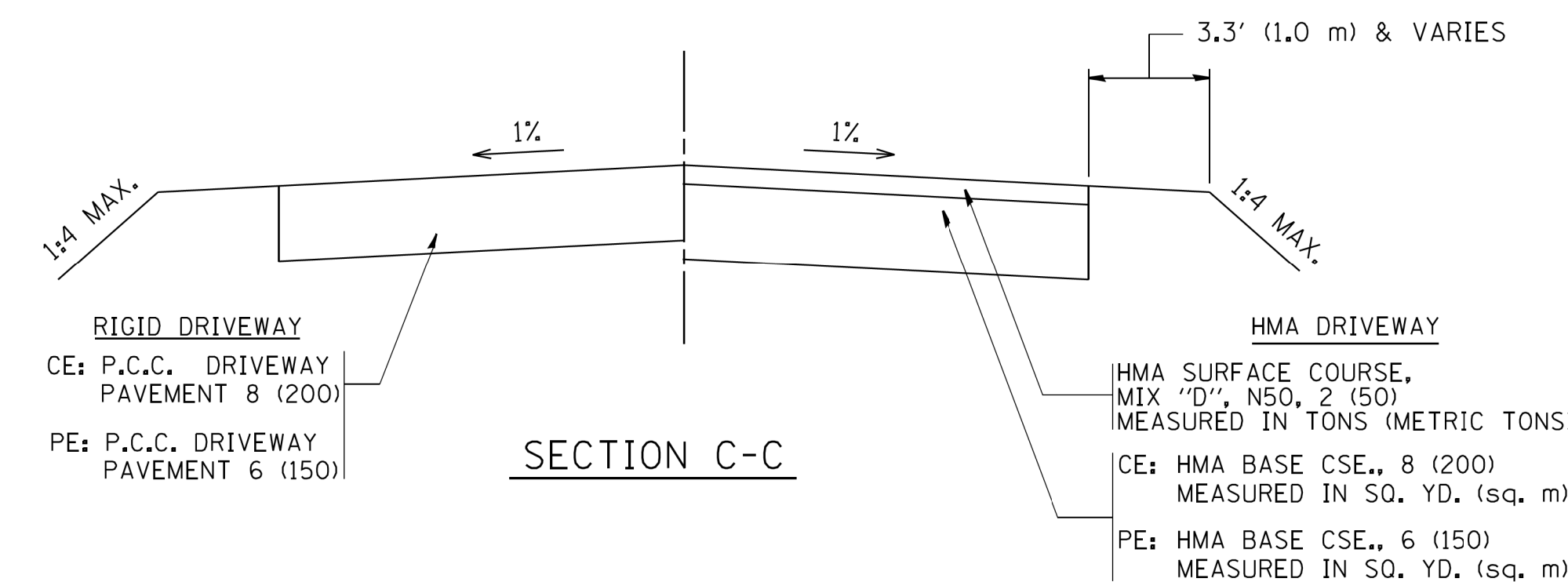
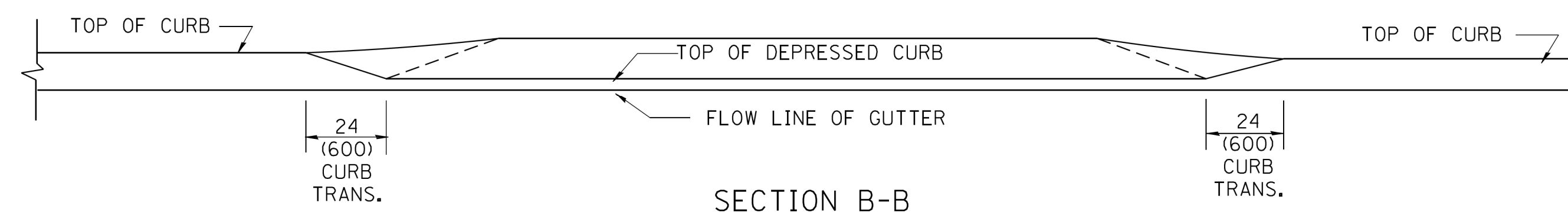
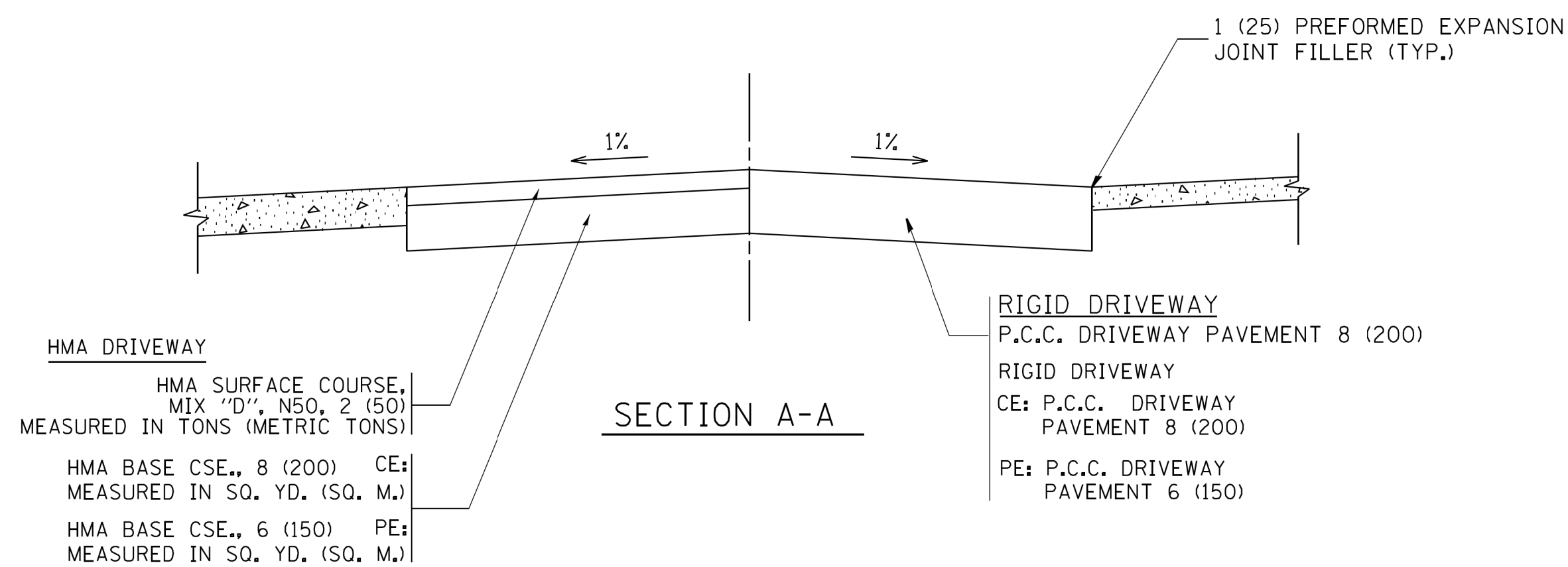
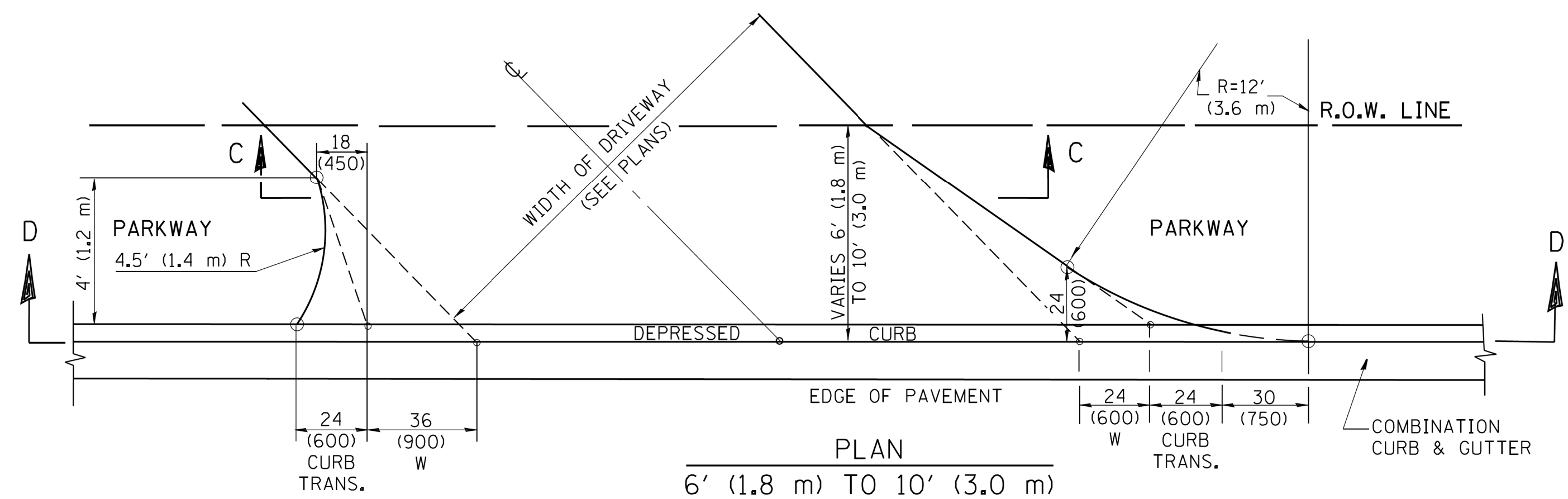
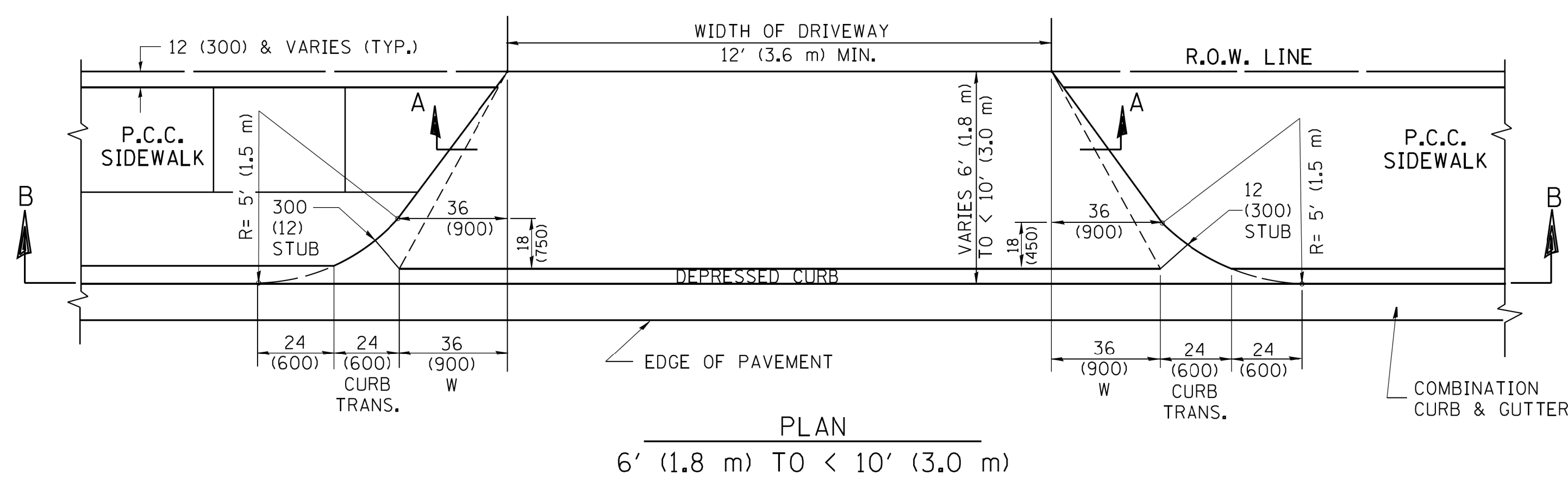
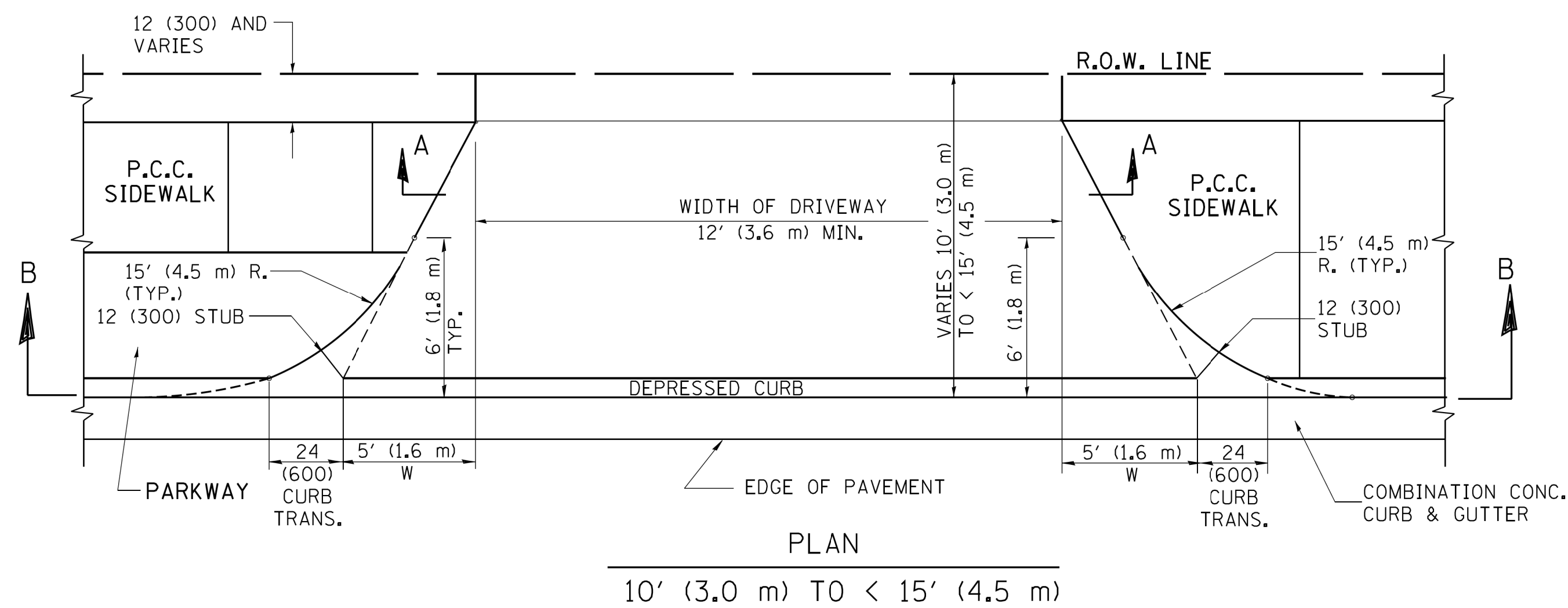
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et:\pwork\p\dot\leysa\0108315\bd01.dgn		DRAWN -	REVISED - R. BORO 01-01-07
	PLOT SCALE = 50.0000' / 1"	CHECKED -	REVISED - R. BORO 06-11-08
	PLOT DATE = 9/6/2011	DATE - 11-04-95	REVISED - R. BORO 09-06-11

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DRIVEWAY DETAILS - DISTANCE BETWEEN R.O.W.
AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	BD0156-07 (BD-01)		510	344
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO.	



GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATION 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 8' (2.4 m), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

THE 1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 36 (900) TO 5' (1.5 m) PROPORTIONAL TO THE LENGTH (L), FROM 6' (1.8 m) TO 10' (3 m).

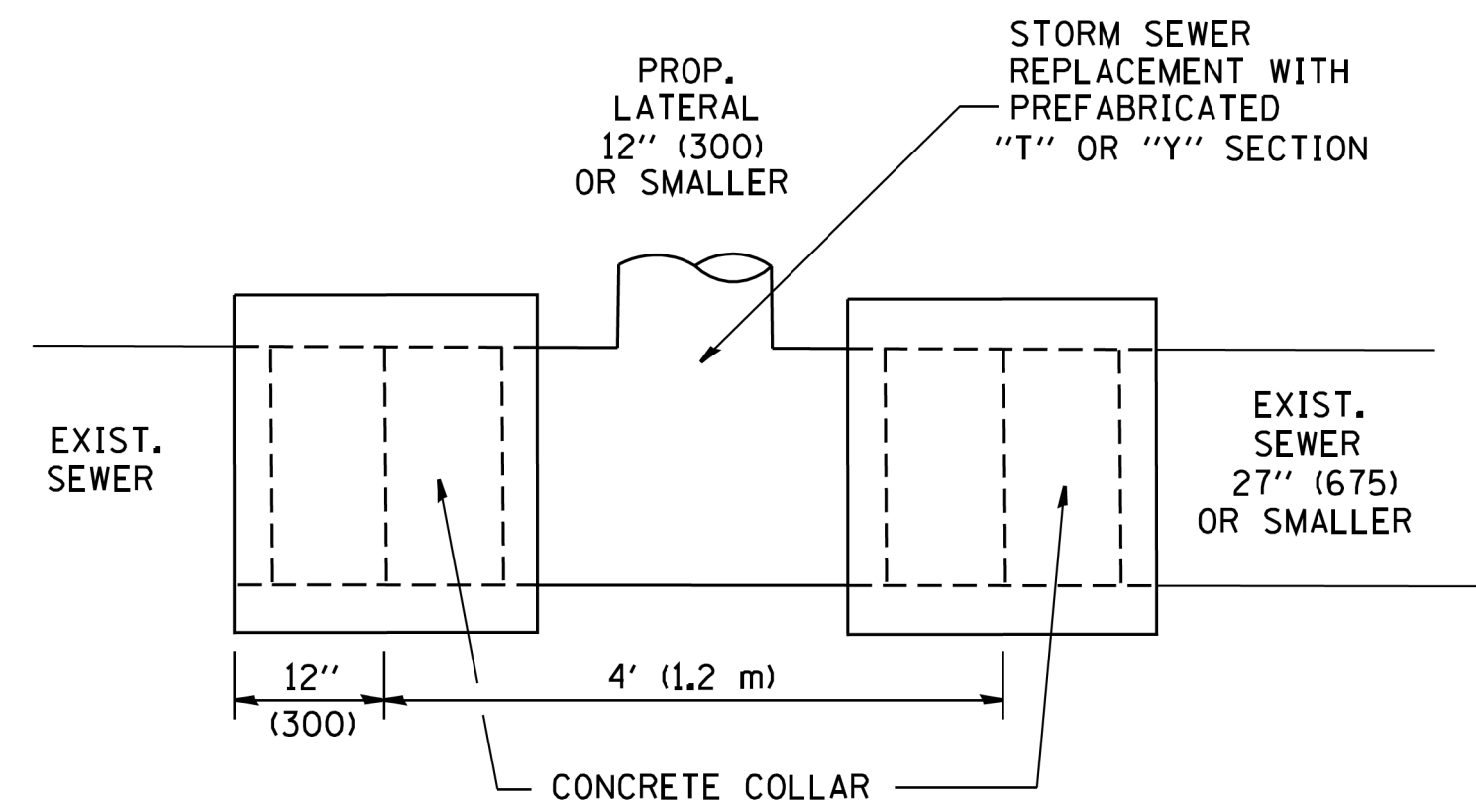
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED.

FILE NAME =	USER NAME = lrysa	DESIGNED - R. SHAH	REVISED - M. GOMEZ 04-06-01
et:\pwwork\pwwork\lrysa\d0108315\bd02.dgn		DRAWN -	REVISED - P. LOFLEUR 04-15-03
	PLOT SCALE = 50.0000' / 1"	CHECKED -	REVISED - R. BORO 01-01-07
	PLOT DATE = 10/28/2011	DATE - 11-06-95	REVISED - R. BORO 09-06-11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

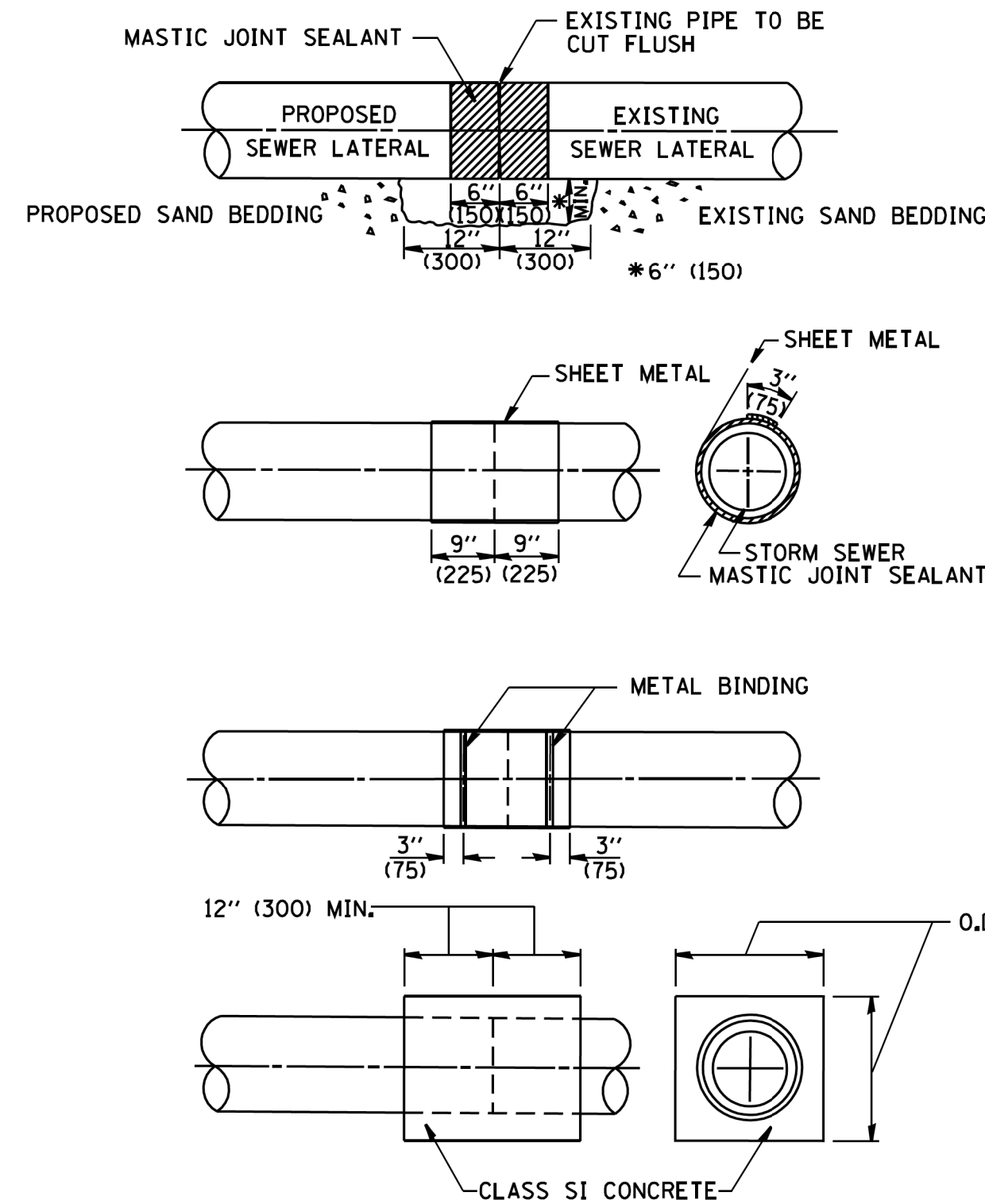
DRIVEWAY DETAILS			
DISTANCE BETWEEN ROW AND FACE OF CURB < 15' (4.5 m)			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	BD400-02 (BD-02)		510	345
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO.	



DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER

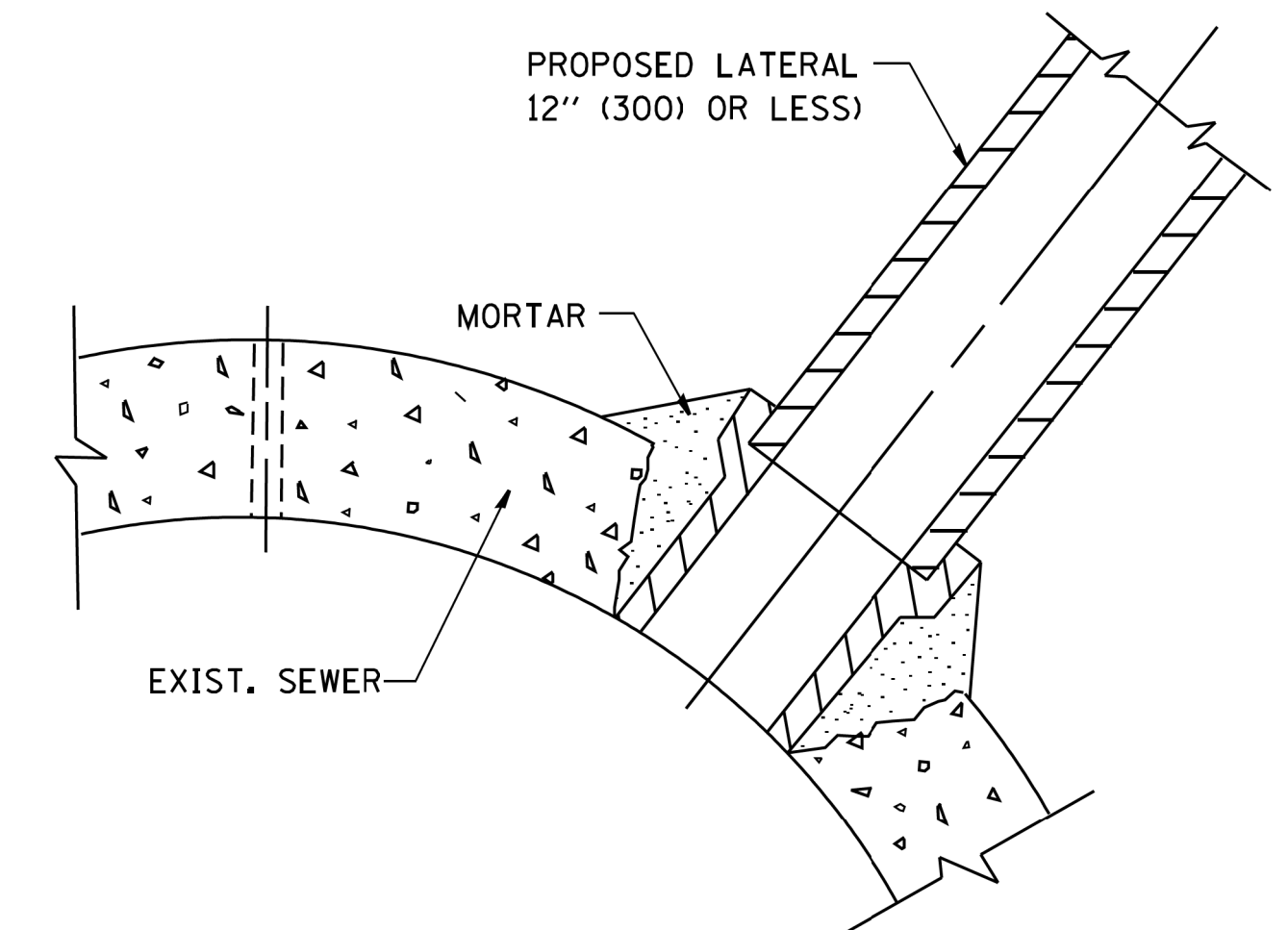


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12" x 6" (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

- THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.
- CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS. THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

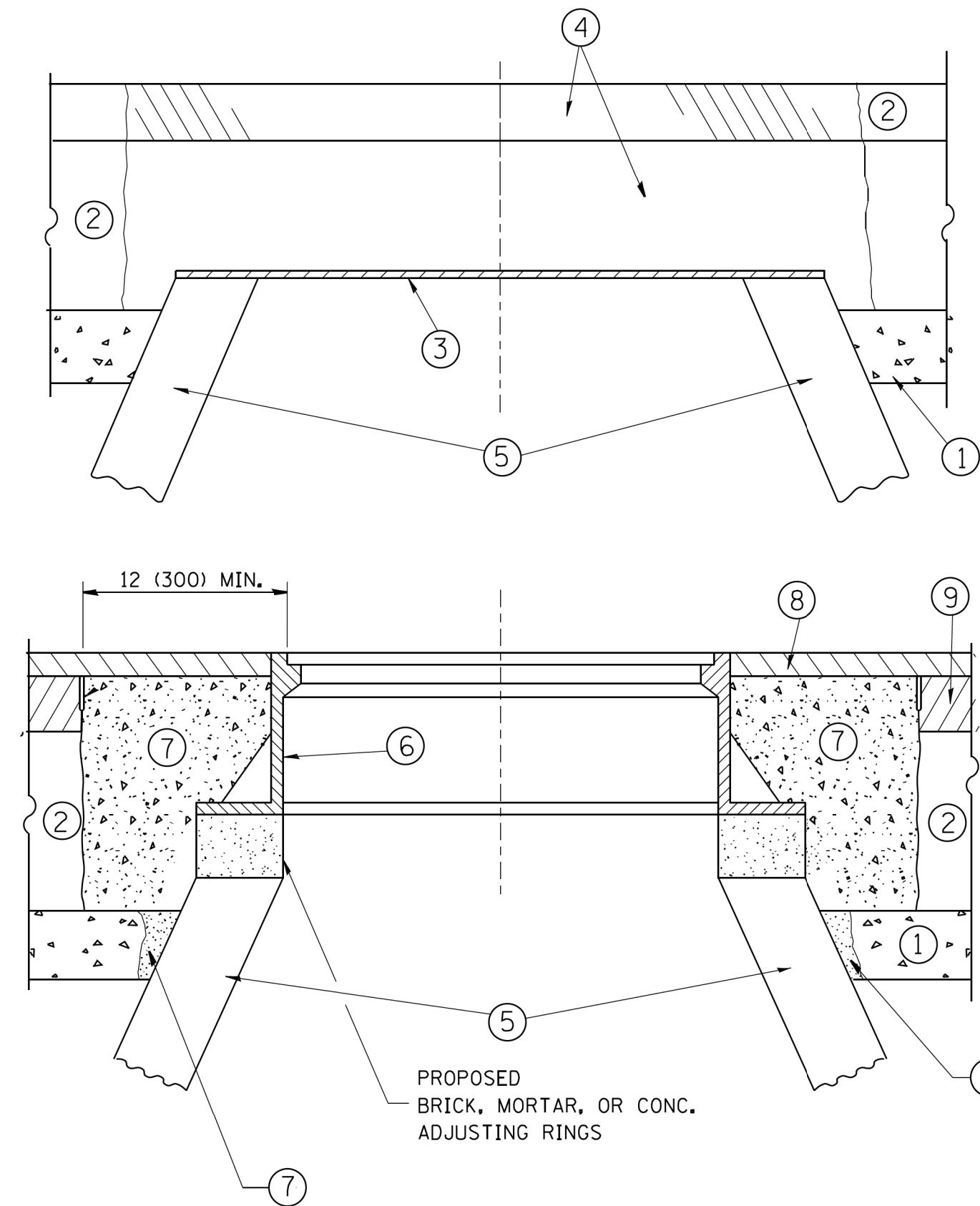
REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

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

FILE NAME = W:\dststd\22x34\bd07.dgn	USER NAME = geglionbt	DESIGNED - M. DE YONG	REVISED - M. DE YONG 05-08-92	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. SHAH 09-09-94		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	510	346		
		PLOT SCALE = 50.000' / IN.	REVISED - R. SHAH 10-25-94					BD500-01 (BD-7)		CONTRACT NO.		
		PLOT DATE = 1/4/2008	REVISED - R. SHAH 06-12-96		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							



CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

- A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.
- B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.
- C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.
- D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 1/2 (40) THICK HMA SURFACE MIX APPROVED BY THE ENGINEER.

STAGE 2 (AFTER PAVEMENT MILLING)

- A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.
- B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.
- C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS PP-1* CONCRETE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

* UNLESS OTHERWISE SPECIFIED IN THE PLANS.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS EXCEPT THAT "THE CONTRACTOR SHALL ADJUST THE STRUCTURES TO THE FINISHED PAVEMENT ELEVATION NO MORE THAN 5 CALENDAR DAYS PRIOR TO PLACEMENT OF THE FINAL LIFT OF SURFACE UNLESS APPROVED BY THE ENGINEER."

LEGEND

- ① SUB-BASE GRANULAR MATERIAL
- ② EXISTING PAVEMENT
- ③ 36 (900) DIAMETER METAL PLATE
- ④ PROPOSED CRUSHED STONE AND HMA SURFACE MIX
- ⑤ EXISTING STRUCTURE
- ⑥ FRAME AND LID (SEE NOTES)
- ⑦ CLASS PP-1* CONCRETE
- ⑧ PROPOSED HMA SURFACE COURSE
- ⑨ PROPOSED HMA BINDER COURSE

LOCATION OF STRUCTURES:

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT:

REMOVING FRAMES AND LIDS ON DRAINAGE AND UTILITY STRUCTURES IN THE PAVEMENT PRIOR TO MILLING, AND ADJUSTING TO FINAL GRADE PRIOR TO PLACING THE SURFACE COURSE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)."

THIS WORK WILL NOT BE PAID FOR WHEN DRAINAGE AND UTILITY STRUCTURES ARE SPECIFIED FOR PAYMENT AS STRUCTURE RECONSTRUCTION.

NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

NOTES:

EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

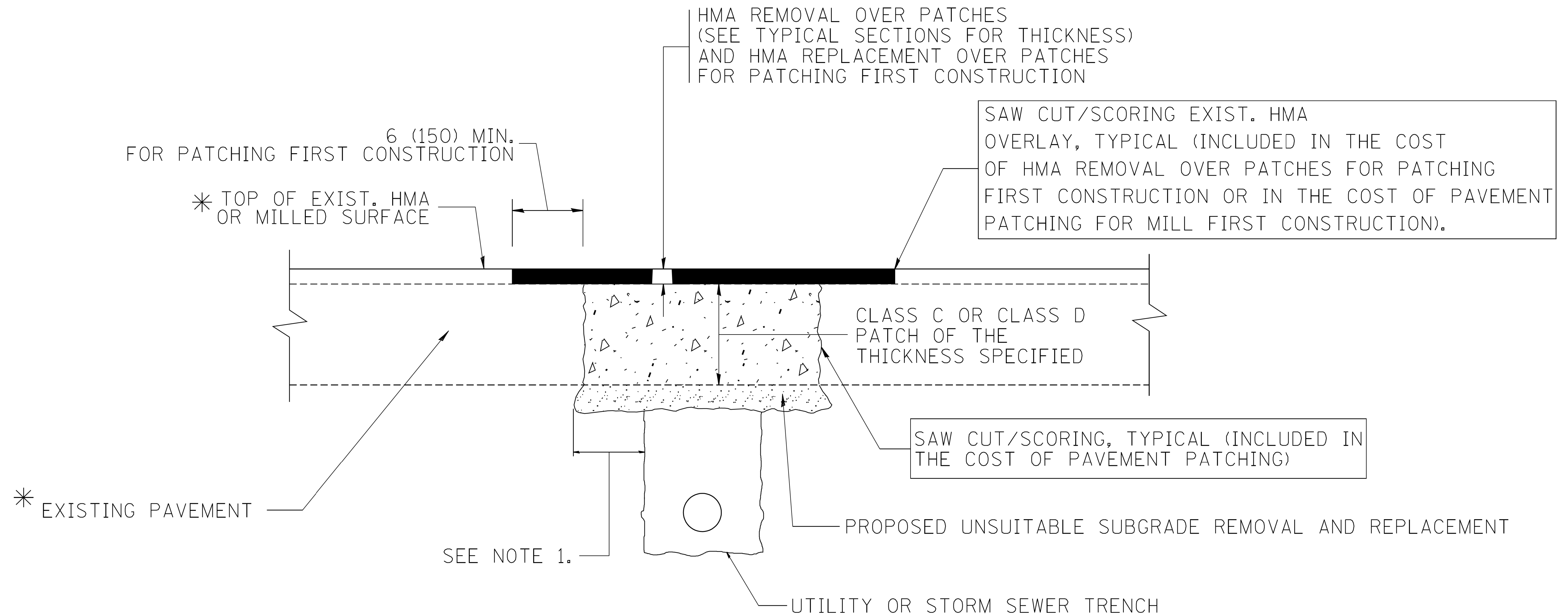
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	USER NAME = bauerdl	DESIGNED - R. SHAH	REVISED - R. WIEDEMAN 05-14-04
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	PLOT SCALE = 1/648.5000 "/ m	CHECKED -	REVISED - R. BORO 03-09-11
	PLOT DATE = 12/6/2011	DATE - 10-25-94	REVISED - R. BORO 12-06-11

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	347
BD600-03 (BD-8)		CONTRACT NO.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

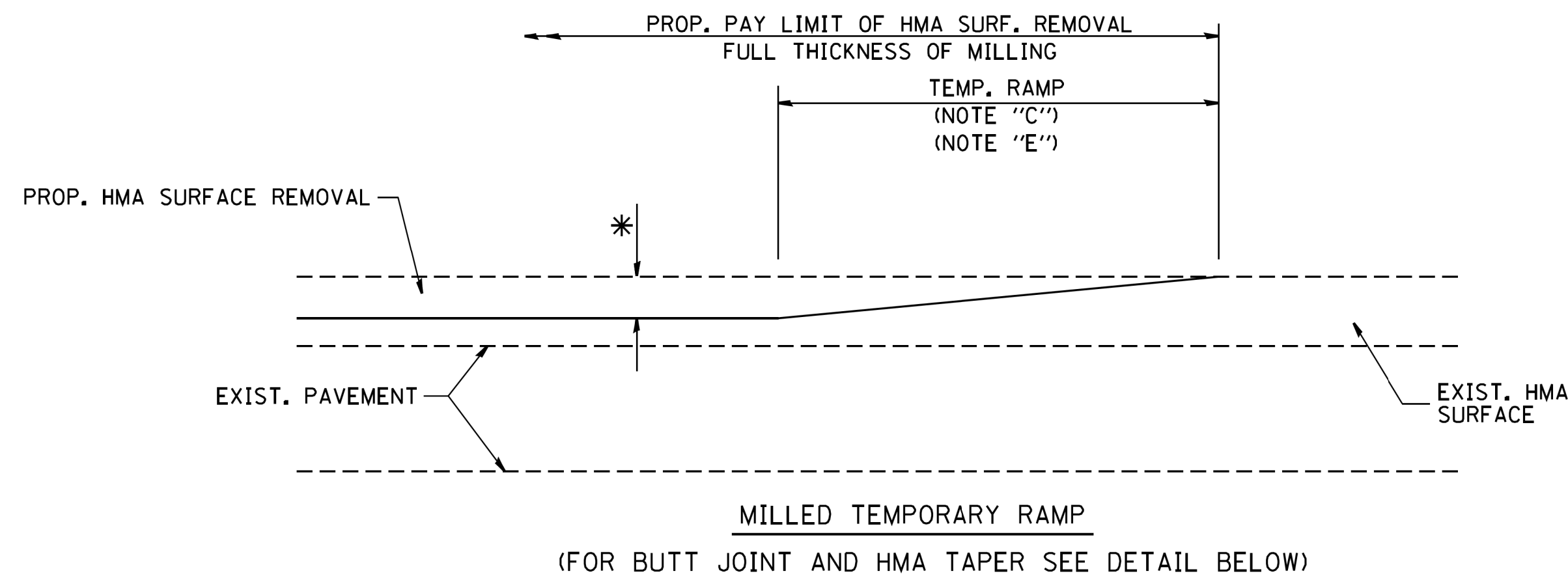
1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

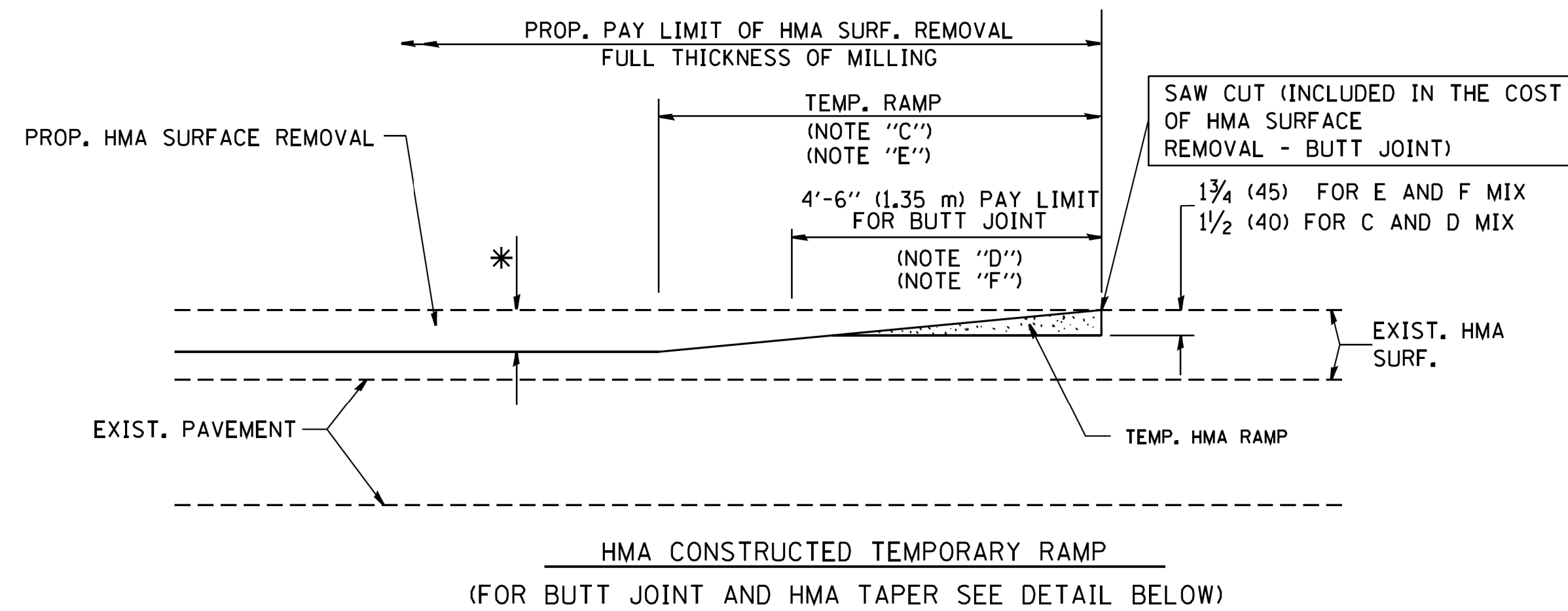
1. MILL HMA FIRST IF THERE IS AT LEAST 4 1/2 INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

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

FILE NAME = c:\projects\dststd22x34\bd22.dgn	USER NAME = bauerdl	DESIGNED - R. SHAH	REVISED - -A. ABBAS 04-27-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. BORO 01-01-07								510	348
		PLOT SCALE = 50.000' / IN.	REVISED - R. BORO 09-04-07		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
		PLOT DATE = 10/27/2008	REVISED - K. ENG 10-27-08					BD400-04 (BD-22)		CONTRACT NO.		

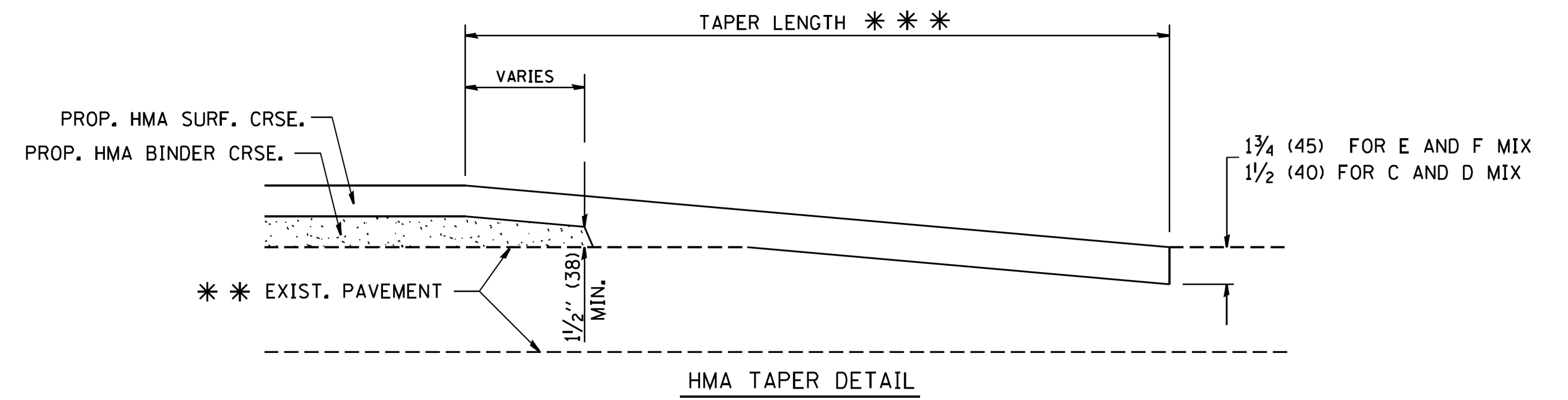
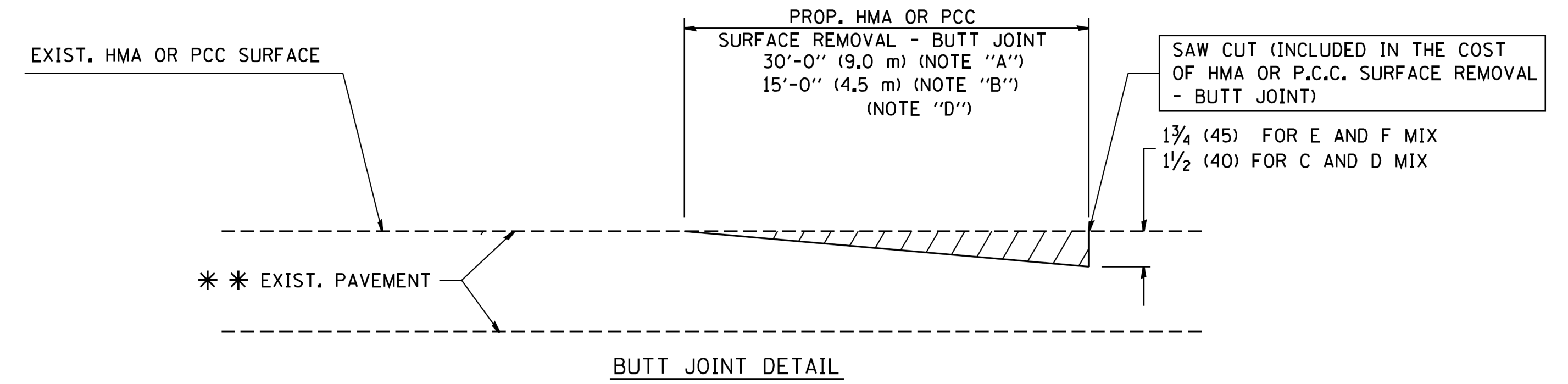


OPTION 1



OPTION 2

TYPICAL TEMPORARY RAMP



TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

* * PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

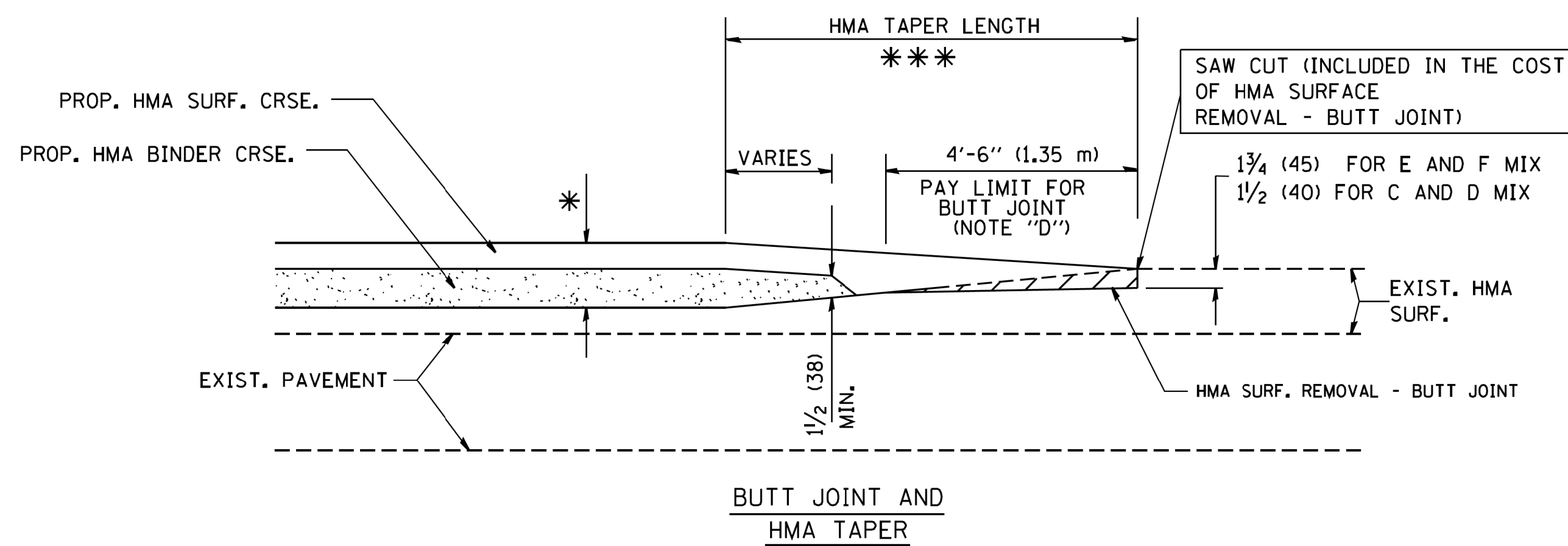
NOTES

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
 - B: MINOR SIDE ROADS.
 - C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
 - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
 - E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
 - F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
 - G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".
- * SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- * * * 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

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



TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING

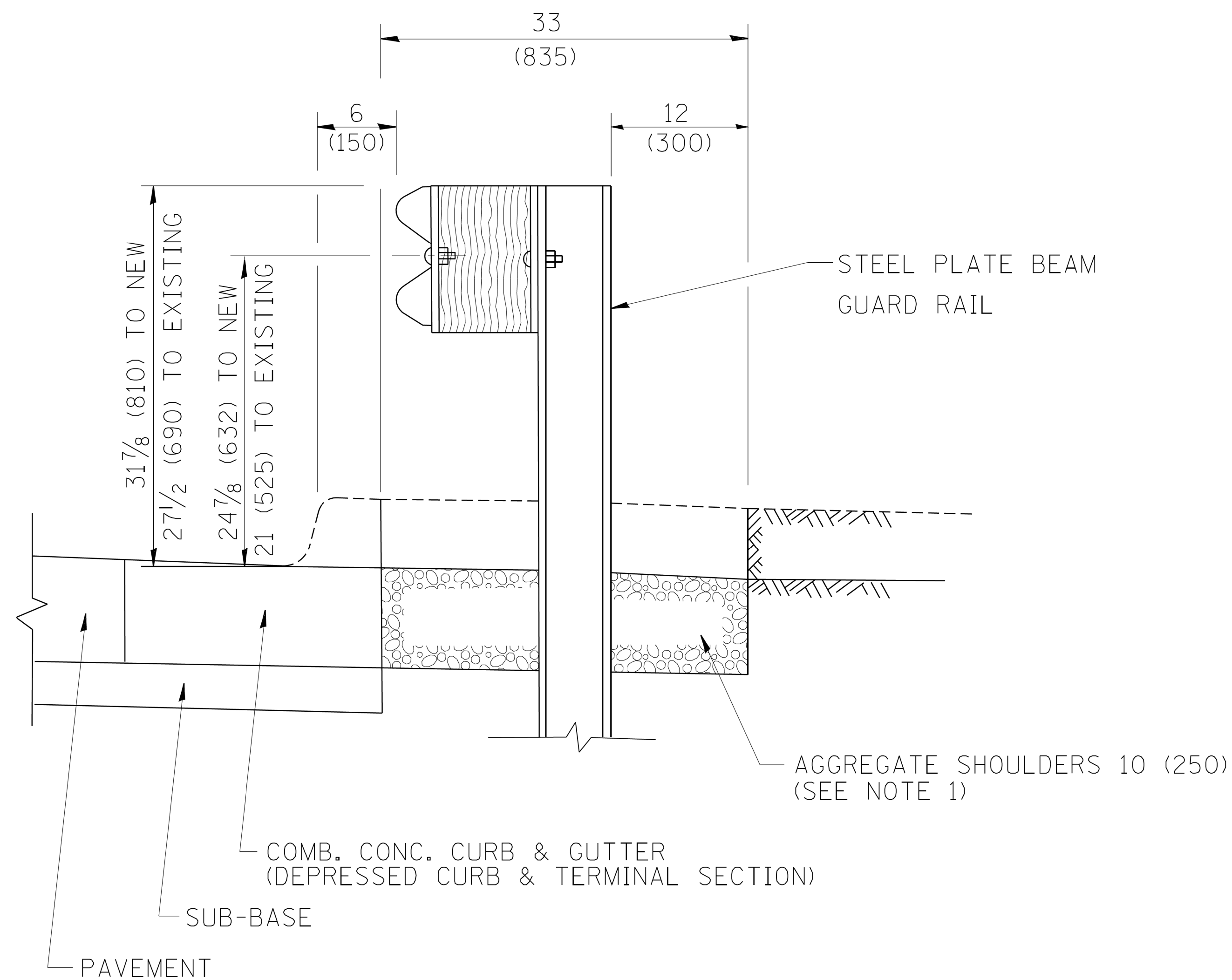
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	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BUTT JOINT AND
HMA TAPER DETAILS**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

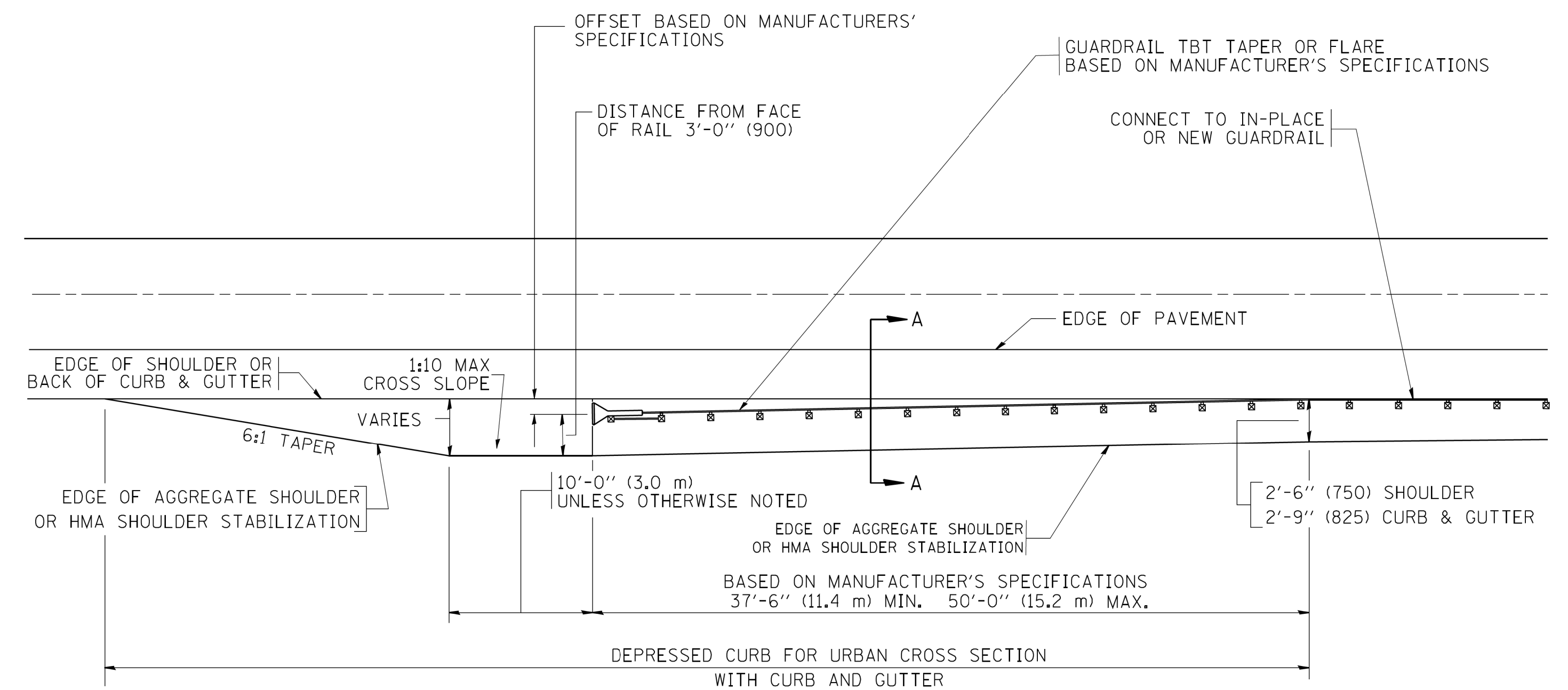
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	349
BD400-05 BD32			CONTRACT NO.	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



SECTION A-A

- NOTES:
1. THE AGGREGATE SHOULDER, 10" OR HMA SHOULDER, 6" (IF REQUIRED) SHALL EXTEND UNDER THE TRAFFIC BARRIER TERMINAL.
 2. "EXISTING" GUARDRAIL REFERS TO CONNECTING TERMINAL SECTION TO GUARD RAILING PRIOR TO THE MIDWEST GUARDRAIL SYSTEM.
 3. THE CONTRACTOR SHALL VERIFY THE TYPE/HEIGHT OF GUARDRAIL IN-PLACE BEFORE ORDERING THE NEW TERMINAL SECTION. COST INCLUDED WITH THE COST OF THE TERMINAL. THE TERMINAL SECTION HEIGHT TO BE PLACED MUST MATCH THE HEIGHT OF THE IN-PLACE GUARDRAIL.

DETAILS FOR STEEL PLATE BEAM
GUARD RAIL ADJACENT TO CURB AND GUTTER
 [FOR ROADWAY SPEED 35 MPH (60 kmh) TO 45 MPH (70 kmh)]



DEPRESSED CURB AND GUTTER AND
SHOULDER TREATMENT AT TBT TY. 1 SPL.

BASIS OF PAYMENT: HMA SHOULDERS 6 (150) (IF REQUIRED) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SHOULDERS 6" (150 mm)".

STEEL PLATE BEAM GUARD RAIL AND TRAFFIC BARRIER TERMINAL, OF THE TYPE SPECIFIED WILL BE PAID FOR SEPARATELY.

TBT = TRAFFIC BARRIER TERMINAL
 ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

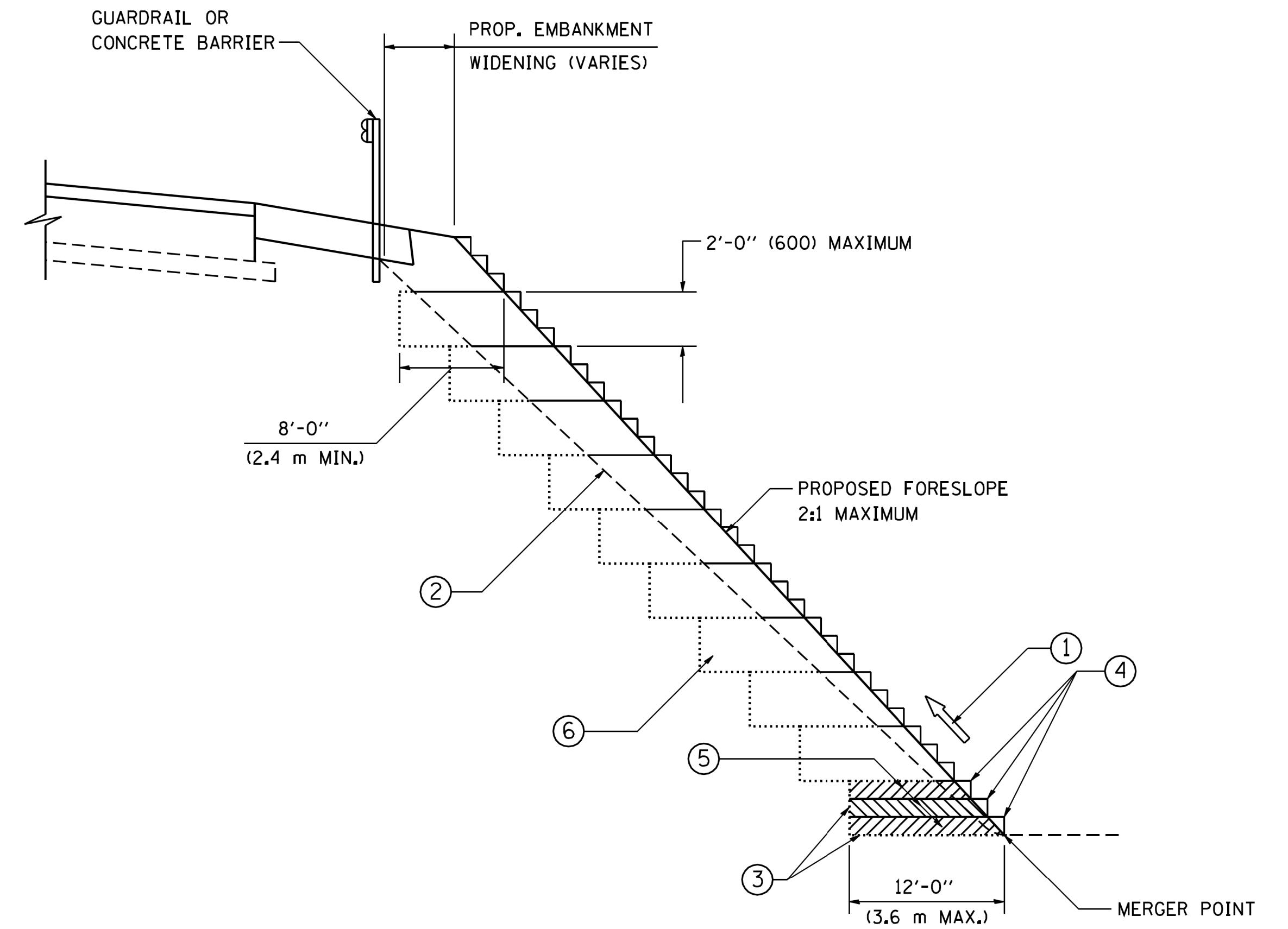
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	PLOT SCALE = 49.9999' / 1" IN.	CHECKED -	REVISED - R. BORO 12-08-2008
	PLOT DATE = 9/21/2009	DATE - 09-22-90	REVISED - R. BORO 09-14-2009

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

DETAILS FOR DEPRESSED CURB & GUTTER AND
 SHOULDER TREATMENT AT TBT TY 1 SPL.

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	350
BD600-10 (BD 34)			CONTRACT NO.	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



TYPICAL BENCHING DETAIL
FOR EMBANKMENT

NOTES:

- ① CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- ② EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
- ③ BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- ④ TRIM TO FINAL SLOPE.
- ⑤ EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
- ⑥ EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ⑦ SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

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

FILE NAME = W:\diststd\22x34\bd51.dgn	USER NAME = gegl1enobt	DESIGNED -	REVISED - -
		DRAWN - CADD	REVISED -
		CHECKED - S.E.B.	REVISED -
		DATE - 06-16-04	REVISED -

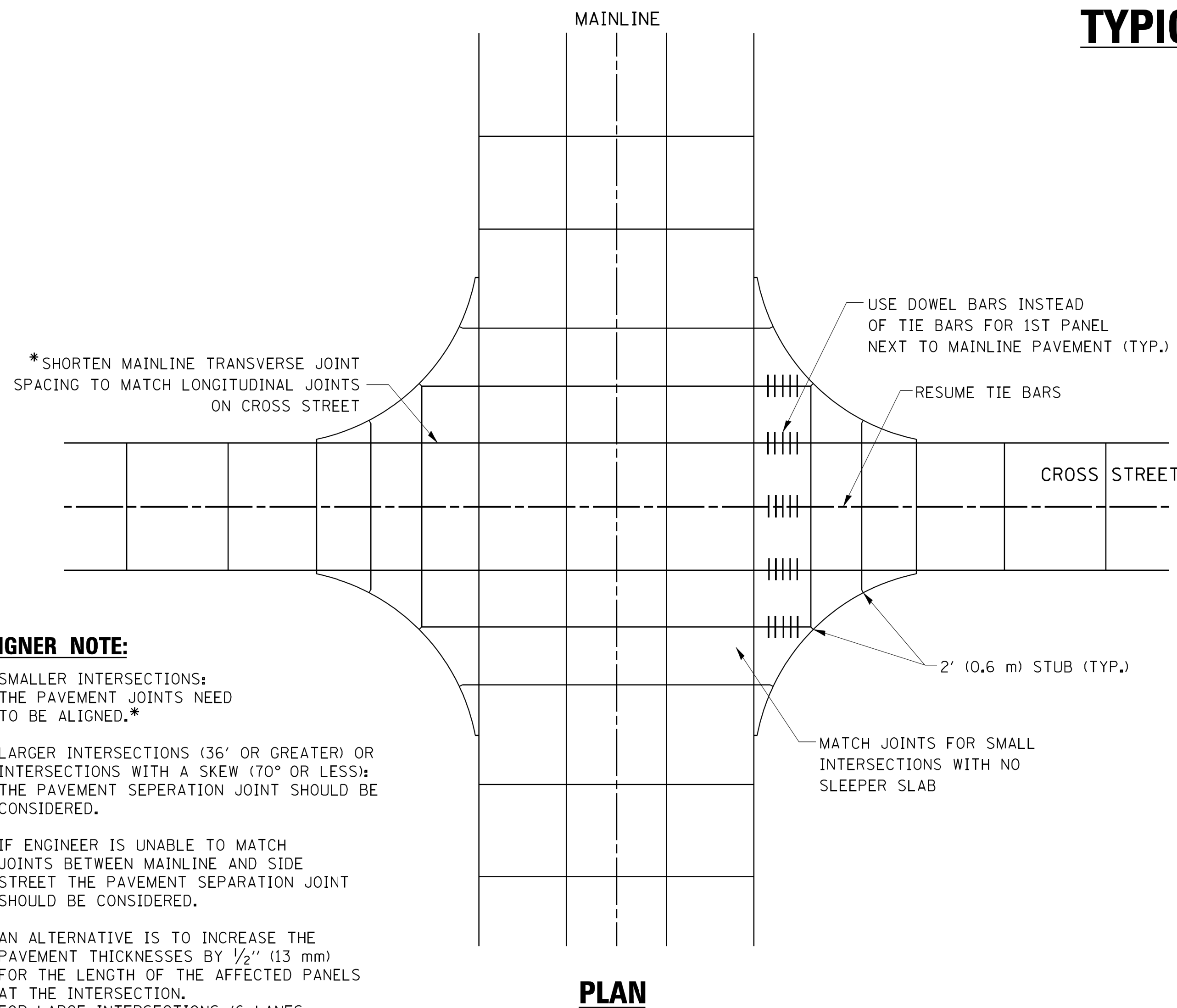
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BENCHING DETAIL			
FOR EMBANKMENT WIDENING			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	351
BD-51		CONTRACT NO.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

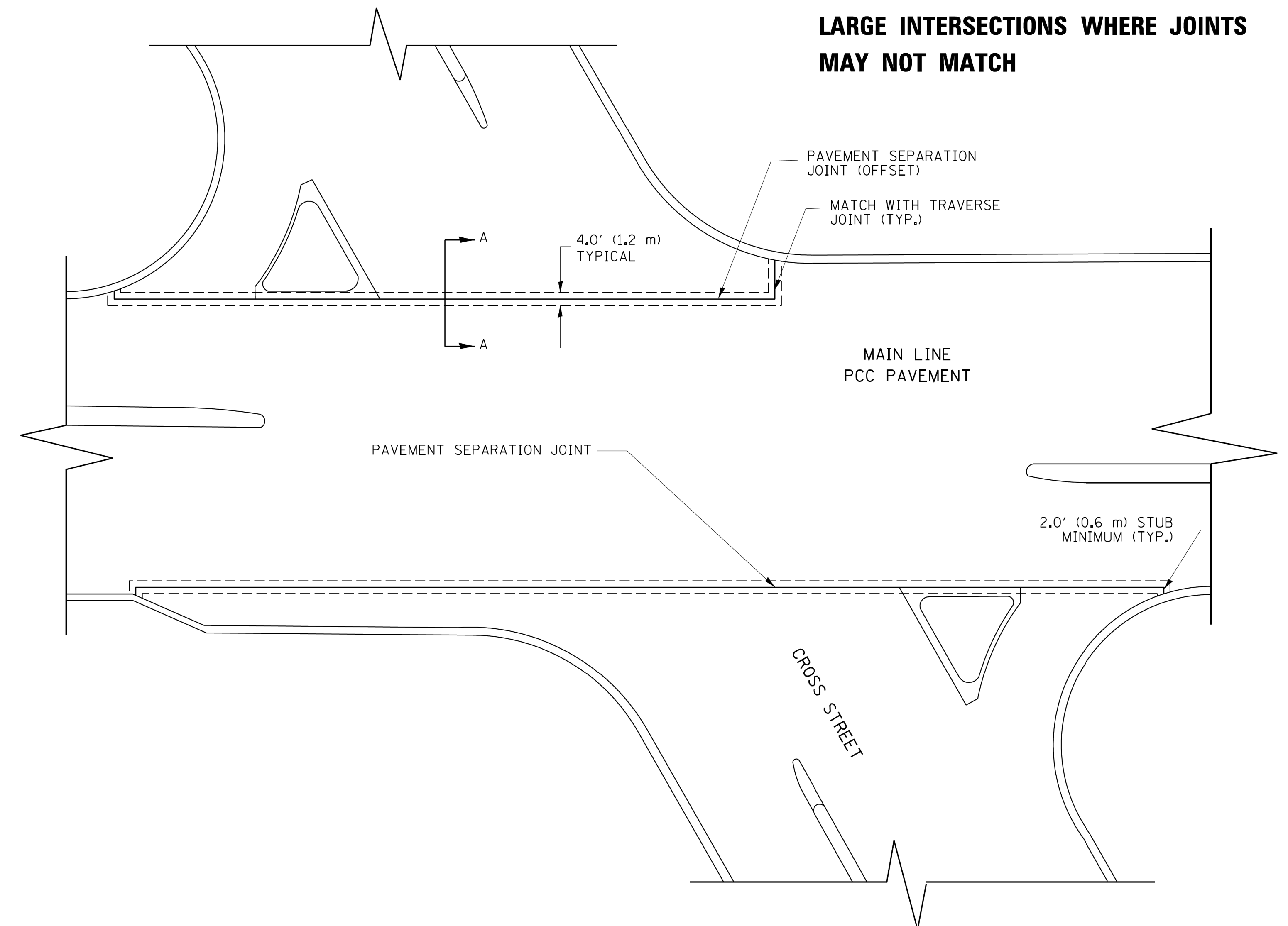
TYPICAL APPLICATION

THE USE OF CROSS STREET PAVEMENT SEPARATION JOINTS FOR SKEWED OR LARGE INTERSECTIONS WHERE JOINTS MAY NOT MATCH



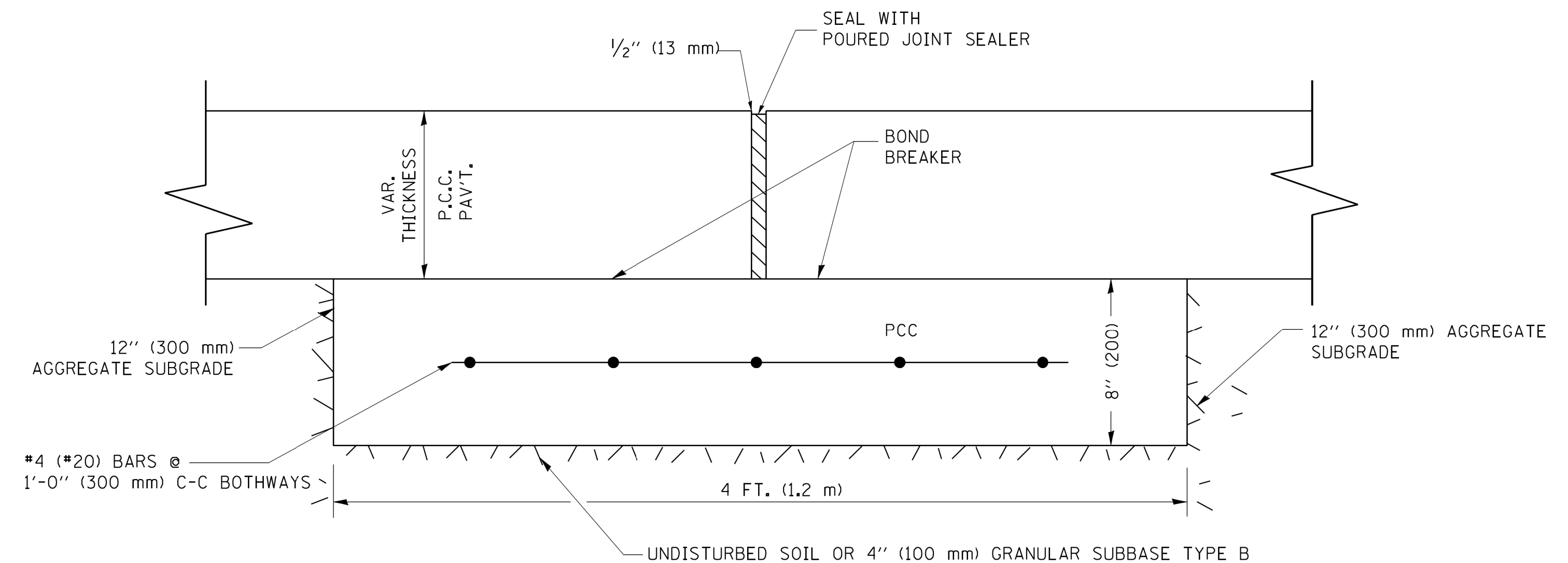
DESIGNER NOTE:

1. SMALLER INTERSECTIONS: THE PAVEMENT JOINTS NEED TO BE ALIGNED.*
2. LARGER INTERSECTIONS (36' OR GREATER) OR INTERSECTIONS WITH A SKEW (70° OR LESS): THE PAVEMENT SEPERATION JOINT SHOULD BE CONSIDERED.
3. IF ENGINEER IS UNABLE TO MATCH JOINTS BETWEEN MAINLINE AND SIDE STREET THE PAVEMENT SEPARATION JOINT SHOULD BE CONSIDERED.
4. AN ALTERNATIVE IS TO INCREASE THE PAVEMENT THICKNESSES BY 1/2" (13 mm) FOR THE LENGTH OF THE AFFECTED PANELS AT THE INTERSECTION. FOR LARGE INTERSECTIONS (6 LANES OR MORE) WHERE JOINTS CAN BE MATCHED, USE #8 (25) DOWEL BARS INSTEAD OF #8 (25) TIE BARS AT EDGE OF MAINLINE PAVEMENT WHEN NO PAVEMENT SEPARATION JOINTS USED.



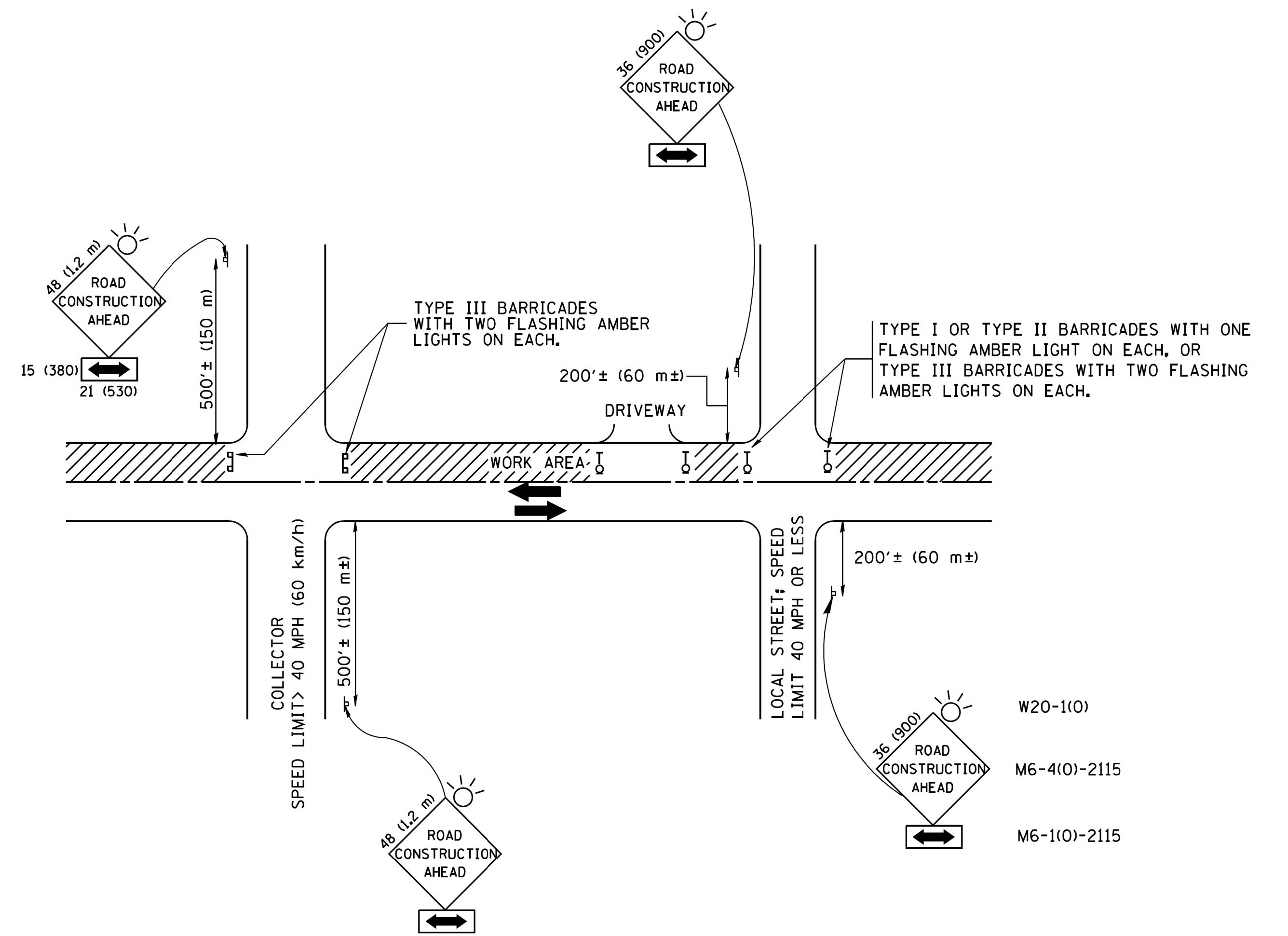
NOTE:

1. JOINT FILLER SHALL CONSIST OF A SHEET OF 1/2" (13 mm) BITUMINOUS PREFORMED FIBER JOINT FILLER CONFORMING TO ARTICLE 1051.03 OF THE STANDARD SPECIFICATIONS.
2. THE JOINT SHALL BE SEALED WITH A HOT POUR JOINT SEALER CONFORMING TO ARTICLE 1050.02 OF THE STANDARD SPECIFICATIONS.
3. A SINGLE LAYER OF FELT ROOFING PAPER SHALL SERVE AS A BOND BREAKER.
4. JOINT SHALL CONTINUE THROUGH COMBINATION CURB & GUTTER OR PCC SHOULDER.
5. PAVEMENT SEPARATION JOINT IS TO BE PAID FOR AS "SLEEPER SLAB" AND IS TO BE MEASURED IN PLACE BY THE LINEAL FOOT.
6. BOND BREAKER AND 1/2" (13 mm) JOINT AND FILLER SHALL BE INCIDENTAL TO THE PAY ITEM "SLEEPER SLAB".



PROPOSED SECTION A-A

FILE NAME = bd52.dgn	USER NAME = lqyaa	DESIGNED - DRAWN -	REVISED - REVISED -	-CADD 06-18-10	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL OF PAVEMENT SEPARATION JOINT FOR JOINTED PCC PAVEMENTS AT INTERSECTIONS			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 49.9999' / IN.	CHECKED -	REVISED -			SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	BD52		510	352
	PLOT DATE = 2/25/2011	DATE -	REVISED -								CONTRACT NO.	ILLINOIS FED. AID PROJECT	



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in millimeters (inches) unless otherwise shown.

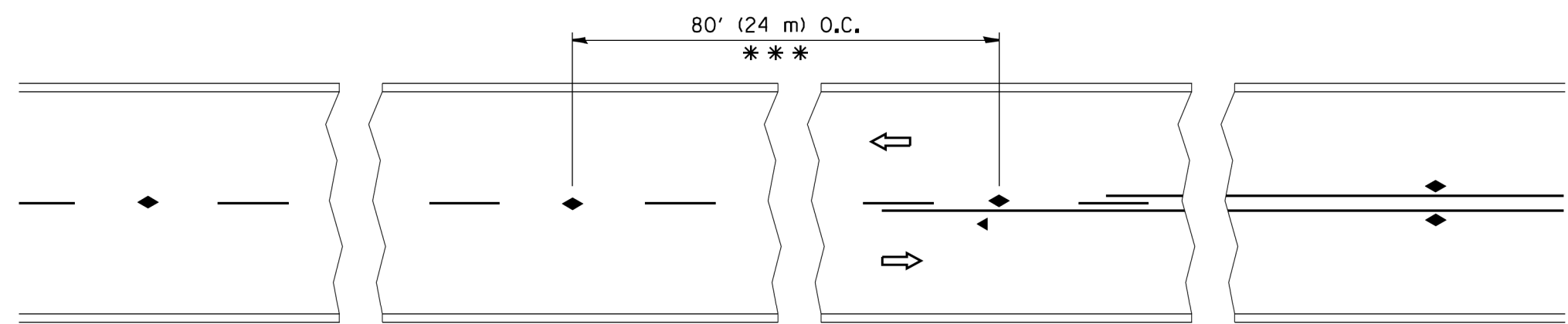
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	PLOT DATE = 1/4/2008	DATE - 06-89	REVISED - T. RAMMACHER 01-06-00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR
SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

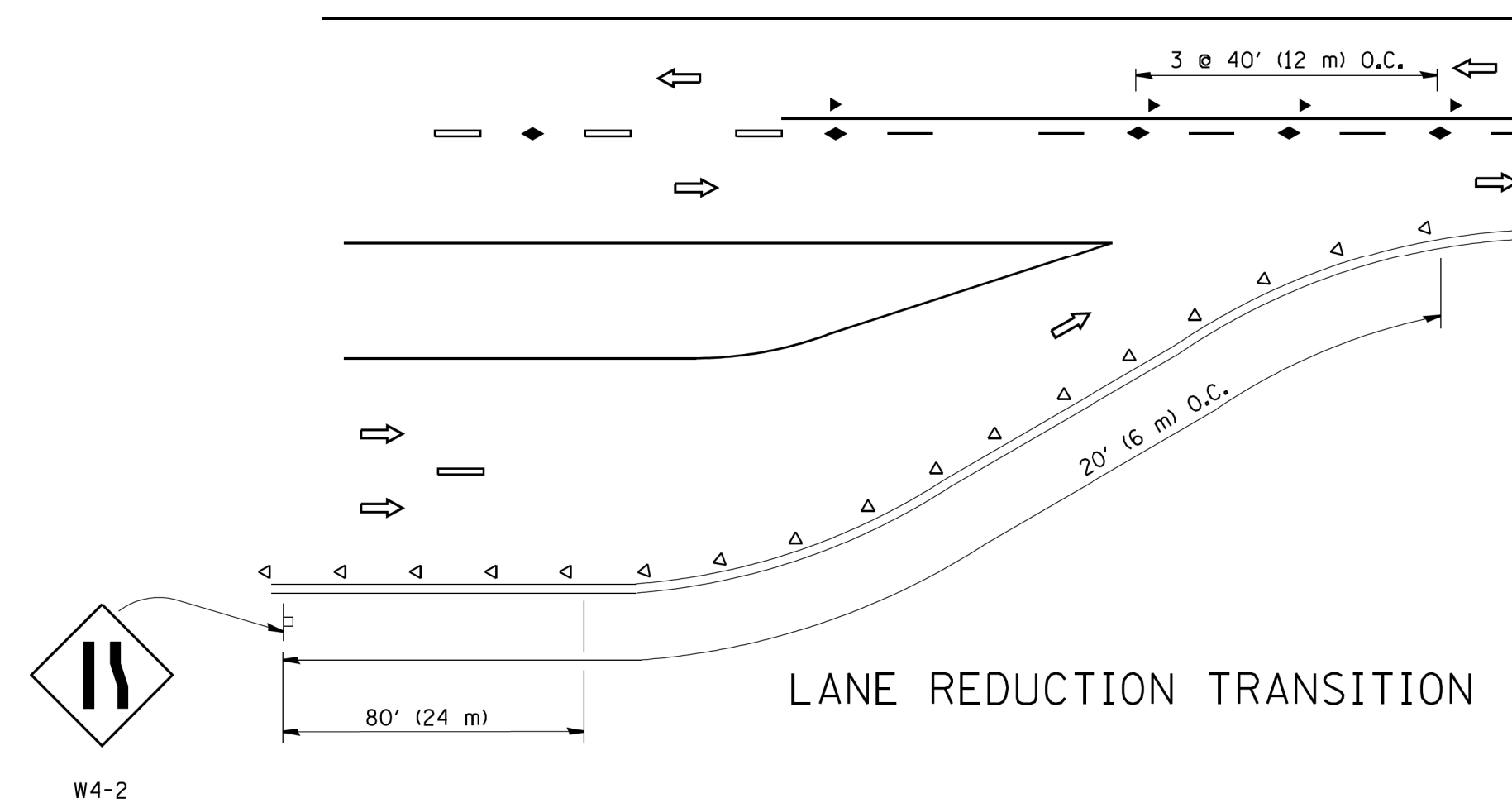
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TC-10		510	353
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO.	

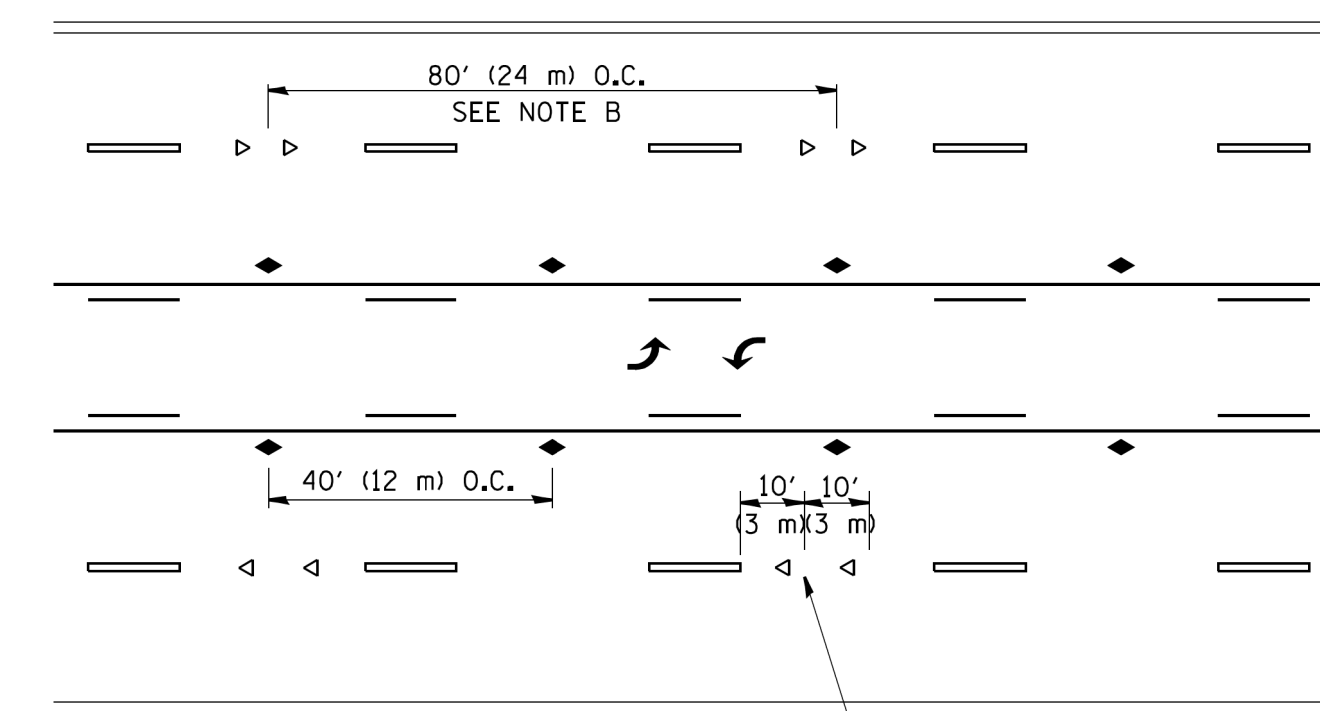


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

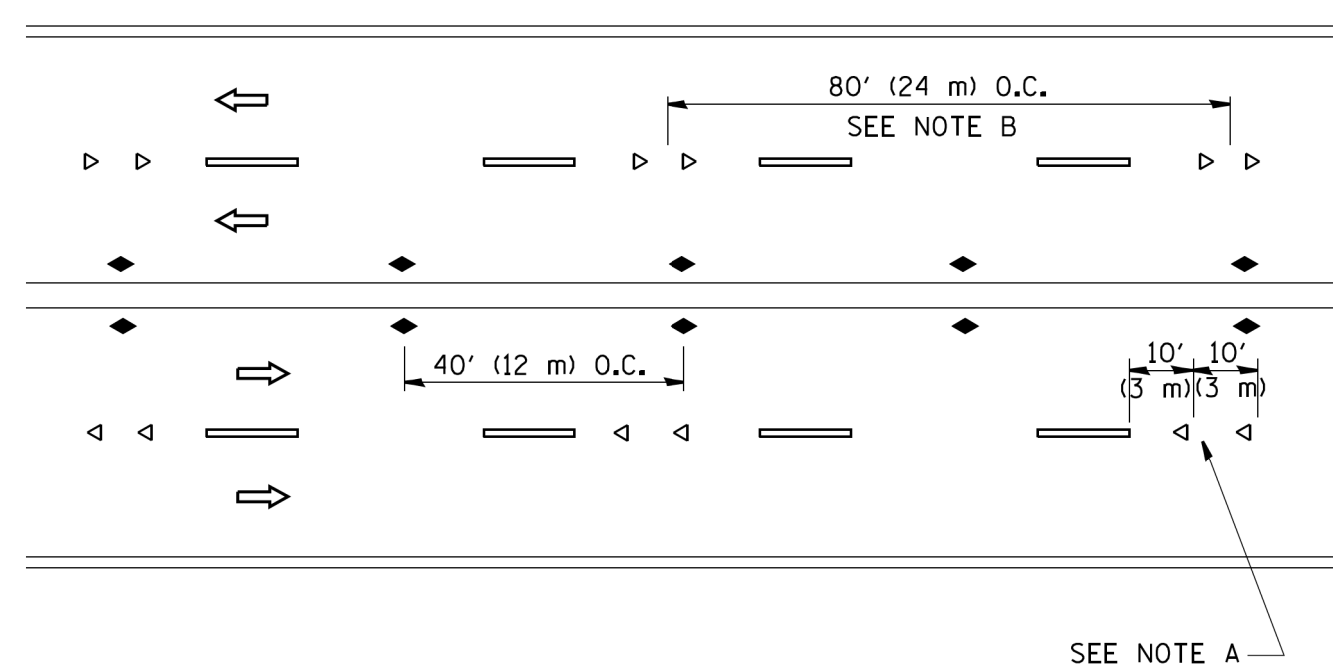
TWO-LANE/TWO-WAY



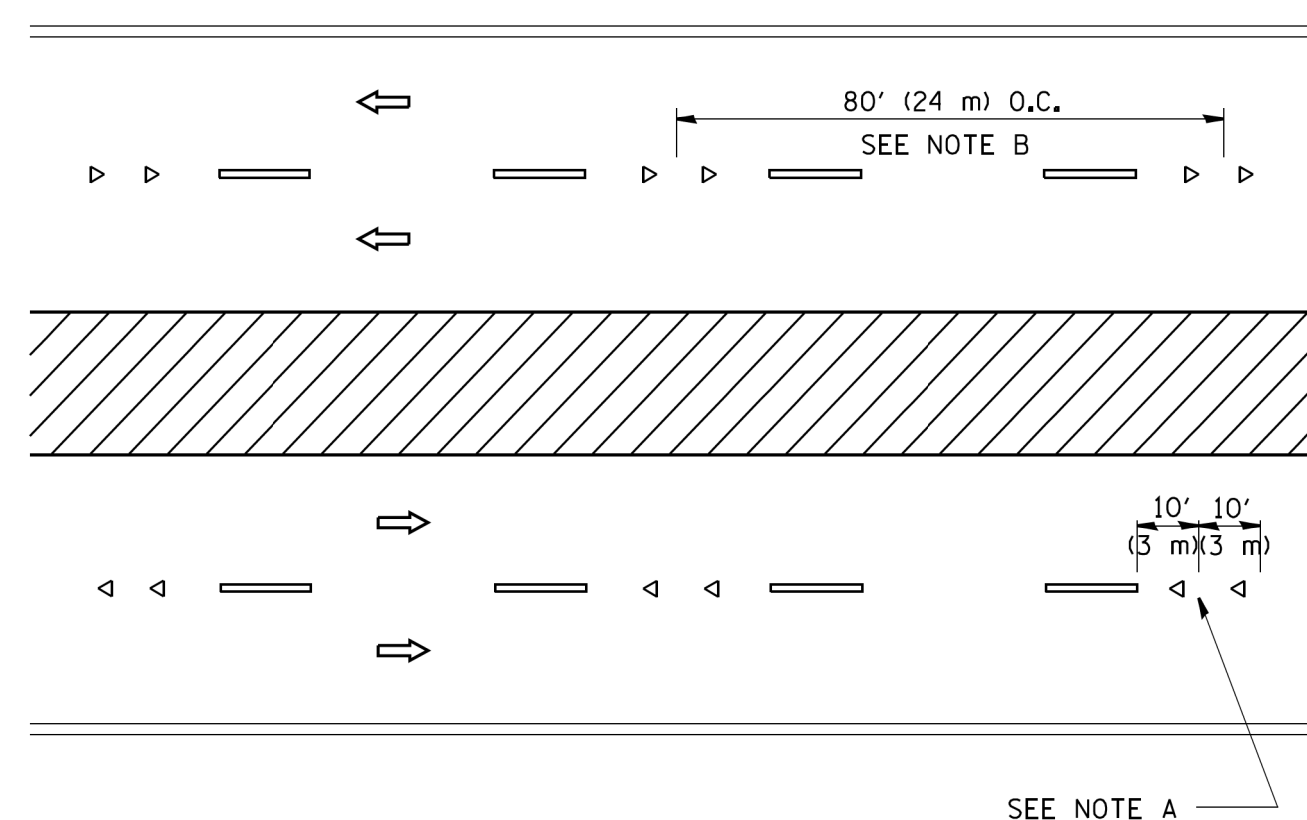
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

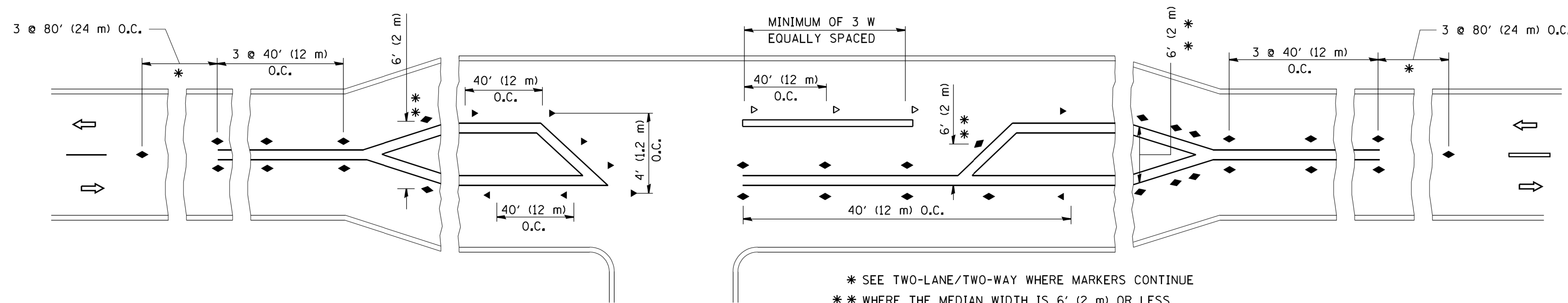
- YELLOW STRIPE
- ▬ WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H. (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHALL BE INCLUDED IN THE PLANS WHEN STANDARD SPECIFICATIONS ARE NOT BEING USED.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE
 ** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

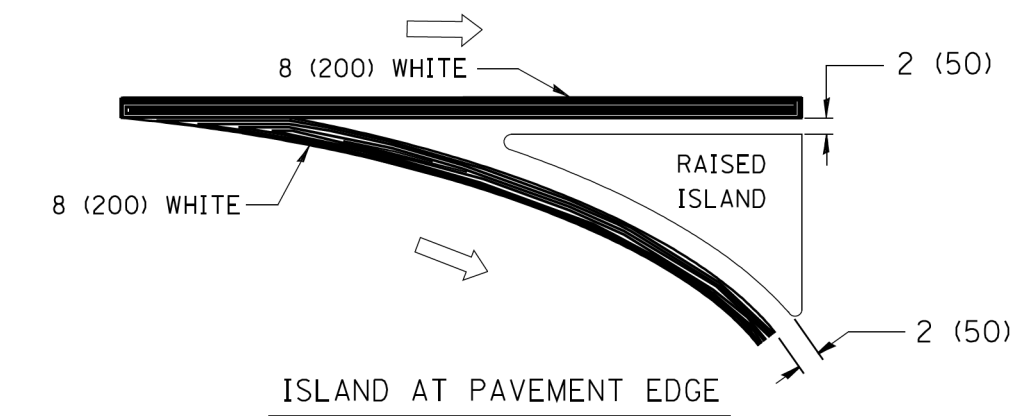
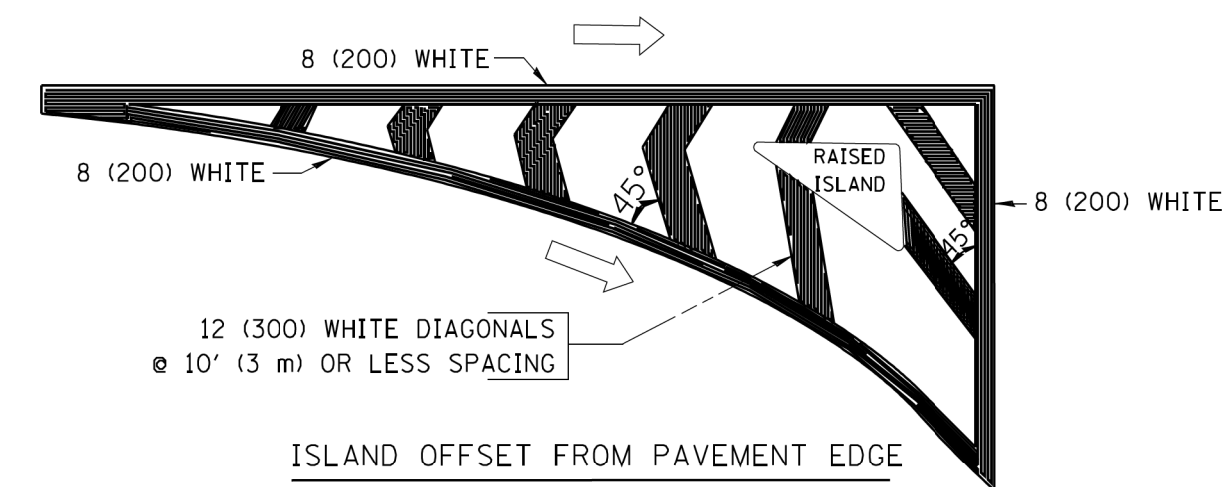
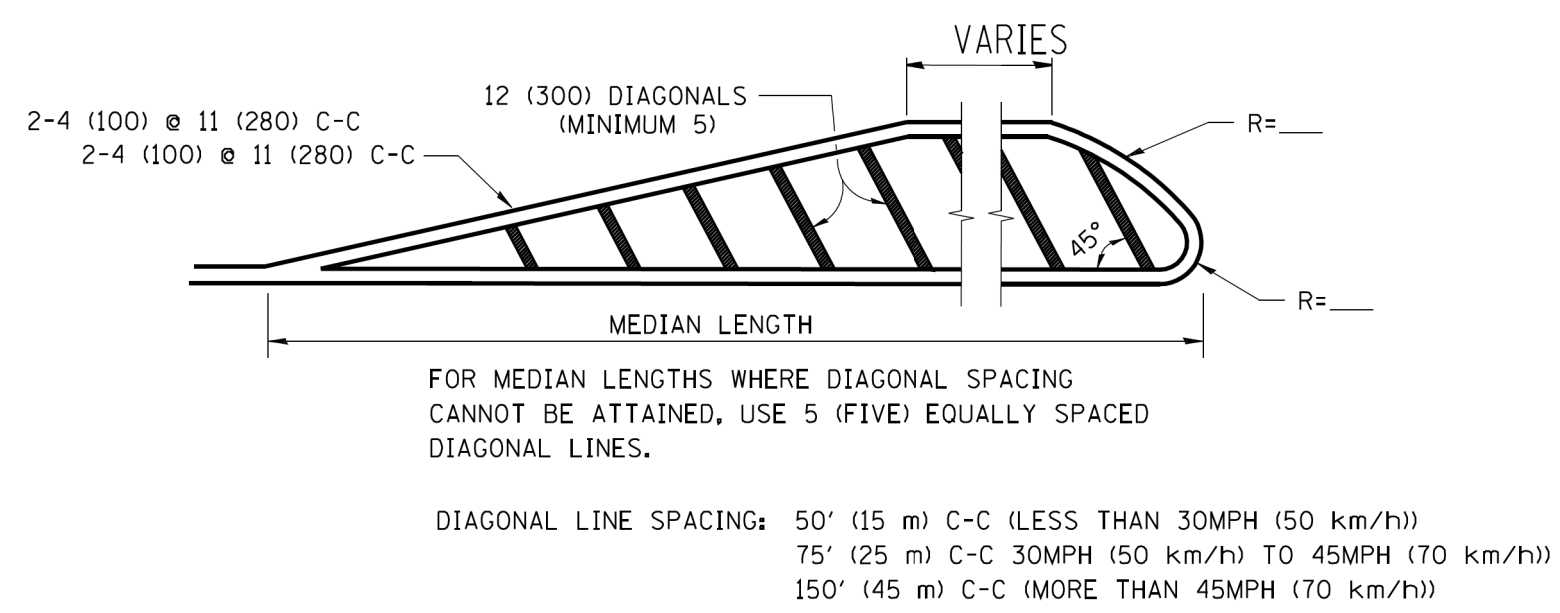
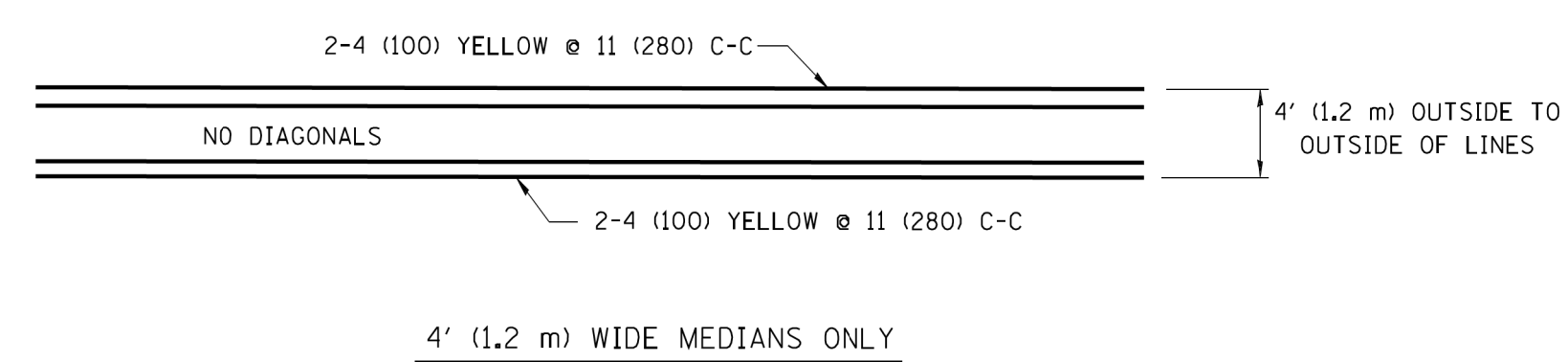
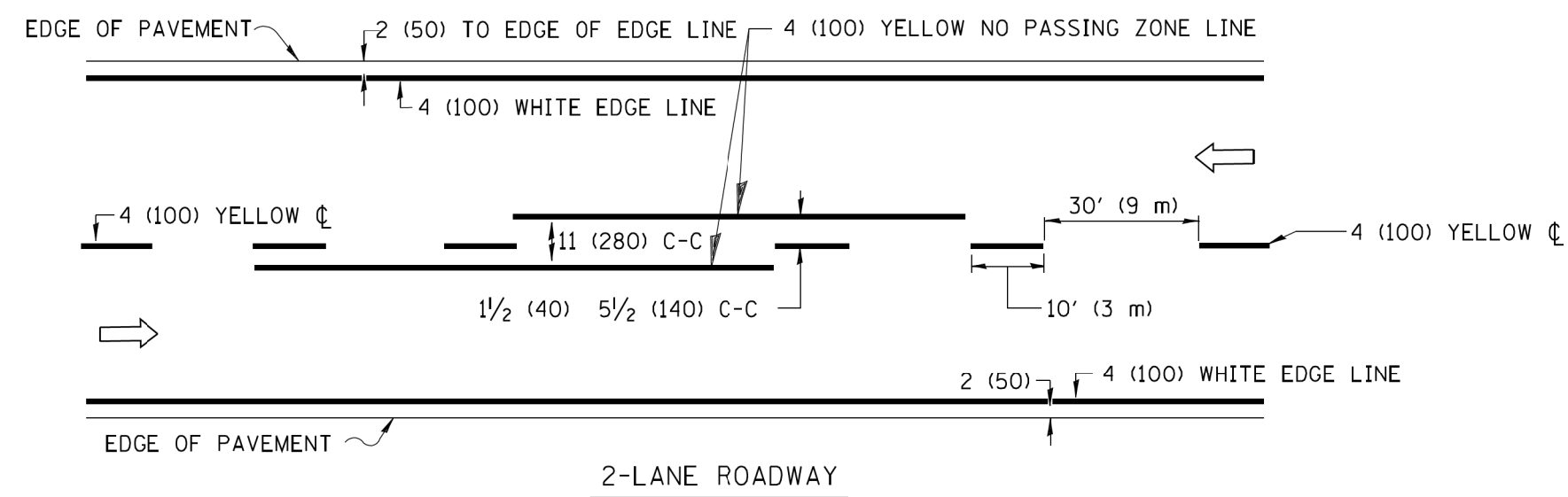
LEFT TURN

All dimensions are in inches (millimeters) unless otherwise shown.

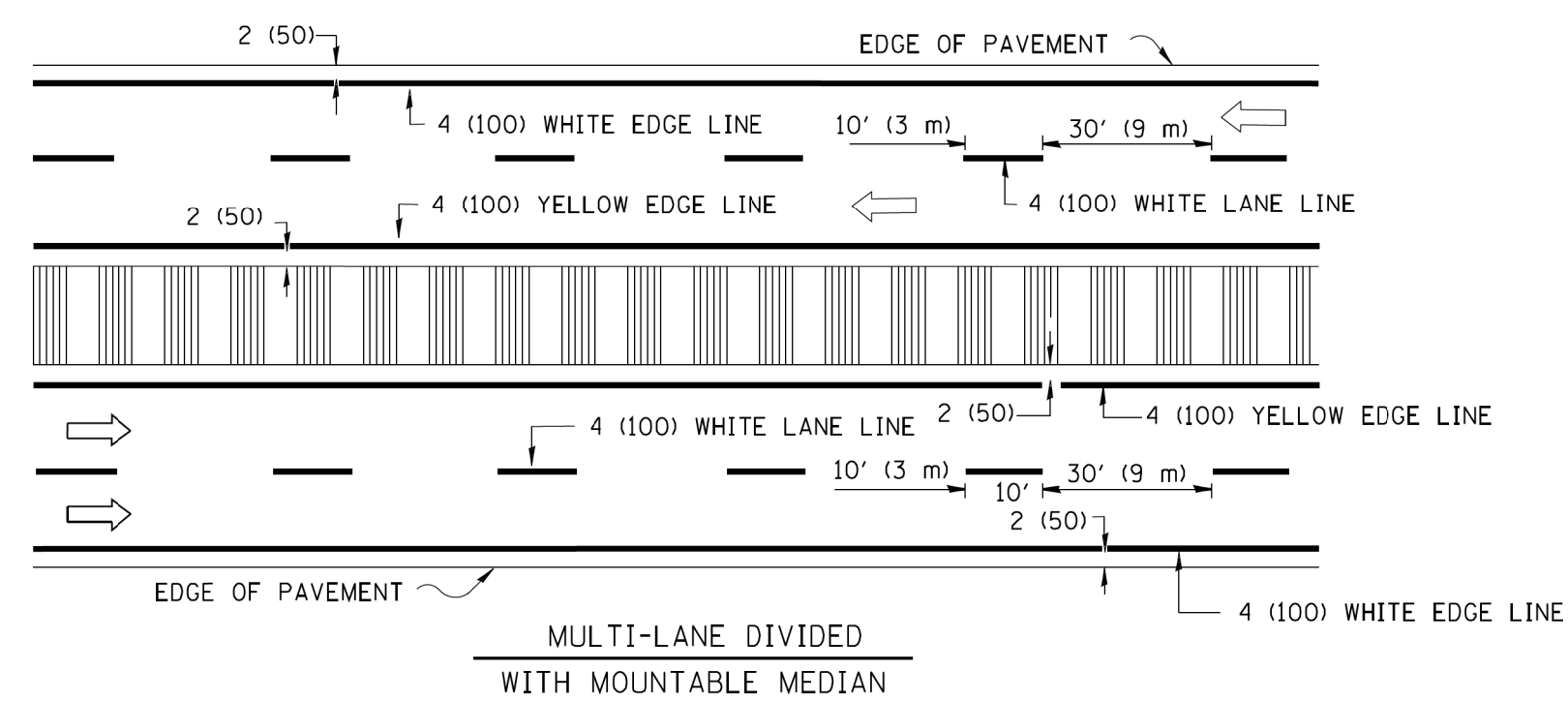
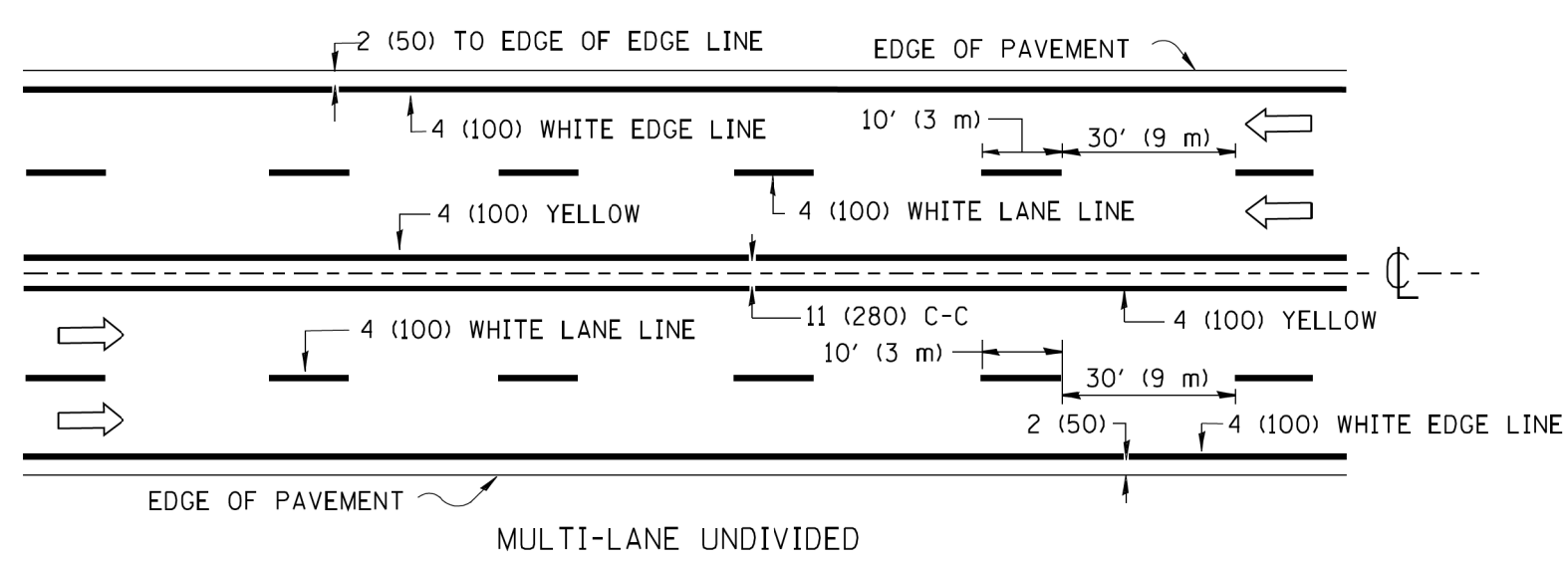
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ei:\pwwork\pwi\dot\lqysa\d0108315\tc11.dgn		DRAWN -	REVISED - T. RAMMACHER 03-12-99
	PLOT SCALE = 50.000' / IN.	CHECKED -	REVISED - T. RAMMACHER 01-06-00
	PLOT DATE = 3/2/2011	DATE -	REVISED - C. JUCIUS 09-09-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)							510	354
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	TC-11		CONTRACT NO.		
				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

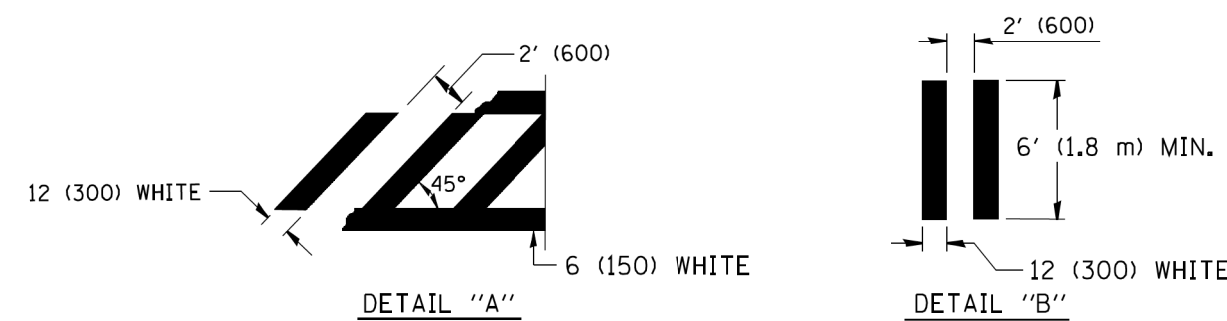
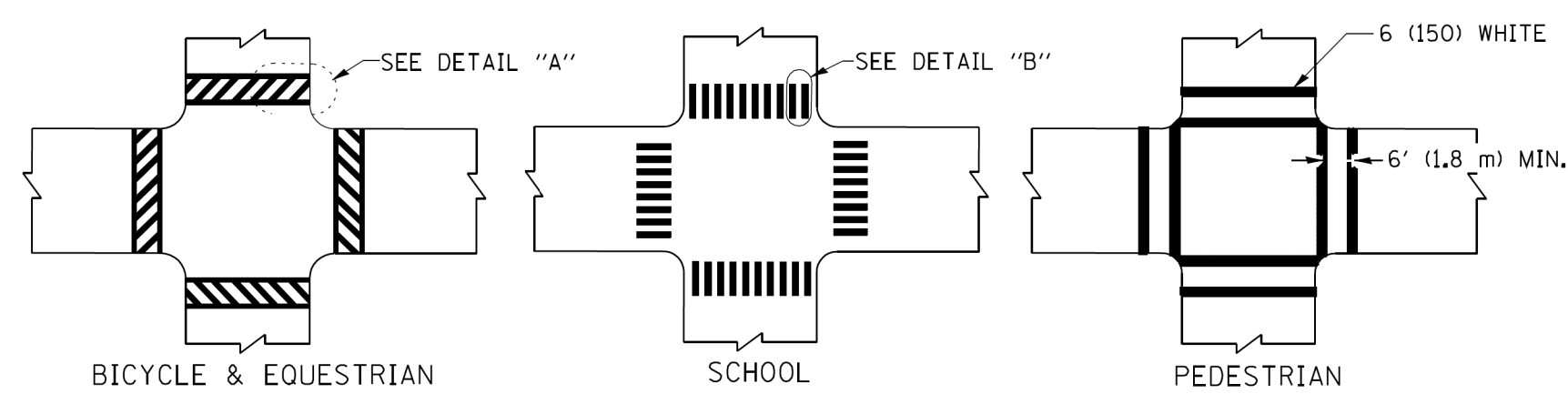


TYPICAL ISLAND MARKING

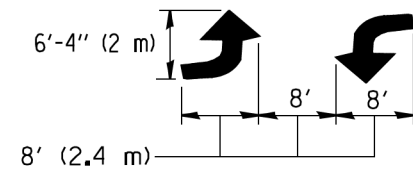
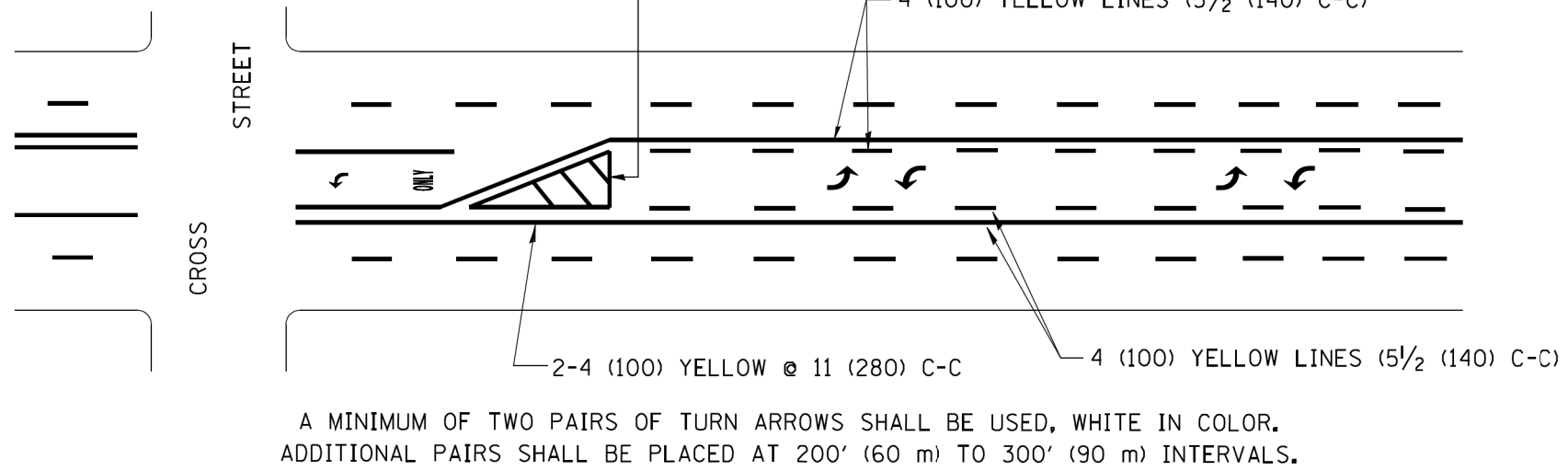


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

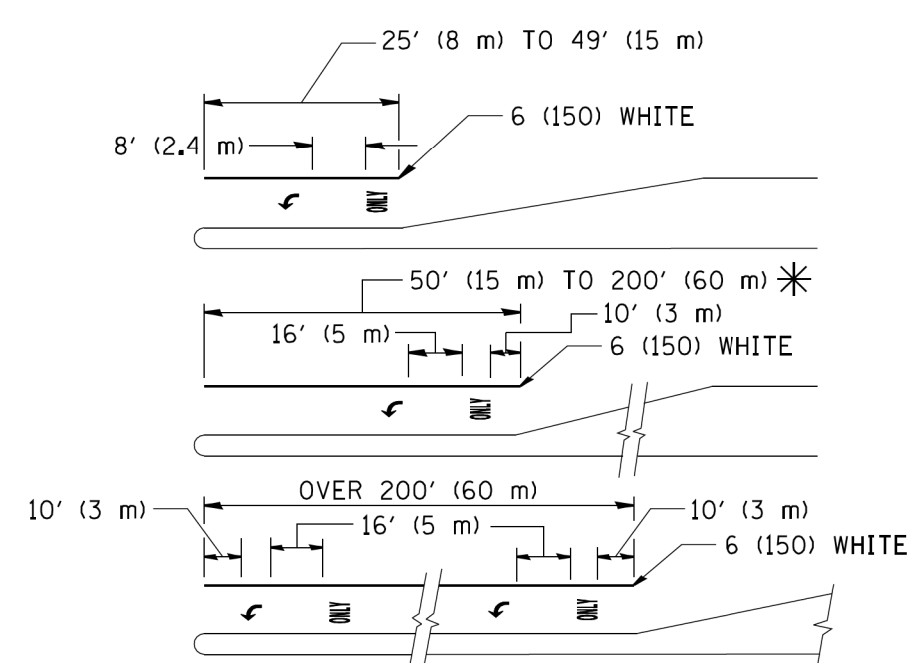
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING



TYPICAL PAINTED MEDIAN MARKING



FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION	4 (100)	SOLID	YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE
NO PASSING ZONE LINES: FOR BOTH DIRECTIONS	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION	SKIP-DASH AND SOLID	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE
	8' (2.4m) LEFT ARROW	IN PAIRS	WHITE	SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES - "RR" IS 6' (1.8 m) LETTERS: 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m ²) EACH "X"=54.0 SQ. FT. (5.0 m ²)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

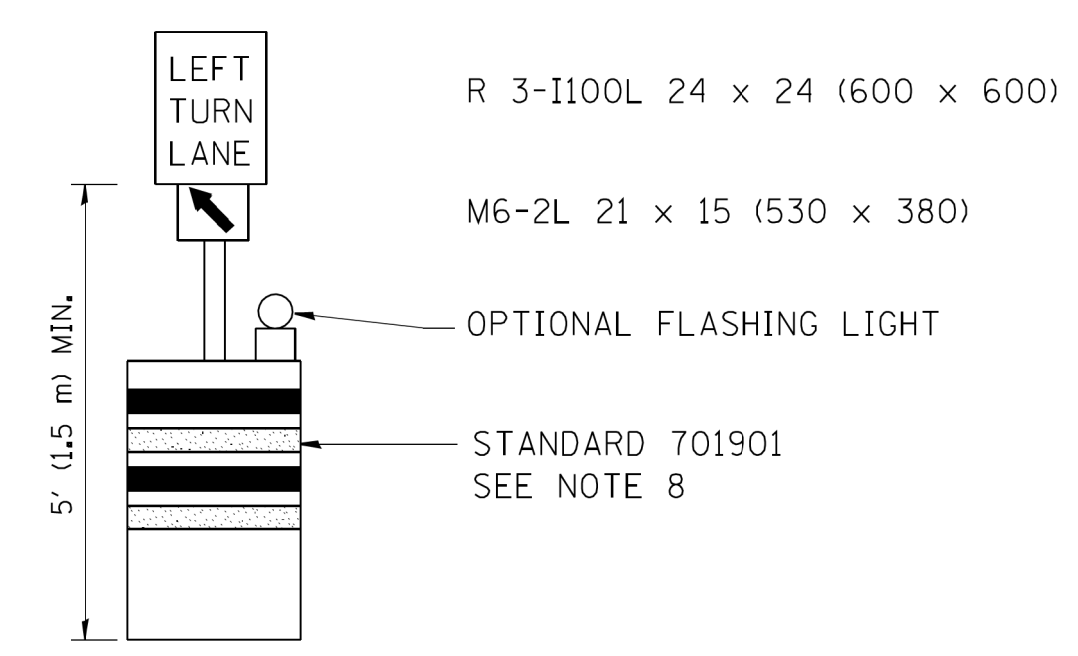
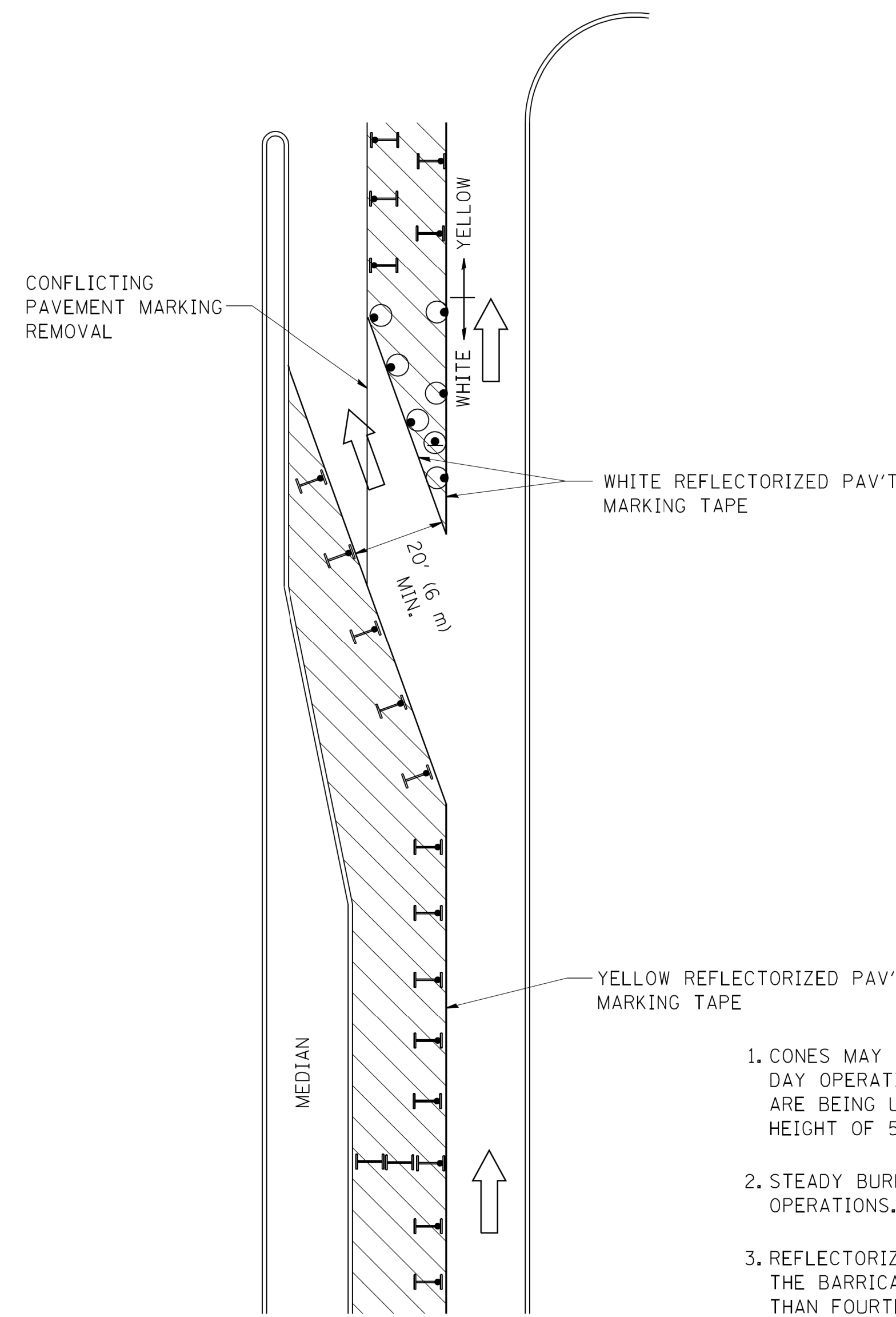
All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = drivakosgn	DESIGNED - EVERS	REVISED -T. RAMMACHER 10-27-94
ei:\pwork\pwi\dot\drivakosgn\d0108315\te3.dgn		DRAWN -	REVISED -C. JUCIUS 09-09-09
	PLOT SCALE = 50.000' / IN.	CHECKED -	REVISED -
	PLOT DATE = 9/9/2009	DATE - 03-19-90	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE			
TYPICAL PAVEMENT MARKINGS			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TC-13		510	355
FED. ROAD DIST. NO. 1 ILLINOIS		CONTRACT NO.		
FED. AID PROJECT				

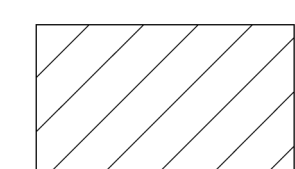

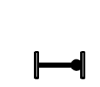


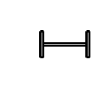


GENERAL NOTES

1. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT. WHEN CONES ARE BEING USED, THE "LEFT TURN LANE" SIGN MAY BE SKID MOUNTED AT A MINIMUM HEIGHT OF 5' (1.5 m).
2. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
3. REFLECTORIZED TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE BARRICADED AREA OF EACH TURN BAY WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS.
4. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-100 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.
5. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
6. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
7. FORM OPER 725 IS REQUIRED.
8. IF A DRUM OR TYPE II BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 PREQUIREMENTS.
9. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in inches (millimeters) unless otherwise shown.

LEGEND

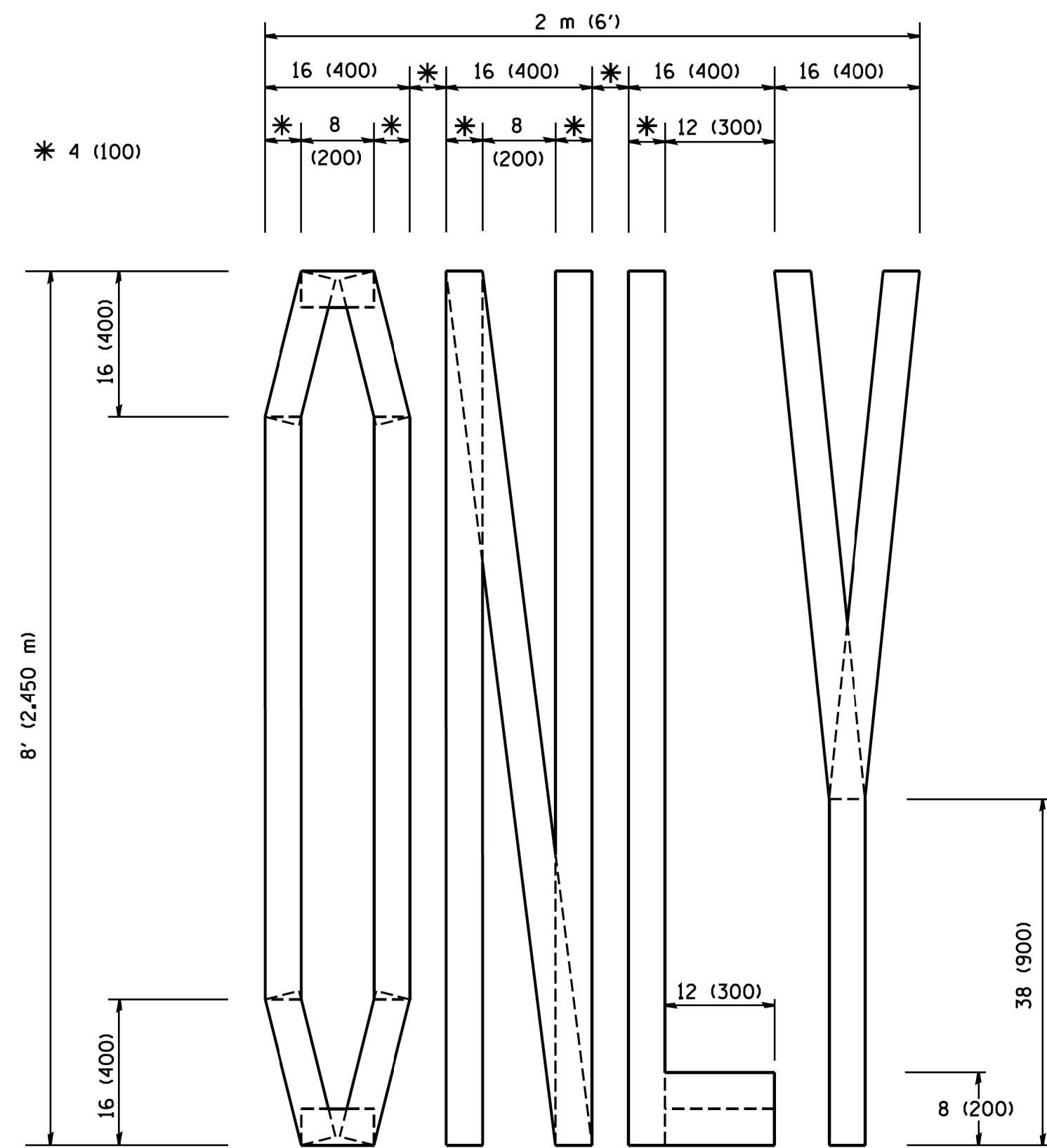
-  WORK AREA
-  LANE OPEN TO TRAFFIC
-  TYPE I OR II BARRICADE WITH STEADY BURN LIGHT
-  DRUM WITH STEADY BURN LIGHT
-  DRUM WITH SIGN (WITH OPTIONAL FLASHING LIGHT) SEE DETAIL
-  TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

FILE NAME =	USER NAME = drivakosgn	REVISED -T. RAMMACHER 09-08-94	REVISED - R. BORO 09-14-09
ei:\pwwork\pwwork\DRIVAKOSGN\d0108315\14.dgn		REVISED - A. HOUSEH 11-07-95	REVISED -
		REVISED - A. HOUSEH 10-12-96	REVISED -
PLOT SCALE = 49.9999 // IN.		REVISED -T. RAMMACHER 01-06-00	REVISED -
PLOT DATE = 9/14/2009			

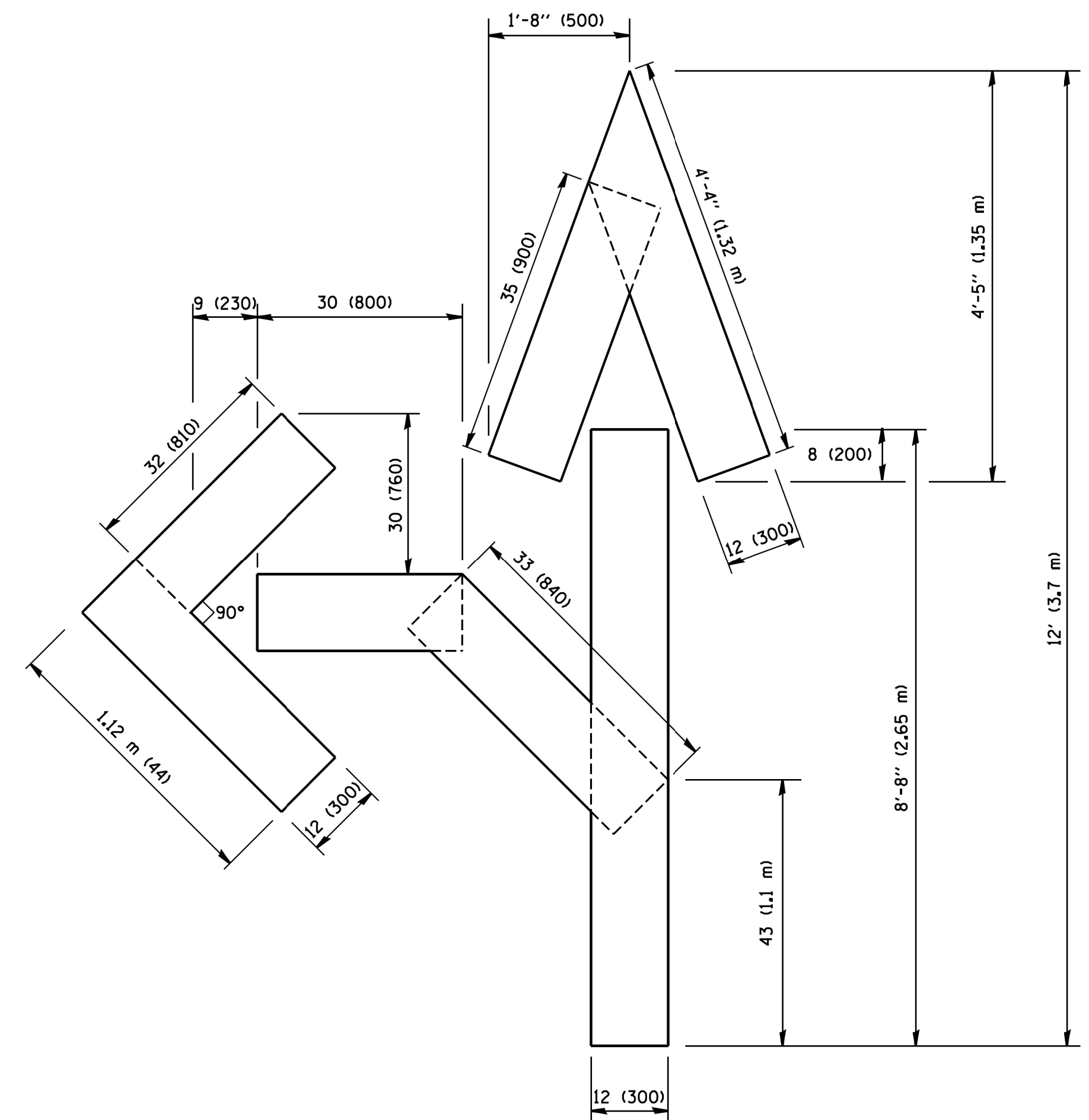
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

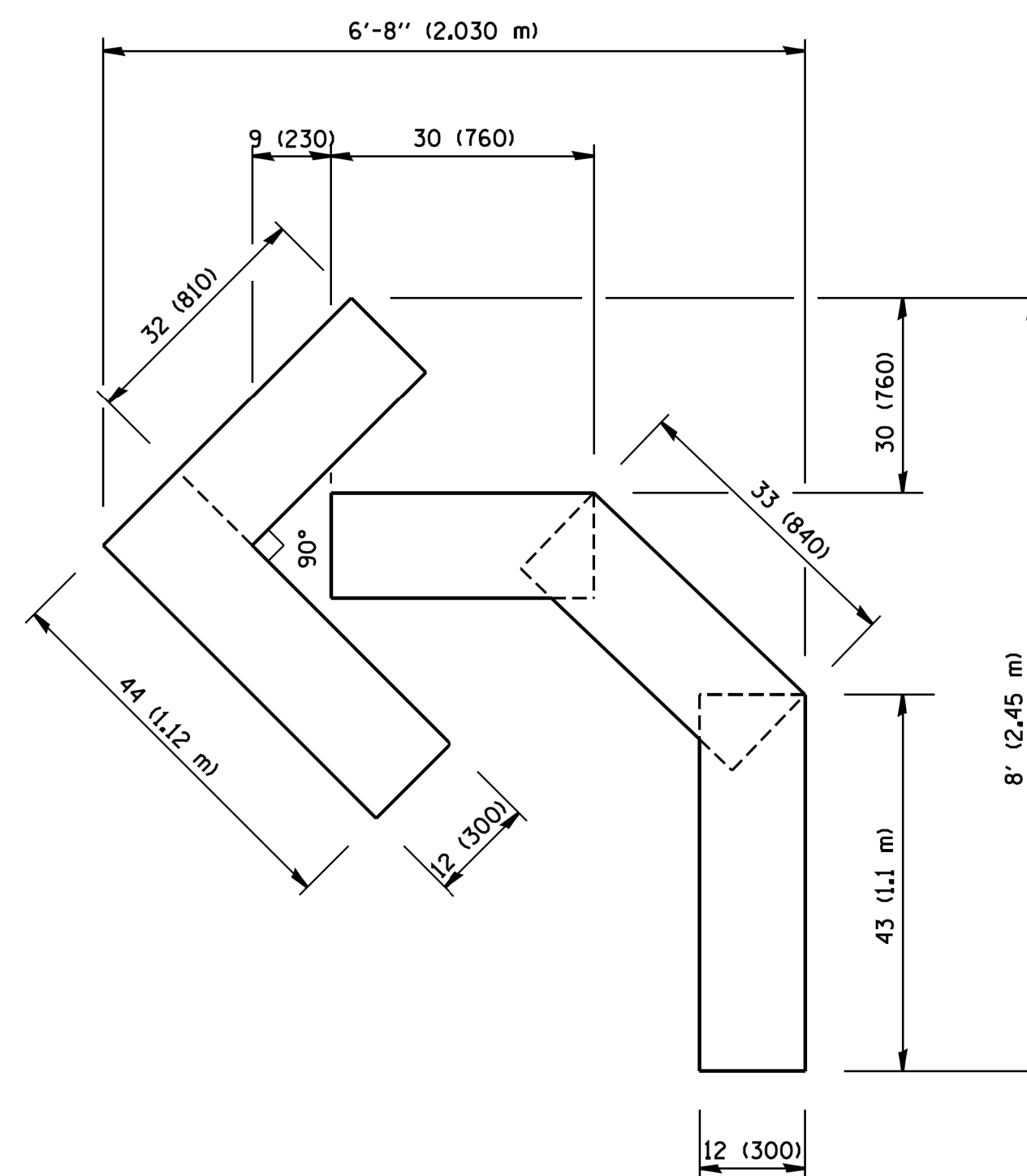
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TC-14		510	356
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



QUANTITY
 4 (100) LINE = 64.1 ft. (19.7 m)
 21.1 sq. ft. (1.97 sq. m)



QUANTITY
 4 (100) LINE = 82.5 ft. (25.3 m)
 27.5 sq. ft. (2.53 sq. m)



QUANTITY
 4 (100) LINE = 45.5 ft. (13.9 m)
 15.2 sq. ft. (1.39 sq. m)

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = W:\dststd\22x34\tbl6.dgn	USER NAME = gaglianobt	DESIGNED - DRAWN -	REVISED -T. RAMMACHER 06-05-96 REVISED -T. RAMMACHER 11-04-97
	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED -T. RAMMACHER 03-02-98
	PLOT DATE = 1/4/2008	DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

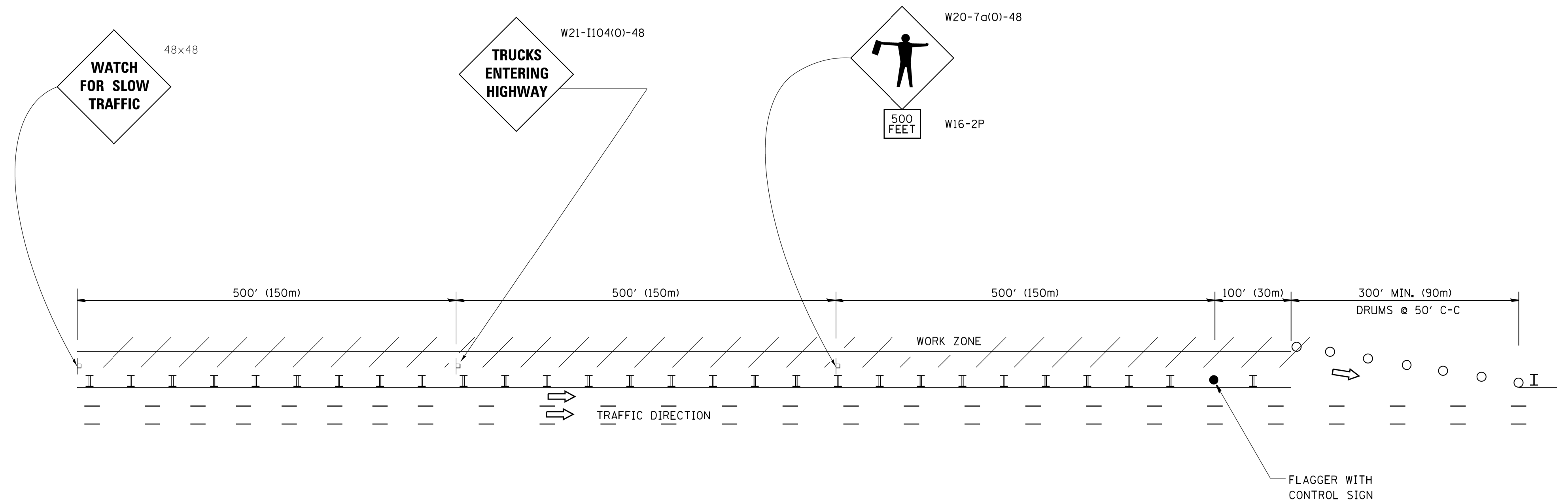
PAVEMENT MARKING LETTERS AND SYMBOLS
 FOR TRAFFIC STAGING

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

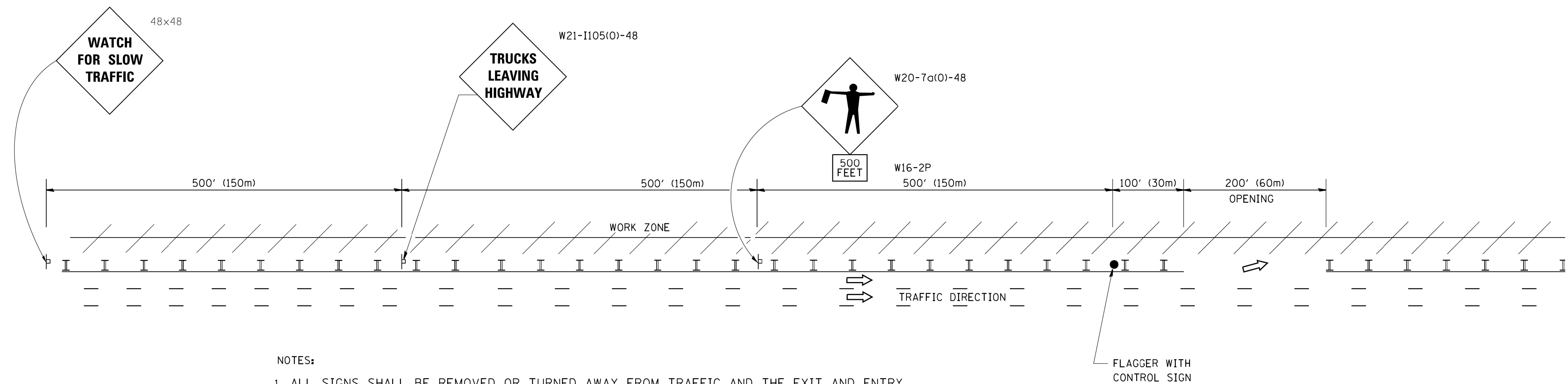
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TC-16		510	357
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO.	

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING

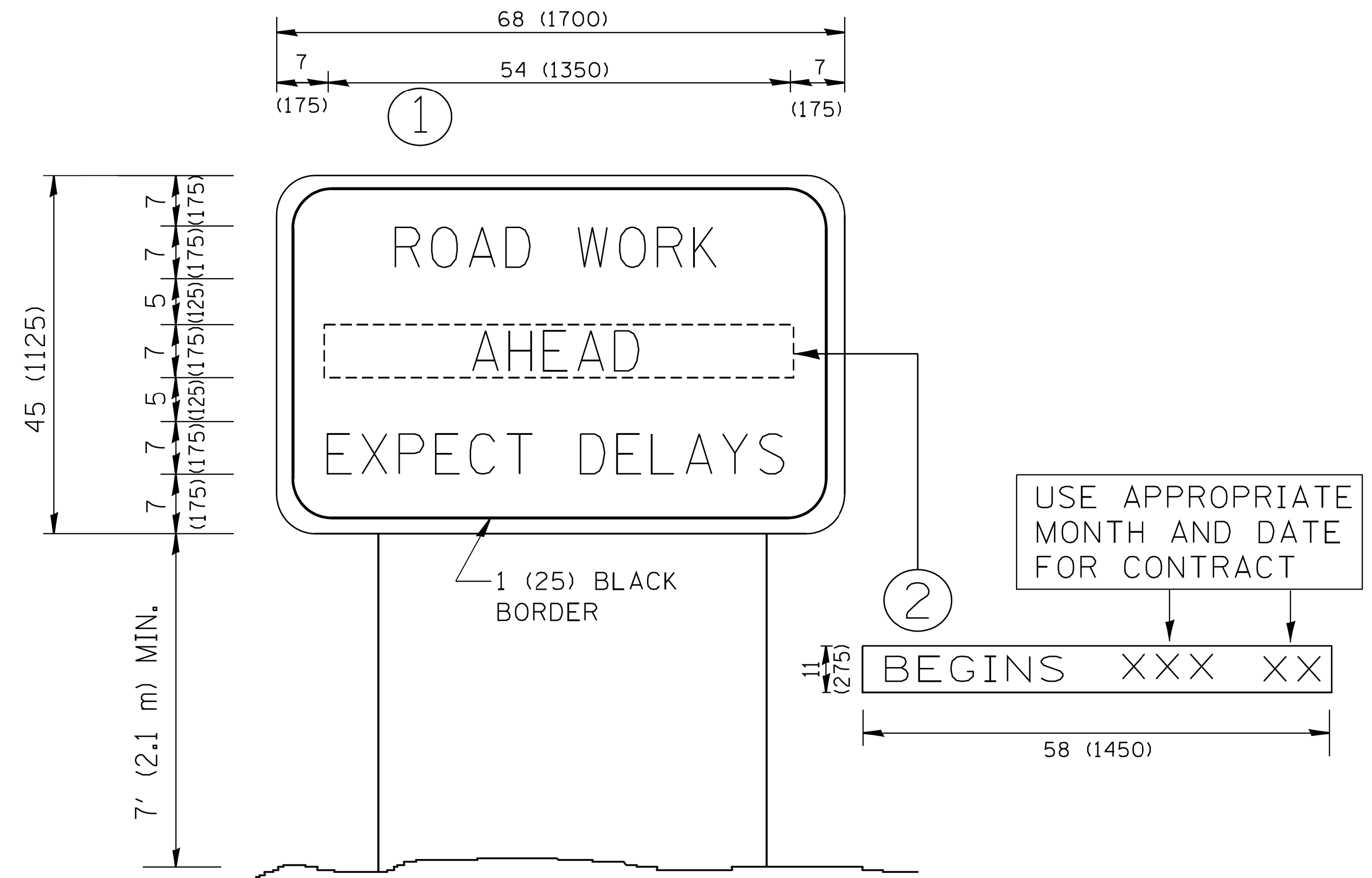


NOTES:

1. ALL SIGNS SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE OPENINGS SHALL BE A MINIMUM OF ONE HALF MILE APART AND A MINIMUM OF ONE QUARTER MILE FROM ALL ENTRANCE AND EXIT RAMPS.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS
5. FLAGGERS SHALL NOT STOP TRAFFIC OR DIRECT TRAFFIC INTO AN ADJACENT LANE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	USER NAME = footemj	DESIGNED -	REVISED - J.A.F. 02-06	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FREEWAY/EXPRESSWAY SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS ON FREEWAYS/EXPRESSWAYS			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pwwork\pwwork\footemj\d0108315\tc18.dgn		DRAWN -	REVISED - S.P.B. 01-07					TC-18			CONTRACT NO.	
		CHECKED -	REVISED - S.P.B. 12-09		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
		DATE -	REVISED - M.D. 06-13									

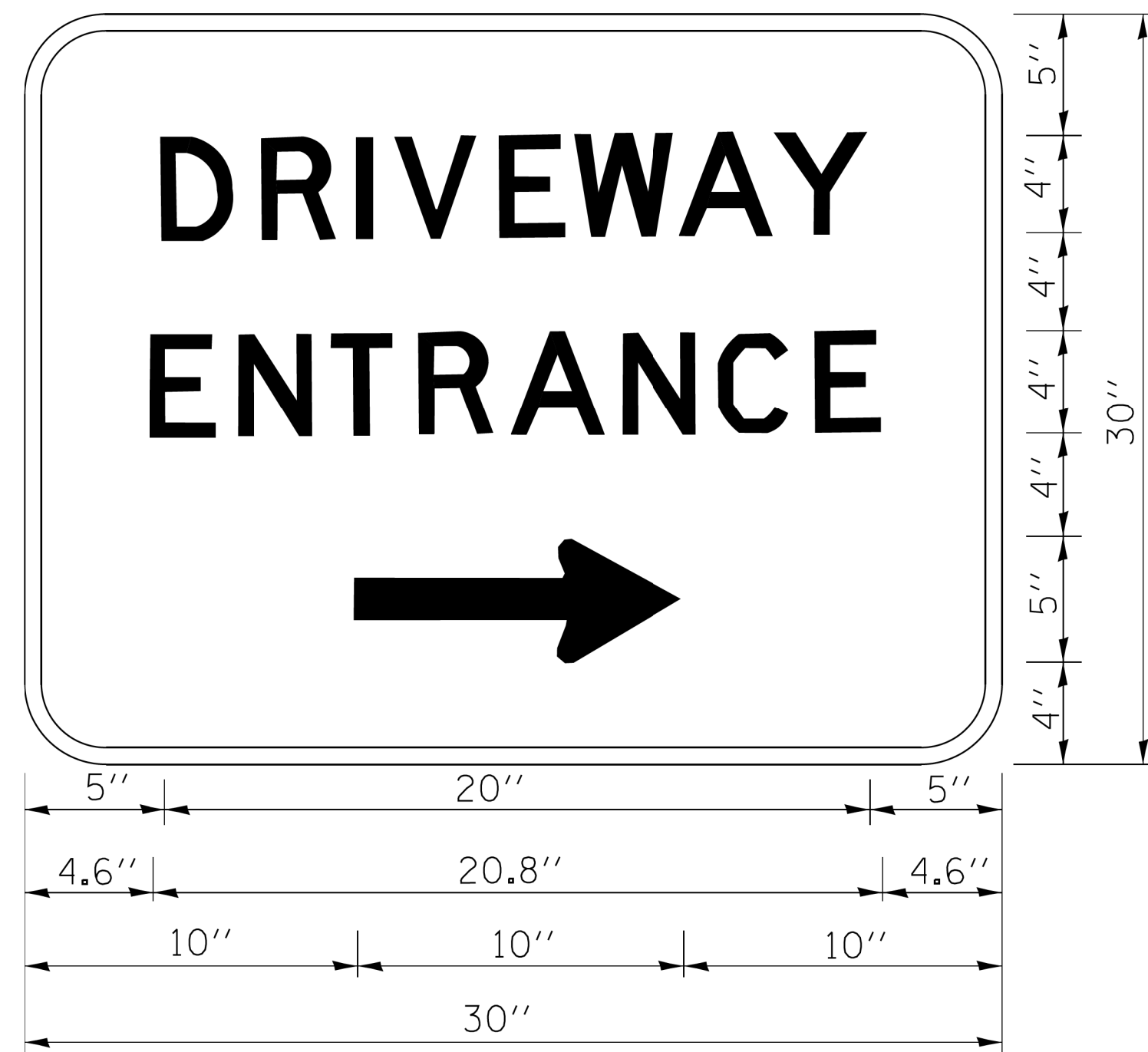


NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

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

FILE NAME = W:\diststd\22x34\to22.dgn	USER NAME = geglonebt	DESIGNED -	REVISED - R. MIRS 09-15-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. MIRS 12-11-97		SCALE: NONE	SHEET NO. 1	OF 1	SHEETS	STA.	TO STA.	510	359
		PLOT SCALE = 50.000' / IN.	REVISED - T. RAMMACHER 02-02-99		TC-22			CONTRACT NO.				
		PLOT DATE = 1/4/2008	REVISED - C. JUCIUS 01-31-07		<small>FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT</small>							



3.0" RADIUS, 0.5" BORDER, WHITE ON GREEN; REFLECTORIZED
 "DRIVEWAY" D; "ENTRANCE" D; STANDARD ARROW CUSTOM 12.0" x 5.0"

NOTES:

1. HALF OF THE SIGNS WILL REQUIRE A LEFT HAND FACING ARROW.
2. TWO SIGNS SHALL BE USED AT EACH COMMERCIAL ENTRANCE
 PLACED BACK-TO-BACK: ONE WITH A RIGHT HAND ARROW (SHOWN)
 SHALL BE PLACED ON THE NEAR RIGHT SIDE THE DRIVEWAY
 AND ONE WITH A LEFT HAND ARROW SHALL BE PLACED ON THE
 FAR LEFT SIDE OF THE DRIVEWAY.
3. SIGNS TO BE PAID FOR AS ITEM "TEMPORARY INFORMATION SIGNING".

FILE NAME =	USER NAME = gag1anobt	DESIGNED -	REVISED - C. JUCIUS 02-15-07
et:\pwork\pwork\gag1anobt\d0108315\to26.dgn		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

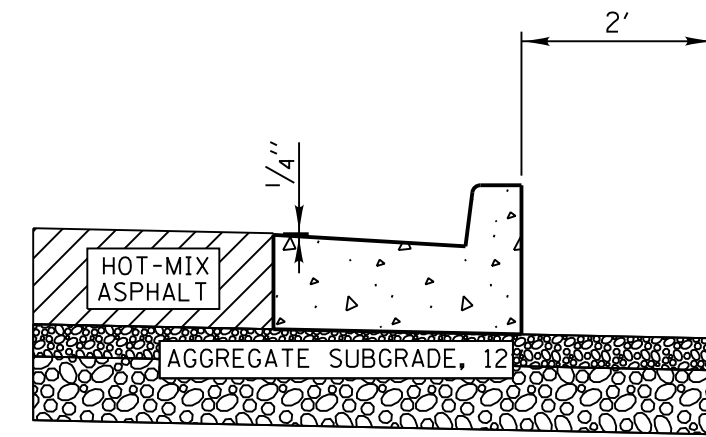
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

DRIVEWAY ENTRANCE SIGNING

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

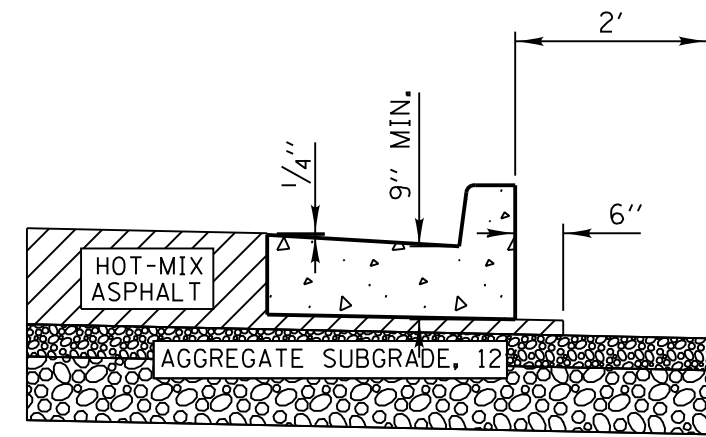
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			510	360
TC-26			CONTRACT NO.	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

DATE	
BY	
PLAN	
NO.	
NOTE BOOK	
CHECKED	
DATE	
FILE NAME	



TYPICAL METHOD

NOTE:
MINIMUM FLAG THICKNESS 9"



OPTIONAL METHOD

NOTE:
COST OF HOT-MIX ASPHALT MATERIAL UNDER CURB AND 6" OUTSIDE OF CURB TO BE INCIDENTAL TO COST OF COMBINATION CONCRETE CURB AND GUTTER.

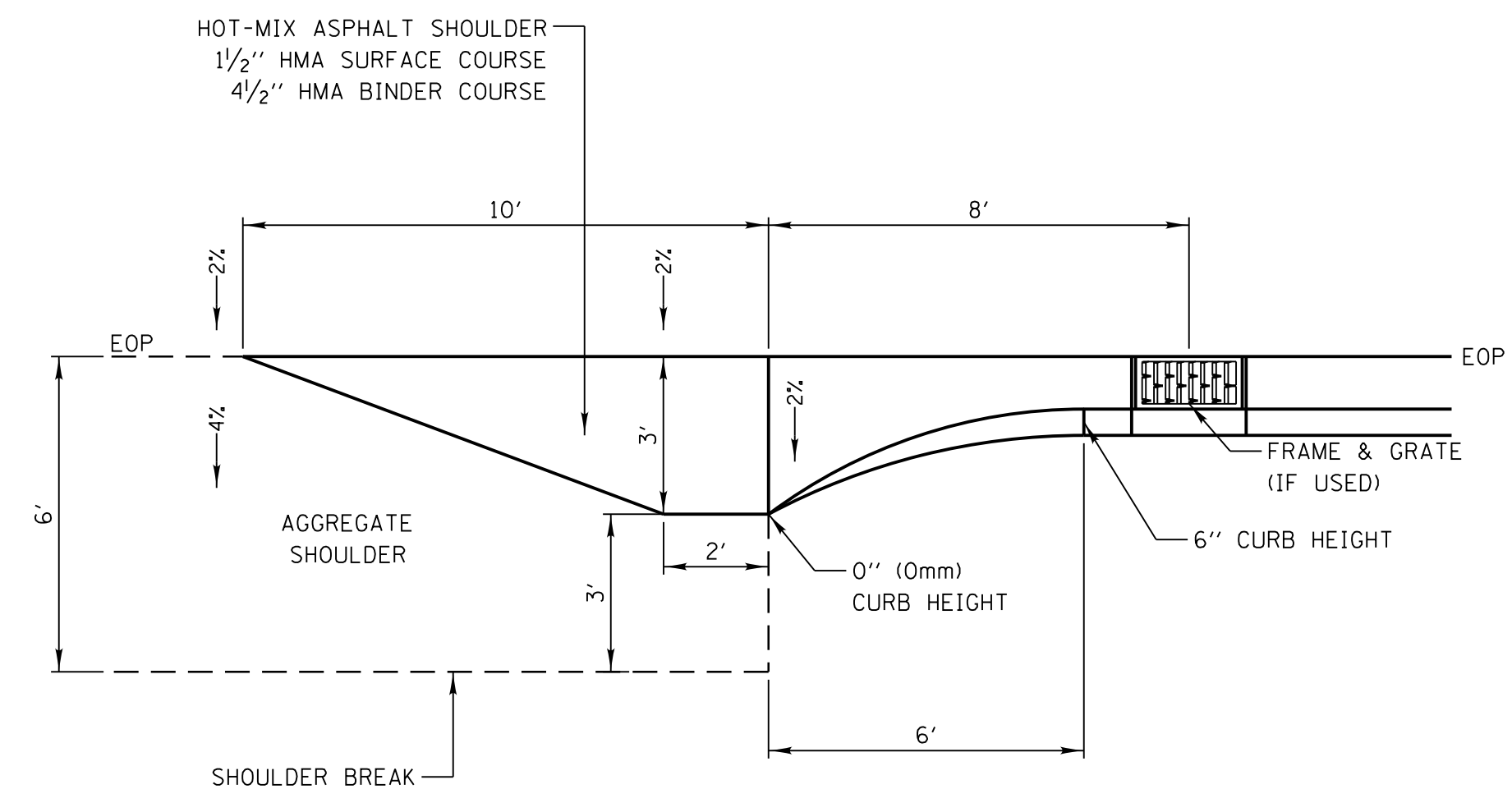
SCALE: 1" = 2'

REVISIONS	DATE	DESCRIPTION

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

LakeCounty
Division of Transportation

CURB & GUTTER
SUBGRADE OPTIONS



SCALE: 1" = 3'

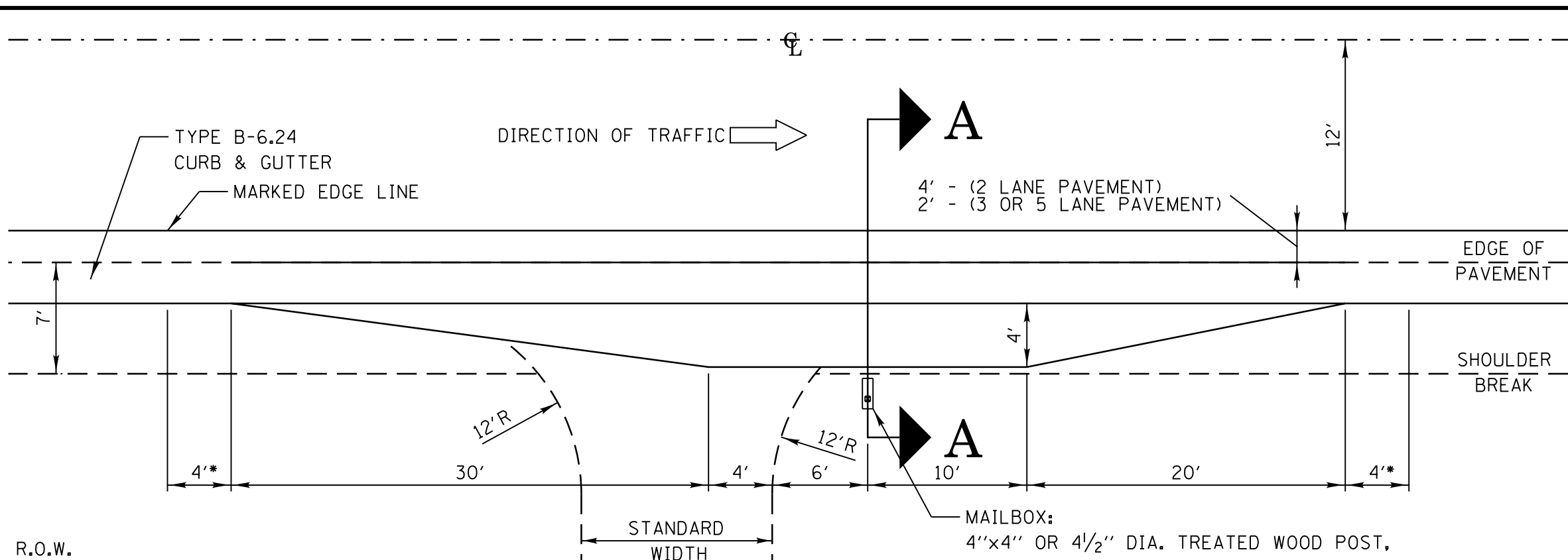
REVISIONS	DATE	DESCRIPTION

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

LakeCounty
Division of Transportation

TRANSITION FROM
AGGREGATE SHOULDER
TO B-6.12

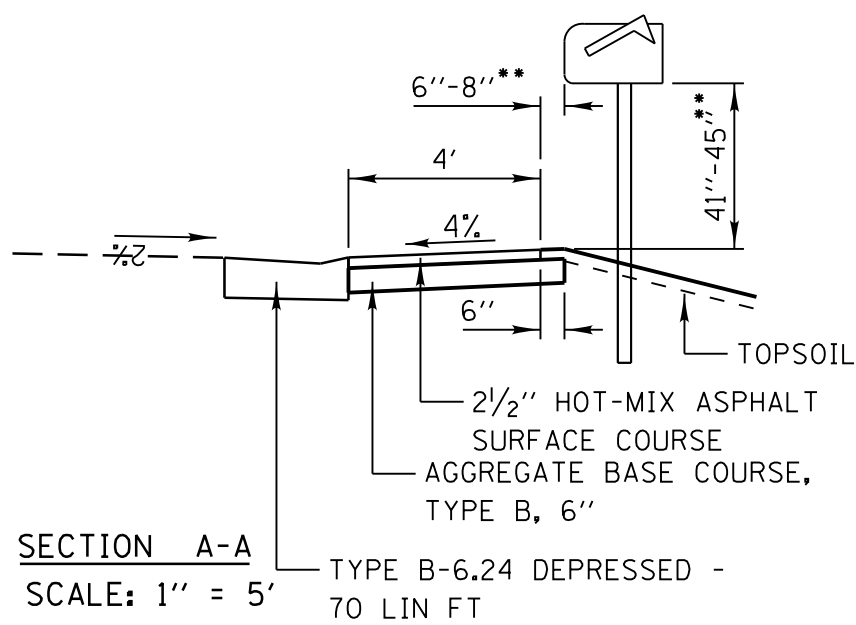
DATE	
BY	
PROFILE	
NO.	
NOTE BOOK	
CHECKED	
DATE	
FILE NAME	



*CURB TRANSITION EACH END TO BE PAID FOR AT THE CONTRACT UNIT PRICE FOR COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24.

DESIGN NOTES:

1. The Resident Engineer shall contact the local postmaster prior to installing the new mailbox posts for the local mounting height of the mailbox. The standard mounting height is 3 1/2'; however, local postmasters may vary this height.
2. The standard mailbox post is a 4"x4" or a 4 1/2" dia. treated wood post. The standard bury length of the post is 2'. Do not shorten or exceed this bury length.
3. Depending on the location of the shoulder break with respect to the edge of the mailbox turnout the overall post length may vary from 5' 8" to 6' 4" to maintain the 2' bury length and the 3 1/2' mounting height.



SECTION A-A
SCALE: 1" = 5'
70 LIN FT

** USPS RESIDENTIAL MAILBOX STANDARD

REVISIONS	DATE	DESCRIPTION
6"-8" BOX OFFSET ADDED	12/22/11	
Revised Type A to Type B Aggregate	12/20/12	
Revised Curb Transition	1/7/15	

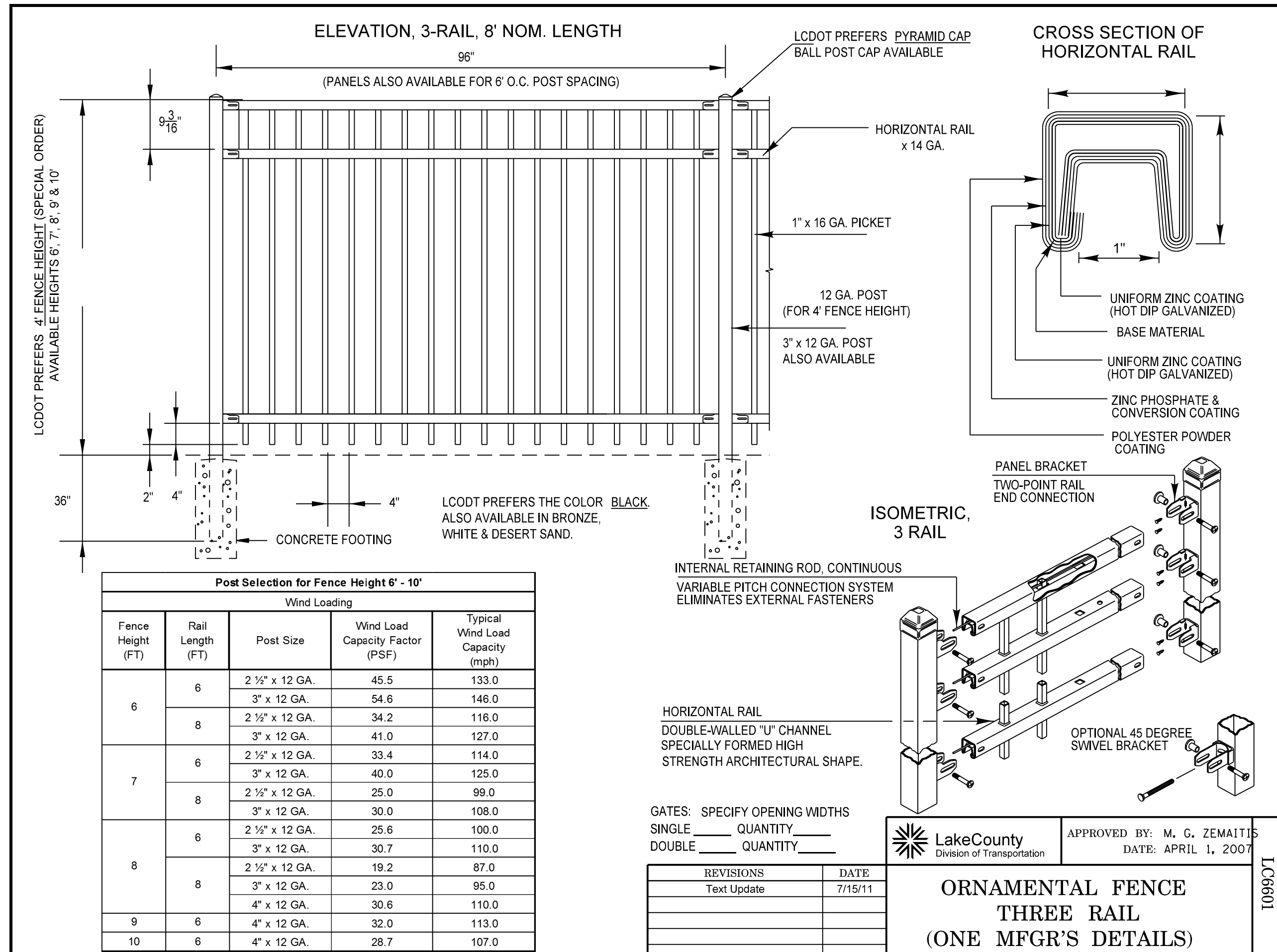
APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

LakeCounty
Division of Transportation

MAILBOX TURNOUT
ALONG CURBED ROADS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

USER NAME = 35361	DESIGNED	REVISED	-
	DRAWN	REVISED	
PLOT SCALE = 1:0000' / 1"	CHECKED	REVISED	
PLOT DATE = 9/14/2017	DATE	02/02/2017	REVISED



Post Selection for Fence Height 6' - 10'					
Wind Loading					
Fence Height (FT)	Rail Length (FT)	Post Size	Wind Load Capacity Factor (PSF)	Typical Wind Load Capacity (mph)	
6	6	2 1/2" x 12 GA.	45.5	133.0	
	8	3" x 12 GA.	54.6	146.0	
	8	2 1/2" x 12 GA.	34.2	116.0	
7	6	3" x 12 GA.	41.0	127.0	
	8	2 1/2" x 12 GA.	33.4	114.0	
	8	3" x 12 GA.	40.0	125.0	
8	6	2 1/2" x 12 GA.	25.0	99.0	
	8	3" x 12 GA.	30.0	108.0	
	8	2 1/2" x 12 GA.	25.6	100.0	
9	6	3" x 12 GA.	30.7	110.0	
	8	2 1/2" x 12 GA.	19.2	87.0	
	8	3" x 12 GA.	23.0	95.0	
10	6	4" x 12 GA.	30.6	110.0	
	6	4" x 12 GA.	32.0	113.0	
	6	4" x 12 GA.	28.7	107.0	

GATES: SPECIFY OPENING WIDTHS
SINGLE QUANTITY
DOUBLE QUANTITY

REVISIONS	DATE
Text Update	7/15/11

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

LakeCounty
Division of Transportation

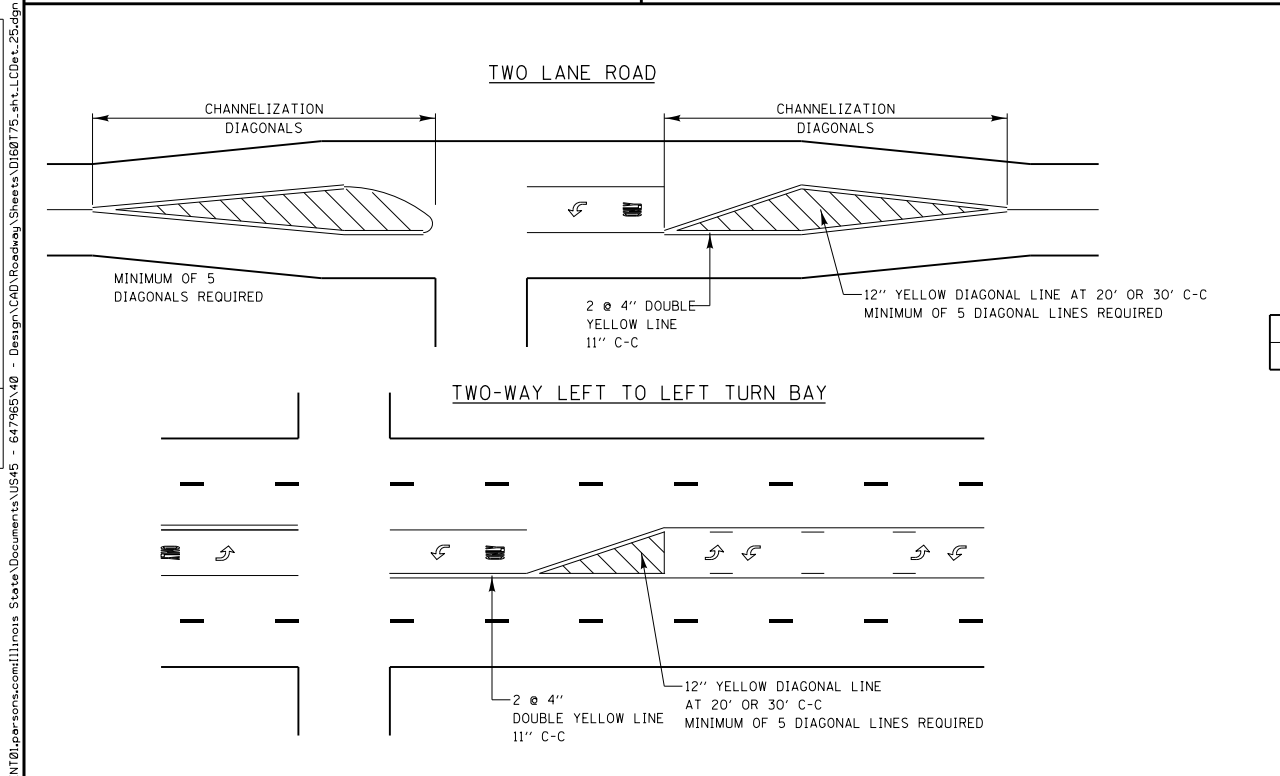
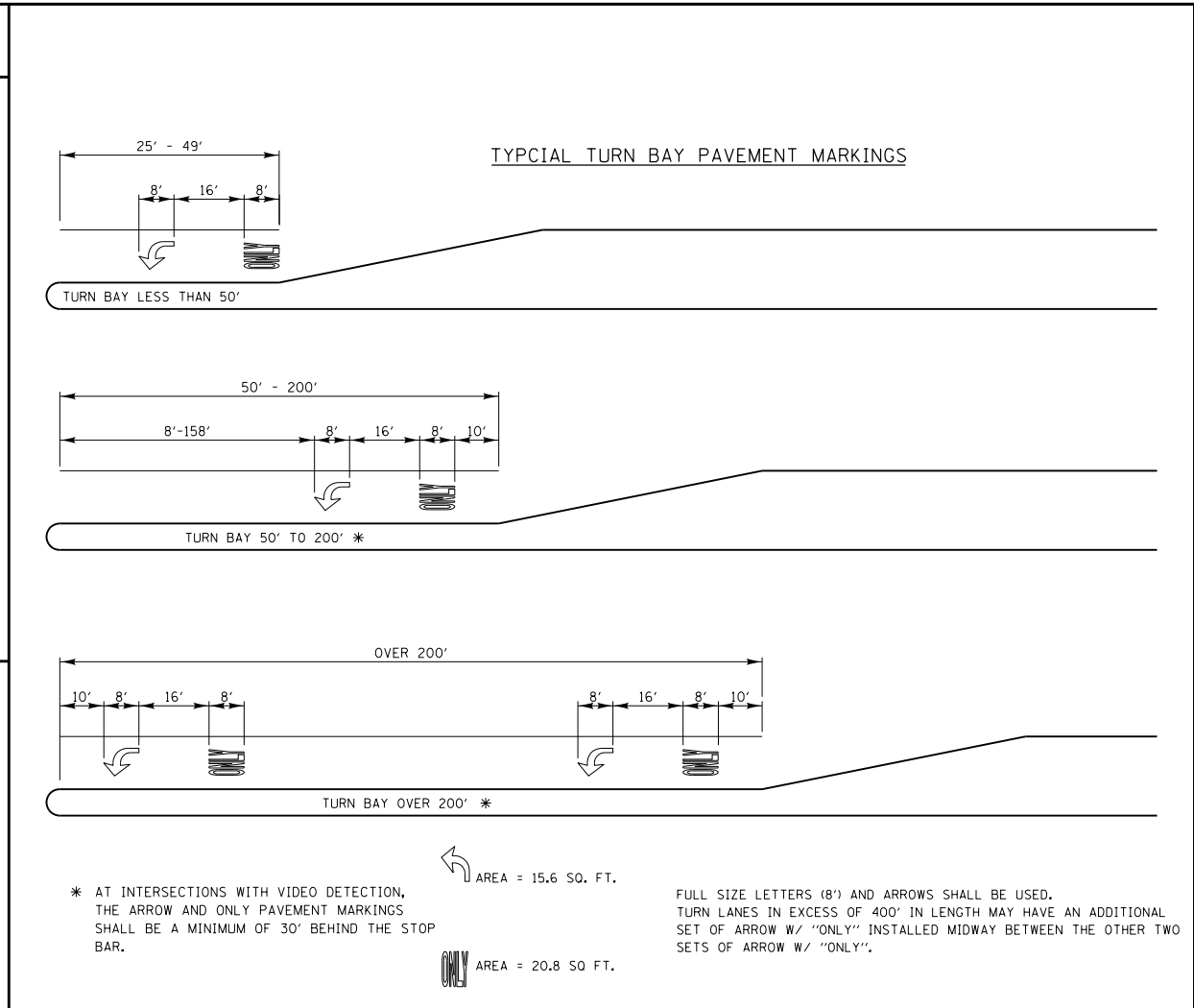
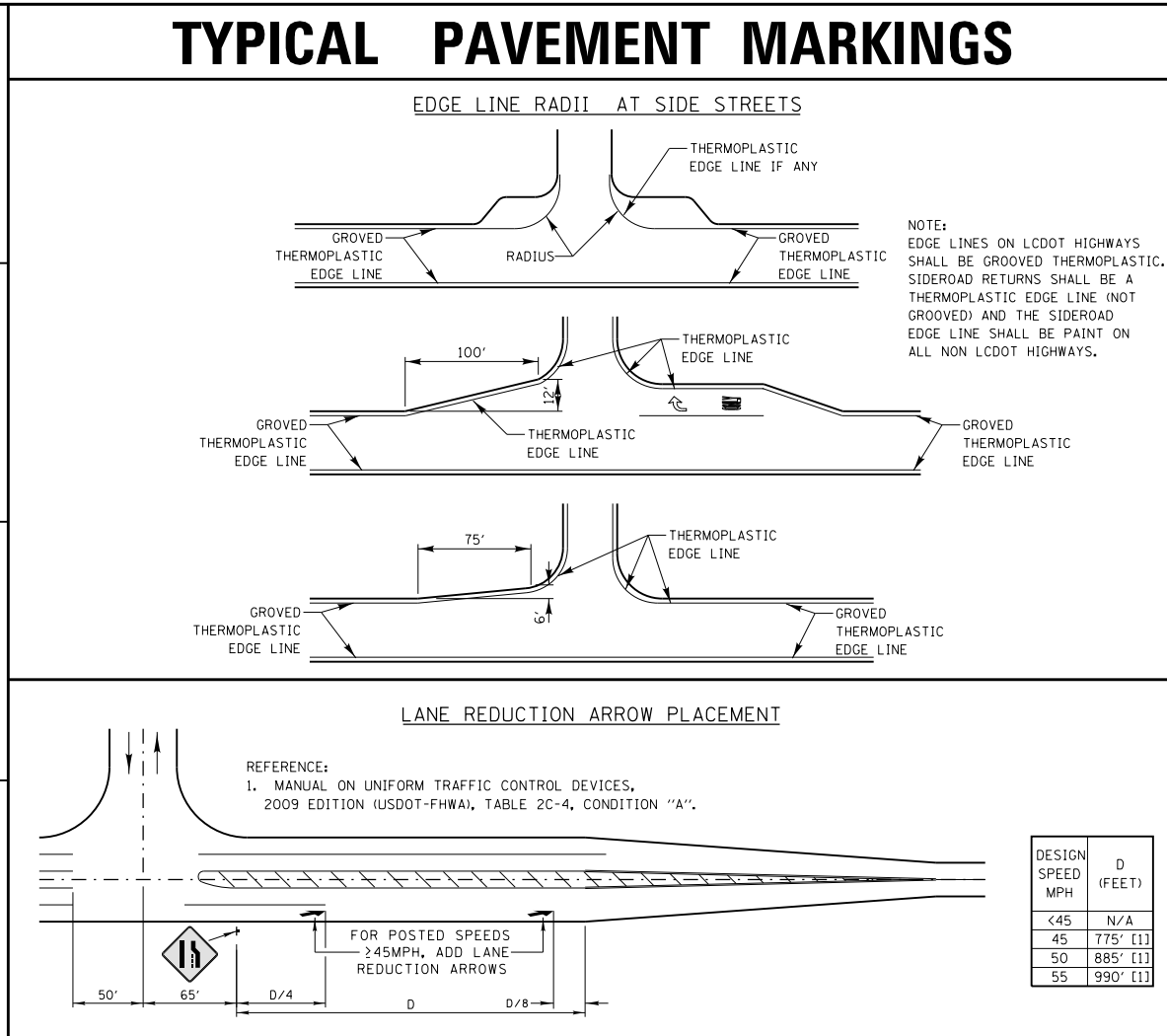
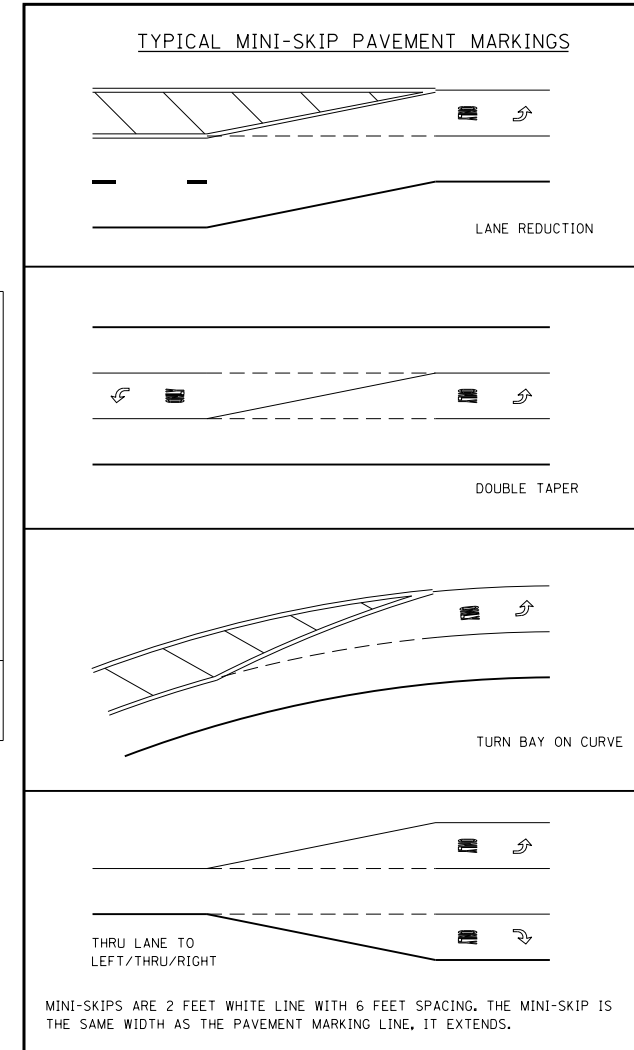
ORNAMENTAL FENCE
THREE RAIL
(ONE MFGR'S DETAILS)

F.A.P. RTE. = 344	SECTION = 39 R	COUNTY = LAKE	TOTAL SHEETS = 510	SHEET NO. = 361
CONTRACT NO. = 60775				ILLINOIS FED. AID PROJECT

SCALE: SHEET OF SHEETS STA. TO STA.

PLAN	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOT AT THIS OFFICE	
	NO. _____	
	BY _____	
	DATE _____	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOT AT THIS OFFICE	
	NO. _____	
	BY _____	
	DATE _____	

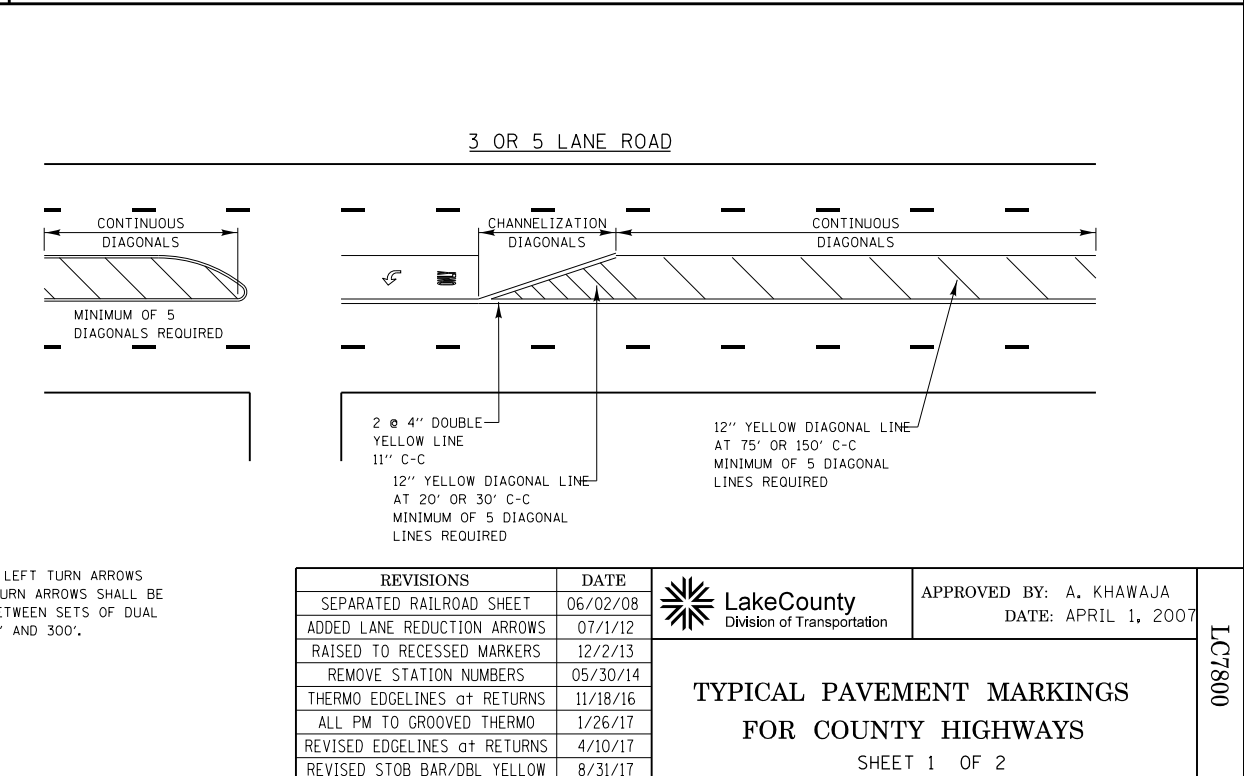


TYPICAL DIAGONAL SPACING

SPEED LIMIT RANGE	CONTINUOUS	INTERSECTION CHANNELIZATION
30-45 MPH	75 FT.	20 FT.
OVER 45 MPH	150 FT.	30 FT.

DUAL LEFT TURN ARROWS

31.2 SQ. FT. MINIMUM OF 2 SETS REQUIRED

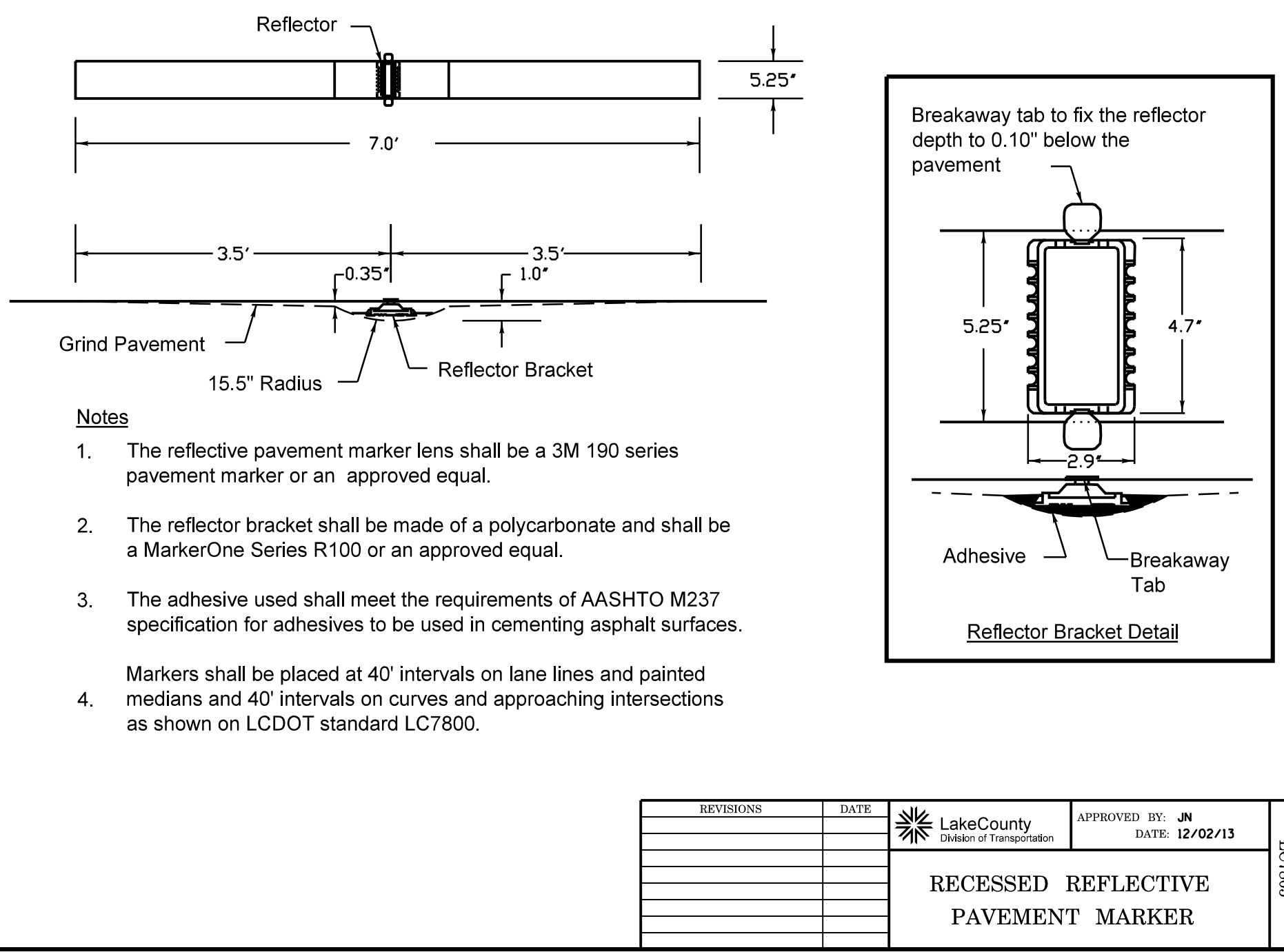


USER NAME = P0027446	DESIGNED	REVISED		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 40.0000' / in.	DRAWN	REVISED										344	39 R	LAKE	510	362
PLOT DATE = 3/14/2018	CHECKED	REVISED										CONTRACT NO. 60775				
	DATE	REVISED										ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	CHECKED AT		
	DATE		
	FILE NAME		

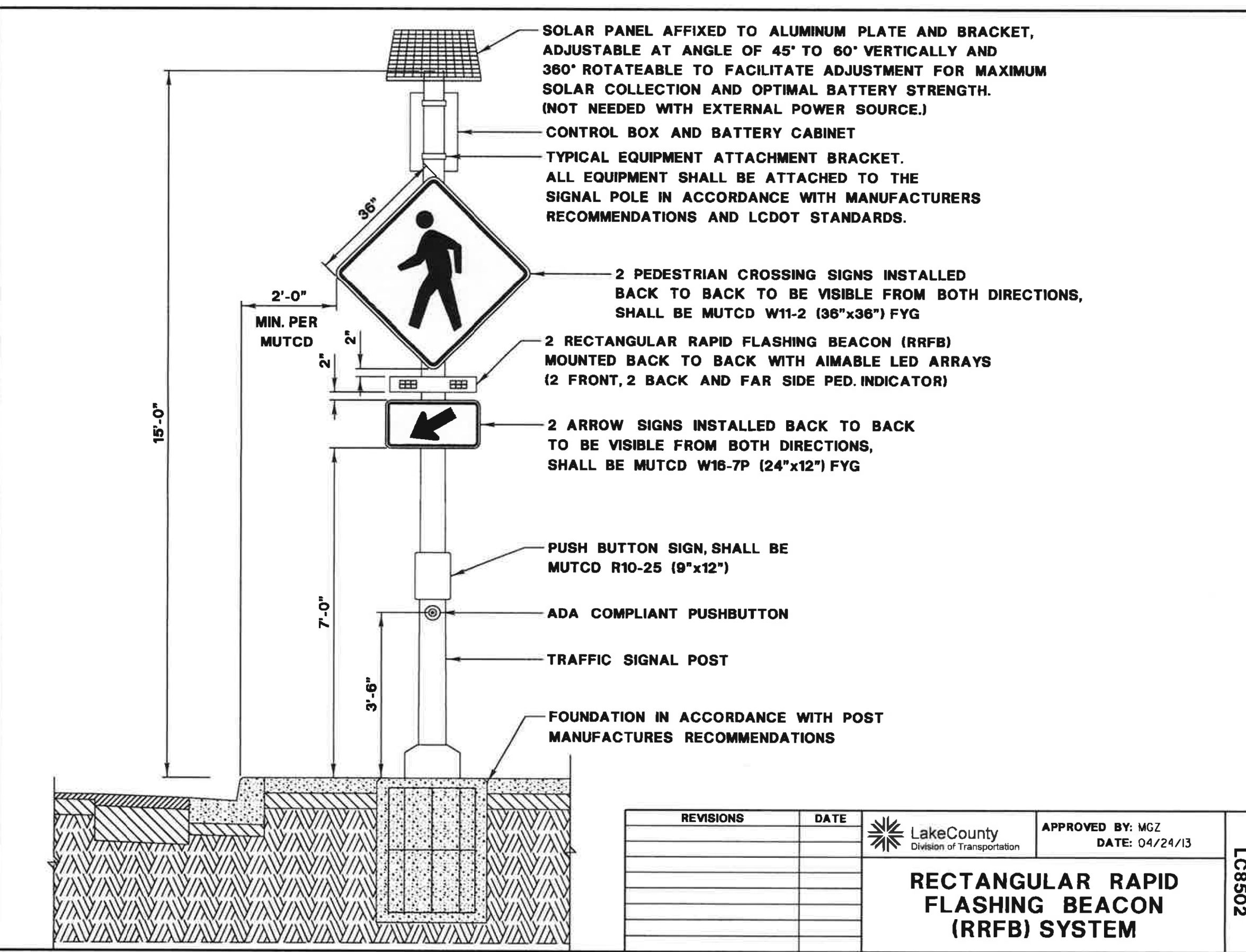
PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		
	NOTE BOOK NO.		
	CHECKED AT		
	DATE		
	FILE NAME		

FILE NAME = p:\t\proj\02\prr\02\person\com\Illinois State Documents\US45 - 647965\48 - Design\CDOT\Roadway\Sheets\0160775.sht.LEDat.27.dgn



- Notes**
- The reflective pavement marker lens shall be a 3M 190 series pavement marker or an approved equal.
 - The reflector bracket shall be made of a polycarbonate and shall be a MarkerOne Series R100 or an approved equal.
 - The adhesive used shall meet the requirements of AASHTO M237 specification for adhesives to be used in cementing asphalt surfaces.
 - Markers shall be placed at 40' intervals on lane lines and painted medians and 40' intervals on curves and approaching intersections as shown on LCDOT standard LC7800.

REVISIONS	DATE	APPROVED BY	DATE
		JN	12/02/13
Lake County Division of Transportation			
RECESSED REFLECTIVE PAVEMENT MARKER			



REVISIONS	DATE	APPROVED BY	DATE
		MGZ	04/24/13
Lake County Division of Transportation			
RECTANGULAR RAPID FLASHING BEACON (RRFB) SYSTEM			

USER NAME = 35361	DESIGNED	REVISED -
	DRAWN	REVISED
PLOT SCALE = 1.0000' / in.	CHECKED	REVISED
PLOT DATE = 12/6/2017	DATE 02/02/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	364
CONTRACT NO.				60T75
ILLINOIS FED. AID PROJECT				

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

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

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USER NAME = 35361	DESIGNED - MO	REVISED -
	DRAWN - SO	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - KK	REVISED -
PLOT DATE = 9/13/2017	DATE - 02/02/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PROPOSED CROSS SECTIONS
MAINTENANCE OF TRAFFIC - US 45**

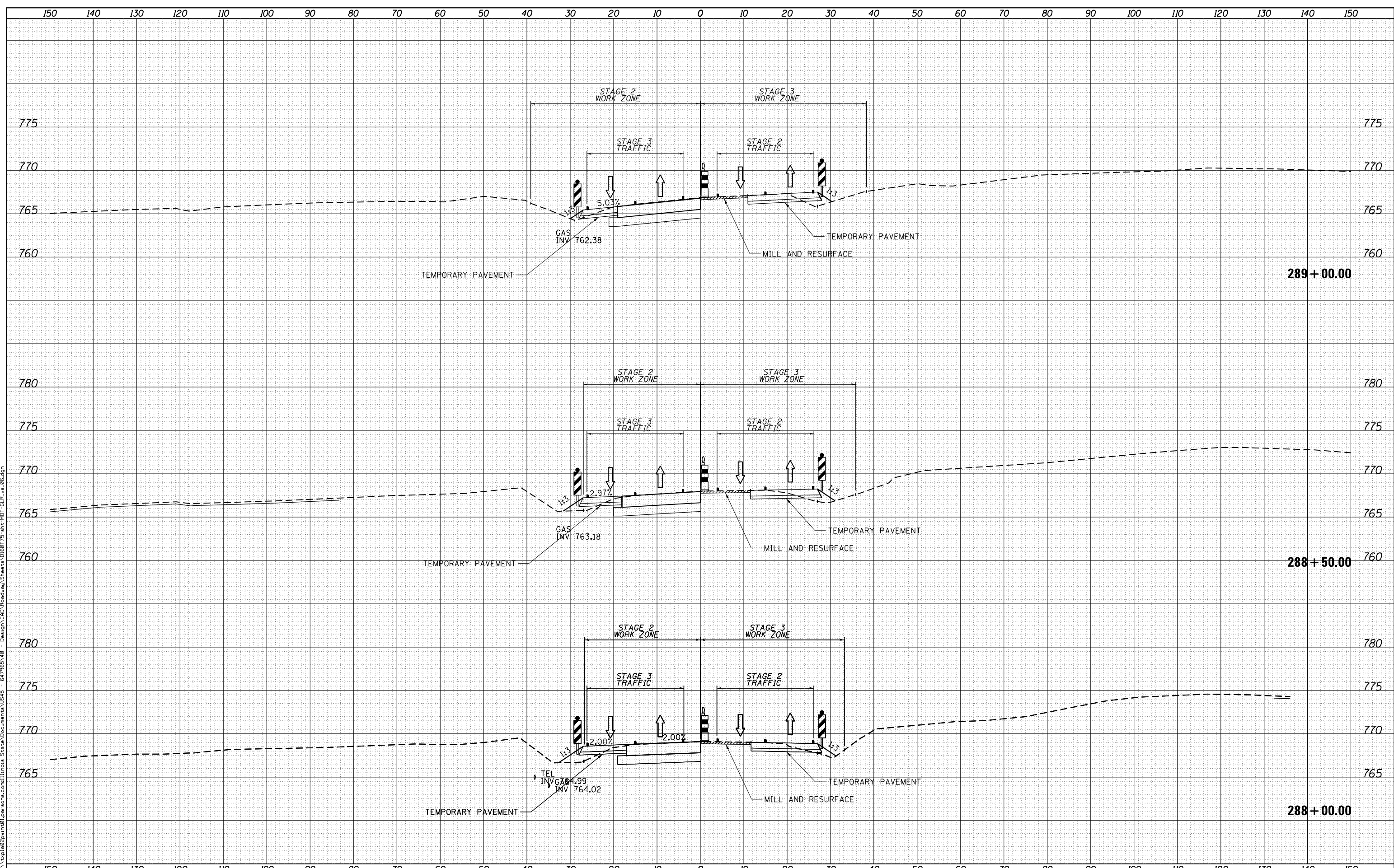
SCALE: SHEET OF SHEETS STA. 106+00.00 TO STA. 106+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	366
CONTRACT NO. 60775			ILLINOIS FED. AID PROJECT	

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	

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USER NAME = 35361	DESIGNED - MO	REVISD -
	DRAWN - SO	REVISD -
PLOT SCALE = 20.0000' / in.	CHECKED - KK	REVISD -
PLOT DATE = 9/13/2017	DATE - 02/02/2017	REVISD -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PROPOSED CROSS SECTION
MAINTENANCE OF TRAFFIC - GRASS LAKE ROAD**

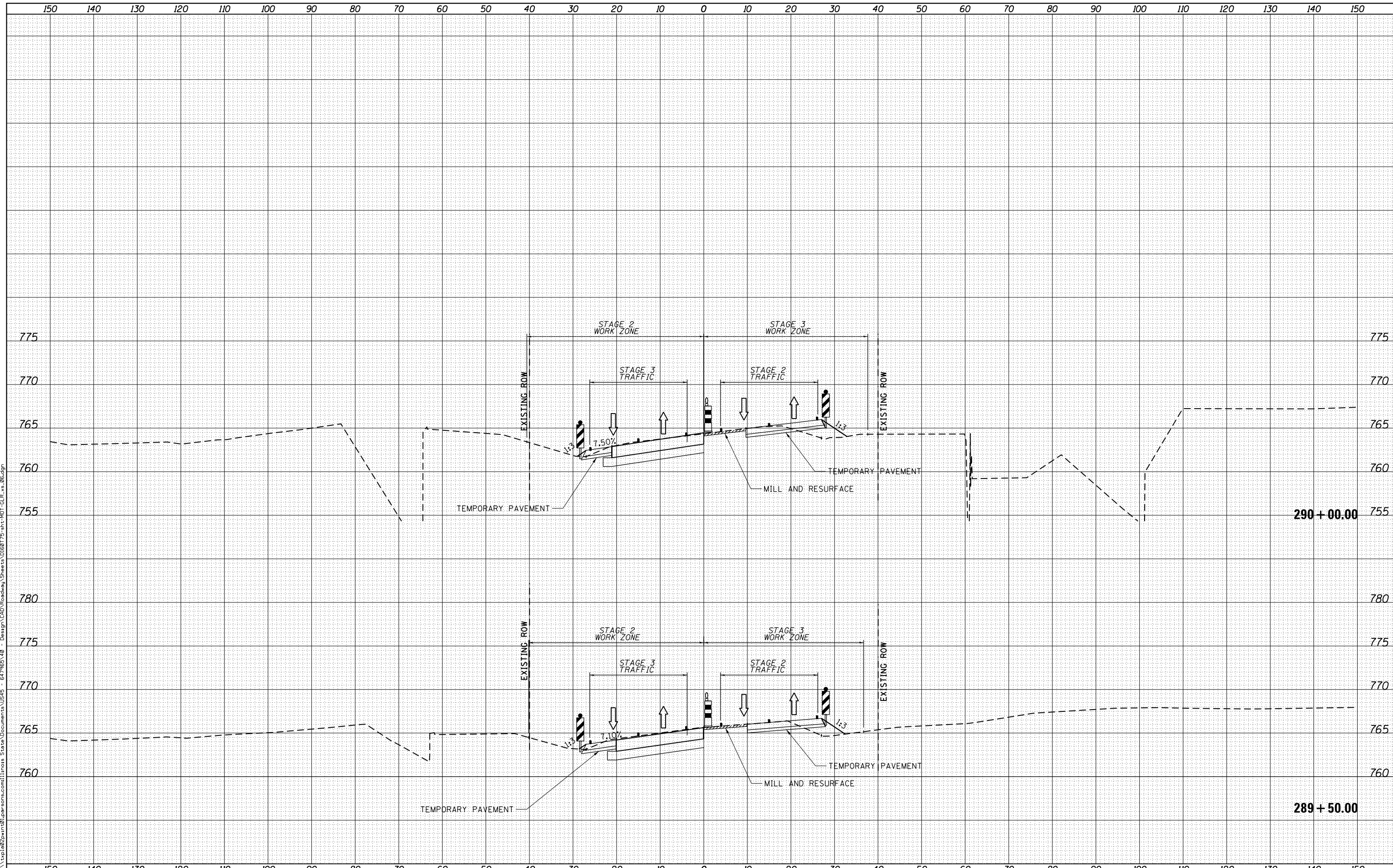
SCALE: SHEET OF SHEETS STA. 288+00.00 TO STA. 289+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	379
CONTRACT NO. 60T75				ILLINOIS FED. AID PROJECT

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

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

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USER NAME = 35361	DESIGNED - MO	REvised -
	DRAWN - SO	REvised -
PLOT SCALE = 20.0000' / in.	CHECKED - KK	REvised -
PLOT DATE = 9/13/2017	DATE - 02/02/2017	REvised -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PROPOSED CROSS SECTION
MAINTENANCE OF TRAFFIC - GRASS LAKE ROAD**

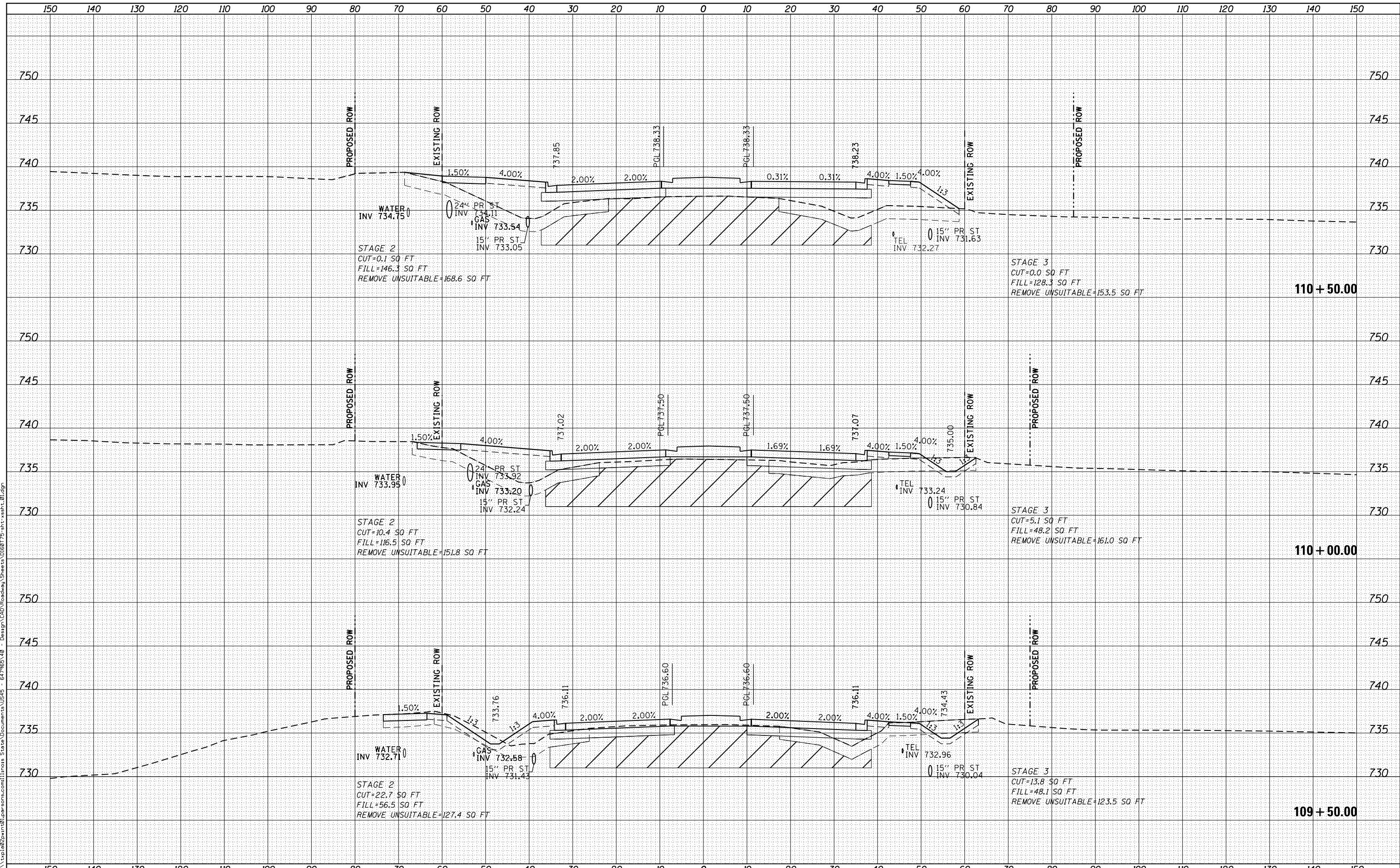
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	380
			CONTRACT NO. 60T75	
ILLINOIS FED. AID PROJECT				

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

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

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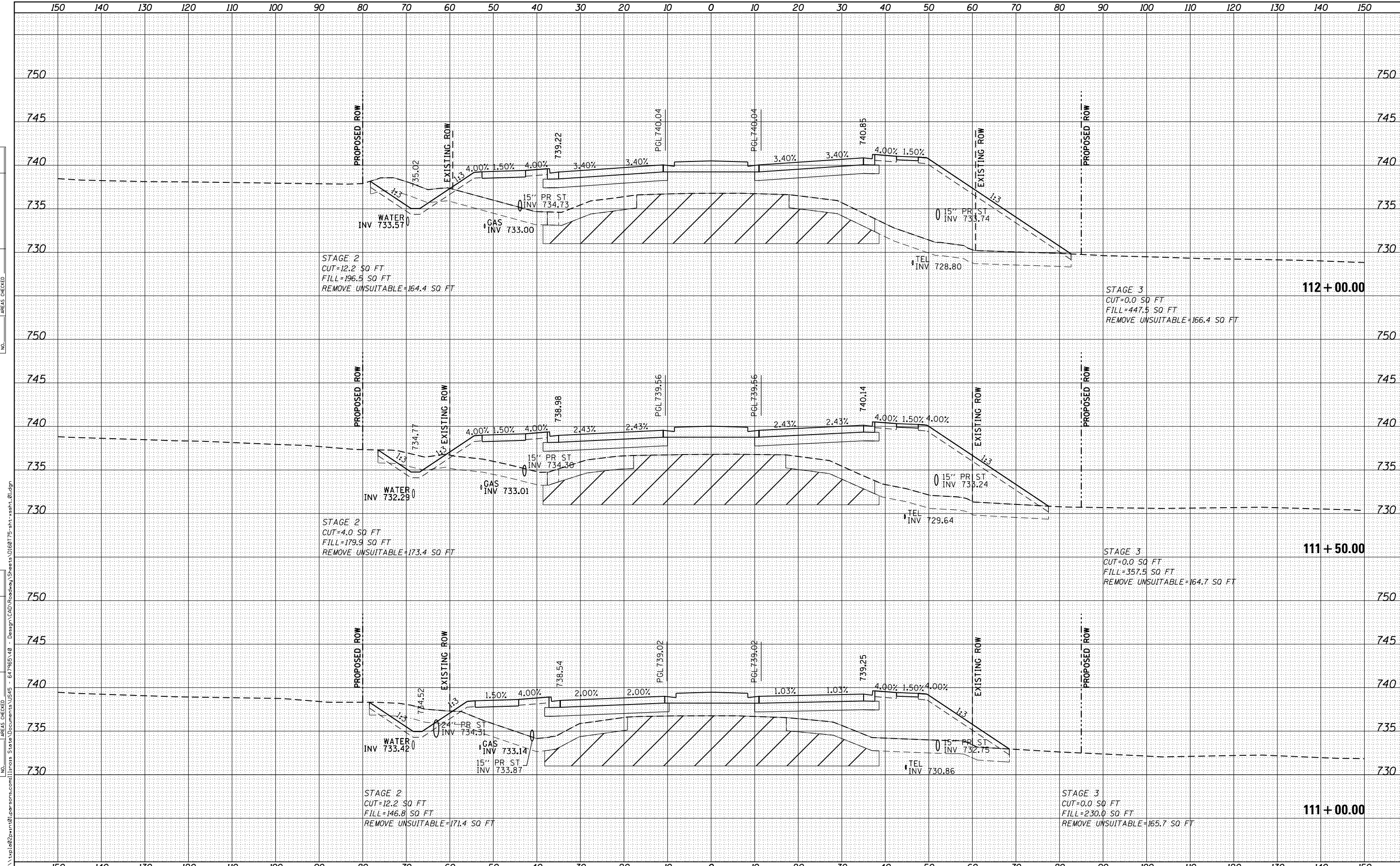
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	DRAWN - SO	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - JC	REVISED -
PLOT DATE = 9/13/2017	DATE - 02/02/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PROPOSED CROSS SECTIONS
US 45 MAINLINE**

SCALE: SHEET OF SHEETS STA. 109+50.00 TO STA. 110+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	397
				CONTRACT NO. 60T75
ILLINOIS FED. AID PROJECT				



DATE	
BY	
FINISHED SURVEY	
PLOTTED TEMPLATE	
NO. AREAS CHECKED	

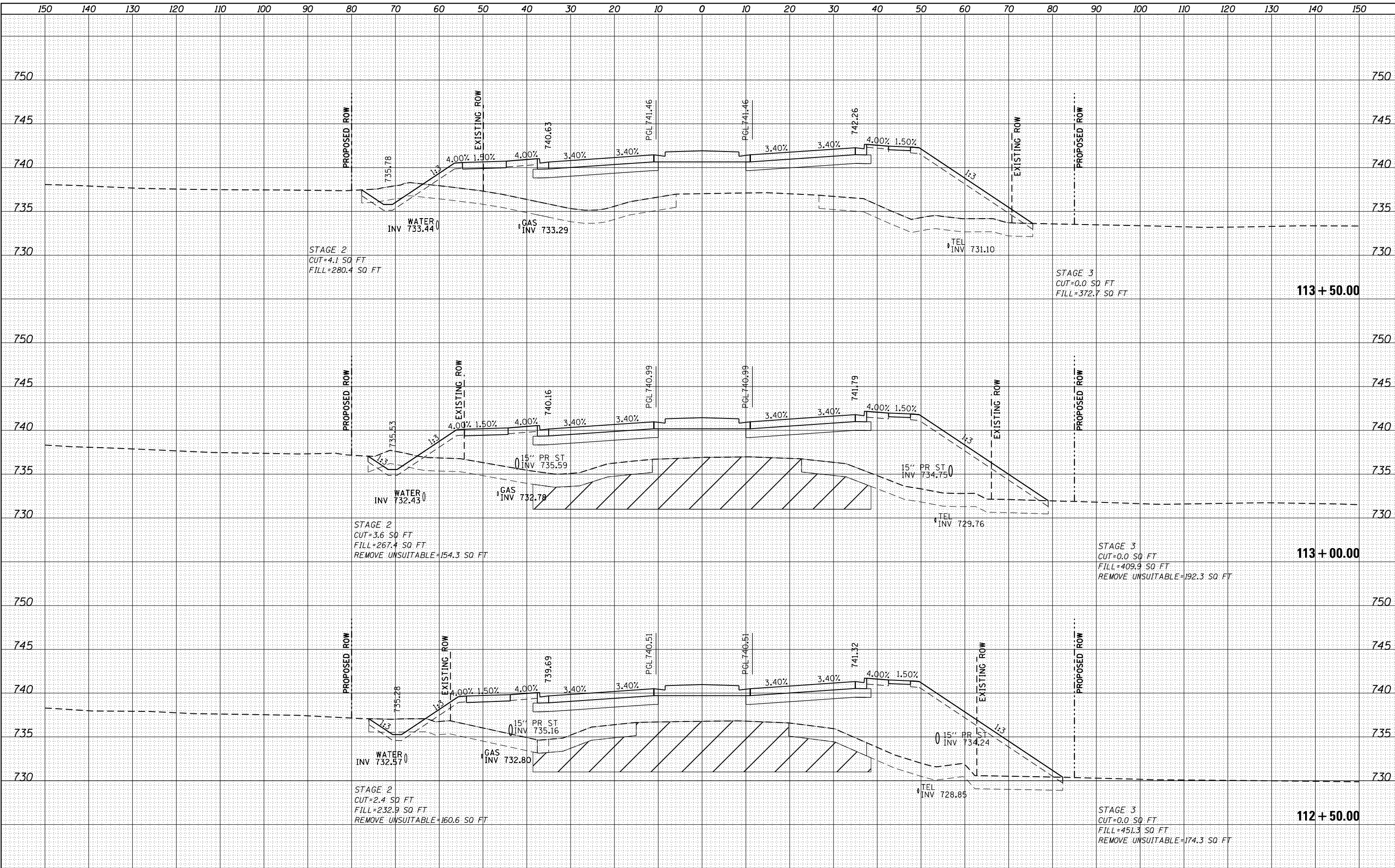
DATE	
BY	
ORIGINAL SURVEY	
PLOTTED TEMPLATE	
NO. AREAS CHECKED	

USER NAME = 35361	DESIGNED - FZ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED CROSS SECTIONS US 45 MAINLINE	F.A. RTE. 344	SECTION 39 R	COUNTY LAKE	TOTAL SHEETS 510	SHEET NO. 398
PLLOT SCALE = 20.0000' / in.	CHECKED - JC	REVISED -						CONTRACT NO. 60T75	
PLLOT DATE = 9/13/2017	DATE - 02/02/2017	REVISED -			SCALE:	SHEET OF SHEETS	STA. 111+00.00 TO STA. 112+00.00	ILLINOIS FED. AID PROJECT	

DATE	
BY	
FINISHED	
NO.	
DATE	
BY	
FINISHED	
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DATE	
BY	
FINISHED	
NO.	

DATE	
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DATE	
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FINISHED	
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DATE	
BY	
FINISHED	
NO.	

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USER NAME = 35361	DESIGNED - FZ	REVISOR -
PLOT SCALE = 20.0000' / 1"	DRAWN - SO	REVISOR -
PLOT DATE = 9/13/2017	CHECKED - JC	REVISOR -
	DATE - 02/02/2017	REVISOR -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PROPOSED CROSS SECTIONS US 45 MAINLINE			
SCALE:	SHEET	OF SHEETS	STA. 112+50.00 TO STA. 113+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
344	39 R	LAKE	510	399
				CONTRACT NO. 60T75
ILLINOIS FED. AID PROJECT				

