

MISSOURI HIGHWAYS and TRANSPORTATION COMMISSION

JEFFERSON CITY, MISSOURI

**SUPPLEMENTAL PLANS TO JULY 2004 MISSOURI STANDARD
PLANS FOR HIGHWAY CONSTRUCTION**

EFFECTIVE July 1, 2010

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION
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607.20F	WOVEN WIRE FENCE	2	10/01/1998				

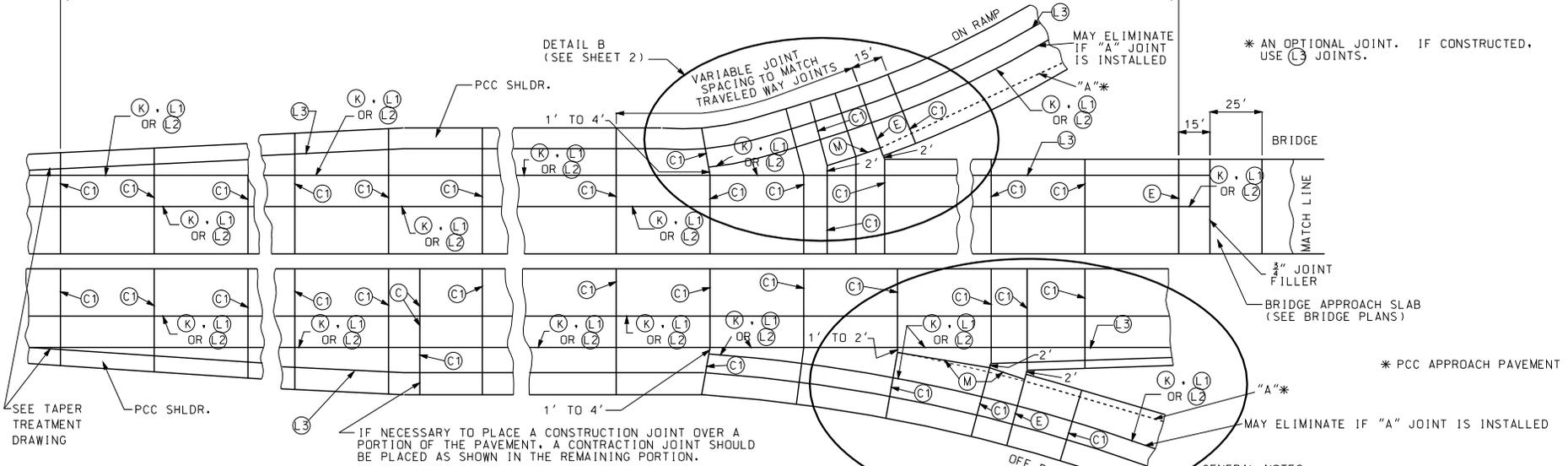
* REVISED OR ADDED SINCE OCTOBER 2009

SHEET 1 OF 2

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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TRANSVERSE JOINT SPACING 15'-0" (MAX.)



* AN OPTIONAL JOINT. IF CONSTRUCTED, USE (L3) JOINTS.

IF NECESSARY TO PLACE A CONSTRUCTION JOINT OVER A PORTION OF THE PAVEMENT, A CONTRACTION JOINT SHOULD BE PLACED AS SHOWN IN THE REMAINING PORTION.

INTERCHANGE

DETAIL A (SEE SHEET 2)

GENERAL NOTES:

ALL TRANSVERSE JOINTS ON SHOULDERS SHALL BE (L3). THE CONTRACTOR SHALL DETERMINE THE PAVING WIDTH.

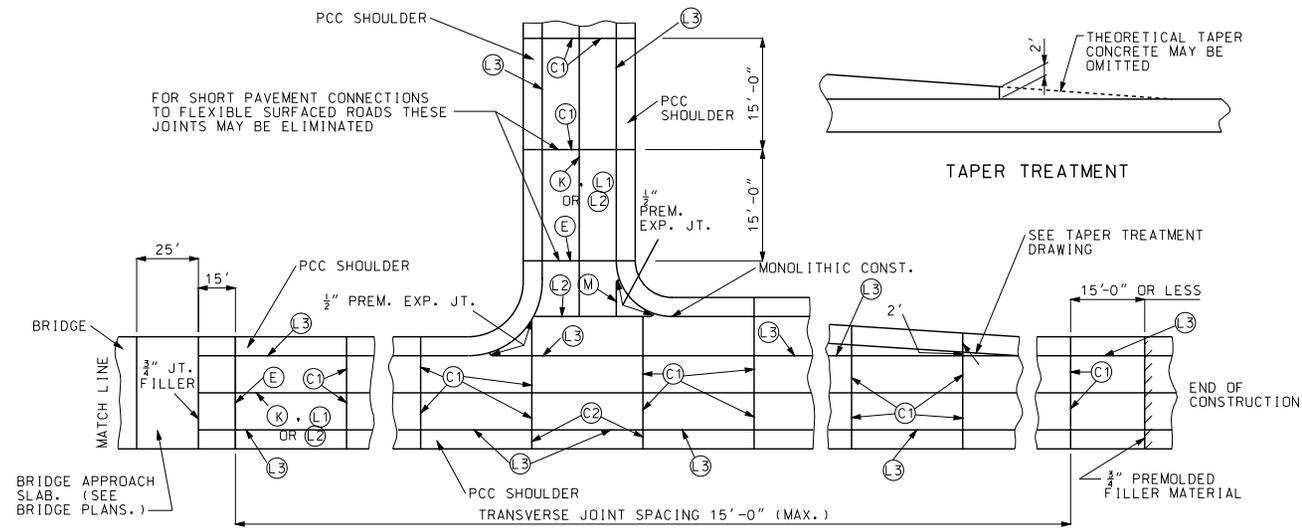
(L3) SHALL BE USED BETWEEN PAVEMENT AND SHOULDER GREATER THAN 4'. THE INTERCHANGE WILL EXTEND FROM THE BEGINNING OF THE ACCELERATION/DECELERATION LANE TO THE GORE RETURN TAPER ON THE MAINLINE. THE INTERCHANGE WILL ALSO INCLUDE THE RAMP UP TO THE BEGINNING OF THE RADIUS WITH THE ROAD INTERSECTING THE RAMP.

FOR JOINT DETAILS, SEE SHEETS NO. 3 & 4.

THE JOINT LAYOUT OF RAMPS IS TYPICAL FOR OUTER RAMPS OF CLOVERLEAF AND DIAMOND INTERCHANGES. SEE OTHER DRAWINGS FOR SPECIAL JOINT LAYOUTS.

JOINT SPACING SHOWN IS MAXIMUM AND IS TO BE REDUCED TO AVOID CONFLICT WITH ABUTTING STRUCTURES. JOINTS IN MULTI-LANE PAVEMENT ARE TO BE CONTINUOUS.

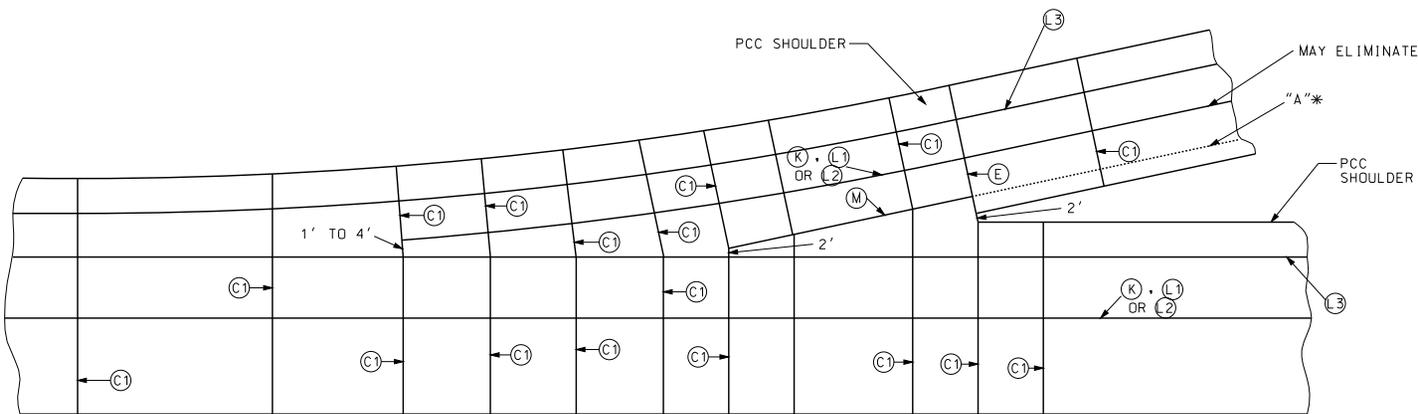
ALL SHOULDERS 4' OR LESS IN WIDTH SHALL BE CAST MONOLITHIC WITH THE ADJACENT LANE AND SHALL NOT HAVE A LONGITUDINAL JOINT OR TIE BARS.



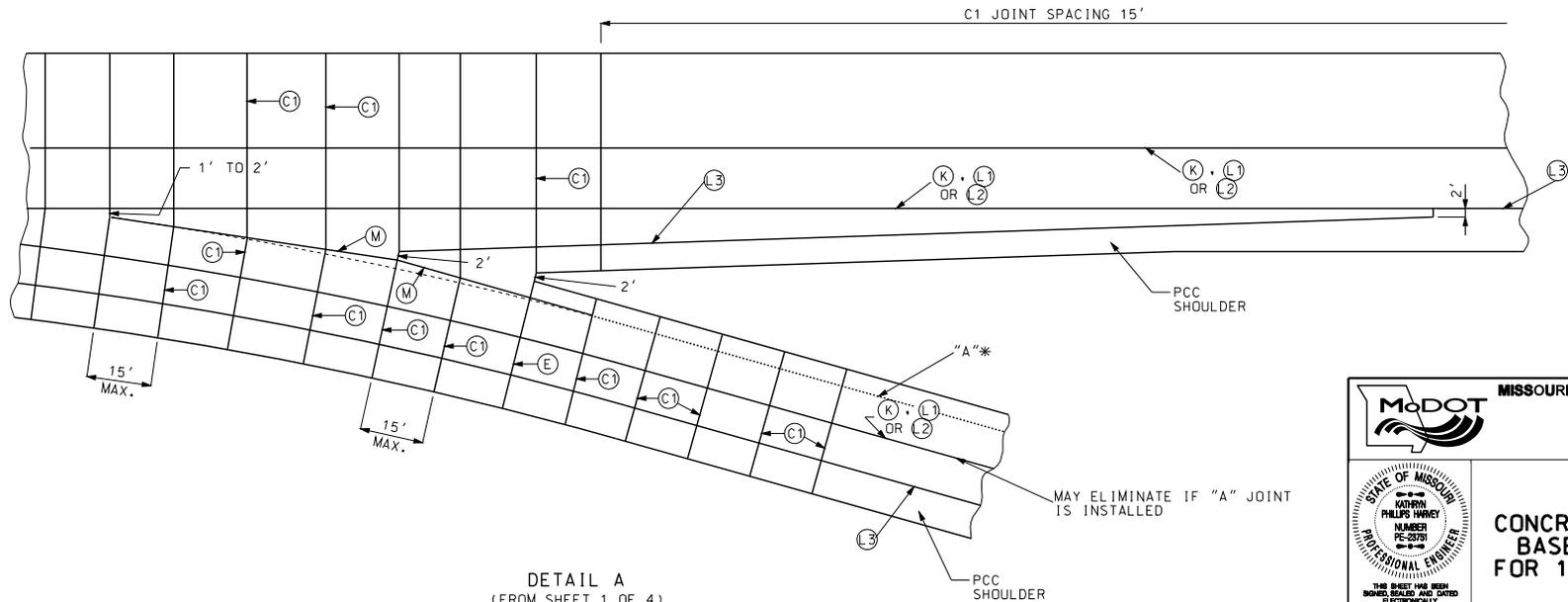
NON-INTERCHANGE

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)			
<p>CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15' JOINT SPACING</p>		<p>DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010</p>	
<p>502.05M</p>		<p>SHEET NO. 1 OF 4</p>	

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



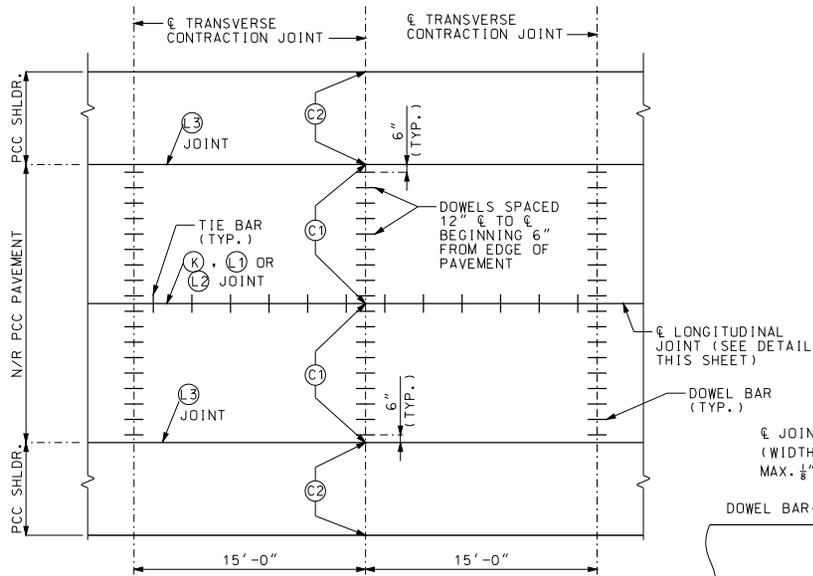
DETAIL B
(FROM SHEET 1 OF 4)



DETAIL A
(FROM SHEET 1 OF 4)

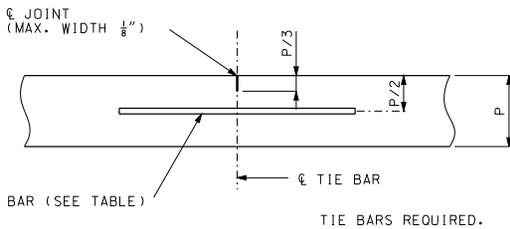
	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15' JOINT SPACING
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	502.05M	SHEET NO. 2 OF 4

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



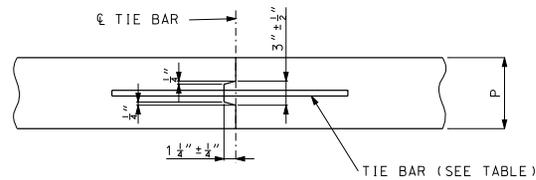
JOINT PLAN AND SPACING FOR CONTRACTION JOINTS (1)

(1) LONGITUDINAL JOINT NOT REQUIRED AT INSIDE SHOULDER ON DIVIDED HIGHWAYS OR AT INSIDE SHOULDER OF RAMPS. FOR 4' OR LESS INSIDE SHOULDERS, DOWELS ARE REQUIRED FOR THE FIRST TWO FEET ADJACENT TO THE TRAVEL LANE.



LONGITUDINAL JOINT (L1)

TIE BAR AND DOWEL TABLE				
PCCP THICKNESS (P)	DOWEL SIZE	TIE BAR SIZE	DOWEL SPACING	TIE BAR SPACING
LESS THAN 7"	NONE	#5X30"	NONE	30" CTR.-CTR.
7" TO 10"	1 1/4"X18"	#5X30"	12" CTR.-CTR.	30" CTR.-CTR.
GREATER THAN 10"	1 1/2"X18"	#6X40"	12" CTR.-CTR.	30" CTR.-CTR.



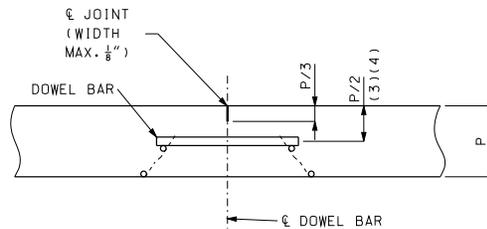
IF METAL IS USED TO FORM KEY DISCONTINUE STRIP FOR DISTANCE OF APPROXIMATELY 3" EACH SIDE OF TRANSVERSE JOINT.

TYPE (K) REQUIRES TIE BAR.

TYPE (M) CONSTRUCTED WITHOUT TIE BARS.

(K) AND (M) JOINTS SHALL NOT BE SAWED.

TONGUE AND GROOVE JOINTS (K) AND (M)

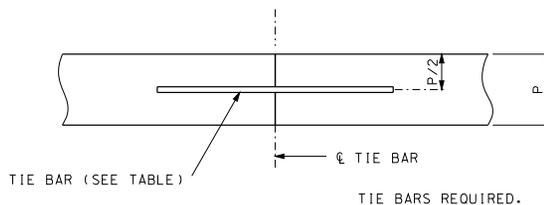


DOWELS REQUIRED. FOR PERMISSIBLE TYPES OF DOWELS SUPPORTING UNITS. SEE OTHER DRAWINGS.

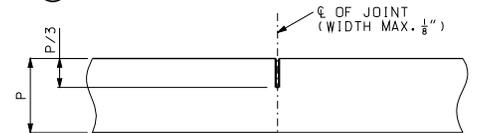
TRANSVERSE CONTRACTION JOINTS FOR CONCRETE PAVEMENT OR BASE WIDENING SHALL MATCH EXISTING JOINTS.

TRANSVERSE CONTRACTION JOINT (C1) (2)

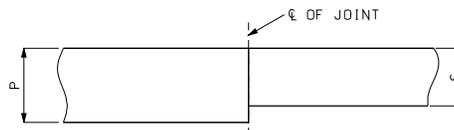
- (2) DOWEL BARS ARE REQUIRED FOR ALL PAVEMENTS HAVING THE SAME THICKNESS AS THE TRAVELED WAY.
- (3) FOR PAVEMENTS HAVING THICKNESS IN 1/2" INCREMENTS, DOWEL BASKETS SHALL BE P/2 - 1/2".
- (4) DOWEL BARS MAY BE PLACED BY MECHANICAL MEANS AT THE OPTION OF THE CONTRACTOR.



LONGITUDINAL CONSTRUCTION JOINT (L2)



TRANSVERSE CONTRACTION JOINT (C2)



LONGITUDINAL CONSTRUCTION JOINT FOR SHOULDER (L3)

S = SHOULDER THICKNESS

GENERAL NOTES:

THE FINAL POSITION OF ALL DOWELS AND TIE BARS SHALL BE PERPENDICULAR TO THE PLANE OF THE JOINT AND PARALLEL TO THE SURFACE OF THE PAVEMENT AND PARALLEL TO EACH OTHER.

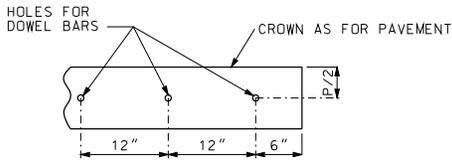
(L3) JOINT FOR FULL DEPTH OR PARTIAL DEPTH SHOULDERS.

MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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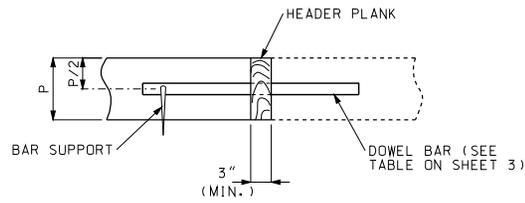
STATE OF MISSOURI
 KATHRYN PHILLIPS HANNEY
 NUMBER PE-23791
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15' JOINT SPACING

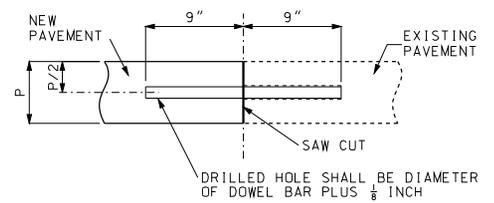
DATE EFFECTIVE: 06/01/2010	502.05M	SHEET NO. 3 OF 4
DATE PREPARED: 4/11/2010		



PART ELEVATION OF HEADER PLANK



HEADER SECTION



SAWED SECTION

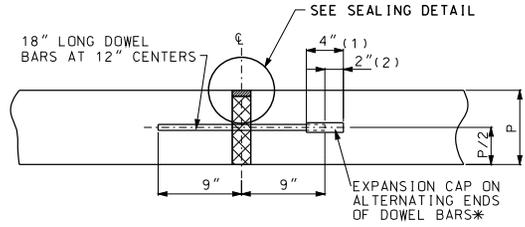
THE HEADER BOARD SHALL BE SUFFICIENTLY RIGID TO PREVENT DISTORTION FROM THE TYPICAL SECTION AND MAINTAIN A STRAIGHT LINE FROM PAVEMENT EDGE TO PAVEMENT EDGE.

THE CONSTRUCTION JOINT MAY BE SAWED FULL DEPTH. HOLES FOR DOWEL BARS SHALL BE DRILLED AFTER THE CONCRETE HAS SUFFICIENT SET TO PREVENT DAMAGE. DOWEL BARS SHALL BE BONDED INTO THE HOLES.

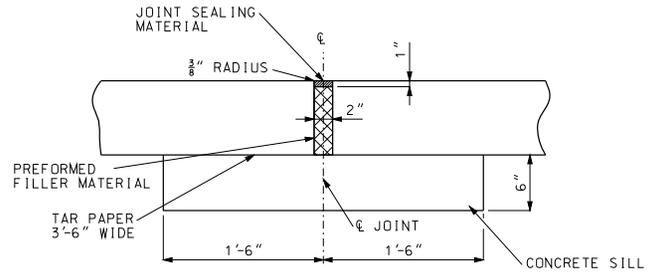
BONDING FOR DOWEL BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.

THE PORTION OF THE DOWEL OUTSIDE THE HOLE SHALL BE COATED WITH AN APPROVED LUBRICANT.

CONSTRUCTION JOINT (C)

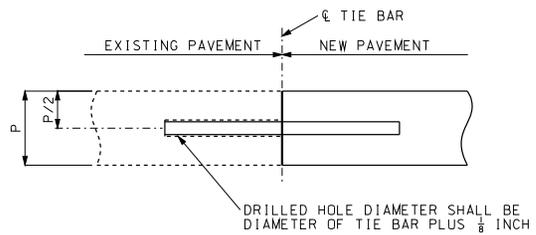


EXPANSION JOINTS (E)



SILL SHALL EXTEND 18" BEYOND EACH EDGE OF THE PAVEMENT AND SHALL BE CONSTRUCTED OF CONCRETE REGARDLESS OF ADJACENT BASE MATERIAL.

ALTERNATE EXPANSION JOINTS (E)
(CONTRACTOR MAY SELECT EITHER EXPANSION JOINT (E))



LONGITUDINAL CONSTRUCTION JOINT (EXISTING PAVEMENT) (L)

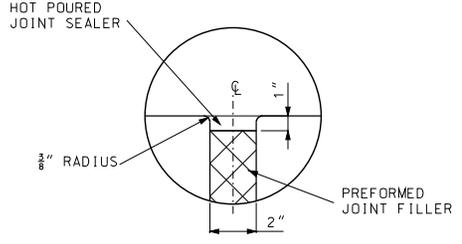
TIE BARS SHALL BE EPOXY COATED, DEFORMED REINFORCING BARS MEETING THE REQUIREMENTS OF SECTIONS 710 AND 1057.

BONDING FOR TIE BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.

TIE BAR SIZE AND LENGTH SHALL BE BASED ON THE THICKNESS OF THE THINNER PAVEMENT OR SHOULDER TO BE TIED TOGETHER.

- (1) LENGTH OF CAP
- (2) GAP BETWEEN END OF CAP AND DOWEL.

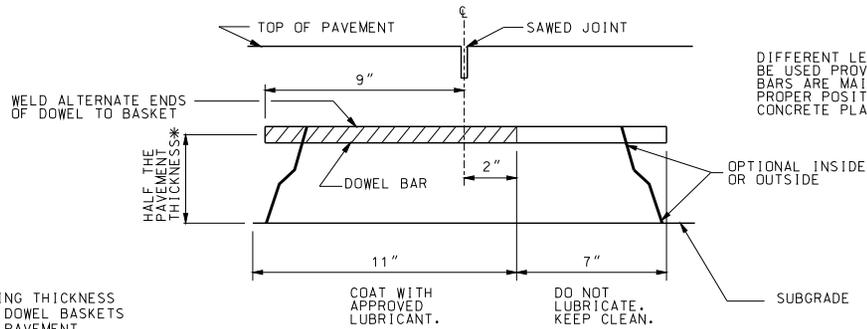
* FOR EXPANSION JOINTS FORMED USING A CONSTRUCTION HEADER, THE EXPANSION CAPS SHALL BE INSTALLED ON THE EXPOSED END OF EACH BAR ONCE THE HEADER HAS BEEN REMOVED AND THE JOINT FILLER MATERIAL HAS BEEN INSTALLED.



SEALING DETAIL

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15' JOINT SPACING	
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	502.05M	SHEET NO. 4 OF 4

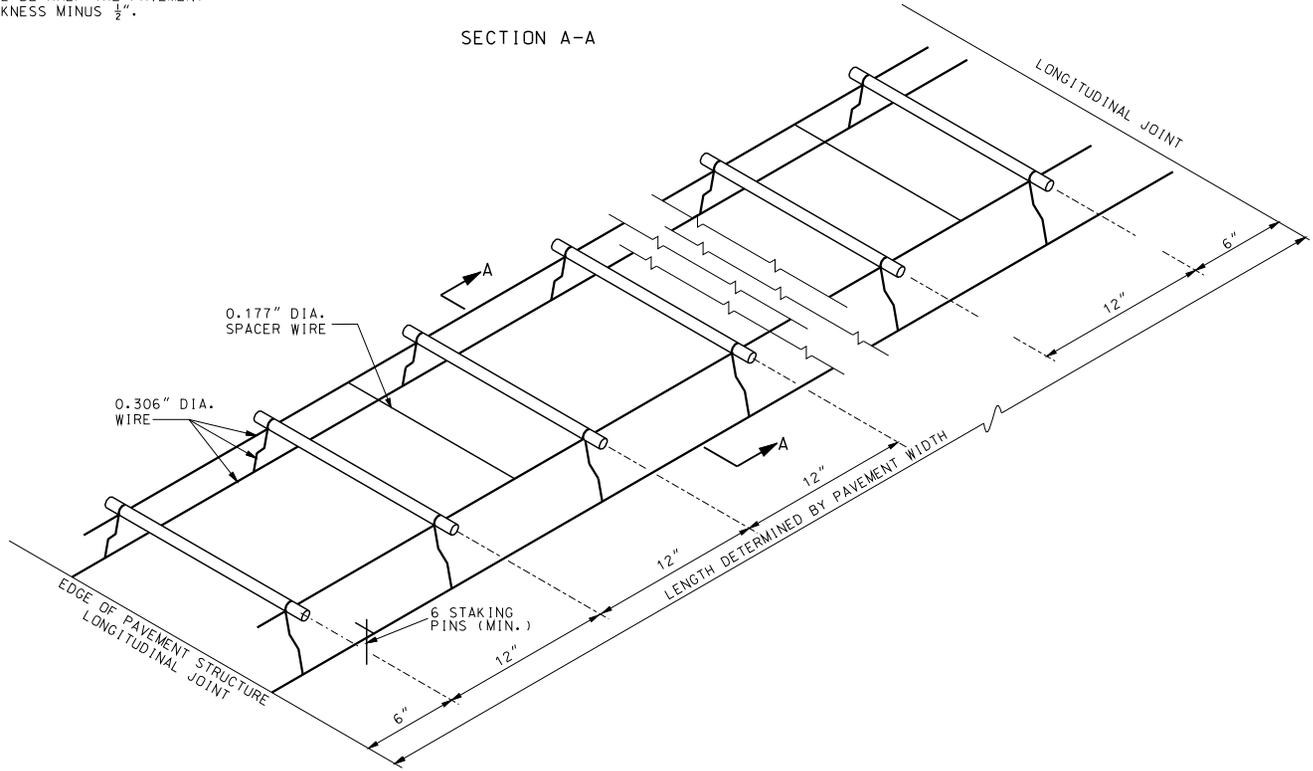
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DIFFERENT LEG SHAPES MAY BE USED PROVIDED THE DOWEL BARS ARE MAINTAINED AT THE PROPER POSITION DURING CONCRETE PLACEMENT

* FOR PAVEMENTS HAVING THICKNESS IN 1/2" INCREMENTS, DOWEL BASKETS SHALL BE HALF THE PAVEMENT THICKNESS MINUS 1/2".

SECTION A-A



DOWEL BARS		
PAVEMENT THICKNESS	BAR SIZE	
	DIAMETER	LENGTH
10" AND LESS	1 1/4"	18"
GREATER THAN 10"	1 1/2"	18"

GENERAL NOTES:

THE DOWEL SUPPORTING UNITS SHALL BE FACTORY ASSEMBLED AND CAPABLE OF HOLDING THE DOWELS IN THEIR REQUIRED POSITIONS. IN THE COMPLETED JOINT INSTALLATION, DOWELS SHALL BE POSITIONED WITHIN 1/2" OF THE VERTICAL AND HORIZONTAL PLANE AND IN THE LONGITUDINAL DIRECTION. THE SKEW TOLERANCE SHALL BE 1/4".

THE FREE END OF EACH EPOXY COATED DOWEL SHALL BE MARKED WITH A SPOT OF PAINT AT LEAST ONE INCH IN DIAMETER AND CONTRASTING IN COLOR WITH THE EPOXY COATING.

WIRE SIZES SHOWN ARE MINIMUM REQUIRED.

WIRES, BARS OR CLIPS SHALL BE USED AS NECESSARY TO STRENGTHEN THE ASSEMBLIES.

THE DIAMETER OF THE SPACER WIRE SHALL NOT EXCEED 0.200".

SPACER WIRE MAY BE CUT OR LEFT INTACT.

STAKING PINS SHALL BE FABRICATED FROM 0.306" DIAMETER WIRE MINIMUM WITH A SUITABLE HOOK. STAKING PINS SHALL HAVE A MINIMUM LENGTH OF 12" FOR DOWEL ASSEMBLIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

MINOR VARIATIONS IN THE CONFIGURATION OF THE SUPPORT UNITS WILL BE ALLOWED.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
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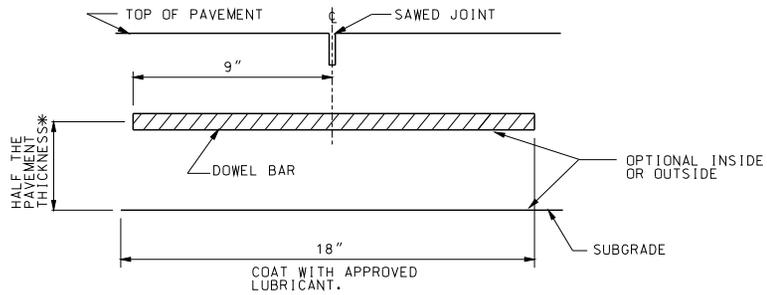
DOWEL SUPPORTING UNITS

APPROVED FOR USE WITH TRANSVERSE JOINTS



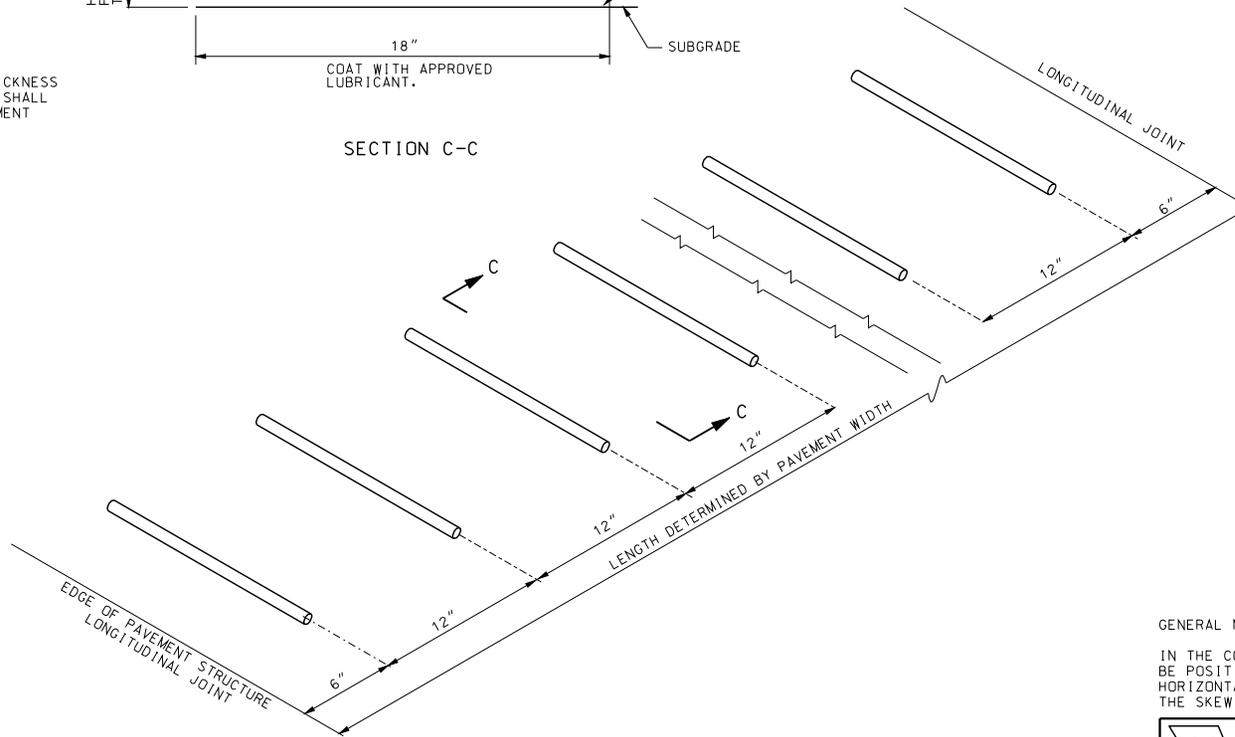
DATE EFFECTIVE:	06/01/2010	502.10K	SHEET NO.
DATE PREPARED:	4/1/2010		1 OF 2

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



* FOR PAVEMENTS HAVING THICKNESS IN $\frac{1}{2}$ " INCREMENTS, DOWEL SHALL BE PLACED HALF THE PAVEMENT THICKNESS MINUS $\frac{1}{2}$ ".

SECTION C-C

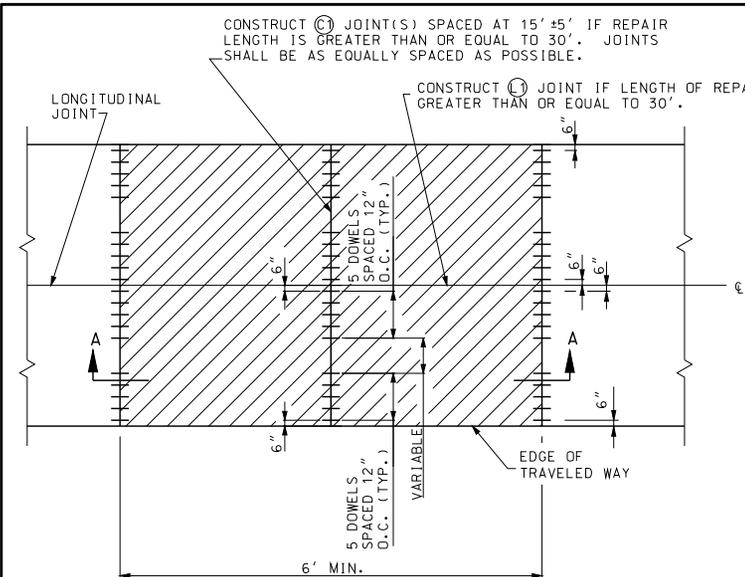


GENERAL NOTES:

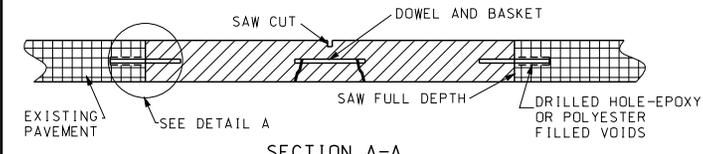
IN THE COMPLETED JOINT INSTALLATION, DOWELS SHALL BE POSITIONED WITHIN $\frac{1}{2}$ " OF THE VERTICAL AND HORIZONTAL PLANE AND IN THE LONGITUDINAL DIRECTION. THE SKEW TOLERANCE SHALL BE $\frac{1}{4}$ ".

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)		
		DOWEL SUPPORTING UNITS MECHANICAL PLACEMENT	
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	502.10K		SHEET NO. 2 OF 2

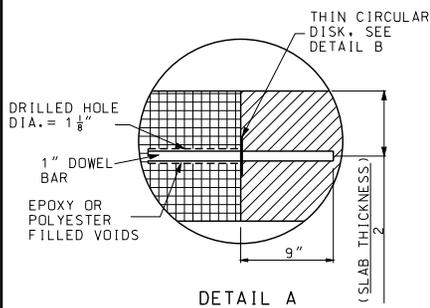
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TWO OR MORE LANES

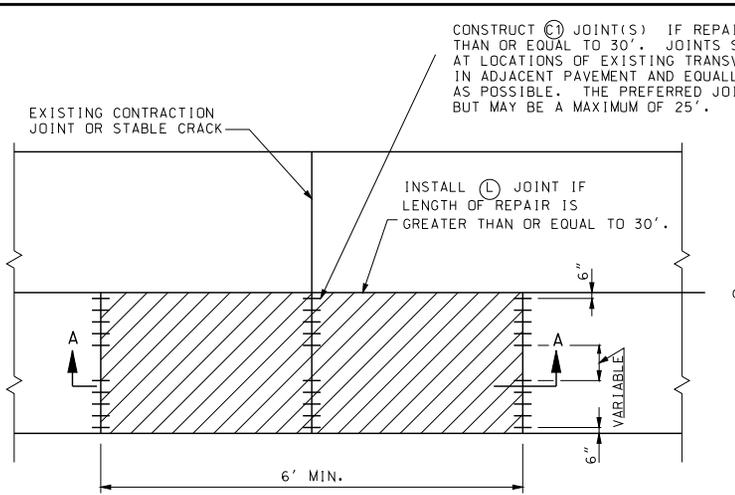


SECTION A-A

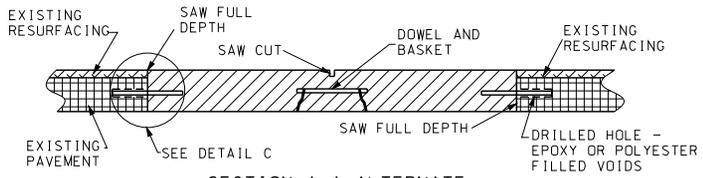


DETAIL A

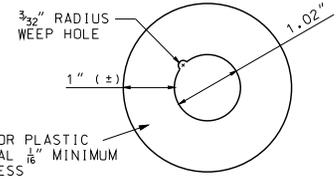
1. SMOOTH EPOXY COATED DOWELS SHALL BE USED IN ALL FULL DEPTH PAVEMENT REPAIR TRANSVERSE JOINTS.
2. THE ANCHORING MATERIAL (EPOXY OR POLYESTER) SHALL BE PLACED TO THE BACK OF THE PREDRILLED HOLE BEFORE INSERTING THE DOWEL BAR.
3. THE DOWEL IS INSERTED INTO THE HOLE WITH A TWISTING MOTION SO THAT THE MATERIAL IN THE BACK OF THE HOLE IS FORCED UP AND AROUND THE BAR.
4. EXPOSED END OF DOWEL SHALL BE COATED WITH A THIN UNIFORM COAT OF GRAPHITE GREASE. DOWEL BASKET ASSEMBLIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD PLAN 502.10. IN LIEU OF GRAPHITE GREASE, THE DOWEL BAR BASKET SUPPLIER MAY PROVIDE COMPLETED BASKET UNITS PRE-DIPPED IN AN APPROVED BONDBREAKER.
5. REPAIR ONLY ONE LANE AT A TIME.



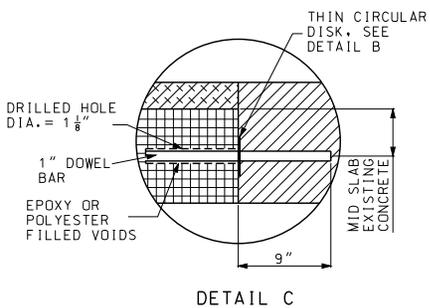
ONE LANE



SECTION A-A ALTERNATE WITH ASPHALT OVERLAY



DETAIL B THIN CIRCULAR DISK



DETAIL C

GENERAL NOTES:
 ALL SAW CUTS SHALL BE MADE WITH A DIAMOND SAW EXCEPT THE CENTER RELIEF CUT.
 FOR DETAILS OF TYPE (C), (L) AND (L1) JOINTS, SEE STANDARD PLAN 502.05.

NON-REINFORCED AND REINFORCED PORTLAND CEMENT CONCRETE

MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

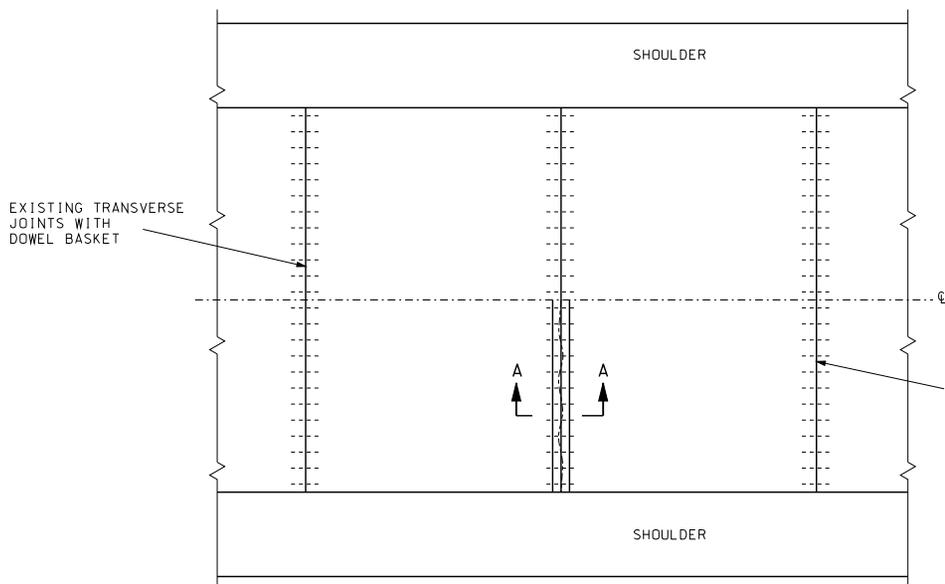
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

PAVEMENT REPAIR

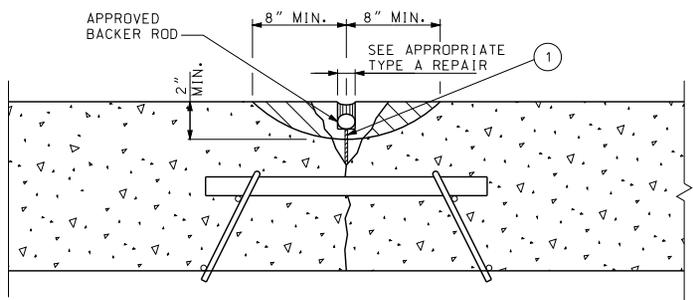
FULL DEPTH

DATE EFFECTIVE: 06/01/2010	SHEET NO. 1 OF 3
DATE PREPARED: 4/1/2010	613.00P

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PLAN VIEW



SECTION A-A
MILLING OPTIONS



- ① THE INITIAL RE-ESTABLISHMENT OF THE JOINT OR CRACK IN THE PLASTIC CONCRETE SHALL BE ACCOMPLISHED WITH AN APPROVED CUTTER BAR OR WITH MINIMUM 1/4" COMPRESSION RELIEF MATERIAL (SAWING NOT ALLOWED).

JOINT COMPRESSION RELIEF TO THE TOP OF THE DOWEL BARS SHALL BE PROVIDED BY A MINIMUM 1/4" SAWCUT AS SOON AS POSSIBLE AFTER INITIAL SET OR MINIMUM 1/4" COMPRESSION RELIEF MATERIAL AS NOTED ABOVE.

GENERAL NOTES:

THE LIMITS OF THE REMOVAL AREA WILL BE DEFINED BY THE ENGINEER.

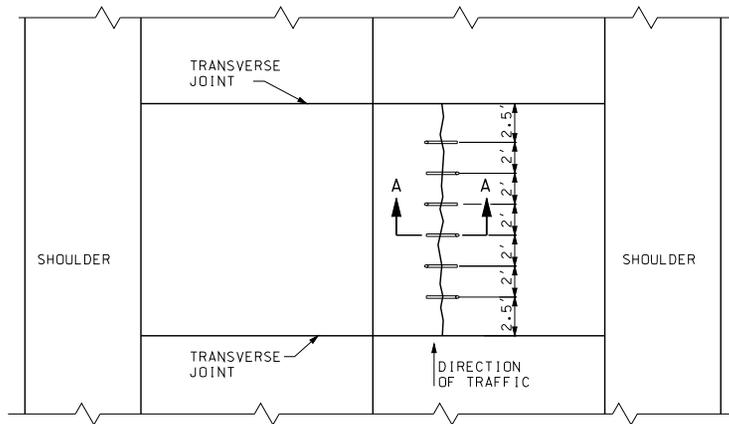
ALL CONCRETE SHALL BE REMOVED TO LIMITS SHOWN IN THE DETAIL, INCLUDING DETERIORATED CONCRETE TO A MAXIMUM OF 1/2 THE PAVEMENT DEPTH OR TOP OF DOWELS BY MILLING.

EXPOSED SURFACE SHALL BE CLEANED BY SANDBLASTING, HIGH-PRESSURE WATER BLASTING OR OTHER METHODS APPROVED BY THE ENGINEER.

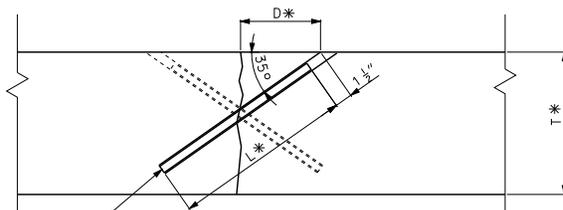
EXPOSED SURFACES OF DOWELS, IF ANY, SHALL BE COATED WITH AN APPROVED BOND BREAKER.

JOINTS AND CRACKS SHALL BE SEALED WITH APPROPRIATE SEALER.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)		
 <p>STATE OF MISSOURI KATHRYN PHILIPS HAWLEY NUMBER PE-23701 PROFESSIONAL ENGINEER</p> <p><small>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</small></p>	<p>PAVEMENT REPAIR PARTIAL DEPTH AT JOINTS AND CRACKS CLASS A</p>	
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	613.00P	SHEET NO. 2 OF 3



CROSS STITCHING PLAN



#6 EPOXY REBAR
CROSS STITCH
BAR

* SEE TABLE

T	SLAB THICKNESS (IN)	8	9	10	11	12
D	DISTANCE TO HOLE (IN)	5 3/4	6 1/2	7 1/4	8 1/2	8 1/2
L	LENGTH OF BAR (IN)	8 1/2	11	12 1/2	14	16

SECTION A-A

GENERAL NOTES:

AT EACH REPAIR LOCATION, HOLES SHALL BE DRILLED AT 35° ANGLES TO THE PAVEMENT SURFACE, PERPENDICULAR TO THE CRACK. THE DRILL BIT DIAMETER SHALL NOT EXCEED 1 1/8".

DRILLING SHALL ALTERNATE BACK AND FORTH ON EITHER SIDE OF THE LONGITUDINAL JOINT FROM HOLE TO HOLE.

DRILLED HOLES SHALL NOT PENETRATE THROUGH THE SLAB BOTTOM.

DRILLED HOLES SHALL BE CLEANED OF LOOSE DEBRIS AND DUST. EPOXY OR POLYESTER BONDING AGENTS FOR DOWELS, MEETING THE MATERIAL REQUIREMENTS OF SECTION 1039, SHALL BE INJECTED OR Poured INTO EACH HOLE. A CROSS-STITCH BAR SHALL BE INSERTED IN EACH HOLE SUCH THAT THE EPOXY MATERIAL IS EVENLY DISTRIBUTED AROUND THE BAR AND EXTRUDING FROM THE SURFACE OPENING. EACH BAR SHALL BE INSERTED FAR ENOUGH TO ALLOW 1 1/2" OF COVER AS SHOWN IN THE PROFILE DETAIL.

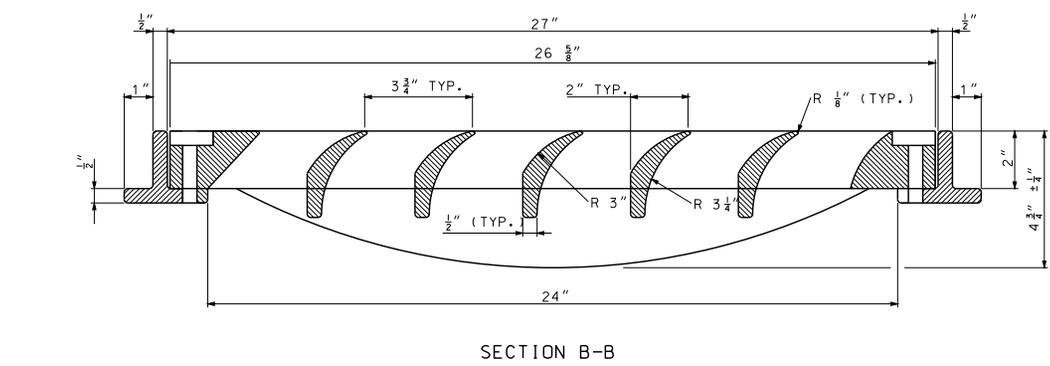
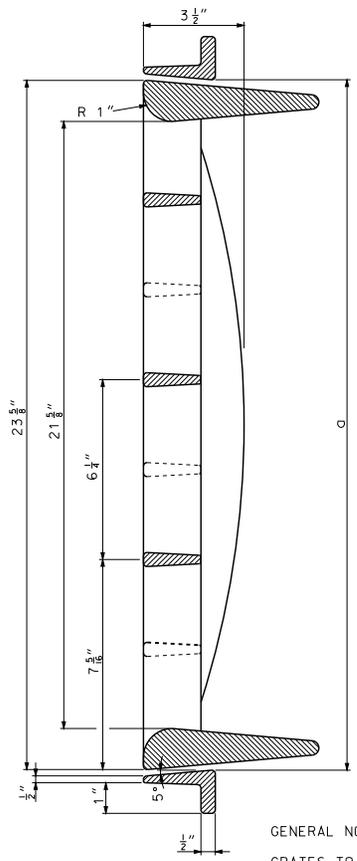
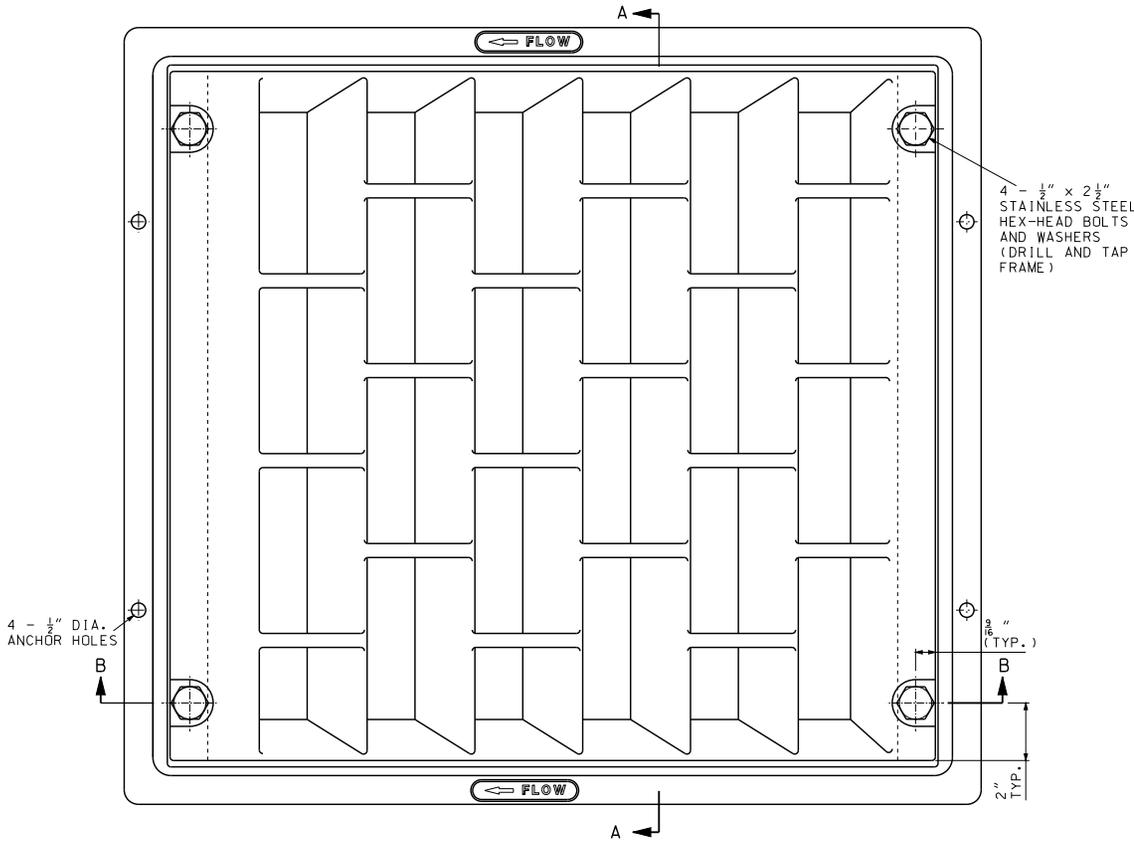
THE SURFACE SHALL HAVE ALL EXCESS EPOXY REMOVED AND HAVE A FLUSH FINISH.

GENERAL NOTES:

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<p align="center">PAVEMENT REPAIR CROSS STITCHING</p>
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/17/2010	<p>613.00P</p>	SHEET NO. 3 OF 3

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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NOMINAL
DIMENSIONS AND WEIGHTS

OPENING		ø	WEIGHT (LB.)
WIDTH	LENGTH		
2'-0"	2'-0"	24"	200
4'-0"	2'-0"	48"	348

NOTE: TWO 2' X 2' GRATES
MAY BE USED IN LIEU OF
SINGLE 4' X 2' GRATES.

GENERAL NOTES:

GRATES TO BE CONSTRUCTED OF CAST GRAY IRON AND MEET REQUIREMENTS OF AASHTO M 306. MINOR VARIATIONS IN VANE SHAPE TO MEET MANUFACTURER'S STANDARD PRACTICE ARE PERMITTED.

MINIMUM CLEAR OPEN AREA: 2.10 SQUARE FEET.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CURVED VANE GRATE AND FRAME



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE EFFECTIVE:	06/01/2010	614.11C	SHEET NO.
DATE PREPARED:	4/1/2010		1 OF 1

A = WIDTH AS SPECIFIED IN PLANS.

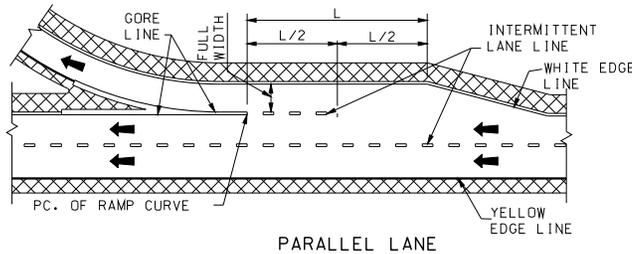
L = $S \times W$ WHEN POSTED SPEED 45 MPH OR GREATER OR $WS^2 / 60$ WHEN POSTED SPEED IS 40 MPH OR LESS.

L = LENGTH OF TAPER IN FEET.

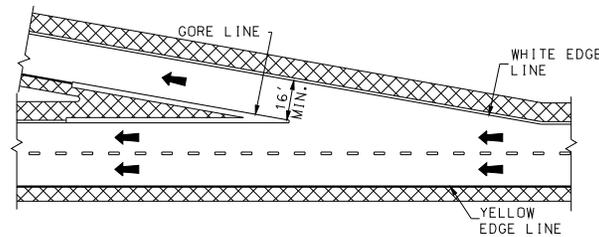
S = OFF PEAK 85 PERCENTILE SPEED IN MPH.

W = OFFSET DISTANCE IN FEET.

DISTANCE (L) SHALL BE EXTENDED AS REQUIRED BY SIGHT DISTANCE CONDITIONS.

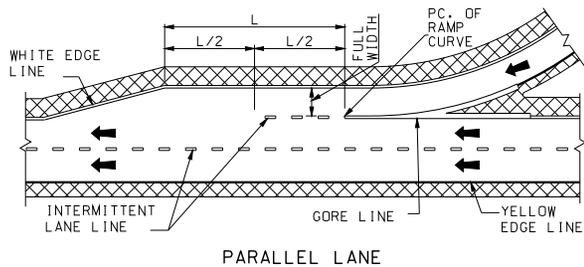


PARALLEL LANE

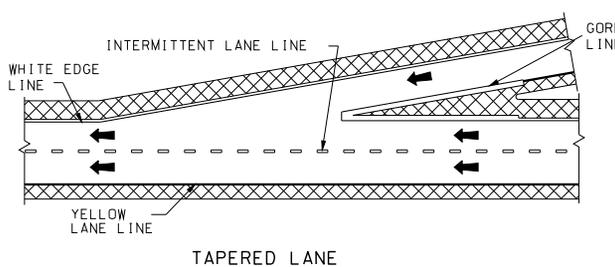


TAPERED LANE

EXIT RAMP MARKING

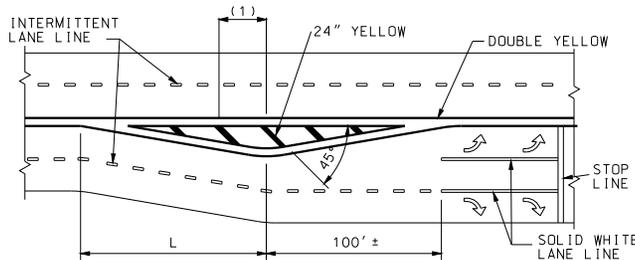


PARALLEL LANE

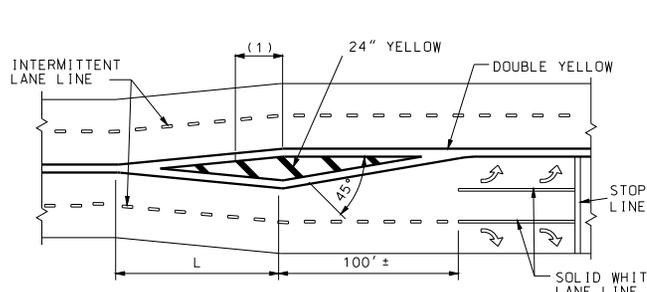


TAPERED LANE

ENTRANCE RAMP MARKING



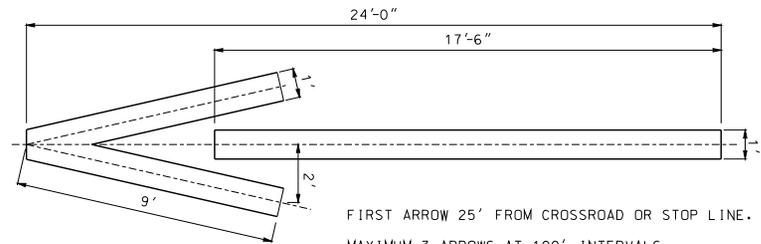
OFFSET ONE LANE



OFFSET BOTH LANES

MEDIAN ISLAND LEFT TURN LANE MARKING

(1) 50' (TYP.) SPACE BETWEEN BARS. A MINIMUM OF 3 BARS ARE REQUIRED. IF NECESSARY, THE DISTANCE BETWEEN THE BARS SHALL BE DECREASED TO INSTALL 3 BARS.



FIRST ARROW 25' FROM CROSSROAD OR STOP LINE.
 MAXIMUM 3 ARROWS AT 100' INTERVALS.
 ON MULTI-LANE RAMP USE ARROW IN EACH LANE.
 WRONG WAY ARROWS ARE NOT USED WHEN RAMP HAS LANE USE CONTROL ARROWS.

OFF RAMP WRONG WAY ARROW

GENERAL NOTES:

REFER TO THE STANDARD PLAN 626.00 WHEN INSTALLING PAVEMENT MARKINGS OVER RUMBLE STRIPS.

LANE LINES SHALL BE AN INTERMITTENT OR SOLID WHITE.

INTERMITTENT LINES SHALL BE 10 FEET IN LENGTH SEPARATED BY 30 FOOT GAPS.

EDGE LINES SHALL BE CONTINUOUS SOLID WHITE OR YELLOW LINES. RIGHT SIDE EDGE LINES SHALL BE SOLID WHITE. MEDIAN OR LEFT SIDE EDGE LINES ON DIVIDED HIGHWAYS AND ON THE LEFT SIDE OF RAMP SHALL BE SOLID YELLOW. EDGE LINES SHALL BE CONTINUOUS ACROSS DRIVEWAYS AND MINOR INTERSECTING ROADS.

"NO PASSING" LINES SHALL BE CONTINUOUS SOLID YELLOW.

"NO PASSING" LINES SHALL BE PLACED AS SHOWN IN "LINE DETAIL". "NO PASSING" LINES ON A TWO-LANE, TWO-WAY HIGHWAY WHEN PASSING IS PROHIBITED IN EACH DIRECTION SHALL BE PLACED 4 INCHES APART AND THE INTERMITTENT CENTERLINE SHALL BE OMITTED.

STOP LINES SHALL BE A SOLID WHITE TRANSVERSE LINE 24 INCHES WIDE, LOCATED AT LEAST 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY.

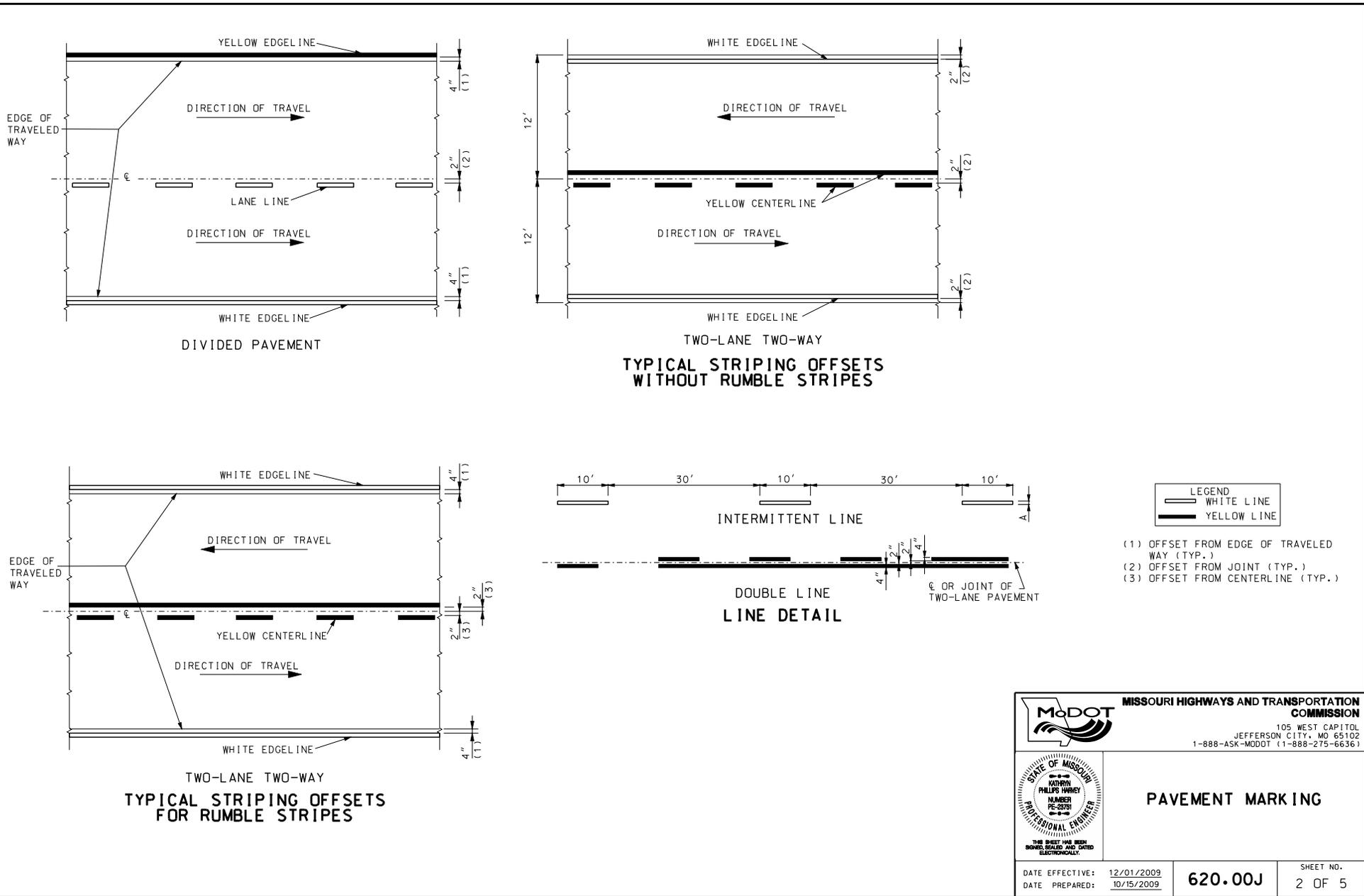
CROSSWALK LINES SHALL BE SOLID WHITE TRANSVERSE LINES 6 INCHES WIDE AT LEAST 6 FEET APART. CROSSWALK LINES ON THE INTERSECTION SIDE OF THE CROSSWALK SHALL MEET AT THE CURB.

GORE LINES SHALL BE A SOLID WHITE LINE WITH A WIDTH TWICE THAT OF THE EDGE LINE.

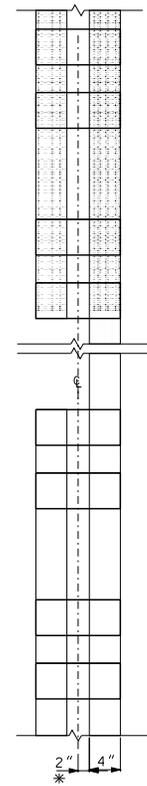
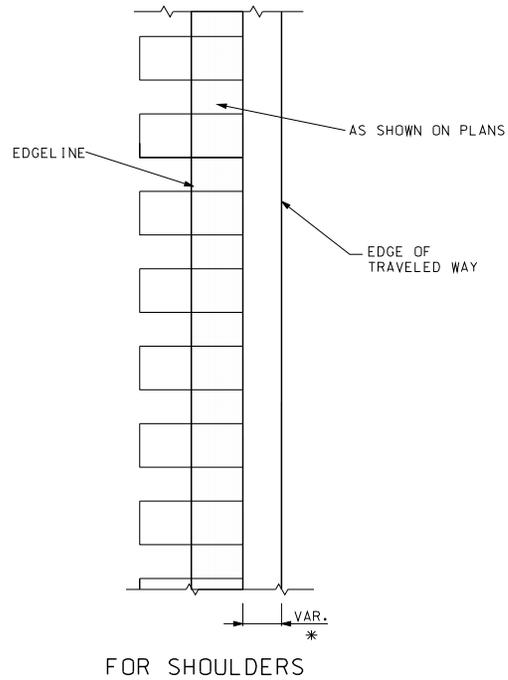
ARROWS AND WORD SYMBOLS SHALL BE SOLID WHITE.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	
PAVEMENT MARKING	
DATE EFFECTIVE: 12/01/2009 DATE PREPARED: 10/15/2009	620.00J
SHEET NO. 1 OF 5	

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

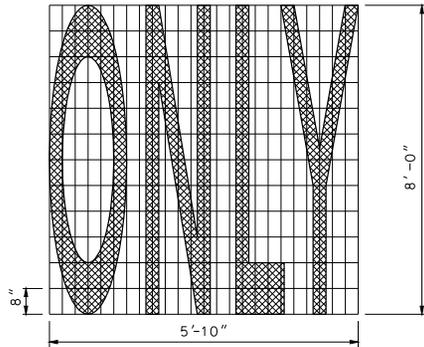


2 WAY 2 LANE
(SEE TYPICAL STRIPING
FOR RUMBLESTRIPS)

* = LATERAL DEVIATION SHALL NOT EXCEED ONE INCH IN 100 FEET.

 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<p>PAVEMENT MARKING STRIPING THROUGH RUMBLE STRIPS</p>
DATE EFFECTIVE: 12/01/2009 DATE PREPARED: 10/15/2009	<p>620.00H</p>
SHEET NO. 3 OF 5	

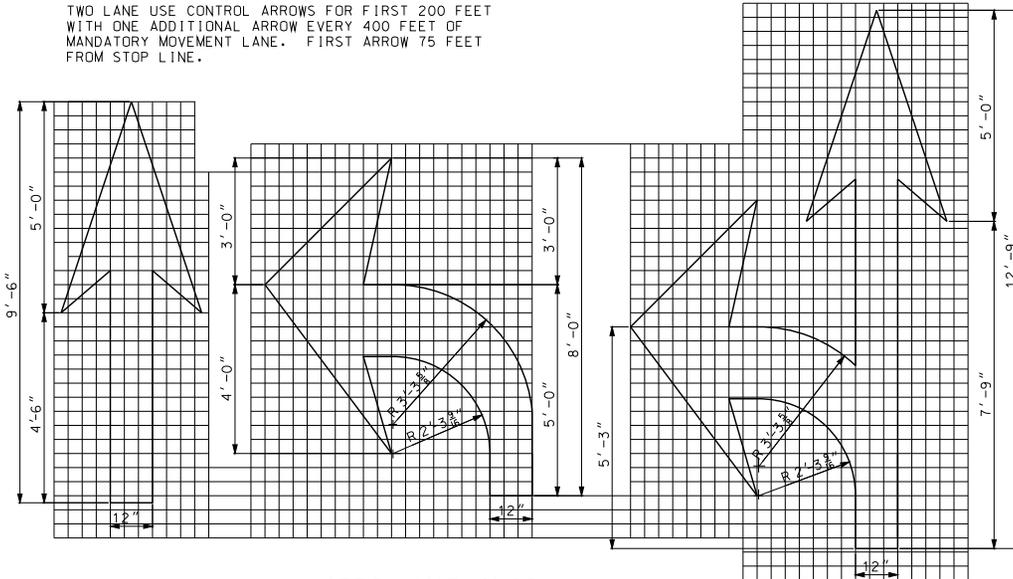
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



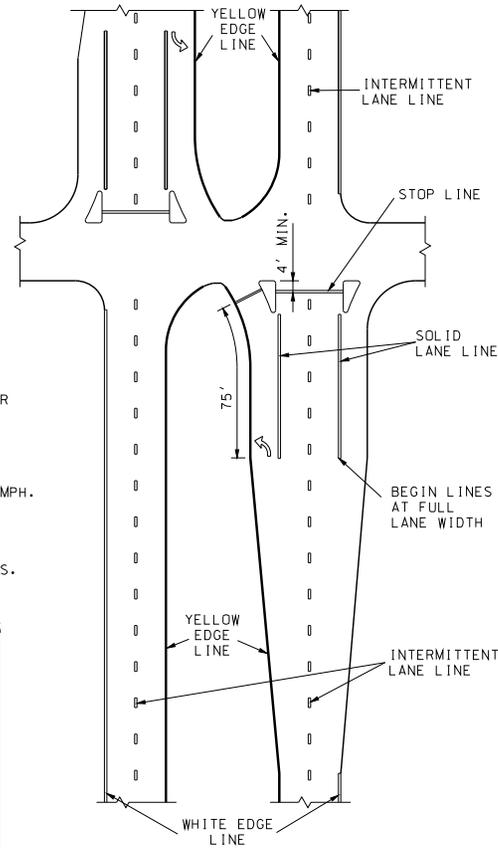
WORD MARKING
ELONGATED WORD & SYMBOL

$L = S \times W$ WHEN POSTED SPEED 45 MPH OR GREATER OR $WS^2 / 60$ WHEN POSTED SPEED IS 40 MPH OR LESS.
 L = LENGTH OF TAPER IN FEET.
 S = OFF PEAK 85 PERCENTILE SPEED IN MPH.
 W = OFFSET DISTANCE IN FEET.
 DISTANCE (L) SHALL BE EXTENDED AS REQUIRED BY SIGHT DISTANCE CONDITIONS.

TWO LANE USE CONTROL ARROWS FOR FIRST 200 FEET WITH ONE ADDITIONAL ARROW EVERY 400 FEET OF MANDATORY MOVEMENT LANE. FIRST ARROW 75 FEET FROM STOP LINE.



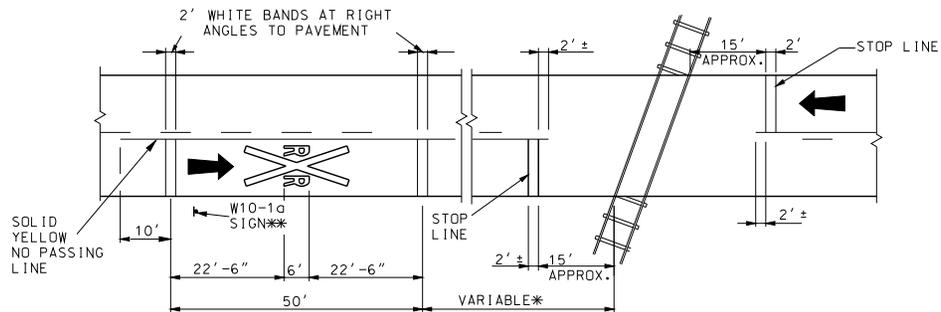
ARROW MARKINGS



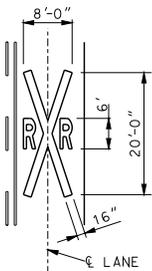
SIGNALIZED GRADE INTERSECTION MARKING

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	PAVEMENT MARKING	
	DATE EFFECTIVE: 12/01/2009 DATE PREPARED: 10/15/2009	620.00J
		SHEET NO. 4 OF 5

1. STOP LINES SHALL BE PLACED 90° TO THE ROADWAY.
2. IF RAILROAD GATE IS PRESENT THE STOP LINE SHALL BE 8' FROM GATE.



PAVEMENT DETAIL



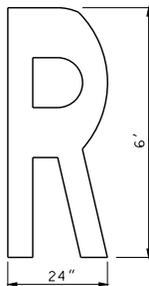
SYMBOL DETAIL

* THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND THE SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT SHALL BE NO LESS THAN 50 FEET.

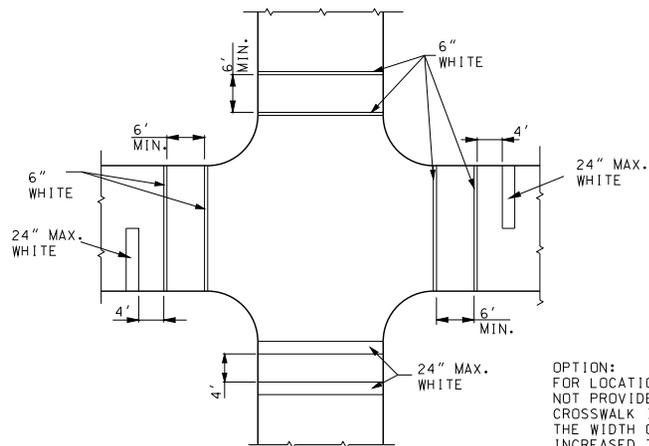
A THREE-LANE ROADWAY SHALL BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING. ON MULTI-LANE ROADWAYS THE TRANSVERSE BANDS SHALL EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL "R X R" SYMBOLS SHALL BE USED IN EACH APPROACH LANE.

** PLACEMENT OF W10-1a SIGN BY OTHERS.

RAILROAD GRADE CROSSING

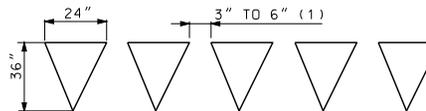


LETTER DETAIL



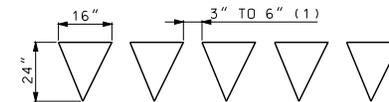
SOLID WHITE PEDESTRIAN CROSSWALK

OPTION:
FOR LOCATIONS WHERE STOP BARS ARE NOT PROVIDED SPEEDS EXCEED 35 MPH OR CROSSWALK IN AN UNEXPECTED LOCATION, THE WIDTH OF THE CROSSWALK MAY BE INCREASED TO 24 INCHES.



DIRECTION OF TRAVEL

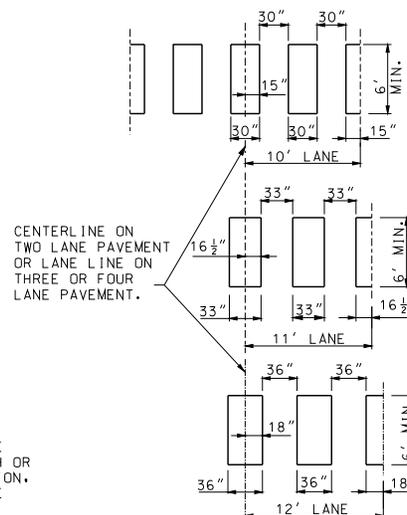
24 INCH YIELD LINE TRIANGLES



DIRECTION OF TRAVEL

16 INCH YIELD LINE TRIANGLES

YIELD LINE TRIANGLES



WHITE MIDBLOCK (ZEBRA)

<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	<p>PAVEMENT MARKING</p>	
	<p>STATE OF MISSOURI KATHRYN PHILIPS HANEY NUMBER PE-23701 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>DATE EFFECTIVE: 12/01/2009 DATE PREPARED: 10/15/2009</p>
		<p>SHEET NO. 5 OF 5</p>

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

AREA OF STEEL REQUIRED FOR "J5" BARS IN WINGS (sq. in./ft.)
BARREL HEIGHT VS. WALL THICKNESS
* BACKFILL SLOPE = 2:1

WALL THICKNESS	BARREL HEIGHT (ft.)															
"TX" (in.)	4	5	6	7	8	9	10	11	12	13	14	15	16			
8	0.1683	0.1683	0.1699	0.2502	0.2677											
9	0.1683	0.1683	0.1683	0.2111	0.2680	0.3071	0.4101	0.5366								
10		0.1683	0.1683	0.1821	0.2573	0.2867	0.3510	0.4573	0.5856	0.7393						
11			0.1683	0.1683	0.2260	0.3061	0.3073	0.3992	0.5095	0.6405	0.7954	0.9780				
12				0.1683	0.2016	0.2748	0.3259	0.3546	0.4515	0.5661	0.7007	0.8580	1.0413			
13					0.1820	0.2479	0.3285	0.3461	0.4058	0.5078	0.6271	0.7658	0.9262			
14						0.2259	0.2990	0.3665	0.3687	0.4608	0.5681	0.6924	0.8355			
15							0.2745	0.3550	0.3871	0.4219	0.5195	0.6323	0.7617			
16									0.4078	0.4078	0.4788	0.5821	0.7004			
17									0.3863	0.4286	0.4442	0.5396	0.6486			
18										0.4495	0.4495	0.5029	0.6041			
19											0.4705	0.4711	0.5654			
20												0.4915	0.5316			

AREA OF STEEL REQUIRED FOR "J5" BARS IN WINGS (sq. in./ft.)
BARREL HEIGHT VS. WALL THICKNESS
* BACKFILL SLOPE = 3:1

WALL THICKNESS	BARREL HEIGHT (ft.)															
"TX" (in.)	4	5	6	7	8	9	10	11	12	13	14	15	16			
8	0.1683	0.1683	0.1683	0.1683	0.2280											
9	0.1683	0.1683	0.1683	0.1683	0.1917	0.2617	0.2680	0.3393								
10		0.1683	0.1683	0.1683	0.1683	0.2255	0.2867	0.2911	0.3708	0.4651						
11			0.1683	0.1683	0.1683	0.1982	0.2626	0.3061	0.3244	0.4059	0.5012	0.6119				
12				0.1683	0.1683	0.1769	0.2342	0.3030	0.3259	0.3605	0.4443	0.5412	0.6527			
13					0.1683	0.1683	0.2113	0.2732	0.3461	0.3461	0.3993	0.4857	0.5846			
14						0.1683	0.1926	0.2489	0.3155	0.3665	0.3665	0.4408	0.5299			
15							0.1769	0.2285	0.2895	0.3608	0.3871	0.4037	0.4848			
16									0.2676	0.3333	0.4078	0.4078	0.4470			
17									0.2488	0.3098	0.3803	0.4286	0.4286			
18										0.2893	0.3551	0.4303	0.4495			
19											0.3330	0.4035	0.4705			
20												0.3799	0.4551			

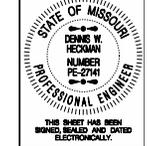
NOTE:

IF AREA OF STEEL IN THE WALL OF THE CULVERT (J4 Bars) IS GREATER THAN THAT INDICATED IN THE TABLE, USE THE SAME SIZE AND SPACING FOR THE "J5" BARS IN THE WINGS. HOWEVER, IF THE AREA OF STEEL PROVIDED BY MATCHING SIZE AND SPACING OF THE "J4" BARS IS INSUFFICIENT, INCREASE THE SIZE OF THE "J5" BARS (#8 Max.) AND/OR DECREASE THE SPACING OF THE "J5" BARS (6" Min.). USE SMALLEST BAR SIZE POSSIBLE BASED ON MINIMUM SPACING.

MINIMUM STEEL TO BE USED IN THE WINGS FOR "J5" BARS IS #4 BARS AT 14" CENTERS (As = 0.1683 sq. in./ft.)

* SEE STANDARD PLAN 703.37B, SHEET 2 OF 2 FOR BACKFILL SLOPE TO BE USED BASED ON SKEW.

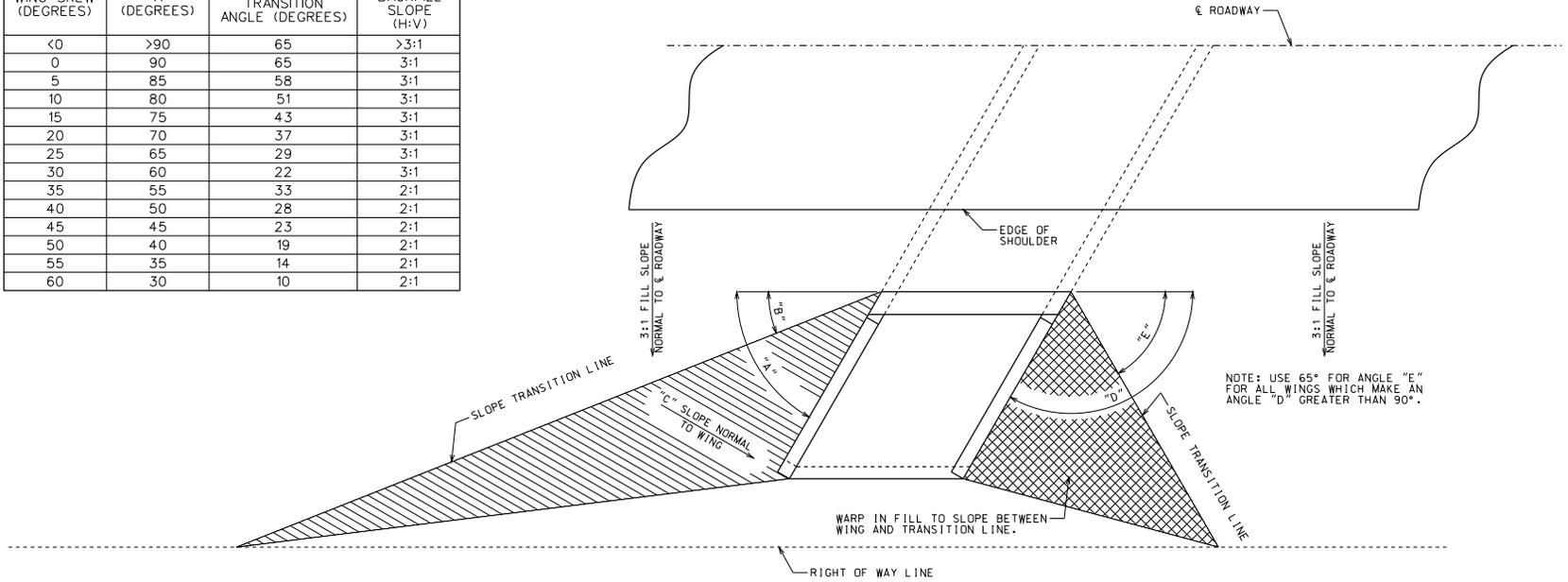
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	CONCRETE BOX CULVERT EXTERIOR WING REINFORCEMENT (HS20 & HS20 MOD. LOADING)	
	DATE EFFECTIVE: 10-01-2009 DATE PREPARED: 10/28/2009	703.37B



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

WING BACKFILL TABLE			
WING SKEW (DEGREES)	"A" (DEGREES)	"B" TRANSITION ANGLE (DEGREES)	"C" BACKFILL SLOPE (H:V)
<0	>90	65	>3:1
0	90	65	3:1
5	85	58	3:1
10	80	51	3:1
15	75	43	3:1
20	70	37	3:1
25	65	29	3:1
30	60	22	3:1
35	55	33	2:1
40	50	28	2:1
45	45	23	2:1
50	40	19	2:1
55	35	14	2:1
60	30	10	2:1

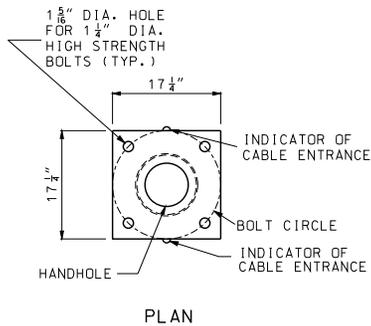


PLAN OF WINGS AND SLOPE TRANSITION LINES

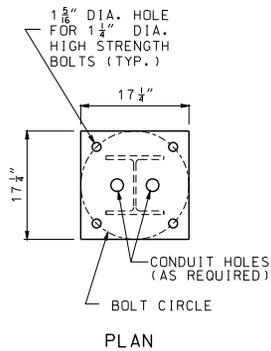
NOTE: BACKFILL TRANSITION ANGLE AND BACKFILL SLOPE SHALL APPLY TO ALL BOX CULVERTS REGARDLESS OF TYPE - SINGLE, DOUBLE, OR TRIPLE.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		CONCRETE BOX CULVERT EXTERIOR WING BACKFILL SLOPE TRANSITION
DATE EFFECTIVE: 10-01-2009 DATE PREPARED: 10/29/2009	703.37B	SHEET NO. 2 OF 2

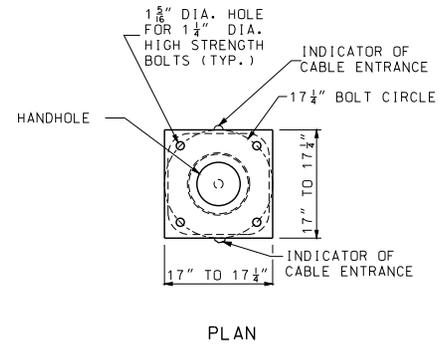
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PLAN

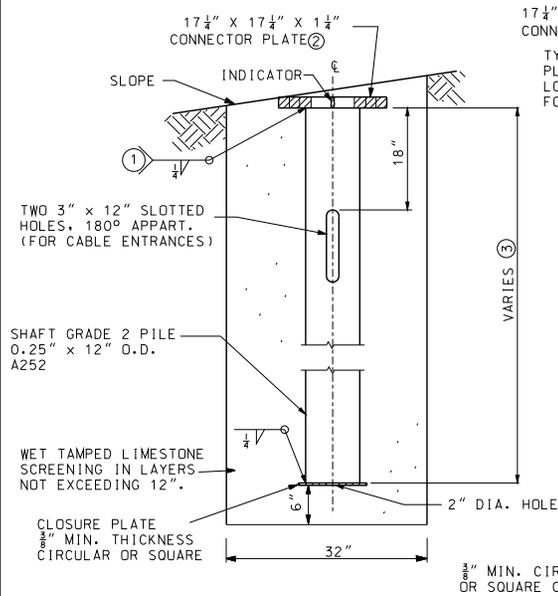


PLAN

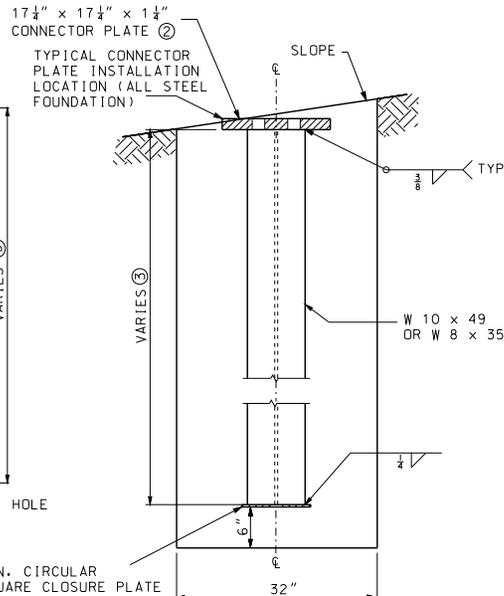


PLAN

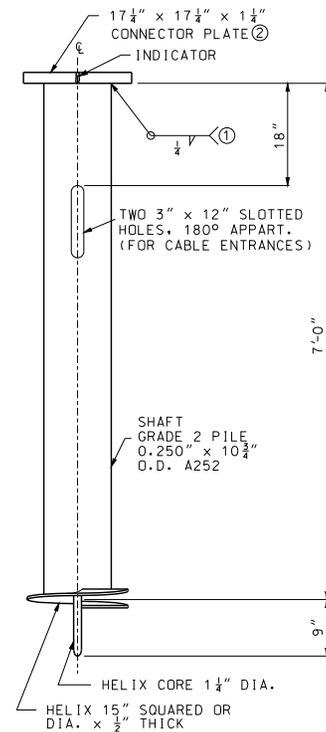
NOTE:
DRIVE HOLES WILL BE PERMITTED PROVIDED THEY DO NOT CONFLICT WITH OR COMPROMISE THE STRUCTURAL INTEGRITY OF THE PLATE, THE WELD BETWEEN THE PLATE AND SHAFT, OR THE BOLT HOLES.



ELEVATION
DETAILS OF CIRCULAR
STEEL PILE FOUNDATION



ELEVATION
DETAILS OF STEEL "H"
PILE FOUNDATION



ELEVATION
DETAILS OF
SCREW ANCHOR FOUNDATION

- ① GRIND WELD AS NECESSARY TO CLEAR BOLT HEAD.
- ② FOUNDATIONS SHALL BE INSTALLED SO THAT CONNECTOR PLATES ARE LEVEL PERPENDICULAR TO THE BRACKET ARM AND SLOPED FOR POLE RAKING PARALLEL TO THE BRACKET ARM.
- ③ PILE LENGTHS FOR STEEL PILE FOUNDATIONS:

AT-45 DESIGN NO.	PILE LENGTH
4 & 5	8'-0"
2 & 3	9'-0"
1	10'-0"

GENERAL NOTES:

ALL CLASSIFICATIONS ARE ASTM UNLESS OTHERWISE NOTED. SEE STANDARD SPECIFICATIONS FOR CLASSIFICATIONS NOT SHOWN.

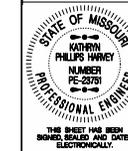
ALL BOLT CIRCLES FOR 45' MOUNTING HEIGHT SHALL BE 17-1/4".

ALL CONNECTOR PLATE AND CLOSURE PLATE THICKNESSES SHOWN ARE MINIMUM DIMENSIONS.

ALL ANCHOR BOLTS SHALL BE FULLY GALVANIZED 1-1/4" DIAMETER HIGH STRENGTH ANCHOR BOLTS.

ALL STEEL COMPONENTS SHALL BE HOT DIP GALVANIZED.

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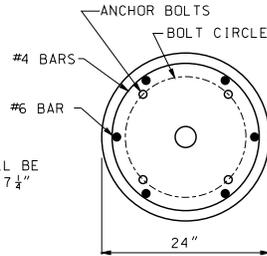
**HIGHWAY LIGHTING
POLES, FOUNDATIONS
AND APPURTENANCES
FOR 45' MOUNTING HEIGHT**

DATE EFFECTIVE: 06/01/2009
DATE PREPARED: 4/17/2010

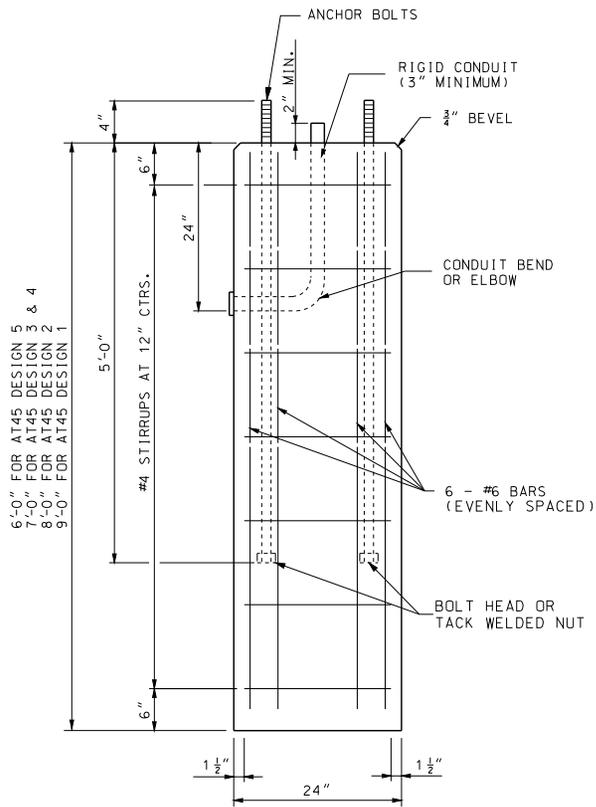
901.01AF

SHEET NO.
5 OF 6

NOTE:
ANCHOR BOLTS SHALL BE
PLACED ONLY FOR 17 1/4"
BOLT CIRCLE



PLAN

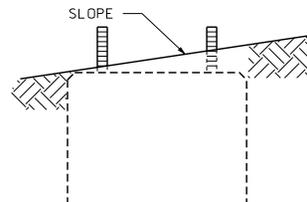


ELEVATION

DETAILS OF CONCRETE
FOUNDATION ④

④ AT THE OPTION OF THE CONTRACTOR THE CONCRETE FOUNDATIONS MAY BE PRECAST. IF PRECAST, THEY SHALL BE SET IN DRILLED HOLES 3 FEET IN DIAMETER AND 6 INCHES DEEPER THAN THE BOTTOM OF THE CONCRETE FOUNDATION. THE BOTTOM 6 INCHES OF THE HOLE AND THE REMAINING SPACE AROUND THE FOUNDATION SHALL BE BACKFILLED WITH WET TAMPED LIMESTONE SCREENINGS IN LAYERS NOT EXCEEDING 12 INCHES.

QUANTITIES		
HEIGHT	CONC. CU. YD.	REINF. LBS.
6'-0"	.70	80
7'-0"	.81	90
8'-0"	.93	104
9'-0"	1.05	120



CONCRETE FOUNDATION
EMBEDMENT

GENERAL NOTES:

ALL CLASSIFICATIONS ARE ASTM UNLESS OTHERWISE NOTED. SEE STANDARD SPECIFICATIONS FOR CLASSIFICATIONS NOT SHOWN.

ALL BOLT CIRCLES FOR 45' MOUNTING HEIGHT SHALL BE 17-1/4".

ALL CONNECTOR PLATE AND CLOSURE PLATE THICKNESSES SHOWN ARE MINIMUM DIMENSIONS.

ALL ANCHOR BOLTS SHALL BE FULLY GALVANIZED 1-1/4" DIAMETER HIGH STRENGTH ANCHOR BOLTS.

ALL STEEL COMPONENTS SHALL BE HOT DIP GALVANIZED.

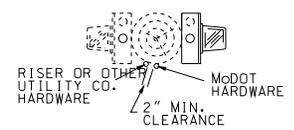
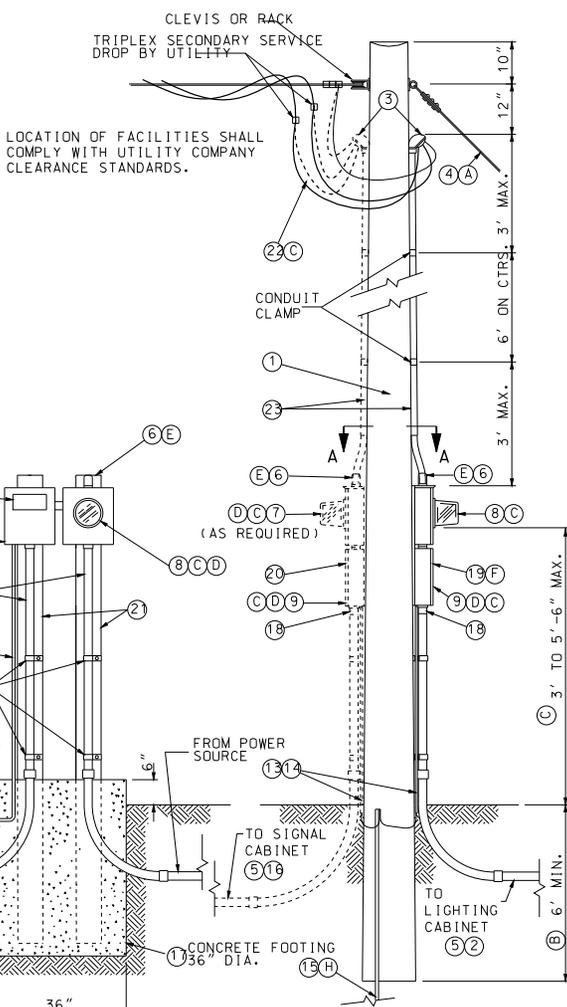
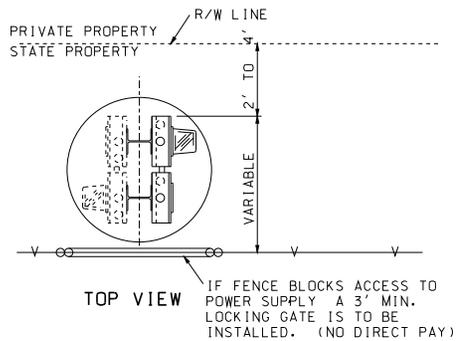
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
KATHRYN PHILLIPS HANNEY
NUMBER PE-23701
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

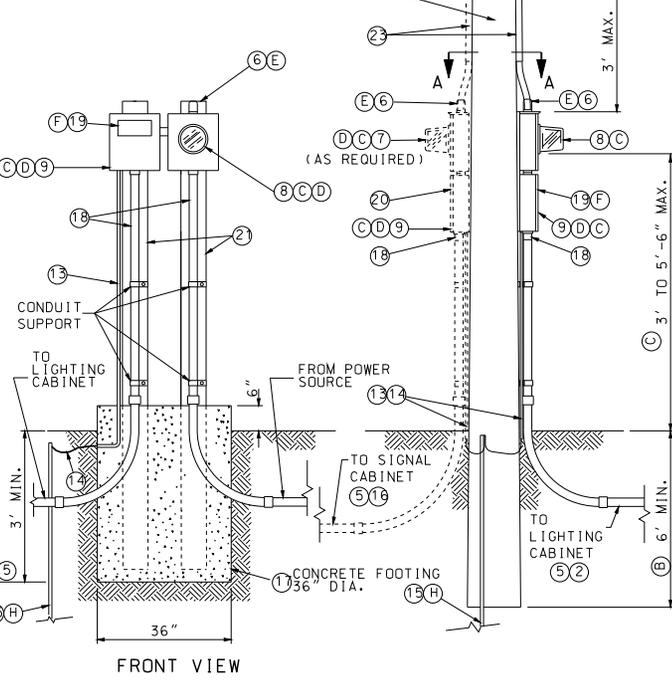
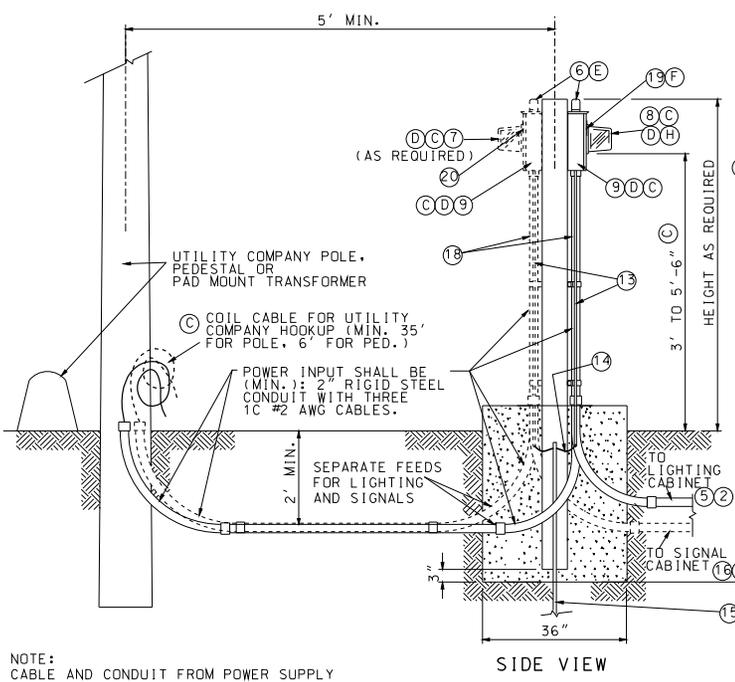
**HIGHWAY LIGHTING
POLES, FOUNDATIONS
AND APPURTENANCES
FOR 45' MOUNTING HEIGHT**

DATE EFFECTIVE: 06/01/2009	901.01AF	SHEET NO.
DATE PREPARED: 4/1/2010		6 OF 6

PEDESTAL OR NEW STATE-OWNED POLE TO BE SET WITHIN 2' TO 4' OF RIGHT-OF-WAY LINE.
 ALL SERVICE POWER SUPPLY ASSEMBLIES ARE TO BE LOCATED ON STATE PROPERTY.



SECTION A-A



SIDE VIEW

FRONT VIEW

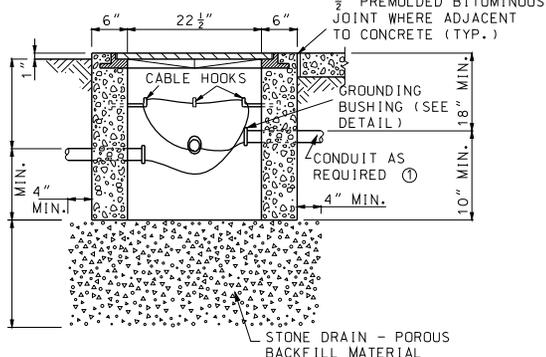
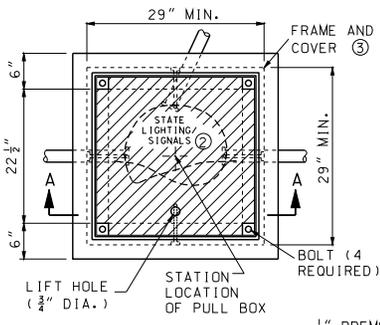
TYPE 2 (PEDESTAL)
UNDERGROUND SERVICE

TYPE 1 (POLE)
OVERHEAD SERVICE

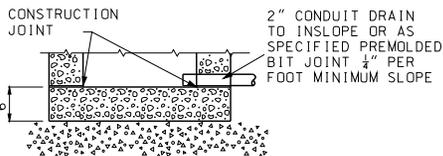
NOTE:
CABLE AND CONDUIT FROM POWER SUPPLY ASSEMBLY TO UTILITY COMPANY FACILITIES SHALL BE INCLUDED IN PRICE BID FOR POWER SUPPLY ASSEMBLY.

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		HIGHWAY LIGHTING POWER SUPPLY ASSEMBLY SECONDARY SERVICE	
DATE EFFECTIVE:	04/01/2002	901.80D	SHEET NO.
DATE PREPARED:	5/19/2010		2 OF 2

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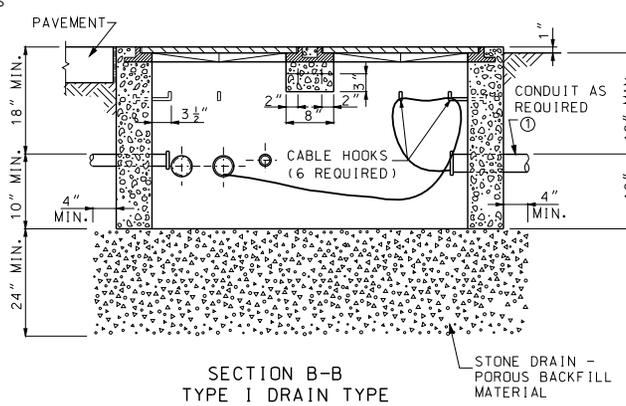
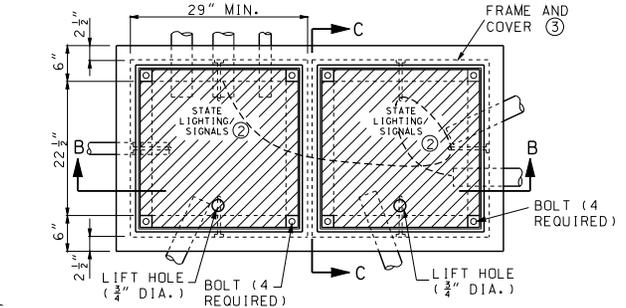


SECTION A-A
TYPE I DRAIN TYPE

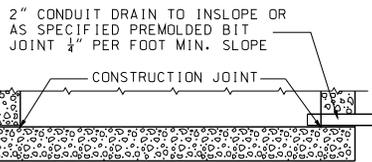


SECTION A-A
TYPE II DRAIN TYPE
(SEE DRAIN OUTLET DETAILS)
(SECTION ABOVE BREAK APPLICABLE TO TYPE I DRAIN)

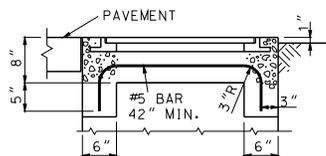
STANDARD CONCRETE PULL BOX



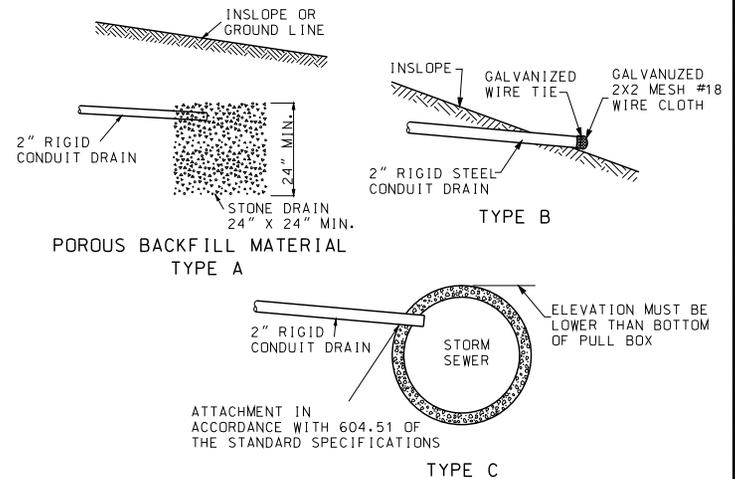
SECTION B-B
TYPE I DRAIN TYPE



SECTION B-B
TYPE II DRAIN TYPE
(SEE DRAIN OUTLET DETAILS)
(SECTION ABOVE BREAK APPLICABLE TO TYPE I DRAIN)



SECTION C-C
DOUBLE CONCRETE PULL BOX, TYPE A



TYPE II DRAIN OUTLET DETAILS

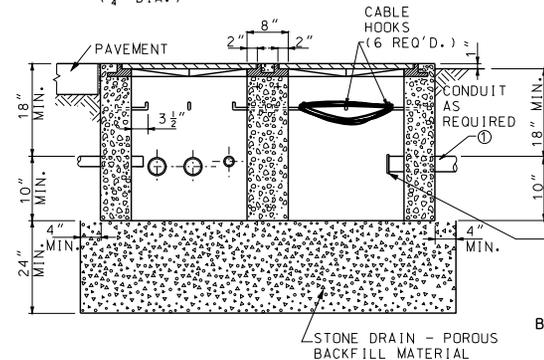
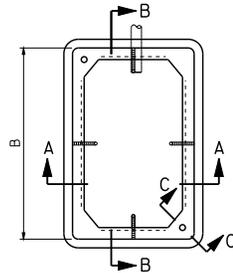
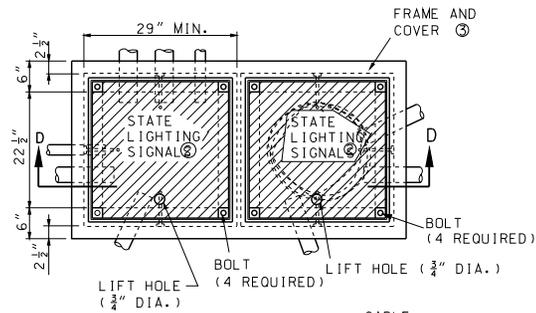
- ① ALL METAL CONDUITS SHALL BE ELECTRICALLY BONDED BY A GROUND BUSHING AND #6 AWG BARE COPPER WIRE. FOR PVC CONDUIT, ALL GROUND WIRES SHALL BE CONNECTED.
- ② SIGNAL PULL BOXES SHALL BE EMBOSSED "STATE SIGNALS" AND LIGHTING PULL BOXES "STATE LIGHTING."
- ③ PULL BOX FRAMES AND COVERS SHALL BE CAST IRON AND THE FOLLOWING MINIMUM DIMENSIONS:
 FRAME SIZE: 29" x 29"
 FRAME HEIGHT: 4 1/4"
 OPENING SIZE: 22 1/2" x 22 1/2"
 FRAME WEIGHT: 120 LBS.
 COVER SIZE: 22 3/8" x 22 3/8"
 COVER THICKNESS: 3/4"
 COVER WEIGHT: 140 LBS.

GENERAL NOTES:

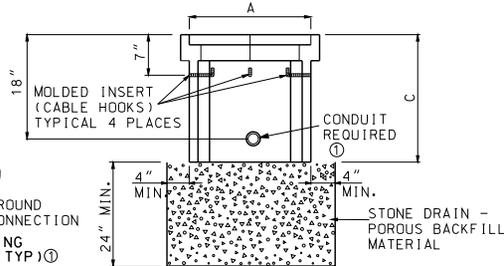
- ALL DIMENSIONS SHOWN ARE NOMINAL.
- BOLT CLEANOUT DETAIL SHALL BE APPROVED BY ENGINEER.
- PAVEMENT AND SUBGRADE SHALL BE AS SHOWN ON PLANS.
- STONE DRAIN MATERIAL SHALL CONFORM TO SECTION 1009 OF THE STANDARD SPECIFICATIONS.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	TRAFFIC SIGNALS CONCRETE PULL BOXES	
	DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/17/2010	902.20F SHEET NO. 1 OF 3

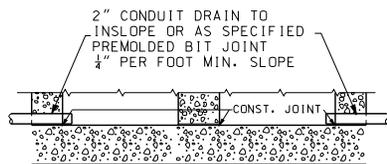
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



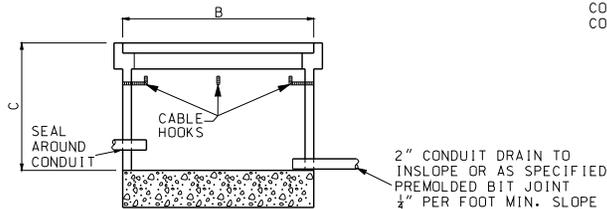
SECTION D-D
TYPE I DRAIN TYPE



SECTION A-A
TYPE I DRAIN TYPE

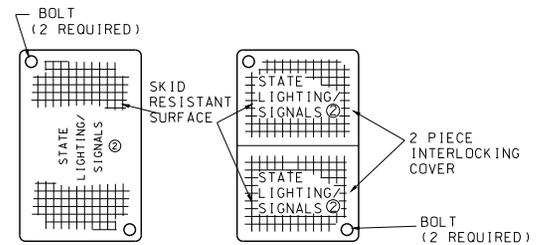


TYPE II DRAIN TYPE
(SEE DRAIN OUTLET DETAILS)
(SECTION ABOVE BREAK APPLICABLE TO TYPE I DRAIN.)
DOUBLE CONCRETE PULL BOX, TYPE B



SECTION B-B
TYPE II DRAIN TYPE
PREFORMED PULL BOX

SECTION C-C
TYPICAL BOLT CLEANOUT



CLASS 1 OR 2 CLASS 3
PREFORMED PULL BOX COVER

NUMBER OF ENTERING CONDUCTORS	CLASS	PREFORMED PULL BOX MINIMUM DIMENSIONS		
		A	B	C
< 23	1	17"	30"	22"
23 - 68	2	24"	36"	24"
> 68	3	30"	48"	36"

- ALL METAL CONDUITS SHALL BE ELECTRICALLY BONDED BY A GROUND BUSHING AND #6 AWG BARE COPPER WIRE. FOR PVC CONDUIT, ALL GROUND WIRES SHALL BE CONNECTED.
- SIGNAL PULL BOXES SHALL BE EMBOSSED "STATE SIGNALS" AND LIGHTING PULL BOXES "STATE LIGHTING."
- PULL BOX FRAMES AND COVERS SHALL BE CAST IRON AND THE FOLLOWING MINIMUM DIMENSIONS:
 FRAME SIZE: 29" x 29"
 FRAME HEIGHT: 4 1/2"
 OPENING SIZE: 22 1/2" x 22 1/2"
 FRAME WEIGHT: 120 LBS.
 COVER SIZE: 22 3/8" x 22 3/8"
 COVER THICKNESS: 1/2"
 COVER WEIGHT: 140 LBS.

GENERAL NOTES:

IF AN EXTENSION IS USED WITH A PREFORMED BOX, THE LIP OF THE EXTENSION MAY BE INTERIOR OR EXTERIOR. THE EXTENSION SHALL BE COMPATIBLE AND FROM THE SAME MANUFACTURER.

IF PREFORMED PULL BOXES ARE SPECIFIED, THE CONTRACTOR MAY USE THE STANDARD CONCRETE PULL BOX IN LIEU OF THE CLASS 1 OR 2 PREFORMED PULL BOX OR THE DOUBLE CONCRETE PULL BOX, TYPE A, IN LIEU OF THE CLASS 3 PREFORMED PULL BOXES.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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**TRAFFIC SIGNALS
CONCRETE AND PREFORMED
PULL BOXES**

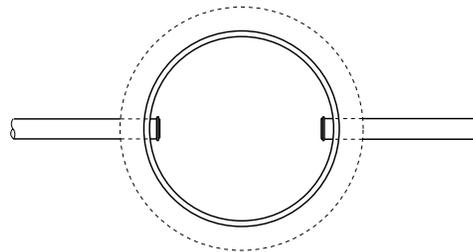
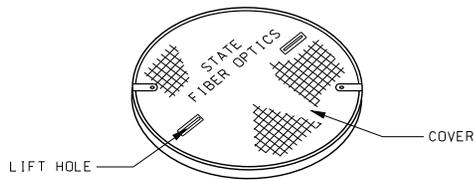
THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

SHEET NO.
2 OF 3

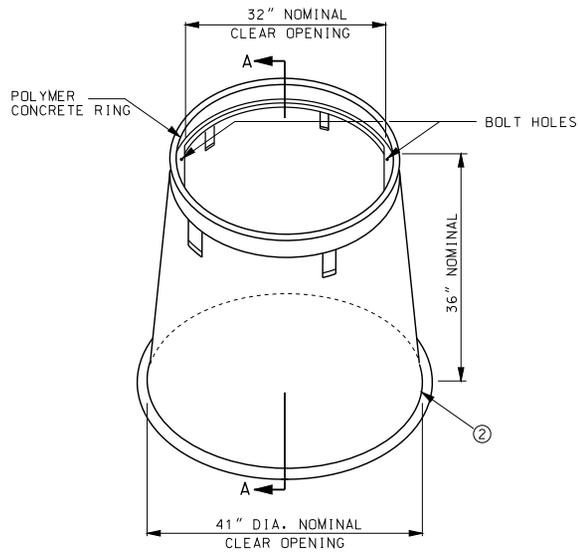
DATE EFFECTIVE: 06/01/2010
DATE PREPARED: 4/1/2010

902.20F

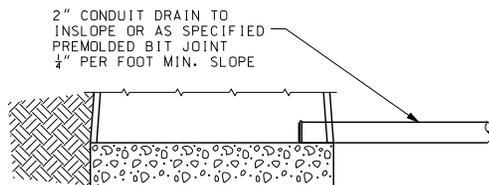
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PLAN

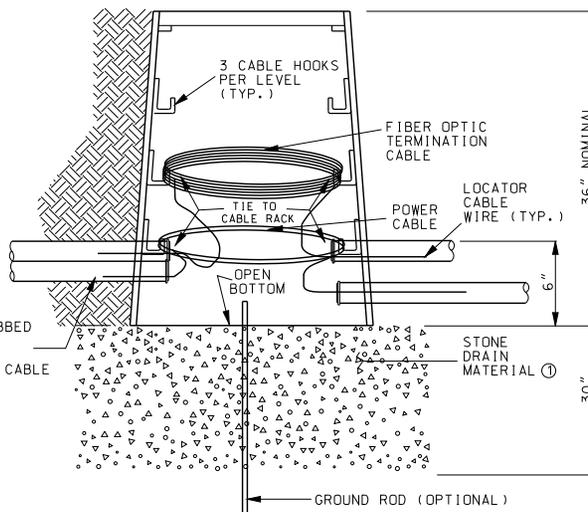


CIRCULAR PULL BOX CLASS 5



TYPE II DRAIN TYPE

(SEE DRAIN OUTLET DETAILS)
(SECTION ABOVE BREAK APPLICABLE TO TYPE I DRAIN.)



SECTION A-A
TYPE I DRAIN TYPE

- ① AGGREGATE SHALL BE TYPE 1 CONFORMING TO SEC 1007.
- ② BOX SHALL BE OF A FLARE DESIGN AND HAVE A LIP FOR STABILIZATION.

GENERAL NOTES:

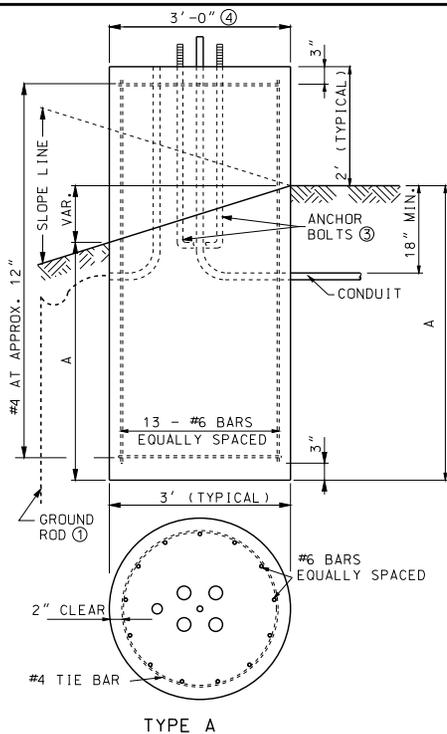
A MINIMUM OF NINE HOOKS, INSTALLED IN THREE LEVELS, SHALL BE INCLUDED WITH EACH PULL BOX.

IF SUBSURFACE CONDITIONS EXIST WHICH PROHIBIT THE PLACEMENT OF THE GROUND ROD IN A VERTICAL POSITION, THE ROD MAY BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM VERTICAL OR BURIED IN A TRENCH AT LEAST 30 IN. DEEP. CONNECTION TO GROUND ROD SHALL BE CADWELDED.

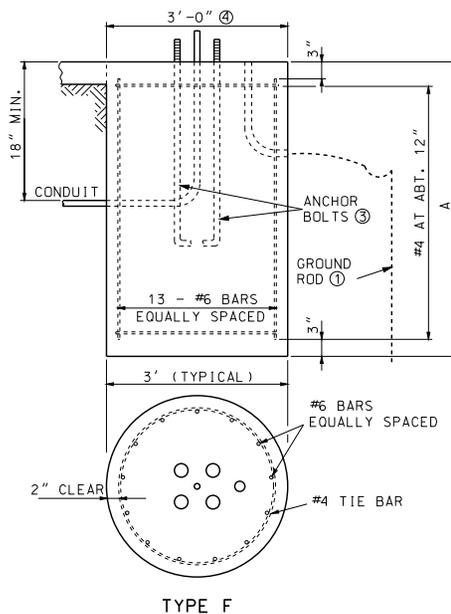
THE CIRCULAR PULL BOX COVER SHOULD BE SIZED TO FIT A BOX WITH AN OPENING OF 32".

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
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	TRAFFIC SIGNALS CONCRETE AND PREFORMED PULL BOXES	
	DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	902.20F

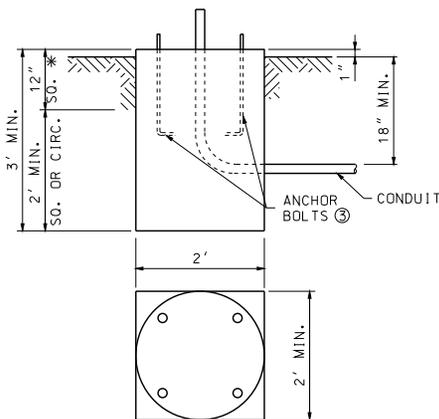
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



TYPE A



TYPE F



TYPE C

* SURFACE OF BASE TO BE CONSTRUCTED SQUARE FOR A DEPTH OF 12".

POST BASES

STEEL AND CONCRETE REQUIREMENTS FOR POST BASES

BASES		#6 STEEL BAR	CONC.
TYPE	A ⑦	LENGTH	WEIGHT LBS.
A-9	9'-0"	10'-6"	260
A-9.5	9'-6"	11'-0"	270
A-10	10'-0"	11'-6"	285
A-10.5	10'-6"	12'-0"	295
A-11	11'-0"	12'-6"	271
A-12	12'-0"	13'-6"	335
F-9	9'-0"	8'-6"	210
F-9.5	9'-6"	9'-0"	220
F-10	10'-0"	9'-0"	235
F-10.5	10'-6"	10'-0"	250
F-11	11'-0"	10'-6"	260
F-12	12'-0"	11'-6"	285
C*			0.44

* SURFACE OF BASE TO BE CONSTRUCTED SQUARE FOR A DEPTH OF 12".

POST BASES		
POST TYPE	ARM LENGTH (FEET) ⑤	BASE TYPE ⑥
C OR CL	15 - 25	A-9 OR F-9
C OR CL	30 - 35	A-9.5 OR F-9.5
C OR CL	40 - 55	A-10.5 OR F-10.5
B OR BL	15 - 25	A-10 OR F-10
B OR BL	30 - 35	A-11 OR F-11
B OR BL	40 - 55	A-12 OR F-12

- ① APPLICABLE ONLY WHERE CONTROLLER IS MOUNTED TO A SIGNAL POLE.
- ② BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- ③ ANCHOR BOLT DIMENSIONS ARE SHOWN ON THE MANUFACTURER'S APPROVED DRAWINGS.
- ④ MAXIMUM BOLT CIRCLE DIAMETER IS 26". BASE PLATE SHALL STAY WITHIN THE TOP OF THE POST BASE DIAMETER.
- ⑤ ARM LENGTH DETERMINED BY LENGTH OF LONGEST ARM FOR TYPE B & BL SIGNAL POSTS.
- ⑥ BASE TYPE A OR F DETERMINED BY LOCATION OF POST BASE.
- ⑦ SOIL DEPTH, NO ROCK.
- ⑧ INCLUDE #4 TIE BAR.
- ⑨ WHEN CONCRETE BASE IS LOCATED WITHIN 8" CONCRETE DIVISIONAL ISLAND, EMBEDMENT LENGTH MAY BE REDUCED BY 1/2 DIAMETER OF THE DRILLED SHAFT.

BASE EMBEDMENT IN SOLID ROCK

SOLID ROCK ENCOUNTER POINT	REQUIRED EMBEDMENT FOR BASE TYPE
	A-10 F-10
AT SURFACE	4'-9"
AT ONE-FOURTH NORMAL DEPTH	4'-0"
AT ONE-HALF NORMAL DEPTH	3'-3"
AT THREE-FOURTHS NORMAL DEPTH	1'-3"

1. REQUIRED EMBEDMENT DEPTHS CAN BE INTERPOLATED BETWEEN ENCOUNTER POINTS FOR OTHER SOLID ROCK ENCOUNTER DEPTHS.
2. NORMAL LENGTHS FOR ANCHOR BOLTS AND REINFORCING STEEL WILL BE REQUIRED.
3. CORE DRILL HOLES FOR ANCHOR BOLTS AND REINFORCING STEEL IN SOLID ROCK SHALL BE PROVIDED. CORE DRILL HOLES SHALL BE TWICE THE DIAMETER OF THE ANCHOR BOLT AND REINFORCING STEEL DIAMETER AND TO WITHIN 3 INCHES OF THE NORMAL BASE DEPTH.
4. IF SOIL, SHALE, GRAVEL, FRACTURED ROCK, OR VOIDS ARE ENCOUNTERED DURING CORE DRILLING, THE ROCK SHALL BE REMOVED TO THE POINT OF ENCOUNTER.
5. ANCHOR BOLTS AND REINFORCING STEEL SHALL BE GROUTED IN THE CORE DRILL HOLES WITH NON-SHRINK GROUT HAVING A MINIMUM STRENGTH OF 9,000 POUNDS IN 24 HOURS.
6. STRAIGHT ANCHOR BOLTS OF THE LENGTH SHOWN IN THE ANCHOR BOLT TABLE UNDER THE COLUMN "BOLT LENGTH" ARE ADEQUATE FOR USE IN GROUTED CORE DRILLED HOLES.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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TRAFFIC SIGNALS

POST BASES

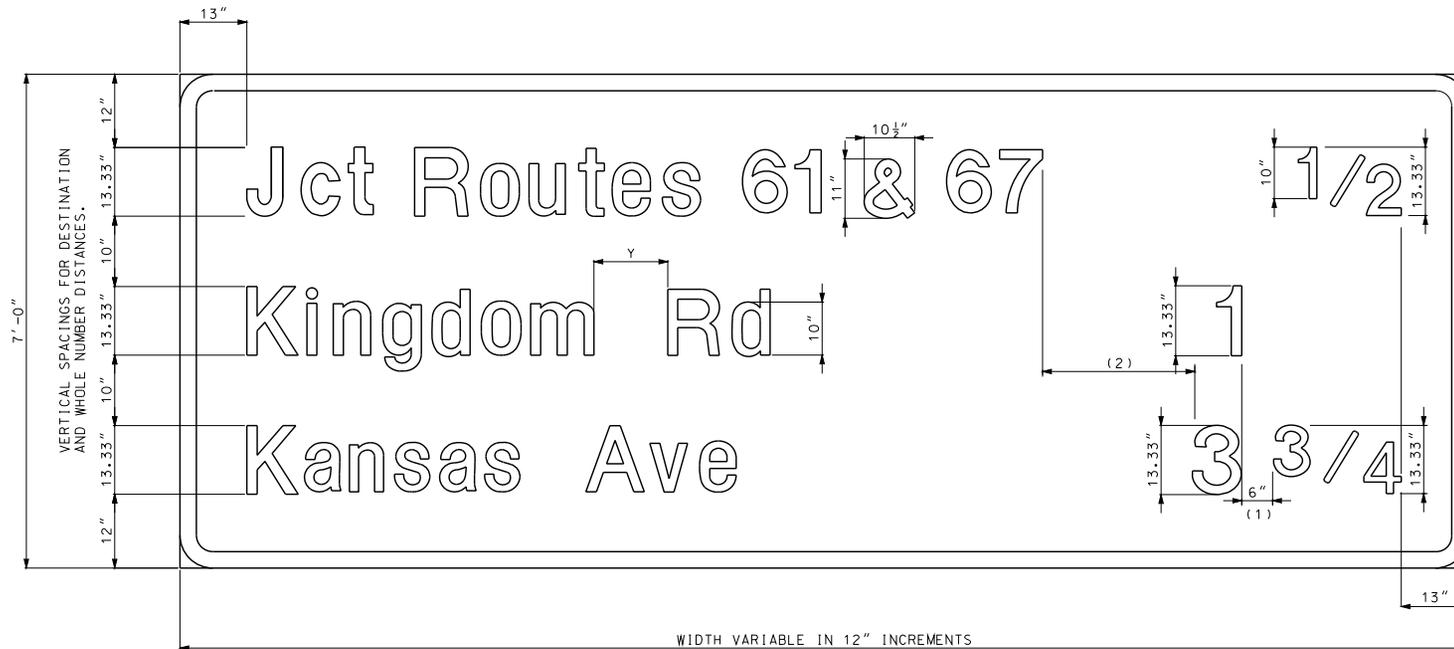
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

902.30P

SHEET NO.
1 OF 2

DATE EFFECTIVE: 02/01/2008
DATE PREPARED: 4/17/2010

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



LEGEND, SYMBOLS & BORDER

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
 R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

NOTES:

"ROUTE" SHALL NOT BE ABBREVIATED.

INTERSTATES SHALL BE REFERENCED WITH A CAPITAL "I". (EX. ROUTE I-29).

Y = UPPER CASE LETTER HEIGHT.

USE HYPHEN TO JOIN 2 ROUTES SHARING THE SAME ROADWAY.

USE AN AMPERSAND TO SEPERATE 2 ROUTES ON INDIVIDUAL ROADWAYS.

USE COMMAS AND AN AMPERSAND TO SEPERATE 3 OR MORE ROUTES ON INDIVIDUAL ROADWAYS.

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

(1) 6" STANDARD, HORIZONTALLY ALIGN RIGHT EXTREME EDGE OF WHOLE NUMERALS, REGARDLESS OF LINE OF COPY.

HORIZONTALLY ALIGN RIGHT EXTREME EDGE OF FRACTIONS REGARDLESS OF LINE COPY.

WHEN NO FRACTIONS EXIST, RIGHT EXTREME EDGE OF WHOLE NUMERALS SHALL BE 13" FROM EDGE OF SIGN.

(2) UPPER CASE LETTER HEIGHT FROM LONGEST DESTINATION TO LONGEST DISTANCE.

INCREASE THIS SPACE TO PROVIDE EVEN 12" WIDTH FOR ENTIRE SIGN.

GENERAL SIGN DATA				
STR2L-3	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND	L-3	R2	GREEN	
LEGEND	L-3	R4	WHITE	E(M)
SYMBOLS	L-3	R4	VAR.	
BORDER	L-3	R4	WHITE	
SUBSTRATE	STRUCTURAL			

GENERAL NOTES (ALL SIGNS):

GROUND MOUNTED SIGNS GREATER THAN 6 FEET WIDE OR SIGNS GREATER THAN 30 SQUARE FEET SHALL BE STRUCTURAL.

GUIDE SIGN WIDTH VARIABLE IN 12" INCREMENTS.

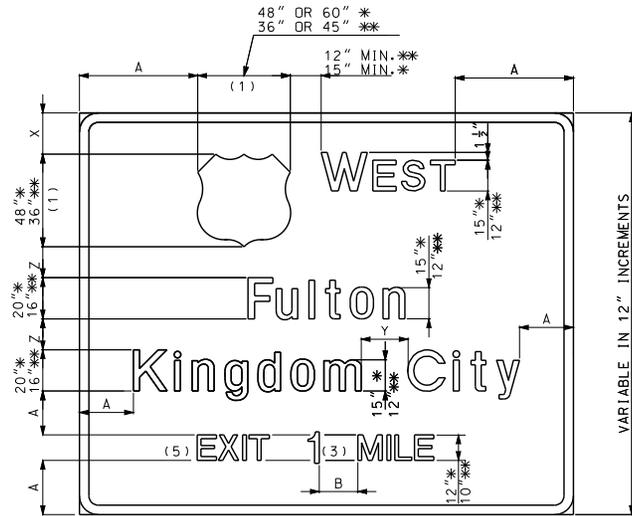
GUIDE SIGN HEIGHT VARIABLE IN 12" INCREMENTS.

STATE ABBREVIATIONS SHALL BE THE STANDARD 2-LETTER POSTAL ABBREVIATION, AND SHALL BE DETAILED IN ALL-CAPS.

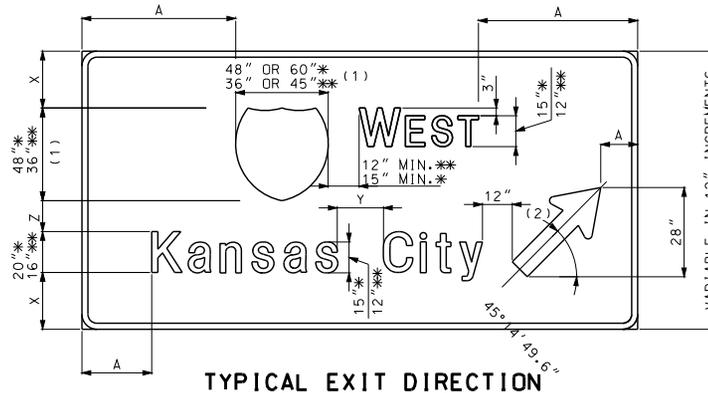
SEE OTHER STANDARD DRAWINGS FOR ARROW DETAILS.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING STRUCTURAL SIGNS INTERCHANGE SEQUENCE	
	DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/11/2010	903.02AK SHEET NO. 1 OF 19

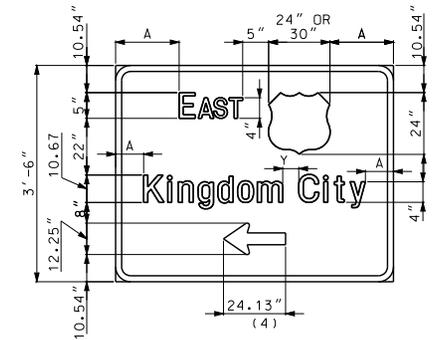
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



TYPICAL ADVANCE GUIDE



TYPICAL EXIT DIRECTION



CROSSROAD GUIDE

GUIDE SIGN LEGEND

- A = VARIABLE SO THAT THE OVERALL SIGN WIDTH IS IN 12" INCREMENTS MINIMUM LOWER CASE HEIGHT.
- B = 1.5 TIMES WORDING LETTER HEIGHT.
- X = APPROXIMATELY THE UPPERCASE LETTER HEIGHT. VARY THIS DIMENSION FOR HEIGHT AND WIDTH INCREMENTAL ROUNDING.
- Y = UPPERCASE LETTER HEIGHT
- Z = LOWER CASE LETTER HEIGHT
- * = GROUND MOUNT
- ** = OVERHEAD

NOTES:

- NUMERAL TO FRACTION SPACE, 8" GROUND MOUNT, 6" OVERHEAD.
- HORIZONTALLY CENTER ALL LINES OF TEXT AND SYMBOLS.
- BOX DIMENSION FRACTIONS: OVERHEAD IS 15" H x 20" W FOR 1/2, 1/4, 15" H x 25" W FOR 3/4, GROUND MOUNT 18" H x 24" W FOR 1/2, 1/4, 18" H x 30" W FOR 3/4.

LEGEND, SYMBOLS & BORDER

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

BACKGROUND REFLECTIVE SHEETING

- R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
- R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

GENERAL SIGN DATA					
STR2L-3	TYPE	REFL. SHEETING TYPE		COLOR	LETTER SERIES
		GROUND	OVERHEAD		
BACKGROUND	L-3	R2	R2	GREEN	
LEGEND	L-3	R4	R4	WHITE	E(M)
SYMBOLS	L-3	R4	R4	VAR.	
BORDER	L-3	R4	R4	WHITE	
SUBSTRATE	STRUCTURAL (SEE GEN. NOTES ON SH. 1)				

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
KATHYRIN PHILLIPS HANNEY
GOVERNOR
NUMBER PE-23701
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

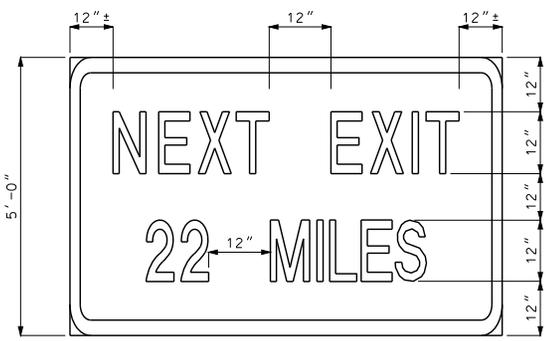
HIGHWAY SIGNING STRUCTURAL SIGNS

INTERCHANGE SEQUENCE

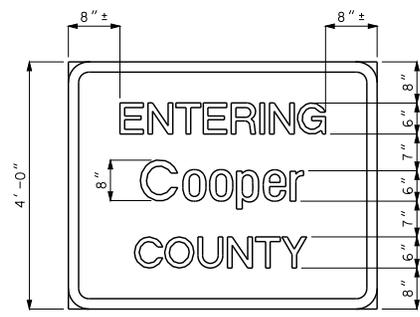
DATE EFFECTIVE: 06/01/2010
DATE PREPARED: 4/1/2010

903.02AK

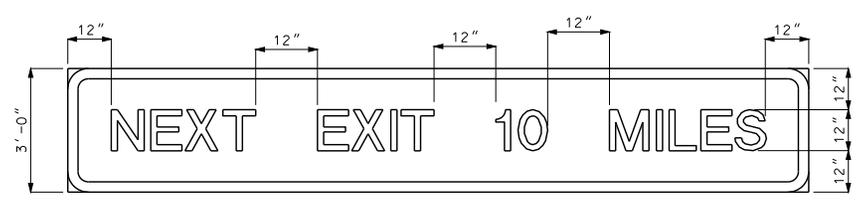
SHEET NO.
2 OF 19



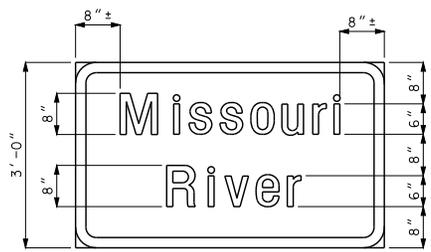
E2-1A



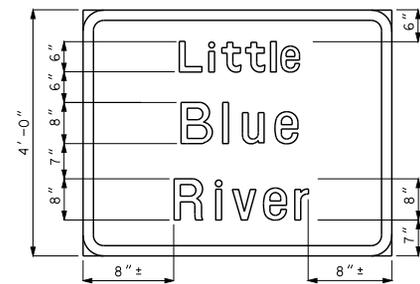
COUNTY LINE



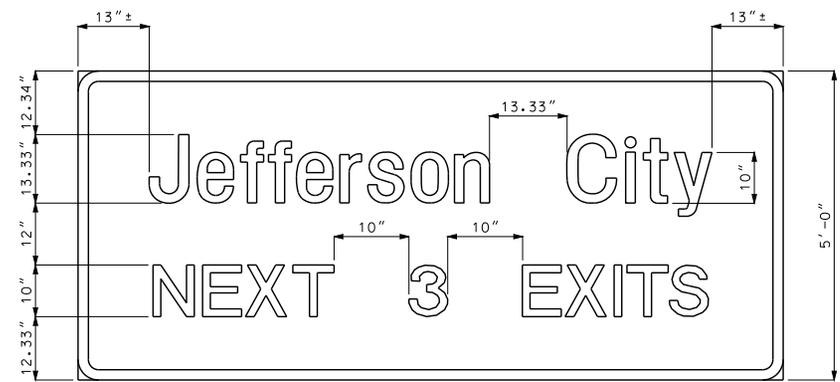
E2-1
NEXT EXIT SUPPLEMENTAL
ADVANCE GUIDE



RIVER/CREEK
(TWO LINES)



RIVER/CREEK
(THREE LINES)



NEXT (X) EXITS

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

LEGEND, SYMBOLS & BORDER
L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

GENERAL SIGN DATA				
STR2L-3	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	GREEN	
LEGEND	L-3	R4	WHITE	E(M)
SYMBOLS	L-3	R4	YAR.	
BORDER	L-3	R4	WHITE	
SUBSTRATE	STRUCTURAL (SEE GEN. NOTES ON SH. 1)			

BACKGROUND REFLECTIVE SHEETING
R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7



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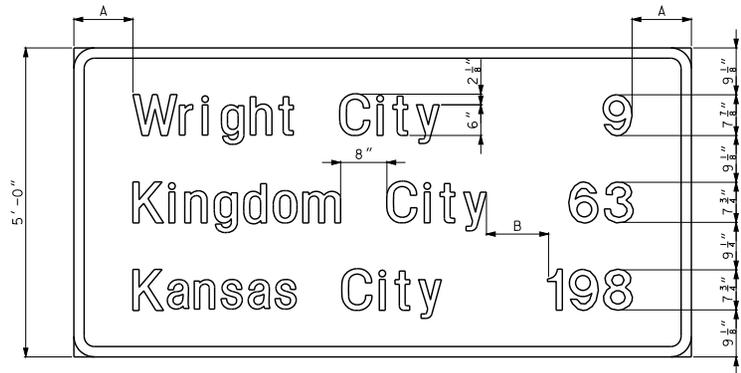
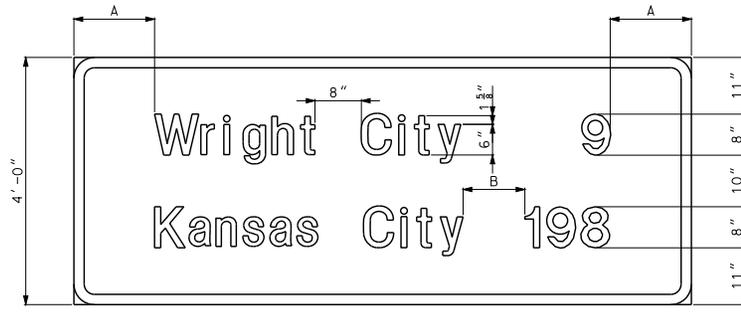
**HIGHWAY SIGNING
STRUCTURAL SIGNS
MISC. FREEWAY AND EXPRESSWAY
GUIDE SIGNS**



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE EFFECTIVE:	06/01/2010	903.02AK	SHEET NO. 3 OF 19
DATE PREPARED:	4/1/2010		

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



NOTE: FOR INTERSTATE, LAST LINE OF COPY SHALL INDICATE APPROVED AASHTO CONTROL CITY.

POST INTERCHANGE/INTERSECTION DISTANCE

- A = VARIABLE SO THAT THE OVERALL SIGN WIDTH IS IN 12" INCREMENTS, MINIMUM LOWER CASE HEIGHT.
- B = UPPER CASE LETTER HEIGHT, FROM LONGEST DESTINATION TO LONGEST DISTANCE, REGARDLESS OF LINE COPY.

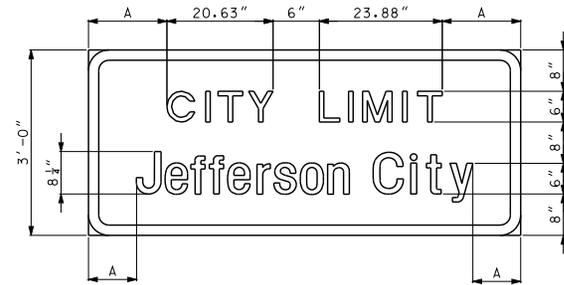
BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

BACKGROUND REFLECTIVE SHEETING

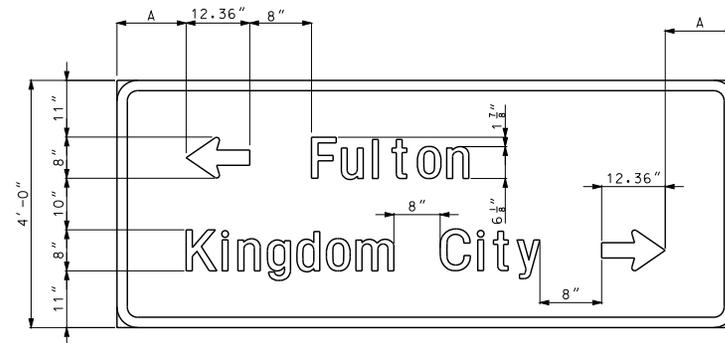
- R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
- R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

LEGEND, SYMBOLS & BORDER

- L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)



CITY LIMITS



NOTE: DESTINATIONS ARE PLACED IN THE FOLLOWING ORDER: AHEAD, LEFT, RIGHT. TYPE D ARROWS SHALL BE USED.

ADVANCE INTERSECTION DESTINATION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

**HIGHWAY SIGNING
STRUCTURAL SIGNS**

MISC. GOUND MOUNTED FREEWAY
AND EXPRESSWAY GUIDE SIGNS

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

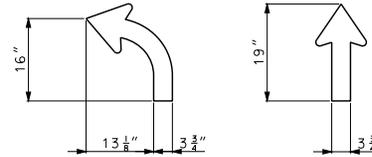
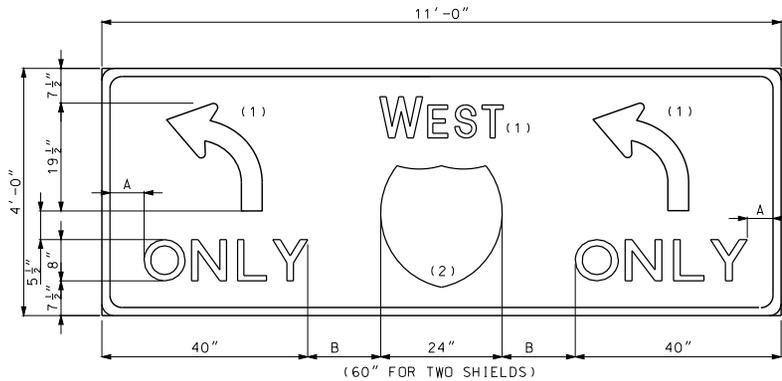
DATE EFFECTIVE: 06/01/2010

DATE PREPARED: 4/1/2010

903.02AK

SHEET NO.
4 OF 19

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

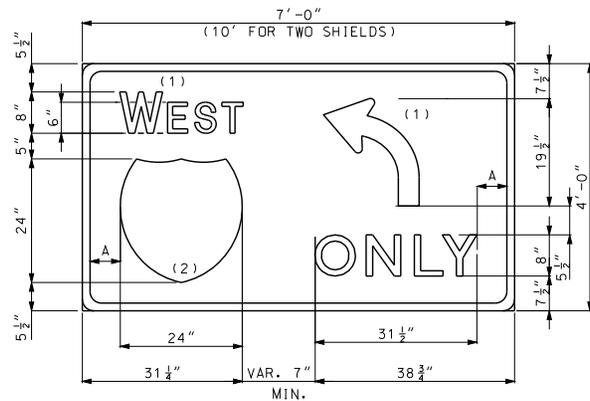


NOTES:

SHEILD SHALL APPEAR ON THE EXIT SIDE OF SIGN.

SIGN ALWAYS PLACED OVERHEAD. MOUNT ON BRIDGE WHEREVER POSSIBLE.

- (1) ALL CARDINAL DIRECTIONS AND ARROWS HORIZONTALLY CENTERED IN SPACE PROVIDED.
- (2) ALTERNATE ROUTE SHIELDS MAY BE PROVIDED. USE STANDARD 24" OR 30" SHIELD IN SPACE PROVIDED.



A = VARIABLE SO THAT THE OVERALL SIGN WIDTH IS IN 12" INCREMENTS, MINIMUM 6".
 B = VARIABLE, MINIMUM 7".

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

BACKGROUND REFLECTIVE SHEETING

- R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
- R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL SIGN DATA				
STR2L-3	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	GREEN	
LEGEND	L-3	R4	WHITE	E(M)
SYMBOLS	L-3	R4	VAR.	
BORDER	L-3	R4	WHITE	
SUBSTRATE	STRUCTURAL			

LEGEND, SYMBOLS & BORDER

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

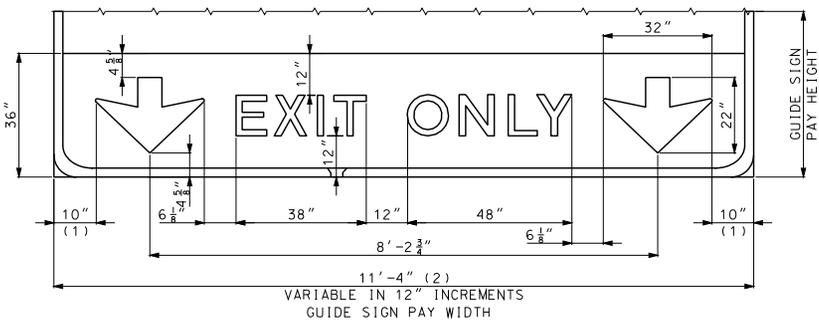
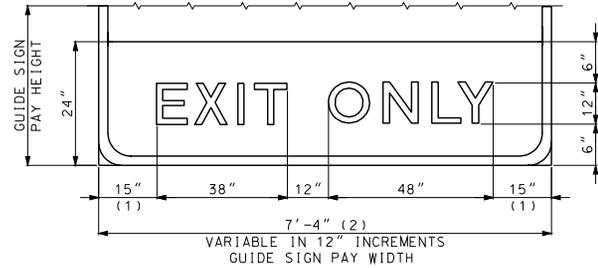
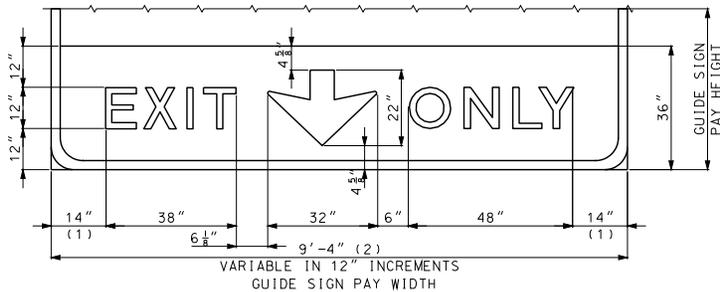
**HIGHWAY SIGNING
STRUCTURAL SIGNS
LANE CONTROL
WITH ROUTE SHIELD**

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE EFFECTIVE: 06/01/2010
DATE PREPARED: 4/17/2010

903.02AK

SHEET NO.
5 OF 19



- (1) TYPICALLY VARY THIS DISTANCE TO MATCH WIDTH OF GUIDE SIGN.
- (2) MINIMUM GUIDE SIGN WIDTH WHEN EXIT ONLY PANEL IS CONTROL LINE FOR SIGN WIDTH.

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

GENERAL SIGN DATA				
	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R4	FL. YL.	
LEGEND	L-1		BLACK	E (MOD)
SYMBOLS	L-1		BLACK	
BORDER	L-1		BLACK	
SUBSTRATE	STRUCTURAL			

LEGEND, SYMBOLS AND BORDER
 L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED ON SIGN COLOR COMBINATION.

BACKGROUND REFLECTIVE SHEETING
 R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
 R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL NOTES:
 NO DIRECT PAY MADE FOR THIS PANEL. COST FOR PANEL IS INCLUDED IN THE COST FOR THE GUIDE SIGN TO WHICH THIS PANEL IS ATTACHED.
 FOR OVERHEAD USE ONLY.
 PLACE SIGN ON TRUSS TO ALIGN CENTER OF LANE WITH TYPE C ARROW.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

HIGHWAY SIGNING STRUCTURAL SIGNS

EXIT ONLY PANELS

STATE OF MISSOURI
 KATHRYN PHILIPS HANNEY
 NUMBER PE-23791
 PROFESSIONAL ENGINEER

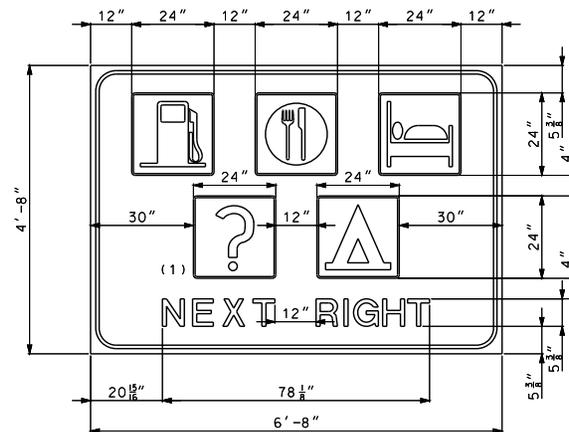
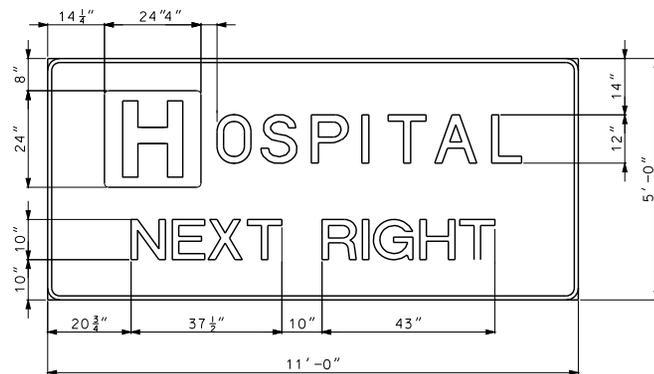
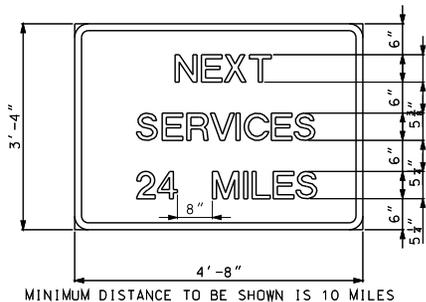
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE EFFECTIVE: 06/01/2010
 DATE PREPARED: 4/11/2010

903.02AK

SHEET NO.
 6 OF 19

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



NOTE:
HORIZONTALLY CENTER ALL LINES OF TEXT AND SYMBOLS.

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL SIGN DATA				
STR2L-3	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	BLUE	
LEGEND	L-3	R4	WHITE	E(M)
SYMBOLS	L-3	R4	WHITE	
BORDER	L-3	R4	WHITE	
SUBSTRATE	STRUCTURAL			

LEGEND, SYMBOLS & BORDER

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)



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HIGHWAY SIGNING STRUCTURAL SIGNS SERVICE SIGNS

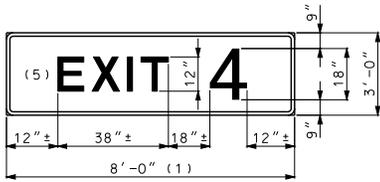


THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

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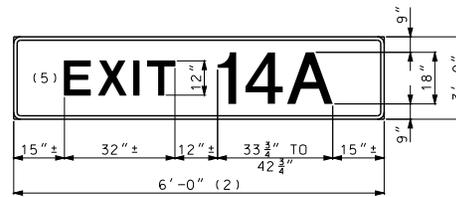
SHEET NO.
7 OF 19

DATE EFFECTIVE: 06/01/2010
DATE PREPARED: 4/11/2010



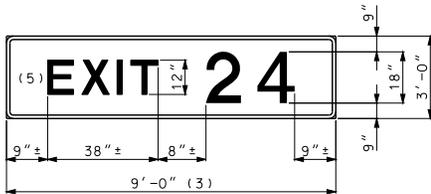
(1) 9'-0" 2 THROUGH 9 WITH A LETTER
11'-0" FOR "EXITS" 2 THROUGH 9 WITH A-B LETTERS

1 THROUGH 9



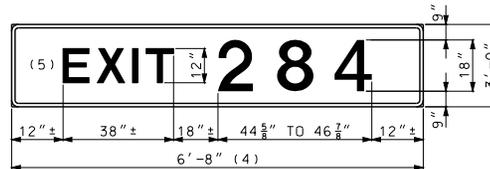
(2) 12'-0" FOR "EXITS" 10 THROUGH 19
NUMERAL WITH A-B LETTERS

**10 THROUGH 19 NUMERAL
WITH LETTER**



(3) 9'-0" WITH NUMBER 1 NUMERAL
11'-0" WITH A LETTER
10'-0" WITH A NUMBER 1 NUMERAL AND A LETTER
12'-0" FOR "EXITS" WITH A NUMBER 1 NUMERAL AND
A-B LETTERS
13'-0" FOR "EXITS" WITH DOUBLE NUMERAL AND
A-B LETTERS

20 THROUGH 99



(4) 10'-0" WITH NUMBER 1 NUMERAL
12'-0" WITH A LETTER
12'-0" WITH A NUMBER 1 NUMERAL AND A LETTER
13'-0" FOR "EXITS" WITH A TRIPLE NUMERAL
WITH A NUMBER 1 NUMERAL AND A-B LETTERS
14'-0" FOR "EXITS" WITH A TRIPLE
NUMERAL AND A-B LETTERS

100 AND OVER

GENERAL NOTES:

FOR MOUNTING DETAILS SEE OTHER DRAWINGS.

PANEL SHALL BE MOUNTED DIRECTLY TO THE TOP OF THE
GUIDE SIGN AND ALIGNED WITH THE EXIT SIDE.

LEGEND, SYMBOLS & BORDER

L-3 DIRECT APPLIED (CUT FROM
MATERIAL SHOWN ON PLANS.)

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

BORDER (ALL SIGNS)			
CORNER RADIUS		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

GENERAL SIGN DATA				
STR2L-3	TYPE	REFL. SHEETING TYPE		LETTER SERIES
		GROUND	OVERHEAD	
BACKGROUND		R2	R2	GREEN
LEGEND	L-3	R4	R4	WHITE E(M)
SYMBOLS	L-3	R4	R4	VAR.
BORDER	L-3	R4	R4	WHITE
SUBSTRATE	STRUCTURAL			



**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

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JEFFERSON CITY, MO 65102
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HIGHWAY SIGNING

EXIT NUMBER PANELS

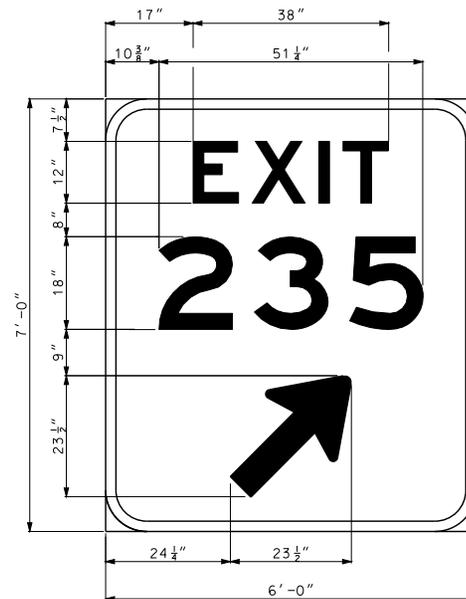
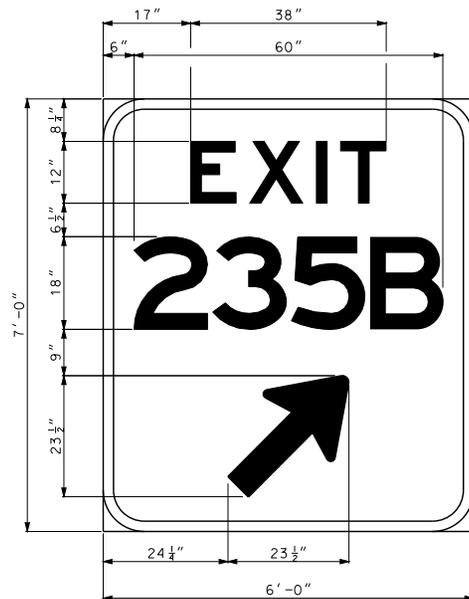
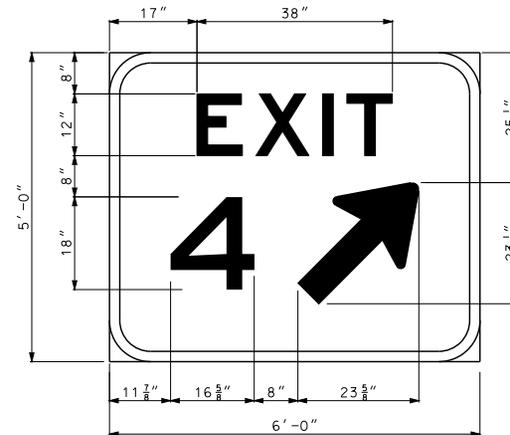
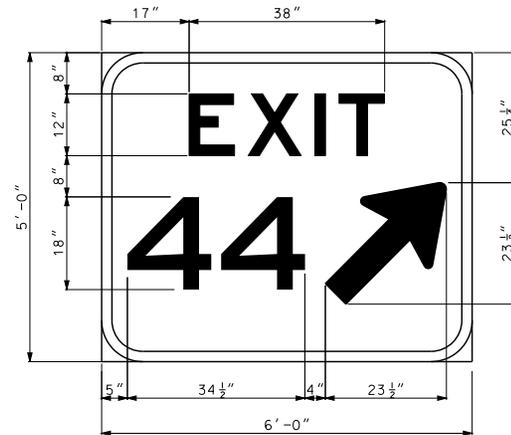
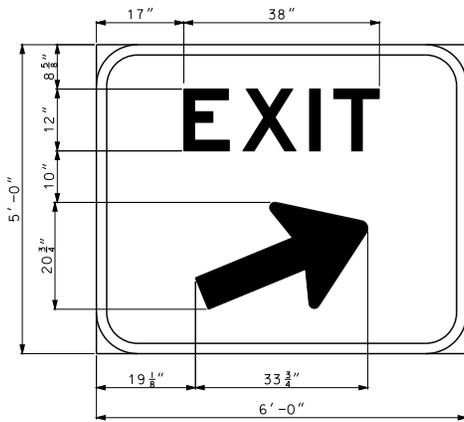


DATE EFFECTIVE: 06/01/2010
DATE PREPARED: 4/1/2010

903.02AK

SHEET NO.
8 OF 19

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



BORDER (ALL SIGNS)			
CORNER RADII		WIDTH	
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

GENERAL SIGN DATA					
STR2L-3	TYPE	REFL.	SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	R2	GREEN	
LEGEND	L-3	R4	R4	WHITE	E(M)
SYMBOLS	L-3	R4	R4	VAR.	
BORDER	L-3	R4	R4	WHITE	
SUBSTRATE	STRUCTURAL				

SUBSTRATE
ST STRUCTURAL
SH SHEET

BACKGROUND REFLECTIVE SHEETING
R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL NOTE:
FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

LEGEND, SYMBOLS & BORDER

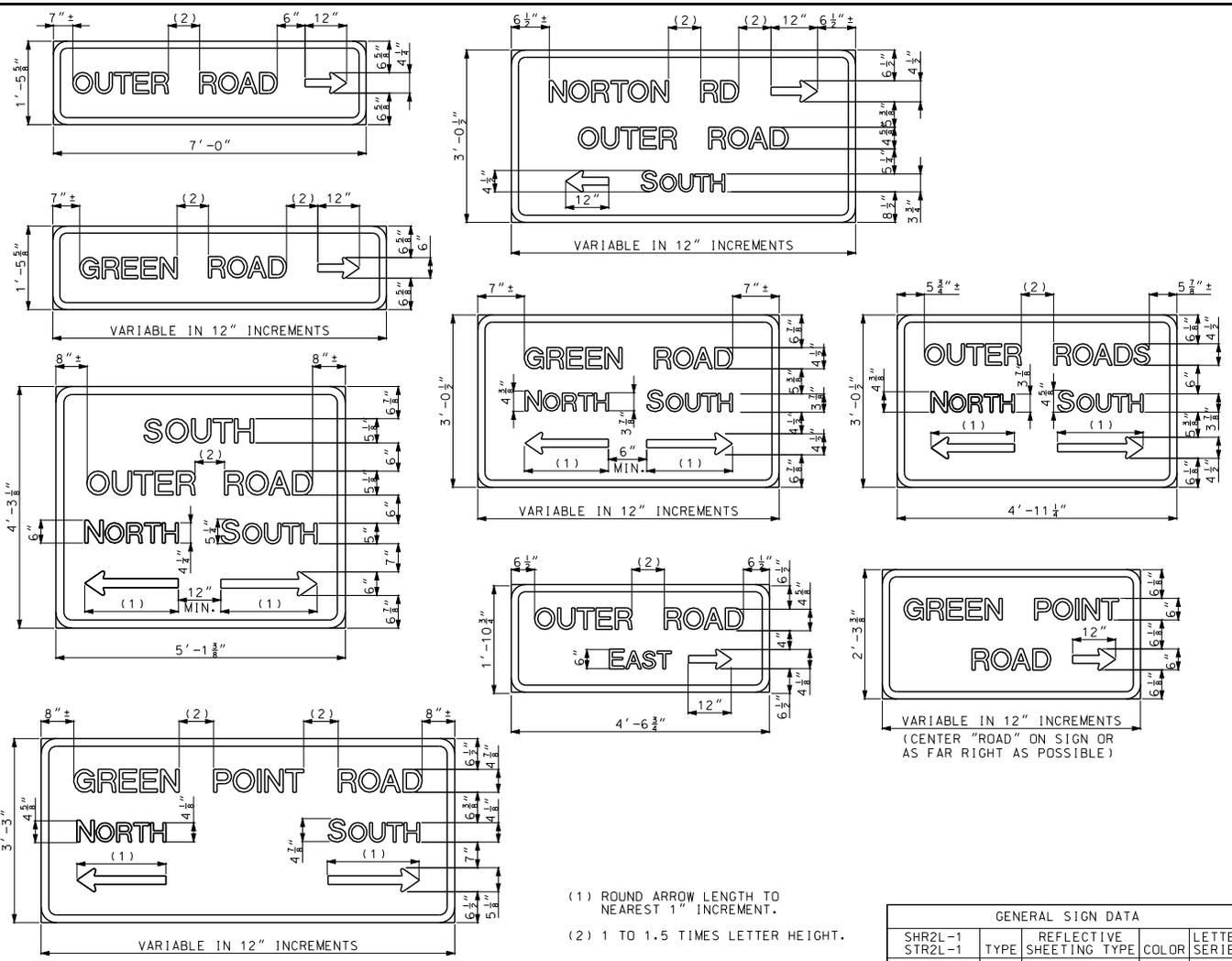
L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED SIGN COLOR COMBINATION.

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	<p>HIGHWAY SIGNING</p> <p>GORE EXIT SIGN</p>	
	<p>DATE EFFECTIVE: 06/01/2010</p> <p>DATE PREPARED: 4/1/2010</p>	<p>903.02AK</p>
		<p>SHEET NO. 9 OF 19</p>

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



- (1) ROUND ARROW LENGTH TO NEAREST 1" INCREMENT.
- (2) 1 TO 1.5 TIMES LETTER HEIGHT.

LEGEND, SYMBOLS & BORDER

L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED SIGN COLOR COMBINATION.

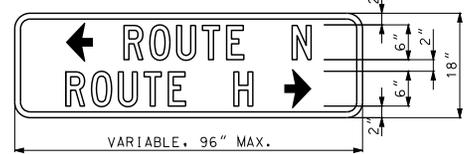
L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

SUBSTRATE
 ST STRUCTURAL
 SH SHEET

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
 R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL SIGN DATA				
SHR2L-1	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
STR2L-1		R2	GREEN	
LEGEND	L-1	R4	WHITE	D
SYMBOLS	L-1	R4	WHITE	
BORDER	L-1	R4	WHITE	
SUBSTRATE	SHEET (SEE GENERAL NOTES)			



MAST ARM STREETNAME SIGNS

BORDER (ALL SIGNS)			
CORNER RADII	WIDTH		
SIGN HEIGHT	INCHES	LETTER SIZE	INCHES
LESS THAN OR EQUAL TO 6'	6	LESS THAN 12"	1
7'	9		
GREATER THAN OR EQUAL TO 8'	12	12" OR LARGER	2

GENERAL NOTES:

SIGNS GREATER THAN 6' WIDE OR 30 SQ. FT. IN AREA SHALL BE STRUCTURAL.

MAST ARM STREETNAME SIGNS SHALL BE FLAT SHEET.

FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS:

- 9 SQUARE FEET OR LESS - .080 IN..
- OVER 9 SQUARE FEET BUT LESS THAN 16 SQUARE FEET - .100 IN..
- 16 SQUARE FEET OR LARGER - .125 IN.

FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

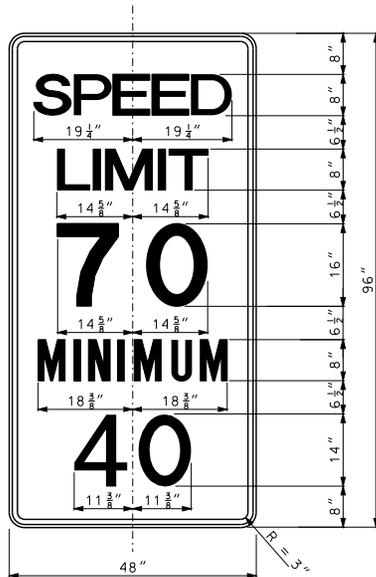
HIGHWAY SIGNING

CROSS ROAD AND OUTER ROAD SIGNS

DATE EFFECTIVE: 06/01/2010
 DATE PREPARED: 4/1/2010

903.02AK SHEET NO. 10 OF 19

CROSS ROAD AND OUTER ROAD SIGNS



R2-4a
FOR USE ON
INTERSTATE ONLY

GENERAL SIGN DATA: R2-4a				
SHR2L-1	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	WHITE	
LEGEND	L-1		BLACK	C
SYMBOLS	L-1		BLACK	
BORDER	L-1		BLACK	
SUBSTRATE	SHEET			

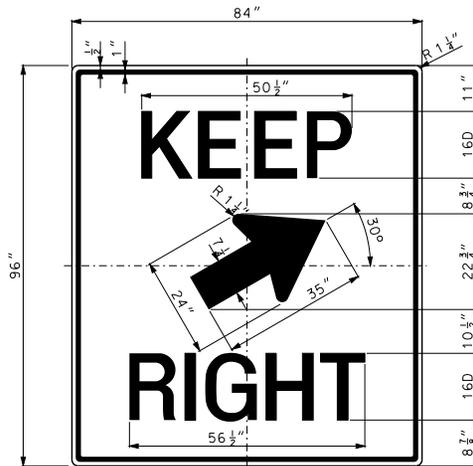
LEGEND, SYMBOLS & BORDER

L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED ON SIGN COLOR COMBINATION.

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3



(3) SIGN R4-7d SHALL BE STRUCTURAL

R4-7d
KEEP RIGHT
(WITH 30° ARROW)
FREEWAY/EXPRESSWAY

GENERAL SIGN DATA: R4-7d				
STR2L-3	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND		R2	WHITE	
LEGEND	L-3		BLACK	D
SYMBOLS	L-3		BLACK	
BORDER	L-3		BLACK	
SUBSTRATE	STRUCTURE			

GENERAL NOTES:

FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS (EXCEPT FOR 36" STOP SIGN THAT USES AN .100 ALUMINUM PLATE):

9 SQUARE FEET OR LESS - .080 IN.

OVER 9 SQUARE FEET TO 16 SQUARE FEET - .100 IN.

16 SQUARE FEET OR LARGER - .125 IN.

FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING REGULATORY SIGNS	
	DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	903.02AK SHEET NO. 11 OF 19

GENERAL SIGN DATA: FLAT SHEET			
SHR4L-1	TYPE	REFLECTIVE SHEETING TYPE	COLOR
BACKGROUND		R4	FL. YL
LEGEND	L-1		BLACK
SYMBOLS	L-1		BLACK
BORDER	L-1		BLACK

GENERAL SIGN DATA: STRUCTURE			
STR4L-1	TYPE	REFLECTIVE SHEETING TYPE	COLOR
BACKGROUND		R4	FL. YL
LEGEND	L-1		BLACK
SYMBOLS	L-1		BLACK
BORDER	L-1		BLACK

LEGEND, SYMBOLS & BORDER

L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED ON SIGN COLOR COMBINATION.

L-3 DIRECT APPLIED (CUT FROM MATERIAL SHOWN ON PLANS.)

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3

R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

SUBSTRATE

SH FLAT SHEET

ST EXTRUDED PANEL

GENERAL NOTES:

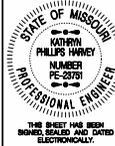
FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS

9 SQUARE FEET OR LESS - .080 IN..

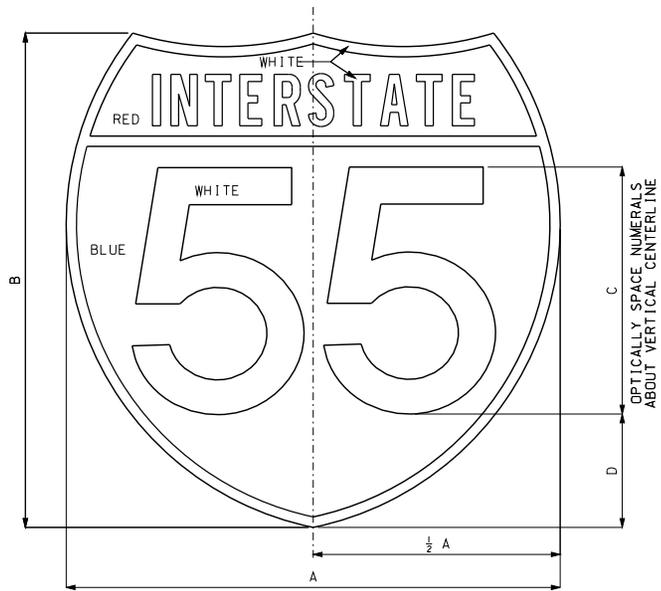
OVER 9 SQUARE FEET TO 16 SQUARE FEET - .100 IN..

16 SQUARE FEET OR LARGER - .125 IN.

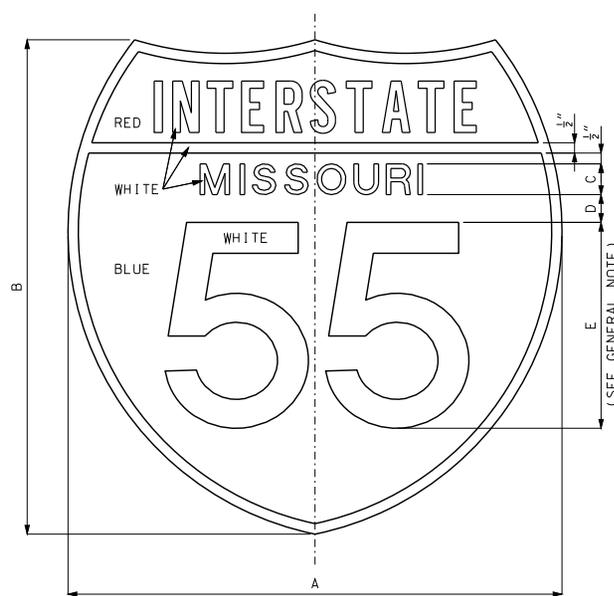
FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)		
		HIGHWAY SIGNING WARNING SIGNS	
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	903.02AK		SHEET NO. 12 OF 19

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



FOR GUIDE SIGN USE



FOR INDEPENDENT USE

INTERSTATE SHIELD

LOCATION	SIGN	DIMENSIONS (INCHES)			
		A	B	C	D
CROSSROAD	1,2-DIGITS	24	24	12D	5 1/2
OVERHEAD	1,2-DIGITS	36	36	18D	8 1/2
GROUND MOUNT	1,2-DIGITS	48	48	24D	11
CROSSROAD	3-DIGITS	30	24	12D	5 1/2
OVERHEAD	3-DIGITS	45	36	18D	8 1/2
GROUND MOUNT	3-DIGITS	60	48	24D	11

DIMENSIONS FOR GUIDE SIGN, BUSINESS LOOP OR SPUR SHIELDS

GUIDE SIGN				
GENERAL SIGN DATA				
	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
BACKGROUND	L-1	R4	VAR.	
LEGEND	L-1 *		WHITE	VAR **
SYMBOLS				
BORDER	L-1 *		WHITE	
SUBSTRATE				

* REVERSE SCREEN PROCESS.
** SEE DIMENSION TABLES THIS DRAWING.

SIGN	DIMENSIONS (INCHES)				
	A	B	C	D	E
1 & 2 DIGITS	24	24	1 1/2 D	1 3/8	10D
3 DIGITS	30	24	1 1/2 D	2 1/4	10D

DIMENSIONS FOR INDEPENDENT USE SHIELD

INDEPENDENT GENERAL SIGN DATA				
SHR2L-1 BACKGROUND	TYPE	REFLECTIVE SHEETING TYPE	COLOR	LETTER SERIES
LEGEND	L-1 *	R2	WHITE	VAR **
SYMBOLS				
BORDER	L-1 *		WHITE	
SUBSTRATE	SHEET			

LEGEND, SYMBOLS & BORDER

L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTABLE FILMS AS APPROVED BY ENGINEER BASED ON SIGN COLOR COMBINATION.

* REVERSE SCREEN PROCESS.
** SEE DIMENSION TABLES THIS DRAWING.

SUBSTRATE

ST STRUCTURAL
SH SHEET

BACKGROUND REFLECTIVE SHEETING

R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL NOTES:

ALL SHIELDS FOR GUIDE SIGN USE SHALL BE SCREEN PROCESS OR ELECTRONIC CUTABLE FILM ON TYPE 7 REFLECTIVE SHEETING.

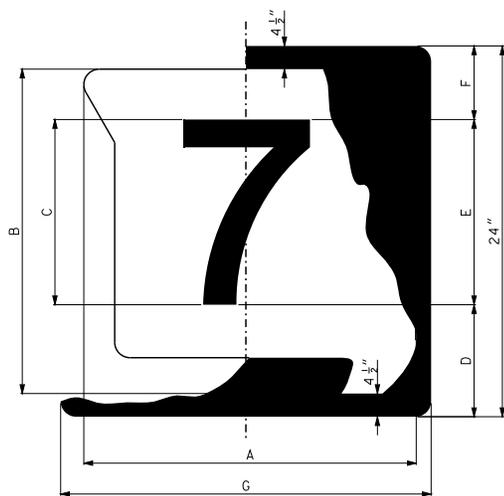
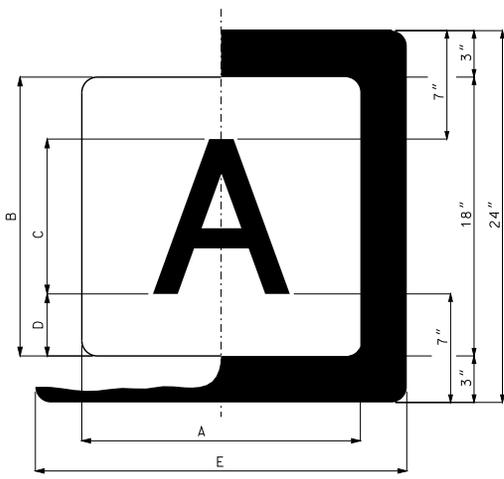
FOR HOLE PUNCHING AND MOUNTING DETAILS SEE OTHER DRAWINGS.

OCCASIONALLY THE NUMERALS CANNOT BE ACCOMMODATED WITHIN THE SPACE AVAILABLE ON THE STANDARD SHIELD. FOR THESE SITUATIONS, THE STANDARD SERIES D NUMERAL MAY BE REDUCED TO SERIES C, OR HORIZONTALLY COMPRESSED BY MEANS OF SIGNING SOFTWARE AS DIRECTED BY THE ENGINEER.

ALL SIGNS ON THIS SHEET ARE TO BE FABRICATED FROM .080 IN. SHEET ALUMINUM, UNLESS OTHERWISE SHOWN.

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		HIGHWAY SIGNING SHIELD FOR INDEPENDENT AND GUIDE SIGN USE	
DATE EFFECTIVE:	06/01/2010	903.02AK	SHEET NO.
DATE PREPARED:	4/17/2010		13 OF 19

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



LOCATION	NO. OF LETTERS	DIMENSIONS (INCHES) FOR GUIDE SIGN USE			
		A	B	C	D
CROSSROAD	1	24	24	12D	6
CROSSROAD	2	30	24	12D	6
OVERHEAD	1	30	30	18D	6
OVERHEAD	2	36	30	18D	6
GROUND MOUNT	1	42	42	24D	9
GROUND MOUNT	2	48	42	24D	9

NUMBER OF LETTERS	DIMENSIONS (INCHES) FOR INDEPENDENT USE	
	C	E
1	12D	24
2	12C	30

SUPPLEMENTARY SHIELD

LOCATION	ROUTE NUMBER	DIMENSIONS (INCHES) FOR GUIDE SIGN USE		
		A	B	C
CROSSROAD	1 & 2 DIGITS	24	24	12D
OVERHEAD	1 & 2 DIGITS	36	36	18C
GROUND MOUNT	1 & 2 DIGITS	48	48	24D
CROSSROAD	3 DIGITS	30	24	12C
OVERHEAD	3 DIGITS	45	36	18D
GROUND MOUNT	3 DIGITS	60	48	24D

ROUTE NUMBER	DIMENSIONS (INCHES) FOR INDEPENDENT USE			
	D	E	F	G
1 & 2 DIGIT	7 1/4	12D	4 3/4	24
3 DIGIT	8 1/4	12 B OR C	5 3/4	30

STATE ROUTE SHIELD

GUIDE SIGN			
GENERAL SIGN DATA			
	COLOR	REFLECTIVE SHEETING TYPE	LETTER SERIES
BACKGROUND	WHITE	R4	
LEGEND	BLACK		VAR *
SYMBOLS	WHITE		

INDEPENDENT			
GENERAL SIGN DATA			
	COLOR	REFLECTIVE SHEETING TYPE	LETTER SERIES
SHR2L-1	WHITE	R2	
BACKGROUND	WHITE		VAR *
LEGEND	BLACK		
SYMBOLS	WHITE		
BORDER	BLACK		
SUBSTRATE	SHEET		

* SEE DIMENSION TABLES THIS DRAWING.

LEGEND, SYMBOLS & BORDER
 L-1 SCREEN PRINT, REVERSE SCREEN PRINT, OR OPAQUE OR TRANSLUCENT CUTTABLE FILMS AS APPROVED BY ENGINEER BASED ON SIGN COLOR COMBINATION.

SUBSTRATE
 ST STRUCTURAL
 SH SHEET

BACKGROUND REFLECTIVE SHEETING
 R2 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 3
 R4 REFER TO MISSOURI SPECIFICATION SECTION 1042 TYPE 7

GENERAL NOTES:
 ALL SHIELDS FOR GUIDE SIGN USE SHALL BE SCREEN PROCESS OR CUTTABLE FILM ON TYPE 7 REFLECTIVE SHEETING.
 ALL SHIELDS FOR INDEPENDENT SIGN USE SHALL BE SCREEN PROCESS OR CUTTABLE FILM ON TYPE 3 REFLECTIVE SHEETING.
 FOR HOLE PUNCHING AND MOUNTING DETAILS SEE OTHER DRAWINGS.
 LAYOUT OF MISSOURI SHIELDS ARE AVAILABLE UPON REQUEST.
 OCCASIONALLY THE NUMERALS CANNOT BE ACCOMMODATED WITHIN THE SPACE AVAILABLE ON THE STANDARD SHIELD. FOR THESE SITUATIONS, THE STANDARD SERIES D NUMERAL MAY BE REDUCED TO SERIES C, OR HORIZONTALLY COMPRESSED BY MEANS OF SIGNING SOFTWARE AS DIRECTED BY THE ENGINEER.
 ALL SIGNS ON THIS SHEET ARE TO BE FABRICATED FROM .080 IN. SHEET ALUMINUM, UNLESS OTHERWISE SHOWN.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

HIGHWAY SIGNING
 STANDARD SHIELDS FOR
 INDEPENDENT AND GUIDE
 SIGN USE



DATE EFFECTIVE: 06/01/2010	903.02AK	SHEET NO. 14 OF 19
DATE PREPARED: 4/1/2010		

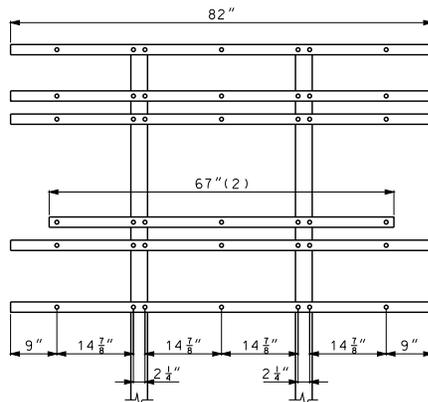


24" x 12"
 24" x 24" OR
 30" x 24" (3)
 21" x 15"
 24" x 12"
 24" x 24"
 21" x 15"

TWO-ROUTE ASSEMBLY

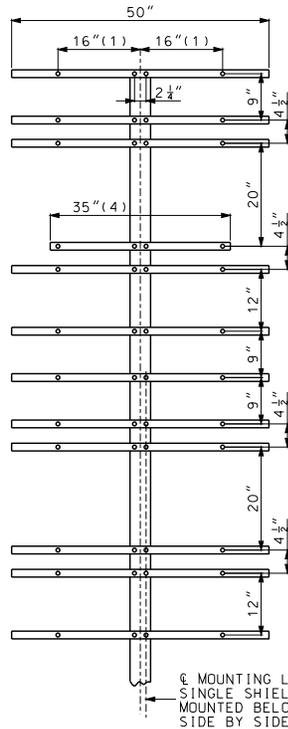
NOTE: 1ST DIMENSION - WIDTH OF PLATE
 2ND DIMENSION - HEIGHT OF PLATE

ONE POST
 (WITH BARS)

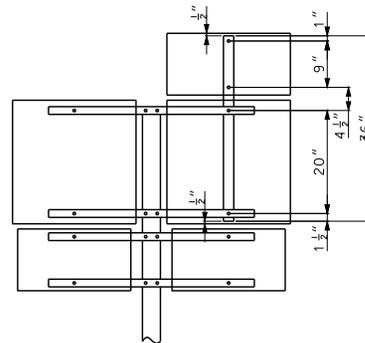


NOTE:
 ASSEMBLIES WITH TWO-ROUTE SHIELDS MOUNTED BELOW
 THREE-ROUTE SHIELDS SHALL BE MOUNTED TO THE POST
 AS SHOWN IN ONE-POST WITH BARS, DRAWING ABOVE.
 TWO POSTS

WIDE FLANGE POST MOUNTING



☒ MOUNTING LOCATION FOR
 SINGLE SHIELD ASSEMBLY
 MOUNTED BELOW (OR ABOVE)
 SIDE BY SIDE ASSEMBLIES



AUXILIARY PLATE MOUNTING

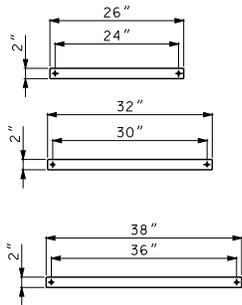
- (1) FOR 30" x 24" SHIELD, DIMENSION WILL BE 22".
- (2) FULL SIZE BARS SHALL BE USED WHEN INTERSTATE SHIELD IS NOT USED. VERTICAL SPACING OF BARS SHALL BE THE SAME AS FOR A SINGLE POST ASSEMBLY.
- (3) 24" x 24" SHALL BE USED FOR 1 OR 2 DIGIT ROUTE SHIELDS.
- (4) FOR SIDE BY SIDE 30" x 24" SHIELDS, DIMENSION WILL BE 41".

GENERAL NOTES:

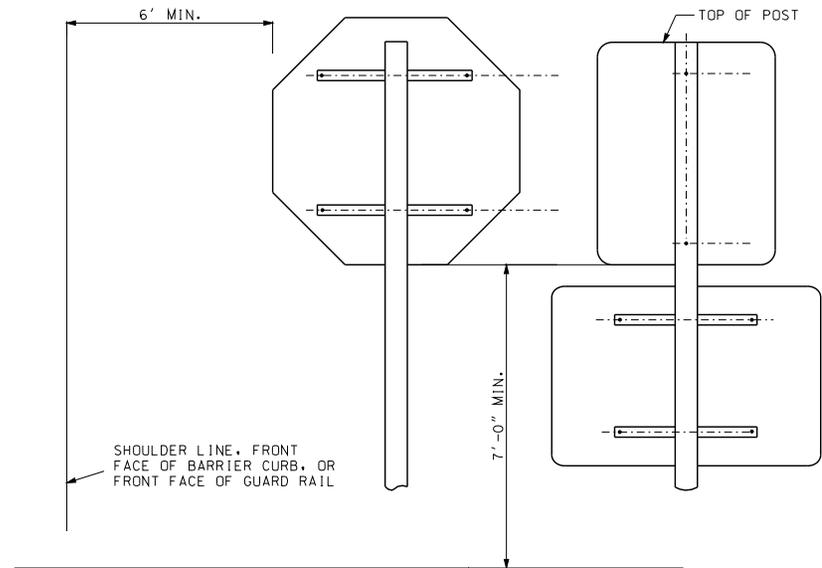
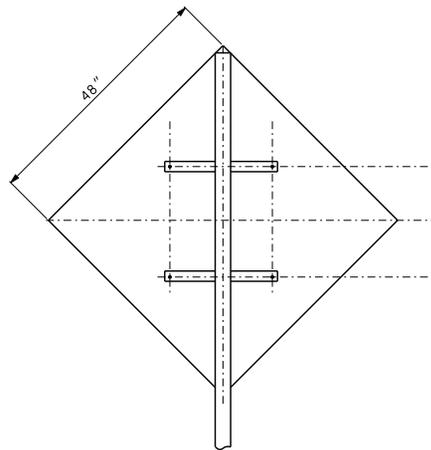
ALL BARS SHALL BE 2" x 3/8" STEEL, GALVANIZED AFTER PUNCHING.
 WEIGHT = 2.55 LBS. PER FOOT. HOLES IN BARS SHALL BE 3/8" AND SHALL BE PUNCHED AS SHOWN ON THIS DRAWING.
 BACKING BARS PAID FOR AS STRUCTURAL STEEL, PER POUND.

FOR POST AND FOOTING DATA AND DETAILS OF SHIELDS AND PLAQUES, SEE OTHER DRAWINGS.

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		HIGHWAY SIGNING BACKING BARS SHEET SIGN MOUNTING ROUTE SHIELD AND MARKER ASSEMBLIES	
DATE EFFECTIVE:	06/01/2010	903.02AK	SHEET NO. 15 OF 19
DATE PREPARED:	4/1/2010		



THE THREE BACKING BAR LAYOUTS FOR SINGLE POST SIGNS



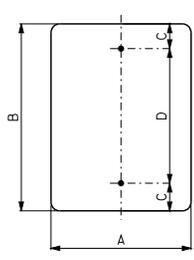
SHOULDER LINE, FRONT FACE OF BARRIER CURB, OR FRONT FACE OF GUARD RAIL

ELEV. OUTSIDE EDGE OF PAVEMENT FOR CLAMP DETAILS. SEE OTHER DRAWINGS.

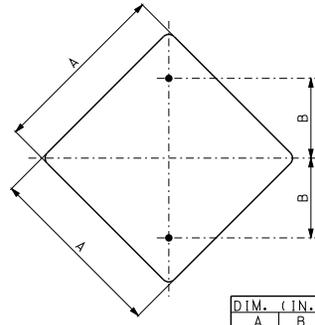
HOLES IN BACKING BARS SHALL BE $\frac{3}{8}$ " AND PUNCHED AS SHOWN ON THIS DRAWING.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		HIGHWAY SIGNING BACKING BARS DETAILS
DATE EFFECTIVE: 06/01/2010 DATE PREPARED: 4/1/2010	903.02AK	SHEET NO. 16 OF 19

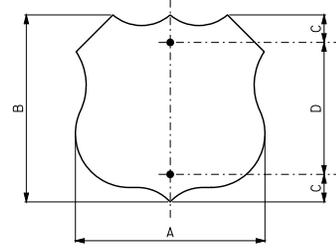
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



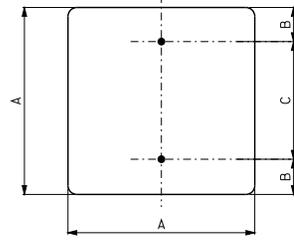
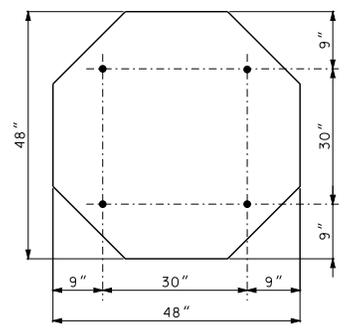
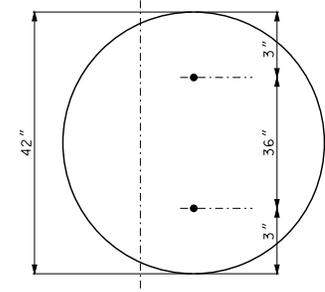
DIMENSIONS (IN.)			
A	B	C	D
6	15	1.5	12
8	24	3	18
9	12	1.5	9
9	48	3	42
10	30	3	24
12	18	3	12
12	24	3	18
12	36	3	30
12	48	3	42
18	24	3	18
24	30	3	24
24	36	3	30
30	36	3	30
30	42	3	36
30	48	3	42



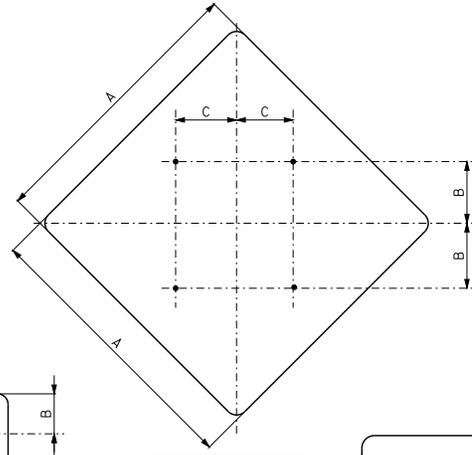
DIM. (IN.)	
A	B
18	9
24	12
30	15
36	18



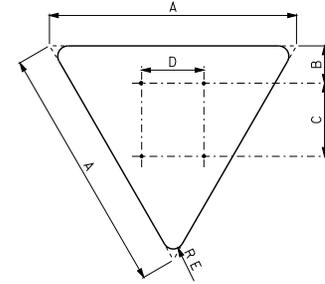
DIMENSIONS (IN.)			
A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



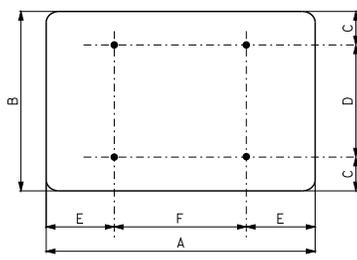
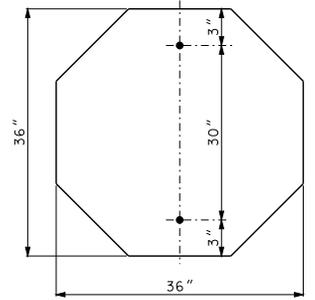
DIMENSIONS (IN.)		
A	B	C
14	3	8
18	3	12
24	3	18
30	3	24



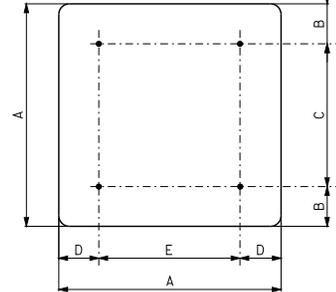
DIMENSIONS (IN.)		
A	B	C
48	15	15
60	18	18



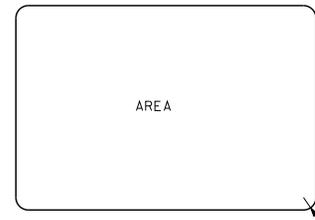
DIMENSIONS (IN.)				
A	B	C	D	E
48	3	12	12	3
60	4	18	15	3



DIMENSIONS (IN.)					
A	B	C	D	E	F
36	24	3	18	6	24
36	30	3	24	6	24
42	30	3	24	6	30
42	36	3	30	6	30
48	12	1.5	9	9	30
48	18	1.5	15	9	30
48	24	3	18	9	30
48	30	3	24	9	30
48	36	3	30	9	30
60	12	1.5	9	12	36
60	24	3	18	12	36
60	36	6	24	12	36



DIMENSIONS (IN.)				
A	B	C	D	E
36	6	24	6	24
48	6	36	9	30



AREA	RADII
LESS THAN 16 FT ²	1 1/2"
16 FT ² OR GREATER	3"

RADII FOR SHEET SIGNS

GENERAL NOTES:

SIGNS WITH FOUR OR MORE HOLES REQUIRE BACKING BARS OR MULTIPLE POSTS.

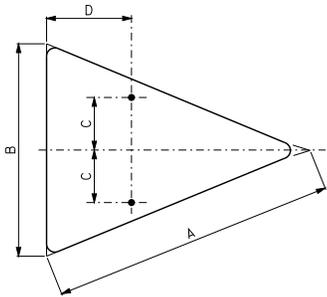
HOLES IN SIGNS SHALL BE 3/8" AND PUNCHED AS SHOWN ON THIS DRAWING.

FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS:

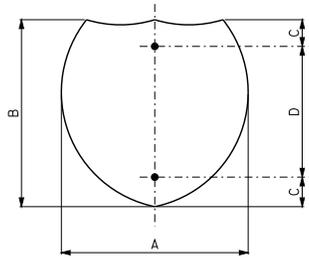
- 9 SQUARE FEET OR LESS - .080 IN.
- OVER 9 SQUARE FEET BUT LESS THAN 16 SQUARE FEET - .100 IN.
- 16 SQUARE FEET OR LARGER - .125 IN.

FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

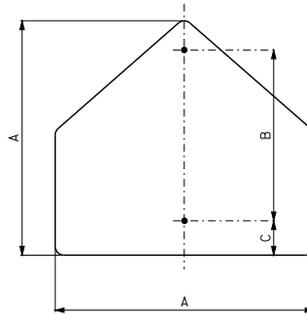
	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	HIGHWAY SIGNING HOLE PUNCHING	
	DATE EFFECTIVE: 05/01/2010 DATE PREPARED: 4/1/2010	903.02AK



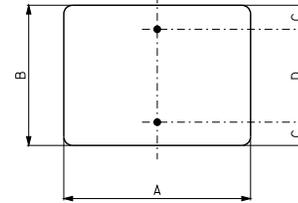
DIMENSIONS (IN.)			
A	B	C	D
40	30	7.5	12
48	36	9	15



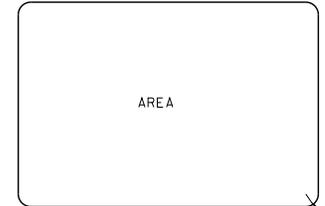
DIMENSIONS (IN.)			
A	B	C	D
24	24	3	18
30	24	3	18
36	36	6	24
45	36	6	24



DIMENSIONS (IN.)		
A	B	C
36	24	3

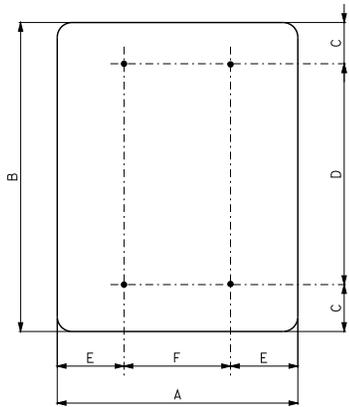


DIMENSIONS (IN.)			
A	B	C	D
5	9	1.5	6
12	9	1.5	6
14	12	1.5	9
18	12	1.5	9
20	9	1.5	6
21	15	1.5	12
24	6	1.5	3
24	8	1.5	5
24	10	1.5	7
24	12	1.5	9
24	18	3	12
30	6	1.5	3
30	12	1.5	9
30	15	1.5	12
30	18	3	12
30	24	3	18
36	12	1.5	9
36	18	3	12

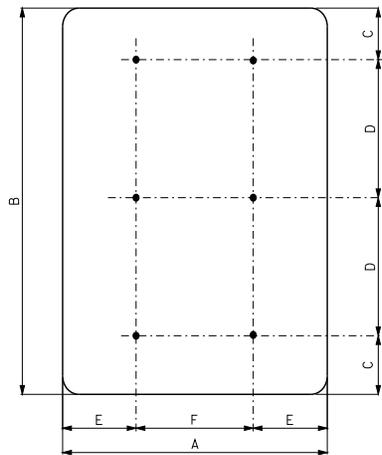


AREA	RADII
LESS THAN 16 FT ²	1 1/2"
16 FT ² OR GREATER	3"

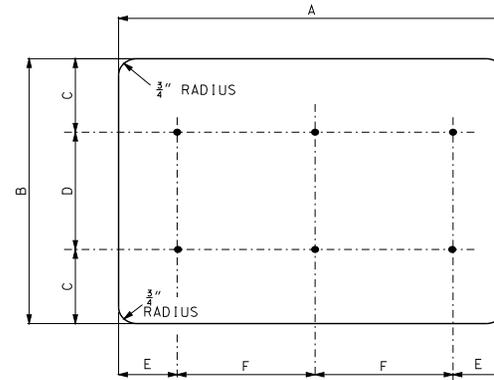
RADII FOR SHEET SIGNS



DIMENSIONS (IN.)					
A	B	C	D	E	F
36	48	6	36	6	24
36	54	6	42	6	24
48	60	6	48	9	30



DIMENSIONS (IN.)					
A	B	C	D	E	F
48	96	6	42	9	30



DIMENSIONS (IN.)					
A	B	C	D	E	F
96	48	6	36	16	32

GENERAL NOTES:

FLAT SHEET FOR SIGNS SHALL BE THE FOLLOWING THICKNESS:

9 SQUARE FEET OR LESS - .080 IN.

OVER 9 SQUARE FEET BUT LESS THAN 16 SQUARE FEET - .100 IN.

16 SQUARE FEET OR LARGER - .125 IN.

FOR MOUNTING DETAILS, SEE OTHER DRAWINGS.

HOLES IN SIGNS SHALL BE 3/8" AND PUNCHED AS SHOWN ON THIS DRAWING.

SIGNS WITH FOUR OR MORE HOLES REQUIRE BACKING BARS OR MULTIPLE POSTS.

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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

