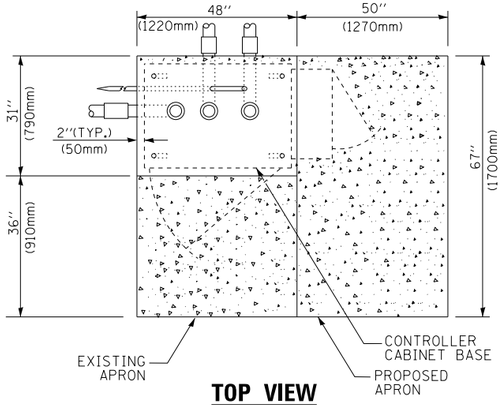
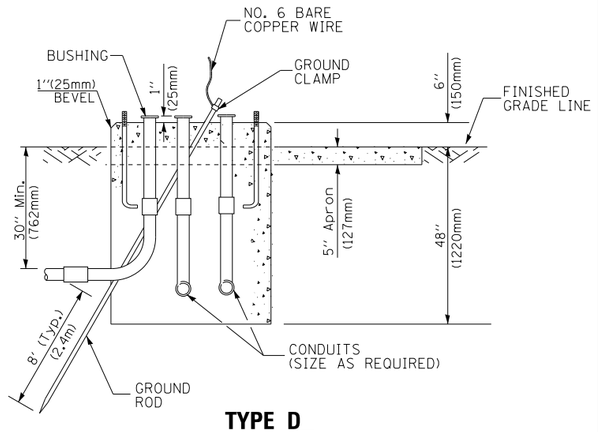
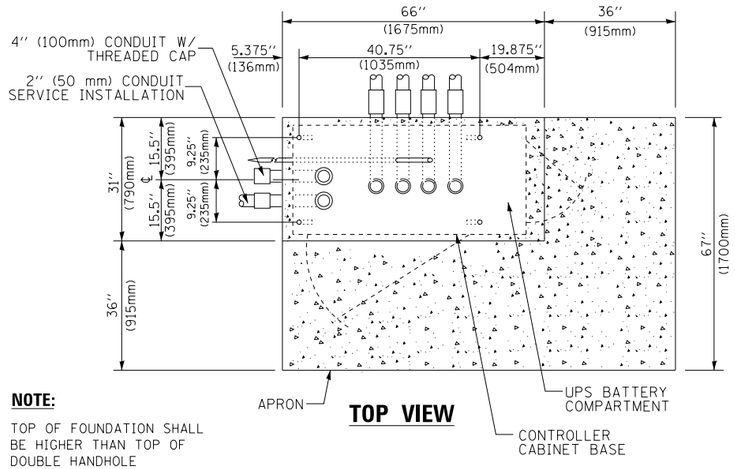


TOP VIEW



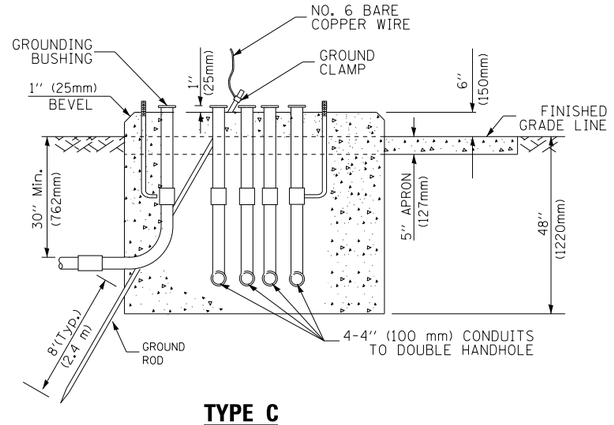
TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



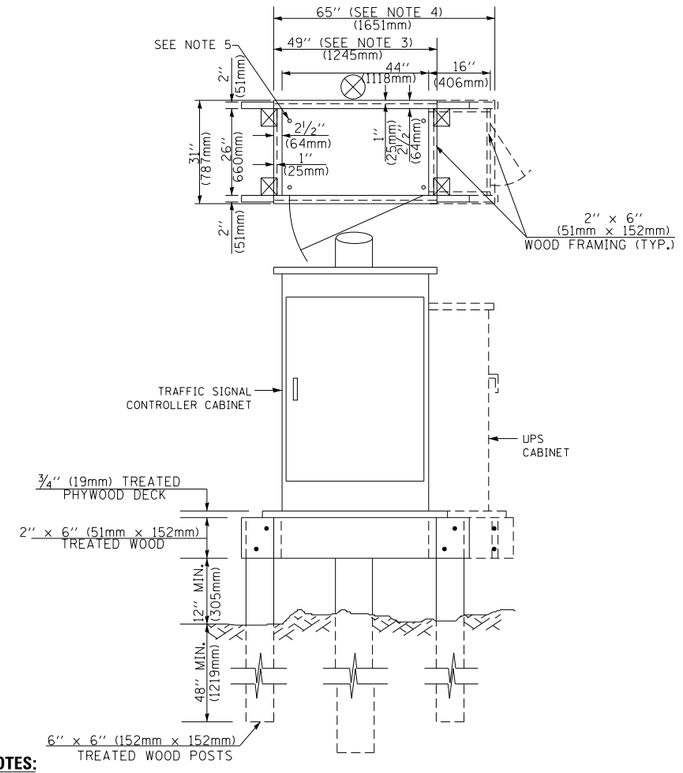
NOTE:

TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE

TOP VIEW



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



NOTES:

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

TEMPORARY SIGNAL CONTROLLER
WOOD SUPPORT PLATFORM

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

CABLE SLACK

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

VERTICAL CABLE LENGTH

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

DEPTH OF FOUNDATION

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0'' (3.0 m)	30'' (750mm)	24'' (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6'' (4.1 m)	30'' (750mm)	24'' (600mm)	8	6(19)
	11'-0'' (3.4 m)	36'' (900mm)	30'' (750mm)	12	7(22)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	13'-0'' (4.0 m)	36'' (900mm)	30'' (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0'' (4.6 m)	36'' (900mm)	30'' (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0'' (6.4 m)	42'' (1060mm)	36'' (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0'' (7.6 m)	42'' (1060mm)	36'' (900mm)	16	8(25)

NOTES:

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

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 5 OF 7 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	(1517 & 1415) R-2	COOK	734	701
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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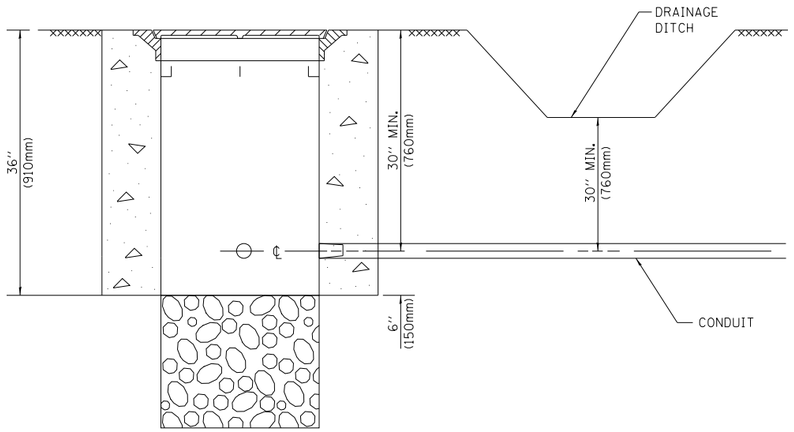
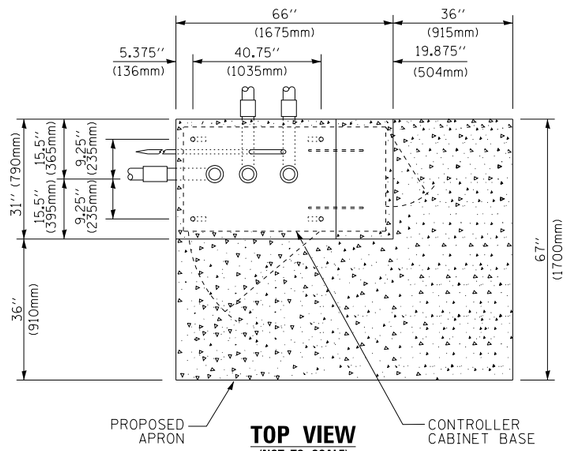


NOTES:

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

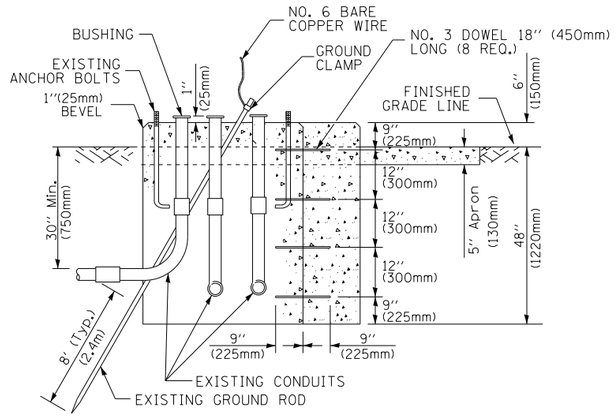
HANDHOLE WITH MINIMUM CONDUIT DEPTH

(NOT TO SCALE)



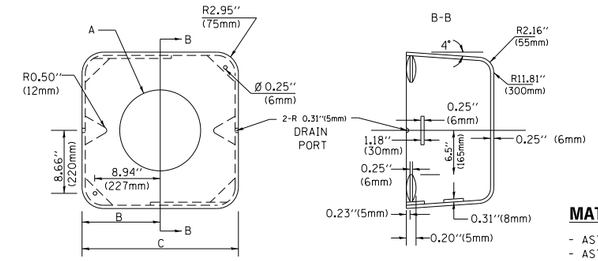
TOP VIEW

(NOT TO SCALE)



MODIFY EXISTING TYPE "D" FOUNDATION TO TYPE "C" FOUNDATION

(NOT TO SCALE)



MATERIAL:

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

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

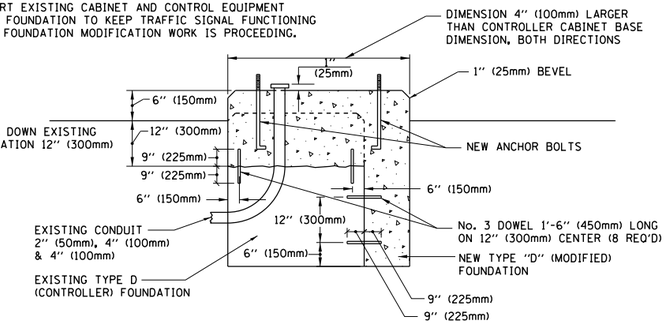
SHROUD

NOTES:

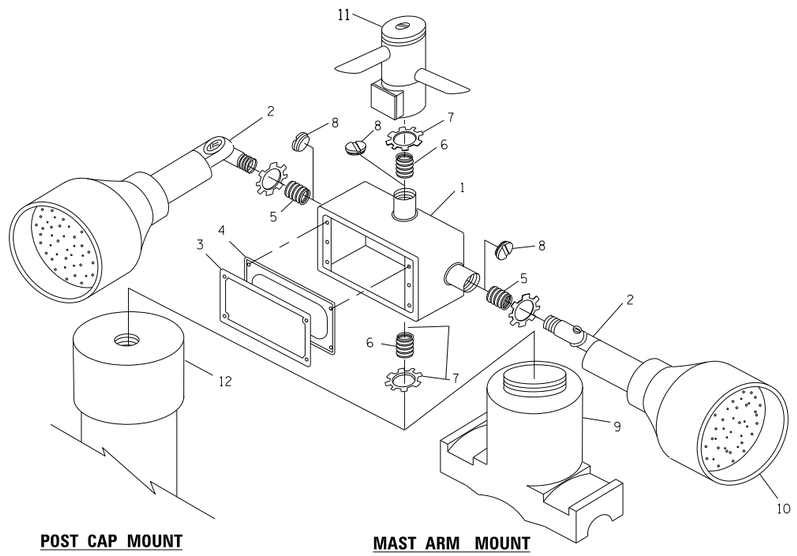
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE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

NOTE:

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



MODIFY EXISTING TYPE "D" FOUNDATION



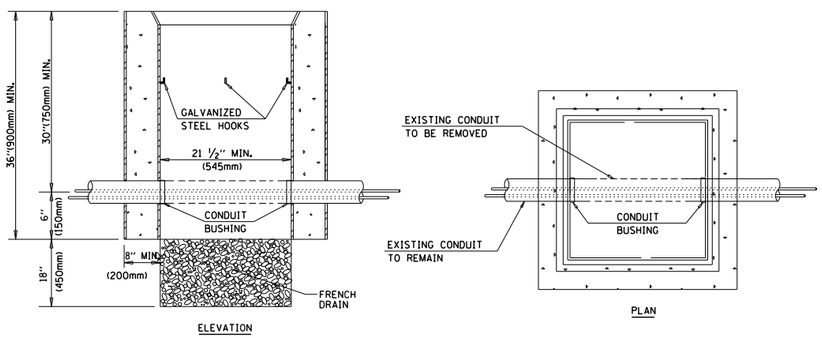
POST CAP MOUNT **MAST ARM MOUNT**

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

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

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL



NOTES:

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

HANDHOLE TO INTERCEPT EXISTING CONDUIT

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	(1517 & 1415) R-2	COOK	734	702
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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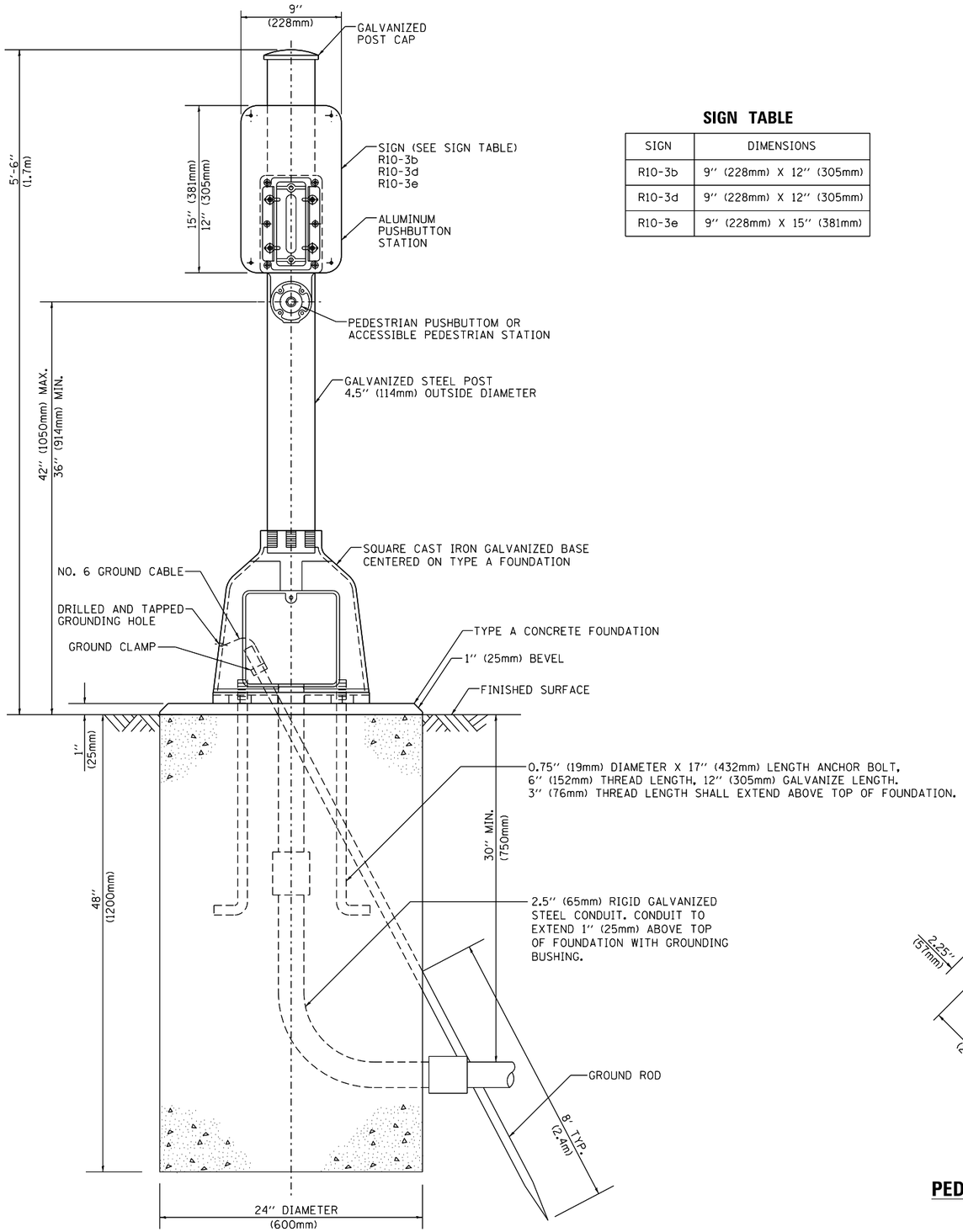
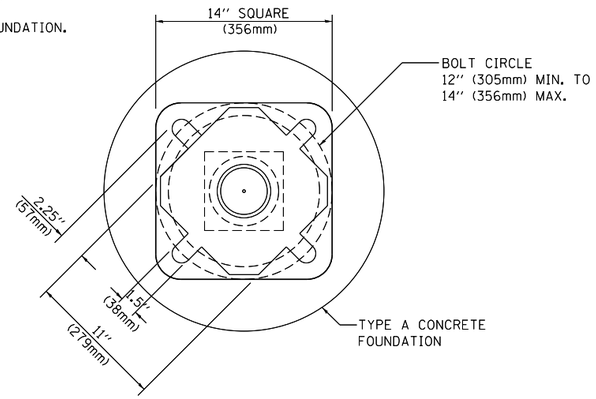


SIGN TABLE

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



BOLT PATTERN

PEDESTRIAN PUSH BUTTON POST, TYPE A

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	(1517 & 1415) R-2	COOK	734	703
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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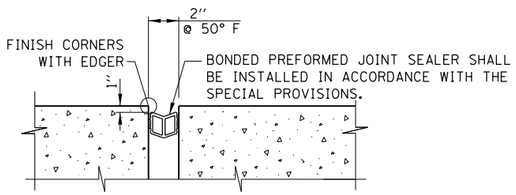
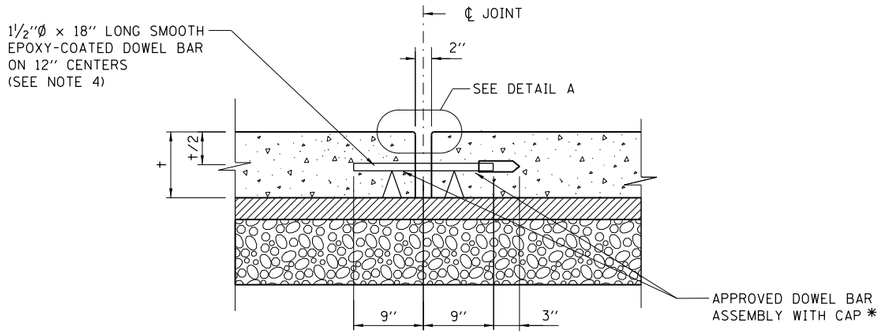
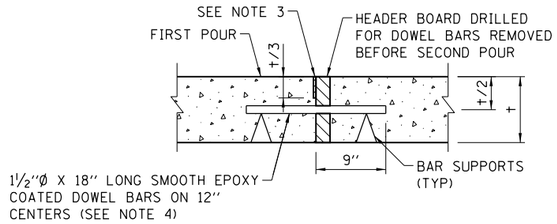


DETAIL A



TRANSVERSE EXPANSION JOINT
(JOINTED PLAIN CONCRETE PAVEMENT)



TRANSVERSE CONSTRUCTION JOINT
(JOINTED PLAIN CONCRETE PAVEMENT)

* EXPANSION CAPS SHALL BE INSTALLED ON THE EXPOSED END OF EACH DOWEL BAR ONCE THE HEADER HAS BEEN REMOVED.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.
2. t = PAVEMENT THICKNESS
3. A ⅜'' SAW CUT SHALL BE PROVIDED FOR PAVEMENT CRACK CONTROL.
4. FOR 13'' PAVEMENT USE THE FOLLOWING DOWELS:
   1-1/2''Ø X 18'' LONG SMOOTH EPOXY COATED DOWEL BARS ON 9'' CENTERS
   OR
   1-3/4''Ø X 18'' LONG SMOOTH EPOXY COATED DOWEL BARS ON 12'' CENTERS

APPROVED Paul Kovacs CHIEF ENGINEER DATE 5-1-2009

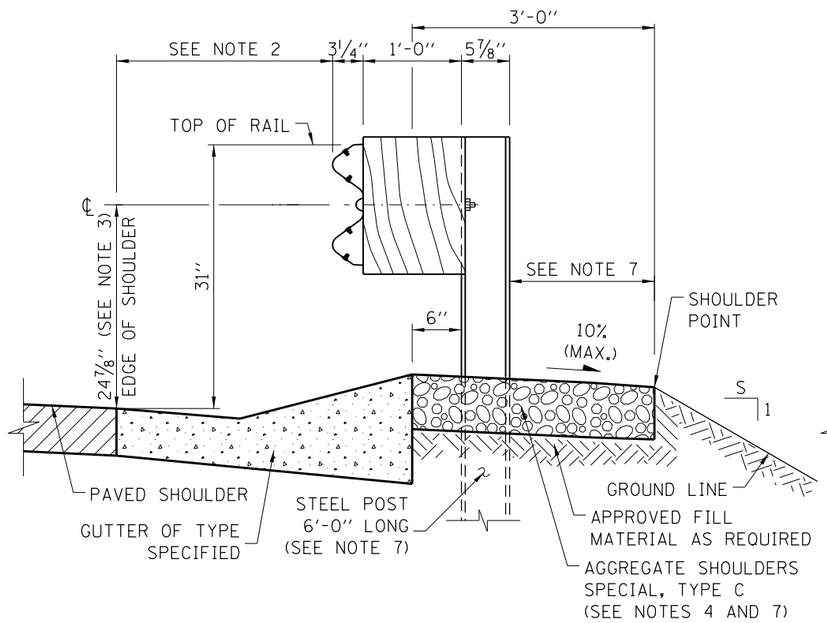
Illinois Tollway

DATE	REVISIONS
5-01-2017	MODIFIED JOINT DETAIL.
	REVISED NOTES
3-31-2016	REVISED 13'' PAVEMENT
	NOTE FOR DOWEL BARS
3-31-2017	ADDED TRANSVERSE EXPANSION JOINT

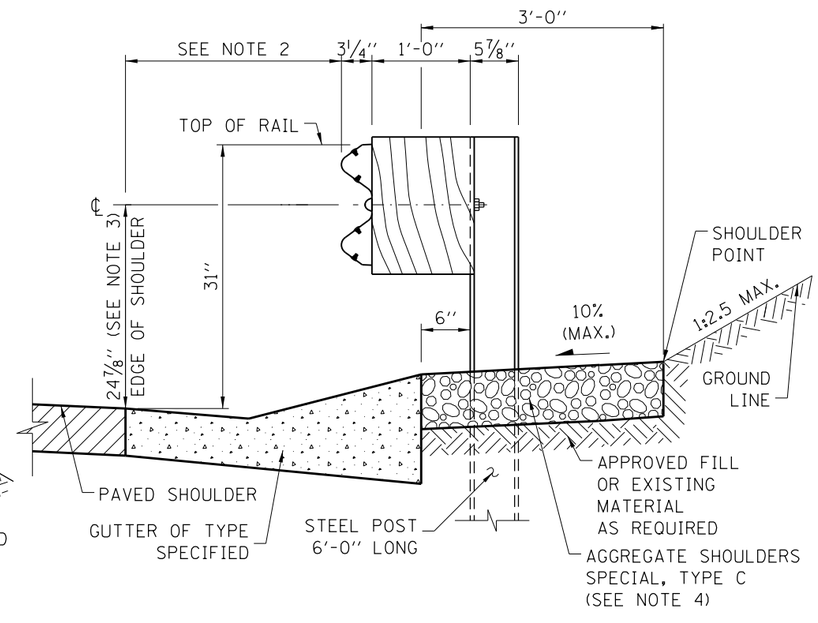
PAVEMENT JOINTS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	704

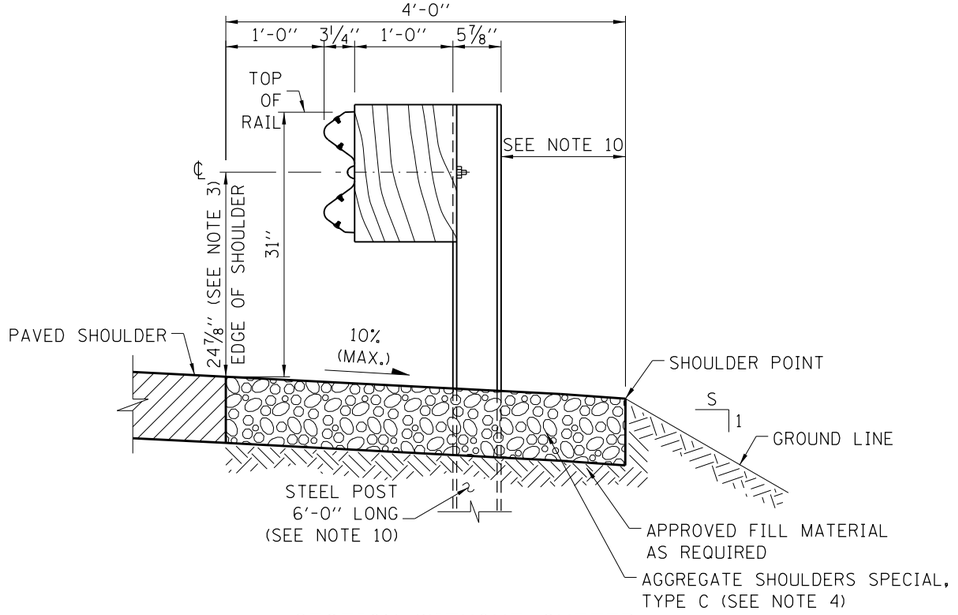
STANDARD A7-03



FILL SECTION WITH GUTTER



CUT SECTION WITH GUTTER



SECTION WITHOUT GUTTER

GUARDRAIL INSTALLATION DETAILS

NOTES:

1. 1'-0'' OFFSET FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL IS TYPICAL FOR ALL INSTALLATIONS WITHOUT GUTTER EXCEPT AS OTHERWISE DETAILED IN THE PLAN DRAWINGS.
2. WHERE GUTTERS SUCH AS TYPE G-2, G-3 ARE REQUIRED IN FRONT OF THE GUARDRAIL, THE POSTS SHALL BE LOCATED 6'' BEHIND THE GUTTER, OR AS OTHERWISE DETAILED IN THE PLANS. THE OFFSET FROM THE EDGE OF SHOULDER TO THE FACE OF THE GUARDRAIL SHALL BE AS SHOWN ON STANDARD B28.
3. THE 24 7/8'' TYPICAL RAIL HEIGHT IS MEASURED FROM EXISTING SURFACE 1'-0'' IN FRONT OF RAIL, OR FROM EDGE OF SHOULDER/EDGE OF GUTTER WHEN EDGE IS MORE THAN 1'-0'' IN FRONT OF RAIL TO CENTER OF RAIL.
4. WHERE GUTTER IS PROPOSED WITH GUARDRAIL, A 6'' MINIMUM THICKNESS OF AGGREGATE SHOULDERS SPECIAL, TYPE C SHALL BE PLACED BEHIND GUTTER. FOR GUARDRAIL WITHOUT GUTTER, AGGREGATE SHOULDER, TYPE C, OF THE SAME THICKNESS AS PAVED SHOULDER SHALL BE PLACED FROM THE EDGE OF PAVED SHOULDER SLOPING AWAY TO A 6'' MIN. THICKNESS.
5. GUARDRAIL POSTS SHALL NOT BE ATTACHED TO ANY STRUCTURE.
6. PLASTIC BLOCK-OUTS SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR WOOD BLOCK-OUTS ON NEW INSTALLATIONS.
7. WHEN S IS GREATER THAN OR EQUAL TO 3 AND 3'-0'' AGGREGATE SHOULDER WIDTH CANNOT BE MET, THE POST LENGTH SHALL BE 9'-0'' AND THE AGGREGATE SHOULDER WIDTH SHALL BE 1'-0'' MIN. BEHIND THE POST TO THE SHOULDER POINT.
8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENTS (V:H).
9. UNDER NO CIRCUMSTANCES SHALL AN EXISTING GUARDRAIL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE EXTENDED, ATTACHED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.
10. WHEN S IS GREATER THAN OR EQUAL TO 3, THE POST LENGTH SHALL BE 9'-0'' AND 4'-0'' AGGREGATE SHOULDER WIDTH MAINTAINED.
11. THE GUARDRAIL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
12. GUARDRAIL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENT. WHEN NECESSARY USE LEAVE-OUT DETAIL ON SHEET 3 OF 4 OF THIS SERIES.

Paul Kovacs
APPROVED CHIEF ENGINEER
DATE 5-1-2009

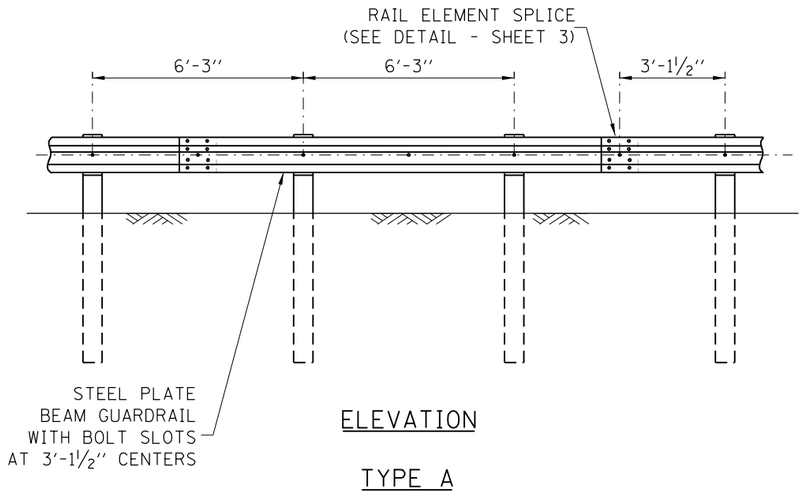
DATE	REVISIONS
11-01-12	MODIFIED AGGREGATE SHOULDERS
03-31-14	REMOVED SECONDARY HOLE FROM POST AND UPDATED NOTES.
03-31-16	ADDED SECTION, REV'D SHLDR
03-31-17	REVISED NOTES

Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	705

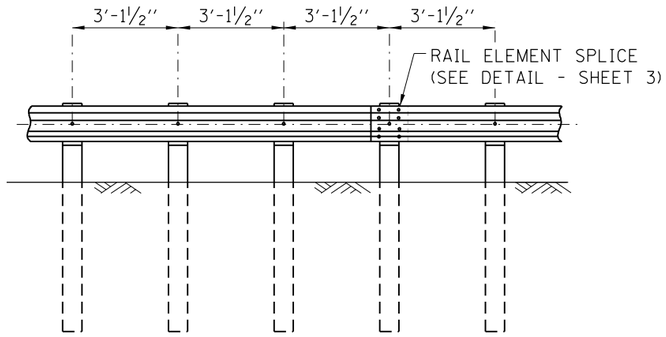
STANDARD C1-09



ELEVATION

TYPE A

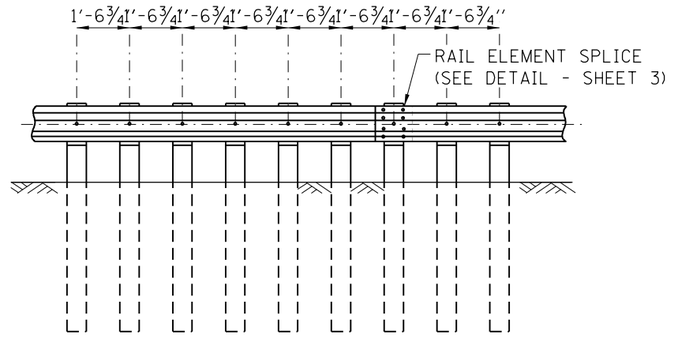
6'-3'' TYPICAL POST SPACING



ELEVATION

TYPE B

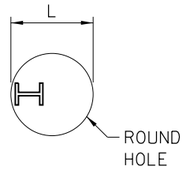
3'-1½'' ½ POST SPACING



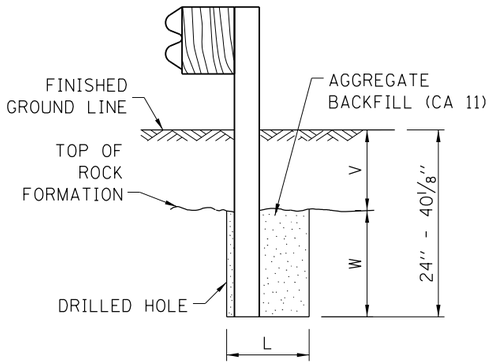
ELEVATION

TYPE C

1'-6¾'' ¼ POST SPACING



PLAN

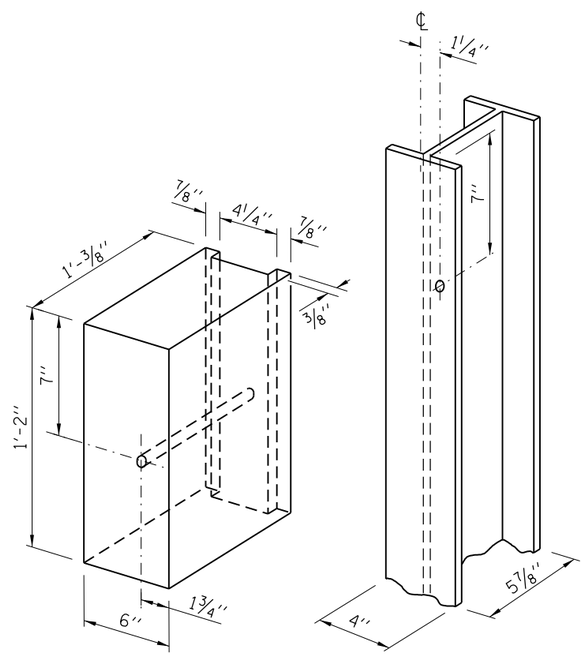


ELEVATION

FOOTING FOR POST WHEN ROCK FORMATION IS ENCOUNTERED

TABLE 1		
V	W	L
0 - 16⅛''	24''	21''
> 16⅛'' - 28⅛''	12''	8''
> 28⅛'' - 40⅛''	12'' - 0 (*)	8''

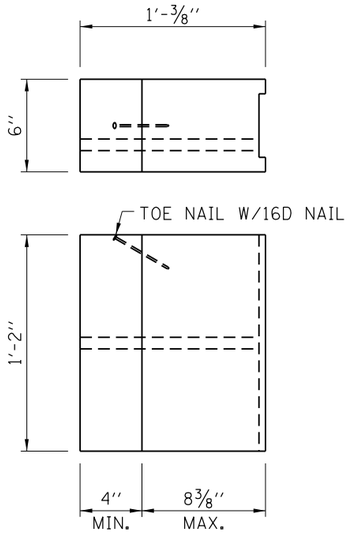
* V + W = 40⅛''



NOTES:

ALL HOLES 3/4'' DIA.

WOOD BLOCK-OUT AND STEEL POST DETAILS



TWO-PIECE WOOD BLOCK-OUT OPTION

SHEET 2 OF 4

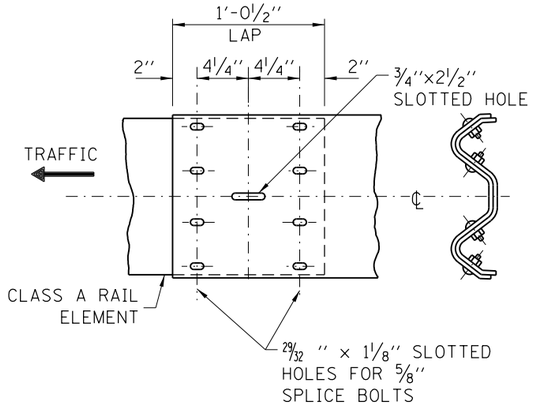
Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

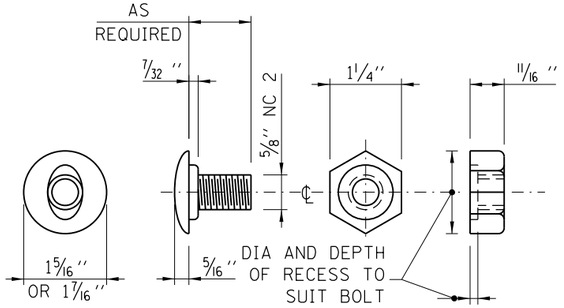
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	706

STANDARD C1-09

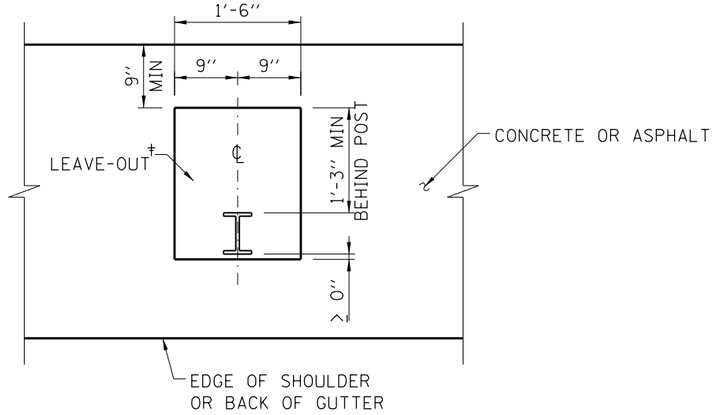
Paul Kovacs
APPROVED CHIEF ENGINEER DATE 5-1-2009



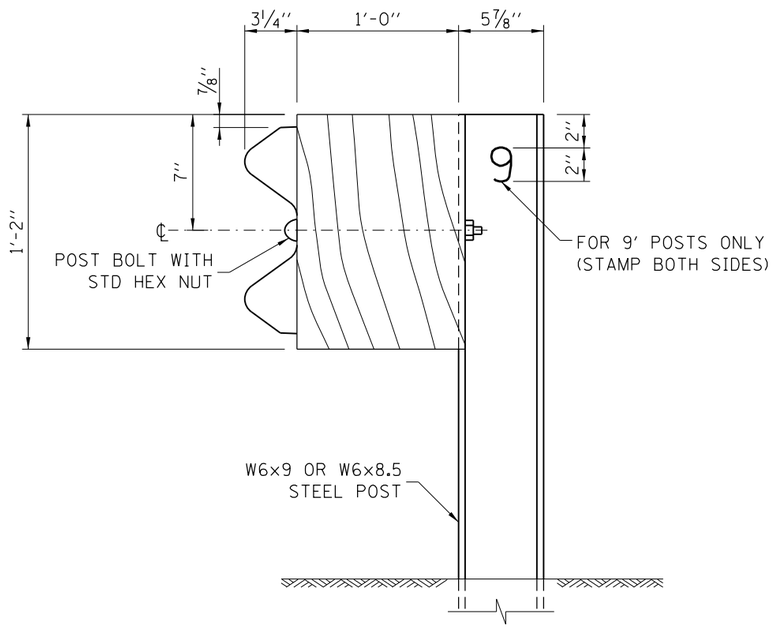
RAIL ELEMENT SPLICE



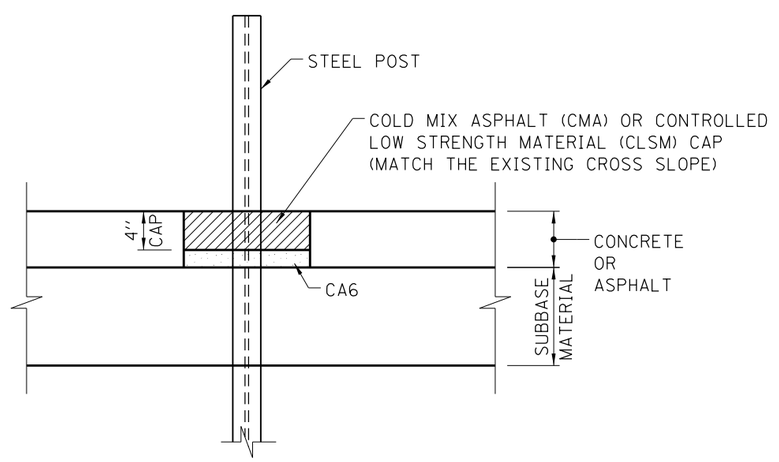
POST OR SPLICE BOLT & NUT



PLAN



STEEL POST CONSTRUCTION



ELEVATION

LEAVE-OUTS

‡ THE AREA AROUND THE POST THAT IS EITHER OMITTED FROM THE NEW CONSTRUCTION OR REMOVED FROM THE EXISTING CONCRETE OR ASPHALT.

Paul Kovacs
APPROVED CHIEF ENGINEER DATE 5-1-2009

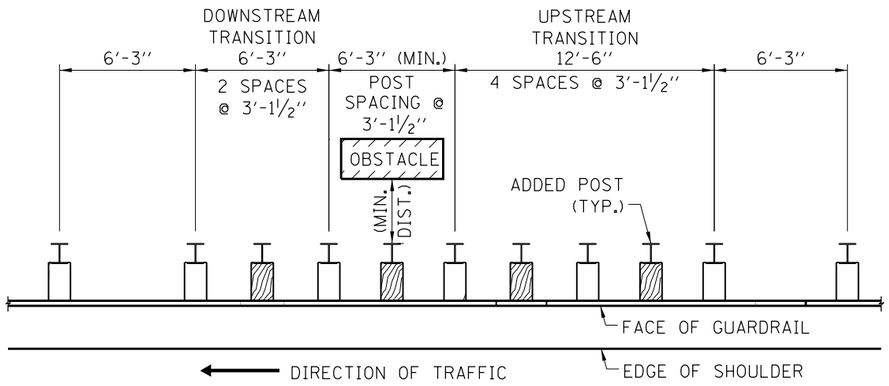
Illinois Tollway

GALVANIZED STEEL PLATE BEAM GUARDRAIL

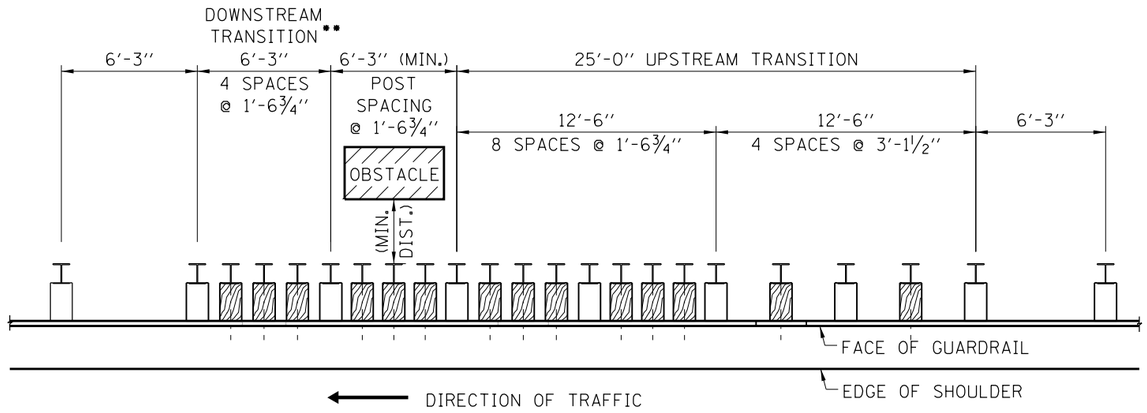
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	707

STANDARD C1-09

TABLE 2 - BARRIER CLEARANCE DISTANCE			
GUARDRAIL SYSTEM	POST SPACING	MINIMUM DISTANCE	
		CURRENT	CONSTRUCTION AFTER 2017
TYPE A	6′-3″	28″	39″
TYPE B 1/2 POST SPACING	3′-1 1/2″	23″	34″
TYPE C 1/4 POST SPACING	1′-6 3/4″	14″	26″



TRANSITION TO 1/2-POST SPACING



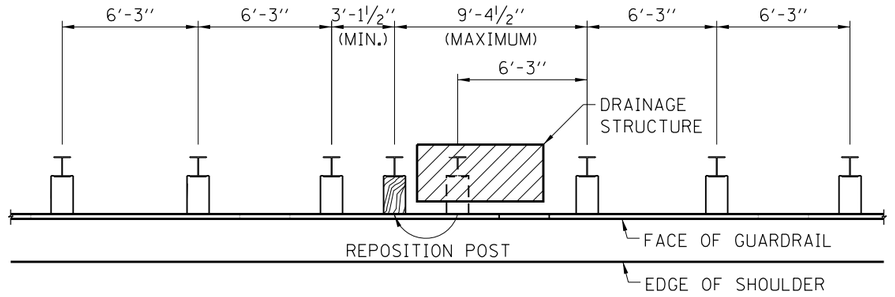
TRANSITION TO 1/4-POST SPACING

** WHEN LENGTH OF OBSTACLES IS 1′-3″ OR LESS, THE DOWNSTREAM TRANSITION SHALL BE OMITTED.

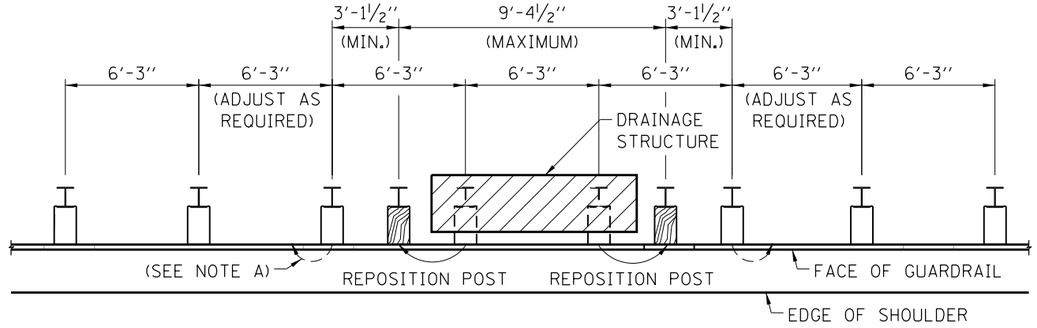
POST SPACING TRANSITIONS

NOTE: NO MODIFICATIONS OF ANY KIND TO THE TRANSITION POST SPACING ARE ALLOWED.

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009



TYPE A GUARDRAIL-DRAINAGE STRUCTURE CONFLICT
ONE POST



TYPE A GUARDRAIL - DRAINAGE STRUCTURE CONFLICT
TWO POSTS

DRAINAGE STRUCTURE CONFLICTS

NOTES:

A. GUARDRAIL POSTS SHALL NOT BE ELIMINATED; ALL POSTS MUST BE USED. POSTS ADJACENT TO REPOSITIONED POSTS MAY NEED TO BE MOVED TO KEEP 3′-1 1/2″ MINIMUM SPACING.

B. GUARDRAIL POSTS SHALL NOT BE SET BACK TO AVOID CONFLICTS WITH A DRAINAGE STRUCTURE.

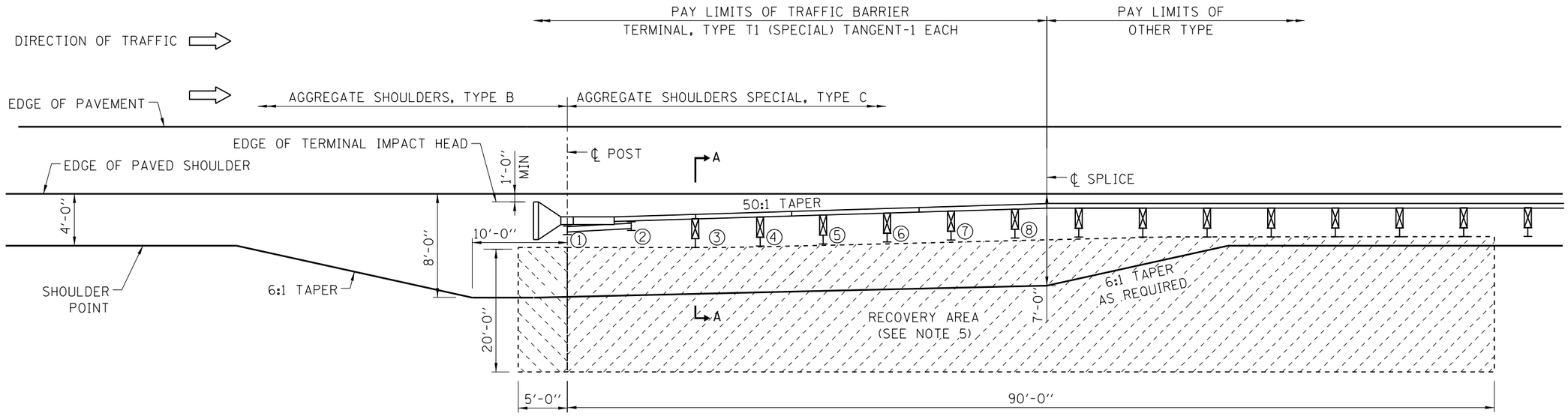
C. THIS DETAIL ALSO APPLIES TO OTHER UNDERGROUND CONFLICTS.

Illinois Tollway

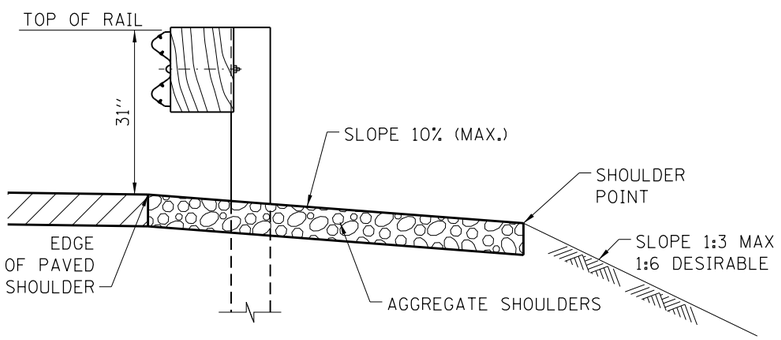
GALVANIZED STEEL PLATE BEAM GUARDRAIL

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	708

STANDARD C1-09



SHOULDER WIDENING TRANSITION-WITHOUT GUTTER FOR
TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT



SECTION A-A

GENERAL NOTES:

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

2. REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING B28 FOR GUTTER TRANSITION, AND MINIMUM DISTANCE FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL.

3. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE ATTACHED TO OR MODIFIED IN ANY WAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.

4. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.

5. NO ABOVE-GROUND ROADSIDE OBSTACLE OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.

6. ON TANGENT ROADWAY: TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 50:1 TAPER MEASURED FROM EDGE OF TRAVELED WAY.
ON CURVED ROADWAY: THE EDGE OF THE TERMINAL IMPACT HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1. NO CURVED W-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TERMINAL SHALL BE LAID OUT IN A STRAIGHT LINE.

7. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON ILLINOIS TOLLWAY STANDARD DRAWING C1.

8. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH REPORT (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

9. WHEN GUTTER IS PRESENT, DRAINAGE STRUCTURES SHALL NOT BE INSTALLED WITHIN THE TERMINAL LIMITS, BUT SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE TERMINAL AS REQUIRED.

DATE	REVISIONS
03-01-13	TERMINAL CHANGED TO ALL
	STEEL POST SYSTEM, REVISED
	TERMINAL PAY LIMITS
03-31-14	REVISED RECOVERY AREA
	DIMENSION
3-11-2015	REVISED NOTES
3-31-2016	COMBINED G-3 & G-2
3-31-2017	REVISED NOTES

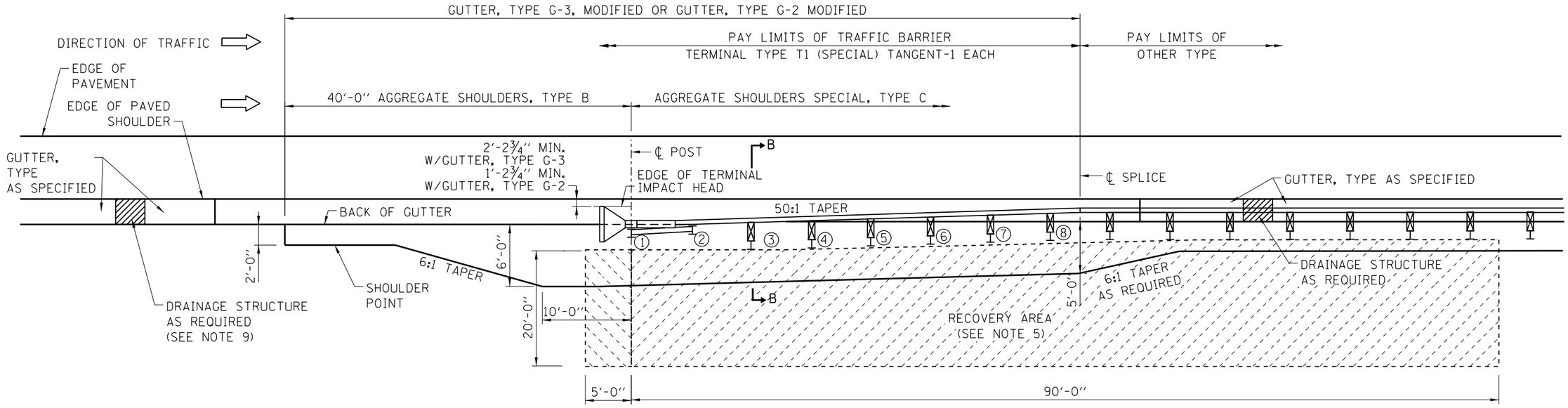
Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT

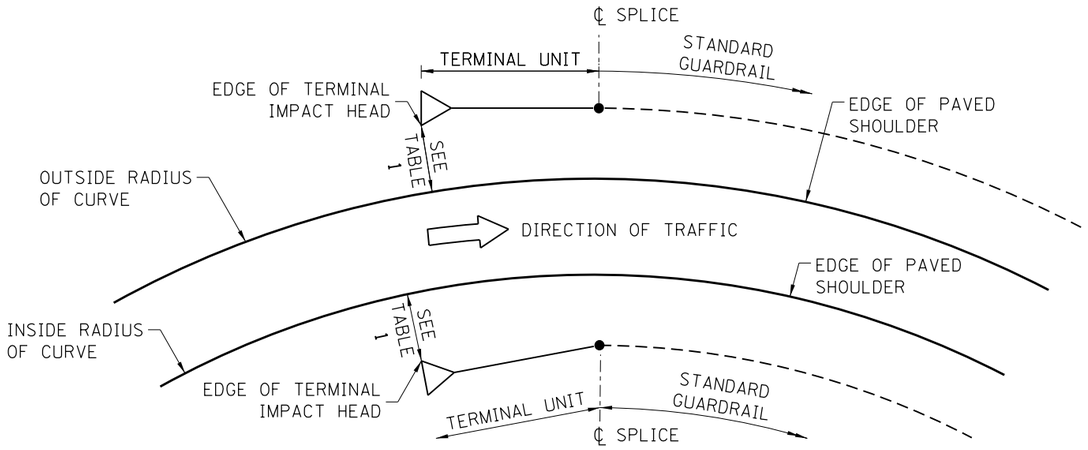
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	709

STANDARD C6-09

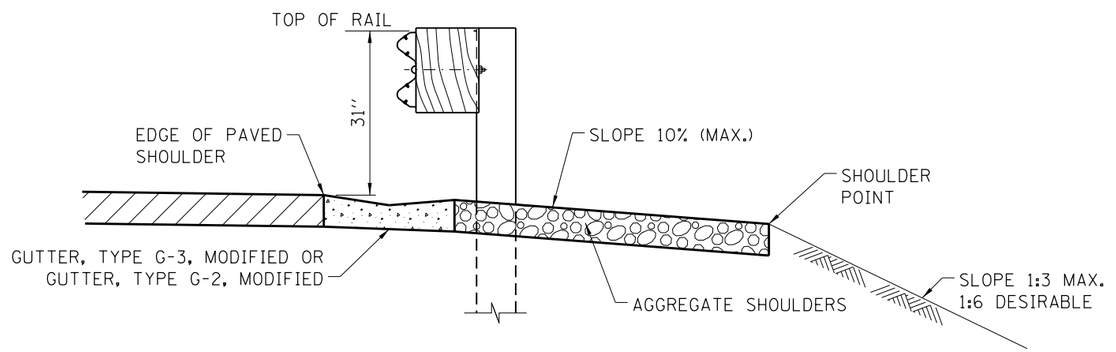
Paul Kovacs
APPROVED ..... DATE 7-1-2009
CHIEF ENGINEER



SHOULDER WIDENING TRANSITION-WITH GUTTER, TYPE G-3 OR TYPE G-2 FOR TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT



CURVED ROADWAY
TRAFFIC BARRIER TERMINAL PLACEMENT



SECTION B-B

TABLE 1		
LATERAL OFFSET DIMENSION TO EDGE OF TERMINAL IMPACT HEAD		
	INSIDE RADIUS OF CURVE	OUTSIDE RADIUS OF CURVE
NO GUTTER	1'-0"	1'-0" MIN. *
GUTTER, TYPE G-2	1'-2¾"	1'-2¾" MIN. *
GUTTER, TYPE G-3	2'-2¾"	2'-2¾" MIN. *

(*) OFFSET DISTANCE WILL VARY BASED ON RADIUS OF HORIZONTAL CURVE AND THE TERMINAL BEING INSTALLED IN A STRAIGHT LINE.

NOTES:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

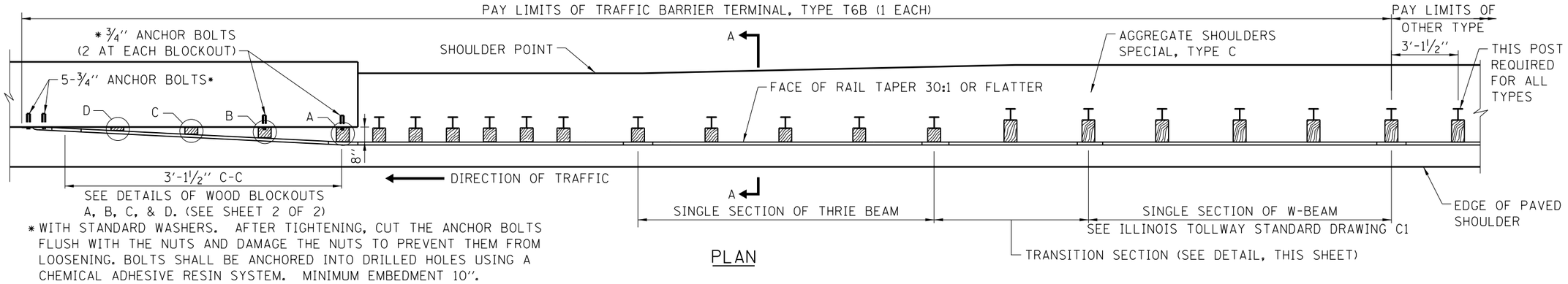
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1 (SPECIAL) TANGENT

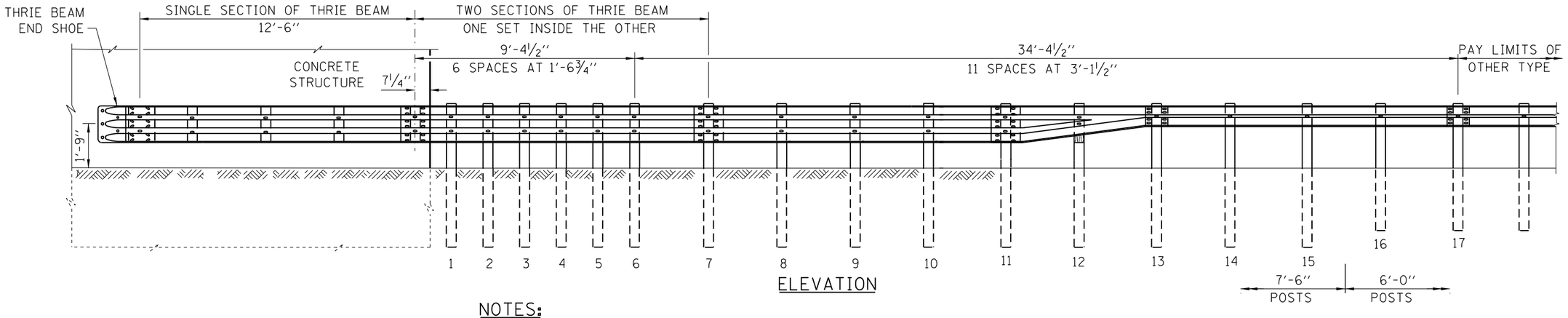
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	710

STANDARD C6-09

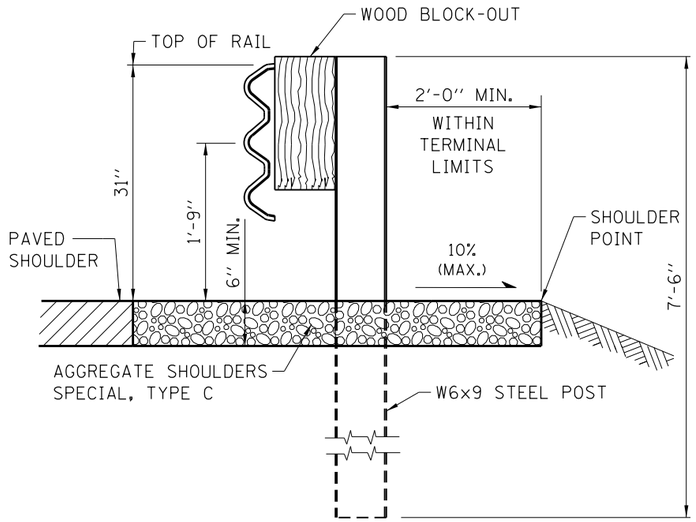


* WITH STANDARD WASHERS. AFTER TIGHTENING, CUT THE ANCHOR BOLTS FLUSH WITH THE NUTS AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING. BOLTS SHALL BE ANCHORED INTO DRILLED HOLES USING A CHEMICAL ADHESIVE RESIN SYSTEM. MINIMUM EMBEDMENT 10".

PLAN



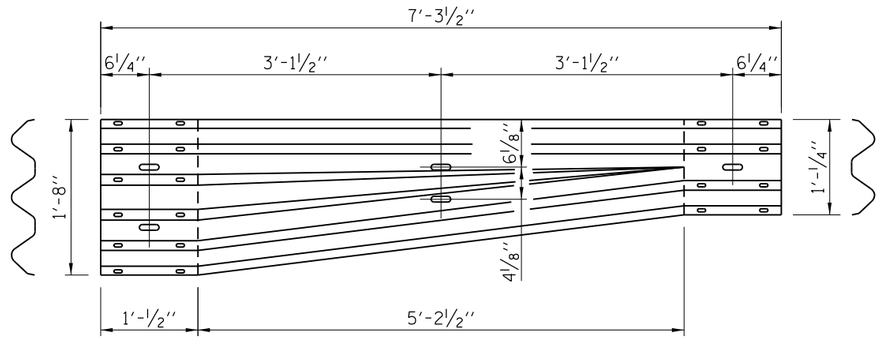
ELEVATION



SECTION A-A

NOTES:

1. SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
3. THE TRAFFIC BARRIER TERMINAL, TYPE T6B IS TYPICALLY UTILIZED TO ATTACH GALVANIZED STEEL PLATE BEAM GUARDRAIL AT THE UPSTREAM END OF THE BRIDGE CONCRETE PARAPET, WHERE A ROADSIDE GUTTER IS NOT TO BE INSTALLED.
4. UNDER NO CIRCUMSTANCES SHALL EXISTING TERMINAL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE ATTACHED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.
5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE ILLINOIS TOLLWAY'S DETAILS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE PERMITTED.
6. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALT PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL PER ILLINOIS TOLLWAY STANDARD DRAWING C1, SHEET 3 OF 4.
7. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON ILLINOIS TOLLWAY STANDARD DRAWING C1.
8. LEAVE-OUT DIMENSION BEHIND POSTS 1-6, SHALL BE A MINIMUM OF 4".



TRANSITION SECTION
(10 GUAGE RAIL ELEMENT)

SHEET 1 OF 2

DATE	REVISIONS
2-07-2012	REVISED WOOD BLOCK-OUT DIMENSION
	ADHESIVE AND REVISED NOTES
11-01-2012	MODIFIED AGGREGATE SHOULDERS,
	REVISED NOTES
3-31-2014	REVISED WOOD BLOCKS AND NOTES
3-11-2015	REVISED NOTES
3-31-2016	REVISED SECTION A-A SHOULDER
3-31-2017	REVISED SHOULDER SLOPE LABEL

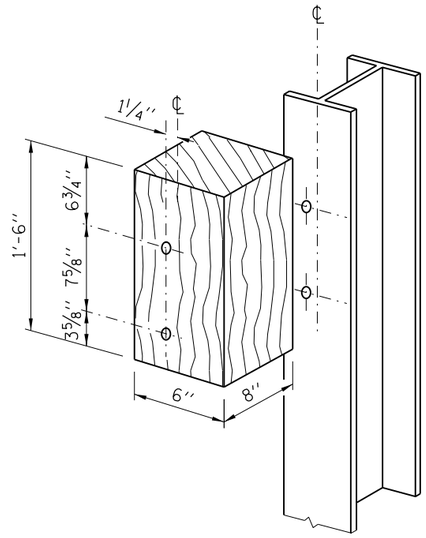
Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6B

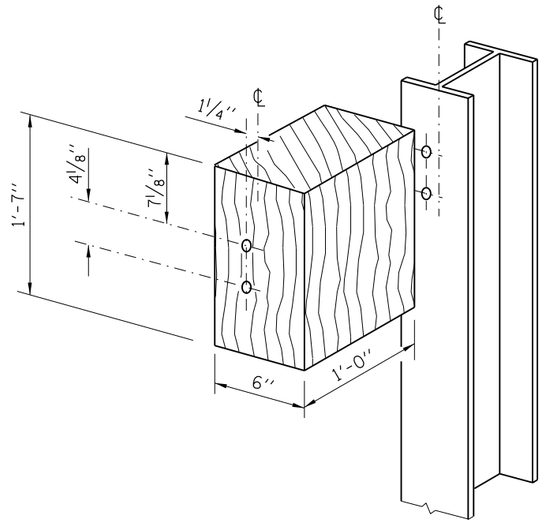
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	711

STANDARD C10-08

APPROVED Paul Kovacs CHIEF ENGINEER DATE 7-1-2009

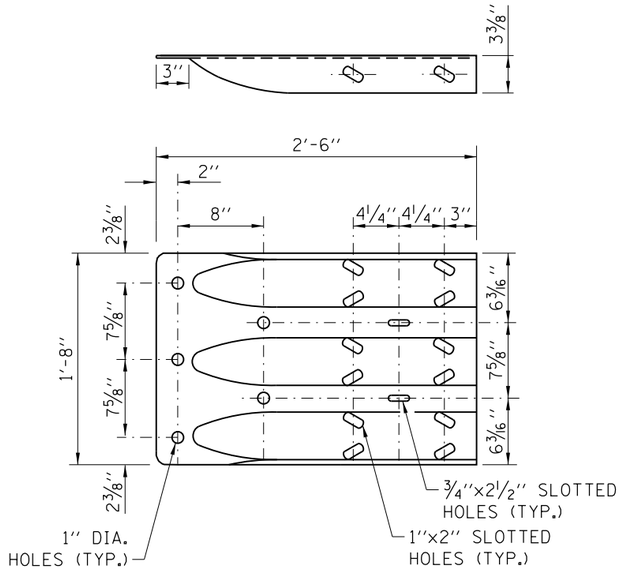


POSTS 1-11 WOOD BLOCK-OUT DETAIL

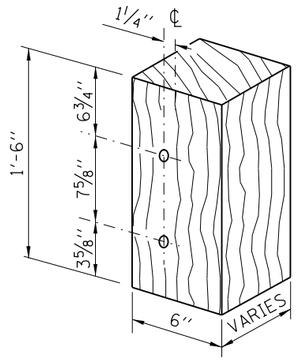


POST 12 WOOD BLOCK-OUT DETAIL

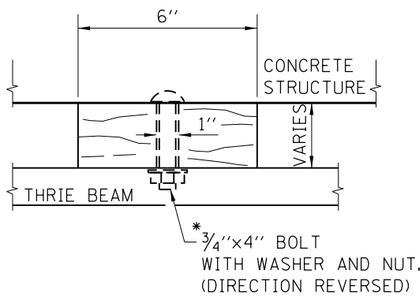
(SEE ILLINOIS TOLLWAY STANDARD DRAWING C1 FOR POST 13-17 BLOCKOUTS)



THRIE BEAM END SHOE DETAIL

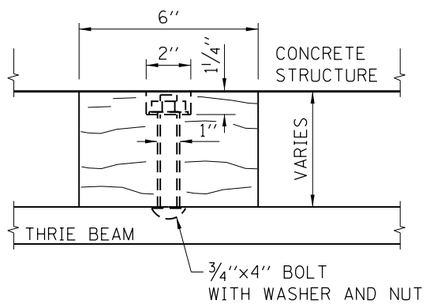


MODIFIED THICKNESS DETAIL
WOOD BLOCK-OUTS A, B, C, & D

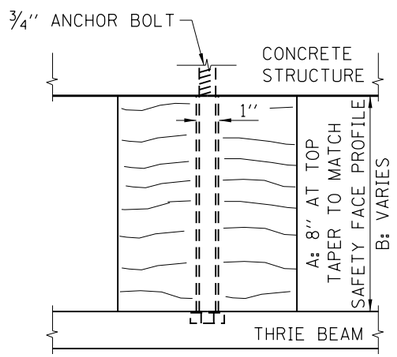


WOOD BLOCK-OUT D

* AFTER TIGHTENING, CUT THE BOLTS FLUSH WITH THE NUTS AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING.



WOOD BLOCK-OUT C



WOOD BLOCK-OUT A & B

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

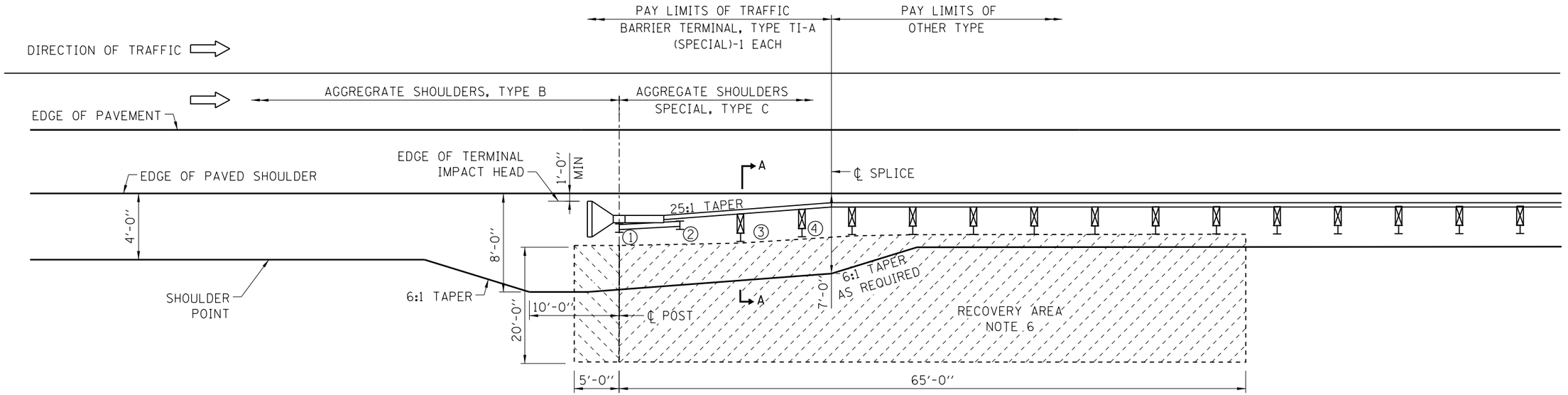
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

Illinois Tollway

TRAFFIC BARRIER TERMINAL, TYPE T6B

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	712

STANDARD C10-08



SHOULDER WIDENING TRANSITION-WITHOUT GUTTER FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)

GENERAL NOTES:

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

2. THE TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL) IS THE UPSTREAM END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM, FOR RAMP INSTALLATION WITH DESIGN SPEED LIMIT OF 40 MPH OR LESS, NCHRP 350, TEST LEVEL (TL-2).

3. REFERENCE ILLINOIS TOLLWAY STANDARD DRAWING B29 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL), AND MINIMUM DISTANCE FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL.

4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMINAL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE ATTACHED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.

5. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.

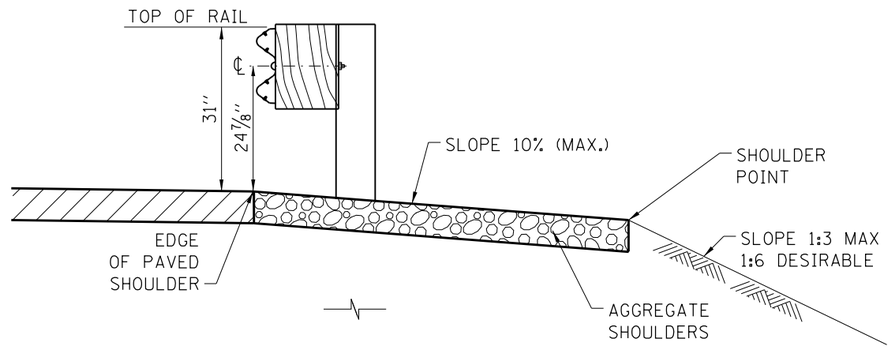
6. NO ABOVE-GROUND ROADSIDE OBSTACLE OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.

7. ON TANGENT ROADWAY: TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 25:1 TAPER MEASURED FROM EDGE OF TRAVELED WAY.
   ON CURVED ROADWAY: THE EDGE OF THE TERMINAL IMPACT HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1. NO CURVED W-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL) SHALL BE LAID OUT IN A STRAIGHT LINE.

8. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA. WHEN NECESSARY USE LEAVE-OUT DETAIL SHOWN ON ILLINOIS TOLLWAY STANDARD DRAWING C1.

9. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURCES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH REPORT (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.

10. WHEN GUTTER IS PRESENT, DRAINAGE STRUCTURES SHALL NOT BE INSTALLED WITHIN THE TERMINAL LIMITS, BUT SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE TERMINAL AS REQUIRED.



SECTION A-A

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 1-1-2011

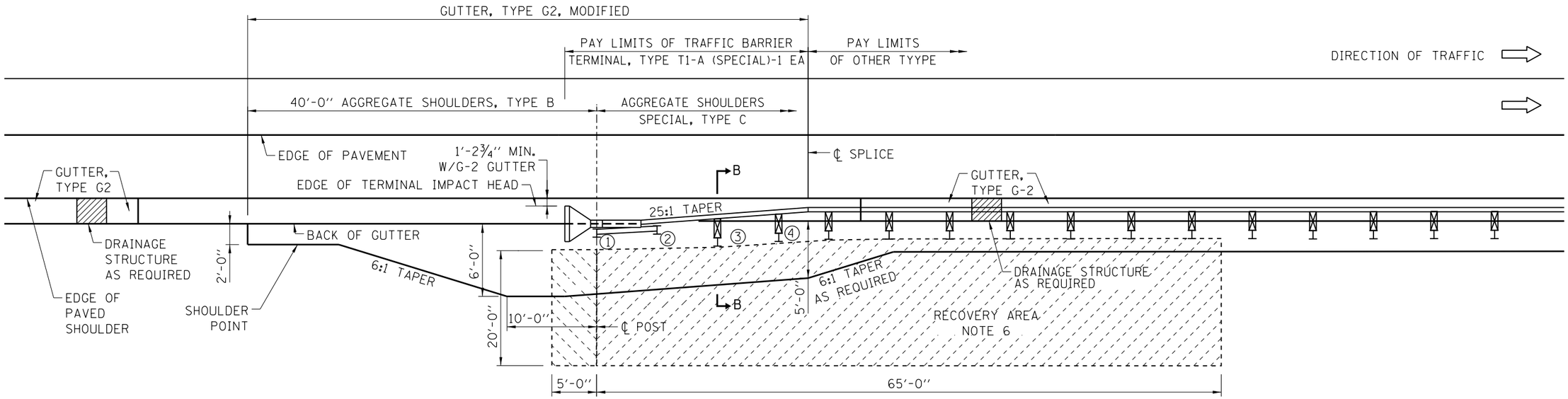
DATE	REVISIONS
2-07-2012	REVISED SLOPE NOTE.
11-01-2012	MODIFIED AGGREGATE SHOULDER
3-01-2013	TERMINAL CHANGED TO ALL STEEL POST, REVISED TERMINAL PAY LIMITS
3-31-2014	REVISED RECOVERY AREA DIMENSION.
3-11-2015	REVISED NOTES
3-31-2016	ADDED INSTALLATION NOTES IN NOTE 7 AND REVISED SECTION A-A SHOULDER
3-31-2017	REVISED SHOULDER WIDTH AT TERMINAL

Illinois Tollway

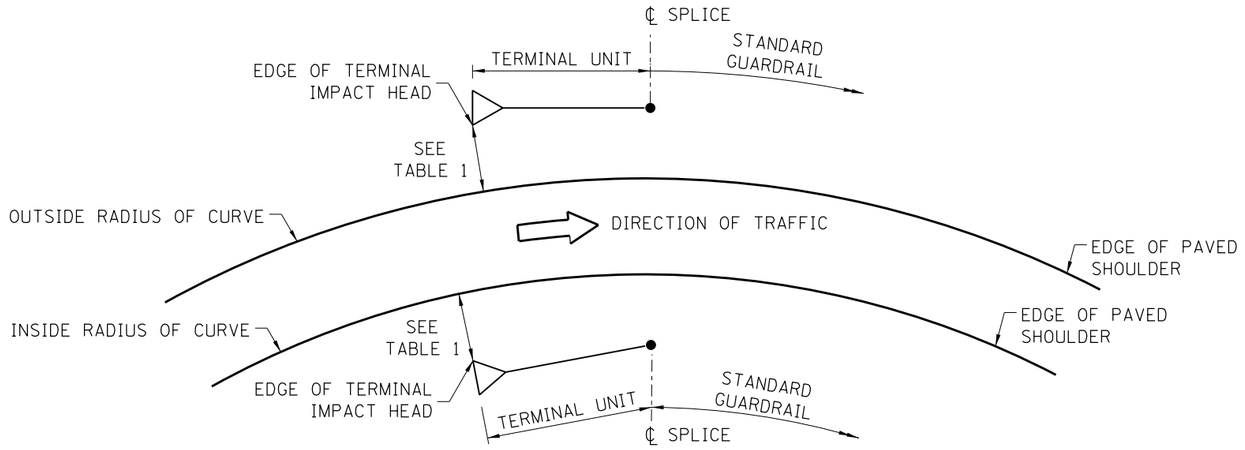
SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	713

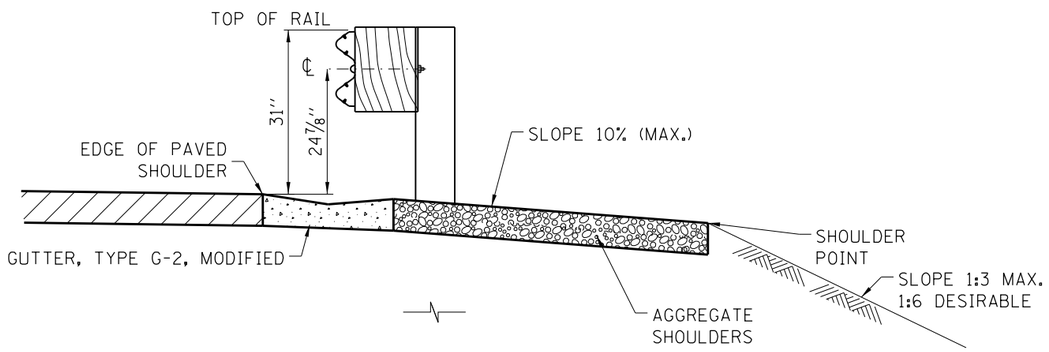
STANDARD C12-07



SHOULDER WIDENING TRANSITION-WITH GUTTER, TYPE G-2
FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)



CURVED ROADWAY
TRAFFIC BARRIER TERMINAL PLACEMENT
(SEE NOTE 7)



SECTION B-B

TABLE 1		
LATERAL OFFSET DIMENSION TO EDGE OF TERMINAL IMPACT HEAD		
	INSIDE RADIUS OF CURVE	OUTSIDE RADIUS OF CURVE
NO GUTTER	1'-0"	1'-0" MIN. *
GUTTER, TYPE G-2	1'-2¾"	1'-2¾" MIN. *

(*) OFFSET DISTANCE WILL VARY BASED ON RADIUS OF HORIZONTAL CURVE AND THE TERMINAL BEING INSTALLED IN A STRAIGHT LINE.

NOTES:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

Paul Kovacs
APPROVED ..... DATE 1-1-2011
CHIEF ENGINEER

Illinois Tollway

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL, TYPE T1-A (SPECIAL)

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	714

STANDARD C12-07

PERMANENT DELINEATION SPACING					
		MAINLINE		RAMP	
	REFLECTORS	TANGENT	CURVE	TANGENT	CURVE
*	GUARDRAIL	100′	100′	100′	100′ (R >= 1,050′) 50′ (R < 1,050′)
*	BARRIER WALL (DOUBLE FACE)	100′	100′	100′	100′ (R >= 1,050′) 50′ (R < 1,050′)
*	BARRIER WALL (SINGLE FACE)	100′	100′	100′	100′ (R >= 1,050′) 50′ (R < 1,050′)
	SHOULDER NARROWING	3 @ 15′	3 @ 15′	3 @ 15′	3 @ 15′
	BRIDGE APPROACHES	3 @ 15′	3 @ 15′	3 @ 15′	3 @ 15′
*	BRIDGE PARAPET	50′	50′	50′	50′
*	NOISE ABATEMENT WALL (CRASH WORTHY)	100′	100′	100′	100′ (R >= 1,050′) 50′ (R < 1,050′)

	ROADWAY DELINEATORS	MAINLINE		RAMP	
		TANGENT	CURVE	TANGENT	CURVE
	POST MOUNTED DELINEATOR	200′	200′	200′	TABLE A
	POST MOUNTED DELINEATOR (RAMP TAPERS AND TANGENTS)	100′	100′	NA	NA

	TEMPORARY DELINEATION SPACING				
		TANGENT	REVERSE CURVE	SHIFT	TAPER
	TEMPORARY CONCRETE BARRIER	50′	25′	25′	25′

* WHEN ADJACENT SHOULDER IS USED AS A TRAVELED LANE, USE SPACING REQUIREMENTS AS SHOWN FOR TEMPORARY DELINEATION.

TABLE A	
REFLECTOR SPACING ON RAMP-CURVES	
RADIUS OF CURVE (FT.)	SPACING ALONG CURVE (FT.)
LESS THAN 1050	50
1050-1299	100
1300-1999	125
2000-2999	150
3000-3999	175
MORE THAN 3999	200

Paul Kovacs
APPROVED ..... DATE 7-1-2009
CHIEF ENGINEER

GENERAL NOTES:

EMERGENCY TURNAROUNDS DELINEATION-THE FOLLOWING DELINEATION SHOULD BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT APPROACHING EMERGENCY TURNAROUNDS.

A. ONE-HALF OF A MILE IN ADVANCE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFECTOR UNIT OVER THREE AMBER REFLECTOR UNITS.

B. ONE-FOURTH OF A MILE IN ADVANCE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFLECTOR UNIT OVER TWO AMBER REFLECTOR UNITS.

C. AT A POINT NEAR THE INTERSECTION OF THE EDGE OF THE LEFT SHOULDER AND NEAR EDGE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFLECTOR UNIT OVER ONE AMBER REFLECTOR UNIT.

NOTES FOR ROADWAY DELINEATORS, POST MOUNTED INSTALLATION:

1. A. MAINLINE-SINGLE WHITE REFECTOR UNITS SHALL BE PLACED CONTINUOUSLY ON THE RIGHT AND SINGLE AMBER REFLECTOR UNITS SHALL BE PLACED ON THE LEFT ON MAIN LINE SECTIONS WITHOUT BARRIER WALL.

   B. RAMPS-SINGLE REFLECTOR UNITS SHALL BE PLACED ON THE OUTSIDE OF ALL CURVED SECTIONS OF RAMPS, SINGLE WHITE SHALL BE PLACED ON THE RIGHT SIDE AND AMBER ON THE LEFT SIDE. THE DELINEATORS SHALL BE OVERLAPPED FOR A SHORT DISTANCE TO CLEARLY INDICATE WHERE DELINEATION ON ONE SIDE OF THE RAMP ENDS AND DELINEATION ON THE OTHER SIDE APPEARS.

   C. DOUBLE WHITE REFLECTOR UNITS SHALL BE PLACED ON THE RIGHT AT ALL ACCELERATION AND DECELERATION LANES.

2. REFLECTORS SHALL BE MOUNTED ON SUPPORTS SUCH THAT THE TOP OF REFLECTORS IS FOUR FEET ABOVE THE ROADWAY EDGE AND TWO FEET OUTSIDE THE OUTER EDGE OF THE PAVED SHOULDER OR TWO FEET MINIMUM AND SIX FEET MAXIMUM OUTSIDE THE BACKS OF CURBS OR GUTTERS.

3. IN ALL CASES, THE COLOR OF THE REFLECTORS SHALL BE THE SAME AS THE ADJACENT EDGE LINE EXCEPT AS SPECIFIED IN GENERAL NOTES.

4. POST MOUNTED REFLECTORS SHALL BE PLACED CONTINUOUSLY AS NOTED ABOVE IN CONJUNCTION WITH GUARDRAIL INSTALLED.

5. THE PLACEMENT OF ROADWAY DELINEATOR "CIRCULAR REFLECTORS" SHALL BE USED FOR ALL MINOR PROJECTS WHICH HAVE A LENGTH OF LESS THAN 5 MILES. THE PLACEMENT OF ROADWAY DELINEATOR "RECTANGULAR REFLECTORS" SHALL BE USED FOR ALL MAJOR PROJECTS WHICH HAVE A LENGTH GREATER THAN 5 MILES. ALL ROADWAY DELINEATORS WITHIN A ROADWAY SEGMENT SHALL BE OF THE SAME TYPE.

NOTES FOR GUARDRAIL AND BARRIER WALL REFLECTOR:

1. REFLECTORS TYPE B AND TYPE C SHALL HAVE REFLECTIVE SURFACE ON ONE SIDE ONLY.

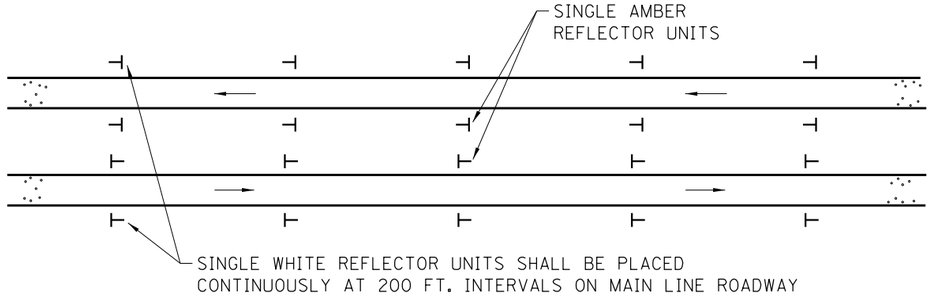
DATE	REVISIONS
07-01-09	CHANGED BARRIER TO F-SHAPE CONFIG.
	ADDED SECTION C-C NEW BARRIER DELINEATORS
02-07-12	REVISED REFLECTOR MARKER TYPE C DIMENSION
11-01-12	REVISED NOTES, TABLE AND DELINEATION
	SPACING
3-11-2015	REVISED NOTES
3-31-2016	REVISED DELINEATOR ATTACHMENT TO POST
3-31-2017	REVISED PERM. DELINEATION SPACING TABLE

Illinois Tollway

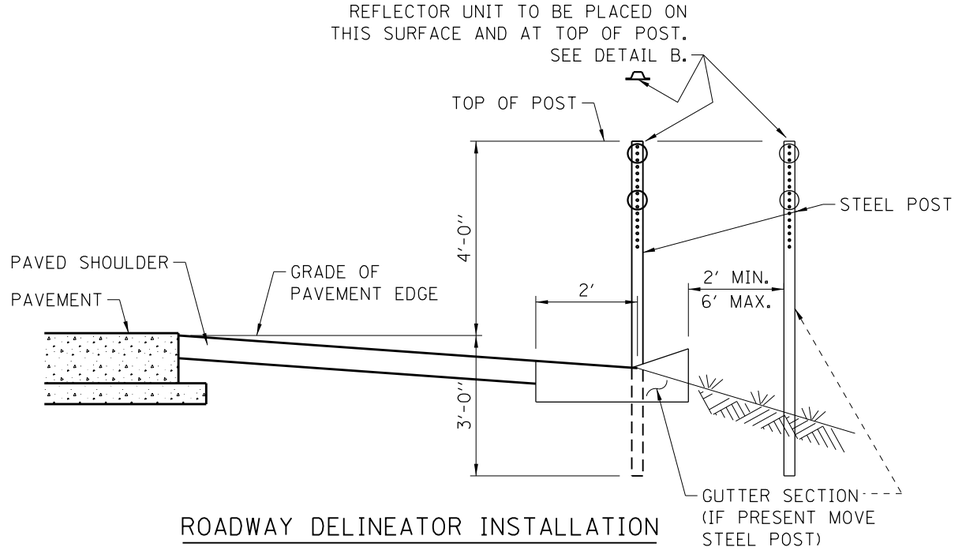
ROADWAY DELINEATORS AND REFLECTORS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	715

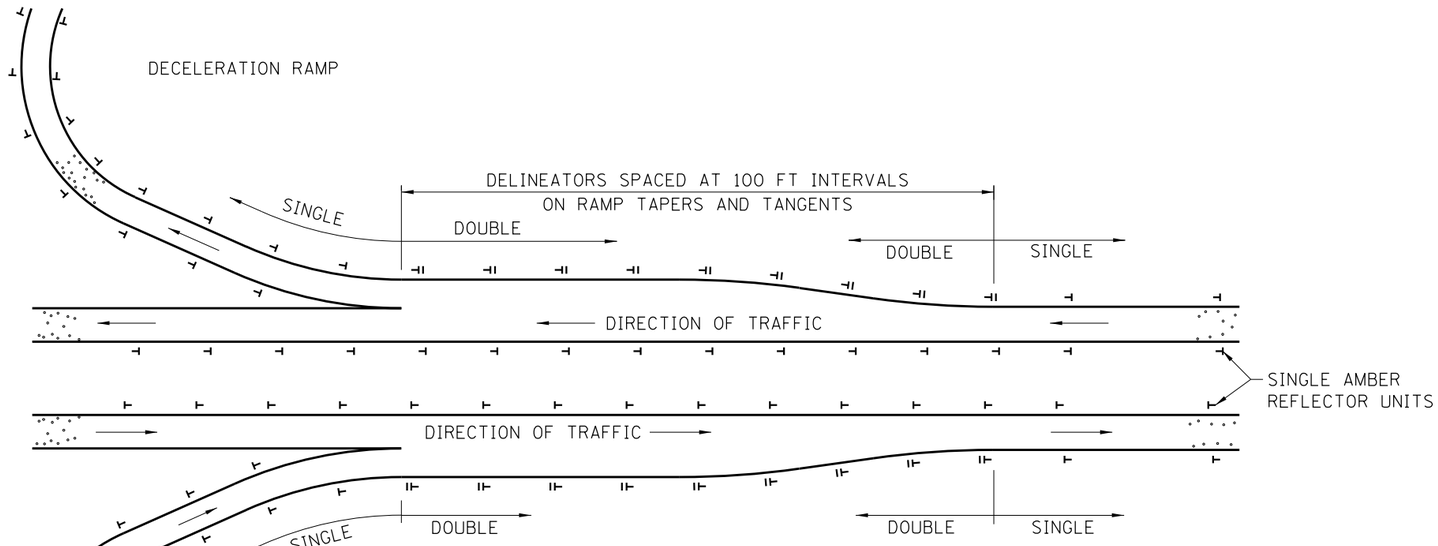
STANDARD D4-06



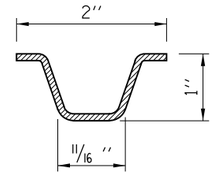
TANGENT PLACEMENT



ROADWAY DELINEATOR INSTALLATION

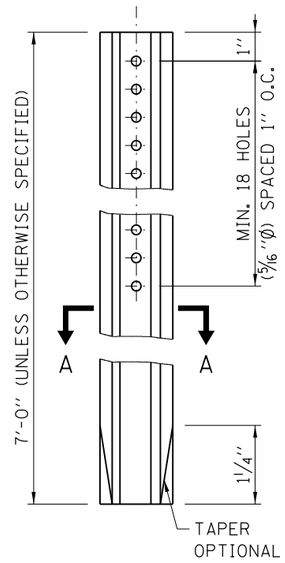


INTERCHANGE RAMP PLACEMENT

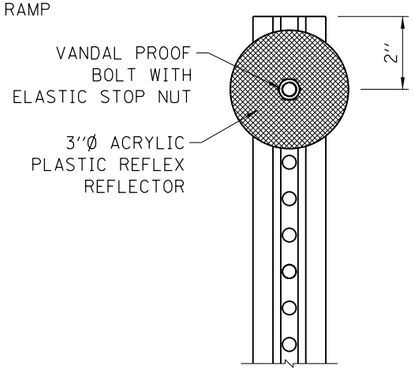


SECTION A-A

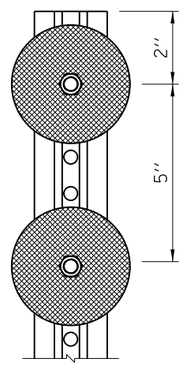
STEEL- 1.12 LBS/FT.



STEEL POST

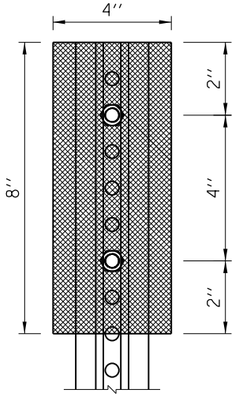


SINGLE UNIT

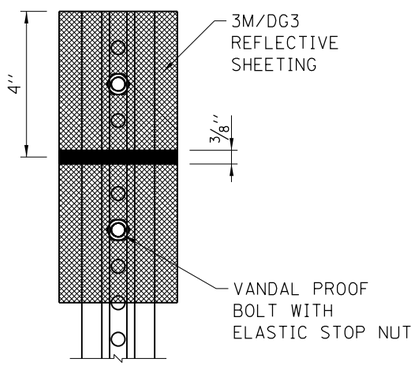


DOUBLE UNIT

CIRCULAR REFLECTORS



SINGLE UNIT



DOUBLE UNIT

RECTANGULAR REFLECTORS

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

Paul Kovacs
APPROVED ..... DATE 7-1-2009
CHIEF ENGINEER

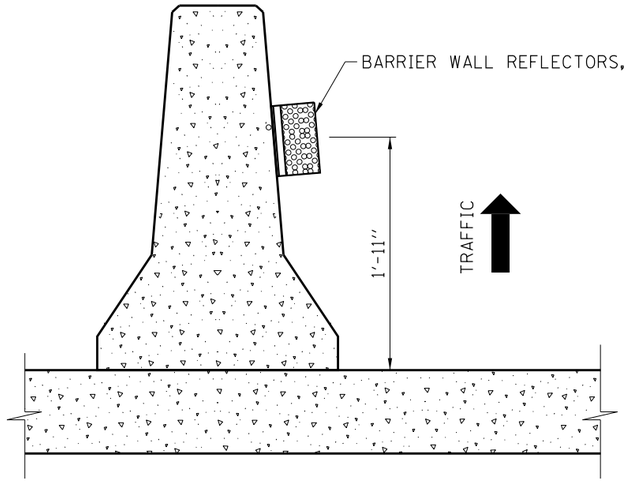
SHEET 2 OF 3

Illinois Tollway

ROADWAY DELINEATORS
AND REFLECTORS

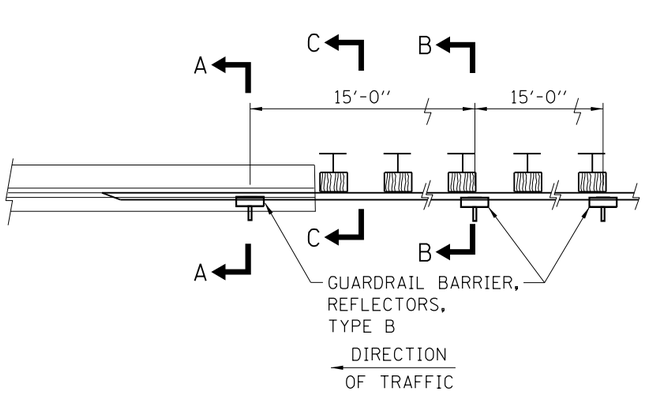
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	716

STANDARD D4-06

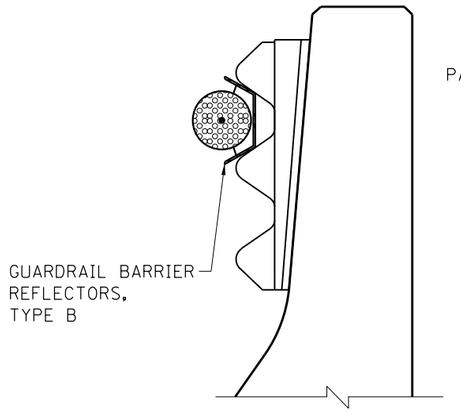


CROSS-SECTION

TEMPORARY CONCRETE BARRIER



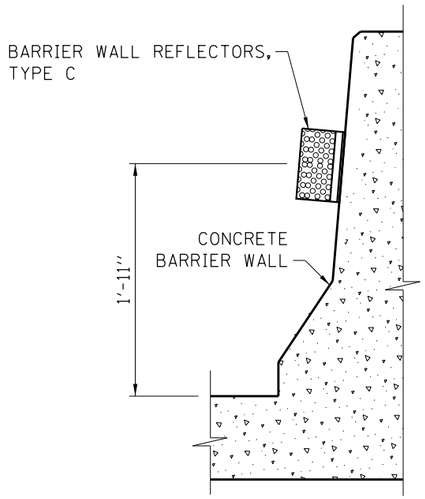
PLAN



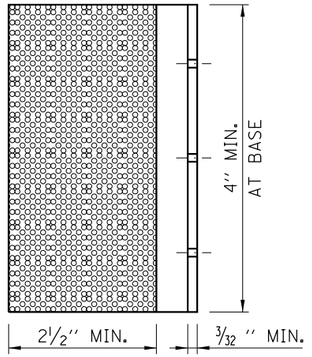
SECTION A-A

REFLECTOR INSTALLATION ON GUARDRAIL AT BRIDGE APPROACHES

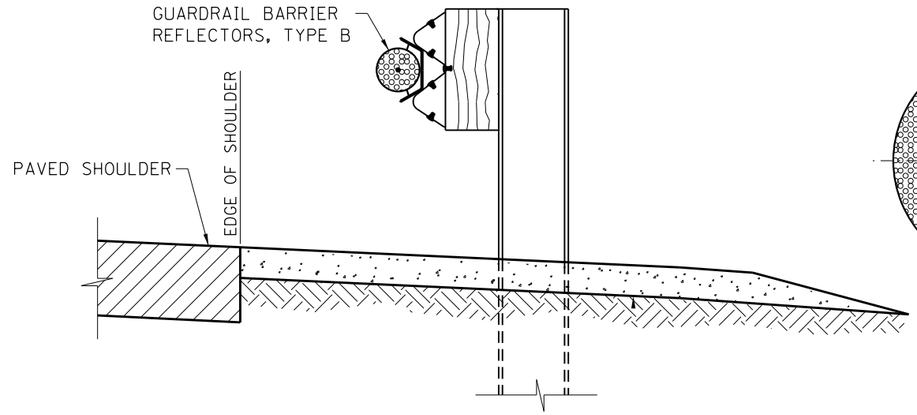
ALSO SEE SHEET 1 IN THIS SERIES FOR ADDITIONAL INFORMATION



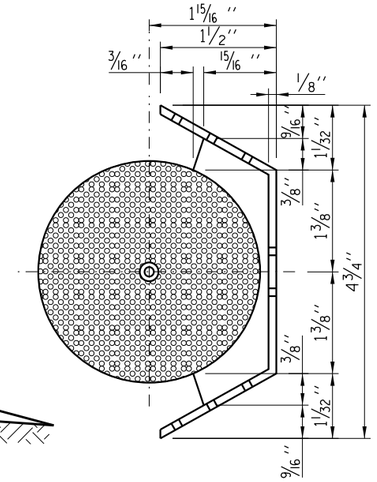
BARRIER OR PARAPET REFLECTOR INSTALLATION



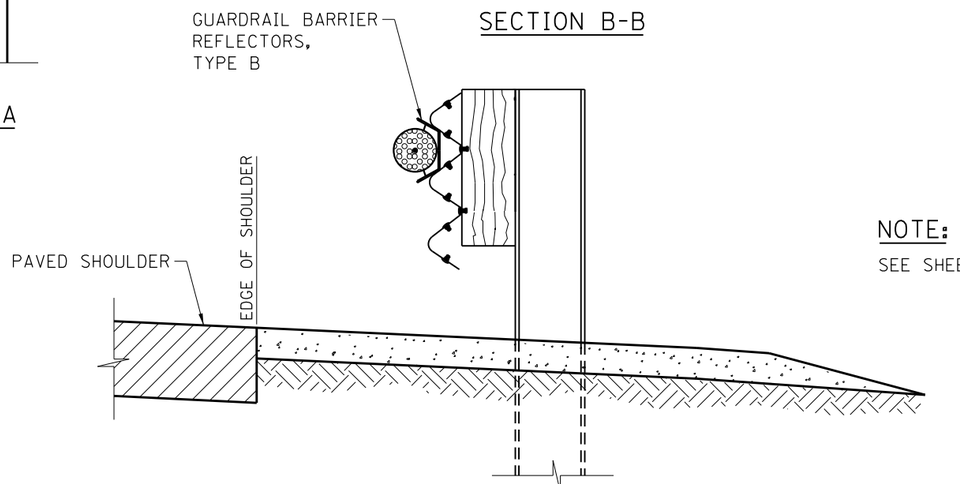
REFLECTOR, TYPE C



SECTION B-B



REFLECTOR, TYPE B



SECTION C-C

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

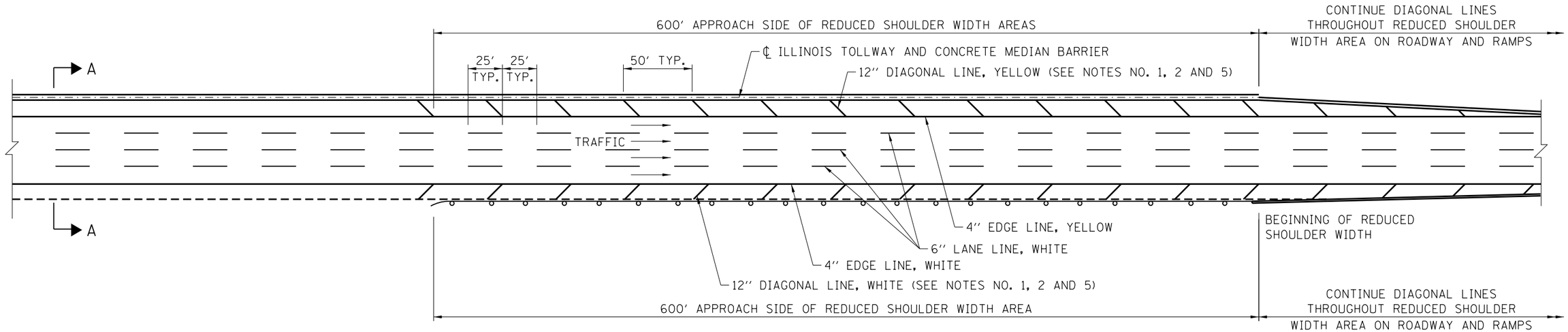
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

Illinois Tollway

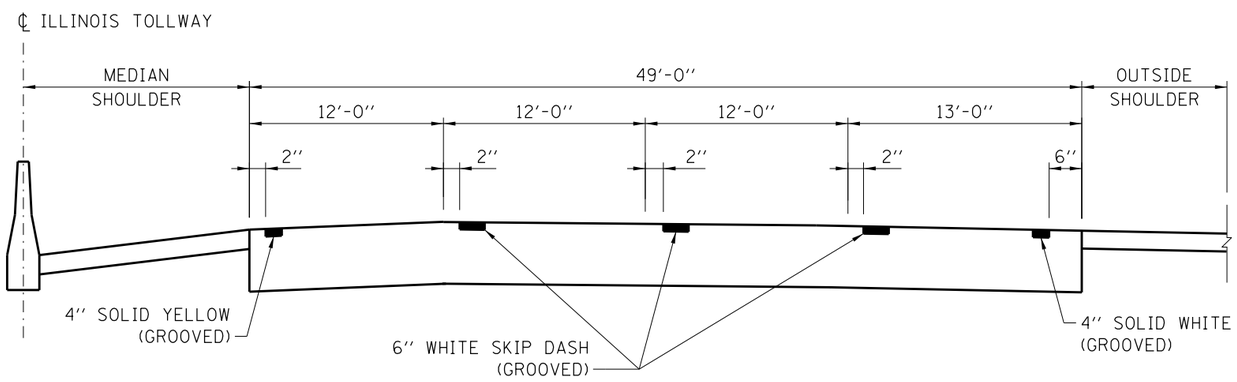
ROADWAY DELINEATORS AND REFLECTORS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	717

STANDARD D4-06



PLAN



SECTION A-A

ROADWAY AND SHOULDER STRIPING - NEW CONSTRUCTION

GENERAL NOTES:

1. DIAGONAL SHOULDER STRIPING REQUIRED WHERE THE SHOULDER WIDTH IS LESS THAN STANDARD.
2. ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND ASPHALT SURFACE SHALL BE AS SHOWN ON THE PLANS.
3. WHERE THE GUARDRAIL ENCROACHES ON THE SHOULDER THE DIAGONAL MARKINGS SHALL EXTEND AS CLOSE TO THE FACE OF THE RAIL AS POSSIBLE.
4. ALL PERMANENT LANE LINES AND EDGE LINES SHALL BE GROOVED, ON ROADWAY SURFACES, UNLESS OTHERWISE NOTED.
5. DIAGONAL STRIPING SHALL BE SURFACE APPLIED.
6. GORE STRIPING (CHEVRON) SHALL BE SURFACE APPLIED.
7. ALL LANE LINES AND EDGE LINES SHALL BE SURFACE APPLIED ON BRIDGES.
8. PAVEMENT MARKINGS SHALL NOT BE GROOVED AT THE CASH SIDE OF MAINLINE TOLL PLAZAS OR THE OPEN ROAD TOLLING (ORT), 100′ CONTINUOUSLY REINFORCED CONCRETE (CRC) PAVEMENT SECTION OF MAINLINE UNDER MONOTUBES.

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

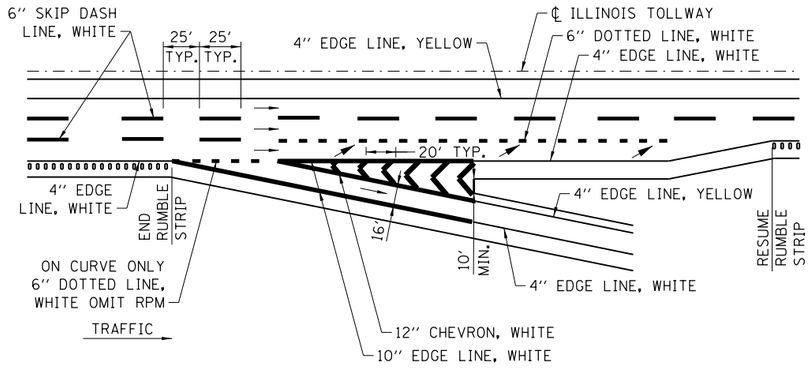
DATE	REVISIONS
7-01-09	ADDED LINE GROOVING NOTES
2-07-12	REVISED NOTES
11-01-12	REVISED EDGELINE OFFSET. REVISED NOTES
3-31-14	REVISED NOTES
3-31-16	REVISED NOTES

Illinois Tollway

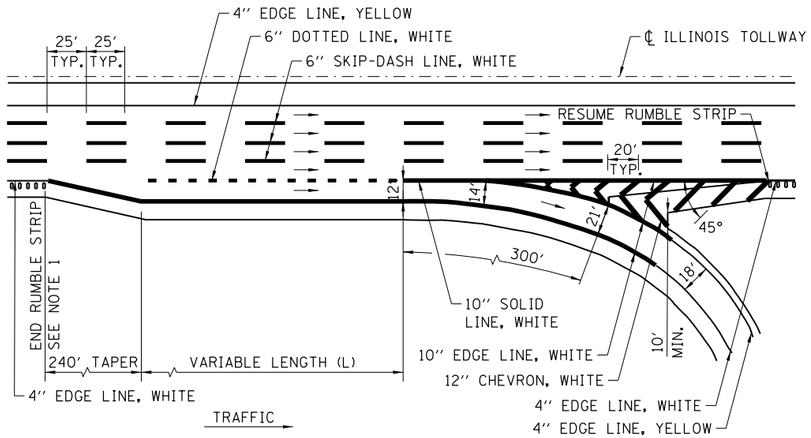
PERMANENT PAVEMENT MARKINGS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	718

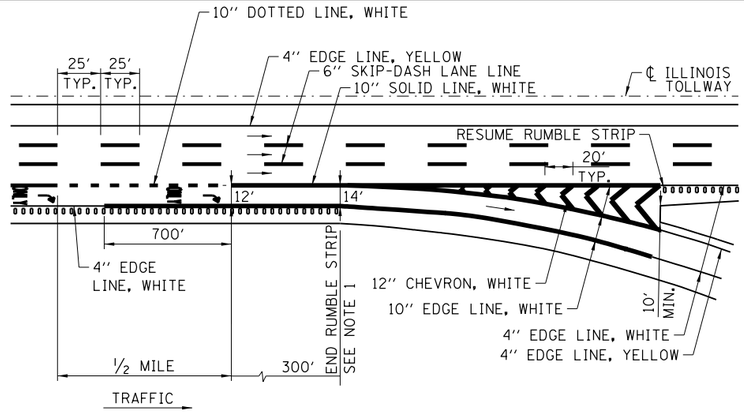
STANDARD D5-06



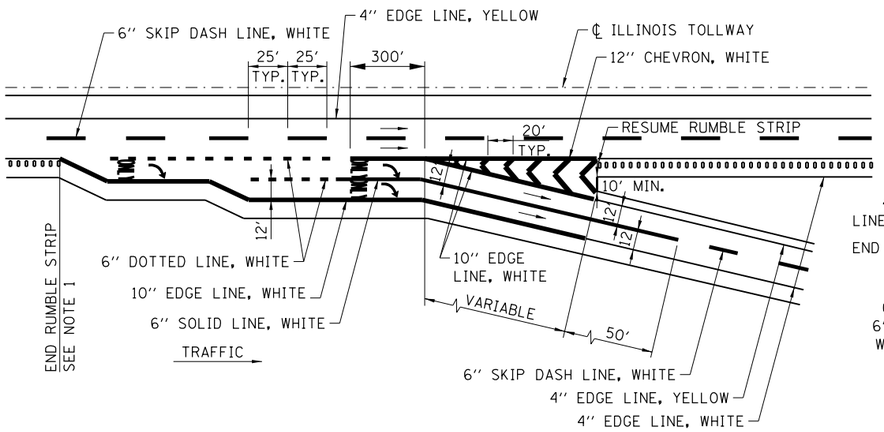
EXIT - SINGLE LANE RAMP
LANE THREE TERMINATION



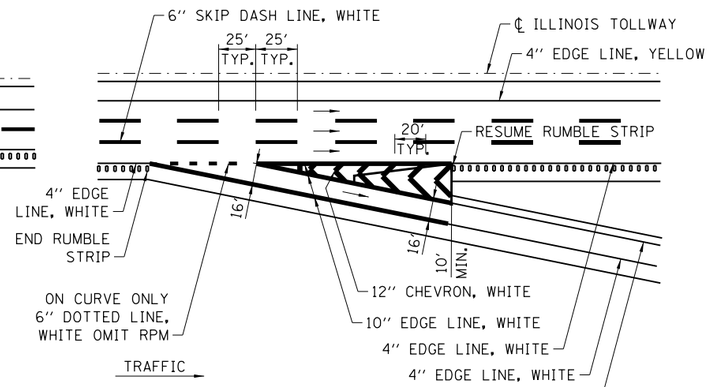
EXIT - SINGLE LANE LOOP RAMP - PARALLEL TYPE



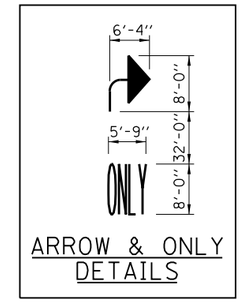
EXIT - SINGLE LANE RAMP - LANE DROP



EXIT - TWO LANE PARALLEL RAMP



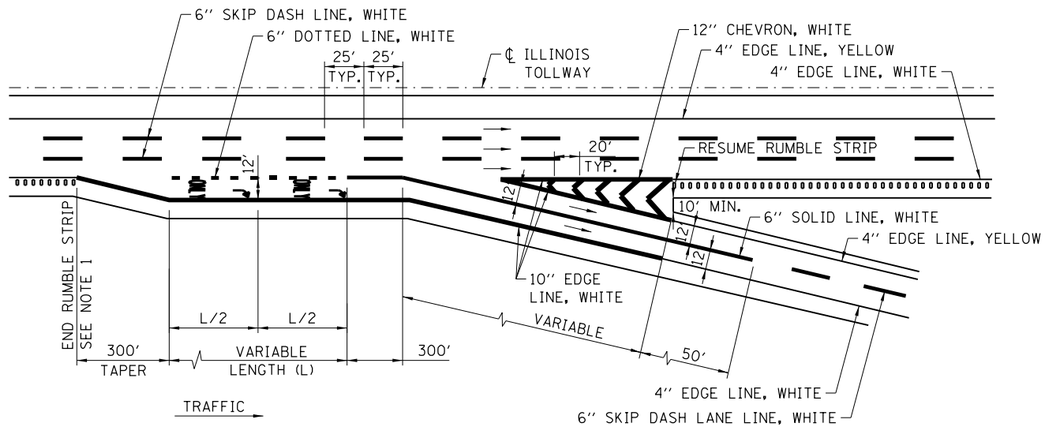
EXIT - SINGLE LANE RAMP - TAPER TYPE



ARROW & ONLY DETAILS

NOTE:

PAVEMENT MARKING LETTERS AND SYMBOLS-ONLY AND ARROW ARE TO BE TYPICALLY PLACED AT ½ MILE EXIT ONLY GUIDE SIGN, AT GORE EXIT GUIDE SIGN AND APPROXIMATELY HALFWAY BETWEEN THE TWO.



EXIT - TWO LANE RAMP

GENERAL NOTES:

1. RUMBLE STRIPS SHALL BE INSTALLED BETWEEN THE THEORETICAL GORE AND TAPER WHEN LENGTHS (L) OF AUXILIARY LANES, ACCELERATION LANES OR DECELERATION LANES, ARE GREATER THAN 1000'.
2. ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND ASPHALT SURFACE SHALL BE AS SHOWN ON THE PLANS.
3. ALL LANE LINES AND EDGE LINES SHALL BE GROOVED.
4. GORE STRIPING (CHEVRON) SHALL BE SURFACE APPLIED.
5. LETTERS AND SYMBOL MARKING SHALL BE SURFACE APPLIED.
6. DOTTED LINES SHALL CONSIST OF 3' LINE AND 9' GAPS.

Paul Kovacs
APPROVED ..... DATE 7-1-2009
CHIEF ENGINEER

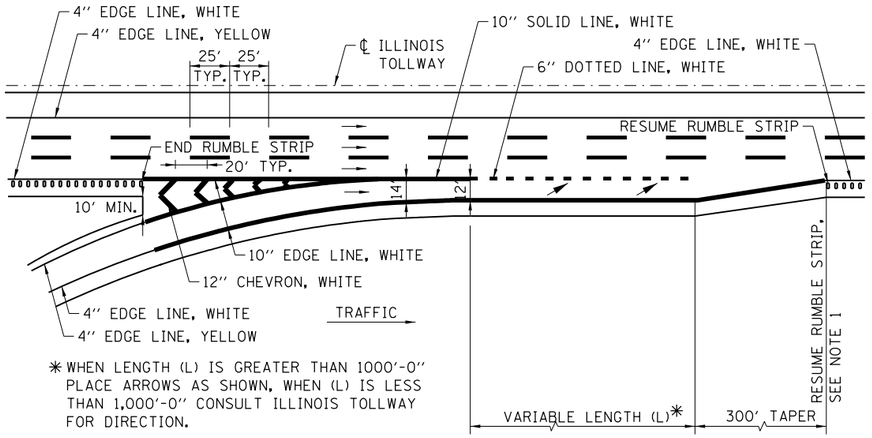
DATE	REVISIONS
11-01-12	REVISED NOTES AND ADDED DOTTED LINE
03-01-13	REVISED SINGLE LANE LOOP RAMP DETAILS
03-31-14	ADDED LANE REDUCTION MARKINGS
3-11-2015	REVISED DETAILS, ADDED LANE-REDUCTION ARROWS AND SHEET 3
3-31-2016	REVISED NOTES, ADDED IPO PAVEMENT MARKING DETAIL.
3-31-2017	REVISED NOTES

Illinois Tollway

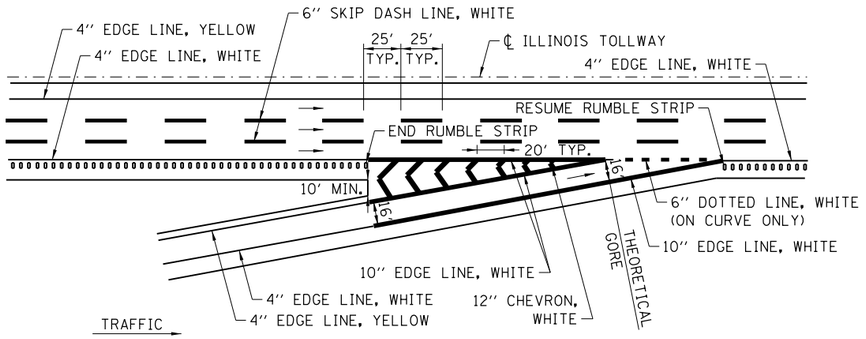
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	719

PAVEMENT MARKING
AND SHOULDER
RUMBLE STRIP DETAILS

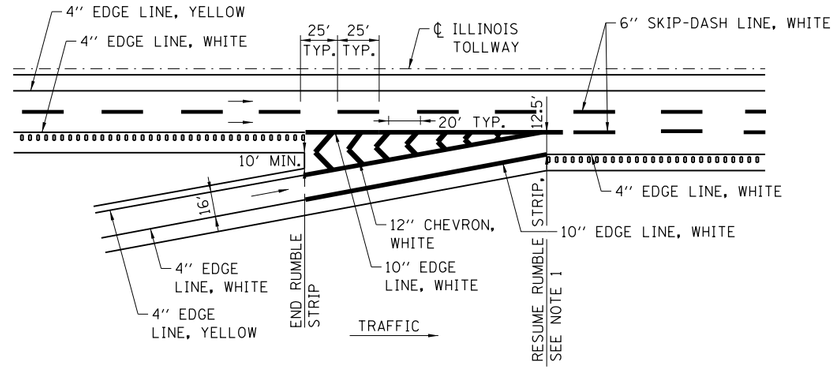
STANDARD D6-07



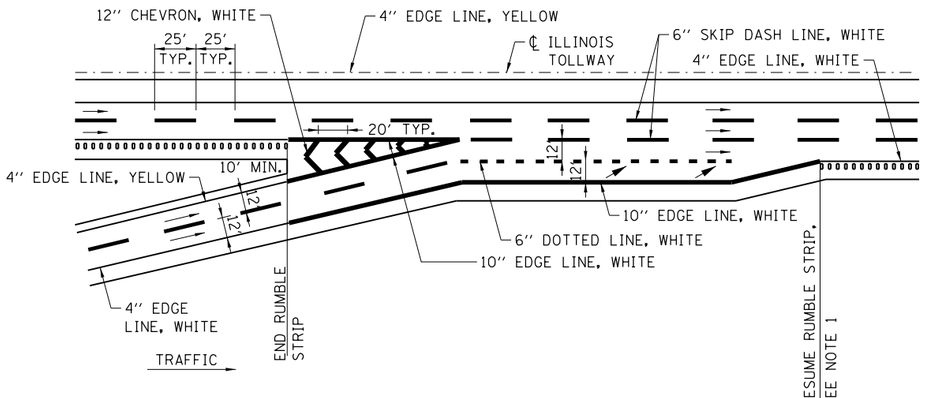
ENTRANCE - SINGLE LANE RAMP - PARALLEL TYPE



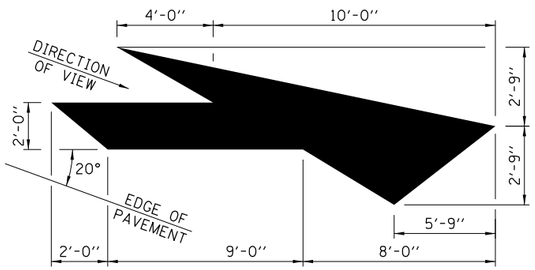
ENTRANCE - SINGLE LANE RAMP - TAPER TYPE



ENTRANCE - SINGLE LANE RAMP
WITH ADDED MAINLINE LANE

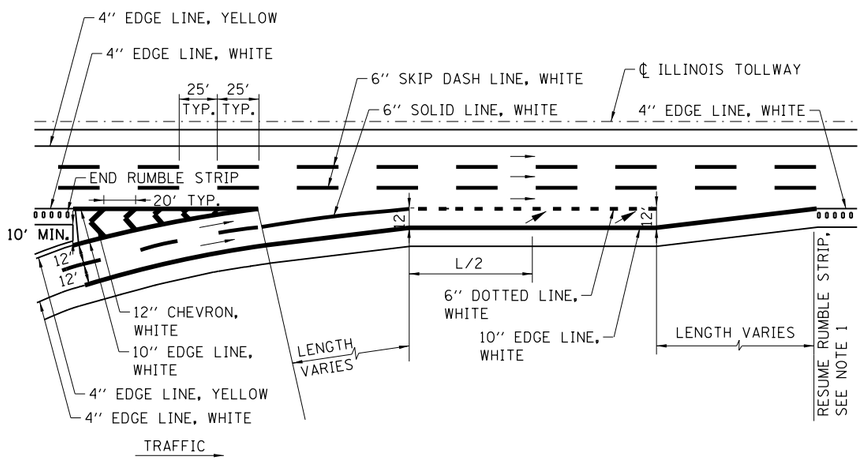


ENTRANCE - TWO LANE RAMP
WITH ADDED MAINLINE LANE

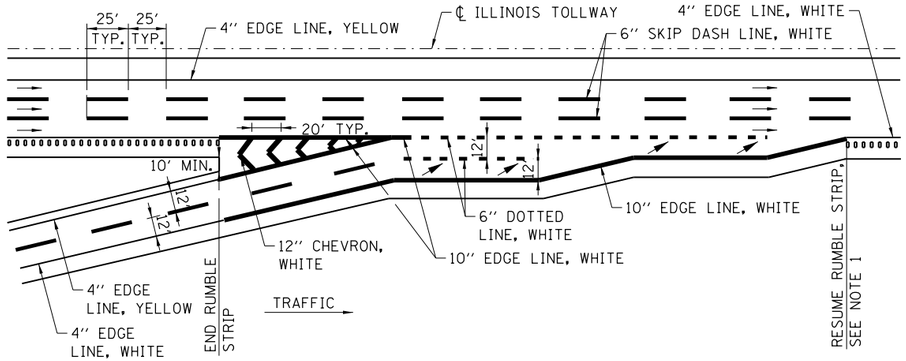


LANE-REDUCTION ARROW

RIGHT LANE-REDUCTION ARROW SHOWN.
USE MIRROR IMAGE FOR LEFT LANE.



ENTRANCE - TWO LANE RAMP



ENTRANCE - TWO LANE PARALLEL RAMP

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

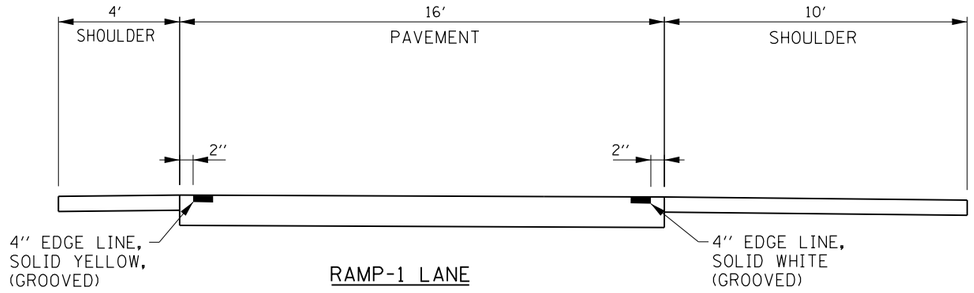
SEE SHEET 1 IN THIS SERIES FOR GENERAL NOTES.

Illinois Tollway

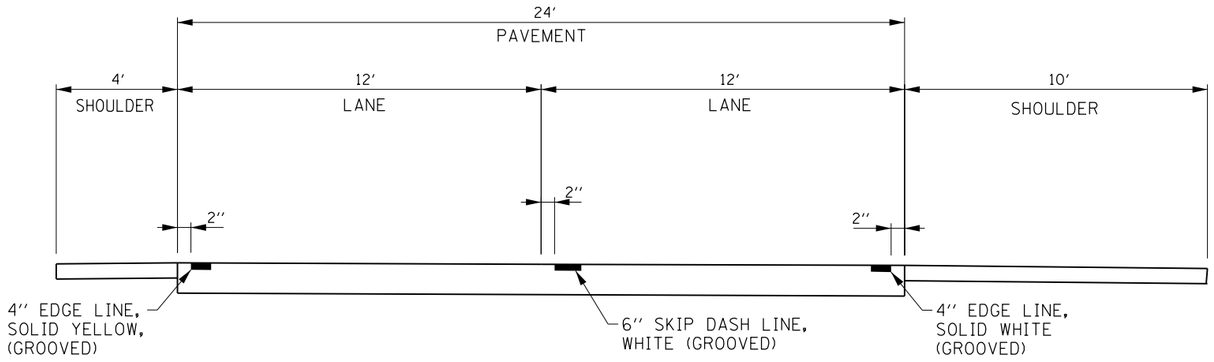
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	720

PAVEMENT MARKING AND SHOULDER RUMBLE STRIP DETAILS

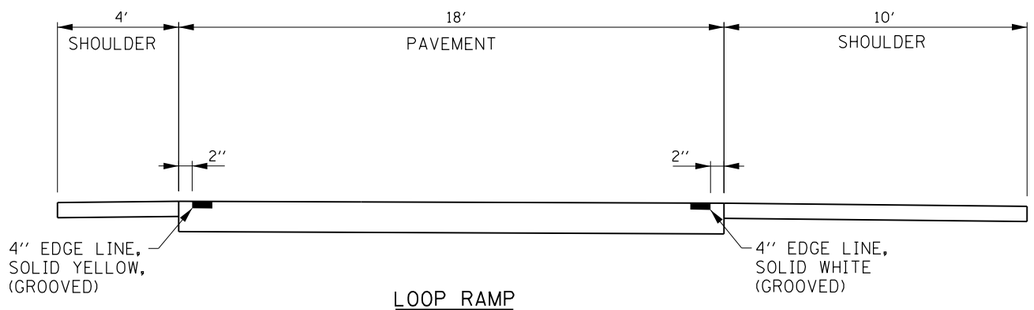
STANDARD D6-07



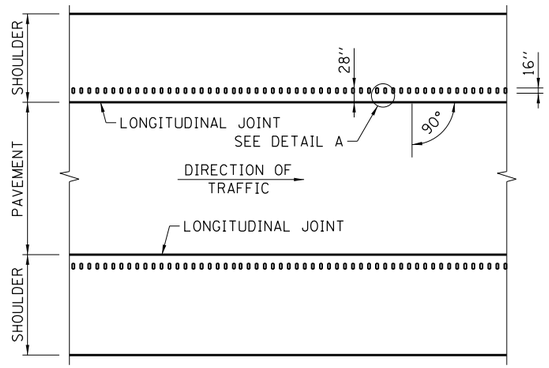
RAMP-1 LANE



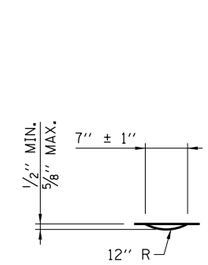
RAMP-2 LANES



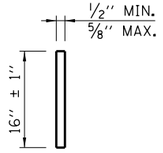
LOOP RAMP



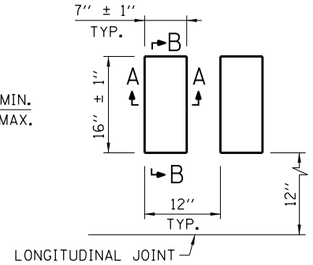
TYPICAL PLAN VIEW
MAINLINE



SECTION A-A



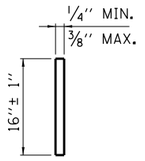
SECTION B-B



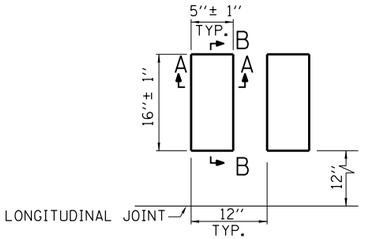
PLAN DETAIL A

ASPHALT SHOULDER
RUMBLE STRIP DETAILS

SECTION A-A

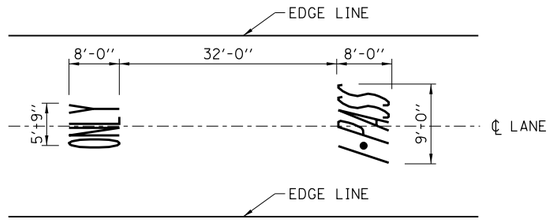


SECTION B-B



PLAN DETAIL A

CONCRETE SHOULDER
RUMBLE STRIP DETAILS



IPO LANE PAVEMENT MARKING

SEE SHEET 1 IN
THIS SERIES FOR
GENERAL NOTES.

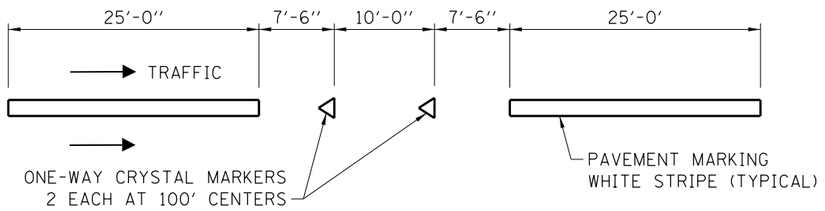
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

Illinois Tollway

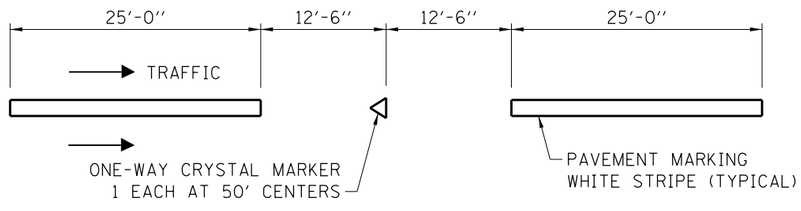
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	721

PAVEMENT MARKING
AND SHOULDER
RUMBLE STRIP DETAILS

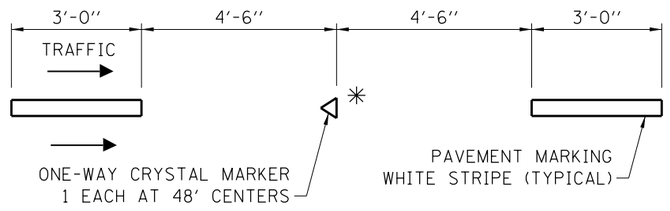
STANDARD D6-07



DETAIL A

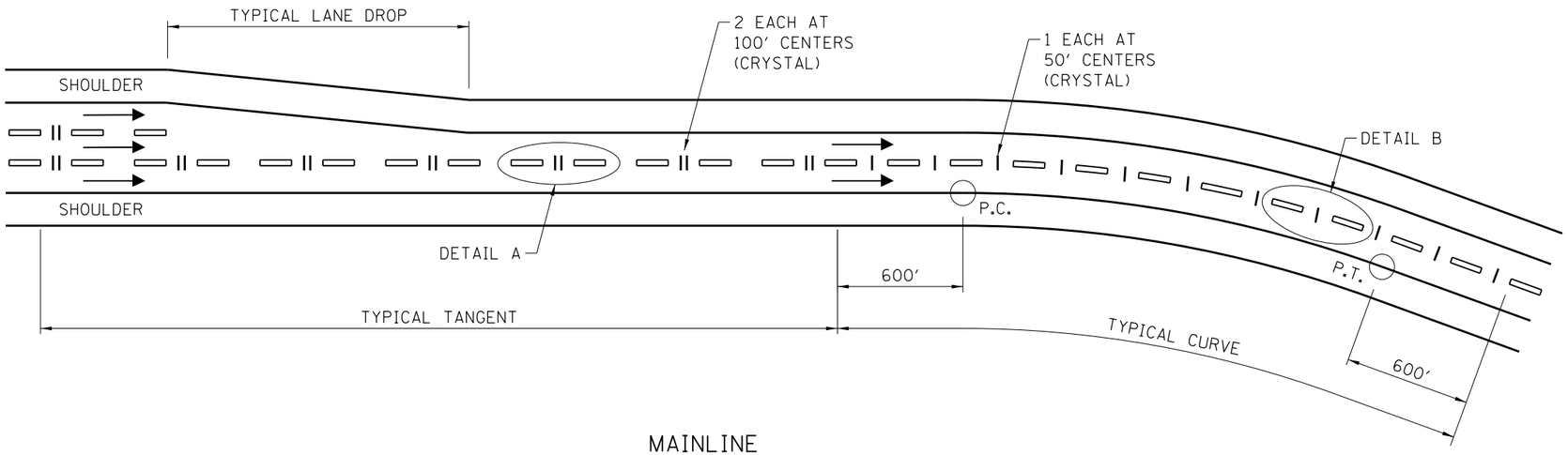


DETAIL B



✳ MARKER TO BE INSTALLED WHEN LENGTHS OF AUXILIARY LANES ARE GREATER THAN 1000'.

DETAIL C



MAINLINE

RAISED PAVEMENT LANE MARKER DETAILS

NOTES:

1. FOR COLLECTOR-DISTRIBUTOR (C-D) ROADWAYS, PLACE ONE-WAY CRYSTAL MARKER, 2 EACH AT 100' CENTERS. USE DETAIL A.
2. FOR MULTI LANE DIRECTIONAL RAMPS, PLACE ONE-WAY CRYSTAL MARKER, 1 EACH AT 50' CENTERS. USE DETAIL B.
3. FOR AUXILIARY LANES, PLACE ONE-WAY CRYSTAL MARKER, 1 EACH AT 48' CENTERS. USE DETAIL C.

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

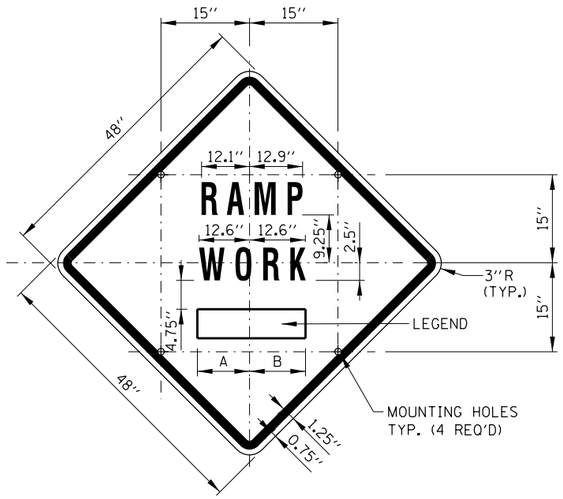
DATE	REVISIONS
11-01-2012	REVISED DETAIL C.
3-31-2016	REVISED NOTES 1.

Illinois Tollway

RAISED PAVEMENT LANE MARKER

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	722

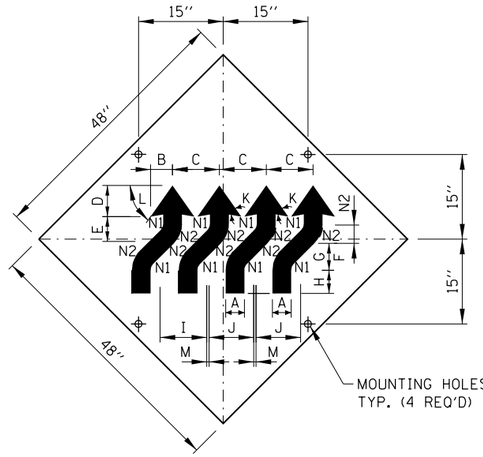
STANDARD D8-02



SIGN NO.	LEGEND	A	B
TS-2A	AHEAD	15.50''	15.50''
TS-2B	500 FT	14.25''	15.13''
TS-2C	1000 FT	14.88'' ∠2	15.75'' ∠2
TS-2D	1500 FT	14.88'' ∠2	15.75'' ∠2
TS-2E	1/2 MILE	15.75'' ∠3	15.75'' ∠3
TS-2F	1 MILE	13.06''	13.06''

SIGN TS-2 (O)

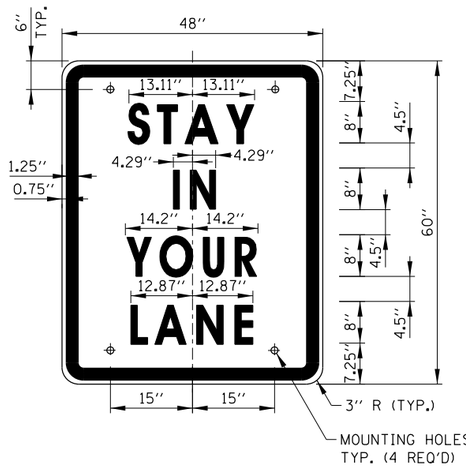
COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND SYMBOL - BLACK
SIZE: 48''x48''
LETTERING: 7'' FEDERAL SERIES D
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN



A	4 1/2''
B	5 3/4''
C	12 1/2''
D	7 3/4''
E	6 1/2''
F	4 1/2''
G	6 1/2''
H	6''
I	12 3/4''
J	12''
K	45°
L	55°
M	3/4''
N1	2''
N2	6 1/2''

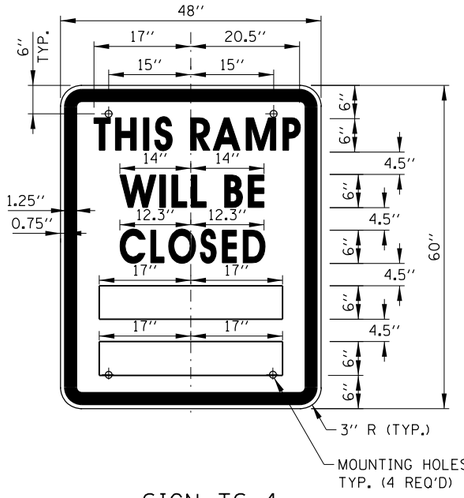
SIGN W1-4dR (O)

COLOR: BACKGROUND-FLUORESCENT ORANGE (O)
TYPE A REFLECTIVE
SHEETING PER STANDARD
SPECIFICATIONS (* A)
BORDER AND LETTERS-BLACK
SIZE: 48''x48''
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN.



SIGN TS-3

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (*A)
BORDER AND LETTERS - BLACK
SIZE: 48''x60''
LETTERING: LEGEND - 8'' FEDERAL SERIES D
MOUNTING HOLES: 7/16'' DIA., 4 HOLES, SPACED AS SHOWN

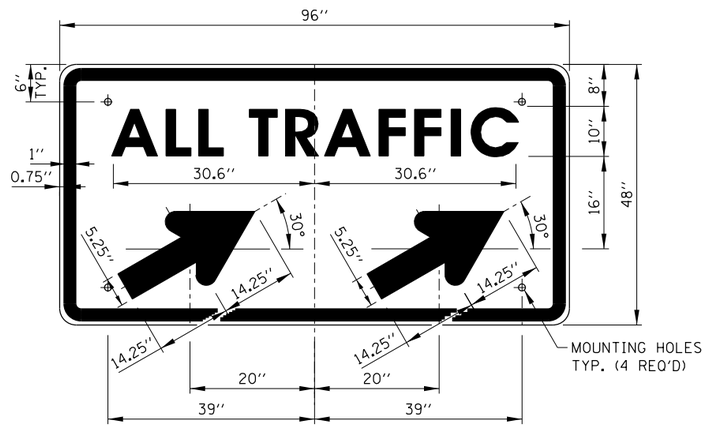


SIGN TS-4

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(*A)
BORDER AND LETTERS - BLACK
SIZE: 48''x60''
LETTERING: LEGEND - 6'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES, SPACED AS SHOWN

RAMP CLOSURE ADVANCE INFORMATION SIGN

THE VARIABLE MESSAGE WITH DATES FOR THE BOTTOM TWO LINES SHALL BE DETERMINED BY THE ENGINEER AND GIVEN TO THE CONTRACTOR BEFORE THE REQUIRED FIELD ERECTION DATE.



SIGN TS-5a & TS-5b

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(*A)
BORDER AND LETTERS - BLACK
ARROW - BLACK
SIZE: 96''x48''
LETTERING: 10'' FEDERAL SERIES D
MOUNTING HOLES: 7/16'' DIA., 4 HOLES, SPACED AS SHOWN
NOTE: SIGN TS-5a IS SHOWN, SUBSTITUTE
LEGEND ''↗'' FOR ''↗↗'' FOR SIGN TS-5b

NOTES:

1. ALL LETTERING IS DESIGNATED BY SIZE AND SERIES IN ACCORDANCE WITH THE LATEST EDITION OF ''STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'' AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. LETTERING SPACING SHALL BE IN ACCORDANCE WITH THIS GUIDE EXCEPT WHERE NOTED.

2. SYMBOLS AND ARROWS SHALL CONFORM TO THE DETAILS SHOWN IN THE LATEST EDITION OF ''STANDARD HIGHWAY SIGNS'' AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION.

3. SEE THE CONTRACT REQUIREMENTS FOR ADDITIONAL NOTES AND SPECIFICATIONS.
   (O) FLUORESCENT ORANGE REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.
   (*A) - REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.

4. DIMENSIONS INDICATED THUS ∠ ARE BASED ON A REDUCTION IN STANDARD LETTERING SPACING AS SHOWN BELOW:
   ∠1 SPACING REDUCED BY 25%
   ∠2 SPACING REDUCED BY 40%
   ∠3 SPACING REDUCED BY 50%

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

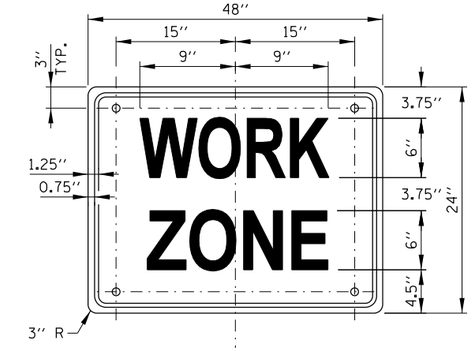
DATE	REVISIONS
05-01-09	DELETED FLASHING ARROW BOARDS
01-01-11	ADDED SIGN COLOR DESIGNATION
11-01-12	DELETED SIGN TS-1
03-31-14	REVISED FINE SIGN NUMBER AND
	ADDED LED SPEED LIMIT DISPLAY
3-11-2015	REVISED NOTES
3-31-2017	REVISED END WZSL SIGN COLOR

Illinois Tollway

CONSTRUCTION SIGNS

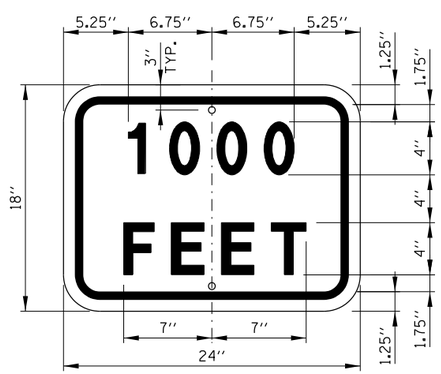
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	723

STANDARD E1-06



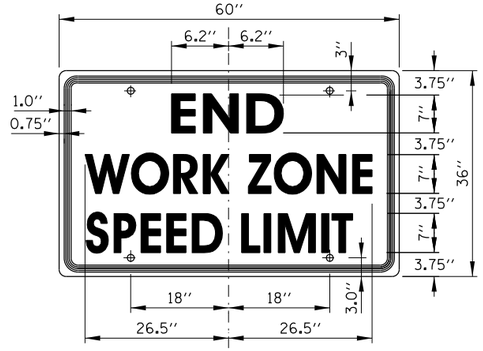
SIGN G20-I102 (O)

COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND LETTERS - BLACK
SIZE: 48''x24''
LETTERING: 6'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN



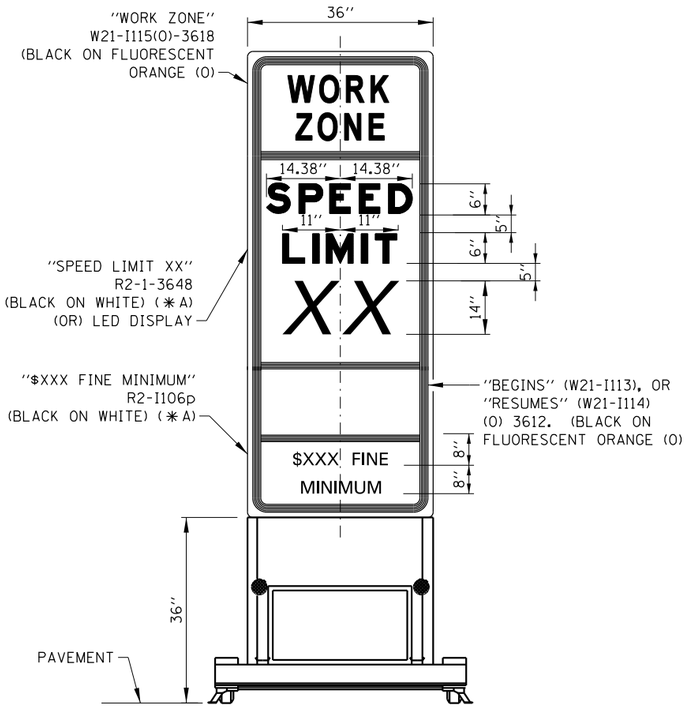
SUPPLEMENTAL PLATE (O)

COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND LETTTERS - BLACK
SIZE: 24''x18''
LETTERING: 4'' FEDERAL SERIES D
MOUNTING HOLES: 7/16'' DIA., 2 HOLES SPACED AS SHOWN

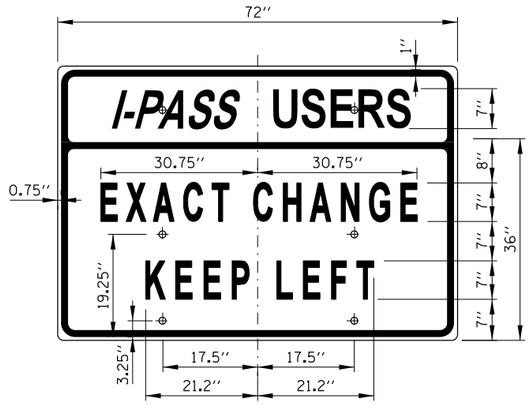


SIGN G20-I103

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (* A)
BORDER AND LETTERS - BLACK
SIZE: 60''x36''
LETTERING: 6'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN

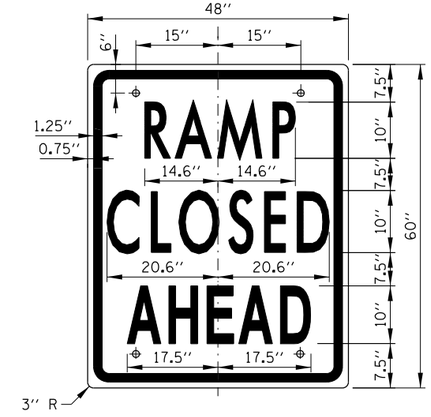


WORK ZONE SPEED LIMIT
SIGN ASSEMBLY



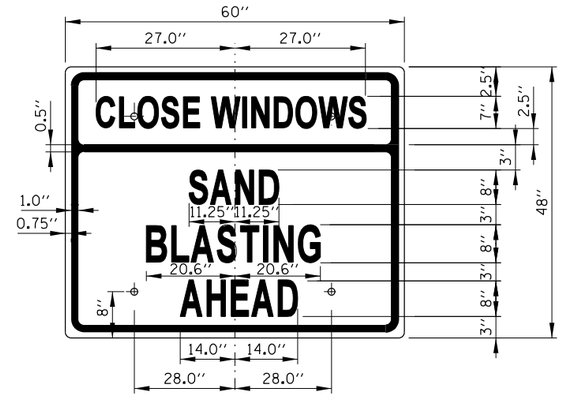
SIGN TS-7

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (* A)
BORDER AND LETTTERS - BLACK
SIZE: 72''x36''
LETTERING: 7'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN



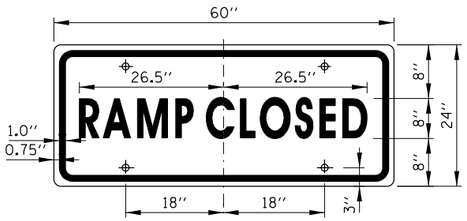
SIGN TS-9

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (* A)
BORDER AND LETTTERS - BLACK
SIZE: 48''x60''
LETTERING: 10'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN



SIGN TS-10 (O)

COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND LETTTERS - BLACK
SIZE: 60''x48''
LETTERING: 8'' FEDERAL SERIES C, 7'' FEDERAL SERIES B
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN



SIGN TS-6

COLOR: BACKGROUND - WHITE (REFLECTORIZED) (* A)
BORDER AND LETTTERS - BLACK
SIZE: 60''x24''
LETTERING: 8'' FEDERAL SERIES C
MOUNTING HOLES: 7/16'' DIA., 4 HOLES SPACED AS SHOWN

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

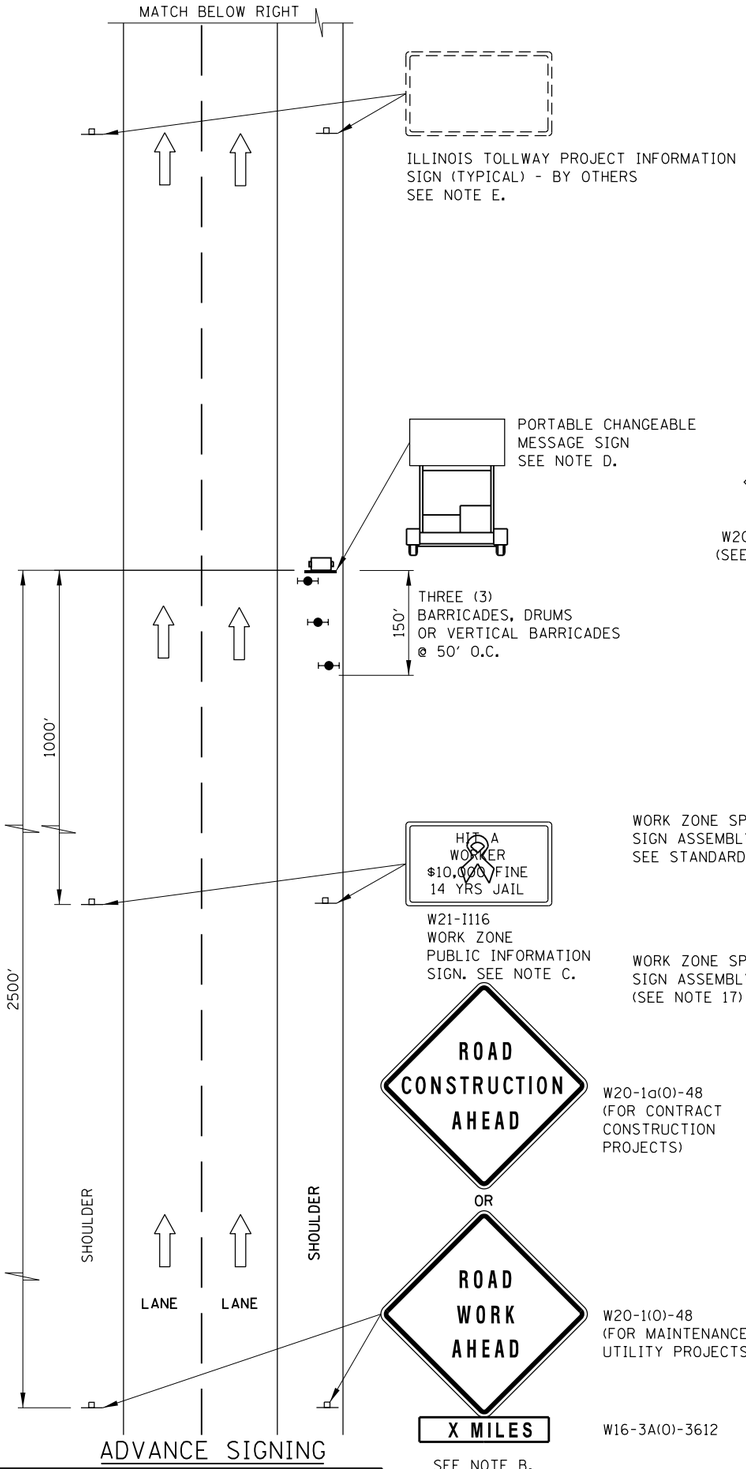
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

Illinois Tollway

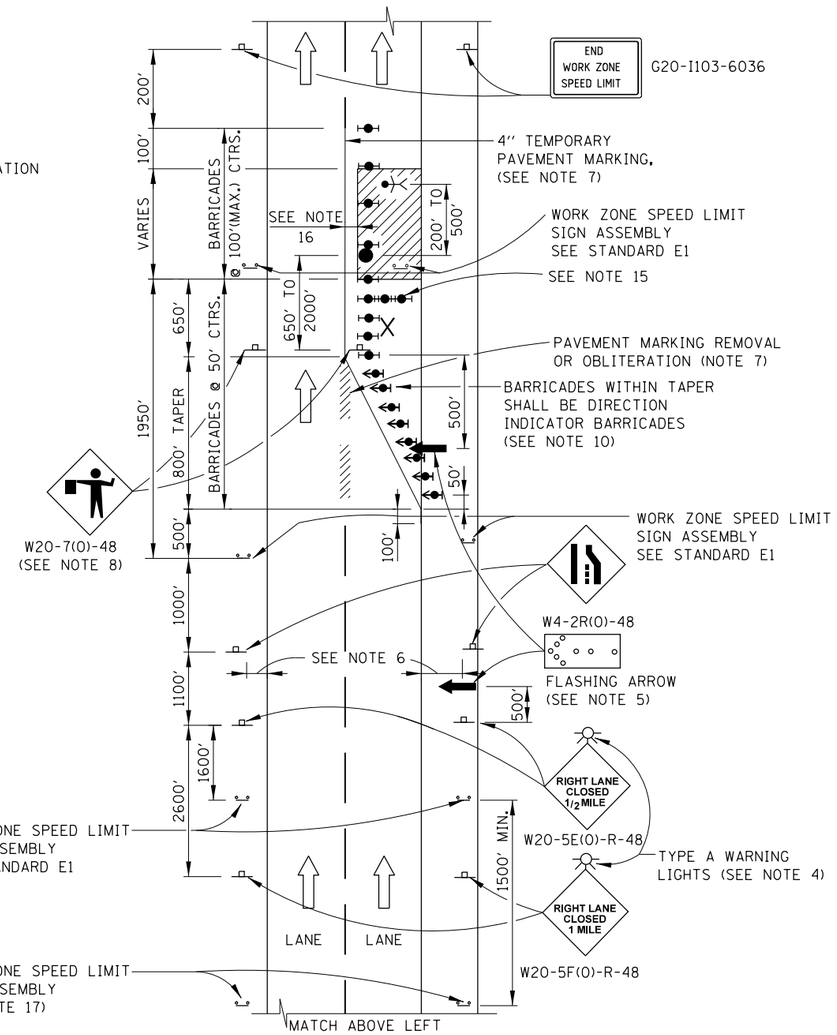
CONSTRUCTION SIGNS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	724

STANDARD E1-06



ADVANCE SIGNING



ONE-LANE CLOSURE WITH BARRICADE

ADVANCE SIGNING NOTES:

A. THE ADVANCE SIGNING SHOWN ON THIS STANDARD SHALL APPLY ANY TIME THE CONTRACTOR CLOSES ONE OR MORE LANES, OR IS REQUIRED TO SHIFT THE LANE ALIGNMENT. THE "ROAD WORK AHEAD" OR "ROAD CONSTRUCTION AHEAD" SIGNS, WORK ZONE PUBLIC INFORMATION SIGNS AND PORTABLE CHANGEABLE MESSAGE ARE STATIONARY.

B. THE ROAD CONSTRUCTION AHEAD SIGN (W20-1A, WITH W16-3a SUPPLEMENTAL PLATE) OR ROAD WORK AHEAD SIGN (W20-1, WITH W16-3A SUPPLEMENTAL PLATE) SHALL BE LOCATED UP TO 5 MILES IN ADVANCE OF THE PROJECT LIMITS, WITH THE LOCATION BEING DETERMINED BY THE ENGINEER.

C. THE WORK ZONE PUBLIC INFORMATION SIGN IS 60" WIDE BY 48" HIGH. THE CONTRACTOR SHALL OBTAIN THE CAMERA-READY ARTWORK REQUIRED FOR THE SIGN MESSAGE BY CONTACTING IDOT'S CENTRAL BUREAU OF OPERATIONS.

D. THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE USED TO DISPLAY THE STATUS OF LANE WITHIN THE CONTRACT LIMITS. THE PRIMARY MESSAGES SHALL BE: "RIGHT LANE(S) CLOSED" / "x MILES AHEAD", "LEFT LANE(S) CLOSED" / "x MILES AHEAD", "LANE(S) SHIFT" / "x MILES AHEAD", "ALL LANES OPEN". THE PORTABLE CHANGEABLE MESSAGE SIGN MAY BE MOVED TO THE MEDIAN SHOULDER WHEN THE LANE CLOSURES ARE ON THE LEFT, PROVIDED THE EXISTING SHOULDER WIDTH IS ADEQUATE.

E. THE ILLINOIS TOLLWAY WILL FURNISH AND INSTALL STATIC PROJECT INFORMATION SIGNS IN ADVANCE, THROUGH AND AT THE END OF THE WORK ZONE. THESE SIGNS WILL BE INSTALLED ALONG THE OUTSIDE SHOULDER WITH THE ADVANCE SIGNS LOCATED BEYOND THE PORTABLE CHANGEABLE MESSAGE SIGN. THE ENGINEER AND CONTRACTOR SHALL COORDINATE WITH THE ILLINOIS TOLLWAY REGARDING THE LOCATION OF THESE SIGNS AND NOTIFY THE ILLINOIS TOLLWAY OF ANY DAMAGE TO THE SIGNS OR SUPPORTS.

LANE CLOSURE NOTES:

1. IF CLOSURES ARE EXPECTED TO PRODUCE TRAFFIC BACKUPS EXTENDING BEYOND THE FIRST WARNING SIGN SHOWN ON THE DETAILS, ADDITIONAL UPSTREAM SIGNS SHALL BE PLACED SO THAT THE TRAFFIC CONTROL ZONE ENCOMPASSES THE ANTICIPATED BACKUP ZONE.
2. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.
3. THESE DETAILS ALSO APPLY TO OPPOSITE HAND LANE CLOSURES BY CHANGING SIGN LEGENDS AND ARROW DIRECTIONS TO INDICATE THE APPROPRIATE CLOSURE.
4. FOR NIGHT TIME CLOSURES, ONE TYPE A WARNING LIGHT SHALL BE INSTALLED ABOVE EACH OF THE 1 MILE AND ½ MILE ADVANCE WARNING SIGNS. FOR DAYLIGHT-ONLY CLOSURES, THE LIGHTS MAY BE OMITTED.
5. FOR ANY LANE CLOSURE, FLASHING ARROW BOARDS SHALL BE REQUIRED AND IN OPERATION AT ALL TIMES. THE FLASHING ARROW BOARD IN ADVANCE OF THE TAPER SHALL BE PROTECTED WITH THREE TYPE II BARRICADES AT 50' O.C.
6. CONSTRUCTION SIGNS SHALL GENERALLY BE POST-MOUNTED OR ATTACHED TO PORTABLE SUPPORTS AND SHALL BE INSTALLED 8' TO 12' FROM ADJACENT TRAVEL LANE WHEREVER POSSIBLE. IN NO CASE SHALL SIGNS BE LOCATED TO PROVIDE LESS THAN 2' CLEARANCE BETWEEN EDGE OF SIGN AND ADJACENT TRAVEL LANE.
7. PAVEMENT MARKING TAPE AND REMOVAL OR OBLITERATION OF EXISTING MARKINGS SHALL BE REQUIRED WHEN THE CLOSURE TIME EXCEEDS FOUR DAYS. THIS WORK SHALL BE MEASURED AND PAID FOR SEPARATELY.
8. WHEN A FLAGGER IS NOT ON STATION, THE FLAGGER SIGN SHALL BE PROMPTLY REMOVED, COVERED OR TURNED TO FACE AWAY FROM TRAFFIC. FLAGGER SIGNS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED SPACING BETWEEN THE SIGNS AND THE WORKERS IN EACH SEPARATE WORK ACTIVITY, PER THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
9. WORK ZONE SPEED LIMIT SIGN ASSEMBLIES, SHALL BE PLACED ADJACENT TO THE OPEN TRAFFIC LANE(S). WORK ZONE SPEED SIGNS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED SPACING BETWEEN SIGNS AND THE WORKERS IN EACH SEPARATE WORK ACTIVITY PER THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
10. DIRECTION INDICATOR BARRICADES SHALL BE USED IN LANE TAPERS.
11. FOR CLOSURES OTHER THAN SHORT TERM (SUNRISE TO ONE HOUR BEFORE SUNSET), THE MINIMUM HEIGHT OF THE SIGN FROM SHOULDER ELEVATION SHALL BE 7'-0".
12. CONES MAY BE USED IN LIEU OF BARRICADES IN THE BUFFER AND WORK AREAS, WHEN THE CLOSURE IS FOR MAINTENANCE OPERATIONS.
13. BARRICADES ARE TO BE LOCATED AT JOINT LINE WHEN WORK AREA EXTENDS UP TO JOINT UNLESS OTHERWISE SHOWN ON THE PLANS.
14. SEE MAINTENANCE OF TRAFFIC DRAWINGS FOR ADDITIONAL SIGNING IN THIS AREA.
15. CHECK BARRICADES SHALL BE PLACED IN THE MIDDLE OF THE CLOSED LANE AND AT THE SHOULDER AT 1000 FOOT CENTERS.
16. A 1'-0" MINIMUM/2'-0" DESIRABLE SHY DISTANCE SHALL BE PROVIDED, MEASURED BETWEEN EDGE OF PAVEMENT LANE MARKING TO THE EDGE OF THE TRAFFIC CONTROL DEVICE.
17. ADDITIONAL WORK ZONE SPEED LIMIT SIGNS SHALL BE PLACED WHEN DIFFERENCE BETWEEN POSTED TO WORK ZONE SPEED LIMIT IS > 20 M.P.H.

LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- DIRECTION INDICATOR BARRICADE WITH SEQUENTIAL FLASHING WARNING LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- FLAGGER WITH TRAFFIC CONTROL SIGN
- WORKER
- LANE CLOSED

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

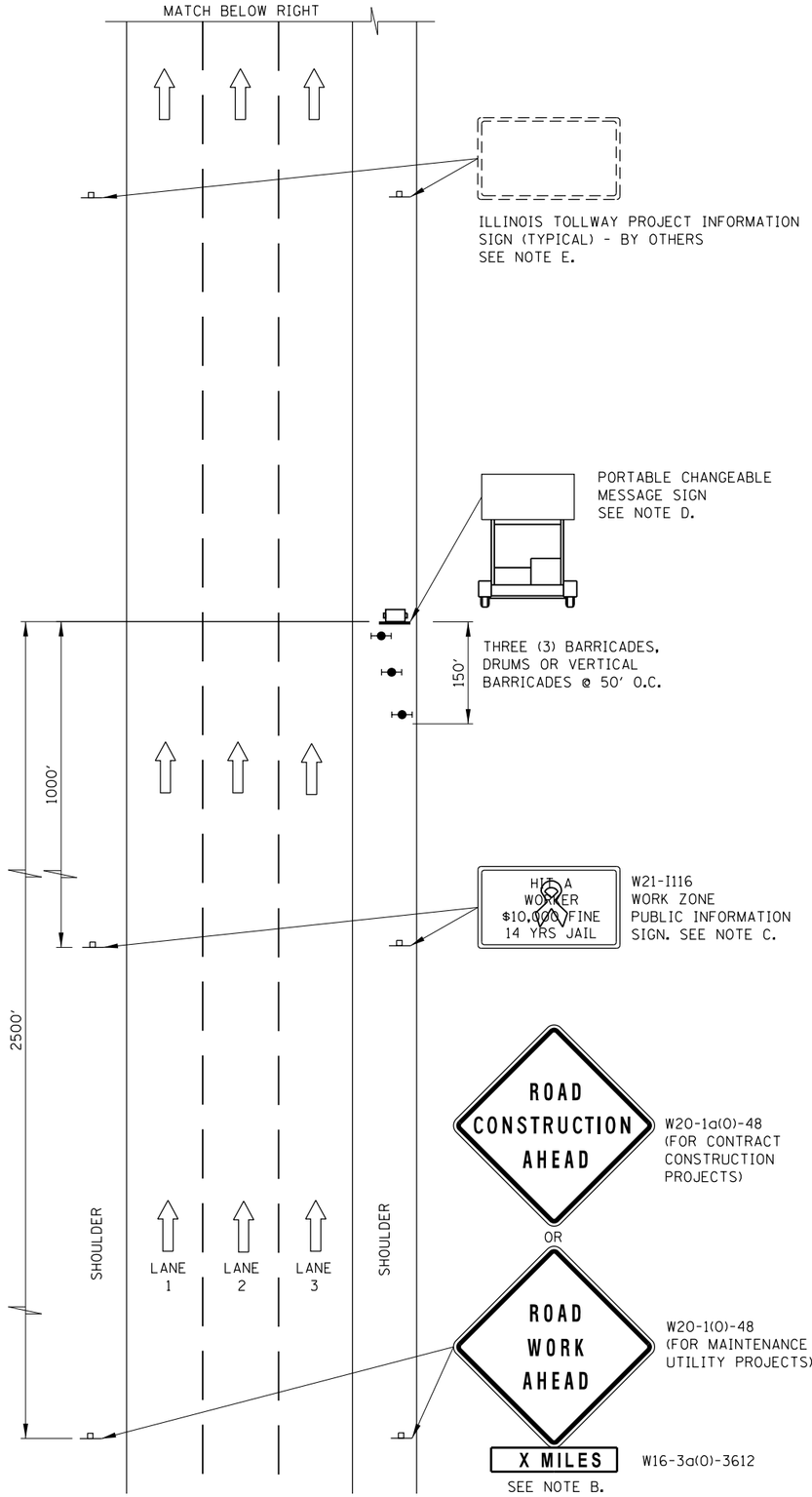
DATE	REVISIONS
11-01-12	ADDED THREE LANE CLOSURE
03-31-14	REVISED BUFFER SPACE, TAPER DIMENSIONS AND REVISED NOTES.
3-11-2015	REVISED NOTES.
3-31-2016	ADDED LANE CLOSURE WITH BARRIER AND ADDED SEQUENTIAL FLASHING WARNING LIGHT.
3-31-2017	ADDED TAPER RATE TABLE

Illinois Tollway

LANE CLOSURE DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	725

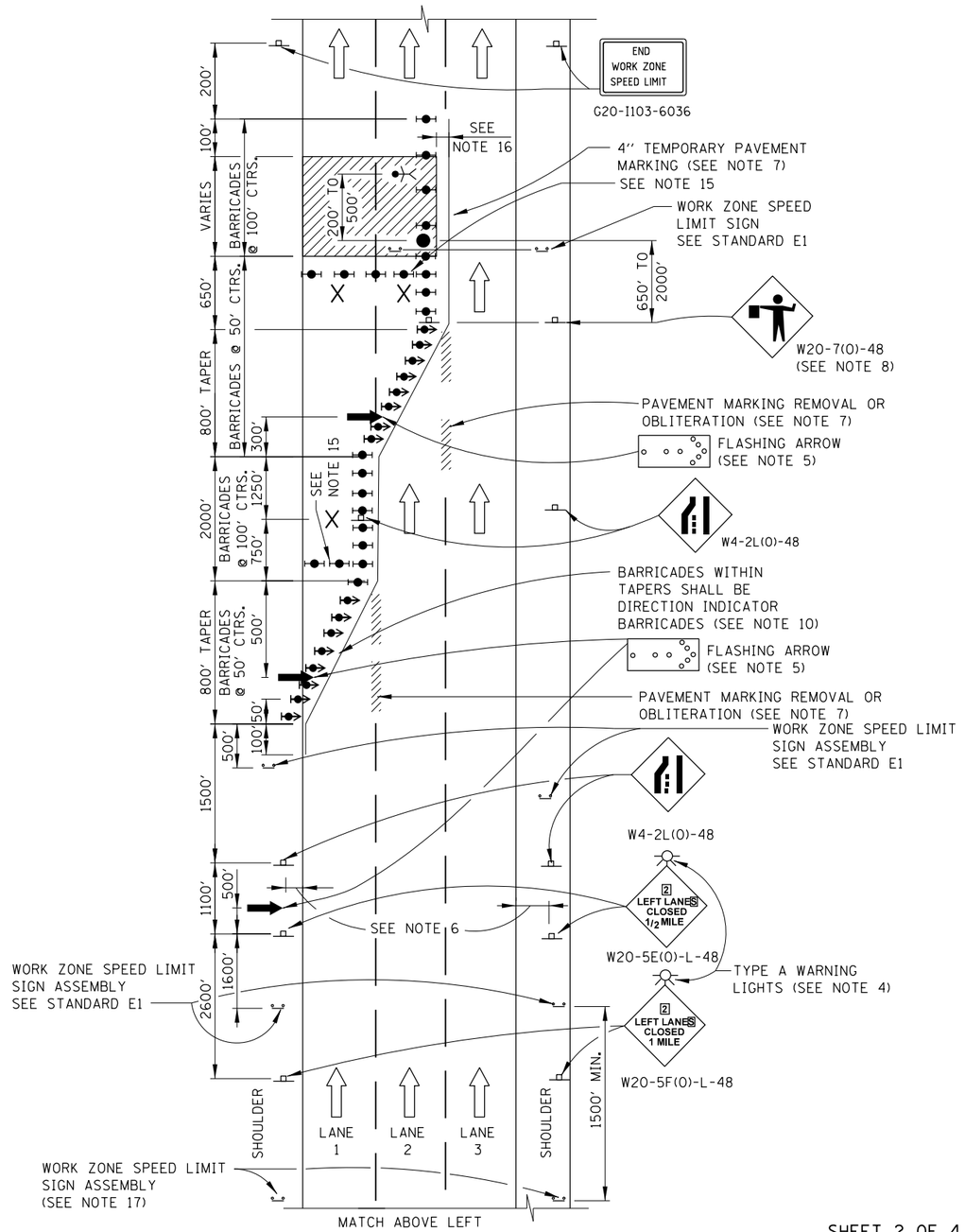
STANDARD E2-07



ADVANCE SIGNING

LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- DIRECTION INDICATOR BARRICADE WITH SEQUENTIAL FLASHING WARNING LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- FLAGGER WITH TRAFFIC CONTROL SIGN
- WORKER
- LANE CLOSED



TWO-LANE CLOSURE WITH BARRICADE

SEE SHEET 1 IN THIS SERIES FOR NOTES

APPROVED Paul Kovacs CHIEF ENGINEER DATE 5-1-2009

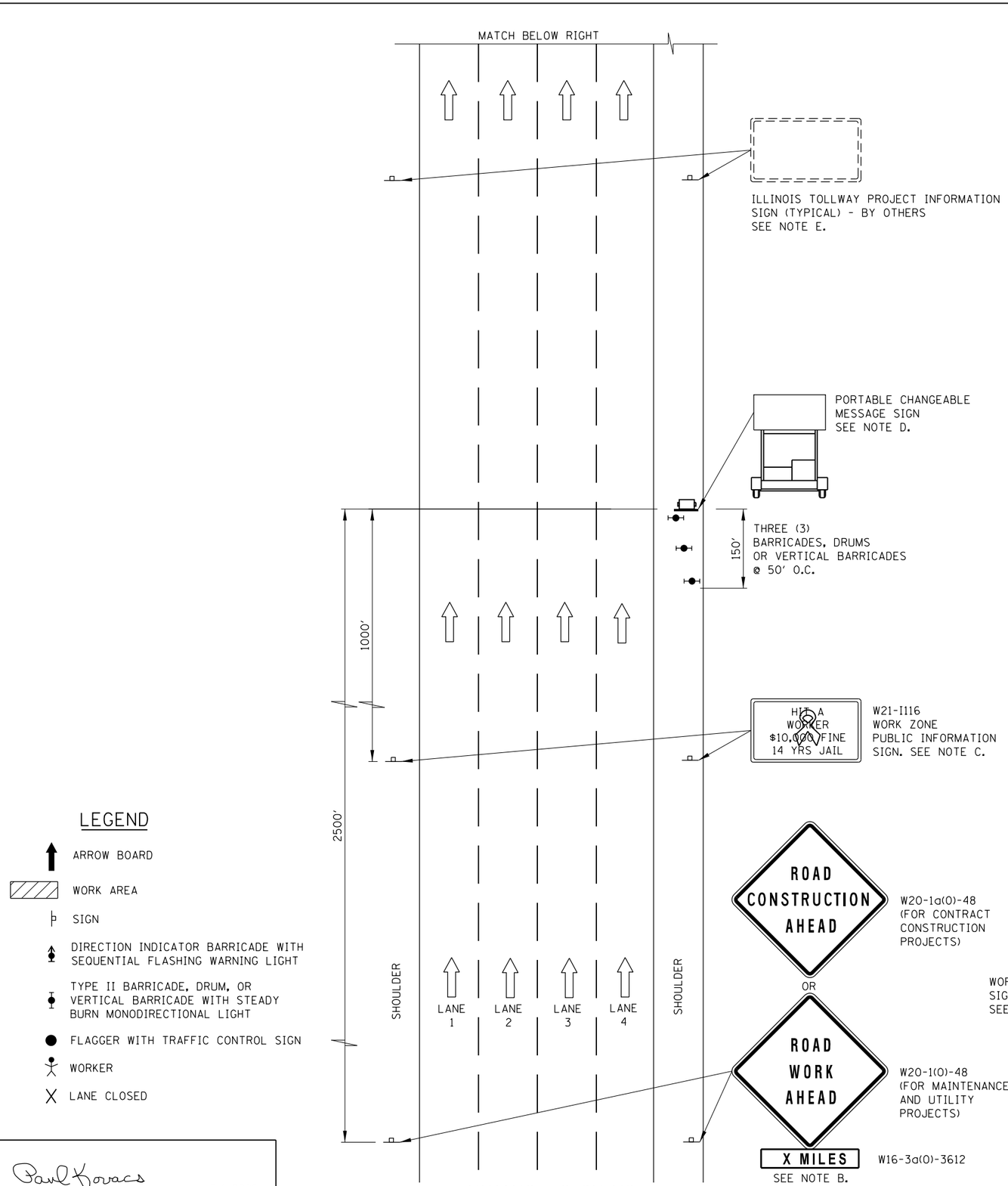
SHEET 2 OF 4

Illinois Tollway

LANE CLOSURE DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	726

STANDARD E2-07

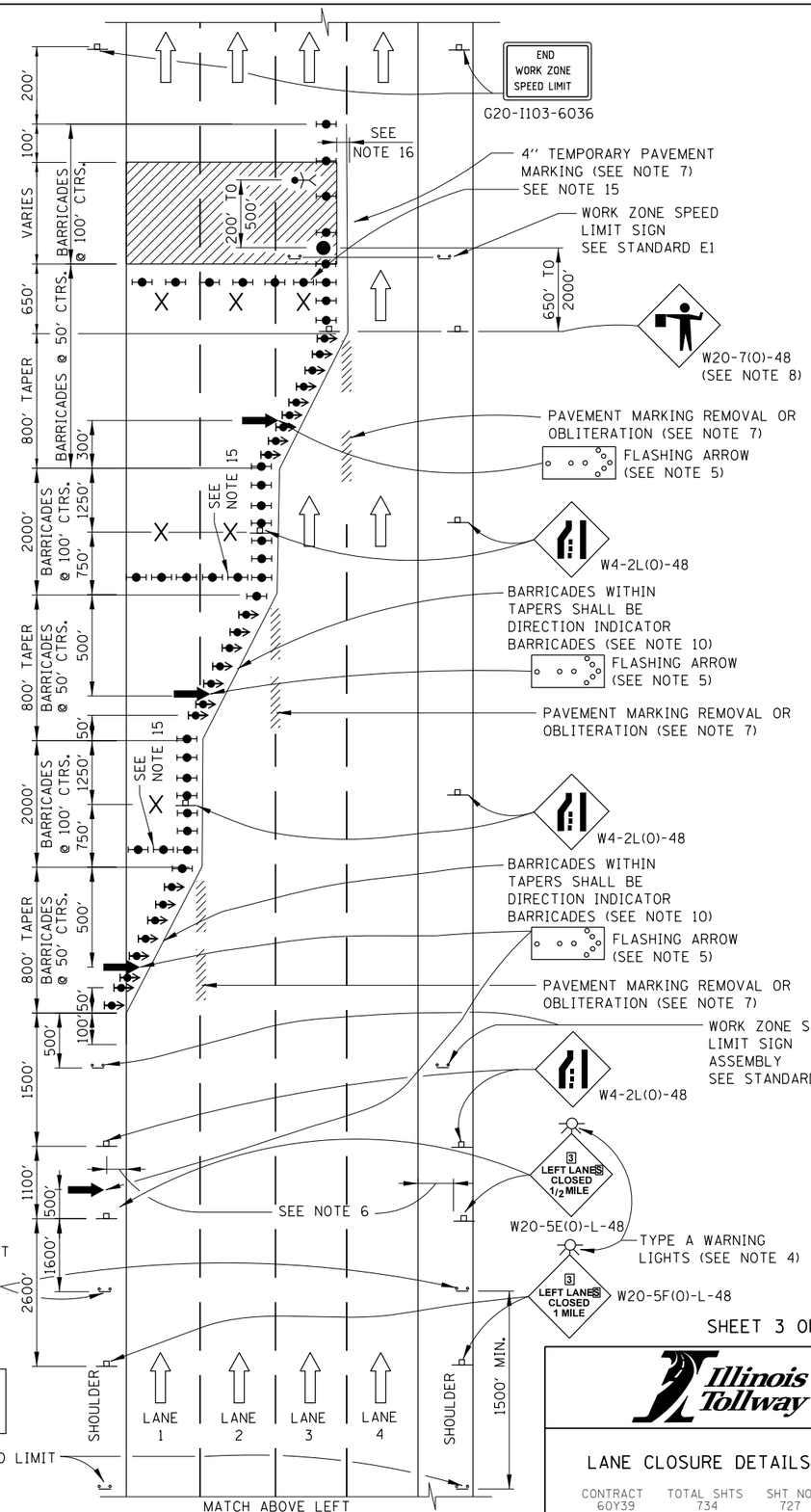


LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- DIRECTION INDICATOR BARRICADE WITH SEQUENTIAL FLASHING WARNING LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- FLAGGER WITH TRAFFIC CONTROL SIGN
- WORKER
- LANE CLOSED

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

ADVANCE SIGNING



THREE-LANE CLOSURE WITH BARRICADE

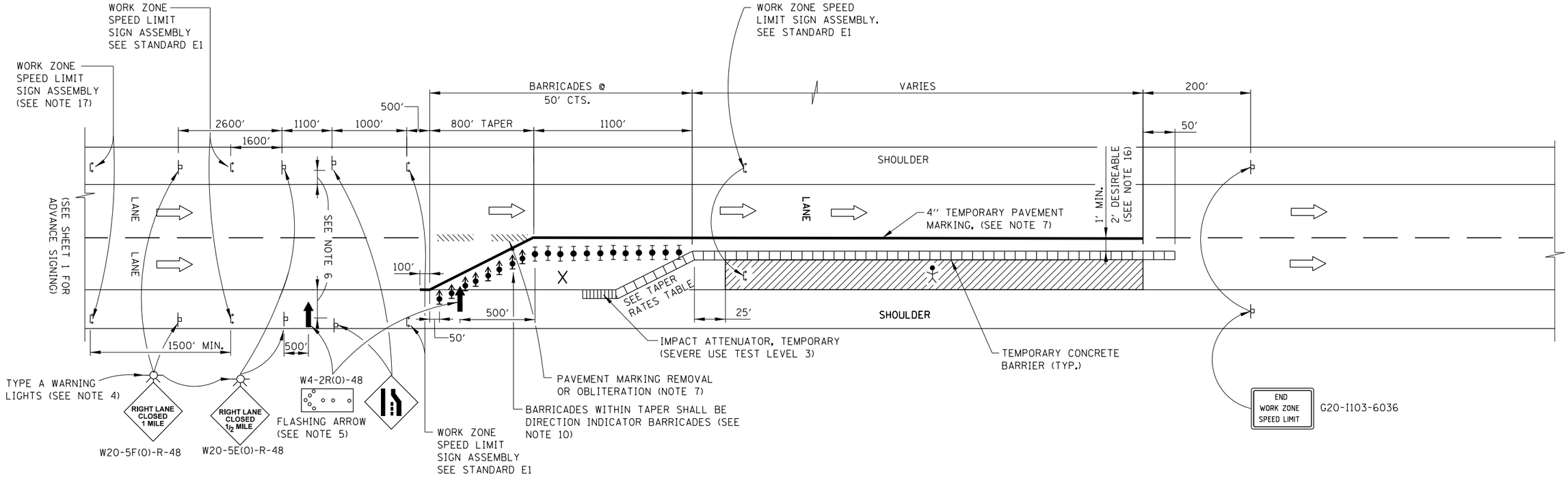
SHEET 3 OF 4

Illinois Tollway

LANE CLOSURE DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	727

STANDARD E2-07



ONE-LANE CLOSURE WITH BARRIER

TAPER RATES

WORK ZONE SPEED (mph)	SHY LINE (ft.)	BARRIER INSIDE SHY LINE	BARRIER AT OR BEYOND SHY LINE
65	8.5	28:1	19:1
60	8	26:1	18:1
55	7	24:1	16:1
50	6.5	21:1	14:1
45	6	18:1	12:1
40	5	16:1	10:1
35	4.5	15:1	9:1
30	4	13:1	8:1

LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN
- DIRECTION INDICATOR BARRICADE WITH SEQUENTIAL FLASHING WARNING LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- WORKER
- LANE CLOSED

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

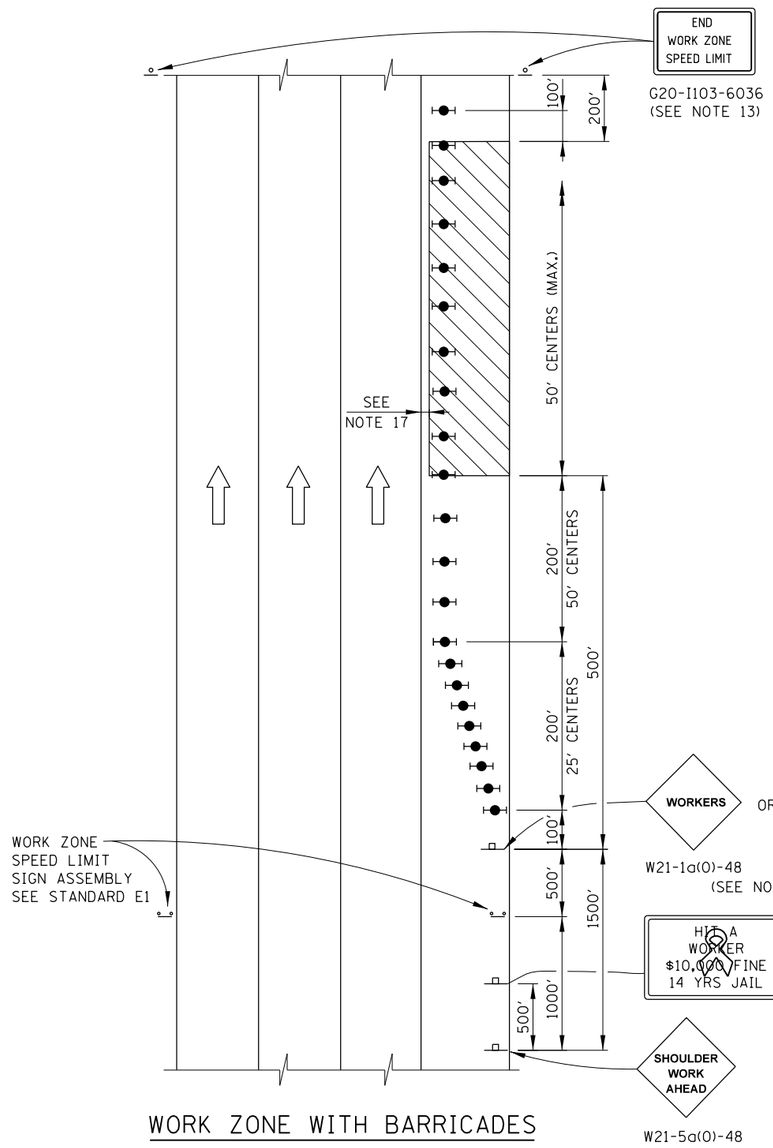
Paul Kovacs
APPROVED ..... DATE 3-31-2016
CHIEF ENGINEER

Illinois Tollway

LANE CLOSURE DETAILS

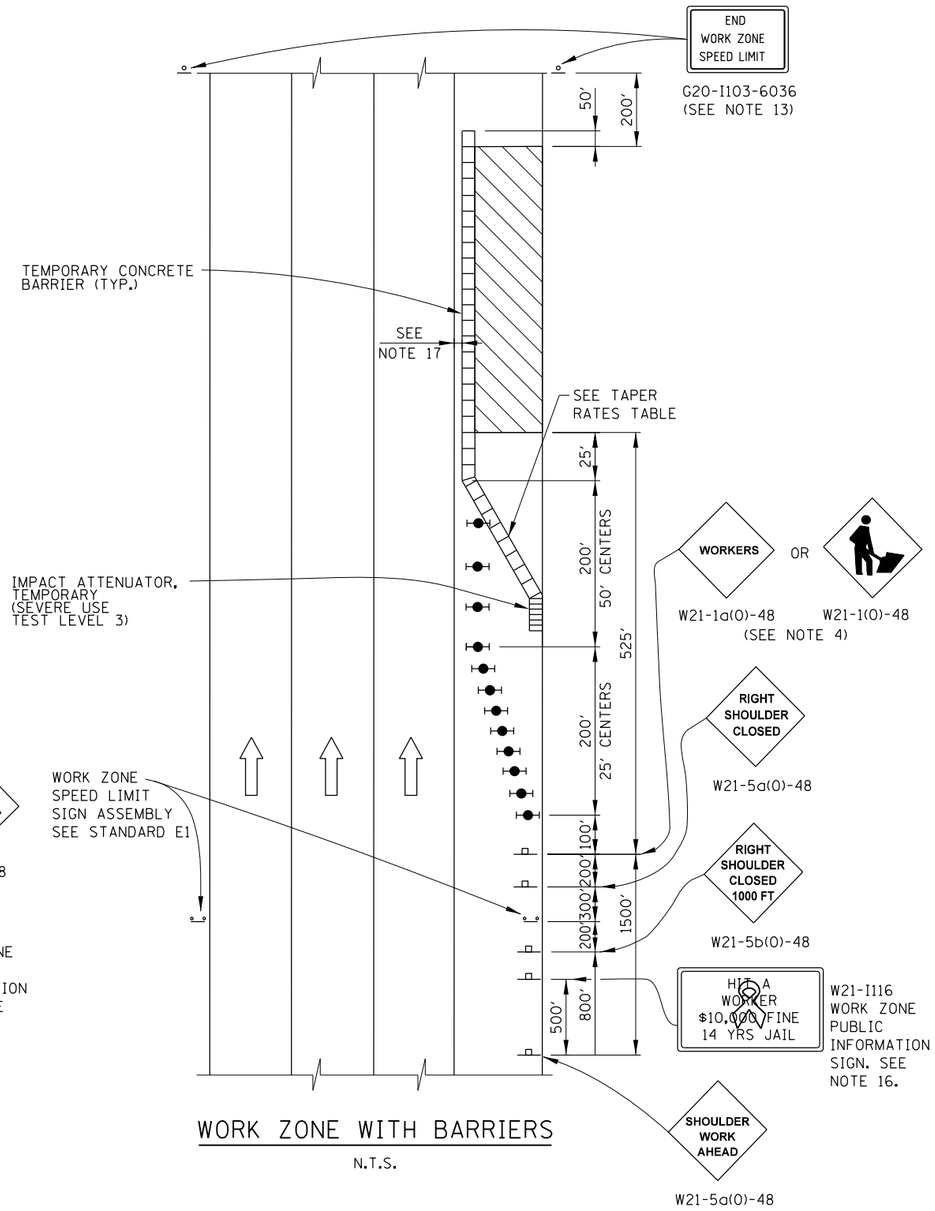
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	728

STANDARD E2-07



WORK ZONE WITH BARRICADES

N.T.S.



WORK ZONE WITH BARRIERS

N.T.S.

TAPER RATES

WORK ZONE SPEED (mph)	SHY LINE (ft.)	BARRIER INSIDE SHY LINE	BARRIER AT OR BEYOND SHY LINE
65	8.5	28:1	19:1
60	8	26:1	18:1
55	7	24:1	16:1
50	6.5	21:1	14:1
45	6	18:1	12:1
40	5	16:1	10:1
35	4.5	15:1	9:1
30	4	13:1	8:1

LEGEND

- WORK AREA
- SIGN
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT

GENERAL NOTES:

1. THE SHOULDER SHALL BE CLOSED WHEN A WORK ACTIVITY REQUIRING 15 OR MORE MINUTES IS PERFORMED AT A DISTANCE WHICH IS LESS THAN 15 FEET BUT NO CLOSER THAN 2 FEET FROM THE EDGE OF PAVEMENT.
2. THE ADJACENT EXTERIOR LANE SHALL BE CLOSED WHEN WORK IS PERFORMED WITHIN 2 FEET FROM THE EDGE OF PAVEMENT.
3. THE CHANNELIZING DEVICES WHICH SEPARATE THE WORK SPACE FROM THE ADJACENT TRAVEL LANE SHALL BE SPACED AT 25' FOR (200 FEET) AND AT A MAXIMUM OF 50' FOR ALL ADDITIONAL DEVICES.
4. WHEN THE WORKSITE IS UNATTENDED, SUBSTITUTE - ''SHOULDER WORK AHEAD'' SIGN.
5. WORKER SIGNS OR SHOULDER WORK SIGNS AND CHANNELIZATION DEVICES ARE PLACED ONLY ON THE SIDE OF THE ROADWAY ON WHICH THE ACTIVITY IS PERFORMED.
6. FOR SHOULDER CLOSURE EXTENDING OVERNIGHT, BARRICADE TYPE II WITH STEADY BURNING LIGHT, TYPE C SHALL BE USED.
7. FOR SHORT TERM CLOSURE (SUNRISE TO ONE HOUR BEFORE SUNSET) NOT EXTENDING INTO DARKNESS, CONES MAY BE USED.
8. ONE WORK ZONE SPEED LIMIT SIGN ASSEMBLY SHALL BE PLACED AT A DISTANCE OF 500' TO 2,500' MAXIMUM IN ADVANCE OF WORKERS THROUGHOUT THE SHOULDER CLOSURE. MOVING OPERATIONS MAY REQUIRE CONTINUOUS ADJUSTMENT OF THE SIGN ASSEMBLY LOCATION TO MAINTAIN THE ABOVE INTERVAL.
9. AN ADDITIONAL SIGN ASSEMBLY SHALL BE PLACED 500' BEYOND THE LAST ENTRANCE RAMP FOR EACH INTERCHANGE THAT FALLS WITHIN THE 2,500'.
10. THE SIGN ASSEMBLY SHALL BE PLACED NO CLOSER THAN 500' TO ANY OTHER SIGN.
11. THE WORK ZONE SPEED LIMIT SIGNS AND SIGN ASSEMBLY SHALL BE PROMPTLY REMOVED OR COVERED WHEN SHOULDER CLOSURE IS NOT IN USE.
12. ALL CONFLICTING SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED.
13. ''END WORK ZONE SPEED LIMIT'' SIGNS SHALL BE IN PLACE ONLY WHEN THE EXISTING POSTED SPEED > 55MPH.
14. FOR SHOULDER REPAIRS OR REPLACEMENT THE CHANNELIZING DEVICES SHALL BE PLACED AT THE EDGE OF PAVEMENT WHENEVER THE WORK ACTIVITIES RESULT IN A DROPOFF AT THE EDGE OF PAVEMENT.
15. ANY UNATTENDED OBSTACLE OR EXCAVATION LEFT ON THE SHOULDER OVERNIGHT SHALL BE IN COMPLIANCE WITH THE ROADWAY TRAFFIC CONTROL AND COMMUNICATIONS MANUAL.
16. THE WORK ZONE PUBLIC INFORMATION SIGN IS 60'' WIDE BY 48'' HIGH. THE CONTRACTOR SHALL OBTAIN THE CAMERA-READY ARTWORK REQUIRED FOR THE SIGN MESSAGE BY CONTACTING IDOT'S CENTRAL BUREAU OF OPERATIONS.
17. A 1'-0'' MINIMUM/2'-0'' DESIRABLE SHY DISTANCE SHALL BE PROVIDED, MEASURED BETWEEN EDGE OF PAVEMENT LANE MARKING TO THE EDGE OF THE TRAFFIC CONTROL DEVICE.

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

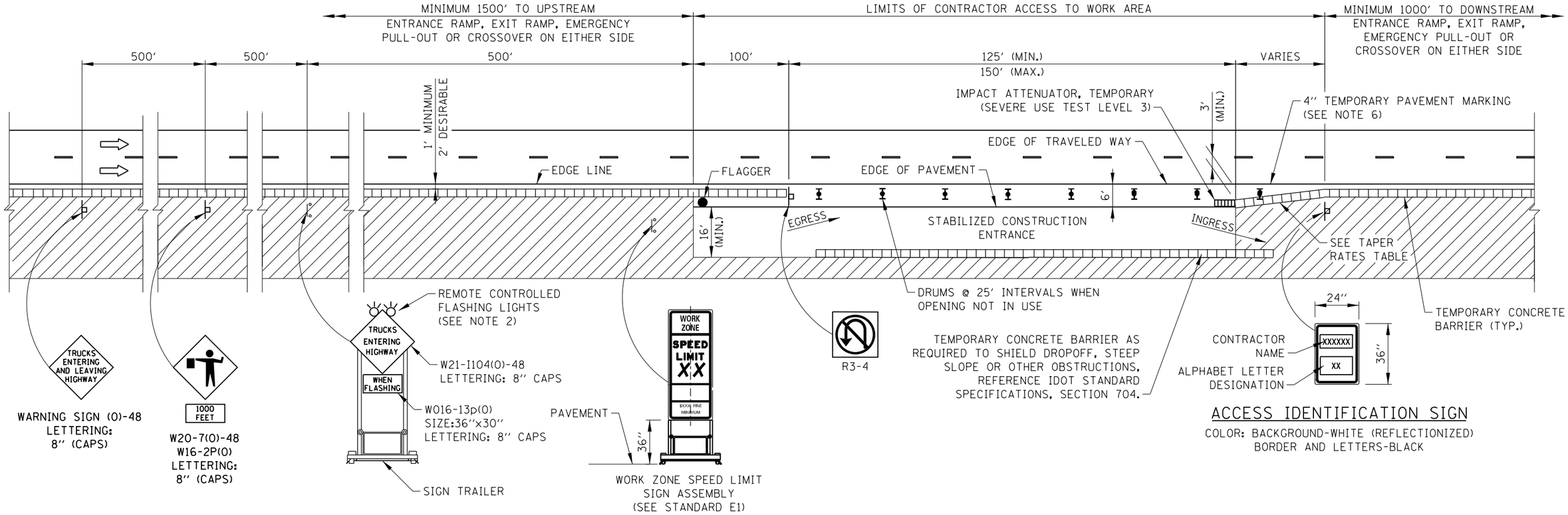
DATE	REVISIONS
1-01-11	CHANGED SYMBOL DESIGNATION
	REVISED NOTES
3-31-14	REVISED WORKER SIGN NUMBERS PER
	''MUTCD'' AND REVISED NOTES.
3-11-2015	REVISED NOTES
3-31-2016	ADD WORK ZONE WITH BARRIERS.
3-31-2017	ADDED TAPER RATE TABLE.

Illinois Tollway

SHOULDER CLOSURE DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	729

STANDARD E3-06



CONTRACTOR ACCESS TO WORK AREA

LEGEND

- ● FLAGGER
- ⊢ CONSTRUCTION SIGN ON SUPPORT PER ILLINOIS TOLLWAY STANDARD UNLESS NOTED
- ⇨ DIRECTION OF TRAFFIC FLOW
- ▨ WORK AREA
- ⊢ DRUM WITH STEADY BURNING MONODIRECTIONAL LIGHT

NOTES:

1. SIGNS DESIGNATED FOR THIS ACCESS TO WORK AREA SHALL BE COVERED OR TURNED AWAY FROM THE TRAFFIC WHEN THE FLAGGER IS NOT ON STATION AND THE ACCESS OPENINGS ARE NOT IN USE.
2. THE FLASHING WARNING LIGHT SHALL MEET THE REQUIREMENTS OF ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS AND BE OPERATED BY THE FLAGGER REMOTELY. THE LIGHTS SHALL BE FLASHING ONLY WHEN A VEHICLE IS ENTERING THE ILLINOIS TOLLWAY.
3. WHEN THREE LANES OR MORE ARE OPENED TO TRAFFIC, ADVANCE WARNING SIGNS AND ASSEMBLIES SHALL BE PROVIDED ON BOTH SIDES OF TRAVELED WAY.
4. WHEN CONTRACTOR ACCESS TO WORK AREA IS ON OPPOSITE SIDE FROM SHOWN, ALL INSTALLATIONS ARE MIRROR IMAGE.
5. FOR NIGHTIME OPERATIONS, TEMPORARY LIGHTING OF CONSTRUCTION ACCESS TO WORK AREA SHALL BE PROVIDED.
6. TEMPORARY PAVEMENT MARKINGS SHALL BE REPLACED AS OFTEN AS NECESSARY TO DELINEATE OPENINGS.
7. IF POSSIBLE, LANE CLOSURES SHALL BE UTILIZED TO ELIMINATE THE MERGING OF CONSTRUCTION TRAFFIC INTO THROUGH TRAFFIC LANES.
8. A 1'-0" MINIMUM/2'-0" DESIRABLE SHY DISTANCE SHALL BE PROVIVED, MEASURED BETWEEN EDGE OF PAVEMENT LANE MARKING TO THE EDGE OF THE TRAFFIC CONTROL DEVICES.
9. "TRUCKS ENTERING HIGHWAY" SIGN MAY BE SUPPORTED BY OPTIONAL POST OR STAND MOUNTED DEVICES WHEN POSITIONED BEHIND TEMPORARY CONCRETE BARRIER.

TAPER RATES

WORK ZONE SPEED (mph)	SHY LINE (ft.)	BARRIER INSIDE SHY LINE	BARRIER AT OR BEYOND SHY LINE
65	8.5	28:1	19:1
60	8	26:1	18:1
55	7	24:1	16:1
50	6.5	21:1	14:1
45	6	18:1	12:1
40	5	16:1	10:1
35	4.5	15:1	9:1
30	4	13:1	8:1

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

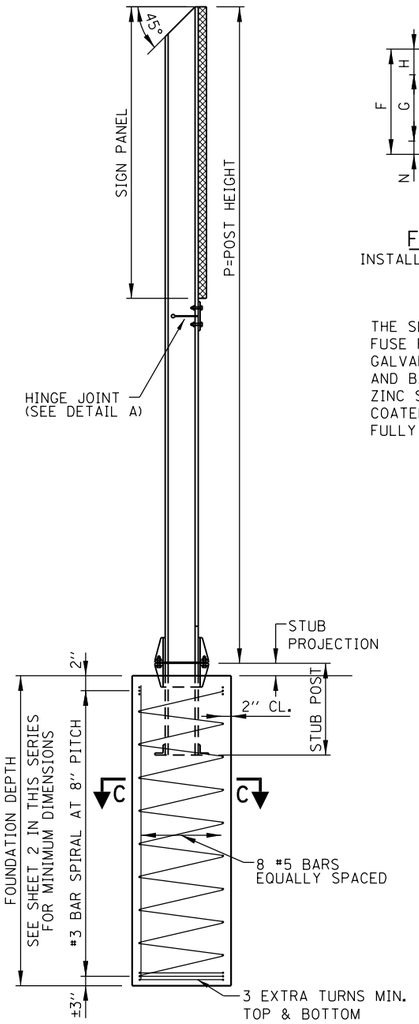
DATE	REVISIONS
3-01-2013	REVISED NOTES.
3-31-2014	REVISED NOTE FOR TEMPORARY CONCRETE BARRIER.
3-31-2017	ADDED TAPER RATES TABLE

Illinois Tollway

CONTRACTOR ACCESS TO WORK AREA

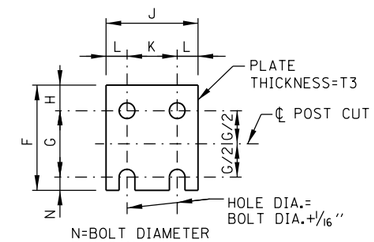
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	730

STANDARD E6-03



SIDE ELEVATION
POST & FOUNDATION

SEC. C-C

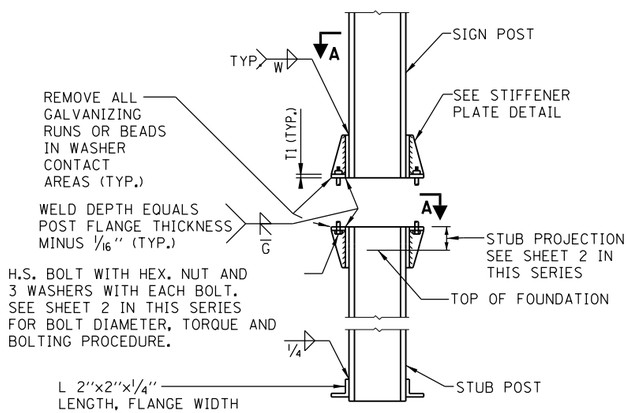


FUSE PLATE DETAIL
INSTALL WITH NOTCHES TOWARDS BASE

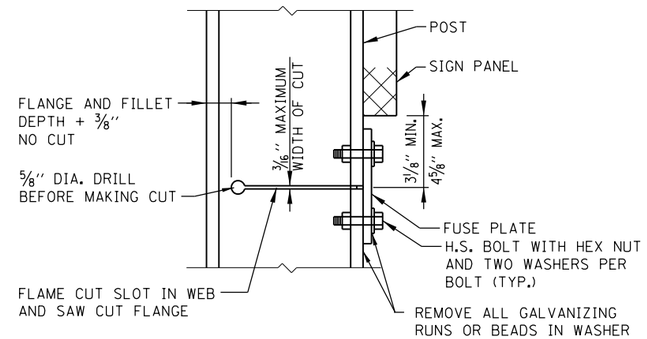
G & H DIM. TABLE		
BOLT DIA.	G	H
1/2"	2"	1 1/8"
5/8"	2 1/4"	1 1/4"
3/4"	2 1/2"	1 3/8"
7/8"	2 3/4"	1 1/2"
1"	3"	1 5/8"
1 1/8"	3 1/4"	1 3/4"
1 1/4"	3 1/2"	1 7/8"

FABRICATORS NOTES

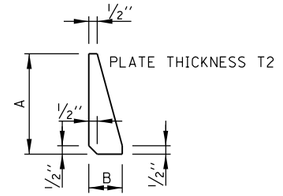
THE SLOT AND THE 5/8" DIA. HOLE IN THE WEB AND THE FUSE PLATE BOLT HOLES IN THE FLANGE SHALL BE MADE BEFORE GALVANIZING. POST FLANGE SHALL BE SAW CUT AFTER GALVANIZING AND BARE METAL SURFACES SHALL BE COATED WITH AN APPROVED ZINC SOLDER OR ZINC-RICH PAINT. THESE SURFACES SHALL NOT BE COATED UNTIL THE FUSE PLATE IS INSTALLED AND BOLTS FULLY TIGHTENED.



ELEVATION
SIGN POST & STUB POST



HINGE JOINT
DETAIL A

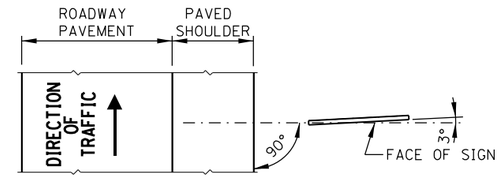


STIFFENER PLATE
DETAIL

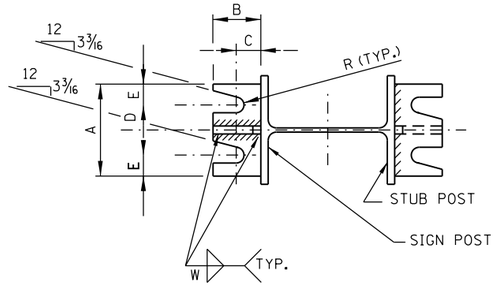
SEE SHEET 2 IN THIS
SERIES FOR DIMENSIONS

SHIM DETAIL

FURNISH 2-.012" THICK AND
2-.032" THICK SHIMS PER POST.
SHIMS SHALL BE FABRICATED
FROM BRASS SHIM STOCK
CONFORMING TO ASTM B36.



LOCATION SKETCH



SEC. A-A

GENERAL NOTES

DESIGN: THE LATEST EDITION OF THE "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS".

CONSTRUCTION: STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

LOADING: FOR 80 MPH WIND VELOCITY PLUS 30% GUST FACTOR NORMAL TO SIGN.

DESIGN STRESSES:
STRUCTURAL STEEL - PER AASHTO 20,000 P.S.I.
REINFORCING STEEL - 24,000 P.S.I.
CLASS SI CONCRETE - 1,400 P.S.I.
MINIMUM SOIL PRESSURE - 1.25 TONS/SQ. FT.

WELDING: ALL WELDING TO BE CONTINUOUS UNLESS OTHERWISE SHOWN. ALL WELDING TO BE DONE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS, AND STANDARD SPECIFICATIONS.

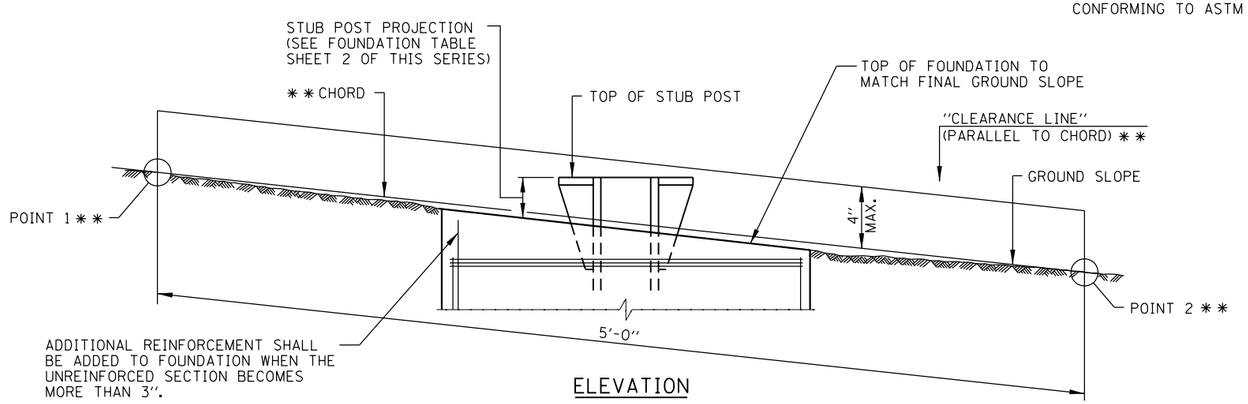
MATERIALS: ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND STANDARD SPECIFICATIONS.

ALL HIGH STRENGTH STEEL BOLTS, NUTS AND WASHERS SHALL CONFORM TO STANDARD SPECIFICATIONS.

HIGH STRENGTH STEEL BOLTS, NUTS AND HARDENED WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.

HIGH STRENGTH BOLTS IN BASE PLATES SHALL BE TIGHTENED TO THE TORQUE SHOWN ON SHEET 2 IN THIS SERIES.

AFTER FABRICATION, THE POST, FUSE PLATE, BASE PLATE AND UPPER 6" OF STUB POST SHALL BE HOT-DIP GALVANIZED ACCORDING TO ASTM M111, EXCEPT AS NOTED UNDER FABRICATOR NOTES.



ELEVATION
GROUND LINE & STUB POST

* * FOR ALL "POINT 1" AND "POINT 2"LOCATIONS, "CLEARANCE LINE" MUST BE AT OR ABOVE TOP OF STUB POST.

SHEET 1 OF 4

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 1-1-2010

DATE	REVISIONS
2-7-2012	ADDED STUB POST CLEARANCE
	DIMENSIONS, REVISED SIGN
	INSTALLATION CLEARANCE DIMENSIONS
11-1-2012	REVISED NOTES, MODIFIED SLOPE
	REQUIREMENTS FOR BREAKAWAY
	SUPPORTS

Illinois Tollway

BREAKAWAY SIGN SUPPORT DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	731

STANDARD F9-04

POST	FOUNDATION TABLE												BASE CONNECTION DATA TABLE									
	FOUNDATION			REINFORCEMENT							STUB POST			BOLT SIZE AND TORQUE	A	B	C	D	E	T1	T2	W	R
	DIA.	MIN. DEPTH	CY.* CONC.	VERTICAL BARS NO.	VERTICAL BARS SIZE	VERTICAL BARS LGTH.	BAR SPIRALS SIZE	BAR SPIRALS O.D.	BAR SPIRALS LGTH.	LBS.**	STUB LGTH.	STUB PROJECTION	LBS.***										
W6x9	2'-0"	6'-0"	.70	8	#5	5'-9"	#3	20½"	79'	78	2'-3"	3"	44	⅝" Ø x 3¼" LG. TORQUE = 450" #	6"	2¼"	1¼"	3½"	1¼"	¾"	½"	¼"	11/32 "
W6x15	2'-0"	6'-0"	.70	8	#5	5'-9"	#3	20½"	79'	78	2'-6"	3"	71										
W8x18	2'-0"	6'-0"	.70	8	#5	5'-9"	#3	20½"	79'	78	2'-6"	3"	85	¾" Ø x 3¾" LG. TORQUE = 750" #	6"	2½"	1⅜"	3¼"	1⅜"	1"	½"	5/16 "	13/32 "
W10x22	2'-6"	6'-6"	1.18	8	#5	6'-3"	#3	26½"	105'	92	3'-0"	2½"	110										
W10x26	2'-6"	7'-0"	1.27	8	#5	6'-9"	#3	26½"	112'	98	3'-0"	2½"	137	⅞" Ø x 4" LG. TORQUE = 950" #	7"	2¾"	1½"	4"	1½"	1"	¾"	⅜"	15/32 "
W12x26	2'-6"	7'-9"	1.41	8	#5	7'-6"	#3	26½"	119'	107	3'-0"	2½"	140										
W14x30	3'-0"	7'-3"	1.90	8	#5	7'-0"	#3	32½"	145'	113	3'-0"	2½"	150										
W14x38	3'-0"	8'-0"	2.09	8	#5	7'-9"	#3	32½"	153'	122	3'-6"	2½"	208	1" Ø x 4½" LG. TORQUE = 1100" #	7½"	3"	1¾"	4"	1¾"	1¼"	¾"	⅜"	17/32 "
W16x45	3'-0"	8'-6"	2.23	8	#5	8'-3"	#3	32½"	162'	130	3'-6"	2½"	233										

• QUANTITY OF CLASS SI CONCRETE CONSISTS OF ALL CONCRETE NECESSARY FOR ONE FOUNDATION. (CUBIC YARDS)

•• THIS INCLUDES REINFORCEMENT BARS AND SPIRAL HOOPING REQUIRED FOR ONE FOUNDATION.

••• INCLUDES WEIGHT OF STUB POST WITH ANGLES, GUSSETS, BASE PLATES, BOLTS, NUTS, WASHERS, PLUS BASE PLATES AND GUSSETS ON MAIN POST, PLUS FUSE PLATE (IF ANY) WITH BOLTS, NUTS AND WASHERS. (ONE POST)

EQUIVALENT TORQUE VALUES

450" # = 37.5' #
750" # = 62.5' #
950" # = 79.2' #
1100" # = 91.7' #

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:

1. ASSEMBLE POST TO STUB WITH H.S. BOLTS AND ONE OF THE THREE FLAT WASHERS ON EACH BOLT BETWEEN PLATES AS SHOWN.
2. SHIMS MAY BE USED BETWEEN PLATES TO LEVEL POST.
3. TIGHTEN BOLTS IN BASE PLATE IN A SYSTEMATIC ORDER TO THE REQUIRED TORQUE.
4. LOOSEN EACH BOLT AND RETIGHTEN TO THE REQUIRED TORQUE IN SAME ORDER AS INITIAL TIGHTENING.
5. BURR OR CENTER PUNCH THREADS AT JUNCTURE OF BOLT AND NUT TO PREVENT NUT FROM LOOSENING.

POST	FUSE PLATE DATA TABLE				FUSE PLATE BOLT SIZE TABLE SIGN DEPTH										
	J	K	L	T3	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
W6x9	4"	2¼"	⅞"	¼"	½"Ø x 1½"	½"Ø x 1½"	½"Ø x 1½"	⅝"Ø x 1¾"	⅝"Ø x 1¾"	⅝"Ø x 1¾"	---	---	---	---	---
W6x15	6"	3½"	1¼"	⅜"	½"Ø x 1¾"	½"Ø x 1¾"	⅝"Ø x 2"	⅝"Ø x 2"	¾"Ø x 2"	¾"Ø x 2"	¾"Ø x 2"	¾"Ø x 2"	⅞"Ø x 2"	⅞"Ø x 2"	---
W8x18	5¼"	2¾"	1¼"	⅜"	½"Ø x 1¾"	½"Ø x 1¾"	½"Ø x 1¾"	⅝"Ø x 2"	⅝"Ø x 2"	¾"Ø x 2"	¾"Ø x 2"	⅞"Ø x 2¼"	⅞"Ø x 2¼"	⅞"Ø x 2¼"	⅞"Ø x 2¼"
W10x22	5¾"	2¾"	1½"	½"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	⅝"Ø x 2"	⅝"Ø x 2"	¾"Ø x 2¼"	¾"Ø x 2¼"	⅞"Ø x 2¼"	¾"Ø x 2¼"	⅞"Ø x 2½"	1"Ø x 2½"
W10x26	5¾"	2¾"	1½"	⅝"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	⅝"Ø x 2¼"	⅝"Ø x 2¼"	¾"Ø x 2½"	¾"Ø x 2½"	⅞"Ø x 2½"	⅞"Ø x 2½"	1"Ø x 2¾"	1"Ø x 2¾"
W12x26	6½"	3½"	1½"	⅝"	---	---	---	---	---	⅝"Ø x 2¼"	---	---	⅞"Ø x 2½"	⅞"Ø x 2½"	1"Ø x 2½"
W14x30	6¾"	3½"	1⅝"	½"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	⅝"Ø x 2"	⅝"Ø x 2¼"	¾"Ø x 2¼"	¾"Ø x 2¼"	⅞"Ø x 2½"	1"Ø x 2½"
W14x38	6¾"	3½"	1⅝"	½"	---	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	½"Ø x 2"	⅝"Ø x 2¼"	⅝"Ø x 2¼"	¾"Ø x 2½"	¾"Ø x 2½"	⅞"Ø x 2½"	⅞"Ø x 2½"
W16x45	7"	3½"	1¾"	½"	---	---	---	½"Ø x 2"	½"Ø x 2"	⅝"Ø x 2¼"	⅝"Ø x 2¼"	⅝"Ø x 2¼"	¾"Ø x 2½"	¾"Ø x 2½"	⅞"Ø x 2½"

POST	FUSE PLATE DATA TABLE				FUSE PLATE BOLT SIZE TABLE SIGN DEPTH										
	J	K	L	T3	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	---
W6x9	4"	2¼"	⅞"	¼"	---	---	---	---	---	---	---	---	---	---	---
W6x15	6"	3½"	1¼"	⅜"	---	---	---	---	---	---	---	---	---	---	---
W8x18	5¼"	2¾"	1¼"	⅜"	⅞"Ø x 2¼"	⅞"Ø x 2¼"	---	---	---	---	---	---	---	---	---
W10x22	5¾"	2¾"	1½"	½"	1"Ø x 2¾"	1"Ø x 2¾"	1"Ø x 2¾"	1"Ø x 2¾"	1"Ø x 2¾"	1"Ø x 2¾"	---	---	---	---	---
W10x26	5¾"	2¾"	1½"	⅝"	1"Ø x 2¾"	1⅛"Ø x 3"	1⅛"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	---
W12x26	6½"	3½"	1½"	⅝"	1"Ø x 2¾"	1"Ø x 2¾"	1⅛"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	---
W14x30	6¾"	3½"	1⅝"	½"	1"Ø x 2¾"	1"Ø x 2¾"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	---
W14x38	6¾"	3½"	1⅝"	½"	1"Ø x 2½"	1"Ø x 2¾"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	---
W16x45	7"	3½"	1¾"	½"	⅞"Ø x 2½"	1"Ø x 2¾"	1"Ø x 2¾"	1⅛"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	1¼"Ø x 3"	---

PROCEDURE FOR FUSE PLATE BOLT TIGHTENING:

ALL FRICTION FUSE BOLTS SHALL BE TIGHTENED IN THE SHOP AS APPROVED BY THE ENGINEER ACCORDING TO ONE OF THE FOLLOWING METHODS:

1. TURN-OF-NUT TIGHTENING,
2. TIGHTENING BY USE OF A DIRECT TENSION INDICATOR.

THE ABOVE METHODS OF INSTALLATION AND TIGHTENING SHALL CONFORM TO THE LATEST ISSUE OF THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A-325 OR A-490 BOLTS, FOR SLIP-CRITICAL CONNECTIONS AS ISSUED BY THE RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS OF THE ENGINEERING FOUNDATION.

TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT.

BOLT DIA.	MIN. RESIDUAL BOLT TENSION	BOLT DIA.	MIN. RESIDUAL BOLT TENSION	BOLT DIA.	MIN. RESIDUAL BOLT TENSION
½"	12,050	⅞"	39,250	1¼"	71,700
⅝"	19,200	1"	51,500		
¾"	28,400	1⅛"	56,450		

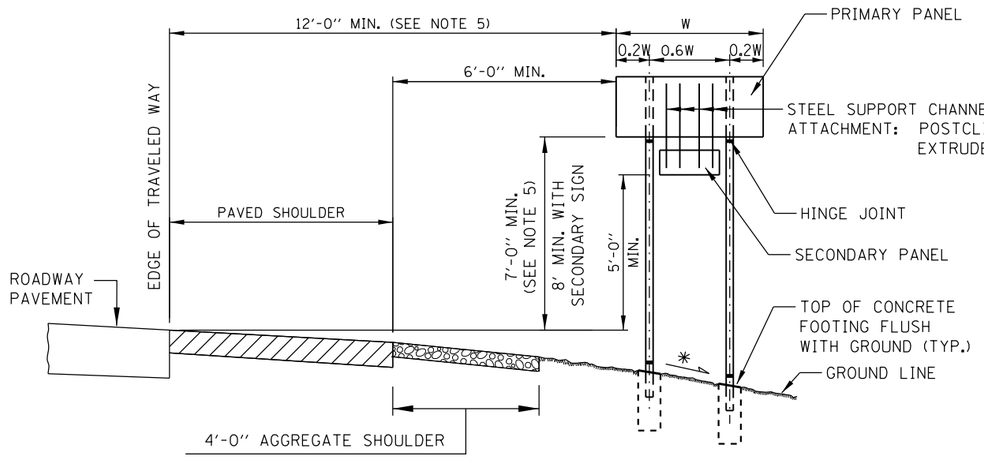
Paul Kovacs
APPROVED ..... DATE 1-1-2010
CHIEF ENGINEER

Illinois Tollway

BREAKAWAY SIGN SUPPORT DETAILS

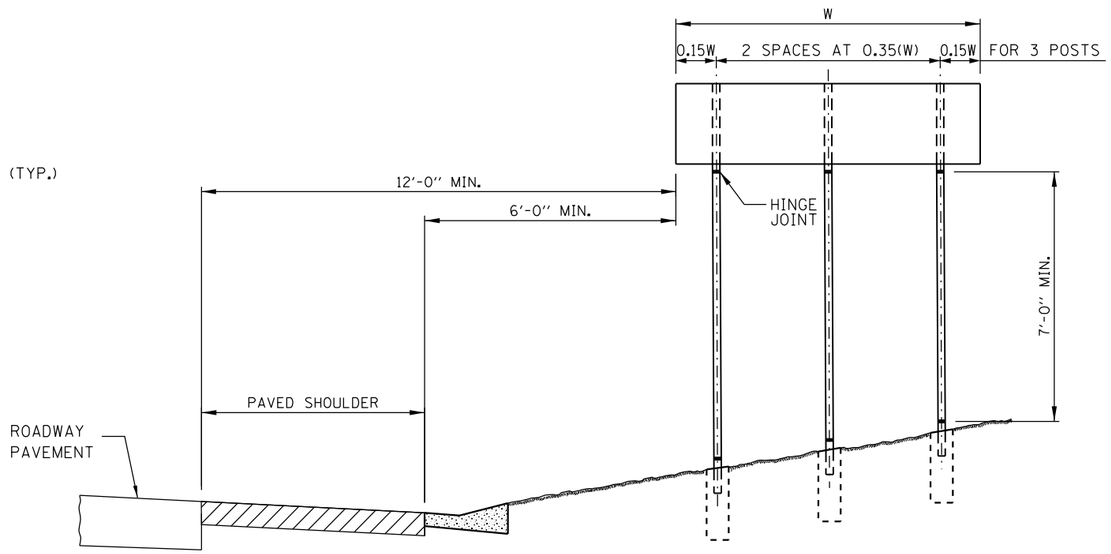
CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	732

STANDARD F9-04

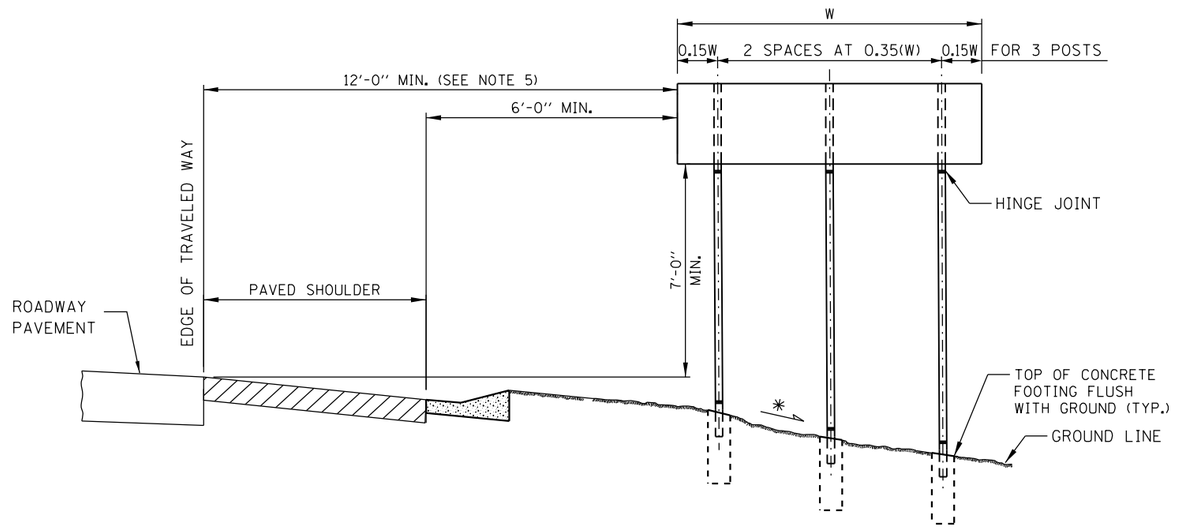


CONDITION 1 - SIGN INSTALLATION

(*) FORESLOPE 1:6 (V:H) OR FLATTER



CONDITION 3 - SIGN INSTALLATION



CONDITION 2 - SIGN INSTALLATION

(*) FORESLOPE 1:6 (V:H) OR FLATTER

NOTES:

1. SEE SIGN INSTALLATION SCHEDULE IN CONTRACT PLANS FOR DIMENSIONS.
2. THE DIMENSIONS OF ALL POSTS FOR GROUND MOUNTED SIGNS ARE BASED ON DESIGN CROSS SECTIONS. THE CONTRACTOR SHALL VERIFY REQUIRED POST LENGTHS IN THE FIELD, PRIOR TO SUBMITTING SHOP DRAWINGS AND POST FABRICATION TO MAINTAIN THE CLEARANCES SHOWN.
3. SIGN FOUNDATION ELEVATIONS TO BE BASED ON FINISHED SLOPES.
4. ANY ADDITIONAL SIGN TO BE ADDED LATER MUST BE SUPPORTED BY THE EXISTING SIGN PANEL AND NOT THE SIGN POST. MINIMUM CLEARANCES SHALL BE MAINTAINED.
5. SIGNS THAT ARE PLACED WELL OUTSIDE THE CLEAR ZONE MAY BE INSTALLED WITH A MINIMUM HEIGHT OF 5 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE HORIZONTAL ELEVATION OF THE NEAR EDGE OF TRAVELED ROADWAY.
6. MINIMUM HEIGHT OF LOWEST POST SHALL BE 7'-0'' MEASURED BETWEEN STUB PROJECTION AND HINGE JOINT.
7. FOR TWO POSTS SPACED LESS THAN 7 FEET APART, EACH POST SHALL HAVE A MASS LESS THAN 18 lb/ft.
8. WHEN THE TOTAL COMBINED WEIGHT OF THE TWO POSTS LOCATED WITHIN 7 FEET OF EACH OTHER EXCEEDS 600 lbs., THE SIGN SHALL BE PLACED WELL OUTSIDE THE CLEAR ZONE OR BE SHIELDED FROM VEHICULAR IMPACT.

UNSHIELDED SLOPE

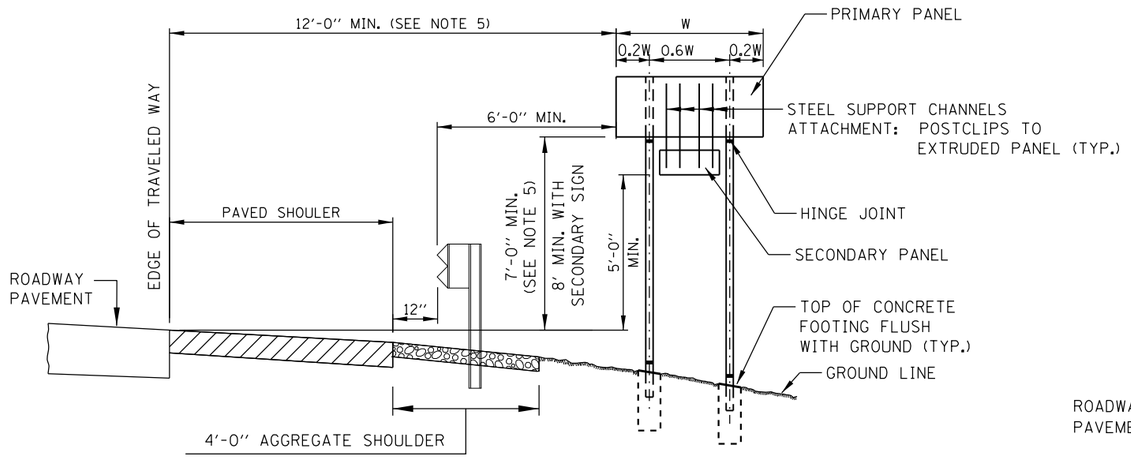
Paul Kovacs
APPROVED ..... DATE 1-1-2010
CHIEF ENGINEER

Illinois Tollway

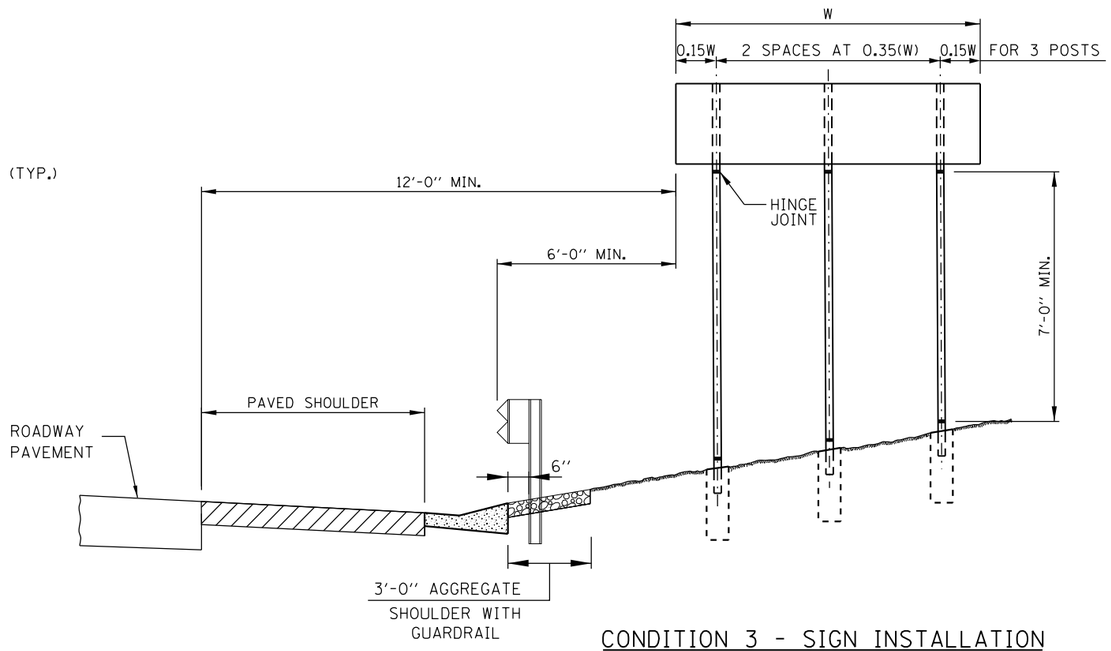
BREAKAWAY SIGN SUPPORT DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	733

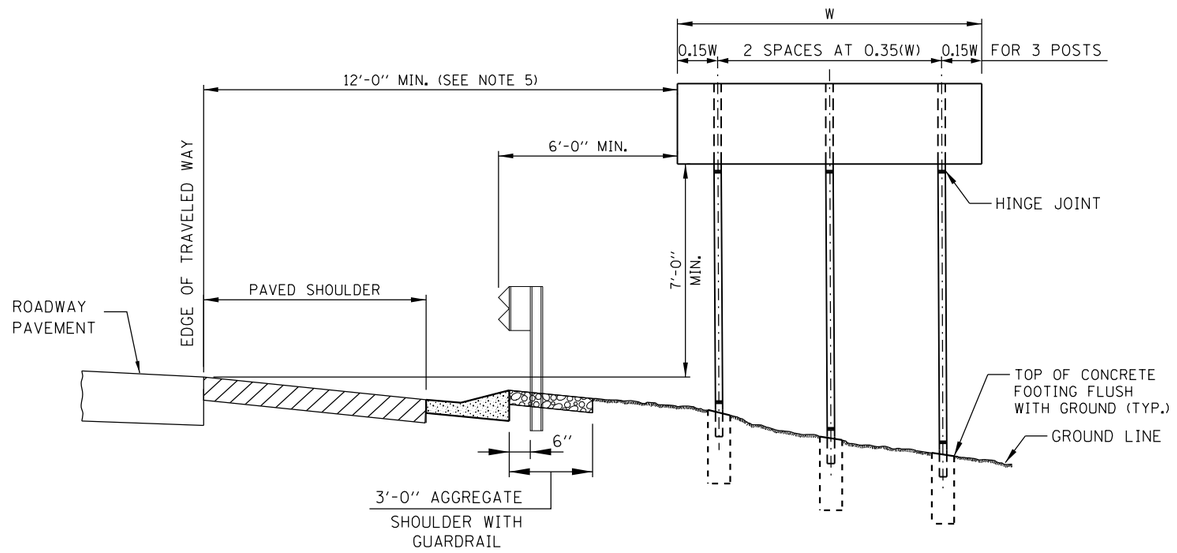
STANDARD F9-04



CONDITION 1 - SIGN INSTALLATION



CONDITION 3 - SIGN INSTALLATION



CONDITION 2 - SIGN INSTALLATION

NOTES:

1. SEE SIGN INSTALLATION SCHEDULE IN CONTRACT PLANS FOR DIMENSIONS.
2. THE DIMENSIONS OF ALL POSTS FOR GROUND MOUNTED SIGNS ARE BASED ON DESIGN CROSS SECTIONS. THE CONTRACTOR SHALL VERIFY REQUIRED POST LENGTHS IN THE FIELD, PRIOR TO SUBMITTING SHOP DRAWINGS AND POST FABRICATION TO MAINTAIN THE CLEARANCES SHOWN.
3. SIGN FOUNDATION ELEVATIONS TO BE BASED ON FINISHED SLOPES.
4. ANY ADDITIONAL SIGN TO BE ADDED LATER MUST BE SUPPORTED BY THE EXISTING SIGN PANEL AND NOT THE SIGN POST. MINIMUM CLEARANCES SHALL BE MAINTAINED.
5. SIGNS THAT ARE PLACED WELL OUTSIDE THE CLEAR ZONE MAY BE INSTALLED WITH A MINIMUM HEIGHT OF 5 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE HORIZONTAL ELEVATION OF THE NEAR EDGE OF TRAVELED ROADWAY.
6. MINIMUM HEIGHT OF LOWEST POST SHALL BE 7'-0'' MEASURED BETWEEN STUB PROJECTION AND HINGE JOINT.
7. FOR TWO POSTS SPACED LESS THAN 7 FEET APART, EACH POST SHALL HAVE A MASS LESS THAN 18 lb/ft.
8. WHEN THE TOTAL COMBINED WEIGHT OF THE TWO POSTS LOCATED WITHIN 7 FEET OF EACH OTHER EXCEEDS 600 lbs., THE SIGN SHALL BE PLACED WELL OUTSIDE THE CLEAR ZONE OR BE SHIELDED FROM VEHICULAR IMPACT.

SHIELDED SLOPE

Paul Kovacs
APPROVED ..... DATE 1-1-2010
CHIEF ENGINEER

Illinois Tollway

BREAKAWAY SIGN SUPPORT DETAILS

CONTRACT	TOTAL SHTS	SHT NO.
60Y39	734	734

STANDARD F9-04