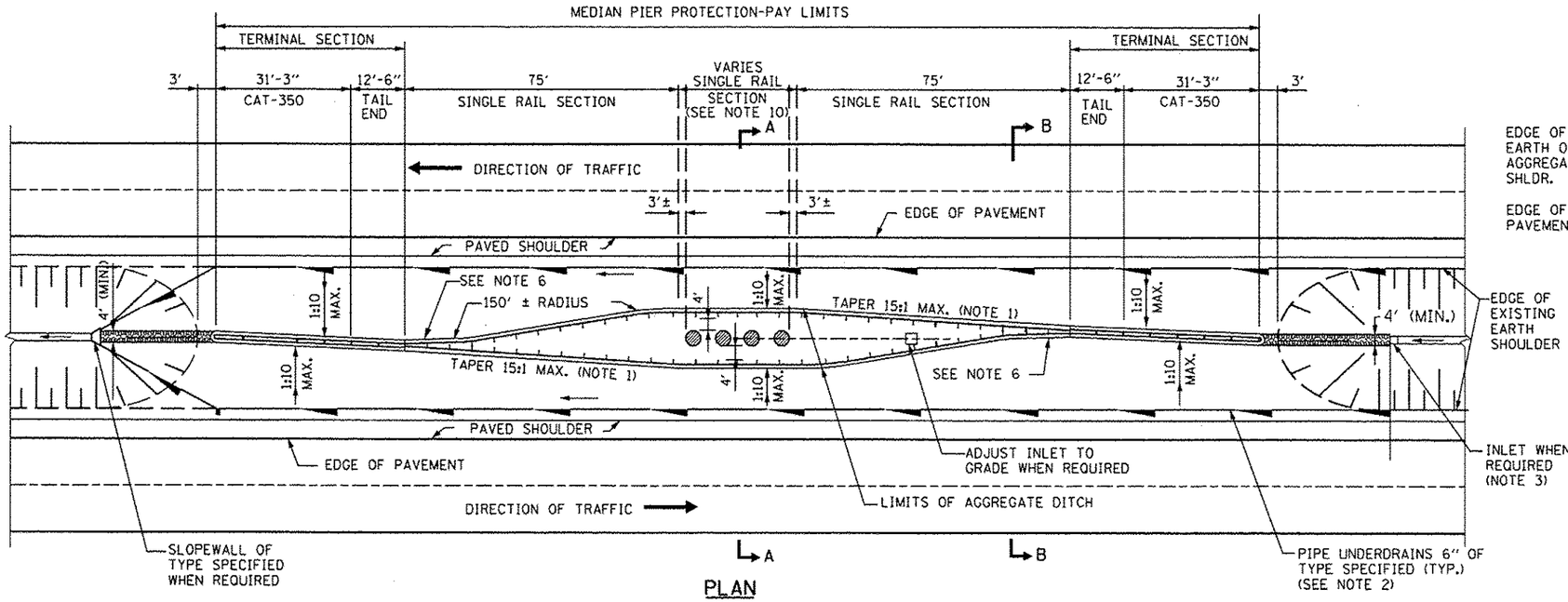
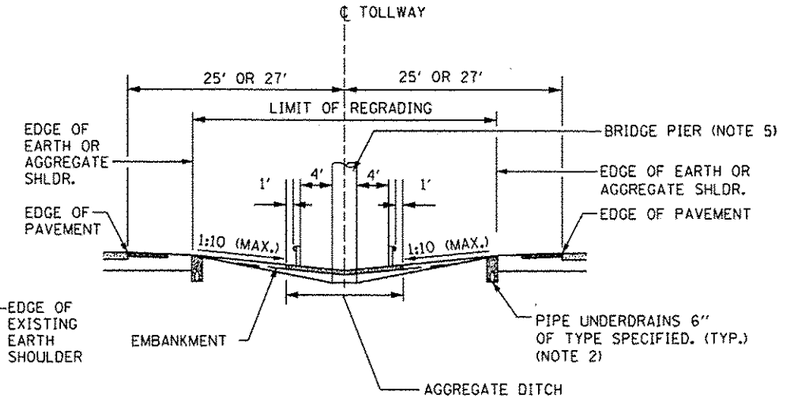
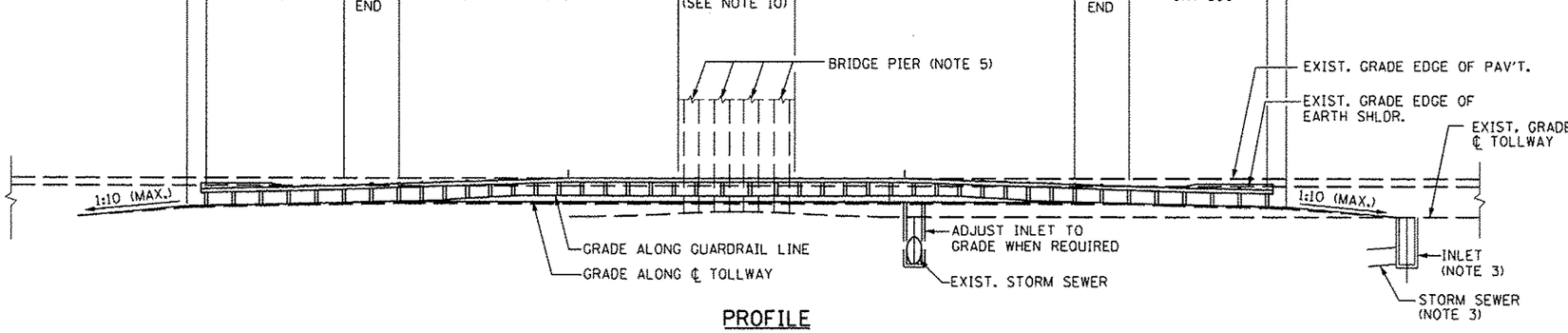


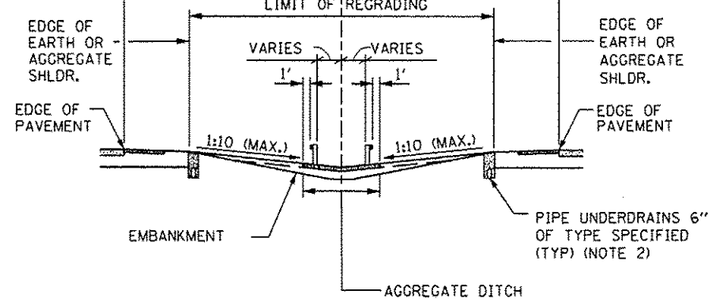
PLAN



SECTION A-A



PROFILE



SECTION B-B

NOTES:

1. FLATTER RATE OF TAPER MAY BE USED WHERE REQUIRED TO AVOID DAMAGE TO EXISTING STORM SEWERS.
2. PIPE UNDERDRAIN REQUIRED IN SAG VERTICAL CURVE OR WHEN FROST HEAVE IS EXPECTED.
3. AN INLET IS TO BE PROVIDED WHEN REQUIRED. THE INLET SHALL BE CONNECTED TO THE NEAREST DOWNSTREAM INLET OR CULVERT.
4. MAXIMUM CROSS SLOPE FROM THE EDGE OF THE EARTH SHOULDER TO THE FACE OF THE RAIL SHALL BE 1:10.
5. BRIDGE PIER OR OVERHEAD SIGN PIER.
6. SINGLE W6x8.5 STEEL POST WITH BLOCKOUTS MAY BE USED FOR THIS POST.
7. RAIL HEIGHT SHALL BE MEASURED FROM EXISTING SURFACE 1'-0" IN FRONT OF RAIL.
8. SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
9. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURE'S DETAILS AND SPECIFICATIONS.
10. SEE PLAN FOR LIMITS.
11. THE GUARDRAIL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE RESEARCH PROGRAM (NCHRP) REPORT 350. NO MODIFICAOFTION ANY KIND TO THIS STANDARD DRAWING SHALL BE PERMITTED.

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

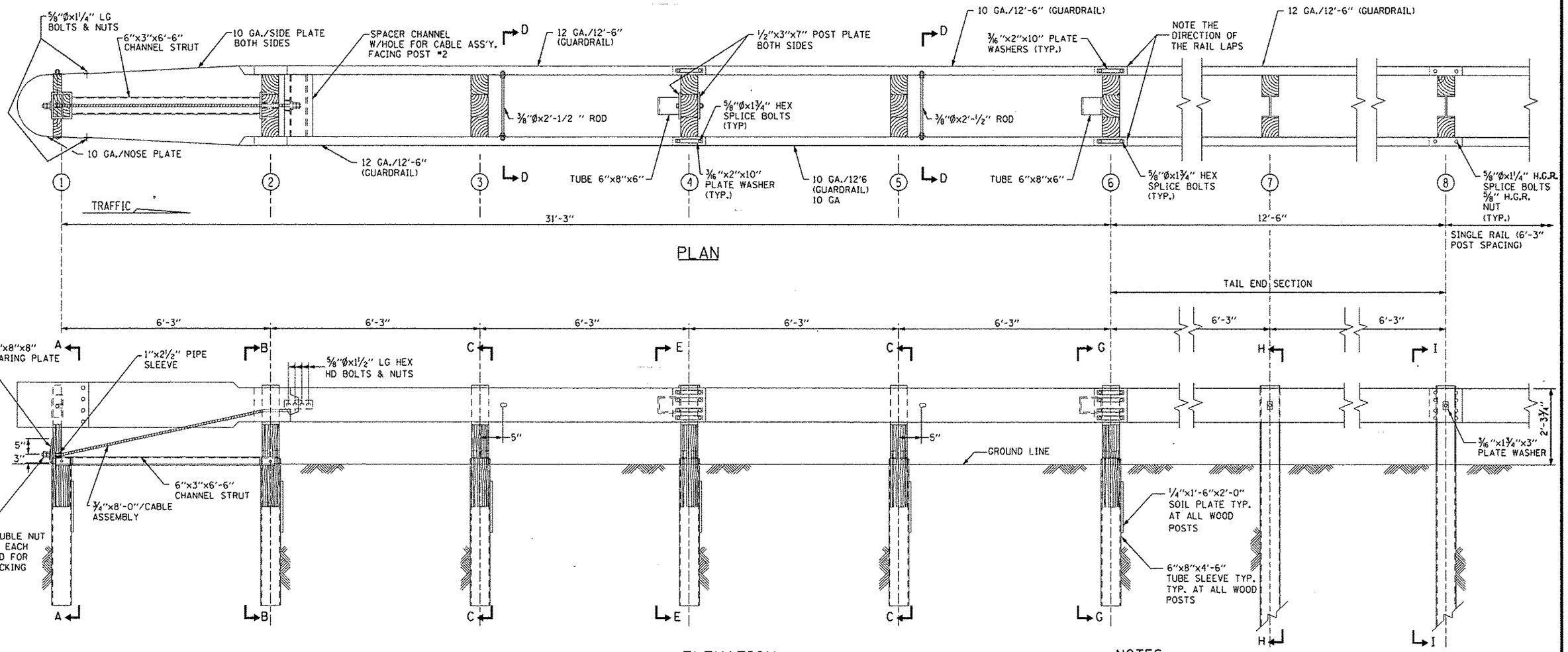
CONTRACT 60I31 SHEET 901 OF 963
SHEET 1 OF 3

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
7-1-2009	DITCH DIMENSION ON SECTION A-A
	MODIFIED GUARDRAIL BARRIER TERMINAL DIMENSIONS
	REVISED NOTES
3-1-2010	ADDED TERMINAL TAIL END SECTION
	REVISED NOTES

MEDIAN PIER PROTECTION

STANDARD C2-02



NOTES:

1. RAIL ELEMENTS, BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AASHTO M232 (ASTM A-153).
2. THE BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-307, GRADE A. HIGH STRENGTH BOLTS, NUTS AND WASHERS SHALL CONFORM TO AASHTO M164 (ASTM A-325).
3. POSTS, BLOCKS, PLATES AND MISCELLANEOUS ACCESSORIES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M183 (ASTM A-36) AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 (ASTM A-123).
4. THE WOOD TERMINAL POSTS SHALL BE TREATED AND CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
5. HOLLOW STRUCTURAL TUBING SHALL CONFORM TO ASTM-500, GRADE B OR A-501.
6. THE 3/16" STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M232 (ASTM A-153).

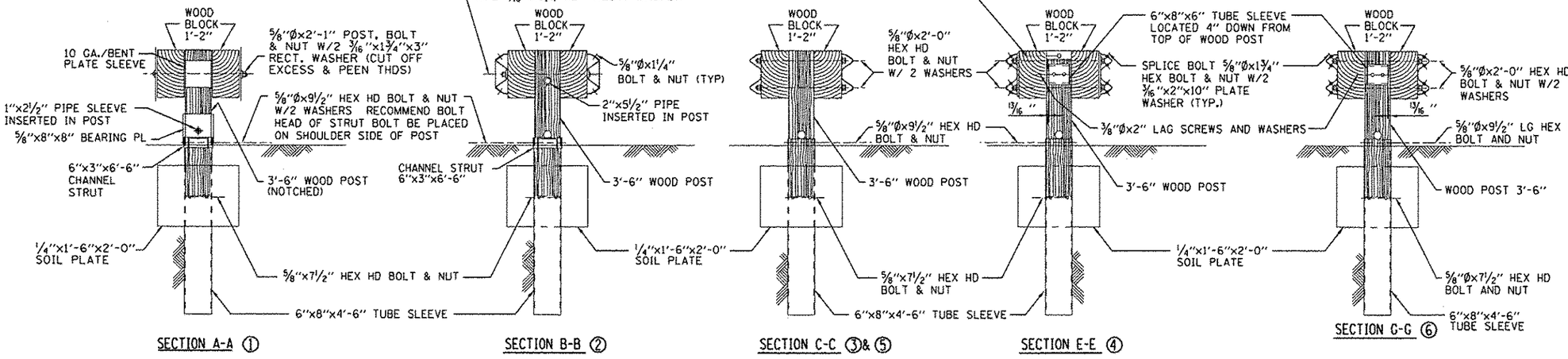
MEDIAN PIER PROTECTION-TERMINAL SECTION

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

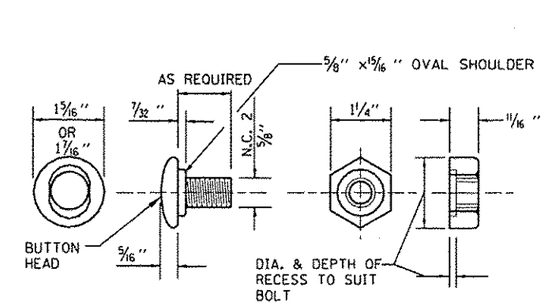
Illinois Tollway
Open Roads for a Faster Future

MEDIAN PIER PROTECTION

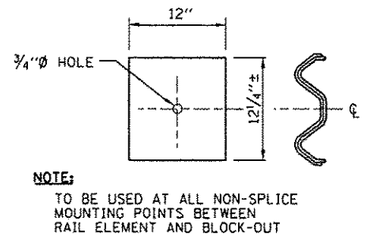
STANDARD C2-02



MEDIAN PIER PROTECTION-TERMINAL SECTION

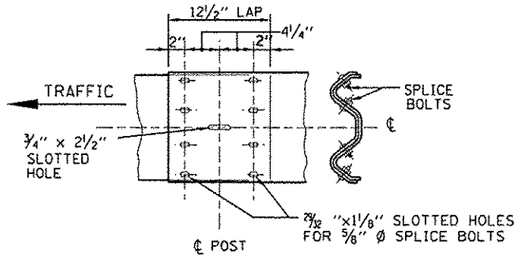


POST OR SPLICE BOLT & NUT



NOTE:
TO BE USED AT ALL NON-SPLICE MOUNTING POINTS BETWEEN RAIL ELEMENT AND BLOCK-OUT

PLATE "A"



RAIL ELEMENT SPLICE

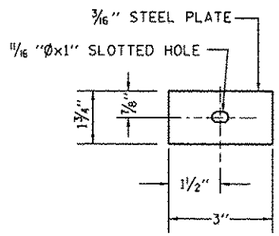
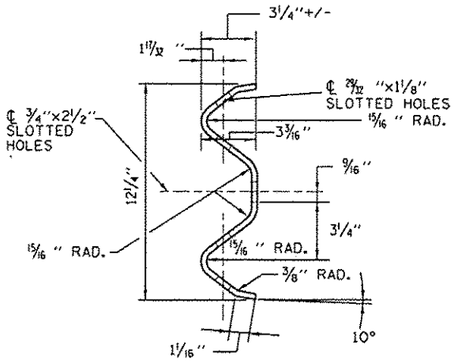
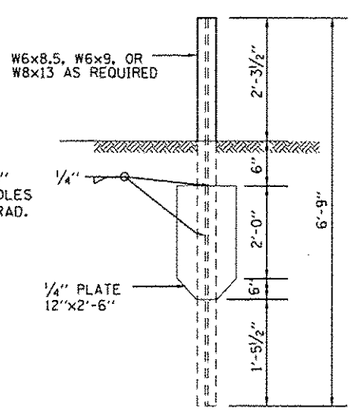
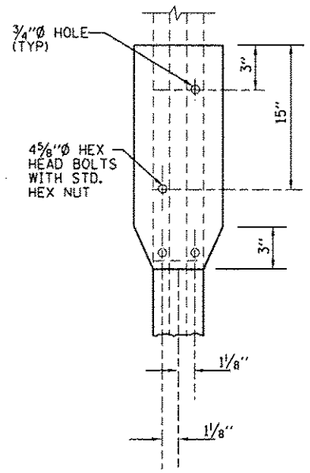


PLATE WASHER



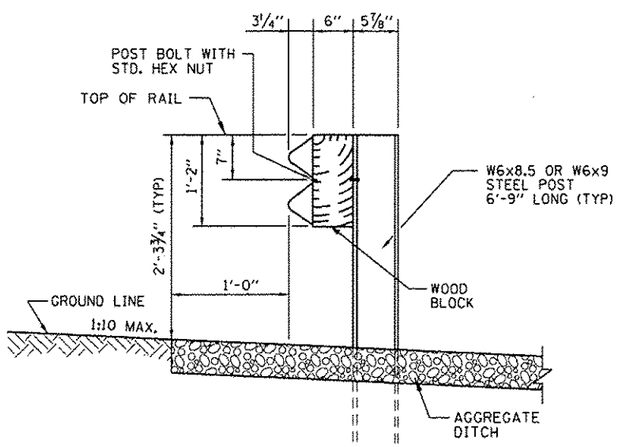
RAIL ELEMENT SECTION





ALTERNATE SOIL PLATE CONNECTION

SOIL PLATE FOR POST REINFORCEMENT



MEDIAN PIER PROTECTION-SINGLE RAIL SECTION

NOTES:

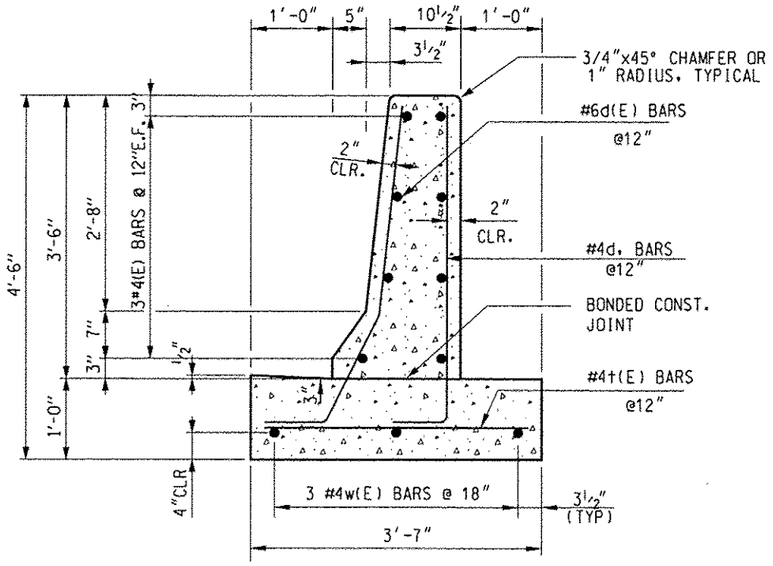
1. ALL HOLES IN POSTS AND BLOCK-OUTS SHALL BE 3/4"Ø UNLESS OTHERWISE NOTED.
2. IN THE EVENT OF AN OBSTRUCTION PREVENTING POST INSTALLATION, UP TO TWO (2) CONSECUTIVE POSTS MAY BE OMITTED IF 2-PLY GUARDRAIL PANELS ARE USED FROM THIS LENGTH.
3. RAIL ELEMENT SHALL BE FURNISHED IN NOMINAL LENGTHS OF 12'-6". AN ALTERNATE 25'-0" NOMINAL LENGTH MAY BE FURNISHED AT THE OPTION OF THE CONTRACTOR.
4. ALL RAIL ELEMENTS AND ACCESSORIES SHALL CONFORM TO STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL LOAD TEST 10 PERCENT OF ALL EXPANSION ANCHOR BOLTS IN INSTALLATION IN THE PRESENCE OF THE ENGINEER. THE EQUIPMENT AND METHOD USED SHALL MEET THE APPROVAL OF THE ENGINEER. THE MINIMUM TEST LOAD SHALL BE 8,000 POUNDS FOR 7/8"Ø BOLTS AND 3,000 POUNDS FOR 5/8"Ø BOLTS IN DIRECT OF PULL FOR EACH ANCHOR THAT FAILS THE TEST REQUIREMENTS, TWO MORE ANCHOR BOLTS, PICKED BY THE ENGINEER SHALL BE TESTED. EACH ANCHOR BOLT THAT FAILS TO MEET THE TEST REQUIREMENTS SHALL BE RESET OR REMOVED AND THE HOLE DRILLED DEEPER. ALL RESET ANCHOR BOLTS SHALL MEET THE MINIMUM TEST REQUIREMENTS.
6. THE MAXIMUM POST SPACING SHALL BE 6'-3".

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

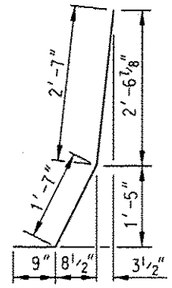
Illinois Tollway
Open Roads for a Faster Future

MEDIAN PIER PROTECTION

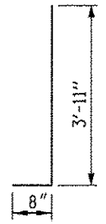
STANDARD C2-02



TYPE F BARRIER



#6d(E) BAR



d(E) BAR

BENDING DIAGRAMS

NOTES:

1. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
2. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30 FEET.
3. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE WITH AN APPROVED FINISHING TOOL AT THE DISCRETION OF THE ENGINEER SUBJECT TO THE SATISFACTORY CONTROL OF CRACKING. THE SAWING OF CONTRACTION JOINTS IN THE BARRIER WALL SHALL NOT BE PERMITTED.
4. REINFORCING BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
5. REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES ", ACI 315, LATEST EDITION.
6. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
7. BARRIER SHALL BE USED WITH ALL NEW CONSTRUCTION, OR RECONSTRUCTION OF EXISTING BARRIERS.

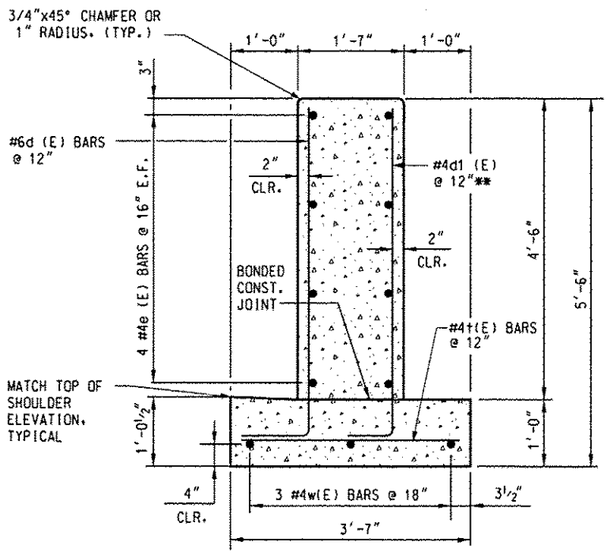
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

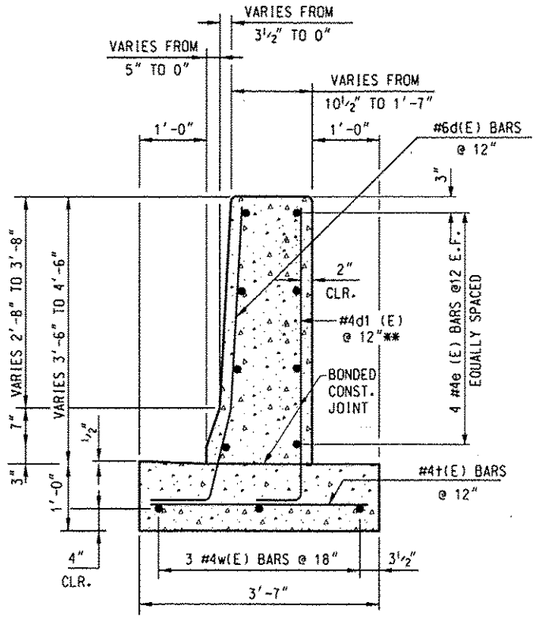
DATE	REVISIONS
7-1-2009	REVISED NOTES
2-7-2012	DELETED TYPE II BARRIER AND REVISED REINFORCEMENT BARS

SINGLE FACE REINFORCED CONCRETE BARRIER

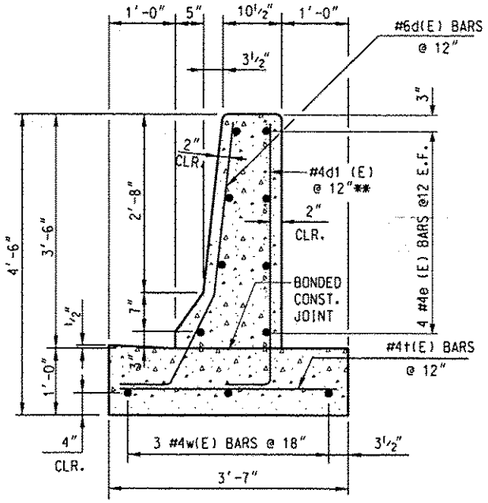
STANDARD C3-02



SECTION C-C

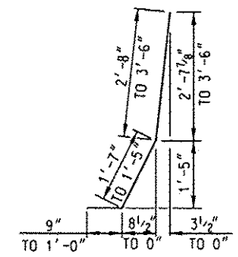


SECTION B-B

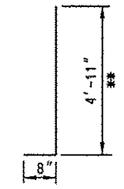


SECTION A-A

** CUT TO FIT IN FIELD
2" VERTICAL CLR.

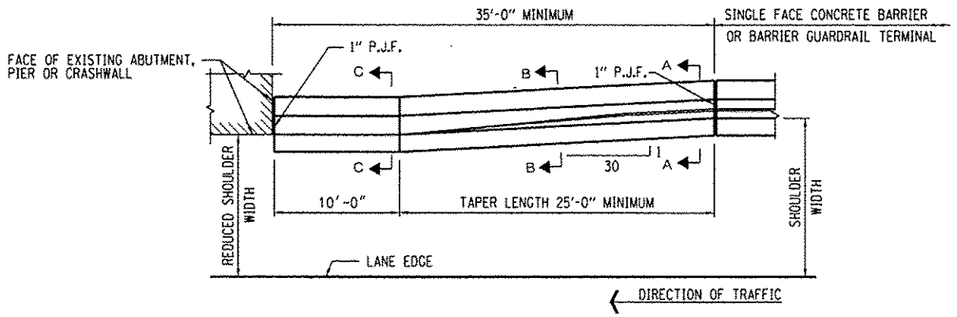


#6 (E) BAR

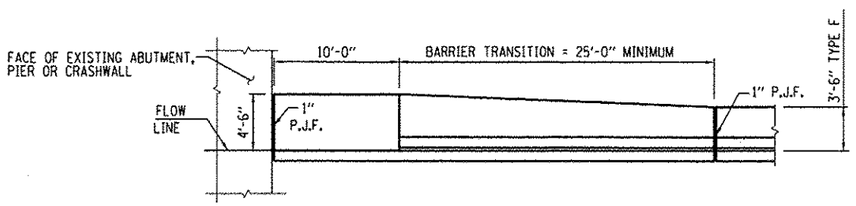


#4d (E) BAR

BENDING DIAGRAMS



PLAN



ELEVATION

CONCRETE SHOULDER BARRIER TRANSITION, TYPE F

NOTES:

1. TAPER LENGTH REQUIRED FOR THE WIDTH TRANSITION WILL BE 25'-0" MINIMUM. INCREASE TAPER RATE AS REQUIRED TO OBTAIN THE LENGTH OF 25'-0".
2. TOP SHOULDER EDGE OF BARRIER BASE GUTTER SHALL MATCH THE TOP OF SHOULDER ELEVATION.
3. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN BOTH THE REINFORCED CONCRETE BARRIER WALL AND BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30 FEET.
4. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE WITH AN APPROVED FINISHING TOOL AT THE DISCRETION OF THE ENGINEER SUBJECT TO THE SATISFACTORY CONTROL OF CRACKING. THE SAWING OF CONTRACTION JOINTS IN THE BARRIER WALL SHALL NOT BE PERMITTED.
5. REINFORCING BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.
6. REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION.
7. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
8. TYPE F BARRIER SHALL BE USED WITH ALL NEW CONSTRUCTION, OR RECONSTRUCTION OF EXISTING BARRIERS.
9. E.F. DENOTES EACH FACE

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

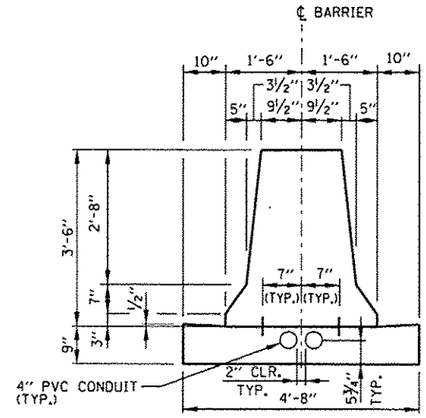
CONTRACT 60I31 SHEET 905 OF 963

Illinois Tollway
Open Roads for a Faster Future

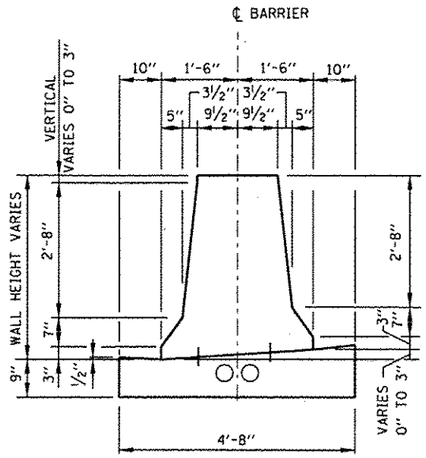
DATE	REVISIONS
7-1-2009	REVISED NOTES.
2-7-2012	DELETED SHOULDER BARRIER TRANSITION TYPE II, TAPER CHART, REVISED REINFMNT. BARS AND REVISED LENGTH OF VERTICAL FACE BARRIER WALL.

CONCRETE SHOULDER BARRIER TRANSITION

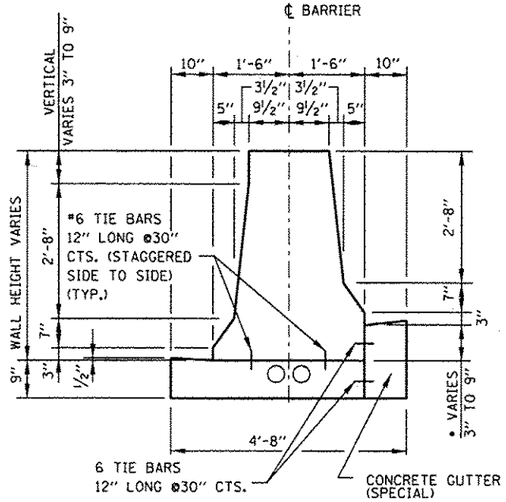
STANDARD C4-02



CONCRETE BARRIER, DOUBLE FACE, 42"
CONCRETE BARRIER BASE



DETAIL A



DETAIL B

* WHEN 6" OR GREATER ADD TOP TIE BAR.

CONCRETE BARRIER,
DOUBLE FACE, VARIABLE HEIGHT
CONCRETE BARRIER BASE, VARIABLE HEIGHT

NOTES:

1. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30'
2. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE WITH AN APPROVED FINISHING TOOL AT THE DISCRETION OF THE ENGINEER SUBJECT TO THE SATISFACTORY CONTROL OF CRACKING. THE SAWING OF CONTRACTION JOINTS IN THE CONCRETE BARRIER WALL SHALL NOT BE PERMITTED.
3. GUTTER PROFILE IN THE VICINITY OF SAG VERTICAL CURVES, ALONG FLAT GRADES AND AT THE MEETING OF PROPOSED AND EXISTING GUTTER, SHALL BE CAREFULLY CONTROLLED AND FIELD ADJUSTED IF NECESSARY TO ENSURE POSITIVE DRAINAGE AND AVOID PONDING.
4. IN AREAS OF RELATIVELY FLAT LONGITUDINAL PROFILE GRADES, THE 3" VERTICAL DIMENSION AT THE BOTTOM OF THE BARRIER CAN VARY FROM 2" TO 3 1/4" TO CREATE AN ACCEPTABLE LONGITUDINAL GRADE IN THE GUTTER.
5. TIE BARS ARE INCIDENTAL TO THE VARIOUS BARRIER & GUTTER ITEMS AND SHALL BE EPOXY COATED.
6. TWO CONDUITS SHALL BE INSTALLED IN THE BARRIER BASE WHETHER ELECTRICAL OR ITS ELEMENTS ARE INCLUDED FOR FUTURE USE.
7. WHEN VARIABLE HEIGHT VERTICAL DIFFERENTIAL EXCEEDS 9" SEE CONSTRUCTION PLANS FOR DETAILS.

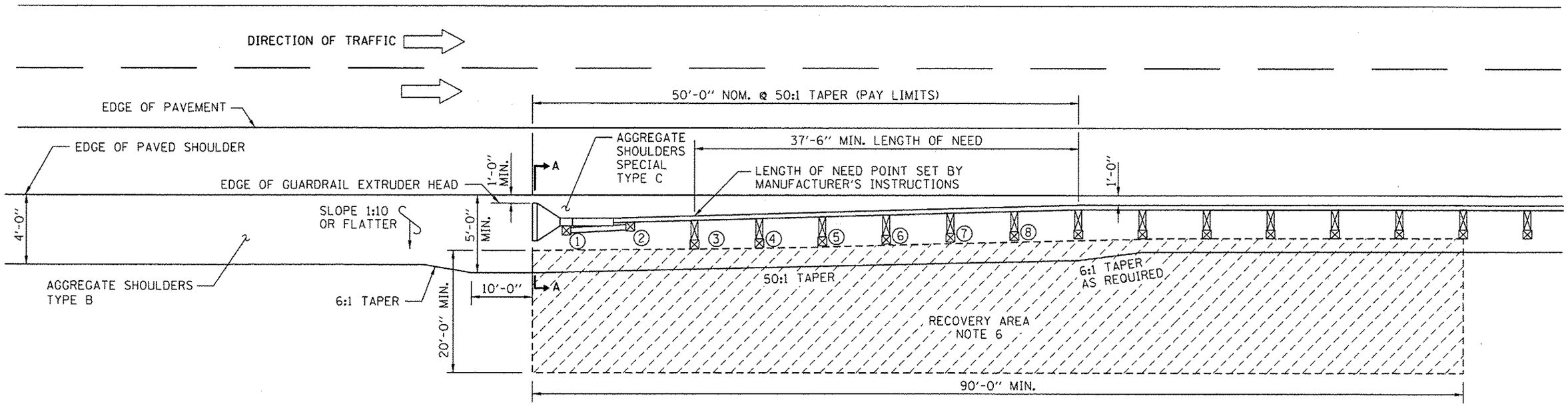
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 2-7-2012

DATE	REVISIONS
2-7-2012	ADDED CONDUITS TO BARRIER BASE.

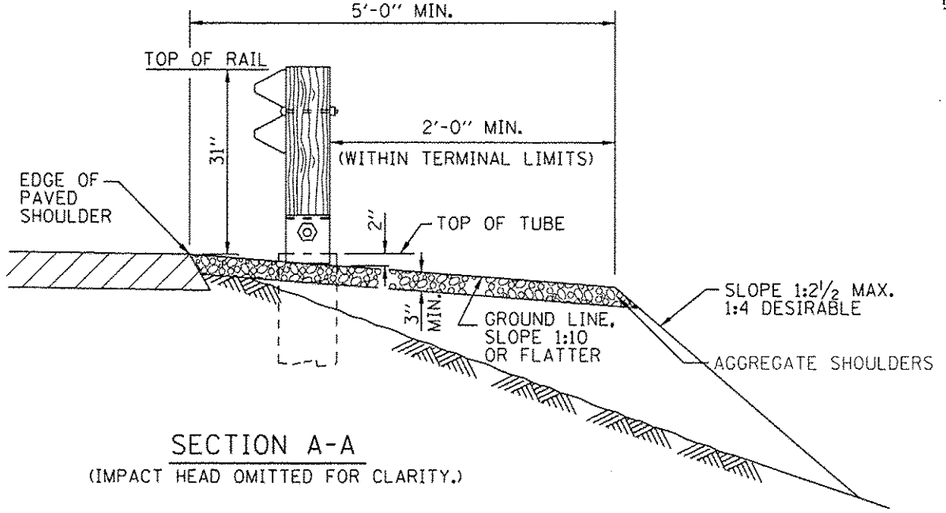
Illinois Tollway
Open Roads for a Faster Future

CONCRETE BARRIER BASE AND CONCRETE BARRIER, DOUBLE FACE, 42" AND VARIABLE HEIGHT

STANDARD C5-01



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



SECTION A-A
(IMPACT HEAD OMITTED FOR CLARITY.)

NOTE FOR INSTALLATION ON TANGENT ROADWAY:

TRAFFIC BARRIER TERMINAL SHALL BE INSTALLED AT A 50:1 TAPER MEASURED FROM EDGE OF TRAVELED WAY.

NOTE FOR INSTALLATION ON CURVED ROADWAY:

THE EDGE OF THE TERMINAL EXTRUDER HEAD SHALL BE OFFSET A DISTANCE FROM A POINT ON THE BACK OF THE CURVED EDGE OF PAVED SHOULDER AS SHOWN IN TABLE 1.

GENERAL NOTES:

1. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
2. THE TYPE T1 (SPECIAL) TERMINAL IS THE UPSTREAM END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM.
3. REFERENCE STANDARD B28 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL).
4. UNDER NO CIRCUMSTANCES SHALL AN EXISTING TERMIAL, 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 ROADSIDE OBSTRUCTION OF ANY TYPE-FIXED OR BREAKAWAY, EITHER TEMPORARY OR PERMANENT SHALL BE ALLOWED WITHIN THIS RECOVERY AREA.
7. NO CURVED W-BEAM SECTIONS ARE PERMITTED WITHIN THE TERMINAL PAY LIMITS. THE TRAFFIC BARRIER TERMINAL TYPE T1 (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 STANDARD 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.

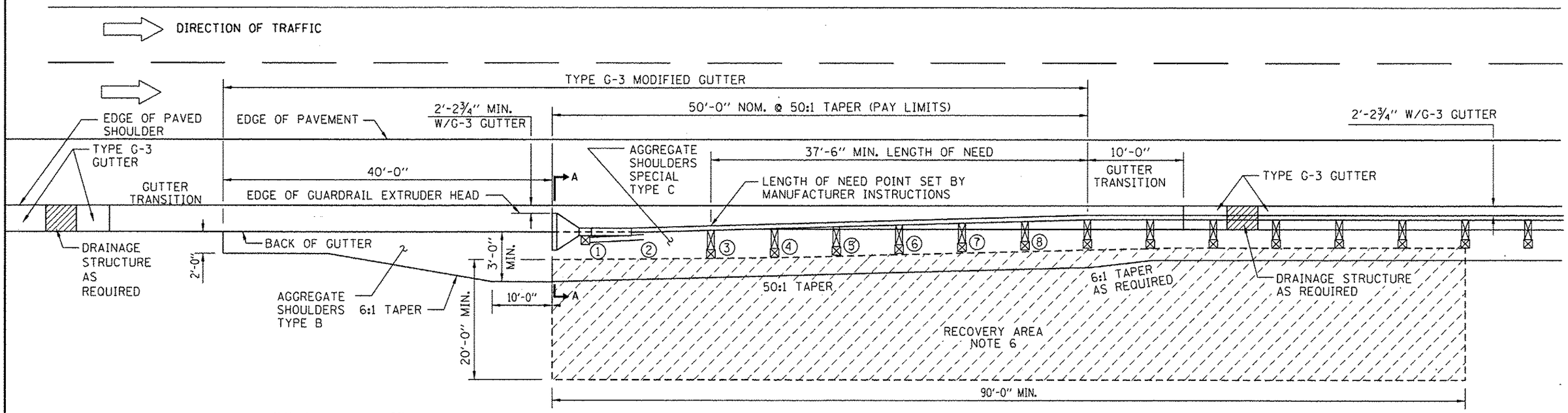
APPROVED Paul Kovacs, CHIEF ENGINEER DATE 7-1-2009

Illinois Tollway
Open Roads for a Faster Future

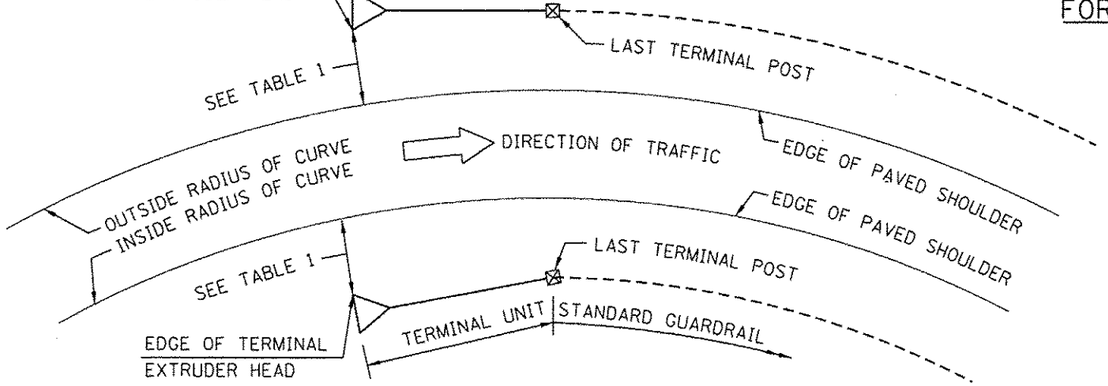
	REVISIONS
3-1-2010	ADDED OBSTRUCTION FREE ZONES. REVISED NOTES.
	ADDED NEW SHEET, SHOULDER WIDENING WITH GUTTER.
1-1-2011	REVISED NOTES, ADDED CURVED ROADWAY TERMINAL PLACEMENT.
2-7-2012	REVISED SLOPE NOTE.

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL)

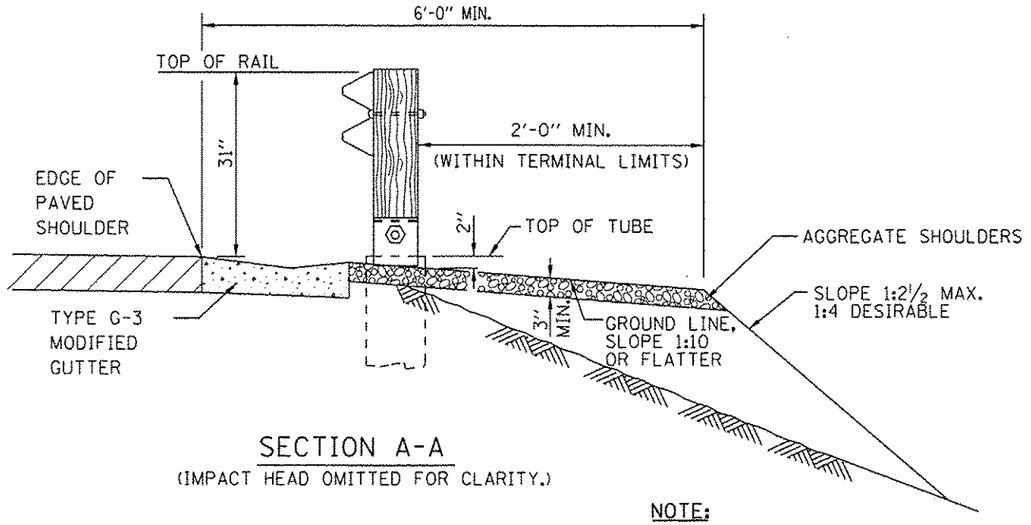
STANDARD C6-03



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



CURVED ROADWAY TRAFFIC BARRIER TERMINAL PLACEMENT



SECTION A-A

(IMPACT HEAD OMITTED FOR CLARITY.)

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

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

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

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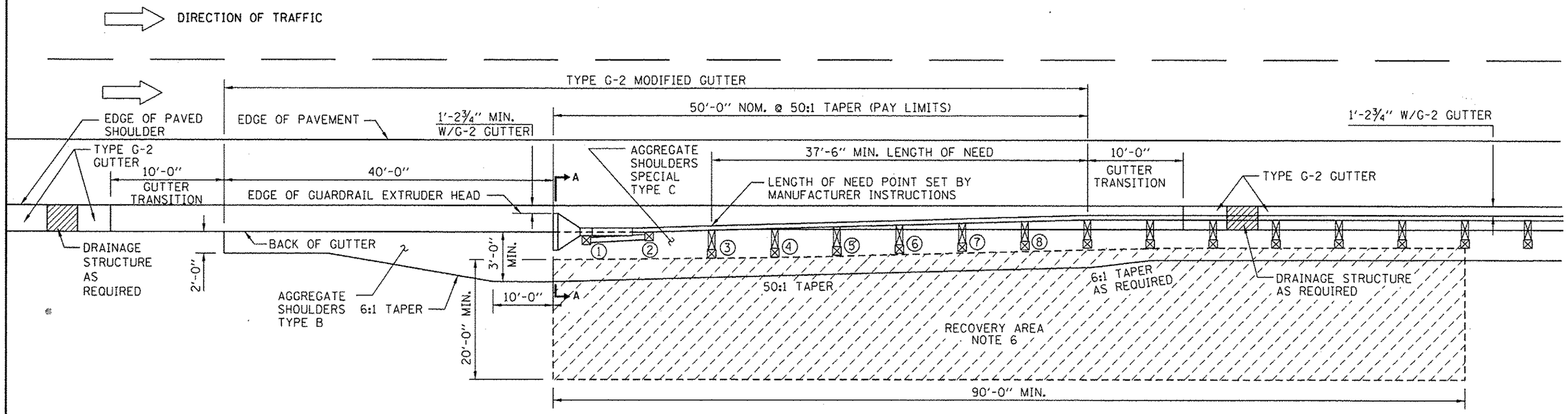
APPROVED ..... DATE 7-1-2009
CHIEF ENGINEER

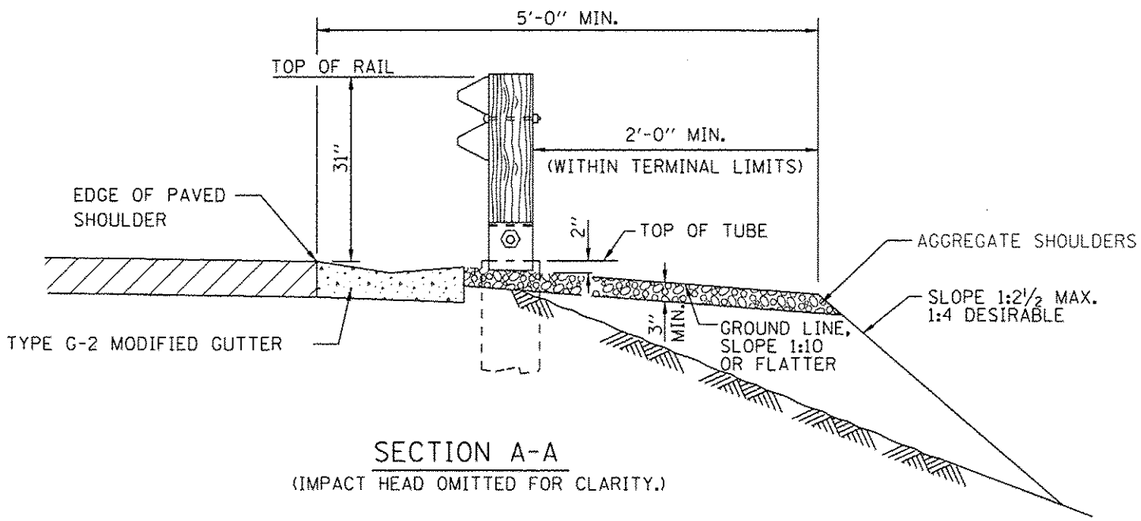
Illinois Tollway
Open Roads for a Faster Future

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL)

STANDARD C6-03



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



SECTION A-A
(IMPACT HEAD OMITTED FOR CLARITY.)

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

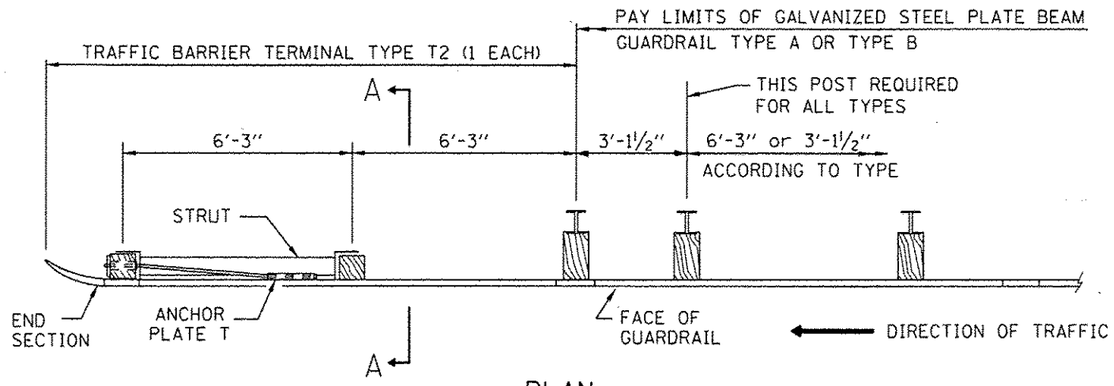
CONTRACT 60I31 SHEET 909 OF 963
SHEET 3 OF 3

APPROVED Paul Kovacs CHIEF ENGINEER DATE 7-1-2009

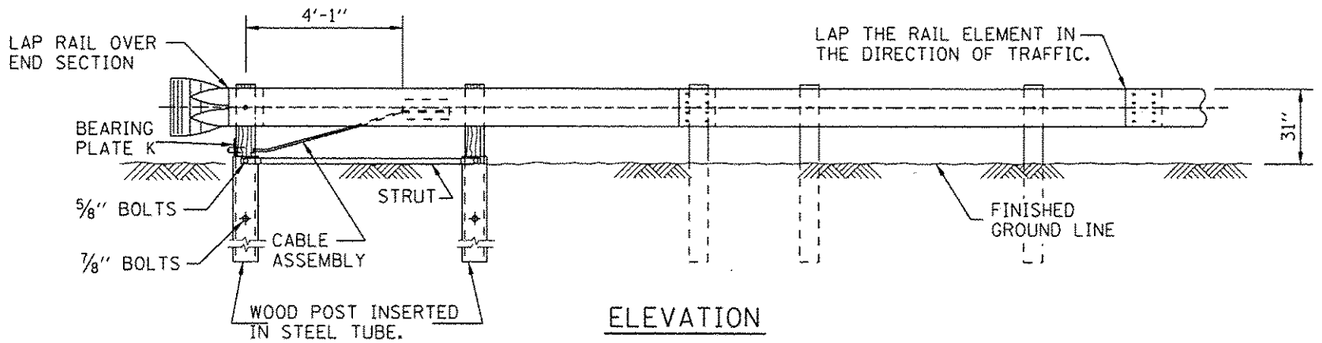
Illinois Tollway
Open Roads for a Faster Future

SHOULDER WIDENING FOR TRAFFIC BARRIER TERMINAL TYPE T1 (SPECIAL)

STANDARD C6-03

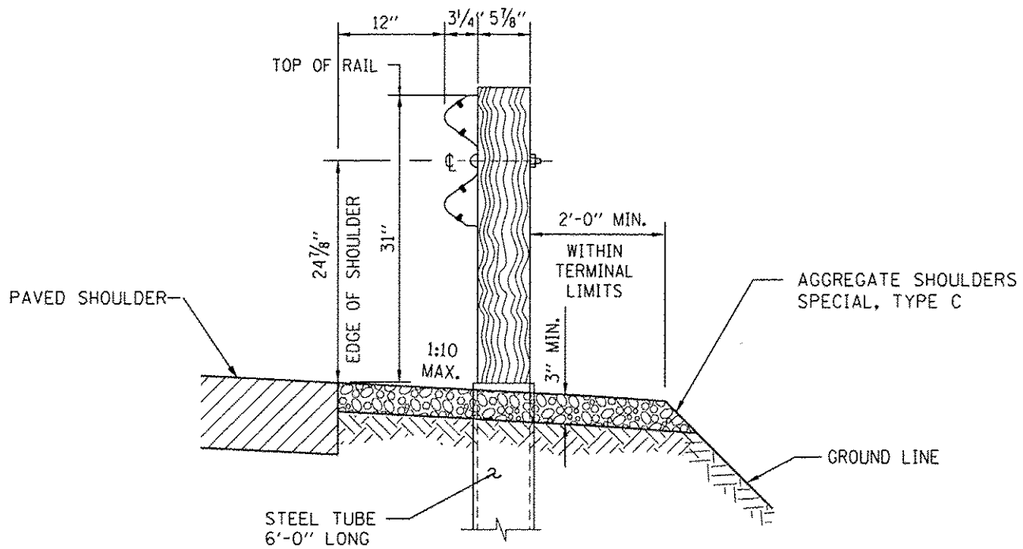


PLAN



ELEVATION

TRAFFIC BARRIER TERMINAL TYPE T2-WITHOUT GUTTER



SECTION A-A

NOTES:

1. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THE BEARING PLATE K SHALL BE HELD IN POSITION BY TWO 8D NAILS DRIVEN INTO THE POST AND BENT OVER THE TOP OF THE PLATE.
3. THE TYPE T2 TERMINAL IS TYPICALLY UTILIZED FOR THE DEPARTING END SECTION OF A GALVANIZED STEEL PLATE BEAM GUARDRAIL BARRIER SYSTEM.
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. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA PAVEMENT. WHEN NECESSARY USE LEAVE-OUT DETAIL PER STANDARD C1.
7. 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.

Paul Kovacs
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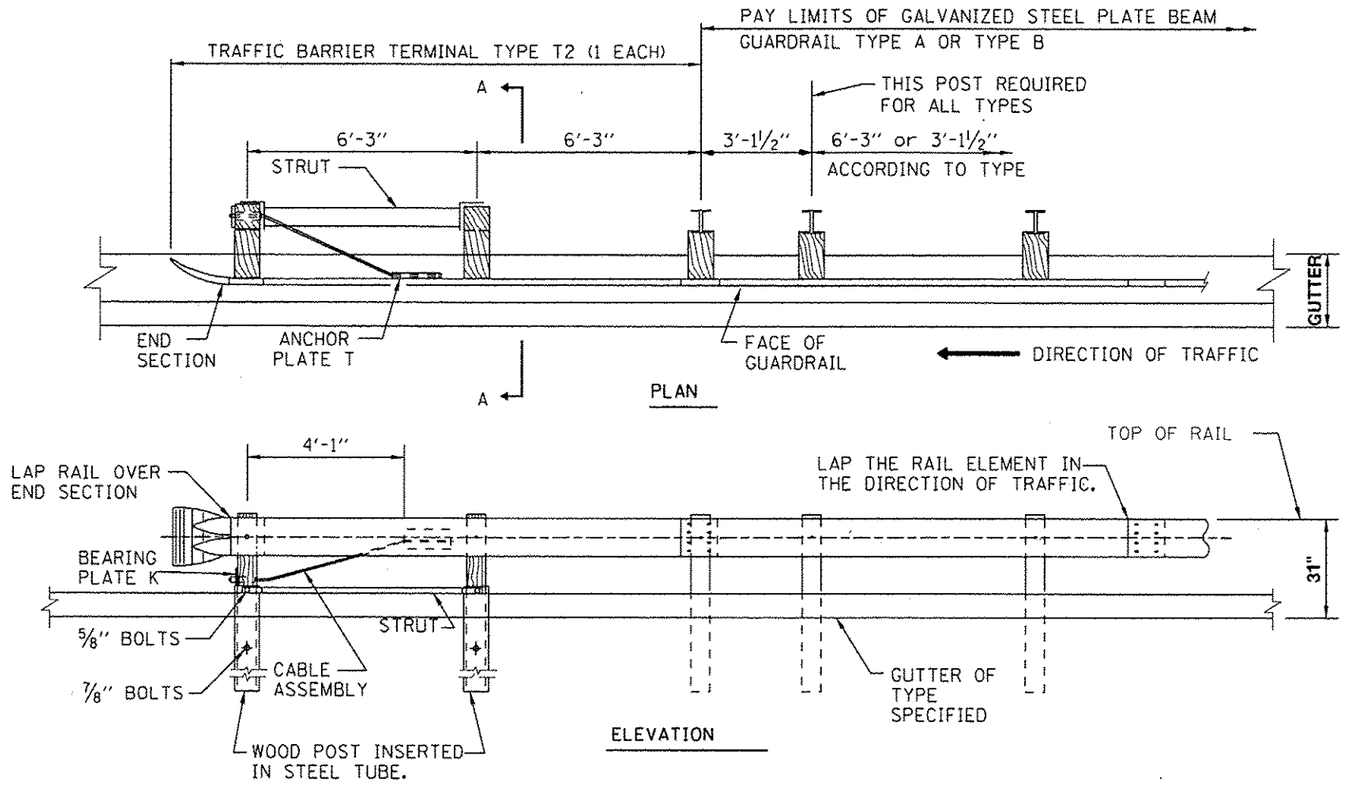
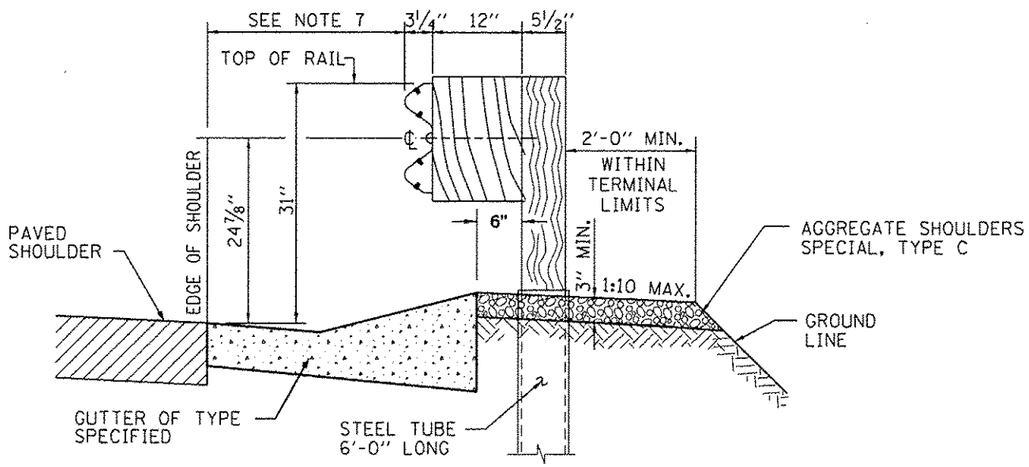
	REVISIONS
3-1-2010	MODIFIED STEEL TUBE HOLE LOCATIONS, SECTION A-A, REVISED NOTES
1-1-2011	REMOVED WOOD BLOCKOUT, SECTION A-A, SHEET 1, REVISED STEEL TUBE LENGTH
2-7-2012	REVISED DIMENSIONS OF BEARING PLATE, POST, CABLE STRUT AND TUBE, AND NOTES

TRAFFIC BARRIER TERMINAL, TYPE T2

STANDARD C7-03



TRAFFIC BARRIER TERMINAL TYPE T2-WITH GUTTER



SECTION A-A

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED Paul Kovacs CHIEF ENGINEER DATE 7-1-2009

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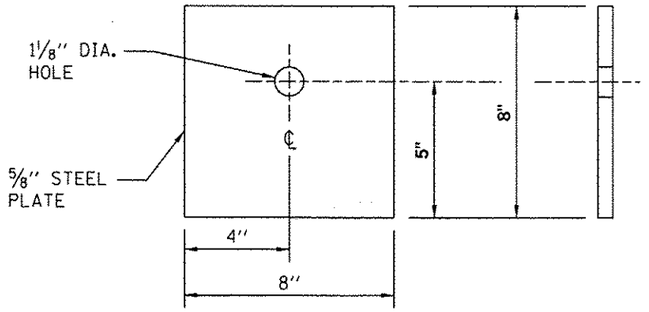
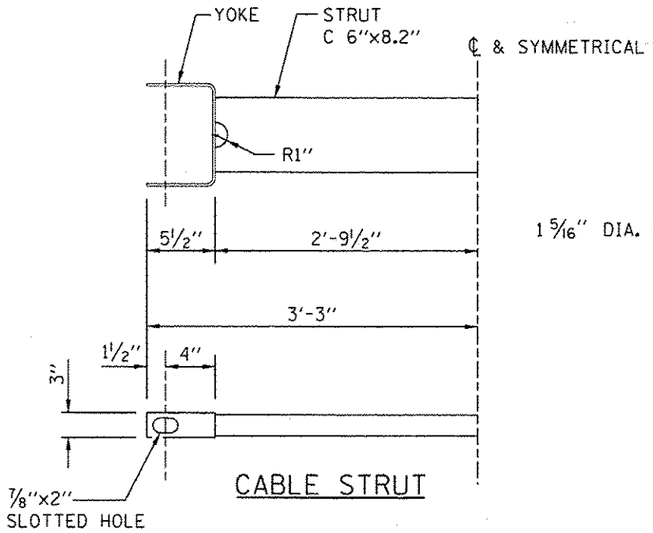
TRAFFIC BARRIER TERMINAL, TYPE T2

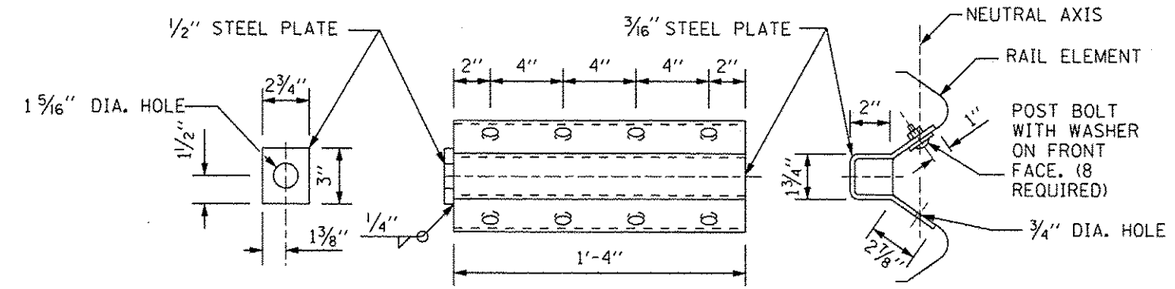
STANDARD C7-03



BEARING PLATE K



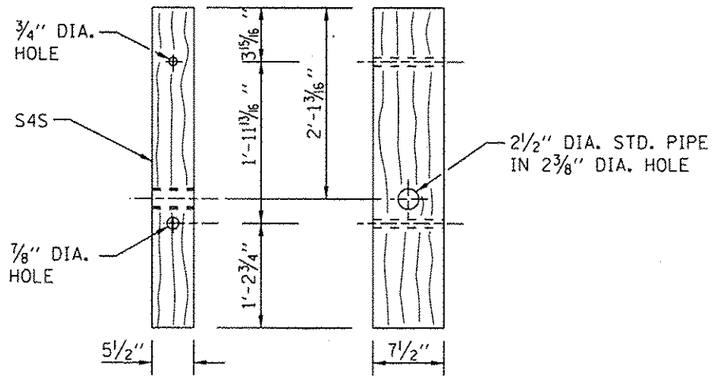
CABLE STRUT



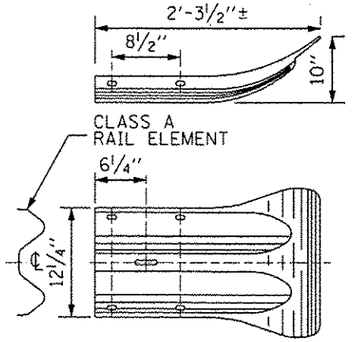
NOTE:

ANCHOR PLATE T SHALL BE USED TO ATTACH CABLE ASSEMBLY TO GUARDRAIL WHEN REQUIRED ON TRAFFIC BARRIER TERMINALS.

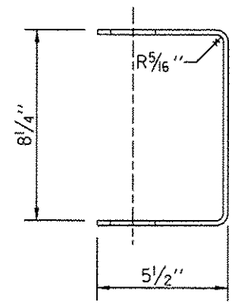
ANCHOR PLATE T DETAILS



WOOD POST

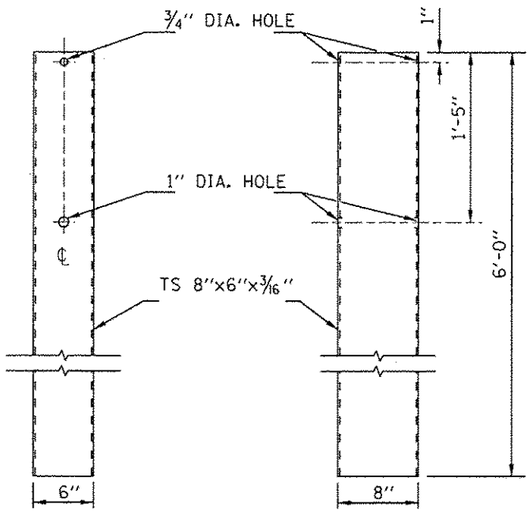


END SECTION



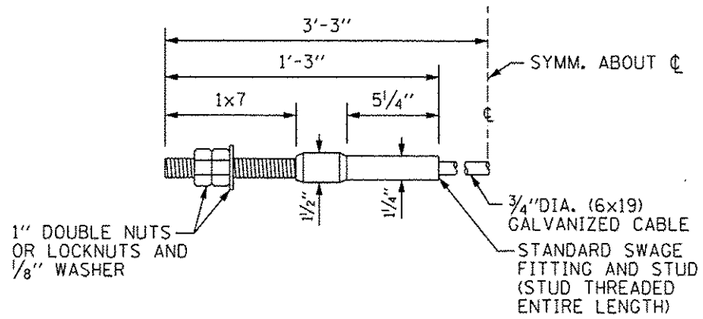
YOKE

3/16" THICK STEEL



FRONT SIDE

STEEL TUBE



CABLE ASSEMBLY

(40,000 LBS.) MIN. BREAKING STRENGTH)
TIGHTEN TO TAUT TENSION.

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

CONTRACT 60I31 SHEET 912 OF 963

SHEET 3 OF 3

Paul Kovacs
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DATE 7-1-2009

Illinois Tollway
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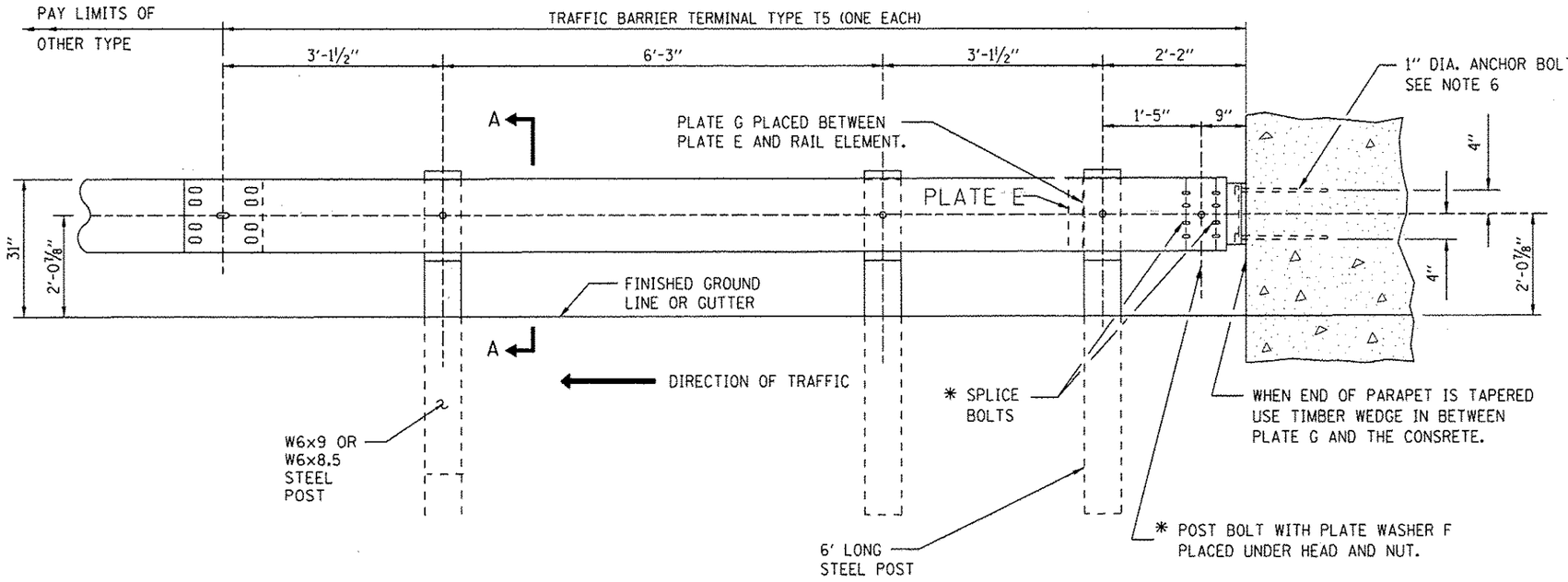
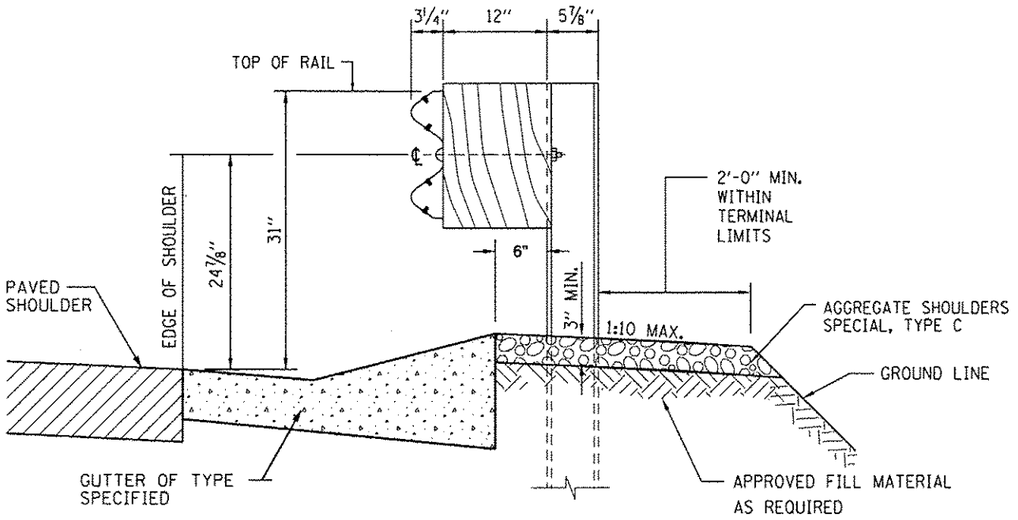
TRAFFIC BARRIER TERMINAL, TYPE T2

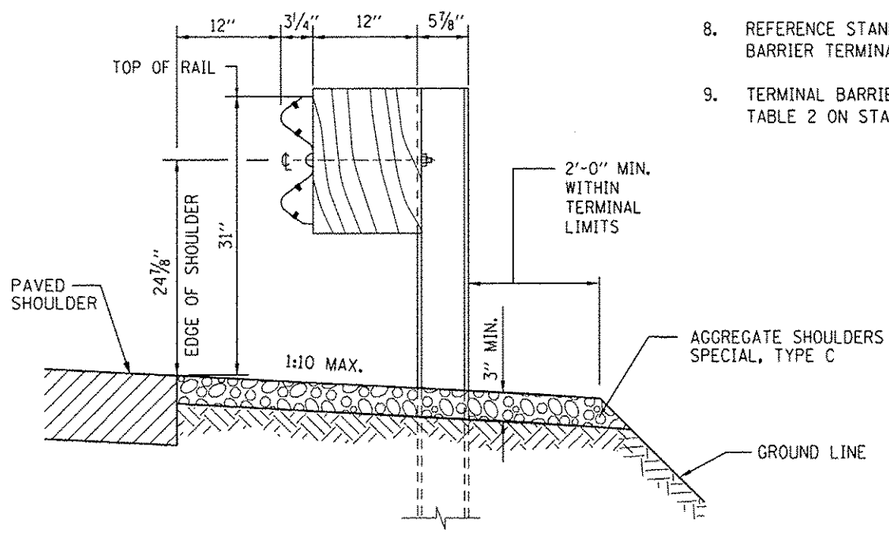
STANDARD C7-03



TYPE T5 - CONCRETE BRIDGE PARAPET



SECTION WITH GUTTER



SECTION WITHOUT GUTTER

SECTION A-A

* WHEN AN EXPANSION JOINT EXISTS BELOW THE CONNECTOR, BOLTS SHALL BE PROVIDED WITH A LOCKNUT OR DOUBLE NUTS AND SHALL BE TIGHTENED ONLY TO A POINT THAT WILL ALLOW PLATE G TO BE FREE TO MOVE.

NOTES:

1. INSTALL PLATE WASHER D SO THE 1" PROJECTION FILLS THE REMAINDER OF THE SLOTTED HOLES IN THE 1" END PLATE ON PLATE G AFTER THE 1" DIA BOLTS ARE IN PLACE.
2. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
3. THE TYPE T5 TERMINAL IS TYPICALLY UTILIZED TO CONNECT GALVANIZED STEEL PLATE BEAM GUARDRAIL TO THE CONCRETE BRIDGE PARAPET AT THE DEPARTING END OF A NEW BRIDGE.
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. 1" DIA. ANCHOR BOLT, 3'-6" LENGTH, SHALL BE CAST IN PLACE AN EMBEDDED LENGTH 3'-2" IN THE CONCRETE PARAPET. DRILLING FOR PLACEMENT OF THIS ANCHORAGE IS NOT PERMITTED.
7. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA PAVEMENT. WHEN NECESSARY, USE LEAVE-OUT DETAIL PER STANDARD C1.
8. REFERENCE STANDARD B2 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE T5.
9. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON STANDARD C1.

CONTRACT 60I31 SHEET 913 OF 963
SHEET 1 OF 2

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

Illinois Tollway
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	REVISIONS
3-1-2010	ADDED SECTION A-A, ADDED NOTES
1-1-2011	REVISED NOTES
2-7-2012	REVISED NOTES

TRAFFIC BARRIER
TERMINAL, TYPE T5

STANDARD C8-03

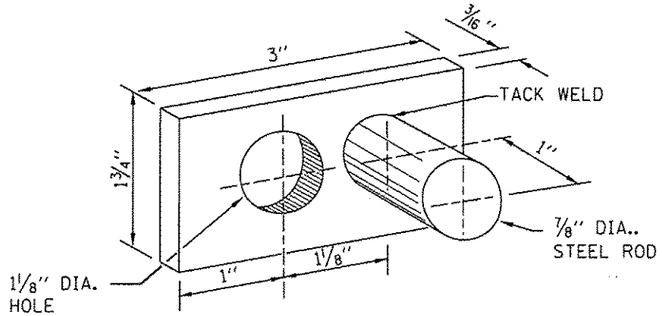
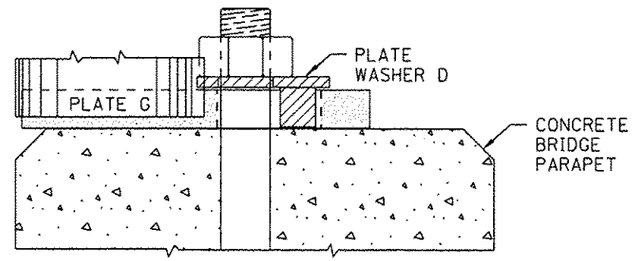


PLATE WASHER D



PLACEMENT OF PLATE WASHER D

(PLAN)

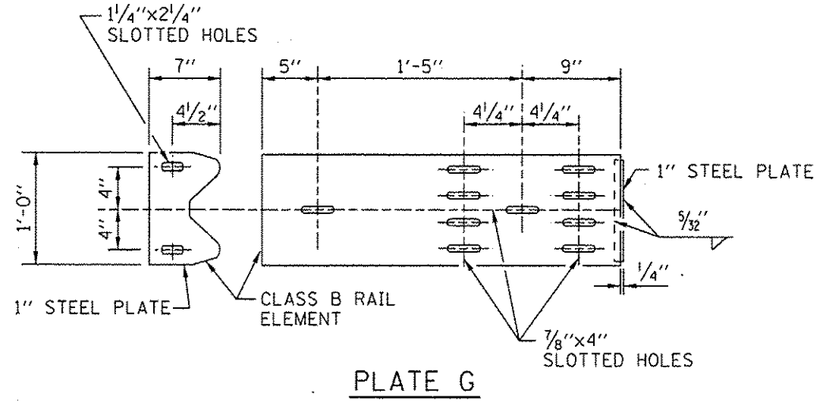


PLATE G

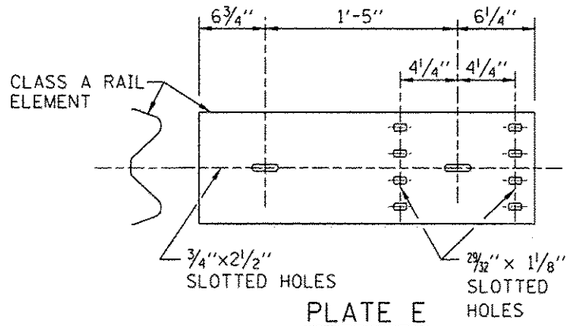


PLATE E

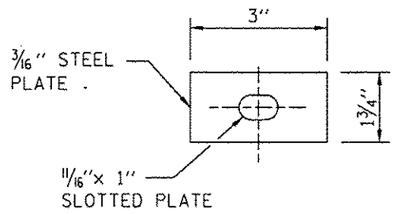
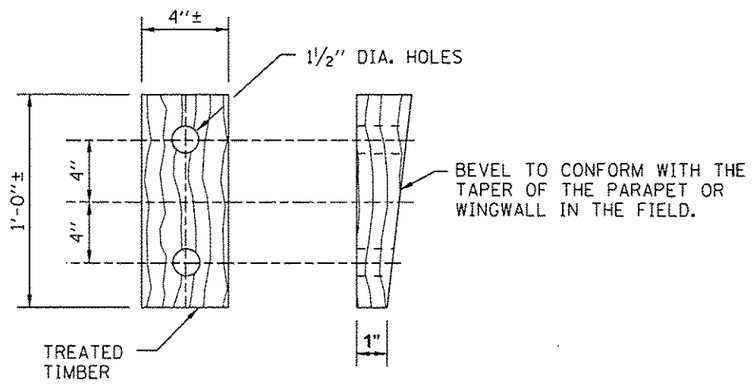


PLATE WASHER F



WEDGE M

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

CONTRACT 60I31 SHEET 914 OF 963

SHEET 2 OF 2

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TRAFFIC BARRIER
TERMINAL, TYPE T5

STANDARD C8-03

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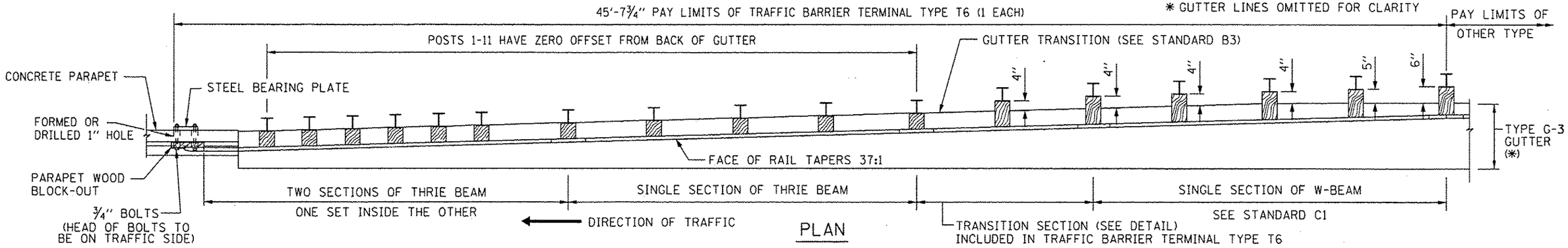
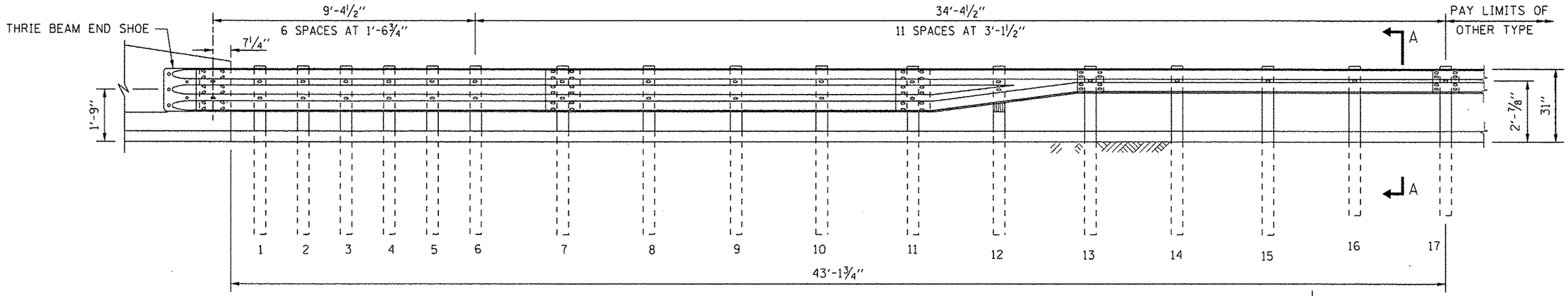
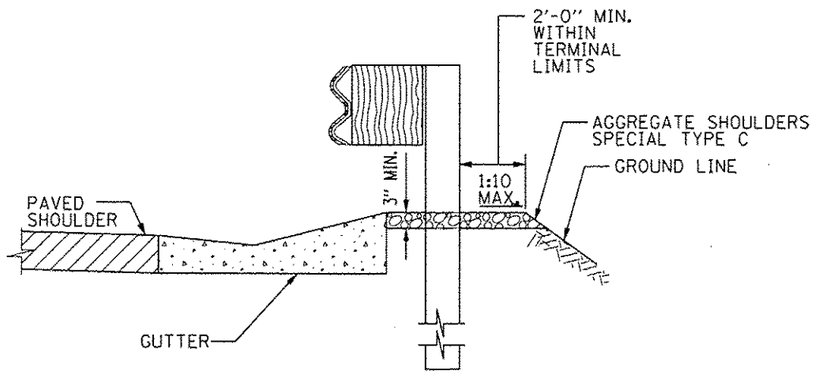


PLAN



ELEVATION



WITH TYPE G-3 GUTTER

SECTION A-A

NOTES:

1. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
3. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
4. THE TYPE T6 TERMINAL IS TYPICALLY UTILIZED TO ATTACH GALVANIZED STEEL PLATE BEAM GUARDRAIL AT THE UPSTREAM END OF THE BRIDGES CONCRETE PARAPET, WHERE A ROADSIDE GUTTER IS TO BE INSTALLED.
5. SEE STANDARD B3 FOR GUTTER TRANSITION AT TRAFFIC BARRIER TERMINAL TYPE T6.
6. 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 WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT COMFORMS TO THE CURRENT STANDARD.
7. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.
8. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL PER STANDARD C1.
9. TERMINAL POSTS TO BE INSTALLED PERPENDICULAR TO BACK OF GUTTER.
10. THE TERMINAL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
11. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON STANDARD C1.

FOR PARAPET (SAFETY FACE) WITH TYPE G-3 GUTTER

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

CONTRACT 60I31 SHEET 915 OF 963
SHEET 1 OF 4

Illinois Tollway
Open Roads for a Faster Future

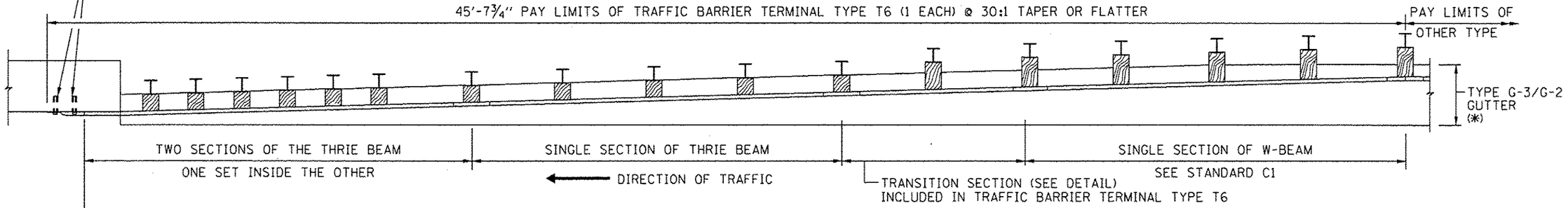
	REVISIONS
3-1-2010	ADDED SECTION A-A DETAIL, REVISED STEEL POSTS, REVISED NOTES
1-1-2011	REMOVED PARAPET TOE CHAMFER, REVISED BLOCKOUT DIMENSION
2-7-2012	REVISED BOLT NOTES, ANCHORAGE ADHESIVE AND REVISED NOTES.

TRAFFIC BARRIER TERMINAL, TYPE T6

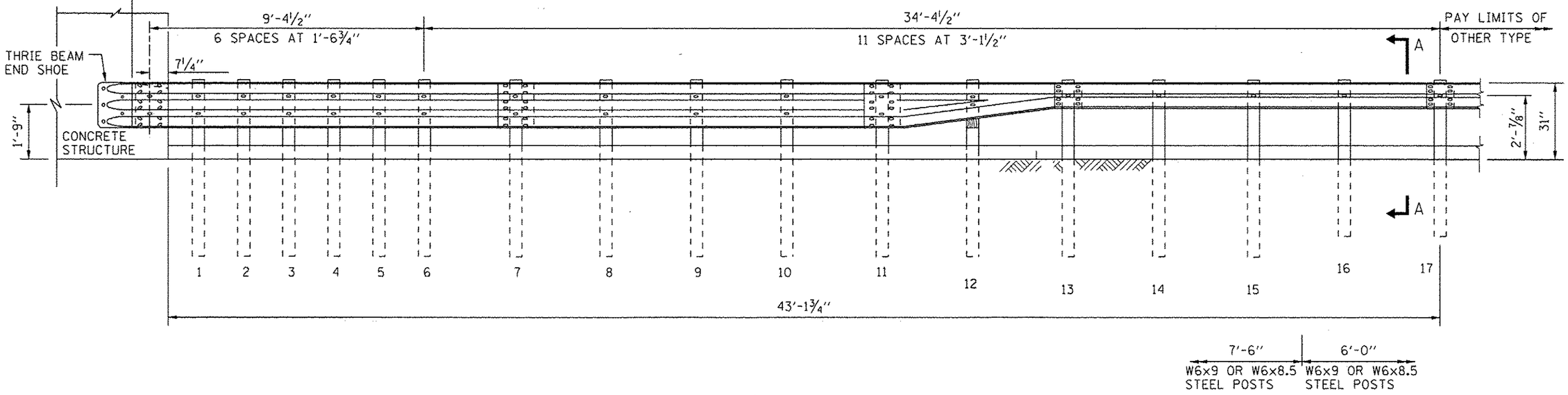
STANDARD C9-03

5-¾" BOLTS SHALL BE ANCHORED INTO DRILLED HOLES USING A CHEMICAL ADHESIVE. MINIMUM EMBEDMENT 10". ANCHOR BOLTS WITH STANDARD WASHERS. AFTER TIGHTENING, CUT THE ANCHOR BOLTS FLUSH WITH THE NUTS, AND DAMAGE THE NUTS TO PREVENT THEM FROM LOOSENING.

* GUTTER LINES OMITTED FOR CLARITY



PLAN



FOR OTHER CONCRETE STRUCTURE (VERTICAL FACE) WITH TYPE G-3/G-2 GUTTER

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

Paul Kovacs
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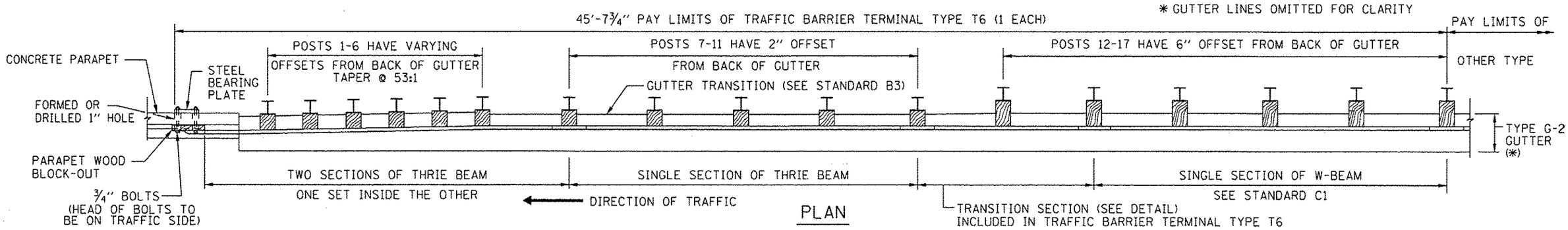
DATE 7-1-2009

Illinois Tollway
Open Roads for a Faster Future

TRAFFIC BARRIER TERMINAL, TYPE T6

STANDARD C9-03



NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

FOR PARAPET (SAFETY FACE)
WITH TYPE G-2 GUTTER

Paul Kovacs
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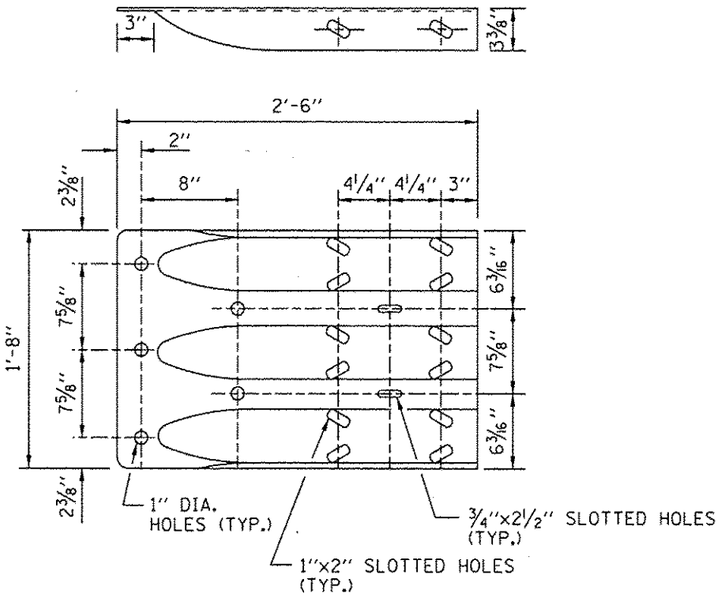
DATE 7-1-2009

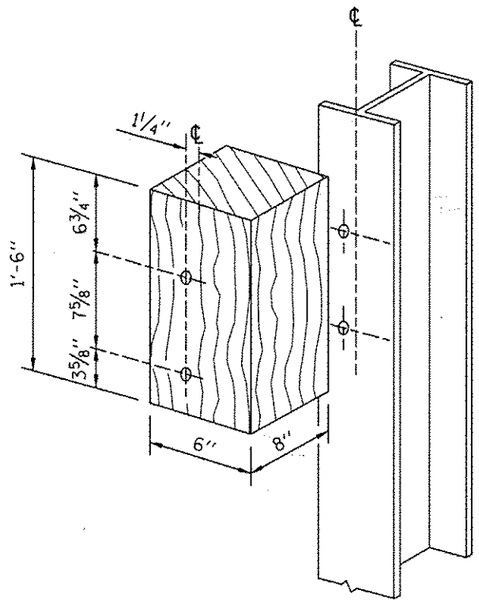
Illinois Tollway
Open Roads for a Faster Future

TRAFFIC BARRIER TERMINAL, TYPE T6

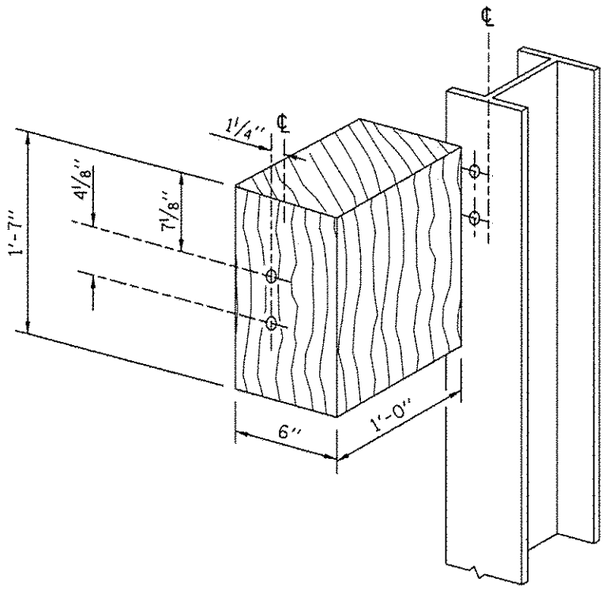
STANDARD C9-03



THRIE BEAM END SHOE DETAIL

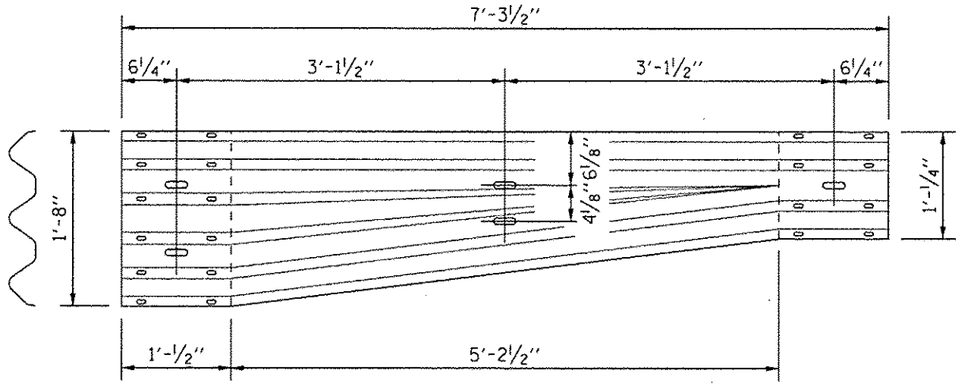


POSTS 1-11 WOOD BLOCKOUT DETAIL



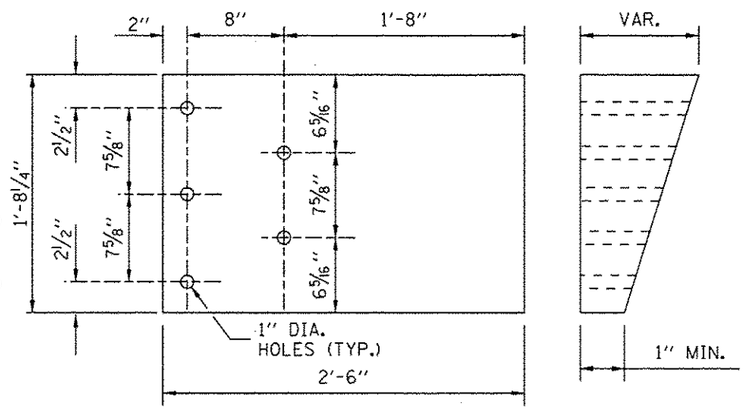
POST 12 WOOD BLOCKOUT DETAIL

(SEE STANDARD C1 FOR POST 13-17 BLOCKOUTS.)

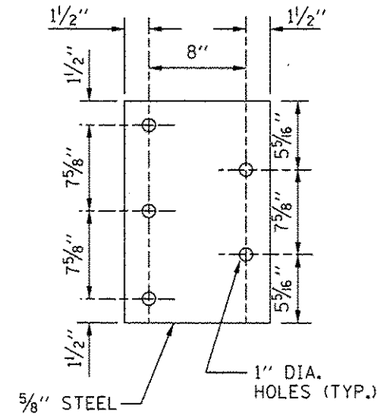


TRANSITION SECTION

(10 GUAGE RAIL ELEMENT)



PARAPET WOOD BLOCK-OUT DETAIL



PARAPET STEEL BEARING PLATE DETAIL

(5 EACH INDIVIDUAL 5"x5"x⅝" STEEL PLATES WITH CENTERED 1" HOLES MAY BE SUBSTITUTED FOR THE PLATE SHOWN.)

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

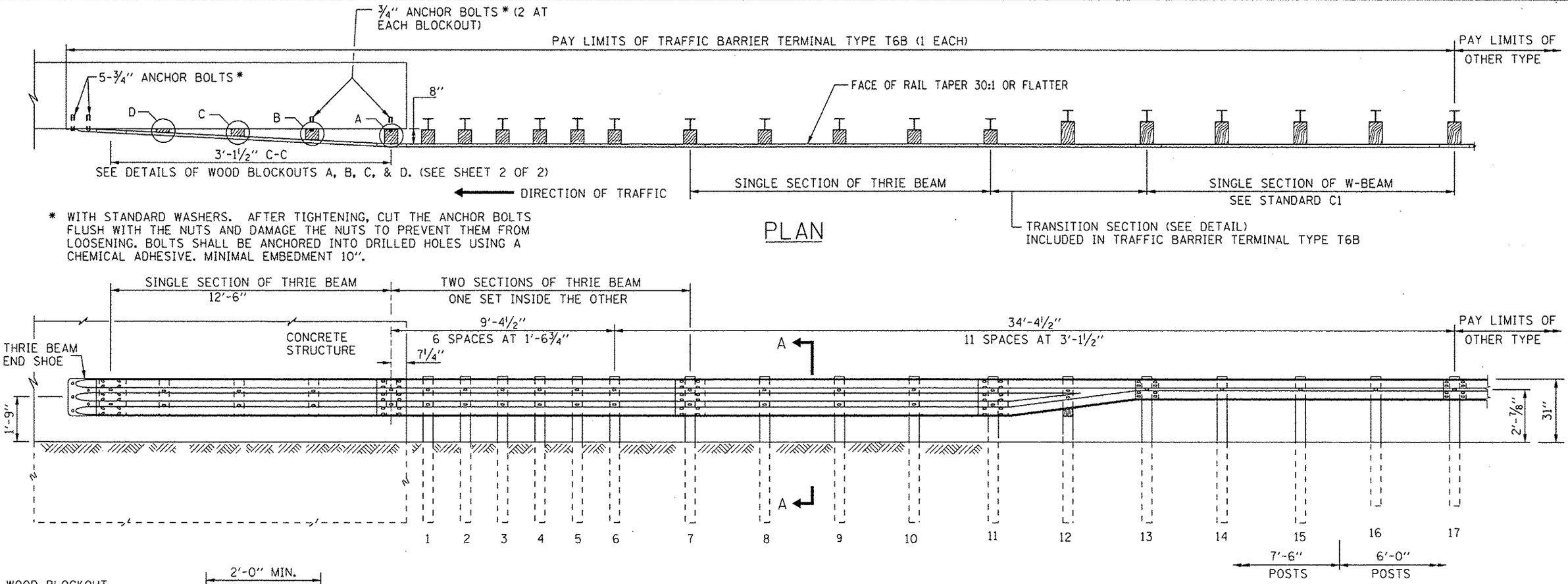
Paul Kovacs
APPROVED ..... CHIEF ENGINEER ..... DATE 7-1-2009

CONTRACT 60I31 SHEET 918 OF 963
SHEET 4 OF 4

Illinois Tollway
Open Roads for a Faster Future

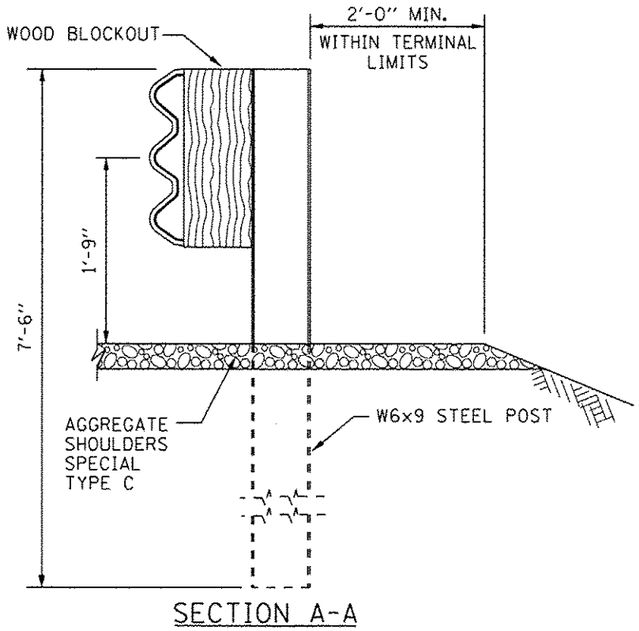
TRAFFIC BARRIER TERMINAL, TYPE T6

STANDARD C9-03



PLAN

* 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. MINIMAL EMBEDMENT 10".

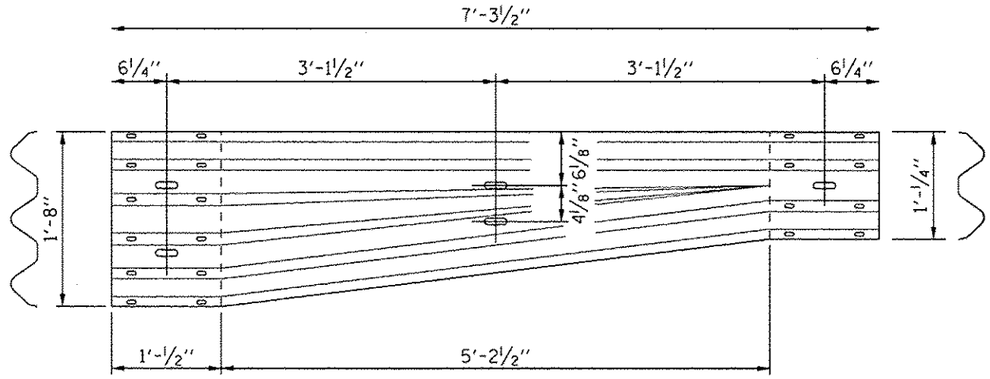


SECTION A-A

ELEVATION

NOTES:

1. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THRIE BEAM RAIL SHALL BE BOLTED TO BLOCK-OUT AT ALL POSTS.
3. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
4. THE TYPE T6B TERMINAL 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.
5. 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.
6. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURE'S DETAILS AND SPECIFICATIONS.
7. TERMINAL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA PAVEMENTS. WHEN NECESSARY USE LEAVE-OUT DETAIL PER STANDARD C1, SHEET 4 OF 4.
8. TERMINAL BARRIER CLEARANCE DISTANCE SHALL CONFORM WITH TABLE 2 ON STANDARD C1.



TRANSITION SECTION

(10 GUAGE RAIL ELEMENT)

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

SHEET 1 OF 2

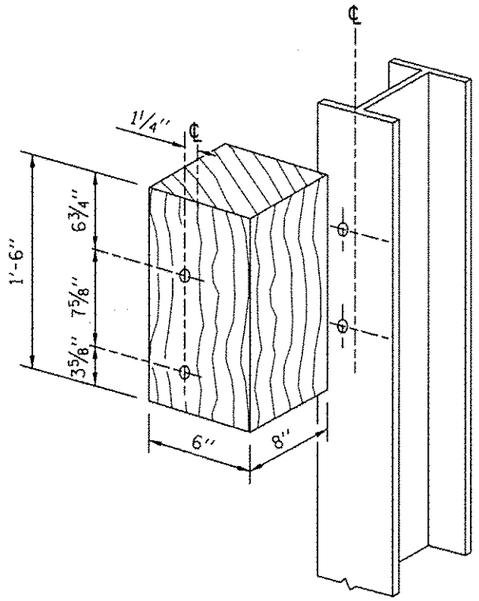
CONTRACT 60I31 SHEET 919 OF 963

Illinois Tollway
Open Roads for a Faster Future

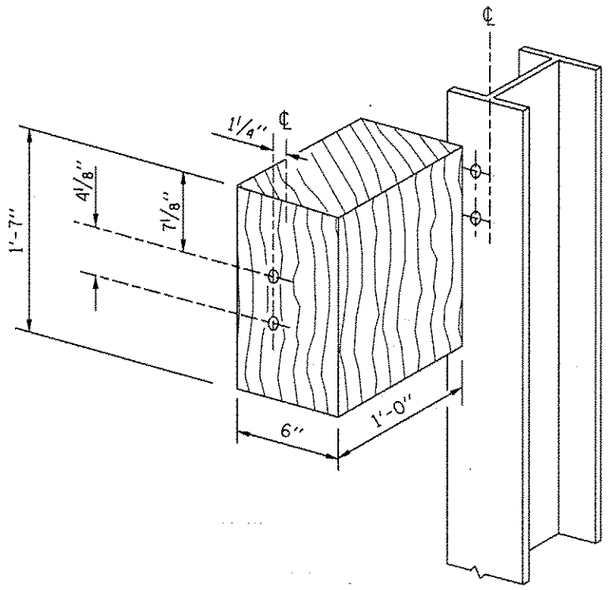
REVISIONS	
3-1-2010	REVISED NOTES
1-1-2011	REMOVED EMBANKMENT SLOPE, REVISED WOOD BLOCKOUT DIMENSION
2-7-2012	REVISED BOLT NOTES, ANCHORAGE ADHESIVE AND REVISED NOTES.

TRAFFIC BARRIER TERMINAL, TYPE T6B

STANDARD C10-03

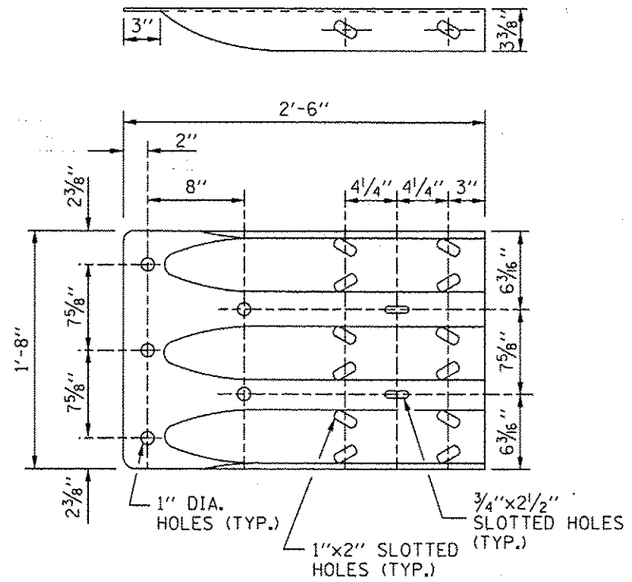


POSTS 1-11 WOOD BLOCKOUT DETAIL

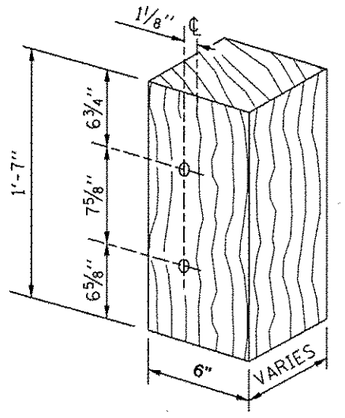


POST 12 WOOD BLOCKOUT DETAIL

(SEE STANDARD C1 FOR POST 13-17 BLOCKOUTS)

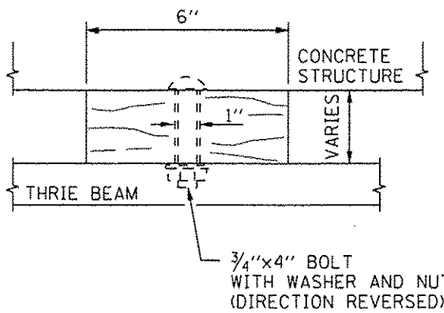


THRIE BEAM END SHOE DETAIL

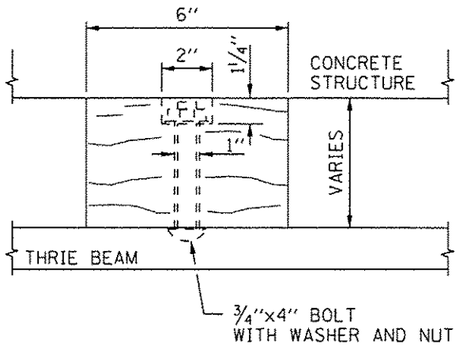


MODIFIED THICKNESS DETAIL

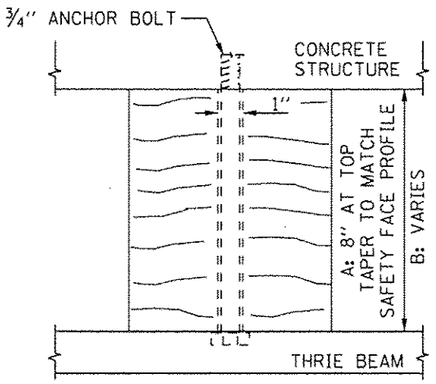
WOOD BLOCKOUTS A, B, C, & D



WOOD BLOCKOUT D



WOOD BLOCKOUT C



WOOD BLOCKOUT A & B

CONTRACT 60I31 SHEET 920 OF 963
SHEET 2 OF 2

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

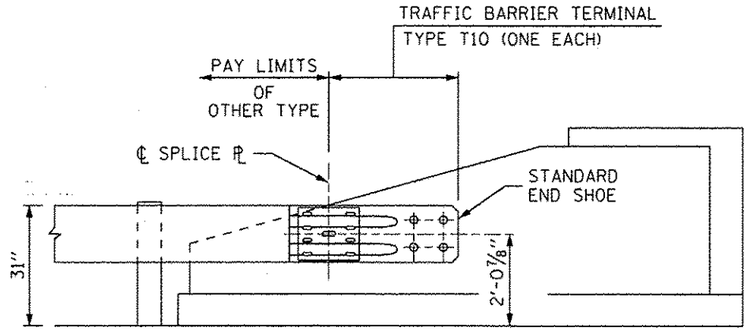
NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

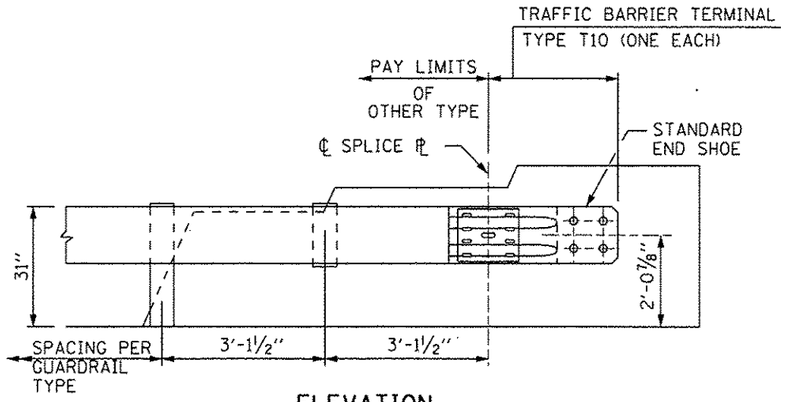
Illinois Tollway
Open Roads for a Faster Future

TRAFFIC BARRIER
TERMINAL, TYPE T6B

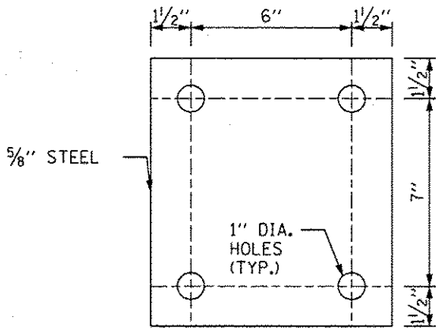
STANDARD C10-03



ELEVATION

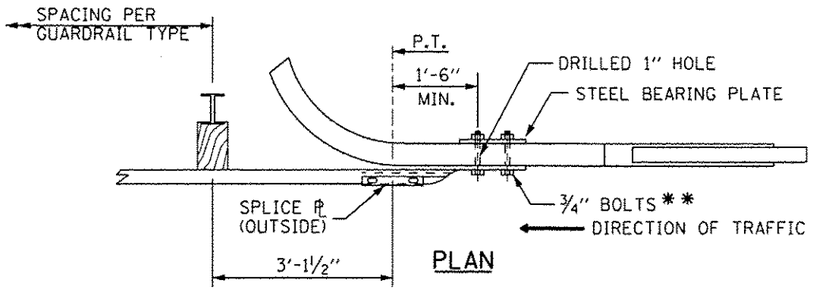


ELEVATION



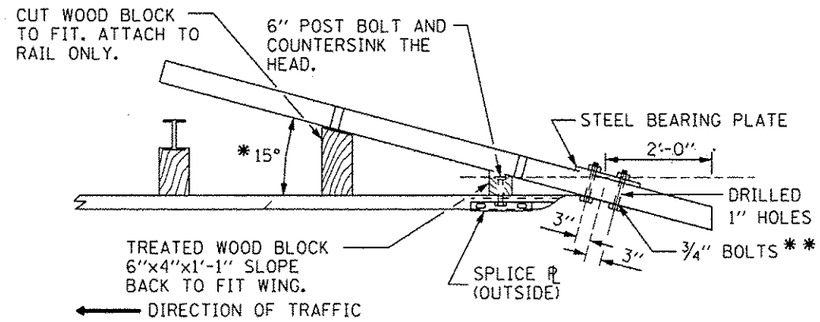
PARAPET STEEL BEARING
PLATE DETAIL

(4 EACH INDIVIDUAL 5"x5"x5/8" STEEL PLATES WITH CENTERED HOLES MAY BE SUBSTITUTED FOR THE PLATE SHOWN)



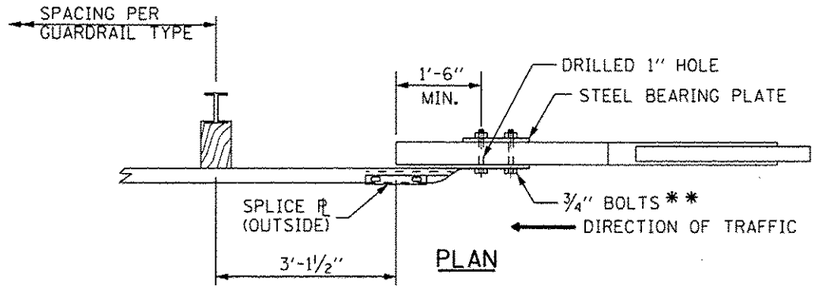
PLAN

CURVED WING



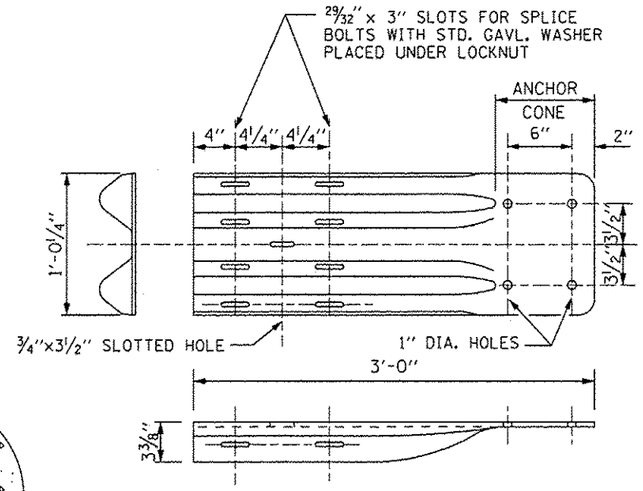
PLAN

FLARED WING



PLAN

TANGENT WING

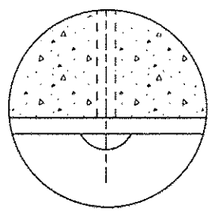


END SHOE

GENERAL NOTE:

* OR TO BE DETERMINED IN THE FIELD.

** HEAD OF BOLT TO BE ON TRAFFIC SIDE. SEE DETAIL "A"



DETAIL "A"

NOTES:

1. SEE STANDARD C1 FOR DETAILS OF GUARDRAIL NOT SHOWN.
2. THE TYPE T10 TERMINAL IS TYPICALLY UTILIZED TO CONNECT GALVANIZED STEEL PLATE BEAM GUARDRAIL TO THE DEPARTING END OF AN EXISTING BRIDGE CONCRETE WING WALL OR PARAPET.
3. 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.
4. TRAFFIC BARRIER TERMINAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND SPECIFICATIONS.
5. WHEN END SHOE IS ATTACHED TO A BRIDGE PARAPET WHICH HAS AN EXPANSION JOINT, THE BOLTS SHALL BE PROVIDED WITH A LOCKNUT OR DOUBLE NUT AND SHALL BE TIGHTENED ONLY TO A POINT THAT WILL ALLOW GUARDRAIL MOVEMENT.
6. THE ANCHOR CONE SHALL BE SET FLUSH WITH THE SURFACE OF THE CONCRETE.
7. EXTERNALLY THREADED STUDS PROTRUDING FROM THE SURFACE OF THE CONCRETE WILL NOT BE PERMITTED.

CONTRACT 60I31 SHEET 921 OF 963

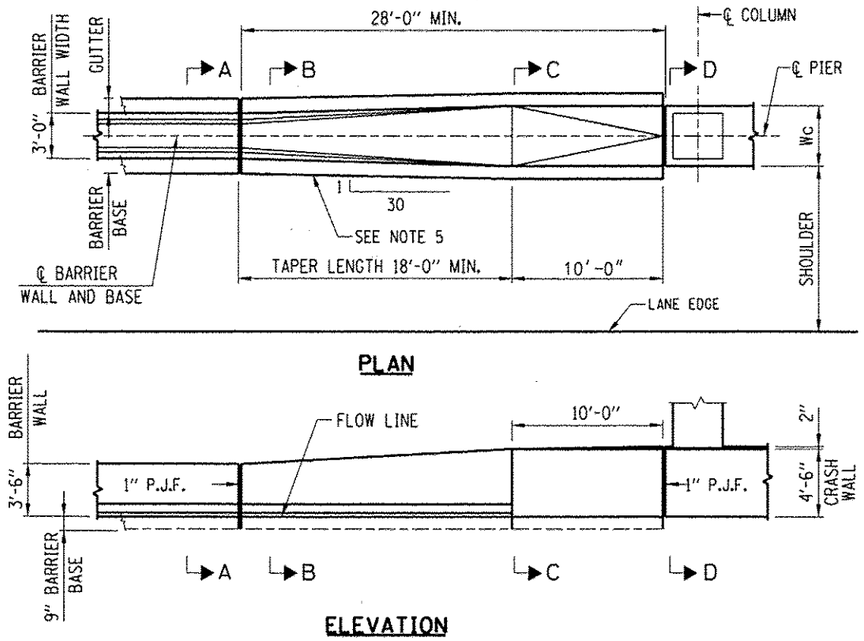
Paul Kovacs
APPROVER ..... DATE 7-1-2009
CHIEF ENGINEER

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
3-1-2010	REVISED NOTES. ADDED END SHOE AND PARAPET BEARING PLATE DETAIL.
1-1-2011	REVISED END SHOE HEIGHT ATTACHEMENT.
2-7-2012	REVISED BOLT NOTE, ADDED DETAIL "A" AND REVISED NOTES.

TRAFFIC BARRIER
TERMINAL, TYPE T10

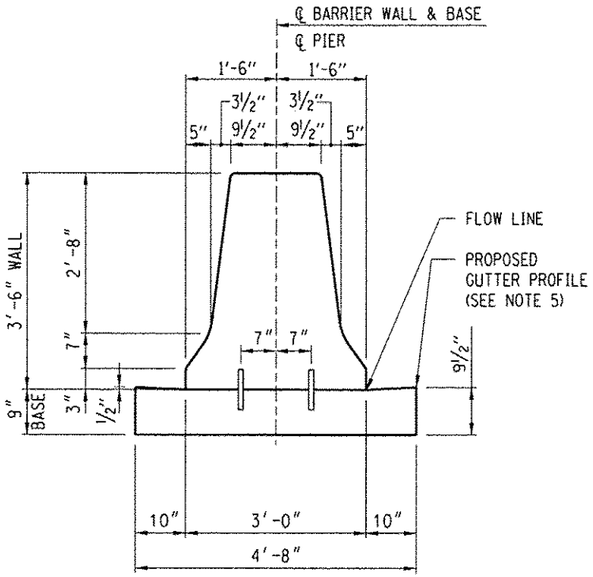
STANDARD C11-03



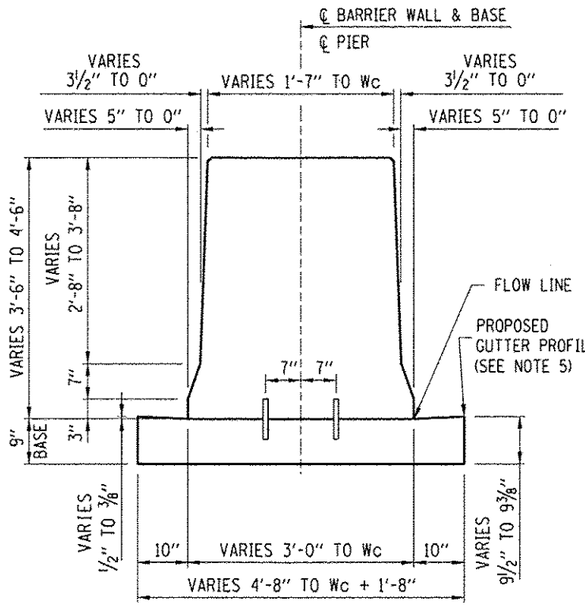
CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F AT BRIDGE PIERS

NOTES:

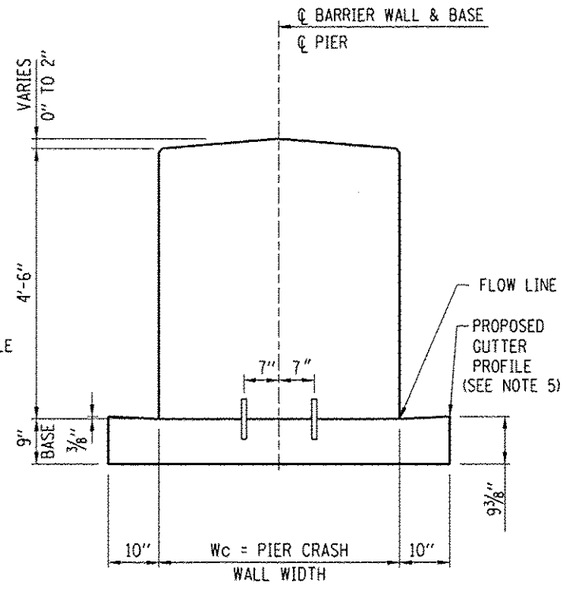
1. 1" DEEP CONTRACTION JOINTS SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL AND IN THE CONCRETE BARRIER BASE. CONTRACTION JOINTS SHALL ALSO BE CONSTRUCTED AT BOTH SIDES OF ALL DRAINAGE STRUCTURES. MAXIMUM JOINT SPACING SHALL BE 30'
2. THE FORMING OF CONTRACTION JOINTS SHALL BE DONE WITH AN APPROVED FINISHING TOOL AT THE DISCRETION OF THE ENGINEER SUBJECT TO THE SATISFACTORY CONTROL OF CRACKING. THE SAWING OF CONTRACTION JOINTS IN THE BARRIER WALL SHALL NOT BE PERMITTED.
3. TAPER LENGTH REQUIRED FOR THE WIDTH TRANSITION WILL BE 18'-0" MINIMUM.
4. TOP SHOULDER EDGE OF GUTTER SLAB SHALL MATCH THE TOP OF SHOULDER ELEVATION.
5. GUTTER PROFILE IN THE VICINITY OF SAG VERTICAL CURVES, ALONG FLAT GRADES AND AT THE MEETING OF PROPOSED AND EXISTING GUTTER, SHALL BE CAREFULLY CONTROLLED AND FIELD ADJUSTED IF NECESSARY TO ENSURE POSITIVE DRAINAGE AND AVOID PONDING.



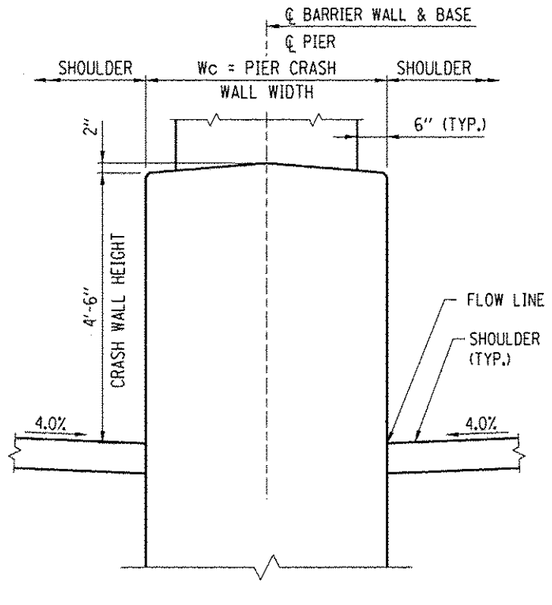
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

CONTRACT 60I31 SHEET 922 OF 963

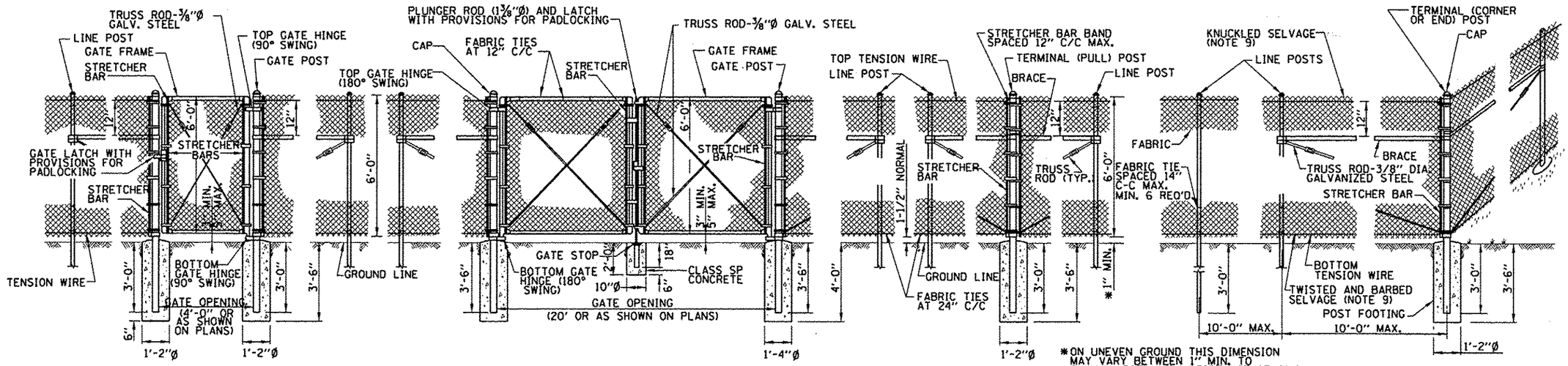
APPROVED Paul Kovacs CHIEF ENGINEER DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS

CONCRETE MEDIAN BARRIER TRANSITION, TYPE V-F AT BRIDGE PIERS

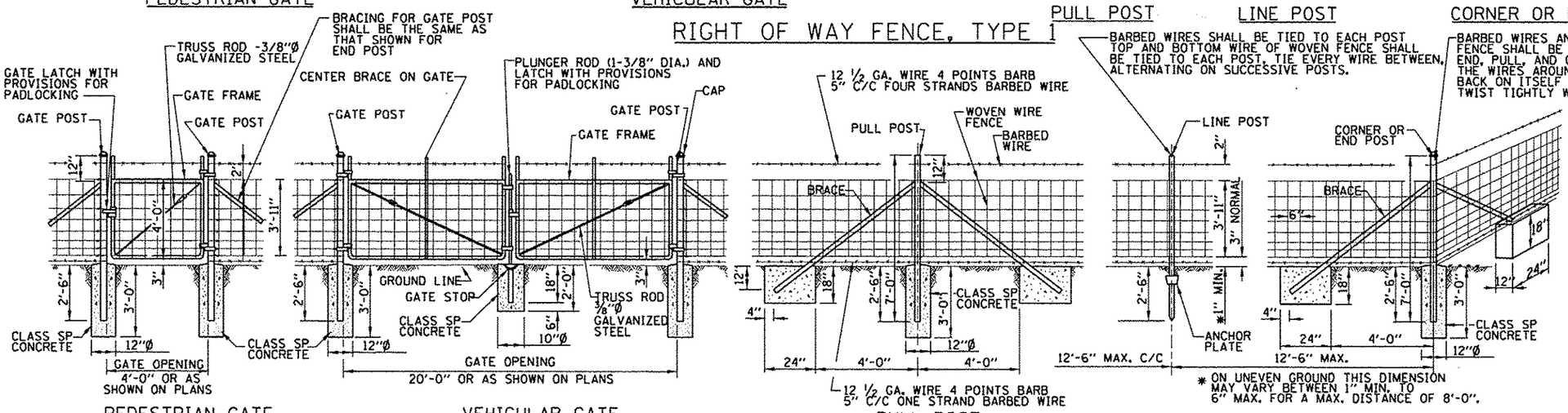
STANDARD C13-00



PEDESTRIAN GATE

VEHICULAR GATE

RIGHT OF WAY FENCE, TYPE 1



PEDESTRIAN GATE

VEHICULAR GATE

PULL POST

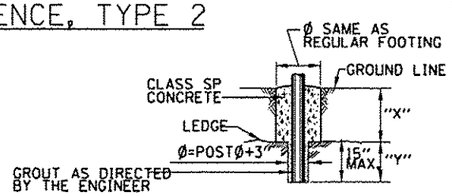
LINE POST

CORNER OR END POST

GENERAL NOTES

1. ON STRAIGHT RUNS OF FENCE, PULL POSTS SHALL BE USED AT 500' CENTERS FOR TYPE 1 AND 330' CENTERS FOR TYPE 2.
2. ALL FENCING MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
3. WHERE R.O.W. FENCE FOLLOWS R.O.W. LINE IT SHALL BE INSTALLED PARALLEL TO AND 6" INSIDE THE R.O.W. LINE ON TOLLWAY PROPERTY.
4. LINE POSTS AND BRACES SHALL BE ON TOLLWAY SIDE OF FENCE FABRIC.
5. WHEN THE TENSION OF THE FENCE TENDS TO PULL THE POSTS FROM THE GROUND, THE LINE POSTS SHALL BE ANCHORED WITH ANCHORAGE SPECIFIED FOR CORNER POSTS.
6. AT LOCATION WHERE THE PROPOSED FENCE IS TO BE CONNECTED TO AN EXISTING POST, THE REQUIRED CONNECTIONS AND BRACING INCLUDING ALL NECESSARY HARDWARE SHALL BE CONSIDERED INCIDENTAL TO THE FENCE OF THE TYPE SPECIFIED.
7. WHEN THE FENCE LINE HAS A CHANGE IN DIRECTION OF 10° OR MORE, A CORNER POST SHALL BE PLACED AT THE POINT OF CHANGE. WHERE THE ANGLE OF CHANGE IS LESS THAN 10° A PULL POST SHALL BE USED.
8. WHERE GRADE LINE HAS A CHANGE IN SLOPE OF 10° OR MORE, A CORNER POST WITH BRACING AS REQUIRED SHALLBE PLACED. WHERE ANGLE IS LESS THAN 10° LINE POST MAY BE USED.
9. WHERE TYPE 1 FENCE IS USED, THE FABRIC SHALL BE KNUCKLED SELVAGE ON TOP AND TWISTED AND BARBED SELVAGE ON BOTTOM.
10. PLACEMENT OF BRACED END POSTS OR CORNER POSTS WITHIN THE CLEAR ZONE SHALL BE AVOIDED.

RIGHT OF WAY FENCE, TYPE 2



FOOTING FOR POST WHEN ROCK LEDGE IS ENCOUNTERED

CORNER OR END POST

NOTE:
"X"+"Y" SHALL NOT EXCEED 30" WHEN "X" IS 0" TO 15" "Y"=15", AND THE POST SHALL BE SHORTENED AS REQUIRED. WHEN "X" EXCEEDS 15" "Y" SHALL BE DECREASED ACCORDINGLY.

CONTRACT 60I31 SHEET 923 OF 963

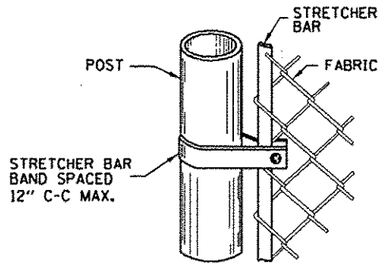
Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
7-1-2009	R.O.W. FENCE TYPES 1 AND 2 FENCE DETAILS

RIGHT OF WAY FENCE

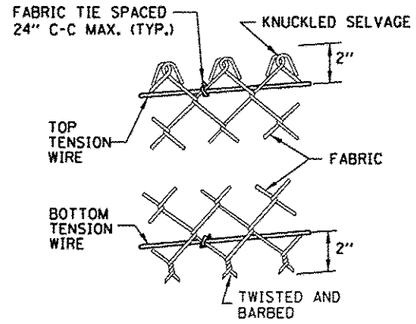
STANDARD D1-01

APPROVED Paul Kovacs CHIEF ENGINEER DATE 7-1-2009

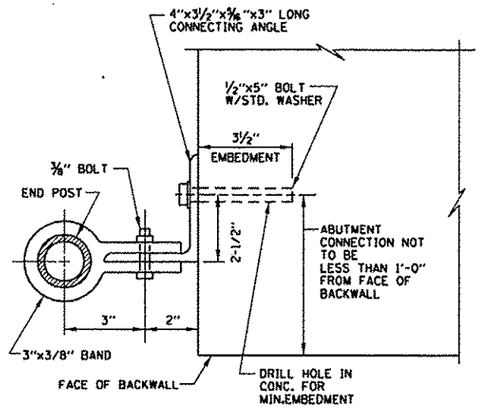


STRETCHER BARS SHALL BE GALVANIZED FLAT STEEL BAR NOT LESS THAN 1/4"x3/4" AND THE STRETCHER BAR BANDS SHALL BE GALVANIZED FLAT STEEL BAR NOT LESS THAN 1/8"x 1" WITH A 3/8" GALVANIZED CARRIAGE BOLT.

METHOD OF FASTENING
STRETCHER BAR TO POST



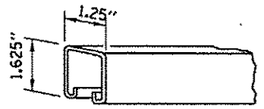
METHOD OF TYING
FABRIC TO TENSION WIRES



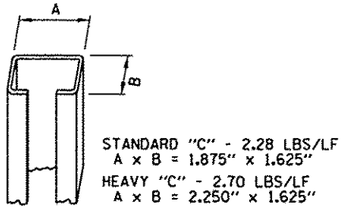
ABUTMENT CONNECTION DETAIL

NOTES FOR ABUTMENT CONNECTION:

1. WHEN ROLL FORMED SECTION IS USED IN LIEU OF PIPE AS END POST, THE POST SHALL BE BOLTED DIRECTLY TO THE ABUTMENT WALL WITH 2½" x 5" BOLTS WITH STANDARD WASHERS MEETING THE APPROVAL OF THE ENGINEER.

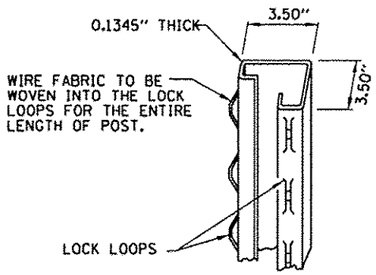


BRACE SECTION
1.25 LBS/LF



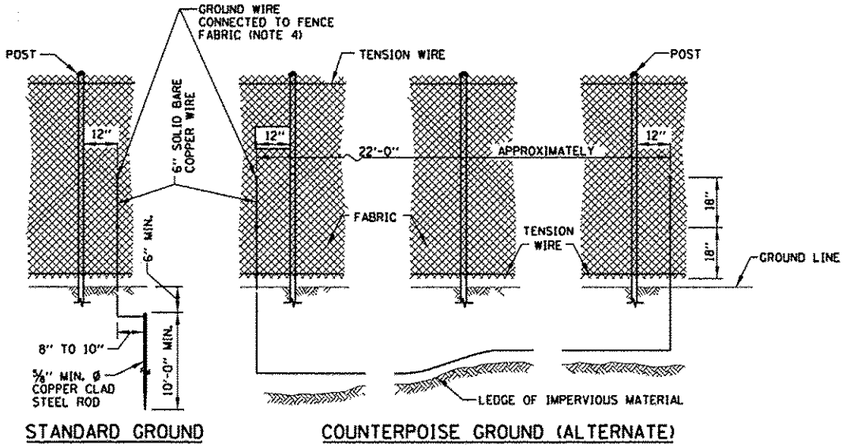
STANDARD "C" - 2.28 LBS/LF
A x B = 1.875" x 1.625"
HEAVY "C" - 2.70 LBS/LF
A x B = 2.250" x 1.625"

LINE POST "C" SECTION



TERMINAL POST SECTION
5.10 LBS/LF

DETAILS OF ROLL FORMED SECTIONS

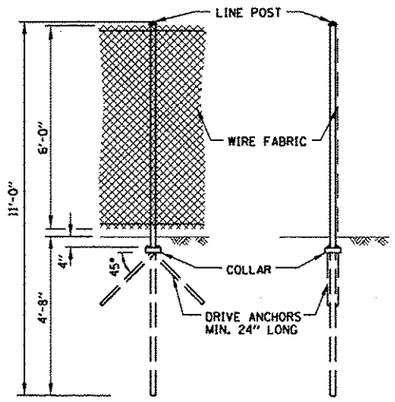


STANDARD GROUND

COUNTERPOISE GROUND (ALTERNATE)

NOTES FOR STANDARD AND COUNTERPOISE GROUND:

1. THE INTERVALS FOR GROUNDING CONTINUOUS FENCING SHALL NOT EXCEED 500 FEET IN URBAN AREAS AND 1000 FEET IN RURAL AREAS. FENCE ADJACENT TO A GATE SHALL BE GROUNDED A MAXIMUM DISTANCE 100 FEET EACH SIDE OF THE GATE.
2. FENCE CROSSING UNDER A POWER LINE SHALL BE GROUNDED, ONCE DIRECTLY UNDER THE CROSSING AND ONE ON EACH SIDE AT 25 TO 50 FEET AWAY. FENCE LOCATED DIRECTLY UNDER A TELEPHONE WIRE OR CABLE CROSSING SHALL HAVE A SINGLE GROUND.
3. COUNTERPOISE GROUNDS SHALL BE USED AT LOCATIONS WHERE GROUND RODS CAN NOT BE DRIVEN DUE TO IMPERVIOUS EARTH MATERIALS.
4. THE GROUND WIRES SHALL BE CONNECTED TO FENCE FABRIC AND GROUND ROD BY STAINLESS STEEL BOLTS AND WASHERS. THE LOWER CONNECTION OF THE GROUND WIRE SHALL BE MADE TO THE BOTTOM TENSION WIRE.
5. SEE SHEET 2 (OF 2) IN THIS SERIES FOR ADDITIONAL DETAILS AND GENERAL NOTES.



ALTERNATE
DRIVEN LINE POST ANCHORAGE
WITH OR WITHOUT DRIVE ANCHORS

NOTE FOR FENCE POST:

ALTERNATE DRIVEN LINE POST ANCHORAGE IS OPTIONAL. DRIVEN LINE POST ANCHORAGE WITHOUT DRIVE ANCHORS MAY BE USED IN AVERAGE TO GOOD SOIL CONDITIONS. WHEN SOIL IS WEAKER (Q_U < 1.25 TONS/ SQ. FT.) AND STABILTIY OF THE POST IS QUESTIONABLE, DRIVE ANCHORS SHALL BE USED. TYPES, SHAPES, DIMENSIONS AND COATING REQUIREMENTS OF DRIVE ANCHORS (ANCHOR BLADES AND COLLARS) FOR DIFFERENT TYPE OF POSTS SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

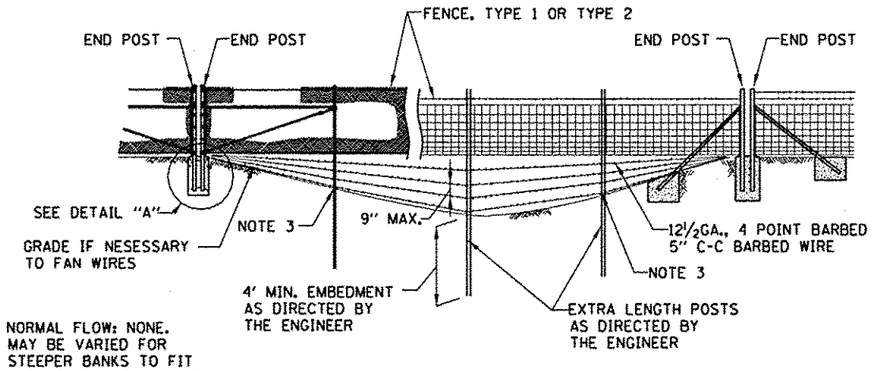
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009

ELECTRICAL GROUNDING DETAILS

Illinois Tollway
Open Roads for a Faster Future

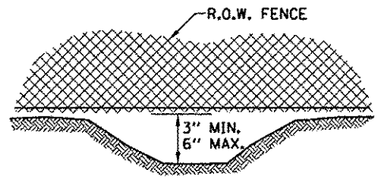
RIGHT OF WAY FENCE

STANDARD D1-01

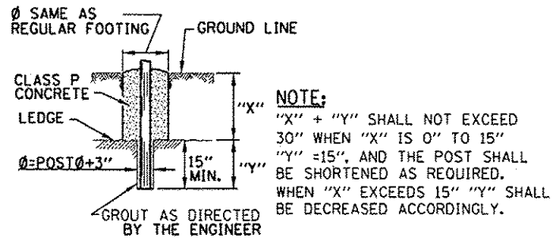


NORMAL FLOW: NONE.
MAY BE VARIED FOR STEEPER BANKS TO FIT VARIOUS CHANNEL SECTIONS.

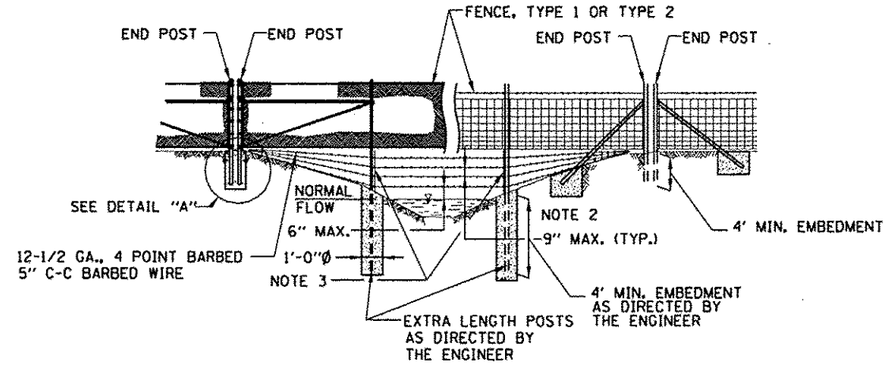
STREAM CROSSING TYPE I



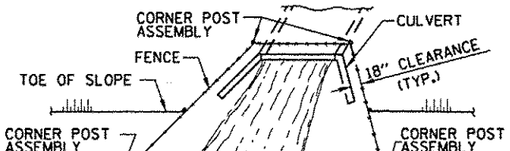
FENCE INSTALLATION OVER DITCH



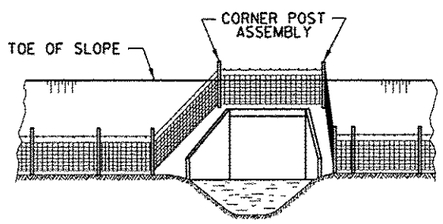
FOOTING FOR POST WHEN ROCK LEDGE IS ENCOUNTERED



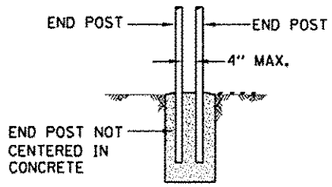
STREAM CROSSING TYPE II



PLAN AT HEADWALL



ELEVATION



THE FENCE FABRIC SHALL BE REPLACED BY BARBED WIRE STRANDS AT 12" MAXIMUM CENTERS BETWEEN THE END POSTS WHEN SHOWN ON THE PLANS THE BARBED WIRE STRANDS, IF REQUIRED, SHALL BE INCIDENTAL TO THE VARIOUS TYPES OF STREAM CROSSING REQUIRED.

DETAIL A

NOTES FOR STREAM CROSSING TYPE I AND TYPE II:

1. THESE INSTALLATION CONDITIONS ARE TYPICAL AND ARE NOT TO BE CONSTRUED AS REPRESENTATIVE OF ALL CONDITIONS WHICH WILL BE ENCOUNTERED CONSTRUCTION WILL BE VARIED AS REQUIRED OR DIRECTED TO MEET FIELD CONDITIONS.
2. FOR STREAM CROSSING OF THE TYPE REQUIRED THE BOTTOM BARBED WIRE SHALL BE ANCHORED TO CONCRETE FOOTING OR TO HOLES DRILLED IN POSTS, AND INTERMEDIATE WIRES SHALL BE TIED TO THE BOTTOM WIRE AND TO POSTS IN AN EVENLY SPACED FASHION TO PREVENT SLIPPAGE.
3. CONCRETE AND FITTINGS FOR ALL TYPES OF FENCE SHALL BE AS DETAILED FOR SIMILAR CONDITIONS ON STANDARD DRAWING SD XX-8A AND SD XX-8C.

NOTES FOR INSTALLATION AROUND HEADWALL:

1. THIS TYPE OF INSTALLATION IS TO BE USED ONLY WHEN SPECIFICALLY CALLED FOR IN THE CONTRACT PLANS.
2. WHEN THE WIDTH OF THE CULVERT MAKES NECESSARY TO ANCHOR A POST TO THE TOP OF THE CULVERT, A CAST IRON SHOE OR OTHER DEVICE APPROVED BY THE ENGINEER SHALL BE USED. THE COST OF ANCHORING THE POST SHALL BE INCIDENTAL TO THE TYPE OF FENCE REQUIRED.

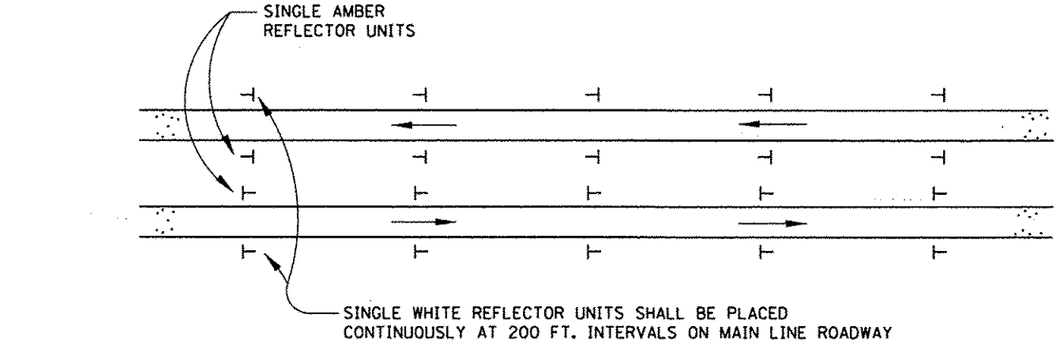
INSTALLATION AROUND HEADWALL

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

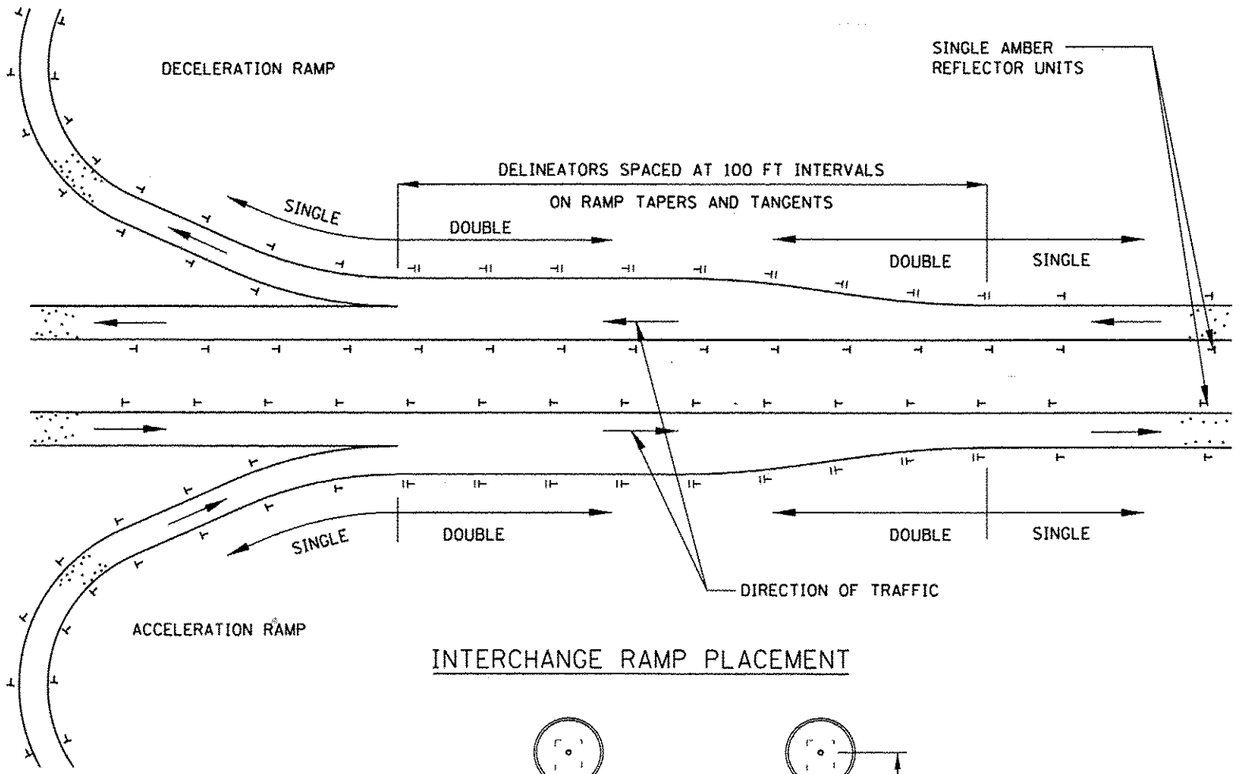
Illinois Tollway
Open Roads for a Better Future

RIGHT OF WAY FENCE

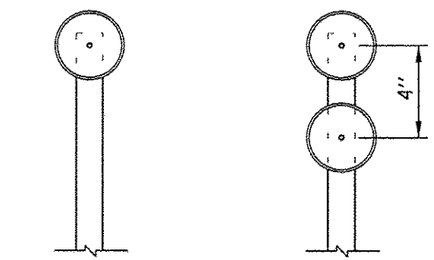
STANDARD D1-01



TANGENT PLACEMENT



INTERCHANGE RAMP PLACEMENT



SINGLE UNIT DOUBLE UNIT

TYPICAL DELINEATORS

GENERAL NOTES:

EMERGENCY CROSSOVERS/MEDIAN OPENINGS DELINEATION-THE FOLLOWING DELINEATION SHOULD BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT APPROACHING EMERGENCY CROSSOVER/MEDIAN OPENINGS.

A. ONE-HALF OF A MILE IN ADVANCE OF THE EMERGENCY CROSSOVER/MEDIAN OPENINGS ONE WHITE REFECTOR UNIT OVER THREE AMBER REFLECTOR UNITS.

B. ONE-FOURTH OF A MILE IN ADVANCE OF THE EMERGENCY CROSSOVER/MEDIAN OPENINGS 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 CROSSOVER/MEDIAN OPENINGS ONE WHITE REFLECTOR UNIT OVER ONE AMBER REFLECTOR UNIT.

NOTES FOR POST MOUNTED DELINEATOR INSTALLATION:

1. DELINEATORS ON TANGENT SECTIONS OF MAIN LINE SHALL BE PLACED AT 200 FOOT SPACING. DELINEATORS ON RAMPS AND ACCELERATION AND DECELERATION LANES SHALL BE PLACE AT MAXIMUM SPACING OF 100 FEET.

2. A. MAIN LINE-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.

3. DELINEATORS 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.

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

5. POST MOUNTED DELINEATORS SHALL BE PLACED CONTINUOUSLY AS NOTED ABOVE IN CONJUNCTION WITH GUARDRAIL INSTALLED.

NOTES FOR BARRIER DELINEATOR:

1. THE DELINEATORS SHALL BE PLACED AT 100 FOOT SPACINGS ALONG ROADWAY AND 50 FOOT ON BRIDGES AND THREE DELINEATORS AT 15 FOOT SPACINGS ON BRIDGE APPROACHES. THE SPACINGS ARE THE SAME FOR TANGENT AND CURVE ALIGNMENTS. WHITE DELINEATOR SHALL BE PLACED ON THE RIGHT SIDE AND AMBER ON THE LEFT SIDE.

2. REFLECTOR MARKERS TYPE B AND TYPE C SHALL HAVE REFLECTIVE SURFACE ON ONE SIDE ONLY.

CONTRACT 60I31 SHEET 926 OF 963

SHEET 1 OF 3

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

DATE	REVISIONS
7-1-2009	CHANGED BARRIER TO F-SHAPE CONFIG.
	ADDED SECTION C-C
	NEW BARRIER DELINEATORS
2-7-2012	REVISED REFLECTOR MARKER TYPE C DIMENSION

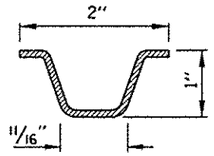
Illinois Tollway
Open Roads for a Faster Future

DELINEATORS

STANDARD D4-02

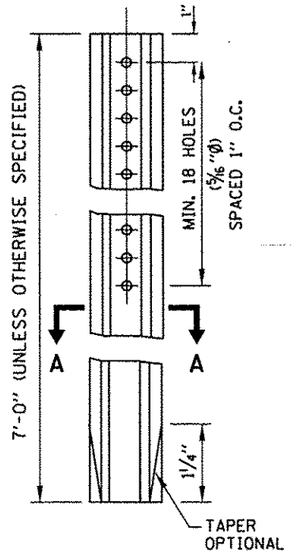
POST MOUNTED DELINEATOR SPACING ON CURVES

RADIUS OF CURVE (FT.)	SPACING ON CURVE (FT.)	SPACING IN ADVANCE AND BEYOND CURVE (FT.)		
		1ST	2ND	3RD
LESS THAN 100	20	40	65	125
100 - 174	30	60	90	180
175 - 224	35	70	110	200
225 - 274	40	85	125	200
275 - 349	50	95	145	200
350 - 449	55	110	170	200
450 - 549	65	125	190	200
550 - 649	70	140	200	200
650 - 749	75	150	200	200
750 - 849	80	165	200	200
850 - 949	85	175	200	200
950 - 1049	90	185	200	200
1050 - 1299	100	200	200	200
1300 - 1999	125	200	200	200
2000 - 2999	150	200	200	200
3000 - 3999	175	200	300	200
MORE THAN 3999	200	200	200	200

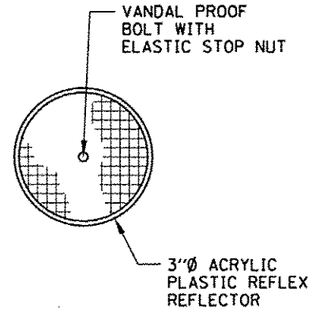


SECTION A-A

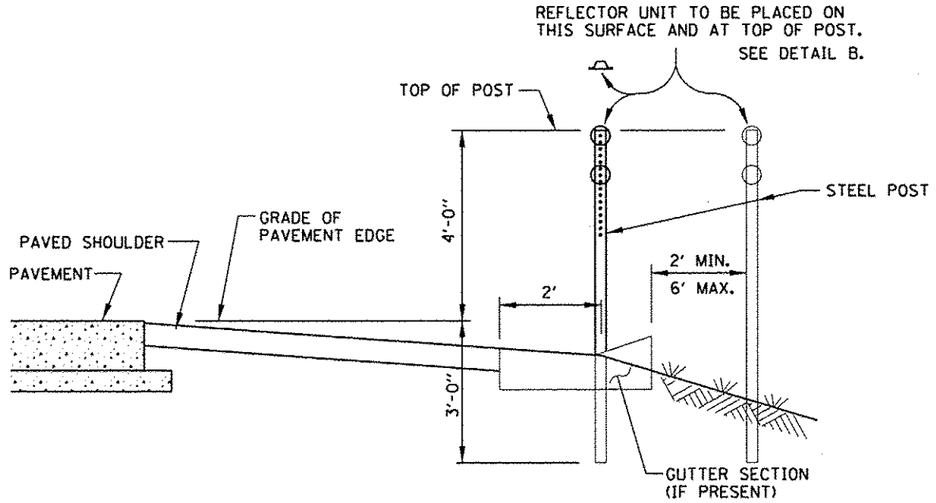
STEEL- 1.12 LBS/FT.



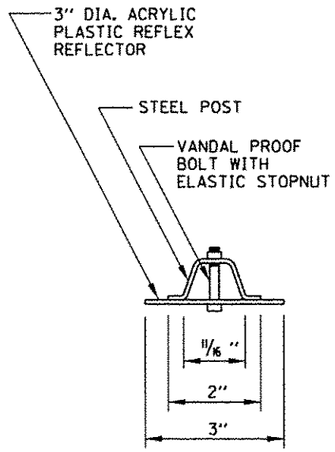
STEEL POST



DELINEATORS



DELINEATOR INSTALLATION



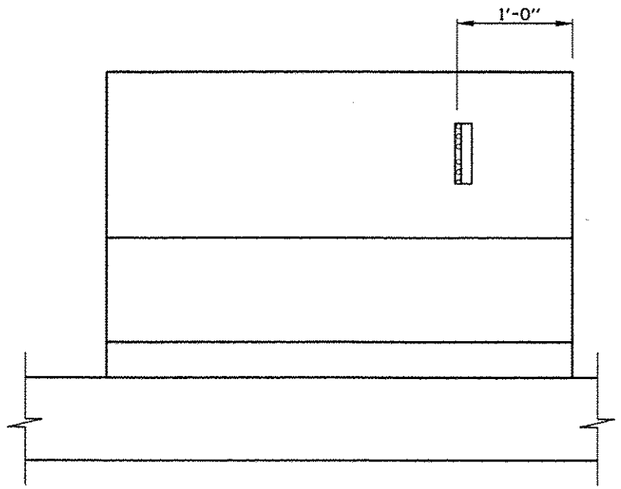
DETAIL B

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

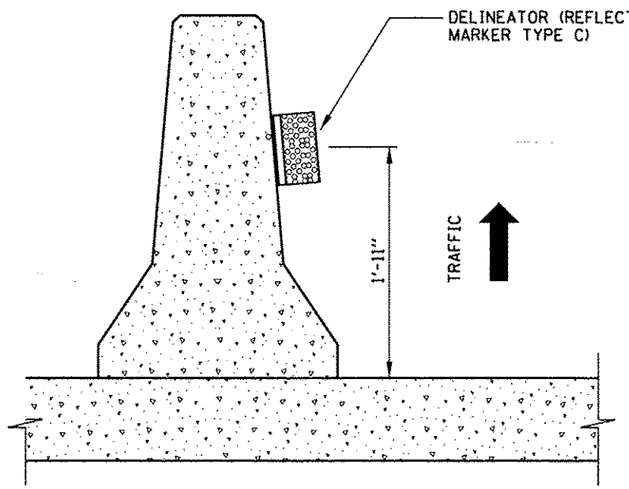
Illinois Tollway
Open Roads for a Faster Future

DELINEATORS

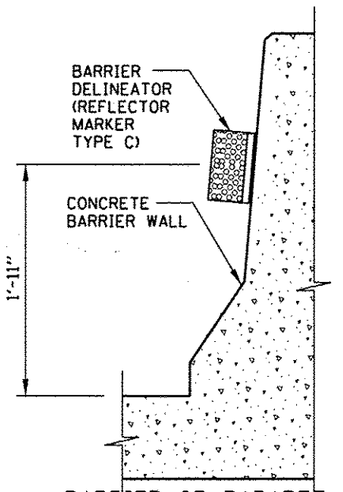
STANDARD D4-02



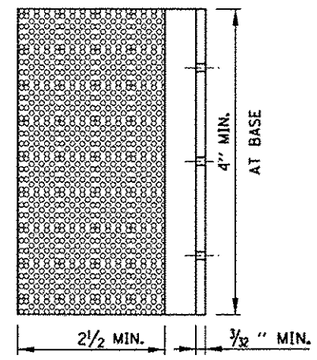
ELEVATION



CROSS-SECTION

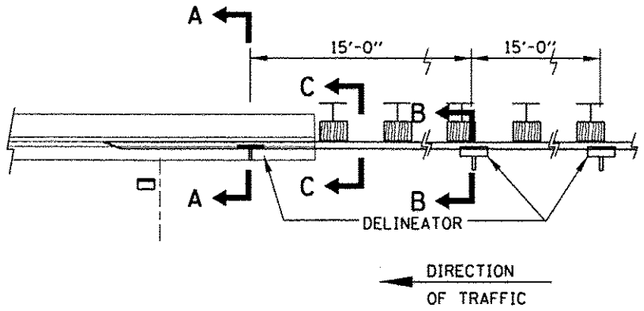


BARRIER OR PARAPET
DELINEATOR INSTALLATION

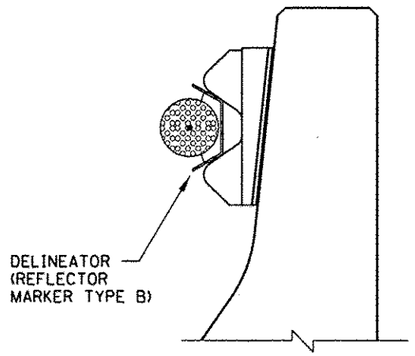


DELINEATOR
(REFLECTOR MARKER TYPE C)

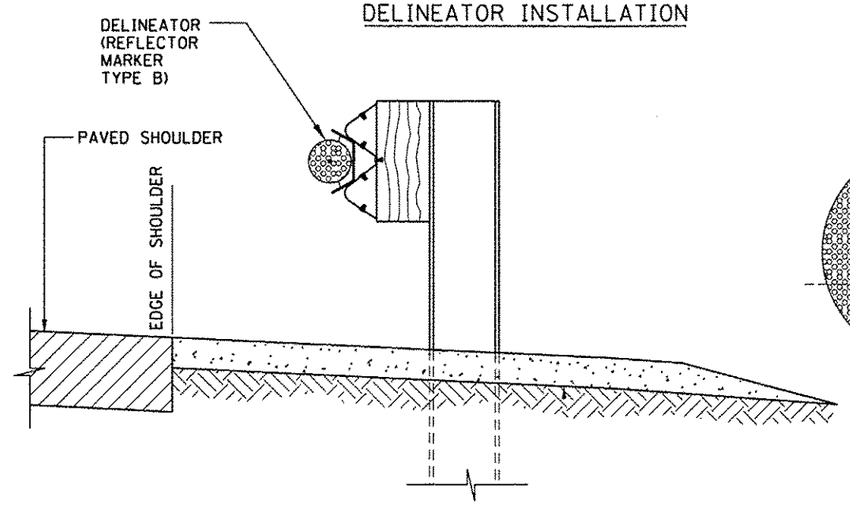
TEMPORARY CONCRETE BARRIER



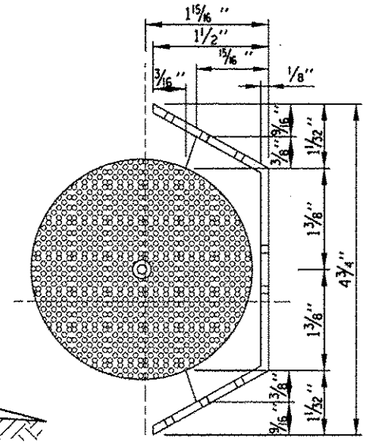
PLAN



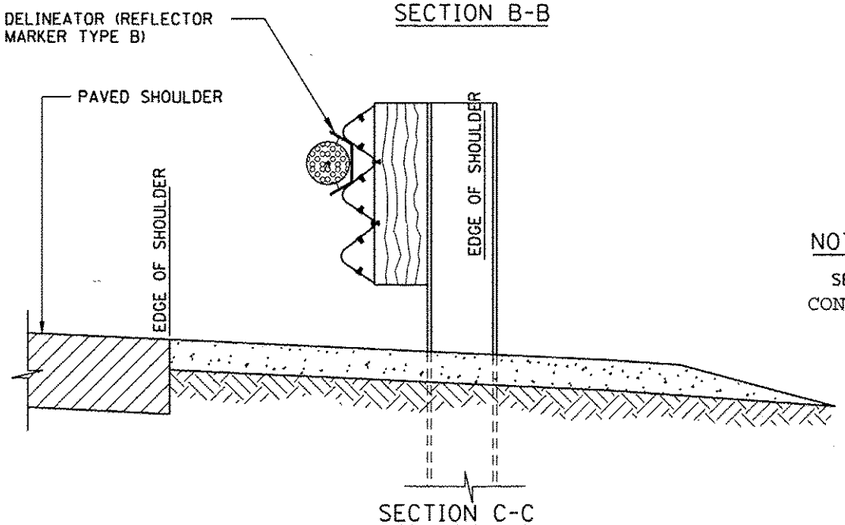
SECTION A-A



SECTION B-B



DELINEATOR
(REFLECTOR MARKER TYPE B)



SECTION C-C

DELINEATOR INSTALLATION ON GUARDRAIL AT BRIDGE APPROACHES

ALSO SEE SHEET 1 (OF 3) IN THIS SERIES FOR ADDITIONAL INFORMATION

NOTES FOR BARRIER DELINEATOR:

1. THE DELINEATORS SHALL BE PLACED AT 100 FOOT SPACINGS ALONG ROADWAY AND 50 FOOT ON BRIDGES AND THREE DELINEATORS AT 15 FOOT SPACINGS ON BRIDGE APPROACHES. THE SPACINGS ARE THE SAME FOR TANGENT AND CURVE ALIGNMENTS. WHITE DELINEATOR SHALL BE PLACED ON THE RIGHT SIDE AND AMBER ON THE LEFT SIDE.
2. REFLECTOR MARKERS TYPE B AND TYPE C SHALL HAVE REFLECTIVE SURFACE ON ONE SIDE ONLY.

NOTE:

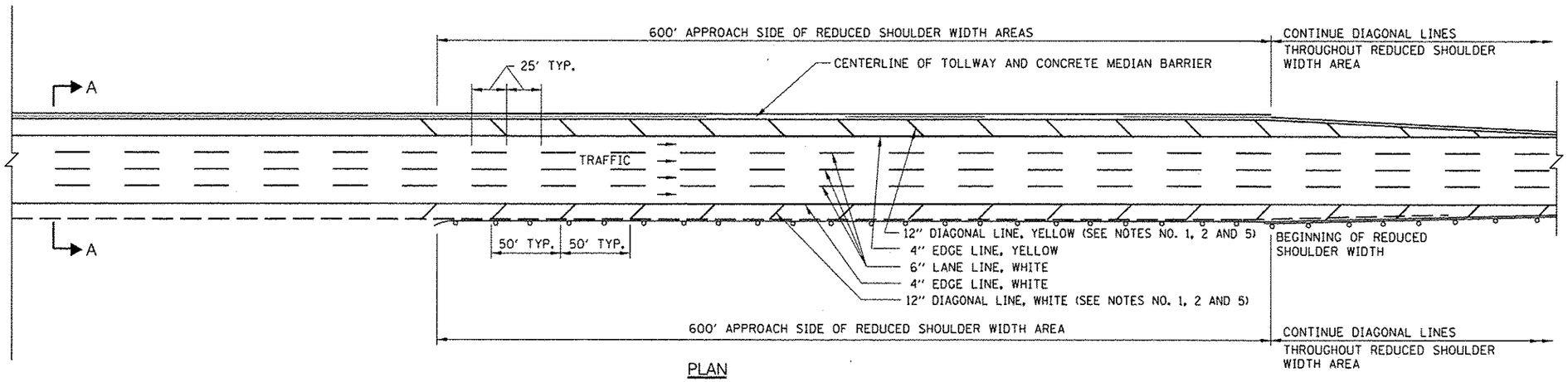
SEE SHEET 1 OF THIS SERIES FOR NOTES.

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

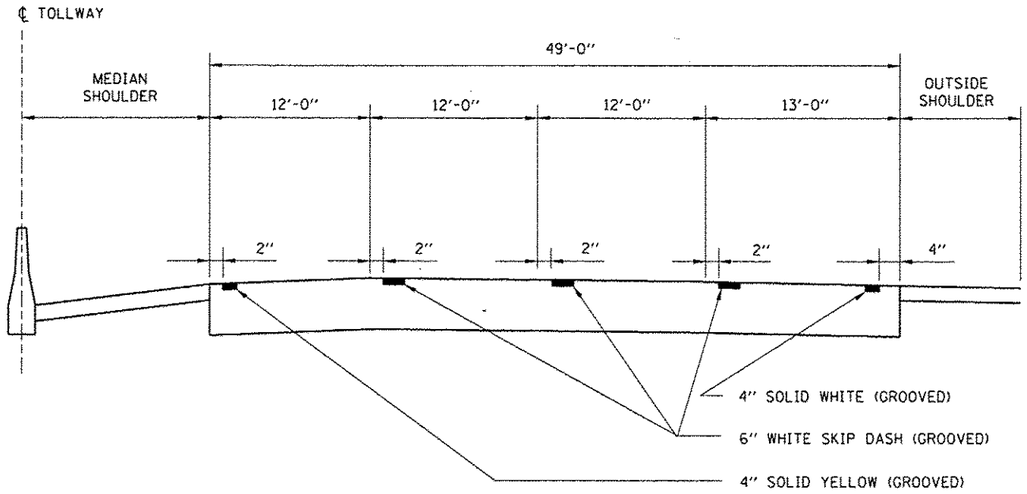
Illinois Tollway
Open Roads for a Faster Future

DELINEATORS

STANDARD D4-02



PLAN



SECTION A-A

GENERAL NOTES:

1. DIAGONAL SHOULDER STRIPING REQUIRED WHERE HMA SHOULDER WIDTH IS LESS THAN STANDARD.
2. ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND HOT-MIX 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 LANE LINES AND EDGE LINES SHALL BE GROOVED.
5. DIAGONAL STRIPING SHALL BE SURFACE APPLIED.
6. GORE STRIPING (CHEVRON) SHALL BE SURFACED APPLIED.

ROADWAY AND SHOULDER STRIPING - NEW CONSTRUCTION

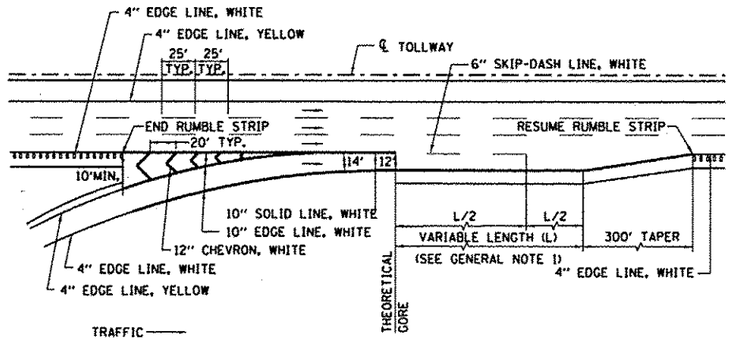
Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
9-19-2007	STRIPE LOCATION ℄ OUTSIDE LANE
7-1-2009	ADDED LINE GROOVING NOTES
2-7-2012	REVISED NOTES

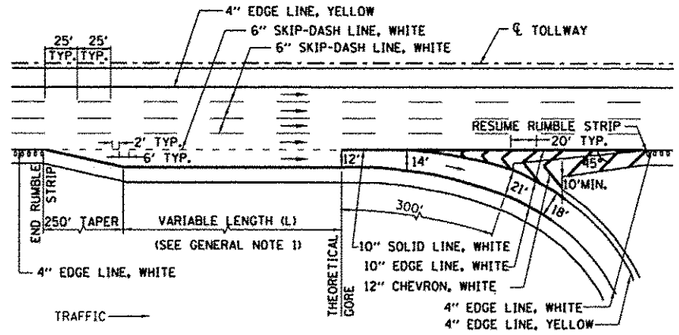
PERMANENT PAVEMENT MARKINGS

STANDARD D5-03

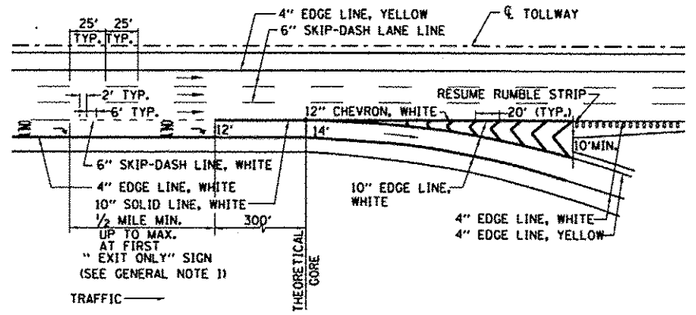
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 7-1-2009



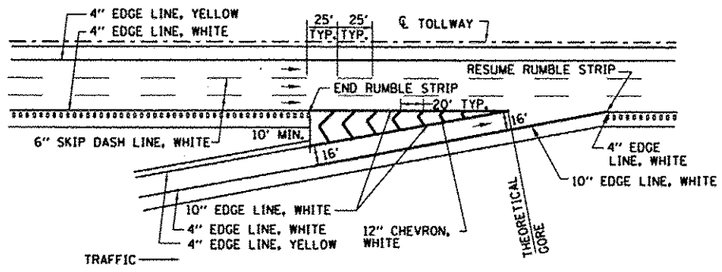
ENTRANCE - SINGLE LANE RAMP - PARALLEL TYPE



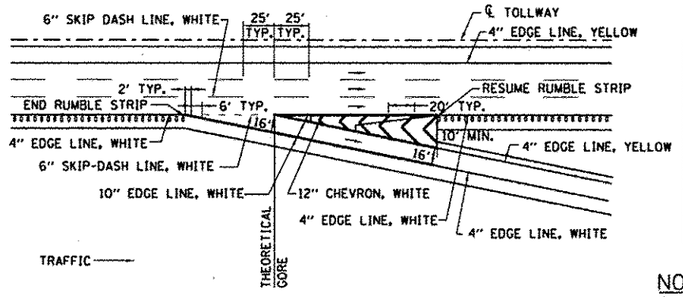
EXIT - SINGLE LANE RAMP - PARALLEL TYPE



EXIT - SINGLE LANE RAMP - WITH AUXILIARY LANE



ENTRANCE - SINGLE LANE RAMP - TAPER TYPE



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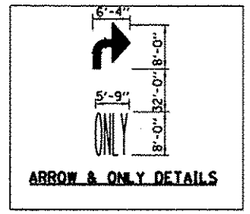
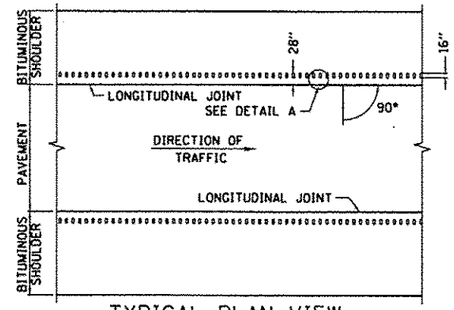
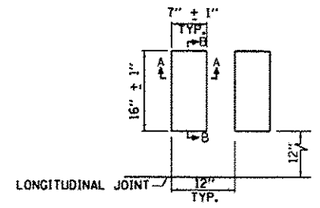


ARROW & ONLY DETAILS

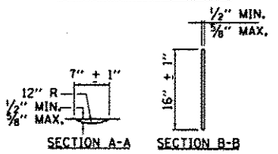
NOTE:
PAVEMENT MARKING LETTERS AND SYMBOLS-ONLY AND ARROW ARE TO BE TYPICALLY PLACED AT ½ MILE EXIT ONLY GUIDE SIGN, AT GORE EXIT GUIDE SIGN AND APPROXIMATELY HALFWAY BETWEEN THE TWO.



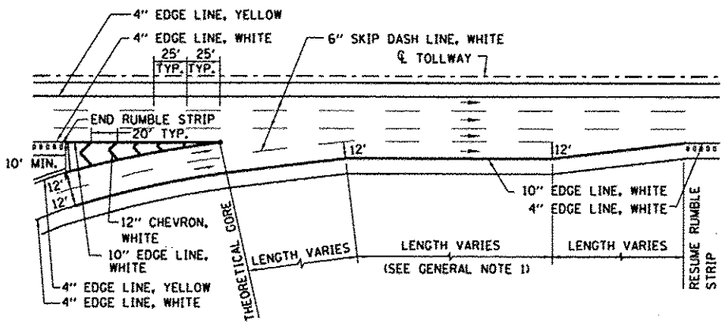
TYPICAL PLAN VIEW
MAINLINE



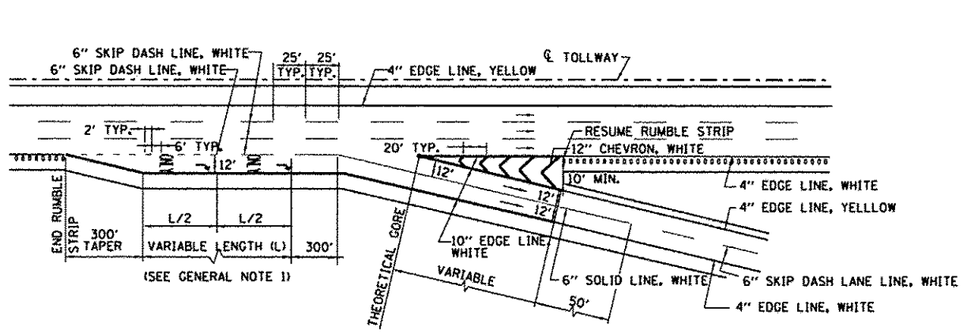
PLAN DETAIL A



SHOULDER RUMBLE STRIP DETAILS



ENTRANCE - TWO LANE RAMP



EXIT - TWO LANE RAMP

GENERAL NOTES:

1. RUMBLE STRIPS SHALL BE INSTALLED UP TO THE GORE WHEN AUXILIARY LANES, ACCELERATION LANES AND DECELERATION LANES, LENGTHS ARE GREATER THAN 1000 FT.
2. ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND HOT-MIX 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 SURFACED APPLIED.
5. LETTERS AND SYMBOL MARKING SHALL BE SURFACED APPLIED.

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

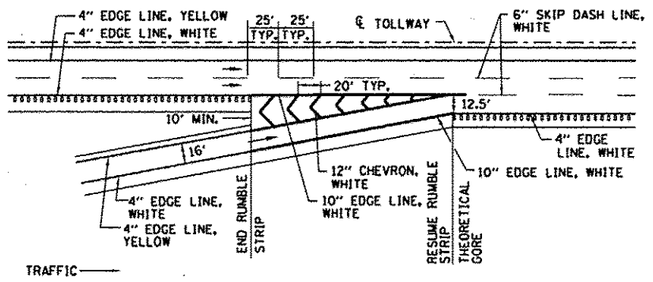
CONTRACT 60I31 SHEET 930 OF 963
SHEET 1 OF 2

Illinois Tollway
Open Roads for a Faster Future

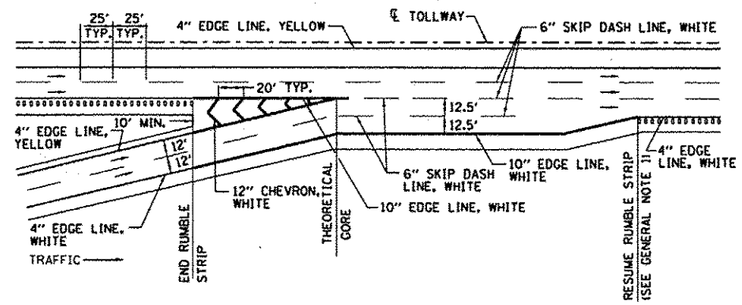
DATE	REVISIONS
7-1-2009	ADDED LINE GROOVING NOTES

PAVEMENT MARKING AND SHOULDER RUMBLE STRIP DETAILS

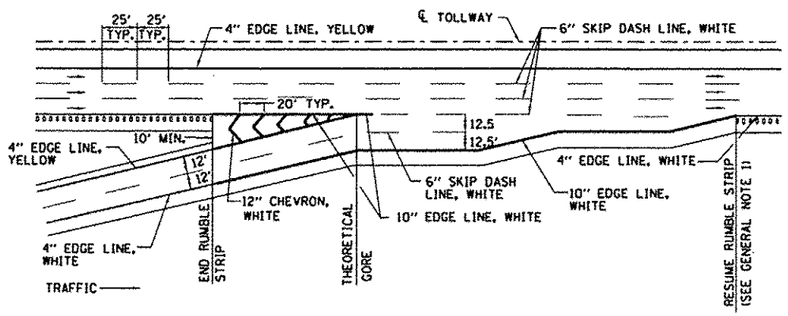
STANDARD D6-01



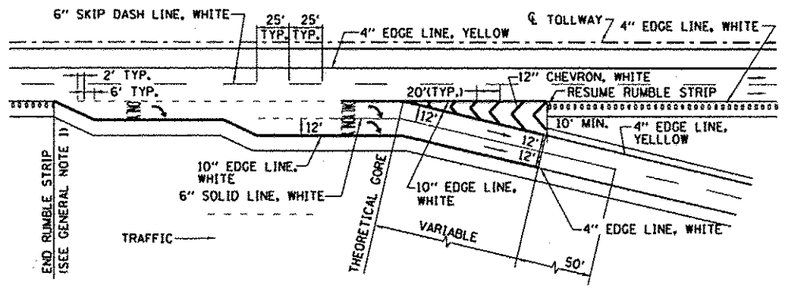
ENTRANCE - SINGLE LANE RAMP WITH BEGINNING OF LANE 3



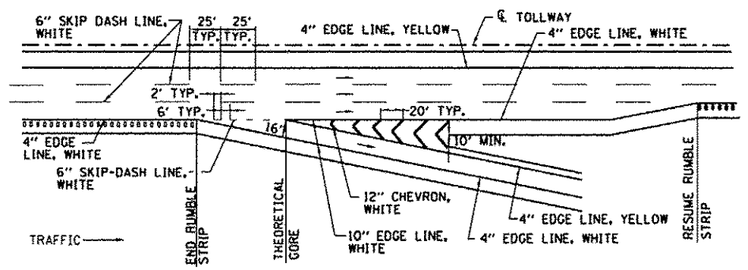
ENTRANCE - TWO LANE RAMP WITH BEGINNING OF LANE 3



ENTRANCE - TWO LANE PARALLEL RAMP



EXIT - TWO LANE PARALLEL RAMP



EXIT - SINGLE LANE RAMP LANE THREE TERMINATION

CONTRACT 60I31 SHEET 931 OF 963
SHEET 2 OF 2

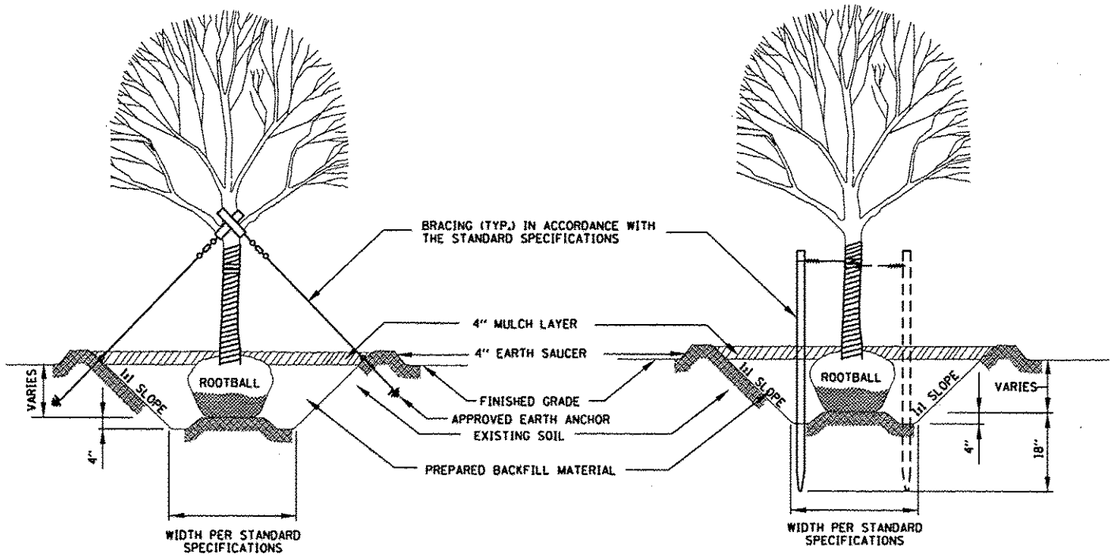
SEE SHEET 1 OF 2. IN THIS SERIES FOR GENERAL NOTES.

Illinois Tollway
Open Roads for a Faster Future

PAVEMENT MARKIING AND SHOULDER RUMBLE STRIP DETAILS

STANDARD D6-01

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

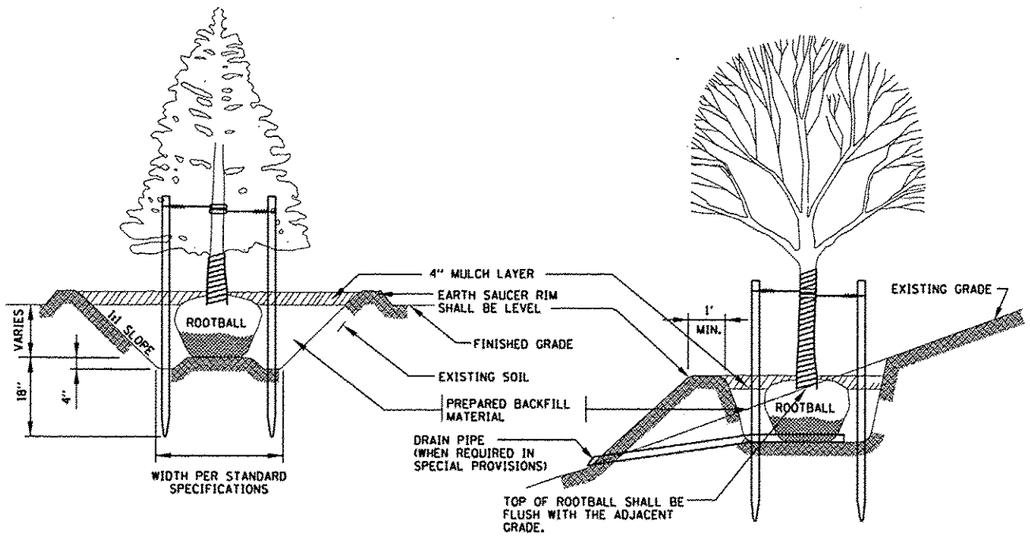


DECIDUOUS TREE PLANTING DETAIL
(4½" CALIPER AND LARGER)

DECIDUOUS TREE PLANTING DETAIL
GREATER THAN 4 FT HEIGHT AND LESS THAN 4½" CALIPER)

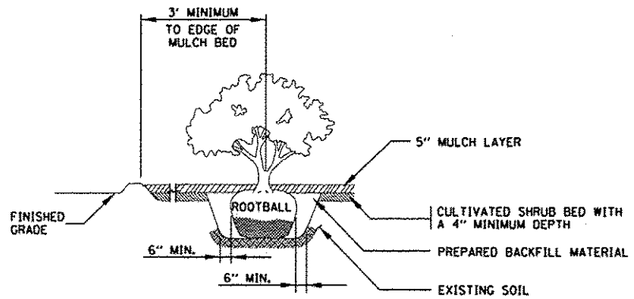
PLANTING NOTES:

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES, FIBER OPTICS, STORM SEWERS AND DRAINAGE STRUCTURES IN THE FIELD PRIOR TO THE EXCAVATION OF ANY PLANT PITS OR PLANTING BEDS. LOCATIONS OF TREE AND SHRUB PLANTINGS SHALL BE ADJUSTED TO AVOID DAMAGING ANY UNDERGROUND FEATURES.
2. THE PLANT LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATELY ONLY. THE EXACT LOCATIONS SHALL BE ADJUSTED AS REQUIRED IN THE FIELD BY THE ENGINEER. TREE LOCATIONS SHALL NOT BE MOVED CLOSER TO PAVEMENT EDGES THAN SHOWN ON THE PLANS OR A MINIMUM OF FIFTY (50) FEET.
3. TREES SHALL BE SPACED A MINIMUM OF FIVE (5) FEET FROM FENCES.
4. TREE AND SHRUB PLANTINGS SHALL NOT BLOCK ACCESS TO GATES IN FENCES.
5. TREES PLANTED IN TURF AREAS SHALL BE SPACED A MINIMUM OF TEN (10) FEET FROM THE EDGE OF A SHRUB BED.
6. TREES SHALL BE SPACED A MINIMUM OF TEN (10) FEET FROM NOISEWALLS OR OTHER STRUCTURES.
7. DITCHES SHALL BE KEPT CLEAR OF PLANTINGS. THE MINIMUM VERTICAL DISTANCE BETWEEN DITCH BOTTOMS AND PLANTS SHALL BE THREE (3) FEET.
8. IF DURING EXCAVATION, A PLANT HOLE OR PLANTING BED SHOWS POOR DRAINAGE, STANDING WATER OR AN IMPERVIOUS STRATUM OF SOIL, THE CONTRACTOR SHALL CEASE EXCAVATION AND SHALL NOTIFY THE ENGINEER. THE PLANT(S) SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER AND THE HOLE(S) OR BED SHALL BE FILLED IN AND RESTORED TO MATCH THE CONDITION AND VEGETATION OF THE ADJACENT AREA.
9. IMPROPERLY PRUNED PLANTINGS WILL BE REJECTED AND REPLACEMENTS WILL IMMEDIATELY BE MADE BY THE CONTRACTOR.
10. THE SIDES OF ALL PLANT PITS SHALL BE LOOSENED TO DISJOIN ANY GLAZING WHICH MAY OCCUR DURING THE DIGGING OPERATION.
11. TREE WRAPPING SHALL EXTEND TO THE LOWEST MAJOR BRANCH.
12. TOP OF ROOTBALL SHALL BE APPROXIMATELY 2 INCHES ABOVE ADJACENT FINISHED GRADE.
13. SHRUB PLANTINGS:
    - A. UNLESS NOTED OTHERWISE, ALL SHRUBS SHALL BE PLANTED IN MULCHED BEDS. THE EDGE OF THE MULCH BED SHALL EXTEND A MINIMUM OF THREE (3) FEET BEYOND THE CENTERS OF THE PERIPHERAL PLANTS IN THE BED.
    - B. THE EDGE OF A MULCH BED FOR SHRUB PLANTINGS ADJACENT TO A WALL, FENCE, GUARDRAIL OR OTHER FIXED OBJECT SHALL EXTEND TO THE OBJECT. THE PERIPHERAL PLANTS IN THE BED SHALL NOT BE PLANTED WITHIN FIVE (5) FEET OF THE OBJECT.
    - C. WHEN A TREE IS LOCATED IN A SHRUB BED, THE MINIMUM DISTANCE BETWEEN THE TREE AND THE ADJACENT SHRUBS SHALL BE SIX (6) FEET.
14. THE CONTRACTOR SHALL RESTORE ALL AREAS, OBJECTS AND VEGETATION DISTURBED BY THE LANDSCAPE OPERATIONS TO ORIGINAL CONDITIONS.
15. STAKES, GUYWIRES AND ALL TREE SUPPORTS SHALL BE REMOVED AFTER ONE YEAR OR AS DIRECTED BY THE LANDSCAPE ARCHITECT.
16. REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM TOP HALF OF ROOTBALL. THE LOWER HALF OF BURLAP SHALL BE FOLDED TOWARD THE BOTTOM OF THE ROOTBALL.



EVERGREEN TREE PLANTING DETAIL

STEEP SLOPE PLANTING DETAIL



SHRUB PLANTING DETAIL

CONTRACT 60I31 SHEET 932 OF 963

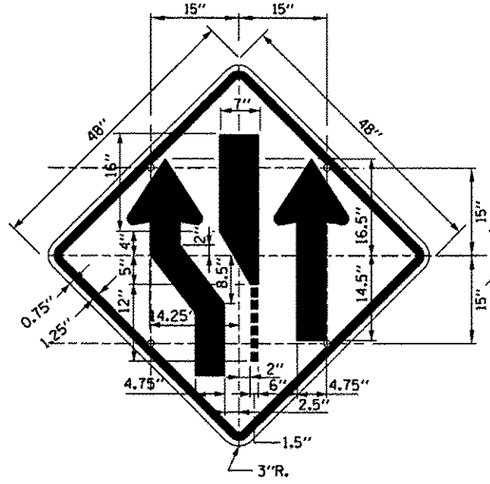
APPROVED Paul Kovacs CHIEF ENGINEER DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
2-7-2012	REVISED POST BRACING DETAIL.

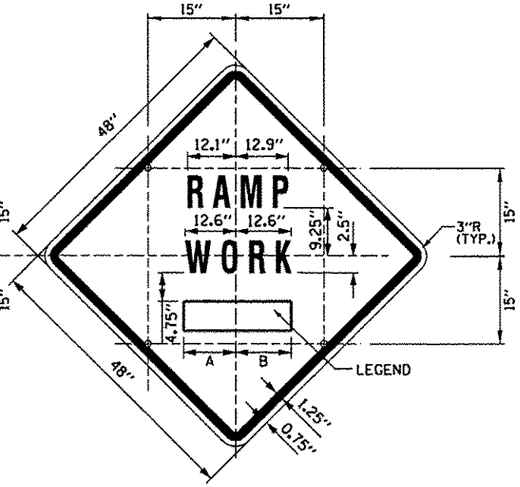
LANDSCAPE PLANTING DETAILS

STANDARD D7-01



SIGN TS-1 (O)

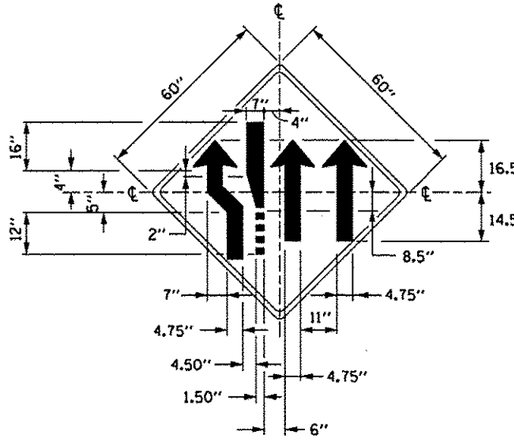
COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND SYMBOL - BLACK
SIZE: 48"×48"
MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN
NOTE: SIGN TS-1L IS SHOWN; REVERSE SYMBOL FOR SIGN TS-1R



SIGN TS-2 (O)

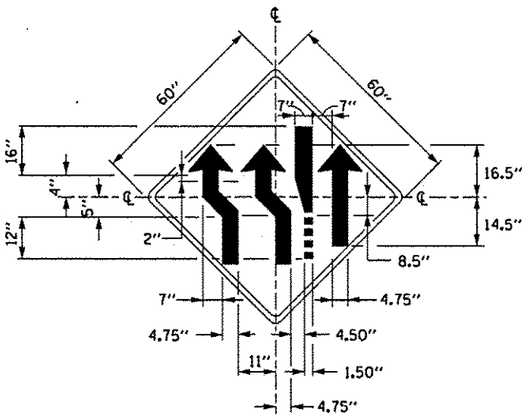
COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND SYMBOL - BLACK
SIZE: 48"×48"
LETTERING: 7" FEDERAL SERIES D
MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN

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"



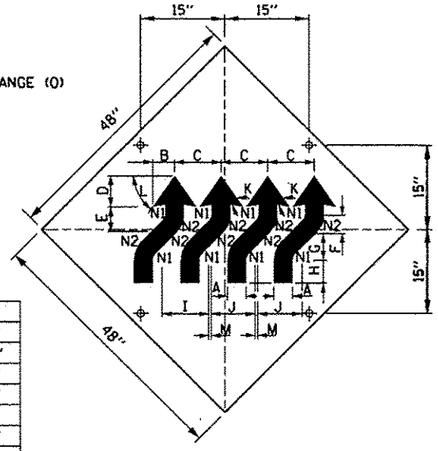
SIGN TS-1CL (O)

COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND SYMBOL-BLACK
(NON-REFLECTORIZED)



SIGN TS-1CR (O)

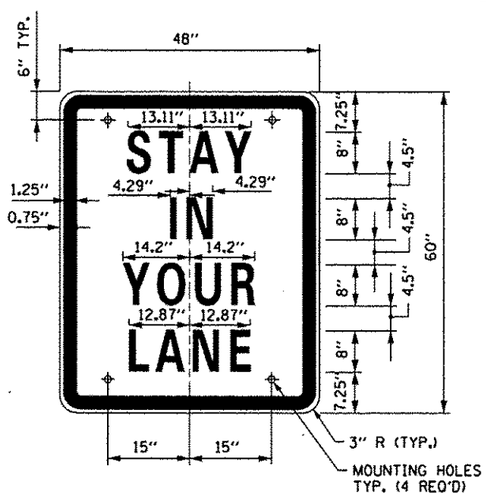
COLOR: BACKGROUND - FLUORESCENT ORANGE (O)
BORDER AND SYMBOL-BLACK
(NON-REFLECTORIZED)



A	4½"
B	5¾"
C	12½"
D	7¾"
E	6½"
F	4½"
G	6½"
H	6"
I	12¾"
J	12"
K	45°
L	55°
M	0¾"
N1	2"
N2	6½"

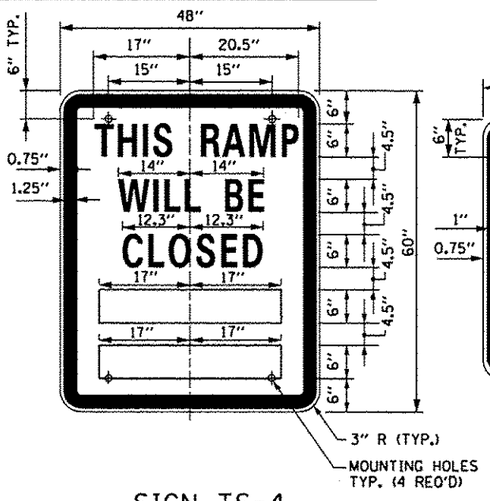
SIGN WI-4dR (O)

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



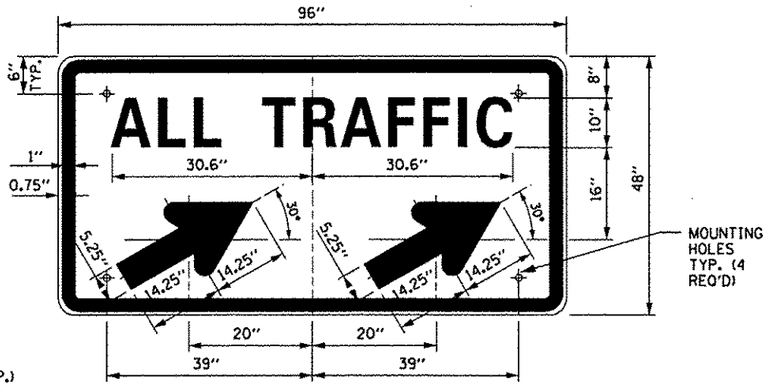
SIGN TS-3

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(✱A)
BORDER AND LETTERS - BLACK
SIZE: 48"×60"
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"×60"
LETTERING: LEGEND - 6" FEDERAL SERIES C
MOUNTING HOLES: 7/16" DIA., 4 HOLES, SPACED AS SHOWN



SIGN TS-5a & TS-5b

COLOR: BACKGROUND - WHITE (REFLECTORIZED)(✱A)
BORDER AND LETTERS - BLACK
ARROW - BLACK
SIZE: 96"×48"
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

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.

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%

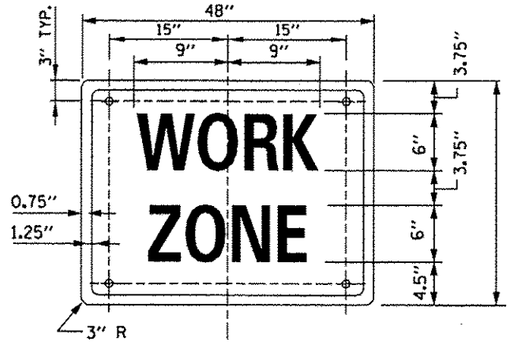
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 5-1-2009

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
5-1-2009	DELETED FLASHING ARROW BOARDS
1-1-2011	ADDED SIGN COLOR DESIGNATION

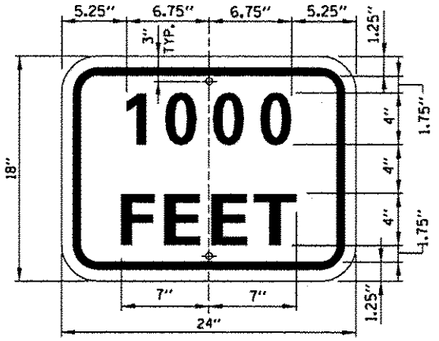
CONSTRUCTION SIGNS

STANDARD E1-02



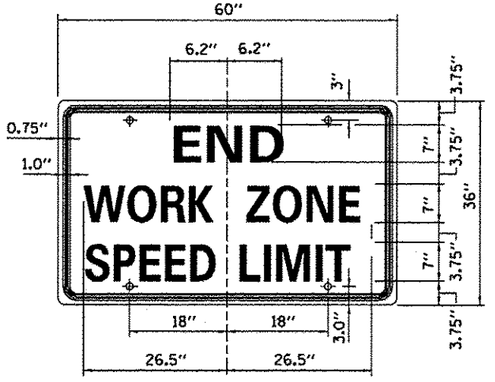
SIGN G20-I102 (0)

COLOR: BACKGROUND - FLUORESCENT ORANGE (0)
BORDER AND LETTERS - BLACK
SIZE: 48"x24"
LETTERING: 6" FEDERAL SERIES C.
MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN ON SIGN G20-2A



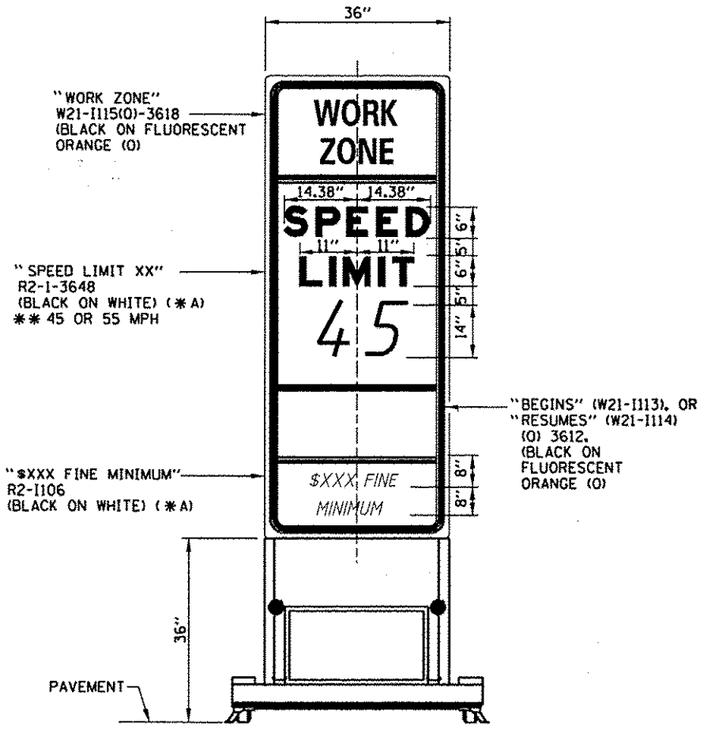
SUPPLEMENTAL PLATE (0)

COLOR: BACKGROUND - FLUORESCENT ORANGE (0)
BORDER AND LETTTERS - BLACK
SIZE: 24"x18"
LETTERING: 4" FEDERAL SERIES D
MOUNTING HOLES: 7/16" DIA.

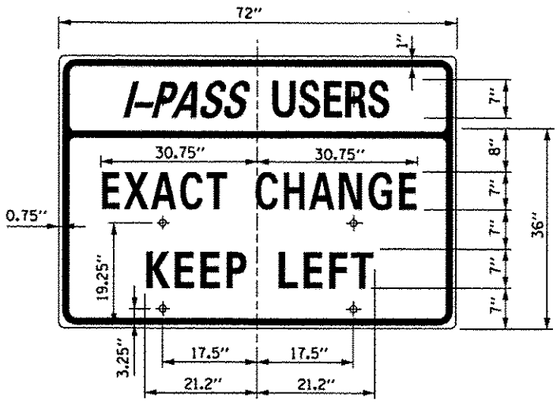


SIGN G20-I103 (0)

COLOR: BACKGROUND - FLUORESCENT ORANGE (0)
BORDER AND LETTERS - BLACK
SIZE: 60"x36"
LETTERING: 6" FEDERAL SERIES C.
MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN

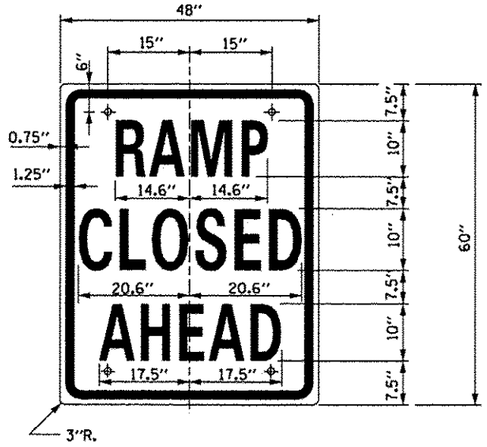


WORK ZONE SPEED LIMIT
SIGN ASSEMBLY



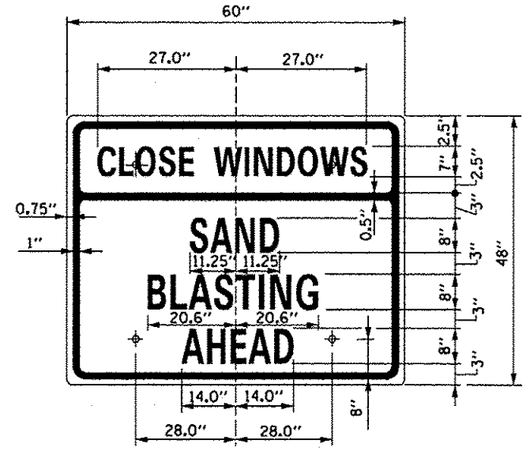
SIGN TS-7

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



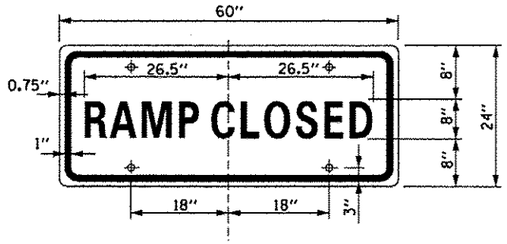
SIGN TS-9

COLOR: BACKGROUND - WHITE (REFLECTURIZED)
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 (0)

COLOR: BACKGROUND - FLUORESCENT ORANGE (0)
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 (REFLECTURIZED)
BORDER AND LETTTERS - BLACK
SIZE: 60"x24"
LETTERING: 8" FEDERAL SERIES C
MOUNTING HOLES: 7/16" DIA., 4 HOLES SPACED AS SHOWN

GENERAL 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 THE 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.
(0) FLUORESCENT ORANGE REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.
(*A)-REFLECTIVE SHEETING PER THE STANDARD SPECIFICATIONS.

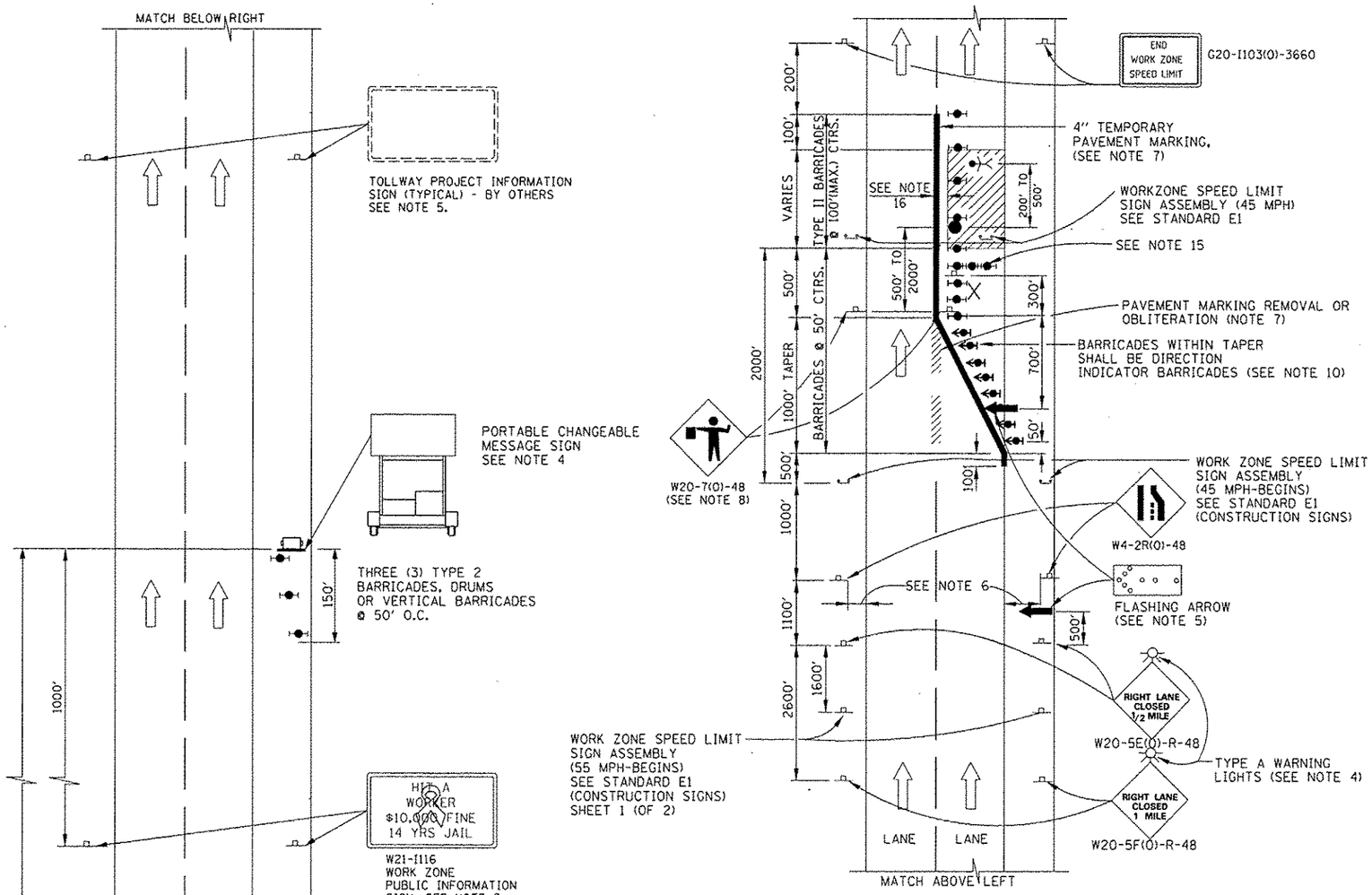
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 5-1-2009

CONTRACT 60I31 SHEET 934 OF 963
SHEET 2 OF 2

Illinois Tollway
Open Roads for a Faster Future

CONSTRUCTION SIGNS

STANDARD E1-02



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 FOURS 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 TOLLWAY SUPPLEMENTAL SPECIFICATIONS.
9. WHENEVER WORKERS ARE PRESENT AND WITHIN 12' OR LESS TO MOVING TRAFFIC, 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 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.

ONE-LANE CLOSURE

ADVANCE SIGNAGE NOTES:

1. THE ADVANCE SIGNAGE 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.
2. THE ROAD CONSTRUCTION AHEAD SIGN (W20-1A, WITH W16-3a SUPPLEMENTAL PLATE) OR ROAD WORK AHEAD SIGN (W20-1, WITH 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.
3. THE WORK ZONE 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.
4. 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.
5. THE 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 TOLLWAY REGARDING THE LOCATION OF THESE SIGNS AND NOTIFY THE TOLLWAY OF ANY DAMAGE TO THE SIGNS OR SUPPORTS.

SYMBOLS

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

SHEET 1 OF 2

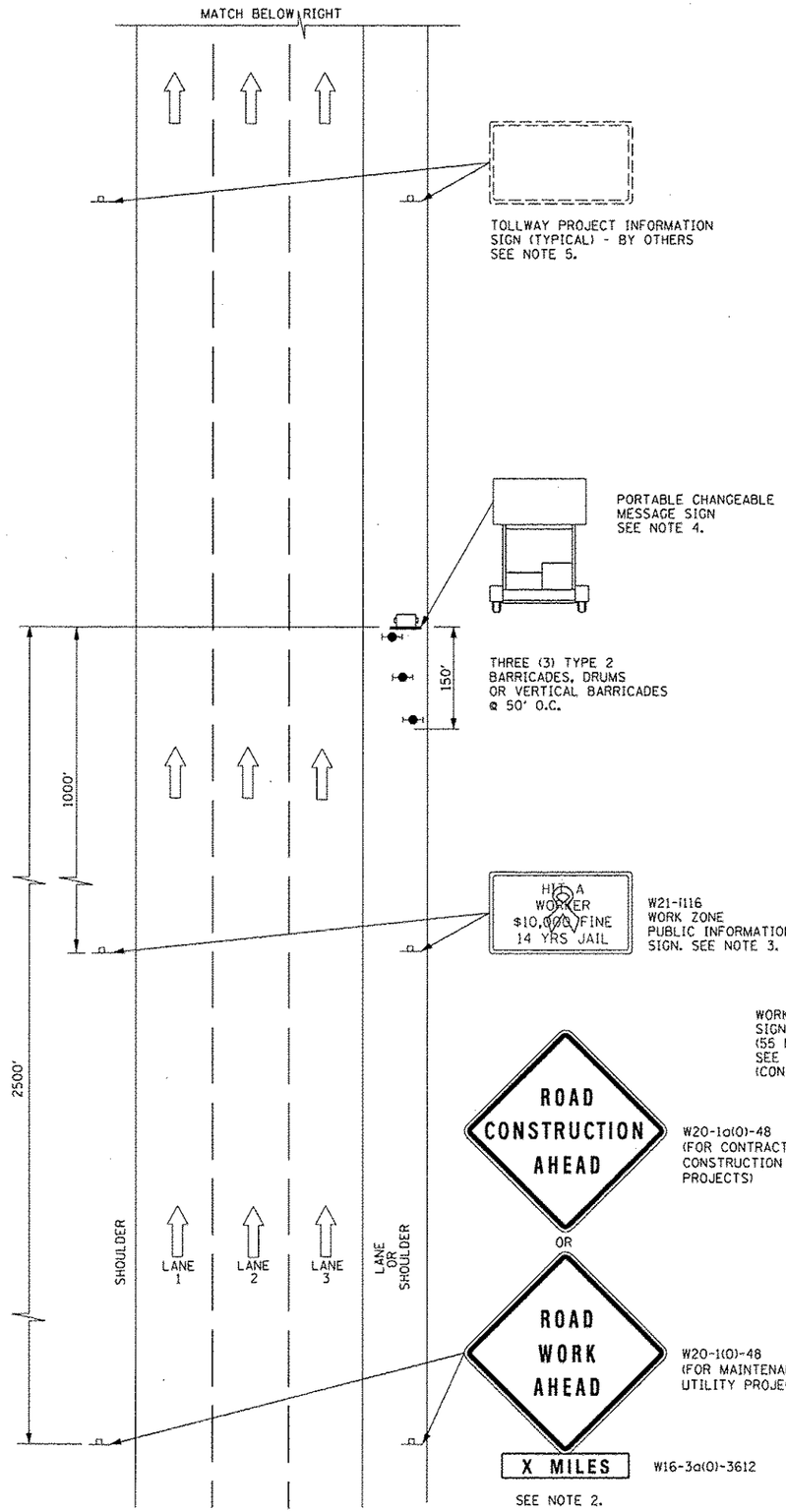
Paul Kovacs
APPROVED ... CHIEF ENGINEER
DATE 5-1-2009

DATE	REVISIONS
5-1-2009	CHANGED TRAFFIC CONTROL DIMENSIONS
	UPDATED ROADWAY SIGNAGE
1-1-2011	CHANGED SYMBOL DESIGNATION, REVISED NOTES

Illinois Tollway
Open Roads for a Faster Future

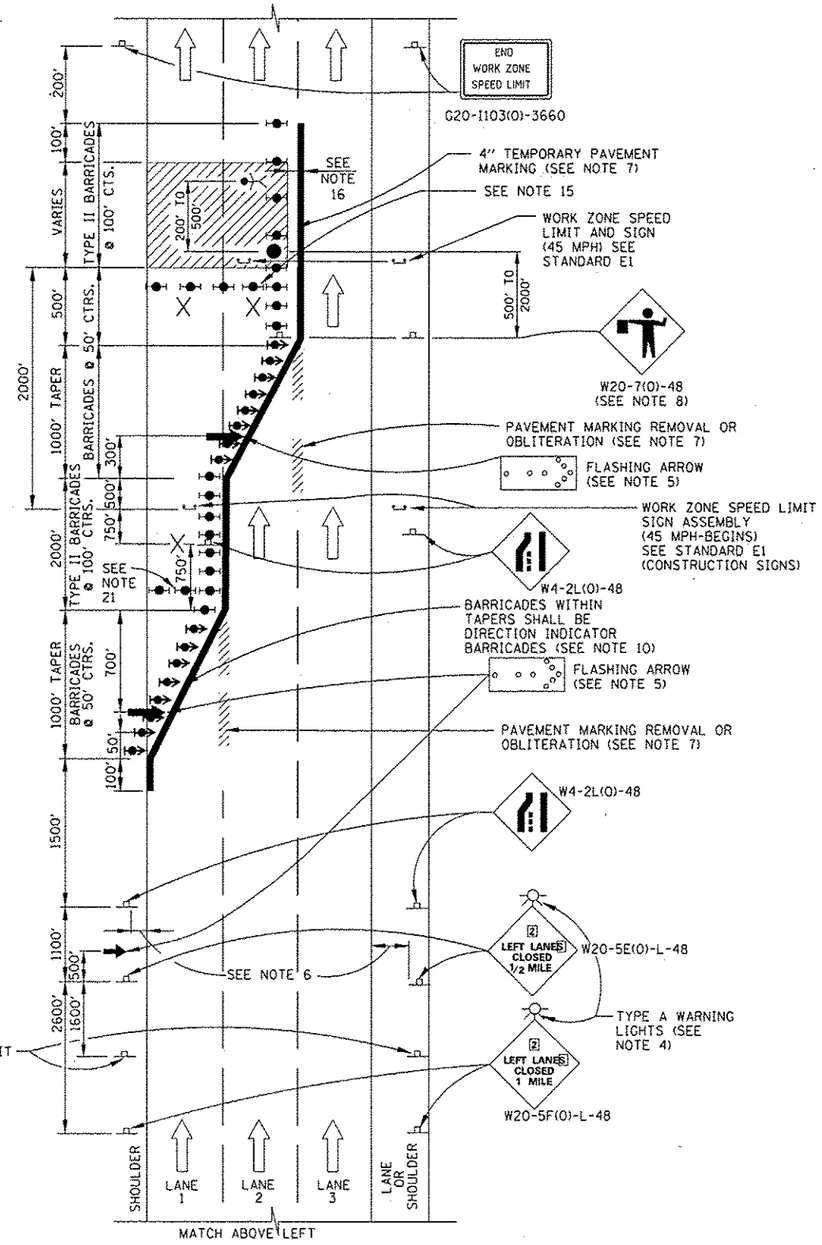
LANE CLOSURE DETAILS

STANDARD E2-02



SYMBOLS

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



TWO-LANE CLOSURE

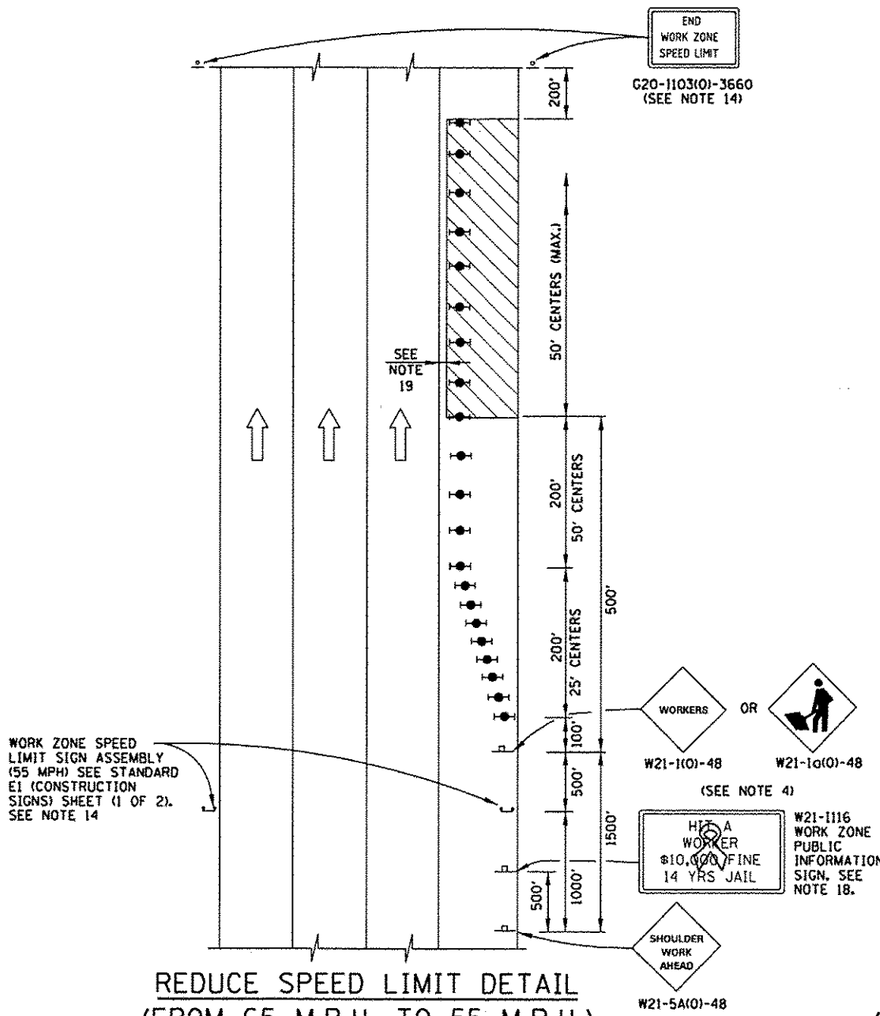
SEE SHEET 1 (OF 2) IN THIS SERIES FOR GENERAL NOTES

APPROVED Paul Kovacs CHIEF ENGINEER DATE 5-1-2009

Illinois Tollway
Open Roads for a Faster Future

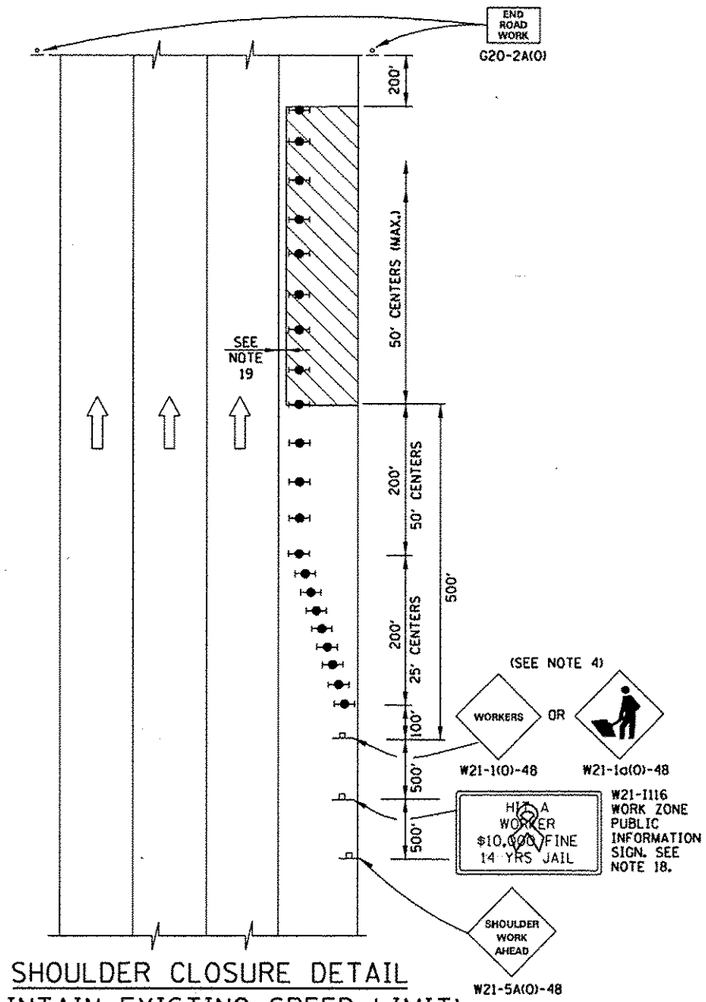
LANE CLOSURE DETAILS

STANDARD E2-02



REDUCE SPEED LIMIT DETAIL
(FROM 65 M.P.H. TO 55 M.P.H.)

N.T.S.



SHOULDER CLOSURE DETAIL
(MAINTAIN EXISTING SPEED LIMIT)

N.T.S.

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 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 FOR THE SECOND 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 (55 MPH - BEGINS) 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 SIGN ASSEMBLY SHALL NOT BE UTILIZED WHEN WORKERS ARE BEHIND A TEMPORARY (MOVABLE BARRIER) WALL.
12. THE WORK ZONE SPEED LIMIT SIGNS AND SIGN ASSEMBLY SHALL BE PROMPTLY REMOVED OR COVERED WHEN WORKERS ARE NOT PRESENT OR CLOSE TO MOVING TRAFFIC.
13. ALL CONFLICTING SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED.
14. "END WORK ZONE SPEED LIMIT" SIGNS SHALL BE IN PLACE ONLY WHEN THE EXISTING POSTED SPEED > 55MPH.
15. 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.
16. "WORK ZONE SPEED LIMIT" SIGNS SHALL BE IN PLACE ONLY WHEN THE EXISTING POSTED SPEED > 55MPH.
17. ANY UNATTENDED OBSTACLE OR EXCAVATION LEFT ON THE SHOULDER OVERNIGHT SHALL BE PROTECTED BY TEMPORARY CONCRETE BARRIER.
18. THE WORK ZONE 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.
19. 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.

SYMBOLS

WORK AREA

SIGN

TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT

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

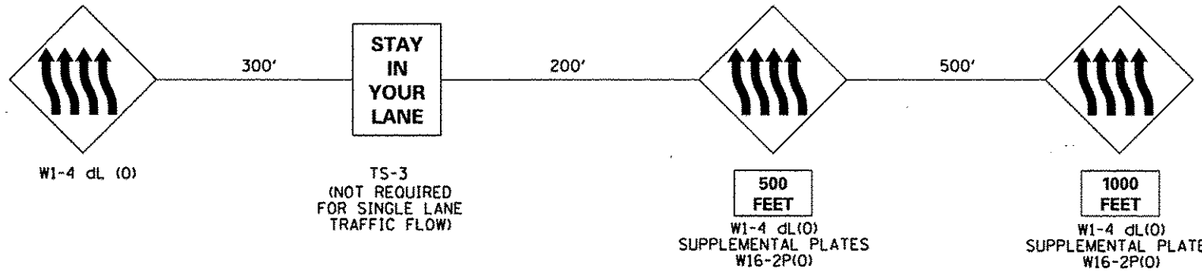
CONTRACT 60I31 SHEET 937 OF 963

Illinois Tollway
Open Roads for a Faster Future

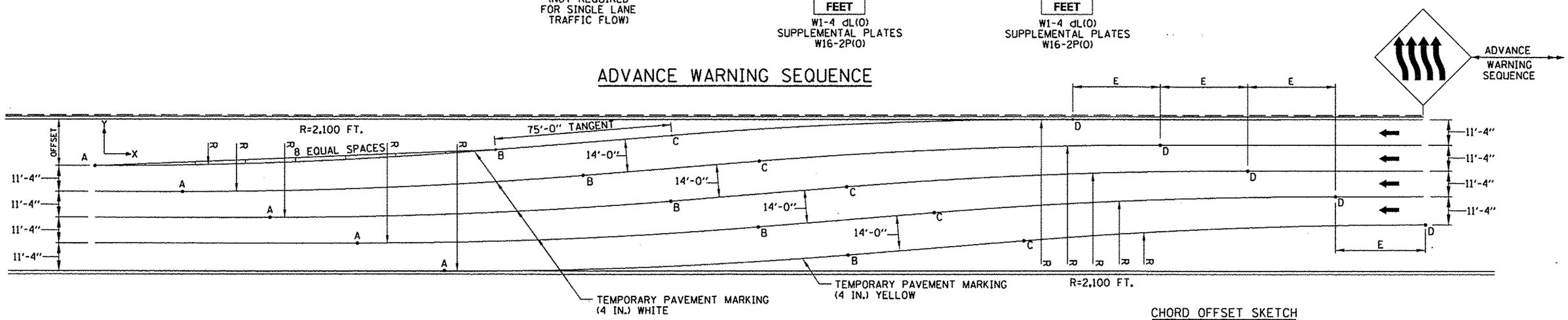
DATE	REVISIONS
5-1-2009	MODIFIED SHOULDER CLOSURE DETAILS
	-MAINTAIN EXISTING SPEED LIMIT
	-SPEED REDUCTION
	-MOVED "TEMPORARY CORE DETAILS" TO E5
1-1-2011	CHANGED SYMBOL DESIGNATION
	REVISED NOTES

SHOULDER CLOSURE DETAILS

STANDARD E3-02

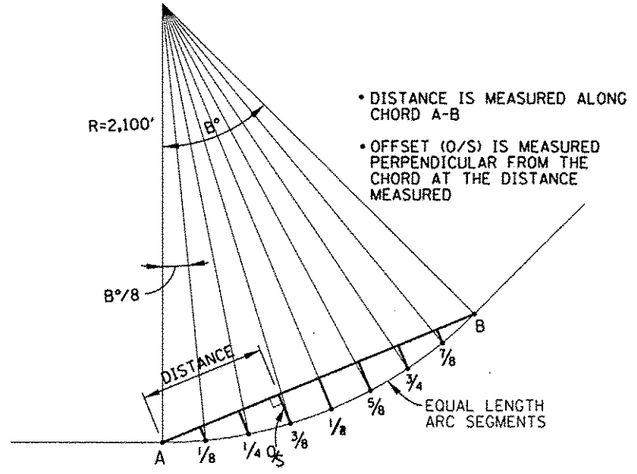


ADVANCE WARNING SEQUENCE



			POINT LAY-OUT								CHORD OFFSET DATA							
OFFSET	E	B°	A		B		C		D		1/8 & 7/8		1/4 & 3/4		3/8 & 5/8		1/2	
			X	Y	X	Y	X	Y	X	Y	O/S	DIST	O/S	DIST	O/S	DIST	O/S	DIST
10	50.23	3.06	0	0	112.2	3.0	187.1	7.0	299.2	10.0	0.3	14.0	0.6	28.0	0.7	42.1	0.7	56.1
12	44.94	3.43	0	0	125.6	3.8	200.4	8.2	326.0	12.0	0.4	15.7	0.7	31.4	0.9	47.1	0.9	62.8
14	40.96	3.77	0	0	138.0	4.5	212.8	9.5	350.8	14.0	0.5	17.3	0.9	34.5	1.1	51.8	1.1	69.0
16	37.86	4.08	0	0	149.5	5.3	224.3	10.7	373.9	16.0	0.6	18.7	1.0	37.4	1.2	56.1	1.3	74.8
18	35.34	4.38	0	0	160.4	6.1	235.2	11.9	395.6	18.0	0.7	20.1	1.2	40.1	1.4	60.2	1.5	80.3
20	33.26	4.66	0	0	170.7	7.0	245.5	13.0	416.2	20.0	0.8	21.4	1.3	42.7	1.6	64.1	1.7	85.4
22	31.50	4.93	0	0	180.5	7.8	255.3	14.2	435.8	22.0	0.9	22.6	1.5	45.2	1.8	67.8	1.9	90.4
24	30.00	5.19	0	0	189.9	8.6	264.6	15.4	454.6	24.0	0.9	23.8	1.6	47.5	2.0	71.3	2.2	95.1
26	28.68	5.44	0	0	199.0	9.4	273.6	16.6	472.6	26.0	1.0	24.9	1.8	49.8	2.2	74.7	2.4	99.6
28	27.53	5.67	0	0	207.7	10.3	282.3	17.7	489.9	28.0	1.1	26.0	1.9	52.0	2.4	78.0	2.6	104.0
30	26.51	5.90	0	0	216.0	11.1	290.6	18.9	506.7	30.0	1.2	27.0	2.1	54.1	2.6	81.1	2.8	108.2
32	25.59	6.13	0	0	224.2	12.0	298.7	20.0	522.9	32.0	1.3	28.0	2.3	56.1	2.8	84.2	3.0	112.2
34	24.76	6.34	0	0	232.0	12.9	306.6	21.1	538.6	34.0	1.4	29.0	2.4	58.1	3.0	87.1	3.2	116.2
36	24.02	6.55	0	0	239.7	13.7	314.2	22.3	553.8	36.0	1.5	30.0	2.6	60.0	3.2	90.0	3.4	120.0
38	23.33	6.76	0	0	247.1	14.6	321.6	23.4	568.7	38.0	1.6	30.9	2.7	61.9	3.4	92.8	3.7	123.8
40	22.71	6.96	0	0	254.3	15.5	328.8	24.5	583.1	40.0	1.7	31.8	2.9	63.7	3.6	95.5	3.9	127.4
42	22.13	7.15	0	0	261.4	16.3	335.8	25.7	597.2	42.0	1.8	32.7	3.1	65.4	3.8	98.2	4.1	131.0
44	21.60	7.34	0	0	268.3	17.2	342.7	26.8	611.0	44.0	1.9	33.6	3.2	67.2	4.0	100.8	4.3	134.4
46	21.11	7.53	0	0	275.0	18.1	349.4	27.9	624.4	46.0	2.0	34.4	3.4	68.9	4.2	103.3	4.5	137.8
48	20.65	7.71	0	0	281.6	19.0	356.0	29.0	637.6	48.0	2.1	35.2	3.6	70.5	4.5	105.8	4.7	141.1
50	20.22	7.89	0	0	288.1	19.9	362.4	30.1	650.5	50.0	2.2	36.1	3.7	72.2	4.7	108.3	5.0	144.4
52	19.82	8.06	0	0	294.4	20.7	368.7	31.3	663.1	52.0	2.3	36.9	3.9	73.7	4.9	110.7	5.2	147.6
54	19.44	8.23	0	0	300.6	21.6	374.9	32.4	675.5	54.0	2.4	37.6	4.1	75.3	5.1	113.0	5.4	150.7
56	19.09	8.40	0	0	306.7	22.5	380.9	33.5	687.7	56.0	2.5	38.4	4.2	76.8	5.3	115.3	5.6	153.8
58	18.76	8.56	0	0	312.7	23.4	386.9	34.6	699.6	58.0	2.6	39.2	4.4	78.3	5.5	117.6	5.9	156.8
60	18.44	8.73	0	0	318.6	24.3	392.7	35.7	711.4	60.0	2.7	39.9	4.6	79.8	5.7	119.8	6.1	159.8

CHORD OFFSET SKETCH



GENERAL NOTES:

1. REVERSE CURVE INFORMATION CAN BE USED FOR SINGLE LANE OR MULTILANE TRAFFIC FLOWS, SHIFTING RIGHT TO LEFT (AS SHOWN) OR LEFT TO RIGHT BY CHANGING TO THE APPROPRIATE ADVANCE WARNING SEQUENCE.
2. THE REVERSE CURVRE SHALL NOT BE USED OUTSIDE THE ACTIVITY AREA. LANE SHIFTS IN ADVANCE OF OR ON THE APPROACH TO THE ACTIVITY AREA SHALL BE IMPLEMENTED WITH A SHIFT RATE OF 83:1.
3. LANE SHIFTS FOR DEPARTURES OUT OF THE ACTIVITY AREA SHALL BE IMPLEMENTED WITH A SHIFT RATE OF 75:1.

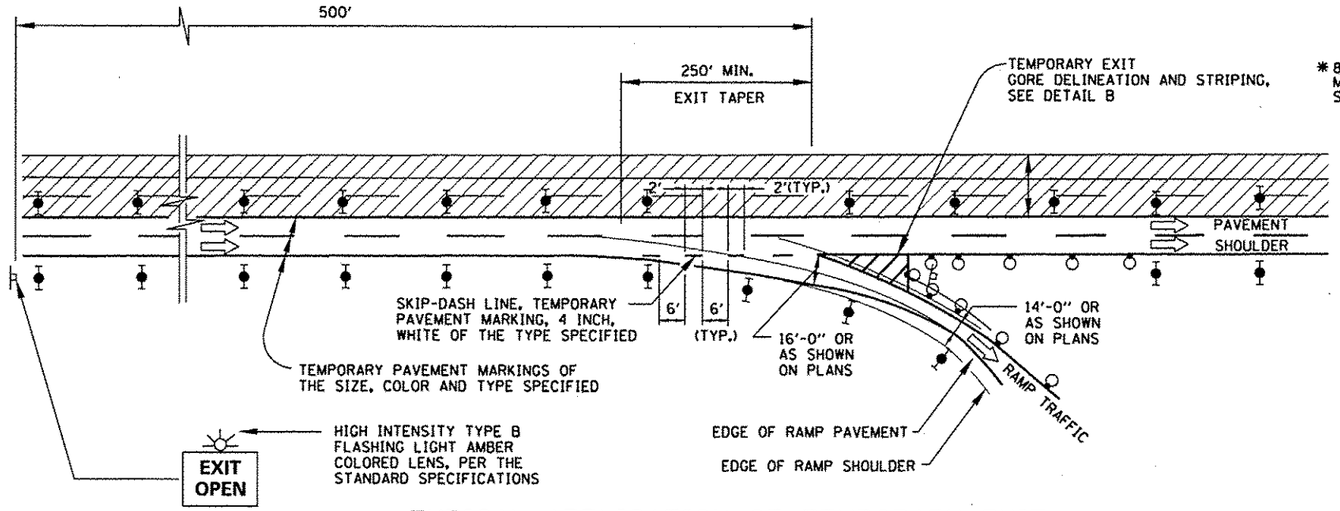
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

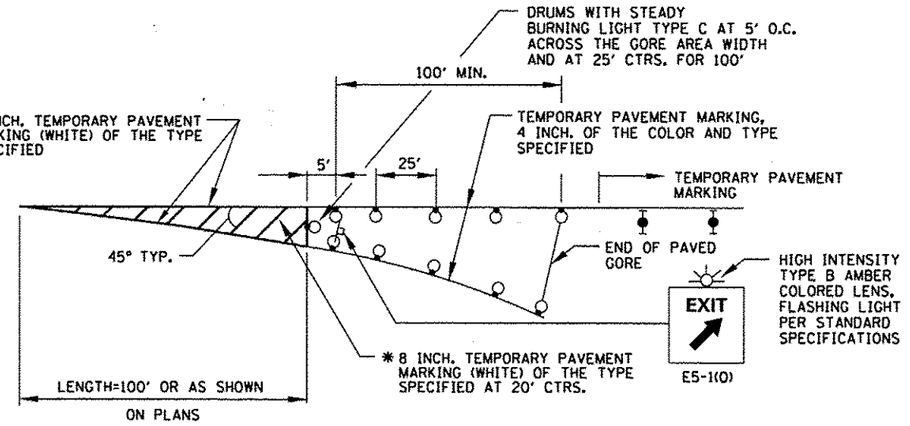
DATE	REVISIONS
1-1-2011	ADDED SIGN COLOR DESIGNATION AND REVISED NOTES. MODIFIED LANE WIDTH DIMENSION/TABLE DATA.
2-7-2012	REVISED NOTES

MAINTENANCE OF TRAFFIC REVERSE CURVE

STANDARD E4-02

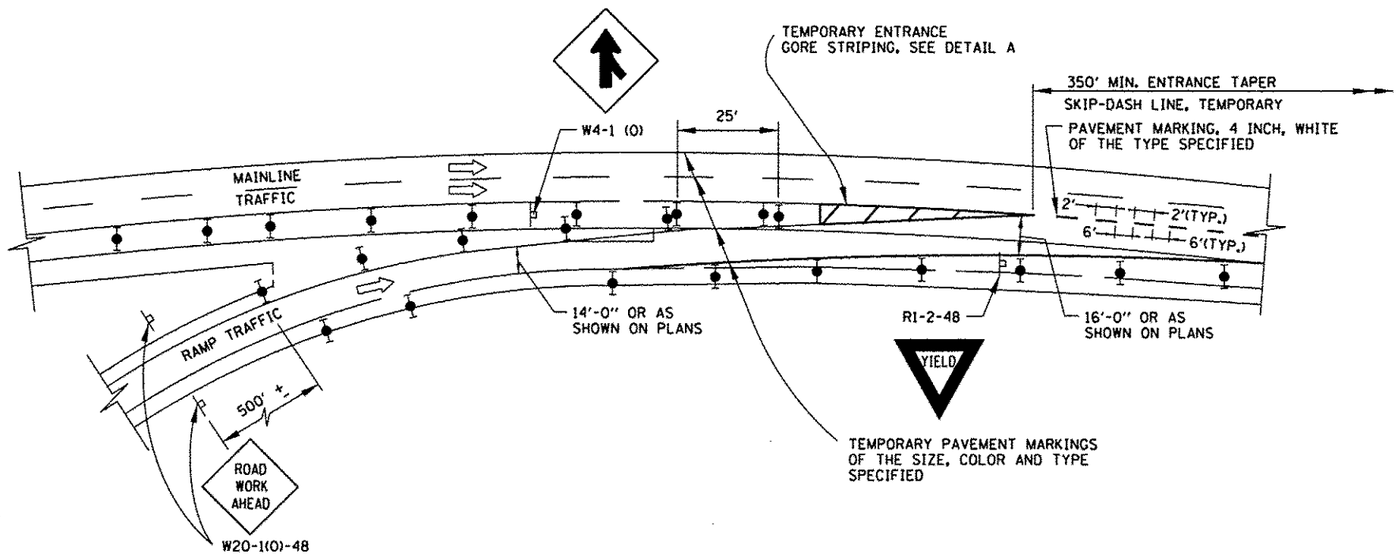


TYPICAL APPLICATION OF TEMPORARY EXIT GORE DELINEATION AND SIGNING

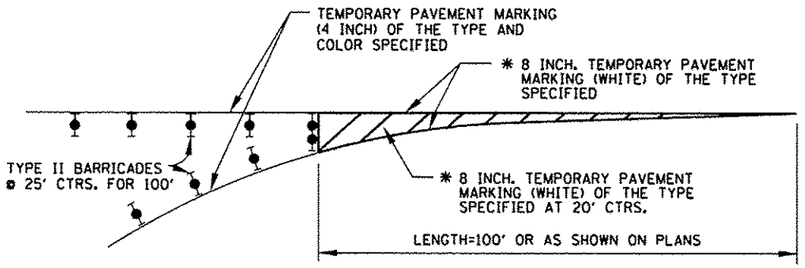


DETAIL B

TEMPORARY EXIT GORE DELINEATION AND SIGNING



TYPICAL APPLICATION OF TEMPORARY ENTRANCE GORE DELINEATION AND SIGNING



DETAIL A

TEMPORARY ENTRANCE GORE STRIPING

SYMBOLS

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

* 8 INCH TEMPORARY PAVEMENT MARKING IS TO BE MADE OF 2-TEMPORARY PAVEMENT MARKING 4 INCH, WHITE OF THE TYPE SPECIFIED.

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

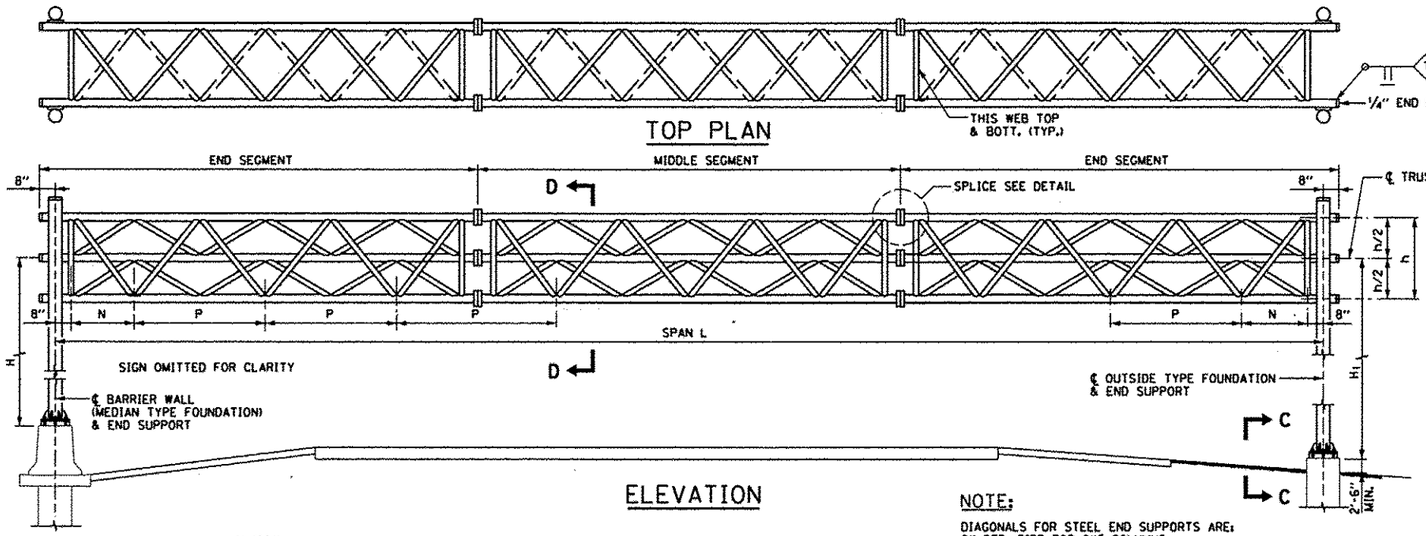
CONTRACT 60I31 SHEET 939 OF 963

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
1-1-2011	CHANGED SYMBOL DESIGNATION
2-7-2012	REVISED MERGE SIGN

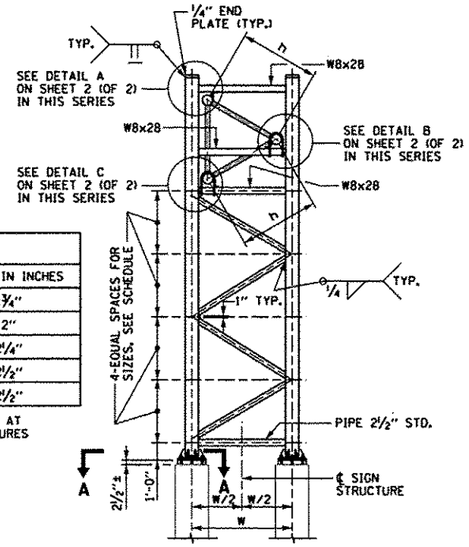
TEMPORARY GORE DETAILS

STANDARD E5-02

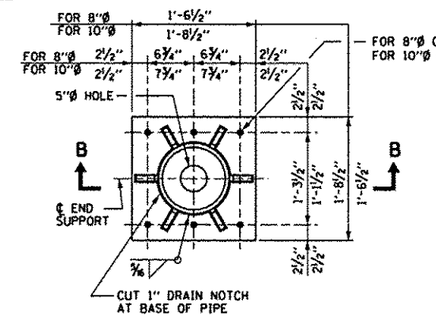


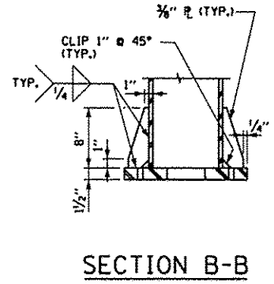
CAMBER	
SPAN IN FEET	CAMBER IN INCHES
60 THRU 70	1¾"
71 THRU 80	2"
81 THRU 100	2¼"
101 THRU 110	2½"
111 THRU 120	2½"

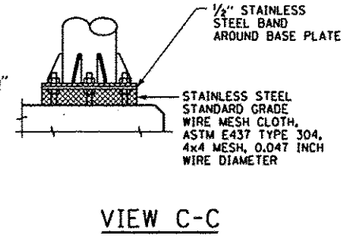
PROVIDE THE ABOVE CAMBER AT MIDDLE OF SPAN OF STRUCTURES

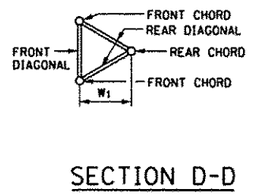


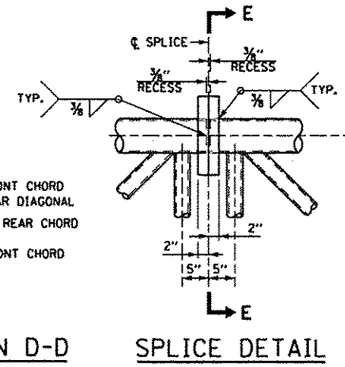
NOTE:
DIAGONALS FOR STEEL END SUPPORTS ARE:
2" STD. PIPE FOR 8"Ø COLUMNS
2½" STD. PIPE FOR 10"Ø COLUMNS











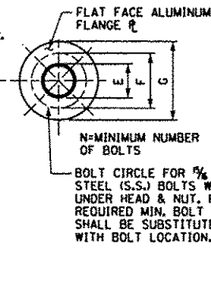


TABLE A			
CHORD SIZE E	F	G	N
3½"Ø & 3¾"Ø	8½"	11½"	6
4¼"Ø, 4¾"Ø, 5"Ø	9¼"	12¼"	8
6"Ø & 6½"Ø	11"	14"	10

BOLT CIRCLE FOR ⅝"Ø HOLES AND ⅞"Ø STAINLESS STEEL (S.S.) BOLTS WITH HEX LOCKNUTS & S.S WASHERS UNDER HEAD & NUT. FOR E, F, G & N, SEE TABLE A. REQUIRED MIN. BOLT TENSION IS 12.500#. ⅞"Ø STUDS SHALL BE SUBSTITUTED WHEN DIAGONALS INTERFERE WITH BOLT LOCATION.

SIGN STRUCTURE SCHEDULE

TRUSS NO.	DIMENSIONS						ALUMINUM TRUSS					STEEL END SUPPORT			FOUNDATION TYPE
								MIDDLE SEGMENT OR END SEGMENT				PIPE COLUMN (NOMINAL DIAMETER)			
								CHORD (O.D.)		DIAGONAL (O.D.)		H OR H_1	H OR H_1	H OR H_1	
	TRUSS SPAN L	P	N	h	W_1	W	DL (TRUSS) DEFLECTION	FRONT	REAR	FRONT	REAR	22'-0" TO 24'-0" (MAX.)	25'-0" TO 27'-0" (MAX.)	28'-0" TO 29'-0" (MAX.)	
T-60	60'-0"	6'-8"	2'-8"	3'-4"	2'-10⅝"	4'-4½"	1⅞"	3½"Ø x¼"	3¾"Ø x¼"	2"Ø x⅜"	2"Ø x⅜"	8" STD. (28.55#/FT.)	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	80
T-65	65'-0"	7'-4"	2'-6"	3'-8"	3'-2⅛"	4'-8"	1⅝"	3½"Ø x¼"	3¾"Ø x¼"	2"Ø x⅜"	2"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	80
T-70	70'-0"	8'-0"	2'-4"	4'-0"	3'-5⅝"	5'-0"	1⅞ "	3¾"Ø x¼"	3¾"Ø x¼"	2"Ø x⅜"	2"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	80
T-75	75'-0"	8'-6"	2'-10"	4'-3"	3'-8¼"	5'-3"	1⅞"	4¼"Ø x¼"	4¾"Ø x⅜"	2"Ø x⅜"	2"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	80
T-80	80'-0"	9'-0"	3'-4"	4'-6"	3'-10¾"	5'-6"	2"	4¾"Ø x⅜"	5"Ø x¼"	2¼"Ø x⅜"	2"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" X.S. (54.74#/FT.)	80
T-85	85'-0"	9'-6"	3'-10"	4'-9"	4'-1⅜"	5'-9"	2⅛"	5"Ø x¼"	5"Ø x⅜"	2¼"Ø x⅜"	2¼"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" X.S. (54.74#/FT.)	100
T-90	90'-0"	10'-0"	4'-4"	5'-0"	4'-4"	5'-11½"	2⅛"	5"Ø x⅜"	5"Ø x⅜"	2½"Ø x⅜"	2¼"Ø x⅜"	10" STD. (40.48#/FT.)	10" STD. (40.48#/FT.)	10" X.S. (54.74#/FT.)	100
T-95	95'-0"	10'-6"	4'-10"	5'-3"	4'-6⅞"	6'-2"	2⅜"	5"Ø x⅜"	5"Ø x⅜"	2½"Ø x⅜"	2½"Ø x⅜"	10" STD. (40.48#/FT.)	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	100
T-100	100'-0"	11'-4"	4'-0"	5'-8"	4'-10⅞"	6'-7½"	2¼"	6"Ø x¼"	6"Ø x¼"	2¾"Ø x⅜"	2½"Ø x⅜"	10" STD. (40.48#/FT.)	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	100
T-105	105'-0"	12'-0"	3'-10"	6'-0"	5'-2⅜"	6'-11"	2⅝"	6"Ø x⅜"	6"Ø x⅜"	3"Ø x⅜"	2¾"Ø x⅜"	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	120
T-110	110'-0"	12'-6"	4'-4"	6'-3"	5'-5"	7'-1½"	2⅞"	6"Ø x⅜"	6"Ø x⅜"	3"Ø x⅜"	2¾"Ø x⅜"	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	120
T-115	115'-0"	13'-0"	4'-10"	6'-6"	5'-7⅝"	7'-4½"	2⅛"	6½"Ø x⅜"	6"Ø x⅜"	3¼"Ø x¼"	3"Ø x⅜"	10" X.S. (54.74#/FT.)	10" X.S. (54.74#/FT.)	10" X.X.S. (104.13#/FT.)	120
T-120	120'-0"	13'-8"	4'-8"	6'-10"	5'-11"	7'-8"	2⅜"	6½"Ø x⅜"	6½"Ø x⅜"	3½"Ø x⅜"	3"Ø x⅜"	10" X.S. (54.74#/FT.)	10" X.X.S. (104.13#/FT.)	10" X.X.S. (104.13#/FT.)	120

NOTES:

DESIGN SPECIFICATIONS:

1. 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 5TH EDITION WITH 2010 INTERIMS.

LOADING:

1. TRUSSES ARE DESIGNED FOR A NINE FOOT DEEP SIGN PANEL OVER 75% OF SPAN LENGTH, BOTH END SUPPORTS ARE DESIGNED FOR 60% OF THE TOTAL LOAD.
2. WIND LOADING SHALL BE A MINIMUM OF 35 PSF ON SIGN PANELS AND 10 PSF ON GROSS AREAS DEFINED BY THE PERIMETER OF TRUSS MEMBERS NOT COVERED BY SIGN PANEL AREAS.
3. THE AASHTO GROUP II AND III ALLOWABLE STRESS SHALL BE 133% (ALLOWABLE STRESS DESIGN).

CONSTRUCTION SPECIFICATIONS:

1. ALL MATERIALS, EXCEPT AS SHOWN, FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 733 OF THE LATEST IDOT STANDARD SPECIFICATIONS.

CONTRACT 60I31 SHEET 940 OF 963
SHEET 1 OF 2

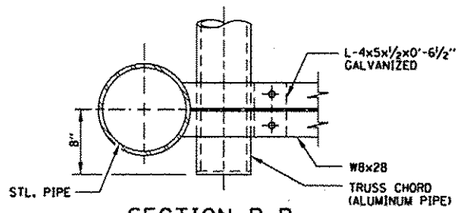
Illinois Tollway
Open Roads for a Faster Future

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

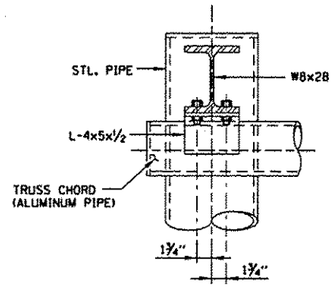
DATE	REVISIONS
2-7-2012	REVISED FOUNDATIONS AND REVISED NOTES.

OVERHEAD SIGN STRUCTURE
SPAN TYPE, ALUMINUM

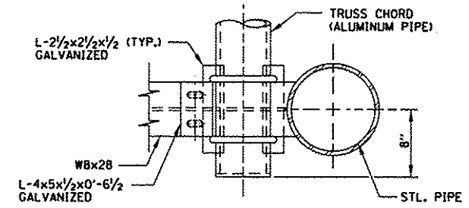
STANDARD F1-01



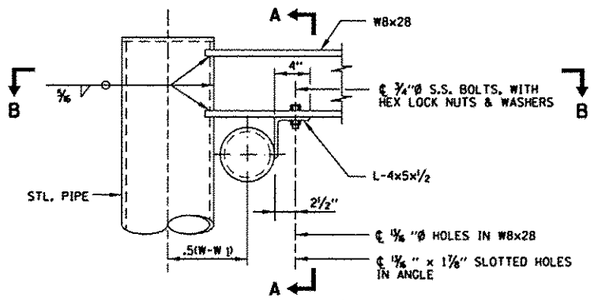
SECTION B-B



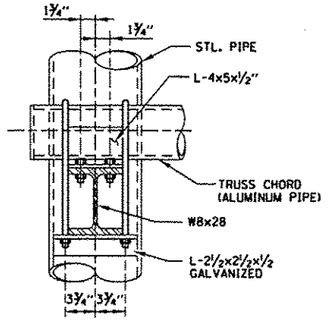
SECTION A-A



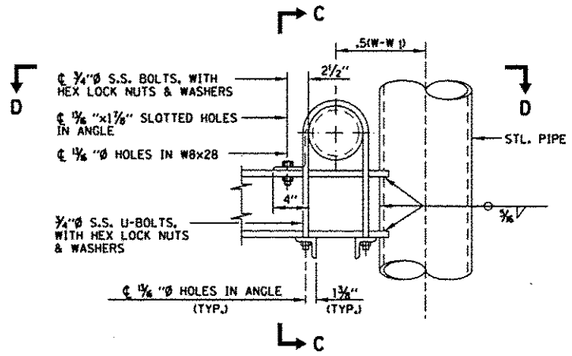
SECTION D-D



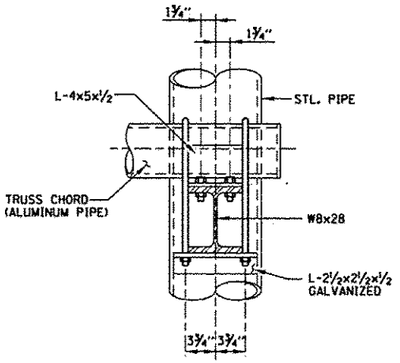
DETAIL A



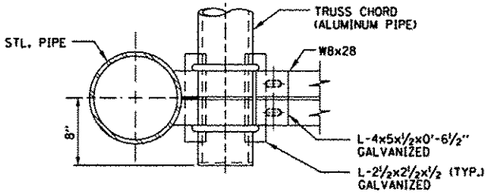
SECTION F-F



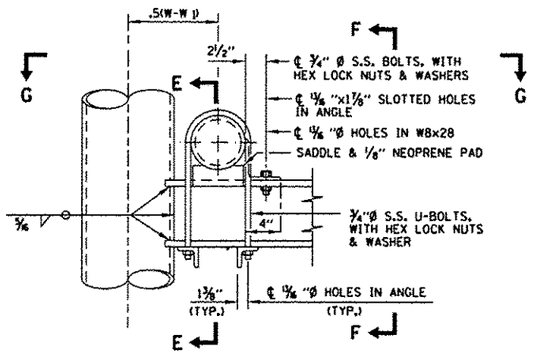
DETAIL B



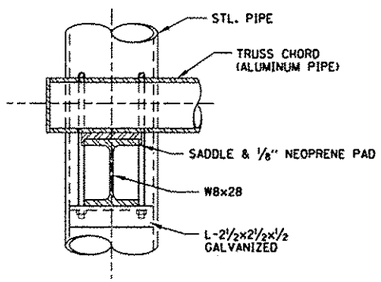
SECTION C-C



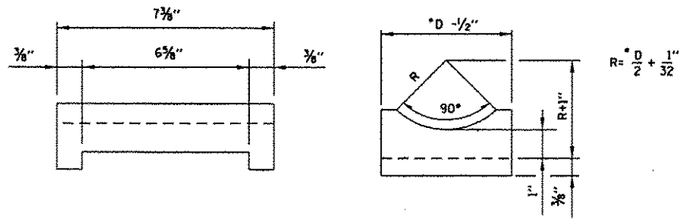
SECTION G-G



DETAIL C



SECTION E-E



SADDLE (SHIM) DETAIL
(ALUMINUM)

NOTES:

1. FOR LOCATION OF DETAILS A, B, & C, SEE SHEET 1 (OF 2) IN THIS SERIES.
2. °D=OUTSIDE DIAMETER OF CHORD

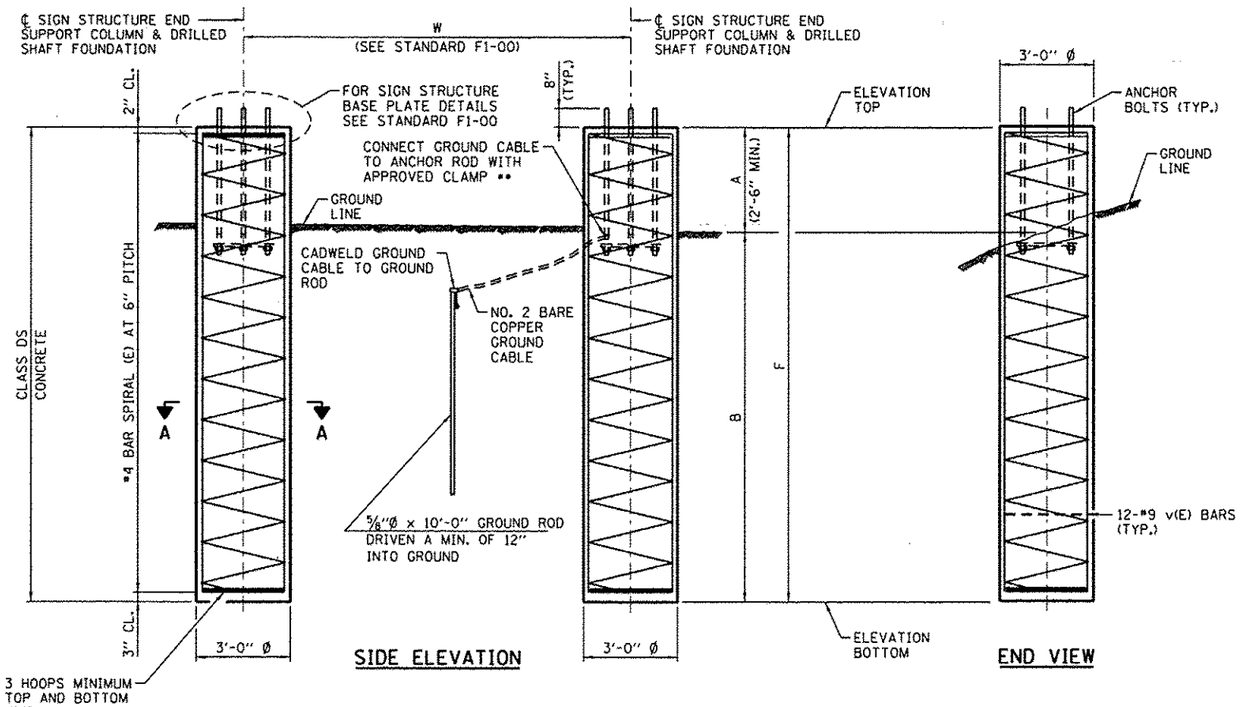
CONTRACT 60I31 SHEET 941 OF 963
SHEET 2 OF 2

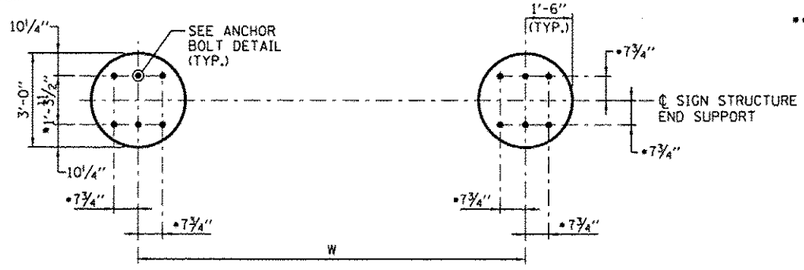
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

OVERHEAD SIGN STRUCTURE
SPAN TYPE, ALUMINUM, DETAILS

STANDARD F1-01





PLAN
(FOR 10" Ø COLUMN)
• FOR 8" Ø COLUMN USE 6¾" ANCHOR BOLT SPACING.

** ANCHOR ROD SHALL BE GROUND OR FILED TO BRIGHT METAL AT CLAMP AND GROUND CABLE CONNECTION.

NOTES:

1. THE FOUNDATION DETAILS SHOWN ARE BASED ON COMMON COHESIVE SOIL CONDITIONS (SILTY OR SANDY CLAY), WITH AN AVERAGE Qu > 1.25 TON/SQ. FT. NO STANDARD DRILLED SHAFT FOUNDATIONS WERE DESIGNED OR DETAILED FOR COHESION LESS SOIL CONDITIONS. REGARDLESS THE DESIGN SECTION ENGINEER (DSE) MUST CONDUCT A SUBSURFACE INVESTIGATION AT EACH OVERHEAD SIGN FOUNDATION TO DETERMINE THE ACTUAL SOIL PROPERTIES. SHOULD THE INVESTIGATION REVEL THE PRESENCE OF COHESION LESS SOIL OR COHESIVE SOILS WITH PROPERTIES LESS THAN THE AVERAGES INDICATED HEREIN. THE DSE SHALL DESIGN AND DETAIL THE DRILLED SHAFT FOUNDATIONS TO MEET THE ACTUAL SOIL CONDITIONS.
2. ALL MATERIAL, FABRICATION, AND CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 734 OF THE IDOT STANDARD SPECIFICATIONS.
3. CONCRETE SHALL BE PLACED MONOLITHICALLY, WITHOUT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
4. BACKFILL SHALL BE PLACED PER SECTION 502 OF THE IDOT STANDARD SPECIFICATION AND PRIOR TO ERECTION OF SUPPORT COLUMN.
5. A NORMAL SURFACE FINISH FOLLOWED BY A BRIDGE SEAT SEALER APPLICATION WILL BE REQUIRED ON CONCRETE SURFACES ABOVE THE LOWEST ELEVATION 6" BELOW FINISHED GROUND LINE. COST INCLUDED IN THE COST OF THE FOUNDATION.
6. ALL REBAR DESIGNATED (E) SHALL BE EPOXY COATED. REBAR SHALL BE POSITIONED SO THAT THERE WILL BE NO INTERFERENCE BETWEEN VERTICAL REINFORCEMENT AND ANCHOR BOLTS.
7. FURNISHING AND INSTALLING ALL CONDUIT, FITTINGS AND GROUNDING SYSTEM IS INCLUDED IN THE COST OF THE FOUNDATION.
8. NO SONOTUBES OR DECOMPOSABLE FORMS SHALL BE USED 6" BELOW THE FINISHED GROUND LINE. PERMANENT METAL FORMS OR OTHER SHIELDING MAY NOT BE LEFT IN PLACE BELOW THE ELEVATION WITHOUT THE ENGINEER'S WRITTEN PERMISSION. EXCAVATIONS SHALL BE DEWATERED BEFORE CONCRETE PLACEMENT IF DIRECTED BY THE ENGINEER AT NO ADDITION COST.

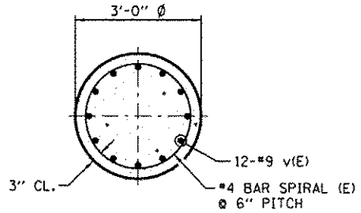
DESIGN SPECIFICATIONS:
THESE FOUNDATIONS ARE DESIGNED TO SATISFY THE 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, FIFTH EDITION.

DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS

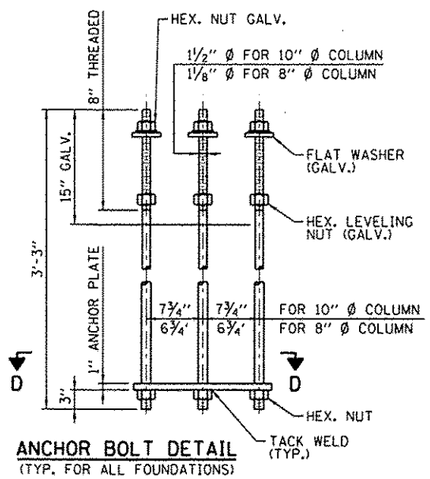
TRUSS No.	W	A	B	F	CLASS DS CONC. CY	REBAR POUNDS
T-60	4'-4 1/2"	2'-6"	25'-0"	27'-6"	14.4	2850
T-65	4'-8"	2'-6"	25'-0"	27'-6"	14.4	2850
T-70	5'-0"	2'-6"	25'-0"	27'-6"	14.4	2850
T-75	5'-3"	2'-6"	25'-0"	27'-6"	14.4	2850
T-80	5'-6"	2'-6"	25'-0"	27'-6"	14.4	2850
T-85	5'-9"	2'-6"	26'-0"	28'-6"	14.9	2950
T-90	5'-11 1/2"	2'-6"	26'-0"	28'-6"	14.9	2950
T-95	6'-2"	2'-6"	26'-0"	28'-6"	14.9	2950
T-100	6'-7 1/2"	2'-6"	26'-0"	28'-6"	14.9	2950
T-105	6'-11"	2'-6"	29'-0"	31'-6"	16.5	3260
T-110	7'-1 1/2"	2'-6"	29'-0"	31'-6"	16.5	3260
T-115	7'-4 1/2"	2'-6"	29'-0"	31'-6"	16.5	3260
T-120	7'-8"	2'-6"	29'-0"	31'-6"	16.5	3260

BAR LIST - EACH FOUNDATION
(2 SHAFTS)

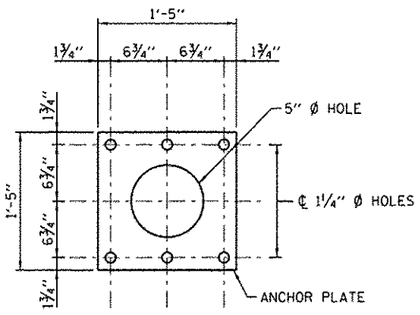
BAR	NUMBER	SIZE	LENGTH	SHAPE
v(E)	24	#9	F LESS 5"	——
#4 BAR SPIRAL (E) - SEE SIDE ELEVATION				



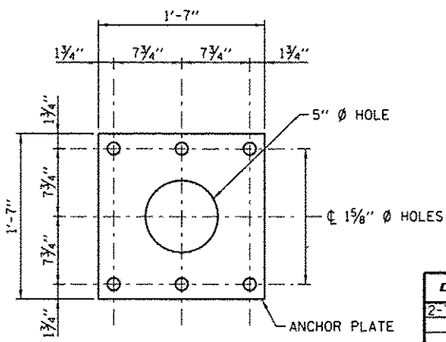
SECTION A-A
(TYPICAL BOTH SHAFTS)



ANCHOR BOLT DETAIL
(TYP. FOR ALL FOUNDATIONS)



SECTION D-D
(FOR 8" Ø COLUMN)



SECTION D-D
(FOR 10" Ø COLUMN)

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

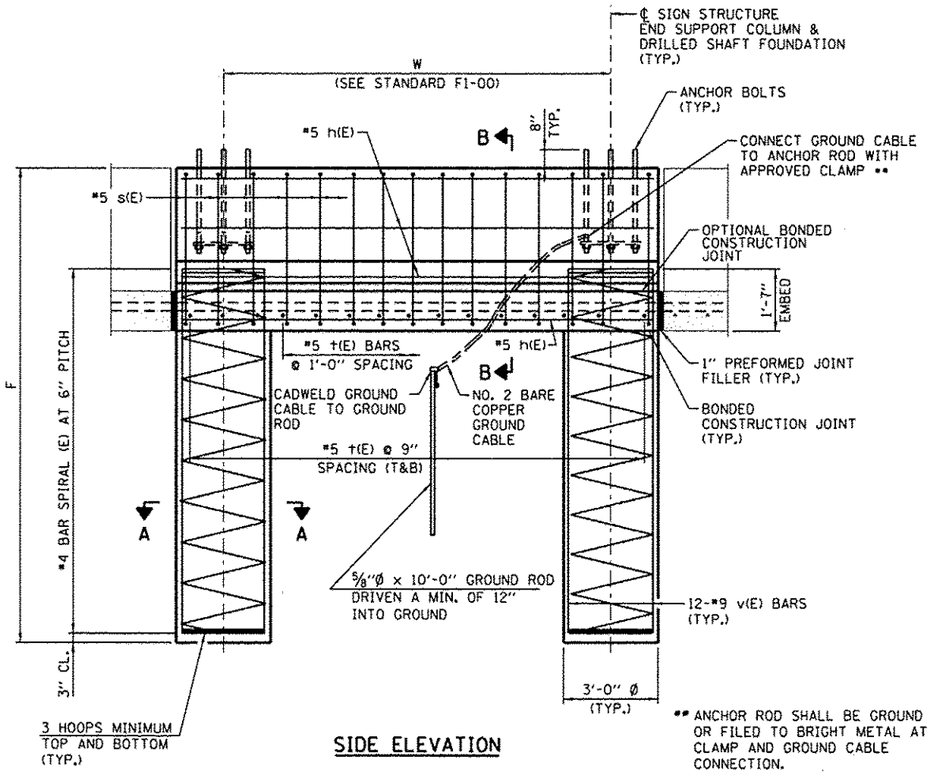
CONTRACT 60I31 SHEET 942 OF 963
SHEET 1 OF 3

DATE	REVISIONS
2-7-2012	REVISED FDN DETAIL
	ADDED CONDUIT/GROUNDING DETAIL

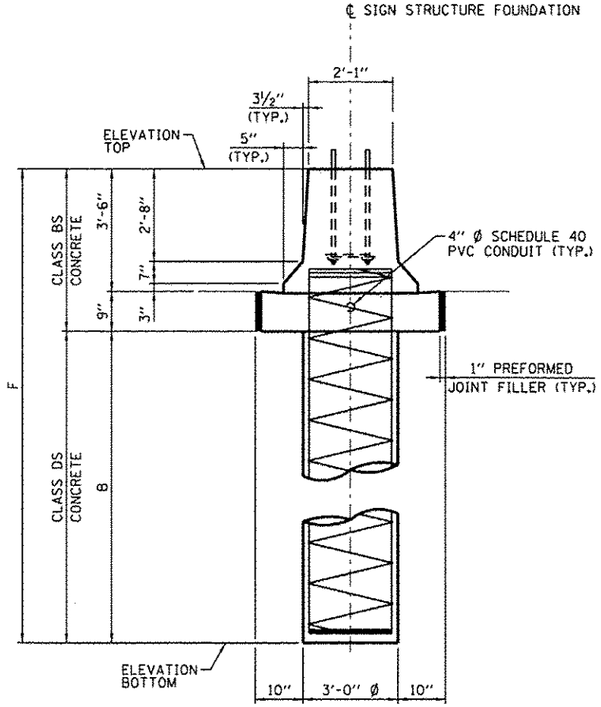
Illinois Tollway
Open Roads for a Faster Future

OVERHEAD SIGN STRUCTURES
SHOULDER FOUNDATION
DRILLED SHAFT DETAILS

STANDARD F3-01



SIDE ELEVATION

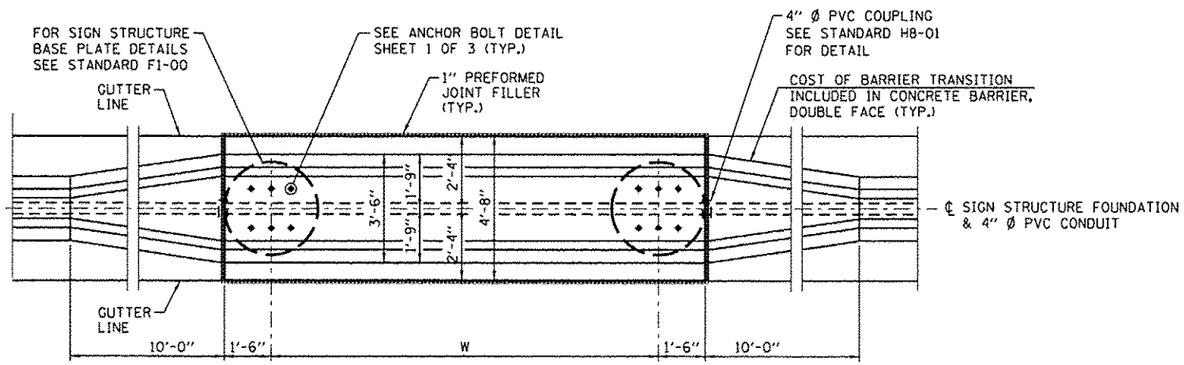


END VIEW

NOTES:

1. SEE SHEET 1 OF STANDARD F3-01 FOR GENERAL NOTES AND DESIGN CRITERA.

DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS					
TRUSS No.	W	B	CLASS BS CONC. CY	CLASS DS CONC. CY	REBAR POUNDS
T-60	4'-4 1/2"	25'-0"	3.7	13.1	2990
T-65	4'-8"	25'-0"	3.9	13.1	2990
T-70	5'-0"	25'-0"	4.1	13.1	3000
T-75	5'-3"	25'-0"	4.2	13.1	3020
T-80	5'-6"	25'-0"	4.3	13.1	3020
T-85	5'-9"	26'-0"	4.4	13.6	3130
T-90	5'-11 1/2"	26'-0"	4.5	13.6	3130
T-95	6'-2"	26'-0"	4.6	13.6	3150
T-100	6'-7 1/2"	26'-0"	4.9	13.6	3160
T-105	6'-11"	29'-0"	5.0	15.2	3470
T-110	7'-1 1/2"	29'-0"	5.1	15.2	3490
T-115	7'-4 1/2"	29'-0"	5.3	15.2	3490
T-120	7'-8"	29'-0"	5.4	15.2	3490



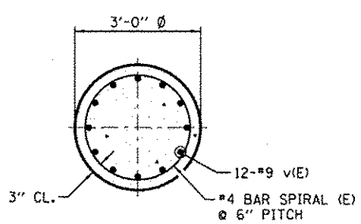
PLAN

(REINFORCEMENT NOT SHOWN FOR CLARITY)

BAR s(E)

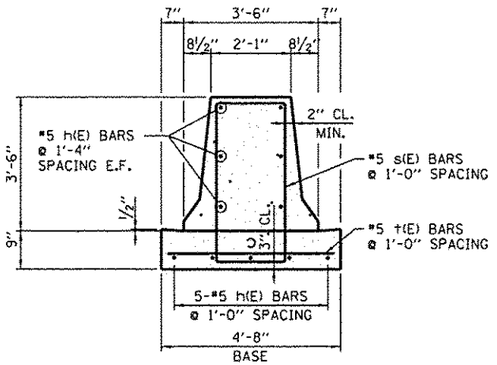
BAR LIST - EACH FOUNDATION

BAR	NUMBER	SIZE	LENGTH	SHAPE
h(E)	11	*5	W ADD 2'-8"	
s(E)	VARIES	*5	12'-7"	
t(E)	VARIES	*5	4'-4"	
v(E)	24	*9	F LESS 3'-2"	
*4 BAR SPIRAL (E) - SEE SIDE ELEVATION				



SECTION A-A

(TYPICAL BOTH SHAFTS)



SECTION B-B

APPROVED Paul Kovacs CHIEF ENGINEER DATE 2-7-2012

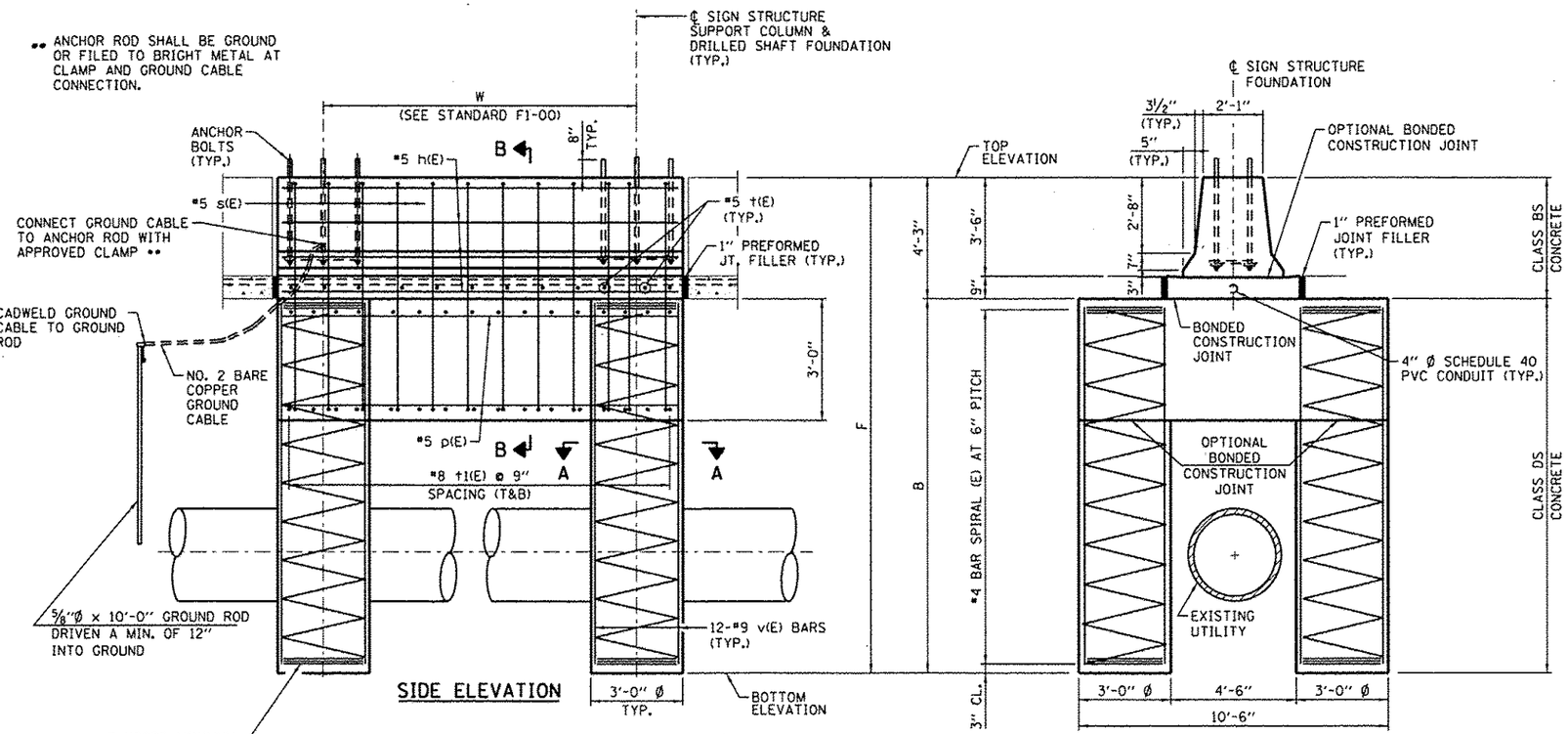
CONTRACT 60I31 SHEET 943 OF 963

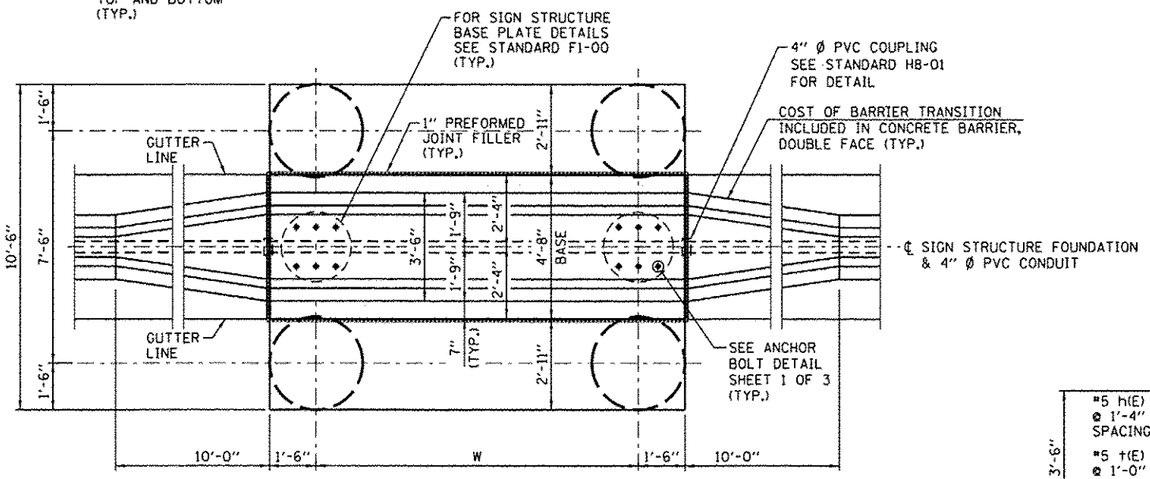
SHEET 2 OF 3

Illinois Tollway
Open Roads for a Faster Future

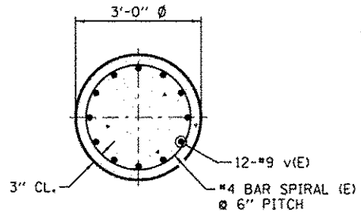
OVERHEAD SIGN STRUCTURES
MEDIAN FOUNDATION
DRILLED SHAFT DETAILS

STANDARD F3-01

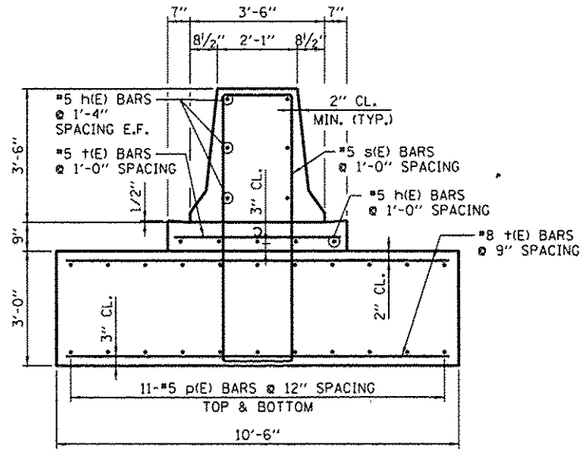




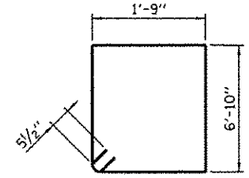
PLAN
(REINFORCEMENT NOT SHOWN FOR CLARITY)



SECTION A-A
(TYPICAL FOR 4 SHAFTS)



SECTION B-B



BAR s(E)

NOTES:

1. SEE SHEET 1 OF STANDARD F3-01 FOR GENERAL NOTES AND DESIGN CRITERA.

DESIGN TABLE FOR DRILLED SHAFTS IN COHESIVE SOILS

TRUSS No.	W	B	CLASS BS CONC. CY	CLASS DS CONC. CY	REBAR POUNDS
T-60	4'-4 1/2"	25'-0"	3.4	31.6	5440
T-65	4'-8"	25'-0"	3.6	32.0	5450
T-70	5'-0"	25'-0"	3.7	32.4	5450
T-75	5'-3"	25'-0"	3.8	32.7	5480
T-80	5'-6"	25'-0"	3.9	33.0	5480
T-85	5'-9"	26'-0"	4.1	34.3	5690
T-90	5'-11 1/2"	26'-0"	4.2	34.5	5690
T-95	6'-2"	26'-0"	4.3	34.8	5720
T-100	6'-7 1/2"	26'-0"	4.5	35.3	5720
T-105	6'-11"	29'-0"	4.6	38.8	6340
T-110	7'-1 1/2"	29'-0"	4.7	39.0	6360
T-115	7'-4 1/2"	29'-0"	4.8	39.3	6370
T-120	7'-8"	29'-0"	4.9	39.7	6370

BAR LIST - EACH FOUNDATION

BAR	NUMBER	SIZE	LENGTH	SHAPE
h(E)	11	*5	W ADD 2'-8"	——
p(E)	22	*5	W ADD 2'-8"	——
s(E)	VARIES	*5	18'-1"	□
t(E)	VARIES	*5	4'-4"	——
t1(E)	VARIES	*8	10'-2"	——
v(E)	48	*9	B LESS 0'-5"	——
*4 BAR SPIRAL (E) - SEE END VIEW				

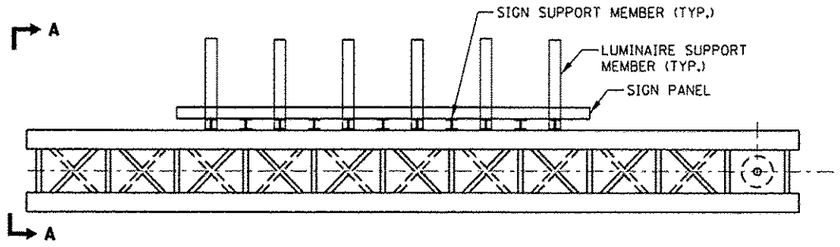
CONTRACT 60I31 SHEET 944 OF 963
SHEET 3 OF 3

Illinois Tollway
Open Roads for a Faster Future

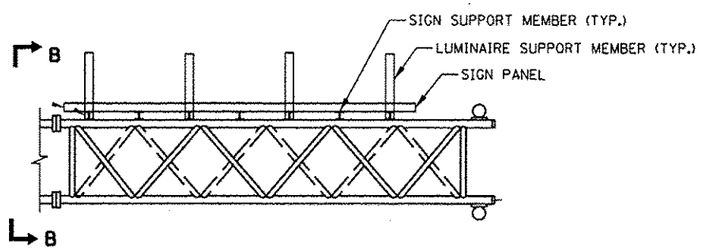
OVERHEAD SIGN STRUCTURES
MEDIAN FOUNDATION
DRILLED SHAFT DETAILS

STANDARD F3-01

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



PLAN



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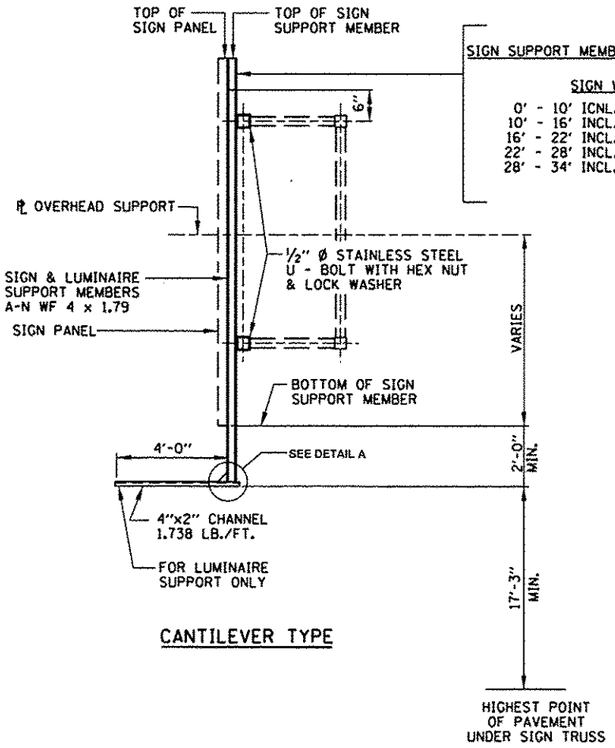
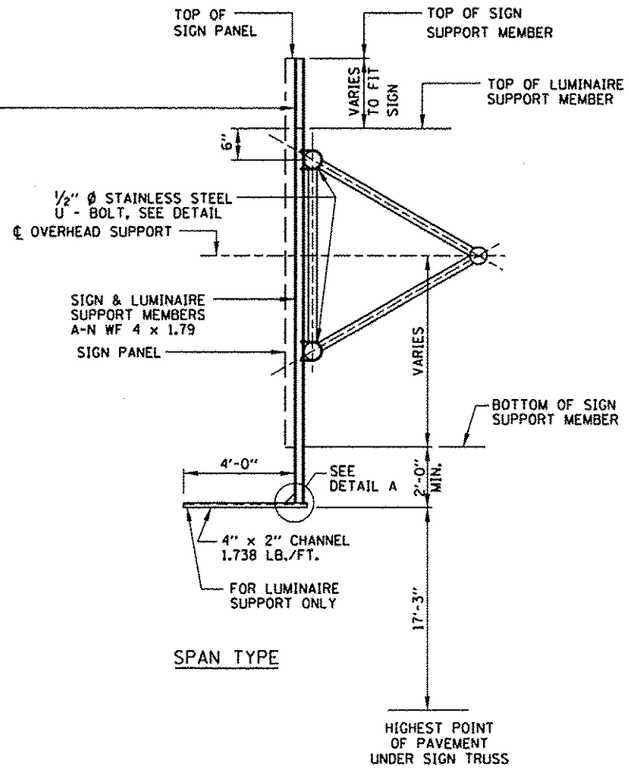


CANTILEVER TYPE



SPAN TYPE

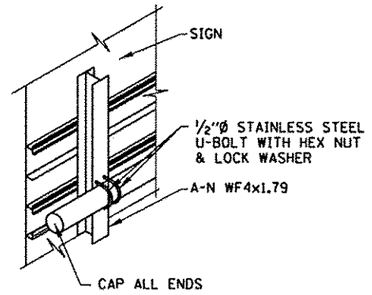
SIGN AND LUMINAIRE SUPPORT DETAIL

SECTION A-A

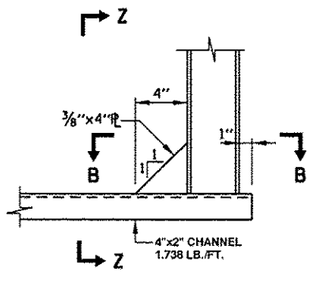
SECTION B-B

NOTE:

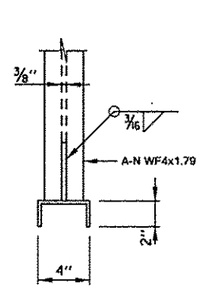
1. SIGN PANEL SHALL BE ATTACHED TO TRUSS AS CLOSE TO PANEL JOINTS AS POSSIBLE.
2. LUMINAIRE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN SIGN STRUCTURE IS TO BE ILLUMINATED. DESIGNER TO DETERMINE REQUIREMENTS BASED ON ROADWAY GEOMETRY.



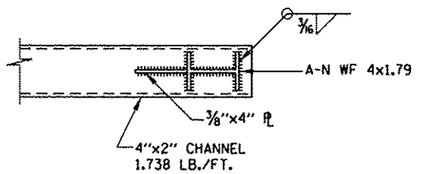
STAINLESS STEEL U-BOLT DETAIL



DETAIL A



SECTION Z-Z



SECTION B-B

NOTES:

ALL MATERIAL IS ALUMINUM (UNLESS OTHERWISE NOTED).

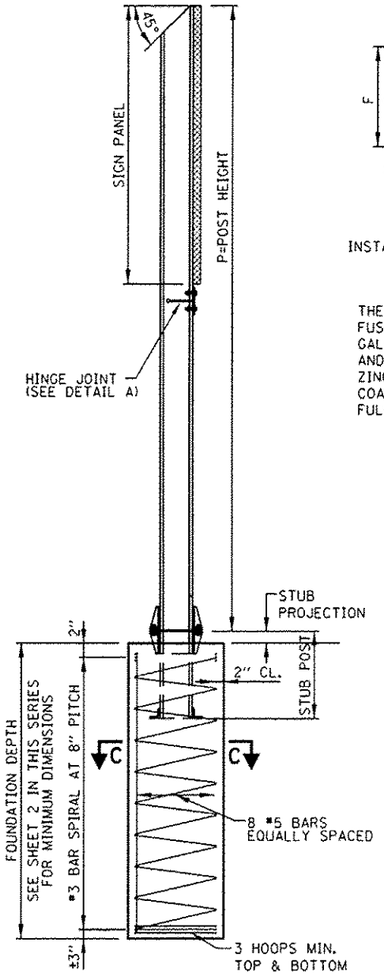
Paul Kovacs
APPROVER ..... DATE 2-7-2012 .....
CHIEF ENGINEER

Illinois Tollway
Open Roads for a Faster Future

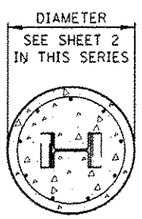
DATE	REVISIONS
1-1-2009	ADDED PLAN VIEWS FOR SIGN STRUCTURES
2-7-2012	REVISED OVERHEAD SIGN STRUCTURE
	CANTILEVER DIAGONALS

OVERHEAD SIGN STRUCTURE SIGN AND LUMINAIRE SUPPORTS

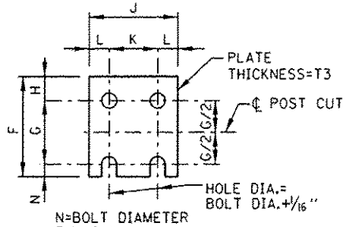
STANDARD F8-02



SIDE ELEVATION
POST & FOUNDATION



SEC. C-C

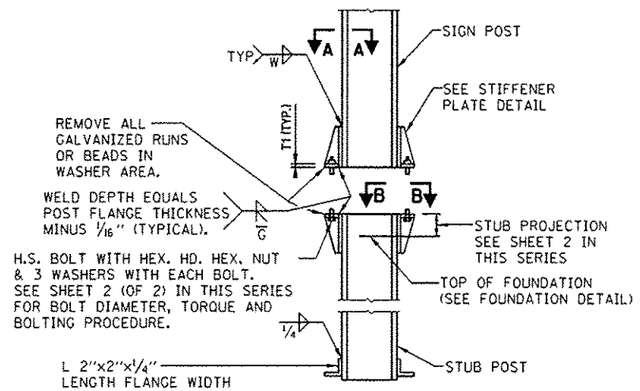


FUSE PLATE DETAIL
INSTALL WITH NOTCHES TOWARDS BASE

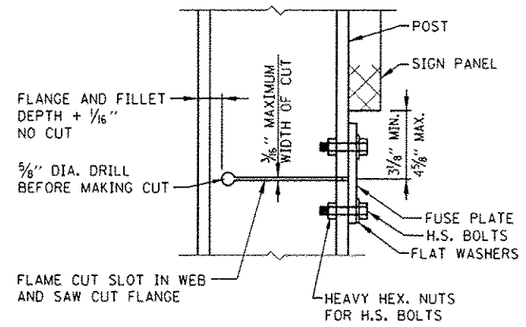
G & H DIM. TABLE		
BOLT DIA.	G	H
1/2"	2"	1 1/8"
5/8"	2 1/4"	1 1/4"
3/4"	2 1/2"	1 3/8"
7/8"	2 3/4"	1 1/2"
1"	3"	1 5/8"
1 1/8"	3 1/4"	1 3/4"
1 1/4"	3 1/2"	1 7/8"

FABRICATORS NOTES

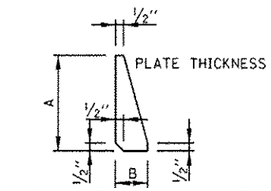
THE SLOT AND THE 5/8" DIA. HOLE IN THE WEB AND THE FUSE PLATE BOLT HOLES IN THE FLANGE SHALL BE MADE BEFORE GALVANIZING. POST FLANGE SHALL BE SAW CUT AFTER GALVANIZING AND BARE METAL SURFACES SHALL BE COATED WITH AN APPROVED ZINC SOLDER OR ZINC-RICH PAINT. THESE SURFACES SHALL NOT BE COATED UNTIL THE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



SIGN POST & STUB POST
ELEVATION

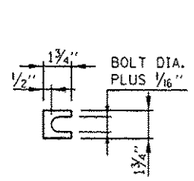


HINGE JOINT
DETAIL A



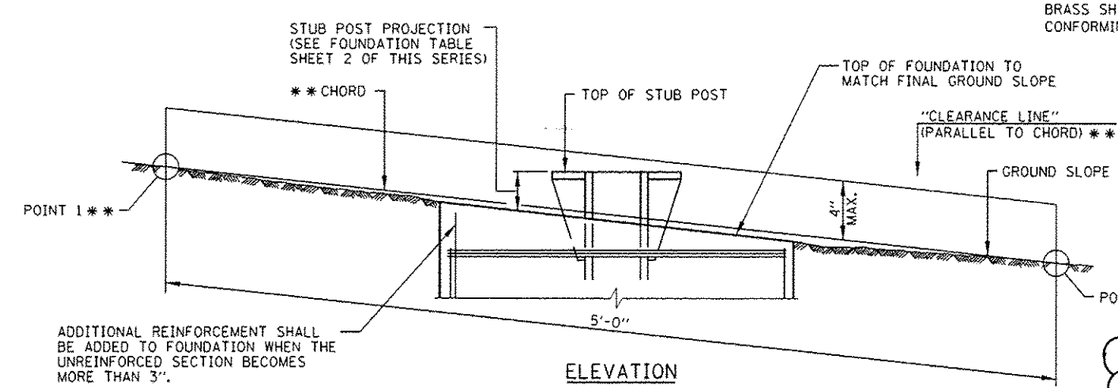
STIFFENER PLATE
DETAIL

SEE SHEET 2 IN THIS SERIES FOR DIMENSIONS



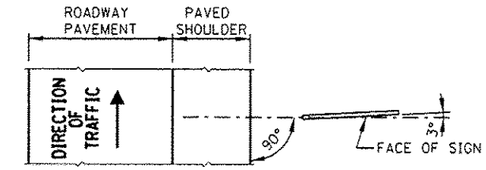
SHIM DETAIL

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

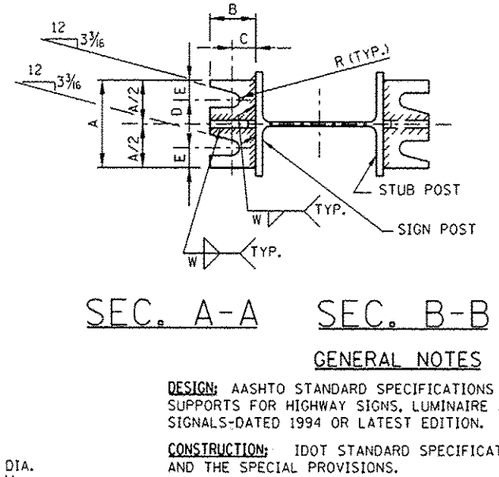


ELEVATION
GROUND LINE & STUB POST

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



LOCATION SKETCH



SEC. A-A SEC. B-B

GENERAL NOTES

DESIGN: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRE AND TRAFFIC SIGNALS-DATED 1994 OR LATEST EDITION.

CONSTRUCTION: IDOT STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

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

UNIT STRESSES:
STRUCTURAL STEEL - PER AASHTO
REINFORCING STEEL - 24,000 P.S.I.
CLASS SP 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 IDOT STANDARD SPECIFICATIONS.

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

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

APPROVED Paul Kovacs CHIEF ENGINEER DATE 1-1-2010

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
1-1-2009	REVISED NOTES
	R GROUND
	LINE AND STUB POST
2-7-2012	ADDED STUB POST CLEARANCE
	DIMENSIONS, REVISED SIGN
	INSTALLATION CLEARANCE DIMENSIONS

BREAKAWAY SIGN SUPPORT DETAILS

STANDARD F9-03

FOUNDATION TABLE

POST	FOUNDATION			REINFORCEMENT							STUB POST		
	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
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
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
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
W16x45	3'-0"	8'-6"	2.23	8	#5	8'-3"	#3	32½"	162'	130	3'-6"	2½"	233

BASE CONNECTION DATA TABLE

BOLT SIZE AND TORQUE	A	B	C	D	E	T1	T2	W	R
⅝" Ø x 3¼" LG. TORQUE = 450" #	6"	2¼"	1¼"	3½"	1¼"	¾"	½"	¼"	11/32"
¾" Ø x 3¾" LG. TORQUE = 750" #	6"	2½"	1⅜"	3¼"	1⅜"	1"	½"	5/16"	11/32"
⅞" Ø x 4" LG. TORQUE = 950" #	7"	2¾"	1½"	4"	1½"	1"	¾"	⅜"	13/32"
1" Ø x 4½" LG. TORQUE = 1100" #	7½"	3"	1¾"	4"	1¾"	1¼"	¾"	⅜"	11/32"

- QUANTITY OF IDOT CLASS DS 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.

FUSE PLATE DATA TABLE / FUSE PLATE BOLT SIZE TABLE

POST	FUSE PLATE DATA TABLE J	K	L	T3	FUSE PLATE BOLT SIZE TABLE SIGN DEPTH 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 J	K	L	T3	FUSE PLATE BOLT SIZE TABLE SIGN DEPTH 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 ..... DIRECT ENGINEER ..... DATE 1-1-2010

SHEET 2 OF 3

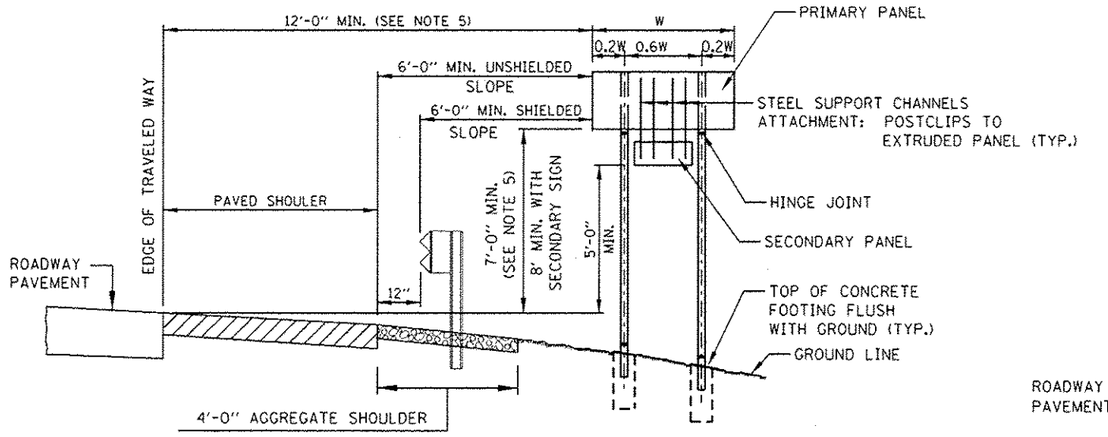
Illinois Tollway
Open Roads for a Faster Future

A

CONTRACT 60I31 SHEET 945B OF 963

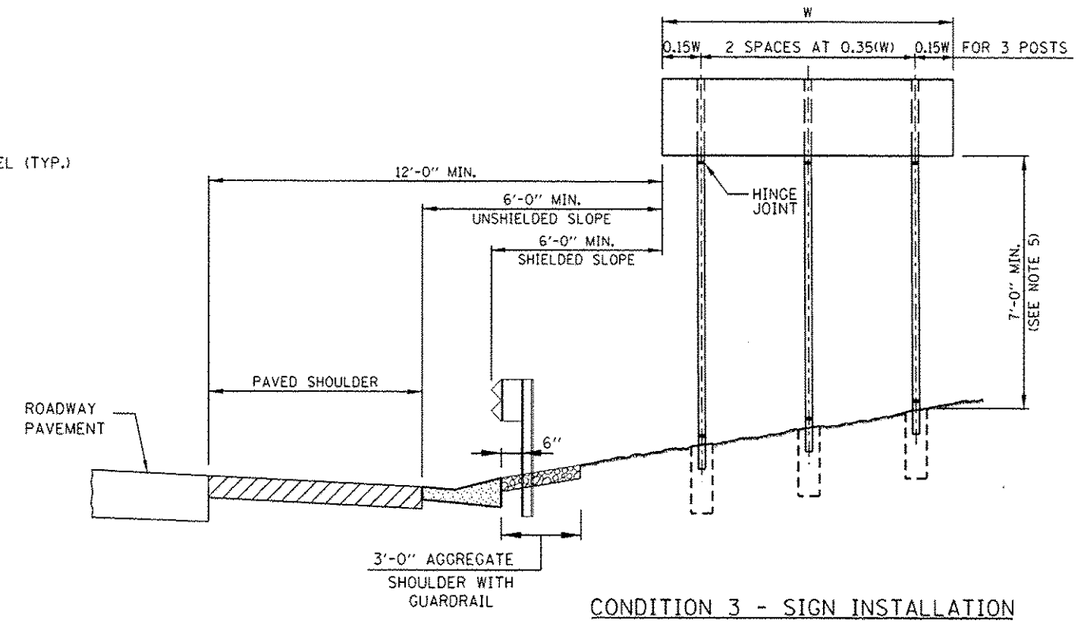
BREAKAWAY SIGN SUPPORT DETAILS

STANDARD F9-03



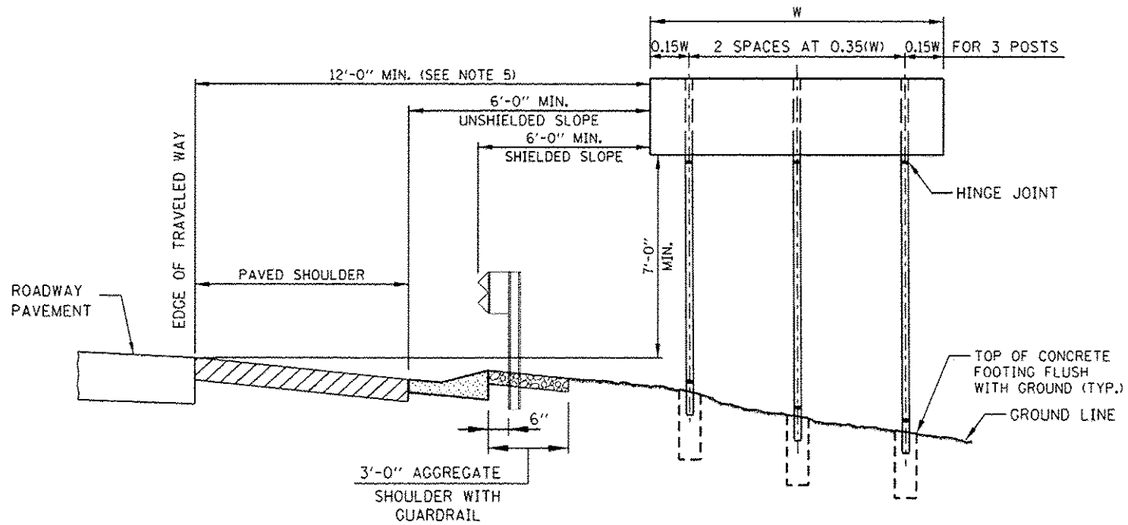
CONDITION 1 - SIGN INSTALLATION

1a.) WITHOUT GUTTER - UNSHIELDED SLOPE
1b.) WITHOUT GUTTER - SHIELDED SLOPE



CONDITION 3 - SIGN INSTALLATION

3a.) WITH GUTTER - UNSHIELDED SLOPE
3b.) WITH GUTTER - SHIELDED SLOPE



CONDITION 2 - SIGN INSTALLATION

2a.) WITH GUTTER - UNSHIELDED SLOPE
2b.) WITH GUTTER - SHIELDED SLOPE

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 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.

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

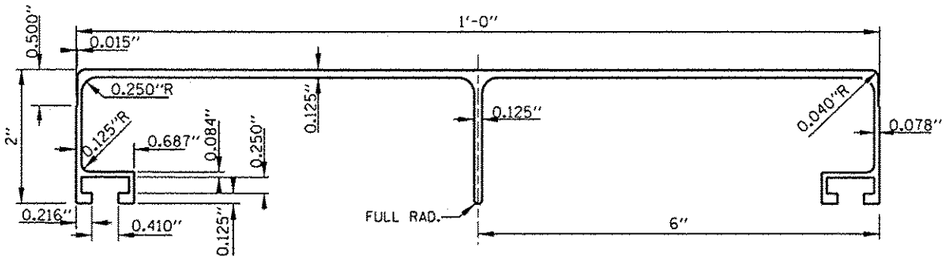
Illinois Tollway
Open Roads for a Faster Future

BREAKAWAY SIGN SUPPORT DETAILS

STANDARD F9-03

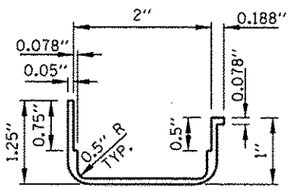
A

CONTRACT 60I31 SHEET 945C OF 963

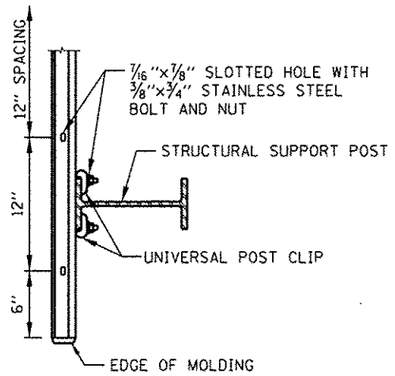


12" PANEL

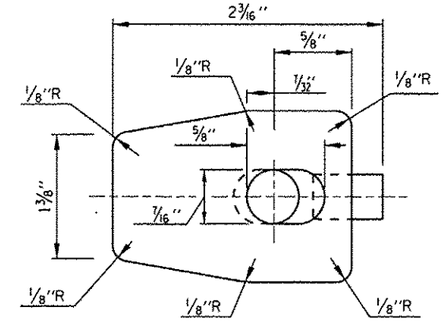
TYPE B SIGN PANEL EXTRUSIONS



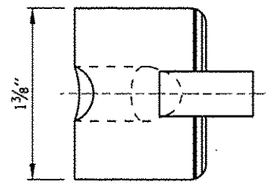
EDGE MOLDING SECTION FOR SIGN PANEL



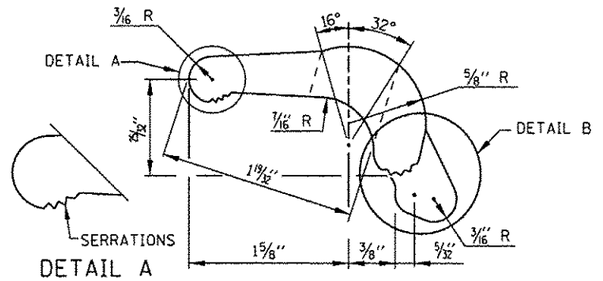
SECTION C-C



PLAN VIEW

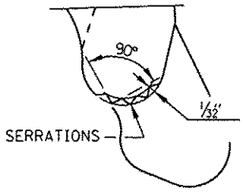


END VIEW



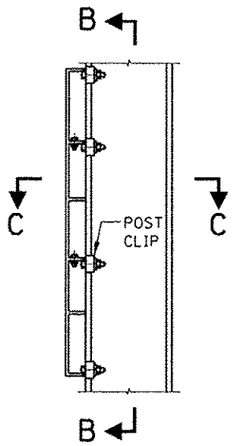
DETAIL A
(ENLARGED VIEW OF SERRATIONS)

ELEVATION VIEW

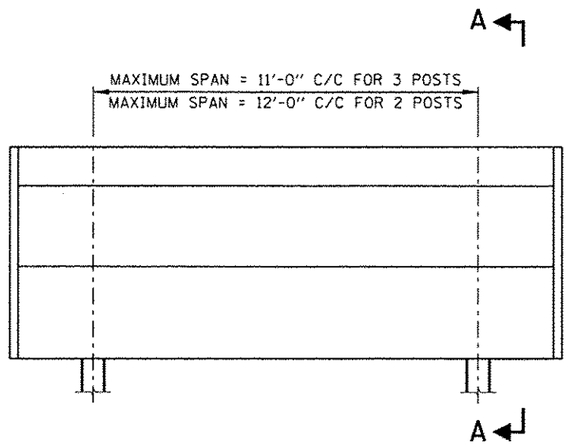


DETAIL B
(ENLARGED DETAIL OF SERRATIONS)

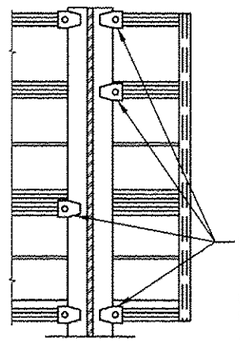
ALUMINUM CLIP DETAIL



SECTION A-A

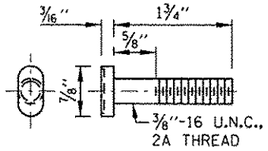


FACE OF SIGN PANEL



PROVIDE TWO (2) POST CLIPS AT TOP AND BOTTOM. ALTERNATE INTERIOR POST CLIPS ON SIGNS UNDER 24 FEET LONG AND OVER HEAD MOUNTED SIGNS. DO NOT ALTERNATE INTERIOR CLIPS ON OTHER SIGNS.

SECTION B-B



POST CLIP BOLT STAINLESS STEEL

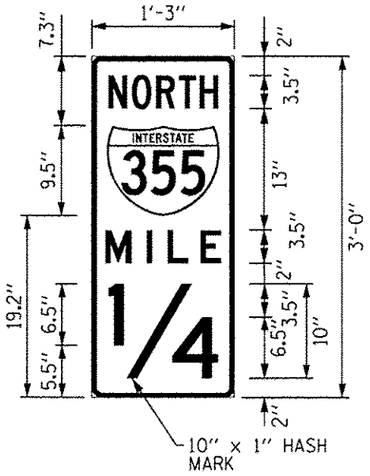
Illinois Tollway
Open Roads for a Faster Future

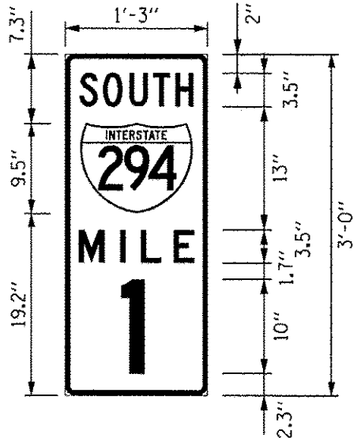
DATE	REVISIONS
1-1-2009	MODIFIED TYPE B SIGN PANEL DIM.
	MODIFIED POST CLIP DETAIL
2-7-2012	REMOVED DETAIL FOR MOUNTING 2 PANEL SIGN

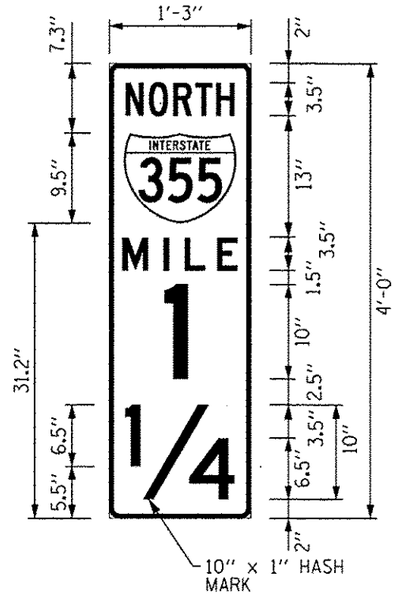
MISCELLANEOUS DETAILS AND ALUMINUM SIGN PANELS

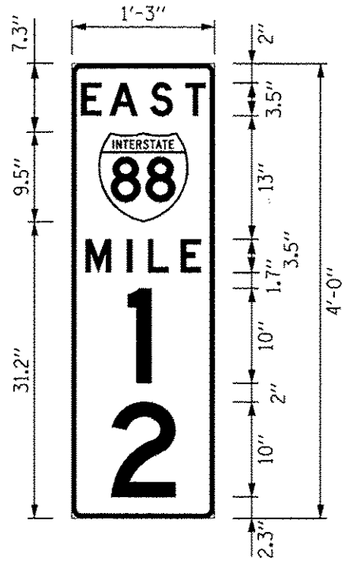
STANDARD F10-02

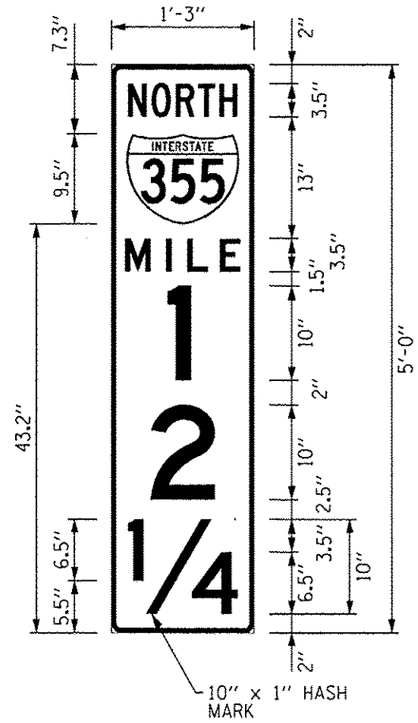
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

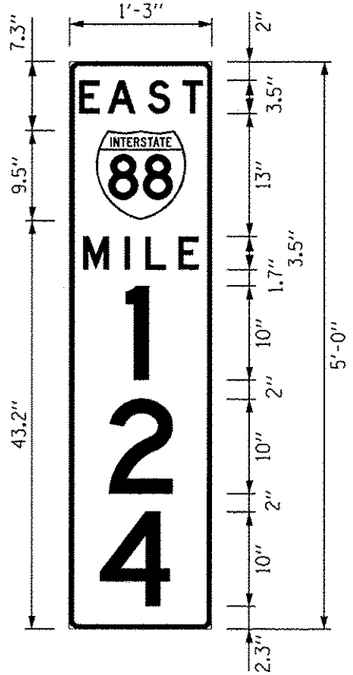


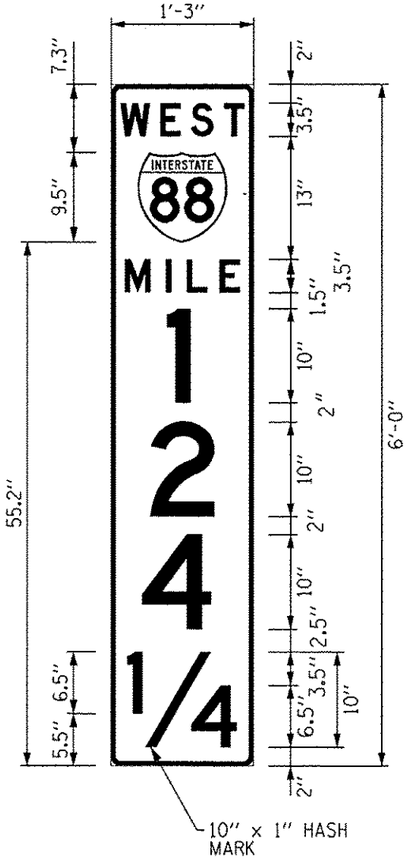












GENERAL NOTES:

1. 1" TYPICAL RADIUS FOR SIGN BORDER.
2. CLEARVIEW 5 (CV5) SHALL BE USED FOR THE WORD "MILE" AND NUMBERS BELOW "MILE".
3. HWY D, WITH REDUCED LETTER SPACING, SHALL BE USED FOR THE WORD "NORTH", "SOUTH", "EAST" AND "WEST".
4. BORDER SHALL BE WHITE AND ½" WIDE AND LOCATED ½" FROM THE EDGE OF SIGN.
5. SIGN SHALL BE WHITE LETTERS ON A GREEN BACKGROUND EXCEPT FOR INTERSTATE SHIELD WHICH SHALL HAVE A RED (TOP) AND BLUE (BOTTOM) BACKGROUND.
6. DG3 SHEETING SHALL BE USED.

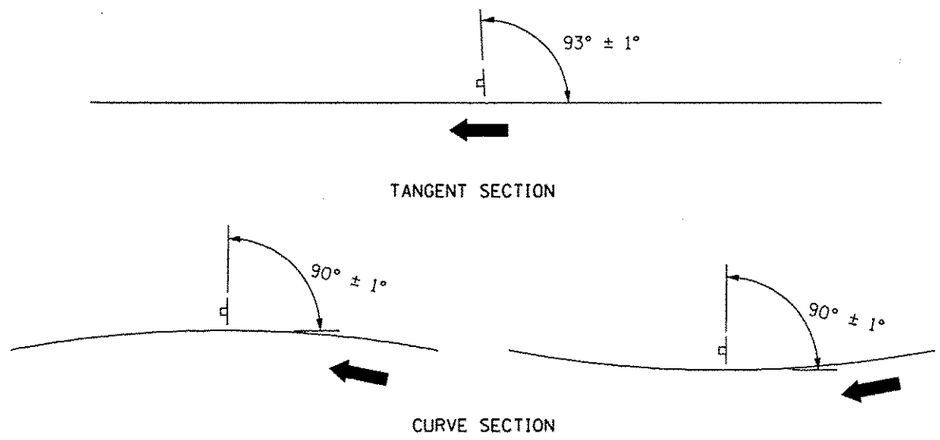
APPROVED Paul Kovacs CHIEF ENGINEER DATE 4-6-2009

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
5-8-2009	POSITIONING DETAILS
8-1-2009	REVISED BARRIER WALL MOUNT

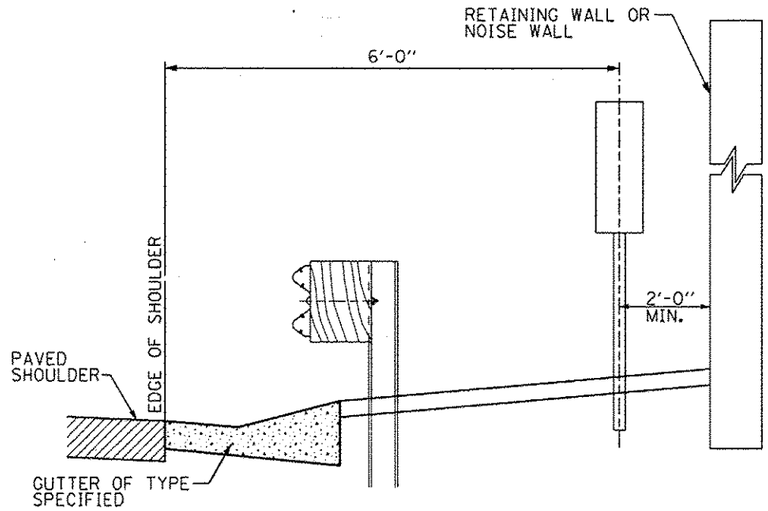
MILEPOST MARKER

STANDARD F11-02



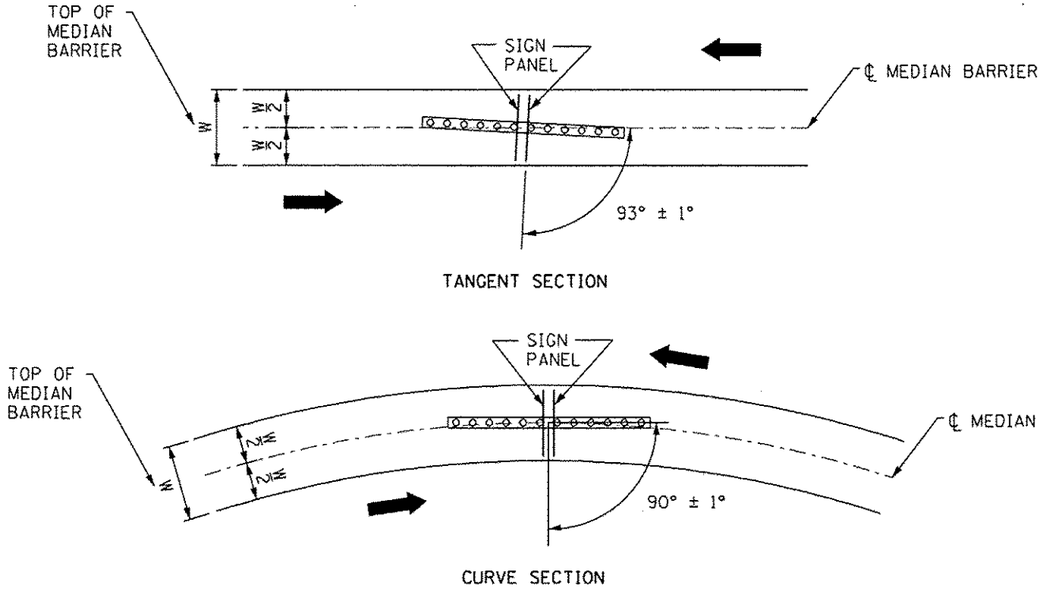
GROUND MOUNT SIGN POSITIONING

NOT TO SCALE



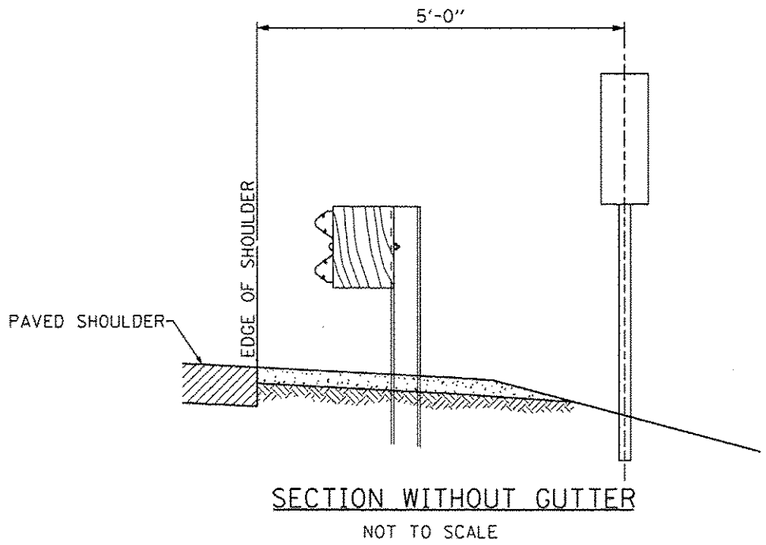
SECTION WITH GUTTER

NOT TO SCALE



MEDIAN BARRIER SIGN POSITIONING

NOT TO SCALE



SECTION WITHOUT GUTTER

NOT TO SCALE

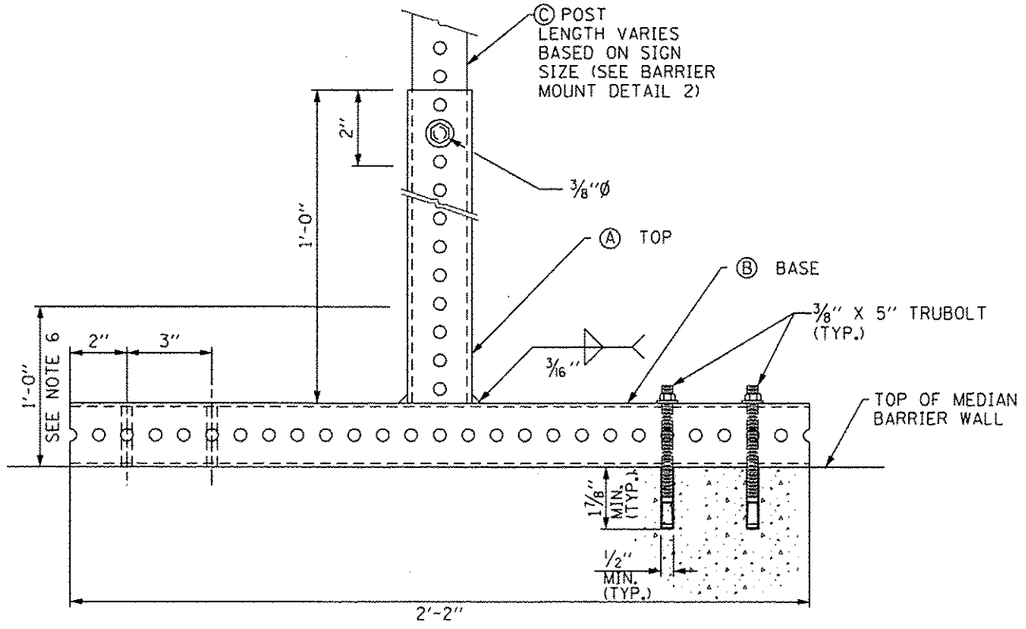
DIRECTION OF TRAFFIC

APPROVED Paul Kovacs CHIEF ENGINEER DATE 4-6-2009

Illinois Tollway
Open Roads for a Faster Future

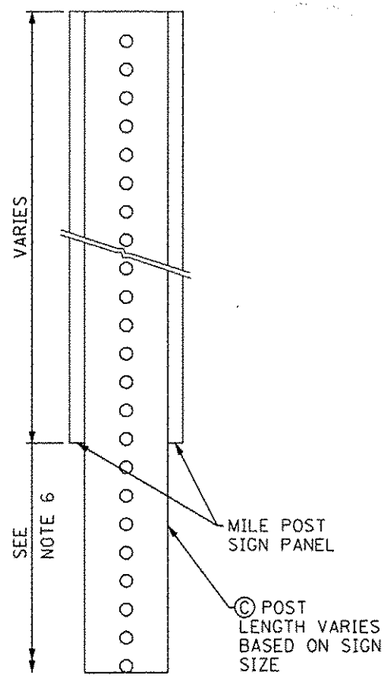
MILEPOST MARKER

STANDARD F11-02



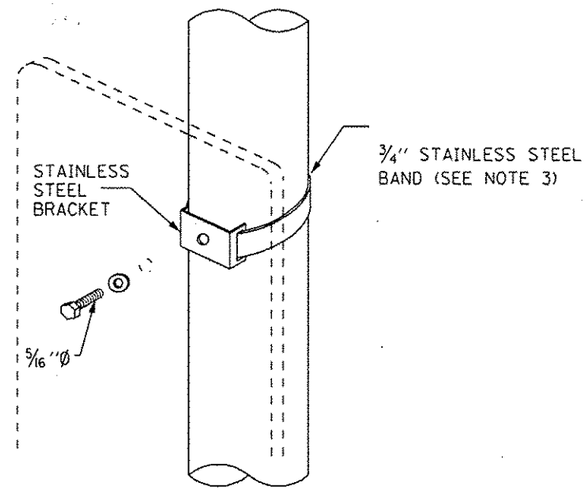
BARRIER WALL MOUNT DETAIL

NOT TO SCALE



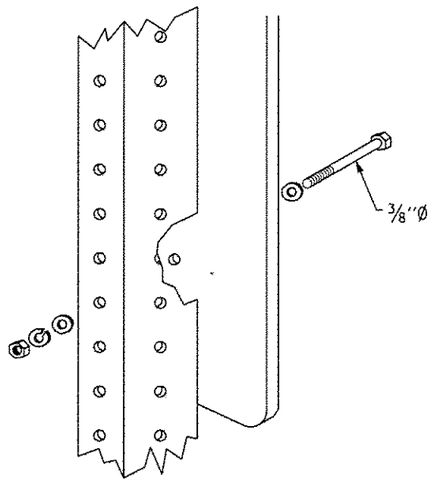
BARRIER WALL MOUNT DETAIL 2

NOT TO SCALE



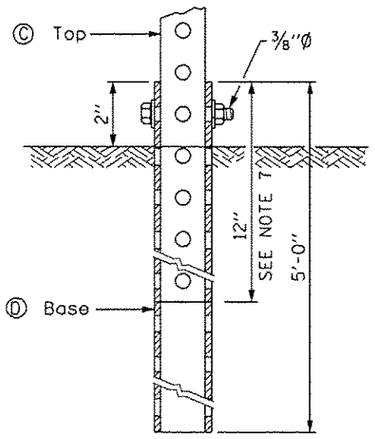
LIGHT POLE/SIGN STRUCTURE
MOUNT DETAIL

NOT TO SCALE



TELESCOPING STEEL POSTS

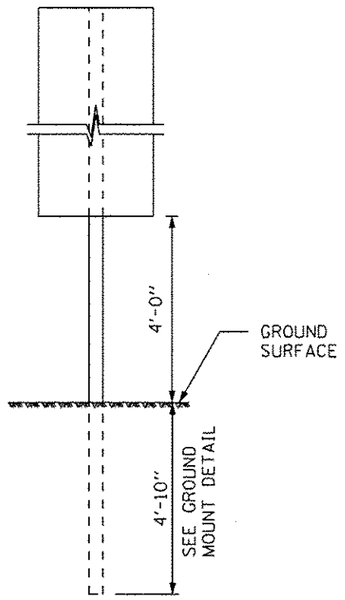
NOT TO SCALE



GROUND MOUNT DETAIL

NOT TO SCALE

Ⓐ	2 1/4" x 2 1/4" x 1'-0" (12 GA.)
Ⓑ	2 1/4" x 2 1/4" x 2'-2" (12 GA.)
©	2" x 2" x VARIES (12 GA.)
Ⓓ	2 1/2" x 2 1/2" x 5'-0" (12 GA.)



ONE POST INSTALLATION

NOT TO SCALE

GENERAL NOTES:

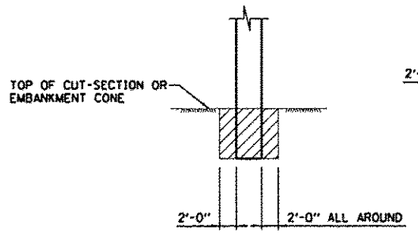
1. ALL ANCHOR BOLTS FOR MEDIAN BARRIER MOUNT DETAIL SHALL BE 3/8" DIA. RED HEAD "TRUBOLT" OR APPROVED EQUAL.
2. ALL DIMENSIONS ARE IN INCHES UNLESS SHOWN OTHERWISE.
3. FOLLOWING ARE THE STEPS FOR FASTENING THE MILEPOST MARKER SIGN PANEL. ALL MOUNTING DETAILS SHOWN ON THIS SHEET APPLY:
   a. CENTER ALL FASTENERS ON THE SIGN PANEL.
   b. START AND FINISH THE FASTERNER SPACING USING A MINIMUM OF 3" TO A MAXIMUM OF 6" FROM THE TOP AND BOTTOM EDGE OF THE SIGN PANEL.
   c. THE DISTANCE BETWEEN SUCCESSIVE FASTENERS SHALL NOT EXCEED 2'-0".
4. CENTER THE 5/16" DIA. BOLT IN THE MIDDLE OF THE SIGN.
5. USE THE SAME ATTACHMENT FOR BACK TO BACK MILEPOST MARKER SIGN.
6. DISTANCE FROM THE GROUND TO THE BOTTOM OF THE MILEPOST MARKER SIGN SHALL HAVE A MINIMUM OF 4'-0" REGARDLESS OF BARRIER TYPE.
7. THE TOP SECTION SHALL BE TELESCOPED INTO THE BASE SECTION 12 INCHES AND FASTENED TOGETHER.
8. ALL BOLTS SHALL BE GALVANIZED, A325 GRADE UNLESS OTHERWISE NOTED.
9. FOR ATTACHMENT TO BRIDGE PARAPET USE BARRIER MOUNT WALL DETAIL. ONLY ONE PANEL REQUIRED WHEN ATTACHED TO PARAPET ALONG OUTSIDE SHOULDER.

Paul Kovacs
APPROVED ..... DATE 4-6-2009
CHIEF ENGINEER

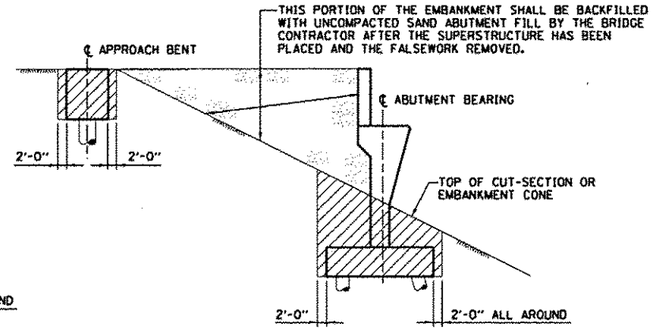
Illinois Tollway
Open Roads for a Faster Future

MILEPOST MARKER

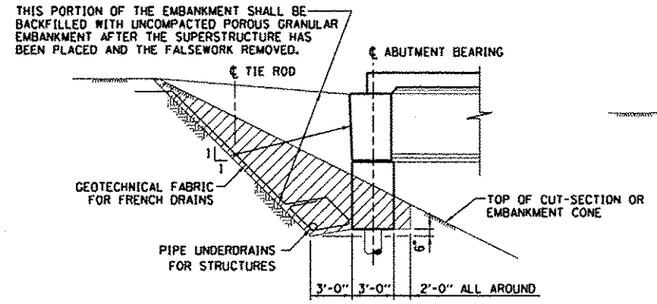
STANDARD F11-02



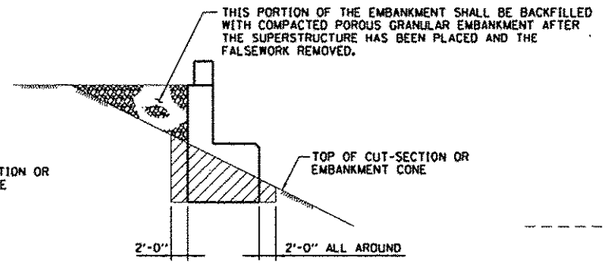
ABUTMENT WING OR CURTAIN WALL



VAULTED ABUTMENT

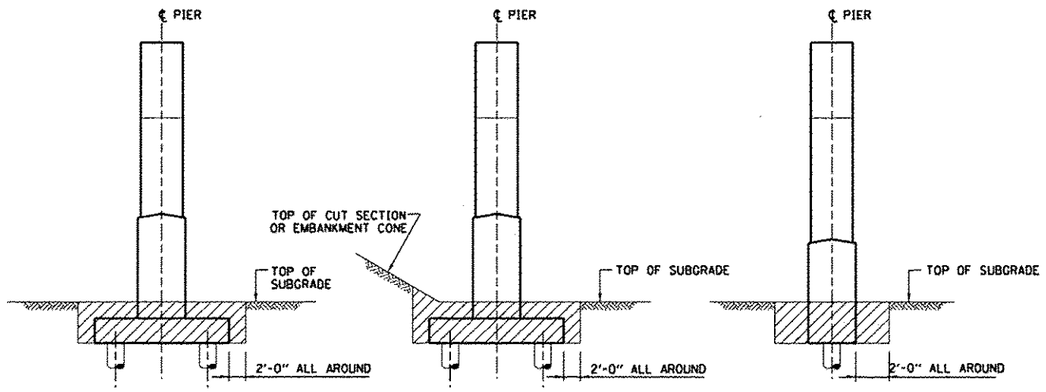


INTEGRAL ABUTMENT



STUB ABUTMENT

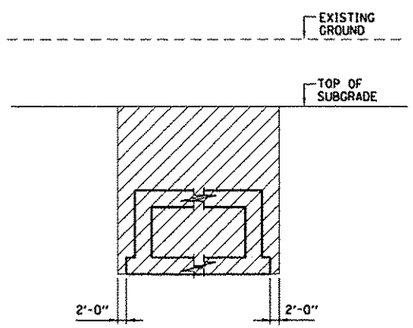
LIMITS OF STRUCTURE EXCAVATION FOR ABUTMENTS



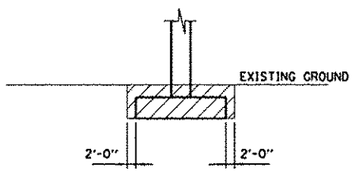
LIMITS OF STRUCTURE EXCAVATION FOR PIERS

LEGEND:

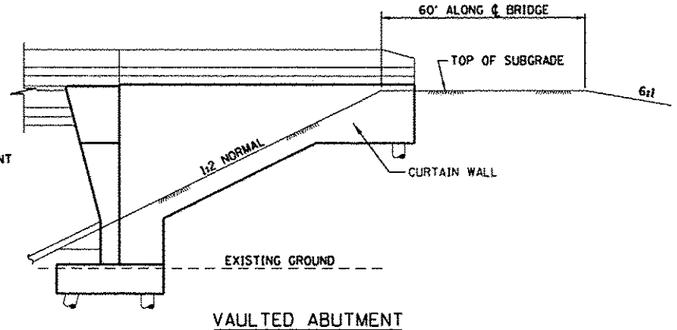
- STRUCTURE EXCAVATION
- SAND ABUTMENT FILL
- COMPACTED POROUS GRANULAR EMBANKMENT
- UNCOMPACTED POROUS GRANULAR EMBANKMENT



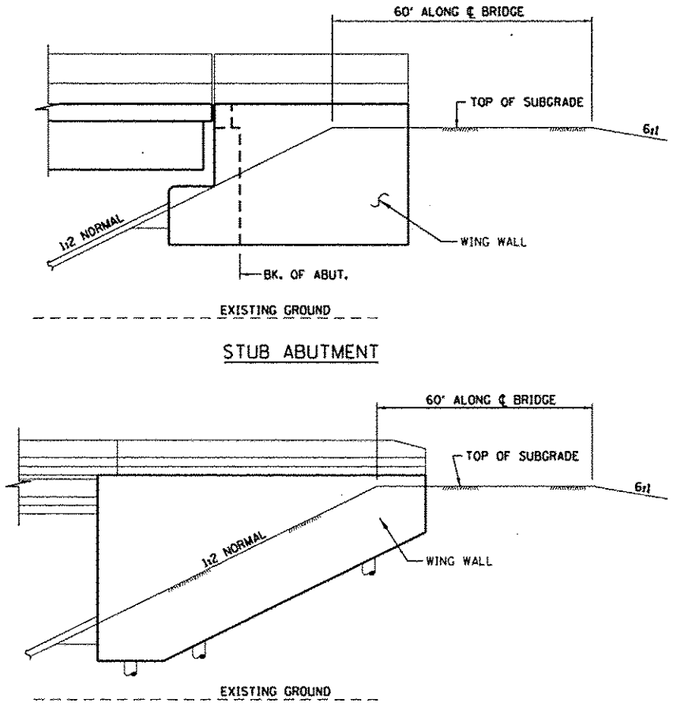
LIMITS OF STRUCTURE EXCAVATION FOR CULVERTS



LIMITS OF STRUCTURE EXCAVATION FOR RETAINING WALLS



VAULTED ABUTMENT



STUB ABUTMENT

INTEGRAL ABUTMENT

EMBANKMENT CONE DETAILS

NOTES:

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

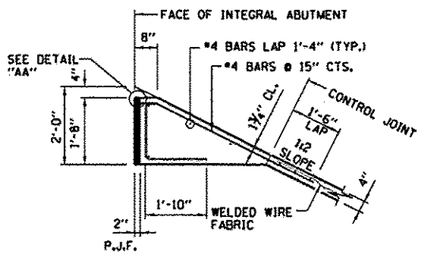
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 6-1-2009

DATE	REVISIONS
6-1-2009	ADDED NOTES

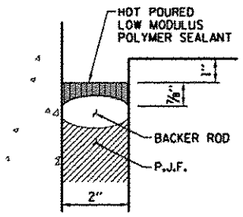
Illinois Tollway
Open Roads for a Faster Future

LIMITS OF STRUCTURE EXCAVATION AND EMBANKMENT CONE DETAILS

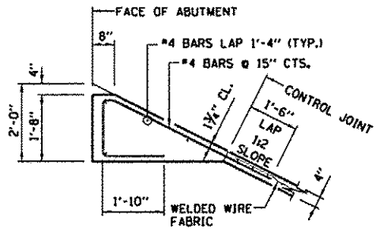
STANDARD G1-01



DETAIL "A"



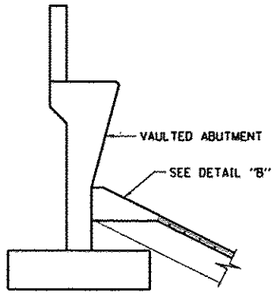
DETAIL "AA"



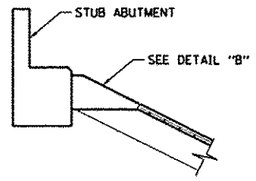
DETAIL "B"

NOTE:

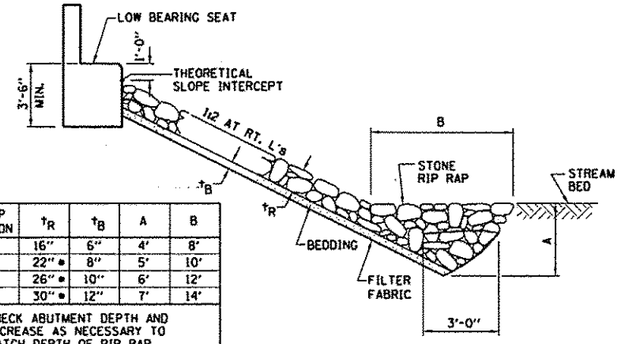
SEALANT, BACKER ROD AND PJF SHALL MEET THE REQUIREMENTS OF SECTIONS 1050 AND 1051 OF THE IDOT STANDARD SPECIFICATIONS.



AT VAULTED ABUTMENT



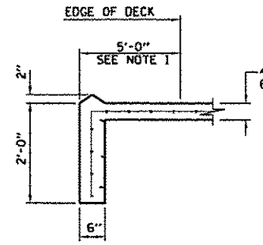
AT STUB ABUTMENT



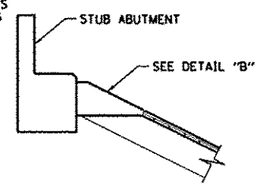
RIP RAP GRADATION	t_R	t_B	A	B
RR4	16"	6"	4'	8'
RR5	22" *	8"	5'	10'
RR6	26" *	10"	6'	12'
RR7	30" *	12"	7'	14'

* CHECK ABUTMENT DEPTH AND INCREASE AS NECESSARY TO MATCH DEPTH OF RIP RAP

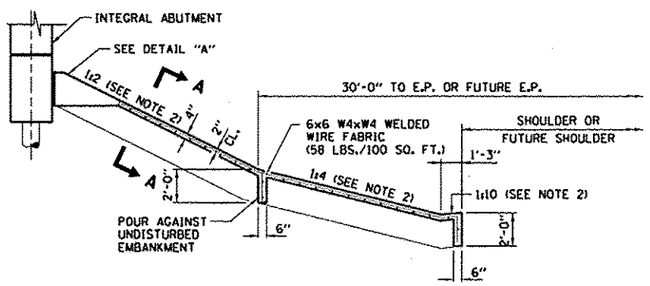
STONE RIPRAP FOR TOLLWAY BRIDGES OVER WATERWAYS



SECTION A-A



AT STUB ABUTMENT



AT INTEGRAL ABUTMENT

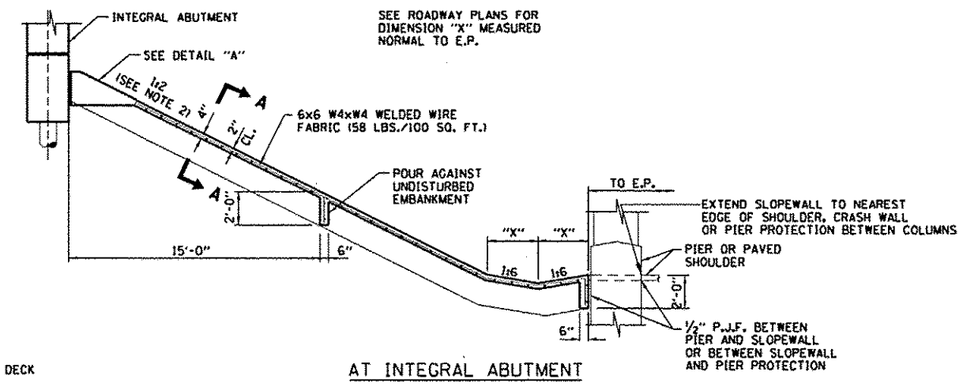
SLOPE WALLS FOR BRIDGES OVER TOLLWAY

NOTES:

1. DIMENSIONS SHALL BE 2'-0" IF DECK DRAINS ARE NOT PROVIDED.
2. DIMENSIONS MARKED THUS ARE MEASURED NORMAL TO E.P.
3. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

NOTE:

SEE ROADWAY PLANS FOR DIMENSION "X" MEASURED NORMAL TO E.P.



AT INTEGRAL ABUTMENT

TOLLWAY BRIDGES OVER CROSSROADS

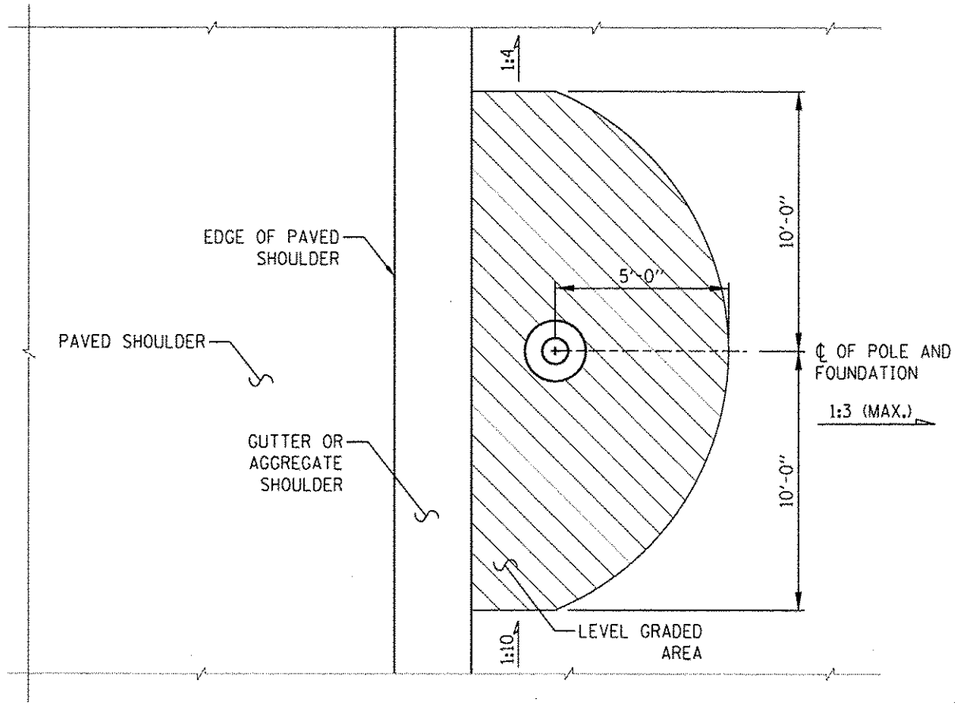
Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
6-1-2009	REVISED NOTES

SLOPEWALL DETAILS

STANDARD G2-01

Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 6-1-2009

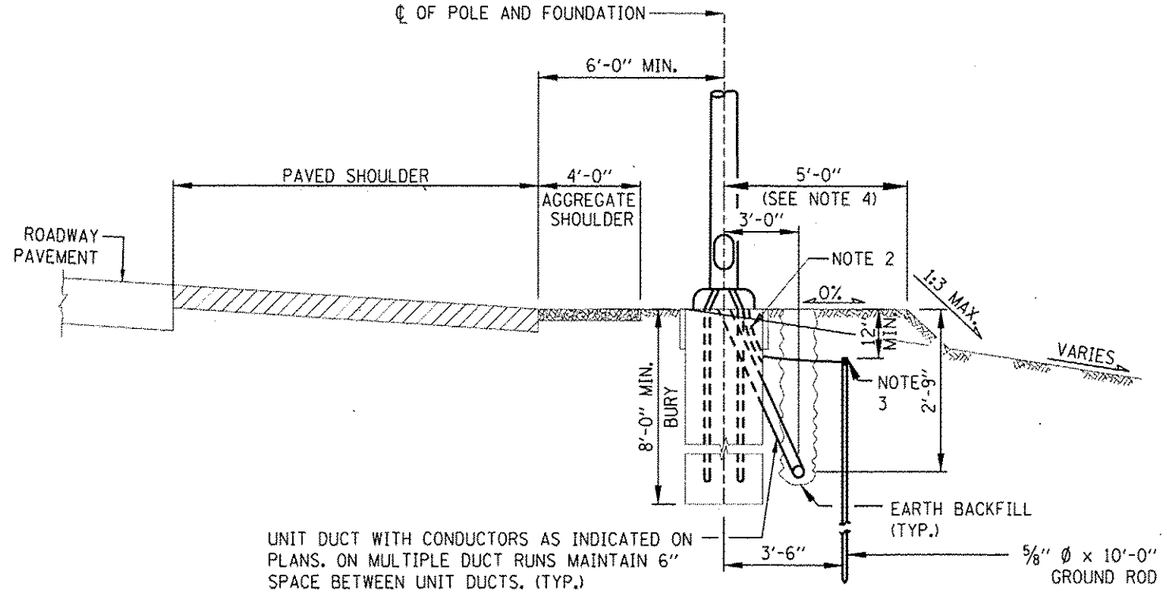


PLAN

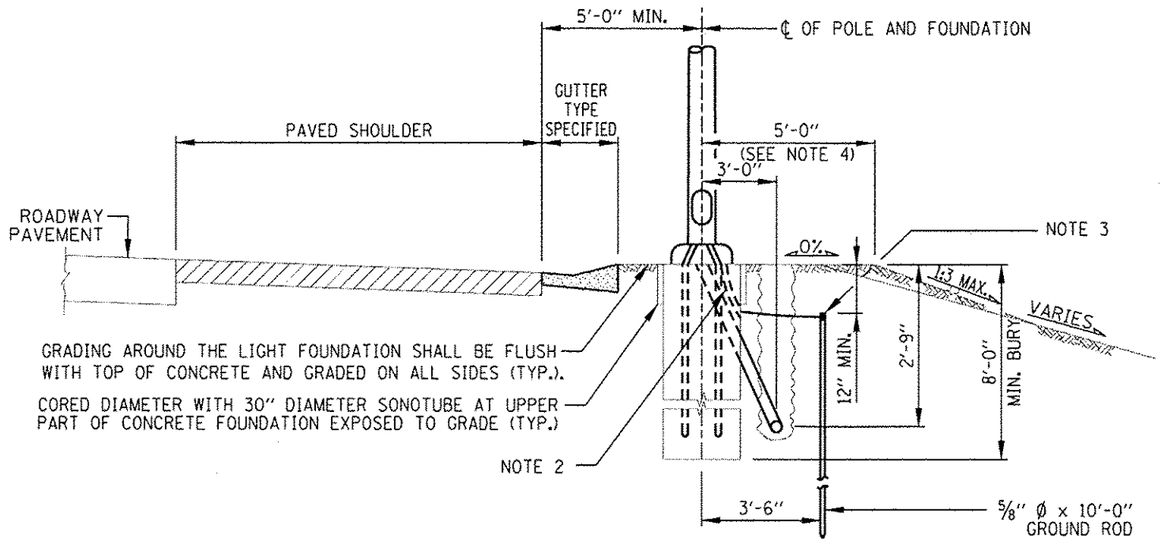
CONCRETE FOUNDATION GRADING PLAN WITH FRONT SLOPES

NOTES:

1. AT LOCATIONS NOT SHIELDED BY GUARDRAIL, THE SLOPE ADJACENT TO EACH FOUNDATION SHALL BE GRADED LEVEL SO THAT THE LIGHT POLE FOUNDATION IS FLUSH WITH GRADE ON ANY FACE. THE TOP OF THE FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE TOP OF GUTTER OR AGGREGATE SHOULDER.
2. ¾" PVC CONDUIT IN CONCRETE FOUNDATION FOR NO. 6 BARE COPPER GROUND WIRE.
3. CADWELD NO. 6 BARE COPPER GROUND CABLE TO GROUND ROD.
4. WHERE THE GRADING SLOPES DOWNWARD THE AREA BEHIND EACH LIGHT POLE FOUNDATION SHALL BE GRADED LEVEL FOR 5' BEFORE SLOPING DOWN.
5. THE LEVEL AREA SHALL EXTEND PARALLEL TO THE ROADWAY 10' ON EITHER SIDE OF THE LIGHT POLE FOUNDATION.
6. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).
7. ALL GROUND MOUNTED LIGHT POLES SHALL BE PROVIDED WITH AN ACCEPTED FHWA BREAKAWAY BASE OR DEVICE.
8. THE MINIMUM LIGHT POLE SETBACK DISTANCE FROM EDGE OF ROADWAY TO ℄ OF POLE AND FOUNDATION SHALL BE 11'-0" WHEN THE PAVED SHOULDER WIDTH IS LESS THAN 10'-0".



CONCRETE FOUNDATION ADJACENT TO AGGREGATE SHOULDER WITH FORESLOPE



CONCRETE FOUNDATION ADJACENT TO GUTTER WITH FORESLOPE

APPROVED Paul Kovacs CHIEF ENGINEER DATE 2-7-2012

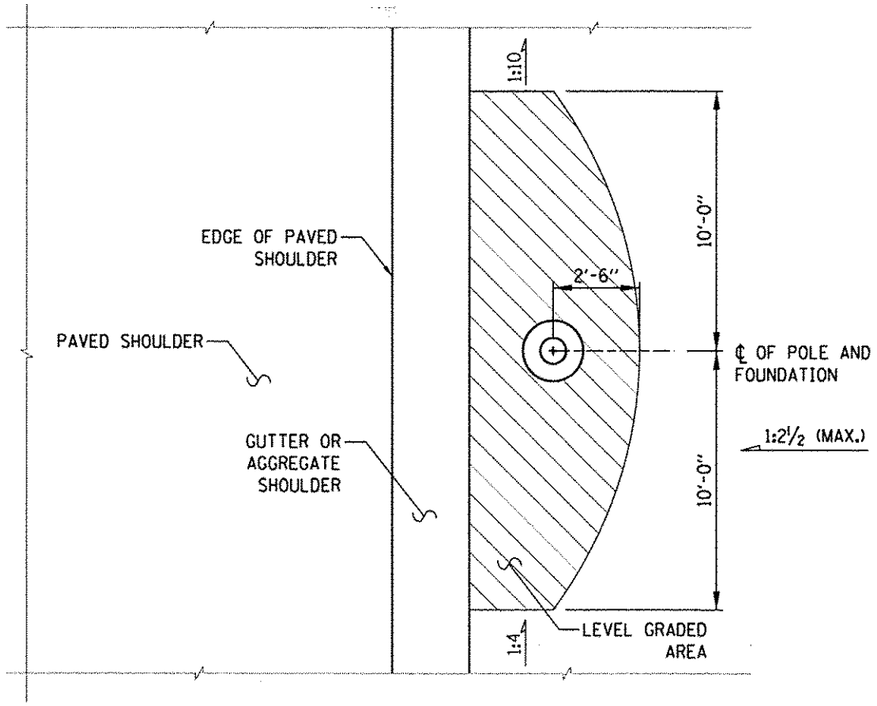
CONTRACT 60I31 SHEET 952 OF 963

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
2-7-2012	MODIFIED FOUNDATION DETAILS, REVISED NOTES

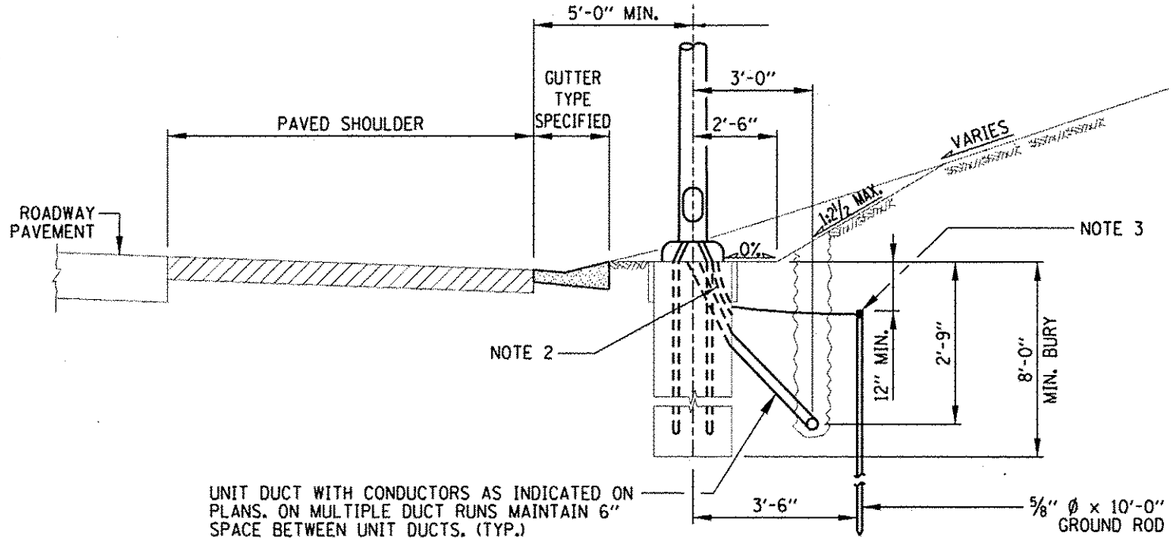
LIGHT STANDARD FOUNDATION

STANDARD H1-01

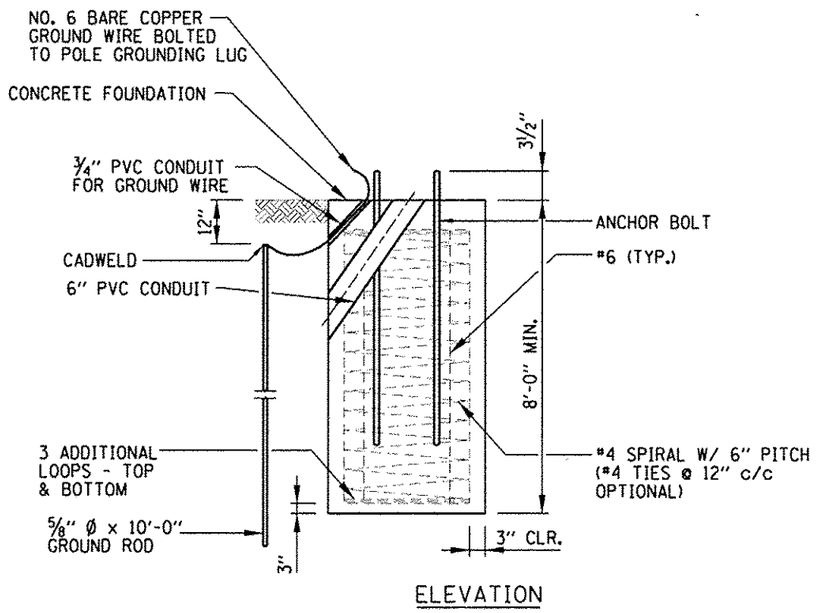


PLAN

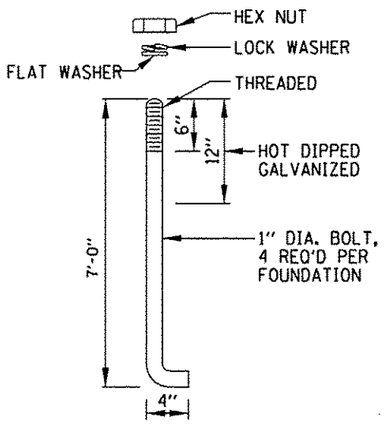
CONCRETE FOUNDATION GRADING PLAN WITH BACKSLOPE



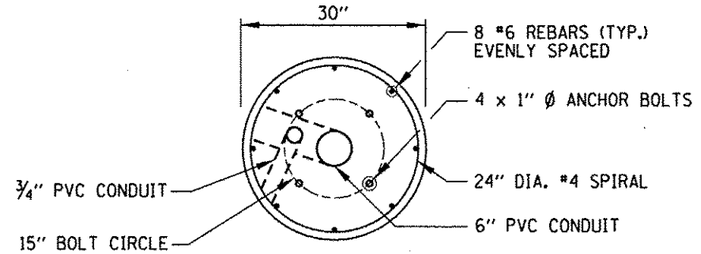
CONCRETE FOUNDATION ADJACENT TO GUTTER WITH BACKSLOPE



ELEVATION



ANCHOR BOLT DETAIL



PLAN

CONCRETE FOUNDATION DETAILS

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

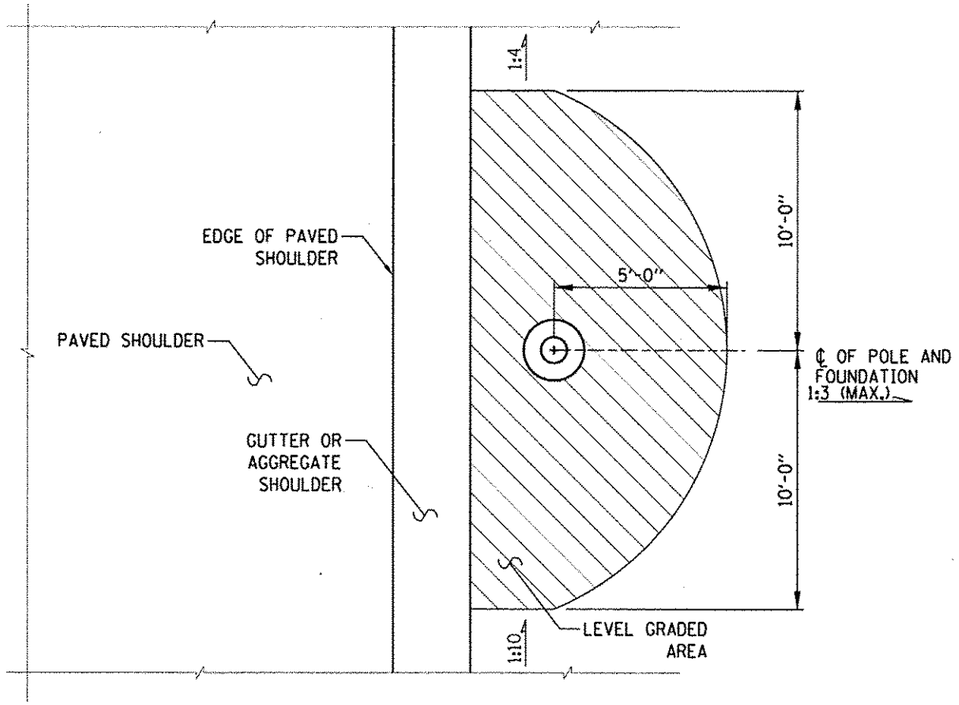
SHEET 2 OF 6

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

Illinois Tollway
Open Roads for a Faster Future

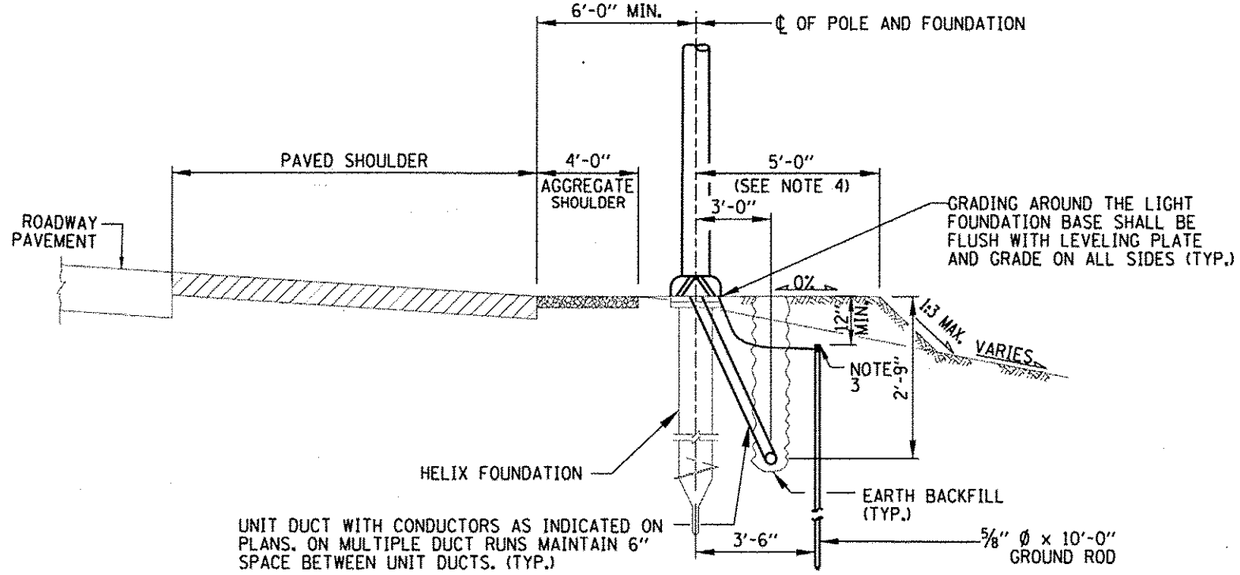
LIGHT STANDARD FOUNDATION

STANDARD H1-01

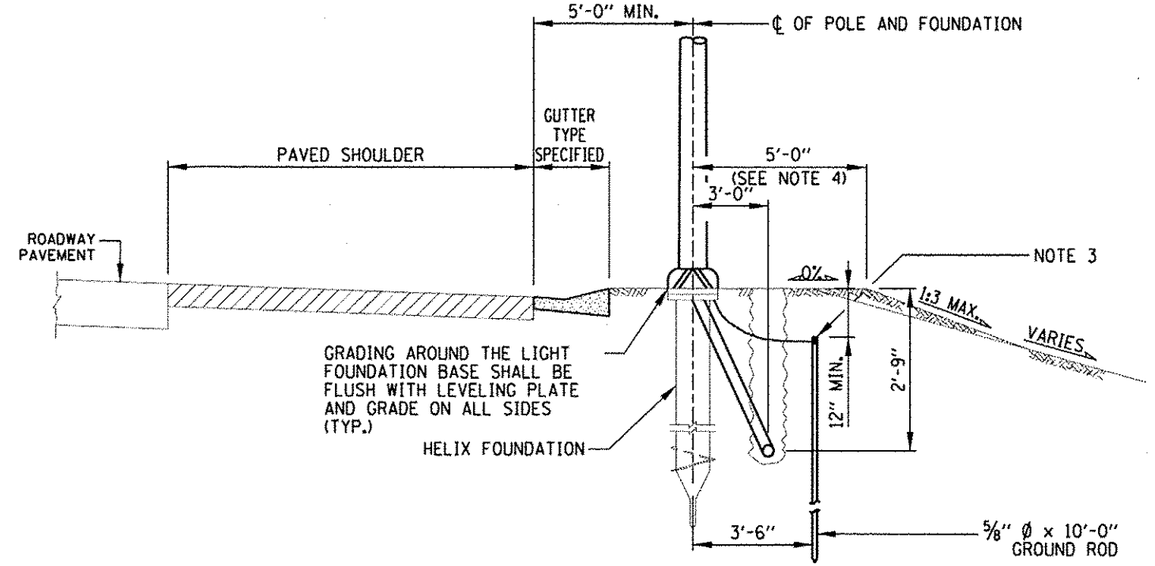


PLAN

HELIX FOUNDATION GRADING PLAN WITH FRONT SLOPES



HELIX FOUNDATION ADJACENT TO AGGREGATE SHOULDER WITH FORESLOPE



HELIX FOUNDATION ADJACENT TO GUTTER WITH FORESLOPE

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

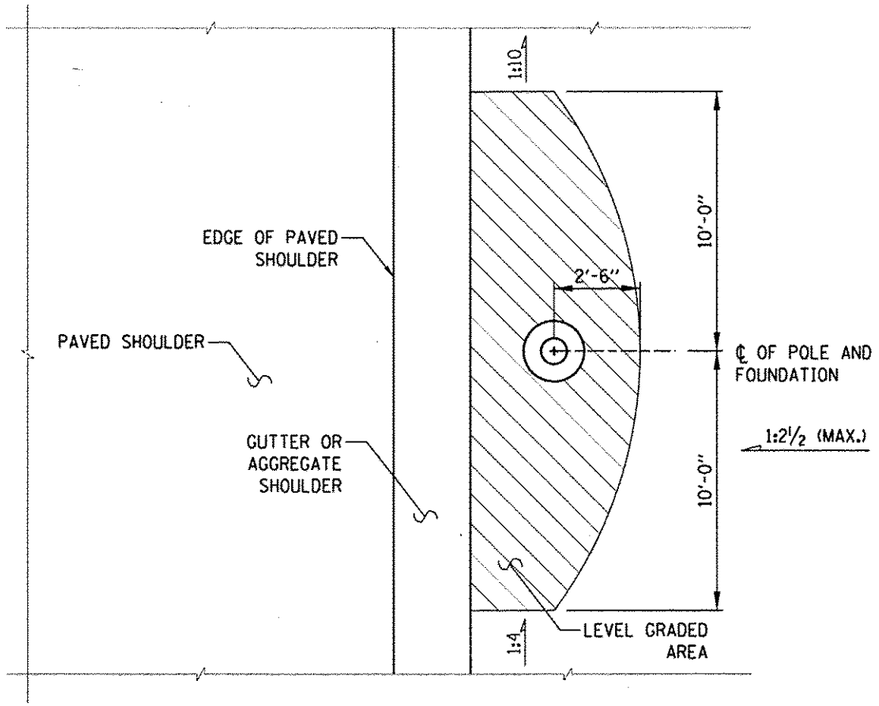
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

CONTRACT 60I31 SHEET 954 OF 963
SHEET 3 OF 6

Illinois Tollway
Open Roads for a Faster Future

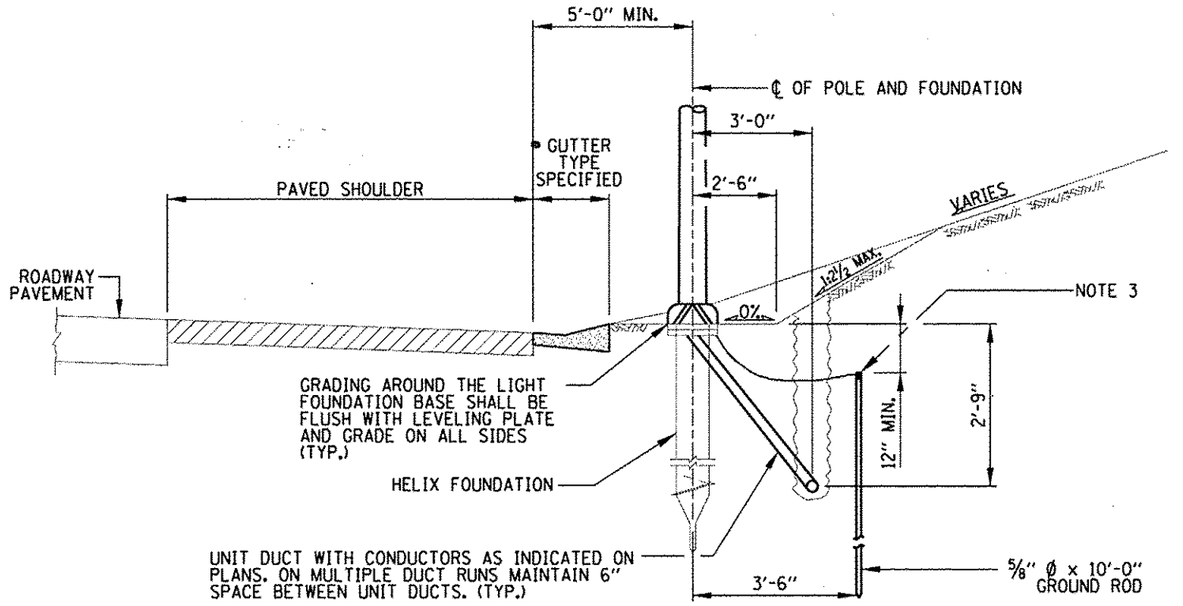
LIGHT STANDARD FOUNDATION

STANDARD H1-01

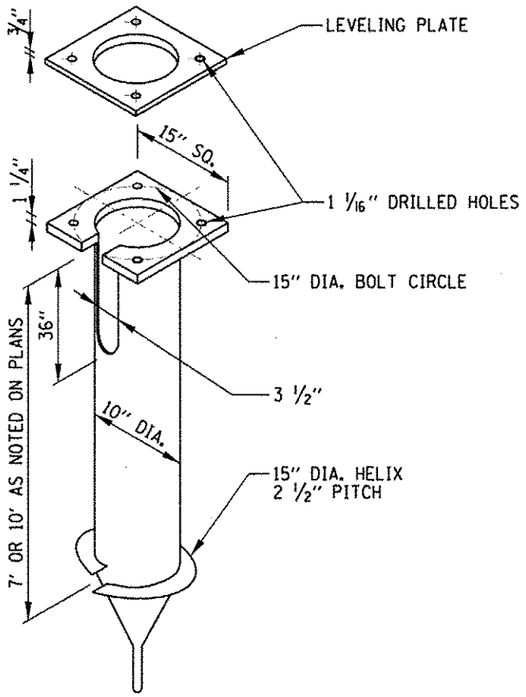


PLAN

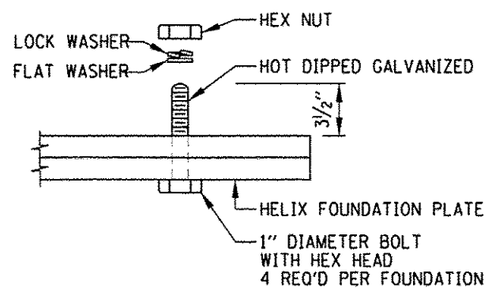
HELIX FOUNDATION GRADING PLAN WITH BACKSLOPE



HELIX FOUNDATION ADJACENT TO GUTTER WITH BACKSLOPE



HELIX FOUNDATION



HELIX FOUNDATION BASE ATTACHMENT DETAIL

NOTE:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

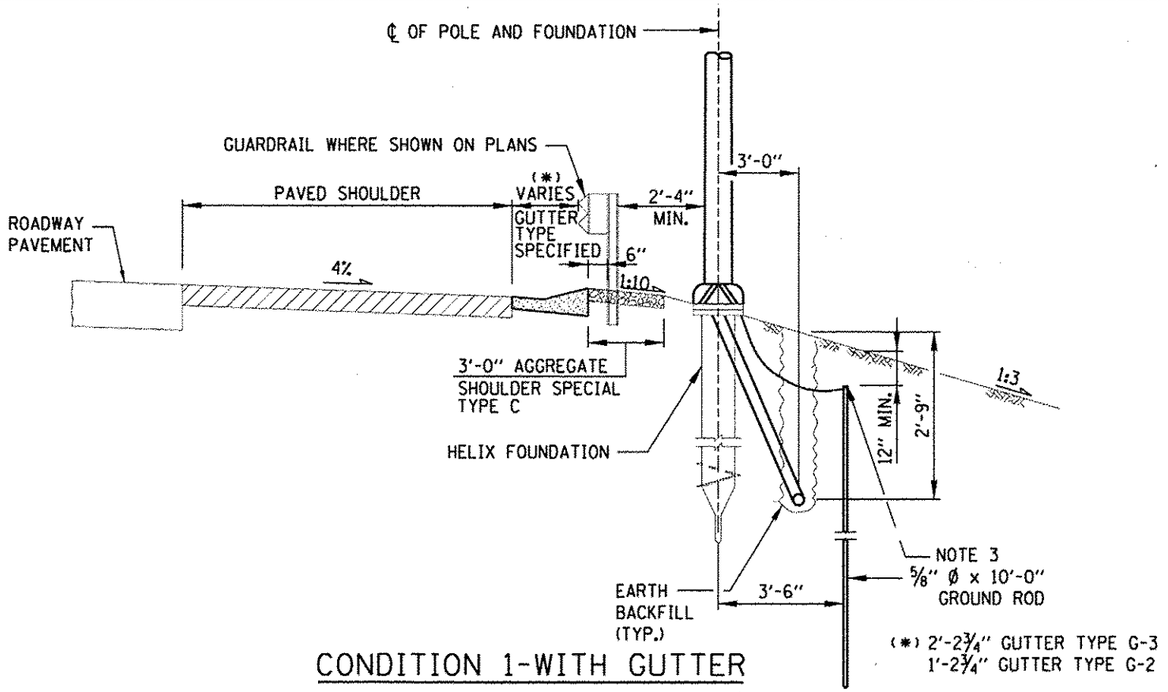
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

CONTRACT 60I31 SHEET 955 OF 963
SHEET 4 OF 6

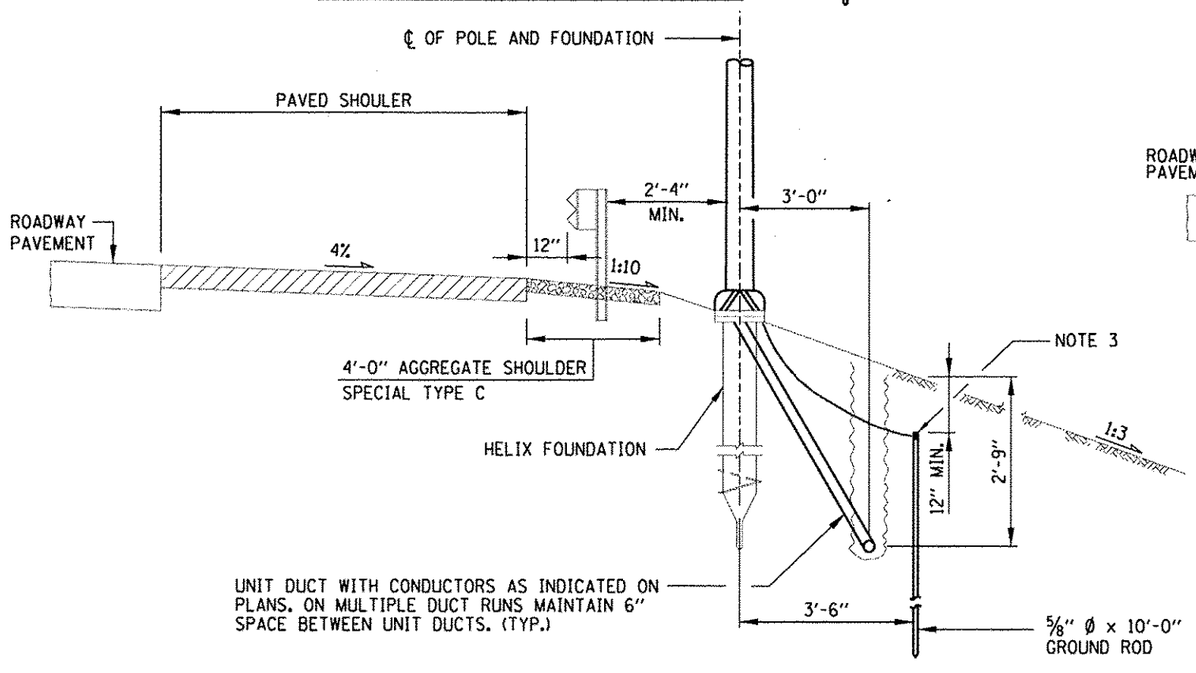
Illinois Tollway
Open Roads for a Faster Future

LIGHT STANDARD FOUNDATION

STANDARD H1-01

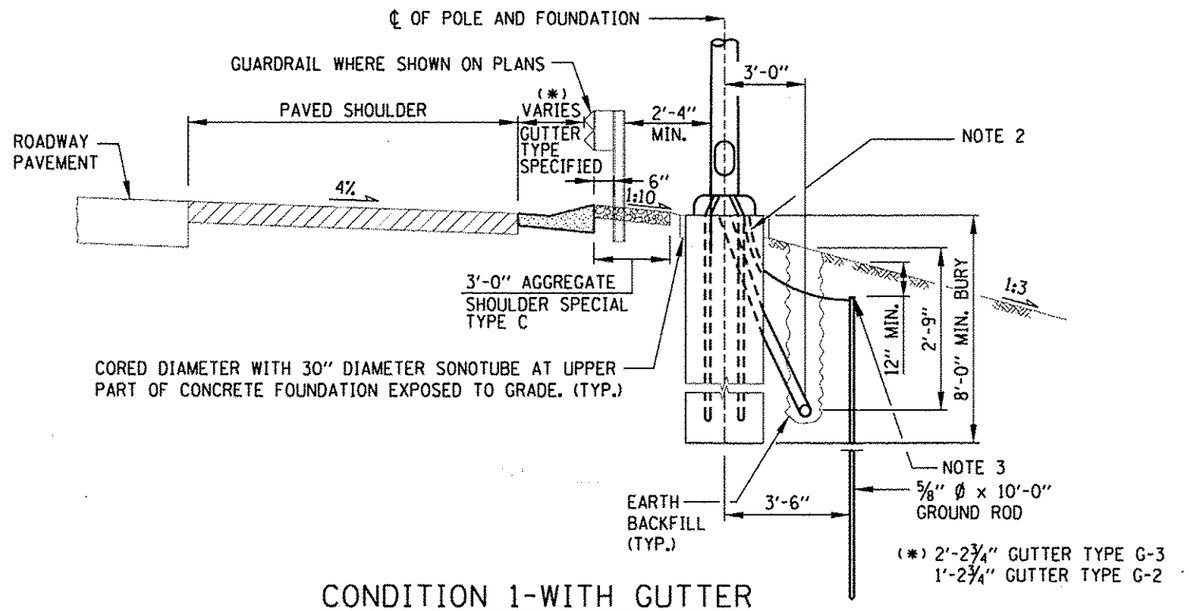


CONDITION 1-WITH GUTTER

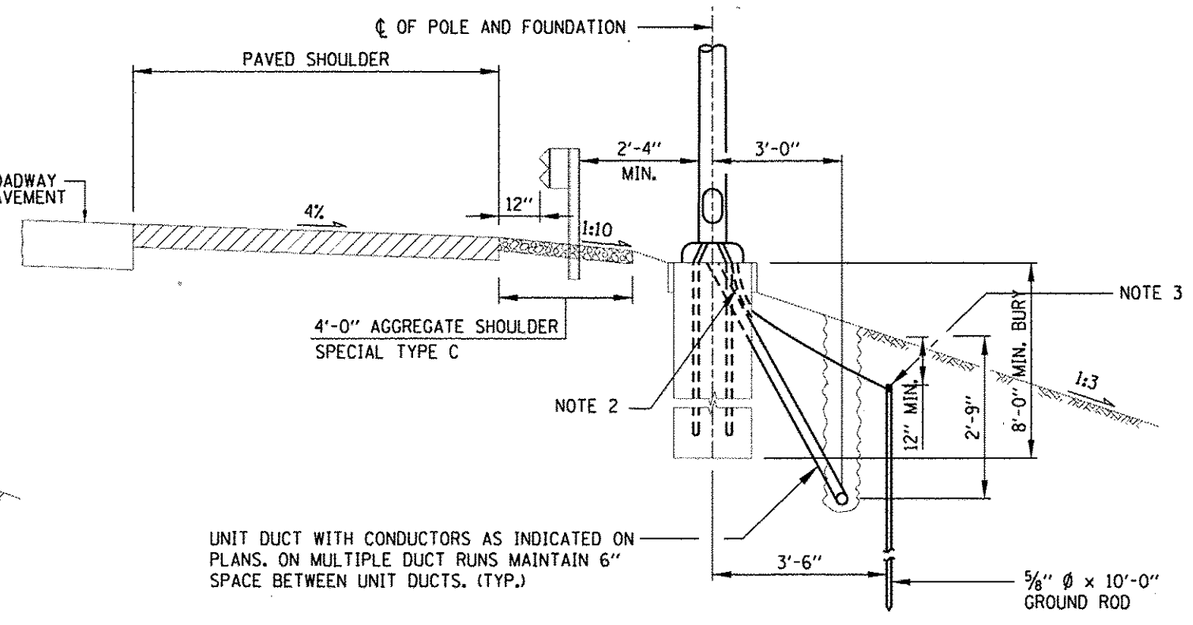


CONDITION 2-WITHOUT GUTTER

HELIX FOUNDATION



CONDITION 1-WITH GUTTER



CONDITION 2-WITHOUT GUTTER

CONCRETE FOUNDATION

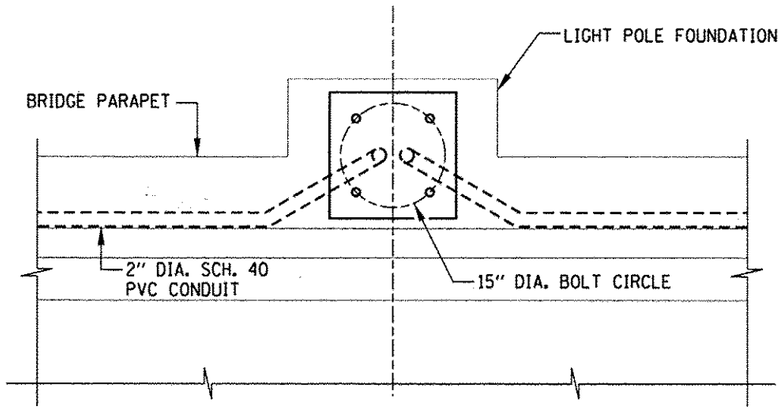
NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

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

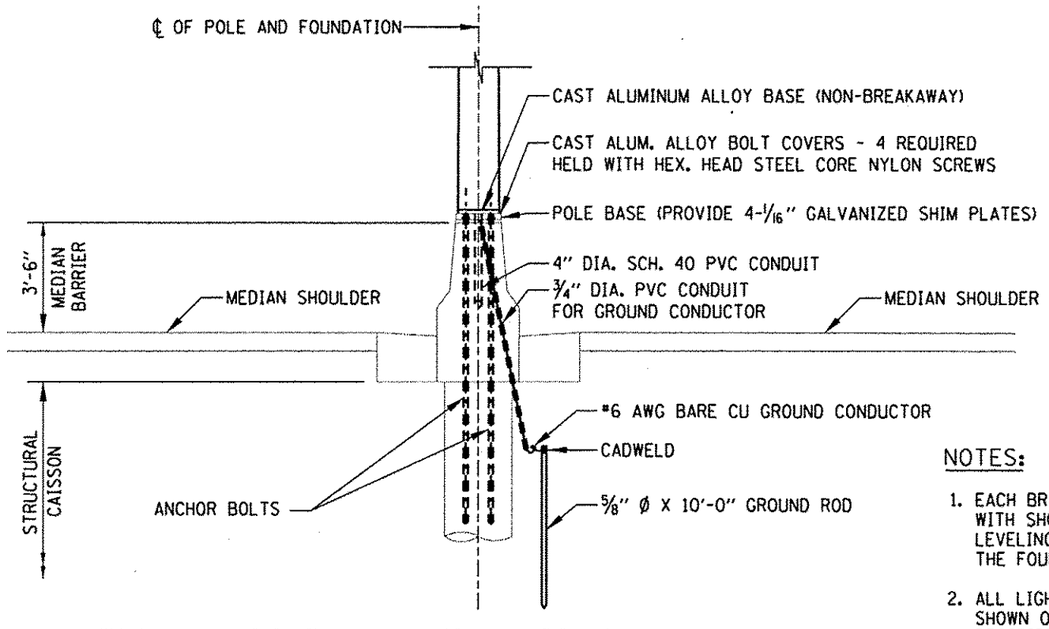
Illinois Tollway
Open Roads for a Faster Future

LIGHT STANDARD FOUNDATION

STANDARD H1-01



PLAN VIEW



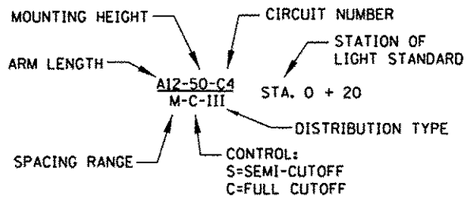
MEDIAN BARRIER MOUNTED LIGHT STANDARD DETAIL

(SEE STANDARDS H8 AND H9)

NOTES:

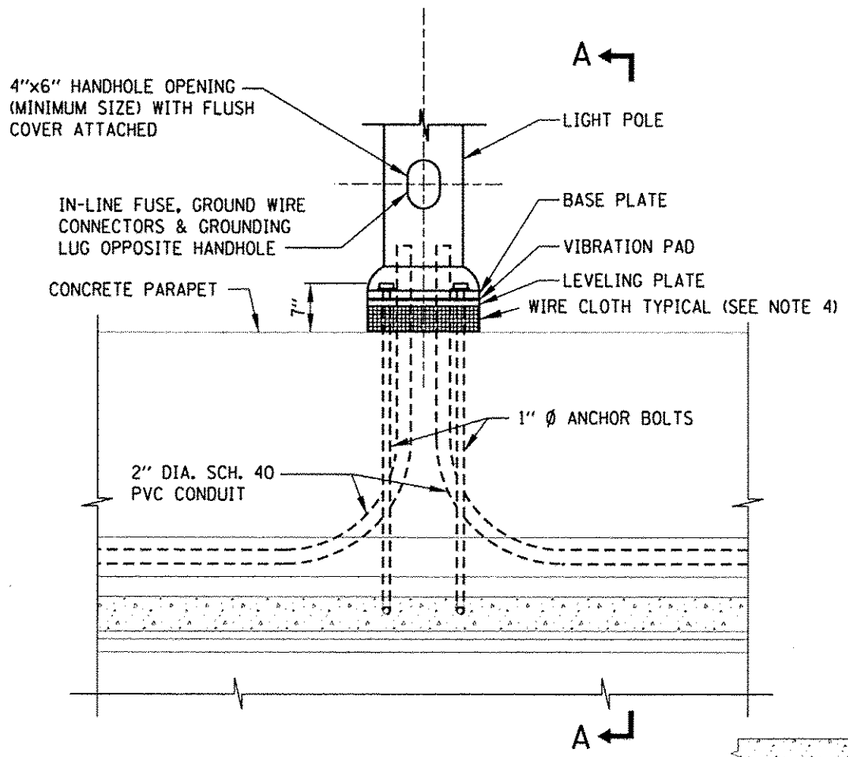
1. EACH BRIDGE MOUNTED STANDARD SHALL BE PROVIDED WITH SHOCK ABSORBING VIBRATION PADS, NUTS, WASHERS, LEVELING PLATE AND WIRE MESH FOR ITS ERECTION ON THE FOUNDATION AS SHOWN ON THE PLANS.

2. ALL LIGHT STANDARDS, BOTH NEW AND EXISTING, ARE SHOWN ON PLANS WITH THE FOLLOWING SAMPLE DESCRIPTION:

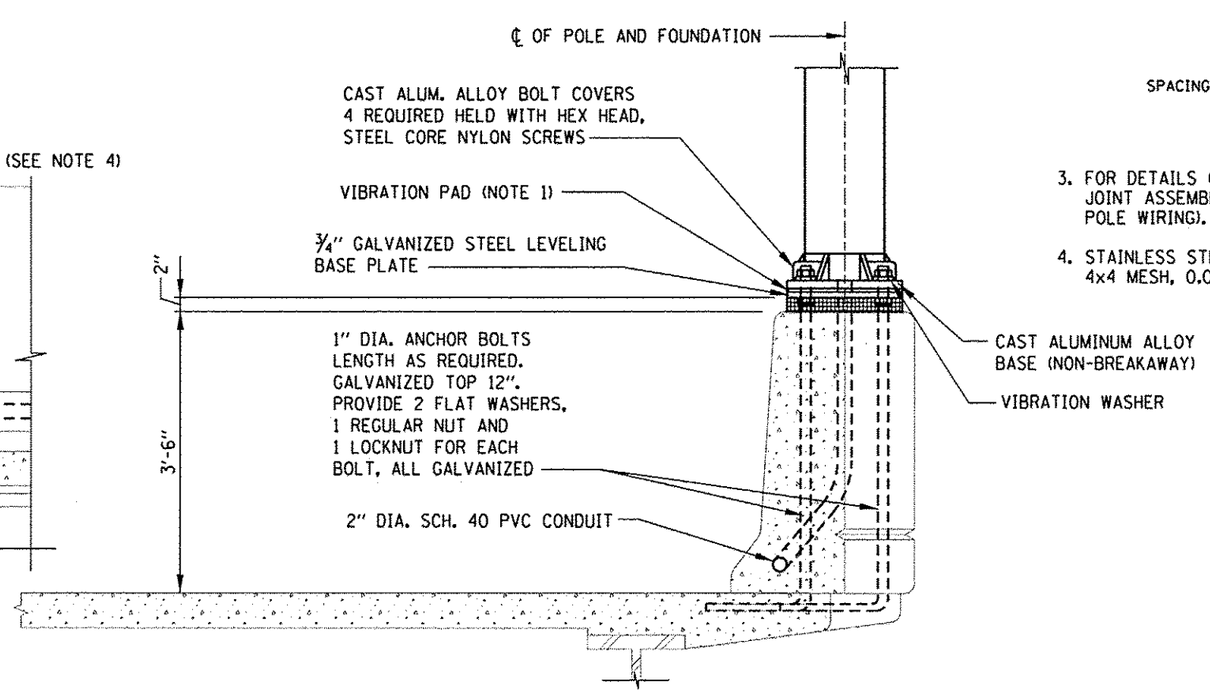


3. FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING, AND JOINT ASSEMBLY, SEE STANDARD H2 (LIGHT STANDARD POLE WIRING).

4. STAINLESS STEEL STANDARD GRADE WIRE CLOTH-TYPE 304, 4x4 MESH, 0.047" WIRE DIAMETER.



ELEVATION OF CONCRETE
PARAPET AND LIGHT STANDARD



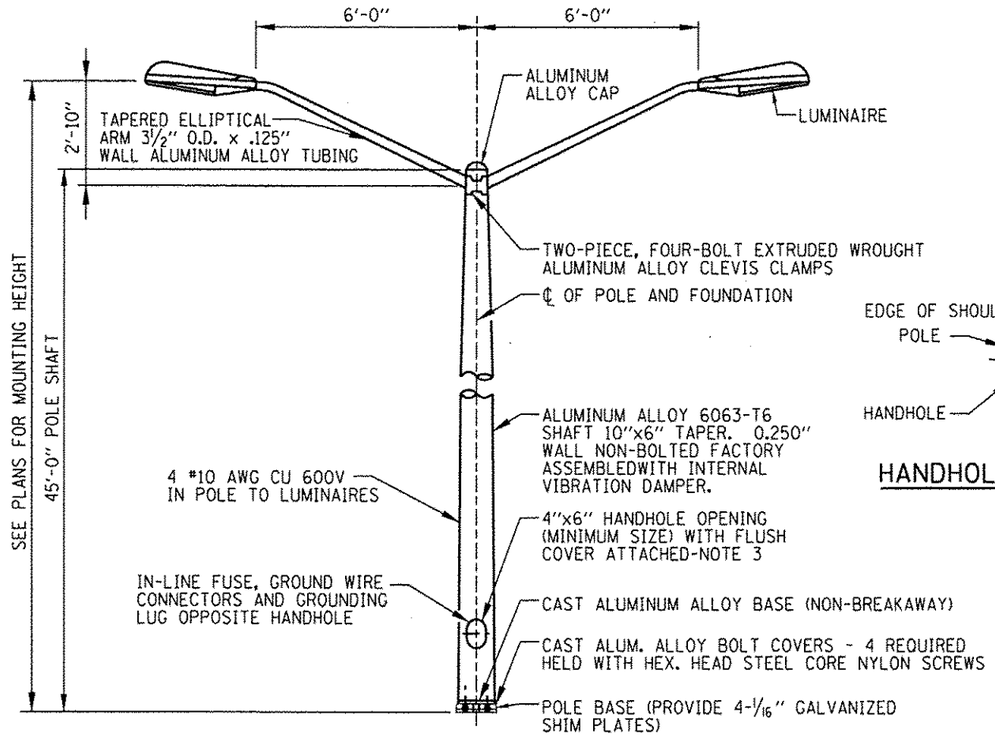
BRIDGE PARAPET MOUNTED LIGHT STANDARD DETAIL
SECTION A-A

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

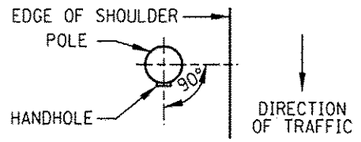
Illinois Tollway
Open Roads for a Faster Future

LIGHT STANDARD
FOUNDATION

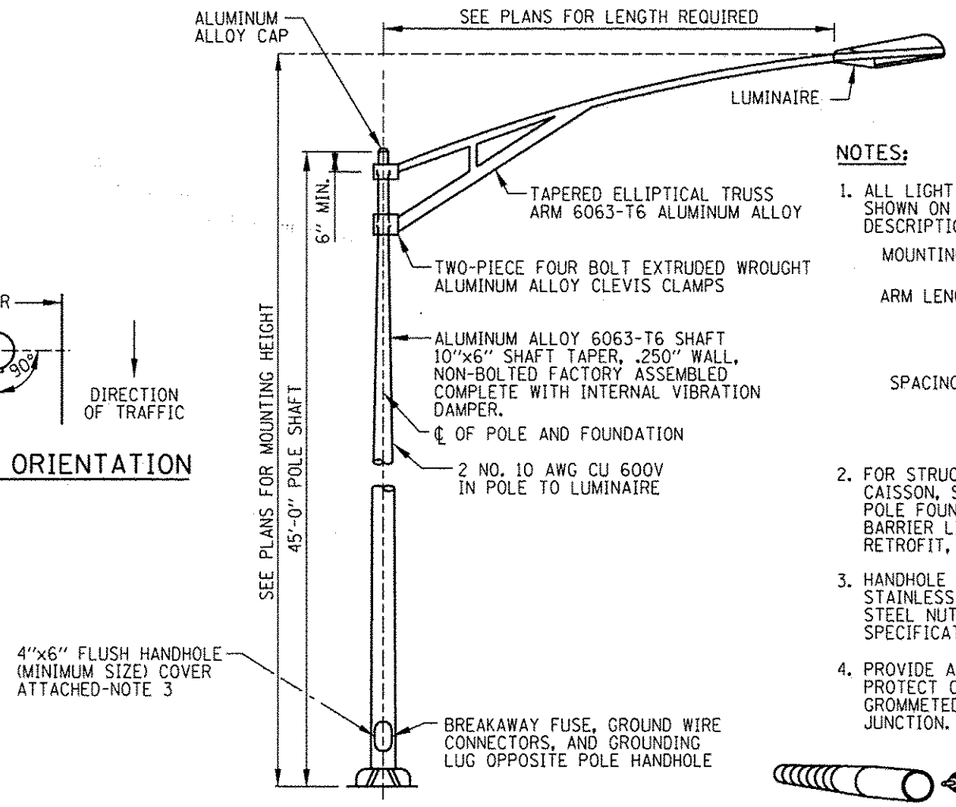
STANDARD H1-01



TWIN MAST LIGHT STANDARD DETAIL



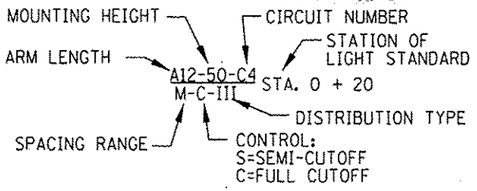
HANDHOLE ORIENTATION



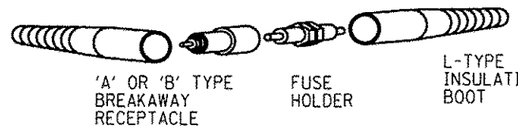
SINGLE MAST LIGHT STANDARD DETAIL

NOTES:

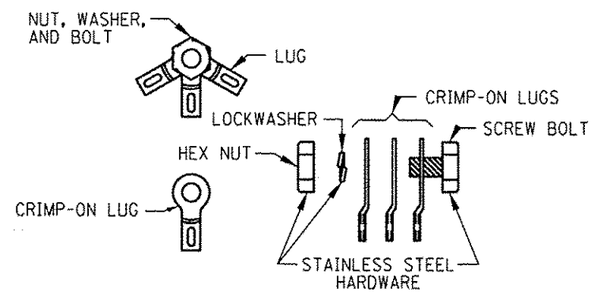
1. ALL LIGHT STANDARDS, BOTH NEW AND EXISTING, ARE SHOWN ON PLANS WITH THE FOLLOWING SAMPLE DESCRIPTION:



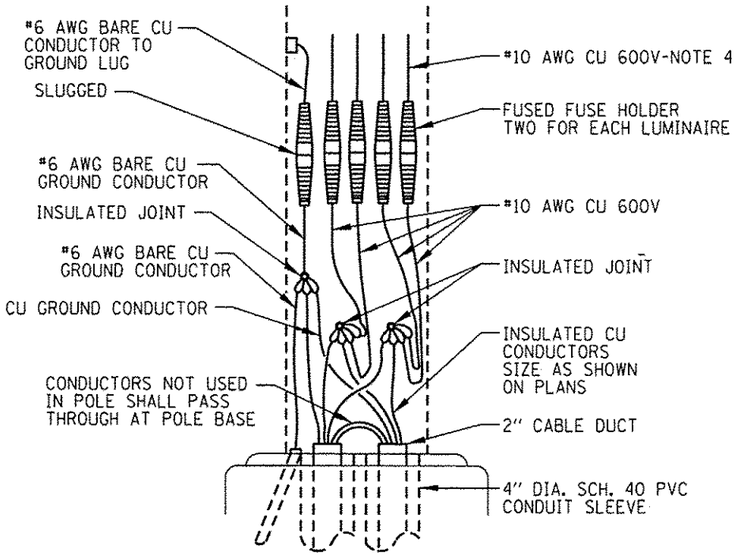
2. FOR STRUCTURAL DETAILS OF MEDIAN BARRIER AND CAISSON, SEE STANDARD H8 (MEDIAN BARRIER LIGHT POLE FOUNDATION DETAILS), STANDARD H9 (MEDIAN BARRIER LIGHT POLE FOUNDATION DETAILS - TYPE 4 RETROFIT, 32" BARRIER) OR STRUCTURAL PLANS.
3. HANDHOLE COVERS SHALL BE FASTENED USING TWO STAINLESS STEEL SCREWS WITH CAPTIVE STAINLESS STEEL NUTS OR INSERTS, PER THE SUPPLEMENTAL SPECIFICATIONS.
4. PROVIDE A 24" LONG POLYETHYLENE TUBE TO PROTECT CABLES WHERE THEY PASS THROUGH THE GROMMETED OPENING AT THE POLE/MAST ARM JUNCTION.



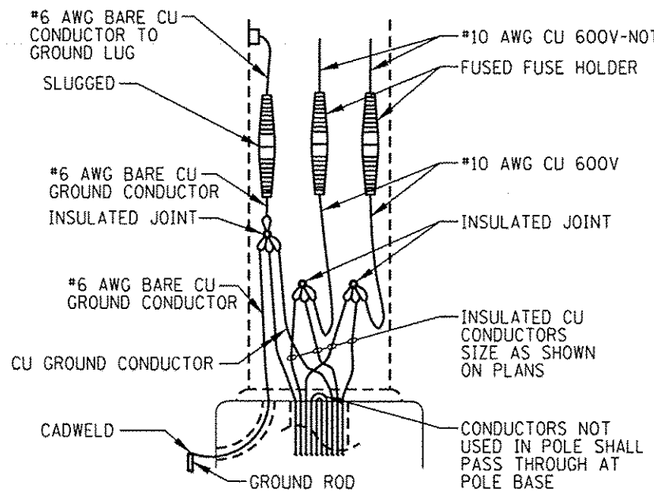
IN-THE-LINE FUSE HOLDER DETAIL WITH BREAKAWAY FEATURE



JOINT ASSEMBLY DETAILS



TWIN MAST POLE BASE WIRING DIAGRAM



SINGLE MAST POLE BASE WIRING DIAGRAM

CONTRACT 60I31 SHEET 958 OF 963

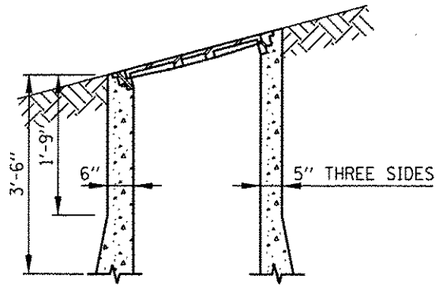
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

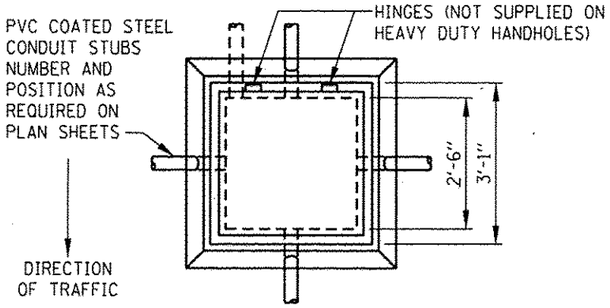
DATE	REVISIONS
2-7-2012	REVISED LIGHT POLE HANDHOLE NOTES, REMOVED CABLE VOLTAGE, AND REVISED NOTES

LIGHT STANDARD POLE WIRING

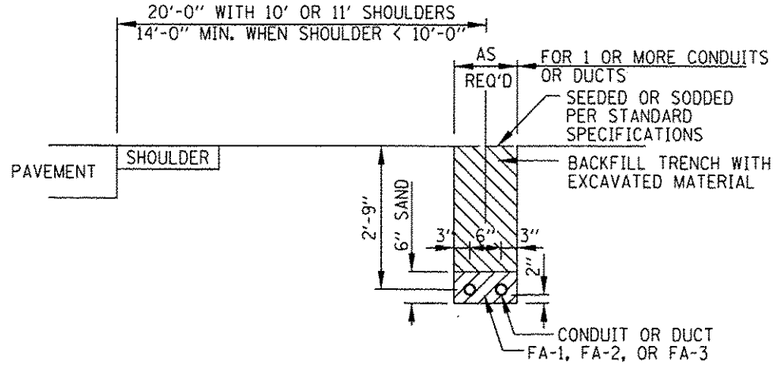
STANDARD H2-01



SLOPE INSTALLATION

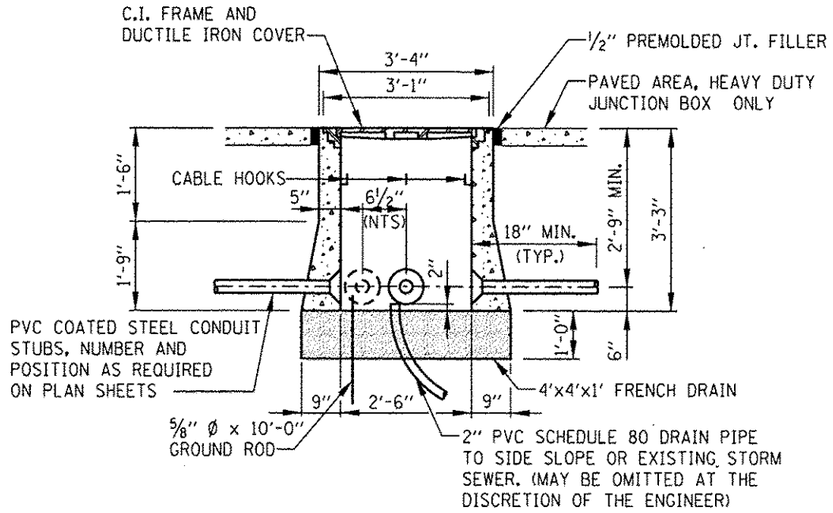


PLAN



TRENCHING FOR CONDUIT IN NON-PAVED AREAS

(NOTE 6)



PAVED AREA INSTALLATION

HANDHOLE AND HEAVY DUTY HANDHOLE

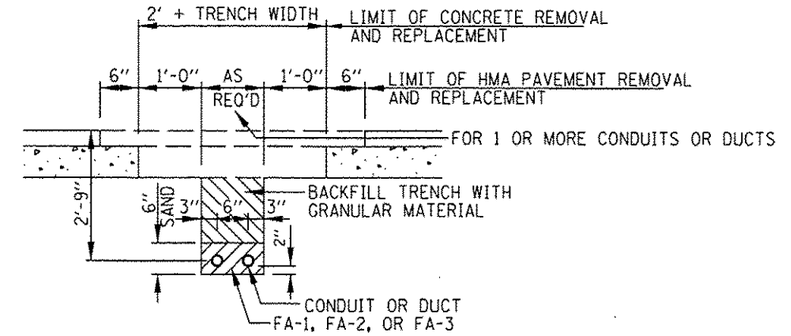
SEE NOTES

NOTES:

1. HANDHOLES LOCATED IN UNPAVED AREAS AND NOT SHIELDED BY GUARDRAIL SHALL BE CONSTRUCTED WITH THE TOP FLUSH WITH THE ADAJACENT SLOPE.
2. HEAVY DUTY HANDHOLE - THIS TYPE SHALL BE CONSTRUCTED IN PAVED AREAS AND ITS FRAME AND COVER SHALL BE EITHER NEENAH FOUNDRY R-6662-PP WITH TYPE G LIFTING HANDLE OR EAST JORDAN IRON WORKS NO. 8213 WITH LIFTING RING, OR APPROVED EQUAL.
3. HANDHOLE - THIS TYPE SHALL BE CONSTRUCTED ONLY IN NON-PAVED AREAS AND ITS FRAME AND COVER SHALL BE NEENAH FOUNDRY R-6660-NH OR APPROVED EQUAL. THE FRAME AND COVER SHALL BE INSTALLED WITH THE HINGES AT THE SIDE FACING APPROACHING TRAFFIC.
4. AGGREGATE FOR FRENCH DRAIN SHALL BE PER ARTICLE 1003.04 OF THE STANDARD SPECIFICATIONS.
5. 10 FEET OF EXTRA CABLE SHALL BE COILED IN EACH HANDHOLE.
6. TRENCH AND BACKFILL FOR ELECTRICAL WORK SHALL BE INCLUDED IN THE COST OF THE UNDERGROUND RACEWAY AND WILL NOT BE MEASURED FOR PAYMENT.

NOTE:

SAW-CUT HMA AND CONCRETE PAVEMENTS PRIOR TO REMOVAL



TRENCHING FOR CONDUIT IN PAVED AREAS

(NOTE 6)

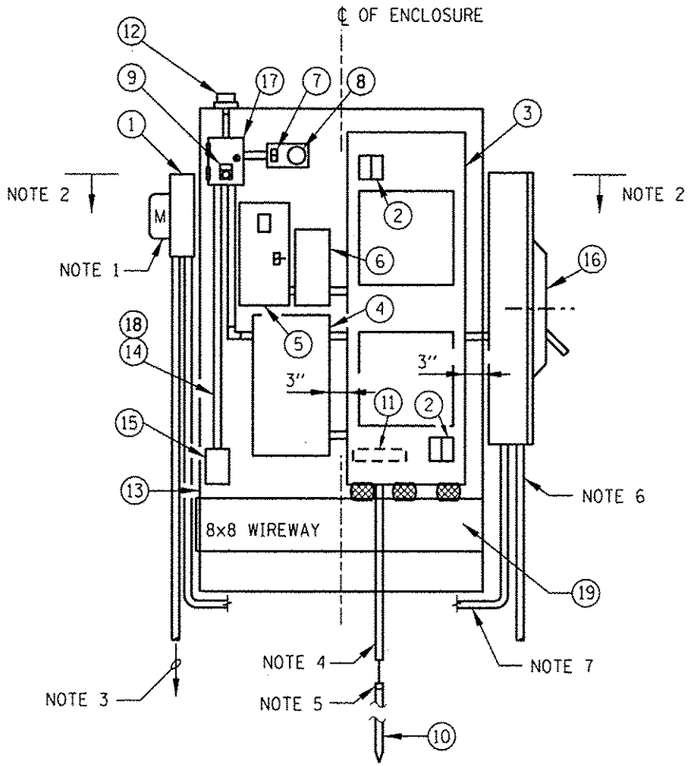
Paul Kovacs
APPROVED ..... CHIEF ENGINEER
DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
2-7-2012	MODIFY TRENCH DETAIL, NEW HANDHOLE DETAILS AND REVISED NOTES

HANDHOLES AND BURIED WIRING DETAILS

STANDARD H4-01



INTERIOR EQUIPMENT LAYOUT

FOR WIRING DIAGRAM SEE SHEET 2 (OF 2) IN THIS SERIES

ITEM	DESCRIPTION
(1)	METER HOUSING, MILBANK U8949.
(2)	SECONDARY SURGE ARRESTERS, 2 POLE, 650 VOLT. (JOSLYN Z2-650-0)
(3)	MAIN PANELBOARD, 480/240 VOLT, 1 PHASE, 3 WIRE, 2 SECTION, 200 AMP, 2 POLE MAIN CIRCUIT BREAKER 65,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY. EATON PANELBOARD TYPE POW-R-LINE 3a IN A NEMA 1 ENCLOSURE, WITH CIRCUIT BREAKERS PER SCHEDULE ON PLANS. DOOR HINGES ON RIGHT SIDE.
(4)	LIGHTING CONTACTOR, 480 VOLT, 200 AMP, 2 POLE, 120 VOLT CONTROL, WITH RELAY FOR 2 WIRE CONTROL. (MAGNECRAFT W389ACX-9) ONE NORMALLY OPEN AND ONE NORMALLY CLOSED AUXILIARY CONTACTS, CONTROL LINE FUSE, IN A NEMA 1 ENCLOSURE, SQUARE-D CLASS 8903, TYPE PB.
(5)	SECONDARY BREAKER, 15 AMPERE TRIP, 120 VOLT, SINGLE POLE, 65,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY IN A NEMA 1 SURFACE MOUNTED ENCLOSURE.
(6)	STEP DOWN TRANSFORMER, 1500 VA, 480 VOLT PRIMARY, 120 VOLT SECONDARY, SINGLE PHASE, 60 HERTZ, DRY TYPE, NEMA 3R ENCLOSURE. (JEFFERSON 411-0081-000)
(7)	SINGLE POLE, 15 AMPERE SWITCH, IN A NEMA 1 ENCLOSURE (WITH ITEM 8), RATED AT 120-277 VAC. (HUBBELL 1201)
(8)	LAMP HOLDER 660W, 600V, MOUNTED ON A NEMA 1 ENCLOSURE (WITH ITEM 7), W/25W, 120V INCANDESCENT LAMP. (LEVITON 8829)
(9)	HAND-OFF-AUTO SELECTOR SWITCH WITH LEGEND PLATE. MOUNTED IN THE COVER OF ITEM 18. (SQ D 9001KS43BH13)
(10)	5/8" x 10'-0" GROUND ROD IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. DRIVEN EXTERNAL TO THE FOUNDATION.
(11)	GROUND BUS MOUNTED IN PANELBOARD ENCLOSURE.
(12)	PHOTO ELECTRIC CONTROL SWITCH, (TORK 5001S) WITH RECEPTACLE (MODEL 2421).
(13)	NEMA TYPE 3R STAINLESS STEEL ENCLOSURE WITH DRIP SHIELD AND STAINLESS STEEL HARDWARE. ENCLOSURE SHALL CONFORM TO J.I.C. STANDARDS WITH CELLULAR NEOPRENE GASKETED DOORS, ALL SEAMS CONTINUOUSLY WELDED, 10 GAUGE STAINLESS STEEL BODY, REMOVABLE STEEL (PAINTED WHITE) PANEL INSIDE THE BACK AND A FACTORY INSTALLED DRIP SHIELD. THE ENCLOSURE SHALL HAVE CONTINUOUS HINGED DOORS MEETING IN THE CENTER, OVERLAPPED AND GASKETED, WITH NO CENTERPOST. AN OIL TIGHT KEY LOCKING HANDLE WITH 3 POINT LATCH SHALL BE PROVIDED (FURNISH 6 KEYS). EACH END OF THE ENCLOSURE SHALL HAVE A SCREENED, GASKETED VENTILATING LOUVER AND THE TOP OF THE ENCLOSURE SHALL HAVE A VENTILATOR. INTERNAL CONDUIT SHALL HAVE LOCKNUTS, INSULATING BUSHING AND CONDULET FITTINGS AS REQUIRED. INTERNAL WIRING SHALL BE XLP INSULATED NEC TYPE RHH/RHW-2. PROVIDE A WIRING DIAGRAM IN A PRINT POCKET ON THE INSIDE OF THE CABINET DOOR.
(14)	INTERNAL CONTROL WIRING SHALL BE #12 AWG, STRANDED, XLP INSULATED NEC TYPE RHH/RHW-2 RATED 600 VOLT, WITH SUITABLE COLOR CODING TO BE APPROVED BY THE ENGINEER BEFORE CONSTRUCTION.
(15)	200 WATT, 120 VOLT CABINET HEATER WITH INTEGRAL THERMOSTAT. HOFFMAN CATALOG NO. DAH2001A.
(16)	SERVICE SAFETY SWITCH, 200 AMP, 600 VOLT, NON-FUSED, NEMA 4X STAINLESS STEEL ENCLOSURE.
(17)	NEMA TYPE 1, 8"x6"x4" JUNCTION BOX & COVER WITHOUT KNOCKOUTS. ITEM 9 IS MOUNTED IN THE COVER.
(18)	INTERNAL CONDUIT AND FITTINGS SHALL BE 3/4" MINIMUM.
(19)	8"x8" WIREWAY WITH 3-3" NIPPLES.

NOTES:

1. PROVIDE METER HOUSING WHEN SERVICE PEDESTAL IS NOT PROVIDED.
2. 6'-0" MAXIMUM HEIGHT ABOVE GRADE.
3. TO UTILITY SERVICE AS INDICATED ON PLANS WHEN SERVICE PEDESTAL IS NOT PROVIDED.
4. 3/4" PVC CONDUIT IN CONCRETE, SEE FOUNDATION DETAILS.
5. CADWELD NO. 2 BARE COPPER GROUND CABLE TO GROUND ROD.
6. TO SERVICE PEDESTAL AS INDICATED ON PLANS.
7. CONDUIT AND CABLE BETWEEN METER FITTING AND DISCONNECT SWITCH ROUTED BETWEEN CONTROL CONSOLE AND CONCRETE FOUNDATION, WHEN A METER HOUSING IS REQUIRED. CONDUIT AND CABLE SHALL BE THE SAME AS THE SERVICE.

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

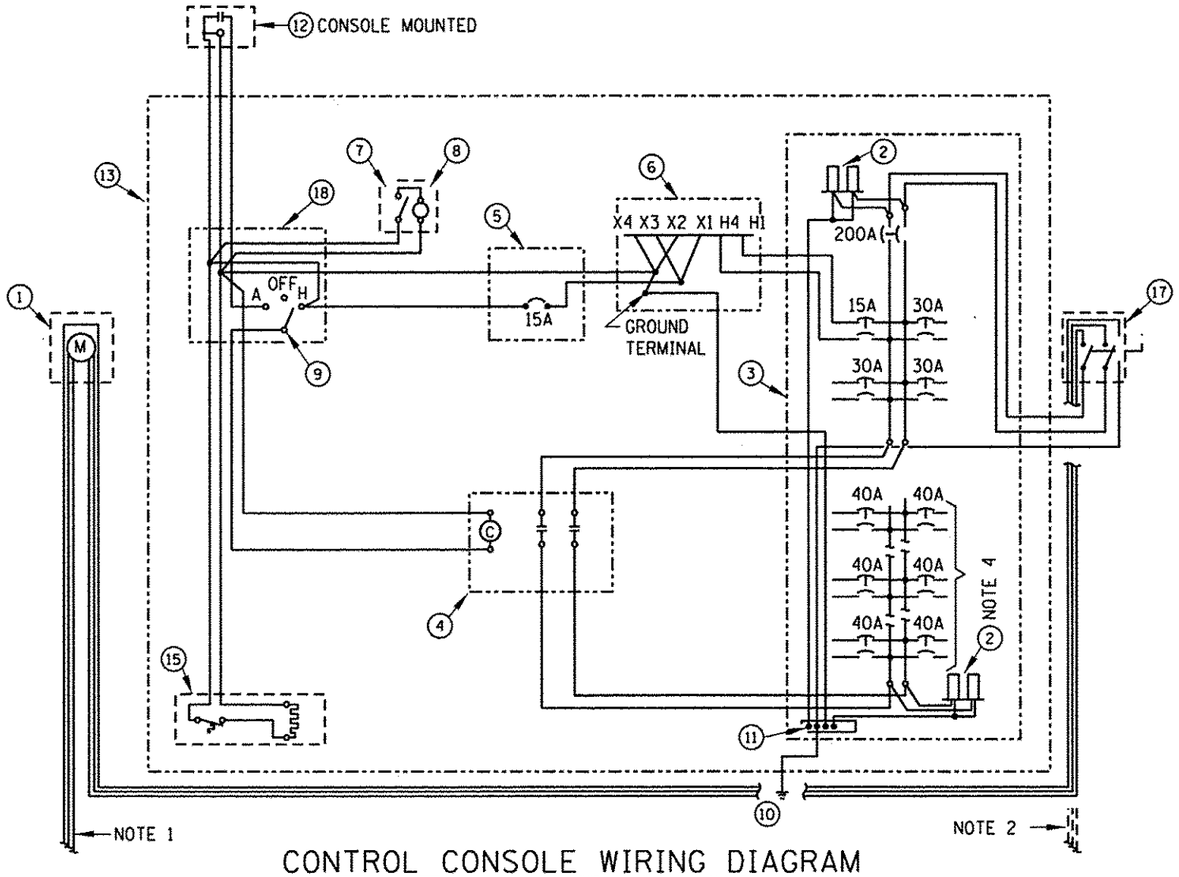
CONTRACT 60131 SHEET 960 OF 963
SHEET 1 OF 2

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
2-7-2012	MODIFY ENCLOSURE DIMENSIONS, REVISED NOTES AND ITEM DESCRIPTIONS

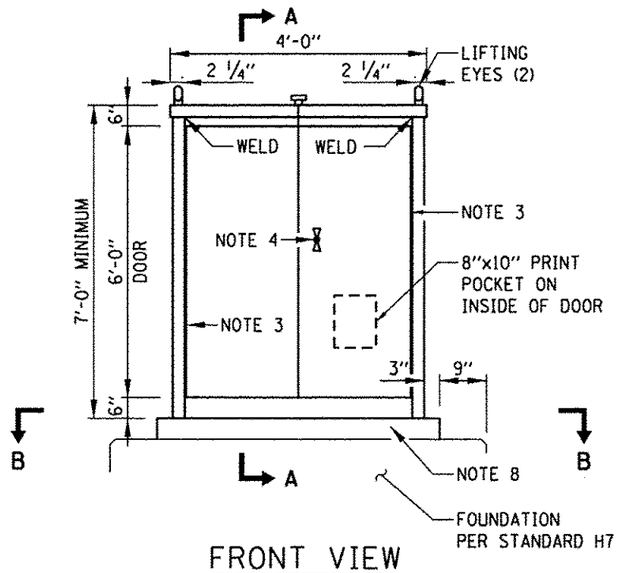
OUTDOOR CONTROL CONSOLE DETAILS

STANDARD H6-01

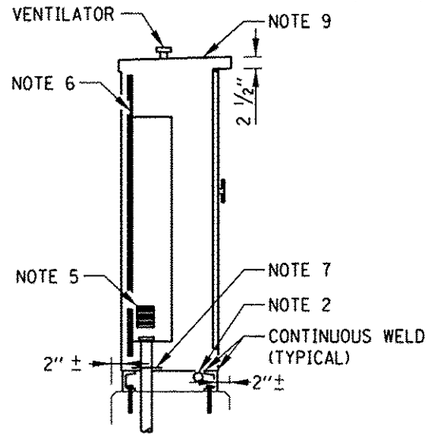


CONTROL CONSOLE WIRING DIAGRAM

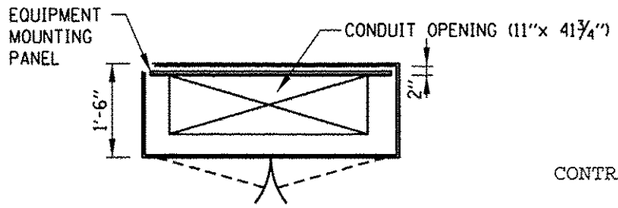
NOTE 1



FRONT VIEW



SECTION A-A



SECTION B-B

WIRING DIAGRAM NOTES:

1. TO UTILITY SERVICE. 480/240V, 1 PHASE, 3 WIRE, GROUNDED, WHEN A METER HOUSING IS REQUIRED (FED FROM PAD MOUNTED UTILITY TRANSFORMER WITHIN TOLLWAY RIGHT-OF-WAY).
2. TO SERVICE PEDESTAL, 480/240V, 1 PHASE, 3 WIRE, GROUNDED. SEE STANDARD H5.
3. ITEM NUMBERS REFER TO EQUIPMENT LIST ON SHEET 1 (OF 2) IN THIS SERIES.
4. PROVIDE BREAKERS PER SCHEDULE ON THE CONTRACT PLANS.

CONTROL CONSOLE NOTES:

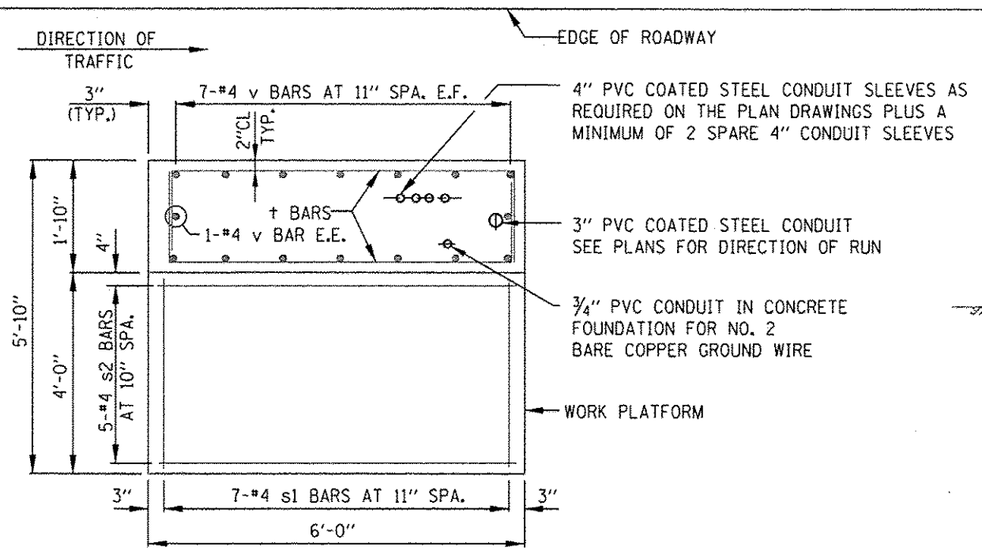
1. FOR INTERIOR EQUIPMENT LAYOUT DETAILS, SEE SHEET 1 (OF 2) IN THIS SERIES.
2. CONDUIT AND CABLE BETWEEN METER FITTING AND DISCONNECT SWITCH ROUTED BETWEEN CONTROL CONSOLE AND CONCRETE FOUNDATION, WHEN A METER HOUSING IS REQUIRED. CONDUIT AND CABLE SHALL BE THE SAME AS THE SERVICE.
3. CONTINUOUS STAINLESS STEEL PIANO HINGES.
4. 3 POINT LATCH VAULT TYPE HANDLE WITH MASTER KEYED CHICAGO CYLINDER LOCK CATALOG NO. 60
5. SCREENED LOUVERS ON SIDES OF CABINET.
6. 10 GAUGE GALVANIZED STEEL EQUIPMENT MOUNTING PANEL (PAINTED WHITE).
7. REMOVABLE #10 GAUGE 13"x43¾" STAINLESS STEEL PLATE. DRILL PLATE AS REQUIRED FOR CONDUIT ENTRY.
8. 4" x 2½" STAINLESS STEEL CHANNEL (2 REQUIRED-FRONT AND BACK). EXTEND CHANNEL 3" BEYOND ENCLOSURE (CONTINUOUSLY WELD CHANNEL TO ENCLOSURE).
9. TOP SLOPED ½" TO REAR FOR DRAINAGE.

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

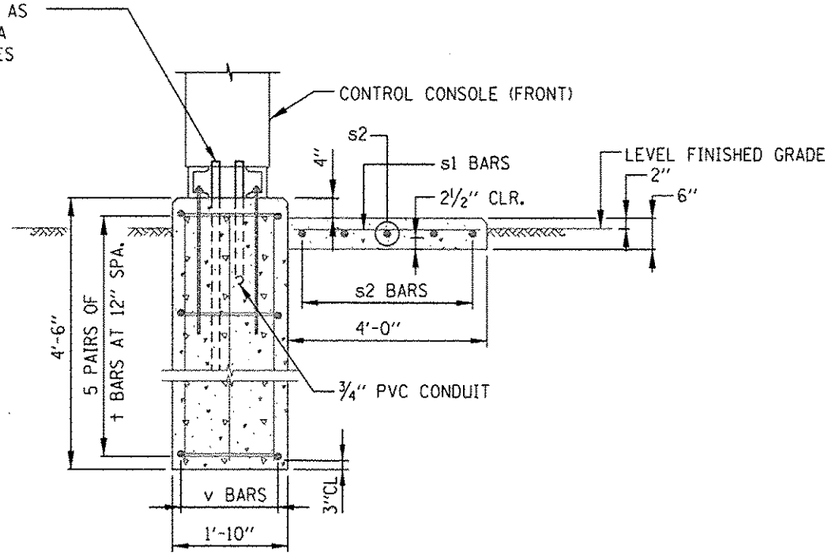
Illinois Tollway
Open Roads for a Faster Future

OUTDOOR CONTROL CONSOLE DETAILS

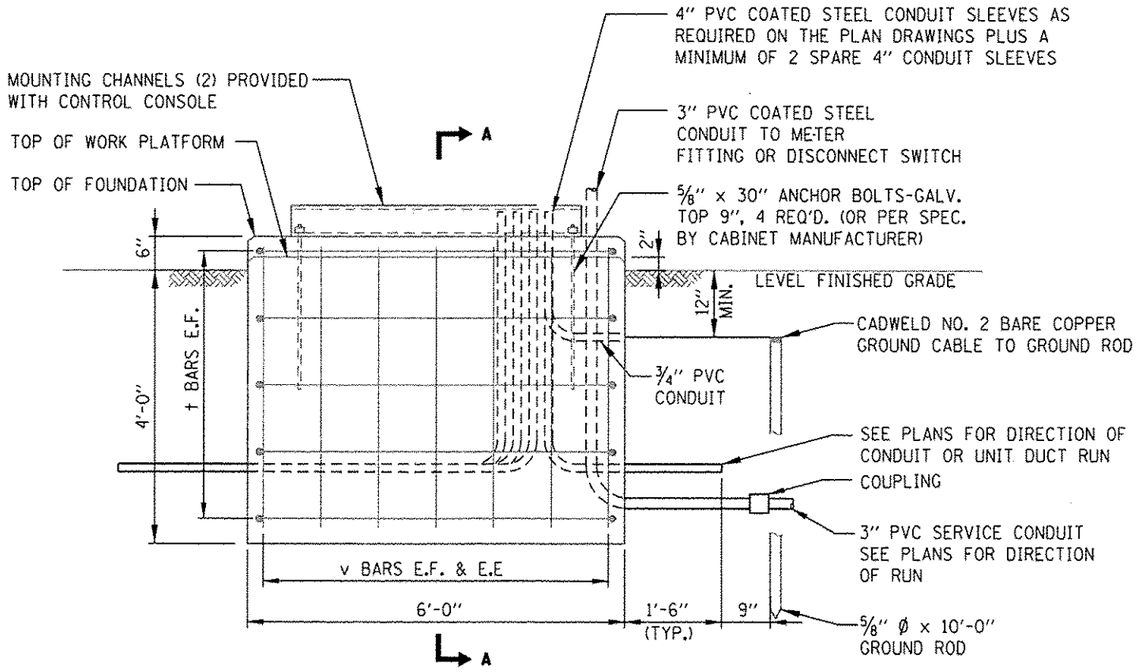
STANDARD H6-01



PLAN



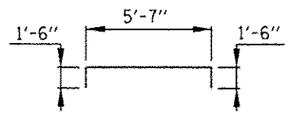
SECTION A-A



ELEVATION

REINFORCING BAR SCHEDULE					
BAR	NO.	SIZE	LENGTH	WT. LBS.	SHAPE
v	16	#4	4'-0"	43	——
†	10	#4	8'-7"	57	⌐¬
s1	7	#4	3'-8"	17	——
s2	5	#4	5'-8"	19	——

BILL OF MATERIAL		
DESCRIPTION	UNIT	QUANTITY
REINF. STEEL, EPOXY COATED	LBS.	136
CLASS "SI" CONCRETE	CU. YDS.	2.3



† BARS

NOTE:

SEE SHEET 2 OF THIS SERIES FOR GENERAL NOTES

CONTRACT 60I31 SHEET 962 OF 963
SHEET 1 OF 2

TYPE A CONTROL CONSOLE FOUNDATION

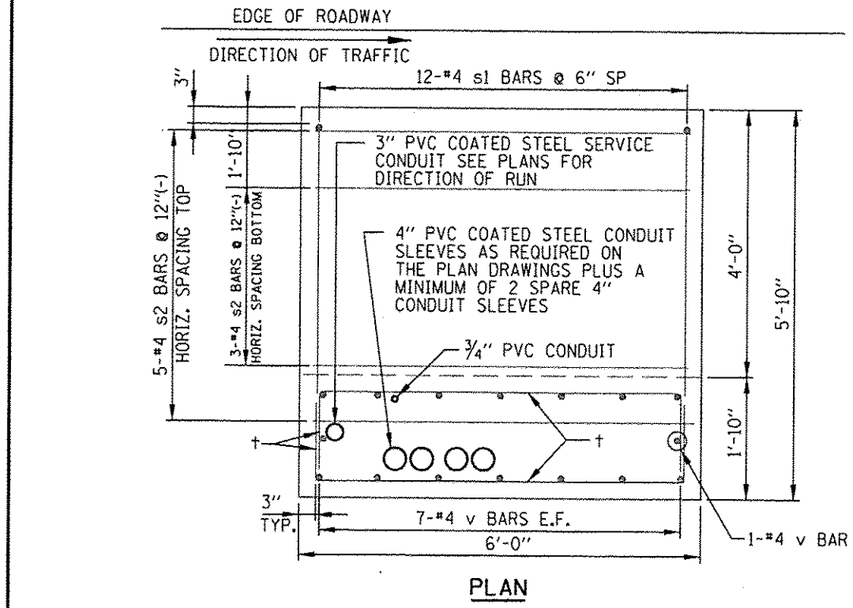
Paul Kovacs
APPROVED ..... CHIEF ENGINEER DATE 2-7-2012

DATE	REVISIONS
2-7-2012	REVISED TYPE A AND TYPE B CONTROL CONSOLE FOUNDATIONS

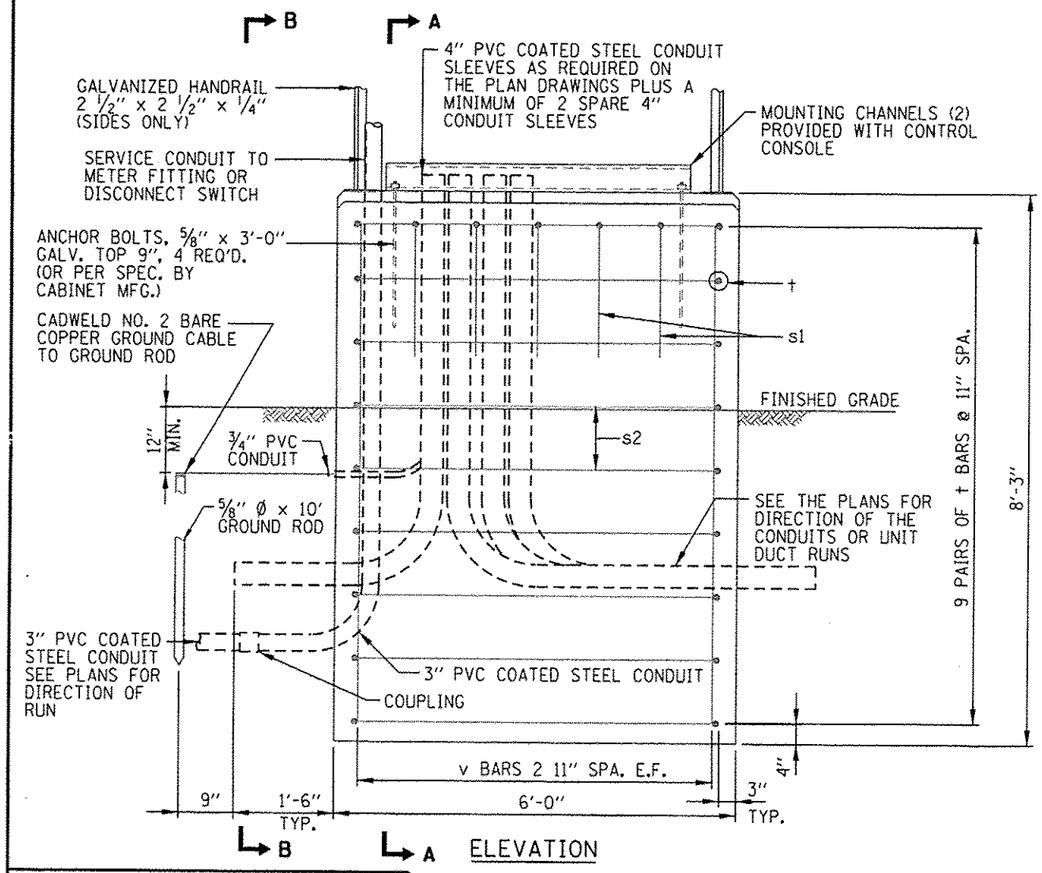
Illinois Tollway
Open Roads for a Faster Future

OUTDOOR CONTROL CONSOLE FOUNDATION DETAILS

STANDARD H7-01



PLAN



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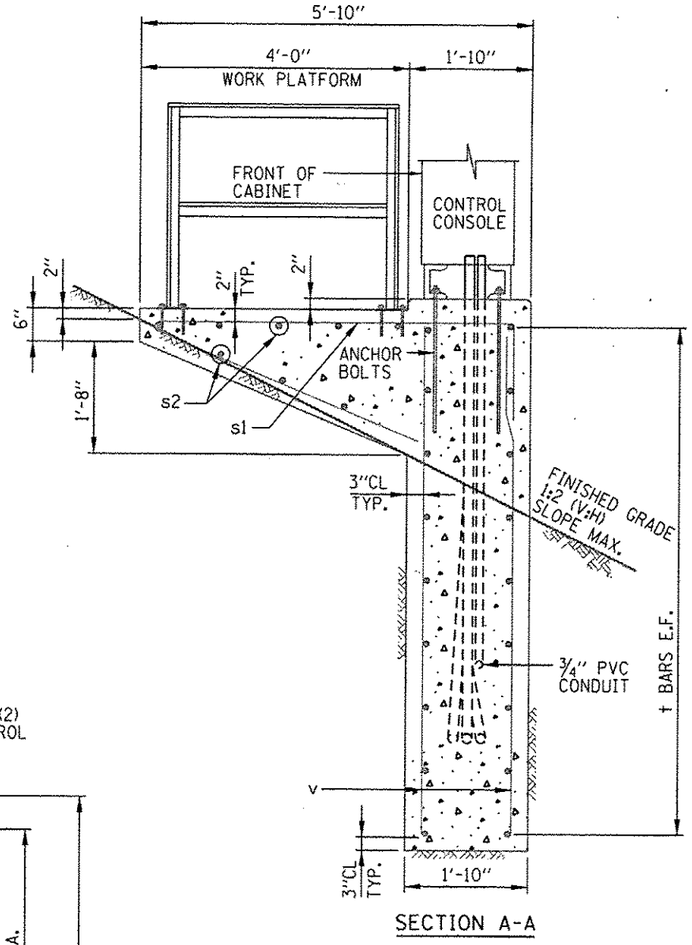
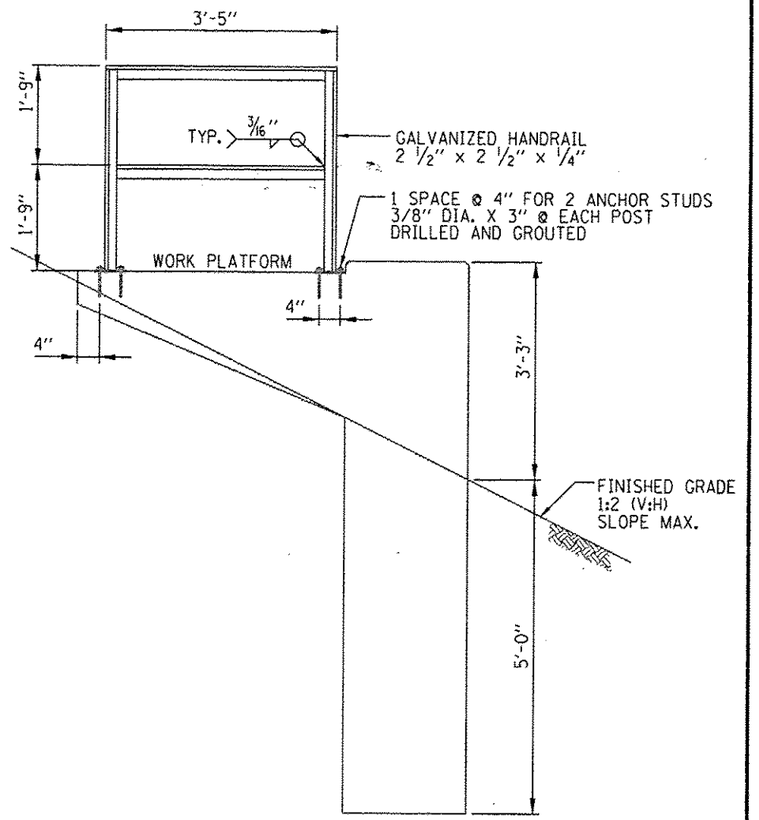
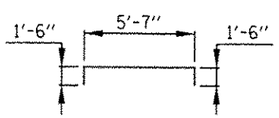


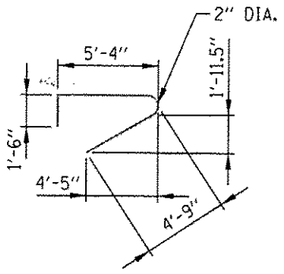
SECTION A-A



VIEW B-B



† BARS



s1 BARS

NOTES:

1. EXPOSED CONCRETE EDGES SHALL HAVE 3/4" x 45° CHAMFERS EXCEPT WHERE SHOWN OTHERWISE. CHAMFERS ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL.
2. ALL REINFORCEMENT BARS SHALL BE EXPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A615), GRADE 60 DEFORMED BARS.
3. REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION.
4. REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
5. COVER FROM THE FACE OF CONCRETE TO FACE OF REINFORCEMENT BARS SHALL BE 3" FOR ALL SURFACES UNLESS OTHERWISE SHOWN.
6. FOR CLARITY, CONTROL CONSOLE AND RAILINGS ARE NOT SHOWN IN PLAN VIEW.

REINFORCING BAR SCHEDULE					
BAR	NO.	SIZE	LENGTH	WT. LBS.	SHAPE
v	16	#4	7'-10"	84	
†	18	#4	8'-7"	103	
s1	12	#4	11'-9"	94	
s2	8	#4	5'-6"	29	

BILL OF MATERIAL		
DESCRIPTION	UNIT	QTY
REINF. STEEL, EPOXY COATED	LBS.	310
CLASS "SI" CONCRETE	CU. YDS.	9.4
STRUCTURAL STEEL	LBS.	158

CONTRACT 60I31 SHEET 963 OF 963
SHEET 2 OF 2

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

TYPE B CONTROL CONSOLE FOUNDATION

Illinois Tollway
Open Roads for a Faster Future

OUTDOOR CONTROL CONSOLE FOUNDATION DETAILS

STANDARD H7-01