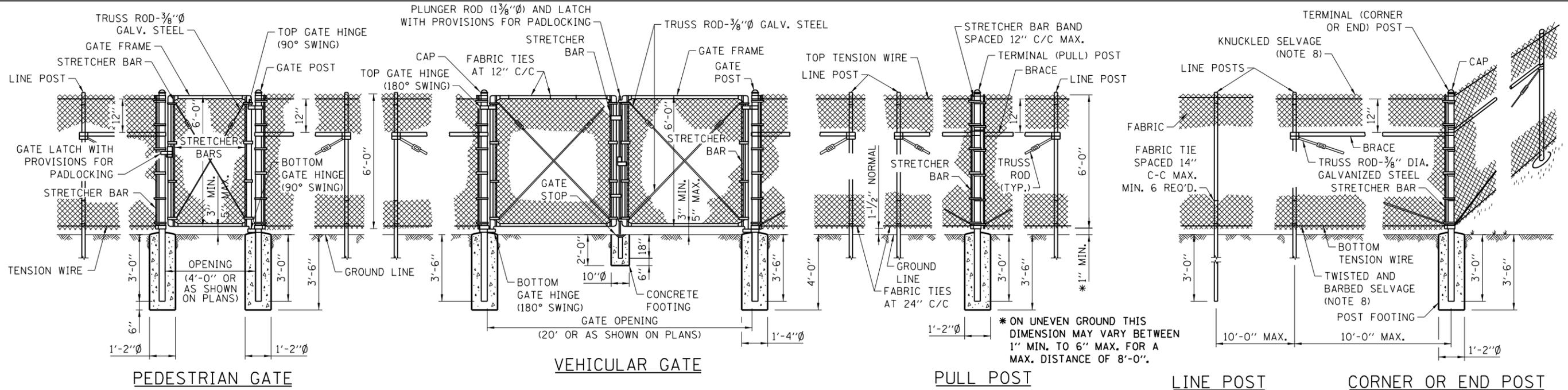


Illinois Tollway Standard Drawing Revisions

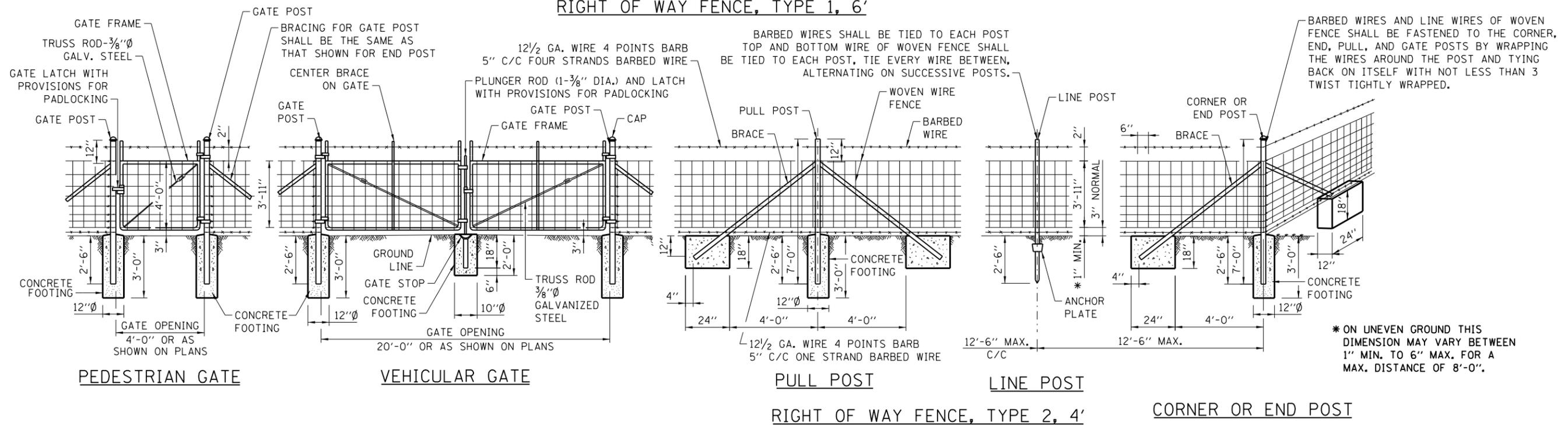
Section D	Roadway Appurtenances	
Standard	Modification Summary	Effective: 03-01-2024
<b>D4-09</b>	<b>ROADWAY DELINEATORS AND REFLECTORS</b>	
Sheet 1	Added retaining walls to crashworthy NAW and bridge parapet notes, in Permanent Delineation Spacing table.	
Sheet 3	Added detail for reflector at crashworthy NAW or crashworthy retaining walls.	

 New Sheet

 Retired Standard



**RIGHT OF WAY FENCE, TYPE 1, 6'**



**GENERAL NOTES**

- ON STRAIGHT RUNS OF FENCE, PULL POSTS SHALL BE USED AT 500' CENTERS FOR TYPE 1 AND 330' CENTERS FOR TYPE 2.
- 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 ILLINOIS TOLLWAY PROPERTY.
- LINE POSTS AND BRACES SHALL BE ON ILLINOIS TOLLWAY SIDE OF FENCE FABRIC.
- 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.
- 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.
- WHERE GRADE LINE HAS A CHANGE IN SLOPE OF 10° OR MORE, A CORNER POST WITH BRACING AS REQUIRED SHALL BE PLACED. WHERE ANGLE IS LESS THAN 10° LINE POST MAY BE USED.
- WHERE RIGHT-OF-WAY FENCE, TYPE 1 IS USED, THE FABRIC SHALL BE KNUCKLED SELVAGE ON TOP AND TWISTED AND BARBED SELVAGE ON BOTTOM.
- PLACEMENT OF BRACED END POSTS OR CORNER POSTS WITHIN THE CLEAR ZONE SHALL BE AVOIDED.

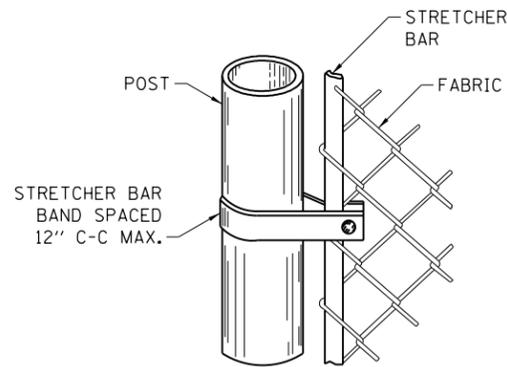
APPROVED BY: *Paul Kovacs* CHIEF ENGINEERING OFFICER  
 DATE: 07/01/2009

DATE	REVISIONS
3-01-2020	ADDED GATE TO HEADWALL DETAIL
3-31-2017	REVISED NOTES
3-11-2015	REVISED NOTES
3-31-2014	REVISED ROLLED FORM SECTIONS
11-01-2012	REVISED NOTES

SHEET 1 OF 3

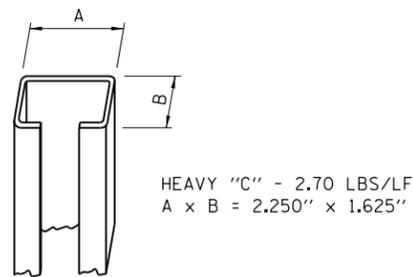
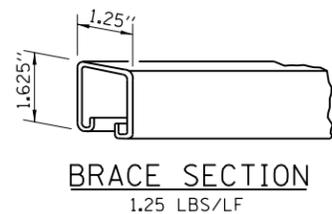
RIGHT OF WAY FENCE

STANDARD D1-06

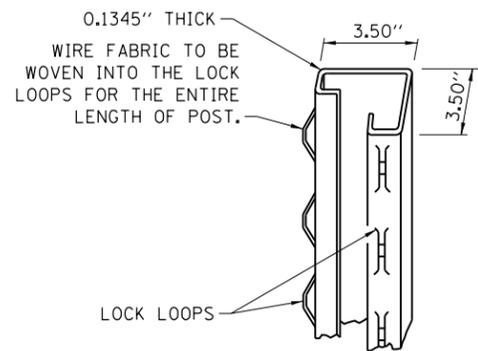


STRETCHER BARS SHALL BE GALVANIZED FLAT STEEL BAR NOT LESS THAN 1/4" x 3/4" AND THE STRETCHER BAR BANDS SHALL BE GALVANIZED FLAT STEEL BAR NOT LESS THAN 1/8" x 1" WITH A 3/8" GALVANIZED CARRIAGE BOLT.

**METHOD OF FASTENING STRETCHER BAR TO POST**

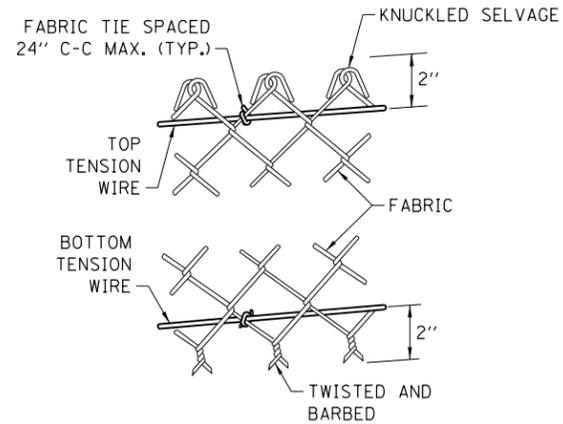


**LINE POST 'C' SECTION**

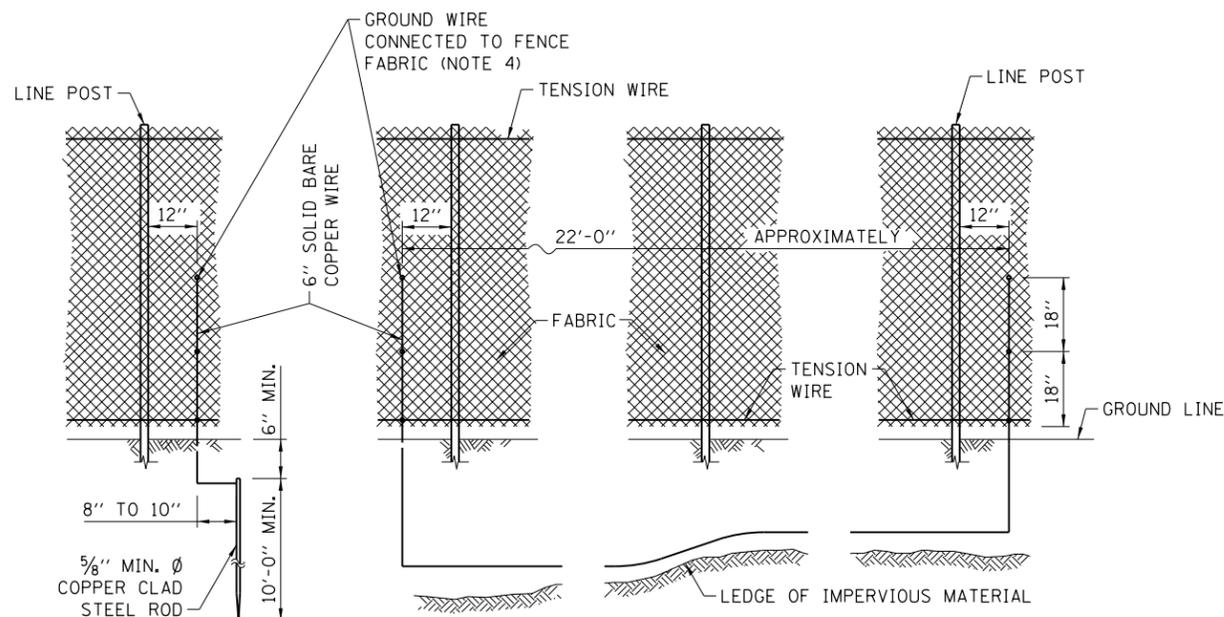


**TERMINAL POST SECTION**  
5.10 LBS/LF

**DETAILS OF ROLL FORMED SECTIONS**



**METHOD OF TYING FABRIC TO TENSION WIRES**



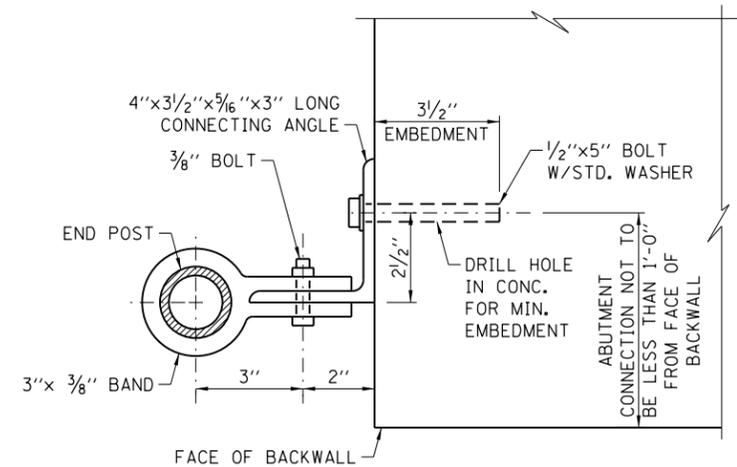
**STANDARD GROUND**

**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.

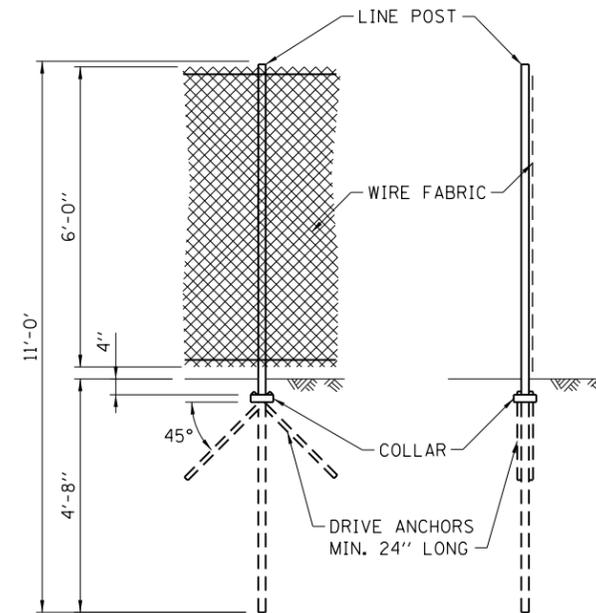
**ELECTRICAL GROUNDING DETAILS**



**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 2 1/2" x 5" BOLTS WITH STANDARD WASHERS MEETING THE APPROVAL OF THE ENGINEER.



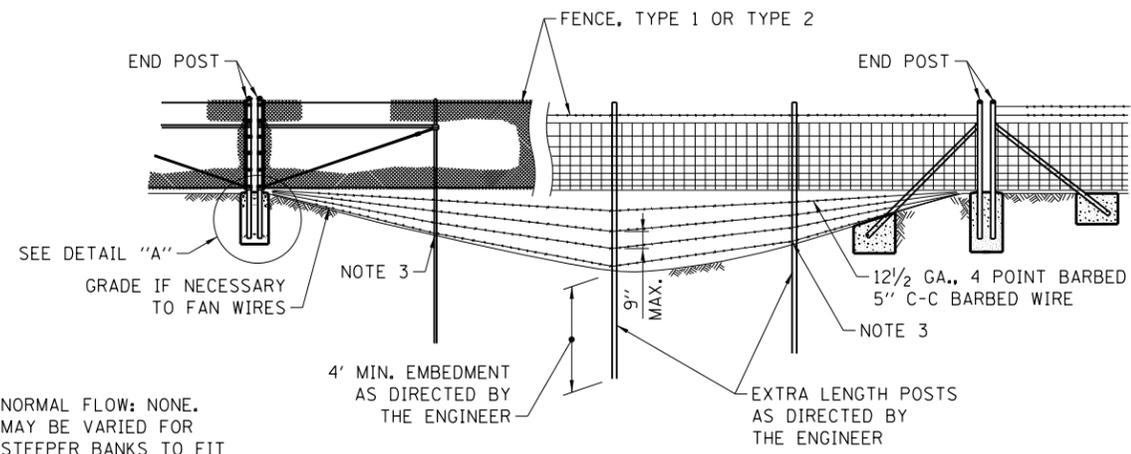
**ALTERNATE DRIVEN LINE POST ANCHORAGE WITH OR WITHOUT DRIVE ANCHORS**

**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 STABILITY 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.

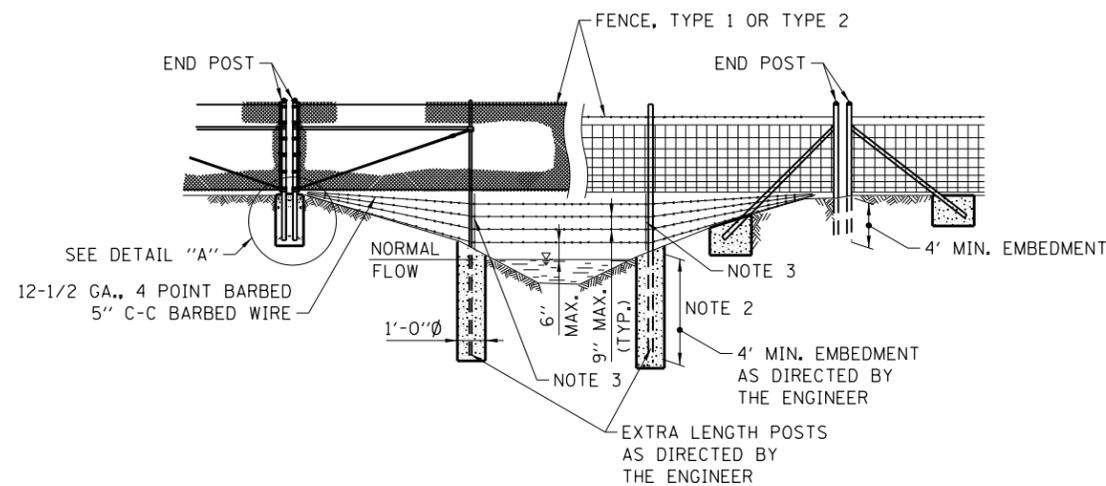
APPROVED BY: *Paul Kovacs*  
CHIEF ENGINEERING OFFICER  
DATE: 07/01/2009





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

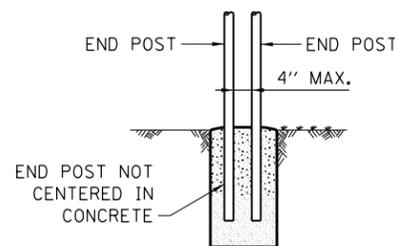
**STREAM CROSSING, TYPE 1**



**STREAM CROSSING, TYPE 2**

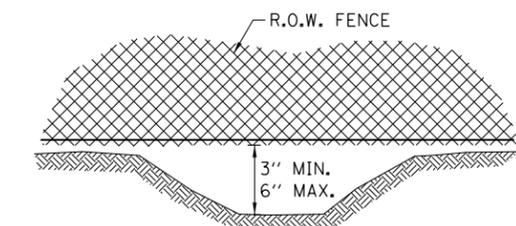
**NOTES FOR STREAM CROSSING TYPE 1 AND TYPE 2:**

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 PER STANDARD DRAWING.

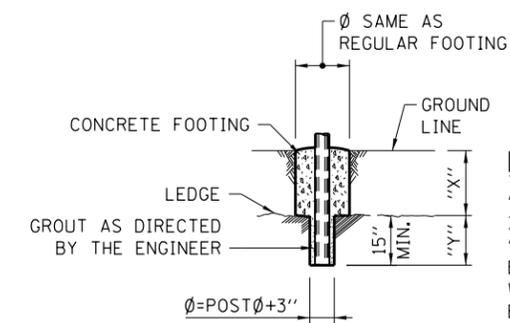


THE FENCE FABRIC SHALL BE REPLACED BY BARBED WIRE STRANDS AT 12\"/>

**DETAIL A**

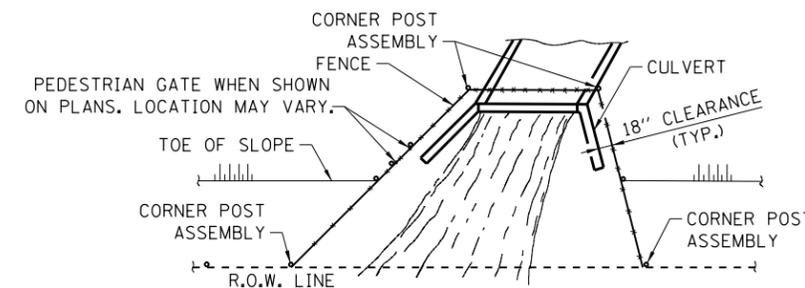


**FENCE INSTALLATION OVER DITCH**

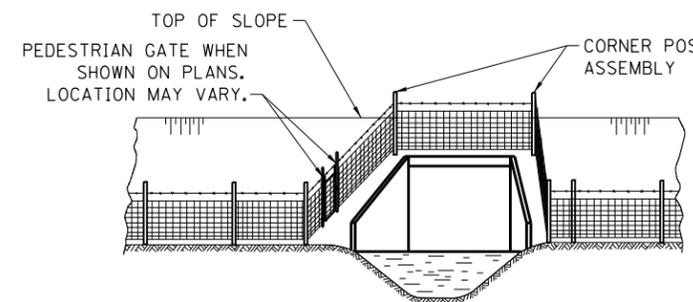


**NOTE:**  
"X" + "Y" SHALL NOT EXCEED 30" WHEN "X" IS 0" TO 15" "Y" =15", AND THE POST SHALL BE SHORTENED AS REQUIRED. WHEN "X" EXCEEDS 15" "Y" SHALL BE DECREASED ACCORDINGLY.

**FOOTING FOR POST WHEN ROCK LEDGE IS ENCOUNTERED**



**PLAN AT HEADWALL**



**ELEVATION**

**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 IT 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.

**INSTALLATION AROUND HEADWALL**



APPROVED BY: *Paul Kovacs* CHIEF ENGINEERING OFFICER  
DATE: 07/01/2009

SURVEY AND ROADWAY ITEMS

<u>EXISTING</u>	<u>PROPOSED</u>	
		CONSTRUCTION JOINT W/DOWEL BARS
		BENCHMARK
		CANTILEVER SIGN STRUCTURE
		BUTTERFLY SIGN STRUCTURE
		DOUBLE COLUMN GROUND MOUNTED SIGN
		SINGLE COLUMN GROUND MOUNTED SIGN
		SPAN TYPE SIGN STRUCTURE
		TRIPLE COLUMN GROUND MOUNTED SIGN
		RUMBLE STRIP

DRAINAGE AND UTILITY ITEMS; ROADWAY LIGHTING AND SIGNS

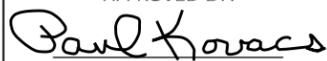
<u>EXISTING</u>	<u>PROPOSED</u>	
		BOX CULVERT WITH HEADWALL
		CABLE IN DUCT W/O GROUND
		LOW POINT
		OVERHEAD ELECTRICAL
		OVERHEAD TELEPHONE
		PIPE CULVERT
		LAKE OR POND
		QUARRY
		STREAM
		SWAMP
		CABLE OR CONDUIT TAG
		ELECTRICAL MANHOLE
		LIGHT-DUTY BOX
		ROADWAY LUMINAIRE
		STEEL TOWER
		TELEPHONE MANHOLE
		UNDERPASS LUMINAIRE
		WATER POINT
		WATERMAIN VALVE VAULT
		WATER WELL
		WOOD POLE



DATE	REVISIONS
3-31-2016	UPDATED DITCH CHECK SYMBOL
3-11-2015	ADDED NEW SYMBOL
11-01-2012	ADDED NEW SYMBOLS
7-01-2009	REVISED SYMBOL & PATTERNS

SYMBOLS AND PATTERNS

STANDARD D2-04

APPROVED BY:  DATE: 07/01/2009  
CHIEF ENGINEERING OFFICER

EROSION & SEDIMENT CONTROL, LANDSCAPING ITEMS

EXISTING

PROPOSED



CLEARING & GRADING LIMITS  
(LIMITS OF CONSTRUCTION)



DIVERSION DIKE



DRAINAGE DIVIDE



DRAINAGE PATH



SEDIMENT BASIN  
AGGREGATE BERM



CIP

CULVERT INLET  
PROTECTION-STONE



CULVERT INLET  
PROTECTION-FENCE



FILTER FABRIC  
INLET PROTECTION, BASKET TYPE



FILTER FABRIC  
INLET PROTECTION, COVER TYPE



FLOTATION BOOM



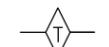
INITIAL CONSTRUCTION ITEM



RECTANGULAR INLET  
PROTECTION



TEMPORARY ROCK CHECK DAM



TEMPORARY DITCH CHECK



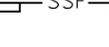
SEDIMENT BASIN



SILT FENCE



SUPER SILT FENCE



STABILIZED CONSTRUCTION ENTRANCE



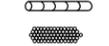
STONE OUTLET STRUCTURE  
SEDIMENT TRAP



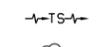
STREAM DIVERSION



TEMPORARY PIPE SLOPE DRAIN



TEMPORARY RIPRAP



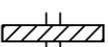
TEMPORARY SWALE



TREES AND STUMP

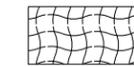


TREE PROTECTION

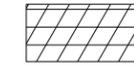


TEMPORARY STREAM CROSSING

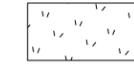
PROPOSED



EROSION CONTROL BLANKET



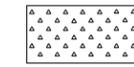
OVER SEEDING CLASS B1



OVER SEEDING CLASS B2



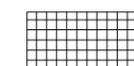
SEEDING CLASS A1



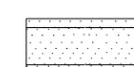
SEEDING CLASS A2



SEEDING CLASS A3



SEEDING CLASS A4



SEEDING CLASS A5



SEEDING CLASS A6



SEEDING CLASS D1



SODDING (SALT TOLERANT)



TEMPORARY GROUND COVER



TURF REINFORCEMENT MAT



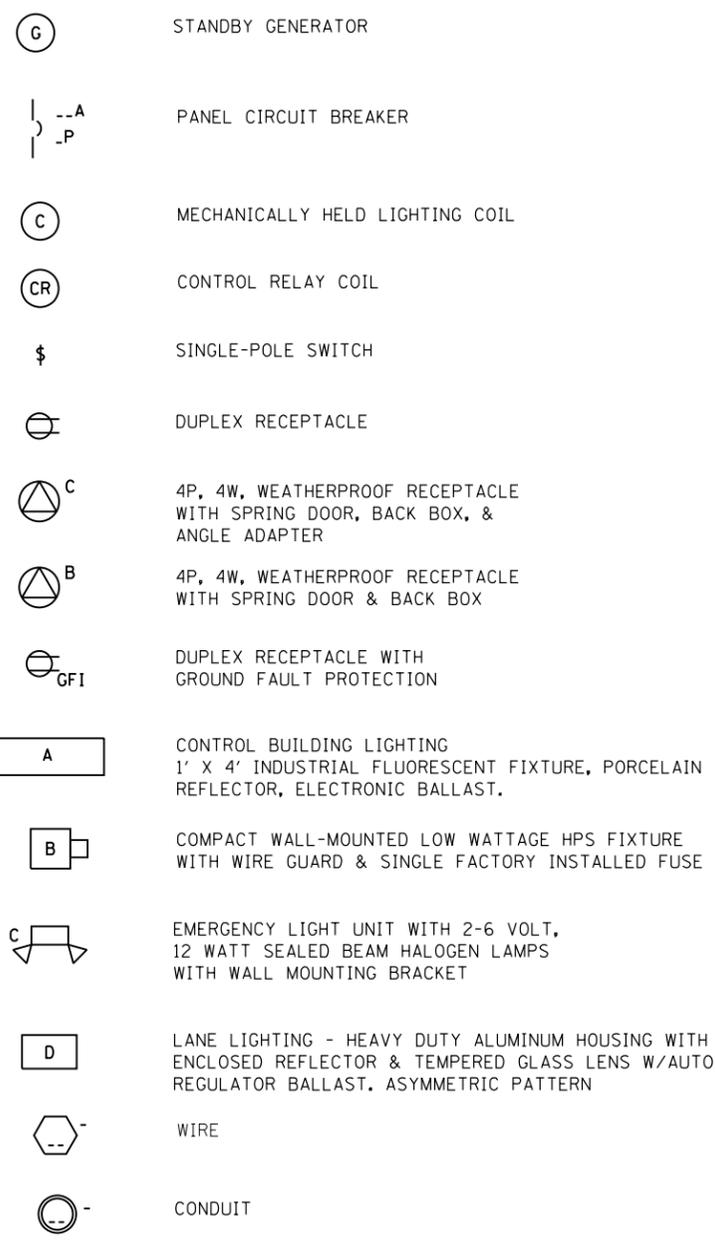
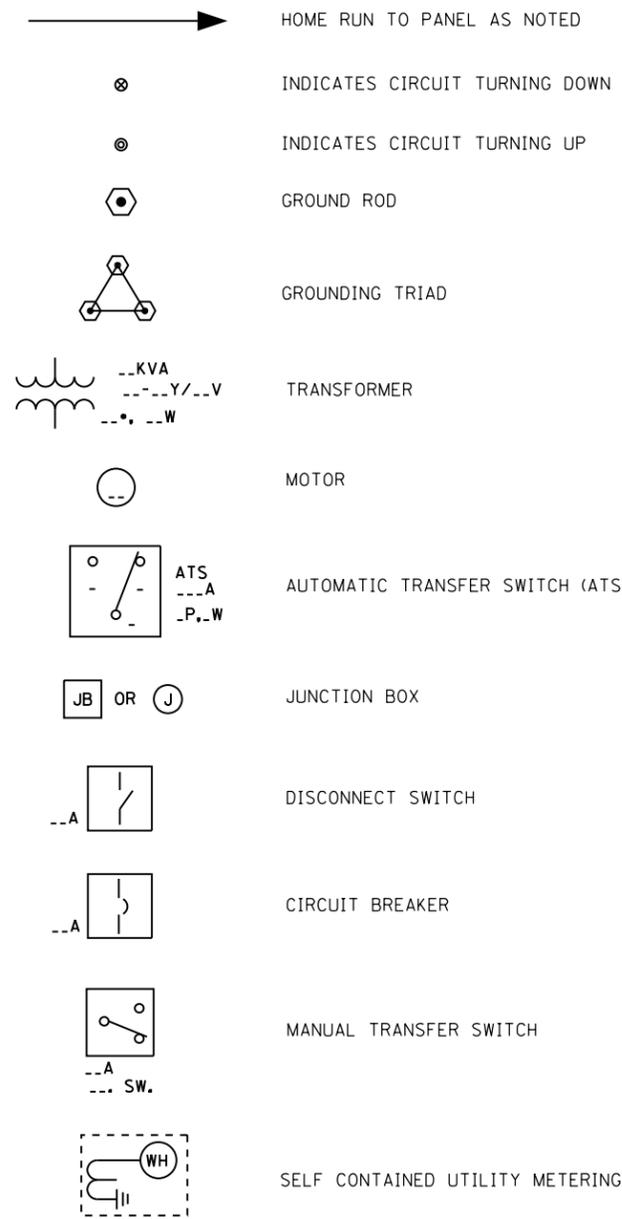
APPROVED BY:

DATE:

*Paul Kovacs*  
CHIEF ENGINEERING OFFICER

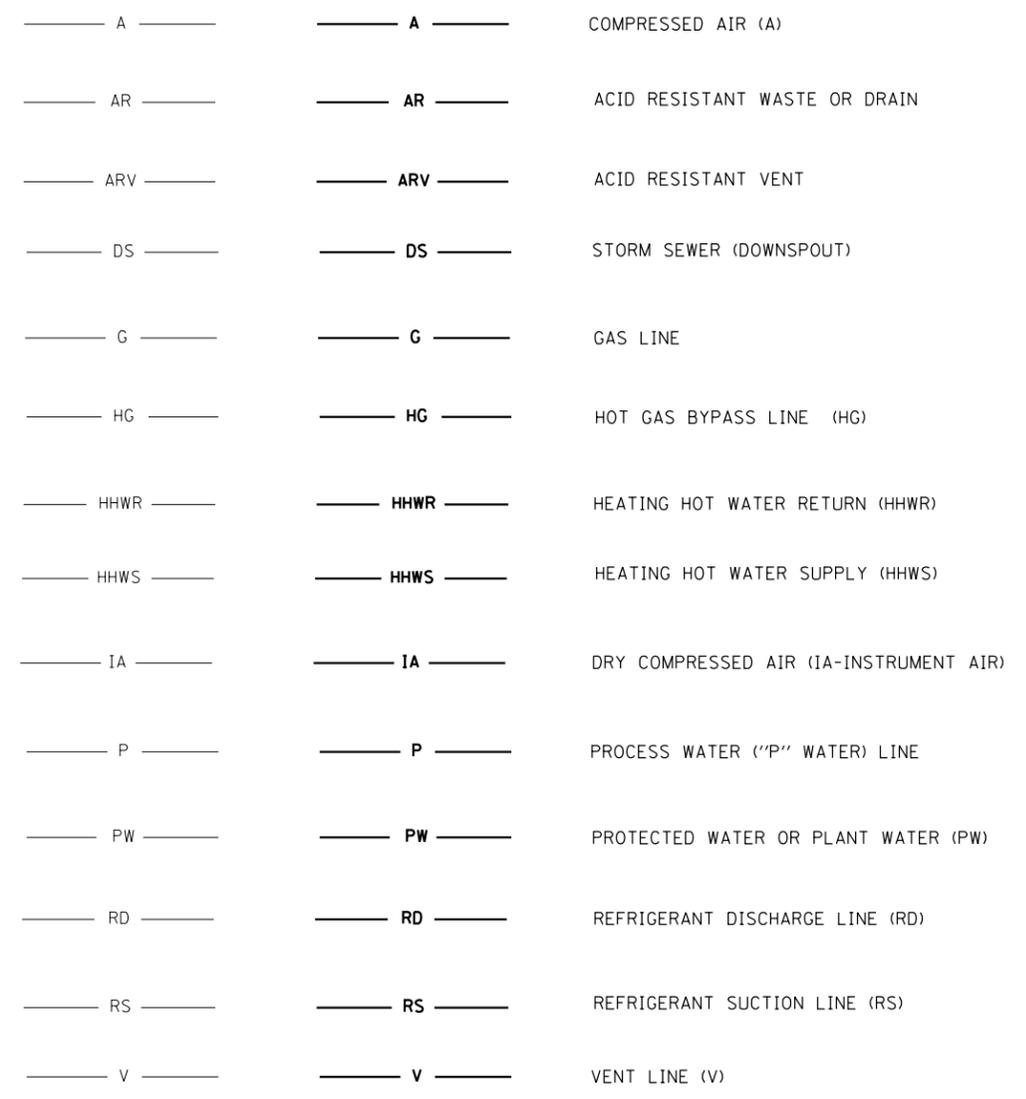
07/01/2009

ELECTRICAL AND MECHANICAL ITEMS



EXISTING

PROPOSED



SYMBOLS AND PATTERNS

STANDARD D2-04

NOTE:

ALL SYMBOLS AND PATTERNS ON THIS DRAWING ARE PROPOSED UNLESS OTHERWISE NOTED.

APPROVED BY: *Paul Kovacs*  
 CHIEF ENGINEERING OFFICER  
 DATE: 07/01/2009

## ELECTRICAL AND MECHANICAL ITEMS

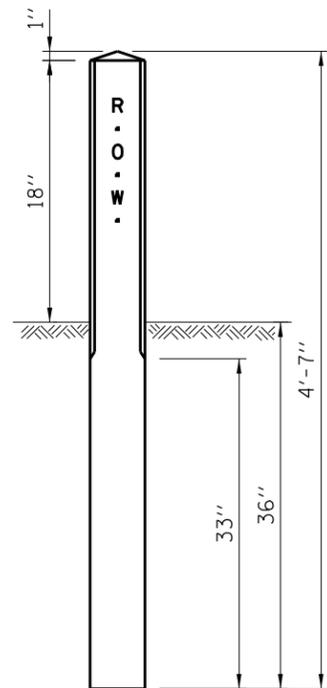
	OR		QUANTITY AND DIRECTION OF THE AIR FLOW		OR		SPLITTER DAMPER		GLOBE VALVE
	OR		DUCT SIZE (FIRST FIGURE SIZE OF SHOWN, SECOND FIGURE SIZE OF SIDE NOT SHOWN.)				PLUG VALVE WITH MEMORY STOP (BALANCING)		BUTTERFLY VALVE
	OR		DUCT SIZE (FIRST FIGURE SIZE OF SHOWN, SECOND FIGURE SIZE OF SIDE NOT SHOWN.)				PLUG VALVE		CHECK VALVE
			SUPPLY DUCT SECTION				SOLENOID VALVE		ANGLE GATE VALVE
	OR		RETURN OR EXHAUST DUCT SECTION				TEMPERATURE CONTROL VALVE		CONCENTRIC REDUCER
	OR		DUCT DROPS IN THE DIRECTION OF FLOW				THREE-WAY TEMPERATURE CONTROL VALVE DIAPHRAGM		ECCENTRIC REDUCER
	OR		DUCT RISES IN THE DIRECTION OF FLOW				THREE-WAY TEMPERATURE CONTROL VALVE TOP VIEW		ORIFICE FLANGE
	OR		TURNING VANES				PRESSURE REDUCING VALVE (NOS. = INITIAL AND FINAL PRESSURE - PSIG)		CROSSOVER
	OR		8" THROAT DIAMETER CEILING DIFFUSER; AIR FLOW -- 100 CFM				AIR PRESSURE REDUCING STATION (NO. CORRESPONDS WITH AIR PRESSURE REDUCER SCHEDULE)		PIPE GUIDE
	OR		BALANCING OR VOLUME DAMPER				PRV		EXPANSION JOINT (SLIP TYPE)
	OR		MOTOR OPERATED DAMPER				SAFETY VALVE (NOS. = PRESSURE SETTING - PSIG)		EXPANSION JOINT (BELLOWS TYPE)
			FLEXIBLE DUCT				FLOAT OPERATED VALVE		PIPE CAP
	OR		FIRE DAMPER				QUICK COUPLING (QC)		STRAIGHT CROSS
	OR		SOUND ATTENUATOR				HORIZONTAL UNIT HEATER (NO. CORRESPONDS WITH UNIT HEATER SCHEDULE)		90° ELBOW
	OR		ZONE DAMPER				VERTICAL UNIT HEATER (NO. CORRESPONDS WITH UNIT HEATER SCHEDULE)		90° ELBOW TURNED DOWN
			FLEXIBLE CONNECTION AT FAN OR EQUIPMENT				CABINET TYPE UNIT HEATER (NO. CORRESPONDS WITH UNIT HEATER SCHEDULE)		90° ELBOW TURNED UP
			EXTRACTOR				THERMOSTAT OR ROOM TEMPERATURE SENSOR		SIDE OUTLET ELBOW TURNED DOWN
							GATE VALVE		SIDE OUTLET ELBOW TURNED UP
							FLOW SWITCH		LATERAL
							VENTURI FLOW METER AND FLOW TO BE INDICATED		TEE
							CONNECTION BETWEEN NEW AND EXISTING		TEE OUTLET UP
									TEE OUTLET DOWN
									UNION
									STRAINER
									PIPE ANCHOR
									THERMOMETER (NOS. = RANGE IN DEGREES FAHRENHEIT)
									PRESSURE, VACUUM OR COMPOUND GAUGE



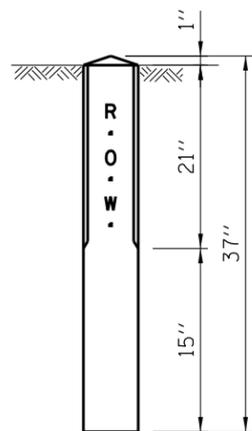
**NOTE:**

ALL SYMBOLS AND PATTERNS ON THIS DRAWING ARE PROPOSED UNLESS OTHERWISE NOTED.

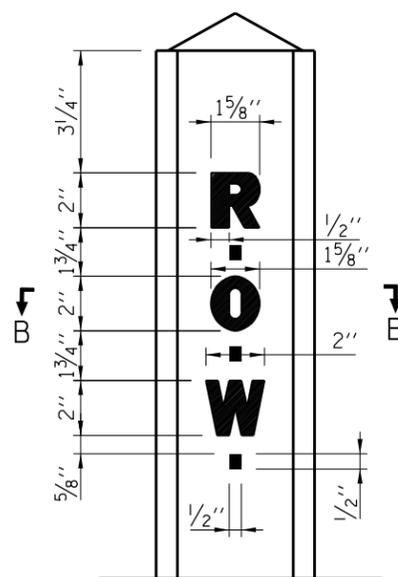
APPROVED BY: *Paul Kovacs* DATE: 07/01/2009  
CHIEF ENGINEERING OFFICER



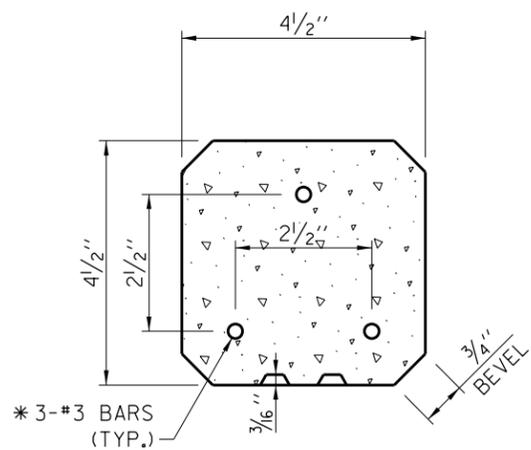
RIGHT OF WAY MARKER



RIGHT OF WAY MARKER (SPECIAL)

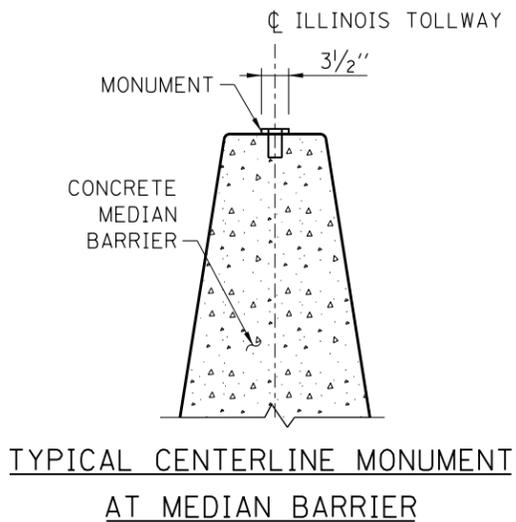


LETTERING DETAIL



\* METHOD A- 4'-2" LONG BARS  
\* METHOD B- 2'-6" LONG BARS  
SECTION B-B

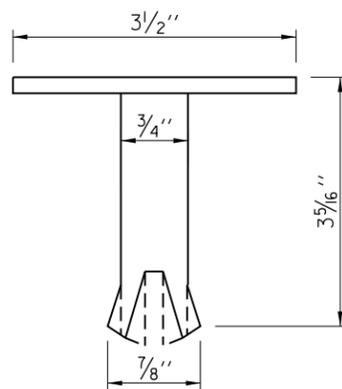
RIGHT OF WAY MARKER



TYPICAL CENTERLINE MONUMENT AT MEDIAN BARRIER



TOP VIEW



BRONZE DOMED CAP

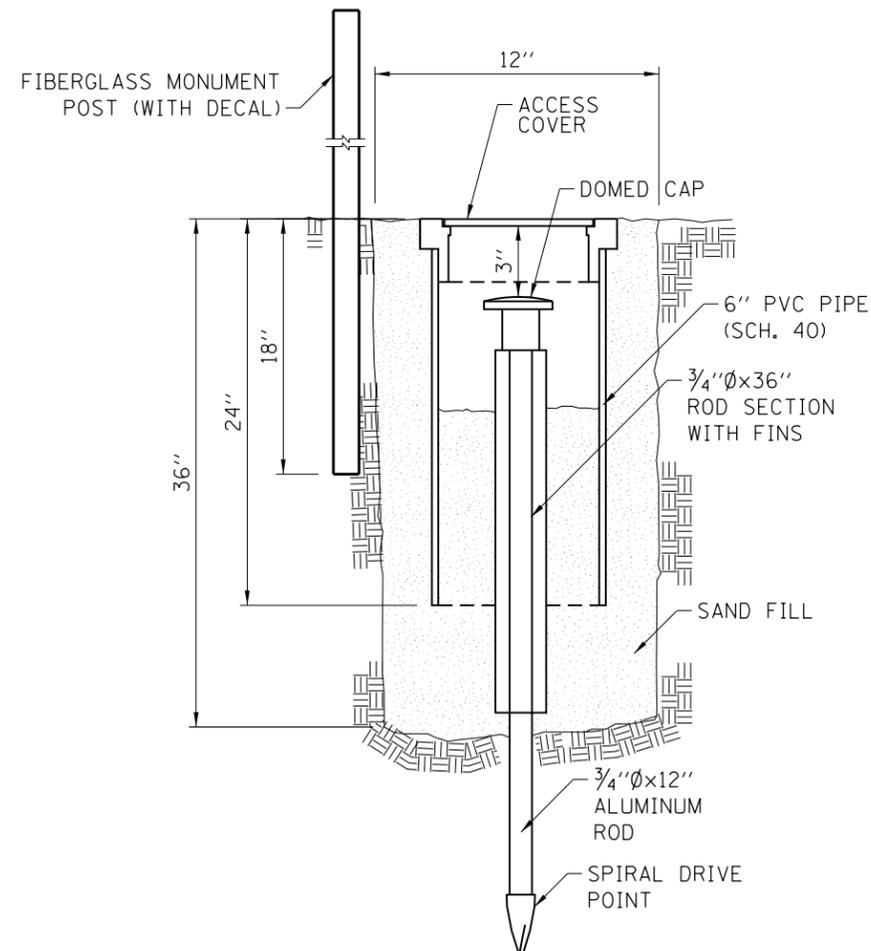
PERMANENT SURVEY MONUMENT



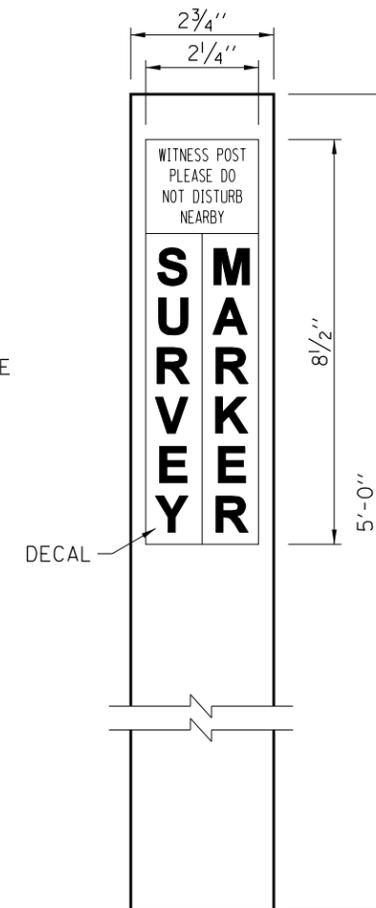
ACCESS COVER (RECESSED HINGE)



ALUMINUM DOMED CAP



PERMANENT SURVEY MONUMENT (SPECIAL)



MONUMENT POST

APPROVED BY: *Paul Kovacs* CHIEF ENGINEERING OFFICER  
DATE: 01/01/2007

DATE	REVISIONS
3-01-2019	CHANGED TO CONSTANT-SLOPE MEDIAN BARRIER
7-01-2010	NEW MONUMENT AND BARRIER MARKERS

PERMANENT SURVEY MONUMENTS AND RIGHT-OF-WAY MARKERS  
STANDARD D3-02

PERMANENT DELINEATION SPACING				
REFLECTORS	MAINLINE		RAMP	
	TANGENT	CURVE	TANGENT	CURVE
* GUARDRAIL	100'	100'	100'	100' (R >= 1,050') 50' (R < 1,050')
* BARRIER WALL (DOUBLE FACE)	100'	100'	100'	100' (R >= 1,050') 50' (R < 1,050')
* BARRIER WALL (SINGLE FACE)	100'	100'	100'	100' (R >= 1,050') 50' (R < 1,050')
SHOULDER NARROWING	3 @ 15'	3 @ 15'	3 @ 15'	3 @ 15'
BRIDGE APPROACHES	3 @ 15'	3 @ 15'	3 @ 15'	3 @ 15'
* BRIDGE OR RETAINING WALL PARAPET	50'	50'	50'	50'
* CRASHWORTHY NOISE ABATEMENT WALL OR RETAINING WALL AT EDGE OF SHOULDER	100'	100'	100'	100' (R >= 1,050') 50' (R < 1,050')

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

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

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

\* \* RED REFLECTORS SHALL BE INSTALLED (FACING OPPOSITE TRAFFIC FLOW) ALONG EXIT RAMP AND ADJACENT TO THE RIGHT SIDE OF TANGENTS AND TAPERS OF DECELERATION LANES AS INDICATED ON THE INTERCHANGE RAMP PLACEMENT PLAN (SEE SHEET 2).

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

**GENERAL NOTES:**

- EMERGENCY TURNAROUNDS DELINEATION - THE FOLLOWING DELINEATION SHOULD BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT APPROACHING EMERGENCY TURNAROUNDS.
  - ONE-HALF OF A MILE IN ADVANCE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFLECTOR UNIT OVER THREE AMBER REFLECTOR UNITS.
  - ONE-FOURTH OF A MILE IN ADVANCE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFLECTOR UNIT OVER TWO AMBER REFLECTOR UNITS.
  - AT A POINT NEAR THE INTERSECTION OF THE EDGE OF THE LEFT SHOULDER AND NEAR EDGE OF THE EMERGENCY TURNAROUNDS ONE WHITE REFLECTOR UNIT OVER ONE AMBER REFLECTOR UNIT.

- ALL REFLECTORS FACING OPPOSITE TRAFFIC FLOW SHALL BE RED.

**NOTES FOR ROADWAY DELINEATORS, POST MOUNTED INSTALLATION:**

- MAINLINE-SINGLE WHITE REFLECTOR 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.
  - RAMP-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.
  - DOUBLE WHITE REFLECTOR UNITS SHALL BE PLACED ON THE RIGHT AT ALL ACCELERATION AND DECELERATION LANES.
  - TWO RED REFLECTORS SHALL BE INSTALLED ON THE BACK SIDE (FACING OPPOSITE TRAFFIC FLOW) OF ALL DELINEATOR POSTS ALONG EXIT RAMPS AND ALONG THE RIGHT SIDE OF TANGENTS AND TAPERS OF DECELERATION LANES.
- REFLECTORS SHALL BE MOUNTED ON SUPPORTS SUCH THAT THE TOP OF REFLECTORS IS FOUR FEET ABOVE THE ROADWAY EDGE AND TWO FEET OUTSIDE THE OUTER EDGE OF THE PAVED SHOULDER OR TWO FEET MINIMUM AND SIX FEET MAXIMUM OUTSIDE THE BACKS OF CURBS OR GUTTERS.
- IN ALL CASES, THE COLOR OF THE REFLECTORS SHALL BE THE SAME AS THE ADJACENT EDGE LINE EXCEPT AS SPECIFIED IN GENERAL NOTES.
- POST MOUNTED REFLECTORS SHALL BE PLACED CONTINUOUSLY AS NOTED ABOVE IN CONJUNCTION WITH GUARDRAIL INSTALLED.
- THE PLACEMENT OF ROADWAY DELINEATOR "CIRCULAR REFLECTORS" SHALL BE USED FOR ALL MINOR PROJECTS WHICH HAVE A LENGTH OF LESS THAN 5 MILES. THE PLACEMENT OF ROADWAY DELINEATOR "RECTANGULAR REFLECTORS" SHALL BE USED FOR ALL MAJOR PROJECTS WHICH HAVE A LENGTH GREATER THAN 5 MILES. ALL ROADWAY DELINEATORS WITHIN A ROADWAY SEGMENT SHALL BE OF THE SAME TYPE.

**NOTES FOR GUARDRAIL AND BARRIER WALL REFLECTOR:**

- REFLECTORS TYPE B AND TYPE C SHALL HAVE REFLECTIVE SURFACE ON ONE SIDE ONLY. WHERE DOUBLE BACK REFLECTOR IS INDICATED, A SECOND RED REFLECTOR SHALL BE INSTALLED.

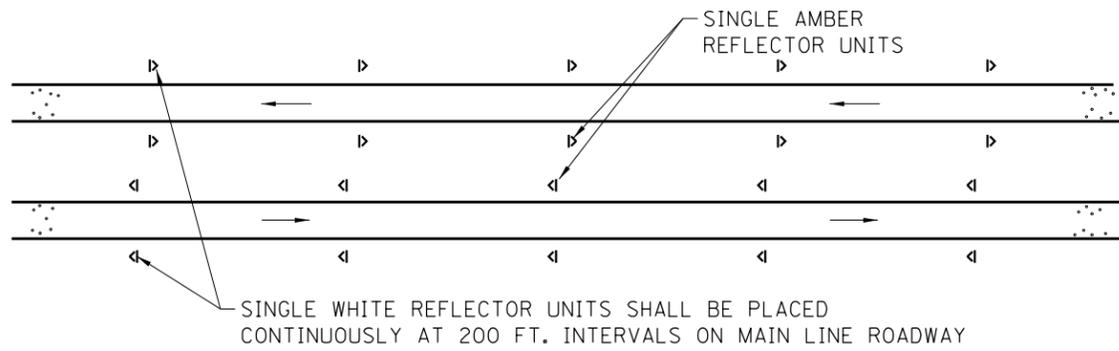


DATE	REVISIONS
3-01-2024	ADDED DETAIL FOR REFLECTOR AT NAW & RETAINING WALL
3-01-2023	ADDED WRONG-WAY REFLECTORS TO EXIT RAMP AND RELATED NOTES
3-01-2019	CHANGED BARRIER TO CONSTANT-SLOPE SHAPE

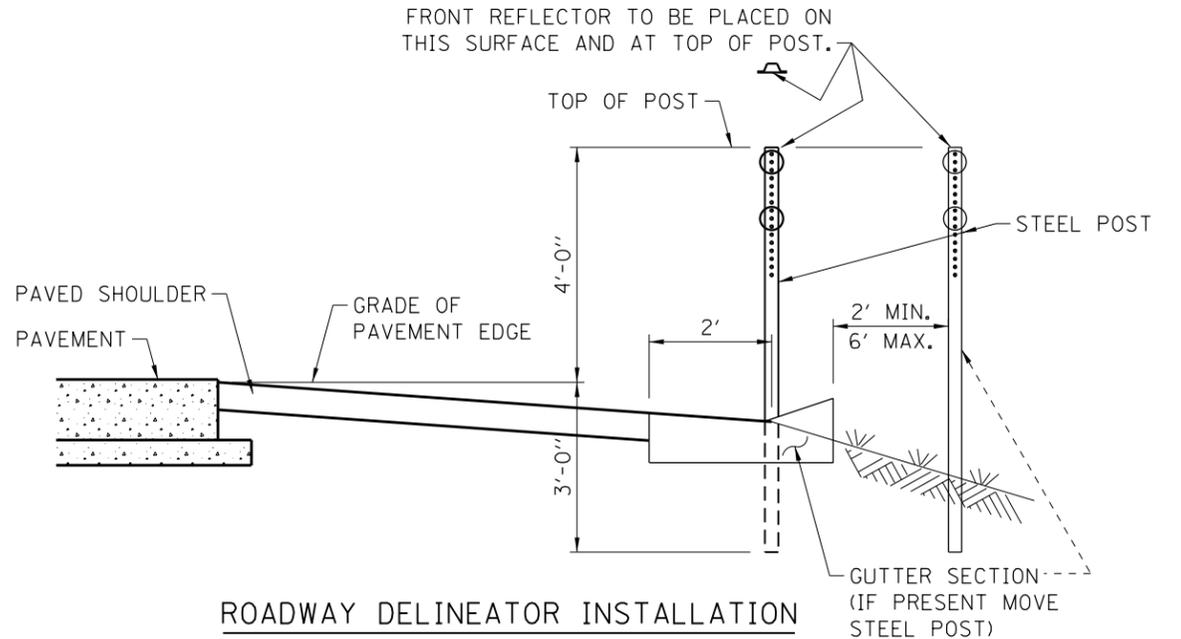
ROADWAY DELINEATORS AND REFLECTORS

STANDARD D4-09

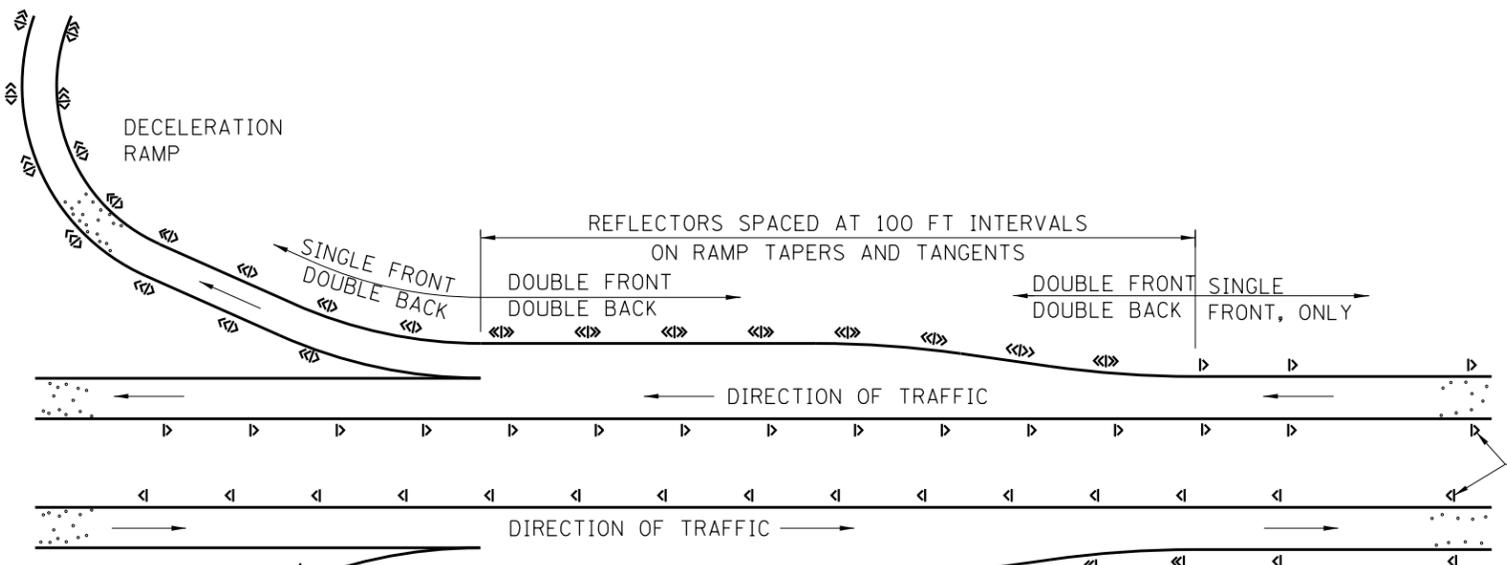
APPROVED BY: *Mama Nashif* DATE: 03/01/2024  
CHIEF ENGINEERING OFFICER



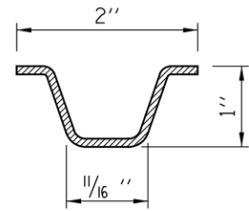
**TANGENT PLACEMENT**



**ROADWAY DELINEATOR INSTALLATION**

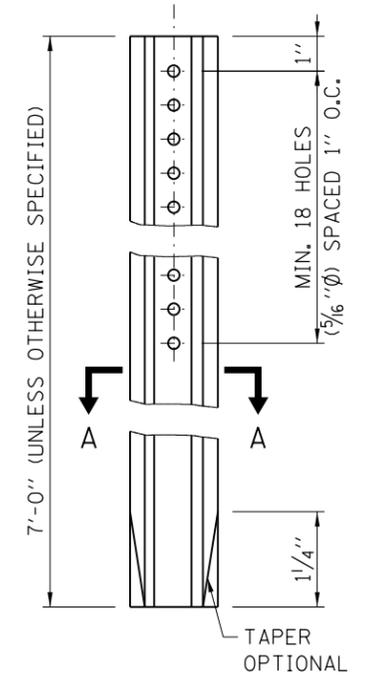


**INTERCHANGE RAMP PLACEMENT**

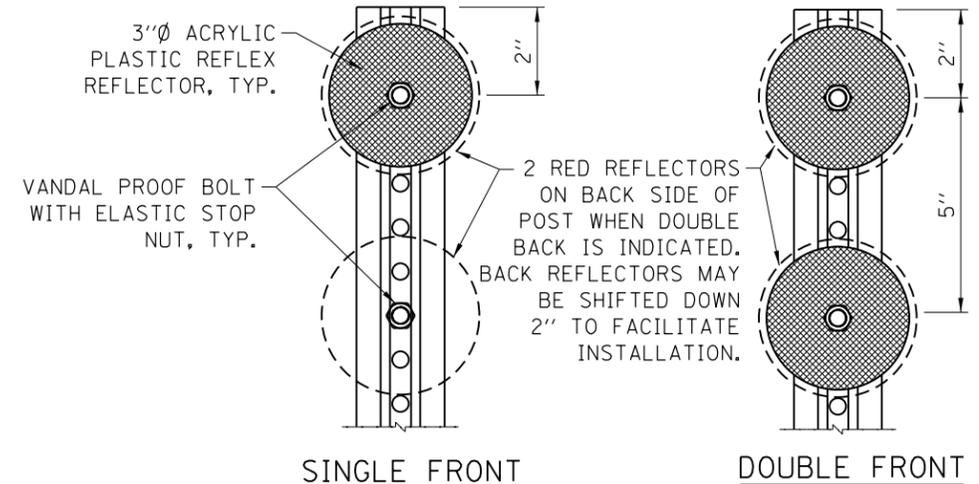


**SECTION A-A**  
STEEL- 1.12 LBS/FT.

NOTE: SINGLE/DOUBLE FRONT INDICATES ONE (SINGLE) OR TWO (DOUBLE) REFLECTORS FACING APPROACHING TRAFFIC. DOUBLE BACK INDICATES TWO RED REFLECTORS FACING OPPOSITE TRAFFIC FLOW.



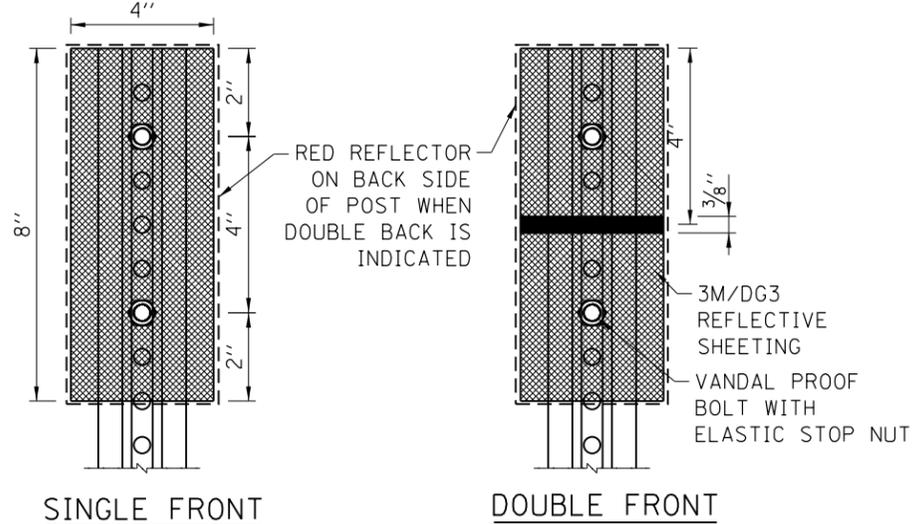
**STEEL POST**



**SINGLE FRONT**

**DOUBLE FRONT**

**CIRCULAR REFLECTORS**



**SINGLE FRONT**

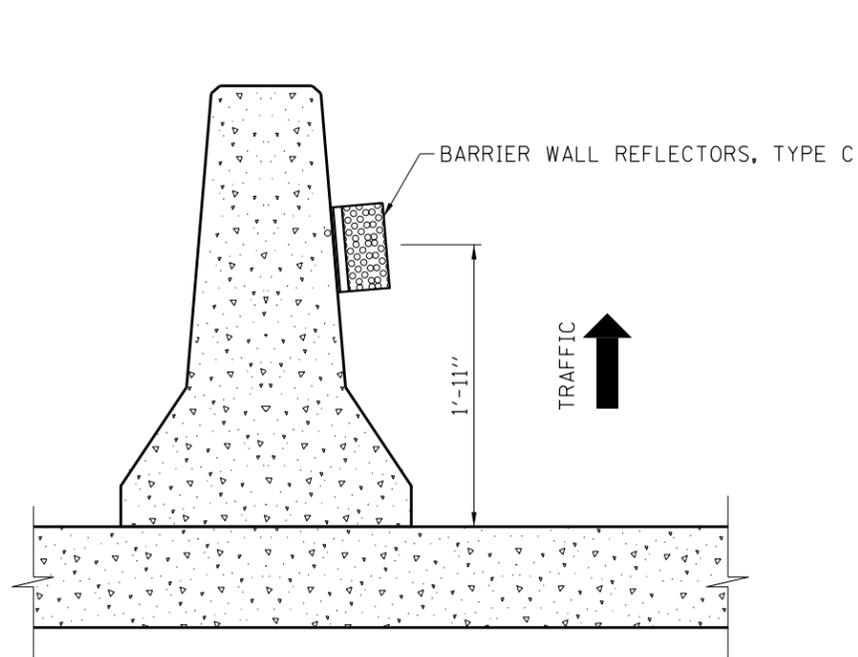
**DOUBLE FRONT**

**RECTANGULAR REFLECTORS**

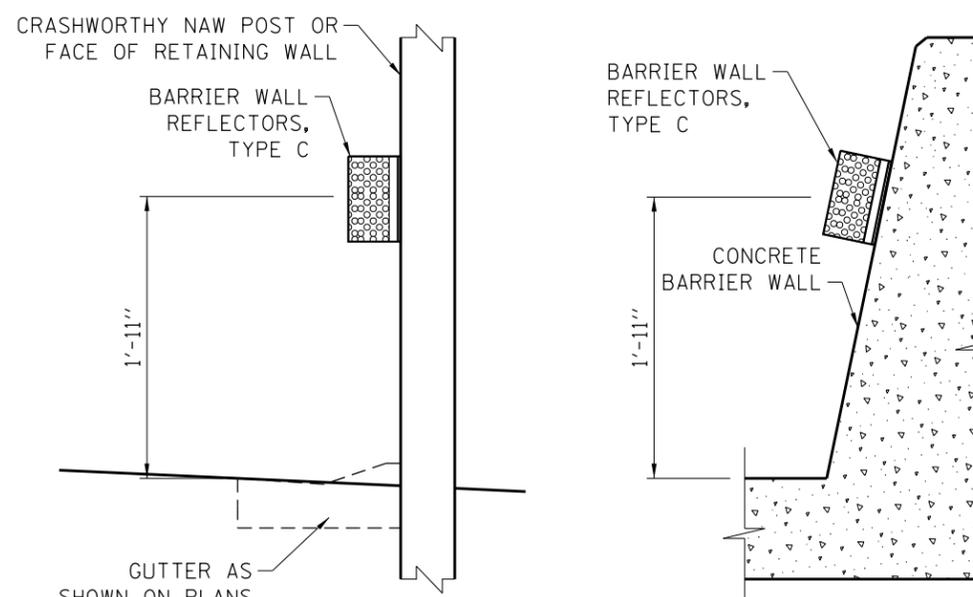
NOTE:  
SEE SHEET 1 OF THIS SERIES FOR NOTES.

APPROVED BY: *Mamun Nashid*  
CHIEF ENGINEERING OFFICER  
DATE: 03/01/2024

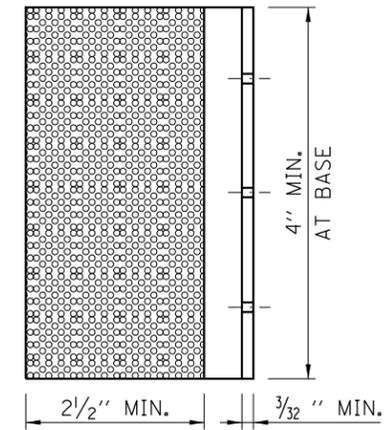




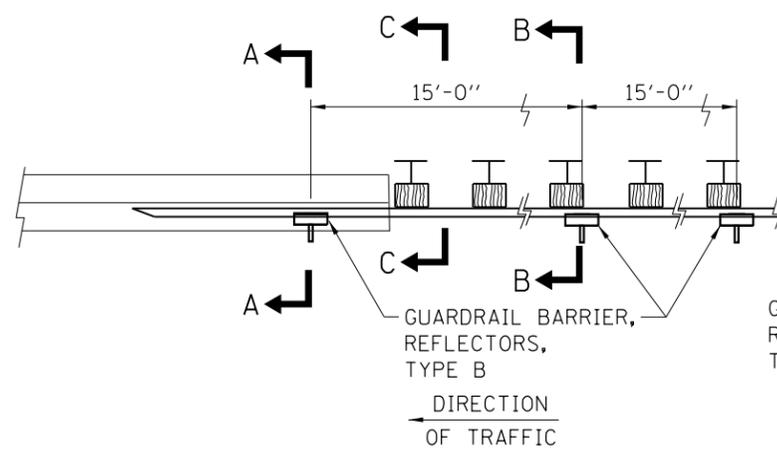
CROSS-SECTION  
TEMPORARY CONCRETE BARRIER



VERTICAL WALL, BARRIER OR PARAPET  
REFLECTOR INSTALLATION



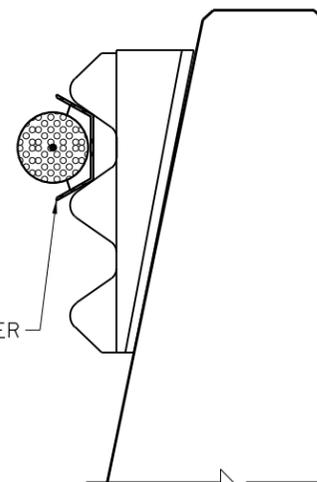
REFLECTOR, TYPE C



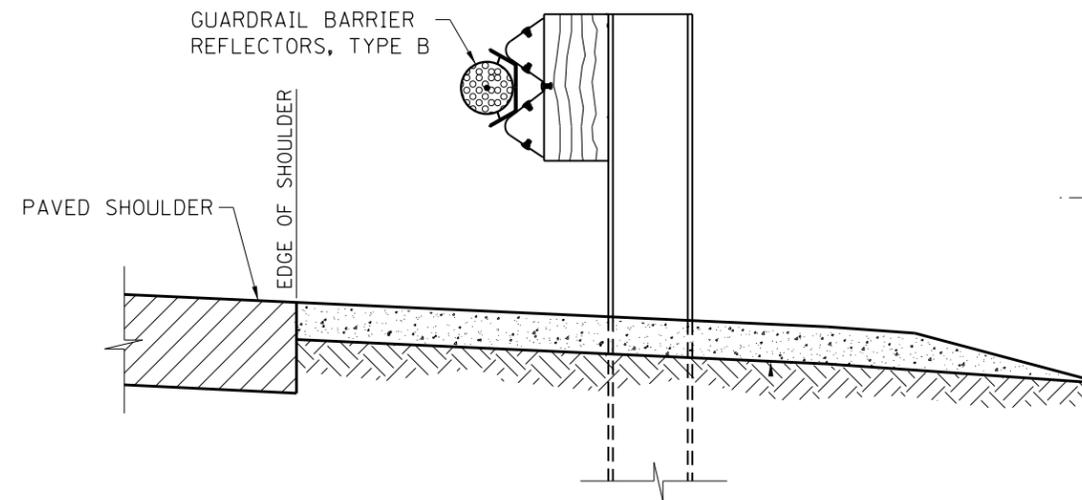
PLAN

REFLECTOR INSTALLATION ON GUARDRAIL  
AT BRIDGE APPROACHES

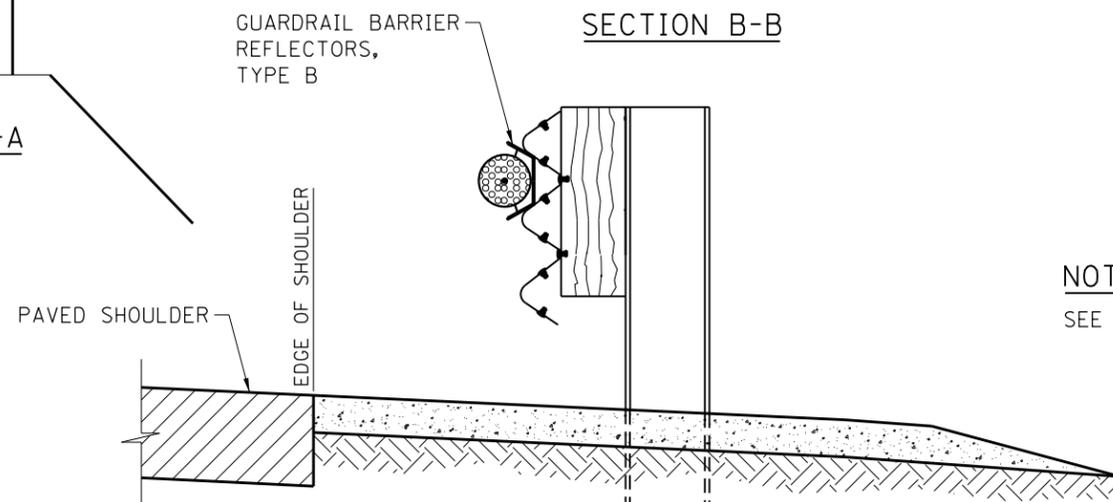
ALSO SEE SHEET 1 IN THIS SERIES  
FOR ADDITIONAL INFORMATION



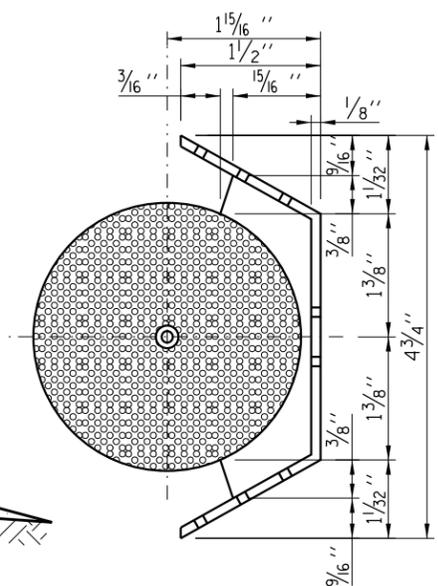
SECTION A-A



SECTION B-B



SECTION C-C



REFLECTOR, TYPE B

NOTE:  
SEE SHEET 1 OF THIS SERIES FOR NOTES.

SHEET 3 OF 3

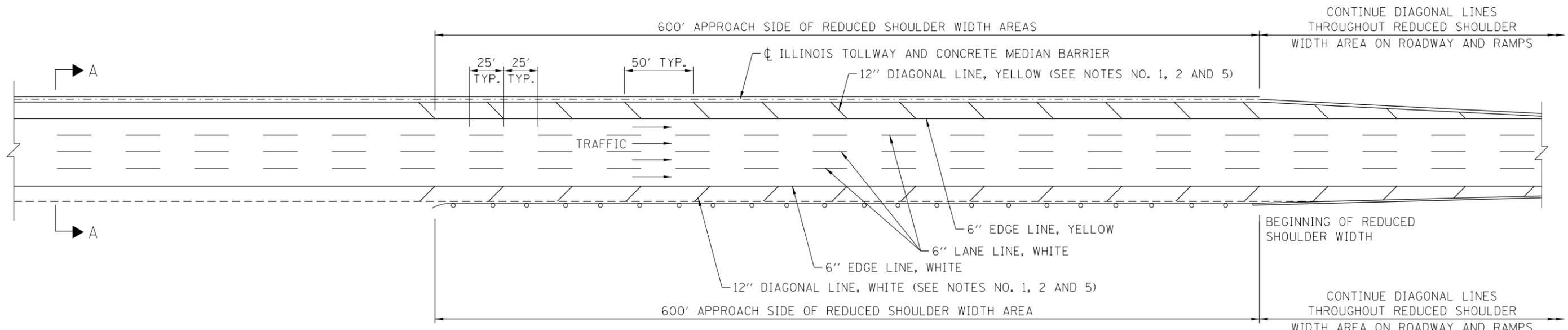
APPROVED BY:  
*Mamam Nashif*  
CHIEF ENGINEERING OFFICER

DATE:  
03/01/2024

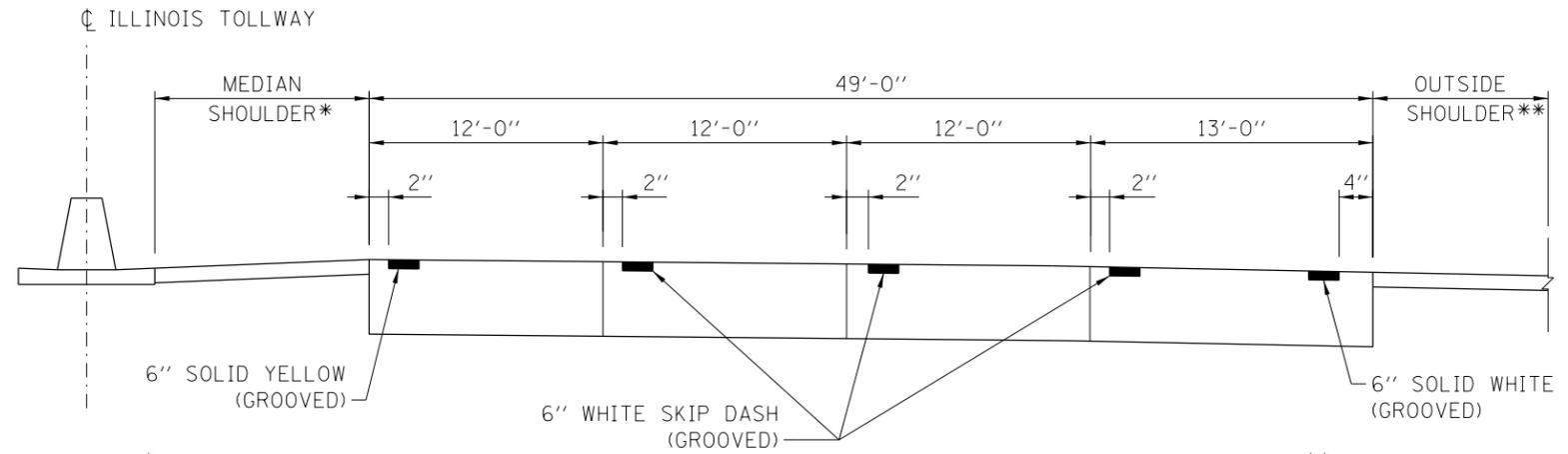
**Illinois Tollway**

ROADWAY DELINEATORS  
AND REFLECTORS

STANDARD D4-09



PLAN

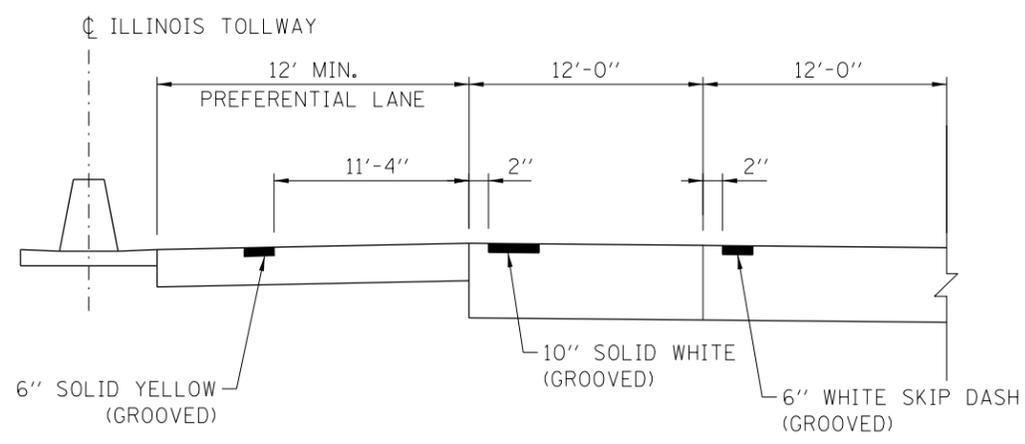


\*FOR PREFERENTIAL LANE, SEE DETAIL A BELOW

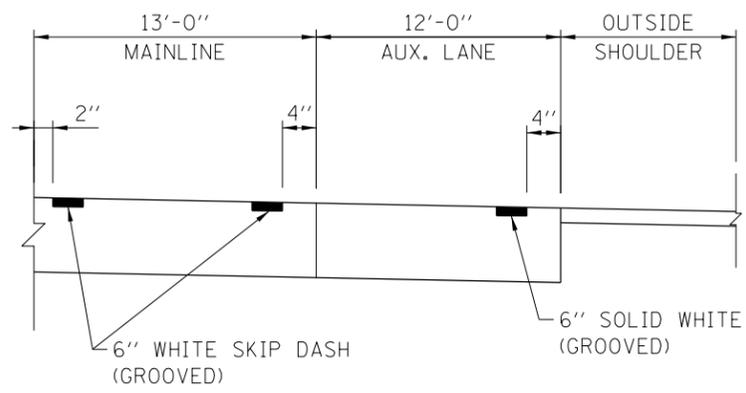
\*\*FOR AUXILIARY LANE, SEE DETAIL B BELOW

SECTION A-A  
ROADWAY AND SHOULDER STRIPING - NEW CONSTRUCTION

FOR RUMBLE STRIP DETAILS SEE STANDARD DRAWING D7



DETAIL A - PREFERENTIAL LANE STRIPING



DETAIL B - AUXILIARY LANE STRIPING

GENERAL NOTES:

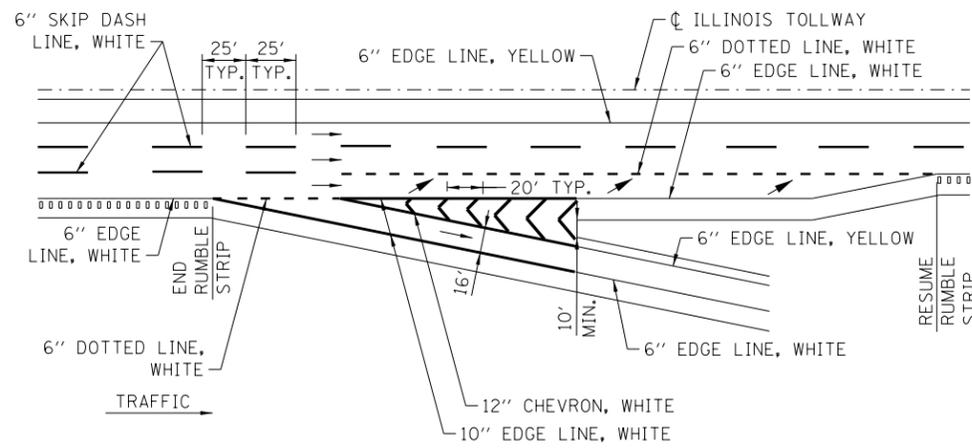
1. DIAGONAL SHOULDER STRIPING REQUIRED WHERE THE SHOULDER WIDTH IS LESS THAN STANDARD.
2. ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND ASPHALT SURFACE SHALL BE AS SHOWN ON THE PLANS.
3. WHERE THE GUARDRAIL ENCROACHES ON THE SHOULDER THE DIAGONAL MARKINGS SHALL EXTEND AS CLOSE TO THE FACE OF THE RAIL AS POSSIBLE.
4. ALL PERMANENT LANE LINES AND EDGE LINES SHALL BE GROOVED, ON ROADWAY SURFACES, UNLESS OTHERWISE NOTED.
5. DIAGONAL STRIPING SHALL BE SURFACE APPLIED.
6. GORE STRIPING (CHEVRON) SHALL BE SURFACE APPLIED.
7. ALL LANE LINES AND EDGE LINES SHALL BE SURFACE APPLIED ON BRIDGES.
8. ALL LANE LINES AND EDGE LINES SHALL BE SURFACE APPLIED ON CONTINUOUSLY REINFORCED CONCRETE (CRC) PAVEMENT AT TOLL PLAZAS.

APPROVED BY:  
*Manar Nashif*  
CHIEF ENGINEERING OFFICER  
DATE:  
02/23/2023

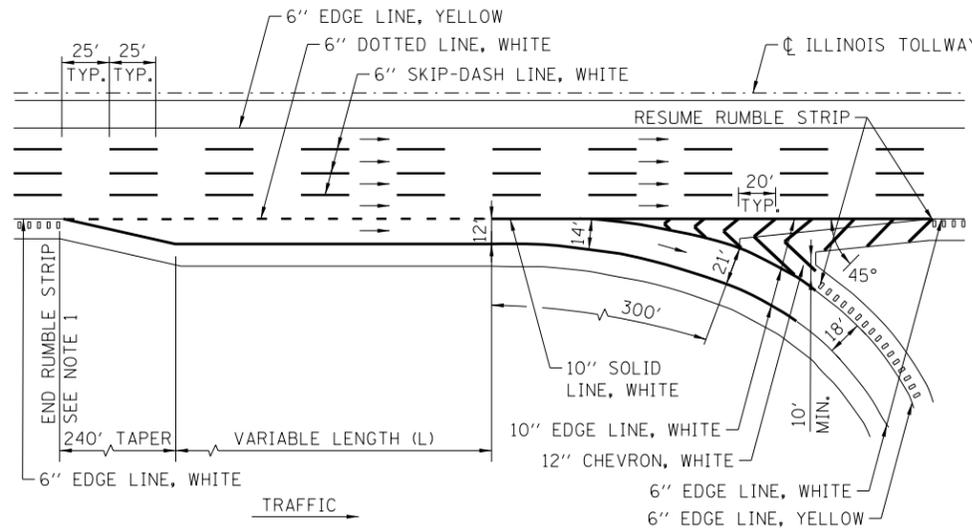
DATE	REVISIONS
3-01-2023	ADDED AUX. LANE STRIPING DETAIL
3-01-2022	REVISED EDGE LINES TO 6"
3-01-2021	ADDED PREF. LANE STRIPING
3-01-2020	REVISED EDGE LINE TO BE 4" MIN.
3-31-2016	REVISED NOTES
3-31-2014	REVISED NOTES



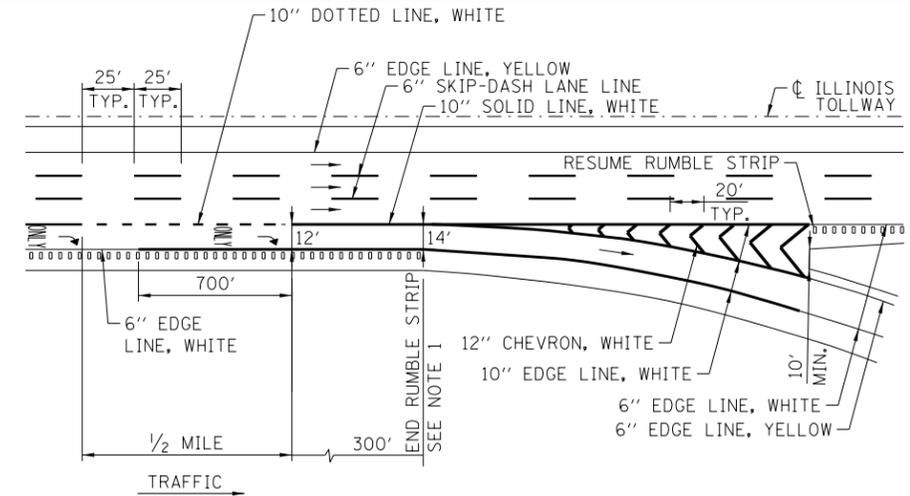
PERMANENT PAVEMENT MARKINGS  
MAINLINE  
STANDARD D5-10



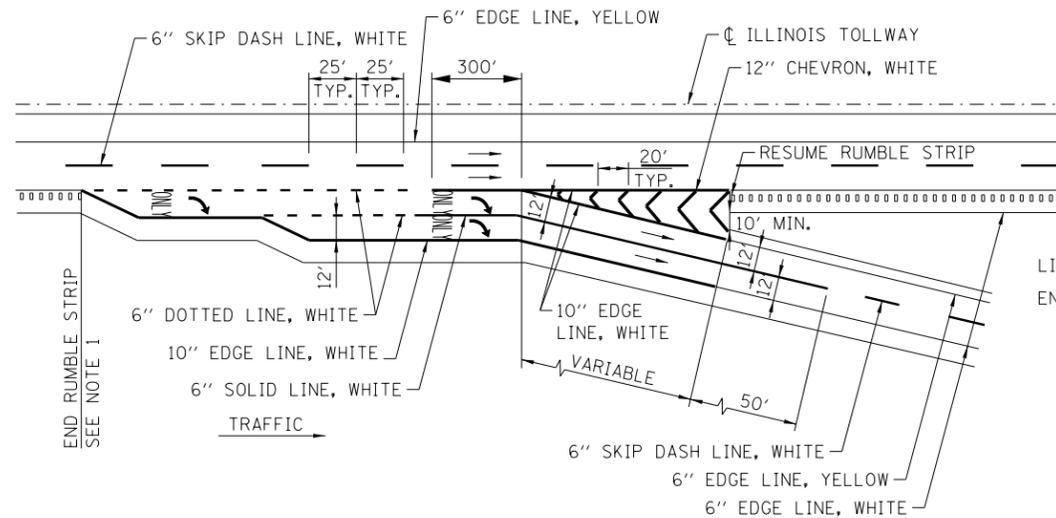
EXIT - SINGLE LANE RAMP  
LANE THREE TERMINATION



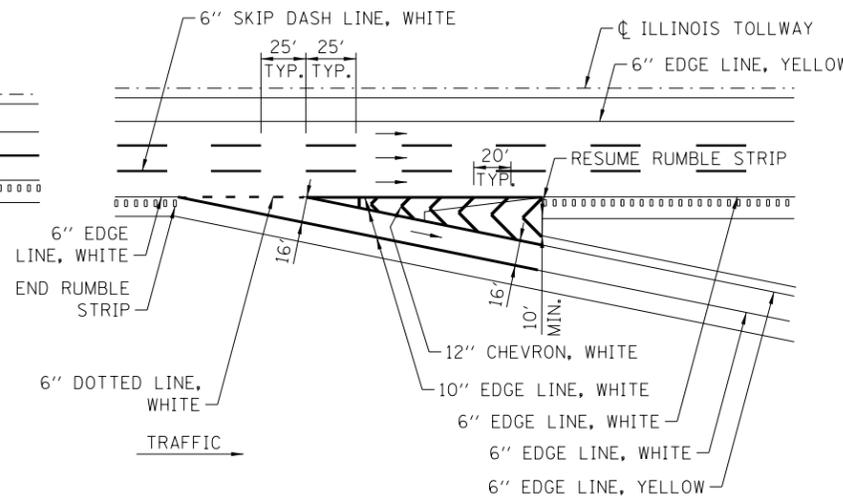
EXIT - SINGLE LANE LOOP RAMP - PARALLEL TYPE  
SEE SHEET 4 FOR SPEED REDUCTION MARKINGS



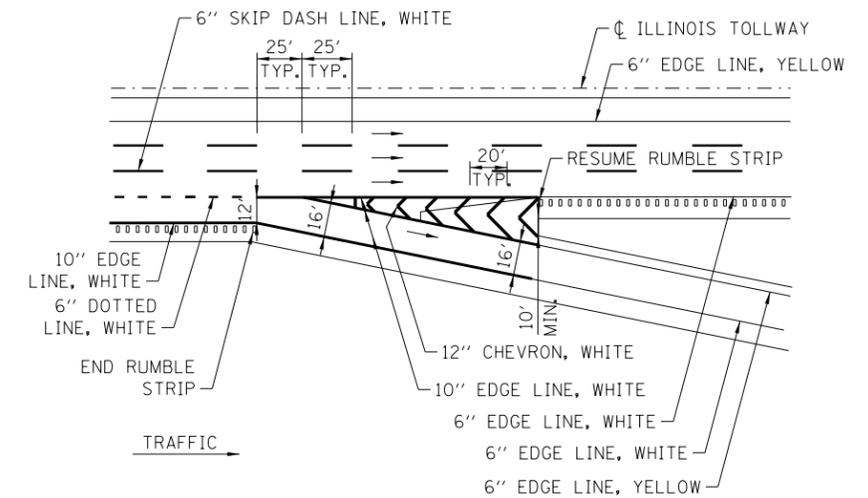
EXIT - SINGLE LANE RAMP - LANE DROP



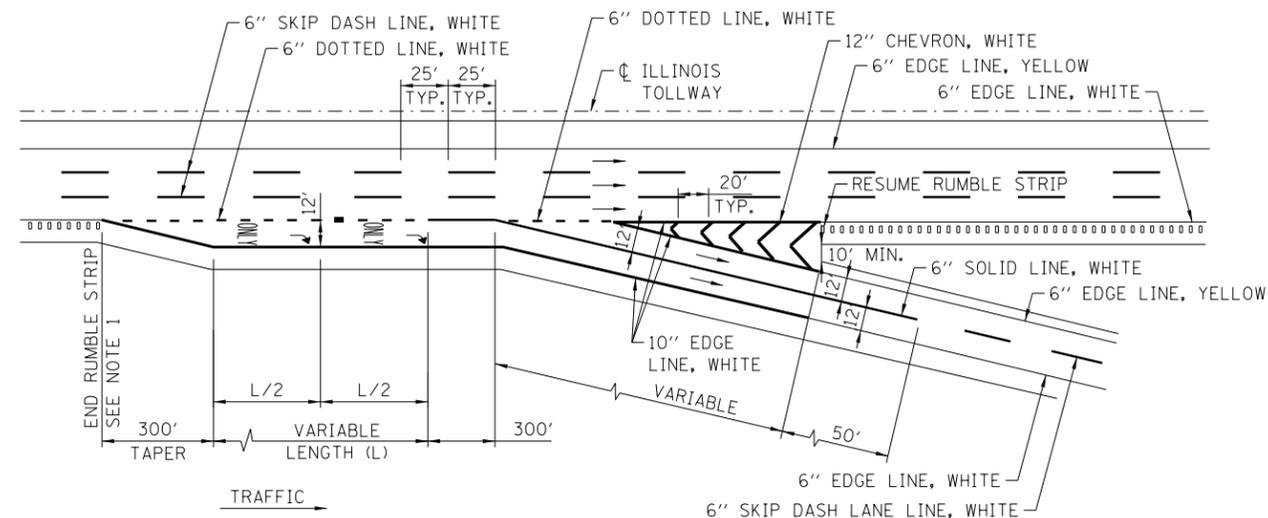
EXIT - TWO LANE PARALLEL RAMP



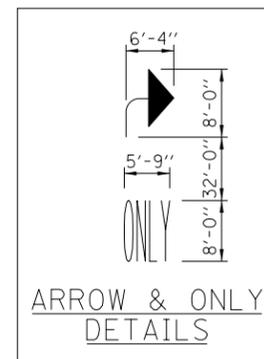
EXIT - SINGLE LANE RAMP - TAPER TYPE



EXIT - SINGLE LANE RAMP WITH AUX LANE - TAPER TYPE



EXIT - TWO LANE RAMP



NOTE:  
PAVEMENT MARKING LETTERS AND SYMBOLS-ONLY AND ARROW ARE TO BE TYPICALLY PLACED AT 1/2 MILE EXIT ONLY GUIDE SIGN, AT GORE EXIT GUIDE SIGN AND APPROXIMATELY HALFWAY BETWEEN THE TWO.

GENERAL NOTES:

- RUMBLE STRIPS SHALL BE INSTALLED BETWEEN THE THEORETICAL GORE AND TAPER WHEN LENGTHS (L) OF AUXILIARY LANES, ACCELERATION LANES OR DECELERATION LANES, ARE GREATER THAN 1000'.
- ROADWAY MARKING MATERIALS TO BE USED ON FINISHED CONCRETE SURFACE AND ASPHALT SURFACE SHALL BE AS SHOWN ON THE PLANS.
- ALL LANE LINES AND EDGE LINES SHALL BE GROOVED.
- GORE STRIPING (CHEVRON) SHALL BE SURFACE APPLIED.
- LETTERS AND SYMBOL MARKING SHALL BE SURFACE APPLIED.
- DOTTED LINES SHALL CONSIST OF 3' LINE AND 9' GAPS.
- PAVEMENT MARKINGS SHALL NOT BE GROOVED ON THE CONTINUOUSLY REINFORCED CONCRETE (CRC) PAVEMENT SECTION AT TOLL PLAZAS.

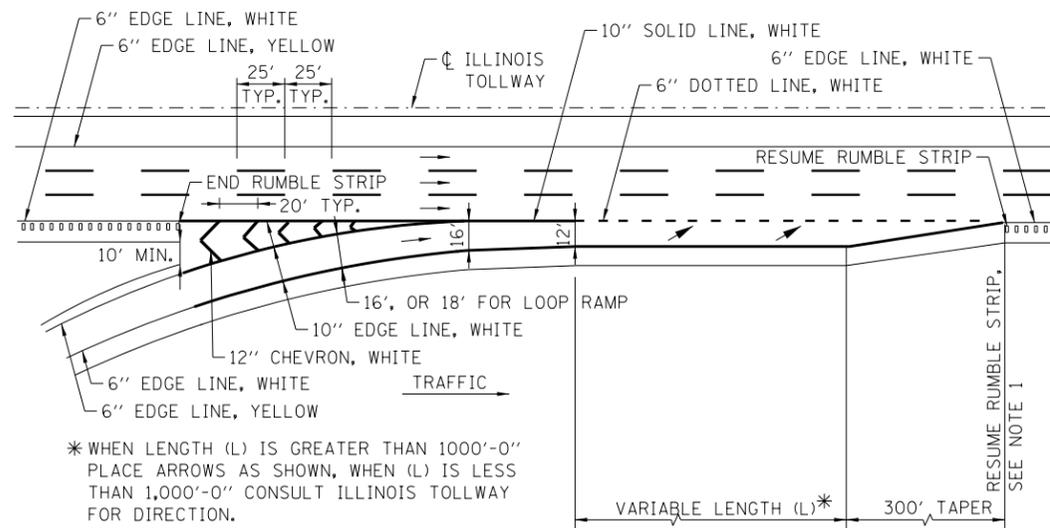


DATE	REVISIONS
3-31-2023	ADD 6" DOTTED LINE ACROSS EXIT & ENTRANCE RAMP TAPERS. ADDED NOTE 7.
3-01-2022	REVISED EDGE LINES TO 6"

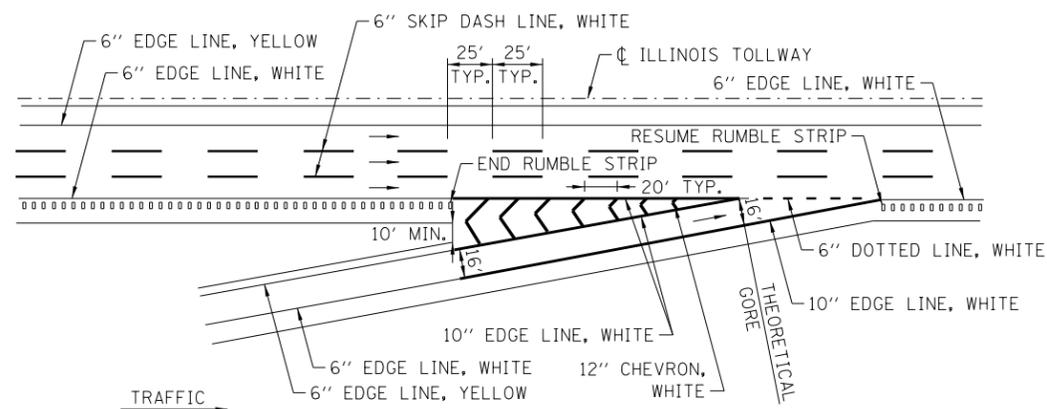
PERMANENT PAVEMENT MARKINGS  
RAMPS

STANDARD D6-11

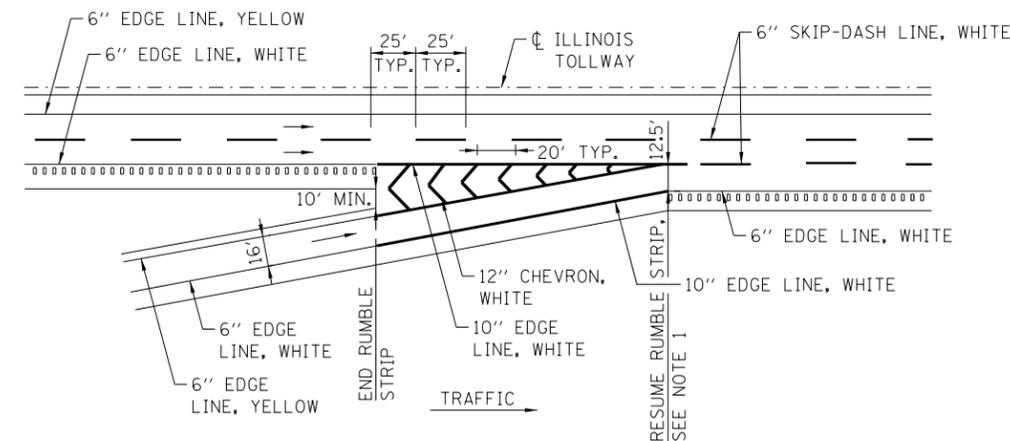
APPROVED BY: *Manar Nashif*  
CHIEF ENGINEERING OFFICER  
DATE: 03/01/2023



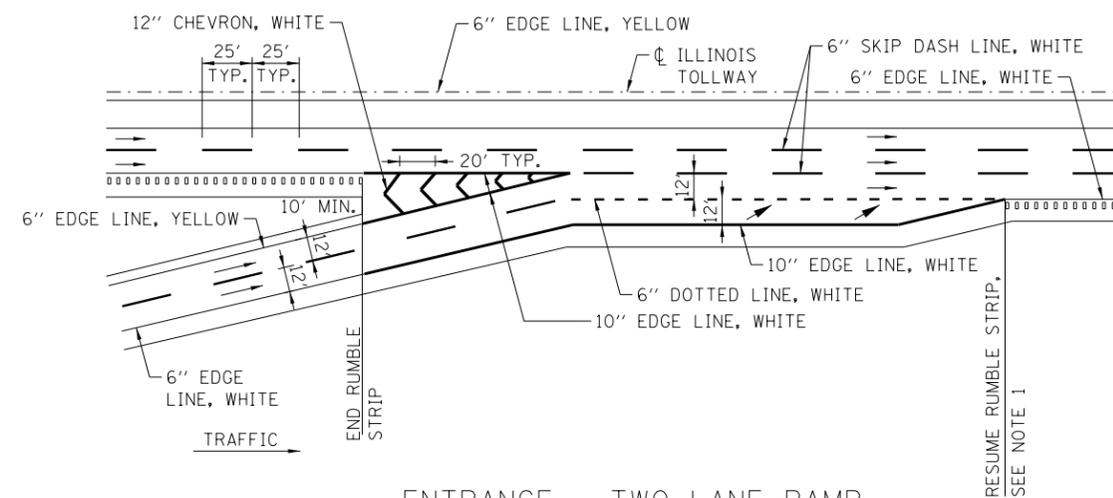
ENTRANCE - SINGLE LANE RAMP - PARALLEL TYPE



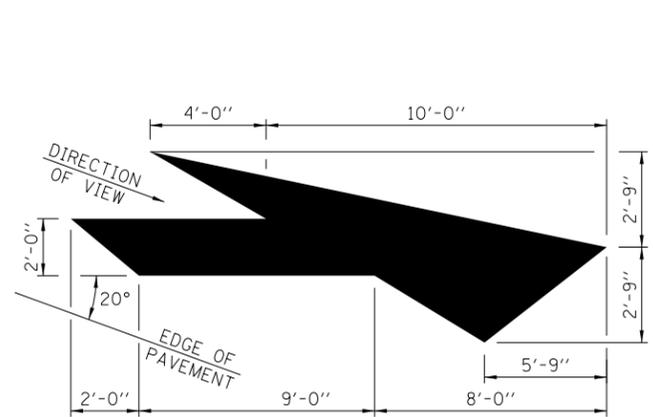
ENTRANCE - SINGLE LANE RAMP - TAPER TYPE



ENTRANCE - SINGLE LANE RAMP WITH ADDED MAINLINE LANE

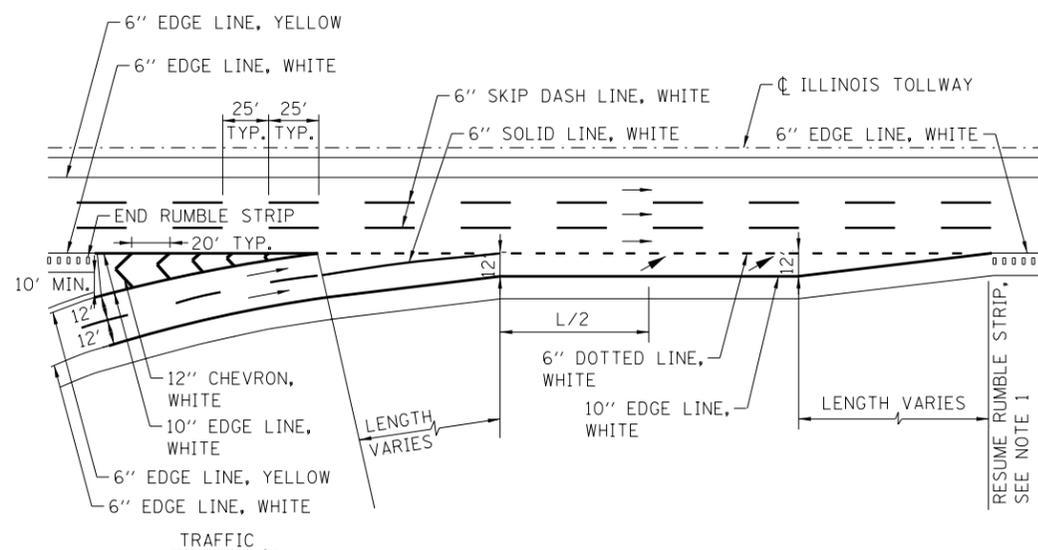


ENTRANCE - TWO LANE RAMP WITH ADDED MAINLINE LANE

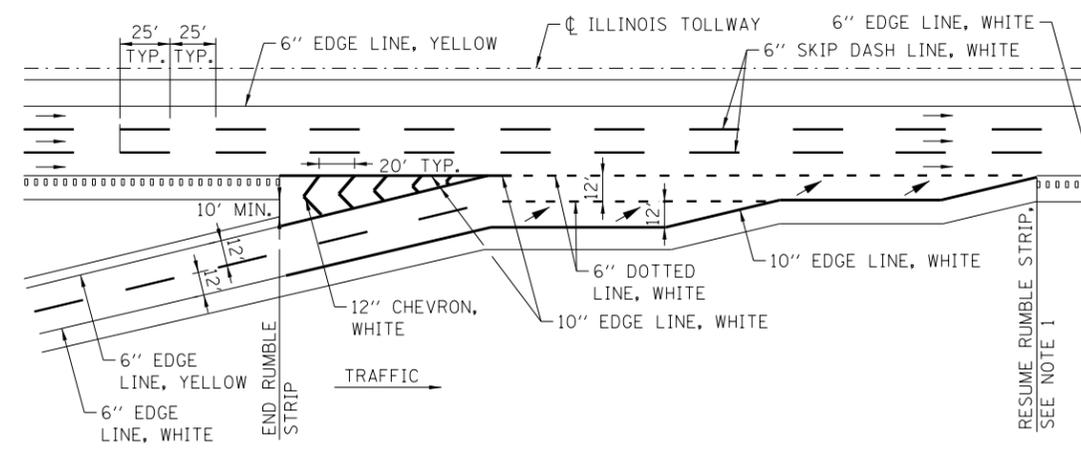


LANE-REDUCTION ARROW

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

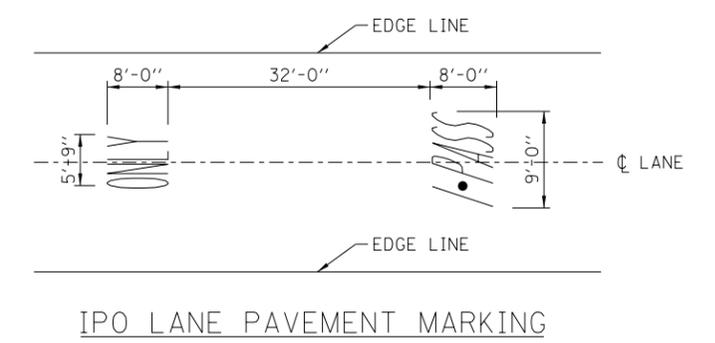
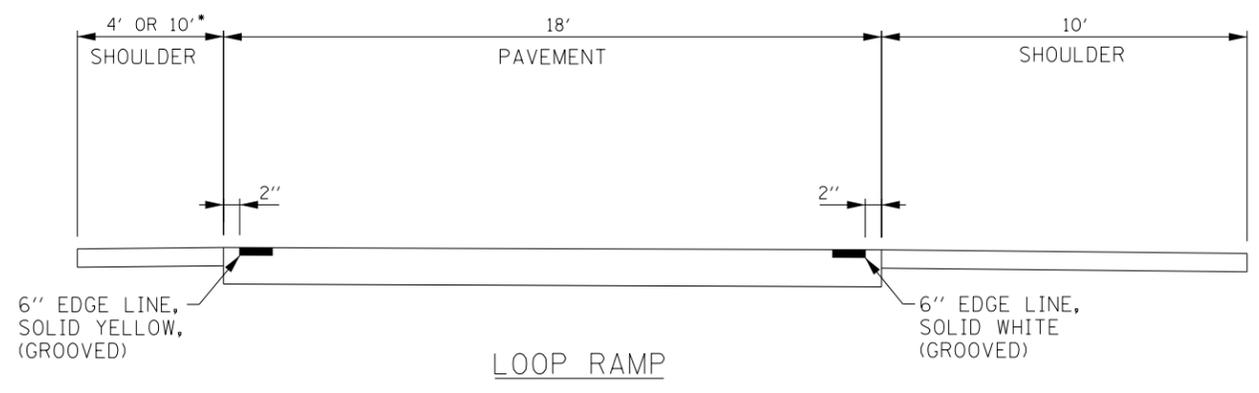
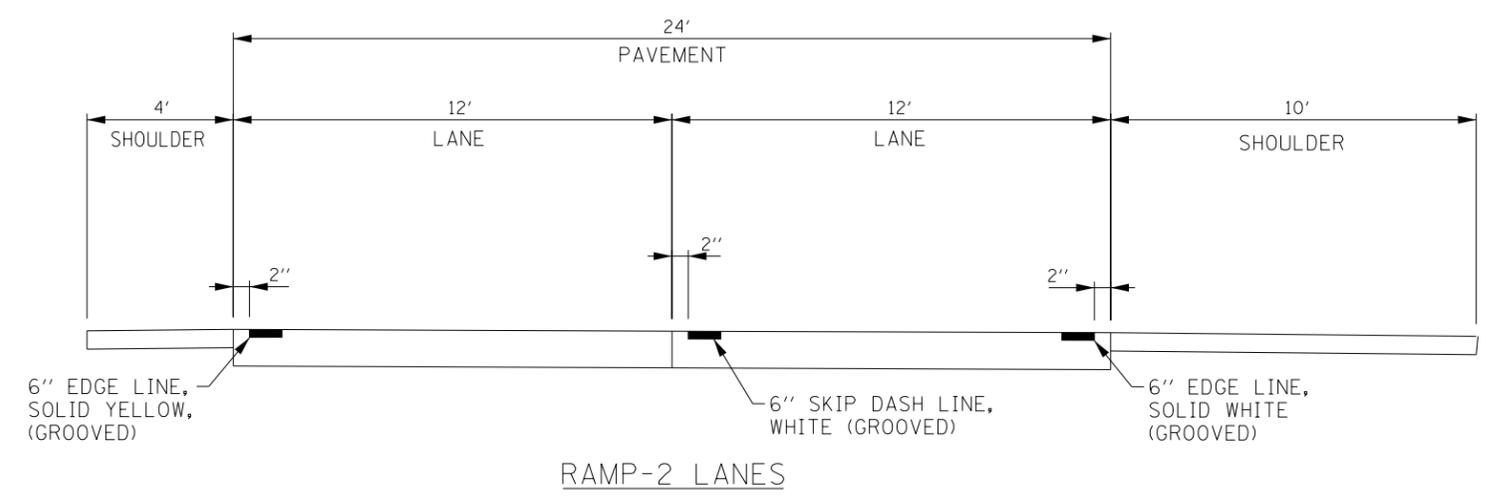
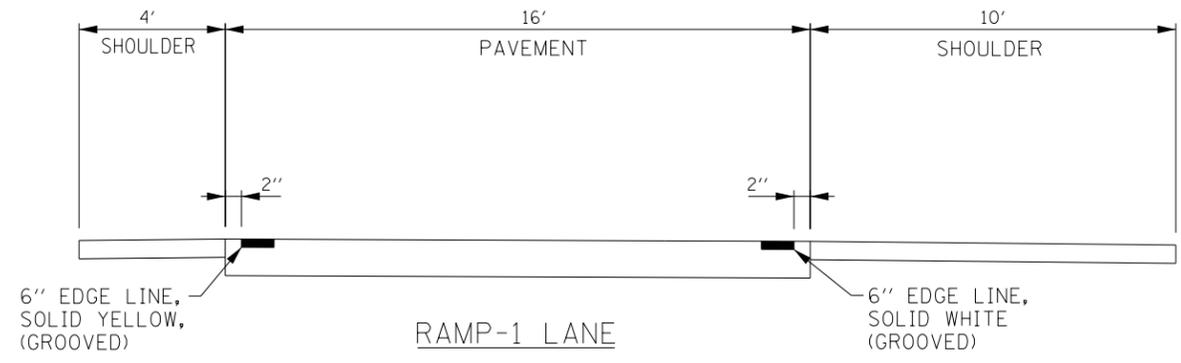


ENTRANCE - TWO LANE RAMP



ENTRANCE - TWO LANE PARALLEL RAMP





\* RUMBLE STRIP SHALL BE ADDED WHEN ALONG EXIT LOOP RAMP AND LEFT SHOULDER IS 10' WIDE

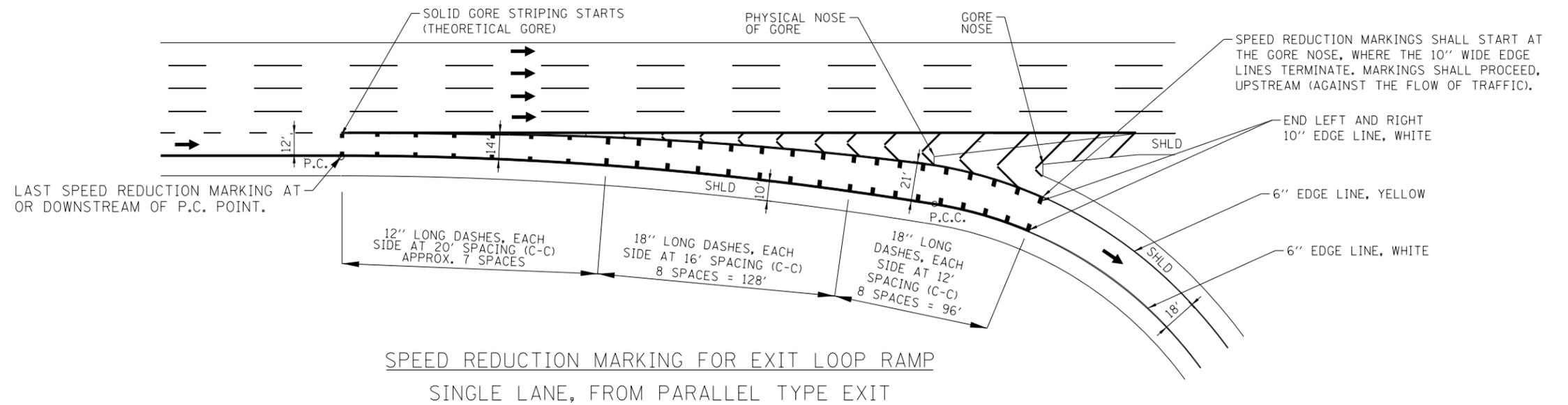
APPROVED BY: *Maman Nashif*  
 CHIEF ENGINEERING OFFICER  
 DATE: 03/01/2023

SEE SHEET 1 IN THIS SERIES FOR GENERAL NOTES.

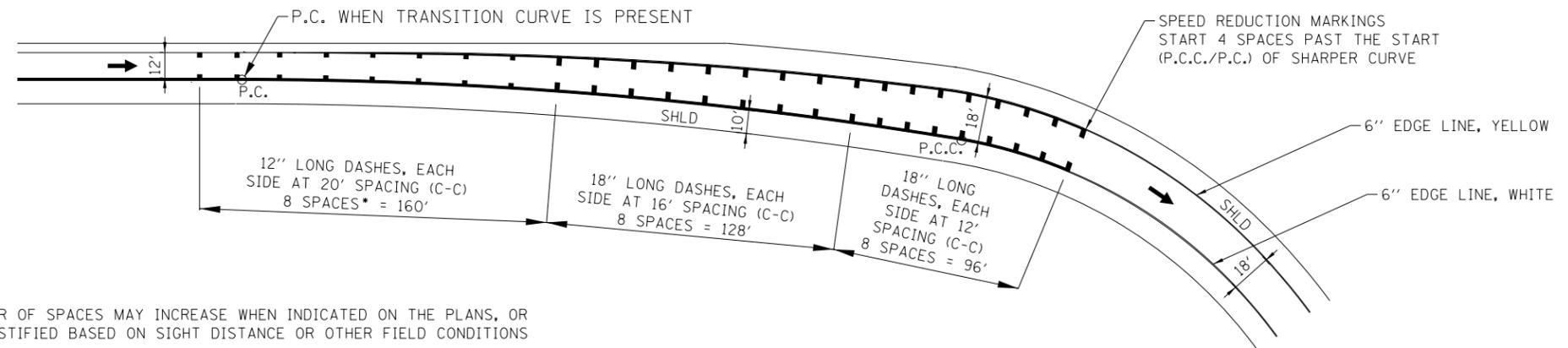
**Illinois Tollway**

PERMANENT PAVEMENT MARKINGS  
 RAMP

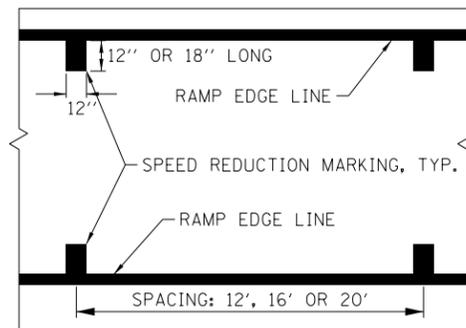
STANDARD D6-11



SPEED REDUCTION MARKING FOR EXIT LOOP RAMP  
SINGLE LANE, FROM PARALLEL TYPE EXIT



SPEED REDUCTION MARKING FOR EXIT LOOP RAMP  
SINGLE LANE, FROM C-D ROAD



SPEED REDUCTION MARKING DETAIL

SPEED REDUCTION MARKING NOTES:

SR-1. SPEED REDUCTION MARKINGS SHALL BE WHITE IN COLOR, BE 12" WIDE AND BE PLACED PERPENDICULAR TO THE EDGE LINE. THE MARKINGS SHALL TOUCH THE EDGE LINE AND EXTEND INTO THE LANE BY THE LENGTH INDICATED. THE MARKINGS ARE NOT GROOVED INTO THE PAVEMENT.

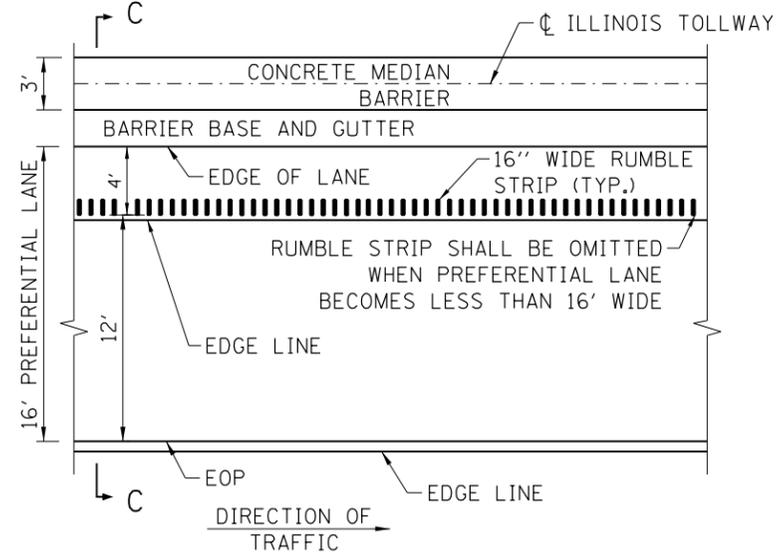
SR-2. SPACINGS SHALL VARY FROM LONGER SPACES TO SHORTER SPACES IN THE DIRECTION OF TRAFFIC. THE SPACES SHALL BE MEASURED ALONG THE RAMP BASELINE AND SHALL BE AS INDICATED ON THE DETAIL.

SR-3. SPEED REDUCTION MARKINGS SHALL ONLY BE USED ON EXIT LOOP RAMPS. PAYMENT FOR SPEED REDUCTION MARKINGS WILL BE FOR PAVEMENT MARKING LINE, 12" OF THE PERMANENT PAVEMENT MARKING TYPE USED ON THE RAMP.

SR-4. THIS DETAIL SHOWS PLACEMENT OF SPEED REDUCTION MARKINGS. FOR PLACEMENT AND TYPE OF EDGE LINES AND OTHER RAMP PAVEMENT MARKINGS, REFER TO OTHER DETAILS ON THE STANDARD DRAWINGS AND PLANS.

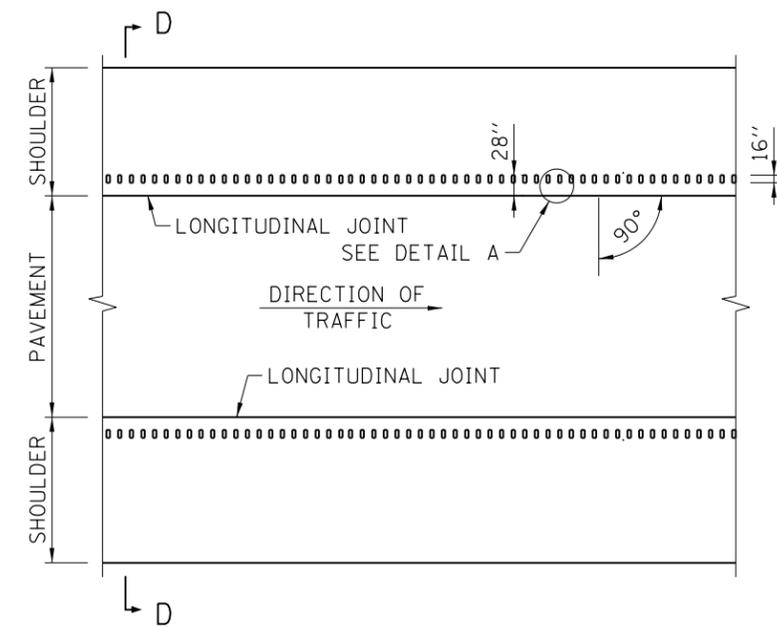
APPROVED BY: *Manar Nashif*  
CHIEF ENGINEERING OFFICER  
DATE: 03/01/2023



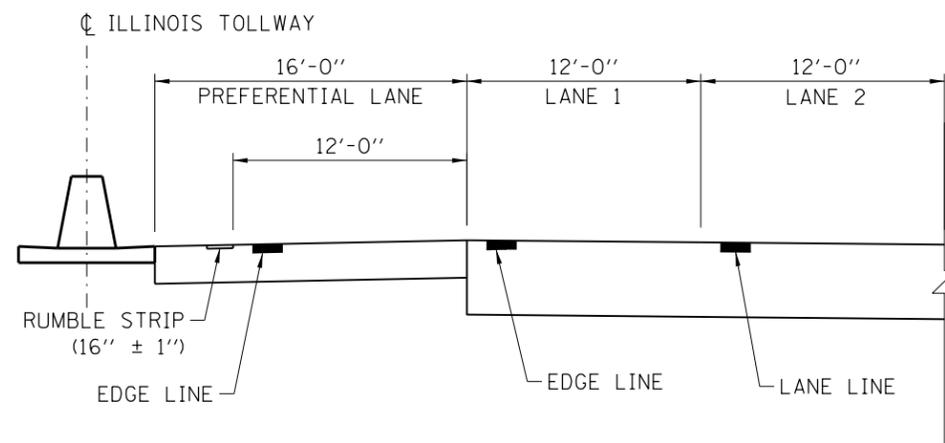


**PREFERENTIAL LANE RUMBLE STRIP PLACEMENT - PLAN VIEW**

USE WHEN SHOWN ON PLANS, MAINLINE MEDIAN SHOULDER IS AT LEAST 16' WIDE AND USED AS PREFERENTIAL LANE

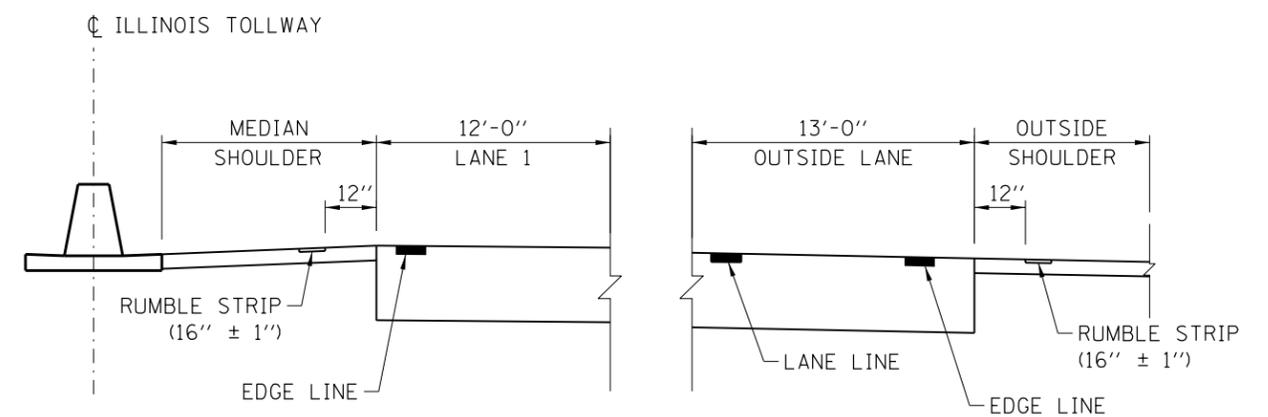


**TYPICAL MAINLINE RUMBLE STRIP PLACEMENT - PLAN VIEW**



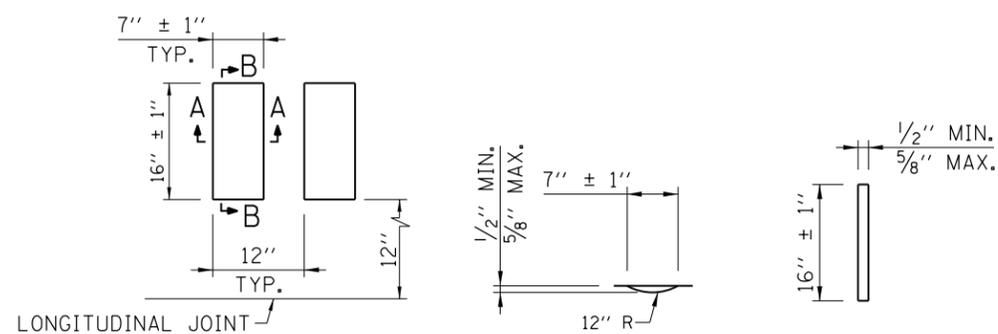
**SECTION C-C**

**PREFERENTIAL LANE RUMBLE STRIP PLACEMENT - SECTION VIEW**



**SECTION D-D**

**TYPICAL MAINLINE RUMBLE STRIP PLACEMENT - SECTION VIEW**

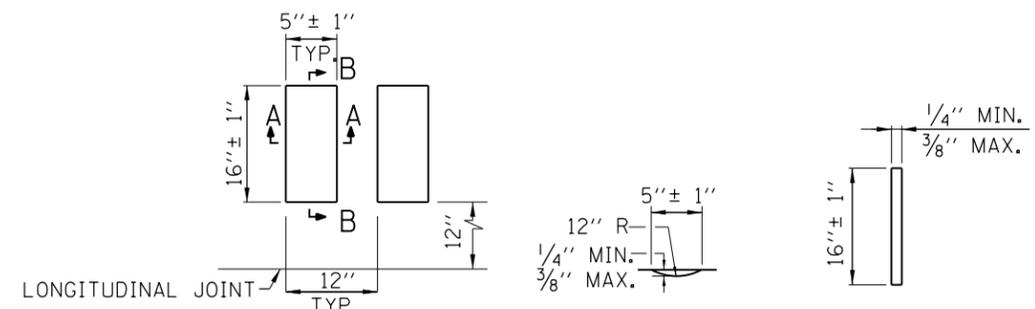


**PLAN DETAIL A**

**SECTION A-A**

**SECTION B-B**

**ASPHALT SHOULDER RUMBLE STRIP DETAILS**



**PLAN DETAIL A**

**SECTION A-A**

**SECTION B-B**

**CONCRETE SHOULDER RUMBLE STRIP DETAILS**

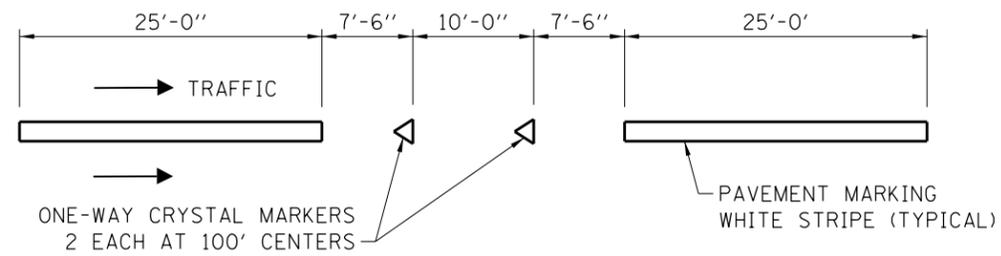
APPROVED BY: *Paul Kovacs*  
CHIEF ENGINEERING OFFICER  
DATE: 03/01/2021

DATE	REVISIONS
3-01-2022	REVISED EDGE LINES ON SECTIONS C-C & D-D

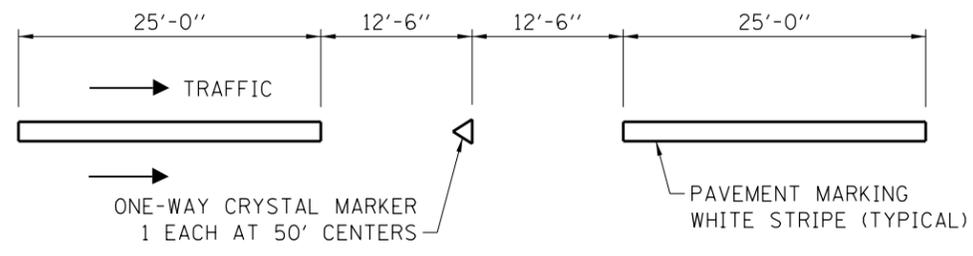


SHOULDER RUMBLE STRIP DETAILS

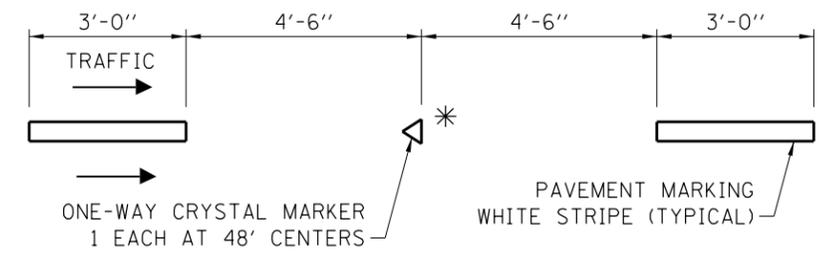
STANDARD D7-01



DETAIL A

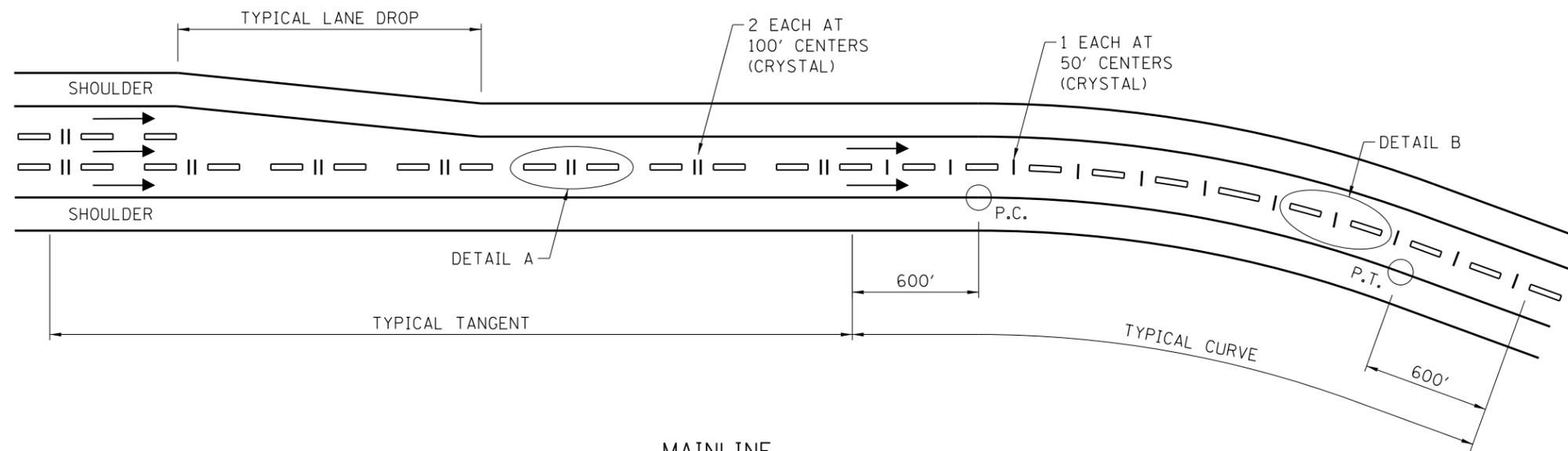


DETAIL B



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

DETAIL C



MAINLINE

RAISED PAVEMENT LANE MARKER DETAILS

NOTES:

1. USE OF RAISED PAVEMENT LANE MARKERS SHALL BE IN ACCORDANCE WITH THE IL TOLLWAY, ROADWAY SIGNING AND PAVEMENT MARKING GUIDELINES.
2. FOR COLLECTOR-DISTRIBUTOR (C-D) ROADWAYS, PLACE ONE-WAY CRYSTAL MARKER, 2 EACH AT 100' CENTERS. USE DETAIL A.
3. FOR MULTI LANE DIRECTIONAL RAMPS, PLACE ONE-WAY CRYSTAL MARKER, 1 EACH AT 50' CENTERS. USE DETAIL B.
4. FOR AUXILIARY LANES, PLACE ONE-WAY CRYSTAL MARKER, 1 EACH AT 48' CENTERS. USE DETAIL C.

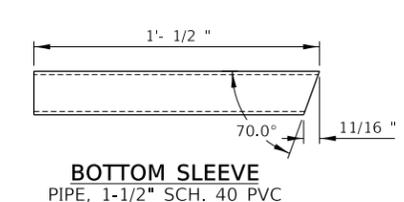
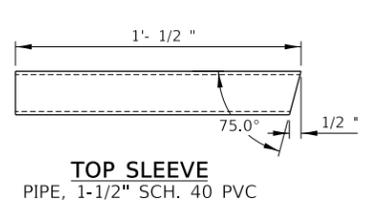
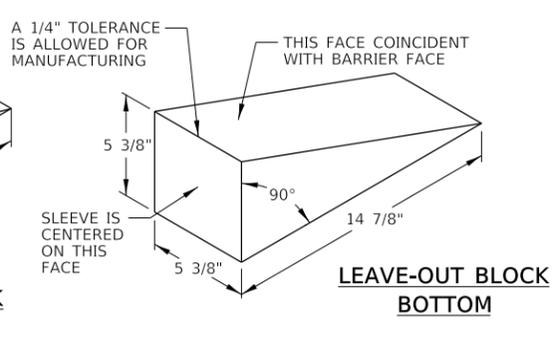
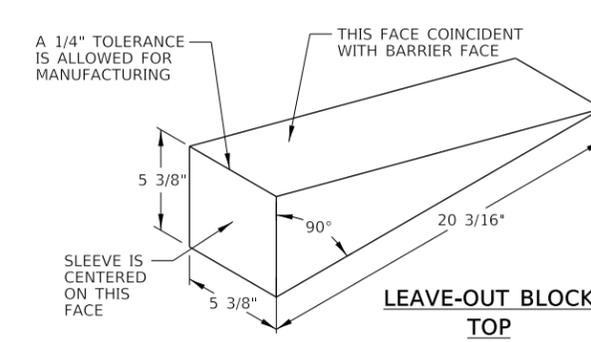
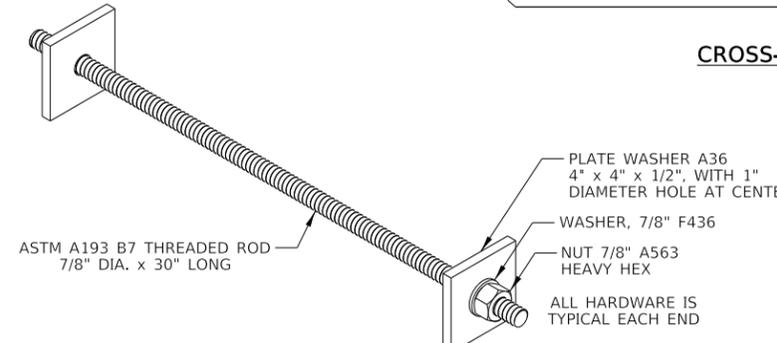
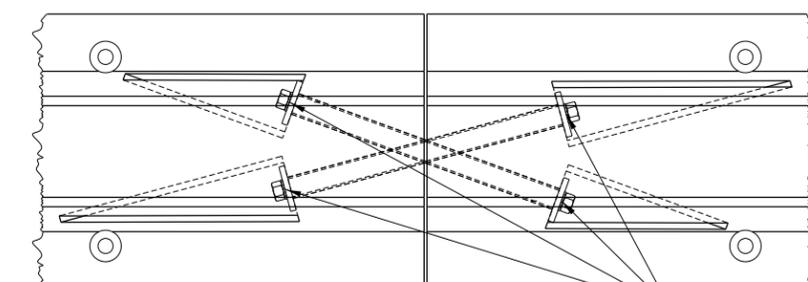
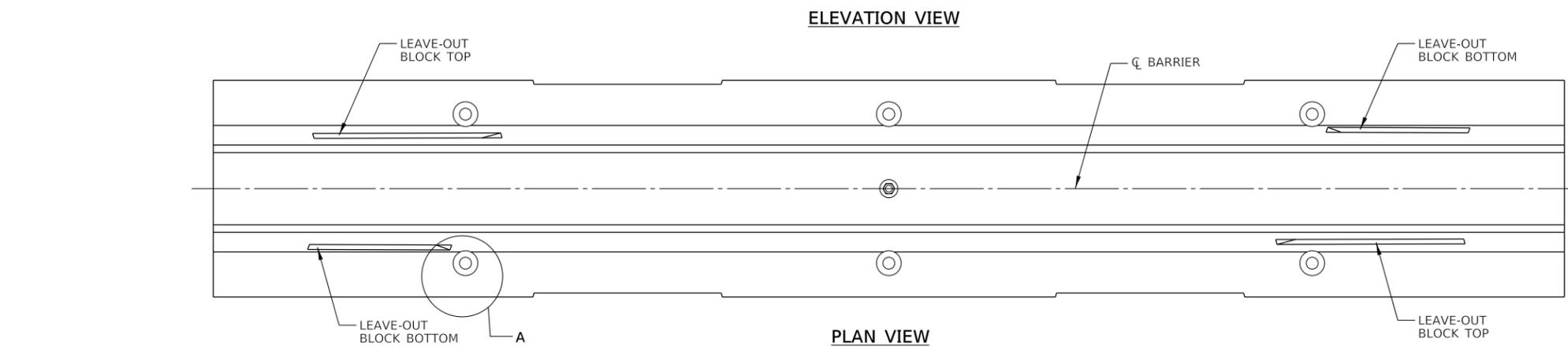
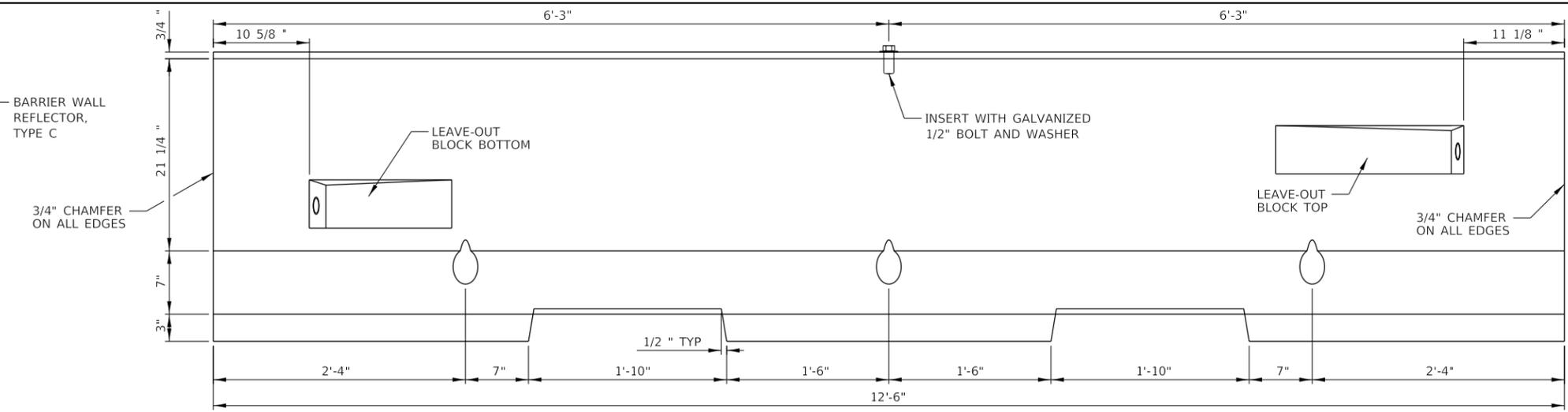
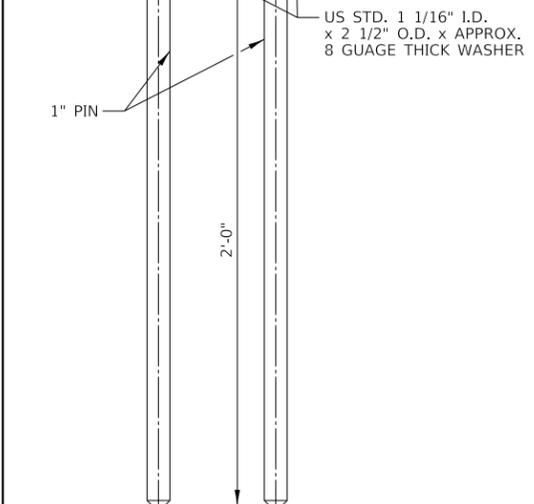
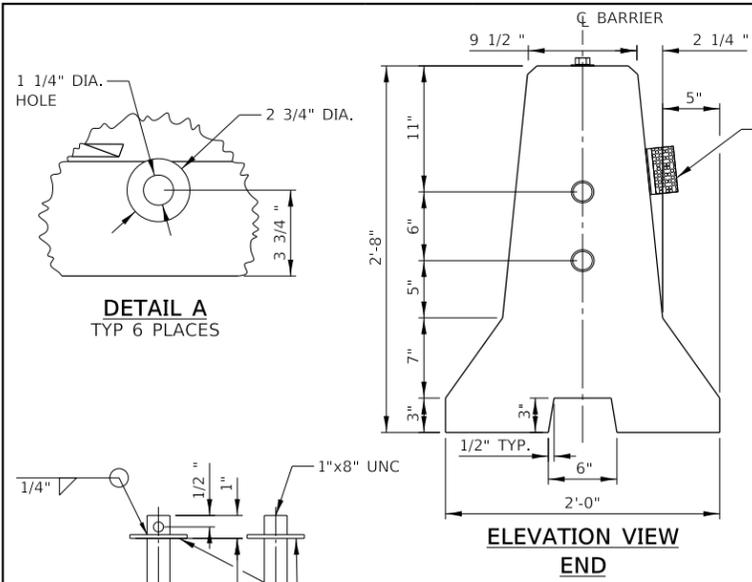
APPROVED BY: *Paul Kovacs*  
CHIEF ENGINEERING OFFICER  
 DATE: 07/01/2009

DATE	REVISIONS
3-01-2019	ADDED NEW NOTE 1
3-31-2016	REVISED NOTES 1.
11-01-2012	REVISED DETAIL C.



RAISED PAVEMENT  
LANE MARKER

STANDARD D8-03



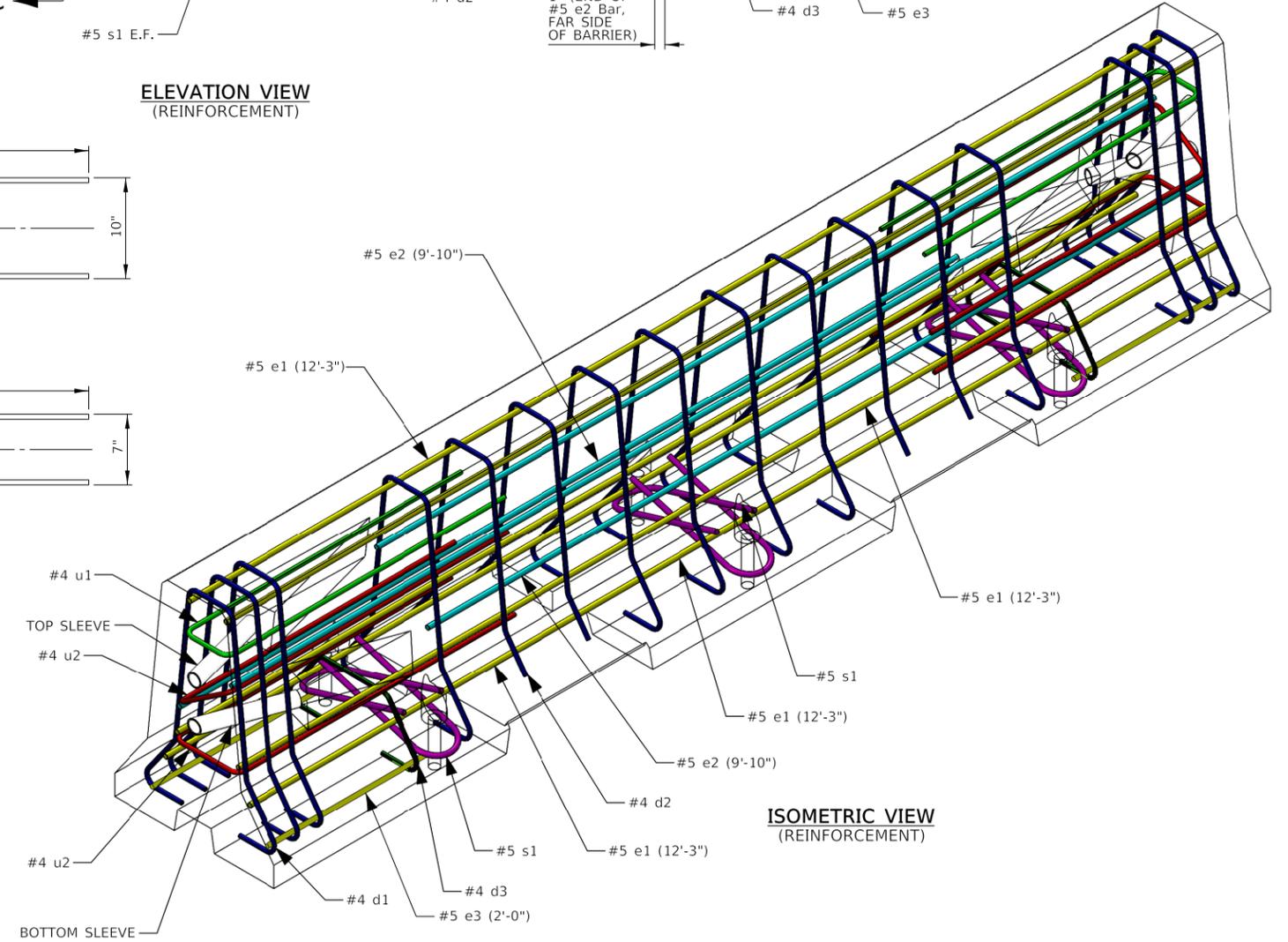
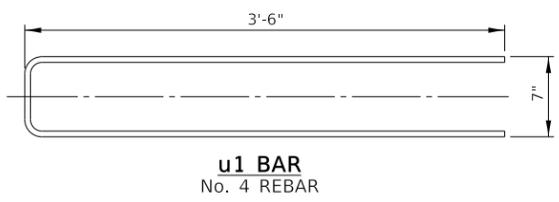
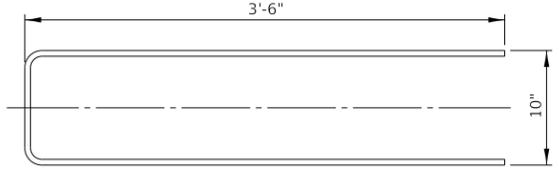
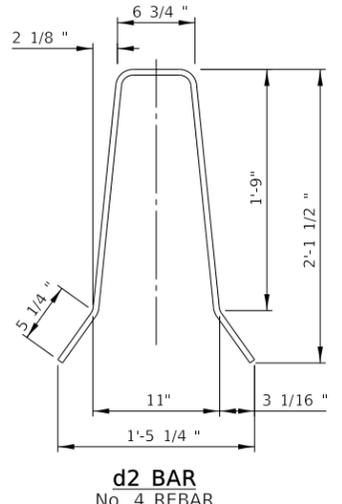
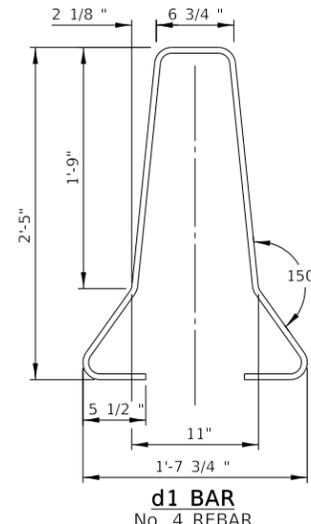
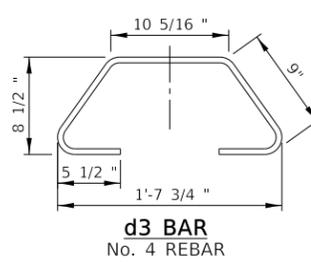
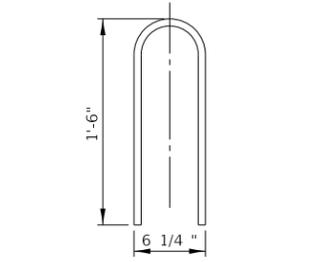
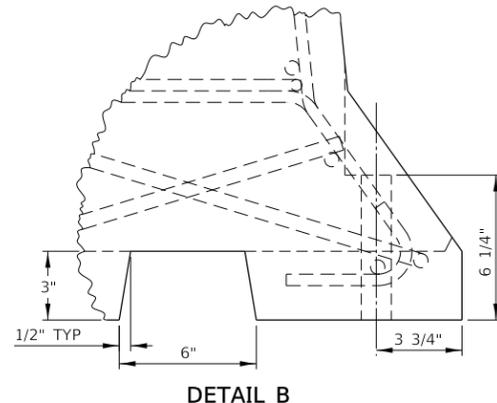
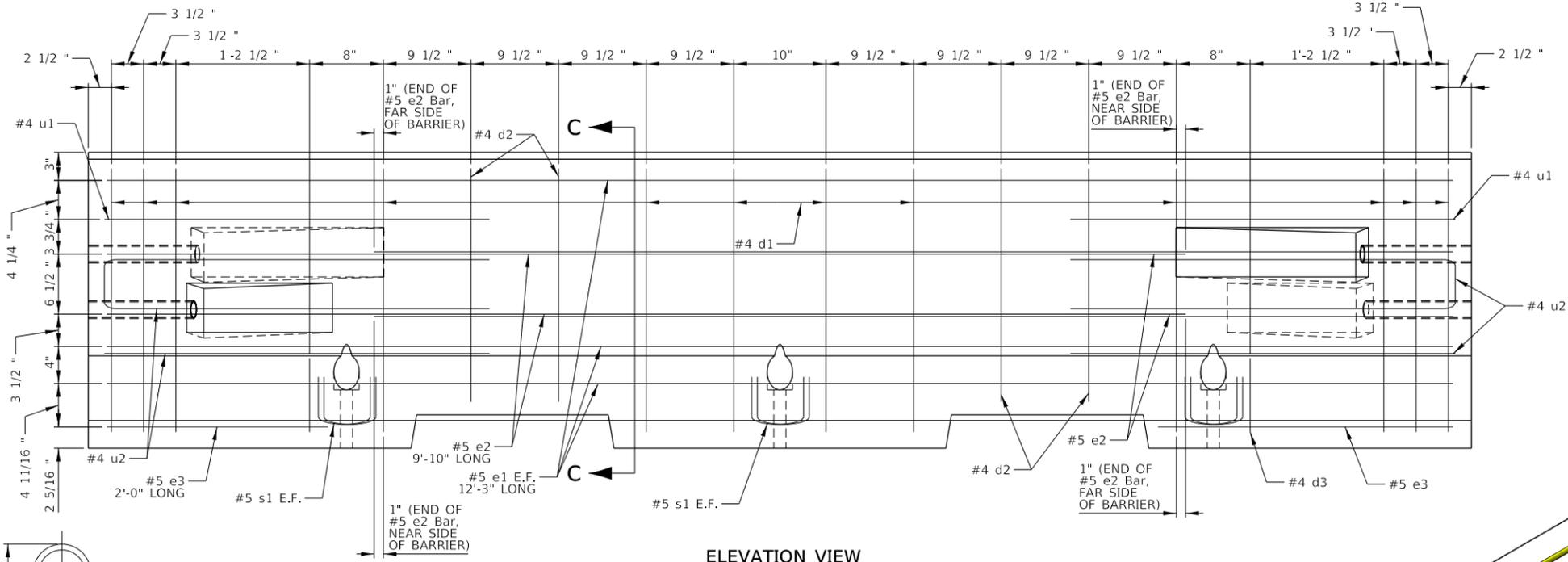
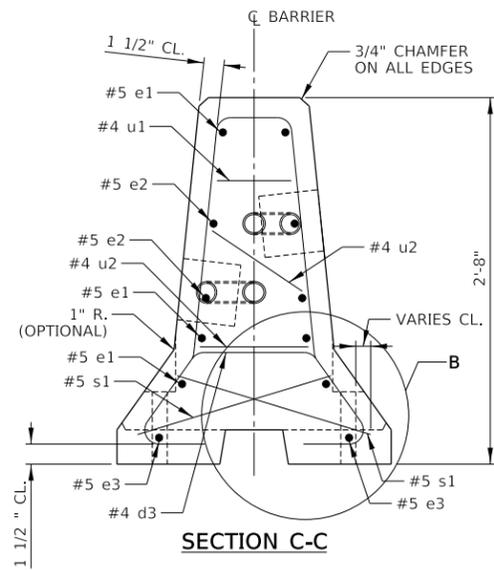
- NOTES**
- EACH F SHAPE BARRIER UNIT SHALL BE CLEARLY MARKED WITH "ILLINOIS TOLLWAY F SHAPE", THE PRODUCER'S MARK AND THE DATE OF MANUFACTURE. THE MARKING SHALL BE RECESSED IN THE BARRIER BY 1/2" OR PAINTED THEREON WITH WATERPROOF PAINT/INK.
  - THE INSERT FOR THE 1/2" BOLT AT THE TOP OF THE BARRIER SHALL BE CAPABLE OF 3000 LB PULL-OUT STRENGTH.
  - AT LOCATIONS WHERE THE BARRIER SEPARATES OPPOSING FLOWS OF TRAFFIC, TYPE C REFLECTORS SHALL BE ON BOTH SIDES OF BARRIER. SEE STANDARD D4 FOR DIMENSIONS OF TYPE C REFLECTOR.
  - ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER, EXCEPT WHERE SHOWN OTHERWISE.
  - REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.
  - REINFORCEMENT BAR BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315.
  - REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.
  - COVER (CL) IS 1-1/2" UNLESS OTHERWISE INDICATED.
  - CONCRETE SHALL BE PORTLAND CEMENT CONCRETE, CLASS PS (4000 PSI).
  - TWO OF EACH LEAVE-OUT BLOCK AND TWO OF EACH SLEEVE NEEDED FOR EACH BARRIER.

REVISIONS	
DATE	DESCRIPTION
03-01-2023	ADDED DIMENSION & LEAVE-OUT BLOCKS TO SECTION C-C, MOVED DETAIL B.
03-01-2022	REVISED NOTE 2.
03-01-2021	LEAVE-OUT BLOCKS ADDED TO ELEV. VIEW-END, AND TEXT TO PLAN VIEW.
	LEAVE-OUT BLOCK TOLERANCE ADDED.

**TEMPORARY CONCRETE BARRIER WITH CROSS-BOLT CONNECTION**

VERSION: 2023-03 STANDARD: D10-03 SHEET: 1 OF 2

APPROVED BY: *Manar Nashif* DATE: 03/01/2023  
CHIEF ENGINEERING OFFICER



APPROVED BY: *Manar Nashif*  
 CHIEF ENGINEERING OFFICER  
 DATE: 03/01/2023

**Illinois Tollway**

**TEMPORARY CONCRETE BARRIER WITH CROSS-BOLT CONNECTION**

VERSION: 2023-03      STANDARD: D10-03      SHEET: 2 OF 2