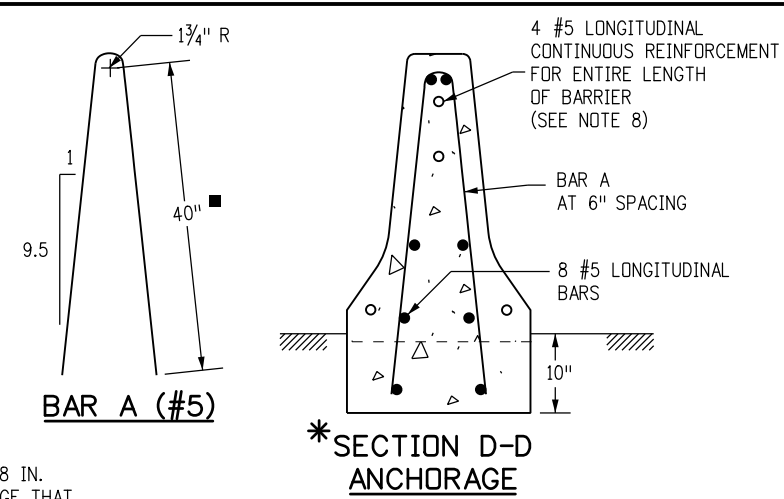
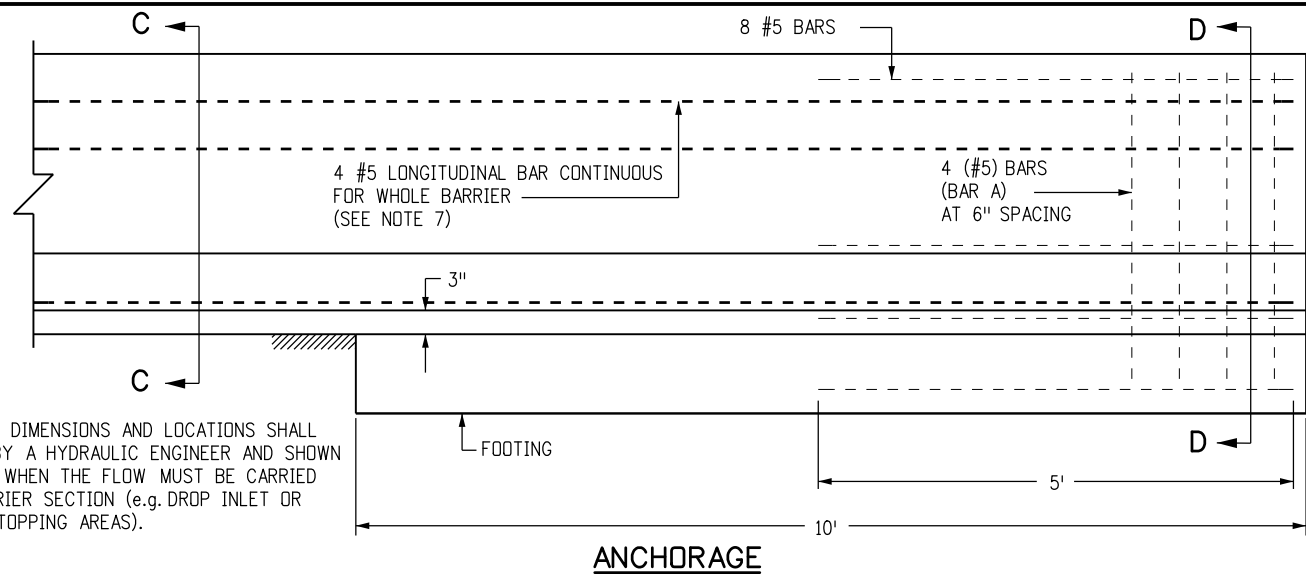


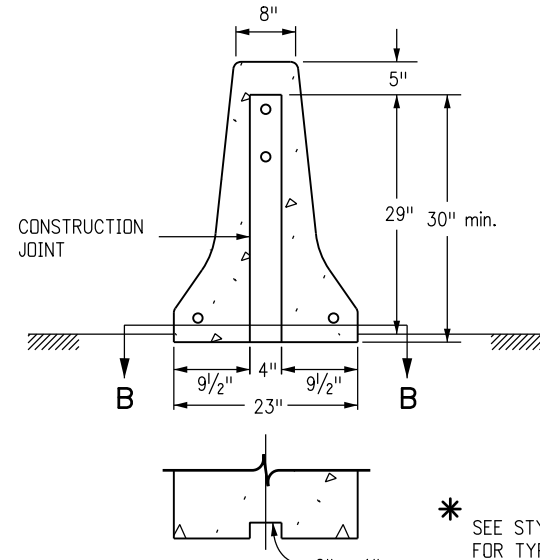
DRAINAGE SLOT DIMENSIONS AND LOCATIONS SHALL BE PROVIDED BY A HYDRAULIC ENGINEER AND SHOWN ON THE PLANS WHEN THE FLOW MUST BE CARRIED ACROSS A BARRIER SECTION (e.g. DROP INLET OR CULVERT OVERTOPPING AREAS).



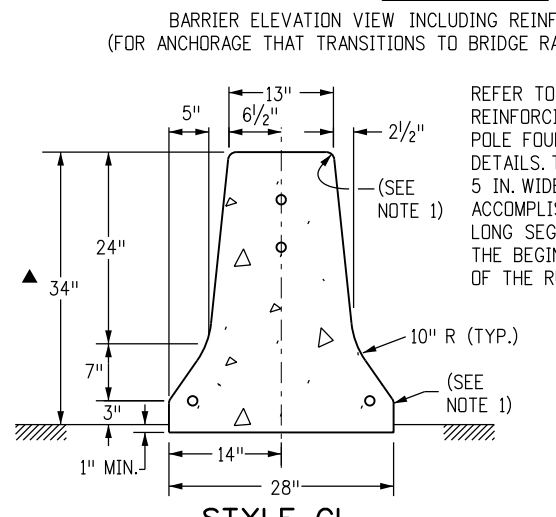
SHALL BE 38 IN. IN ANCHORAGE THAT TRANSITIONS FROM TYPE 7 TO TYPE 3G-THRIE BEAM (SEE SHEET 2)

**GENERAL NOTES**

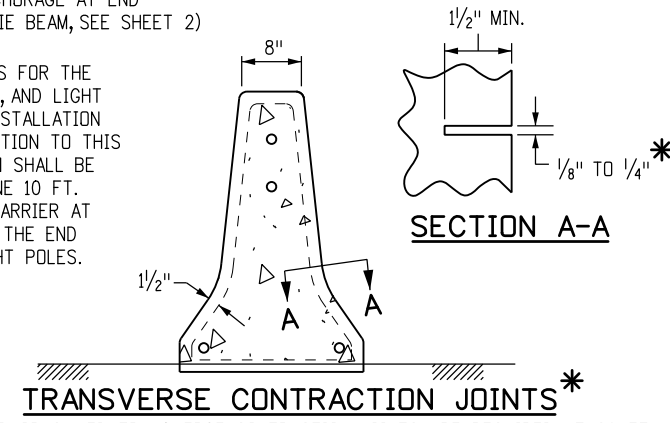
- ALL EDGES SHALL BE ROUNDED WITH A 1 IN. RADIUS EXCEPT AS SHOWN.
- THE BARRIER SHALL BE ANCHORED AT THE ENDS AND AT INTERRUPTIONS WITH THE 10 FT. REINFORCED ANCHORAGE. THE FOOTING AND END BARRIER MAY BE MONOLITHIC OR THE BARRIER MAY BE CONNECTED TO THE 10 IN. DEEP FOOTING USING TEN #8 REBAR DOWELS (10 IN. LONG) SET TWO IN LINE AT 24 IN. SPACING.
- BARRIER MAY BE CAST-IN-PLACE, SLIP FORMED, OR PRECAST (SEE STANDARD PLAN M-606-14).
- BARRIER FOUNDATION SHALL BE PAVEMENT, OR COMPACTED AGGREGATE BASE, OR EMBANKMENT MATERIAL.
- NO FOOTING IS REQUIRED (TYP.) EXCEPT FOR 10 FT. ANCHORAGE.
- CONSTRUCTION JOINTS SHALL BE USED ON ALL BARRIER TYPES SHOWN, AT THE END OF THE DAY'S POUR OR AFTER ANY INTERRUPTION LONGER THAN 30 MINUTES. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS Poured.
- REINFORCING STEEL IN ANCHORAGE SHALL BE GRADE 60 EPOXY COATED DEFORMED BARS.
- CONTINUOUS LONGITUDINAL REINFORCEMENT SHALL BE EITHER GRADE 60 EPOXY COATED DEFORMED BARS OR WIRE STRAND WITH MINIMUM ULTIMATE TENSILE STRENGTH OF 28,000 LBS. AND CLASS C GALVANIZING ACCORDING TO ASTM A 603.
- TRANSITION TO EXISTING CONCRETE BARRIER INSTALLATIONS OF DISSIMILAR SHAPE SHALL BE ACCOMPLISHED IN ONE 10 FT. LONG SEGMENT OF BARRIER.
- CONCRETE SHALL BE CLASS D.
- ADDITIONAL MATERIAL FOR BARRIER EMBEDMENT GREATER THAN 1 IN. WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- EPOXY COATED LONGITUDINAL REBAR SHALL HAVE A MINIMUM LAP SPLICE OF 38 IN. WIRE STRAND LONGITUDINAL REINFORCEMENT SHALL BE BUTT WELDED OR MECHANICALLY SPLICED TO MAINTAIN 100 PERCENT OF THE MINIMUM REQUIRED TENSILE STRENGTH.
- ALL INCIDENTAL WORK AND MATERIAL SUCH AS DOWELS, GROUT, ANCHORS, BOLTS, PINS, JOINT MATERIAL, EXCAVATION FOR BASES, CONTINUOUS LONGITUDINAL REINFORCEMENT, SHALL BE INCLUDED IN THE COST OF GUARDRAIL.
- RETROREFLECTORIZATION IS REQUIRED ON ALL BARRIER TYPES. SEE BARRIER RETROREFLECTOR NOTES ON STANDARD PLAN S-612-1.



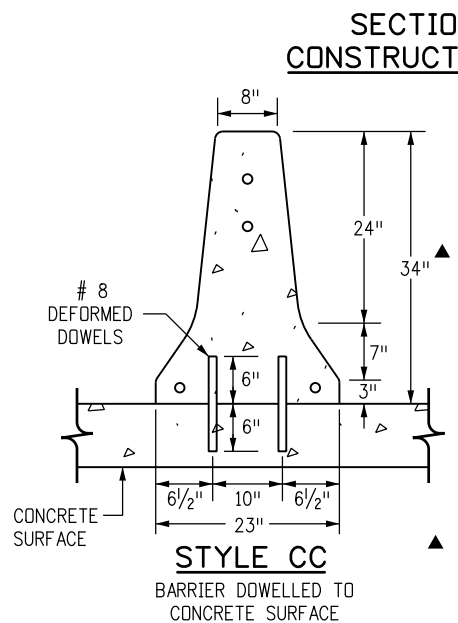
SEE STYLE CA DETAIL FOR TYPICAL DIMENSIONS.



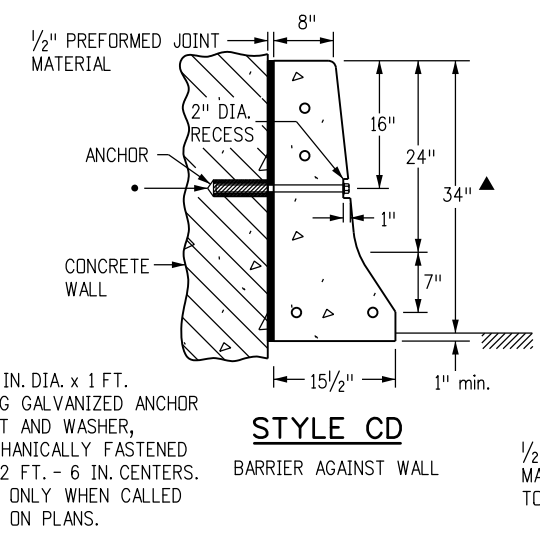
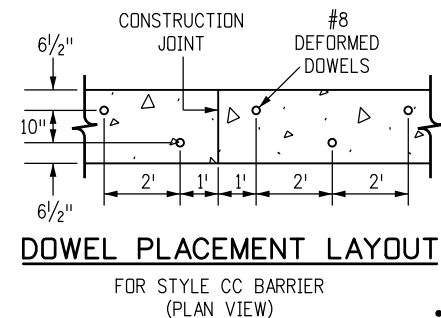
REFER TO THE PLANS FOR THE REINFORCING, WIRING, AND LIGHT POLE FOUNDATION INSTALLATION DETAILS. THE TRANSITION TO THIS 5 IN. WIDER SECTION SHALL BE ACCOMPLISHED IN ONE 10 FT. LONG SEGMENT OF BARRIER AT THE BEGINNING AND THE END OF THE RUN OF LIGHT POLES.



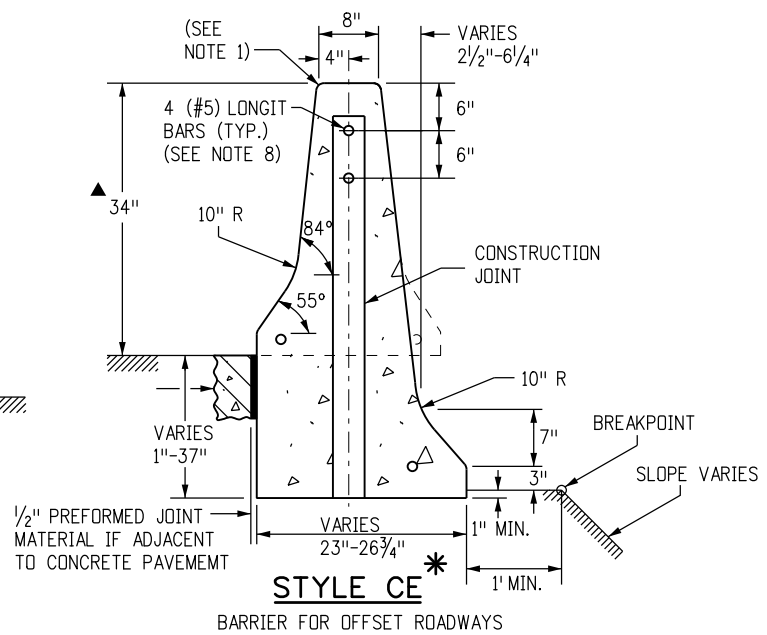
FORMED OR SAWED TRANSVERSE CONTRACTION JOINTS ARE REQUIRED AT 20 FT. INTERVALS OR THE INTERVALS SHALL MATCH THE CONCRETE PAVEMENT JOINTS FOR INSTALLATIONS ON TOP OF THE CONCRETE ROADWAY PAVEMENT.



IN FUTURE OVERLAYS, AN OVERALL MINIMUM HEIGHT OF 31 IN. IS REQUIRED.



1/2 IN. DIA. x 1 FT. LONG GALVANIZED ANCHOR BOLT AND WASHER, MECHANICALLY FASTENED AT 2 FT. - 6 IN. CENTERS. USE ONLY WHEN CALLED FOR ON PLANS.



**Computer File Information**

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**Sheet Revisions**

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08/30/13	Revised Sheet 2 of 4.

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**GUARDRAIL TYPE 7**

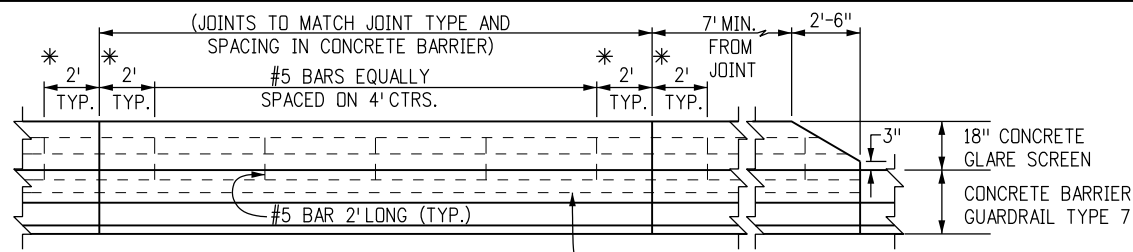
**F-SHAPE BARRIER**

Issued By: Project Development Branch July 4, 2012

**STANDARD PLAN NO.**

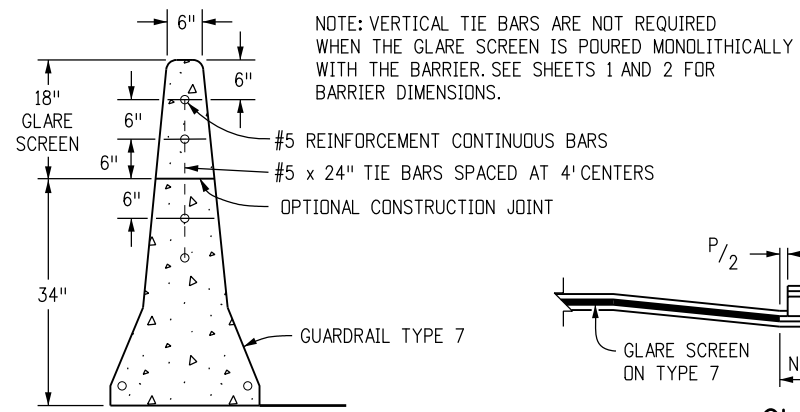
M-606-13

Sheet No. 1 of 4

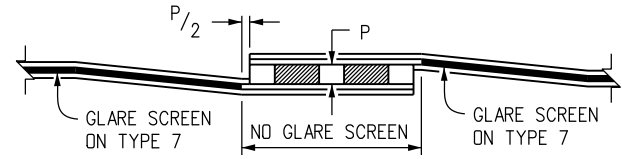


**ELEVATION** #5 REINFORCEMENT CONTINUOUS BARS

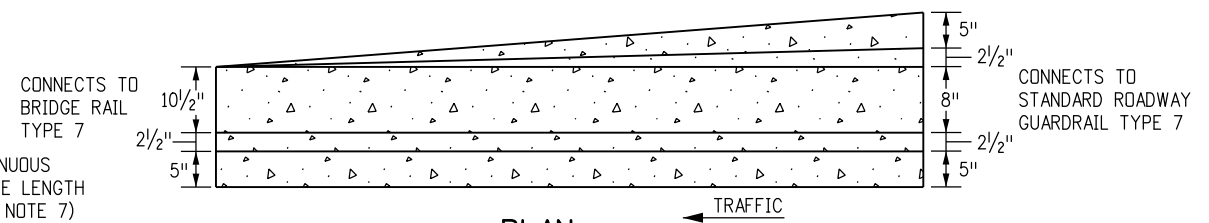
\* 2 FT. IS TYPICAL FOR CAST-IN-PLACE BARRIERS.  
1 FT. IS TYPICAL FOR PRECAST BARRIERS.  
THE MINIMUM ACCEPTABLE DIMENSION IS 6 IN.



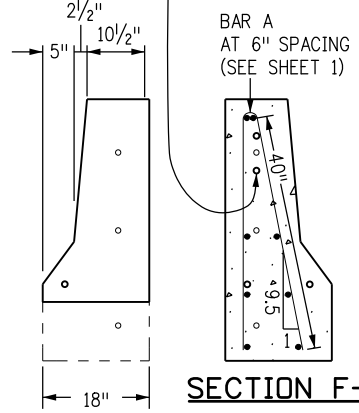
**CONCRETE GLARE SCREEN**



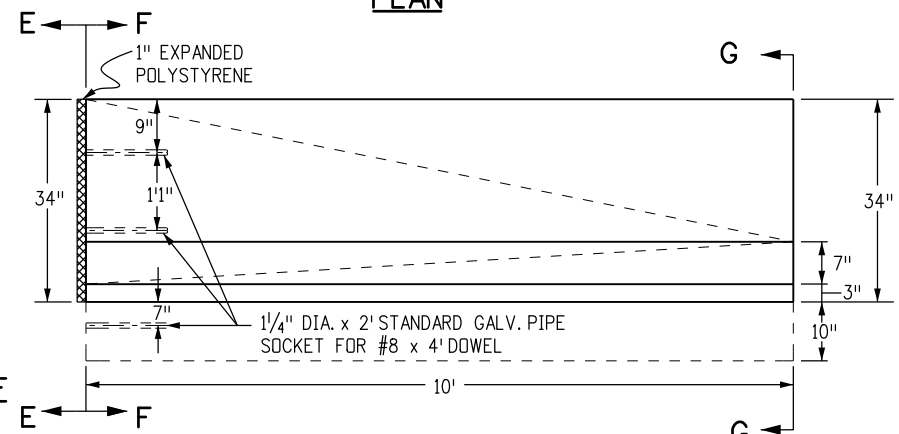
**GLARE SCREEN AT MEDIAN OBSTRUCTIONS**



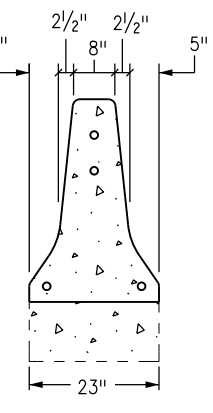
**PLAN**



**SECTION E-E**



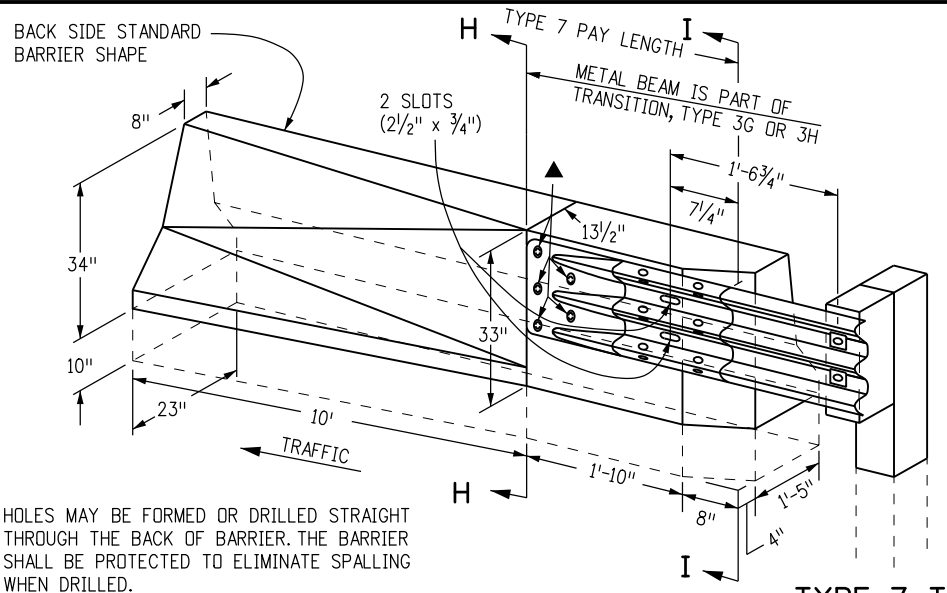
**ELEVATION**



**SECTION G-G**

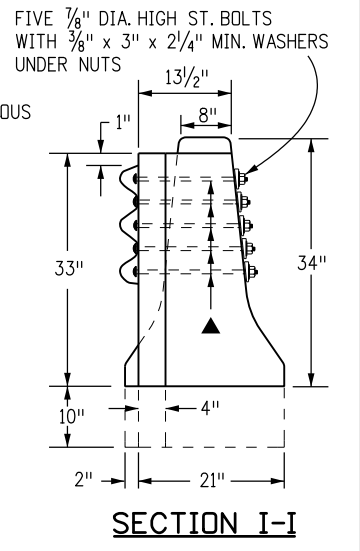
THIS SECTION PROVIDES A TRANSITION FOR THE SHAPE OF THE BRIDGE RAIL TYPE 7 TO THE ROADWAY GUARDRAIL TYPE 7. MEASURED AND PAID FOR AS GUARDRAIL TYPE 7. (SEE ANCHORAGE DETAIL ON SHEET 1 FOR REINFORCEMENT INFORMATION)

**BRIDGE RAIL TYPE 7 TO ROADWAY SHOULDER TYPE 7 TRANSITION AND ANCHORAGE**



▲ HOLES MAY BE FORMED OR DRILLED STRAIGHT THROUGH THE BACK OF BARRIER. THE BARRIER SHALL BE PROTECTED TO ELIMINATE SPALLING WHEN DRILLED.

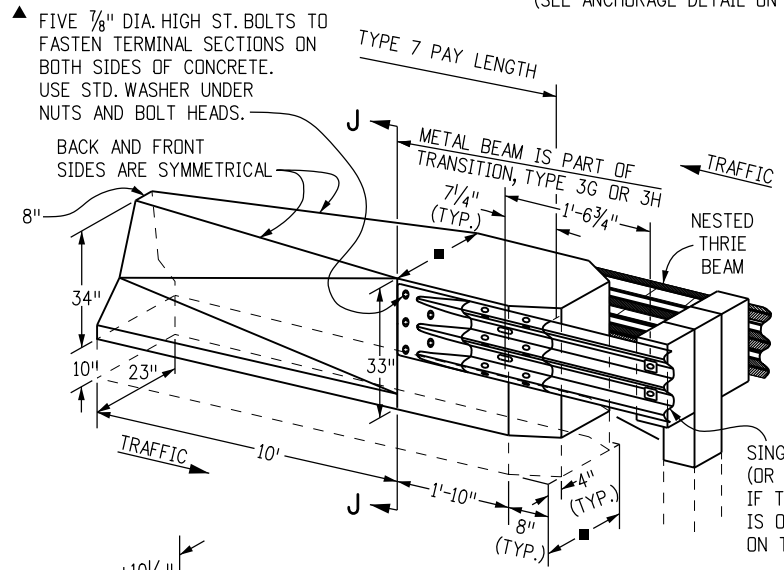
**SECTION H-H**



**SECTION I-I**

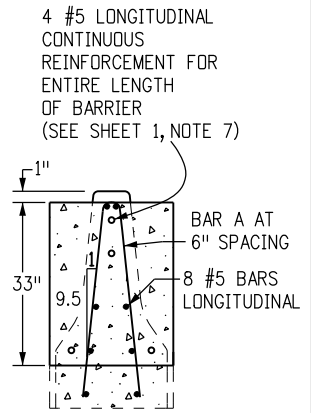
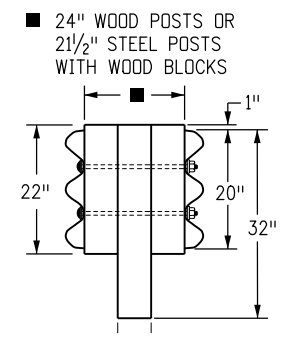
**TYPE 7 TO SINGLE TYPE 3G TRANSITION AND ANCHORAGE**

(SEE ANCHORAGE DETAIL ON SHEET 1 FOR REINFORCEMENT INFORMATION)



**TYPE 7 TO DOUBLE TYPE 3G TRANSITION AND ANCHORAGE**

(SEE ANCHORAGE DETAIL ON SHEET 1 FOR REINFORCEMENT INFORMATION)



**SECTION J-J**

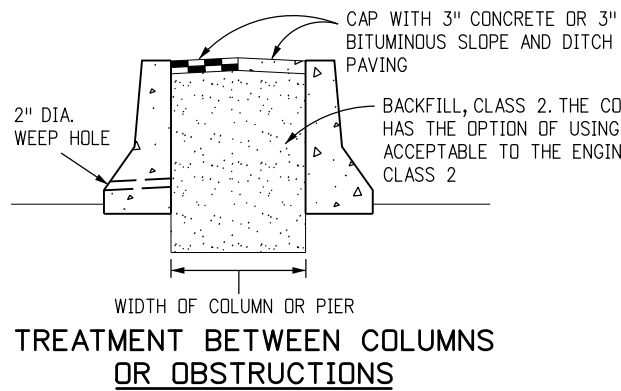
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Drawing File Name: 6060130204.dgn	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

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08/30/13	Revised some dimensions in the Type 7 to Type 3G transition details for consistency with M-606-1, Guardrail Type 3 W-Beam.

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**GUARDRAIL TYPE 7**  
**F-SHAPE BARRIER**  
 Issued By: Project Development Branch July 4, 2012

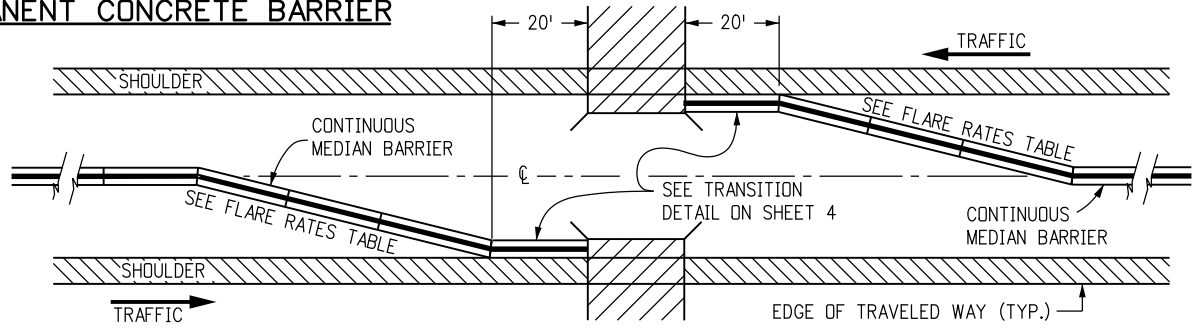
STANDARD PLAN NO.  
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 Sheet No. 2 of 4



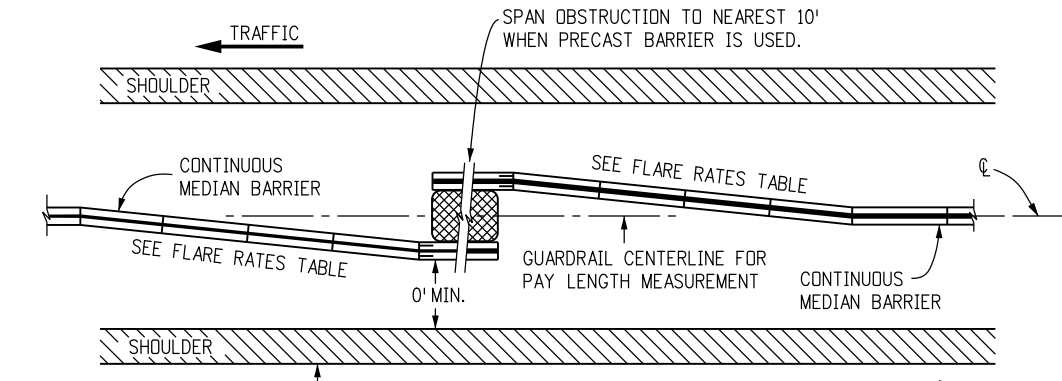
DESIGN SPEED (MPH)	SHY LINE OFFSET (FT.)*	FLARE RATE FOR BARRIER INSIDE SHY LINE	FLARE RATE FOR BARRIER OUTSIDE SHY LINE
80	12	30:1	20:1
75	10	30:1	20:1
70	9	30:1	20:1
60	8	26:1	18:1
55	7	24:1	16:1
50	6.5	21:1	14:1
45	6	18:1	12:1
40	5	16:1	10:1
30	4	13:1	8:1

- NOTES**
1. THE MEDIAN IN THESE APPLICATIONS SHALL BE PAVED ON A SLOPE CONTINUED FROM THE ADJACENT PAVED SHOULDER OR A 10:1 OR FLATTER SLOPE.
  2. THE PAY LENGTH FOR BARRIER ON BOTH SIDES OF AN OBSTRUCTION WILL BE DETERMINED BY ONE LINEAR MEASUREMENT ALONG THE GUARDRAIL CENTERLINE. THE BACKFILL AND CAP BETWEEN COLUMNS OR OBSTRUCTIONS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
  3. GUARDRAIL BETWEEN COLUMNS OR OBSTRUCTIONS MAY BE STYLES CD OR CA AS SHOWN ON THE PLANS.

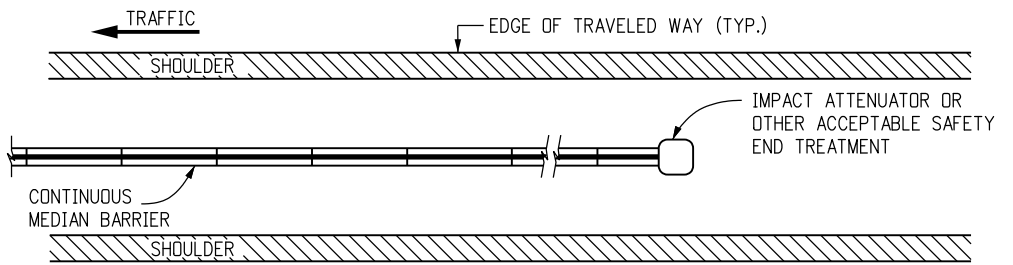
**TABLE OF FLARE RATES FOR PERMANENT CONCRETE BARRIER**



**BRIDGE APPROACH**

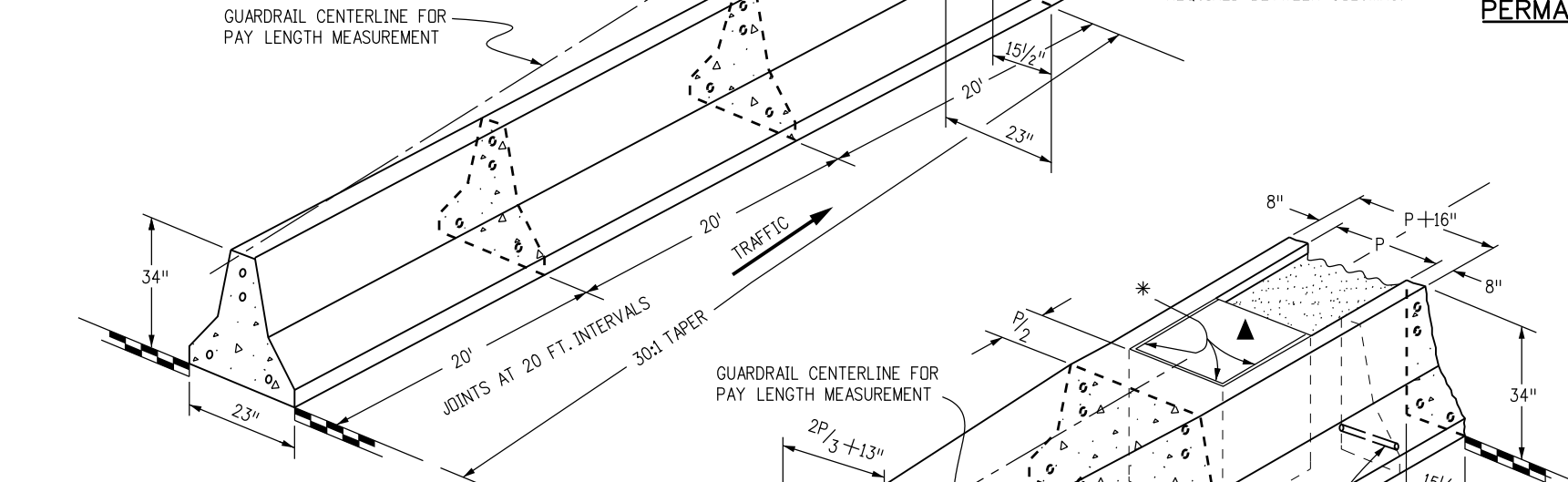


**STYLE CA AT OBSTRUCTION**  
(OBSTRUCTION NOT SUITABLE FOR TYPE CD)



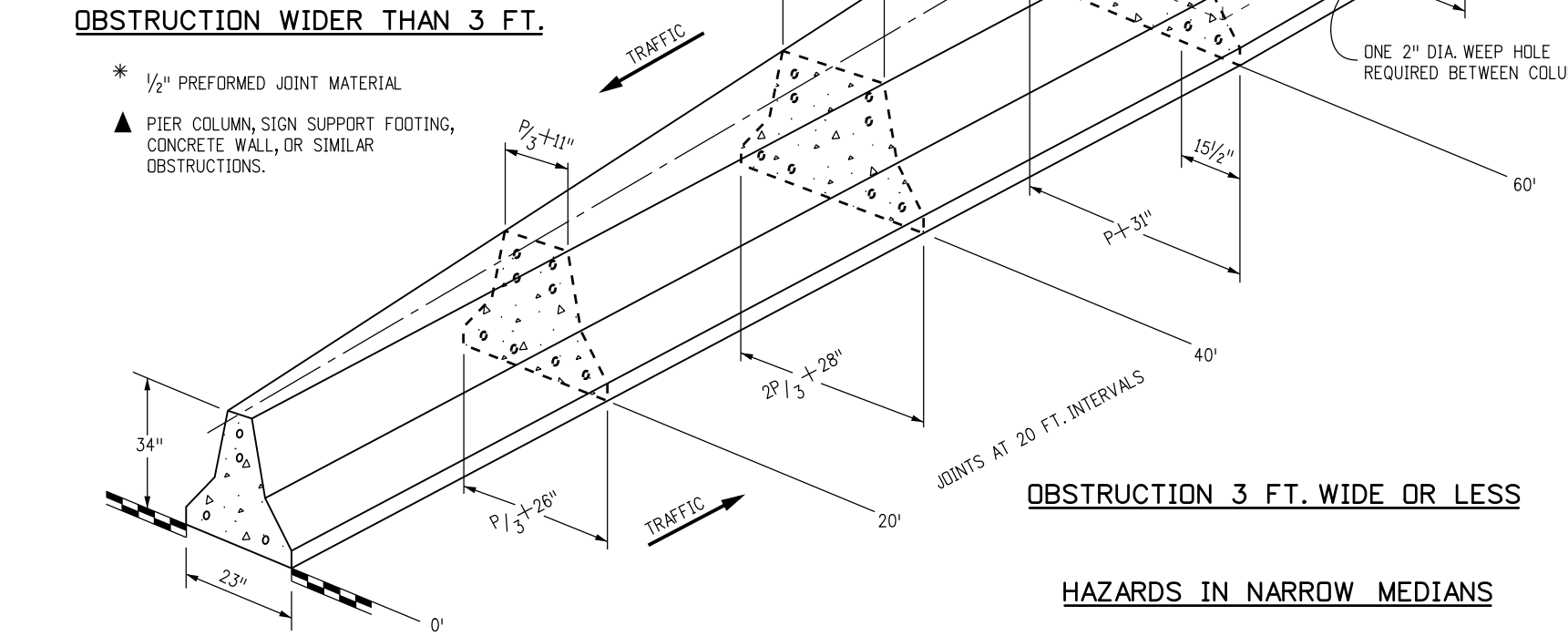
**MEDIAN BARRIER END TREATMENT**

**TREATMENT BETWEEN COLUMNS OR OBSTRUCTIONS**



**OBSTRUCTION WIDER THAN 3 FT.**

- \* 1/2" PREFORMED JOINT MATERIAL
- ▲ PIER COLUMN, SIGN SUPPORT FOOTING, CONCRETE WALL, OR SIMILAR OBSTRUCTIONS.



**OBSTRUCTION 3 FT. WIDE OR LESS**

**HAZARDS IN NARROW MEDIANS**

**Computer File Information**

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Drawing File Name: 6060130304.dgn	
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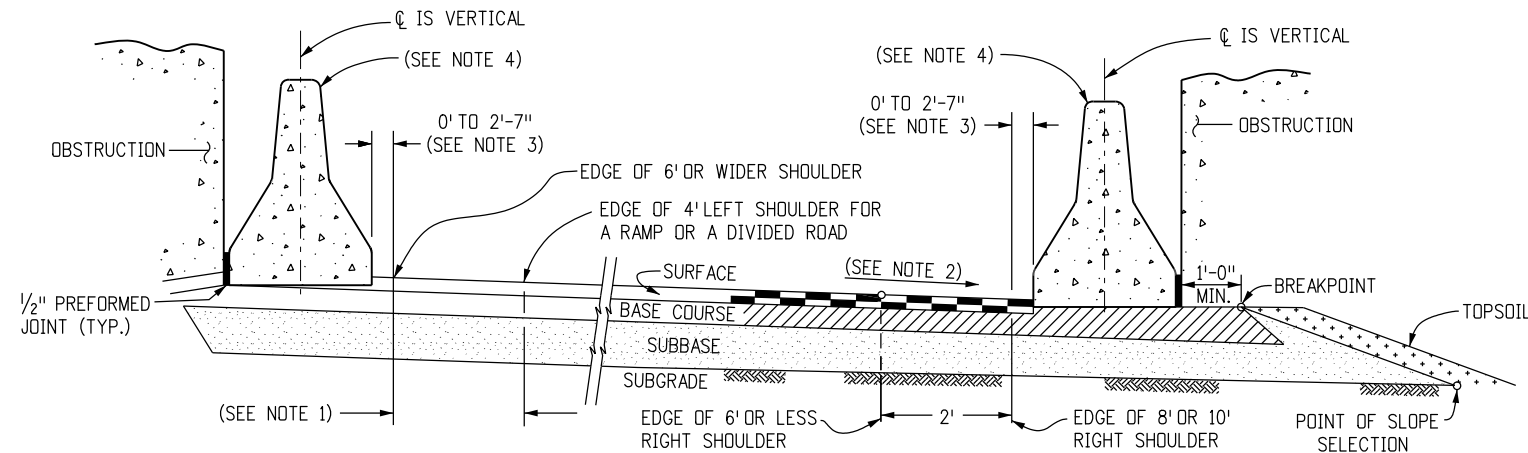
**Sheet Revisions**

Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

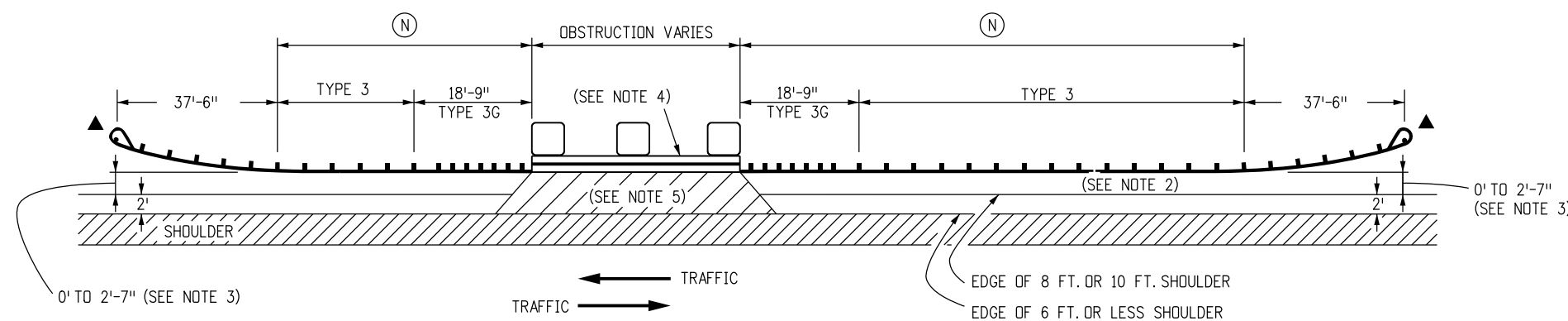
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**GUARDRAIL TYPE 7  
F-SHAPE BARRIER**  
 Issued By: Project Development Branch July 4, 2012

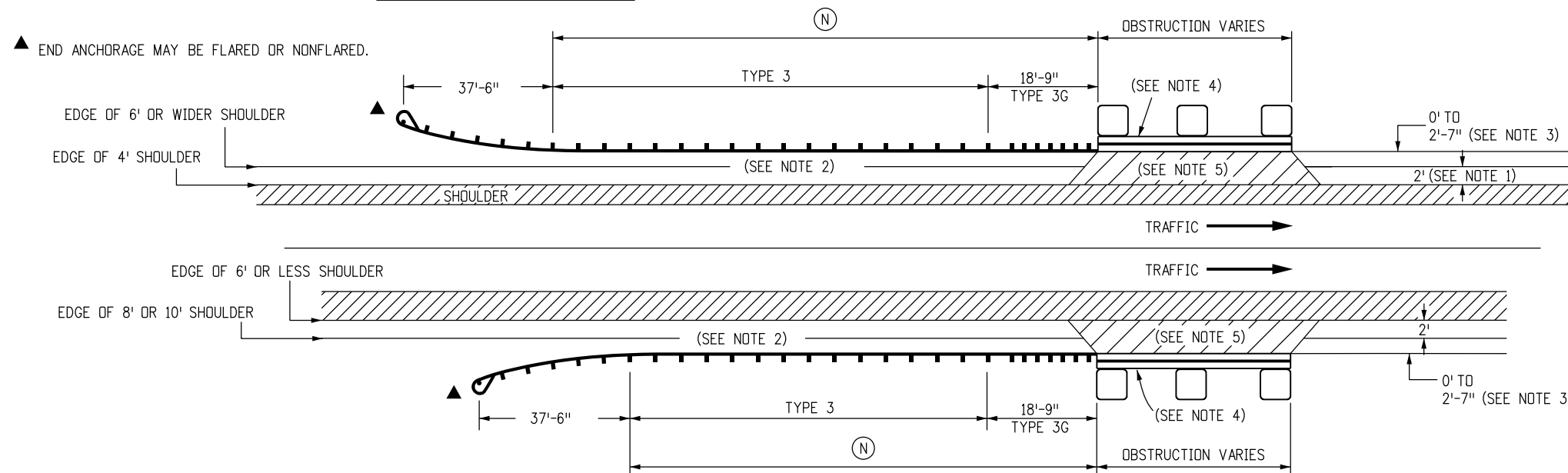
**STANDARD PLAN NO.**  
 M-606-13  
 Sheet No. 3 of 4



**TYPE 7 ON LEFT AND RIGHT SHOULDERS AT OBSTRUCTIONS**



**2-LANE 2-WAY ROADS**



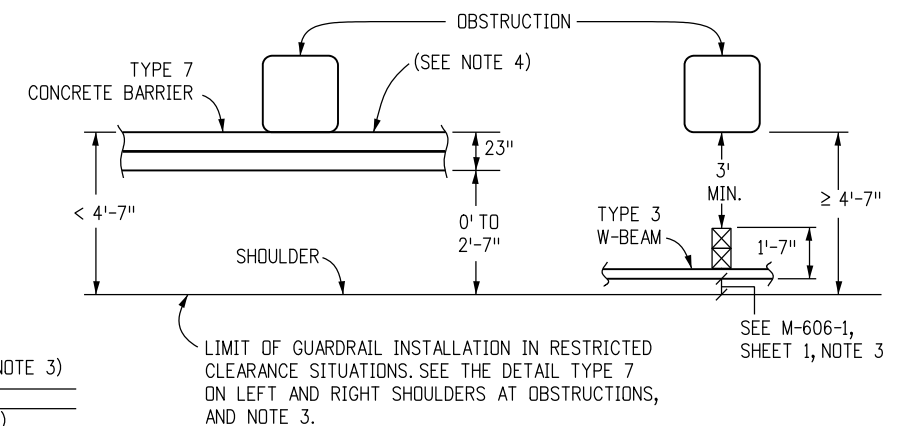
**DIRECTIONAL ROADWAYS AND RAMP**

**HAZARDS ON ROADSIDES**

**NOTES**

1. TWO FT. IS DESIRABLE FOR THIS DIMENSION WITH A 4 FT. LEFT SHOULDER. THE MINIMUM IS 0 FT., WHICH IS ACCEPTABLE FOR 6 FT. OR WIDER SHOULDERS.
2. RATE OF SLOPE DEPENDS ON GUARDRAIL LOCATION:
  - A. FOR GUARDRAIL FACE 2 FT. OR LESS FROM THE NORMAL EDGE OF PAVED SHOULDER, CONTINUE THE RATE OF SLOPE OF THE NORMAL PAVED SHOULDER TO THE BREAKPOINT.
  - B. FOR GUARDRAIL FACE MORE THAN 2 FT. FROM THE NORMAL EDGE OF THE PAVED SHOULDER, THE SLOPE SHALL BE 10:1 OR FLATTER.
3. IF THE DISTANCE FROM THE EDGE OF SHOULDER TO THE OBSTRUCTION EXCEEDS 4 FT.-7 IN., TYPE 3-W BEAM GUARDRAIL MAY BE SPECIFIED ON THE PLANS INSTEAD OF TYPE 7 (SEE PLANS, AND DETAIL BELOW).
4. STYLE CA BARRIERS ARE SHOWN. STYLE CD MAY BE USED AS APPROPRIATE. SEE SHEET 2 FOR TYPE 7 TO SINGLE TYPE 3G TRANSITION.
5. THE AREA BETWEEN SHOULDER AND THE TYPE 7 SHALL BE PAVED. PAYMENT FOR THE PAVED SURFACE WILL BE MADE UNDER A PAVEMENT PAY ITEM, HMA OR CONCRETE, WITH QUANTITIES SHOWN ON THE PLANS.

(N) THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND AS SHOWN ON THE PLANS. MINIMUM SHALL BE 12 FT.-6 IN. WHERE SITE CONDITIONS ALLOW.



Computer File Information	
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(R-X)	
(R-X)	
(R-X)	

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**GUARDRAIL TYPE 7  
 F-SHAPE BARRIER**  
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STANDARD PLAN NO.  
**M-606-13**  
 Sheet No. 4 of 4