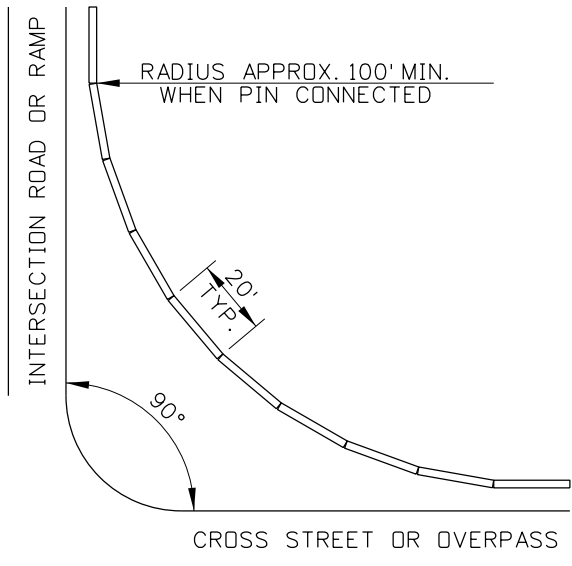
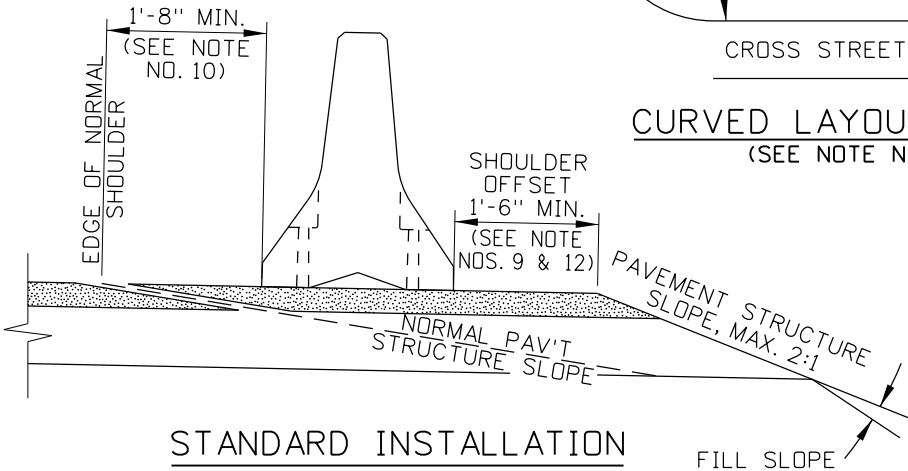


ANCHORING ASSEMBLY DETAIL
(SEE NOTE NOS. 11 AND 12)

CONCRETE BARRIER SHY-LINE OFFSET AND FLARE RATE TABLE			
DESIGN SPEED (MPH)	SHY-LINE OFFSET (FT)	BARRIER FLARE RATE	
		INSIDE SHY LINE	AT OR BEYOND SHY LINE
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



CURVED LAYOUT DETAIL
(SEE NOTE NO. 7)



STANDARD INSTALLATION

REINFORCING STEEL TABLE (SEE NOTE NOS. 2 & 3)				
MARK	LOCATION	BAR SIZE	NUMBER OF BARS	SKETCH
H-1	HORIZONTAL IN BARRIER - TIED INSIDE V-1 BARS	NO. 5	6	19'-3"
H-2	CENTERED ABOVE SCUPPERS LONG. & TRANSVERSELY	NO. 5	6	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2 - TIED TO V-1	NO. 4	2	1'-6"
S-1	HORIZ. IN TOP OF WING WALL & IN FLOOR BACK WALL	NO. 4	2	2'-9" LIFTING HOLE 3 3/8" R 90°
S-2	HORIZONTAL AROUND SLOTS - BETWEEN V-1'S AT SCUPPERS	NO. 4	2	5'3" TOTAL BAR LENGTH 1'-6 1/2" 1' MIN. OVRLP. 1 1/2" R (TYP.) 1" MIN. COVER SLOTS
V-1	VERTICAL IN BARRIER - 3 AT EACH END AND 2 AT EACH SCUPPER	NO. 5	16	4'-9" TOTAL BAR LENGTH 2" R 12° 25 1/2" ±10"

NOTES

1. PRECAST USING CONCRETE CLASS 40A. ENSURE THAT REINFORCING STEEL IS IN ACCORDANCE WITH SECTION 708 - METALS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. PROVIDE 2" MINIMUM CONCRETE COVER OVER REINFORCING STEEL UNLESS OTHERWISE NOTED.
2. ENSURE THAT REINFORCING STEEL BENDS ARE MADE IN ACCORDANCE WITH THE LATEST A.C.I. STANDARD PRACTICES AND AASHTO SPECIFICATIONS.
3. THE DIMENSIONS SHOWN IN THE REINFORCING STEEL TABLE ARE MEASURED FROM OUTSIDE-TO-OUTSIDE (O. TO O.) OF BENDS OR BAR ENDS UNLESS OTHERWISE NOTED.
4. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED, LEAVE THE PVC SLEEVE IN PLACE.
5. TERMINATE THE BARRIER WITH A CRASHWORTHY TERMINAL. ACCEPTABLE TERMINALS MAY INCLUDE TAPERING THE BARRIER OUTSIDE OF THE CLEAR ZONE, CONNECTION TO W-BEAM OR THRIE-BEAM GUARDRAIL, CONNECTION TO A CRASH CUSHION, OR CONNECTION TO A BRIDGE PARAPET.
6. PIN CONNECT BARRIER UNITS WHEN POSTED HIGHWAY SPEEDS ARE 35 MPH OR HIGHER.
7. PIN CONNECTED 20' CONCRETE BARRIERS MAY BE ANGLED APPROXIMATELY 10° AT CONNECTIONS. BARRIER UNITS MAY BE ARRANGED ON A CURVE WHEN PLACED OUTSIDE THE CLEAR ZONE. TEN BARRIER UNITS, ANGLED 10° BETWEEN UNITS, ARE NEEDED TO COMPLETE A 90° TURN.
8. WHEN CONNECTING 20' CONCRETE BARRIER TO 10' CONCRETE BARRIER, THE EXPOSED STEEL LOOP BARS MAY BE BENT (MECHANICALLY, NOT WITH HEAT) TO FIT.
9. THE SHOULDER OFFSET MAY BE REDUCED TO 0'-0" IF THE PAVEMENT STRUCTURE SLOPE IS 6:1 OR FLATTER FOR A DISTANCE OF AT LEAST 3' BEHIND THE BARRIER.
10. FLARE THE BARRIER IN ACCORDANCE WITH THE CONCRETE BARRIER SHY-LINE OFFSET AND FLARE RATE TABLE. THE SHY-LINE OFFSET IS MEASURED FROM THE EDGE OF THE TRAVELED WAY.
11. THIS BARRIER IS NOT REQUIRED TO BE ANCHORED TO MEET NCHRP 350, TL-3 REQUIREMENTS. WHEN INSTALLED WITHOUT ANCHOR ASSEMBLIES, ALLOW FOR APPROXIMATELY 3' OF DEFLECTION BEHIND THE BARRIER.
12. THE BARRIER MAY BE ANCHORED IN LOCATIONS WHERE MINIMAL LATERAL DEFLECTION IS DESIRED. THE BARRIER CAN BE ANCHORED USING DECK BOLTS FOR BRIDGE DECKS AND STABILIZATION PINS FOR PAVEMENT STRUCTURE SECTIONS. WHEN ANCHORING BARRIER UNITS:
 - A. ANCHOR BARRIER WITH FOUR ANCHOR ASSEMBLIES.
 - B. THE SHOULDER OFFSET MAY BE REDUCED TO 0'-0".
 - C. TIGHTEN DECK BOLTS DOWN WELL. BOLT LENGTH SHOULD ALLOW AT LEAST ONE COURSE OF THREADS TO SHOW OUTSIDE OF THE NUT WHEN TIGHTENED.
 - D. ENSURE THAT THE TOP OF DECK BOLTS OR STABILIZATION PINS DO NOT PROTRUDE BEYOND THE EXTERIOR FACE OF THE BARRIER SURFACE.
 - E. DO NOT ANCHOR BARRIER UNITS THAT EXTEND ACROSS BRIDGE EXPANSION JOINTS.
 - F. DO NOT DRILL ANCHOR HOLES INTO PRESTRESSED CONCRETE DECK PANELS.
 - G. ENSURE THAT BRIDGE DECK ANCHOR HOLES ARE DRILLED OR CORED SMOOTH AND ROUND.
 - H. DO NOT USE EXPANSION ANCHORS.
13. NOT TO SCALE.

REVISIONS							
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE
1	8-00	MSM	6	6-04	MSM		
2	12-01	MSM	7	10-04	MSM		
3	7-02	MSM	8	9-10	PLR		
4	7-03	MSM	9	03-13	RDL		
5	9-03	MSM					

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME: q2a1_0613.std
DRAWING DATE: NOVEMBER, 1999

IDAHO TRANSPORTATION DEPARTMENT	
BOISE IDAHO	

ORIGINAL SIGNED BY: LOREN THOMAS HIGHWAYS PROGRAM OVERSIGHT ENGINEER
ORIGINAL SIGNED BY: TOM COLE CHIEF ENGINEER

STANDARD DRAWING
20' CONCRETE BARRIER
REQUIRES SHEET 1 OF 2

English
STANDARD DRAWING NO. G-2-A-1
SHEET 2 OF 2

ORIGINAL STORED
AT: ITD,
Headquarters
3311 West State
Boise, Idaho

ORIGINAL SIGNED BY:
RYAN D. LANCASTER
DATE ORIGINAL SIGNED:
MAY 9, 2013