

ROAD CLOSURE GATE DETAIL

LOCATION: Locate interstate mainline gate post approximately 20 feet beyond the in-place gore exit sign. Locate interstate ramp gate post approximately 20 feet beyond the end of the outside ramp radius. Other roadway locations as directed by the Engineer in the field.

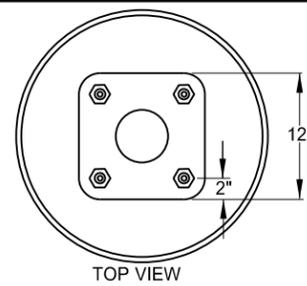
GATE: Use 2 inch square aluminum tubing with 0.125 inch wall thickness conforming to ASTM B-308.

GENERAL: Use 3/8" diameter galvanized cable and galvanized fittings and accessories.

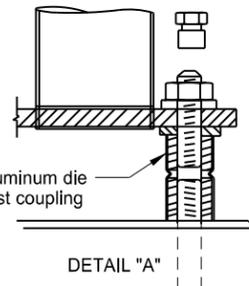
TUBING: Cover tubing with red and white reflectorized tape in all areas which face traffic except the 4'-1" taper area.

SIGNS: Install hinged W20-3-48 signs on both sides of the roadway 1/2 mile in advance of the mainline closure gate. Provide sign supports with mountings for type B high intensity flashing warning lights.

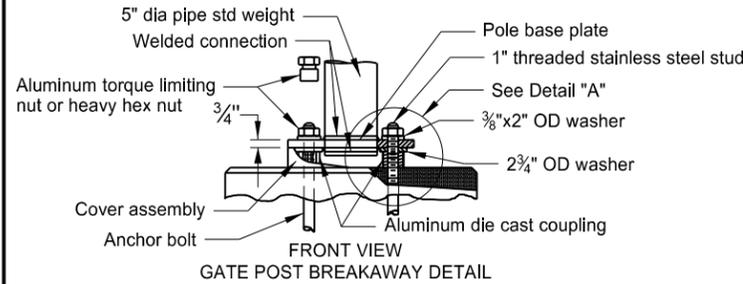
ANCHOR PLATE: Provide 10 gauge galvanized anchor plates as a minimum.



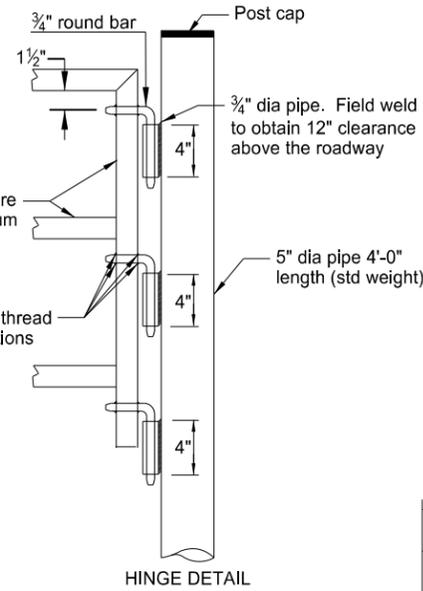
TOP VIEW



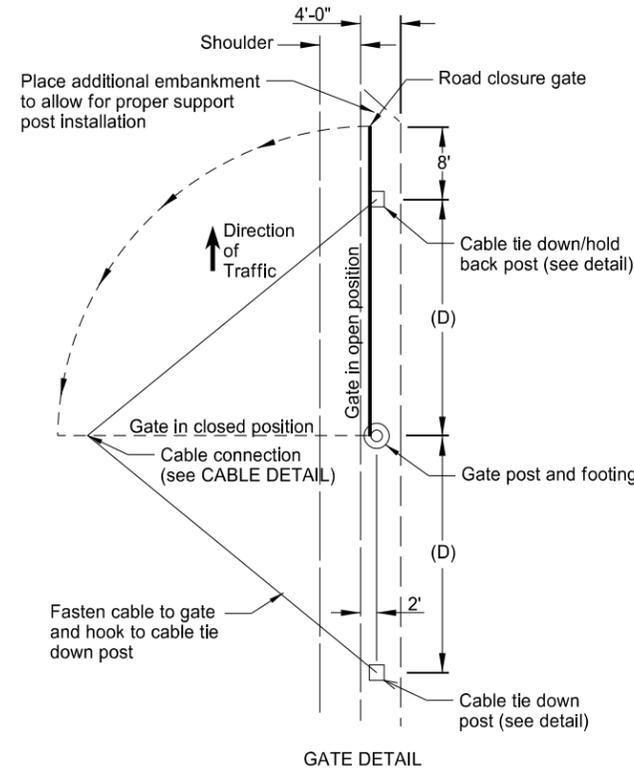
DETAIL "A"



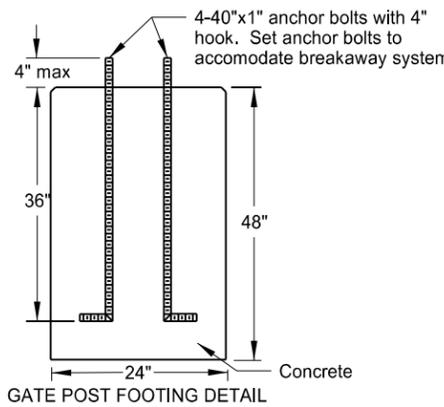
FRONT VIEW  
GATE POST BREAKAWAY DETAIL



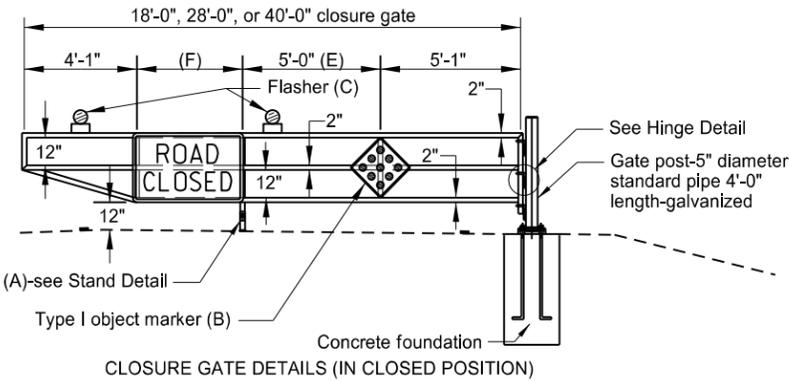
HINGE DETAIL



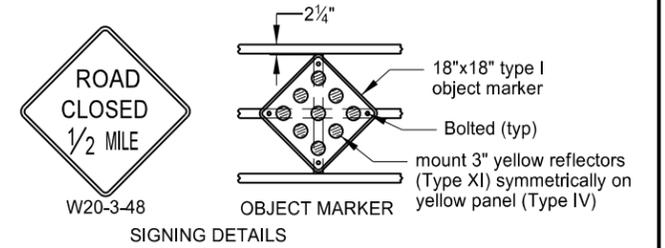
GATE DETAIL



GATE POST FOOTING DETAIL



CLOSURE GATE DETAILS (IN CLOSED POSITION)



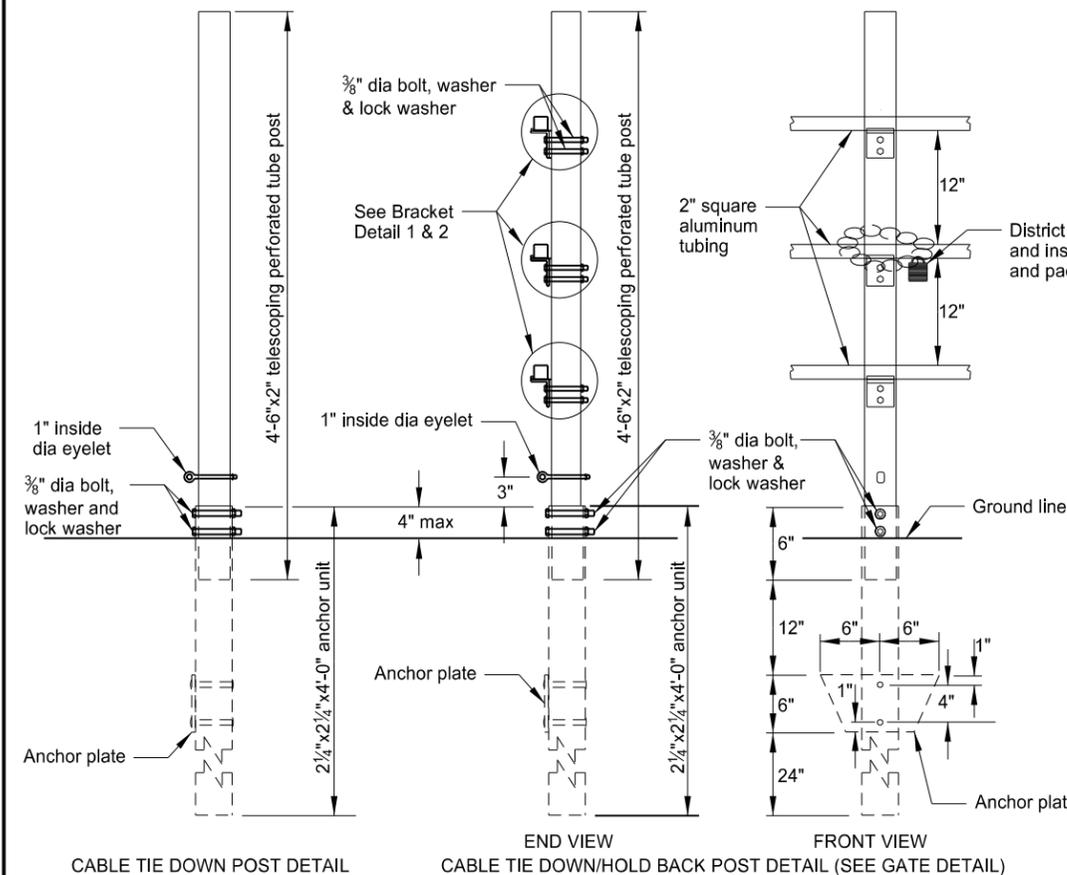
SIGNING DETAILS



R11-2-48

Telescoping Perforated Tubes						
Tube Size (Inch)	Wall Thickness (Inch)	US Standard Gauge	Weight Per Foot (Lbs)	Moment of Inertia (Inch <sup>4</sup> )	Gross Section Area (Inch <sup>2</sup> )	Section Modulus (Inch <sup>3</sup> )
2 X 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 X 2 1/4	0.105	12	2.773	0.561	0.695	0.499

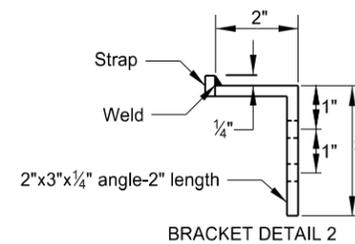
CLOSURE GATE DETAIL TABLE						
Closure Gate Width	A No. of Stands Required	B No. of Type I Object Markers	C No. of Type "B" High Intensity Flashing Warning Lights	D Distance To Tie-Downs	E Additional Vertical Supports @ 5'-0" Centers	F Vertical Support Spacing
18'-0"	1	1	2	10'	0	3'-10"
28'-0"	2	3	2	20'	2	3'-10"
40'-0"	3	5	3	30'	4	5'-10"



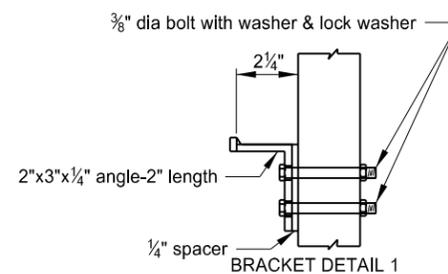
CABLE TIE DOWN POST DETAIL

END VIEW  
CABLE TIE DOWN/HOLD BACK POST DETAIL (SEE GATE DETAIL)

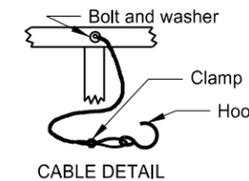
FRONT VIEW



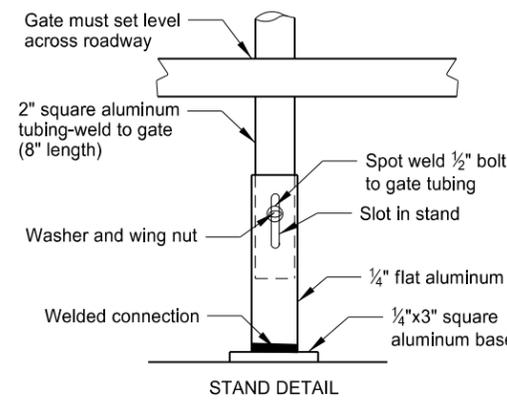
BRACKET DETAIL 2



BRACKET DETAIL 1



CABLE DETAIL



STAND DETAIL

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-20-11	
REVISIONS	
DATE	CHANGE
10-17-17 08-28-19	Updated to active voice, New Design Engineer PE Stamp.

This document was originally issued and sealed by Kirk J Hoff Registration Number PE-4683, on 8/28/19 and the original document is stored at the North Dakota Department of Transportation