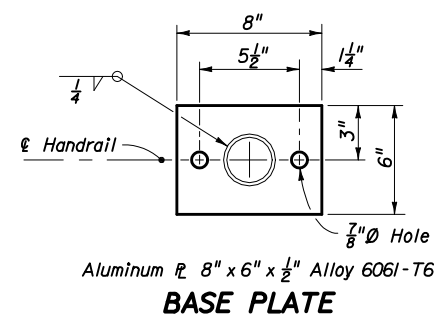
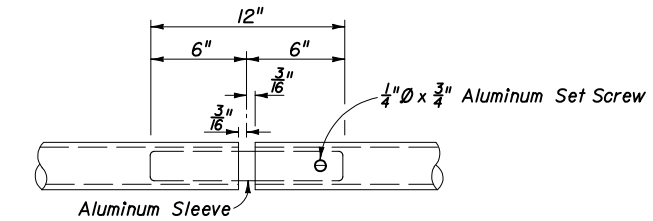


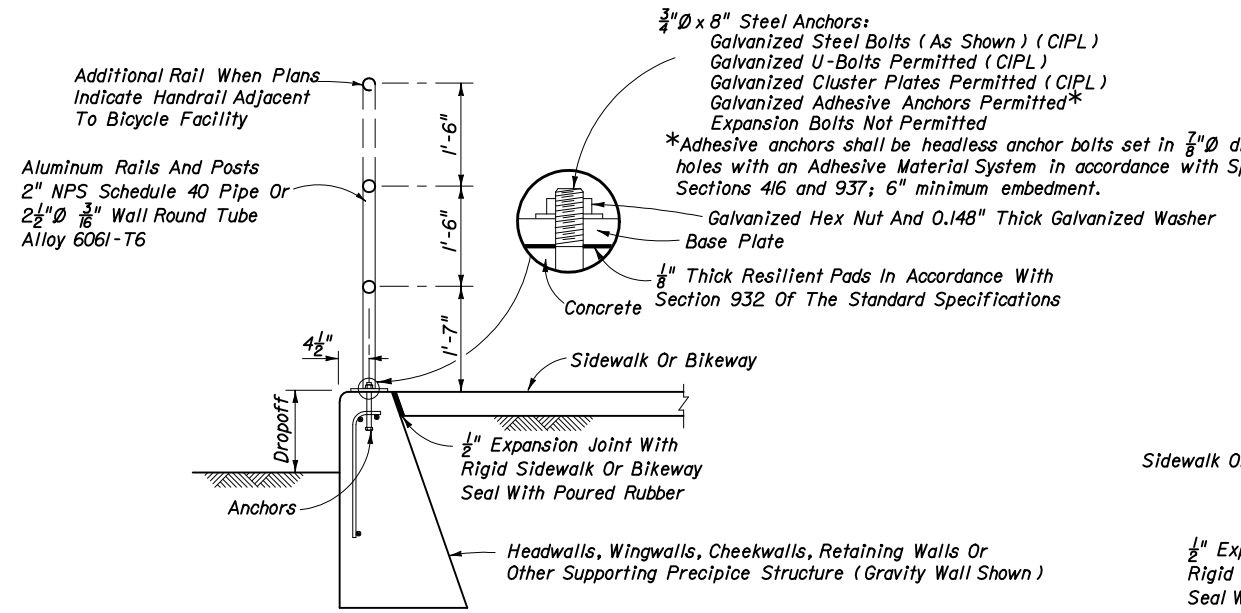
ELEVATION



BASE PLATE



EXPANSION JOINT



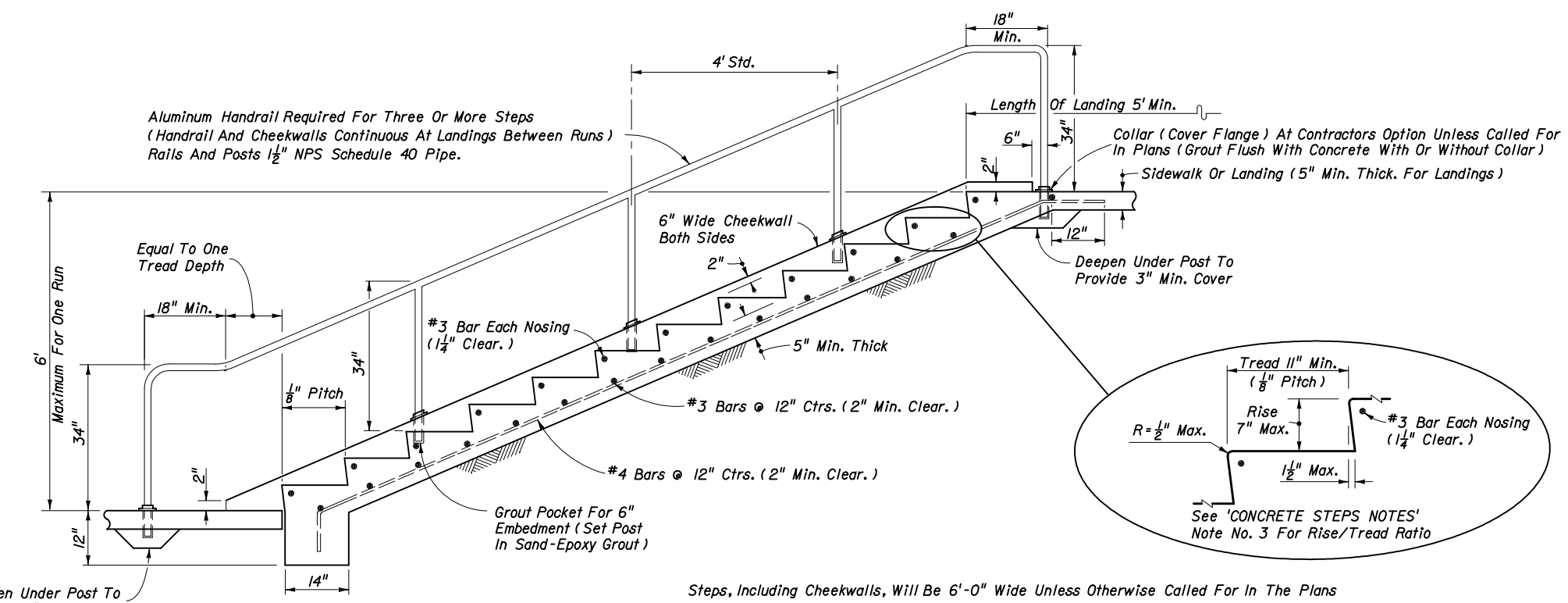
TYPICAL SECTIONS AT POST

ALUMINUM PIPE HANDRAIL ON WALLS FOR DROPOFFS > 10" AND ≤ 2'-6"

- ALUMINUM PIPE HANDRAIL NOTES**
1. This handrail is applicable to mountings on walls and other roadway structures subject to pedestrian use where dropoffs do not exceed thirty inches (30"); and, applicable to select uses on sidewalk, within service areas and similar locations where foundation support and anchorage are adequate or can be provided.
 2. All fixed joints to be either welded all around and ground smooth; or, commercially designed fixed joint systems (soldered, brazed, fused, bonded or shrink fitted) specified on the plans or approved by the Engineer. Mechanical joints other than expansion joints are not permitted unless specified on the plans or approved in writing by the Engineer. Posts shall be connected to base by weld only. Weld filler to be alloy ER5356, ER5556 or ER5183.
 3. Anchor bolts shall be in accordance with ASTM A36 or A307. Nuts, washers, and bolts to be hot dip galvanized in conformance with ASTM A153. After the nuts have been tightened, the anchor bolt thread at the top of the nut shall be punch distorted and coated with zinc compound.
 4. Aluminum handrail shall be constructed in accordance with Section 515 of the Standard Specifications. Payment shall be full compensation for furnishing and installing handrail, including mounting hardware, and shall be paid for under the contract unit price for Pipe Handrail (Aluminum), LF.

DESIGN NOTES

1. For dropoffs that exceed thirty inches (30"), handrails for customary applications are provided in Structures Standard Index Nos. 850 (Steel) and 860 (Aluminum). For customary fence applications see Index No. 452.



CONCRETE STEPS NOTES

1. Step and handrail design shown is for soil supported steps without adjacent dropoffs; do not use for suspended (structural) steps or stairway.
2. 12 risers maximum between landings.
3. Ratio of riser height to tread depth: $2R + T = 26"$.
4. For steps parallel to and adjoining walls, delete adjoining cheek wall and mount handrail to wall at height and length shown.
5. Aluminum handrail shall be constructed in accordance with Section 515 of the Standard Specifications. Payment shall be full compensation for furnishing and installing handrail, including mounting hardware, and shall be paid for under the contract unit price for Pipe Handrail (Aluminum), LF.
6. Cost of concrete steps, landings and cheekwalls shall be paid for under the contract unit price for Class I Concrete (Miscellaneous), CY. Cost of reinforcing steel shall be paid for under the contract unit price for Reinforcing Steel (Miscellaneous), LB.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ALUMINUM PIPE HANDRAILS AND CONCRETE STEPS

Names		Dates		Approved By	
Designed By				 State Roadway Design Engineer	
Drawn By	CDR	02/68			
Checked By	RHC	02/68		Revision	02
				Sheet No.	1 of 1
				Index No.	521

CONCRETE STEPS

Steps, including Cheekwalls, Will Be 6'-0" Wide Unless Otherwise Called For In The Plans