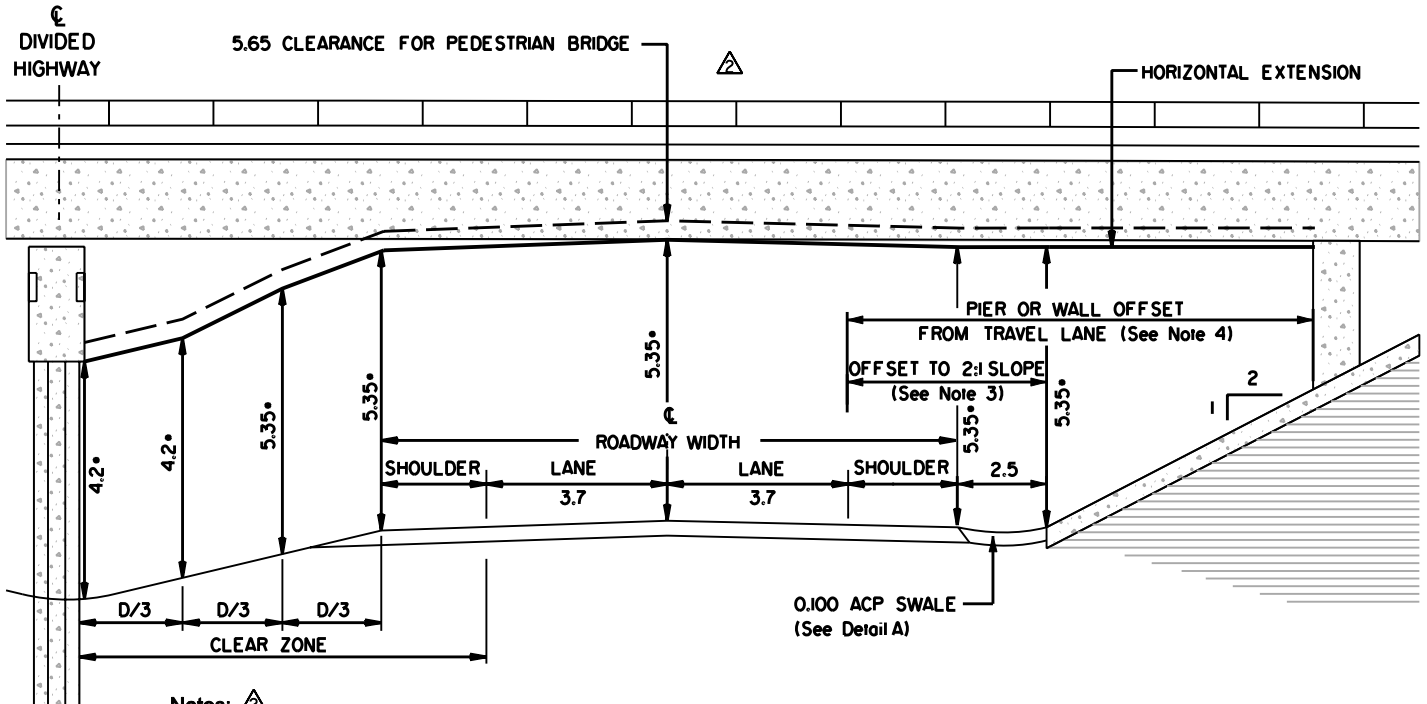
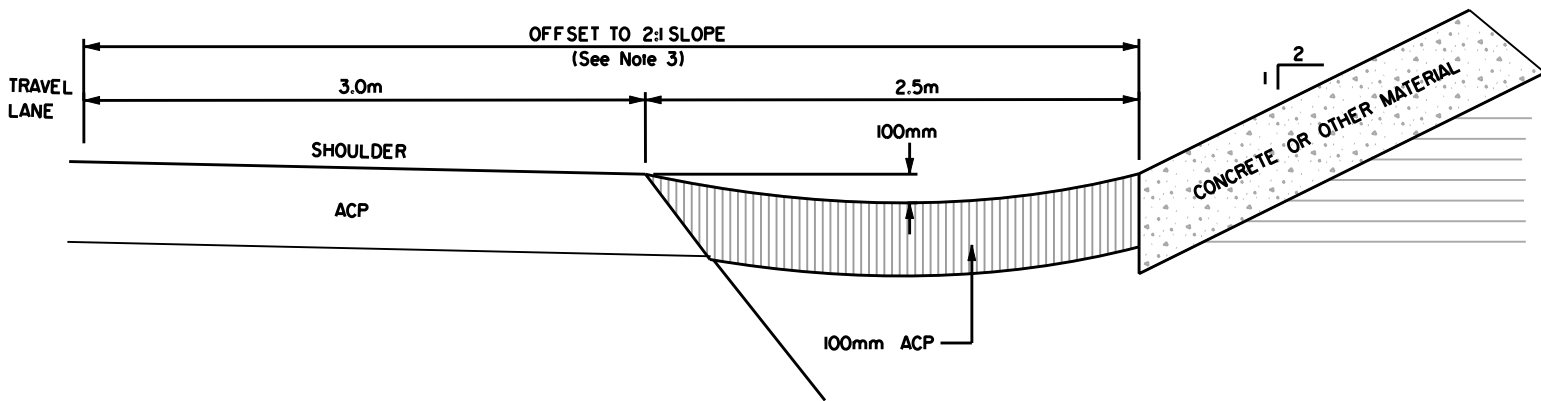


FIGURE C-9.3.3 TYPICAL DETAILS OF HIGHWAY GRADE SEPARATION FOR RAD-412.4



Notes: \triangle

1. Abutment slopes are normally 2:1 however flatter slopes may be used for stability and/or roadside safety.
2. Where traffic barriers are not installed, shoulder rumble strips are desirable.
3. Barrier is normally required if pier is located within the clear zone. An unprotected 2:1 backslope within the clear zone is generally acceptable especially if a suitable offset from the travel lane is provided. A suitable minimum offset for an unprotected 2:1 backslope for any given speed is one half of the clear zone. Refer to Table C.5.2a for clear zone distances.
4. Normally the bridge abutment will be located at the top of the headslope, and the abutment is sized to provide good aesthetics and balance to the depth and span length of the superstructure.
5. Barrier protection around median piers is generally provided if warranted by clear zone guidelines.
- \triangle 6. The standard vertical clearance for pedestrian bridges is 5.65 m over the roadway surface.
* For design vertical clearance, add 0.05 m for construction tolerance.
7. $D = (\text{Clear zone} - \text{shoulder width})$.



DETAIL A - SWALE

REVISIONS	No. \triangle	BY	BK	Added Notes and Dimensions	DATE
	No. \triangle	BY	BK	Added Note	DATE
					Dec/2006

C-120 **BASIC DESIGN PRINCIPLES**