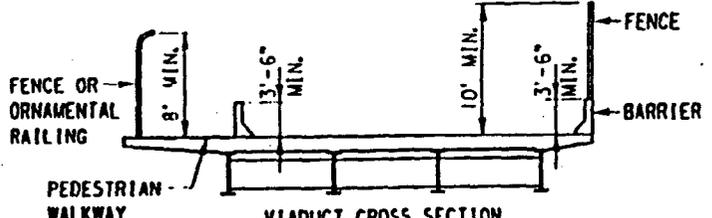
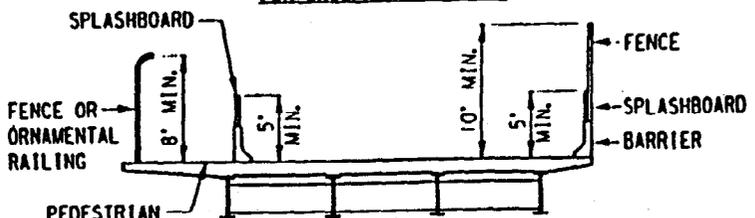


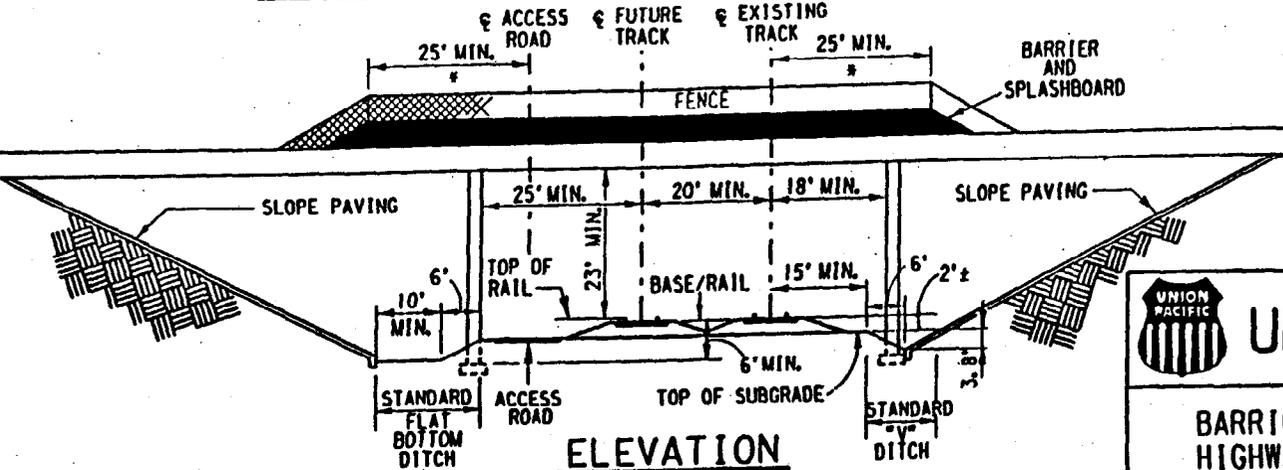
**VIADUCT CROSS SECTION  
NO SNOW REMOVAL AREAS**



**VIADUCT CROSS SECTION  
WITH 3'-6\"/>**



**VIADUCT CROSS SECTION  
WITH SPLASH BOARD AND FENCE  
FOR SNOW REMOVAL AREAS**



**ELEVATION  
PERPENDICULAR TO TRACKS**

\* Fences, splashboards, or solid barriers if required shall extend 25ft. beyond centerline of outer most track or access roadway.

**GENERAL**

Fence shall be provided as indicated on the cross sections and elevation view on both sides of the viaduct in ALL new or modified structures.

Splashboards or solid 3'-6" high barrier rail shall be provided as indicated on the cross sections and elevation view on both sides of the viaduct in ALL new or modified structures where snow removal is being performed.

Lights are to be installed on the underside of the viaduct where shadows cast by the structure would interfere with Railroad operations.

Slope paving shall be provided where end slopes equal to or exceed 2 horizontal to 1 vertical.

Falsework for construction of overhead structures shall comply to UPRR guidelines.

Demolition of existing overhead structures shall comply to UPRR guidelines.

Temporary shoring shall be designed in accordance with UPRR's Shoring Requirements (Drawing No. 106613) and UPRR guidelines.

Applicant shall be responsible for identification, location, and protection of existing utilities.

Contact UPRR's "Call Before You Dig" at least 48 hours prior to commencing work at 1-800-336-9193 to determine location of fiber optics.

Exceptions to these standards must be approved by UPRR's Chief Engineer Design.

**CLEARANCES**

Minimum vertical clearance shall be 23 feet above the plane of top-of-rails. Additional clearance may be required for construction purposes or if sag of vertical curve must be adjusted or if future track raise for flood considerations or maintenance is probable.

Minimum horizontal clearances, measured at right angle from centerline of track, shall be as shown in elevation view.

Minimum construction clearances shall be 21 feet vertical above the plane of top-of-rails and 12 feet horizontal at right angle from centerline of track.

**FUTURE TRACKS**

Space is to be provided for one or more future tracks as required for long range planning or other operating requirements. Where provision is made for more than two tracks, space is to be provided for access road on both sides of tracks.

**PIERS**

Pier protection walls shall be provided in accordance with AREA Chapter 8, Part 2.1.5 for piers within 25 feet of the centerline of track.

Top of footings within 25' from centerline of track shall be a minimum of 6 feet below base of rail and a minimum of 1 foot below flow line of ditch.

**DRAINAGE**

Drainage from the overpass shall be diverted away from UPRR's tracks and not discharged onto the tracks or roadbed.

A standard "V"-shaped or flat-bottom ditch shall be provided on each side of the tracks as necessary.

Culverts may be installed on opposite side of column from track in lieu of standard Railroad ditches when approved by Chief Engineer Design. Maintenance of culverts is to be at applicant's expense.



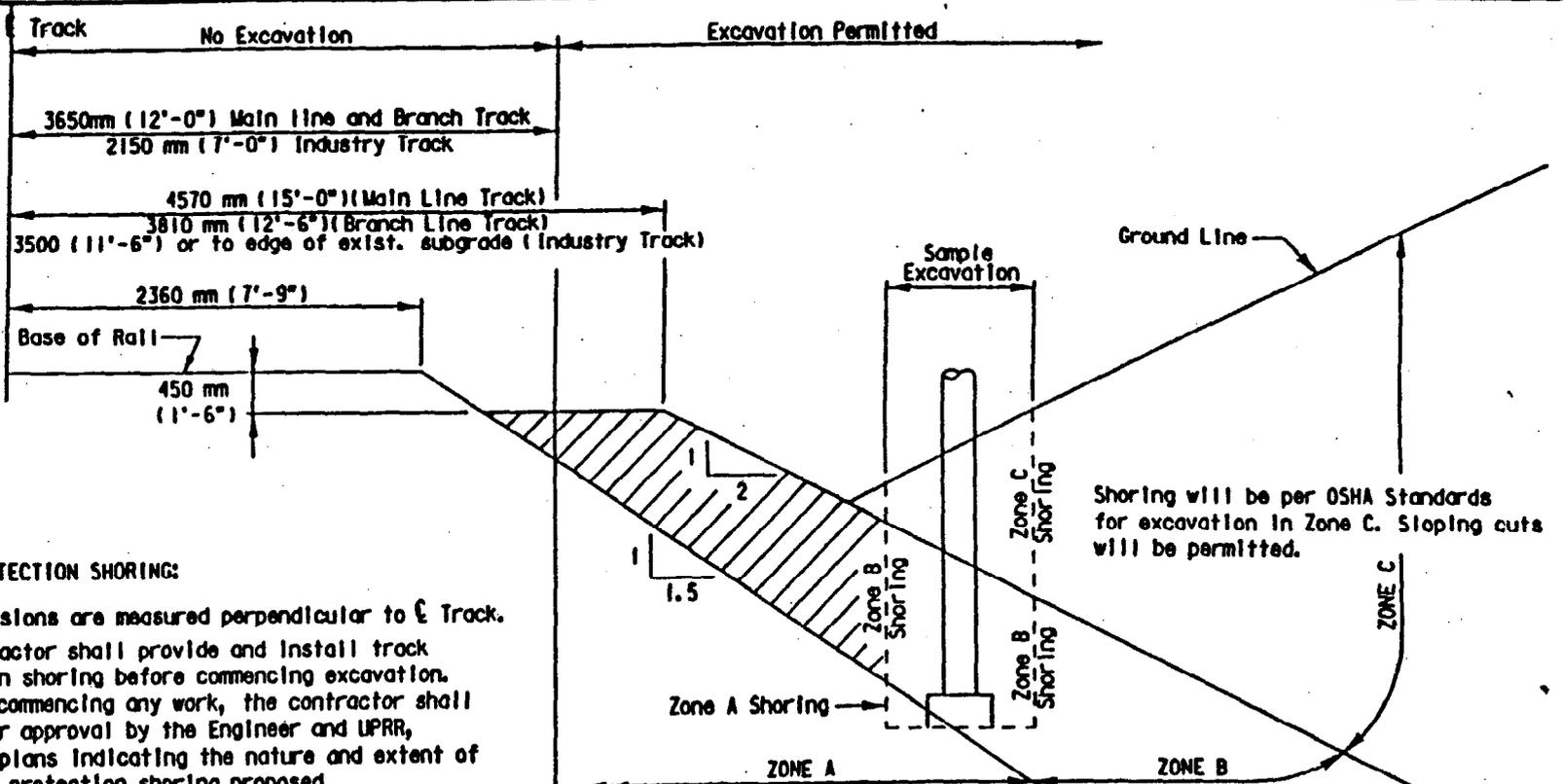
**UNION PACIFIC RAILROAD**

**BARRIERS AND CLEARANCES TO BE PROVIDED AT  
HIGHWAY, STREET, AND PEDESTRIAN OVERPASSES.**

**OFFICE OF CHIEF ENGINEER DESIGN**

REVISED: MAR. 31, 1998

STD. DWG. 0035



**TRACK PROTECTION SHORING:**

All dimensions are measured perpendicular to  $\text{\textcircled{C}}$  Track. The contractor shall provide and install track protection shoring before commencing excavation. Prior to commencing any work, the contractor shall submit for approval by the Engineer and UPRR, detailed plans indicating the nature and extent of the track protection shoring proposed.

Shoring shall be designed for Coopers E80 live load surcharge and the UPRR may impose more stringent requirements as conditions warrant.

For excavations which encroach into railroad live load surcharge zone, shoring plans will be accompanied by a copy of the design calculations, and both must be stamped by a registered professional engineer.

Design of shoring shall comply with UPRR guidelines for design and construction of shoring adjacent to active railroad tracks.

**ZONE A**  
Shoring must be designed for railroad live load surcharge in addition to OSHA Standards for excavation in Zone A.  
APPLICABLE RAILROAD LIVE LOAD; COOPER E80

**ZONE B**  
Only vertical shoring will be permitted for excavation in this zone, (no sloping cuts).

**ZONE C**  
Shoring will be per OSHA Standards for excavation in Zone C. Sloping cuts will be permitted.

**TRACK PROTECTION SHORING REQUIREMENTS**



**UNION PACIFIC RAILROAD**

**GENERAL SHORING REQUIREMENTS**

**OFFICE OF CHIEF ENGINEER DESIGN**

DATE: 3-31-98 REDRAWN

C. E. 106613