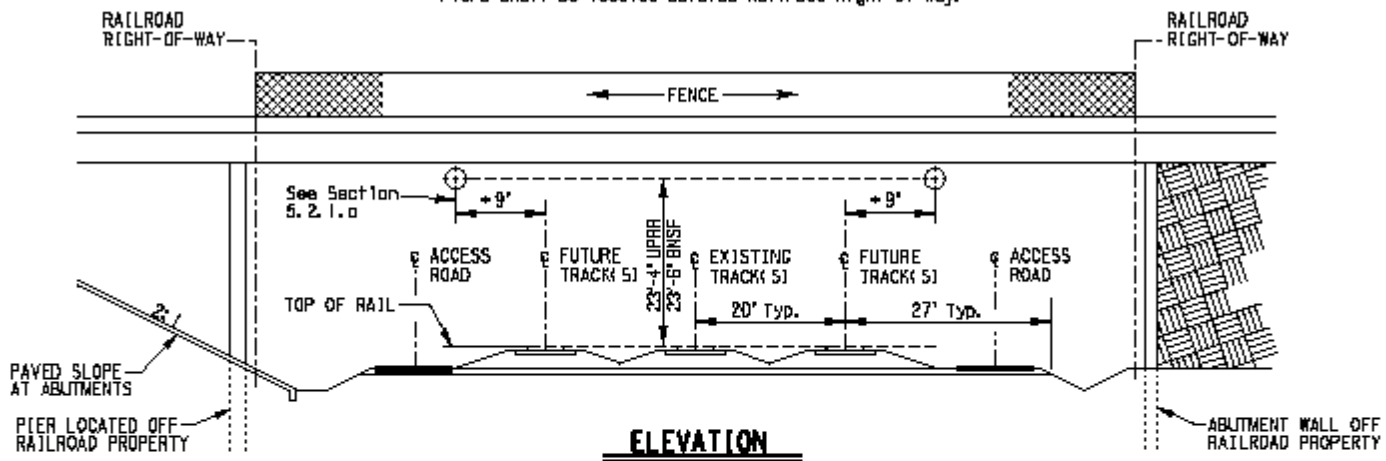
Overhead bridges shall be designed to completely span the Railroad Right-Of-Way.
Piers shall be located outside Railroad Right-of-Way.



ELEVATION

(NORMAL TO RAILROAD)

* See Section 5.2.1.a for Curved Track adjustments.

CONSTRUCTION NOTES:

1. Any shoring system that impact the Railroad operations and/or supports Railroad embankment shall be designed and constructed per the Railroad temporary Shoring requirements.
2. All demolition within the Railroad right-of-way and/or demolition that may impact the Railroad tracks or operations shall comply with the Railroad demolition requirements.
3. Erection over the Railroad right-of-way shall be designed to cause no interruption to all Railroad operations.
4. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.
5. The proposed grade separation project shall not change the quantity and/or characteristics of the flow in the Railroad ditches and/or drainage structures.
6. The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.
7. For Railroad coordination please refer to the Railroad's Coordination Requirements as part of the Specifications or Special Provisions of the project.
8. Temporary Construction Clearances, including falsework clearances, shall comply with Figure 1.
9. All permanent clearances shall be verified before project closeout.

DESIGN BY: BAF | CHECKED BY: ABH

APPROVED:

UPRR - SENIOR MANAGER STRUCTURES DESIGN

BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

BRIDGE STANDARDS

GENERAL OVERHEAD STRUCTURE DRAWING

FILE OWNER: UPRR | DATE:

PLAN NO.: | SHEET: 1

PLAN

1. North Arrow
2. Centerline of bridge and/or centerline of project.
3. Track layout and limits of Railroad right-of-way with respect to centerline of main lines.
4. Footprint of proposed superstructure and substructure including existing structure if applicable.
5. Future tracks, access roadways and existing tracks as main line, siding, spur, etc.
6. Vertical & Horizontal Clearances from Railroad Track:
   a. Point of minimum vertical clearance and distance, measured perpendicular, from the centerline of nearest track.
   b. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
   c. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of nearest foundation below grade.
   d. Horizontal spacing at right angle between centerlines of existing and/or future tracks.
7. Limits of shoring and minimum distance at right angle from centerline of nearest track.
8. Locate and show all existing facilities and utilities and their proposed relocation, if required.
9. Toe of slope and/or limits of retaining wall.
10. Limits of grading with existing and proposed contours.
11. Limits of barrier rail and fence.
12. Minimum structure separation for adjacent structures.
13. Railroad Milepost and direction of increasing Milepost.
14. Direction of flow for all drainage systems within project limits.
15. Timetable direction arrows, nearest Railroad station and end station of Railroad Subdivision.

ELEVATION

1. Individual span length and total bridge length.
2. Limits of barrier rail and fence with respect to centerline of track.
3. Depth of foundation below bottom of tie.
4. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
5. Indicate horizontal spacing at right angle between centerlines of existing and/or future tracks.
6. Minimum horizontal clearance at right angle from centerline of nearest existing or future track to the face of foundation below grade.
7. Indicate top and bottom of pier protection wall elevation relative to top of rail elevation.
8. Controlling dimensions of drainage ditches and/or drainage structures.
9. Top of rail elevations for all tracks.
10. Minimum permanent vertical clearance above top of high rail to the lowest point under the bridge.
11. Existing and proposed goundline & roadway profile.
12. Show elevation of existing or relocated utilities.
13. Show slope and specify type of slope paving. Toe of slope shall be shown relative to drainage ditch and top of subgrade.
14. Show and label future tracks, access roads and existing tracks as main line, siding spur, etc.
15. Show location of deck joints.
16. Location of deck drains.

TYPICAL SECTION

1. Total width of superstructure.
2. Width of shoulder and/or sidewalk.
3. Height and type of barrier rail and fence.
4. Depth of superstructure.

TITLE BLOCK

1. The name & logo of engineering firm or project owner.
2. Drawing title.
3. Railroad milepost number and subdivision.
4. City, county and state.
5. Project name and location.
6. Date.
7. Latitude and longitude.

RAILROAD PROFILE GRADE DIAGRAM

1. Show existing and proposed track profile at the bridge location and a minimum of 1,000 feet past each edge of the bridge.

Note: The Railroad Milepost is calculated at the intersection of centerlines of the Overhead Structure and Existing Track. All separate Overhead Structures shall have individual Milepost designations.

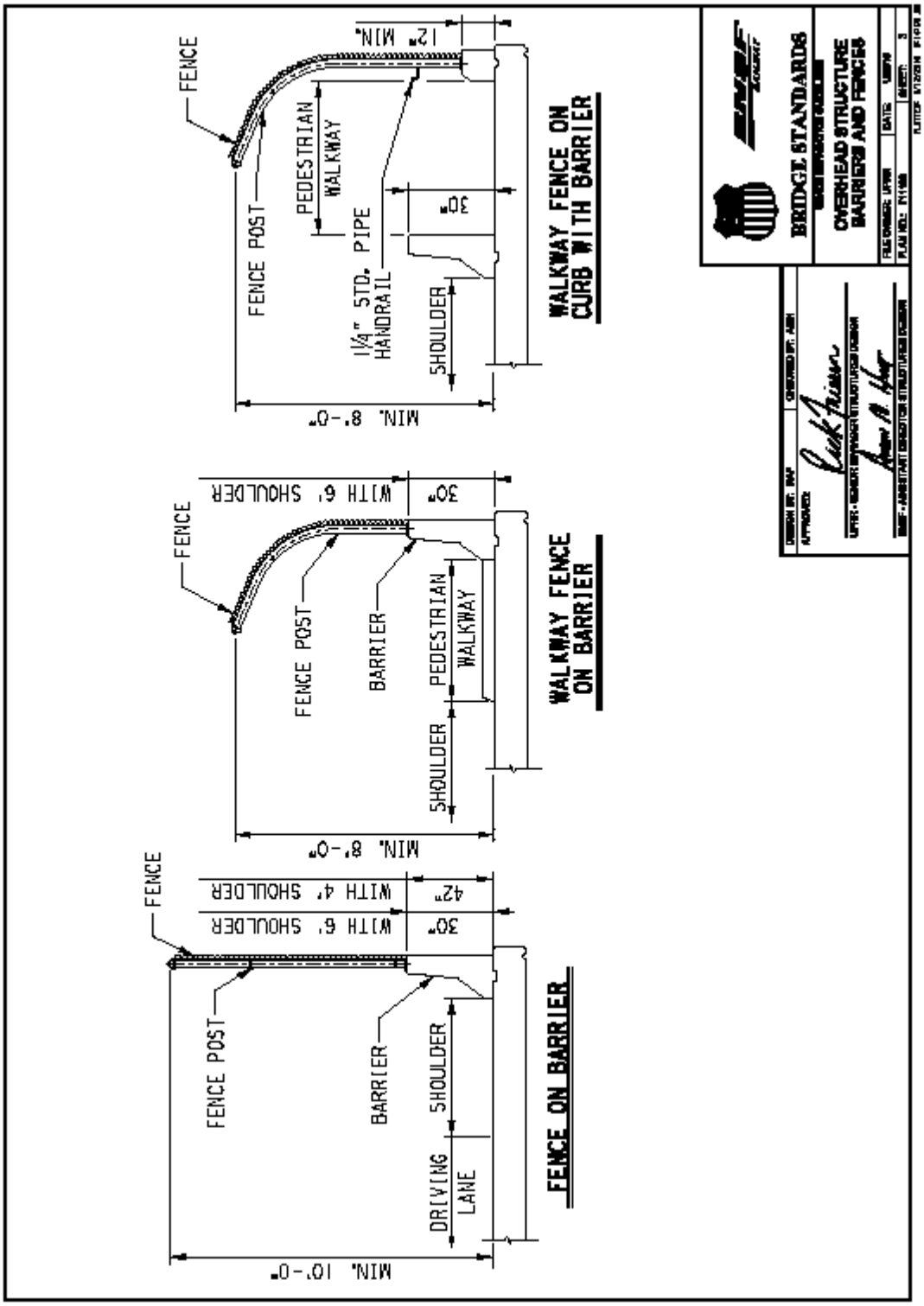
DESIGN BY: RAF | CHECKED BY: ASH
APPROVED:
UPRR - SENIOR MANAGER STRUCTURES DESIGN
BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

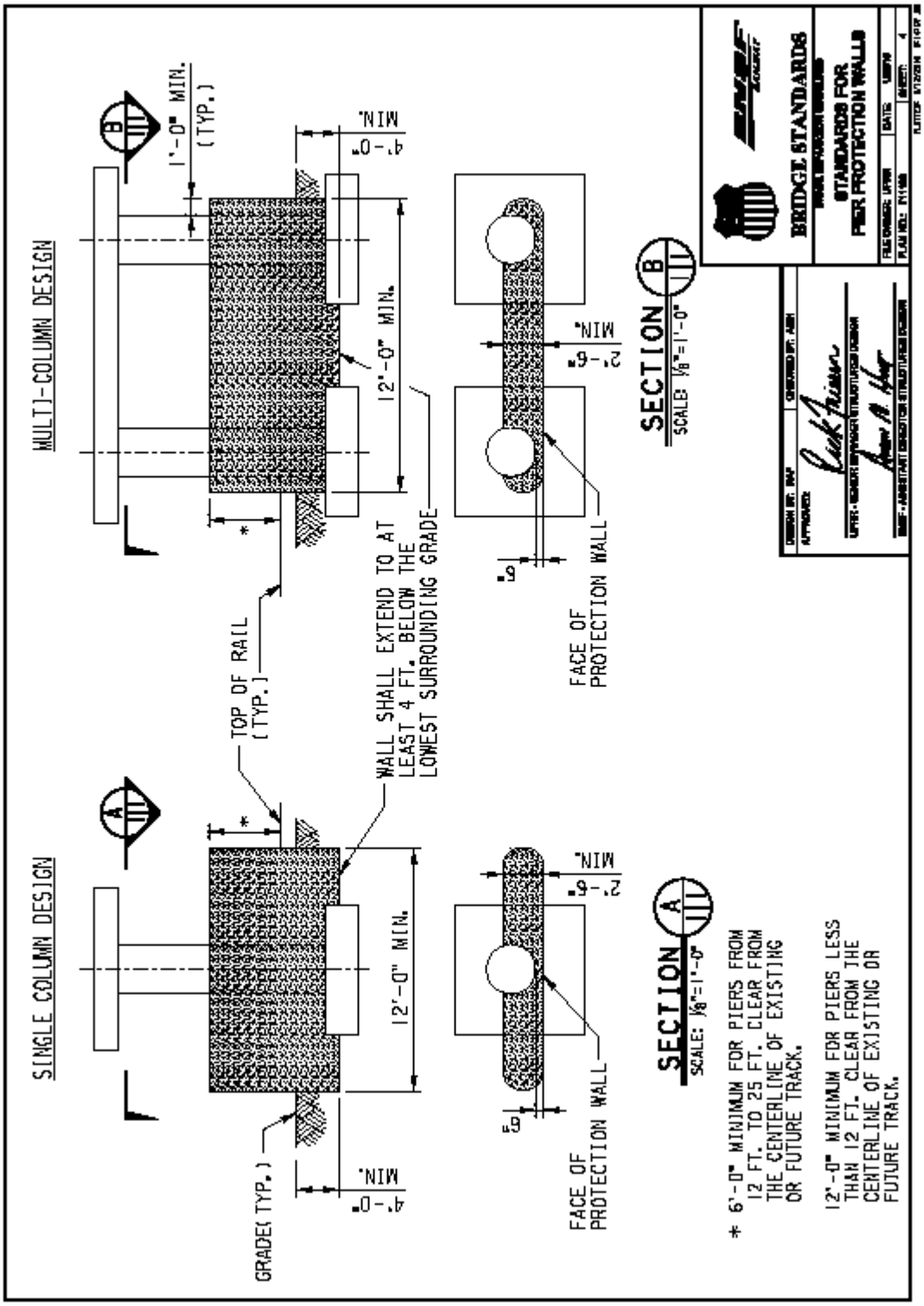
BNSF

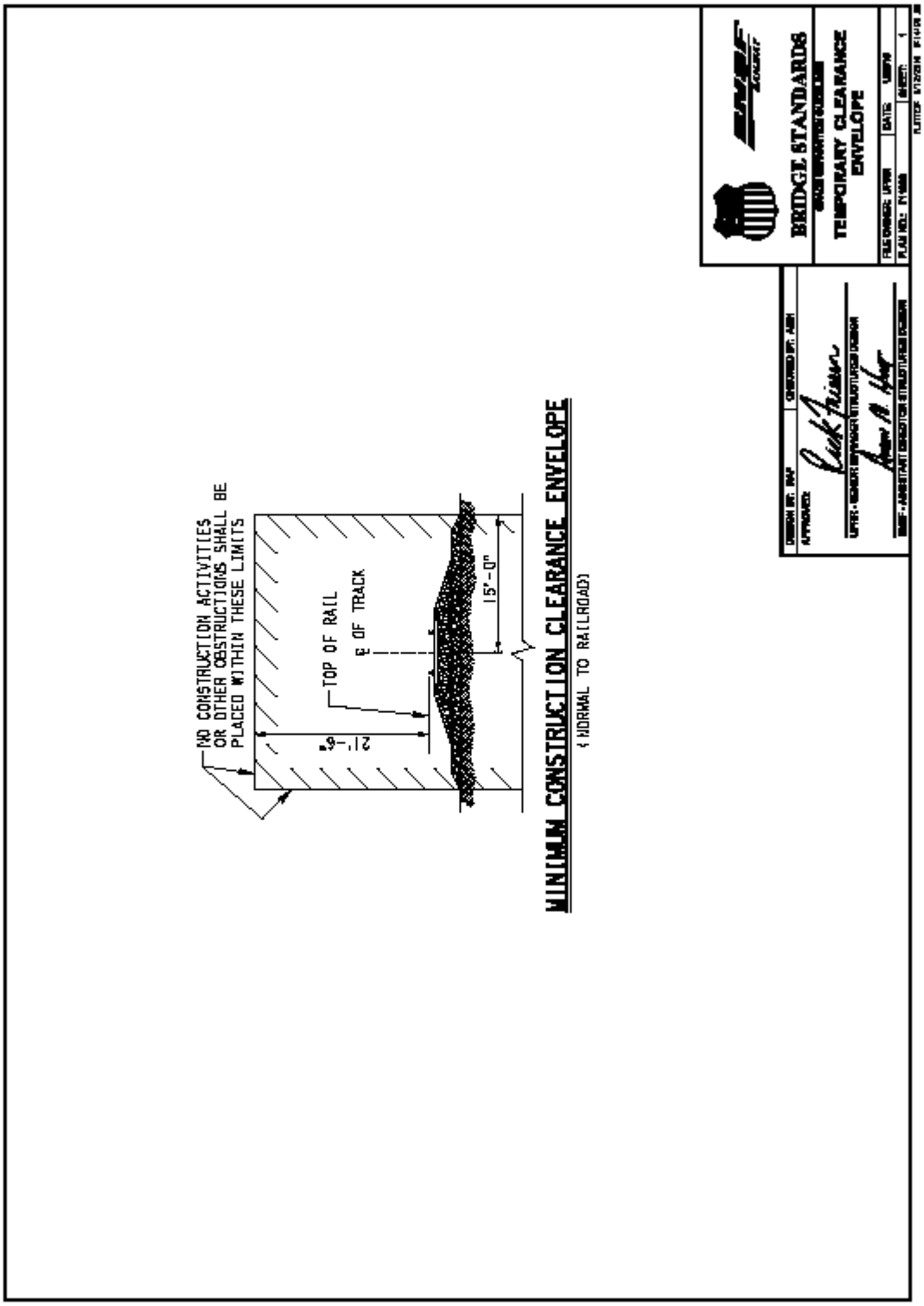
BRIDGE STANDARDS

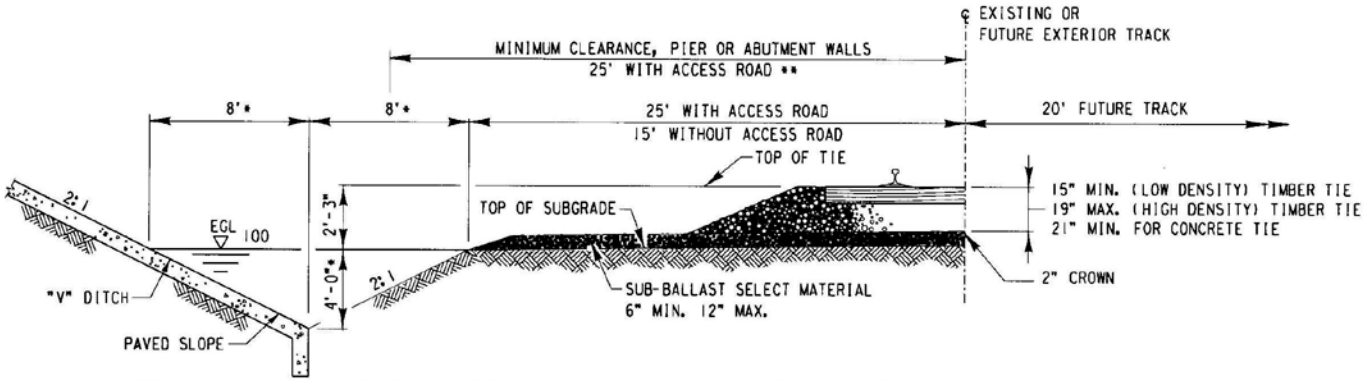
MINIMUM
LAYOUT REQUIREMENTS FOR OVERHEAD STRUCTURES

FILE OWNER: UPRR | DATE: [illegible]
PLAN NO.: [illegible] | SHEET: 2

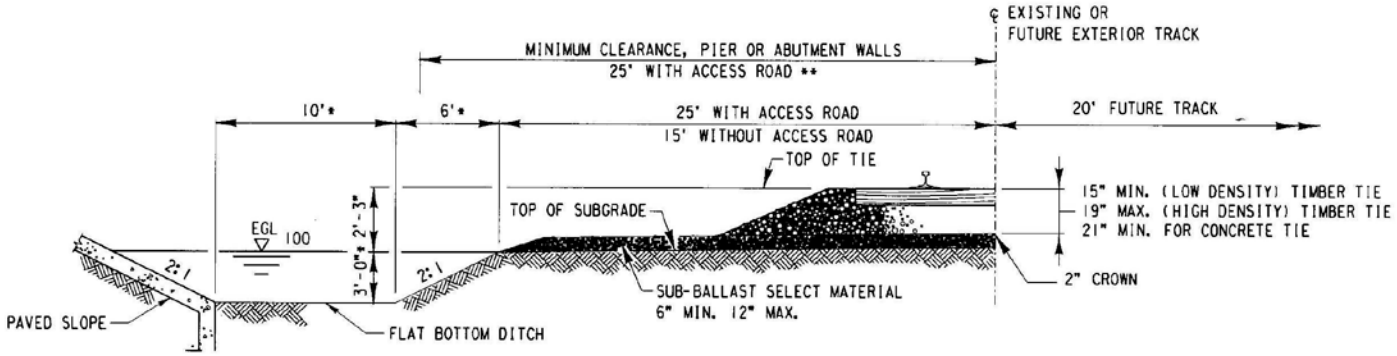

FENCE
FENCE POST
PEDESTRIAN WALKWAY
1¼" STD. PIPE HANDRAIL
SHOULDER
30"
12" MIN.
MIN. 8'-0"
WALKWAY FENCE ON CURB WITH BARRIER
FENCE
FENCE POST
BARRIER
PEDESTRIAN WALKWAY
SHOULDER
30" WITH 6' SHOULDER
MIN. 8'-0"
WALKWAY FENCE ON BARRIER
FENCE
FENCE POST
BARRIER
SHOULDER
DRIVING LANE
30" WITH 6' SHOULDER
42" WITH 4' SHOULDER
MIN. 10'-0"
FENCE ON BARRIER
BRIDGE STANDARDS
OVERHEAD STRUCTURE BARRIERS AND FENCES


MULTI-COLUMN DESIGN
SINGLE COLUMN DESIGN
1'-0" MIN. (TYP.)
4'-0" MIN.
12'-0" MIN.
2'-6" MIN.
6"
TOP OF RAIL (TYP.)
WALL SHALL EXTEND TO AT LEAST 4 FT. BELOW THE LOWEST SURROUNDING GRADE
FACE OF PROTECTION WALL
GRADE (TYP.)
SECTION B
SCALE: 1/8"=1'-0"
SECTION A
SCALE: 1/8"=1'-0"
* 6'-0" MINIMUM FOR PIERS FROM 12 FT. TO 25 FT. CLEAR FROM THE CENTERLINE OF EXISTING OR FUTURE TRACK.
12'-0" MINIMUM FOR PIERS LESS THAN 12 FT. CLEAR FROM THE CENTERLINE OF EXISTING OR FUTURE TRACK.
BRIDGE STANDARDS
STANDARDS FOR PIER PROTECTION WALLS


NO CONSTRUCTION ACTIVITIES OR OTHER OBSTRUCTIONS SHALL BE PLACED WITHIN THESE LIMITS
TOP OF RAIL
℄ OF TRACK
21'-6"
15'-0"
MINIMUM CONSTRUCTION CLEARANCE ENVELOPE
(NORMAL TO RAILROAD)
BRIDGE STANDARDS
TEMPORARY CLEARANCE ENVELOPE



TYP. SECTION AT ABUTMENT SLOPES WITH STD. "V" DITCH



TYP. SECTION AT ABUTMENT SLOPES WITH STD. FLAT BOTTOM DITCH

NOTE:

MINIMUM DITCH SIZES ARE SHOWN. DITCH SIZE TO BE INCREASED AS REQUIRED BASED ON RR HYDRAULIC CRITERIA.

* WIDTH AND HEIGHT SUBJECT TO HYDRAULIC REQUIREMENTS.

** LOCATION OF PIER, BENT COLUMNS OR ABUTMENT WALLS SHOULD NOT INTERFERE WITH THE DRAINAGE IN THE AREA. IF MINIMUM STANDARD DITCHES ARE NOT PROVIDED IN THE LAYOUT, LONGITUDINAL CULVERTS SHALL BE PROVIDED THAT WILL HANDLE THE DRAINAGE AS REQUIRED BY THE HYDRAULIC STUDIES.

REVISIONS		
DATE	LTR.	DESCRIPTION
/		
/		
/		
/		
/		
/		

DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:

K.H. Jennison

BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN

George J. Meyn

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

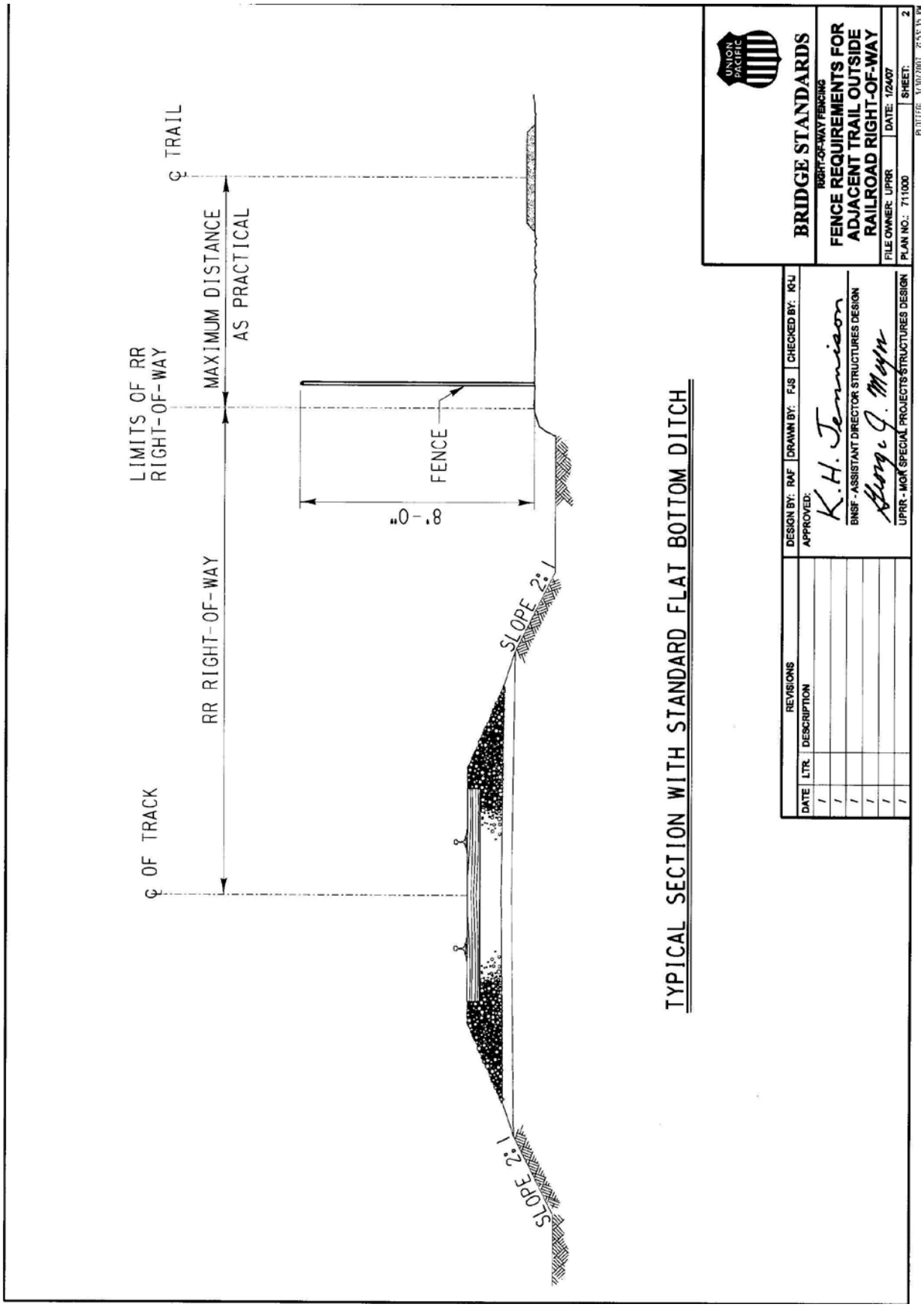
BRIDGE STANDARDS

GRADE SEPARATION GUIDELINES (OVERHEADS)

TYPICAL SECTIONS AT ABUTMENT SLOPES

FILE OWNER: UPRR | DATE: 1/24/07

PLAN NO.: 711100 | SHEET: 5


℄ TRAIL
MAXIMUM DISTANCE
AS PRACTICAL
LIMITS OF RR
RIGHT-OF-WAY
FENCE
8'-0"
RR RIGHT-OF-WAY
SLOPE 2:1
℄ OF TRACK
SLOPE 2:1
TYPICAL SECTION WITH STANDARD FLAT BOTTOM DITCH
REVISIONS
DATE
LTR.
DESCRIPTION
DESIGN BY: RAF
DRAWN BY: FJS
CHECKED BY: KHJ
APPROVED:
K.H. Jennison
BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN
UNION PACIFIC
BRIDGE STANDARDS
RIGHT-OF-WAY FENCING
FENCE REQUIREMENTS FOR
ADJACENT TRAIL OUTSIDE
RAILROAD RIGHT-OF-WAY
FILE OWNER: UPRR
DATE: 1/24/07
PLAN NO.: 711000
SHEET: 2