

Design Conformance to Railroad Guidelines Report (DCRG)

Exhibit "A" Bridge Layout BNSF Overpass

RRMP 81.18

DOT No. 675274R

Houston Subdivision

CSJ: 0912-00-471

Harris County

SH 99 (Grand Parkway)

This report is provided by ZOPB as an aid to the Burlington Northern Santa Fe (BNSF) Railway reviewers. It summarizes conformance of the ZOPB prepared design and contract plans for the above referenced railroad separation to the current UPRR/BNSF Guidelines for Railroad Grade Separation Projects. Please see "Exhibit 'A' SH99 @ BNSF Railway," in the attached sheets for reference.

The BNSF Overpass Bridge meets the UPRR/BNSF Guidelines in the following ways:

BNSF ROW measures 100 feet in width and the existing tracks are crossed overhead at a 25.5 degree skew by SH 99. The bridge clear-spans the BNSF ROW with a 132 feet TxDOT TX 54 I-girder span. The columns supporting this span are set back 2.76 feet at Bent 11 and 13.22 feet at Bent 12, outside the ROW lines. This yields a minimum horizontal clearance from centerline of existing main track to face of foundation at Bent 11 of 52.01 feet and a minimum horizontal clearance from centerline of existing siding track to face of foundation at Bent 12 of 47.56 feet. A future track can be accommodated at a spacing of 20 feet to the east of BNSF Main Track with 32.01 feet of horizontal clearance on the west side and 20 feet east of BNSF Siding Track with 27.56 feet of horizontal clearance on the east side. All of these clearances, measured to bridge columns outside of the BNSF ROW are greater than the 25 feet minimum when a Crash Wall would be indicated by AREMA Requirements. A minimum of 23' – 4" vertical clearance above the top of existing 136 lb rail is provided, which meets the BNSF/UPRR Guidelines vertical clearance envelope of 23' – 4". The prestressed beam construction of this bridge will meet the minimum construction clearances of 21 feet 6 inches vertical and 15 feet horizontal from the existing track. This is a new overpass that is not replacing an existing crossing.

Bridge rails will have no drainage slots over the railway ROW in accordance with TxDOT Standard Bridge Rail Ty 221.

Drainage from the structure has been accommodated to drain away from the BNSF ROW and to not change the character of flow in the Railway ditches or drainage structure.

All drilled shafts are outside the zone of Railway track Live Load surcharge as referenced in BNSF Standard 710000, General Shoring Requirements.

A protective fence has been provided in accordance with BNSF Standard 711100, General Overhead Structure Drawing.

There are no utilities running parallel to the track within the BNSF ROW. No construction activities by the TxDOT contractor will disturb the existing duct bank.

The "Railroad Requirements for Bridge Construction" sheets have been included as part of the Exhibit "A" submission and are attached. Top of rail survey elevations for 1000 feet in each direction of the SH99 BNSF Overpass have been included in the table on Railroad Requirements for Bridge Construction Sheet 2 of 4. Inclusion of these sheets in the contract plan set ensures that all BNSF requirements will be met by this project.

The BNSF Overpass Bridge does not meet the UPRR/BNSF Guidelines in the following ways:

The BNSF Overpass is 92' in overall width with an ultimate width of 128'. Although this is more than 80 feet in width, track lighting underneath the structure has not been provided. There are no switching activities for the BNSF track below and there are no other activates which would place BNSF personnel on the ground below the bridge. Concurrence and release from this requirement is requested from BNSF.