BRIDGE CODE	R R. BRIDGE NO.	FED ROAD DIST NO	STATE	PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	199	8	N D	BG-1-010 (05) 917		25	

GENERAL NOTES

GENERAL:
Work shall conform to all applicable paragraphs of the North Dakota State Highway Department Standard Specifications for Road and Bridge Construction adopted July, 1971.
The cost of furnishing and placing bridge number plates, bituminous felt, sheet lead, bar spacers, bar supports, screed chairs, threaded inserts, and other miscellaneous items shall be included in the price bid for Class AE-1 Modified Concrete.

DESIGN STRESSES:

1,350 psi (Class AE-1 Modified Concrete)
20,000 psi (Grade 40 Reinforcing Steel)
20,000 psi (Structural Carbon Steel, (A36)
27,000 psi (High Strength Low Alloy Structural Steel (A588)

EXCAVATION AND EMBANKMENT:
Shoofly embankment shall be placed according to Section 203 using excavated embankment.
Pier and abutment backfill shall be placed in layers of not more than six (6) inches and compacted in accordance with Section 203-2.3.3 of the Standard Specifications.
For limits of Class 1 excavation at abutments see sheet 20.
For limits of Class 1 excavation at Piers see sheet 11.
For limits of Class 1 excavation at retaining and wing walls see sheet 23
For limits of common excavation under each phase of construction see plan cross sections.

TEMPORARY TRESTLE CONSTRUCTION:
The temporary trestle shall be constructed by Burlington Northern railroad forces after initial excavation and embankment are completed.
All timber required for the trestle shall be untreated.
All timber piles shall be predrilled as noted in the plans and driven to a minimum bearing of 30 tons per pile or to a minimum tip elevation of 1615 as directed by the engineer.
Sheet piling in the area of the retaining walls and specific H-piling as noted under "Sequence of Construction-Phase I (Step 3)" shall be placed by the Contractor prior to temporary trestle construction.

UNTREATED TIMBER:
As excavation around the trestle proceeds under various phases of construction, the contractor shall add bracing to the trestle as shown in the plans and as directed by the engineer. Payment for untreated timber shall be considered full compensation for all tools, materials and labor required for bracing of the trestle to the satisfaction of the engineer.

PILE NOTES:
All piles except timber trestle piles and steel sheet piling to be HP12x53.
Pile spacings shown in details are at bottom of footings.
Piles shown thus ⊢⊢ on the detail sheets for substructure units shall be battered as indicated.
All H-Piles shall be driven to a minimum bearing capacity of 50 tons, or to elevations as required by the Engineer.
Pile splices may be used only with the approval of the Engineer. Pile splice detail shown on sheet 32.
Steel H-piling placed prior to excavation as noted under "Sequence of Construction-Phase I (Step 3) shall be predrilled to plan footing elevation. Cost of predrilling shall be considered incidental and included in the price bid for other items.
Sheet piling in the area where temporary trestle crosses the retaining walls shall be placed by the Contractor as shown on sheet 42. Cost of furnishing and placing sheet piling, soldier piles, angle supports, bolts and lumber shall be considered incidental and included in price bid for other items.
The test piles shall be driven to a bearing of not less than 62.5 tons.

ABUTMENTS:
Bridge seat reinforcement shall be carefully placed to avoid interference with drilling holes for anchor bolts. The anchor bolts shall be drilled and the anchor bolts set in place after beams have been erected in final position.
See sheet 32 for placement of railing corner post anchorages at abutments.
The concrete in the crosshatched portions of the backwall shall be placed after the ballast plate or deck has been erected and the expansion device properly positioned with respect to the ballast plate or deck.
See sheet 32 for rustication details on front face of abutments.
See Dowel Bar Assembly on sheet 32 for contraction and expansion joints between walls and abutments.
Contraction joints extend only from top of wall to top of footing and are centered on match lines between wall or abutment detail sheets. Longitudinal footing reinforcement extends into adjacent footings. Concrete for both footings shall be poured monolithically.
Expansion joints extend thru both the wall stem and footing. Match lines between walls and abutments are at abutment face of concrete. The 1" cork joint filler is included in retaining wall panel lengths.

RETAINING WALLS AND WINGWALLS:
The concrete in the cross-hatched portion of the retaining walls shall be placed after the temporary trestle has been removed.
See sheet 32 for rustication details on front face of walls.

PIERS:
Bridge seat reinforcement shall be carefully placed to avoid interference with drilling holes for anchor bolts. The anchor bolt holes shall be drilled and the anchor bolts set in place after beams have been erected in final position.

CONCRETE:
The "rubbed surface finish" will be required for the exposed outside face of the slab for Bridge A, and all exposed faces of abutments, piers, retaining walls and wingwalls. All other surfaces shall have the "ordinary surface finish." All ordinary surface finish shall be completed within 24 hours after removal of forms.
Air-entrained portland cement shall be used in the entire bridge. All concrete shall be class AE-1 Modified. See Special Provisions.
All exposed edges of concrete shall be beveled with ¾" triangular molding unless otherwise noted.

REINFORCING STEEL:
Dimensions for reinforcing bent bars are given out to out unless otherwise noted.
Use standard A.C.I. bends.
All reinforcing bars are designated on the plans by bar numbers. The letter designates the location and the first digit or the first two digits, the bar size.
The clear distance between reinforcing steel and face of concrete shall be 3" in footings and 2 inches elsewhere unless otherwise noted.
All bars of a series shall vary by a constant increment.

STRUCTURAL STEEL:
Stud shear devices shall conform to N.D.H.D. Spec 616-3.3.27 and are included in weight of "Structural Steel (A36 Rolled Beam)" for payment.
The ballast plate for Bridge B including side retainers shall comply with N.D.H.D. 844-1.6 (A.S.T.M. A588).
All other steel for structural items shall comply with N.D.H.D. 844-1.1 (A.S.T.M. A36).
Unless otherwise noted, field connections shall be made with ¾" ϕ rivets, ⅞" ϕ high strength bolts or pin bolts. Bolt or rivet holes to be ⅞" ϕ except as noted.
Fabrication to conform to current N.D.H.D. Specifications. Natural camber of all beams to be placed upward.

DRAINAGE SYSTEM:
Drainage systems bottom pans, covers, corrugated metal pipes, reducers, collars, and all necessary connections and fasteners to be galvanized and bituminous coated.
The item "Drainage System" to include all materials required for the complete drainage system for Bridge A and for Bridge B including pipe clamps, deck drains and all underground pipe behind abutments, retaining walls and wingwalls.
Threaded bolt anchorages to be the Cinch-Anchor type as manufactured by the National Lead Company, the Rawl-Anchor Type as manufactured by the Rawlplug Co., or approved equal.
The Contractor shall have the option of using three-ply fabric waterproofing as a substitute for the one-ply membrane (rubber) waterproofing.

RAILROAD CONSTRUCTION REQUIREMENTS:
The contractor shall submit his plan of action together with falsework and shoring plans to the Highway Bridge Division for approval of the Burlington Northern Railway Company for review before any work adjacent to Tracks is begun. No work adjacent to the tracks shall be performed prior to the receipt of notice to proceed given by the Chief Engineer of the Railway Company to the State.
The Contractor shall provide protection of Railway Company tracks and traffic in accordance with Special Provision SP-14C.
The Contractor shall not be required to furnish or place any ballast, ties or track but shall give full cooperation to the railroad in scheduling operations required for the various phases of track relocation.

JOINT FILLER:
Cork joint filler shall conform to the requirements of A.A.S.H.T.O. M153 Type II. Secure cork with 2½" long 11 ga. copper nails about 18" centers. Included in price bid for other items.
Bituminous joint filler shall comply with A.A.S.H.T.O. M33. Included in price bid for other items.

PAINTING:
Painting shall be in accordance with Section 718 of the Standard Specifications. Number 25414 color gray shall be used for the first field coat and number 25184 color gray-blue shall be used for the second field coat.
All steel surfaces to be painted shall have a commercial blast cleaning prior to painting.

LEGEND:

e.f.	denotes each face
n.f.	denotes near face
f.f.	denotes far face
Typ.	denotes typical
Ser.	denotes series

CONCRETE SURFACE PROTECTION
Concrete Surface Protection shall be applied to the roadway face of all retaining walls and wingwalls, all exposed vertical faces of the piers and the roadway faces of abutments up to the bottom of the steel beams. Coating shall extend 6" below grade Line.

SEQUENCE OF CONSTRUCTION

Phase I:

Step 1. Excavate between the switching Lead and Mainline tracks at the temporary trestle location. This excavation is noted as "Initial Common Excavation-Type A (Before Trestle Construction)" on the cross section sheets. Construct Temporary embankment for Shooflys C1, C2, C3 and a portion of A as shown on sheet 36.

Step 2. Drive sheet piling as shown on sheets 39 and 42.

Step 3. Predrill to bottom of retaining wall footing and drive all steel H-piling for retaining wall which cannot be driven because of interference with the temporary trestle superstructure after it is in place.

Step 4. (By Burlington Northern Inc. forces) Construct Temporary Trestle. Predrill timber piling to bottom of Phase I or Phase II (Step 3) excavation as shown on the cross section sheets.

Step 5. (By Burlington Northern Inc. forces) Throw Switching Lead Track up to 15 feet and construct new Temporary Track over remaining shoofly route over Temporary Trestle as shown on sheet 36.

Step 6. (By Burlington Northern Inc. forces) Route Switching Lead Traffic over Temporary Track and Trestle.

Step 7. Excavate for permanent Bridge A and construct temporary embankment for Shoofly B and remaining portion of Shoofly A as shown on sheets 37 and 38.

Step 8. Construct permanent Bridge A over the future route of U.S. Highway No. 10. Construct Bridge A wingwalls and Phase I retaining walls as shown on sheets 9 and 10.

Step 9. Construct dam between end of retaining walls and sheet piling as shown on sheet 42. Backfill behind abutments and walls and construct embankment for proposed Switching Lead grade.

Step 10. (By Burlington Northern Inc. forces) Throw track up to 15 feet back to Switching Lead location on new grade and construct new permanent Track over remaining portion of Switching Lead.

Step 11. (By Burlington Northern Inc. forces) Route Switching Lead Traffic over permanent Bridge A on original alignment.

Phase II:

Step 1. (By Burlington Northern Inc. forces) Throw West Leg and Main Line Track up to 15 feet and construct new temporary tracks for remaining sections of Shoofly A and Shoofly B.

Step 2. (By Burlington Northern Inc. forces) Route Mainline and west Leg traffic over Temporary Trestle.

Step 3. Excavate for permanent Bridge B as shown on cross sections.

Step 4. Construct permanent Bridge B over the future route of U.S. Highway No. 10. Construct Bridge B wingwalls and Phase II retaining walls as shown on sheets 23 and 24.

Step 5. Backfill behind abutments and walls and construct embankment for proposed Main Line and West Leg grades.

Step 6. (By Burlington Northern Inc. forces) Throw track up to 15 feet back to Main Line and West Leg original locations on new grade. Construct new permanent track over remaining portions.

Step 7. (By Burlington Northern Inc. forces) Route Mainline and West Leg traffic over permanent Bridge B on original alignment.

Step 8. (By Burlington Northern Inc. forces) Remove remaining temporary track and trestle.

Step 9. Construct top sections of retaining walls as shown on sheets 10 and 24.

Step 10. Remove remaining sheet piling.

Step 11. Excavate to bottom of U.S. Highway No. 10 subgrade at previous trestle location. This excavation is noted "Final Common Excavation-Type A" on the cross section sheets. Construct final embankment behind retaining walls as required for drainage.

Step 12. (By Others) Construction U.S. Highway No. 10.

Step 13. Fill in existing bridge over original U.S. Highway No. 10 location.

Step 14. Remove handrail from existing Bridge. Cost shall be included in the Price Bid for "Fill in Existing Structure."

QUANTITIES

GENERAL NOTES

BURLINGTON NORTHERN, INC.
RAILWAY UNDERPASSES

U.S. HIGHWAY NO. 10
MORTON COUNTY

10-916.95-2