

COLLIN COUNTY, TEXAS

GRADING, PAVING, DRAINAGE, AND STRUCTURES OUTER LOOP ACCESS ROAD DALLAS PARKWAY TO EAST OF SH 289 EXHIBIT A

DESIGN SPEEDS:
OUTER LOOP EBML
PRINCIPAL ARTEIAL = 70 MPH
OUTER LOOP EBFR
URBAN ARTERIAL = 50 MPH
MINOR CROSS STREETS = 30 MPH

FROM: DALLAS PARKWAY TO EAST OF SH 289
NET LENGTH OF PROJECT: 9894.18 FT = 1.874 MILES
ROADWAY LENGTH: 8481.12 FT = 1.606 MILES
BRIDGE LENGTH: 1413.06 FT = 0.268 MILES

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION,
NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS,
SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL
FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012).

CONSTRUCT TWO LANE ACCESS ROAD ON NEW LOCATION CONSISTING OF GRADING,
DRAINAGE, STRUCTURES, CONCRETE & ASPHALT PAVEMENTS, SIGNING, AND PAVEMENT MARKINGS

IN PROGRESS

90% SUBMITTAL

INTERIM REVIEW ONLY

DOCUMENT IS FOR INTERIM REVIEW AND NOT
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PERMIT PURPOSES.

ENGINEER: JESUS GONZALEZ JR., PE

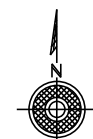
TEXAS SERIAL NO.: 111427

DATE: 12/20/2018

COUNTY JUDGE:
KEITH SELF

COUNTY COMMISSIONER:
PRECINCT 1 SUSAN FLETCHER
PRECINCT 2 CHERYL WILLIAMS
PRECINCT 3 JOHN THOMAS
PRECINCT 4 DUNCAN WEBB

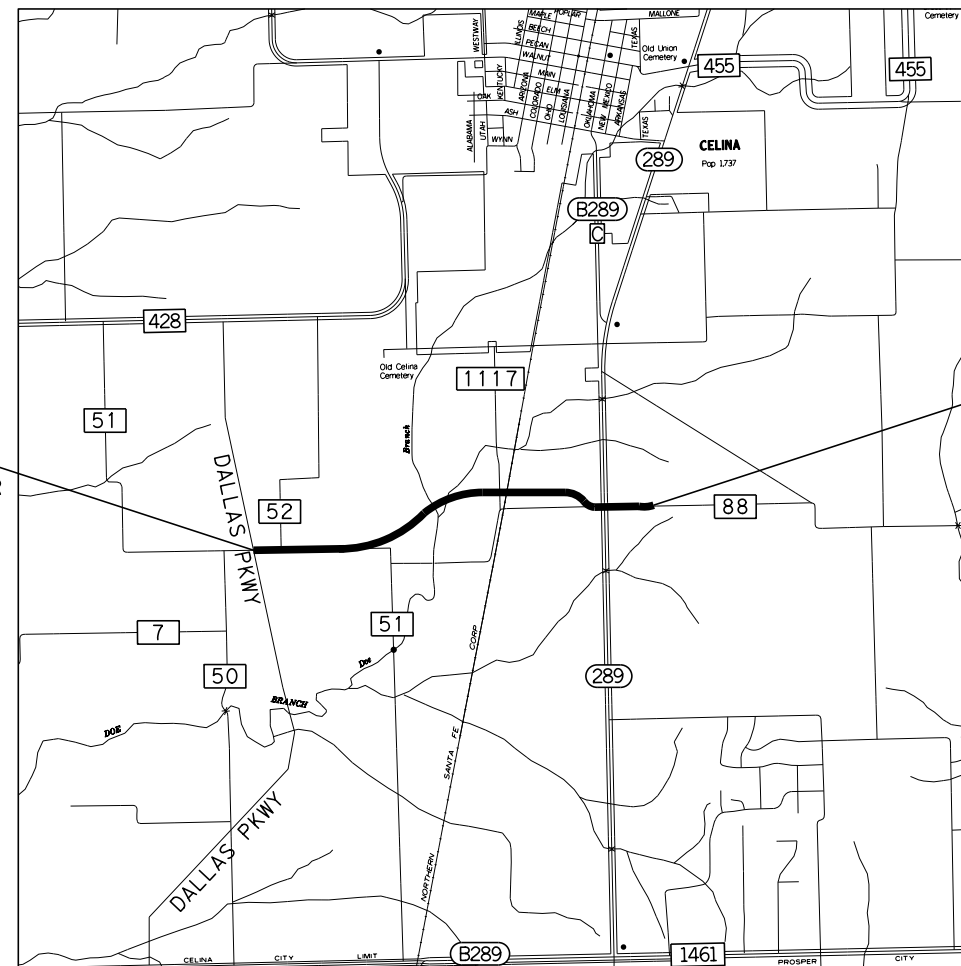
DIRECTOR OF ENGINEERING:
CLARENCE DAUGHERTY, P.E.



SCALE
N.T.S.

BEGIN PROJECT
@ OUTER LOOP EBFR
STA 1000+13.06

END PROJECT
@ CR88
STA 1099+07.24



EXCEPTIONS: NONE
EQUATIONS: @ OUTER LOOP EBFR 1051+81.00 AH = 1051+80.14 BK
RAILROAD CROSSINGS: BNSF RR (STA 1064+31.30, STA 1064+51.97)

LETTING DATE: _____
CONTRACTOR: _____
CONTRACTOR'S ADDRESS: _____

DATE WORK BEGAN: _____
DATE WORK WAS COMPLETED: _____
DATE WORK WAS ACCEPTED: _____

AS BUILT PLANS: _____
FINAL RECORD DRAWING DATE: _____

PREPARED BY:
JACOBS ENGINEERING GROUP.

PROJECT MANAGER

DATE: _____

JACOBS

1999 BRYAN ST, SUITE 1200
DALLAS, TX 75201-3136
Phone: +1 (214) 638-0145
Firm Registration: F-2966

CONSTRUCTION MANAGER

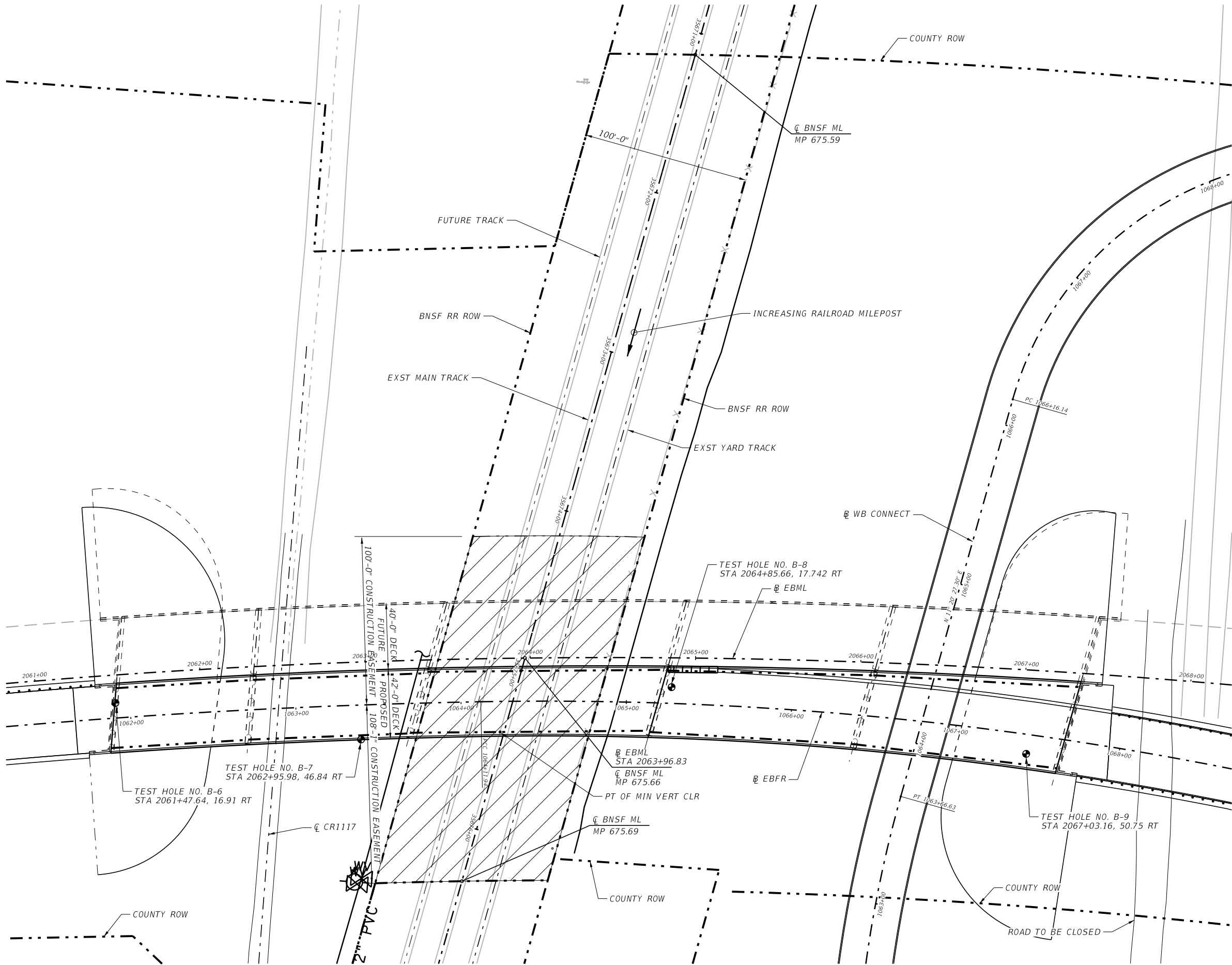
FILE LOCATION AND NAME

LEVELS DISPLAYED

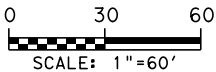
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NOTES:
DIVISION: TEXAS
SUBDIVISION: MADILL
12 THROUGH TRAINS PER DAY AT 40MPH



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ENGINEER: JEFFERY A. ELY, PE
TEXAS SERIAL NO.: 88096
DATE: 12/20/2018

NO.	DATE	REVISION	APPROV.

COLLIN COUNTY OUTER LOOP



EXHIBIT "A"
BNSF OVERPASS
PROJECT PLAN

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

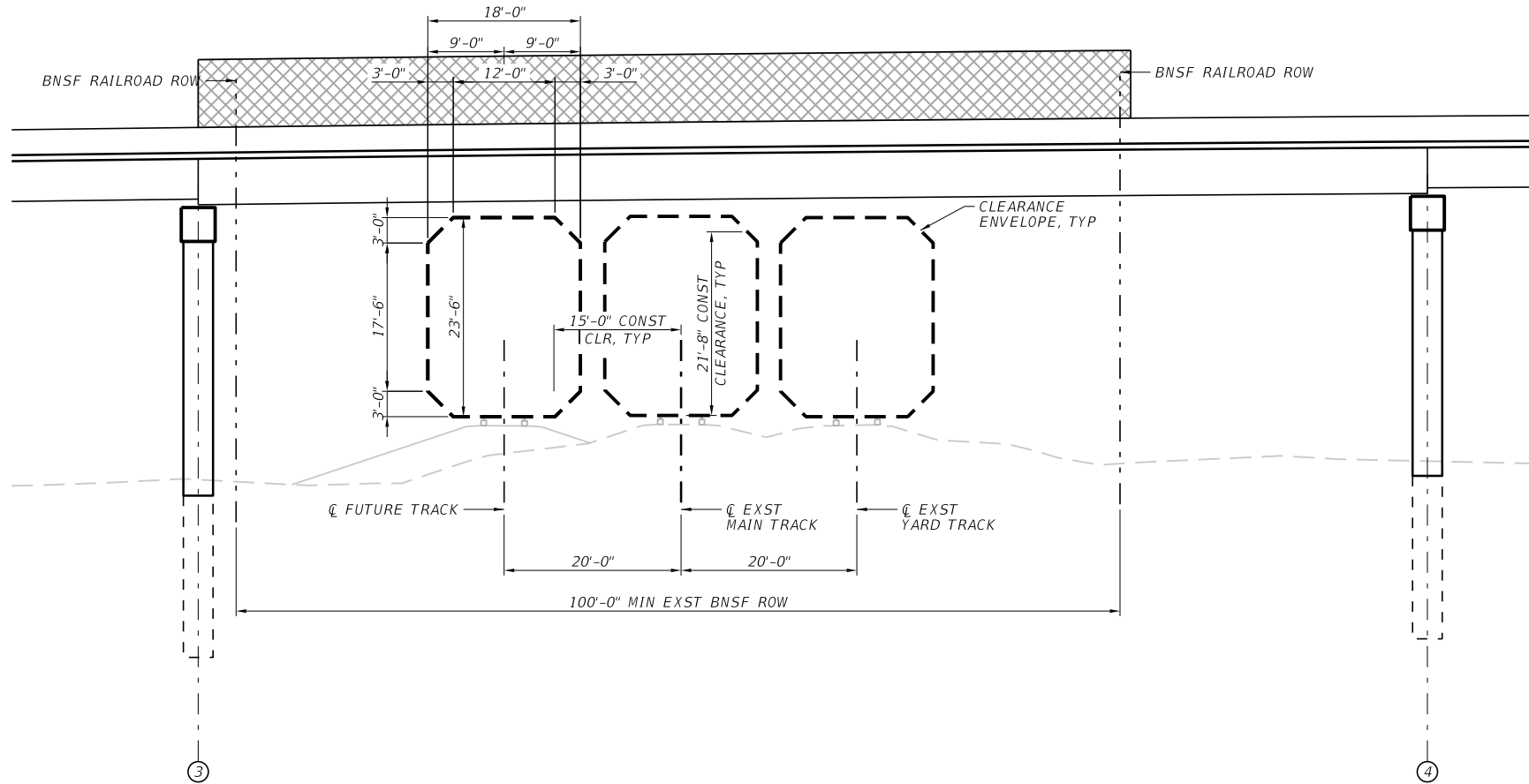
SHEET 1 OF 11

JACOBS

FIRM REGISTRATION: F-2966

BOND PROJECT NO. 07-094

SHEET



DETAIL A

CLEARANCE ENVELOPE & TRACK SPACING PERPENDICULAR TO BNSF TRACK

GENERAL NOTES:

- 12 THROUGH TRAINS PER DAY AT 40 MPH.
- EXISTING BSNF ROW 100'-0".
- THE CONTRACTOR SHALL PROVIDE CONSTRUCTION LIGHTING AT HIS OWN EXPENSE.
- CONTRACTOR SHALL MAINTAIN CONSTRUCTION CLEARANCE OF 21'-6" VERTICAL ABOVE THE PLANE OF THE TOP OF THE HIGHEST RAIL AND 15'-0" HORIZONTAL AT RIGHT ANGLES FROM CENTERLINE OF TRACK.

WORK PERFORMED BY RAILROAD

- FURNISH BNSF FLAGMAN.
- COORDINATE WORK WINDOWS WITH CONTRACTOR.
- REVIEW APPROPRIATE SUBMITTALS.
- PROVIDE XX DAYS OF FLAGGING AND XX DAYS OF INSPECTION.

WORK PERFORMED BY TXDOT CONSTRUCTION CONTRACTOR

- CONSTRUCTION OF NEW SUBSTRUCTURE FOR OVERPASS OUTSIDE BNSF ROW.
- FURNISH AND INSTALL NEW GIRDERS FOR OVERPASS OVER RAILROAD ROW.
- PLACE CONCRETE DECK AND BRIDGE RAILS FOR OVERPASS.
- COORDINATE ALL WORK WINDOWS WITH BNSF IN ADVANCE.
- PROVIDE ALL ERECTION PLANS TO BNSF FOR REVIEW AND APPROVAL.

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ENGINEER:	JEFFERY A. ELY, PE
TEXAS SERIAL NO.:	88096
DATE:	12/20/2018

COLLIN COUNTY OUTER LOOP



EXHIBIT "A" BNSF OVERPASS PROJECT DETAILS

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

SHEET 2 OF 11

JACOBS

FIRM REGISTRATION: F-2966

BOND PROJECT NO. 07-094

SHEET

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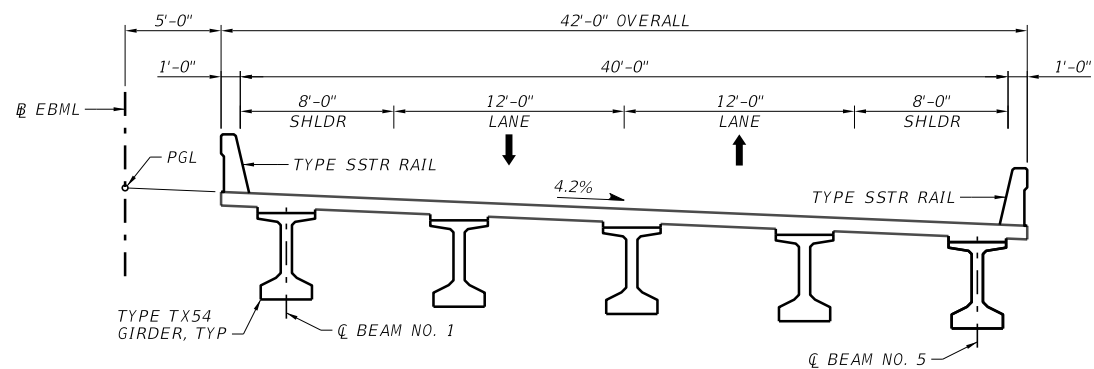
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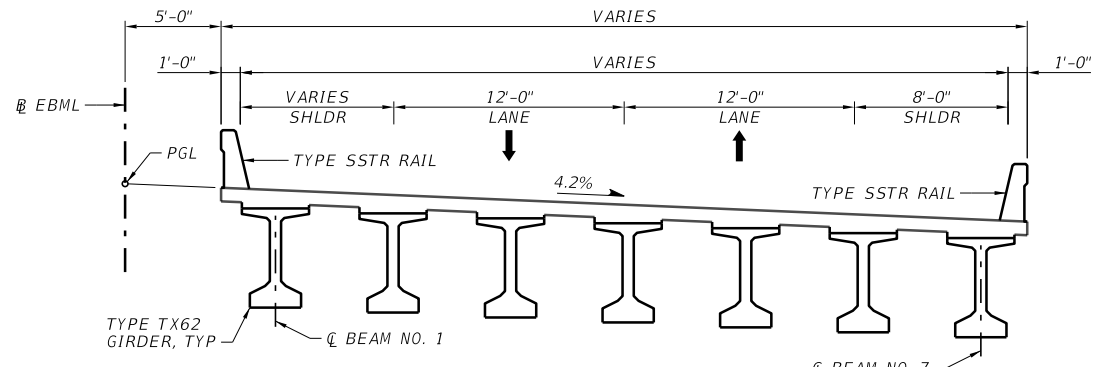
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PLOT TIME: \$PLOTTIME

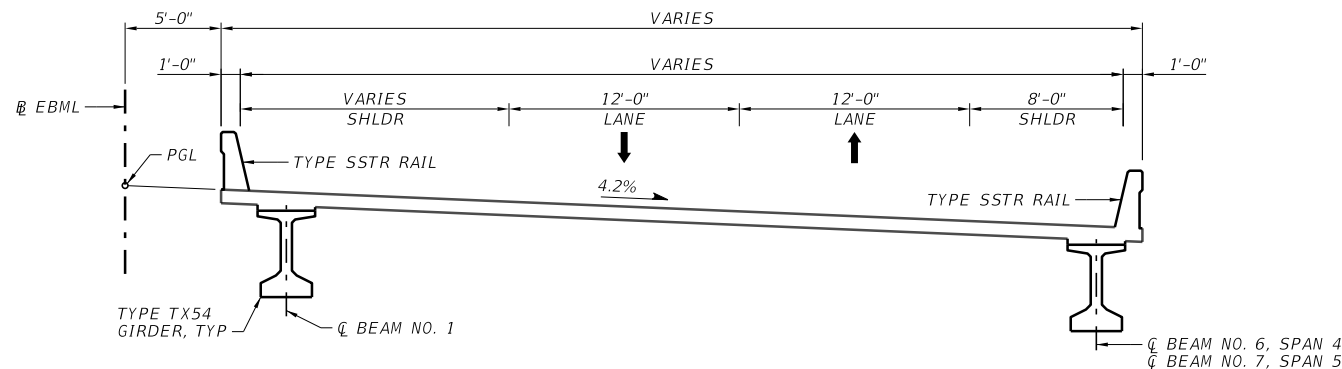
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TYPICAL SECTION
SPAN 1 & 2 SHOWN



TYPICAL SECTION
SPAN 3



TYPICAL SECTION
SPANS 4 & 5

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TEXAS SERIAL NO.: 88096
DATE: 12/20/2018

COLLIN COUNTY OUTER LOOP



EXHIBIT "A"
BNSF OVERPASS
TYPICAL SECTIONS

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

SHEET 5 OF 11

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FIRM REGISTRATION: F-2966

BOND PROJECT NO. 07-094

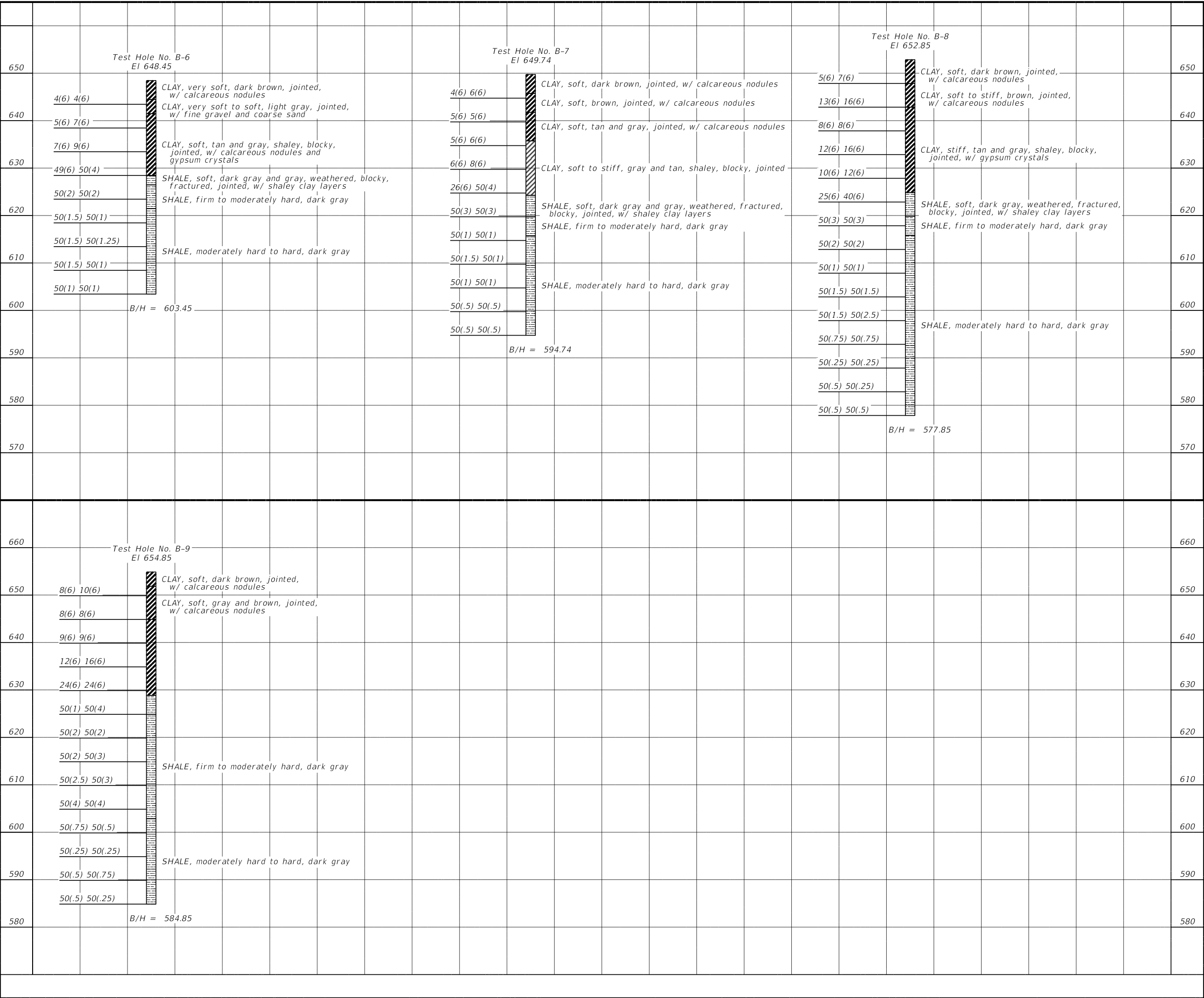
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ENGINEER: JEFFERY A. ELY, PE

TEXAS SERIAL NO.: 88096

DATE: 12/20/2018

NO.	DATE	REVISION	APPROV.

COLLIN COUNTY OUTER LOOP




EXHIBIT "A"

BNSF OVERPASS

BORING LOGS

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

SHEET 6 OF 11

JACOBS

FIRM REGISTRATION: F-2966

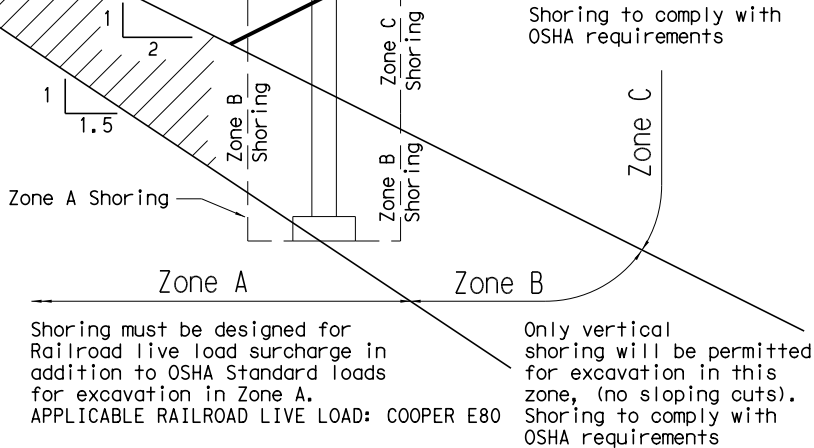
BOND PROJECT NO. 07-094

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DATE: DATE TIME
FILE: DOCUMENT NAME

- GENERAL SHORING NOTES:**
1. All dimensions are measured perpendicular to ϕ of Track.
 2. Prior to commencing any work, submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. Install the temporary shoring system per the approved plans. Comply with design requirements in the BNSF/UPRR GUIDELINES FOR TEMPORARY SHORING.
 3. For excavations which encroach into Zone A or B, provide shoring plans and design calculations. Plans and calculations must be signed and sealed by a Professional Engineer registered in the State of Texas.



GENERAL SHORING REQUIREMENTS

RAILROAD GENERAL NOTES:

1. Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal. See 11.
2. The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures. In the rare event that a grade separation project will increase the quantity and/or characteristics of flow in such elements, such a design must be reviewed and approved by the Railroad.
3. Verify the elevation of the existing top-of-rail profile before beginning construction. Bring all discrepancies to the attention of the Railroad prior to construction.
4. Submit a proposed method of erosion and sediment control for approval by the Railroad.
5. Design and construct all shoring systems that impact the Railroad's operations and/or support the Railroad's embankment per current Railroad Guidelines for Temporary Shoring. See 11.
6. Comply with Railroad Demolition Guidelines for all demolitions within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations.
7. Design erection methods over the Railroad's right-of-way to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements. Coordinate construction work windows with the Railroad's Designated Representative.
8. Design all construction phasing that may impact the Railroad operations to cause no interruption to the Railroad's operations, enabling the track(s) to remain open to traffic per the Railroad's requirements. Coordinate construction work windows with the Railroad's Designated Representative.
9. Comply with minimum construction clearances for falsework outlined in the Railroad's Guidelines.
10. Verify all permanent clearances before project closing.
11. For Railroad coordination please refer to Sheets 2 and 3 and the TxDOT Standard Specifications.

For shoring/excavations in Zone A or B, TxDOT requires a predesigned and approved shoring design in the PS&E. If this is the case no Contractor submittal is required.

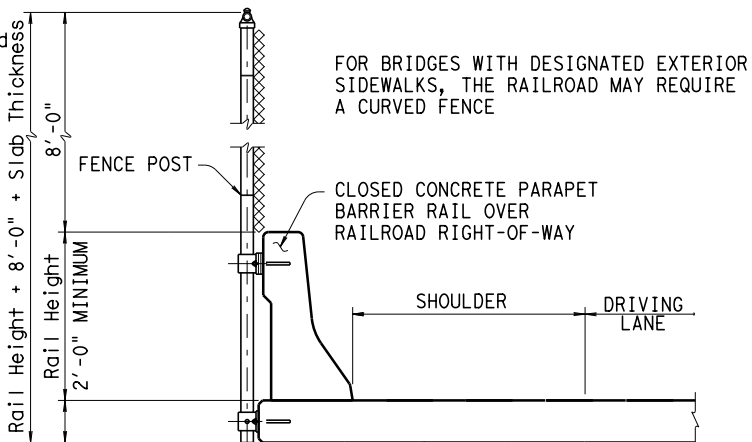
FOR THE FOLLOWING INFORMATION PLEASE REFER TO THE PLAN AND ELEVATION DRAWINGS OF THE BRIDGE PLANS. THE PLAN AND ELEVATION DRAWINGS SHALL SHOW ALL REQUIRED INFORMATION PER BNSF/UPRR GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECT PLAN NO. 711100 SHEET 2.

1. Centerline of bridge and/or centerline of project.
2. Track layout and limits of Railroad right-of-way with respect to centerline of main lines.
3. Future tracks, access roadways and existing tracks as main line, siding, spur, etc.
4. Point of minimum vertical clearance and distance, measured perpendicular, from the centerline of nearest track.
5. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.
6. Horizontal clearance at right angle from centerline of nearest existing or future track to the face of nearest foundation below grade.
7. Horizontal spacing at right angle between centerlines of existing and/or future tracks.
8. Limits of shoring and minimum distance at right angle from centerline of nearest track.
9. All existing facilities and utilities and their proposed relocation, if required.
10. Toe of riprap or earth slope and/or limits of retaining wall.
11. Existing and proposed contours. (not required if the existing groundlines or drainage characteristics in Railroad ROW will not be altered).
12. Railroad Milepost and direction of increasing Milepost.
13. Direction of flow for all drainage systems within project limits.
14. Limits of barrier rail and fence with respect to centerline of track.
15. Depth of foundation below bottom of tie. (for footings only)
16. Top and bottom of pier protection wall elevation relative to top of rail elevation.
17. Controlling dimensions of drainage ditches and/or drainage structures.
18. Top of rail elevations for all tracks.
19. Minimum permanent vertical clearance above top of high rail to the lowest point under the bridge.
20. Existing and proposed groundline & roadway profile.
21. Type of riprap slope paving.
22. Location of deck drains.
23. Total width of superstructure.
24. Width of shoulder and/or sidewalk.

† This table is primarily required for overpass projects. This table is not required for underpass projects if the provided Plan and Profile sheets indicate this information at a minimum of every 100 ft and within bounds including 1500 ft before and after the limits of trackwork.

TABLE OF TOP OF RAIL PROFILE † (STATIONS INCREASE WITH MILEPOST INCREASE)				
	MAIN LINE			
	ALIGNMENT: 100' STATIONS	LEFT RAIL ELEVATION	ALIGNMENT: 100' STATIONS	RIGHT RAIL ELEVATION
1000' PRIOR TO PROJECT				
WITHIN PROJECT				
1000' AFTER PROJECT				

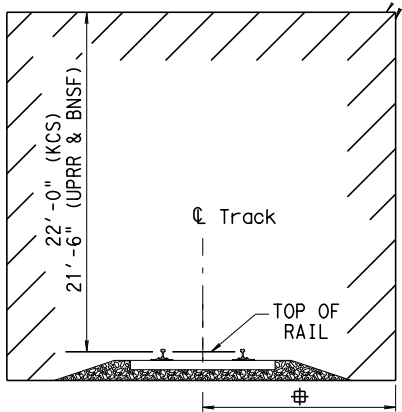
± EXISTING TRACK STA. 10+00
± CONSTRUCTION STA. XX+XX



TYPICAL FENCE ON BARRIER DETAIL

ONLY REQUIRED ON OVERPASSES IF SHOWN ON BRIDGE LAYOUT. (AREAS WITH PEDESTRIANS ON BRIDGE, RAIL YARDS, OR HISTORY OF VANDALISM)

NO CONSTRUCTION ACTIVITIES OR OTHER OBSTRUCTION SHALL BE PLACED WITHIN THESE LIMITS



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)
±15'-0" (BNSF), 14'-0" (KCS), and 12'-0" (UPRR)

GENERAL NOTES:

Design and Construction for Railroad Projects shall be in accordance with the AREMA Manual for Railway Engineering and BNSF/UPRR Guidelines for Railroad Grade Separation Projects (as annotated by TxDOT) or Kansas City Southern Guidelines for the Design and Construction of Overpasses and Underpasses, or DART Light Rail Project Design Criteria Manual, and the TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges AS APPLICABLE TO THE RAILROAD COMPANY INVOLVED. See BNSF/UPRR Guidelines for Grade Separation Projects Plan No. 711100 and TxDOT Railroad Fence Details Sheet for additional information. A curved top fence extending 8'-0" above top of sidewalk is acceptable only where there is a traffic rail between roadway and sidewalk. See Kansas City Southern Guidelines for the Design and Construction of Overpasses and Underpasses for corresponding BNSF/UPRR sheets referenced.

SHEET 1 OF 3

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ENGINEER: JEFFERY A. ELY, PE
TEXAS SERIAL NO.: 88096
DATE: 12/20/2018

RAILROAD REQUIREMENTS FOR BRIDGE CONSTRUCTION.dgn

Texas Department of Transportation		Traffic Operations Division			
RAILROAD REQUIREMENTS FOR BRIDGE CONSTRUCTION					
MADILL SUBDIVISION DOT NO. 675298E RR MP 675.66					
SHEET 7 OF 11					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT		
© TxDOT October 2014	CONT	SECT	JOB		
REVISIONS		DIST	COUNTY		
		SHEET NO.			

PART 1 - GENERAL

1.01 DESCRIPTION

This project includes construction work within the Right-of-Way and/or properties of the Railroad Company and adjacent to its tracks, wire lines and other facilities. These sheets describe the minimum special requirements for coordination with the Railroad when working upon, over or under Railroad Right-of-Way or when impacting current or future Railroad operations. Coordinate with the Railroad while performing the work outlined herein, and afford the same cooperation with the Railroad as with TxDOT. Complete all submittals and work in accordance with TxDOT Standard Specifications, Railroad Guidelines and AREMA recommendations as modified by these minimum special requirements or as directed in writing by the Railroad Designated Representative.

For purposes of this project, the Railroad Designated Representative is the person or persons designated by the Railroad Manager of Industry and Public Projects to handle specific tasks related to the project.

1.02 REQUEST FOR INFORMATION / CLARIFICATION

Submit Requests for Information ("RFI") involving work within any Railroad Right-Of-Way to the TxDOT Engineer. The TxDOT Engineer will submit the RFI to the Railroad Designated Representative for review and approval for RFI's corresponding to work within Railroad Right-Of-Way. Allow six (6) weeks total time for review and approval, which includes four (4) weeks for review and approval by the Railroad.

1.03 PLANS / SPECIFICATIONS

TxDOT has received writtern Railroad approval of the plans and specifications for this project. Any revisions or changes in the plans after award of the Contract must have the approval of TxDOT and the Railroad.

PART 2 - UTILITIES AND FIBER OPTIC

Construct all utility installations in accordance with current AREMA recommendations, Railroad, TxDOT and owning utility specifications and requirements. Railroad general guidelines can be found on the Railroad website or by contacting the Railroad Designated Representative.

PART 3 - CONSTRUCTION

3.01 GENERAL

- A. Perform all work in compliance with all applicable Railroad, FRA (Federal Railway Administration) and TxDOT rules and regulations. Arrange and conduct work in a manner that does not endanger or interfere with the safe operation of the tracks and property of the Railroad and the traffic moving on such tracks, or the wires, signals and other property of the Railroad, its tenants or licensees, at or in the vicinity of the Work. The safe operation of Railroad train movements takes precedence over any work to be performed by the Contractor. The Contractor is responsible for train delay cost and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction or other activities.
- B. Construction activities within 12 feet of the operational tracks will only be allowed if absolutely necessary and the Railroad's Designated Representative grants approval. Construction activities within 12 feet of the operational track(s) preferably allow the tracks to stay operational. In such cases, coordination and approval by the Railroad Track Manager is required with regard to schedule, flagging, and slow orders. See Sections 3.07 and 3.08 for additional information.
- C. Provide track protection for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. When not in use, keep Contractor machinery and materials at least 50 feet from the Railroad's nearest track.
- D. Vehicular crossings of railroad track are allowed only at existing crossings, or haul road crossings developed with Railroad approval.
- E. The Contractor is also advised that new railroad facilities within the project may be built by the Railroad. If applicable, these facilities are delineated in the plans. Be aware of the limits of responsibilities and coordinate efforts with the Railroad and TxDOT.

3.02 RAILROAD OPERATIONS

- A. Trains and/or equipment are expected on any track, at any time, in either direction. Become familiar with the train schedules in this location and structure bid assuming intermittent track windows in this period, as defined in Paragraph B that follows.
- B. All railroad tracks within and adjacent to the Contract Site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. Railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. Coordinate and schedule the work so that construction activities do not interfere with railroad operations.
- C. Coordinate work windows with TxDOT and the Railroad's Designated Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:
 - 1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and/or adjacent to the railroad tracks within 25 feet of the nearest track, a Railroad flag person will be required. At the direction of the Railroad flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the Railroad Designated Representative, from the tracks). Conditional Work Windows are available for the Project.
 - 2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame, the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window, the railroad tracks and/or signals must be completely operational for train operations and all Railroad, Public Utilities Commission (PUC) and FRA requirements, codes and regulations for operational tracks must be satisfied. In the situation where the operating tracks and/or signals have been affected, the Railroad will perform inspections of the work prior to placing that track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for Railroad review.

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

- A. Do not perform any work within Railroad Right-of-Way without a valid executed Right of Entry Agreement if required on this project.
- B. Give advance notice to the Railroad as required in the "Contractor's Right of Entry Agreement" before commencing work in connection with construction upon or over Railroad Right-of-Way and observe the Railroad's rules and regulations with respect thereto.
- C. Perform all work upon Railroad Right-of-Way in a manner to avoid interference with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, submit the work method to the Railroad Designated Representative for approval. Approval does not relieve the Contractor from liability. Do not commence any work which requires flagging service or inspection service until the flagging protection required by the Railroad is available at the job site. See Section 3.18 for railroad flagging requirements.
- D. Make requests in writing for both Absolute and Conditional Work Windows, at least 30 days in advance of any work. Include in the written request:
 - 1. Exactly what the work entails.
 - 2. The days and hours that work will be performed.
 - 3. The exact location of work, and proximity to the tracks.
 - 4. The type of window requested and the amount of time requested.
 - 5. The designated contact person.

Provide a written confirmation notice to the Railroad at least 48 hours before commencing work in connection with approved work windows when work is within 25 feet of nearest rail. Perform all work in accordance with previously approved work plans.

- E. Make provisions to protect operations and property of the Railroad should a condition arising from, or in connection with the work, require immediate and unusual action. If in the judgment of the Railroad Designated Representative such provisions are insufficient, the Railroad Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the Railroad or TxDOT. The Railroad or TxDOT shall have the right to order the Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the Railroad Designated Representative, the Contractor's operations could endanger railroad operations. In the event of such an order, immediately notify TxDOT of the order.

3.04 INSURANCE

Do not begin work upon or over Railroad Right-of-Way until furnishing the Railroad with the insurance policies, binders, certificates and endorsements required by the "Contractor's Right-of-Entry Agreement", and until the Railroad Designated Representative has advised TxDOT that such insurance is in accordance with the Agreement.

3.05 RAILROAD SAFETY ORIENTATION

- A. Complete the Railroad course "Orientation for Contractor's Safety", and maintain current registration prior to working on Railroad property. This orientation is available at www.contractororientation.com. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

"KCS/TEXMEX will not accept on-track safety training certificates from other railroads. Contractor's employees entering the KCS railroad shall hold current certificates at all times. The training can be had by contacting Larry Slater of TrackSense Inc. at 330-847-8661 or by email at lslater@neo.rr.com."

BNSF also will not accept on-track safety training certificates from other railroads. The training can be completed at www.BNSFContractor.com.

- B. Know and follow the "Contractor's Right of Entry Agreement" EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

3.06 COOPERATION

The Railroad will cooperate with Contractor so that work may be conducted in an efficient manner, and will cooperate with Contractor in enabling use of Railroad Right-of-Way in performing the work.

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

Abide by the following minimum temporary clearances during the course of construction:
A. 15' - 0" (BNSF), 14' - 0" (KCS), and 12'-0" (UPRR) horizontal from centerline of track
B. 22' - 0" (KCS) and 21' - 6" (UPRR & BNSF) vertically above top of rail.


For construction clearance less than listed above, obtain local Railroad Operating Unit review and approval.

3.08 APPROVAL OF REDUCED CLEARANCES

- A. Maintain minimum track clearances during construction as specified in Section 3.07.
- B. Submit any proposed infringement on the specified minimum clearances to the Railroad Designated Representative through TxDOT at least 30 days in advance of the work. Do not proceed with such infringement without written approval by the Railroad Designated Representative.
- C. Do not commence work involving an approved infringement until receiving written assurance from the Railroad Designated Representative that arrangements have been made for any necessary flagging service.

DATE:

FILE:

 Texas Department of Transportation				Traffic Operations Division				
RAILROAD REQUIREMENTS FOR BRIDGE CONSTRUCTION								
MADILL SUBDIVISION DOT NO. 675298E RR MP 675.66								
SHEET 8 OF 11								
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REVISIONS								
		DIST		COUNTY				SHEET NO.

3.09 CONSTRUCTION AND AS-BUILT SUBMITTALS

- A. Provide TxDOT submittals for construction materials and procedures as outlined below and indicated in TxDOT Standard Specifications. A summary of most TxDOT submittal requirements can be found at: [www.dot.state.tx.us/publications/bridge/items reviewed.pdf](http://www.dot.state.tx.us/publications/bridge/items%20reviewed.pdf)
- B. The tables below provide the Railroad's minimum submittal requirements for the construction items noted. Submittal requirements are in addition to those specified elsewhere in these bid documents. The review times indicated below represent the total time, including the Railroad's required four (4) weeks.
- C. TxDOT will forward relevant submittals to the Railroad Manager of Industry and Public Projects unless otherwise directed by the Railroad. TxDOT and the Engineer of Record will review and include comments prior to forwarding to the Railroad. Submit items in Table 1 for both railroad overpass and underpass projects, as applicable. Submit items in Table 2 for railroad underpass projects only.

TABLE 1 - RAILROAD SUBMITTAL REQUIREMENTS FOR OVERPASS & UNDERPASS PROJECTS

ITEM	DESCRIPTION	SETS	REVIEW TIME
1	Shoring design and details	6	6 weeks
2	Falsework design and details	6	6 weeks
3	Drainage design provisions	6	6 weeks
4	Erection diagrams and sequence	6	6 weeks
5	Demolition diagram and sequence	6	6 weeks

TABLE 2 - RAILROAD SUBMITTAL REQUIREMENTS FOR UNDERPASS PROJECTS

ITEM	DESCRIPTION	SETS	NOTES	REVIEW TIME
1	Shop drawings	6	Steel and Concrete members	6 weeks
2	Bearings	6	For all structures	6 weeks
3	Concrete Mix Designs	6	For all structures	6 weeks
4	Rebar & Strand certifications	6	For superstructure only	6 weeks
5	28 day concrete strength	6	For superstructure only	6 weeks
6	Waterproofing material certifications and installation procedure	6	Waterproofing & protective boards	6 weeks
7	Structural steel certifications	6	All fracture critical members & other members requiring improved notch toughness	6 weeks
8	Fabrication and Test reports	6	All fracture critical members & other members requiring improved notch toughness	6 weeks
9	Welding Procedures and Welder Certification	6	AWS requirements	6 weeks
10	Foundation Construction Reports or Notes	6	Pile driving, drilled shaft construction, bearing pressure test reports for spread footings	6 weeks
11	Compaction testing reports for backfill at abutments	6	Must meet 95% maximum dry density, Modified Procter ASTM D1557	6 weeks

- D. TxDOT shall submit As-Built Records to the Railroad when TxDOT has processed the final project plans. These records shall consist of the following items:

Overpass Projects

1. Electronic files of all structure design drawings with as-constructed modifications shown, in Microstation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.

Underpass Projects

1. Electronic files of all structure design drawings with as-constructed modifications shown, in Microstation J or Acrobat .PDF format.
2. Hard copies of all structure design drawings with as-constructed modifications shown.
3. Final approved copies of shop drawings for concrete and steel members.
4. Foundation Construction Reports
5. Compaction testing reports for backfill at abutments

3.10 APPROVAL OF DETAILS

Submit details of the construction affecting Railroad tracks and property not already included in the Contract Plans to the Railroad Designated Representative through TxDOT for the Railroad's review and written approval before such work is undertaken. Allow a total six (6) months for review and approval of these submittals, which includes the Railroad's four (4) week review time.

3.11 MAINTENANCE OF RAILROAD FACILITIES

- A. Maintain all ditches and drainage structures free of silt or other obstructions resulting from Contractor's operations. Repair eroded areas and any other damage within Railroad Right-of-Way and repair any other damage to the property of the Railroad, or its tenants.
- B. Perform all such maintenance and repair of damages due to the Contractor's operations at Contractor's expense.
- C. Submit a proposed method of erosion control for review by the Railroad prior to beginning any grading on the Project Site. Comply with all applicable local, state and federal regulations when developing and implementing such erosion control.

3.12 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

- A. In addition to the office reviews of construction submittals, site inspections may be performed by the Railroad Designated Representative at significant points during construction, including the following if applicable:
1. Pre-construction meetings.
2. Pile driving/drilling of caissons or drilled shafts.
3. Reinforcement and concrete placement for railroad bridge substructure and/or superstructure.
4. Erection of precast concrete or steel bridge superstructure.
5. Placement of waterproofing (prior to placing ballast on bridge deck).
6. Completion of the bridge structure.
- B. Site inspection is not limited to the milestone events listed above. Site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by the Railroad.
- C. Provide a detailed construction schedule, including the proposed temporary horizontal and vertical clearances and construction sequence for all work to TxDOT for submittal to the Railroad Designated Representative for review prior to commencement of work. Include the anticipated dates when the above listed events will occur. Update this schedule for the above listed events as necessary and each month at a minimum to allow the Railroad to schedule site inspections.

3.13 RAILROAD REPRESENTATIVES

Railroad representatives, conductors, flag person or watch person will be provided by the Railroad at expense of TxDOT to protect Railroad facilities, property and movements of its trains or engines. In general, the Railroad will furnish such personnel or other protective services as follows:

- A. When any part of any equipment is standing or being operated within 25 feet, measured horizontally, from nearest rail of any track on which trains may operate, or when any object is off the ground and any dimension thereof could extend inside the 25 foot limit, or when any erection or construction activities are in progress within such limits, regardless of elevation above or below track.
- B. For any excavation below elevation of track subgrade if, in the opinion of the Railroad Designated Representative, track or other Railroad facilities may be subject to settlement or movement.
- C. During any clearing, grubbing, excavation or grading in proximity to Railroad facilities, which, in the opinion of the Railroad Designated Representative, may endanger Railroad facilities or operations.
- D. During any contractor's operations when, in the opinion of the Railroad Designated Representative, Railroad facilities, including, but not limited to, tracks, buildings, signals, wire lines, or pipe lines, may be endangered.
- E. Arrange with the Railroad Designated Representative to provide the adequate number of flag persons to accomplish the work.

3.14 WALKWAYS REQUIRED

Maintain along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than twelve feet (12') from centerline of track. Remove any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours before the close of each work day. Construct walkways with railings over open excavation areas when in close proximity of track. Do not violate allowable clearances of these railings to centerline of track: 8' - 6" horizontally for tangent track or 9' - 6" horizontally for curved track.

3.15 COMMUNICATIONS AND SIGNAL LINES

If required, the Railroad will rearrange its communications and signal lines, its grade crossing warning devices, train signals and tracks, and facilities that are in use and maintained by the Railroad's forces in connection with its operation at expense of TxDOT. This work by the Railroad will be done by its own forces and it is not a part of the Work under this Contract.

3.16 TRAFFIC CONTROL

Coordinate any operations that control traffic across or around Railroad facilities with the Railroad Designated Representative.

3.17 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

- A. Take special precaution and care in connection with excavating and shoring. Excavations for construction of footings, piers, columns, walls or other facilities that require shoring shall comply with requirements of TxDOT, OSHA, AREMA and Railroad "Guidelines for Temporary Shoring".
- B. The project plans indicate whether there are fiber optic lines or other such telecommunications systems that require consideration. Regardless, contact the necessary call center to determine if such cable systems are present:

UPRR 1-800-336-9193
7:00 AM to 9:00 PM CST Monday-Friday except holidays,
staffed 24 hrs/day for emergencies
48 hrs notice required

BNSF 1-800-533-2891
24 hour number
5 working days notice required

KCS 1-800-344-8377
Texas One Call, a 24 hour number
48 hrs notice required, excluding weekends and holidays

If a telecommunications system is buried anywhere on or near Railroad property, coordinate with TxDOT, the Railroad and the Telecommunication Company(ies) to arrange for relocation or protective measures prior to beginning work on or near Railroad property. Refer to the project General Notes for additional information.

- C. Projects involving a boring or jack and bore operation under track such as drainage pipes or culverts and utilities require an installation plan reviewed and approved by the Railroad and TxDOT prior to proceeding with such construction. A railroad inspector and contractor-assisted monitoring of ground and track movement is required to maintain safe passage of rail traffic. Stop installation and do not allow passage of trains if movements in excess of 1/4" vertical or horizontal is detected in the tracks. Immediately repair the damage to the satisfaction of TxDOT and the Railroad before proceeding.


3.18 RAILROAD FLAGGING

Per the RIGHT OF ENTRY agreement for flagging, notify the Railroad Representative at least 10 working days in advance of Contractor work and at least 30 working days in advance of any Contractor work in which any person or equipment will be within 25 feet of nearest rail.

FOR THIS PROJECT, RAILROAD FLAGGING SERVICES WILL BE PROVIDED BY RAILPROS (NOT A BNSF EMPLOYEE). The Contractor must contact Railpros directly at Office # 877-315-0513 or e-mail: BNSFinfo@railprosfs.com to enter into a reimbursement agreement for flagging services and to request and schedule a railroad flagger. The Railpros flagger(s), the Contractor, and the BNSF Roadmaster must participate in a job safety briefing PRIOR TO the start of any work on/over/under Railway's right of way. The Railway reserves the right to utilize its employees to provide railroad flagging services when those resources become available. In this event, the Railpros flagger and the Contractor will be notified by the Railway.

3.19 CLEANING OF RIGHT-OF-WAY

When work is complete, remove all tools, implements, and other materials brought into Railroad Right-of-Way and leave the Right-of-Way in a clean and presentable condition to the satisfaction of TxDOT and the Railroad.

				Traffic Operations Division	
RAILROAD REQUIREMENTS FOR BRIDGE CONSTRUCTION					
MADILL SUBDIVISION DOT NO. 675298E RR MP 675.66					
SHEET 9 OF 11					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT October 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
DIST		COUNTY		SHEET NO.	

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PLOT TIME:

TABLE OF TOP OF RAIL PROFILE (STATIONS INCREASE WITH MILEPOST INCREASE)								
	EXISTING BNSF TRACKS							
	MAIN LINE: RIGHT RAIL		MAIN LINE: LEFT RAIL		YARD LINE: RIGHT RAIL		YARD LINE: LEFT RAIL	
	100' STATIONS	ELEVATIONS	100' STATIONS	ELEVATIONS	100' STATIONS	ELEVATIONS	100' STATIONS	ELEVATIONS
1000' PRIOR TO PROJECT	35662+30.66	661.57	35662+30.56	661.58	35662+30.76	661.19	35662+30.75	661.17
	35663+17.48	661.26	35663+17.63	661.27	35663+18.49	661.05	35663+18.50	661.08
	35664+18.61	661.00	35664+18.50	661.01	35664+18.47	660.82	35664+18.66	660.87
	35665+16.23	660.71	35665+16.08	660.73	35665+15.86	660.55	35665+16.05	660.58
	35666+15.14	660.44	35666+15.10	660.47	35666+15.84	660.28	35666+15.65	660.31
	35667+12.81	660.29	35667+12.78	660.30	35667+12.37	660.14	35667+12.63	660.13
	35668+10.37	660.10	35668+10.63	660.11	35668+10.18	660.04	35668+10.53	660.06
	35669+06.43	659.90	35669+06.48	659.90	35669+05.85	659.87	35669+05.87	659.90
	35669+98.98	659.64	35669+98.83	659.65	35669+98.80	659.56	35669+98.98	659.64
	35670+68.46	659.46	35670+68.41	659.46	35670+68.70	659.37	35670+68.84	659.45
	35671+62.62	659.21	35671+62.51	659.21	35671+63.04	659.10	35671+63.15	659.19
	35672+58.69	658.96	35672+58.76	658.95	35672+59.72	658.84	35672+59.75	658.93
	35673+55.65	658.71	35673+55.61	658.68	35673+55.75	658.57	35673+55.88	658.66
WITHIN PROJECT	35674+51.52	658.46	35674+51.65	658.42	35674+52.26	658.30	35674+52.18	658.40
	35675+48.67	658.20	35675+48.59	658.16	35675+48.39	658.03	35675+48.18	658.13
1000' AFTER PROJECT	35676+17.82	658.02	35676+17.97	657.97	35676+18.35	657.84	35676+18.35	657.94
	35677+13.53	657.77	35677+13.57	657.74	35677+13.63	657.57	35677+13.59	657.68
	35678+14.77	657.50	35678+14.76	657.53	35678+04.88	657.37	35678+04.82	657.43
	35679+51.75	657.05	35679+51.76	657.06	35679+51.87	656.81	35679+51.99	656.81
	35680+48.46	656.96	35680+48.70	656.98	35680+48.07	656.78	35680+48.30	656.70
	35681+44.79	656.93	35681+44.82	656.96	35681+43.83	656.71	35681+44.45	656.62
	35682+40.07	656.84	35682+40.12	656.85	35682+39.34	656.55	35682+39.46	656.51
	35683+31.91	656.74	35683+31.87	656.76	35683+32.34	656.59	35683+32.11	656.60
	35684+24.42	656.69	35684+24.64	656.70	35684+25.03	656.59	35684+25.37	656.58
	35685+18.09	656.65	35685+18.38	656.67	35685+18.97	656.43	35685+19.21	656.43
	35686+10.25	656.38	35686+10.62	656.45	35686+11.68	656.25	35686+11.84	656.26

90% SUBMITTAL

INTERIM REVIEW ONLY

DOCUMENT IS FOR INTERIM REVIEW AND NOT
INTENDED FOR CONSTRUCTION BIDDING, OR
PERMIT PURPOSES.

ENGINEER: JEFFERY A. ELY, PE

TEXAS SERIAL NO.: 88096

DATE: 12/20/2018

NO.	DATE	REVISION	APPROV.
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COLLIN COUNTY OUTER LOOP



EXHIBIT "A"
BNSF OVERPASS
RAIL PROFILE

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

SHEET 10 OF 11



BOND PROJECT NO. 07-094

SHEET

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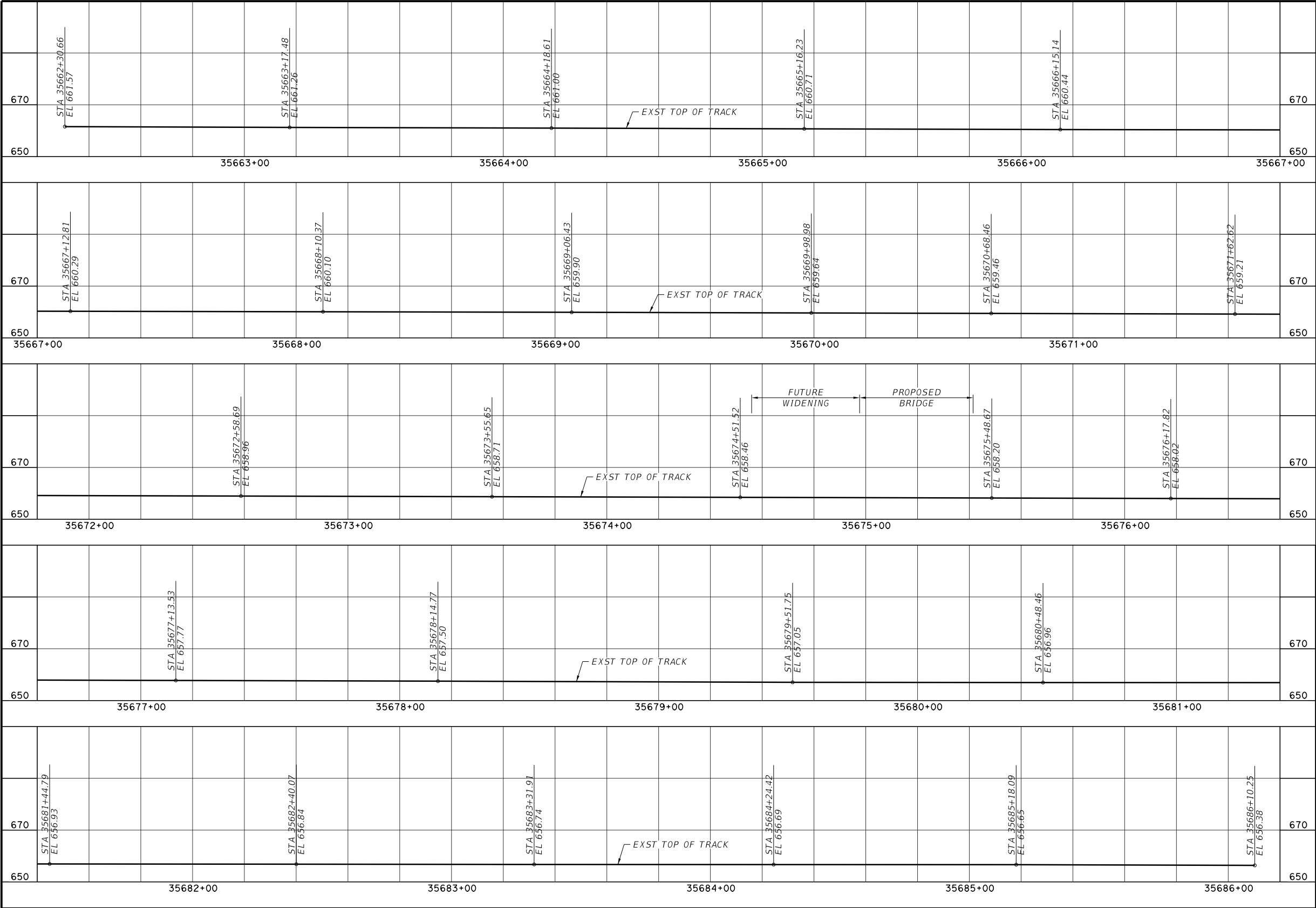
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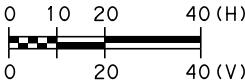
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EXISTING BNSF TRACK PROFILE
SHOWING RIGHT MAIN LINE RAIL



90% SUBMITTAL

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DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

ENGINEER: JEFFERY A. ELY, PE

TEXAS SERIAL NO.: 88096

DATE: 12/20/2018

NO.	DATE	REVISION	APPROV.

COLLIN COUNTY OUTER LOOP



EXHIBIT "A"
BNSF OVERPASS
RAIL PROFILE

MADILL SUBDIVISION
DOT NO. 675298E
RR MP 675.66

SHEET 11 OF 11



FIRM REGISTRATION: F-2966

BOND PROJECT NO. 07-094

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