

## **Appendix A**

### **1. Overhead Grade Separation Data Sheet**

### **2. Overhead Submittal Checklist**

## Appendix A

### Overhead Grade Separation Data Sheet

1 Location: \_\_\_\_\_  
City County State

2 Distance from nearest Milepost to centerline of Bridge: \_\_\_\_\_

3 Description of Project:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4 Utilities on Railroad Property:

<i>Name</i>	<i>Any Adjustments Required</i>	<i>Contact Person</i>

5. List all the at-grade crossings that will be eliminated by the construction of this grade separation:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Minimum horizontal clearance from centerline of the nearest track to face of Pier:  
A. Proposed: \_\_\_\_\_ B. Existing (if applicable): \_\_\_\_\_

7. Minimum vertical clearance from centerline of the nearest track to face of Pier:  
A. Proposed: \_\_\_\_\_ B. Existing (if applicable): \_\_\_\_\_

8. List piers where crash walls are provided:

Pier

Distance from Centerline of Track:

_____	_____
_____	_____
_____	_____

9. Describe how Drainage from approach roadway is handled: \_\_\_\_\_

\_\_\_\_\_

10. Describe how drainage from bridge is handled: \_\_\_\_\_

11. List piers where shoring is required to protect track: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Scheduled Letting Date: \_\_\_\_\_

**ALL INFORMATION ON THIS DATA SHEET TO BE FURNISHED BY THE SUBMITTING AGENCY TO THE MANAGER OF CONTRACTS**

**PRELIMINARY PLAN & ELEVATION VIEWS AS OUTLINED IN SECTION 17 SHALL BE SUBMITTED WITH THIS FORM**

## Appendix A (Continued)

### Overhead Submittal Checklist

<b>Preliminary Plan Submittal Checklist</b>			File: _____			
			Grade Separation: _____		Location: _____	
Hwy/Street Name:			Hw/Street Name:			
Loc. (City & State):			Rte: _____	MP	Sub: _____	
County/Parish			DOT No.:			
Project :			AWO:			
Date:						
Item	Required Information	Min. Required	As Submitted	A/R	Railroad Remarks	
					A = Approved	R = Rejected
	<b>Abutment or Bent No.</b>					
1	Horizontal Clearance (Left) (CL to Face)	18'-0"				
2	Horizontal Clearance (Right) (CL to face)	18'-0"				
3	Vertical Clearance (From Top of Rail)	23'-6"				
4	Horizontal Clearance to footing from CL	25'-0'				
5	Depth top of footing below base of rail	6'-0"				
6	Pier Protection wall required	25'-0" *				
7	Shoring required (CL to nearest Pt.)	12'-0"				
	<b>Bent No.</b>					
1	Horizontal Clearance (Left) (CL to Face)	18'-0"				
2	Horizontal Clearance (Right) (CL to face)	18'-0"				
3	Vertical Clearance (From Top of Rail)	23'-0"				
4	Horizontal Clearance to footing from CL	25'-0'				
5	Depth top of footing below base of rail	6'-0"				
6	Pier Protection wall required	25'-0" *				
7	Shoring required (CL to nearest Pt.)	12'-0"				
	<b>Bent No.</b>					
1	Horizontal Clearance (Left) (CL to Face)	18'-0"				
2	Horizontal Clearance (Right) (CL to face)	18'-0"				
3	Vertical Clearance (From Top of Rail)	23'-0"				
4	Horizontal Clearance to footing from CL	25'-0'				
5	Depth top of footing below base of rail	6'-0"				
6	Pier Protection wall required	25'-0" *				
7	Shoring required (CL to nearest Pt.)	12'-0"				
	<b>Bent No.</b>					
1	Horizontal Clearance (Left) (CL to Face)	18'-0"				
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5	Depth top of footing below base of rail	6'-0"				
6	Pier Protection wall required	25'-0" *				

7	Shoring required (CL to nearest Pt.)	12'-0"				
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\* Pier protection required within KCSRC Right-of-Way

Item	Required Information	Min. Required	As Submitted	A/R	Railroad Remarks	
					A = Approved	R = Rejected
<b>Track Requirements</b>						
1	Existing track centers	Required				
2	Track spreading taken into consideration	Required				
3	Future track centers	20'-0"				
<b>Safety Requirements</b>						
1	Splashboards or barrier rail near Side NS	5'0" / 3'-6"				
2	Splashboards Far Side FS	5'0" / 3'-6"				
3	Splashboards limits adequate	R/W to R/W				
4	Fence w/pedestrian walkway, NS or FS	8'-0" / 10'-0"				
5	Fence w/o pedestrian walkway, NS or FS	10'-0"				
6	Fence limits adequate	R/W to R/W				
<b>Drainage Requirements</b>						
1	Adequate Drainage (Left)	Required				
2	Adequate Drainage (Right)	Required				
3	Drain from Str. / Leaders at Bents	-				
<b>General Requirements</b>						
1	Access road (25' from CL to face)	25'-0"				
2	RR R/W shown correctly	Required				
3	All tracks labeled correctly	Required				
4	Existing utilities aerial or underground	Required				
5	Maximum gap between structures	2'-0"				
6	Lights required for width of Str. Over 80'	80'-0"				
7	Track profile for 1000' on each side of Str.	1000'				
8	Demolition required	-				
9	Abutment slope protection	>2:1				
10	Temp. construction vertical clearance	21'-0"				
11	Temp. construction horizontal clearance	12'-0"				
12	Milepost number & direction of increase	Required				
<b>Instructions</b>						

Milepost and direction of Milepost must be shown in the plans. Left and Right is the orientation of structure elements facing in the direction of increasing milepost.

Fill all applicable parts of table above: In Column "As Submitted" insert all applicable values from plans.

**For any exception to the minimum requirements on the checklist, a detailed explanation/reason why the minimum requirements cannot be provided must be given.**

**PRELIMINARY PLAN REVIEW:**

If items on above table show deficiencies, acceptance of preliminary plans will not be granted until deficiencies are resolved.

**FINAL PLAN REVIEW:**

Prior to structure construction signed final plans, special provisions and hydraulic calculations, if required, shall be submitted for final review. If all items are resolved and plans comply, will release structure for construction.

**UNITS:**

Units for the above checklist to be in English

**Section III**

**Guidelines for  
Bridge Demolition and Removal Plan  
For Structures over Railroad**

**Section III**  
**Bridge Demolition and Removal Plan for**  
**Structures over Railroad**

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Appendix A – KCSRC Bridge Demolition Checklist

**1. General**

- 1.1 The Contractor's work shall in no way impede the train operations of the KCSRC.
- 1.2 The Contractor shall develop a work plan assuming that minimal track windows will be available.
- 1.3 The Contractor shall be responsible for planning and executing all procedures necessary to remove the overhead bridge in a safe and controlled manner.
- 1.4 The Railroad's tracks and property shall be protected at all times.
- 1.5 The contractor shall ensure the area immediately adjacent to operational tracks shall remain free from stumble or like hazards to the ground Railroad personnel to prevent injuries. All excavations shall be designed and constructed in accordance with KCSRC Railroad Construction Guidelines, Section IV, *Design and Construction of Shoring adjacent to and on Railroad Right-of-Way*.
- 1.6 The words "demolition" and "removal" will be used interchangeably.
- 1.7 All removed materials shall be disposed of outside the Railroad right-of-way at no expense to the Railroad.
- 1.8 No work is allowed within 50 feet of the nearest rail when trains pass the work site.
- 1.9 Staged demolition of the portions of structure immediately adjacent to operational tracks will not jeopardize the integrity of the structure over said tracks until actual removal of the portion of the structure over tracks is being done.
- 1.10 A flagman is required when any work is performed on any portion of the Railroad right-of-way.
- 1.11 No blasting will be permitted on Railroad's right-of-way.

**2. Bridge Removal Plans**

- 2.1 The Removal Plan shall include the following:
  - 2.1.1 Plan, elevation and location of bridge, and the locations of any access roads needed for movement of the equipment. The as-built drawings may be used for the submittal provided the removal steps are clearly marked and legible.
  - 2.1.2 Indicate the position of all railroad tracks below the bridge and identify each track as mainline, siding, spur, etc.
  - 2.1.3 Bridge removal sequence and procedures for entire bridge including the staging for the removal of the superstructure and substructure.
  - 2.1.4 List type and number of equipment required and their locations during demolition operations.

- 2.1.5 Locations and types of temporary supports, shoring or bracing required. These members shall be designed to meet the requirements of AREMA Manual for Railway Engineering, latest edition, and KCSRC Railroad Construction Guidelines, Section IV – *Design and Construction of Shoring Adjacent to and on Railroad Right-of-Way* and applicable local and national building codes.
- 2.1.6 The proposed vertical and horizontal clearance from all tracks to the temporary and permanent supports. The minimum vertical and horizontal clearances shall be as per attached frame protection details.
- 2.1.7 If any temporary supports interfere with the natural drainage along the Railroad right-of-way, a temporary drainage plan shall be submitted for review and comment prior to constructing temporary supports. The proposed drainage plan shall route all drainage away from the railroad tracks.
- 2.1.8 Details, limits, and locations of protective covers or other measures proposed to be used to protect the tracks. This includes any shields or other measures that will protect the tracks from falling debris during removal of the overhead bridge and from any debris rolling down the side slopes or otherwise coming into the area round the tracks which could affect train operations. Design loads, including impact loads, shall be noted. In addition equipment should be on site capable of removing debris and track shield from operational tracks.
- 2.1.9 All procedures necessary to remove the bridge in a safe and controlled manner. The estimated time for complete removal over the tacks shall be noted.
- 2.1.10 All overhead and underground utilities in the area affected by removal of the bridge shall be located on the drawings, including any fiber optic, railroad signal, and communication lines.
- 2.1.11 The location and details of track crossings required for moving of the equipment across the railroad tracks. ***Construction of temporary crossings requires a separate written agreement between KCSRC and the contractor.***
- 2.1.12 Limits of demolition of substructures.
- 2.1.13 Details of on-site fire suppression.

### 3. Procedure

- 3.1 During removal operations, the remaining structure shall be stable during all stages of the removal operations.
- 3.2 Prior to proceeding with bridge removal, the sealing Civil or Structural Engineer, or his authorized representative working for the Contractor, shall inspect the temporary

support shoring, including temporary bracing and protective coverings, for conformity with the working drawings. The Engineer shall certify in writing to the Railroad that the work is in conformance with the drawings and that the materials and workmanship are satisfactory. A copy of this certification shall be available at the site of work at all times.

- 3.3 Coordinate the removal schedule with the Railroad. All the removal work within the track area shall be performed during the time windows when the trains are not passing the work site.
- 3.4 All substructures shall be removed to at least 3 feet below the final finished grade or at least 2 feet below base of rail whichever is lower, unless otherwise specified by the Railroad.
- 3.5 All debris and refuse resulting from the work shall be removed from the right-of-way by the Contractor and the premises left in a neat and presentable condition.
- 3.6 The work progress shall be reviewed and logged by the Contractor's Engineer. Should an unplanned event occur, the Contractor shall inform the Railroad and submit procedure to correct or remedy the occurrence.
- 3.7 Preferably all demolition and beam removal shall be from above. In the case that the beams require removal from below, the beams may temporarily straddle the tracks. The following steps shall be taken:
  - 3.7.1 The work shall be scheduled with the Railroad's Service Unit Superintendent subject to the Railroad's operational requirements for continuous train operations. The beams shall be removed in sufficient time for train passage.
  - 3.7.2 The tracks shall be protected and no equipment placed on the tracks.
  - 3.7.3 The beams shall be blocked and not come in contact with the tracks. Blocking shall not be placed on the tracks.
  - 3.7.4 The beams and all equipment will be moved a minimum of 15 feet from the nearest rail of the tracks when a train is passing.

#### **4. Track Protection**

- 4.1 The track protective cover shall be constructed before beginning bridge removal work and may be supported by falsework or members of the existing structure. See the attached Track Shield Detail and Frame Protection Detail for additional requirements. Types of protective covers that may be acceptable methods for protecting the tracks are:
  - 4.1.1 A decking supported by the bridge or a suspended cover from the bridge above the track clearance envelope.
  - 4.1.2 A track shield cover over the tracks per the attached detail.

- 4.1.3 A framed cover outside the track clearance envelope.
- 4.1.4 A catcher box or loader bucket under decking and parapets overhanging the exterior girders.
- 4.2 Construction equipment shall not be placed on the tracks unless tracks are protected.
- 4.3 Temporary haul-road crossings shall be of either Section Timbers or Pre-cast Concrete Panels. The type of crossing shall be determined by the Director of Engineering. Solid timbers or ballast with timber headers shall be used between multiple tracks. If temporary crossing is accessible to public, crossing shall be protected with barricades or locked gates when contractor is not actively working at the site.
- 4.4 Track protection is required for all equipment including rubber-tired equipment operating within 25 ft. or over the tracks.

## 5. Cranes

- 5.1 When cranes are operating near the tracks, the following is required:
  - 5.1.1 Only cranes with the capacity to handle the loads may be used. Front-end loaders and backhoes cannot be used to lift over the tracks.
  - 5.1.2 The Contractor shall verify that the foundations under the crane can support the loads.
  - 5.1.3 The size and material type of crane mats shall be submitted to the Railroad for review and comment. No mat substitution will be allowed. The mats shall be rigid and of sufficient capacity to distribute the crane loads and prevent tipping of the crane.
  - 5.1.4 Installation of temporary track crossings for equipment shall be scheduled with the Roadmaster for that territory. This crossing shall be installed and removed by a track contractor selected by the KCSRC.
  - 5.1.5 Additional track protection is required when crossing with a crane. The protection methods shall be submitted to the Railroad for review and comment.
  - 5.1.6 Equipment shall not place outriggers on the tracks or ballast.
  - 5.1.7 Cranes shall not be placed within the track clearance envelope without flagman protection.

## 6. Cutting Torches

- 6.1 When a cutting torch is used near the tracks or any timber, the following steps shall be taken:

- 6.1.1 Fire suppression equipment is required on-site.
  - 6.1.2 Do not use a torch over, between, or adjacent to the tracks unless a steel plate protective cover is used. Care shall be taken to make certain the use of a steel plate does not come in contact with the rails. See "Track Shield Details" for other requirements. Details of the shield shall be submitted to the Railroad for approval.
  - 6.1.3 Wet the ties and other timber below the cutting area.
  - 6.1.4 Monitor the work site for at least three (3) hours after cutting for a smoldering fire
- 6.2 Extensive overhead cutting will not be performed over the track area without the proper fire suppression equipment on-site and proper protection.

## **7. Utilities**

The demolition operations shall be planned such that the utility lines are operating safely at all times. The utility lines shall be protected if affected by demolition operations. All the work associated with the utility lines should be coordinated by the contractor with the respective utility companies.

## **8. Hazardous Material**

If any hazardous materials are found, provide material protection as specified in local hazardous material codes and immediately contact the Railroad.

## **9. Review Submittals**

Submittals for design and construction of Bridge Demolition and Removal projects shall be coordinated and submitted through the Manager of Contracts. To expedite reviews, submittals must be complete, clearly explained and orderly. Design review for demolition projects shall be reviewed by the Director of Engineering in the office of the Chief Engineer and/or through an outside consultant at the expense of the owner. Prior to any review, Manager of Contracts shall receive authorization from the agency agreeing to pay all review costs for the document review and field demolition phases of the project. Once such an agreement is established, Manager of Contracts shall request and secure a proposal from outside consultant to cover review expenses. Review expenses shall include all costs for in-house personnel and/or consultants retained by the Railroad. This estimated cost of Plan Review and the construction-monitoring phase of the project shall be provided to the submitting agency for review and approval. Once the Manager of Contracts has received the submitting agency's written acceptance of the estimated cost, the review of plans can begin. If, during the review process, the estimated costs are determined to be insufficient to cover said costs, the owner will be advised. The original estimated costs will not be the upper limit of the costs, but will provide a guideline for budgeting purposes. Regardless, all reasonable costs incurred during the plan review process and construction-monitoring phase of the work will be fully recoverable from the agency.

- 9.1 Two (2) sets of plans shall be submitted to the Manager of Contracts. Allow two (2) weeks for in-house review by the Director of Engineering. The Manager of Contracts will then forward the plans along with KCSRC comments to the outside consultant for review. Allow three (3) weeks for review by the outside consultant.