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**Letting January 21, 2022**

## **Notice to Bidders, Specifications and Proposal**



**Contract No. 62H49  
COOK County  
Section 2018-133-BR  
Route FAP 330  
Project NHPP-6T0L(343)  
District 1 Construction Funds**

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)



- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. January 21, 2022 at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 62H49  
COOK County  
Section 2018-133-BR  
Project NHPP-6T0L(343)  
Route FAP 330  
District 1 Construction Funds**

**(0.989-Mile) Bridge new deck, widening, bridge repair scour mitigation and lighting in the City of Countryside and the Villages of Willow Springs, Justice & Hodgkins.**

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.  
  
(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to re-advertise the proposed improvement, and to waive technicalities.

By Order of the  
Illinois Department of Transportation

Omer Osman,  
Acting Secretary

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2022

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

No ERRATA this year.

SUPPLEMENTAL SPECIFICATIONS

Std. Spec. Sec.

Page No.

No Supplemental Specifications this year.

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
1	X Additional State Requirements for Federal-Aid Construction Contracts .....	1
2	X Subletting of Contracts (Federal-Aid Contracts) .....	4
3	X EEO .....	5
4	Specific EEO Responsibilities Non Federal-Aid Contracts .....	15
5	X Required Provisions - State Contracts .....	20
6	Asbestos Bearing Pad Removal .....	26
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal .....	27
8	X Temporary Stream Crossings and In-Stream Work Pads .....	28
9	X Construction Layout Stakes .....	29
10	Use of Geotextile Fabric for Railroad Crossing .....	32
11	Subsealing of Concrete Pavements .....	34
12	Hot-Mix Asphalt Surface Correction .....	38
13	Pavement and Shoulder Resurfacing .....	40
14	Patching with Hot-Mix Asphalt Overlay Removal .....	41
15	Polymer Concrete .....	43
16	PVC Pipeliner .....	45
17	Bicycle Racks .....	46
18	Temporary Portable Bridge Traffic Signals .....	48
19	X Nighttime Inspection of Roadway Lighting .....	50
20	English Substitution of Metric Bolts .....	51
21	Calcium Chloride Accelerator for Portland Cement Concrete .....	52
22	Quality Control of Concrete Mixtures at the Plant .....	53
23	X Quality Control/Quality Assurance of Concrete Mixtures .....	61
24	Digital Terrain Modeling for Earthwork Calculations .....	77
25	Preventive Maintenance – Bituminous Surface Treatment (A-1) .....	79
26	Temporary Raised Pavement Markers .....	85
27	Restoring Bridge Approach Pavements Using High-Density Foam .....	86
28	Portland Cement Concrete Inlay or Overlay .....	89
29	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching .....	93
30	Longitudinal Joint and Crack Patching .....	96
31	Concrete Mix Design – Department Provided .....	98
32	Station Numbers in Pavements or Overlays .....	99

## TABLE OF CONTENTS

LOCATION OF PROJECT .....	1
DESCRIPTION OF PROJECT .....	1
WINTER WORK .....	2
COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS .....	2
COMPLETION DATE PLUS WORKING DAYS (D1) .....	3
MAINTENANCE OF ROADWAYS (D1) .....	3
STATUS OF UTILITIES (D1) .....	4
PUBLIC CONVENIENCE AND SAFETY (D1) .....	7
COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D1) .....	8
AGGREGATE SUBGRADE IMPROVEMENT (D1) .....	8
TEMPORARY PAVEMENT (D1) .....	11
HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D1) .....	12
CLEANING EXISTING DRAINAGE STRUCTURES (D1) .....	17
ADJUSTMENTS AND RECONSTRUCTIONS (D1) .....	18
ENGINEER'S FIELD OFFICE TYPE A (SPECIAL) (D1) .....	19
TRAFFIC CONTROL PLAN (D1) .....	21
FRICTION AGGREGATE (D1) .....	22
HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (D1) .....	25
UNDERGROUND RACEWAYS .....	26
GENERAL ELECTRICAL REQUIREMENTS .....	27
MAINTENANCE OF LIGHTING SYSTEMS .....	44
LUMINAIRE SAFETY CABLE ASSEMBLY .....	48
ROADWAY LUMINAIRE, LED .....	49
UNIT DUCT .....	60
WIRE AND CABLE .....	61
TEMPORARY WOOD POLE, 60 FEET, CLASS 4 .....	62
REMOVAL OF LUMINAIRE, SALVAGE .....	63
REMOVAL OF OBSTRUCTION WARNING LIGHTING SYSTEM (IDOT LIGHTING) .....	64
WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED (IDOT LIGHTING) .....	64
DRAINAGE SYSTEM .....	65
HIGH LOAD MULTI-ROTATIONAL BEARINGS .....	66
JACK AND REMOVE EXISTING BEARINGS .....	72
MODULAR EXPANSION JOINT .....	74
CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES .....	78

PIPE UNDERDRAINS FOR STRUCTURES .....	84
STRUCTURAL REPAIR OF CONCRETE .....	86
DIAMOND GRINDING AND SURFACE TESTING BRIDGE SECTIONS .....	96
SLIPFORM PARAPET .....	101
BRIDGE DECK CONSTRUCTION .....	106
BRIDGE DECK GROOVING (LONGITUDINAL) .....	107
STRUCTURAL STEEL REPAIR .....	108
KEEPING THE EXPRESSWAY OPEN TO TRAFFIC .....	109
FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC .....	111
TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS) .....	112
TEMPORARY INFORMATION SIGNING .....	116
TRAFFIC CONTROL FOR WORK ZONE AREAS .....	117
KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY) .....	118
REMOVE EXISTING FLARED END SECTION .....	118
TEMPORARY END SECTION .....	119
WOODEN POLE REMOVAL .....	119
TURBIDITY CURTAIN .....	119
HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH .....	120
REMOVAL OF EXISTING BEARINGS .....	120
APPROACH SLAB REMOVAL .....	121
SLOPE WALL REPAIR .....	121
TEMPORARY SHORING AND CRIBBING .....	122
TEMPORARY SUPPORT SYSTEM .....	122
COFFERDAM TYPE 2, IN-STREAM/WETLAND WORK .....	123
COFFERDAM EXCAVATION (SPECIAL) .....	124
TEMPORARY SHORING AND CRIBBING .....	124
TEMPORARY SUPPORT SYSTEM .....	125
REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC) .....	125
RAILROAD FLAGGING (IC) .....	128
BNSF RAILROAD REQUIREMENTS .....	131
RIGHT OF ENTRY TO BNSF RAILWAY PROPERTY .....	131
BNSF POSITION ON USE OF CRANES .....	133
BNSF POSITION ON RETAINING WALLS .....	134
BNSF POSITION ON OVERHEAD BRIDGE & ADJACENT FACILITY DRAINAGE .....	135
BNSF GUIDELINES FOR PREPARATION OF BRIDGE DEMOLITION & REMOVAL PLANS .....	137
APPENDIX - BNSF-UP DEMOLITION DRAWINGS .....	147
GUIDELINIES FOR TEMPORARY SHORING .....	151

BNSF CONTRACTOR REQUIREMENTS .....	176
AGREEMENT BETWEEN BNSF RAILWAY & THE CONTRATOR .....	189
EXHIBIT F - GRADE SEPARATIONS .....	198
BNSF CONTRACTOR'S RIGHT OF ENTRY .....	211
CN/IC RAILROAD REQUIREMENTS .....	213
STORM WATER POLLITION PREVENTION PLAN .....	220
BLENDED FINELY DIVIDED MINERALS (BDE).....	232
COMPENSABLE DELAY COSTS (BDE).....	232
CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE).....	236
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE) .....	238
FUEL COST ADJUSTMENT (BDE).....	247
PERFORMANCE GRADED ASPHALT BINDER (BDE).....	250
PORTLAND CEMENT CONCRETE – HAUL TIME (BDE).....	255
STEEL COST ADJUSTMENT (BDE).....	256
SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE) .....	259
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE) .....	259
IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION.....	263
VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE) .....	265
WEEKLY DBE TRUCKING REPORTS (BDE).....	265
WORK ZONE TRAFFIC CONTROL DEVICES (BDE) .....	265
PROJECT LABOR AGREEMENT .....	268
IDNR PERMIT .....	287
404 PERMIT .....	292
BUCKEYE PARTNERS RIGHT-OF-WAY USE RESTRICTIONS .....	318

## STATE OF ILLINOIS

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### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAU Route 330 (US Route 12/20/45 / La Grange Road), Project NHPP-6T0L(343), Section 2018-133-BR, Cook County, Contract No. 62H49 and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

FAU Route 330 (US Route 12/20/45 / La Grange Road)  
Project NHPP-6T0L(343)  
Section 2018-133-BR  
Cook County  
Contract No. 62H49

#### LOCATION OF PROJECT

The project is located in Countryside, Hodgkins, Justice, and Willow Springs in Cook County on northbound US 12/20/45/La Grange Road over the ICG (CN) Railroad, I&M Canal and Chicago Sanitary and Ship Canal (S.N. 016-2468) and on northbound US 12/20/45 (La Grange Road) over Des Plaines River and ATSF (BNSF) Railroad (S.N. 016-2467). The project limits are on northbound US 12/20/45 (La Grange Road) between I-294 and I-55.

#### DESCRIPTION OF PROJECT

The improvement consists of removing and replacing the existing bridge decks with a new PCC deck. The bridge will be widened to be 43'-6" out to out which will provide three 11' wide lanes with 3'-8" wide inside and outside shoulders. The existing lighting system on both northbound bridges will be replaced and upgraded to LED luminaires. The southbound bridges will have the existing lighting retrofit with LED luminaires. Concrete on the piers will be repaired and the steel girders painted. Staged construction will be utilized to close the northbound structures and northbound and southbound traffic will share the existing southbound lanes during construction.



## **WINTER WORK**

No adjustment will be made in the contract unit prices if winter work is necessary to meet the required completion dates specified in the contract.

## **COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS**

This contract abuts and/or overlaps with other concurrent contracts listed below. The Contractor shall cooperate with the other contractors in the phasing and performance of his/her work so as not to delay, interrupt or hinder the progress or completion of work being performed by the other contractors.

The Illinois Tollway has ongoing projects I-294 over La Grange Road and on I-294 over I-55 including the I-294 at I-55 interchange and ramps. Detours have been approved to utilize the I-55 at La Grange Road interchange ramps.

Add the following paragraph to the beginning of Article 105.08; "The Contractor shall identify all such work items (including the critical items listed above) at the beginning of the contract and coordinate the sequence and timing of their execution and completion with the other Contractor through the Engineer. All of these work items shall be identified as separate line items in the Contractor's proposed Construction Progress Schedule. Additional compensation or the extension of contract time will not be allowed for the progress of work items affected by the lack of such coordination by the Contractor".

### Shared Access and Work Area

When necessary for proper prosecution of work, each Contractor shall permit the other access through the overlapping construction areas and the use of any access or haul roads constructed by others.

When necessary for the proper prosecution of work, each Contractor shall permit the other to work within predetermined areas of overlapping construction work areas for a predetermined duration. The Contractor working within the adjacent overlapping construction work areas will be responsible for cleaning the work area upon completion and leaving the work area in a suitable condition, including application of temporary erosion control measures as required, to the satisfaction of both Engineers. Examples of work requiring occupation of overlapping work areas include (but are not limited to): Earth Excavation/ Grading, Landscaping, Maintenance of Erosion Control Items.

Any damages resulting from the shared use of access facilities or overlapping work area shall be repaired by the Contractor which caused the damage at his own expense and at no additional cost to the Contract.

Basis of Payment: All expenses incurred by the Contractor by reason of compliance with these requirements shall be considered as included in and completely covered by the contract unit prices for the various items included in the contract.

**COMPLETION DATE PLUS WORKING DAYS (D1)**

Effective: September 30, 1985

Revised: January 1, 2007

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on **October 1, 2023** except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within **10** working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer.

Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

**MAINTENANCE OF ROADWAYS (D1)**

Effective: September 30, 1985

Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

**STATUS OF UTILITIES (D1)**

Effective: June 1, 2016

Revised: January 1, 2020

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information regarding their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

**UTILITIES TO BE ADJUSTED**

Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances, resolution will be a function of the construction staging. The responsible agency must relocate, or complete new installations as noted below; this work has been deemed necessary to be complete for the Department's contractor to then work in the stage under which the item has been listed.

**Stage 1**

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
Stage 1/ La Grange Road Northbound	Duct attached to underside of bridge deck	Relocation required Sta. 32+85 to Sta. 44+25	<b>AT&amp;T</b>	<b>14 days</b>

**Stage 1: \_\_\_\_\_ Days Total Installation**

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

<b>Agency/Company Responsible to Resolve Conflict</b>	<b>Name of contact</b>	<b>Phone</b>	<b>E-mail address</b>
AT&T	Chris Cass	630.573.5715	<a href="mailto:cc4361@att.com">cc4361@att.com</a>
BP	Blake Patrick	872.245.3915	<a href="mailto:BLAKE.PATRICK@bp.com">BLAKE.PATRICK@bp.com</a>
Buckeye Partners, L.P.	Dave A. Jones	610.904.4409	<a href="mailto:dajones@buckeye.com">dajones@buckeye.com</a>
Comed	Likowo Ndobedi	708.410.5202	<a href="mailto:likowo.ndobedi@comed.com">likowo.ndobedi@comed.com</a>
Enterprise Products	Justine Taleck	281.887.3326	
Illinois American Water	Henry Maradiaga	630.739.8859	<a href="mailto:henry.maradiaga@amwater.com">henry.maradiaga@amwater.com</a>
Marathon Pipe Line, LLC	Greg Newman	O: 419.884.0800 C: 419.564.8826	<a href="mailto:gcnewman@marathonpetroleum.com">gcnewman@marathonpetroleum.com</a>
Natural Gas Pipe Line (Kinder Morgan)	Mark Cavazos	713.420.4363	<a href="mailto:Mark_Cavazos@kindermorgan.com">Mark_Cavazos@kindermorgan.com</a>
MCI	Joe Chaney	312.617.2131	<a href="mailto:joe.chaney@verizon.com">joe.chaney@verizon.com</a>
Metropolitan Water Reclamation District of Greater Chicago	Joseph M. Schuessler	312.751.3236	<a href="mailto:SchuesslerJ@mwrdd.org">SchuesslerJ@mwrdd.org</a>
Nicor Gas	Saki Forah	630.388.2903	<a href="mailto:sforah@southernco.com">sforah@southernco.com</a>
Shell Pipeline	Clint Linder	713.410.5959	<a href="mailto:clinton.linder@shell.com">clinton.linder@shell.com</a>
Badger Line (West Shore Pipeline)	Bobby LaFan	331.803.3704	<a href="mailto:BLafan@buckeye.com">BLafan@buckeye.com</a>

### **UTILITIES TO BE WATCHED AND PROTECTED**

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances, the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owner's part can be secured.

**Stage 1**

<b>STAGE / LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>
Stage 1 / La Grange Road	Overhead Transmission Lines	Watch and protect overhead transmission lines. Sta. 33+75 to Sta. 34+25 Sta. 81+00 to Sta. 82+50	ComEd
Stage 1 / La Grange Road	Overhead Lines	Watch and protect overhead lines. Sta. 26+55 to Sta. 26+75 Sta. 84+90 to Sta. 85+10	ComEd
Stage 1 / La Grange Road	18" Sanitary Sewer	Watch and protect for pier excavation, Sta. 43+40 to Sta. 43+44	MWRD
Stage 1 / La Grange Road	Duct	Watch and protect for pier excavation, Sta. 68+40 to 68+60	AT&T
Stage 1 / La Grange Road	2" gas main	Watch and protect for pier excavation, Sta. 68+40 to 68+60	Nicor
Stage 1 / La Grange Road	Underground electric	Watch and Protect for pier excavation, Sta. 68+40 to Sta. 68+60	ComEd

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

<b>Agency/Company Responsible to Resolve Conflict</b>	<b>Name of contact</b>	<b>Phone</b>	<b>E-mail address</b>
<b>AT&amp;T</b>	<b>Chris Cass</b>	<b>630.573.5715</b>	<b><a href="mailto:cc4361@att.com">cc4361@att.com</a></b>
BP	Laura Moonshower	678.763.4936	<a href="mailto:laura.moonshower@bp.com">laura.moonshower@bp.com</a>
Buckeye Partners, L.P.	Dave A. Jones	610.904.4409	<a href="mailto:dajones@buckeye.com">dajones@buckeye.com</a>
Comed	Likowo Ndobedi	708.410.5202	<a href="mailto:likowo.ndobedi@comed.com">likowo.ndobedi@comed.com</a>
Enterprise Products	Justine Taleck	281.887.3326	
Illinois American Water	Henry Maradiaga	630.739.8859	<a href="mailto:henry.maradiaga@amwater.com">henry.maradiaga@amwater.com</a>
Marathon Pipe Line, LLC	Greg Newman	O: 419.884.0800 C: 419.564.8826	<a href="mailto:gnewman@marathonpetroleum.com">gnewman@marathonpetroleum.com</a>
Natural Gas Pipe Line (Kinder Morgan)	<b>Mark Cavazos</b>	<b>713.420.4363</b>	<b><a href="mailto:Mark_Cavazos@kindermorgan.com">Mark_Cavazos@kindermorgan.com</a></b>
<b>MCI</b>	<b>Joe Chaney</b>	<b>312.617.2131</b>	<b><a href="mailto:joe.chaney@verizon.com">joe.chaney@verizon.com</a></b>
<b>Metropolitan Water Reclamation District of Greater Chicago</b>	<b>Joseph M. Schuessler</b>	<b>312.751.3236</b>	<b><a href="mailto:SchuesslerJ@mwr.org">SchuesslerJ@mwr.org</a></b>
<b>Nicor Gas</b>	<b>Saki Forah</b>	<b>630.388.2903</b>	<b><a href="mailto:sforah@southernco.com">sforah@southernco.com</a></b>
Shell Pipeline	Clint Linder	713.410.5959	<a href="mailto:clinton.linder@shell.com">clinton.linder@shell.com</a>
<b>Badger Line (West Shore Pipeline)</b>	<b>Bobby LaFan</b>	<b>331.803.3704</b>	<b><a href="mailto:BLafan@buckeye.com">BLafan@buckeye.com</a></b>

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be considered in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided above for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation duration must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies when necessary. The Department's contractor is responsible for contacting J.U.L.I.E. prior to all excavation work.

#### **PUBLIC CONVENIENCE AND SAFETY (D1)**

Effective: May 1, 2012

Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

“If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply.”

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

“The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After”

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

“On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.”

**COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D1)**

Effective: November 1, 2011

Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of  $\pm 2.0$  percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

**AGGREGATE SUBGRADE IMPROVEMENT (D1)**

Effective: February 22, 2012

Revised: December 1, 2021

Add the following Section to the Standard Specifications:

**"SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT**

**303.01 Description.** This work shall consist of constructing an aggregate subgrade improvement.

**303.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate .....	1004.07
(b) Reclaimed Asphalt Pavement (RAP) (Notes 1, 2 and 3) .....	1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradation CS 01 but shall not exceed 40 percent by weight of the total product. The top size of the Coarse RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradation CS 01 is used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders. The final product shall not contain more than 40 percent by weight of RAP.

Note 3. The RAP used for aggregate subgrade improvement shall be according to the current Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

**303.03 Equipment.** The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer. The calibration for the mechanical feeders shall have an accuracy of  $\pm 2.0$  percent of the actual quantity of material delivered.

**303.04 Soil Preparation.** The stability of the soil shall be according to the Department's Subgrade Stability Manual for the aggregate thickness specified.

**303.05 Placing Aggregate.** The maximum nominal lift thickness of aggregate gradation CS 01 shall be 24 in. (600 mm).

**303.06 Capping Aggregate.** The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

**303.07 Compaction.** All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

**303.08 Finishing and Maintenance of Aggregate Subgrade Improvement.** The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

**303.09 Method of Measurement.** This work will be measured for payment according to Article 311.08.

**303.10 Basis of Payment.** This work will be paid for at the contract unit price per cubic yard (cubic meter) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.



Add the following to Section 1004 of the Standard Specifications:

**“1004.07 Coarse Aggregate for Aggregate Subgrade Improvement.** The aggregate shall be according to Article 1004.01 and the following.

- (a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. The top 12 inches of the aggregate subgrade improvement shall be 3 inches of capping material and 9 inches of crushed gravel, crushed stone or crushed concrete. In applications where greater than 36 inches of subgrade material is required, rounded gravel, meeting the CS01 gradation, may be used beginning at a depth of 12 inches below the bottom of pavement.
- (b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.
- (c) Gradation.
  - (1) The coarse aggregate gradation for total subgrade thicknesses of 12 in. (300 mm) or greater shall be CS 01.

COARSE AGGREGATE SUBGRADE GRADATIONS					
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)					
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

- (2) The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.

**TEMPORARY PAVEMENT (D1)**

Effective: March 1, 2003

Revised: April 10, 2008

Description. This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer.

The contractor shall use either Portland cement concrete according to Sections 353 and 354 of the Standard Specifications or HMA according to Sections 355, 356, 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement shall be as described in the plans. The contractor shall have the option of constructing either material type if both Portland cement concrete and HMA are shown in the plans.

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The removal of the Temporary Pavement, if required, shall conform to Section 440 of the Standard Specification.

Method of Measurement. Temporary pavement will be measured in place and the area computed in square yards (square meters).

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT and TEMPORARY PAVEMENT (INTERSTATE).

Removal of temporary pavement will be paid for at the contract unit price per square yard (square meter) for PAVEMENT REMOVAL.

**HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D1)**

Effective: November 1, 2019

Revised: December 1, 2021

Revise Article 1004.03(c) to read:

“(c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 <sup>1/</sup>
	SMA 12.5 <sup>2/</sup>	CA 13 <sup>4/</sup> , CA 14, or CA 16
	SMA 9.5 <sup>2/</sup>	CA 13 <sup>3/4/</sup> or CA 16 <sup>3/</sup>
	IL-9.5	CA 16, CM 13 <sup>4/</sup>
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 <sup>1/</sup>
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.

2/ The coarse aggregates used shall be capable of being combined with the fine aggregates and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended.

4/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.”

Revise Article 1004.03(e) of the Supplemental Specifications to read:

“(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent.”

Revise the “High ESAL” portion of the table in Article 1030.01 to read:

“High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5”

Revise Note 2. and add Note 6 to Article 1030.02 of the Standard Specifications to read:

"Item	Article/Section
(g) Performance Graded Asphalt Binder (Note 6)	1032
(h) Fibers (Note 2)	

Note 2. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 6. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be a SBS PG 76-22 for IL-4.75, except where modified herein..”

Revise table in Article 1030.05(a) of the Standard Specifications to read:

"MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>												
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-9.5FG		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)												
1 in. (25 mm)		100										
3/4 in. (19 mm)	90	100		100								
1/2 in. (12.5 mm)	75	89	80	100		100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	60	75 <sup>6/</sup>	90	100
#8 (2.36 mm)	20	42	16	24 <sup>4/</sup>	16	32 <sup>4/</sup>	34 <sup>5/</sup>	52 <sup>2/</sup>	45	60 <sup>6/</sup>	70	90
#16 (1.18 mm)	15	30					10	32	25	40	50	65
#30 (600 μm)			12	16	12	18			15	30		
#50 (300 μm)	6	15					4	15	8	15	15	30
#100 (150 μm)	4	9					3	10	6	10	10	18
#200 (75 μm)	3.0	6.0	7.0	9.0 <sup>3/</sup>	7.5	9.5 <sup>3/</sup>	4.0	6.0	4.0	6.5	7.0	9.0 <sup>3/</sup>
#635 (20 μm)			≤ 3.0		≤ 3.0							
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0		1.0

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with N<sub>design</sub> = 90.

3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.

4/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.

- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.
- 6/ When the mixture is used as a binder, the maximum shall be increased by 0.5 percent passing.”

Revise Article 1030.05(b) of the Standard Specifications to read:

(b) Volumetric Requirements. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 and SMA mixtures it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

Mix Design	Voids in the Mineral Aggregate (VMA), % Minimum for Ndesign				
	30	50	70	80	90
IL-19.0		13.5	13.5		13.5
IL-9.5		15.0	15.0		
IL-9.5FG		15.0	15.0		
IL-4.75 <sup>1/</sup>		18.5			
SMA-12.5 <sup>1/2/5/</sup>				17.0 <sup>3/</sup> /16.0 <sup>4/</sup>	
SMA-9.5 <sup>1/2/5/</sup>				17.0 <sup>3/</sup> /16.0 <sup>4/</sup>	
IL-19.0L	13.5				
IL-9.5L	15.0				

- 1/ Maximum draindown shall be 0.3 percent according to Illinois Modified AASHTO T 305.
- 2/ The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.
- 3/ Applies when specific gravity of coarse aggregate is  $\geq 2.760$ .
- 4/ Applies when specific gravity of coarse aggregate is  $< 2.760$ .
- 5/ For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone”

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

“IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Add after third sentence of Article 1030.09(b) to read:

“If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure.”

Revise Table 1 and Note 4/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

	Breakdown/Intermediate Roller (one of the following)	Final Roller (one or more of the following)	Density Requirement
IL-9.5, IL-9.5FG, IL-19.0 <sup>1/</sup>	V <sub>D</sub> , P, T <sub>B</sub> , 3W, O <sub>T</sub> , O <sub>B</sub>	V <sub>S</sub> , T <sub>B</sub> , T <sub>F</sub> , O <sub>T</sub>	As specified in Section 1030
IL-4.75 and SMA <sup>3/ 4/</sup>	T <sub>B</sub> , 3W, O <sub>T</sub>	T <sub>F</sub> , 3W	As specified in Section 1030
Mixtures on Bridge Decks <sup>2/</sup>	T <sub>B</sub>	T <sub>F</sub>	As specified in Articles 582.05 and 582.06.

“4/ The Contractor shall provide a minimum of two steel-wheeled tandem rollers (T<sub>B</sub>), and/or three-wheel (3W) rollers for breakdown, except one of the (T<sub>B</sub>) or (3W) rollers shall be 84 inches (2.14 m) wide and a weight of 315 pound per linear inch (PLI) (5.63 kg/mm) and one of the (T<sub>B</sub>) or (3W) rollers can be substituted for an oscillatory roller (O<sub>T</sub>). T<sub>F</sub> rollers shall be a minimum of 280 lb/in. (50 N/mm). The 3W and T<sub>B</sub> rollers shall be operated at a uniform speed not to exceed 3 mph (5 km/h), with the drive roll for T<sub>B</sub> rollers nearest the paver and maintain an effective rolling distance of not more than 150 ft (45 m) behind the paver.”

Add the following after the fourth paragraph of Article 406.13 (b):

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s G<sub>mb</sub>.”

Revise first paragraph of Article 1030.10 of the Standard Specifications to read:

“A test strip of 300 ton (275 metric tons), except for SMA mixtures it will be 400 ton (363 metric ton), will be required for each mixture on each contract at the beginning of HMA production for each construction year according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”. At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results.”

Revise third paragraph of Article 1030.10 of the Standard Specifications to read:

“When a test strip is constructed, the Contractor shall collect and split the mixture according to the document “Hot-Mix Asphalt Test Strip Procedures”. The Engineer, or a representative, shall deliver split sample to the District Laboratory for verification testing. The Contractor shall complete mixture tests stated in Article 1030.09(a). Mixture sampled shall include enough material for the Department to conduct mixture tests detailed in Article 1030.09(a) and in the document “Hot-Mix Asphalt Mixture Design Verification Procedure” Section 3.3. The mixture test results shall meet the requirements of Articles 1030.05(b) and 1030.05(d), except Hamburg wheel tests will only be conducted on High ESAL mixtures during production.”

#### **CLEANING EXISTING DRAINAGE STRUCTURES (D1)**

Effective: September 30, 1985

Revised: December 1, 2011

All existing storm sewers, pipe culverts, manholes, catch basins and inlets shall be considered as drainage structures insofar as the interpretation of this Special Provision is concerned. When specified for payment, the location of drainage structures to be cleaned will be shown on the plans.

All existing drainage structures which are to be adjusted or reconstructed shall be cleaned according to Article 602.15 of the Standard Specifications. This work will be paid for according to accordance with Article 602.16 of the Standard Specifications.

All other existing drainage structures which are specified to be cleaned on the plans will be cleaned according to Article 602.15 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price each for DRAINAGE STRUCTURES TO BE CLEANED, and at the contract unit price per foot (meter) for STORM SEWERS TO BE CLEANED, of the diameter specified.



## **ADJUSTMENTS AND RECONSTRUCTIONS (D1)**

Effective: March 15, 2011

Revise the first paragraph of Article 602.04 to read:

**“602.04 Concrete.** Cast-in-place concrete for structures shall be constructed of Class SI concrete according to the applicable portions of Section 503. Cast-in-place concrete for pavement patching around adjustments and reconstructions shall be constructed of Class PP-1 concrete, unless otherwise noted in the plans, according to the applicable portions of Section 1020.”

Revise the third, fourth and fifth sentences of the second paragraph of Article 602.11(c) to read:

“Castings shall be set to the finished pavement elevation so that no subsequent adjustment will be necessary, and the space around the casting shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b.”

Revise Article 603.05 to read:

**“603.05 Replacement of Existing Flexible Pavement.** After the castings have been adjusted, the surrounding space shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b.”

Revise Article 603.06 to read:

**“603.06 Replacement of Existing Rigid Pavement.** After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with Class PP-1 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the Class PP concrete shall be constructed flush with the adjacent surface.”

Revise the first sentence of Article 603.07 to read:

**“603.07 Protection Under Traffic.** After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.”

**ENGINEER'S FIELD OFFICE TYPE A (SPECIAL) (D1)**

Effective: December 1, 2011

Revised: May 1, 2013

Revise the first paragraph of Article 670.02 to read:

**670.02 Engineer's Field Office Type A (Special).** Type A (Special) field offices shall have a ceiling height of not less than 7 feet and a floor space of not less than 3000 square feet with a minimum of two separate offices. The office shall also have a separate storage room capable of being locked for the storage of the nuclear measuring devices. The office shall be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

Revise the first sentence of the second paragraph of Article 670.02 to read:

An electronic security system that will respond to any breach of exterior doors and windows with an on-site alarm shall be provided.

Revise the last sentence of the third paragraph of Article 670.02 to read:

Adequate all-weather parking space shall be available to accommodate a minimum of twelve vehicles.

Revise the fifth paragraph of Article 670.02 to read:

Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. Solid waste disposal consisting of seven waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service. A weekly cleaning service for the office shall be provided.

Revise subparagraph (a) of Article 670.02 to read:

(a) Twelve desks with minimum working surface 42 inch x 30 inch each and twelve non-folding chairs with upholstered seats and backs.

Revise the first sentence of subparagraph (c) of Article 670.02 to read:

(c) Two four-post drafting tables with minimum top size of 37-½ inch x 48 inch.

Revise subparagraph (d) of Article 670.02 to read:

(d) Eight free standing four-drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.

Revise subparagraph (e) of Article 670.02 to read:

(e) Twenty folding chairs and two conference tables with minimum top size of 44 inch x 96 inch.

Revise subparagraph (h) of Article 670.02 to read:

- (h) Three electric desk type tape printing calculator and two pocket scientific notation calculators with a 1000 hour battery life or with a portable recharger.

Revise subparagraph (i)(2) of Article 670.02 to read:

- (i)(2) Telephones lines. Five separate telephone lines including one line for the fax machine, and two lines for the exclusive use of the Engineer. All telephone lines shall include long distance service and all labor and materials necessary to install the phone lines at the locations directed by the Engineer. The TELCOM company shall configure ROLL/HUNT features as specified by the engineer.

Revise subparagraph (j) of Article 670.02 to read:

- (j) Two plain paper network multi-function printer/copier/scanner machines capable of reproducing prints up to 11 inch x 17 inch within automatic feed tray capable of sorting 30 sheets of paper. Letter size and 11 inch x 17 inch paper shall be provided. The contractor shall provide the multi-function machines with IT support for setup and maintenance.

Revise subparagraph (k) of Article 670.02 to read:

- (k) One plain paper fax machine including maintenance and supplies.

Revise subparagraph (l) of Article 670.02 to read:

- (l) Six four-line telephones, with touch tone, where available, and two digital answering machines, for exclusive use by the Engineer.

Revise subparagraph (m) of Article 670.02 to read:

- (m) One electric water cooler dispenser including water service.

Add the following subparagraphs to Article 670.02:

- (s) One 4 foot x 6 foot chalkboard or dry erase board.
- (t) One 4 foot x 6 foot framed cork board.

Add the following to Article 670.07 Basis of Payment.

The building or buildings, fully equipped, will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL).

**TRAFFIC CONTROL PLAN (D1)**

Effective: September 30, 1985

Revised: January 1, 2007

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS

701101	OFF-ROAD OPERATIONS, MULTILANE, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701106	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 M) AWAY
701301	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS- DAY ONLY
701411	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP, FOR SPEEDS $\geq$ 45 MPH
701421	LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS $>$ 45 MPH TO 55 MPH
701422	LANE CLOSURE, MULTILANE, FOR SPEEDS $\geq$ 45 MPH TO 55 MPH
701426	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS $>$ 45 MPH
701501	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701901	TRAFFIC CONTROL DEVICES
704001	TEMPORARY CONCRETE BARRIER
780001	TYPICAL PAVEMENT MARKINGS (Use only for lane drop arrow)
782006	GUARDRAIL & BARRIER WALL REFLECTOR MOUNTING DETAILS

DETAILS:

Entrance and Exit Ramp Closure Details (TC-08)

Traffic Control Details for Freeway Single & Multi-Lane Weave (TC-09)

Typical Applications Raised Reflective Pavement Markers (Snow-Plow Resistant) (TC-11)

District One Typical Pavement Markings (TC-13)

Traffic Control Details for Freeway Shoulder Closures and Partial Ramp Closures (TC-17)

Temporary Information Signing (TC-22)

**SPECIAL PROVISIONS:**

- Maintenance of Roadways
- Temporary Information Signing
- Public Convenience and Safety (D1)
- Keeping the Expressway Open to Traffic (701.01T)
- Failure to Open Traffic Lanes to Traffic (701.02T)
- Traffic Control and Protection (Expressways) (701.03T)
- Temporary Information Signing (701.06T)
- Traffic Control for Work Zone Areas (701.07T)
- Keeping Arterial Roadway Open to Traffic (Lane Closure Only)(701.08Ta)
- Vehicle and Equipment Warning Lights (BDE)
- Work Zone Traffic Control Devices (BDE)

**FRICITION AGGREGATE (D1)**

Effective: January 1, 2011  
 Revised: December 1, 2021

Revise Article 1004.03(a) of the Standard Specifications to read:

**“1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete

Use	Mixture	Aggregates Allowed	
HMA Low ESAL	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>1/</sup> Crushed Concrete	
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L  SMA Binder	<u>Allowed Alone or in Combination</u> <sup>5/6/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete <sup>3/</sup>	
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 IL-9.5FG or IL-9.5L	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>	
HMA High ESAL	D Surface and Binder IL-9.5 or IL-9.5FG	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone (other than Limestone) <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup>	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone		

Use	Mixture	Aggregates Allowed	
HMA High ESAL	E Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/6/</sup> : Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag  No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite <sup>2/</sup>	Any Mixture E aggregate
		75% Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
75% Crushed Gravel <sup>2/</sup>	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag		
HMA High ESAL	F Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/6/</sup> : Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel <sup>2/</sup> or Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as binder.
- 5/ When combinations of aggregates are used, the blend percent measurements shall be by volume.”
- 6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80.”

**HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (D1)**

Effective: January 1, 2019  
 Revised: December 1, 2021

Add to Article 1030.05 (d)(3) of the Standard Specifications to read:

“ During mixture design, prepared samples shall be submitted to the District laboratory by the Contractor for verification testing. The required testing, and number and size of prepared samples submitted, shall be according to the following tables.

High ESAL – Required Samples for Verification Testing	
Mixture	Hamburg Wheel and I-FIT Testing <sup>1/2/</sup>
Binder	total of 3 - 160 mm tall bricks
Surface	total of 4 - 160 mm tall bricks

Low ESAL – Required Samples for Verification Testing	
Mixture	I-FIT Testing <sup>1/2/</sup>
Binder	1 - 160 mm tall brick
Surface	2 - 160 mm tall bricks

- 1/ The compacted gyratory bricks for Hamburg wheel and I-FIT testing shall be  $7.5 \pm 0.5$  percent air voids.
- 2/ If the Contractor does not possess the equipment to prepare the 160 mm tall brick(s), twice as many 115 mm tall compacted gyratory bricks will be acceptable.



Revise the fourth paragraph of Article 1030.10 of the Standard Specifications to read:

“When a test strip is not required, each HMA mixture shall still be sampled on the first day of production: I-FIT and Hamburg wheel testing for High ESAL; I-FIT testing for Low ESAL. Within two working days after sampling the mixture, the Contractor shall deliver gyratory cylinders to the District laboratory for Department verification testing. The High ESAL mixture test results shall meet the requirements of Articles 1030.05(d)(3) and 1030.05(d)(4). The Low ESAL mixture test results shall meet the requirements of Article 1030.05(d)(4). The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the “High ESAL - Required Samples for Verification Testing” table in Article 1030.05(d)(3) above.”

Add the following to the end of Article 1030.10 of the Standard Specifications to read:

“Mixture sampled during first day of production shall include approximately 60 lb (27 kg) of additional material for the Department to conduct Hamburg wheel testing and approximately 80 lb (36 kg) of additional material for the Department to conduct I-FIT testing. Within two working days after sampling, the Contractor shall deliver prepared samples to the District laboratory for verification testing. The required number and size of prepared samples submitted for the Hamburg wheel and I-FIT testing shall be according to the “High ESAL - Required Samples for Verification Testing” table in Article 1030.05(d)(3) above.”

## **UNDERGROUND RACEWAYS**

Effective: March 1, 2015

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.04 of the Standard Specifications:

“All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans.”

Add the following to Article 810.04 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125”) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

## **GENERAL ELECTRICAL REQUIREMENTS**

Effective: June 1, 2021

This special provision replaces Articles 801.01 – 801.07, 801.09 – 801-16 of the Standard Specifications.

**Definition.** Codes, standards, and industry specifications cited for electrical work shall be by definition the latest adopted version thereof, unless indicated otherwise.

Materials by definition shall include electrical equipment, fittings, devices, motors, appliances, fixtures, apparatus, all hardware and appurtenances, and the like, used as part of, or in connection with, electrical installation.

**Standards of Installation.** Materials shall be installed according to the manufacturer’s recommendations, the NEC, OSHA, the NESC, and AASHTO’s Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

All like materials shall be from the same manufacturer. Listed and labeled materials shall be used whenever possible. The listing shall be according to UL or an approved equivalent.

**Safety and Protection.** Safety and protection requirements shall be as follows.

**Safety.** Electrical systems shall not be left in an exposed or otherwise hazardous condition. All electrical boxes, cabinets, pole handholes, etc. which contain wiring, either energized or non-energized, shall be closed or shall have covers in place and be locked when possible, during nonworking hours.

Protection. Electrical raceway or duct openings shall be capped or otherwise sealed from the entrance of water and dirt. Wiring shall be protected from mechanical injury.

**Equipment Grounding Conductor.** All electrical systems, materials, and appurtenances shall be grounded. Good ground continuity throughout the electrical system shall be assured, even though every detail of the requirements is not specified or shown. Electrical circuits shall have a continuous insulated equipment grounding conductor. When metallic conduit is used, it shall be bonded to the equipment grounding conductor, but shall not be used as the equipment grounding conductor.

Detector loop lead-in circuits, circuits under 50 volts, and runs of fiber optic cable will not require an equipment grounding conductor.

Where connections are made to painted surfaces, the paint shall be scraped to fully expose metal at the connection point. After the connection is completed, the paint system shall be repaired to the satisfaction of the Engineer.

Bonding of all boxes and other metallic enclosures throughout the wiring system to the equipment grounding conductor shall be made using a splice and pigtail connection. Mechanical connectors shall have a serrated washer at the contact surface.

All connections to structural steel or fencing shall be made with exothermic welds. Care shall be taken not to weaken load carrying members. Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate a mechanical connection. The epoxy coating shall be repaired to the satisfaction of the Engineer. Where connections are made to insulated conductors, the connection shall be wrapped with at least four layers of electrical tape extended 6 in. (150 mm) onto the conductor insulation.

**Submittals.** At the preconstruction meeting, the Contractor shall submit a written listing of manufacturers for all major electrical and mechanical items. The list of manufacturers shall be binding, except by written request from the Contractor and approval by the Engineer. The request shall include acceptable reasons and documentation for the change.

Within 30 calendar days after contract execution, the Contractor shall submit, for approval, through the Traffic Operations Construction Submittals Application (TOCS) system the manufacturer's product data (for standard products and components) and detailed shop drawings (for fabricated items). Submittals for the materials for each individual pay item shall be complete in every respect. Submittals which include multiple pay items shall have all submittal material for each item or group of items covered by a particular specification, grouped together and the applicable pay item identified. Various submittals shall, when taken together, form a complete coordinated package. A partial submittal will be returned without review unless prior written permission is obtained from the Engineer.

Each PDF document must be a vector format PDF from the originating supplier or program and not scanned images.

The submittal must clearly identify the specific model number or catalog number of the item being proposed.

For further information and requirements regarding the TOCS system, the Contractor should reference the *TOCS Contractors User Guide*.

The submittal shall be properly identified by route, section, county, and contract number.

The Contractor shall have reviewed the submittal material and affixed his/her stamp of approval, with date and signature, for each individual item.

Illegible print, incompleteness, inaccuracy, or lack of coordination will be grounds for rejection.

**Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations.**

The Department may provide a list of pay items broken out by discipline upon request for a particular contract.

The Engineer will review the submittals for conformance with the design concept of the project according to Article 105.04 and the following. The Engineer will stamp the drawings indicating their status as "Approved", "Approved as Noted", "Disapproved", or "Information Only". Since the Engineer's review is for conformance with the design concept only, it shall be the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, or layout drawings by the Engineer's approval thereof. The Contractor shall still be in full compliance with contract and specification requirements.

All submitted items reviewed and marked "Disapproved" or "Approved as Noted" shall be resubmitted by the Contractor in their entirety, unless otherwise indicated within the submittal comments.

Work shall not begin until the Engineer has approved the submittal. Material installed prior to approval by the Engineer, will be subject to removal and replacement at no additional cost to the Department.

**Certifications.** When certifications are specified and are available prior to material manufacture, the certification shall be included in the submittal information. When specified and only available after manufacture, the submittal shall include a statement of intent to furnish certification. All certificates shall be complete with all appropriate test dates and data.

**Authorized Project Delay.** See Article 801.08

**Maintenance transfer and Preconstruction Inspection:**

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than fourteen (14) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 1 foot (304.8 mm) to either side. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition."

### **Maintenance and Responsibility During Construction.**

Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance of the existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately

The proposed lighting system must be operational prior to opening the roadway to traffic unless temporary lighting exists which is designed and installed to properly illuminate the roadway.

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.

**Damage to Electrical Systems.** Should damage occur to any existing electrical systems through the Contractor's operations, the Engineer will designate the repairs as emergency or non-emergency in nature.

Emergency repairs shall be made by the Contractor, or as determined by the Engineer, the Department, or its agent. Non-emergency repairs shall be performed by the Contractor within six working days following discovery or notification. All repairs shall be performed in an expeditious manner to assure all electrical systems are operational as soon as possible. The repairs shall be performed at no additional cost to the Department.

Lighting. An outage will be considered an emergency when three or more lights on a circuit or three successive lights are not operational. Knocked down materials, which result in a danger to the motoring public, will be considered an emergency repair.

Temporary aerial multi-conductor cable, with grounded messenger cable, will be permitted if it does not interfere with traffic or other operations, and if the Engineer determines it does not require unacceptable modification to existing installations.

**Marking Proposed Locations for Highway Lighting System.** The Contractor shall mark or stake the proposed locations of all poles, cabinets, junction boxes, pull boxes, handholes, cable routes, pavement crossings, and other items pertinent to the work. A proposed location inspection by the Engineer shall be requested prior to any excavation, construction, or installation work after all proposed installation locations are marked. Any work installed without location approval is subject to corrective action at no additional cost to the Department.

**Inspection of electrical work.** Inspection of electrical work shall be according to Article 105.12 and the following.

Before any splice, tap, or electrical connection is covered in handholes, junction boxes, light poles, or other enclosures, the Contractor shall notify and make available such wiring for the Engineer's inspection.

**Testing.** Before final inspection, the electrical work shall be tested. Tests may be made progressively as parts of the work are completed or may be made when the work is complete. Tests shall be made in the presence of the Engineer. Items which fail to test satisfactorily shall be repaired or replaced. Tests shall include checks of control operation, system voltages, cable insulation, and ground resistance and continuity.

The forms for recording test readings will be available from the Engineer in electronic format. The Contractor shall provide the Engineer with a written report of all test data including the following:

- Voltage Tests
- Amperage Tests
- Insulation Resistance Tests
- Continuity tests
- Detector Loop Tests

Lighting systems. The following tests shall be made.

- (1) Voltage Measurements. Voltages in the cabinet from phase to phase and phase to neutral, at no load and at full load, shall be measured and recorded. Voltage readings at the last termination of each circuit shall be measured and recorded.
- (2) Insulation Resistance. Insulation resistance to ground of each circuit at the cabinet shall be measured and recorded with all loads disconnected. Prior to performance of the insulation resistance test, the Contractor shall remove all fuses within all light pole bases on a circuit to segregate the luminaire loads.

On tests of new cable runs, the readings shall exceed 50 megohms for phase and neutral conductors with a connected load over 20A and shall exceed 100 megohms for conductors with a connected load of 20A or less.

On tests of cable runs which include cables which were existing in service prior to this contract, the resistance readings shall be the same or better than the readings recorded at the maintenance transfer at the beginning of the contract. Measurements shall be taken with a megohm meter approved by the Engineer.

- (3) Loads. The current of each circuit, phase main, and neutral shall be measured and recorded. The Engineer may direct reasonable circuit rearrangement. The current readings shall be within ten percent of the connected load based on material ratings.
- (4) Ground Continuity. Resistance of the system ground as taken from the farthest extension of each circuit run from the controller (i.e. check of equipment ground continuity for each circuit) shall be measured and recorded. Readings shall not exceed 2.0 ohms, regardless of the length of the circuit.
- (5) Resistance of Grounding Electrodes. Resistance to ground of all grounding electrodes shall be measured and recorded. Measurements shall be made with a ground tester during dry soil conditions as approved by the Engineer. Resistance to ground shall not exceed 10 ohms.

ITS. The following test shall be made in addition to the lighting system test above.

Detector Loops. Before and after permanently securing the loop in the pavement, the resistance, inductance, resistance to ground, and quality factor for each loop and lead-in circuit shall be tested. The loop and lead-in circuit shall have an inductance between 20 and 2500 microhenries. The resistance to ground shall be a minimum of 50 megohms under any conditions of weather or moisture. The quality factor (Q) shall be 5 or greater.

Fiber Optic Systems. Fiber optic testing shall be performed as required in the fiber optic cable special provision and the fiber optic splice special provision.

All test results shall be furnished to the Engineer seven working days before the date the inspection is scheduled.

**Contract Guarantee.** The Contractor shall provide a written guarantee for all electrical work provided under the contract for a period of six months after the date of acceptance with the following warranties and guarantees.

- (a) The manufacturer's standard written warranty for each piece of electrical material or apparatus furnished under the contract. The warranty for light emitting diode (LED) modules, including the maintained minimum luminance, shall cover a minimum of 120 months from the date of delivery.



- (b) The Contractor's written guarantee that, for a period of six months after the date of final acceptance of the work, all necessary repairs to or replacement of said warranted material or apparatus for reasons not proven to have been caused by negligence on the part of the user or acts of a third party shall be made by the Contractor at no additional cost to the Department.
- (c) The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six months after final acceptance of the work.

The warranty for an uninterruptable power supply (UPS) shall cover a minimum of two years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years.

**Record Drawings.** Alterations and additions to the electrical installation made during the execution of the work shall be made on the PDF copy of the as-Let documents using a PDF editor. Hand drawn notations or markups and scanned plans are not acceptable. These drawings shall be updated daily and shall be available for inspection by the Engineer during the work. The record drawings shall include the following:

- Cover Sheet
- The Electrical Maintenance Contract Management System (EMCMS) location designation, i.e. "L" number
- Summary of Quantities, electrical items only
- Legends, Schedules, and Notes
- Plan Sheets
- Pertinent Details
- Single Line Diagrams
- Other useful information useful to locate and maintain the systems.

Any modifications to the details shall be indicated. Final quantities used shall be indicated on the Summary of Quantities. Foundation depths used shall also be listed.

As part of the record drawings, the Contractor shall inventory all materials, new or existing, on the project and record information on inventory sheets provided by the Engineer.

The inventory shall include:

- Location of Equipment, including rack, chassis, slot as applicable.
- Designation of Equipment
- Equipment manufacturer
- Equipment model number
- Equipment Version Number
- Equipment Configuration
  - Addressing, IP or other
  - Settings, hardware or programmed
- Equipment Serial Number

The following electronic inventory forms are available from the Engineer:

- Lighting Controller Inventory
- Lighting Inventory
- Light Tower Inspection Checklist
- ITS Location Inventory

The information shall be entered in the forms; handwritten entries will not be acceptable; except for signatures. Electronic file shall also be included in the documentation.

When the work is complete, and seven days before the request for a final inspection, the set of contract drawings, stamped "**RECORD DRAWINGS**", shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or Electrician. . The record drawings shall be submitted in PDF format through TOCS, on CD-ROM as well as hardcopy's for review and approval.

In addition to the record drawings, PDF copies of the final catalog cuts which have been Approved and Approved as Noted with applicable follow-up shall be submitted along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible. Hard copies of the catalog are not required with this submittal.

The Contractor shall provide three sets of electronically produced drawings in a moisture proof pouch to be kept on the inside door of the controller cabinet or other location approved by the Engineer. These drawings shall show the final as-built circuit orientation(s) of the project in the form of a single line diagram with all luminaires numbered and clearly identified for each circuit.

Final documentation shall be submitted as a complete submittal package, i.e. record drawings, test results, inventory, etc. shall be submitted at the same time. Partial piecemeal submittals will be rejected without review.

A total of three hardcopies and two CD-ROMs of the final documentation shall be submitted. The identical material shall also be submitted through the TOCS system utilizing the following final documentation pay item numbers:

<b>Pay Code</b>	<b>Description</b>	<b>Discipline</b>
FDLRD000	Record Drawings - Lighting	Lighting
FDSRD000	Record Drawings - Surveillance	Surveillance
FDTRD000	Record Drawings - Traffic Signal	Traffic Signal
FDIRD000	Record Drawings - ITS	ITS
FDLCC000	Catalog Cuts - Lighting	Lighting
FDSCC000	Catalog Cuts – Surveillance	Surveillance
FDTCC000	Catalog Cuts – Traffic Signal	Traffic Signal
FDICC000	Catalog Cuts - ITS	ITS
FDLWL000	Warranty - Lighting	Lighting
FDSWL000	Warranty - Surveillance	Surveillance
FDTWL000	Warranty - Traffic Signal	Traffic Signal
FDIWL000	Warranty - ITS	ITS
FDLTR000	Test Results - Lighting	Lighting
FDSTR000	Test Results - Surveillance	Surveillance
FDTTR000	Test Results - Traffic Signal	Traffic Signal
FDITR000	Test Results - ITS	ITS
FDLINV00	Inventory - Lighting	Lighting
FDSINV00	Inventory - Surveillance	Surveillance
FDTINV00	Inventory - Traffic Signal	Traffic Signal
FDIINV00	Inventory - ITS	ITS
FDLGPS00	GPS - Lighting	Lighting
FDSGPS00	GPS - Surveillance	Surveillance
FDTGPS00	GPS - Traffic Signal	Traffic Signal
FDIGPS00	GPS - ITS	ITS

Record Drawings shall include Marked up plans, controller info, Service Info, Equipment Settings, Manuals, Wiring Diagrams for each discipline.

Test results shall be all electrical test results, fiber optic OTDR, and Fiber Optic power meter as applicable for each discipline.

GPS Documentation. In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following electrical components being installed, modified or being affected in other ways by this contract:

- All light poles and light towers.
- Handholes and vaults.
- Junction Boxes
- Conduit roadway crossings.
- Controllers.
- Control Buildings.
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations.
- CCTV Camera installations.
- Roadway Surveillance installations.
- Fiber Optic Splice Locations.
- Fiber Optic Cables. Coordinates shall be recorded along each fiber optic cable route every 200 feet.
- All fiber optic slack locations shall be identified with quantity of slack cable included. When sequential cable markings are available, those markings shall be documented as cable marking into enclosure and marking out of enclosure.

Datum to be used shall be North American 1983.

Data shall be provided electronically. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

1. District
2. Description of item
3. Designation
4. Use
5. Approximate station
6. Contract Number
7. Date
8. Owner
9. Latitude
10. Longitude
11. Comments

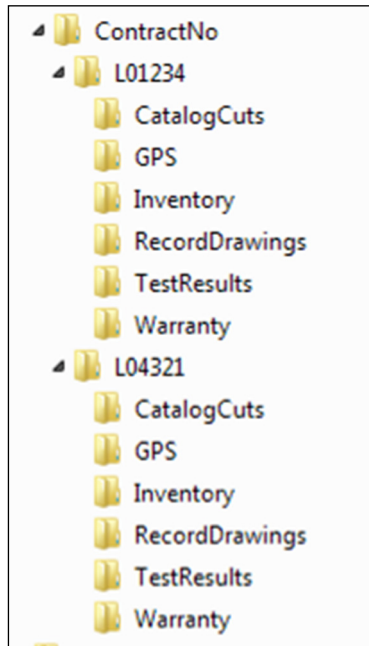
A spreadsheet template will be available from the Engineer for use by the Contractor.

**Accuracy.** Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have minimum 5 meter accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

The documents on the CD shall be organized by the Electrical Maintenance Contract Management System (EMCMS) location designation. If multiple EMCMS locations are within the contract, separate folders shall be utilized for each location as follows:



Extraneous information not pertaining to the specific EMCMS location shall not be included in that particular folder and sub-folder.

The inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.

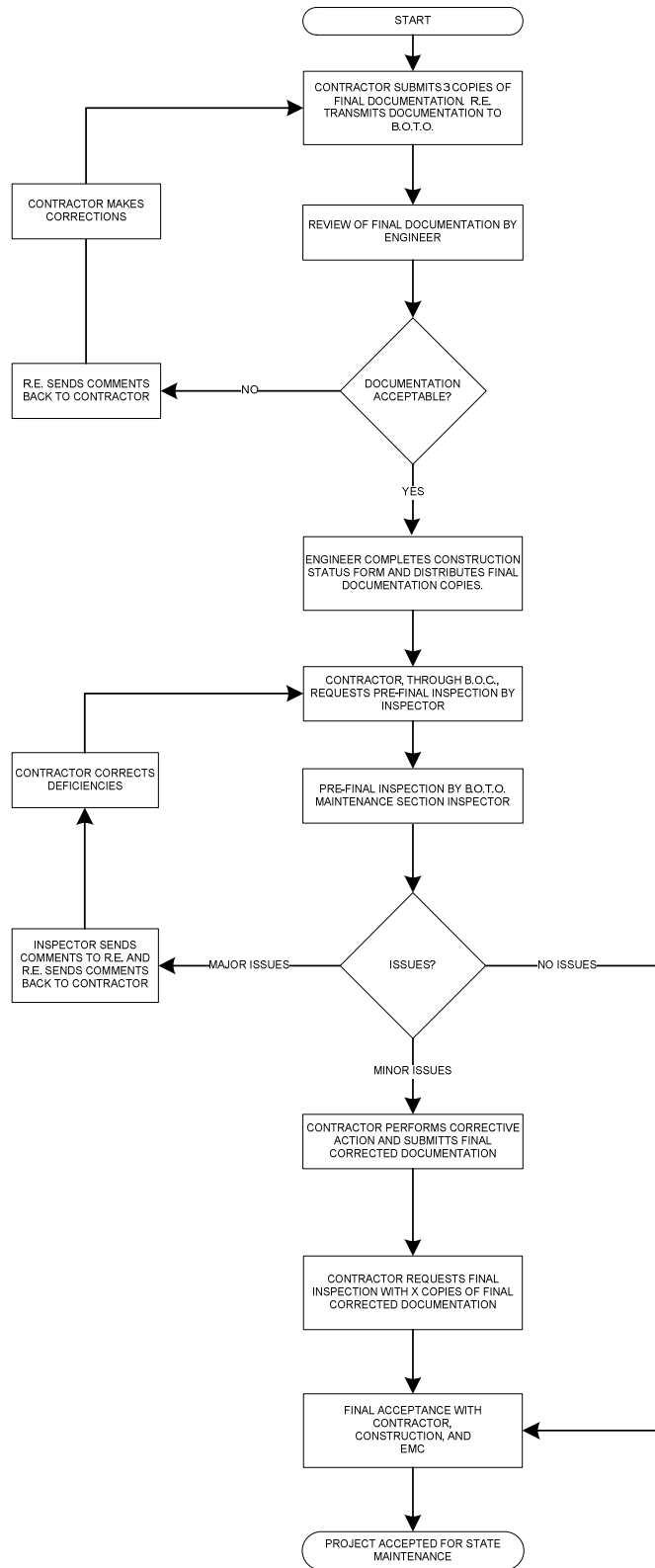
The Final Acceptance Documentation Checklist shall be completed and is contained elsewhere herein.

All CD's shall be labeled as illustrated in the CD Label Template contained herein.

**Acceptance.** Acceptance of electrical work will be given at the time when the Department assumes the responsibility to protect and maintain the work according to Article 107.30 or at the time of final inspection.

When the electrical work is complete, tested, and fully operational, the Contractor shall schedule an inspection for acceptance with the Engineer no less than seven working days prior to the desired inspection date. The Contractor shall furnish the necessary labor and equipment to make the inspection.

A written record of the test readings taken by the Contractor according to Article 801.13 shall be furnished to the Engineer seven working days before the date the inspection is scheduled. Inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.



**Final Acceptance Documentation Checklist**

LOCATION	
Route	Common Name
Limits	Section
Contract #	County
Controller Designation(s)	EMC Database Location Number(s)

ITEM	Contractor (Verify)	Resident Engineer (Verify)
<b>Record Drawings</b> -Three hardcopies (11" x 17") -Scanned to two CD-ROMs	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<b>Field Inspection Tests</b> -Voltage -Amperage -Cable Insulation Resistance -Continuity -Controller Ground Rod Resistance (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>GPS Coordinates</b> -Excel file (Check Special Provisions, Excel file scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Job Warranty Letter</b> (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Catalog Cut Submittals</b> -Approved & Approved as Noted (Scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Lighting Inventory Form</b> (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Lighting Controller Inventory Form</b> (Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Light Tower Inspection Form</b> (If applicable, Three Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>

Three Hardcopies & scanned to two CD's shall be submitted for all items above. The CD ROM shall be labeled as shown in the example contained herein.

**General Notes:**



Record Drawings – The record drawings should contain contract cover sheet, summary of quantities showing all lighting pay item sheets, proposed lighting plans and lighting detail sheets. Submit hardcopies shall be 11” x 17” size. Temporary lighting plans and removal lighting plans should not be part of the set.

Field Inspection Tests – Testing should be done for proposed cables. Testing shall be per standard specifications. Forms shall be neatly filled out.

GPS Coordinates – Check special provisions “General Electrical Requirements”. Submit electronic “EXCEL” file.

Job Warranty Letter – See standard specifications.

Cutsheet Submittal – See special provisions “General Electrical Requirements”. Scan Approved and Approved as Noted cutsheets.

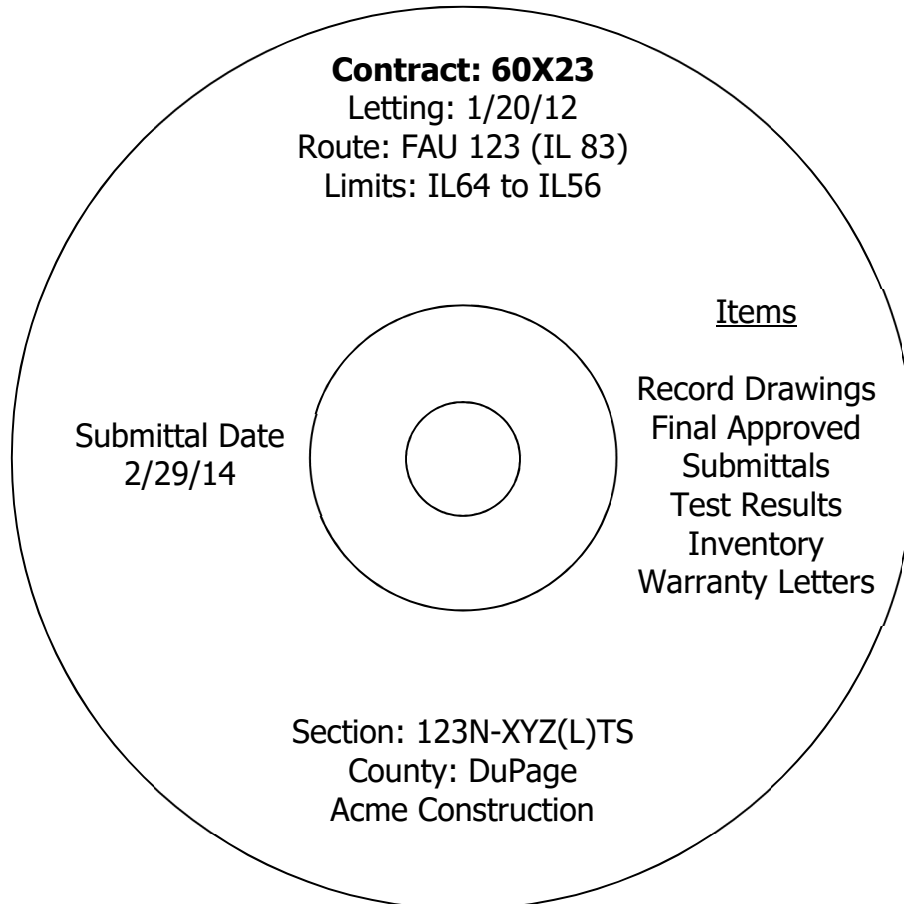
Lighting Inventory Form – Inventory form should include only proposed light poles, proposed light towers, proposed combination (traffic/light pole) lighting and proposed underpass luminaires.

Lighting Controller Inventory Form – Form should be filled out for only proposed lighting controllers.

Light Tower Safety Inspection Form – Form should be filled out for each proposed light tower.

CD LABEL FORMAT TEMPLATE.

**Label must be printed; hand written labels are unacceptable and will be rejected.**



## **MAINTENANCE OF LIGHTING SYSTEMS**

Effective: March 1, 2017

Replace Article 801.11 and 801.12 of the Standard Specifications with the following:

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. During the maintenance preconstruction inspection, the party responsible for existing maintenance shall perform testing of the existing system in accordance with Article 801.13a. The Contractor shall request a date for the preconstruction inspection no less than fourteen (14) days prior to the desired date of the inspection.

The Engineer will document all test results and note deficiencies. All substandard equipment will be repaired or replaced by the existing maintenance contractor, or the Engineer can direct the Contractor to make the necessary repairs under Section 109.04.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained. Contract documents shall indicate the circuit limits.

### **Maintenance of Existing Lighting Systems**

**Existing lighting systems.** Existing lighting systems shall be defined as any lighting system or part of a lighting system in service at the time of contract Letting. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

### **Extent of Maintenance.**

**Partial Maintenance.** Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits within the project limits. The project limits are defined as those limits indicated in the contract plans. Equipment outside of the project limits, on the affected circuits shall be maintained and paid for under Article 109.04. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer. The unaffected circuits and the controller will remain under the maintenance of the State.

**Full Maintenance.** If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits within the project limits. Equipment outside of the project limits shall be maintained and paid for under Article 109.04.

If the existing equipment is damaged by normal vehicular traffic, not contractor operations, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

### **Maintenance of Proposed Lighting Systems**

**Proposed Lighting Systems.** Proposed lighting systems shall be defined as any lighting system or part of a lighting system, temporary or permanent, which is to be constructed under this contract regardless of the project limits indicated in the plans.

The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, vandalism, or other means. The potential cost of replacing or repairing any malfunctioning, damaged, or vandalized equipment shall be included in the bid price of this item and will not be paid for separately.

**Lighting System Maintenance Operations**

The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, State of Illinois, Department of Transportation, Division of Highways, District One. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the contractor within the time limits specified herein.

If the existing equipment is damaged by normal vehicular traffic, not contractor operations, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

<b>INCIDENT OR PROBLEM</b>	<b>SERVICE RESPONSE TIME</b>	<b>SERVICE RESTORATION TIME</b>	<b>PERMANENT REPAIR TIME</b>
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey or reported to EMC	na	na	7 Calendar days
Navigation light outage	na	na	24 hours

- **Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- **Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- **Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from any monies owed to the Contractor. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

### **Operation of Lighting**

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods.

### **Method of Measurement**

The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request. Months in which the lighting systems are not maintained and not operational will not be paid. Payment shall not be made retroactively for months in which lighting systems were not operational.

**Basis of Payment.** Maintenance of lighting systems shall be paid for at the contract unit price per calendar month for **MAINTENANCE OF LIGHTING SYSTEM.**

## **LUMINAIRE SAFETY CABLE ASSEMBLY**

Effective: January 1, 2012

**Description:** This item shall consist of providing a luminaire safety cable assembly as specified herein and as indicated in the plans.

**Materials.** Materials shall be according to the following:

**Wire Rope.** Cables (wire rope) shall be manufactured from Type 304 or Type 316 stainless steel having a maximum carbon content of 0.08 % and shall be a stranded assembly. Cables shall be 3.18 mm (0.125") diameter, 7x19 Class strand core and shall have no strand joints or strand splices.

Cables shall be manufactured and listed for compliance with Federal Specification RR-W-410 and Mil-DTL-83420.

Cable terminals shall be stainless steel compatible with the cable and as recommended by the cable manufacturer. Terminations and clips shall be the same stainless steel grade as the wire rope they are connected to.

**U-Bolts.** U-Bolts and associated nuts, lock washers, and mounting plates shall be manufactured from Type 304 or Type 316 stainless steel.

## **CONSTRUCTION REQUIREMENTS**

**General.** The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm. Unless otherwise indicated in the plans, the luminaire safety cable shall only be used in conjunction with luminaires which are directly above the traveled pavement.

**Basis of Payment:** This work shall be paid for at the contract price each for **LUMINAIRE SAFETY CABLE ASSEMBLY**, which shall be payment for the work as described herein and as indicated in the plans.

## **ROADWAY LUMINAIRE, LED**

Effective: July 1, 2021

### Description.

This work shall consist of furnishing and installing a roadway LED luminaire as shown on the plans, as specified herein.

### General.

The luminaire including the housing, driver and optical assembly shall be assembled in the U.S.A. The luminaire shall be assembled by and manufactured by the same manufacturer. The luminaire shall be mechanically strong and easy to maintain. The size, weight, and shape of the luminaire shall be designed so as not to incite detrimental vibrations in its respective pole and it shall be compatible with the pole and arm. All electrical and electronic components of the luminaire shall comply with the requirements of Restriction of Hazardous Materials (RoHS) regulations. The luminaire shall be listed for wet locations by an NRTL and shall meet the requirements of UL 1598 and UL 8750

### Submittal Requirements.

The Contractor shall also the following manufacturer's product data for each type of luminaire:

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device. Completed manufacturer's luminaire ordering form with the full catalog number provided
2. LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.
3. LED efficacy per luminaire expressed in lumens per watt (l/w).
4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.
5. IES file associated with each submitted luminaire in the IES LM-63 format.
6. Computer photometric calculation reports as specified and in the luminaire performance table.
7. TM-15 BUG rating report.
8. Isofootcandle chart with max candela point and half candela trace indicated.



9. Documentation of manufacturers experience and verification that luminaires were assembled in the U.S.A. as specified.

10. Written warranty.

Upon request by the Engineer, submittals shall also include any or all the following:

- a. TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F (25 °C).
- b. LM-79 report with National Voluntary Laboratory Accreditation Program (NVLAP) current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.
- c. LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.
- d. AGi32 calculation file matching the submittal package.
- e. In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.
- f. Vibration test report in accordance with ANSI C136.31 in PDF format.
- g. ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.
- h. ASTM G154 (ASTM D523) gloss test report in PDF format.
- i. LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).
- j. Power factor (pf) and total harmonic distortion (THD) at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.
- k. Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.
- l. Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.
- m. Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

A sample luminaire shall also be provided upon request of the Engineer. The sample shall be as proposed for the contract and shall be delivered by the Contractor to the District Headquarters. After review, the Contractor shall retrieve the luminaire.

#### Manufacturer Experience.

The luminaire shall be designed to be incorporated into a lighting system with an expected 20 year lifetime. The luminaire manufacturer shall have a minimum of 33 years' experience manufacturing HID roadway luminaires and shall have a minimum of seven (7) years' experience manufacturing LED roadway luminaires. The manufacturer shall have a minimum of 25,000 total LED roadway luminaires installed on a minimum of 100 separate installations, all within the U.S.A.

#### Housing.

Material. The luminaire shall be a single device not requiring onsite assembly for installation. The driver for the luminaire shall be integral to the unit.

Finish. The luminaire shall have a baked acrylic enamel finish. The color of the finish shall be gray, unless otherwise indicated.

The finish shall have a rating of six or greater according to ASTM D1654, Section 8.0 Procedure A – Evaluation of Rust Creepage for Scribed Samples after exposure to 1000 hours of testing according to ASTM B117 for painted or finished surfaces under environmental exposure.

The luminaire finish shall have less than or equal to 30% reduction of gloss according to ASTM D523 after exposure of 500 hours to ASTM G154 Cycle 6 QUV® accelerated weathering testing.

The luminaire shall slip-fit on a mounting arm with a 2" diameter tenon (2.375" outer diameter), and shall have a barrier to limit the amount of insertion. The slip fitter clamp shall utilize four (4) bolts to clamp to the tenon arm. The luminaire shall be provided with a leveling surface and shall be capable of being tilted  $\pm 5$  degrees from the axis of attachment in 2.5 degree increments and rotated to any degree with respect to the supporting arm.

All external surfaces shall be cleaned in accordance with the manufacturer's recommendations and be constructed in such a way as to discourage the accumulation of water, ice, and debris.

The effective projected area of the luminaire shall not exceed 1.6 sq. ft.

The total weight including accessories, shall not exceed 40 lb (18.14 kg). If the weight of the luminaire is less than 20 lb (9.07 kg), weight shall be added to the mounting arm or a supplemental vibration damper installed as approved by the Engineer.

A passive cooling method with no moving, rotating parts, or liquids shall be employed for heat management.

The luminaire shall include a fully prewired, 7-pin twist lock ANSI C136.41-compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and as approved by the Engineer. A shorting cap shall be provided with the luminaire that is compliant with ANSI C136.10.

Vibration Testing. All luminaires shall be subjected to and pass vibration testing requirements at "3G" minimum zero to peak acceleration in accordance with ANSI C136.31 requirements using the same luminaire. To be accepted, the luminaire housing, hardware, and each individual component shall pass this test with no noticeable damage and the luminaire must remain fully operational after testing.

Labels. An internal label shall be provided indicating the luminaire is suitable for wet locations and indicating the luminaire is an NRTL listed product to UL1598 and UL8750. The internal label shall also comply with the requirements of ANSI C136.22.

An external label consisting of two black characters on a white background with the dimensions of the label and the characters as specified in ANSI C136.15 for HPS luminaires. The first character shall be the alphabetical character representing the initial lumen output as specified in Table 1 of Article 1067.06(c). The second character shall be the numerical character representing the transverse light distribution type as specified in IES RP-8 (i.e. Types 1, 2, 3, 4, or 5).

Hardware. All hardware shall be stainless steel or of other corrosion resistant material approved by the Engineer.

Luminaires shall be designed to be easily serviced, having fasteners such as quarter-turn clips of the heavy spring-loaded type with large, deep straight slot heads, complete with a receptacle and shall be according to military specification MIL-f-5591.

All hardware shall be captive and not susceptible to falling from the luminaire during maintenance operations. This shall include lens/lens frame fasteners as well hardware holding the removable driver and electronic components in place.

Provisions for any future house-side external or internal shielding should be indicated along with means of attachment.

Circuiting shall be designed to minimize the impact of individual LED failures on the operation of the other LED's.

Wiring. Wiring within the electrical enclosure shall be rated at 600v, 105°C or higher.

### Driver.

The driver shall be integral to the luminaire shall be capable of receiving an indefinite open and short circuit output conditions without damage.

The driver shall incorporate the use of thermal foldback circuitry to reduce output current under abnormal driver case temperature conditions and shall be rated for a lifetime of 100,000 hours at an ambient temperature exposure of 77 °F (25 °C) to the luminaire. If the driver has a thermal shut down feature, it shall not turn off the LEDs when operated at 104 °F (40 °C) or less.

The driver shall have an input voltage range of 120 to 277 volts ( $\pm 10\%$ ) or 347 to 480 volts ( $\pm 10\%$ ) according to the contract documents. When the driver is operating within the rated input voltage range and in an un-dimmed state, the power factor measurement shall be not less than 0.9 and the THD measurement shall be no greater than 20%.

The driver shall meet the requirements of the FCC Rules and Regulations, Title 47, Part 15 for Class A devices with regard to electromagnetic compatibility. This shall be confirmed through the testing methods in accordance with ANSI C63.4 for electromagnetic interference.

The driver shall be dimmable using the protocol listed in the Luminaire Performance Table shown in the contract.

Surge Protection. The luminaire shall comply the requirements of ANSI C136.2 for electrical transient immunity at the "Extreme" level (20KV/10KA) and shall be equipped with a surge protective device (SPD) that is UL1449 compliant with indicator light. An SPD failure shall open the circuit to protect the driver.

### LED Optical Assembly

The optical assembly shall have an IP66 or higher rating in accordance with ANSI C136.25. The circuiting of the LED array shall be designed to minimize the effect of individual LED failures on the operation of other LEDs. All optical components shall be made of glass or a UV stabilized, non-yellowing material.

The optical assembly shall utilize high brightness, long life, minimum 70 CRI, 4,000K color temperature (+/-300K) LEDs binned in accordance with ANSI C78.377. Lenses shall be UV-stabilized acrylic or glass.

Lumen depreciation at 50,000 hours of operation shall not exceed 15% of initial lumen output at the specified LED drive current and an ambient temperature of 25° C.

The luminaire may or may not have a glass lens over the LED modules. If a glass lens is used, it must be a flat lens. Material other than glass will not be acceptable. If a glass lens is not used, the LED modules may not protrude lower than the luminaire housing.

The assembly shall have individual serial numbers or other means for manufacturer tracking.

### Photometric Performance.

Luminaires shall be tested according to IESNA LM-79. This testing shall be performed by a test laboratory holding accreditation from the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) for the IESNA LM-79 test procedure.

Data reports as a minimum shall yield an isofootcandle chart, with max candela point and half candela trace indicated, maximum plane and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, spectral distribution plots, chromaticity plots, and other standard report outputs of the above mentioned tests.

The luminaire shall have a BUG rating of Back Light B3 or less, Up Light rating of U0, and a Glare rating of G3 or less unless otherwise indicated in the luminaire performance table.

### Photometric Calculations.

Calculations. Submitted report shall include a luminaire classification system graph with both the recorded lumen value and percent lumens by zone along with the BUG rating according to IESNA TM-15.

Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided in accordance with IESNA RP-8 recommendations. Lighting calculations shall be performed using AGi32 software with all luminance calculations performed to one decimal place (i.e. x.x cd/m<sup>2</sup>). Uniformity ratios shall also be calculated to one decimal place (i.e. x.x:1). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Table(s). Values shall be rounded to the number of significant digits indicated in the luminaire performance table(s).

All photometry must be **photopic**. Scotopic or mesopic factors will not be allowed. The AGi32 file shall be submitted at the request of the Engineer.

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE  
 ROADWAY LIGHTING**

**GIVEN CONDITIONS**

Roadway Data	Pavement Width	36	Ft
	Number of Lanes Left of Median	n/a	
	Number of Lanes Right of Median	3	
	Lane Width	12	Ft
	Median Width	n/a	Ft
	IES Surface Classification	R3	
	Q-Zero Value	0.07	
Mounting Data	Mounting Height	47.5	Ft
	Mast Arm Length	12	Ft
	Pole Set-Back from Edge of Pavement	6	Ft
Luminaire Data	Source	LED	
	Color Temperature	4000	°K
	Lumens	25,000	Min
	Pay Item Lumen Designation	H	
	BUG Rating		
	IES Vertical Distribution	Medium	
	IES Control of Distribution	Cutoff	
	IES Lateral Distribution	Type III	
Total Light Loss Factor	0.70		
Pole Layout Data	Spacing	240	Ft
	Configuration	Single Sided	
	Luminaire Overhang over E.O.P.	6	Ft

**NOTE:** Variations from the above specified I.E.S. distribution pattern may be requested, and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

**PERFORMANCE REQUIREMENTS**

**NOTE:** These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

Roadway Luminance	Average Luminance, $L_{AVE}$ (Max)	1.2	Cd/m <sup>2</sup>
	Average Luminance, $L_{AVE}$ (Min)	0.9	Cd/m <sup>2</sup>
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.0	Max
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	5.0	Max
	Veiling Luminance Ratio, $L_V/L_{AVE}$	0.3	Max

Independent Testing

When a contract has 50 or more luminaires of the same type (distribution type and lumen output/wattage), that luminaire type shall be independently tested, unless otherwise noted. The quantity of luminaires to be tested shall be as specified in the following table.

<b>Contract Quantity</b>	<b>Luminaires to be Tested</b>
1-49	0 (unless otherwise noted)
50-100	2
101-150	3
151-200	4
201-250	5
251-300	6
301-350	7

Testing is not required for temporary lighting luminaires.

The Contractor shall coordinate the testing with the contract schedule considering submittal, manufacturing, testing, and installation lead-times and deadlines.

The Electrical Engineer shall select from all the project luminaires at the Contractor's or distributor's storage facility, within District 1, the luminaires for testing. In all cases, the selection of luminaires shall be a random selection from the entire completed lot of luminaires required for the contract. Selections from partial lots will not be allowed. An additional luminaire shall also be selected for physical inspection by the Engineer at the District Headquarters. This luminaire will be available for the Contractor to pick up at a later date to be installed under this contract. This luminaire is in addition to the luminaire required as a part of the submittal process specified elsewhere.

Alternative selection process. With the Engineer's prior approval, the Contractor shall provide a list of luminaire serial numbers for all the luminaires. The Engineer shall make a random selection of the required number of luminaires for testing from the serial numbers. That luminaire must then be photographed clearly showing the serial number prior to shipment to the selected and approved testing laboratory. The testing laboratory shall include a photograph of the luminaire along with the test results directly to the Engineer.

Luminaires shall be tested at a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory approved for each of the required tests. The testing facility shall not be associated in any way, subsidiary or otherwise, with the luminaire manufacturer. All costs associated with luminaire testing shall be included in the bid price of the luminaire.

The selection of the proposed independent laboratory shall be presented with the information submitted for review and approval.

The testing performed shall include photometric and electrical testing.

All tests shall be conducted at the luminaire system operating voltage as specified in the contract plans.

Photometric testing shall be according to IES recommendations, performed with a goniophotometer and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, maximum planned and maximum cone plots of candela, a candlepower table (House and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results.

Electrical testing shall conform to NEMA and ANSI standards and, as a minimum shall include a complete check of wiring connections and a table of characteristics showing input amperes, watts, power factor, total harmonic distortion and LED drive current.

Two copies of the summary report and the test results including IES photometric files (including CD-ROM) shall be certified by the test laboratory and shall be sent by certified mail directly to the Engineer.

To: District Engineer  
Attn: Bureau Chief of Traffic Operations  
Illinois Department of transportation  
201 West center Ct.  
Schaumburg, IL 60196

The package shall state "luminaire test reports" and the contract number clearly.

A copy of this material shall be sent to the Contractor and the Resident Engineer at the same time.

Photometric performance shall meet or exceed that of the specified values. If the luminaire does not meet the specified photometric values, the luminaire has failed regardless of whether the test results meet the submitted factory data.

Should any of the tested luminaires of a given type, and distribution fail to satisfy the specifications and perform according to approved submittal information, the luminaire type of that distribution type and wattage shall be unacceptable and be replaced by alternate equipment meeting the specifications with the submittal and testing process repeated in their entirety; or corrections made to achieve required performance.

In the case of corrections, the Contractor shall advise the Engineer of the proposed corrections and shall request a repeat of the specified testing and, if the corrections are deemed reasonable by the Engineer, the testing process shall be repeated in its entirety.



The number of luminaires to be tested shall be the same quantity as originally tested as required in the above table.

Retesting, should it become necessary, shall not be grounds for additional compensation or extension of time

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen laboratory.

### Installation.

Each luminaire shall be installed according to the luminaire manufacturer's recommendations.

Luminaires which are pole mounted shall be mounted on site such that poles and arms are not left unloaded. Pole mounted luminaires shall be leveled/adjusted after poles are set and vertically aligned before being energized. When mounted on a tenon, care shall be exercised to assure maximum insertion of the mounting tenon. Each luminaire shall be checked to assure compatibility with the project power system. When the night-time check of the lighting system by the Engineer indicates that any luminaires are mis-aligned, the mis-aligned luminaires shall be corrected at no additional cost.

No luminaire shall be installed prior to approval. Where independent testing is required, full approval will not be given until complete test results, demonstrating compliance with the specifications, have been reviewed and accepted by the Engineer.

Pole wiring shall be provided with the luminaire. Pole wire shall run from handhole to luminaire. Pole wire shall be sized No. 10, rated 600 V, RHW/USE-2, and have copper conductors, stranded in conformance with ASTM B 8. Pole wire shall be insulated with cross-linked polyethylene (XLP) insulation. Pole wire shall include a phase, neutral, and green ground wire. Wire shall be trained within the pole or sign structure so as to avoid abrasion or damage to the insulation.

Pole wire shall be extended through the pole, pole grommet, luminaire ring, and any associated arm and tenon. The pole wire shall be terminated in a manner that avoids sharp kinks, pinching, pressure on the insulation, or any other arrangement prone to damaging insulation value and producing poor megger test results. Wires shall be trained away from heat sources within the luminaire. Wires shall be terminated so all strands are extended to the full depth of the terminal lug with the insulation removed far enough so it abuts against the shoulder of the lug, but is not compressed as the lug is tightened.

Included with the pole wiring shall be fusing located in the handhole. Fusing shall be according to Article 1065.01 with the exception that fuses shall be 6 amperes.

Each luminaire and optical assembly shall be free of all dirt, smudges, etc. Should the optical assembly require cleaning, a luminaire manufacturer approved cleaning procedure shall be used.

Horizontal mount luminaires shall be installed in a level, horizontal plane, with adjustments as needed to insure the optics are set perpendicular to the traveled roadway.

When the pole is bridge mounted, a minimum size stainless steel 1/4-20NC set screw shall be provided to secure the luminaire to the mast arm tenon. A hole shall be drilled and tapped through the tenon and luminaire mounting bracket and then fitted with the screw.

Warranty.

The entire luminaire and all of its component parts shall be covered by a 10-year warranty. Failure is when one or more of the following occur:

- 1) Negligible light output from more than 10 percent of the discrete LEDs.
- 2) Significant moisture that deteriorates performance of the luminaire.
- 3) Driver that continues to operate at a reduced output due to overheating.

**The warranty period shall begin on the date of luminaire delivery.** The Contractor shall verify that the Resident Engineer has noted the delivery date in the daily diary. Copy of the shipment and delivery documentation shall be submitted.

The replacement luminaire shall be of the same manufacturer, model, and photometric distribution as the original.

Method of Measurement.

The rated initial minimum luminous flux (lumen output) of the light source, as installed in the luminaire, shall be according to the following table for each specified output designation.

Designation Type	Minimum Initial Luminous Flux	Designation Type	Minimum Initial Luminous Flux
A	2,200	G	15,500
B	3,150	H	25,200
C	4,400	I	47,250
D	6,300	J	63,300
E	9,450	K	80,000+
F	12,500		

Where delivered lumens is defined as the minimum initial delivered lumens at the specified color temperature. Luminaires with an initial luminous flux less than the values listed in the above table will not be acceptable even if they meet the requirements given in the Luminaire Performance table shown in the contract.

Basis of Payment.

This work will be paid for at the contract unit price per each for **LUMINAIRE, LED, ROADWAY**, of the output designation specified, or **TEMPORARY LUMINAIRE, LED, ROADWAY**, of the output designation specified.

**UNIT DUCT**

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

“The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer.”

Revise Article 1088.01(c) to read:

“(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

**Marking:**

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

**Performance Tests:**

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

Duct Diameter		Min. force required to deform sample 50%	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

**WIRE AND CABLE**

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor		Messenger wire			
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

#### **TEMPORARY WOOD POLE, 60 FEET, CLASS 4**

Description: This special provision describes the installation of wooden poles in support of temporary navigational lighting design of the heights identified and at the locations identified in the plans.

Material: Materials shall be according to article 1069.04 of Standard Specification for Road and Bridge Construction.

Installation: Installation shall be according to article 830.03 of Standard Specification for Road and Bridge Construction and in accordance to IDOT District 1 standard Detail BE-801. Where indicated on plans temporary aerial cables must be strung on temporary poles. Contractor shall assume that multiple guy lines will be required for these poles. Contractor must provide calculation showing that poles will be adequately supported by number of guy lines installed per Electric Distribution Line Guys and Anchors RUS Bulletin 1724E-153. Additional guy lines and calculation are incidental.

Basis of Payment: This work will be paid for according to article 830.05 of Standard Specification for Road and Bridge Construction. Payment shall be at the contract unit price EACH for TEMPORARY WOOD POLE, 60FT, CLASS 4 installed at location and depth indicated on plan and detail.

## **REMOVAL OF LUMINAIRE, SALVAGE**

Effective: December 17, 2019

**Description.** This work shall consist of the removal and salvaging of existing luminaires from existing conventional poles.

### **CONSTRUCTION REQUIREMENTS**

**General.** No removal work will be permitted without approval from the Engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the Engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

#### **Removal of luminaires.**

The existing luminaire shall be disconnected and removed from the existing pole mast arms. Disconnect any luminaire safety cable assemblies. Any damage resulting from the removal and/or transportation of the lighting luminaire and associated hardware, shall be repaired or replaced in kind. The Engineer will be the sole judge to determine the extent of damage and the suitability of repair and/or replacement. The removal of pole mounted luminaries shall include the luminaries, lamps and associated hardware and appurtenances.

**Salvage.** When indicated, luminaries, and all associated hardware and appurtenances shall remain the property of the Department and shall be delivered to a Department facility within the District 1 and unloaded and stacked there, as directed by the Engineer. Wood blocking, banding, or other appurtenant items required for proper stacking and protection shall be included. Luminaires shall be removed, boxed in new containers, approved by the Engineer, and delivered to a Department facility, as designated by the Engineer. The contractor shall call IDOT EMC at (708) 524-2145 to schedule the delivery date and location.

**Method of Measurement.** Each luminaire unit which is removed and delivered to a Department storage facility will be counted as a unit for payment.

**Basis of Payment.** Removal of luminaires will be paid for at the contract unit price per each for REMOVAL OF LUMINAIRE, SALVAGE.

### **REMOVAL OF OBSTRUCTION WARNING LIGHTING SYSTEM (IDOT LIGHTING)**

Description. This work shall consist of the removal and disposal of existing navigation lights and all associated hardware and appurtenances, including luminaires, conduit, cable, junction boxes, hangers and associated hardware, as shown on the plans and as directed by the Engineer.

Method of Measurement. All navigation luminaires, and appurtenant equipment which is removed and disposed of as indicated, will be measured for payment on a lump sum basis.

Basis of Payment. This work will be paid for at the contract lump sum price for REMOVAL OF OBSTRUCTION WARNING LIGHTING SYSTEM.

### **WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED (IDOT LIGHTING)**

Description. This item of work shall be performed in accordance with the applicable provisions of Section 822 of the Standard Specifications at the locations shown on the plans and as directed by the Engineer. This luminaire shall meet or exceed all U.S. Coast Guard recommendations and requirements.

HOUSING - The housing shall be of cast aluminum. Casting alloy used shall be suitable for marine environment. Construction shall be rain-tight and fully gasketed. The light assembly shall be designed for heavy duty, long life service. Design shall provide ready access for lamp service.

LENS: Lens shall be tempered Fresnel glass. Inside lens diameter shall measure approximately 7". Outside lens diameter shall measure approximately 8". Lens shall have a wide angle of divergence suitable for high mounting on bridges or structures. The angle of divergence shall not be less than 27 degrees. Channel Margin lens shall be 180 degrees red. Center Channel lens shall be 360 degrees green.

LAMP and RECEPTACLE: Lamp shall be A single medium base 8W, 120V 100,000 hour LED lamp shall be provided in a color to match the lens. Medium base receptacle shall be rated for 250V, 660W and shall be porcelain with a nickel-plated brass shell to resist lamp freezing.

STEM: Lamp fixture head shall be suspended from the swivel on a 1 1/2" schedule 40 pipe, 1.90" O.D. Pipe material shall be galvanized steel. Dimension from center of swivel to focal plane of lens shall be field verified (approximately 36").

SWIVEL: The swivel design shall provide for all wiring to be completely contained inside the light assembly. Gaskets and o-rings shall be used to provide a weather-tight assembly. Swivel shall be of heavy-duty construction, cast of the same material as the fixture head. Spindle shall be of stainless steel.

AUTOMATIC LATCH: An automatic latch shall hold the light securely in normal operating and service positions. A firm pull on the service chain shall automatically release the latch, allowing the fixture to pivot. As the light is raised, latch shall automatically engage to hold light in the service position. Service position shall be 30 degrees from vertical [option: as specified]. Fixture assembly shall be dual-handed (i.e. light may be pulled up from either side).

**MOUNTING:** Base shall be cast of the same material as the fixture head (aluminum or silicon bronze). Light assembly shall mount via four 1/2" diameter bolts through the base, provided by installer to suit installation.

**SERVICE CHAIN:** A stainless steel, #25 sash type service chain shall be provided to facilitate raising and lowering light for service. Required hardware for attaching the chain to the bridge structure shall be included in this item.

**FLEXIBLE CORD:** The luminaire shall be connected to the nearest junction box by means of flexible power cord. All cord shall be portable power cable or hard service cord and shall be No. 12 AWG with ground. The cord shall be rated for extra-hard usage service 600V, -76 to 221 F (-60 to 105 C), and shall be oil, water and UV resistant. Grommets shall be provided where the cord passes through the structural beams.

Basis of Payment. Navigation lights including swivel mount, and all mounting hardware will be measured and paid for at the contract unit price per each for WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED.

#### **DRAINAGE SYSTEM**

Effective: June 10, 1994

Revised: June 24, 2015

Description. This work shall consist of furnishing and installing a bridge drainage system as shown on the plans, including all piping, fittings, support brackets, inserts, bolts, and splash blocks when specified.

Material. The pipe and fittings shall be reinforced fiberglass according to ASTM D 2996 RTRP with a 30,000 psi (207 MPa) minimum short-time rupture strength hoop tensile stress. The reinforced fiberglass shall also have an apparent stiffness factor at 5 percent deflection exceeding 200 cu in.-lbf/sq. in. (22.6 cu mm-kPa) and a minimum wall thickness of 0.10 in. (2.54 mm). The adhesive for joining pipe and fittings shall be as recommended by the manufacturer. All pipe supports and associated hardware shall be hot dip galvanized according to AASHTO M 232 (M 232M). The fiberglass pipe and fittings furnished shall be pigmented through out, or have a resin-rich pigmented exterior coat, specifically designed for overcoating fiberglass, as recommended by the manufacturer. The color shall be as specified by the Engineer. The resin in either case shall have an ultraviolet absorber designed to prevent ultraviolet degradation. The ultraviolet protection shall be designed to withstand a minimum of 2,500 hours of accelerated weathering when tested in conformance with the requirements in ASTM Designation: G 154. Lamps shall be UV-8 (313 nm wavelength). The resting cycle shall be 4 hours of ultraviolet exposure at 140°F (60°C), and then 4 hours of condensate exposure at 120°F (49°C). After testing, the surface of the pipe shall exhibit no fiber exposure, crazing, or checking, and only a slight chalking or color change. The supplier shall certify the material supplied meets or exceeds these requirements.



Design. The drainage system shall be designed as an open system with allowances for the differential expansion and contraction expected between the superstructure and the substructure to which the drainage system is attached.

Installation. All connections of pipes and fittings shown on the plans to facilitate future removal for maintenance cleanout or flushing shall be made with a threaded, gasketed coupler or a bolted gasketed flange system. Adhesive bonded joints will be permitted for runs of pipe between such connections. The end run connection shall feature a minimum nominal 6 in. (150 mm) female threaded fiberglass outlet. Straight runs may utilize a 45 degree reducing saddle bonded to the pipe. The female outlet shall be filled with a male threaded PVC plug.

Runs of pipe shall be supported at spacings not exceeding those recommended by the manufacturer of the pipe. Supports that have point contact or narrow supporting areas shall be avoided. Standard slings, clamps, clevis hangers and shoe supports designed for use with steel pipe may be used. A minimum strap width for hangers shall be 1 1/2 in. (40 mm) for all pipe under 12 in. (300 mm) in diameter and 2 in. (50 mm) for diameters 12 in. (300 mm) or greater. Straps shall have 120 degrees of contact with the pipe. Pipes supported on less than 120 degrees of contact shall have a split fiberglass pipe protective sleeve bonded in place with adhesive.

All reinforced fiberglass pipe, fittings, and expansion joints shall be handled and installed according to guidelines and procedures recommended by the manufacturer or supplier of the material.

Basis of Payment. This work will be paid for at the contract lump sum price for DRAINAGE SYSTEM.

## **HIGH LOAD MULTI-ROTATIONAL BEARINGS**

Effective: October 13, 1988

Revised: April 30, 2021

Description. This work shall consist of furnishing and installing High Load Multi-Rotational type bearing assemblies at the locations shown on the plans.

High Load Multi-Rotational (HLMR) bearings shall be one of the following at the Contractors option unless otherwise noted on the plans:

- a) Pot Bearings. These bearings shall be manufactured so that the rotational capability is provided by an assembly having a rubber disc of proper thickness, confined in a manner so it behaves like a fluid. The disc shall be installed, with a snug fit, into a steel cylinder and confined by a tight fitting piston. The outside diameter of the piston shall be no more than 0.03 in. (750 microns) less than the inside diameter of the cylinder at the interface level of the piston and rubber disc. The sides of the piston shall be beveled. PTFE sheets, or silicone grease shall be utilized to facilitate rotation of the rubber disc. Suitable brass sealing rings shall be provided to prevent any extrusion between piston and cylinder.

- b) Shear Inhibited Disc Type Bearing. The Structural Element shall be restricted from shear by the pin and ring design and need not be completely confined as with the Pot Bearing design. The disc shall be a molded monolithic Polyether Urethane compound.

These bearings shall be further subdivided into one or more of the following types:

- 1) Fixed. These allow rotation in any direction but are fixed against translation.
- 2) Guided Expansion. These allow rotation in any direction but translation only in limited directions.
- 3) Non-Guided Expansion. These allow rotation and translation in any direction.

The HLMR bearings shall be of the type specified and designed for the loads shown on the plans. The design of the top and bottom bearing plates are based on detail assumptions which are not applicable to all suppliers and may require modifications depending on the supplier chosen by the Contractor. The overall depth dimension for the HLMR bearings shall be as specified on the plans. The horizontal dimensions shall be limited to the available bearing seat area. Any modifications required to accommodate the bearings chosen shall be submitted to the Engineer for approval prior to ordering materials. Modifications may include the addition of steel filler plates or the adjustment of beam seat elevations. Adjustments to bridge seat elevations and accompanying reinforcement details shall be approved by the Structural Engineer of record. Modifications required shall be made at no additional cost to the State. Inverted pot bearing configurations will not be permitted.

The Contractor shall comply with all manufacturer's material, fabrication and installation requirements specified.

All bearings shall be supplied by prequalified manufacturers. The Department will maintain a list of prequalified manufacturers. The Contractor's options are limited to those systems prequalified by the Department on the date that the contract is bid.

Submittals. Shop drawings shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. All steel filler plate details shall be included in the shop drawings. In addition the Contractor shall furnish certified copies of the bearing manufacturer's test reports on the physical properties of the component materials for the bearings to be furnished and a certification by the bearing manufacturer stating the bearing assemblies furnished conform to all the requirements shown on the plans and as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

**Materials.** The materials for the HLMR bearing assemblies shall be according to the following:

- (a) Elastomeric Materials. The rubber disc for Pot bearings shall be according to Article 1083.02(a) of the Standard Specifications.
- (b) Polytetrafluoroethylene (PTFE) Material. The PTFE material shall be according to Article 1083.02(b) of the Standard Specifications, except that it shall be dimpled lubricated with a maximum coefficient of friction of 0.02 on stainless steel. The friction requirement shall be as specified in the Long Term Deterioration Test required for prequalification and the Sliding Friction Test as specified below.
- (c) Stainless Steel Sheets: The stainless steel sheets shall be of the thickness specified and shall be according to Article 1083.02(c).
- (d) Structural Steel. All structural steel used in the bearing assemblies shall be according to AASHTO M 270, Grade 50 (M 270M Grade 345), unless otherwise specified.
- (e) Threaded studs. The threaded stud, when required, shall conform to the requirements of Article 1083.02(d)(4) of the Standard Specifications.
- (f) Polyether Urethane for Disc bearings shall be according to all of the following requirements:

<b>PHYSICAL PROPERTY</b>	<b>ASTM TEST METHOD</b>	<b>REQUIREMENTS</b>	
Hardness, Type D durometer	D 2240	45 Min	65 Max
Tensile Stress, psi (kPa) At 100% elongation, min	D 412	1500 psi (10,350 kPa)	2300 psi (15,900 kPa)
Tensile Stress, psi (kPa) At 200% elongation, min	D 412	2800 psi (19,300 kPa)	4000 psi (27,600 kPa)
Tensile Strength, psi (kPa), min	D 412	4000 psi (27,600 kPa)	6000 psi (41,400 kPa)
Ultimate Elongation, %, min	D 412	350	220
Compression Set 22 hr. at 158 °F (70 °C), Method B %, max	D 395	40	40

The physical properties for a durometer hardness between the minimum and maximum values shown above shall be determined by straight line interpolation.

Design. The fabricator shall design the HLMR bearings according to the appropriate AASHTO Design Specifications noted on the bridge plans.

Fabrication. The bearings shall be complete factory-produced assemblies. They shall provide for rotation in all directions and for sliding, when specified, in directions as indicated on the plans. All bearings shall be furnished as a complete unit from one manufacturing source. All material used in the manufacture shall be new and unused with no reclaimed material incorporated into the finished assembly.

The translation capability for both guided and non-guided expansion bearings shall be provided by means of a polished stainless steel sliding plate that bears on a PTFE sheet bonded and recessed to the top surface of the piston or disc. The sliding element of expansion bearings shall be restrained against movement in the fixed direction by exterior guide bars capable of resisting the horizontal forces or 20 percent of the vertical design load on the bearing applied in any direction, whichever is greater. The sliding surfaces of the guide bar shall be of PTFE sheet and stainless steel. Guiding off of the fixed base, or any extension of the base, will not be permitted.

Structural steel bearing plates shall be fabricated according to Article 505.04(l) of the Standard Specifications. Prior to shipment the exposed edges and other exposed portions of the structural steel bearing plates shall be cleaned and given a corrosion protection coating as specified on the plans and according to the applicable Special Provisions and Articles 506.03 and 506.04 of the Standard Specifications. During cleaning and coating the stainless steel, PTFE sheet and neoprene shall be protected from abrasion and coating material.

PTFE sheets shall be bonded to steel under factory controlled conditions using heat and pressure for the time required to set the epoxy adhesive used. The PTFE sheet shall be free from bubbles and the sliding surface shall be burnished to an absolutely smooth surface.

The steel piston and the steel cylinder for pot bearings shall each be machined from a solid piece of steel. The steel base cylinder shall be either integrally machined, recessed into with a snug fit, or continuously welded to its bottom steel bearing plate.

Packaging. Each HLMR bearing assembly shall be fully assembled at the manufacturing plant and delivered to the construction site as complete units. The assemblies shall be packaged, crated or wrapped so the assemblies will not be damaged during handling, transporting and shipping. The bearings shall be held together with removable restraints so sliding surfaces are not damaged.

Centerlines shall be marked on both top and base plates for alignment in the field. The bearings shall be shipped in moisture-proof and dust-proof covers.

Performance Testing. The following performance tests are required per lot on the project. A lot size shall be the number of bearings per type (fixed, guided expansion, non-guided expansion) on the project, but not to exceed 25 bearings per type. When multiple sizes of bearings are used on the same contract, they shall be grouped by type when determining lot sizes and amount of bearings to be tested. All tests shall be performed by the manufacturer prior to shipment.

**Dimension Check.** Each bearing shall be checked dimensionally to verify all bearing components are within tolerances. Failure to satisfy any dimensional tolerance shall be grounds for rejecting the bearing component or the entire bearing assembly.

**Clearance Test.** This test shall be performed on one bearing per lot. The bearing selected for this test shall be the one with the least amount of clearance based on the dimension check. The bearing assembly shall be loaded to its service limit state rated capacity at its full design rotation but not less than 0.02 radians to verify the required clearances exist. This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction. Any visual signs of rubbing or binding shall be grounds for rejection of the lot.

**Proof Load Test.** This test shall be performed on one bearing per lot. The bearing assembly shall be load tested to 150 percent of the service limit state rated capacity at a rotation of 0.02 radians. The load shall be maintained for 5 minutes, removed then reapplied for 5 minutes. If the load drops below the required value during either application, the test shall be restarted from the beginning. This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction.

The bearing shall be visually examined both during the test and upon disassembly after the test. Any resultant visual defects include, but are not limited to:

1. Extruded or deformed elastomer, polyether urethane, or PTFE.
2. Insufficient clearances such as evidence of metal to metal contact between the pot wall and the top plate.
3. Damaged components such as cracked steel, damaged seal rings, or damaged limiting rings.
4. Bond failure.

If any of the above items are found it shall be grounds for rejection of the lot.

Sliding Friction Test. For expansion bearings, this test shall be performed on one bearing per lot. The sliding surfaces shall be thoroughly cleaned with a degreasing solvent. No lubrication other than that specified for the bearing shall be used. The bearing shall be loaded to its service limit state rated capacity for 1 hour prior to and throughout the duration of the sliding test. At least 12 cycles of plus and minus sliding with an amplitude equaling the smaller of the design displacement and 1 inch (25 mm) shall then be applied. The average sliding speed shall be between 0.1 inch and 1.0 inches (2.5 mm and 25 mm) per minute. The sliding friction coefficient shall be computed for each direction of each cycle and its mean and standard deviation shall be computed for the sixth through twelfth cycles.

The friction coefficient for the first movement and the mean plus two standard deviations for the sixth through twelfth cycles shall not exceed the design value used. In addition, the mean value for the sixth through twelfth cycles shall not exceed 2/3 of the design value used. Failure of either of these shall result in rejection of the lot.

The bearing shall also be visually examined both during and after the testing, any resultant defects, such as bond failure, physical destruction, or cold flow of the PTFE shall also be cause for rejection of the lot.

The Contractor shall furnish a notarized certification from the bearing manufacturer stating the HLMR bearings have been performance tested as specified, and a purchase order prior to fabrication. The purchase order shall contain, as a minimum, the quantity and size of each type of bearing furnished. The notarized certifications and the purchase order shall be submitted in one package to the Engineer of Tests at the Bureau of Materials and Physical Research (126 East Ash Springfield, IL 62704). The Department reserves the right to perform any of the specified tests on one or more of the furnished bearings. If the tested bearing shows failure it shall be replaced and the remaining bearings shall be similarly tested for acceptance at the Contractor's expense.

The manufacturer shall furnish samples of component materials used in the bearings, for testing by the Department, to the Engineer of Tests at the Bureau of Materials and Physical Research (126 East Ash Springfield, IL 62704). The required components shall be those components of HLMR bearings that are consistent with elastomeric bearing components according to Article 1083.04 of the Standard Specifications.

Installation. The HLMR bearings shall be erected according to Article 521.05 of the Standard Specifications.

Exposed edges and other exposed portions of the structural steel plates shall be field painted as specified for Structural Steel.

Basis of Payment. This work will be paid for at the contract unit price each for HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED; HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION; or HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

When the fabrication and erection of HLMR bearings is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply.

Fabricated HLMR bearings and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price each for FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED, FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION or FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

Storage and care of fabricated HLMR bearings and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF HIGH LOAD MULTI-ROTATIONAL BEARINGS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

HLMR bearings and other materials fabricated under this item erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price each for ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED, ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION or ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

### **JACK AND REMOVE EXISTING BEARINGS**

Effective: April 20, 1994

Revised: April 13, 2018

Description: This work consists of furnishing all labor, tools and equipment for jacking and supporting the existing beams/slab while removing the bearing assembly. The Contractor is responsible for the complete design of the bridge lifting procedures and the materials used. The Contractor shall furnish and place all bracing, shoring, blocking, cribbing, temporary structural steel, timber, shims, wedges, hydraulic jacks, and any other materials and equipment necessary for safe and proper execution of the work. The Contractor shall remove and dispose of the bearings according to Article 501.05 of the Standard Specifications.

Construction Requirements: The Contractor shall submit details and calculations of his/her proposed jacking systems and temporary support procedures for approval by the Engineer before commencing work. If unforeseen field conditions preclude the execution of the approved jacking plan, the Engineer may require the Contractor to provide additional supports or measures. All changes to the jacking plan shall be approved by the Structural Engineer that sealed the jacking plan. Neither added precautions nor the failure of the Engineer to order additional protection will in any way relieve the Contractor of sole responsibility for the safety of lives, equipment and structure.

- (a) Jack and Remove Existing Bearings with bridge deck in place. Jacking and cribbing under and against the existing diaphragms, if applicable, will not be allowed. The Contractor's jacking plans and procedures shall be designed and sealed by an Illinois Licensed Structural Engineer.

In all cases, traffic shall be removed from the portion of the structure to be jacked prior to and during the entire time the load is being supported by the hydraulic pressure of the jack(s). The minimum jack capacity per beam shall be as noted in the plans. Whenever possible, traffic shall be kept off that portion of the structure during the entire bearing replacement operation. The shoring or cribbing supporting the beam(s) during bearing replacement shall be designed to support the dead load plus one half of the live load and impact shown in the plans. If traffic cannot be kept off that portion of the structure during the bearing replacement then the shoring or cribbing supporting the beam(s) shall be designed to support the dead load and full live load and impact shown in the plans.

No jacking shall be allowed during the period of placement and cure time required for any concrete placed in the span(s) contributing loads to the bearings to be jacked and removed.

Jacking shall be limited to 1/8 in. (4 mm) maximum when jacking one bearing at a time. Simultaneous jacking of all beams at one support may be performed provided the maximum lift is 1/4 in. (7 mm) and the maximum differential displacement between adjacent beams is 1/8 in. (4 mm). Suitable gauges for the measurement of superstructure movement shall be furnished and installed by the Contractor.

- (b) Jack and Remove Existing Bearings when entire bridge deck is removed. Jacking and bearing removal shall be done after the removal of the existing bridge deck is complete. The Contractor's plans and procedures for the proposed jacking and cribbing system shall be designed and sealed by an Illinois Licensed Structural Engineer, unless jacking can be accomplished directly from the bearing seat under the beams or girders.

Jacking shall be limited to 1/4 in. (7 mm) maximum when jacking one beam at a time. Simultaneous jacking of all beams at one support may be performed provided the maximum lift is 3/4 in. (19 mm) and the maximum differential displacement between adjacent beams is 1/4 in. (7 mm). When staged construction is utilized, simultaneous jacking of all beams shall be limited to 1/4 in. (7 mm) unless the diaphragms at the stage line are disconnected, in which case the maximum lift is 3/4 in. (19 mm). Suitable gauges for the measurement of superstructure movement shall be furnished and installed by the Contractor.

The Contractor shall be responsible for restoring to their original condition, prior to jacking, the drainage ditches, pavement, or slopewall disturbed by the cribbing footings.

Basis of Payment: This work will be paid for at the contract unit price each for JACK AND REMOVE EXISTING BEARINGS.

Additional supports or measures resulting from unforeseen field conditions will be paid for according to Article 109.04.



## **MODULAR EXPANSION JOINT**

Effective: May 19, 1994

Revised: October 23, 2020

Description. This work shall consist of furnishing and installing a modular expansion joint(s) as shown on the plans, and according to applicable portions of Section 520 of the Standard Specifications.

General. The expansion joint device shall be capable of handling the specified longitudinal movement. In addition, when specified, the joint shall also be capable of handling the differential non-parallel longitudinal movement. The expansion joint device shall effectively seal the joint opening in the deck surface and barrier curbs against the entrance of water and foreign materials. There shall be no appreciable change in the deck surface plane with the expansion and contraction movements of the bridge.

The device shall consist of a shop-fabricated modular assembly of transverse neoprene seals, edge and separation beams, bearing on support bars spanning the joint opening. The assembly shall maintain equal distances between intermediate support rails, at any cross section, for the entire length of the joint. The assembly shall be stable under all conditions of expansion and contraction.

The configuration of the neoprene seal gland shall match the configuration of the rail knuckles to which it is attached.

The noise level of the joint in service shall meet all Federal and State of Illinois noise requirements.

At sidewalks, concrete median barriers and concrete parapet joints, a sliding steel plate shall be fabricated and installed according to the plans. Painting or galvanizing of sliding steel plates shall be as specified on the plans.

Suppliers: The Department maintains a pre-qualified list of proprietary structural systems allowed for modular expansion joints. This list can be found on the Departments web site under Prequalified Structural Systems. The Contractor's options are limited to those systems pre-qualified by the Department on the date that the contract was bid. These systems have been reviewed for structural feasibility and adequacy only. Presence on this list shall in no case relieve the Contractor of the site-specific design or QC/QA requirements stated herein.

The manufacturer shall provide evidence of current certification by AISC according to Article 106.08(e) of the Standard Specifications.

Submittals: Shop drawings and a copy of the calculations and support documents shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. Submittals will be required for each modular expansion joint device specified. In addition, the Contractor shall provide the Department with a certification of compliance by the manufacturer listing all materials in the system. The certification shall attest that the system conforms to the design and material requirements and be supported by a copy of the successful results of the fatigue tests performed on the system as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

The shop drawings shall include tables showing the total anticipated movements for each joint and the required setting width of the joint assemblies at various temperatures.

Design Requirements: The maximum vertical, transverse and horizontal rotations and displacements shall be defined and included in the design.

The expansion joint device(s) shall be designed, detailed and successfully tested, according to Section 14 of the AASHTO LRFD Bridge Design Specifications.

Top, bottom and sides of support bars shall be restrained to prevent uplift, transmit bearing loads, and maintain the lateral position of the bars.

The total movement of each individual sealing element shall not exceed 3 in. (75 mm).

Materials:

- (a) Metals. Structural Steel. All structural steel shall be according to AASHTO M 270, Grade 50 (M 270M Grade 345), unless otherwise specified.

Stainless steel sheets for the sliding surfaces of the support bars shall conform to the requirements of ASTM A240 (A240M) type 302 or 304.

The use of aluminum components in the modular joint will not be allowed.

- (b) Preformed Elastomeric Seals. The elastomeric sealing element shall be according to ASTM D5973.

Lubricant/Adhesive for installing the preformed elastomeric elements in place shall be a one-part, moisture-curing, polyurethane and hydrocarbon solvent mixture as recommended by the manufacturer and containing not less than 65 percent solids.

- (c) Support Bar Bearings. Support bar bearings shall be fabricated from elastomeric pads with polytetrafluorethylene (PTFE) surfacing or from polyurethane compound with PTFE sliding surfaces. The elastomeric and PTFE materials shall meet the requirements of Section 1083 of the Standard Specifications.

- (d) Support Bars. Support bars shall incorporate stainless steel sliding surfaces to permit joint movement.

### **Construction Requirements**

General. Installation of expansion devices shall be according to the plans and shop drawings.

The fabricator of the modular joint assembly shall be AISC certified according to Article 106.08 for Bridge and Highway Metal Component Manufacturers. In lieu of AISC certification, the Contractor may have all welding on main members (support bars and separation beams) observed and inspected by independent (third party) personnel at the Contractor's expense. Welding shall then be observed by a Certified Welding Inspector (CWI) in addition to the manufacturer's own welding inspection. Third-party Non-Destructive Examination (NDE) shall be performed by inspector(s), certified as level II in applicable methods, and all complete penetration beam-to-bar welds and butt joints in beams shall be UT inspected and 10 percent of fillets and partial pen welds shall be MT inspected.

The manufacturer of the expansion device shall provide a qualified technical service representative to supervise installation. Modular expansion joint devices shall be factory prefabricated assemblies, preset by the manufacturer prior to shipment with provisions for field adjustment for the ambient temperature at the time of installation.

Unless otherwise shown on the plans, the neoprene seals shall be continuous without any field splices. Installation of the joint seals shall be performed by a trained representative of the Manufacturer.

All steel surfaces of the prefabricated assembly shall be shop painted with the primer specified for structural steel, except areas in direct contact with the seals, galvanized items and stainless steel surfaces.

The metal surfaces in direct contact with the neoprene seals shall be blast cleaned to permit a high strength bond of the lubricant/adhesive between the neoprene seal and mating metal surfaces.

The Contractor shall anticipate and make all necessary adjustments to existing or plan-specified reinforcement bars, subject to the approval of the Engineer, in order to prevent interferences with placement of the selected joint in the structure. Any adjustments to reinforcement bars interfering with the joint installation shall be the responsibility of the Contractor and preapproved by the Engineer prior to installation of the joint. Cutting of reinforcement shall be minimized, and any bars that are cut shall be replaced in-kind at no additional cost.

The prefabricated joint assembly shall be properly positioned and attached to the structure according to the manufacturer's approved shop drawings. The attachment shall be sufficiently rigid to prevent non-thermal rotation, distortion, or misalignment of the joint system relative to the deck prior to casting the concrete. The joints shall be adjusted to the proper opening based on the ambient temperature at the time of installation and then all restraints preventing thermal movement shall be immediately released and/or removed. The joint assembly units shall be straight, parallel and in proper vertical alignment or reworked until proper adjustment is obtained prior to casting of the concrete around the joint.

After the joint system is installed, the joint area shall be flooded with water and inspected, from below for leakage. If leakage is observed, the joint system shall be repaired, at the expense of the Contractor, as recommended by the manufacturer and approved by the Engineer.

Method of Measurement. This work will be measured for payment in place, in feet (meters), along the centerline of the joint from face to face of the parapets or curbs. All sliding plate assemblies at the sidewalks, parapets and median barriers will not be measured for payment. The size will be defined as the specified longitudinal movement rounded up to the nearest 3 inch (75 mm) increment.

Basis of Payment: When only a longitudinal movement is specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT, of the size specified. When a differential non-parallel movement is also specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT-SWIVEL, of the size specified.

All materials, equipment and labor required to fabricate, paint and install the sliding plate assemblies at the sidewalks, parapets and median barriers will not be paid for separately but shall be included in the price for the expansion joint specified.

When the fabrication and erection of modular expansion joint is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply, except the furnishing pay items shall include storage and protection of fabricated materials up to 75 days after the completion dates.

Fabricated modular expansion joints and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price per foot (meter) for FURNISHING MODULAR EXPANSION JOINT or FURNISHING MODULAR EXPANSION JOINT – SWIVEL of the size specified.

Storage and care of fabricated joints and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF MODULAR EXPANSION JOINTS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

Modular expansion joints and other materials erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price per foot (meter) for ERECTING MODULAR EXPANSION JOINT or ERECTING MODULAR EXPANSION JOINT - SWIVEL of the size specified.

## **CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES**

Effective: June 30, 2003

Revised: October 23, 2020

Description. This work shall consist of the surface preparation and painting of existing steel structures in areas that will be in contact with new steel.

The existing steel at primary connections (faying surfaces) shall be prepared and primed as specified herein prior to connecting new structural steel to the existing structure.

The existing steel at secondary connections shall be prepared, and if bare metal is exposed, primed as specified herein prior to connecting new structural steel to the existing structure.

General. The existing coatings shall be assumed to contain lead and may also contain other toxic metals. Any plans that may be furnished for the work, and any dimensions or other information given regarding a structure, are only for the purpose of assisting bidders in determining the type and location of steel to be cleaned and painted. It is the responsibility of the Contractor to verify this information and the accuracy of the information provided shall in no way affect the price bid for structural steel.

Materials. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
a) Organic Zinc Rich Primer	1008.05
b) Aluminum Epoxy Mastic	1008.03

### Submittals:

- a) Manufacturer's application instructions and product data sheets. Copies of the paint manufacturer's application instructions and product data sheets shall be furnished to the Engineer at the field site before steel cleaning begins.
- b) Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis.

- c) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings.

Construction Requirements. The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to ensure that the work accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation, coating mixing and application, and evaluations between coats and upon completion of the work). The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 30 foot-candles (325 LUX). Illumination for cleaning and priming, including the working platforms, access, and entryways shall be at least 20 foot-candles (215 LUX).

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

Weather Conditions. Surfaces to be primed after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to ensure that dust, dirt, or moisture does not come in contact with surfaces cleaned prior to painting. Surfaces painted shall be protected until the coating is sufficiently cured to protect itself from damage.

Restrictions on ambient conditions shall be as per the coating manufacturer's written specifications.

Surface Preparation: Prior to making connections or painting, all loose abrasives, paint, and residue shall be contained, collected, removed from the surface area and properly disposed of as specified later in this specification.

Soluble Salt Remediation. The Contractor shall implement surface preparation procedures and processes that will remove chloride from the surfaces to levels below 7 micrograms per square centimeter. Surfaces that may be contaminated with chloride include, but are not limited to, expansion joints and all areas that are subject to roadway splash or runoff such as fascia beams and stringers. Surfaces shall be tested for chlorides at a frequency of five tests per bearing line, with tests performed on both the beams and diaphragms/cross-frames at expansion joints.

Methods of chloride removal may include, but are not limited to, hand washing, steam cleaning, or pressure washing with or without the addition of a chemical soluble salt remover as approved by the coating manufacturer and scrubbing before or after initial paint removal. The Contractor may also elect to clean the steel and allow it to rust overnight followed by recleaning, or by utilizing blends of fine and coarse abrasives during blast cleaning, wet abrasive/water jetting methods of preparation, or combinations of the above. If steam or water cleaning methods of chloride removal are utilized over surfaces where the coating has been completely removed, and the water does not contact any lead containing coatings, the water does not have to be collected. The Contractor shall provide the proposed procedures for chloride remediation in the Surface Preparation/Painting Plan.

Upon completion of the chloride remediation steps, the Contractor shall use cell methods of field chloride extraction and test procedures (e.g., silver dichromate) accepted by the Engineer, to test representative surfaces that were previously rusted (e.g., pitted steel) for the presence of remaining chlorides. Remaining chloride levels shall be no greater than  $7\mu\text{g}/\text{sq cm}$  as read directly from the surface without any multiplier applied to the results. The testing must be performed, and the results must be acceptable, prior to painting each day.

A minimum of 5 tests per 1000 sq. ft. (93 sq m) or fraction thereof completed in a given day, shall be conducted at project start up. If results greater than  $7\mu\text{g}/\text{sq cm}$  are detected, the surfaces shall be recleaned and retested at the same frequency. If acceptable results are achieved on three consecutive days in which testing is conducted, the test frequency may be reduced to 1 test per 1000 sq. ft. (93 sq. m) prepared each day provided the chloride remediation process remains unchanged. If unacceptable results are encountered, or the methods of chloride remediation are changed, the Contractor shall resume testing at a frequency of 5 tests per 1000 sq. ft. (93 sq. m).

Following successful chloride testing the chloride test areas shall be cleaned as specified below.

Painted surfaces of new steel damaged by abrasive blasting or by the Contractor's operations shall be repainted, as directed by the Engineer, at the Contractor's expense.

- a) Primary Connections. Primary connections shall be defined as faying (contact) surfaces of high-strength bolted connections specifically noted in plans.

The surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP15, Commercial Grade Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all rust, mill scale, and existing paint from the contact surface. At the Contractor's option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning may be substituted for SSPC-SP15 at no additional cost to the Department. The surface profile for primary connection surfaces shall be 1.5 to 3.5 mils (38 to 90 microns).

- b) Secondary Connections. Secondary connections shall be defined as all surface areas of existing members that will be in contact with new steel except as previously defined as primary connections.

These surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP3, Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all loose rust, loose mill scale, and loose, checked, alligatored and peeling paint from the contact surface. At the Contractors option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning or SSPC-SP15, Commercial Grade Power Tool Cleaning may be substituted for SSPC-SP3 at no additional cost to the Department. The surface profile for abrasive blast cleaning and Commercial Grade Power Tool Cleaning shall be 1.5 to 3.5 mils (38 to 90 microns).

Painting. The manufacturer's written instructions shall be followed for paint storage, mixing, thinning, application, ambient conditions, and drying times between coats. The surface shall be free of dirt, dust, and debris prior to the application of any coat. The coatings shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application.

The Engineer will approve surface preparation prior to priming.

- a) For Primary connections the surface of the prepared steel cleaned to bare metal shall be primed with an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) dry film thickness.
- b) For Secondary Connections the surface of the prepared steel cleaned to bare metal shall be painted with either one coat of epoxy mastic between 5 and 7 mils (125 microns to 180 microns) in thickness or one coat of an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) in thickness. Areas not cleaned to bare metal need not be painted.

For primary connections, the primer on the surface of the prepared steel shall cure according to the manufacturers instructions prior to connecting new structural steel to the existing structure. For secondary connections, the primer on the surface of the prepared steel need only be dry to touch prior to connecting new steel to the existing structure.

The surrounding coating at each prepared location shall be feathered for a minimum distance of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared areas and the existing coating.



Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on uncontained surfaces overnight. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. The costs of testing shall be considered included in this work. Copies of the test results shall be provided to the Engineer prior to shipping the waste.

The existing paint removed, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90-day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5<sup>th</sup> day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment: This work will be considered included in the cost of "Furnishing and Erecting Structural Steel", "Erecting Structural Steel", or "Structural Steel Repair", as applicable, according to the Standard Specifications, unless otherwise specified on the plans.

**PIPE UNDERDRAINS FOR STRUCTURES**

Effective: May 17, 2000

Revised: October 23, 2020

Add the following to the table following the second paragraph of Article 601.01:

Type	Description
Pipe Underdrains for Structures	A perforated pipe, encased in fabric, installed in a trench backfilled with coarse and fine aggregate
Pipe Underdrains for Structures (Special)	A non-perforated pipe installed in a trench to outlet Pipe Underdrains for Structures

Revise the first sentence of Article 601.02(e) as follows:

(e) Pipe Underdrains (Special) and Pipe Underdrains for Structures (Special). Materials for pipe underdrains (special) and pipe underdrains for structures (special) shall be according to the following.

Add the following to Article 601.02:

(g) Pipe Underdrains for Structures

Item	Article/Section
(1) Perforated Corrugated Steel Pipe (Note 1) (Note 3) .....	1006.01
(2) Perforated Polyvinyl Chloride (PVC) Pipe (Note 3) .....	1040.03
(3) Perforated Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior (Note 3) .....	1040.03
(4) Perforated Corrugated Polyethylene (PE) Pipe (Note 2) (Note 3)	1040.04
(5) Perforated Corrugated Polyethylene (PE) Pipe with a Smooth Interior (Note 3) .....	1040.04
(6) Fine Aggregate for Bedding and Backfill (Note 5).....	1003.04
(7) Coarse Aggregate for Bedding and Backfill (Note 5).....	1004.05
(8) Geotechnical Fabric.....	1080.05

Note 5. Fine and Coarse Aggregate shall meet the requirements of Section 586.

Revise the first sentence of Article 601.04(d) as follows:

(e) Pipe Underdrains (Special) and Pipe Underdrains for Structures (Special). Pipe underdrains (special) and pipe underdrains for structures (special) used for outletting pipe underdrains shall be according to the trench requirements for pipe underdrains.

Revise the first sentence of Article 601.05 as follows:

Concrete headwalls for pipe drains, pipe underdrains (special), pipe underdrains for structures (special), and backslope drains shall be constructed at the locations and according to the details shown on the plans.

Revise Article 601.07 as follows:

601.07 Method of Measurement. Pipe drains, pipe underdrains, pipe underdrains for structures, pipe underdrains (special), and pipe underdrains for structures (special) will be measured for payment in feet (meters) in place.

Measurement for pipe underdrain (special) and pipe underdrains for structures (special) will be made from the back of the headwall to the centerline of the pipe underdrain or pipe underdrain for structures.

Add the following sentence to Article 601.08:

Pipe underdrains for structures will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES, of the diameter specified. Pipe underdrains for structures (special) will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES (SPECIAL), of the diameter specified.

**STRUCTURAL REPAIR OF CONCRETE**

Effective: March 15, 2006

Revised: August 9, 2019

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) R1, R2, or R3 Concrete (Note 2)	
(c) Normal Weight Concrete (Notes 3 and 4)	
(d) Shotcrete (High Performance) (Notes 5 and 6)	
(e) Reinforcement Bars .....	1006.10
(f) Anchor Bolts .....	1006.09
(g) Water .....	1002
(h) Curing Compound .....	1022.01
(i) Cotton Mats .....	1022.02
(j) Protective Coat .....	1023.01
(k) Epoxy (Note 7) .....	1025
(l) Mechanical Bar Splicers .....	508.06(c)

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but a cement factor reduction according to Article 1020.05(b)(8) is prohibited. A self-consolidating concrete mixture is also acceptable per Article 1020.04, except the mix design requirements of this note regarding the cement factor, coarse aggregate, strength, and cement factor reduction shall apply.

Note 2. The R1, R2, or R3 concrete shall be from the Department's qualified product list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs. The R1, R2, or R3 concrete shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, and a retarder may be required to allow time to perform the required field tests. The admixtures shall be per the manufacturer's recommendation, and the Department's qualified product list of Concrete Admixtures shall not apply.

- Note 3. The “high slump” packaged concrete mixture shall be from the Department’s qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “high slump” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “high slump” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump. The admixture shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. A maximum slump of 10 in. (250 mm) may be permitted if no segregation is observed by the Engineer in a laboratory or field evaluation.
- Note 4 The “self-consolidating concrete” packaged concrete mixture shall be from the Department’s qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “self-consolidating concrete” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “self-consolidating concrete” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The concrete mixture should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. The admixtures used to produce self-consolidating concrete shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. The packaged concrete mixture shall meet the self-consolidating requirements of Article 1020.04.

Note 5. Packaged shotcrete that includes aggregate shall be from the Department's qualified product list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A non-chloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 6 Packaged shotcrete that does not include pre-blended aggregate shall be from the Department's qualified product list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 5, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 5. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Note 7. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.



### Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.
- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.
- (d) Rule 4. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications, where the shotcrete may be placed from above in one lift.
- (e) Rule 5. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. Any cut reinforcement shall be repaired or replaced at the expense of the Contractor. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bar with 50 percent or more exposed shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be  $\pm 1/16$  in. ( $\pm 1.5$  mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the sawcut face is roughened by blast cleaning. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

- (a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1, R2, or R3 Concrete,, or a packaged Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

- (b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

For air temperature limits when applying shotcrete in cold weather, the first paragraph of Article 1020.14(b) shall apply. For hot weather, shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be according to Rules 4 and 5 under Construction Requirements, General. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. A manufacturer approved finishing aid may be used. Water shall not be used as a finishing aid. All repaired members shall be restored as close as practicable to their original dimensions.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5) except the exposed layer of shotcrete shall be covered within 10 minutes after finishing, and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. The curing compound shall be according to Article 1022.01. Note 5 of the Index Table in Article 1020.13 shall apply to the membrane curing method.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The acceptable tolerance for conformance of a repaired area shall be within 1/4 in. (6 mm) of the original dimensions. A repaired area not in dimensional conformance or with delaminations shall be removed and replaced.

A repaired area with cracks or voids shall be considered as nonconforming. Exceeding one or more of the following crack and void criteria shall be cause for removal and replacement of a repaired area.

1. The presence of a single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.
2. The presence of two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.
3. The presence of map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.
4. The presence of two or more surface voids with least dimension 3/4 in. (19 mm) each.

A repaired area with cracks or voids that do not exceed any of the above criteria may remain in place, as determined by the Engineer.

If a nonconforming repair is allowed to remain in place, cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to 0.007 in. (0.2 mm) in width, the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzle men as determined by the Engineer. A copy of the nozzle men certificate(s) shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM).

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

With the exception of reinforcement damaged by the Contractor during removal, the furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

### **DIAMOND GRINDING AND SURFACE TESTING BRIDGE SECTIONS**

Effective: December 6, 2004

Revised: April 30, 2021

Description. This work shall consist of diamond grinding and surface testing bridge decks, approach pavements, and 100 feet (30 m) of pavement adjacent to the approach pavement on each end of the bridge.

Equipment. Equipment shall be according to the following.

- (a) Diamond Grinder. The diamond grinder shall be a self-propelled planing machine specifically designed for diamond saw grinding. It shall be capable of accurately establishing the profile grade and controlling the grinding cross slope. It shall also have an effective means for removing excess material and slurry from the surface and for preventing dust from escaping into the air. The removal of slurry shall be continuous throughout the grinding operation. The slurry shall be disposed of according to Article 202.03.

The grinding head shall be a minimum of 4 ft. (1.2 m) wide and the diamond saw blades shall be gang mounted on the grinding head at a rate of 50 to 60 blades / ft. (164 to 197 blades/m).

- (b) Surface Testing Equipment. Required surface testing and analysis equipment and their jobsite transportation shall be provided by the Contractor. The Profile Testing Device shall be according to Illinois Test Procedure 701 except the trace analysis shall be based on traces from bridge sections.

## CONSTRUCTION REQUIREMENTS

General. After all components have been properly cured, the bridge section shall be ground over its entire length and over a width that extends to within 2 ft. (600 mm) of the curbs or parapets. Grinding shall be done separately before any saw cut grooving, and no concurrent combination of the two operations will be permitted. Whenever possible, each subsequent longitudinal grinding pass shall progress down the cross slope from high to low. The maximum thickness removed shall be 1/4 inch (6 mm); however, when the bridge deck thickness noted on the plans can be maintained, as a minimum, additional removal thickness may be permitted.

The grinding process shall produce a pavement surface that is true in grade and uniform in appearance with longitudinal line-type texture. The line-type texture shall contain corrugations parallel to the outside pavement edge and present a narrow ridge corduroy type appearance. The peaks of the ridges shall be 1/8-inch +/- 1/16-inch (3 mm +/- 1.5 mm) higher than the bottom of the grinding with evenly spaced ridges. It shall be the Contractor's responsibility to select the actual number of blades per foot (meter) to be used to provide the proper surface finish for the aggregate type and concrete present on the project within the limits specified above.

The vertical difference between longitudinal passes shall be 1/8 inch (3 mm) maximum. The grinding at the ends of the bridge section shall be diminished uniformly at a rate of 1:240 over the connector pavements.

Grinding shall be continuous through all joints. All expansion joints and bridge components under the joints shall be protected from damage or contact with the grinding slurry.

Surface Testing. The diamond ground bridge section shall be surface tested in the presence of the Engineer prior to opening to traffic.

A copy of the approval letter and recorded settings from the Profile Equipment Verification (PEV) Program shall be submitted to the Engineer prior to testing.

The Contractor shall notify the Engineer of surface smoothness measurements a minimum of 24 hours prior to commencement of measurements. All objects and debris shall be removed from the bridge section surface prior to testing. During surface testing, joint openings may be temporarily filled with material approved by the Engineer.

Profiles shall be taken in both wheel paths of each lane, 3 ft. (1 m) from, and parallel to, the planned lane lines.



The profile trace shall have stationing indicated every 500 ft. (150 m) at a minimum. The profile trace shall include the following information: contract number, beginning and ending stationing, which lane was tested, direction of travel on the trace, which direction the data was taken, date of collection, time of collection, ambient air temperature at time of collection, and the device operator name(s). The data file created from the testing will be submitted to the Engineer and the Bureau of Research for analysis. The file shall be in a format that is compatible with ProVAL software (ERD, PPF).

Trace Reduction and Bump Locating Procedure. All traces shall be reduced using ProVal. This software shall calculate the Mean International Roughness Index (MRI) in inches/mile (mm/km) and indicate any areas of localized roughness in excess of 200 inches/mile (3105 mm/km) on a continuous 25 feet (8 meters) basis.

The average MRI and locations with deviations exceeding the 200 inches/mile (3105 mm/km) limit will be recorded on the Profile Report for Bridge Deck Smoothness.

All ProVAL files shall be provided to the Engineer within two working days of completing the testing. All files shall contain serial numbers for the vehicle and profiling equipment, the approved settings from the PEV program. The Engineer will compare these settings with the approved settings from the PEV Program. If the settings do not match, the results will be rejected and the section shall be retested/reanalyzed with the appropriate settings.

Corrective Actions. Within the bridge section, all deviations in excess of 200 inches/mile (1575 mm) within any continuous length of 25 ft. (8 m) shall be corrected. Correction of deviations shall not result in the deck thickness being less than the minimum. Where corrective work is performed, the bridge section shall be retested to verify that corrections have produced a MRI of 200 inch/mile (3105 mm/km) within an continuous length of 25 ft (8 m) or less for each lane. The Contractor shall furnish the ProVAL files to the Engineer and the Bureau of Research within two working days after any corrections are made.

Corrective actions shall be performed at no additional cost to the department.

The Engineer may perform profile testing on the surface at any time for monitoring and comparison purposes.

Method of Measurement. This work will be measured for payment in place and the area computed in square yards (square meters) of diamond grinding performed.

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for DIAMOND GRINDING (BRIDGE SECTION).

### Instructions for Completing Profile Report for Bridge Deck Smoothness

This form shall be prepared and submitted, along with the profile trace, to the Engineer.

#### Type of Report:

Initial - Testing of bridge section prior to any corrective action.

Intermediate - After some corrective action has been completed.

Final - After all corrective action has been completed.

#### Other Information:

Structure Number - Numerical identification of the bridge.

Traffic Direction - NB, SB, EB and WB depending on the traffic flow of the numbered route.

Lane Description - DL (driving lane), CL (center lane), or PL (passing Lane).

Operator - Printed name of the Contractor personnel operating the profiler.

Engineer - Printed name of Department representative witnessing data collection.

Bump locations are listed by station for each track (wheel path).

Please send completed copies to:

[DOT.BR.Smoothness.Testing@illinois.gov](mailto:DOT.BR.Smoothness.Testing@illinois.gov)



**SLIPFORM PARAPET**

Effective: June 1, 2007

Revised: March 1, 2019

The following shall be added to the end of Article 503.16(b) of the Standard Specifications.

- (3) Slipforming parapets. Unless otherwise prohibited herein or on the plans, at the option of the Contractor, concrete parapets on bridge decks may be constructed by slipforming in lieu of the conventional forming methods. Slipforming will not be permitted for curved parapets on a radius of 1500ft (457 m) or less.

The slipform machine shall be self-propelled and have automatic horizontal and vertical grade control. For 34 inch (864 mm) and 39 inch (991 mm) tall parapets the machine shall be equipped with a minimum of four (4) vibrators. For 42 inch (1.067 m) and 44 inch (1.118 m) tall parapets the machine shall be equipped with a minimum of five (5) vibrators. The equipment shall be approved by the Engineer before use.

If the Contractor wishes to use the slipform parapet option for 44 inch (1.067 m) tall parapets he/she shall construct a test section in a temporary location to demonstrate his/her ability to construct the parapets without defect. The test section shall be constructed under similar anticipated weather conditions, using the same means and methods, equipment, operator, concrete plant, concrete mix design, and slump as proposed for the permanent slipform parapets.

The test section shall be at least 50 feet (15 meters) in length and shall be of the same cross section shown on the plans. The contractor shall place all of the reinforcement embedded in the parapet shown on the plans. Upon completion of the test section, the Contractor shall saw cut the test section into 2 foot (600 mm) segments and separate the segments for inspection by the Engineer.

The test section shall demonstrate to the satisfaction of the Engineer that the Contractor can slipform the parapets on this project without defects. The acceptance of the test section does not constitute acceptance of the slipform parapets in place.

The concrete mix design may combine two or more coarse aggregate sizes, consisting of CA-7, CA-11, CA-13, CA-14, and CA-16, provided a CA-7 or CA-11 is included in the blend in a proportion approved by the Engineer.

The slipform machine speed shall not exceed 3 ft (0.9 m) per minute. Any section of parapet placed with the slipform machine moving in excess of the maximum allowed speed will be rejected. Any time the speed of the machine drops below 0.5 ft (150 mm) per minute will be considered a stoppage of the slipforming operation, portions of parapet placed with three or more intermittent stoppages within any 15 ft (4.6 m) length will be rejected. The contractor shall schedule concrete delivery to maintain a uniform delivery rate of concrete into the slipform machine. If delivery of concrete from the truck into the slipforming machine is interrupted by more than 15 minutes, the portion of the wall within the limits of the slipform machine will be rejected. Any portion of the parapet where the slipforming operation is interrupted or stopped within the 15 minute window may be subject to coring to verify acceptance.

If the Contractor elects to slipform, the parapet cross-sectional area and reinforcement bar clearances shall be revised according to the details for the Concrete Parapet Slipforming Option. In addition, if embedded conduit(s) are detailed, then the contractor shall utilize the alternate reinforcement as detailed.

The use of cast-in-place anchorage devices for attaching appurtenances and/or railings to the parapets will not be allowed in conjunction with slipforming of parapets. Alternate means for making these attachments shall be as detailed on the plans or as approved by the Engineer.

All reinforcement bar intersections within the parapet cross section shall be 100 percent tied utilizing saddle ties, wrap and saddle ties or figure eight ties to maintain rigidity during concrete placement. At pre-planned sawcut joints in the parapet, Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be used to maintain the rigidity of the reinforcement cage across the proposed joints as detailed for the Concrete Parapet Slipforming Option.

Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be subject to approval by the Engineer. Other non-ferrous reinforcement may be proposed for use but shall be subject to approval by the Engineer. GFRP reinforcement shall be tied the same as stated in the previous paragraph.

The Contractor may propose supplemental reinforcement for stiffening to prevent movement of the reinforcement cage and/or for conduit support subject to approval by the Engineer.

Clearances for these bars shall be the same as shown for the required bars and these bars shall be epoxy coated. If the additional reinforcement is used, it shall be at no additional cost to the Department.

For projects with plan details specifying parapet joints spaced greater than 20 ft (6 m) apart, additional sawcut joints, spaced between 10 ft (3 m) and 20 ft (6 m), shall be placed as directed by the Engineer. The horizontal reinforcement extending through the proposed joints shall be precut to provide a minimum of 4 in. (100 mm) gap, centered over the joint, between rebar ends. The ends of the reinforcement shall be repaired according to Article 508.04.

After the slipform machine has been set to proper grade and prior to concrete placement, the clearance between the slipform machine inside faces and reinforcement bars shall be checked during a dry run by the Contractor in the presence of the Engineer. The dry run shall not begin until the entire reinforcing cage has been tied and the Engineer has verified and approved the placement and tying of the reinforcing bars. Any reinforcement bars found to be out of place by more than ½ in. (13 mm), or any dimensions between bars differing from the plans by more than ½ in. (13 mm) shall be re-tied to the plan dimensions.

During the dry run and in the presence of the Engineer, the Contractor shall check the clearance of the reinforcement bars from the inside faces of the slipform mold. In all locations, the Contractor shall ensure the reinforcement bars have the minimum cover distance shown on the plans. This dry run check shall be made for the full distance that is anticipated to be placed in the subsequent pour. Reinforcement bars found to have less than the minimum clearance shall be adjusted and the dry run will be performed again, at least in any locations that have been readjusted.

For parapets adjacent to the watertable, the contractor shall, for the duration of the construction and curing of the parapet, provide and maintain an inspection platform along the back face of the parapet. The inspection platform shall be rigidly attached to the bridge superstructure and be of such design to allow ready movement of inspection personnel along the entire length of the bridge.

The aluminum cracker plates as detailed in the plans shall be securely tied in place and shall be coated or otherwise treated to minimize their potential reaction with wet concrete. In lieu of chamfer strips at horizontal and vertical edges, radii may be used. Prior to slipforming, the Contractor shall verify proper operation of the vibrators using a mechanical measuring device subject to approval by the Engineer.

The top portion of the joint shall be sawcut as shown in the details for the Concrete Parapet Slipforming Option. Sawing of the joints shall commence as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints shall be sawed to the full thickness before uncontrolled shrinkage cracking takes place but no later than 8 hours after concrete placement. The sawcut shall be approximately 3/8 in. (10 mm) wide and shall be performed with a power circular concrete saw. The joints shall be sealed with an approved polyurethane sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use T, to a minimum depth of 1/2 in. (12 mm), with surface preparation and installation according to the manufacturer's written instructions. Cork, hemp or other compressible material may be used as a backer. The sawcut will not require chamfered edges.

Ends of the parapet shall be formed and the forms securely braced. When slipforming of parapets with cross sectional discontinuities such as light standards, junction boxes or other embedded appurtenances except for name plates, is allowed, the parapet shall be formed for a minimum distance of 4 ft (1.2 m) on each side of the discontinuity.

For acceptance and rejection purposes a parapet section shall be defined as the length of parapet between adjacent vertical parapet joints.

The maximum variance of actual to proposed longitudinal alignment shall not exceed  $\pm 3/4$  in. (20 mm) with no more than 1/4 inch in 10 ft (6 mm in 3 m). Notwithstanding this tolerance, abrupt variance in actual alignment of 1/2 inch in 10 ft (13 mm in 3 m) will be cause for rejection of the parapet section.

In addition, all surfaces shall be checked with a 10 ft (3 m) straight edge furnished and used by the Contractor as the concrete is extruded from the slipform mold. Continued variations in the barrier surface exceeding 1/4 inch in 10 ft (6 mm in 3 m) will not be permitted and remedial action shall immediately be taken to correct the problem.

The use of equipment or methods which result in dimensions outside the tolerance limits shall be discontinued. Parapet sections having dimensions outside the tolerance limits will be rejected.

Any visible indication that less than specified cover of concrete over the reinforcing bars has been obtained, or of any cracking, tearing or honeycombing of the plastic concrete, or any location showing diagonal or horizontal cracking will be cause for rejection of the parapet section in which they are found.

The vertical surfaces at the base of the barrier within 3 in. (75 mm) of the deck surface shall be trowelled true after passage of the slipform machine. Hand finishing of minor sporadic surface defects may be allowed at the discretion of the Engineer. All surfaces of the parapet except the top shall receive a final vertical broom finish. Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened.

Slipformed parapets shall be wet cured according to either Article 1020.13(a)(3) or Article 1020.13(a)(5). For either method, the concrete surface shall be covered within 30 minutes after it has been finished. The cotton mat or burlap covering shall be held in place with brackets or another method approved by the Engineer. The Contractor shall have the option, during the period from April 16 through October 31, to delay the start of wet curing by applying a linseed oil emulsion curing compound. Exercising this option waives the requirement for protective coat according to Article 503.19. The linseed oil emulsion shall be according to Article 1022.01 and shall be applied according to Articles 1020.13 Notes-General 8/ and 1020.13(a)(4). The delay for wet curing shall not exceed 3 hours after application of the linseed oil emulsion.

A maximum of three random 4 in. (100 mm) diameter cores per 100 ft (30 m) of parapet shall be taken as directed by the Engineer, but no less than three random cores shall be taken for each parapet pour. At least 2 cores shall be located to intercept the top horizontal bar. Unless otherwise directed by the Engineer, coring shall be accomplished within 48 hours following each parapet pour. Separate parapets poured on the same date shall be considered separate pours. Random cores will not be measured for payment.

The Engineer will mark additional locations for cores where, in the sole opinion of the Engineer, the quality of the slipformed parapet is suspect.

The Engineer or his representative will be responsible for evaluation the cores. Any cores showing voids of any size adjacent to the reinforcement bars, or showing voids not adjacent to reinforcement bars of 1/4 square inch (160 square millimeters) in area or more, or showing signs of segregation, or showing signs of cracking shall be considered failures and the parapet section from which it was taken will be rejected. Parapets with less than 1 1/2 inches of concrete cover over the reinforcement shall be rejected.

Rejected parapet sections shall be removed and replaced for the full depth cross-section of the parapet except that concrete covers between 1 inch and 1½ inches may be open to remedial action subject to the approval of the Engineer. Such action could entail up to and including removal and replacement.

The minimum length of parapet removed and replaced shall be 3 ft (1 m). Additional cores may be required to determine the longitudinal extent of removal and replacement if it can not be determined and agreed upon by other means (i.e. visual, sounding, non-destructive testing, etc.).

Any parapet section with more than one half of its length rejected or with remaining segments less than 10 ft (3 m) in length shall be removed and replaced in its entirety.

If reinforcement bars are damaged during the removal and replacement, additional removal and replacement shall be done, as necessary, to ensure minimum splice length of replacement bars. Any damage to epoxy coating of bars shall be repaired according to Article 508.04.

All core holes will be filled with a non-shrink grout meeting the requirements of Section 1024.

Basis of Payment. When the contractor, at his/her option, constructs the parapet using slipforming methods, no adjustment in the quantities for Concrete Superstructures and Reinforcement Bars, Epoxy Coated to accommodate this option will be allowed. Compensation under the contract bid items for Concrete Superstructures and Reinforcement Bars, Epoxy Coated shall cover the cost of all work required for the construction of the parapet and any test section(s) required, and for any additional costs of work or materials associated with slipforming methods.



## **BRIDGE DECK CONSTRUCTION**

Effective: October 22, 2013

Revised: December 21, 2016

When Diamond Grinding of Bridge Sections is specified, hand finishing of the deck surface shall be limited to areas not finished by the finishing machine and to address surface corrections according to Article 503.16(a)(2). Hand finishing shall be limited as previously stated solely for the purpose of facilitating a more timely application of the curing protection. In addition the requirements of 503.16(a)(3)a. and 503.16(a)(4) will be waived.

### **Revise the Second Paragraph of Article 503.06(b) to read as follows.**

“When the Contractor uses cantilever forming brackets on exterior beams or girders, additional requirements shall be as follows.”

### **Revise Article 503.06(b)(1) to read as follows.**

“(1) Bracket Placement. The spacing of brackets shall be per the manufacturer’s published design specifications for the size of the overhang and the construction loads anticipated. The resulting force of the leg brace of the cantilever bracket shall bear on the web within 6 inches (150 mm) of the bottom flange of the beam or girder.”

### **Revise Article 503.06(b)(2) to read as follows.**

“(2) Beam Ties. The top flange of exterior steel beams or girders supporting the cantilever forming brackets shall be tied to the bottom flange of the next interior beam. The top flange of exterior concrete beams supporting the cantilever forming brackets shall be tied to the top flange of the next interior beam. The ties shall be spaced at 4 ft (1.2 m) centers. Permanent cross frames on steel girders may be considered a tie. Ties shall be a minimum of 1/2 inch (13 mm) diameter threaded rod with an adjusting mechanism for drawing the tie taut. The ties shall utilize hanger brackets or clips which hook onto the flange of steel beams. No welding will be permitted to the structural steel or stud shear connectors, or to reinforcement bars of concrete beams, for the installation of the tie bar system. After installation of the ties and blocking, the tie shall be drawn taut until the tie does not vary from a straight line from beam to beam. The tie system shall be approved by the Engineer.”

**Revise Article 503.06(b)(3) to read as follows.**

“(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder.”

**Delete the last paragraph of Article 503.06(b).**

**BRIDGE DECK GROOVING (LONGITUDINAL)**

Effective: December 29, 2014

Revised: March 29, 2017

Revise Article 503.16(a)(3)b. to read as follows.

b. Saw Cut Grooving. The grooving operation shall not be started until after the expiration of the required curing or protection period and after correcting excessive variations by grinding or cutting has been completed.

The grooves shall be cut into the hardened concrete, parallel to the centerline of the roadway, using a mechanical saw device equipped with diamond blades that will leave grooves 1/8 in. wide and 3/16 in.  $\pm$  1/16 in. deep (3 mm wide and 5 mm  $\pm$  1.5 mm deep), with a uniform spacing of 3/4 in.  $\pm$  1/16 in. (20 mm  $\pm$  1.5 mm) centers. The grooving shall typically extend the full width of the traffic lanes and terminate at the edge of the traffic lane or shoulder. If the bridge has a variable width traffic lane, the grooving shall remain parallel to the centerline of the main roadway. Any staggering of the groove terminations to accommodate the variable width shall be within the shoulders. Grooves shall not be cut closer than 3 inches (75 mm) nor further than 6 inches (150 mm) from any construction joint running parallel to the grooving. In addition, grooves shall not be cut within 6 in.  $\pm$  1 in. (150 mm  $\pm$  25 mm) from deck drains and expansion joints.

The grooving machine shall contain diamond blades mounted on a multi-blade arbor on a self-propelled machine built for grooving hardened concrete surfaces. The grooving machine shall have a depth control device that detects variations in the deck surface and adjusts the cutting head height to maintain a specified depth of groove. The grooving machine shall have a guide device to control multi-pass alignment.

The removal of slurry shall be continuous throughout the grooving operations. The grooving equipment shall be equipped with vacuum slurry pickup equipment which shall continuously pick up water and sawing dust, and pump the slurry to a collection tank. The slurry shall be disposed of offsite according to Article 202.03.

Cleanup shall be continuous throughout the grooving operation. All grooved areas of the deck shall be flushed with water as soon as possible to remove any slurry material not collected by the vacuum pickup. Flushing shall be continued until all surfaces are clean.

**Method of Measurement.** This work shall be measured for payment according to Article 503.21(b) except no measurement will be made for any grooving of the shoulders to accommodate a variable width traffic lane.

**Basis of Payment.** This work will be paid for at the contract unit price per square yard (square meter) for BRIDGE DECK GROOVING (LONGITUDINAL).

### **STRUCTURAL STEEL REPAIR**

Effective: December 15, 2000

Revised: January 1, 2007

Description. This work shall consist of furnishing all labor, equipment and materials necessary to furnish and install steel repair plates and members, according to Section 505 and removal and disposal of structural steel members as necessary according to Section 501 of the Standard Specifications, as indicated on the plans and in this special provision.

Construction Requirements. Existing members noted in the plans to have structural steel repair, that are also noted to be straightened, shall be straightened prior to the connection of any new steel repair plates or members. If beam straightening is required, it shall not be included in this item and shall be paid for separately.

Where required to align with existing holes, field drilling of holes in new members shall be accomplished using existing holes as a template unless field measurements are used to verify the plan dimensions. Burning of holes will not be permitted. All field drilling and grinding necessary to furnish and install the new steel plates and members shall be included in this item.

The removal and disposal of any existing members, bolts or rivets necessary for the installation of the new members as shown in the plans shall be included in this item. Burning of existing rivets will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets will not be allowed for members to remain in place or members that are to be removed and reinstalled. When burning of rivets is not allowed, the head of the rivet shall be sheared off and the shank driven or drilled out. Extreme care shall be taken while removing the rivets so as not to damage the existing structural steel which is to remain. All damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense.

Basis of Payment. This work shall be paid for at the contract unit price per pound (kilogram) for STRUCTURAL STEEL REPAIR.

**KEEPING THE EXPRESSWAY OPEN TO TRAFFIC**

Effective: March 22, 1996  
 Revised: October 9, 2020

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards and the District Freeway details. All Contractors' personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer at [www.idotlcs.com](http://www.idotlcs.com) twenty-four (24) hours in advance of all daily lane, ramp and shoulder closures and 7 days in advance of all permanent and weekend closures on all Freeways and/or Expressways in District One. This advance notification is calculated based on workweek of Monday through Friday and shall not include weekends or Holidays.

**LOCATION: I-55 Stevenson: County Line to Lake Shore Drive**

WEEK NIGHT	TYPE OF CLOSURE	ALLOWABLE LANE CLOSURE HOURS		
Sunday - Thursday	1-Lane/Ramp	9:00 PM	to	5:00 AM
	2-Lanes	11:59 PM	to	5:00 AM
Friday	1-Lane/Ramp	10:00 PM (Fri)	to	7:00 AM (Sat)
	2-Lanes	11:59 PM (Fri)	to	6:00 AM (Sat)
Saturday	1-Lane/Ramp	9:00 PM (Sat)	to	10:00 AM (Sun)
	2-Lanes	11:59 PM (Sat)	to	8:00 AM (Sun)

In addition to the hours noted above, temporary shoulder and non-system interchange partial ramp closures are allowed weekdays between 9:00 A.M. and 3:00 P.M. and between 7:00 P.M. and 5:00 A.M or as approved by the Expressway Traffic Operations Engineer.

Narrow Lanes and permanent shoulder closures will not be allowed between Dec. 1<sup>st</sup> and April 1<sup>st</sup>. Permanent shoulder closures per District Detail TC-17 will only be permitted if called for in the plans or as approved by the Expressway Traffic Operations Engineer.

Full Expressway Closures will only be permitted for a maximum of 15 minutes at a time during the low traffic volume hours of 1:00 A.M. to 5:00 A.M. Monday thru Friday and from 1:00 A.M. to 7:00 A.M. on Sunday. During Full Expressway Closures, the Contractor will be required to close off all lanes except one, using Freeway Standard Closures. Police forces should be notified and requested to close off the remaining lane at which time the work item may be removed or set in place. The District One Expressway Traffic Control Supervisor (847-705-4151) **shall be** notified at least 3 working days (weekends and holidays DO NOT count into this 72 hours notification) in advance of the proposed road closure and will coordinate the closure operations with police forces. Liquidated Damages as specified in the Failure to Open Traffic Lanes to Traffic for One lane or ramp blocked shall be assessed to the Contract for every 15 minutes beyond the initial 15 minutes all lanes are blocked.

All stage changes requiring the stopping and/or the pacing of traffic shall take place during the allowable hours for Full Expressway Closures and shall be approved by the Department. The Contractor shall notify the District One Expressway Traffic Control Supervisor at least 3 working days (weekends and holidays DO NOT count into this 72 hours notification) in advance of any proposed stage change.

A Maintenance of Traffic Plan shall be submitted to the District One Expressway Traffic Control Supervisor 14 days in advance of any stages changes or full expressway closures. The Maintenance of Traffic Plan shall include, but not be limited to: lane and ramp closures, existing geometrics, and equipment and material location.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog and as determined by the Engineer. Also, the contractor shall promptly remove their lane closures when Maintenance forces are out for snow and ice removal.

Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events.

All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above. Also, these signs should be taken down within one-half (1/2) hour after the closure is removed.

The Contractor will be required to cooperate with all other contractors when erecting lane closures on the expressway. All lane closures (includes the taper lengths) without a three (3) mile gap between each other, in one direction of the expressway, shall be on the same side of the pavement. Lane closures on the same side of the pavement with a one (1) mile or less gap between the end of one work zone and the start of taper of next work zone should be connected. The maximum length of any lane closure on the project and combined with any adjacent projects shall be three (3) miles. Gaps between successive permanent lane closures shall be no less than two (2) miles in length.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at the locations approved by the Engineer.

Check barricades shall be placed every 1000' within a lane closure to prevent vehicles from driving through closed lanes.

Temporary ramp closures for service interchanges will only be permitted at night during the restricted hours listed for temporary one-lane closures within the project limits. However, no two (2) adjacent entrance and exit ramps in one direction of the expressway shall be closed at the same time.

Freeway to freeway (system interchange) full ramp closures for two lane ramps will not be permitted. Partial ramp closures of system ramps may be allowed during the 1-lane closure hours above. System ramp full closures for single lane ramps are only permitted for a maximum of four (4) hours

- between the hours of 1:00 a.m. and 5:00 a.m. on Monday thru Friday
- between the hours of 1:00 a.m. and 6:00 a.m. on Saturday, and
- between the hours of 1:00 a.m. and 7:00 a.m. on Sunday.

The Contractor shall furnish and install large (48" X 48") "DETOUR with arrow" signs as directed by the Engineer for all system ramp closures. In addition, one portable changeable message sign will be required to be placed in advance of the ramp closure. The cost of these signs and PCMS board shall be included in the cost of traffic control and protection (6 static signs maximum per closure).

Should the Contractor fail to completely open, and keep open, the ramps to traffic in accordance with the above limitations, the Contractor shall be liable to the Department for liquidated damages as noted under the Special Provision, "Failure to Open Traffic Lanes to Traffic".

#### **FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC**

Effective: March 22, 1996

Revised: February 9, 2005

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified under the Special Provisions for "Keeping the Expressway Open to Traffic", the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = \$ **3,000**

Two lanes blocked = \$ **5,000**

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time

## **TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)**

Effective: March 8, 1996

Revised: April 1, 2019

Description. This work shall include furnishing, installing, maintaining, replacing, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic. Traffic control and protection shall be provided as called for in the plans, applicable Highway Standards, District One Expressway details, Standards and Supplemental Specifications, these Special Provisions, or as directed by the Engineer.

General. The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions on the expressway through the construction zone. The Contractor shall arrange his operations to keep the closing of lanes and/or ramps to a minimum.

The Contractor shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to existing warning signs and overhead guide signs during all construction operations. Warning signs and existing guide signs with down arrows shall be kept consistent with the barricade placement at all times. The Contractor shall immediately remove, completely cover, or turn from the motorist's view all signs which are inconsistent with lane assignment patterns.

The Contractor shall coordinate all traffic control work on this project with adjoining or overlapping projects, including barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor shall remove all traffic control devices that were furnished, installed, or maintained by him under this contract, and such devices shall remain the property of the Contractor. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

Additional requirements for traffic control devices shall be as follows.

(a) Traffic Control Setup and Removal. The setting and removal of barricades for the taper portion of a lane closure shall be done under the protection of a vehicle with a truck/trailer mounted attenuator and arrow board per State Standard 701428 and Section 701 of the Standard Specifications. Failure to meet this requirement will be subject to a Traffic Control Deficiency. The deficiency will be calculated as outlined in Article 105.03 of the Standard Specifications. Truck/trailer mounted attenuators shall comply with Article 1106.02(g) or shall meet the requirements of NCHRP 350 Test Level 3 with vehicles used in accordance with manufacturer's recommendations and requirements.

(b) Sign Requirements

(1) Sign Maintenance. Prior to the beginning of construction operations, the Contractor will be provided a sign log of all existing signs within the limits of the construction zone. The Contractor is responsible for verifying the accuracy of the sign log. Throughout the duration of this project, all existing traffic signs shall be maintained by the Contractor. All provisions of Article 107.25 of the Standard Specifications shall apply.

- (2) Work Zone Speed Limit Signs. Work zone speed limit signs shall be installed as required in Article 701.14(b) and as shown in the plans and Highway Standards. Based upon the existing posted speed limit, work zone speed limits shall be established and signed as follows.
- a. Existing Speed Limit of 55mph or higher. The initial work zone speed limit assembly, located approximately 4200' before the closure, and shall be 55mph as shown in 701400. Additional work zone 45mph assemblies shall be used as required according to Article 701.14(b) and as shown in the Highway Standards and plans. WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED assemblies may be omitted when this assembly would normally be placed within 1500 feet of the END WORK ZONE SPEED LIMIT sign. If existing speed limit is over 65mph then additional signage should be installed per 701400.
  - b. Existing Speed Limit of 45mph. The advance 55mph work zone speed limit assembly shown in 701400 shall be replaced with a 45mph assembly. Additional work zone 45mph assemblies shall be used as required according to Article 701.14(b) and as shown in the Highway Standards and plans. WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED assemblies shall be eliminated in all cases. END WORK ZONE SPEED LIMIT signs are required.
- (3) Exit Signs. The exit gore signs as shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 12 inch capital letters and a 20 inch arrow. EXIT OPEN AHEAD signs shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 8 inch capital letters.
- (4) Uneven Lanes Signs. The Contractor shall furnish and erect "UNEVEN LANES" signs (W8-11) on both sides of the expressway, at any time when the elevation difference between adjacent lanes open to traffic equals or exceeds one inch. Signs shall be placed 500' in advance of the drop-off, within 500' of every entrance, and a minimum of every mile.
- (c) Drums/Barricades. Check barricades shall be placed in work areas perpendicular to traffic every 1000', one per lane and per shoulder, to prevent motorists from using work areas as a traveled way. Check barricades shall also be placed in advance of each open patch, or excavation, or any other hazard in the work area, the first at the edge of the open traffic lane and the second centered in the closed lane. Check barricades, either Type I or II, or drums shall be equipped with a flashing light.

To provide sufficient lane widths (10' minimum) for traffic and also working room, the Contractor shall furnish and install vertical barricades, in lieu of Type II or drums, along the cold milling and asphalt paving operations. The vertical barricades shall be placed at the same spacing as the drums.



- (d) Vertical Barricades. Vertical barricades shall not be used in lane closure tapers, lane shifts, exit ramp gores, or staged construction projects lasting more than 12 hours. Also, vertical barricades shall not be used as patch barricades or check barricades. Special attention shall be given, and ballast provided per manufacture's specification, to maintain the vertical barricades in an upright position and in proper alignment.
- (e) Temporary Concrete Barrier Wall. Prismatic barrier wall reflectors shall be installed on both the face of the wall next to traffic, and the top of sections of the temporary concrete barrier wall as shown in Standard 704001. The color of these reflectors shall match the color of the edgelines (yellow on the left and crystal or white on the right). If the base of the temporary concrete barrier wall is 12 inches or less from the travel lane, then the lower slope of the wall shall also have a 6 inch wide temporary pavement marking edgeline (yellow on the left and white on the right).
- (f) Flaggers. One flagger will be required for each separate activity of an operation that requires frequent construction vehicles to enter or leave a work zone to or from a lane open to traffic. Temporary traffic control and flagger position shall be according to District One Detail TC-18 – Expressway Flagging, or as directed by the Engineer.
- (g) Full Expressway Closures. Full Expressway Closures will only be permitted for a maximum of 15 minutes during the allowable hours listed in the Keeping the Expressway Open to Traffic Special Provision. During Full Expressway Closures, the Contractor will be required to close off all lanes except one, using Freeway Standard Closures. The Contractor will be required to provide one changeable message sign to be placed at the direction of the Engineer. The sign shall display a message as directed by the Engineer. A Maintenance of Traffic Plan shall be submitted to the District One Expressway Traffic Control Supervisor 14 days in advance of the planned work; including all stage changes. The Maintenance of Traffic Plan shall include, but not be limited to: lane and ramp closures, existing geometrics, and equipment and material location. The District One Expressway Traffic Control Supervisor (847-705-4151) shall be contacted at least 3 working days in advance of the proposed road closure and will coordinate the closure operation with police forces.

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing, installing, maintaining, replacing, relocating, and removing traffic control devices required in the plans and these Special Provisions. Traffic control and protection required under Standards 701101, 701400, 701401, 701402, 701406, 701411, 701416, 701426, 701428, 701446, 701901 and District details TC-8, TC-9, TC-17, TC-18 and TC-25 will be included with this item.

Basis of Payment.

- (a) This work will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS). This price shall be payment in full for all labor, materials, transportation, handling, and incidental work necessary to furnish, install, maintain, replace, relocate, and remove all Expressway traffic control devices required in the plans and specifications.

In the event the sum total value of all the work items for which traffic control and protection is required is increased or decreased by more than ten percent (10%), the contract bid price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS) will be adjusted as follows:

$$\text{Adjusted contract price} = .25P + .75P [1 \pm (X - 0.1)]$$

Where: "P" is the bid unit price for Traffic Control and Protection

Where: "X" =	$\frac{\text{Difference between original and final sum total value of all work items for which traffic control and protection is required}}{\text{Original sum total value of all work items for which traffic control and protection is required.}}$
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The value of the work items used in calculating the increase and decrease will include only items that have been added to or deducted from the contract under Article 104.02 of the Standard Specifications and only items which require use of Traffic Control and Protection.

Temporary traffic control costs due to delay will be paid for according to the Compensable Delay Costs (BDE) Special Provision.

- (b) The Engineer may require additional traffic control be installed in accordance with standards and/or designs other than those included in the plans. In such cases, the standards and/or designs will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required will be in accordance with Article 109.04 of the Standard Specifications.
- (c) Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown in the contract shall be submitted by the Contractor for approval by the Engineer. No additional payment will be made for a Contractor requested modification.
- (d) Temporary concrete barrier wall will be measured and paid for according to Section 704.

- (e) Impact attenuators, temporary bridge rail, and temporary rumble strips will be paid for separately.
- (f) Temporary pavement markings shown on the Standard will be measured and paid for according to Section 703 and Section 780.
- (g) All pavement marking removal will be measured and paid for according to Section 703 or Section 783.
- (h) Temporary pavement marking on the lower slope of the temporary concrete barrier wall will be measured and paid for as TEMPORARY PAVEMENT MARKING, 6”.
- (i) All barrier wall reflectors will be measured and paid for according to Section 782.
- (j) The Changeable Message Sign required for Full Expressway Closures shall not be paid for separately.

**TEMPORARY INFORMATION SIGNING**

Effective: November 13, 1996

Revised: January 29, 2020

Description.

This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

Materials.

Materials shall be according to the following Articles of Section 1000 - Materials:

	<u>Item</u>	<u>Article/Section</u>
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.

Note 2. The sign face material shall be in accordance with the Department’s Fabrication of Highway Signs Policy.

Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

## **GENERAL CONSTRUCTION REQUIREMENTS**

### Installation.

The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing bridges, sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs and/or structures due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

### Method of Measurement.

This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

### Basis Of Payment.

This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.

## **TRAFFIC CONTROL FOR WORK ZONE AREAS**

Effective: September 14, 1995

Revised: January 1, 2007

Work zone entry and exit openings shall be established daily by the Contractor with the approval of the Engineer. All vehicles including cars and pickup trucks shall exit the work zone at the exit openings. All trucks shall enter the work zone at the entry openings. These openings shall be signed in accordance with the details shown elsewhere in the plans and shall be under flagger control during working hours.

The Contractor shall plan his trucking operations into and out of the work zone as well as on to and off the expressway to maintain adequate merging distance. Merging distances to cross all lanes of traffic shall be no less than 1/2 mile. This distance is the length from where the trucks enter the expressway to where the trucks enter the work zone. It is also the length from where the trucks exit the work zone to where the trucks exit the expressway. The stopping of expressway traffic to allow trucks to change lanes and/or cross the expressway is prohibited.

Failure to comply with the above requirements will result in a Traffic Control Deficiency charge. The deficiency charge will be calculated as outlined in Article 105.03 of the Standard Specifications. The Contractor will be assessed this daily charge for each day a deficiency is documented by the Engineer.

**KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY)**

Effective: January 22, 2003

Revised: August 10, 2017

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards, and the District Details.

Arterial lane closures shall be in accordance with the Standard Specifications, Highway Standards, District Details, and the direction of the Engineer. The Contractor shall request and gain approval from the Engineer seventy-two (72) hours in advance of all long-term (24 hrs. or longer) lane closures.

Arterial lane closures not shown in the staging plans will not be permitted during **peak traffic volume hours**.

Peak traffic volume hours are defined as weekdays (Monday through Friday) from **7:00 AM to 9:00 AM and 4:00 PM to 6 PM**.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at locations approved by the Engineer in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = \$ 1,000

Two lanes blocked = \$ 2,500

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

**REMOVE EXISTING FLARED END SECTION**

Description. This work shall consist of the removal of existing flared end sections. The removal of flared end sections shall to be disposed of properly. The resulting disturbed ditch shall be regraded appropriately according to the plans including restoration with seeding or sodding. Any damages incurred to the existing pipe culverts as a result of this work shall be the full responsibility of the Contractor. Damaged pipe culverts shall be replaced and installed at the Contractor's expense. All work shall be performed at the direction of the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE EXISTING FLARED END SECTION regardless of the size and type.

### **TEMPORARY END SECTION**

Description. This work shall consist of installing, maintaining, and removing temporary flared end sections. End sections used as drainage structures for proposed temporary connections and detour roads shall be furnished, installed, maintained, and removed as specified, except the end section need not be new. All work shall be performed at the direction of the Engineer.

Basis of Payment. This work will be paid for at the contract unit price each for TEMPORARY END SECTION regardless of the diameter.

### **WOODEN POLE REMOVAL**

Description. This work shall consist of the removal of existing wood pole. The removal shall be according to applicable portions of Section 841. The pole shall become the property of the Contractor and disposed of properly.

Basis of Payment. This work will be paid for at the contract unit price per each for WOODEN POLE REMOVAL.

### **TURBIDITY CURTAIN**

Description. This work shall consist of the furnishing, installation, maintaining, and removal of turbidity curtains, used for the purpose of temporarily controlling the erosion and turbidity encountered during construction in a waterway.

General. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations. These locations shall be limited to the designated areas either shown on the plans or otherwise designated by the Engineer.

All materials shall conform to the applicable requirements of section 1080 and be approved by the Engineer.

The turbidity curtain shall be installed at the locations(s) as shown on the plans. The curtain shall be installed in such a manner to prevent drift shoreward or downstream. The bottom of the curtain shall reach the bottom of the waterway using 1 or 2 vertical sections as required.

Anchors shall be installed to the manufacturer's recommendations on both the shore and stream to maximize stability. Stream anchors shall be sufficient size, type and strength to stabilize the curtain with the number and spacing dependent on the current velocities. Anchors shall be buoyed to prevent the curtain from being pulled under water.

The contractor shall be responsible for maintenance of the curtain throughout construction operations.

On completion of the project, the contractor shall remove the curtain in a manner that will prevent siltation of the waterway.

Method of Measurement. The Turbidity Curtain shall be measured for payment in square yard per the Contract Documents.

Basis of Payment. This work will be paid for at the contract unit price per square yard for TURBIDITY CURTAIN.

### **HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH**

Description. This work shall consist of the removal of asphalt surface at the depths and locations specified in the plans. The removal shall be done in accordance with Section 440 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per square foot for HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH.

### **REMOVAL OF EXISTING BEARINGS**

Description. This work shall consist of removal and proper disposal of the existing bearings at locations shown in the plans according to Article 501.05 of the Standard Specifications.

Method of Measurement. This work will be measured at each individual location as indicated in the plans.

Basis of Payment. This work will be paid for at the contract unit price each for REMOVAL OF EXISTING BEARINGS, which price shall include all equipment, materials and labor required to satisfactorily complete the work. The jacking and cribbing required to removing the load from the existing bearings is not included as part of this work.

## **APPROACH SLAB REMOVAL**

Description. This work shall consist of the complete removal of the existing approach slab as shown in the plans. All pavement and appurtenances within the limits of the approach slab shall be removed. This includes, but not limited to, Portland cement concrete pavement, hot-mix asphalt overlays, reinforcement, curbs, inlets, stabilized subbase, approach footing (sleeper slab), connector pavement, and expansion joint material adjacent to the approach slab.

Approach slab removal shall be performed in accordance with Section 440 and Article 442.05(a) of the Standard Specifications.

Method of Measurement. Approach Slab Removal will be measured for payment in place and the area computed in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for APPROACH SLAB REMOVAL.

## **SLOPE WALL REPAIR**

Description. This work consists of the removal and replacement of failed sections of slope wall as shown on the plans and as directed by the Engineer. Work shall be done in accordance with the requirements of Section 511 of the Standard Specifications.

Materials. Materials shall meet the requirements of Article 511.02 of the Standard Specifications. Any material required to fill voids and level the supporting base shall be crushed stone meeting a CA-6 gradation.

Construction. Areas delineated for removal shall be scored with a concrete saw down to but not through the existing mesh reinforcement. The concrete shall be broken out and removed in such a fashion as to leave a minimum one (1) foot exposed mesh edge to tie into the new mesh. After removal, any depressions or voids in the base shall be filled with crushed stone and compacted prior to placing the mesh and concrete for the slope wall repair.

Method of Measurement. This work will be measured for payment according to Article 511.05(b) of the Standard Specifications

Basis of Payment. This work will be paid for at the contract unit price per square yard for SLOPE WALL REPAIR. Additional crushed stone required for the base will not be paid for separately but shall be considered as included in the work.



## **TEMPORARY SHORING AND CRIBBING**

Description. This item shall consist of furnishing all material, equipment and labor to support the effected beam(s) during the substructure repairs as shown on the plans, as herein specified and as directed by the Engineer.

Construction Requirements. The Contractor shall submit details and calculations, prepared and sealed by an Illinois Licensed Structural Engineer, of the support system he/she proposes to use for approval by the Engineer prior to ordering of material and implementation. Such approval shall in no way relieve the Contractor of responsibility for the safety of the structure. The supports used shall be such that vertical adjustments may be made in order to maintain the existing beam profiles. Prior to starting substructure repairs, the temporary supports shall be used to place an upward reaction on the effected beams designated in the plans, thus relieving the superstructure reactions from the substructure unit to be repaired.

Additionally, if the work is to be completed under stage construction without traffic directly over the beams being shored then the Temporary Shoring and Cribbing shall be designed to carry the Dead Load plus  $\frac{1}{2}$  (Live Load + Imp) as shown in the plans. If work is to be completed with traffic directly over the beams being shored then the Temporary Shoring and Cribbing shall be designed to carry the Dead Load plus full (Live Load + Imp) as shown in the plans.

Basis of Payment. The work specified herein, as shown on the plans and as directed by the Engineer, shall be paid for at the contract unit price each for TEMPORARY SHORING AND CRIBBING for each beam support location required.

## **TEMPORARY SUPPORT SYSTEM**

Description. This work shall consist of designing, fabricating, furnishing, constructing, maintaining and subsequent removal and disposal of the Temporary Support System at the location(s) shown on the plans.

The contractor shall submit working drawings and calculations prepared and sealed by an Illinois Licensed Structural Engineer to the Engineer for the Temporary Support System. The drawings shall provide full details, dimensions, and types of material proposed for use. The Temporary Support System shall not be installed until authorization to proceed is given by the Engineer.

Repair at the designated locations, including any concrete repairs, bearing replacements, or any other construction activity which could add or reduce loads, shall not commence until the Temporary Support System is in place and in conformity with the sealed working drawings.

Upon completion of the repairs, the Temporary Support System shall be removed.

Basis of Payment. This work will be paid for at the contract unit price per Each for TEMPORARY SUPPORT SYSTEM, at the location specified.

## **COFFERDAM TYPE 2, IN-STREAM/WETLAND WORK**

**Description.** This work shall be performed in accordance with Section 502.06 of the Supplemental Specifications and Recurring Special Provisions, except as herein modified. The work shall consist of the preparation of an in-stream/wetland work plan and the installation, maintenance, removal and disposal of the temporary cofferdam(s) to isolate the work area from water within regulated wetlands and Waters of the U.S. (WOUS) in accordance with the authorized U.S. Army Corps of Engineers (USACE) Section 404 Permit and the General Conditions of the current Regional Permit Program.

**Materials.** Materials shall be in accordance with the USACE Section 404 Permit and General Conditions of the current Regional Permit Program.

**Construction Requirements.** Construction shall be in accordance with Article 502.06(a) of the Supplemental Specifications and Recurring Special Provisions and in accordance with the authorized USACE Section 404 Permit. For Cofferdam - Type 1, it is anticipated the design will be based on the flow requirement as shown in the plans and per the General Conditions of the current Regional Permit Program.

The Contractor shall be responsible for diverting the water flow from the construction area using a method meeting the approval of the Engineer and in accordance with the authorized USACE Section 404 Permit and General Conditions of the current Regional Permit Program.

This project requires a USACE Section 404 Permit prior to the start of work. All conditions of the Section 404 Permit must be followed. As a condition of the Section 404 Permit, the Contractor will be required to submit an In-Stream/Wetland Work Plan to the Department for approval. The USACE defines and determines in-stream/wetland work within the WOUS.

Guidelines on acceptable In-Stream/Wetland work techniques can be found on the USACE website: <https://www.lrc.usace.army.mil/Missions/Regulatory/Regional-Permit-Program>

**Method of Measurement.** This work will be measured for payment in units of Each where Each is defined as a plan detailed stage of bridge, culvert or other construction for which a temporary in-stream cofferdam(s) is required. If staged construction is not detailed/specified on the plans, this work will be measured as a total of One Each.

**Basis of Payment.** This work will be paid for at the contract unit price per each for COFFERDAM TYPE 2, IN-STREAM/WETLAND WORK.

### **COFFERDAM EXCAVATION (SPECIAL)**

**Description:** This work shall consist of the excavation for the placement of stone riprap within cofferdams and shall be in accordance with Section 502 of the Standard Specifications except as modified herein.

**Method of Measurement:** The cofferdam excavation will be measure for payment in cubic yards (cubic meters) in its original position within the cofferdam. The horizontal dimensions used in computing the volume will not extend beyond vertical planes 2 ft (600 mm) outside the plan dimensions for the stone riprap shown on the plans. The vertical dimensions will be the average depth from the surface of the material to be excavated to the elevation shown on the plans for the bottom of the excavation for the placement of stone riprap.

**Basis of Payment:** Payment for COFFERDAM EXCAVATION (SPECIAL) will be made at the contract unit price per cubic yard for COFFERDAM EXCAVATION (SPECIAL).

### **TEMPORARY SHORING AND CRIBBING**

**Description:** This item shall consist of furnishing all material, equipment and labor to support the effected beam(s) during the substructure repairs as shown on the plans, as herein specified and as directed by the Engineer.

**Construction Requirements:** The Contractor shall submit details and calculations, prepared and sealed by an Illinois Licensed Structural Engineer, of the support system he/she proposes to use for approval by the Engineer prior to ordering of material and implementation. Such approval shall in no way relieve the Contractor of responsibility for the safety of the structure. The supports used shall be such that vertical adjustments may be made in order to maintain the existing beam profiles. Prior to starting substructure repairs, the temporary supports shall be used to place an upward reaction on the effected beams designated in the plans, thus relieving the superstructure reactions from the substructure unit to be repaired.

Additionally, if the work is to be completed under stage construction without traffic directly over the beams being shored then the Temporary Shoring and Cribbing shall be designed to carry the Dead Load plus  $\frac{1}{2}$  (Live Load + Imp) as shown in the plans. If work is to be completed with traffic directly over the beams being shored then the Temporary Shoring and Cribbing shall be designed to carry the Dead Load plus full (Live Load + Imp) as shown in the plans.

After the temporary shoring and cribbing is no longer required, it shall be completely removed. The temporary shoring and cribbing will become the property of the Contractor.

**Basis of Payment:** The work specified herein, as shown on the plans and as directed by the Engineer, shall be paid for at the contract unit price each for TEMPORARY SHORING AND CRIBBING for each beam support location required.

## **TEMPORARY SUPPORT SYSTEM**

**Description.** This work shall consist of designing, fabricating, furnishing, constructing, maintaining and subsequent removal and disposal of the Temporary Support System at the location(s) shown on the plans.

The contractor shall submit working drawings and calculations prepared and sealed by an Illinois Licensed Structural Engineer to the Engineer for the Temporary Support System. The drawings shall provide full details, dimensions, and types of material proposed for use. The Temporary Support System shall not be installed until authorization to proceed is given by the Engineer.

Repair at the designated locations, including any concrete repairs, bearing replacements, or any other construction activity which could add or reduce loads, shall not commence until the Temporary Support System is in place and in conformity with the sealed working drawings.

After the temporary support system is no longer required, it shall be completely removed. The temporary support system will become the property of the Contractor.

**Basis of Payment.** This work will be paid for at the contract unit price per Each for TEMPORARY SUPPORT SYSTEM, at the location specified.

## **REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)**

**Description.** This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

**Contract Specific Sites.** The excavated soil and groundwater within the areas listed below shall be managed as either “uncontaminated soil”, hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

**Soil Disposal Analysis.** When the waste material requires sampling for landfill disposal acceptance, the Contractor shall secure a written list of the specific analytical parameters and analytical methods required by the landfill. The Contractor shall collect and analyze the required number of samples for the parameters required by the landfill using the appropriate analytical procedures. A copy of the required parameters and analytical methods (from landfill email or on landfill letterhead) shall be provided as Attachment 4A of the BDE 2733 (Regulated Substances Final Construction Report). The price shall include all sampling materials and effort necessary for collection and management of the samples, including transportation of samples from the job site to the laboratory. The Contractor shall be responsible for determining the specific disposal facilities to be utilized; and collect and analyze any samples required for disposal facility acceptance using a NELAP certified analytical laboratory registered with the State of Illinois.

Site 3559-1: ROW, 6000-7200 blocks of S. La Grange Road, Countryside, Hodgkins, Justice, and Willow Springs, Cook County

- Station 25+00 to Station 25+60 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameter: Arsenic.
- Station 25+60 to Station 26+15 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)pyrene, and Arsenic.
- Station 26+15 to Station 26+60 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).
- Station 26+60 to Station 27+10 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameter: Manganese.
- Station 27+10 to Station 27+60 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.
- Station 27+60 to Station 28+15 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameter: Arsenic.
- Station 30+60 to Station 31+15 (CL NB US 12/20/45), 0 to 60 feet LT and 0 to 25 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameter: Arsenic.
- Station 31+15 to Station 31+60 (CL NB US 12/20/45), 0 to 60 feet LT and 0 to 25 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene.
- Station 39+70 to Station 40+40 (CL NB US 12/20/45), 0 to 60 feet LT and 0 to 25 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene, and Dibenzo(a,h)anthracene.
- Station 42+85 to Station 43+50 (CL NB US 12/20/45), 0 to 60 feet LT and 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, and Indeno(1,2,3-cd)pyrene.
- Station 43+50 to Station 44+15 (CL NB US 12/20/45), 0 to 60 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, and Dibenzo(a,h)anthracene.

- Station 44+15 to Station 44+85 (CL NB US 12/20/45), 0 to 175 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameter: Manganese.
- Station 54+70 to Station 55+15 (CL NB US 12/20/45), 0 to 20 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene.
- Station 55+60 to Station 56+05 (CL NB US 12/20/45), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameter: Benzo(a)pyrene.
- Station 56+70 to Station 57+00 (CL NB US 12/20/45), 0 to 60 feet LT and 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(4). Contaminants of concern sampling parameter: Benzo(a)pyrene, and Dibenzo(a,h)anthracene.
- Station 68+15 to Station 68+75 (CL NB US 12/20/45), 0 to 25 feet RT and 0 to 25 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Manganese.
- Station 73+75 to Station 74+20 (CL NB US 12/20/45), 0 to 25 feet RT and 0 to 25 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Arsenic.
- Station 77+65 to Station 77+90 (CL NB US 12/20/45), 0 to 25 feet RT and 0 to 25 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: SVOCs and Metals
- Station 82+20 to Station 85+00 (CL NB US 12/20/45), 0 to 50 feet RT and 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).
- Station 85+00 to Station 88+85 (CL NB US 12/20/45), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(b)(1).

### **Work Zones**

Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents, or sites under management in accordance with the requirements of the Site Remediation Program (SRP), Resource Conservation and Recovery Act (RCRA), or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or as deemed necessary. For this project, the work zones apply for the following ISGS PESA Sites:  
**None**

## **RAILROAD FLAGGING (IC)**

Description. This work shall be performed as in accordance with Sections 107.12 and 109.05 of the Standard Specifications.

General Requirements. The flagging costs incurred for the work associated at the location of the US 12/20/45 (LaGrange Road) and the Illinois Central Railroad Company (IC) grade crossing will be reimbursed by IDOT in accordance with Section 109.05 of the Standard Specifications. The Contractor is responsible for prepaying the CN in advance for flagging services provided. The Contractor shall deposit the cost of flagging services for thirty (30) days with the CN. If the Contractor uses less than 30 days, then the Contractor will be charged for the days used and the balance will be reimbursed back to the Contractor. The Contractor will then be reimbursed by IDOT for the actual number of flagging days used. The Contractor is required to conduct operations at all times in full compliance with the rules, regulations and requirements of the (IC) Special Provisions contained in the Contract Specifications and as described below.

The Contractor shall give thirty (30) days advance written notice to the Engineering Superintendent of the Railroad or his authorized representative prior to commencement of any construction work on the Improvement affecting the railroad property. The Contractor shall notify the Railroad sufficiently in advance of when the protective services are required. The Contractor shall make every effort to notify the Railroad in advance if a previously requested flagger will not be needed for any reason. Any costs for flagging protection provided by the Railroad at the Contractor's request for those days when the Contractor does not work shall be borne by the Contractor.

Basis of Payment. RAILROAD FLAGGING (IC) will be paid for according to Article 109.05 of the Standard Specifications.

**62H49\_BNSF UNDER LAGRANGE ROAD (US 12-20-45)\_ IN HODGKINS, COOK COUNTY\_2021.10.19**

**RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)**

Effective: December 1, 1986  
 Revised: January 1, 2022

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
BNSF Railway Company 4515 Kansas Ave. Kansas City, KS, 66106	0 trains/day	50 trains/day @ 10 mph
Class 1 RR (Y or N): Y DOT/AAR No.: 004 338Y DOT/AAR No.: 004 338Y	RR Mile Post: 15.74 RR Mile Post: 15.70	
RR Division: CHICAGO	RR Sub-Division: CHILLICOTHE	
For Freight/Passenger Information Contact:	Jake Rzewnicki	Phone: 913-551-4275
For Insurance Information Contact:	Rosa Martinez	Phone: 214-303-8519

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

3426I



62H49 IC UNDER LAGRANGE ROAD (US 12-20-45), WILLOW SPRINGS, COOK COUNTY, 2021.10.19

**RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)**

Effective: December 1, 1986  
 Revised: January 1, 2022

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Illinois Central Railroad Company And its Parents 17641 S. Ashland Avenue Homewood, IL 60430	16 trains/day @ 79 mph	10 trains/day @ 79 mph
Class 1 RR (Y or N): Y DOT/AAR No.: 289 724W RR Division: CHICAGO	RR Mile Post: 15.98	RR Sub-Division: JOLIET
For Freight/Passenger Information Contact: Thomas Brasseur For Insurance Information Contact: Rob Glass	Phone: 248-452-4854	Phone: 708-332-6673

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

3426I

## **BNSF RAILROAD REQUIREMENTS**

### **RIGHT OF ENTRY TO BNSF RAILWAY PROPERTY**

Contract 62H49

The contractor shall procure all permits and licenses, obtain Railroad Protective Liability Insurance, pay required fees, schedule railroad flaggers and give all notices necessary to the appropriate railroad personnel prior to beginning construction operations. The BNSF Railway Company contact person is Mr. Calvin Nutt, Manager of Public Projects, 763-782-3495 or [Daniel.Peltier@BNSF.com](mailto:Daniel.Peltier@BNSF.com).

The Contractor, before entering upon the right of way of the railroad for the performance of any construction work, or work preparatory thereto, shall secure permission from the Railroad for the occupancy and use of the railroad's right of way outside the limits of the railroad grade separation structure or grade crossing. This permission shall be obtained with a permit by contacting Amanda Reyna of Jones Lang LaSalle Brokerage, Inc, at 817-230-2628. The contractor shall pay all costs for required permits to obtain permission for Right of Entry on the railroad right of way. The costs for such permits will not be paid for separately, but shall be included as part of the contract. Prior to commencing any work on BNSF property, the contractor and all sub-contractors shall complete the safety training program at Internet Website <http://www.contractororientation.com>. This training must be completed in advance of entry on the railroad property.

In addition to the occupancy permit, the Railroad may require the Contractor to secure a BNSF Railway Company C and C-1 Agreement (Agreement between the BNSF Railway Company and the Contractor). There is no additional cost to the Contractor for these Agreements. A copy has been included in the bidding documents for the Contractors information. Prior to filling out and submitting these agreements, the contractor shall contact Mr. Calvin Nutt, BNSF Manager of Public Projects at (763) 782-3495.

The Contractor shall confer with the Railroad Engineer relative to railroad requirements for clearances, operation and general safety regulation in accordance with Article 107.12 of the Standards Specifications. For all railroad-highway work as indicated in the contract proposal, the Contractor shall obtain Railroad Protective Liability and Property Damage Liability insurance in accordance with Article 107.11 of the Standard Specifications and as specified elsewhere in the Specials. The cost for providing insurance, as noted elsewhere, will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE. Effective January 1, 2006, Railroad Protective Liability Insurance limits have increased to a minimum of \$5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of \$10,000,000 over the life of the policy. Be sure the policy reflects these revised amounts.

All work to be done by the Contractor on the railroad's right of way shall be performed in a manner satisfactory to the Railroad Engineer. The work shall be performed at such times and in such a manner as not to unnecessarily interfere with the movement of the trains or traffic upon the tracks of the railroad. The Contractor shall use all reasonable care and precaution in order to avoid accidents, damage, delay or interference with the Railroad's trains or other facilities.

The services of railroad flaggers will be required when the contractor's operations will encroach within 25' from the track or over the railroad's right of way. The Contractor shall pay the costs of providing flaggers as required to maintain the integrity of the railroad's property and shall be paid for in accordance with Article 107.12 and 109.05 of the Standard Specifications. The railroad flagger contact person is \_\_\_\_\_, \_\_\_\_\_ (cell), \_\_\_\_\_ (office). A minimum of 72 hours' notice is requested.

## BNSF POSITION ON USE OF CRANES

### ***BNSF Position on Use of Cranes, Lifting of Material, and Demolition on or over BNSF Right-of-Way***

This generally addresses lifting activities for overhead bridge construction and demolition, but also covers other work using cranes or material lifting near railroad property which has the potential to impact railroad operations. The intent is to ensure necessary planning, engineering and execution to avoid equipment or material failures that can lead to safety issues or unplanned interruptions of railroad traffic. Demolition procedures other than those considered as lifting activities are covered in a Demolition Plan Submittal.

Use of cranes and the lifting of materials on or over the railroad right-of-way shall not cause interruption to railroad operations.

- A PE-sealed lifting plan or demolition plan is necessary for any lifting activities requiring authority or protection over railroad tracks. The Professional Engineer is responsible for addressing all required parameters of the lifting plan or demolition plan, and BNSF has minimum submittal requirements for specific lifting activities.
- For Agency sponsored projects, Agency shall accept the lifting and/or demolition plan and advise BNSF of acceptance of plan(s) prior to submittal
- An onsite, pre-lift safety meeting is mandatory for all lifting activities covered by the lifting and/or demolition plan
  - Representatives of the contractor, the agency and BNSF shall be present
  - Purpose is to confirm all processes and equipment are in place to proceed per the lifting plan, or otherwise track authority will not be provided.
  - Deviations or modifications to the plan require additional review
- Train operations will not be permitted during splicing, post tensioning or any activities performed during a suspended load until structural stability is achieved. For these reasons, superstructures of these type are not recommended. The method of erection permissible will be dependent upon track time available. This is to be coordinated through the BNSF site representative during construction.
- Prior to the release of Railroad traffic, components lifted over railroad tracks shall be supported by falsework or permanent substructure, shall be secured and stable and shall not be supported by cranes or other construction equipment.

*BNSF publishes position statements to clarify BNSF's position on the subject matter. The information contained in a position statement is neither exhaustive nor exclusive to all circumstances or individuals. The relevance and implementation of these recommendations may be affected by local, state, or federal statutes, other rules or regulations, and differing project conditions. Position statements are not intended to provide any approval of a public agency project. Nothing in this position statement, supersedes or supplements the terms of a governing agency agreement with BNSF. The position statement should not be relied upon as being inclusive of all BNSF's policies on the subject matter, but only as a resource. BNSF takes great care in publishing position statements and reserves the right to rescind or modify these statements at any time.*

*Approved by Craig Rasmussen, AVP Engineering Services and Structures  
Date Approved: August 16, 2017*

## BNSF POSITION ON RETAINING WALLS

### ***BNSF Position on Retaining Walls***

There are two distinct types of retaining wall projects with differing requirements. Retaining walls which retain the railroad grade have some differences from walls meant to support adjacent soil to keep them off the railroad grade. BNSF uses the term Mechanically Stabilized Earth (MSE) walls for walls that are not self-supporting. BNSF Railway prefers retaining wall types that are self-supporting. If an MSE wall has a damaged panel, embankment fill is compromised by excavation, or the straps damaged, the entire wall can fail and will likely need to be rebuilt.

#### Walls Supporting Railroad Embankment

- Retaining walls which retain the railroad embankment should be self-supporting. In other words, wall types that utilize the soil stability as part of the strength of the wall, are not generally acceptable for this application.
- Walls for this application shall be designed in accordance with Railroad requirements and the general design principles specified in AREMA.

#### Walls not Supporting Railroad Embankment

- Self-supporting walls should also be utilized for any applications within railroad right-of-way, or within 50 feet of existing or future tracks. The applications may include supporting roadway or railways above track level.
- Use of MSE walls on the Railroad right-of-way, requires written justification and request for variance for the proposed design. Requests for variance may be rejected.
- In consideration of allowing MSE walls, following will apply:
  - For locations less than 25' from centerline of track (existing and future), MSE walls are not acceptable
  - For locations greater than 25' and less than 50' from centerline of tracks (existing and future), a wall thickness of at least 2.5 feet thick is acceptable since they meet the AREMA "heavy construction" recommendations and are represented as having a 100-year design service life. The height of the 2.5 foot thick section must be at least 6-ft above top of rail of the nearest existing or future track.
  - Additionally, bridge abutments shall be supported by deep foundations within these limits
  - The 25' boundary should be applied to existing or future track centerline, as applicable. Otherwise, there would be a potential compromise of standards and utility of use of BNSF Railway property.
- The responsibilities for maintenance and inspection of walls are stipulated by the Construction and Maintenance agreement. In general, the maintenance of walls is the responsibility of the Agency. This includes both structural items and aesthetic issues such as graffiti removal.

Designers and Agencies who sponsor projects which involve MSE or similar wall types understand that lower construction costs and/or less robust design criteria comes with inherent risks during future operation. In the event that walls require reconstruction or any maintenance, the full cost (both direct and indirect) are borne solely by the Agency.

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Approved by Craig Rasmussen, AVP Engineering Services and Structures  
Date Approved: August 16, 2017

## **BNSF POSITION ON OVERHEAD BRIDGE & ADJACENT FACILITY DRAINAGE**

### ***BNSF Position on Overhead Bridge & Adjacent Facility Drainage***

Drainage is an important factor in the proper maintenance of railroad track and embankment. Projects or developments that will affect drainage onto or through BNSF right-of-way must be designed to minimize negative effects to BNSF property, and not to restrict future expansion of railroad operations.

Railroad ditches are not designed or intended for conveyance of public water.

For projects that change drainage on BNSF right-of-way, pre-project and post-project capacities must be evaluated and submitted to BNSF for review. When it is necessary to upgrade drainage facilities so that there is no net impact to BNSF property, the project shall bear all costs associated with the upgrade and necessary drainage rights must be secured.

A crossbuck assembly is required at public grade crossings. The crossbuck assembly provides warning of the public grade crossing to the traveling public and is defined in the Manual of Uniform Traffic Control Devices (MUTCD). BNSF maintains the crossbuck assemblies. It is BNSF's responsibility to inspect and maintain the railroad crossing signals at all public grade crossings equipped with active warning devices.

The Road Authority installs and maintains the advance warning signs.

It is BNSF's responsibility to maintain all public grade crossing surfaces in accordance with State law and regulations. BNSF maintains the crossing surface between the rails and outside the rails as far as the edge of the crossing surface material. BNSF does not typically perform roadway approach work on behalf of a Road Authority without specific contract terms identified in a grade crossing agreement. The Road Authority is responsible for the roadway approaches to a grade crossing. Consult with the appropriate Manager Public Projects for state specific requirements.

BNSF recommends the crossing surface material be installed with a 2 foot overhang beyond the edge of the roadway. Special attention must be given to the roadway design and crossing surface length needed to fully cover the roadway surface at a skewed crossing.

During ice and snow events, it is recommended that snow removal operation by the Road Authority include the following at the grade crossings: Lift the blade up slightly to not catch the rail, turn off salt spreader across the rails and notification made to the Railroad where conditions require work done by truck or other means. Snow removal and ice control shall be done with care. Snow shall not be "windrowed" across the tracks. Snowplows can damage crossing surfaces. Chemicals can corrode track and fittings and can short-out track circuits.

Roadway resurfacing operations shall be coordinated with the railroad. A Railroad Flagger is needed anytime work is performed within 25' of the track centerline. Resurfacing lifts should be tapered to match existing elevation near the crossing to assure a smooth transition across the tracks. Drainage shall be checked to assure that the additional roadway height has not directed water onto the crossing surface. All necessary steps shall be taken to prevent interference between resurfacing equipment and personnel and trains.

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*Approved by Craig Rasmussen, AVP Engineering Services and Structures*

*Date Approved: August 16, 2017*

FAU Route 330 (US Route 12/20/45 / La Grange Road)  
Project NHPP-6T0L(343)  
Section 2018-133-BR  
Cook County  
Contract No. 62H49

**BNSF GUIDELINES FOR PREPARATION OF BRIDGE DEMOLITION & REMOVAL PLANS**

**BNSF RAILWAY COMPANY**



**GUIDELINES FOR PREPARATION OF**  
**BRIDGE DEMOLITION & REMOVAL PLAN**  
**OVER THE BNSF RAILWAY**

**OFFICE OF DIRECTOR BRIDGE ENGINEERING**  
**KANSAS CITY, KANSAS**  
**August 21, 2008**



Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

**INDEX**

	<b>ITEM</b>	<b>PAGE</b>
I.	<b>General</b>	<b>1</b>
II.	<b>Bridge Removal Plan</b>	<b>2</b>
III.	<b>Procedure</b>	<b>4</b>
IV.	<b>Track Protection</b>	<b>5</b>
V.	<b>Cranes</b>	<b>6</b>
VI.	<b>Cutting Torches</b>	<b>7</b>
VII.	<b>Utilities</b>	<b>8</b>
VIII.	<b>Hazardous Material</b>	<b>8</b>
	<b>Appendix</b>	<b>9</b>

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

## **I. GENERAL**

### **A. The Contractor's work shall in no way impede the train operations.**

1. The words "demolition" and "removal" will be used interchangeably in this Guideline.
2. The term "Railroad" refers to the Railroad's Engineers or designated representative.

### **B. Safety takes precedence over productivity. The Contractor shall be responsible for planning and executing all procedures necessary to remove the structure in a safe, predictable manner.**

1. All employees of the Contractor and Subcontractors must be Safety Trained. Refer to <http://www.railroadsafetytraining.com>

### **C. The Contractor shall develop a demolition plan ONLY AFTER CONSULTING WITH THE RAILROAD TO GET AN ESTIMATE OF THE RANGE OF TRACK WINDOWS THAT MIGHT NORMALLY BE AVAILABLE FOR THE JOB SITE.**

1. A Track Window is the elapsed time between approaching trains.
2. An estimate of the availability of Track Windows can be used by the Contractor to design a demolition plan. The estimated Track Window is a guideline and not to be considered as a guarantee for available working time.
3. A Track Window is highly variable, depending on the location. Low speed - low train density tracks have predictable Track Windows. The opposite is true for high density- high speed main tracks. The Railroad can furnish a range of Track Windows that might be expected at a specific location under normal train traffic conditions.
4. Plan the demolition procedures based upon the smallest ESTIMATED Track Window. Do not assume the longest Track Window will be available on any given day. Do not assume the same Track Windows will be available from one day to the next.

### **D. The Railroad's tracks and property shall be protected at all times.**

1. Removal procedures shall take into account SEVER WEATHER CONDITIONS, including high winds, heavy rains and snowfall accumulation.
2. The contractor shall ensure that all areas adjacent to active tracks shall remain free from hazards.
  - a) Trainmen must have an unobstructed walkway available parallel to all active tracks.
  - b) All open excavations shall be protected with fencing.
  - c) Do not store materials or equipment within 25 feet of the centerline of an active track.
3. Protect the project area from vandalism.
  - a) Do not leave debris where vandals could place it on the tracks to drop it onto the tracks from an overhead structure.

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

- b) Secure all heavy equipment from potential movement by vandals.
- c) Do not store flammable materials on railroad right of way. Remove combustible waste materials daily. Do not store fuel or other flammable liquids on railroad right of way.

**E. All demolition materials and scrap shall be disposed of outside the Railroad right-of-way at no expense to the railroad. At the conclusion of the project, the area must be left in a clean and graded condition to the exclusive satisfaction of the Railroad.**

**F. No work is allowed within 25 feet of the nearest track unless protected by a Railroad Flagman. When trains approach the work site, all demolition activity within 50 feet of the track shall stop until the entire length of the train has passed the work site.**

**G. The staged demolition of any portion of a structure over or adjacent to operational tracks will not jeopardize the stability of other parts of the structure awaiting demolition.**

- 1. Where multiple tracks are involved, the demolition plan should be engineered as much as practical such that no more than one track is rendered impassable at any given moment.

**H. No blasting will be permitted on Railroad's right-of-way.**

## **II. BRIDGE REMOVAL PLAN**

**A. The Contractor shall submit a detailed Bridge Removal Plan to the Railroad. The Bridge Removal Plan shall encompass the following:**

- 1) Provide a scale drawing showing the plan view, elevation and location of the structure and locations of any access roads needed on railroad right of way to access the job site. The as-built drawings may be used for the submittal provided the removal steps are clearly marked and legible.
- 2) Indicate the position of all railroad tracks below the bridge. Identify each track as mainline, siding, spur, etc. Identify locations where temporary crossings will be installed to cross equipment over each track.
- 3) List in sequential order, all procedures necessary to remove the bridge in a safe and controlled manner. Include step by step details of each sequence and the elapsed time required to execute the sequence. The removal plan must specify which, if any, sequences will render a track impassable to trains during execution of the sequence. If more than one track is adjacent to the work area, specify which tracks will be impassable during execution of each sequence.
- 4) Include text, drawings or photos to communicate the types of equipment that will be utilized. Include diagrams showing the position of the equipment in relation to the tracks. Where cranes are to be used, furnish the lifting capacities of the crane at the anticipated radius and the weights of components to be removed.

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

- 5) For every sequence, specify the minimum horizontal clearance from centerline of track and the minimum vertical clearance above top of rail for equipment, falsework, rubble shields and temporary supports. If a crane is to be utilized, include clearances for the backswing radius of the crane counterweight and the position of the outriggers. (Refer to the attached frame protection diagram for the minimum allowable vertical and horizontal clearances.)
- 6) If the removal plan includes concrete demolition, include the details of rubble control such as maximum anticipated size of rubble, drop distance, shield size and shield position.
- 7) The Bridge Removal Plan will indicate locations and types of temporary supports, shoring, cables or bracing required. Refer to current standard drawing 106613 "General Shoring Requirements" "Guidelines for Design and Construction of Falsework for Structures" and "Guidelines for Design and Construction of Shoring Adjacent to Active Railroad Tracks", and the appropriate Federal, State and local regulations and building codes.
- 8) If any temporary supports interfere with the natural drainage along the Railroad right-of-way, a temporary drainage diversion plan shall be included in the Bridge Removal Plan. The drainage plan shall route all surface water away from the railroad tracks.
  - a) Do not block drainage in side ditches with debris.
  - b) Do not place footing blocks in drainage ditches.
  - c) Surface runoff must be diverted away from the footing block excavations to avoid saturation of the underlying supporting soils.
- 9) The Demolition Plan shall include details, limits, and locations of protective shields or other measures designed to protect the rails, ties and ballast from falling debris. Include details of catchment apparatus necessary to protect the tracks from rolling debris that may fall onto side slopes. Include the design load for the shields for both the maximum static load and the maximum anticipated impact loads from falling debris. Specify the type of equipment that will be utilized to remove the debris and shields from operational tracks.
- 10) Protection of the track ballast section must be provided to avoid contamination of the rock with fine dust and mud produced during demolition activities. Filter fabric or some other effective means of prevent ballast contamination should be incorporated into the Demolition Plan.
- 11) 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.
- 11) Indicate the limits of demolition of substructures, including depths and dimensions of excavations that might be necessary to demolish buried footings.
- 12) The Demolition Plan should include details of planned on-site fire suppression.

**B. The Contractor shall submit to the Railroad: three (3) complete sets of the Bridge Removal Plan for review and comments.**

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

1. The Plan shall be sealed by a Civil or Structural Engineer registered in the state where the proposed demolition will take place.
2. A minimum of four (4) weeks shall be expected for the Railroad's review after the complete submittal is received.
3. No removal operations will be permitted over the Railroad right of way until the submitted material has been reviewed and approved.

**C. Approval and/or comments furnished by the Railroad in the course of review of the Contractor's Removal Plan will not relieve the Contractor of the ultimate responsibility for the safe and secure demolition of the structure.**

### **III. PROCEDURE**

**A. The Bridge Removal Plan must be executed such that stability is continuously maintained for the standing portions of the structure over all tracks.**

- 1) All members of the structure being demolished must be continuously supported to resist high winds, including wind buffets and suction forces generated by high speed trains.

**B. Prior to proceeding with bridge removal, the sealing Civil or Structural Engineer, or his authorized representative, shall inspect all components of the temporary support shoring, including temporary bracing and protective coverings, insuring conformity with the working drawings.**

- 1) The sealing 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.
- 2) A copy of this certification shall be available at the job site at all times.

**C. Well in advance of planned work, coordinate the removal schedule with the Railroad.**

- 1) No work is allowed within 25 feet of the nearest active track unless protected by a Railroad Flagman.
- 2) All the removal work within 25 feet of the nearest active track shall be performed during the Track Windows granted by the Railroad Flagman.
- 3) When trains pass the work site, all demolition activity within 50 feet of the track shall stop until the entire length of the train has passed the work site.

**D. All substructures shall be removed to at least 3 feet below the final finished grade or at least 3 feet below base of rail whichever is lower, unless otherwise specified by the Railroad.**

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

**E. All debris and refuse shall be removed from the railroad right of way by the Contractor. The premises shall be left in a neat and presentable condition to the exclusive satisfaction of the Railroad. Soils contaminated by fuel spills, hydraulic oil leaks, etc. will be removed from railroad right of way and replaced to the exclusive satisfaction of the Railroad.**

**F. 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 a procedure to correct or remedy the occurrence.**

**G. Beam removal and all other demolition procedures shall take place as much as practicable with equipment positioned above the track. In the rare case that beams require removal from below the structure, the following steps shall be taken before beams are allowed to straddle the tracks:**

- 1) Certain territories with high density train traffic, especially where multiple main tracks are affected, may not grant Track Windows on all tracks simultaneously. Beam removal from the underside of structures may not be possible unless the procedure can be accomplished in very short Track Windows or be engineered such that only one track is affected.
- 2) The work shall be scheduled well in advance with the Railroad's Service Unit Superintendent subject to the Railroad's operational requirements for continuous train operations. The beam removal plan must be engineered to minimize the Track Window time.
- 3) The rails, ties and ballast shall be protected. No equipment will be crossed over or placed on the tracks unless pre-approved by the Railroad.
- 4) The beams shall be blocked to prevent the beams from coming into contact with the rails. Blocking shall not be placed on the rails or ties.
- 5) Upon approach of a train, the beams and all personnel and equipment will be moved a position to provide a minimum of 15 feet horizontal clearance and 21 ft. vertical clearance from the nearest rail. Care must be exercised to insure that crane booms are rotated to a position parallel with the track.

#### **IV. TRACK PROTECTION**

**A. 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. The following are examples of protective covers that may be acceptable:**

- 1) A decking supported by the bridge or a suspended cover from the bridge above the track clearance envelope.
- 2) A track shield cover over the tracks per the attached detail.

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

- 3) A framed cover outside the track clearance envelope.
- 4) A catcher box or loader bucket under decking and parapets overhanging the exterior girders.
- 5) Protection of the track ballast section must be provided to avoid contamination of the rock with fine dust and mud produced during demolition activities. Filter fabric or some other effective means of prevent ballast contamination should be incorporated into the Demolition Plan.

**B. Construction equipment shall not be crossed over or placed on the tracks unless the rails, ties and ballast are protected against damage.**

- 1) Track protection is required for all equipment including rubber tired equipment.
- 2) A list of equipment to be crossed over or positioned on the tracks along with the intended method of protection shall be submitted to the railroad for approval prior to use at the job site.

**C. Temporary haul road crossings shall be either Timbers or Precast Concrete Panels. The type of crossing shall be determined by the Railroad.**

- 1) Solid timbers or ballast with timber headers shall be used between multiple tracks.
- 2) If the job site is accessible to the public, all temporary haul road crossings shall be protected with barricades or locked gates when the Contractor is not actively working at the site.
- 3) Installation and removal of temporary track crossings for equipment shall be scheduled well in advance with the Railroad.

## V. CRANES

**A. When cranes are operated over or adjacent to the tracks the following is required:**

- 1) The Contractor shall verify that the foundations and soil conditions under the crane and crane outriggers can support the loads induced by the crane under an assumed maximum capacity lift. The size and material type of crane mats shall be rigid and of sufficient capacity to safely distribute the crane loads.
- 2) Front end loaders and backhoes cannot be used in place of a crane to lift materials over the tracks. These types of equipment do not have the necessary safety features built into the machines to circumvent overloading and tipping. Only cranes with the rated capacity to handle the loads may be used.
- 3) Additional track protection may be required for a crane when crossing over the track. The protection methods shall be submitted to the Railroad for review and comment well in advance of intended use.

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

- 6) Cranes and other equipment utilizing outriggers shall not place outriggers on the tracks or ballast.
- 7) Cranes or crane booms shall not be positioned within the track clearance envelope without Railroad Flagman protection. Cranes operating from a position farther than 25 ft. from the nearest track will need a Railroad Flagman present if the boom length is such that it could fall onto a track.
- 8) During passage of a train, the Crane Operator must stop all movements. Crane Operators shall remain in the cab with motor at idle with the load lines, boom, rotation and travel controls locked and stationary until the full length of the train has passed the job site.

## VI. CUTTING TORCHES

### A. When a cutting torch or welding equipment is used in the demolition process, the following steps shall be taken:

- 1) Fire suppression equipment is required on-site.
- 2) Do not use a torch over, between, or adjacent to the tracks unless a steel plate protective cover is used to shield against sparks and slag coming into contact with timber ties. 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.
- 3) Wet the ties below the steel plate and wet other timbers and flammable demolition debris located near cutting areas.
- 4) Monitor the work site for at least three hours after cutting has ceased to detect a smoldering fire.

### B. Extensive overhead cutting may require more robust fire suppression equipment and precautions than what would normally be required for routine cuts.

- 1) On days when extensive torch cutting is planned, the Contractor shall have a larger water supply on hand or take other measures as needed to effectively suppress fires.
- 2) Overhead torch cutting and welding must cease upon approach and passage of a train.
- 3) Extensive torch cutting shall not take place during high winds.
- 4) Contractor will clear vegetation and other combustible debris from the surrounding work areas prior to engaging in extensive torch cutting.



Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

## **VII. UTILITIES**

**A. 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 utility lines should be coordinated by the contractor with the respective utility companies.**

## **VIII. HAZARDOUS MATERIALS**

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

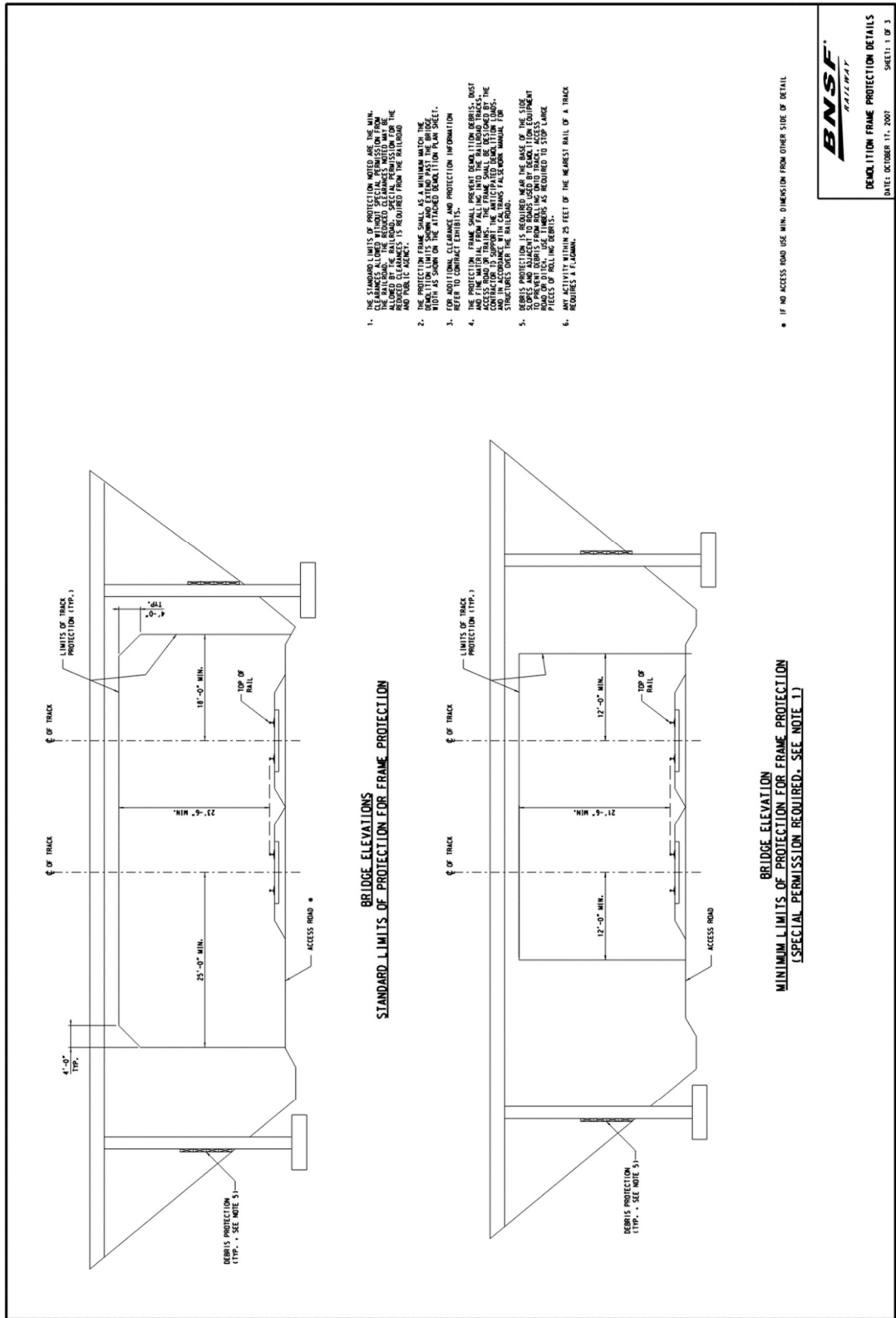
- 1) If pipelines are attached to the structure, pipes must be purged of flammable or hazardous materials prior to beginning demolition.
- 2) Fuel spills, hydraulic fluid releases, equipment oil leaks or any other release of contaminants must be reported to the Railroad. Contaminated soils must be removed and replaced to the satisfaction of the Railroad.

## **APPENDIX - BNSF-UP DEMOLITION DRAWINGS**

Guidelines for Preparation of Bridge Demolition and Removal Plan over the BNSF Railway

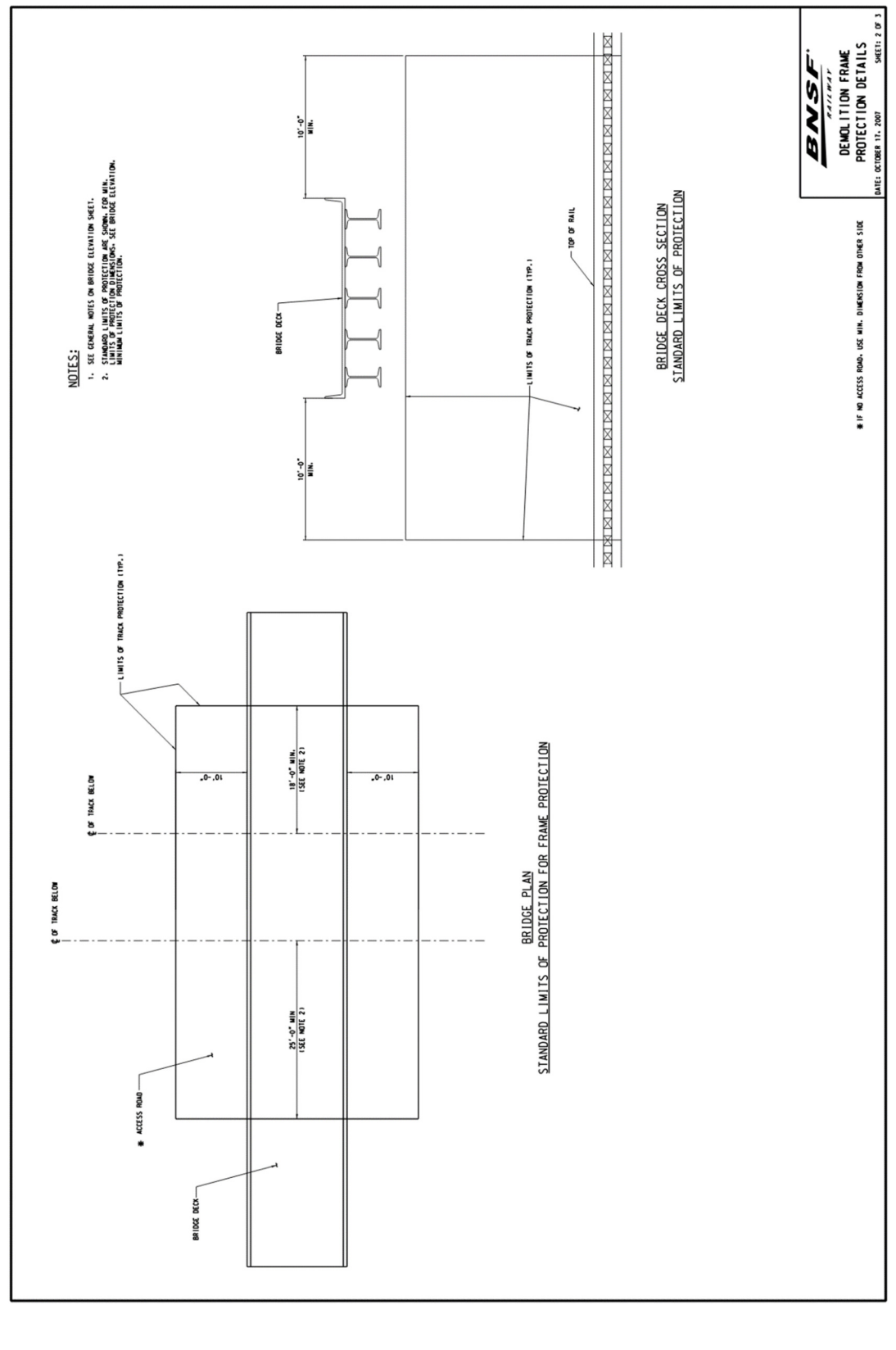
### **APPENDIX – BNSF-UP Demolition Drawings**

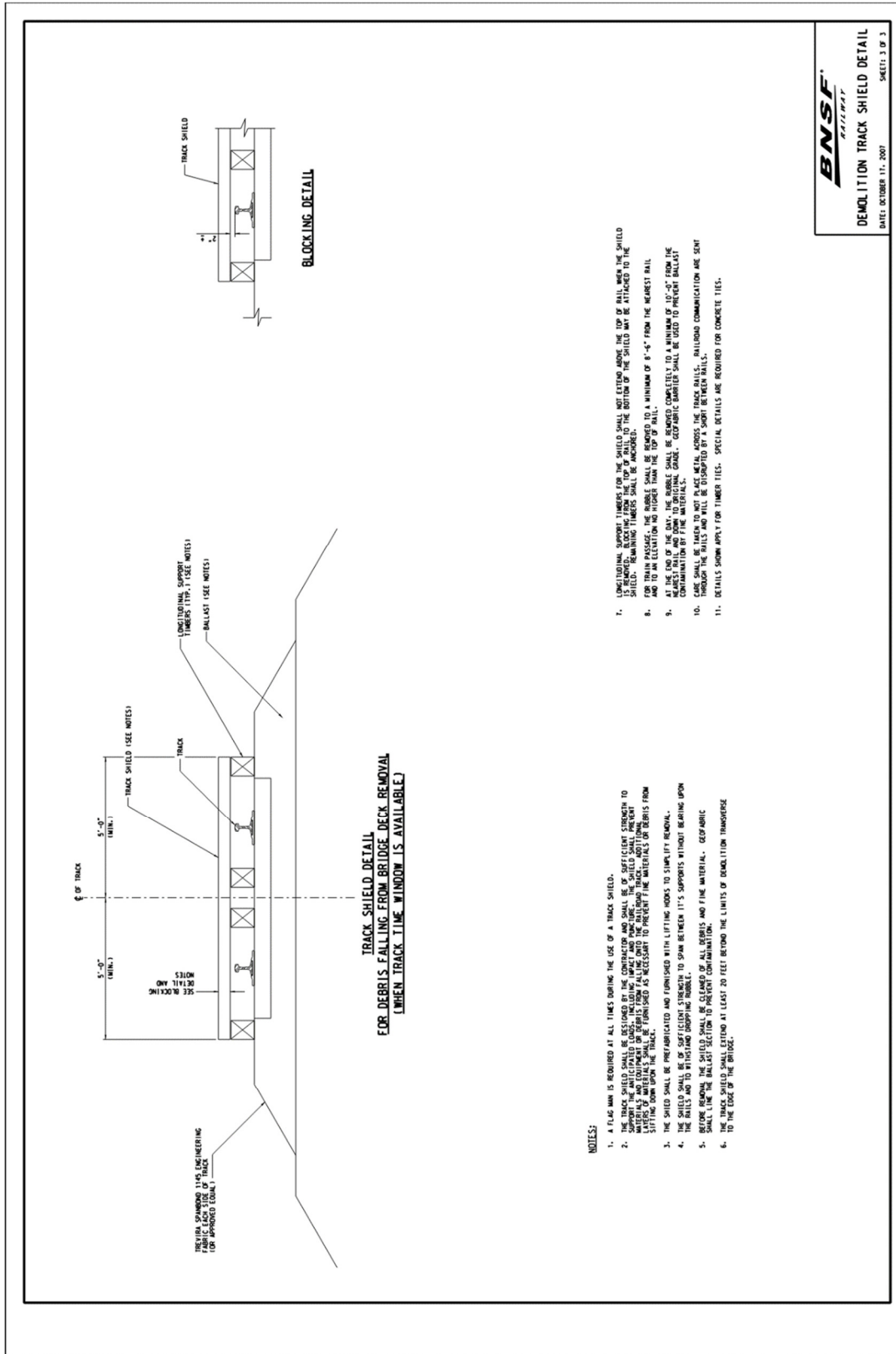
- Demolition Frame Protection Details (Sheets 1 of 3 & 2 of 3)
- Demolition Track Shield Details (Sheet 3 of 3)



1. THE STANDARD LIMITS OF PROTECTION NOTED ARE THE MIN. CLEARANCES ALLOWED WITHOUT SPECIAL PERMISSION FROM THE STATE OF ILLINOIS. SPECIAL PERMISSION FOR THE ALLOWED BY THE BAILLARD, SPECIAL PERMISSION FOR THE AND PUBLIC AGENCY.
2. THE PROTECTION FRAME SHALL AS A MINIMUM MATCH THE WITHIN 48" SWAY ON THE ATTACHED TRACK (TYP.) PLAN SHEET.
3. FOR ADDITIONAL CLEARANCE AND PROTECTION INFORMATION REFER TO CONTRACT EXHIBITS.
4. THE PROTECTION FRAME SHALL PREVENT DEMOLITION BEGINS, MUST ACCESS, ROAD OR TRAILING. THE FRAME SHALL BE DESIGNED BY THE AND IN ACCORDANCE WITH CALTRANS FALLS MANUA FOR STRUCTURES OVER THE BAILLARD.
5. CURBS AND SLOPES SHALL BE MAINTAINED BY TRACK TO PREVENT TO PREVENT EXPOSURE FROM ROLLING INTO TRACK. ACCESS TO TRACK SHALL BE MAINTAINED AS REQUIRED TO STOP LANE.
6. ANY ACTIVITY WITHIN 20 FEET OF THE NEAREST RAIL OF A TRACK REQUIRES A T-100MM.

**BNSF**  
 RAILWAY  
 DEMOLITION FRAME PROTECTION DETAILS  
 DATE: OCTOBER 11, 2007  
 SHEET: 1 OF 3





- NOTES:**
1. A FLAGMAN IS REQUIRED AT ALL TIMES DURING THE USE OF A TRACK SHIELD.
  2. THE TRACK SHIELD SHALL BE DESIGNED BY THE CONTRACTOR AND SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE SHIELD, TRACK, AND BALLAST. THE SHIELD SHALL BE MADE OF STEEL OR ALUMINUM MATERIAL AND TYPICAL DETAILS SHALL BE AS SHOWN. THE SHIELD SHALL BE DESIGNED TO PREVENT DEBRIS FROM FALLING INTO THE TRACK AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE SHIELD SHALL BE REMOVED COMPLETELY TO A MINIMUM OF 10'-0" FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY.
  3. THE SHIELD SHALL BE PREFABRICATED AND FURNISHED WITH LIFTING HOOPS TO SIMPLIFY REMOVAL.
  4. THE SHIELD SHALL BE OF SUFFICIENT STRENGTH TO SPAN BETWEEN IT'S SUPPORTS WITHOUT BEARING UPON THE RAILS AND TO WITHSTAND SHIPPING ROBBLES.
  5. THE SHIELD SHALL BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY.
  6. THE TRACK SHIELD SHALL EXTEND AT LEAST 20 FEET BEYOND THE LIMITS OF DEMOLITION TRANSVERSE TO THE EDGE OF THE BRIDGE.

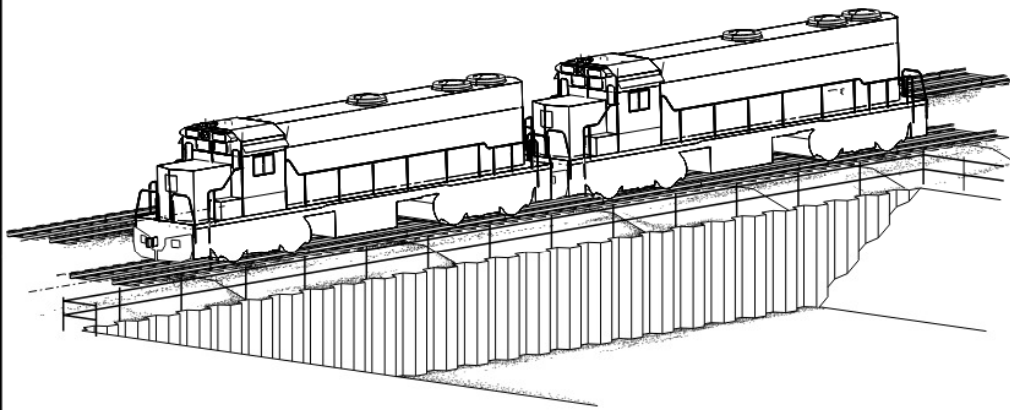
7. LONGITUDINAL SUPPORT TIMBERS FOR THE SHIELD SHALL NOT EXTEND ABOVE THE TOP OF RAIL WHEN THE SHIELD IS REMOVED. BLOCKING FROM THE TOP OF RAIL TO THE BOTTOM OF THE SHIELD MAY BE ATTACHED TO THE SHIELD. REMAINING TIMBERS SHALL BE REMOVED.
8. BLOCKING SHALL BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY.
9. AT THE END OF THE DAY, THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY. THE RAILROAD SHALL BE ADVISED OF THE LOCATION OF THE SHIELD AND TO BE REMOVED FROM THE TRACK AT THE END OF THE DAY.
10. CARE SHALL BE TAKEN TO NOT PLACE METAL ACROSS THE TRACK RAILS. BALLAST AND COMMUNICATION ARE SENT THROUGH THE RAILS AND WILL BE INTERRUPTED BY A SHORT BETWEEN RAILS.
11. DETAILS SHOWN APPLY FOR TIMBER TIES. SPECIAL DETAILS ARE REQUIRED FOR CONCRETE TIES.

**BNSF**  
*RAILWAY*

**DEMOLITION TRACK SHIELD DETAIL**  
 DATE: OCTOBER 17, 2007  
 SHEETS: 3 OF 3

**GUIDELINES FOR TEMPORARY SHORING**

GUIDELINES FOR TEMPORARY  
SHORING



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**INDEX**

SECTION	PAGE
1. SCOPE . . . . .	1
2. GENERAL CRITERIA . . . . .	1
3. CONTRACTOR RESPONSIBILITIES . . . . .	2
4. INFORMATION REQUIRED . . . . .	3
5. TYPES OF TEMPORARY SHORING . . . . .	5
6. GENERAL SHORING REQUIREMENTS . . . . .	5
7. COMPUTATION OF APPLIED FORCES . . . . .	7
8. STRUCTURAL INTEGRITY. . . . .	9
9. SOIL CHARACTERISTICS. . . . .	10
10. PLANS . . . . .	11
11. SUBMITTALS . . . . .	13
12. APPENDIX . . . . .	14
13. BIBLIOGRAPHY. . . . .	14

## GUIDELINES FOR TEMPORARY SHORING

### 1. SCOPE

The scope of these guidelines is to inform public agencies, design engineers, contractors and inspectors of current Railroad standards and requirements concerning design and construction of temporary shoring.

1. The term **Railroad** refers to the Burlington Northern & Santa Fe Railway (BNSF) and/or the Union Pacific Railroad (UPRR). The term **Contractor** is defined as any party gaining access to work on Railroad right-of-way or other Railroad operating locations.
2. These guidelines are provided as a reference and may not be taken as authority to construct without prior review and written approval of the Railroad. These guidelines supersede all previous guidelines for temporary shoring and are subject to revision without notice.
3. These guidelines supplement the current, American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual of Recommended Practice. The 2002 AREMA Manual was utilized in developing this guideline. The AREMA Manual is available from:  
  
American Railway Engineering and Maintenance-of-Way Association  
8201 Corporate Drive, Suite 1125  
Landover, MD 20785-2230  
Phone: (301) 459-3200  
FAX: (301) 459-8077  
www.arena.org
4. The specific requirements for temporary shoring addressed in this document shall be followed for all locations where the Railroad operates, regardless of track ownership.
5. Any items not covered specifically herein shall be in accordance with the AREMA Manual and subject to the review and approval of the Railroad. Where conflicts exist, the most stringent specification should be applied.
6. All excavations shall also be governed by Railroad requirements, Federal, State and Local laws, rules, and regulations concerning construction safety.
7. Safe rail operations shall be required for the duration of the project. All personnel, railroad tracks and property shall be protected at all times.
8. To expedite the review process of the temporary shoring plans, drawings submitted by the Contractors are required to adhere to the project specifications, AREMA and other Railroad requirements.

### 2. GENERAL CRITERIA

The Contractor must not begin construction of any component of the shoring system affecting the Railroad right-of-way until written Railroad approval has been received.

1. All excavations shall be in compliance with applicable OSHA regulations and shall be shored where there is any danger to tracks, structures or personnel regardless of depth.



2. The Contractor is responsible for planning and executing all procedures necessary to construct, maintain and remove the temporary shoring system in a safe and controlled manner.
3. Emergency Railroad phone numbers are to be obtained from the Railroad representative in charge of the project prior to the start of any work and shall be posted at the job site.
4. The Contractor must obtain a valid right of entry permit from the Railroad and comply with all Railroad requirements when working on Railroad property.
5. The Contractor is required to meet minimum safety standards as defined by the Railroad.
6. All temporary shoring systems that support or impact the Railroad's tracks or operations shall be designed and constructed to provide safe and adequate rigidity.
7. The Railroad requirements, construction submittal review times and review criteria should be discussed at the pre-construction meeting with the Contractor.
8. A flagman is required when any work is performed within 25 feet of track centerline. If the Railroad provides flagging or other services, the Contractor shall not be relieved of any responsibilities or liabilities as set forth in any document authorizing the work. No work is allowed within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of track centerline and secure all equipment when trains are present.
9. Appropriate measures for the installation and protection of fiber optic cables shall be addressed in the plans and contract documents. For specific Railroad requirements and additional information refer to:  
  
www.bnsf.com or call 1-800-533-2891.  
  
www.uprr.com, call 1-800-336-9193 or refer to UPRR Fiber Optic Engineering, Construction and Maintenance Standards.
10. Relocation of utilities or communication lines not owned by the Railroad shall be coordinated with the utility owners. The utility relocation plans must then be submitted to the Railroad utility representative for approval. The shoring plans must include the correct contact for the Railroad, State or Local utility locating service provider. The Railroad will not be responsible for cost associated with any utility, signal, or communication line relocation or adjustments.

### 3. CONTRACTOR RESPONSIBILITIES

The Contractor shall be solely responsible for the design, construction and performance of the temporary structure. **(AREMA 8.28.1.3)**

1. The Contractor's work shall in no way impede the train operations of the Railroad and must be coordinated with the local Railroad operating department.
2. The Contractor shall develop a work plan that enables the track(s) to remain open to train traffic at all times.
3. The Contractor shall comply with all State and Federal Laws, county or municipal ordinances and regulations which in any manner affect the work.
4. All removed soils will become the responsibility of the Contractor and shall be disposed of outside the Railroad right-of-way according to the applicable Federal, State and Local regulations.
5. The Project Engineer and the Contractor shall evaluate the quality of materials furnished and work performed.

6. The Contractor is responsible to protect the Railroad ballast and subballast from contamination.
7. The Contractor must monitor and record top of rail elevations and track alignment for the duration of the project. The movement shall be within the limits defined in **Table 1, Deflection Criteria** on page 10. Displacements exceeding the limits defined in **Table 1** must be immediately reported to the Railroad. All work on the project must stop and the Railroad may take any action necessary to ensure safe passage of trains. The Contractor must immediately submit a corrective action plan to the Railroad for review and approval. The Railroad must review and approve the proposed repair procedure. The repair must be inspected by the Railroad before the track can be placed back in service.
8. Any damage to Railroad property such as track, signal equipment or structure could result in a train derailment. All damage must be reported immediately to the Railroad representative in charge of the project and to the Railroad Manager of Track Maintenance (MTM).

#### 4. INFORMATION REQUIRED

Plans and calculations shall be submitted, signed and stamped by a Registered Professional Engineer familiar with Railroad loadings and who is licensed in the state where the shoring system is intended for use. Shoring design plans and calculations shall be in English units. If Metric units are used, all controlling dimensions, elevations, design criteria assumptions, and material stresses shall be expressed in dual units, with English units to be in parentheses. Information shall be assembled concerning right-of-way boundary, clearances, proposed grades of tracks and roads, and all other factors that may influence the controlling dimensions of the proposed shoring system. See section 10 for additional requirements.

##### 1. Field Survey.

Sufficient information shall be shown on the plans in the form of profiles, cross sections and topographical maps to determine general design and structural requirements. Field survey information of critical or key dimensions shall be referenced to the centerline of track(s) and top of rail elevations. Existing and proposed grades and alignment of tracks and roads shall be indicated together with a record of controlling elevation of water surfaces or ground water. Show the location of existing/proposed utilities and construction history of the area which might hamper proper installation of the piling, soldier beams, or ground anchors.

##### 2. Geotechnical Report shall provide:

- a. Elevation and location of soil boring in reference to the track(s) centerline and top of rail elevations.
- b. Classification of all soils encountered.
- c. Internal angle of soil friction.
- d. Dry and wet unit weights of soil.
- e. Active and passive soil coefficients, pressure diagram for multiple soil strata.
- f. Bearing capacity and unconfined compression strength of soil.
- g. Backfill and compaction recommendations.
- h. Optimum moisture content of fill material.
- i. Maximum density of fill material.
- j. Minimum recommended factor of safety.
- k. Water table elevation on both sides of the shoring system.
- l. Dewatering wells and proposed flownets or zones of influence.
- m. In seismic areas, evaluation of liquefaction potential of various soil strata.

##### 3. Loads.

All design criteria, temporary and permanent loading must be clearly stated in the design calculations and on the contract and record plans. Temporary loads include, but are not limited to: construction equipment, construction materials and lower water levels adjoining the bulkhead causing unbalanced hydrostatic pressure. Permanent loads include, but are not limited to: future grading and paving, Railroads or highways, structures, material storage piles, snow and earthquake. The allowable live load after construction should be clearly shown in the plans and painted on the pavements behind the bulkheads or shown on signs at the site and also recorded on the record plans. Some of the loads are:

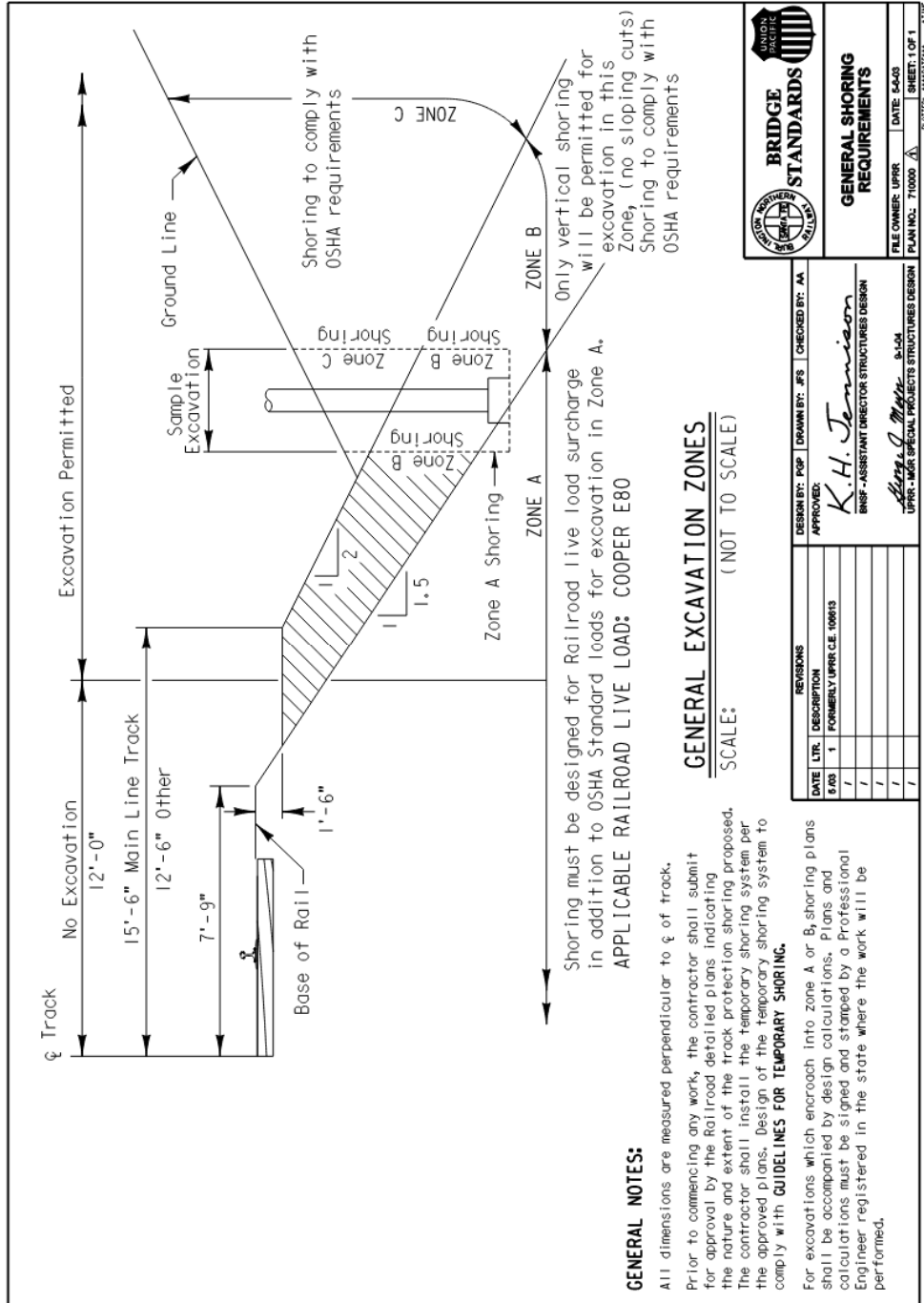
- a. Live load pressure due to E80 loading for track parallel to shoring system.
  - b. Live load pressure due to E80 loading for track at right angle to shoring system.
  - c. Other live loads.
  - d. Active earth pressure due to soil.
  - e. Passive earth pressure due to soil.
  - f. Active earth pressure due to surcharge loads.
  - g. Active pressure due to sloped embankment.
  - h. Dead load.
  - i. Buoyancy.
  - j. Longitudinal force from live load.
  - k. Centrifugal forces.
  - l. Shrinkage.
  - m. Temperature.
  - n. Earthquake.
  - o. Stream flow pressure.
  - p. Ice pressure.
4. Drainage. **(AREMA 8.20.2.4)**
- a. The drainage pattern of the site before and after construction should be analyzed and adequate drainage provisions should be incorporated into the plans and specifications. Consideration should be given to groundwater as well as surface drainage.
  - b. Drainage provisions for backfill should be compatible with the assumed water conditions in design.
5. Structural design calculations.
- a. List all assumptions used to design the temporary shoring system.
  - b. Determine E80 live load lateral pressure using the Boussinesq strip load equation. See **Figure 2** which illustrates Plan Number **710001 "LIVE LOAD PRESSURE DUE TO COOPER E80"**.
  - c. Computerized calculations and programs must clearly indicate the input and output data. List all equations used in determining the output.
  - d. Example calculations with values must be provided to support computerized output and match the calculated computer result.
  - e. Provide a simple free body diagram showing all controlling dimensions and applied loads on the temporary shoring system.
  - f. Calculated lateral deflections of the shoring and effects to the rail system must be included. See section 8, Part 6. Include the elastic deflection of the wall as well as the deflection due to the passive deflection of the resisting soil mass.
  - g. Documents and manufacturer's recommendations which support the design assumptions must be included with the calculations.

## 5. TYPES OF TEMPORARY SHORING

1. A shoring box is a prefabricated shoring system which is installed as the excavation progresses. This shoring system is not accepted by the Railroad. This system is allowed in special applications only, typically where Railroad live load surcharge is not present. The shoring box is moved down into the excavation by gravity or by applying vertical loading from excavation equipment.
2. Anchored systems with tiebacks are discouraged. The tiebacks will be an obstruction to future utility installations and may also damage existing utilities. Tiebacks must be removed per Railroad direction. Removal of tieback assemblies is problematic.
3. An anchored sheet pile wall is a structure designed to provide lateral support for a soil mass and derives stability from passive resistance of the soil in which the sheet pile is embedded and the tensile resistance of the anchors.
  - a. For purposes of these guidelines, ground anchors shall be cement-grouted tiebacks designed, furnished, installed, tested and stressed in accordance with the project specifications and AREMA requirements.
4. An anchored soldier beam with lagging wall is a structure designed to provide lateral support for a soil mass and derives stability from passive resistance of the soil in which the soldier beam is embedded and from the tensile resistance of the ground anchors.
  - a. Anchored soldier beam with lagging walls are generally designed as flexible structures which have sufficient lateral movement to mobilize active earth pressures and a portion of the passive pressure.
  - b. For purposes of these specifications, soldier beams include steel H-piles, wide flange sections or other fabricated sections that are driven or set in drilled holes. Lagging refers to the members spanning between soldier beams.
5. A cantilever sheet pile wall is a structure designed to provide lateral support for a soil mass and derives stability from passive resistance of the soil in which the sheet pile is embedded. If cantilever sheet pile is used for shoring adjacent to an operating track, the shoring system shall be at least 12'-0" away from the centerline of track. Cantilever sheet pile walls shall be used only in granular soils or stiff clays.
6. A cantilever soldier beam with lagging wall is a structure designed to provide lateral support for a soil mass and derives stability from passive resistance of the soil in which the soldier beam is embedded.
7. A braced excavation is a structure designed to provide lateral support for a soil mass and derives stability from passive resistance of the soil in which the vertical members are embedded and from the structural capacity of the bracing members.
  - a. For purposes of these guidelines, the vertical members of the braced excavation system include steel sheet piling or soldier beams comprised of steel H-piles, wide flange sections, or other fabricated sections that are driven or installed in drilled holes. Wales are horizontal structural members designed to transfer lateral loads from the vertical members to the struts. Struts are structural compression members that support the lateral loads from the wales.
8. A cofferdam is an enclosed temporary structure used to keep water and soil out of an excavation for a permanent structure such as a bridge pier or abutment or similar structure. Cofferdams may be constructed of timber, steel, concrete or a combination of these. These guidelines consider cofferdams primarily constructed with steel sheet piles.

## 6. GENERAL SHORING REQUIREMENTS

For general shoring requirements and specific applications of the following items refer to **Figure 1** on the next page which illustrates Plan Number **710000 "GENERAL SHORING REQUIREMENTS"**.



DATE	DESCRIPTION	DESIGN BY: POP	DRAWN BY: JPS	CHECKED BY: AA
9/03	1 FORMERLY UPR C.E. 106915			
/	/			
/	/			
/	/			

APPROVED:  
*K.H. Jemison*  
 BRSP - ASSISTANT DIRECTOR STRUCTURES DESIGN

*Greg J. Moore*  
 UPR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

**BRIDGE STANDARDS**

**GENERAL SHORING REQUIREMENTS**

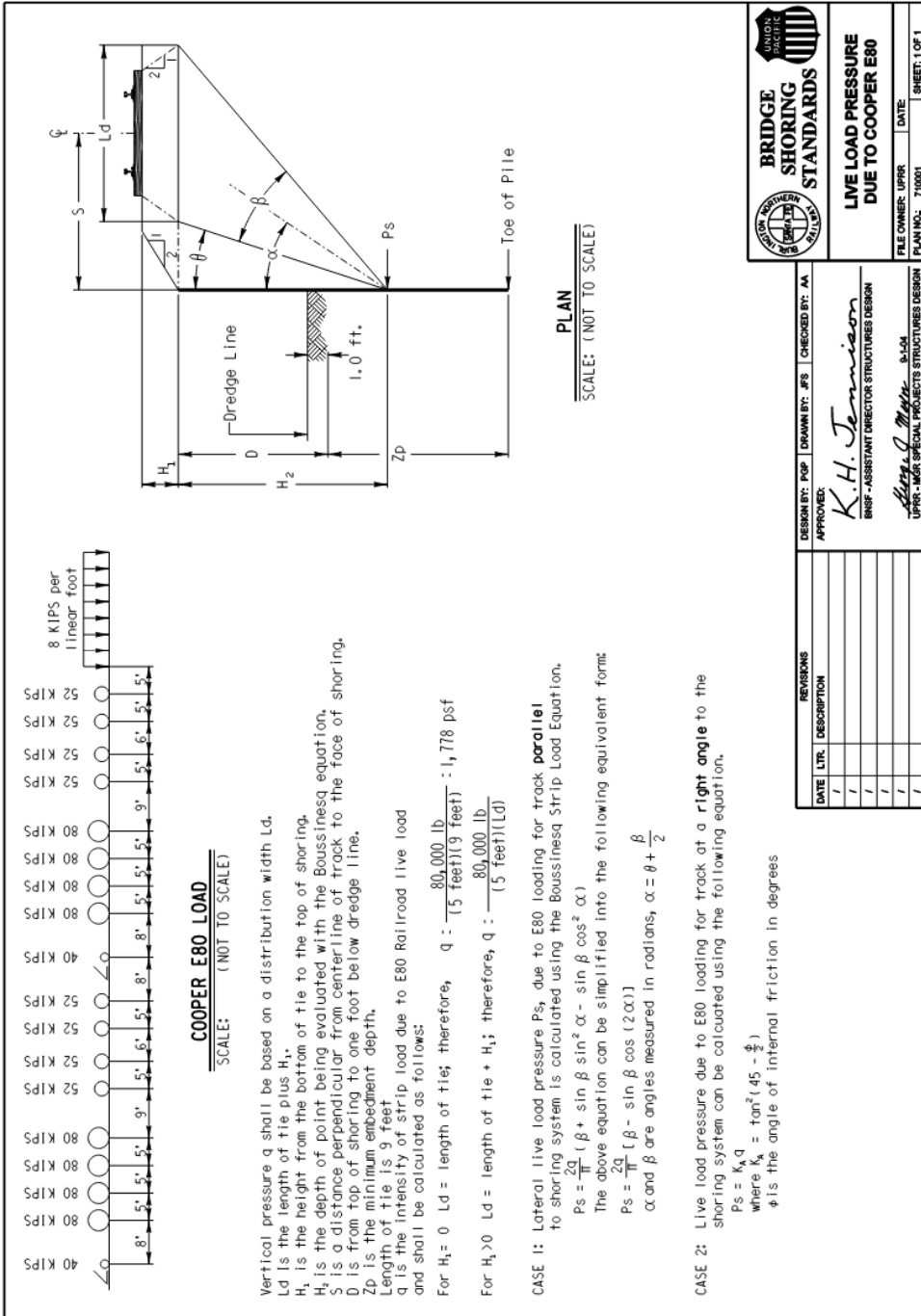
FILE OWNER: UPRR DATE: 6/03  
 PLAN NO.: 71000 SHEET: 1 OF 1  
 KOTITE: 110101011

**Figure 1**

1. No excavation shall be permitted closer than 12'-0" measured at a right angle from the centerline of track to the trackside of shoring system. If existing conditions preclude the installation of shoring at the required minimum distance, the shifting of tracks or temporary removal of tracks shall be investigated prior to any approval. All costs associated with track shifting or traffic interruption shall be at Contractor's expense.
2. Evaluate slope and stability conditions to ensure the Railroad embankment will not be adversely affected. Local and global stability conditions must also be evaluated.
3. All shoring within the limits of Zone A or Zone B must be placed prior to the start of excavation.
4. Lateral clearances must provide sufficient space for construction of the required ditches parallel to the standard roadbed section. The size of ditches will vary depending upon the flow and terrain and should be designed accordingly.
5. The shoring system must be designed to support the theoretical embankment shown for zones A and B.
6. Any excavation, holes or trenches on the Railroad property shall be covered, guarded and/or protected. Handrails, fence, or other barrier methods must meet OSHA and FRA requirements. Temporary lighting may also be required by the Railroad to identify tripping hazards to train crewmen and other Railroad personnel.
7. The most stringent project specifications of the Public Utilities Commission Orders, Department of Industrial Safety, OSHA, FRA, AREMA, BNSF, UPRR or other governmental agencies shall be used.
8. Secondhand material is not acceptable unless the Engineer of Record submits a full inspection report which verifies the material properties and condition of the secondhand material. The report must be signed and sealed by the Engineer of Record.
9. All components of the shoring system are to be removed when the shoring is no longer needed. All voids must be filled and drainage facilities restored. See compaction requirements section 9, Part 4.
10. Slurry type materials are not acceptable as fill for soldier piles in drilled holes. Concrete and flowable backfill may prevent removal of the shoring system. Use compacted peagravel material.

## 7. COMPUTATION OF APPLIED FORCES

1. Railroad live load and lateral forces.
  - a. For specific applications of the Coopers E80 live load refer to **Figure 2** on the next page which illustrates Plan Number **710001 "LIVE LOAD PRESSURE DUE TO COOPER E80"**. Supplemental information and sample calculations are provided in the Appendix pages A-1 through A-4.
2. Dead load.
  - a. Spoil pile: must be included assuming a minimum height of two feet of soil adjacent to the excavation.
  - b. Track: use 200 lbs/linear ft for rails, inside guardrails and fasteners.
  - c. Roadbed: ballast, including track ties, use 120 lb per cubic foot.



**Figure 2**

3. Active earth pressure.

- a. The active earth pressure due to the soil may be computed by the Coulomb Theory or other approved method.
- b. The active earth pressure at depth " $z_a$ " is:

$$P_A = K_A \gamma z_a, \text{ where } K_A = \tan^2(45 - \frac{\phi}{2})$$

$z_a$  = depth of soil influencing the active pressure.

4. Active earth pressure due to unbalanced water pressure.

- a. When bulkheads are used for waterfront construction, the bulkhead is subjected to a maximum earth pressure at the low water stage. During a rainstorm or a rapidly receding high water, the water level behind the bulkhead may be several feet higher than in front of the bulkhead.
- b. Drained conditions in backfill apply when clean sand or clean sand and gravel are used and adequate permanent drainage outlets are provided. Where drained conditions exist, the design water level may be assumed at the drainage outlet elevation.

5. Active earth pressure due to surcharge load.

The active earth pressure due to surcharge load  $q'$ :

$$P_U = K_A q', \text{ where } K_A = \tan^2(45 - \frac{\phi}{2})$$

6. Passive earth pressure.

The passive earth pressure,  $P_p$ , in front of the bulkhead may also be computed by the Coulomb Theory.

$$P_p = K_p \gamma z_p, \text{ where } K_p = \tan^2(45 + \frac{\phi}{2})$$

$z_p$  = vertical distance beginning one foot below dredge line but not to exceed embedment depth

7. Pressure due to embankment surcharges.

Conventional analysis (Rankine, Coulomb, or Log-Spiral) should be used to determine the additional surcharge from embankment slopes.

8. Additional analysis for centrifugal force calculations as described in **AREMA Chapter 15, Part 1, Section 1.3, Article 1.3.6** Centrifugal Loads are required where track curvature exceeds three degrees.

9. Include and compute all other loads that are impacting the shoring system such as a typical Railroad service vehicle (HS-20 truck).

## 8. STRUCTURAL INTEGRITY

Structures and structural members shall be designed to have design strengths at all sections at least equal to the required strengths calculated for the loads and forces in such combinations as stipulated in **AREMA Chapter 8 Part 2 Article 2.2.4b**, which represents various combinations of loads and forces to which a structure may be subjected. Each part of the structure shall be proportioned for the group loads that are applicable, and the maximum design required shall be used.

1. Embedment depth.

- a. Calculated depth of embedment is the embedment depth required to maintain static equilibrium.



- b. Minimum depth of embedment is the total depth of embedment required to provide static equilibrium plus additional embedment due to the minimum factor of safety.
  - 1. Embedment depth factor of safety for well-defined loading conditions and thoroughly determined soil parameters is generally 1.3 for most temporary shoring systems. (See **AREMA 8.20.4.1.c**)
  - 2. All anchored shoring systems require a minimum embedment depth of 1.5 times the calculated depth of embedment. Shallow penetration into strong soil layers is not acceptable. (See **AREMA 8.20.5.1**)
- 2. The allowable stresses based on AREMA requirements are as follows:
  - Structural Steel: 0.55Fy for Compression in extreme fiber. (**AREMA Ch.15 Table 1-11**)
  - Structural Steel: 0.35Fy for Shear. (**AREMA Ch.15 Table 1-11**)
  - Sheet Pile Sections: 2/3 of yield strength for steel. (**AREMA 8.20.5.7**)
  - Concrete: 1/3 of Compressive strength. (**AREMA 8.20.5.7**)
  - Anchor Rods: 1/2 of yield strength for steel. (**AREMA 8.20.5.7**)
- 3. AISC allowances for increasing allowable stress due to temporary loading conditions are not acceptable.
- 4. Gravity type temporary shoring systems must also be analyzed for overturning, sliding and global stability.
- 5. The contractor is responsible for providing an approved test method to verify the capacity of anchored or tieback systems. The manufacturers recommendations for testing must be satisfied. Systems which support the Railroad embankment will be considered high risk in determining the percentage of elements to be proof tested.
- 6. Calculated deflections of temporary shoring system and top of rail elevation shall not exceed the criteria outlined in **Table 1 Deflection Criteria**.

**Table 1 Deflection Criteria**

Horizontal distance from shoring to track C/L measured at a right angle from track	Maximum horizontal movement of shoring system	Maximum acceptable horizontal or vertical movement of rail
12' < S < 18'	3/8"	1/4"
18' < S < 24'	1/2"	1/4"

**9. SOIL CHARACTERISTICS**

- 1. Subsurface Exploration. (**AREMA 8.5.2.2**)
  - a. Sufficient borings shall be made along the length of the structure to determine, with a reasonable degree of certainty, the subsurface conditions. Irregularities found during the initial soil boring program may dictate that additional borings be taken.
  - b. The subsurface investigation shall be made in accordance with the provisions of **AREMA Chapter 8 Part 22, Geotechnical Subsurface Investigation**.
- 2. Type of backfill.
  - a. Backfill is defined as material behind the wall, whether undisturbed ground or fill, that contributes to the pressure against the wall.

- b. The backfill shall be investigated and classified with reference to the soil types described in **AREMA Table 8-5-1**.
- c. Types 4 and 5 backfill shall be used only with the permission of the Engineer. In all cases the wall design shall be based on the type of backfill used.

**Table 8-5-1 (AREMA) Types of Backfill for Retaining Walls**

Backfill Type	Backfill Description
1	Coarse-grained soil without admixture of fine soil particles, very free-draining (clean sand, gravel or broken stone).
2	Coarse-grained soil of low permeability due to admixture of particles of silt size.
3	Fine silty sand; granular materials with conspicuous clay content; or residual soil with stones.
4	Soft or very soft clay, organic silt; or soft silty clay.
5	Medium or stiff clay that may be placed in such a way that a negligible amount of water will enter the spaces between the chunks during floods or heavy rains.

3. Computation of backfill pressure. **(AREMA 8.5.3.2a)**

- a. Values of the unit weight, cohesion, and angle of internal friction of the backfill material shall be determined directly by means of soil tests or, if the expense of such tests is not justifiable, by means of **AREMA Table 8-5-2** referring to the soil types defined in **AREMA Table 8-5-1**. Unless the minimum cohesive strength of the backfill material can be evaluated reliably, the cohesion shall be neglected and only the internal friction considered. See Appendix page A-6 for AREMA generic soil properties.

**Table 8-5-2 (AREMA) Properties of Backfill Materials**

Type of Backfill	Unit Weight Lb. Per Cu. Ft.	Cohesion "c"	Angle of Internal Friction
1	105	0	33°-42° (38° for broken stone)
2	110	0	30°
3	125	0	28°
4	100	0	0°
5	120	240	0°

4. Compaction.

- a. The backfill shall preferably be placed in loose layers not to exceed 8 inches in thickness. Each layer shall be compacted before placing the next, but over compaction shall be avoided.
- b. It is required that backfill be compacted to no less than 95% of maximum dry density at a moisture content within 2% of optimum and tested using Modified Proctor ASTM D1557.
- c. Fill within 100 feet of bridge ends or 20 feet outside culverts shall be placed and compacted to not less than 100% of maximum.
- d. No dumping of backfill material shall be permitted in such a way that the successive layers slope downward toward the wall. The layers shall be horizontal or shall slope downward away from the wall.

**10. PLANS**

The shoring plans must completely identify the site constraints and the shoring system. Use the design templates provided in the appendix as an example to show the required information, specifications and drawings. The specific requirements of the plan submittals are as follows:

1. General plan view should show:
  - a. Railroad right-of-way and North arrow.
  - b. Position of all Railroad tracks and identify each track as mainline, siding, spur, etc.
  - c. Spacing between all existing tracks.
  - d. Location of all access roadways, drainage ditches and direction of flow.
  - e. Footprint of proposed structure, proposed shoring system and any existing structures if applicable.
  - f. Proposed horizontal construction clearances. The minimum allowable is 12 feet measured at a right angle from centerline of track.
  - g. Location of existing and proposed utilities.
  - h. Drawings must be signed and stamped by a Licensed Professional Engineer, registered in the state where the work will be performed.
  - i. Railroad and other "CALL BEFORE YOU DIG" numbers.
  - j. Detailed view of shoring along with controlling elevations and dimensions.
2. Typical section and elevation should show:
  - a. Top of rail elevations for all tracks.
  - b. Offset from the face of shoring system to the centerline of all tracks at all changes in horizontal alignment.
  - c. All structural components, controlling elevations and dimensions of shoring system.
  - d. All drainage ditches and controlling dimensions.
  - e. All slopes, existing structures and other facilities which may surcharge the shoring system.
  - f. Location of all existing and proposed utilities.
  - g. Total depth of shoring system.
3. General criteria
  - a. Design loads to be based on the AREMA manual and Cooper E80 loading.
  - b. Pressure due to embankment surcharges.
  - c. ASTM designation and yield strength for each material.
  - d. Maximum allowable bending stress for structural steel is  $0.55F_y$ .
  - e. Temporary overstress allowances are not acceptable.
  - f. All timber members shall be Douglas Fir grade 2 or better.
  - g. In situ soil classification.
  - h. Backfill soil classification.
  - i. Internal angle of friction and unit weight of the soil.
  - j. Active and passive soil coefficients.
  - k. Fill within 100 feet of bridge ends or 20 feet outside culverts shall be placed and compacted to a minimum of 100% of maximum dry density tested per Modified Proctor ASTM D1557.
  - l. Slopes without shoring shall not be steeper than 2 horizontal to 1 vertical

- m. Dredge line elevation.
  - n. Shoring deflection to be calculated and meet Railroad requirements.
4. Miscellaneous:
- a. Project name, location, GPS coordinates, track owner, Railroad line segment, milepost and subdivision in the title block.
  - b. Procedure outlining the installation and removal of the temporary shoring system.
  - c. General notes specifying material requirements, design data, details, dimensions, cross-sections, sequence of construction etc.
  - d. A description of the tieback installation including drilling, grouting, stressing information and testing procedures, anchor capacity, type of tendon, anchorage hardware, minimum unbonded lengths, minimum anchor lengths, angle of installation, tieback locations and spacing.
  - e. All details for construction of drainage facilities associated with the shoring system shall be clearly indicated.
  - f. Details and descriptions of all shoring system members and connection details.
  - g. Settlement and displacement calculations.
  - h. Handrail and protective fence details along the excavation.
  - i. Drawings must be signed and stamped by a Licensed Professional Engineer, registered in the state where the work will be performed.
  - j. Call before you dig number.
  - k. Construction clearance diagram.

## 11. SUBMITTALS

The Contractor will be responsible for any and all cost associated with the review of plans by the Railroad. Review of design submittals by the Railroad will require a minimum of four (4) weeks. To avoid impacting the construction schedule, the Contractor must schedule submittals well in advance. Partial, incomplete or inadequate designs will be rejected, thus delaying the approval. Revised submittals will follow the same procedure as the initial submittal until all issues are resolved. Submit a minimum of three sets of shoring plans and two sets of calculations with manufacturers' specifications. Drawings and calculations must be signed and stamped by a Registered Professional Engineer familiar with Railway loadings and who is licensed in the state where the shoring system is intended for use. Drawings accompanying the shoring plans shall be submitted on 11" x 17" or 8½" x 11" sized paper.

### 1. Contractor review.

The Contractor must review the temporary shoring plans to ensure that the proposed method of construction is compatible with the existing site and soil conditions. The Contractor's work plan must be developed to allow train traffic to remain in service. Removal of the shoring system must also be addressed.

### 2. Applicant and or Engineer of Record review.

The applicant and or Engineer of Record must review and approve the submittal for compliance with the project specifications, AREMA Manual, these guidelines and structural capacity before forwarding the submittal to the Railroad.

3. Review process.

All design submittals shall be forwarded to the Railroad Representative who will send them to the Structures Design Department. The Structures Design Department shall review or have an outside consultant review said submittals. If a Railroad consultant performs said review, the consultant may reply directly to the applicant or their representative after consultation with the Structures Design Department. A copy of the reply will be mailed to the Railroad Representative. During the review process the Railroad Representative is the point of contact to resolve outstanding issues.

**12. APPENDIX**

ITEM	PAGE
1. SAMPLE PROBLEM . . . . .	A-1 & A-2
2. CHART A . . . . .	A-3 & A-4
3. GUIDELINE & WEBSITE DIRECTORY . . . . .	A-5
4. TABLES . . . . .	A-6
AREMA Table 8-20-1. Granular Soils	
AREMA Table 8-20-2. Silt and Clay Soils	
AREMA Table 8-20-3. Unit Weights of Soils, and Coefficients of Earth Pressure	
5. TEMPLATES	
GENERAL CRITERIA AND MISCELLANEOUS . . . . .	A-7
GENERAL PLAN VIEW . . . . .	A-8
TYPICAL SECTION & ELEVATION VIEW . . . . .	A-9

**13. BIBLIOGRAPHY**

The following list of references used in these guidelines are placed here in alphabetical order for your convenience.

1. *Manual for Railway Engineering*, 2002 American Railway Engineering and Maintenance-of-Way Association.
2. *TRENCHING AND SHORING MANUAL*, January 1990, Revision 11/12/96. State of California Department of Transportation, Office of Structures Construction.

SAMPLE PROBLEM

Point in question: **S = 12 ft H = 6 ft**

$$q = \frac{80,000 \text{ lbs}}{(5 \text{ ft})(9 \text{ ft})} = 1778 \text{ psf for E80 loading, axle spacing} = 5 \text{ ft, tie length } b = 9 \text{ ft}$$

$$\text{Solve for } X_1 = S - b/2 = 7.5 \text{ ft}$$

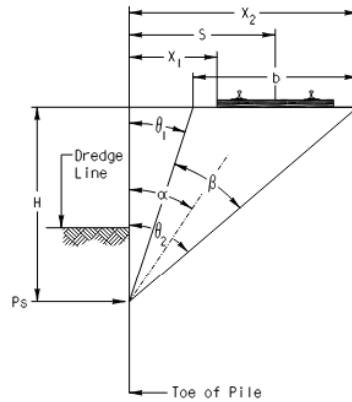
$$\text{Solve for } X_2 = S + b/2 = 16.5 \text{ ft}$$

$$\text{Solve for } \theta_1 = \arctan\left(\frac{X_1}{H}\right) = 0.896 \text{ radians} \quad \text{Solve for } \theta_2 = \arctan\left(\frac{X_2}{H}\right) = 1.222 \text{ radians}$$

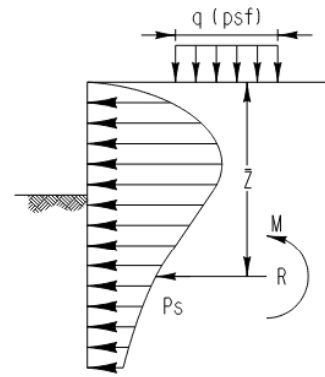
$$\text{Solve for } \beta = \theta_2 - \theta_1 = 0.326 \text{ radians}$$

$$\text{Solve for } \alpha = \frac{\theta_1 + \theta_2}{2} = 1.059 \text{ radians}$$

$$\text{Note: } \tan \alpha \neq \frac{S}{H}$$



PRESSURE DISTRIBUTION FOR STRIP LOAD



EQUIVALENT LOADING

- Pressure,  $P_s$  due to E80 liveload at the above-identified point:

$$P_s = \frac{2q}{\pi}(\beta - \sin \beta \cos 2\alpha) = \frac{2 * 1778}{\pi}(0.326 - \sin(0.326)\cos(2 * 1.059)) = 558 \text{ psf}$$

- Shear due to E80 liveload at the above-identified point:

$$R_x = \frac{2qH\beta}{\pi} = \frac{2 * 1778 * 6 * 0.326}{\pi} = 2214 \text{ lbs/ft}$$

- Depth  $\bar{z}$  from base of tie:

$$\bar{z} = \frac{H^2\beta - bH + x_2^2\left(\frac{\pi}{2} - \theta_2\right) - x_1^2\left(\frac{\pi}{2} - \theta_1\right)}{2H\beta} = \frac{6^2 * 0.326 - 9 * 6 + 16.5^2\left(\frac{\pi}{2} - 1.222\right) - 7.5^2\left(\frac{\pi}{2} - 0.896\right)}{2 * 6 * 0.326} = 3.77 \text{ ft}$$

SAMPLE PROBLEM (CONTINUED)

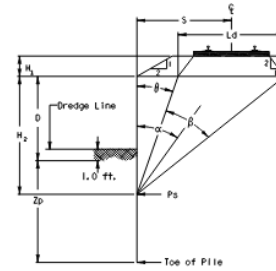
- Moment due to E80 liveload at the above identified point:

$$M = R_x(H - \bar{z}) = 2214 * (6 - 3.77) = 4940 \text{ ft-lbs/ft}$$

Use the above equations to determine  $P_s$ ,  $M$ ,  $R_x$  &  $\bar{z}$  due to the E80 liveload along the **entire** depth of the shoring system. Typically the equations are evaluated on 6" increments to determine the maximum values along the depth of the shoring system. The resultants must be combined with other applicable pressures and loads to evaluate the total loading on the shoring system for the entire depth of the system. Determine the minimum embedment depth required and the minimum cross sectional properties of the shoring system based on the allowable stresses and the required factors of safety.

CHART A

- This chart identifies the active pressure and resulting forces due to E80 live load.
- See "SAMPLE PROBLEM" sheet for definitions of variables and equations.
1. Select distance S from track centerline to face of shoring.
  2. Select depth H<sub>2</sub> below base of tie.
  3. Read P<sub>s</sub>, M, R and z̄ from the table.
  4. Use the procedure outlined in the sample problem to determine values at non-tabulated points.



$$P_s = \frac{2q}{\pi} [\beta - \sin \beta \cos(2\alpha)]$$

where q = 1778 psf

**Boussinesq surcharge pressure E80 live load for H<sub>1</sub>=0**

Depth below top of shoring H <sub>2</sub> (ft)	Variables	Horizontal distance (S) from shoring to track CL measured at a right angle									
		12	14	16	18	20	22	24	26	28	30
2	<b>P<sub>s</sub></b> (psf)	<b>305</b>	<b>220</b>	<b>166</b>	<b>130</b>	<b>105</b>	<b>86</b>	<b>72</b>	<b>61</b>	<b>53</b>	<b>46</b>
	α (radians)	1.38	1.41	1.44	1.45	1.47	1.48	1.48	1.49	1.50	1.50
	β (radians)	0.14	0.10	0.07	0.06	0.05	0.04	0.03	0.03	0.02	0.02
	z̄ (ft)	1.32	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
	M (ft-lbs/ft)	215	152	114	89	71	58	49	41	36	31
	R (lbs/ft)	317	226	170	132	106	87	73	62	53	46
4	<b>P<sub>s</sub></b> (psf)	<b>496</b>	<b>381</b>	<b>299</b>	<b>240</b>	<b>197</b>	<b>164</b>	<b>138</b>	<b>118</b>	<b>102</b>	<b>89</b>
	α (radians)	1.21	1.27	1.31	1.34	1.36	1.38	1.40	1.41	1.43	1.44
	β (radians)	0.25	0.19	0.14	0.11	0.09	0.07	0.06	0.05	0.05	0.04
	z̄ (ft)	2.59	2.61	2.63	2.64	2.64	2.65	2.65	2.65	2.65	2.66
	M (ft-lbs/ft)	1,609	1,165	882	692	557	459	384	327	281	244
	R (lbs/ft)	1,141	840	643	508	411	339	285	242	209	182
6	<b>P<sub>s</sub></b> (psf)	<b>558</b>	<b>461</b>	<b>381</b>	<b>317</b>	<b>266</b>	<b>225</b>	<b>193</b>	<b>167</b>	<b>146</b>	<b>128</b>
	α (radians)	1.06	1.13	1.19	1.23	1.27	1.29	1.32	1.34	1.35	1.37
	β (radians)	0.33	0.25	0.20	0.16	0.13	0.11	0.09	0.08	0.07	0.06
	z̄ (ft)	3.77	3.83	3.88	3.90	3.92	3.94	3.95	3.96	3.96	3.97
	M (ft-lbs/ft)	4,944	3,674	2,830	2,244	1,822	1,508	1,269	1,082	933	813
	R (lbs/ft)	2,214	1,696	1,332	1,070	877	731	618	529	458	400
8	<b>P<sub>s</sub></b> (psf)	<b>535</b>	<b>476</b>	<b>414</b>	<b>358</b>	<b>309</b>	<b>268</b>	<b>234</b>	<b>205</b>	<b>181</b>	<b>160</b>
	α (radians)	0.94	1.02	1.08	1.13	1.17	1.21	1.24	1.26	1.29	1.30
	β (radians)	0.37	0.29	0.24	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	z̄ (ft)	4.84	4.97	5.06	5.11	5.16	5.19	5.21	5.23	5.24	5.26
	M (ft-lbs/ft)	10,481	8,006	6,286	5,051	4,141	3,452	2,920	2,501	2,165	1,892
	R (lbs/ft)	3,316	2,641	2,134	1,751	1,456	1,228	1,047	903	786	689
10	<b>P<sub>s</sub></b> (psf)	<b>474</b>	<b>449</b>	<b>411</b>	<b>370</b>	<b>329</b>	<b>293</b>	<b>260</b>	<b>232</b>	<b>207</b>	<b>186</b>
	α (radians)	0.83	0.92	0.99	1.04	1.09	1.13	1.17	1.19	1.22	1.24
	β (radians)	0.38	0.32	0.26	0.22	0.19	0.16	0.14	0.12	0.10	0.09
	z̄ (ft)	5.81	6.02	6.16	6.26	6.34	6.39	6.44	6.47	6.50	6.52
	M (ft-lbs/ft)	18,145	14,227	11,385	9,280	7,689	6,463	5,502	4,736	4,117	3,610
	R (lbs/ft)	4,328	3,571	2,964	2,482	2,099	1,792	1,544	1,341	1,175	1,037
12	<b>P<sub>s</sub></b> (psf)	<b>404</b>	<b>403</b>	<b>386</b>	<b>360</b>	<b>331</b>	<b>302</b>	<b>274</b>	<b>248</b>	<b>225</b>	<b>204</b>
	α (radians)	0.75	0.83	0.90	0.96	1.01	1.06	1.10	1.13	1.16	1.18
	β (radians)	0.38	0.33	0.28	0.24	0.20	0.18	0.15	0.13	0.12	0.11
	z̄ (ft)	6.68	6.97	7.18	7.34	7.46	7.55	7.61	7.67	7.71	7.75
	M (ft-lbs/ft)	27,703	22,237	18,121	14,980	12,550	10,641	9,121	7,895	6,894	6,068
	R (lbs/ft)	5,207	4,424	3,763	3,214	2,762	2,389	2,080	1,823	1,608	1,427
14	<b>P<sub>s</sub></b> (psf)	<b>338</b>	<b>351</b>	<b>349</b>	<b>337</b>	<b>319</b>	<b>298</b>	<b>276</b>	<b>255</b>	<b>234</b>	<b>215</b>
	α (radians)	0.68	0.76	0.83	0.89	0.94	0.99	1.03	1.07	1.10	1.13
	β (radians)	0.38	0.33	0.28	0.25	0.22	0.19	0.17	0.15	0.13	0.12
	z̄ (ft)	7.46	7.85	8.13	8.35	8.51	8.64	8.74	8.82	8.89	8.94
	M (ft-lbs/ft)	38,880	31,856	26,395	22,116	18,729	16,021	13,831	12,043	10,568	9,339
	R (lbs/ft)	5,948	5,178	4,499	3,913	3,414	2,990	2,631	2,327	2,068	1,847
16	<b>P<sub>s</sub></b> (psf)	<b>280</b>	<b>301</b>	<b>310</b>	<b>308</b>	<b>300</b>	<b>286</b>	<b>271</b>	<b>254</b>	<b>237</b>	<b>220</b>
	α (radians)	0.62	0.70	0.77	0.83	0.88	0.93	0.97	1.01	1.04	1.07
	β (radians)	0.36	0.32	0.28	0.25	0.22	0.20	0.18	0.16	0.14	0.13
	z̄ (ft)	8.17	8.64	9.01	9.29	9.51	9.68	9.82	9.93	10.03	10.10
	M (ft-lbs/ft)	51,411	42,880	36,066	30,598	26,183	22,590	19,644	17,207	15,175	13,468
	R (lbs/ft)	6,563	5,829	5,158	4,560	4,034	3,576	3,179	2,837	2,540	2,284

GUIDELINES FOR TEMPORARY SHORING, Published October 25, 2004

A-3

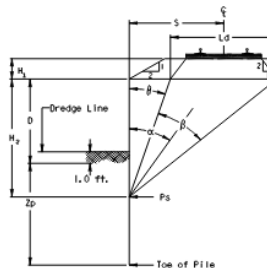


CHART A continued

This chart identifies the active pressure and resulting forces due to E80 live load.

See "SAMPLE PROBLEM" sheet for definitions of variables and equations.

1. Select distance S from track centerline to face of shoring.
2. Select depth H<sub>2</sub> below base of tie.
3. Read Ps, M, R and z̄ from the table.
4. Use the procedure outlined in the sample problem to determine values at non-tabulated points.



$$P_s = \frac{2q}{\pi} [\beta - \sin \beta \cos(2\alpha)]$$

where q = 1778 psf

**Boussinesq surcharge pressure E80 live load for H<sub>1</sub>=0**

Depth below top of shoring H <sub>2</sub> (ft)	Variables	Horizontal distance (S) from shoring to track CL measured at a right angle									
		12	14	16	18	20	22	24	26	28	30
18	<b>Ps</b> (psf)	<b>231</b>	<b>256</b>	<b>271</b>	<b>277</b>	<b>276</b>	<b>269</b>	<b>259</b>	<b>247</b>	<b>234</b>	<b>220</b>
	α (radians)	0.57	0.64	0.71	0.77	0.82	0.87	0.92	0.96	0.99	1.02
	β (radians)	0.35	0.31	0.28	0.25	0.23	0.20	0.18	0.16	0.15	0.13
	z̄ (ft)	8.80	9.37	9.81	10.16	10.44	10.67	10.85	11.00	11.12	11.22
	M (ft-lbs/ft)	65,062	55,110	46,976	40,313	34,834	30,304	26,536	23,384	20,728	18,477
	R (lbs/ft)	7,072	6,386	5,739	5,145	4,609	4,132	3,710	3,338	3,012	2,725
20	<b>Ps</b> (psf)	<b>191</b>	<b>217</b>	<b>236</b>	<b>246</b>	<b>250</b>	<b>249</b>	<b>244</b>	<b>237</b>	<b>227</b>	<b>217</b>
	α (radians)	0.52	0.59	0.66	0.72	0.77	0.82	0.87	0.91	0.94	0.98
	β (radians)	0.33	0.30	0.28	0.25	0.23	0.21	0.19	0.17	0.15	0.14
	z̄ (ft)	9.37	10.03	10.56	10.98	11.32	11.59	11.82	12.01	12.16	12.30
	M (ft-lbs/ft)	79,641	68,368	58,973	51,137	44,586	39,093	34,465	30,548	27,216	24,367
	R (lbs/ft)	7,493	6,859	6,245	5,668	5,135	4,651	4,214	3,822	3,474	3,163
22	<b>Ps</b> (psf)	<b>159</b>	<b>184</b>	<b>204</b>	<b>217</b>	<b>225</b>	<b>228</b>	<b>227</b>	<b>223</b>	<b>217</b>	<b>210</b>
	α (radians)	0.49	0.55	0.62	0.67	0.73	0.77	0.82	0.86	0.90	0.93
	β (radians)	0.31	0.29	0.27	0.25	0.23	0.21	0.19	0.17	0.16	0.14
	z̄ (ft)	9.89	10.64	11.24	11.73	12.14	12.47	12.74	12.97	13.17	13.33
	M (ft-lbs/ft)	94,986	82,497	71,913	62,945	55,341	48,878	43,370	38,658	34,611	31,122
	R (lbs/ft)	7,842	7,260	6,684	6,131	5,611	5,128	4,685	4,283	3,918	3,590
24	<b>Ps</b> (psf)	<b>133</b>	<b>157</b>	<b>176</b>	<b>191</b>	<b>202</b>	<b>207</b>	<b>210</b>	<b>209</b>	<b>206</b>	<b>201</b>
	α (radians)	0.45	0.52	0.58	0.63	0.68	0.73	0.78	0.82	0.85	0.89
	β (radians)	0.30	0.28	0.26	0.24	0.22	0.20	0.19	0.17	0.16	0.15
	z̄ (ft)	10.35	11.19	11.87	12.44	12.90	13.29	13.62	13.89	14.13	14.32
	M (ft-lbs/ft)	110,969	97,366	85,670	75,625	66,997	59,577	53,183	47,661	42,875	38,716
	R (lbs/ft)	8,132	7,600	7,064	6,540	6,037	5,564	5,122	4,715	4,342	4,001
26	<b>Ps</b> (psf)	<b>112</b>	<b>134</b>	<b>153</b>	<b>168</b>	<b>180</b>	<b>188</b>	<b>192</b>	<b>194</b>	<b>193</b>	<b>191</b>
	α (radians)	0.42	0.48	0.54	0.60	0.65	0.69	0.74	0.78	0.82	0.85
	β (radians)	0.28	0.27	0.25	0.23	0.22	0.20	0.19	0.17	0.16	0.15
	z̄ (ft)	10.78	11.69	12.45	13.09	13.62	14.07	14.44	14.77	15.04	15.28
	M (ft-lbs/ft)	127,485	112,863	100,135	89,071	79,460	71,105	63,836	57,499	51,963	47,113
	R (lbs/ft)	8,376	7,890	7,393	6,899	6,418	5,959	5,524	5,118	4,741	4,393
28	<b>Ps</b> (psf)	<b>94</b>	<b>114</b>	<b>132</b>	<b>148</b>	<b>160</b>	<b>169</b>	<b>175</b>	<b>179</b>	<b>180</b>	<b>180</b>
	α (radians)	0.40	0.46	0.51	0.56	0.61	0.66	0.70	0.74	0.78	0.81
	β (radians)	0.27	0.26	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15
	z̄ (ft)	11.17	12.16	12.99	13.70	14.29	14.80	15.23	15.60	15.91	16.19
	M (ft-lbs/ft)	144,448	128,896	115,211	103,191	92,642	83,385	75,258	68,113	61,823	56,274
	R (lbs/ft)	8,581	8,137	7,677	7,214	6,758	6,315	5,892	5,491	5,115	4,764
30	<b>Ps</b> (psf)	<b>80</b>	<b>98</b>	<b>115</b>	<b>130</b>	<b>142</b>	<b>152</b>	<b>160</b>	<b>165</b>	<b>167</b>	<b>168</b>
	α (radians)	0.37	0.43	0.48	0.53	0.58	0.63	0.67	0.71	0.74	0.78
	β (radians)	0.26	0.25	0.23	0.22	0.21	0.20	0.18	0.17	0.16	0.15
	z̄ (ft)	11.52	12.59	13.49	14.26	14.92	15.48	15.97	16.38	16.75	17.06
	M (ft-lbs/ft)	161,789	145,388	130,819	117,903	106,466	96,343	87,381	79,443	72,404	66,153
	R (lbs/ft)	8,755	8,349	7,925	7,492	7,060	6,636	6,227	5,834	5,462	5,112
32	<b>Ps</b> (psf)	<b>69</b>	<b>85</b>	<b>101</b>	<b>115</b>	<b>127</b>	<b>137</b>	<b>145</b>	<b>151</b>	<b>155</b>	<b>157</b>
	α (radians)	0.35	0.41	0.46	0.51	0.55	0.60	0.64	0.68	0.71	0.75
	β (radians)	0.25	0.24	0.22	0.21	0.20	0.19	0.18	0.17	0.16	0.15
	z̄ (ft)	11.85	12.98	13.95	14.79	15.51	16.13	16.67	17.13	17.54	17.89
	M (ft-lbs/ft)	179,452	162,274	146,888	133,136	120,859	109,909	100,144	91,432	83,655	76,706
	R (lbs/ft)	8,904	8,532	8,140	7,736	7,329	6,925	6,531	6,150	5,785	5,438

GUIDELINES FOR TEMPORARY SHORING, Published October 25, 2004

A-4

#### GUIDELINE & WEBSITE DIRECTORY

BNSF guidelines are as follows:

- a. Guidelines for Design and Construction of Grade Separation Structures.

UPRR guidelines are as follows:

- a. **Underpass Structures** – “Guidelines for Design and Construction of Grade Separation Underpass Structures.”
- b. **Overhead Grade Separation** – “Guidelines for Design of Highway Separation Structures Over Railroad (Overhead Grade Separation).”
- c. **Demolition** – “Guidelines for Preparation of a Bridge Demolition and Removal Plan for Structures Over Railroad.”
- d. **Shoofly** – “Guidelines for Design and Construction of Shoofly (Detour) Tracks.”
- e. **Fiber Optic** – “UPRR Fiber Optic Engineering, Construction And Maintenance Standards.”  
1/1/2002
- f. **Pipeline** – “Pipeline Installation” available at [www.uprr.com](http://www.uprr.com).
- g. **Industry Track** – “Technical Specification for Construction of Industrial Tracks”

WEBSITE DIRECTORY:

1. [www.astm.org](http://www.astm.org)
2. [www.arena.org](http://www.arena.org)
3. [www.bnsf.com](http://www.bnsf.com)
4. [www.pilespecs.com](http://www.pilespecs.com)
5. [www.uprr.com](http://www.uprr.com)

AREMA Table 8-20-1. Granular Soils

Descriptive Term for Relative Density	Standard Penetration Test Blows per Foot "N"
Very Loose	0 - 4
Loose	4 - 10
Medium	10 - 30
Dense	30 - 50
Very Dense	Over 50

AREMA Table 8-20-2. Silt and Clay Soils

Descriptive Term for Consistency	Unconfined Compressive Strength Tons per Square Foot
Very Soft	Less than 0.25
Soft	0.25 - 0.50
Medium	0.50 - 1.00
Stiff	1.00 - 2.00
Very Stiff	2.00 - 4.00
Hard	Over 4.00

AREMA Table 8-20-3. Unit Weights of Soils, and Coefficients of Earth Pressure

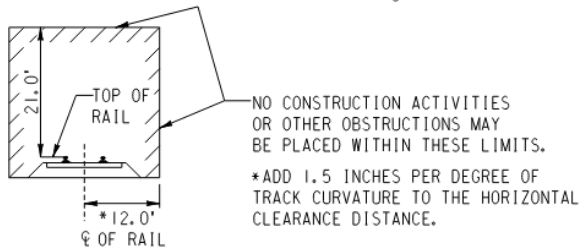
Type of Soil	Unit Weight of Moist Soil, $\gamma$ (Note 1)		Unit Weight of Submerged Soil, $\gamma'$ (Note 1)		Coefficient of Active Earth Pressure, $K_A$				Coefficient of Passive Earth Pressure, $K_p$		
					For Backfill	For Soils in Place	Friction Angles (Note 2)		For Soils in Place	Friction Angles (Note 2)	
	Minimum	Maximum	Minimum	Maximum			$\phi$	$\delta$		$\phi$	$\delta$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<b>Clean Sand:</b>											
Dense	110	140	65	78		0.20	38	20	9.0	38	25
Medium	110	130	60	68		0.25	34	17	7.0	34	23
Loose	90	125	56	63	0.35	0.30	30	15	5.0	30	20
<b>Silty Sand:</b>											
Dense	110	150	70	88		0.25			7.0		
Medium	95	130	60	68		0.30			5.0		
Loose	80	125	50	63	0.50	0.35			3.0		
Silt and Clay (Note 3)	$\frac{165(1+w)}{1+2.65w}$		$\frac{103}{1+2.65w}$		1.00	$1 - \frac{q_u}{P + \gamma z}$			$1 + \frac{q_u}{P + \gamma z}$		
<p>Note 1: In pounds per cubic foot.</p> <p>Note 2: These angles, expressed in degrees, are <math>\phi</math>, the angle of internal friction, and <math>\delta</math>, the angle of wall friction, and are used in estimating the coefficients under which they are listed.</p> <p>Note 3: The symbol <math>\gamma</math> represents <math>\gamma</math> or <math>\gamma'</math>, whichever is applicable; P is the effective unit pressure on the top surface of the stratum; <math>q_u</math> is the unconfined compressive strength; w is the natural water content, in percentage of dry weight; and z is the depth below the top surface of the stratum.</p>											

General criteria:

- a. Design loads to be based on the AREMA manual and Cooper E80 loading.
- b. Pressure due to embankment surcharges.
- c. ASTM designation and yield strength for each material.
- d. Maximum allowable bending stress for steel is  $0.55F_y$ .
- e. Temporary overstress allowances are not acceptable.
- f. All timber members shall be Douglas Fir Grade 2 or better.
- g. Insitu soil classification.
- h. Backfill soil classification.
- i. Internal angle of friction and unit weight of soil.
- j. Active and passive soil coefficients.
- k. Backfill compacted to a minimum of 95% Proctor density per ASTM D-1557.
- l. Slopes without shoring shall not be steeper than 2 horizontal to 1 vertical.
- m. Dredge line elevation.
- n. Shoring deflection to be calculated and meet Railroad requirements.

Miscellaneous:

- a. Project name, location, GPS coordinates, track owner, Railroad line segment, milepost and subdivision in the title block.
- b. Procedure outlining the installation and removal of the temporary shoring system.
- c. General notes specifying material requirements, design data, details, dimensions and cross-sections, sequence of construction etc.
- d. A description of tieback installation including drilling, grouting, stressing information and testing procedures, anchor capacity, type of tendon, anchorage hardware, minimum unbonded lengths, minimum anchor lengths, angle of installation, tieback locations and spacing.
- e. All details for construction of drainage facilities associated with the shoring system shall be clearly indicated.
- f. Details and descriptions of all shoring system members and connection details.
- g. Settlement and displacement calculations.
- h. Handrail and protective fence details along the excavations.
- i. Drawings must be signed and stamped by a Licensed Professional Engineer, registered in the state where the work will be performed.
- j. Call before you dig number.
- k. Construction clearances diagram as shown below.



**MINIMUM CONSTRUCTION**

<b>CLEARANCES</b> (NORMAL TO RAILROAD) Not to scale	DESIGN BY:	NAME & LOGO OF ENGINEERING FIRM OR PROJECT OWNER		
	DRAWN BY:			
	SCALE:	GENERAL CRITERIA AND MISCELLANEOUS		
	DRAWING NO:	RR M.P. SUBDIVISION		
	SHEET: 1 of 3	CITY	COUNTY	STATE
	DOT#:	PROJECT NAME & LOCATION		
	DATE:			

General plan view should show:

- a. Railroad right-of-way and North arrow.
- b. Position of all Railroad tracks and identify each track as mainline, siding, spur, etc.
- c. Spacing between all existing tracks.
- d. Location of all access roadways, drainage ditches and direction of flow.
- e. Footprint of proposed structure, proposed shoring system and any existing structures if applicable.
- f. Proposed horizontal construction clearances. The minimum allowable is 12 feet measured at a right angle from centerline of track.
- g. Location of existing and proposed utilities.
- h. Drawings must be signed and stamped by a Licensed Professional Engineer, registered in the state where the work will be performed.
- i. Railroad and other "CALL BEFORE YOU DIG" numbers.
- j. Detailed view of shoring along with controlling elevations and dimensions.

DESIGN BY:	NAME & LOGO OF ENGINEERING FIRM OR PROJECT OWNER		
DRAWN BY:			
SCALE:	GENERAL PLAN VIEW		
DRAWING NO:			
SHEET: 2 OF 3	RR M.P.	SUBDIVISION	
DOT#:	city	COUNTY	STATE
DATE:	PROJECT NAME & LOCATION		

Typical section and elevation should show:

- Top of rail elevations for all tracks.
- Offset from the face of shoring system to the centerline of all tracks at all changes in horizontal alignment.
- All structural components, controlling elevations and dimensions of shoring system.
- All drainage ditches and controlling dimensions.
- All slopes, existing structures and other facilities which may surcharge the shoring system.
- Location of all existing and proposed utilities.
- Total depth of shoring system.

DESIGN BY:	NAME & LOGO OF ENGINEERING FIRM OR PROJECT OWNER		
DRAWN BY:			
SCALE:	TYPICAL SECTION & ELEVATION VIEW		
DRAWING NO:			
SHEET: 3 of 3	RR M.P.	SUBDIVISION	
DOT#:	CITY	COUNTY	STATE
DATE:	PROJECT NAME & LOCATION		

## BNSF CONTRACTOR REQUIREMENTS



### EXHIBIT "C"

#### CONTRACTOR REQUIREMENTS

##### 1.01 General:

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "**Railway**" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during \_\_\_\_\_ the \_\_\_\_\_ construction of \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit "C-1" Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit "C-1". Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to **Rosa Martinez** at Marsh, USA, 214-303-8519.
- **1.01.03** The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.
- **1.01.04** The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway's opinion, prosecutes the Project work in a manner which is hazardous to Railway property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) Contractor fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to



any liability on the part of Railway. Railway's right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- **1.01.05** The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State and Local Governmental Agencies against the Railway which arise out of Contractor's work under this Agreement.
- **1.01.06** The Contractor must notify **(Agency)** at \_\_\_\_\_ and Railway's Manager Public Projects, telephone number ( ) \_\_\_\_\_ at least thirty (30) calendar days before commencing any work on Railway Property. Contractor's notification to Railway must refer to Railway's file \_\_\_\_\_.
- **1.01.07** For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering





and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that plans have been approved. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.

- **1.01.08** Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

#### **1.02 Contractor Safety Orientation**

- **1.02.01 No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site [www.bnsfcontractor.com](http://www.bnsfcontractor.com). The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.**

#### **1.03 Railway Requirements**

- **1.03.01** The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Agency.
- **1.03.02** The Contractor must notify the Railway's Division Engineer \_\_\_\_\_ at (\_\_\_\_\_) \_\_\_\_\_ and provide blasting



plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's Property.

- **1.03.03** The Contractor must abide by the following temporary clearances during construction:
  - 15'-0" Horizontally from centerline of nearest track
  - 21'-6" Vertically above top of rail
  - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
  - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
  - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
  - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts
  
- **1.03.04** Upon completion of construction, the following clearances shall be maintained:
  - 25' Horizontally from centerline of nearest track
  - 23' 6" Vertically above top of rail
  
- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the **(Agency)** and must not be undertaken until approved in writing by the Railway, and until the **(Agency)** has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.
  
- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Agency.
  
- **1.03.07** The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by **(Agency)** for approval before work is undertaken and this work must not be undertaken until approved by the Railway.
  
- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across the



Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.

- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the **Railway's Resource Operations Center at 1(800) 832-5452**, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.
- **1.03.10** The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway's Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said property by said Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

**1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan:**

- **1.04.01** Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site [www.bnsfcontractor.com](http://www.bnsfcontractor.com), which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.
- **1.04.02** Contractor shall have a background investigation performed on all of its employees, subcontractors and agents who will be performing any services for Railroad under this Agreement which are determined by Railroad in its sole discretion **a)** to be on Railroad's property, or **b)** that require access to Railroad Critical Infrastructure, Railroad Critical Information Systems, Railroad's Employees,



Hazardous Materials on Railroad's property or is being transported by or otherwise in the custody of Railroad, or Freight in Transit involving Railroad.

The required background screening shall at a minimum meet the rail industry background screening criteria defined by the e-RAILSAFE Program as outlined at <http://www.eVerifile.com>, in addition to any other applicable regulatory requirements.

Contractor shall obtain written consent from all its employees, subcontractors or agents screened in compliance with the e-RAILSAFE Program to participate in the Program on their behalf and to release completed background information to Railroad's designee. Contractor shall be subject to periodic audit to ensure compliance.

Contractor subject to the e-RAILSAFE Program hereunder shall not permit any of its employees, subcontractors or agents to perform services hereunder who are not first approved under e-RAILSAFE Program standards. Railroad shall have the right to deny entry onto its premises or access as described in this section above to any of Contractor's employees, subcontractors or agents who do not display the authorized identification badge issued by a background screening service meeting the standards set forth in the e-RAILSAFE Program, or who in Railroad's opinion, which may not be unreasonable, may pose a threat to the safety or security of Railroad's operations, assets or personnel.

Contractors shall be responsible for ensuring that its employees, subcontractors and agents are United States citizens or legally working in the United States under a lawful and appropriate work VISA or other work authorization.

#### **1.05 Railway Flagger Services:**

- **1.05.01** The Contractor must give Railway's **Roadmaster (telephone \_\_\_\_\_)** a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.
- **1.05.02** Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned



beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:

- **1.05.02a** When, upon inspection by Railway's Representative, other conditions warrant.
- **1.05.02b** When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.
- **1.05.02c** When work in any way interferes with the safe operation of trains at timetable speeds.
- **1.05.02d** When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.
- **1.05.02e** Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.
- **1.05.03** Flagging services will be performed by qualified Railway flaggers.
  - **1.05.03a** Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.
  - **1.05.03b** Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.
  - **1.05.03c** The cost of flagger services provided by the Railway will be borne by **(Agency)**. The estimated cost for one (1) flagger is approximately between \$800.00-\$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF**



**FLAGGING PURSUANT TO THIS PARAGRAPH.**

- **1.05.03d** The average train traffic on this route is \_\_\_\_\_ freight trains per 24-hour period at a timetable speed \_\_\_\_\_ MPH and \_\_\_\_\_ passenger trains at a timetable speed of \_\_\_\_\_ MPH.

**1.06 Contractor General Safety Requirements**

- **1.06.01** Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.
- **1.06.02** Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).
- **1.06.03** Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Project Representative. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.
- **1.06.04** When Contractor employees are required to work on the Railway Property after normal working hours or on weekends, the Railway's representative in charge of the project must be notified. A minimum of two employees must be present at all times.
- **1.06.05** Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway's Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.
- **1.06.06** Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machine which may come in contact with track, signal



equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452. Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

- **1.06.07** For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.
- **1.06.08** All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, [www.bnsfcontractor.com](http://www.bnsfcontractor.com), however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats; c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railway's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)**
- **1.06.09 THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S REPRESENTATIVE.**
- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)
- **1.06.11** Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.



- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

#### **1.07 Excavation:**

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact **BNSF's Field Engineering Representative (\_\_\_\_\_)**. All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. **It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.**
- **1.07.02** The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.
- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.
- **1.07.04** Any excavations, holes or trenches on the Railway's Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.





#### **1.08 Hazardous Waste, Substances and Material Reporting:**

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery: (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties: and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

#### **1.09 Personal Injury Reporting**

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway's Project Representative no later than the close of shift on the date of the injury.



## NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

(If injuries are in connection with rail equipment accident/incident, highway rail grade crossing accident or automobile accident, ensure that appropriate information is obtained, forms completed and that data entry personnel are aware that injuries relate to that specific event.)

Injured Person Type:

- Passenger on train (C)       Non-employee (N)  
*(i.e., emp of another railroad, or, non-BNSF emp involved in vehicle accident, including company vehicles)*
- Contractor/safety sensitive (F)       Contractor/non-safety sensitive (G)
- Volunteer/safety sensitive (H)       Volunteer/other non-safety sensitive (I)
- Non-trespasser (D) - to include highway users involved in highway rail grade crossing accidents who did not go around or through gates
- Trespasser (E) - to include highway users involved in highway rail grade crossing accidents who went around or through gates
- Non-trespasser (J) - Off railroad property

If train involved, Train ID: \_\_\_\_\_

Transmit attached information to Accident/Incident Reporting Center by:

Fax 1-817-352-7595

or by Phone 1-800-697-6736

or email to: [Accident-Reporting.Center@BNSF.com](mailto:Accident-Reporting.Center@BNSF.com)

Officer Providing Information:

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Employee No.)

\_\_\_\_\_  
(Phone #)

**REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490**



**NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION**

INFORMATION REQUIRED TO BE COLLECTED PURSUANT TO FEDERAL REGULATION. IT SHOULD BE USED FOR COMPLIANCE WITH FEDERAL REGULATIONS ONLY AND IT IS NOT INTENDED TO PRESUME ACCEPTANCE OF RESPONSIBILITY OR LIABILITY.

I. Accident City/St: \_\_\_\_\_ 2. Date: \_\_\_\_\_ Time: \_\_\_\_\_  
County: \_\_\_\_\_ 3. Temperature: \_\_\_\_\_ 4. Weather: \_\_\_\_\_  
(if non BNSF location)

Mile Post / Line Segment: \_\_\_\_\_

5. Driver's License No (and state) or other ID: \_\_\_\_\_ **SSN (required):** \_\_\_\_\_

6. Name (last, first, mi): \_\_\_\_\_

7. Address: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

8. Date of Birth: \_\_\_\_\_ and/or Age: \_\_\_\_\_ Gender: \_\_\_\_\_  
(if available)

Phone Number: \_\_\_\_\_ Employer: \_\_\_\_\_

9. Injury: \_\_\_\_\_ 10. Body Part: \_\_\_\_\_  
(i.e., Laceration, etc.) (i.e., Hand, etc.)

II. Description of Accident (To include location, action, result, etc.):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Treatment:  
 First Aid Only \_\_\_\_\_  
 Required Medical Treatment \_\_\_\_\_  
 Other Medical Treatment \_\_\_\_\_

13. Dr. Name: \_\_\_\_\_ Date: \_\_\_\_\_

14. Dr. Address:  
Street: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

15. Hospital Name: \_\_\_\_\_

16. Hospital Address:  
Street: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

17. Diagnosis: \_\_\_\_\_

**REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS  
AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490**

**AGREEMENT BETWEEN BNSF RAILWAY & THE CONTRATOR**



**EXHIBIT "C-1"**

**Agreement Between  
BNSF RAILWAY COMPANY  
and the  
CONTRACTOR**

**Railway File:** \_\_\_\_\_

**Agency Project:** \_\_\_\_\_

**Contractor's Name** (hereinafter called "Contractor"), has entered into an agreement (hereinafter called "Agreement") dated \_\_\_\_\_, 201\_\_, with **Agency's Name** for the performance of certain work in connection with the following project: \_\_\_\_\_ Performance of such work will necessarily require Contractor to enter **BNSF RAILWAY COMPANY** (hereinafter called "Railway") right of way and property (hereinafter called "Railway Property"). The Agreement provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for **Agency's Name** (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Agreement, has agreed and does hereby agree with Railway as follows:

**1) RELEASE OF LIABILITY AND INDEMNITY**

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENSIONAL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.**



**THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED.**

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. **THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE.**

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

## **2) TERM**

This Agreement is effective from the date of the Agreement until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

## **3) INSURANCE**

Contractor shall, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

- A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of \$2,000,000 each



occurrence and an aggregate limit of at least \$4,000,000 but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- ◆ Bodily Injury and Property Damage
- ◆ Personal Injury and Advertising Injury
- ◆ Fire legal liability
- ◆ Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- ◆ The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insureds.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to **Railway** employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:

- ◆ Bodily injury and property damage
- ◆ Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insureds.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.



C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- ◆ Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- ◆ Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.

D. Railroad Protective Liability insurance naming only the **Railway** as the Insured with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 12 04 and include the following:

- ◆ Endorsed to include the Pollution Exclusion Amendment
- ◆ Endorsed to include the Limited Seepage and Pollution Endorsement.
- ◆ Endorsed to remove any exclusion for punitive damages.
- ◆ No other endorsements restricting coverage may be added.
- ◆ The original policy must be provided to the **Railway** prior to performing any work or services under this Agreement
- ◆ Definition of "Physical Damage to Property" shall be endorsed to read: "means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured' care, custody, and control arising out of the acts or omissions of the contractor named on the Declarations.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate (if available) in Railway's Blanket Railroad Protective Liability Insurance Policy.

**Other Requirements:**

Where allowable by law, all policies (applying to coverage listed above) shall contain no exclusion for punitive damages.

Contractor agrees to waive its right of recovery against **Railway** for all claims and suits against **Railway**. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against **Railway** for all claims and suits. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against **Railway** for loss of its owned or leased property or property under Contractor's care, custody or control.

Allocated Loss Expense shall be in addition to all policy limits for coverages referenced above.



Contractor is not allowed to self-insure without the prior written consent of **Railway**. If granted by **Railway**, any self-insured retention or other financial responsibility for claims shall be covered directly by Contractor in lieu of insurance. Any and all **Railway** liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by Contractor's insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing services, Contractor shall furnish to **Railway** an acceptable certificate(s) of insurance from an authorized representative evidencing the required coverage(s), endorsements, and amendments. The certificate should be directed to the following address:

BNSF Railway Company  
c/o CertFocus  
P.O. Box 140528  
Kansas City, MO 64114  
Toll Free: 877-576-2378  
Fax number: 817-840-7487  
Email: [BNSF@certfocus.com](mailto:BNSF@certfocus.com)  
[www.certfocus.com](http://www.certfocus.com)

Contractor shall notify **Railway** in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration.

Any insurance policy shall be written by a reputable insurance company acceptable to **Railway** or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provided.

If coverage is purchased on a "claims made" basis, Contractor hereby agrees to maintain coverage in force for a minimum of three years after expiration, cancellation or termination of this Agreement. Annually Contractor agrees to provide evidence of such coverage as required hereunder.

Contractor represents that this Agreement has been thoroughly reviewed by Contractor's insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this Agreement.

Not more frequently than once every five years, **Railway** may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor shall require that the subcontractor shall provide and maintain insurance coverage(s) as set forth herein,





naming **Railway** as an additional insured, and shall require that the subcontractor shall release, defend and indemnify **Railway** to the same extent and under the same terms and conditions as Contractor is required to release, defend and indemnify **Railway** herein.

Failure to provide evidence as required by this section shall entitle, but not require, **Railway** to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section shall not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor shall not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by **Railway** shall not be limited by the amount of the required insurance coverage.

In the event of a claim or lawsuit involving **Railway** arising out of this agreement, Contractor will make available any required policy covering such claim or lawsuit.

These insurance provisions are intended to be a separate and distinct obligation on the part of the Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby regardless of whether or not indemnity provisions are determined to be enforceable in the jurisdiction in which the work covered hereunder is performed.

For purposes of this section, **Railway** shall mean "Burlington Northern Santa Fe LLC", "BNSF Railway Company" and the subsidiaries, successors, assigns and affiliates of each.

#### **4) SALES AND OTHER TAXES**

In the event applicable sales taxes of a state or political subdivision of a state of the United States are levied or assessed in connection with and directly related to any amounts invoiced by Contractor to Railway ("Sales Taxes"), Railway shall be responsible for paying only the Sales Taxes that Contractor separately states on the invoice or other billing documents provided to Railway; *provided, however*, that (i) nothing herein shall preclude Railway from claiming whatever Sales Tax exemptions are applicable to amounts Contractor bills Railway, (ii) Contractor shall be responsible for all sales, use, excise, consumption, services and other taxes which may accrue on all services, materials, equipment, supplies or fixtures that Contractor and its subcontractors use or consume in the performance of this Agreement, (iii) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) that Contractor fails to separately state on the invoice or other billing documents provided to Railway or fails to collect at the time of payment by Railway of invoiced amounts (except where Railway claims a Sales Tax exemption), and (iv) Contractor shall be responsible for Sales Taxes (together with any penalties, fines or interest thereon) if Contractor fails to issue separate invoices for each state in which Contractor delivers goods, provides services or, if applicable, transfers intangible rights to Railway.

Upon request, Contractor shall provide Railway satisfactory evidence that all taxes (together with any penalties, fines or interest thereon) that Contractor is responsible to pay under this



Agreement have been paid. If a written claim is made against Contractor for Sales Taxes with respect to which Railway may be liable for under this Agreement, Contractor shall promptly notify Railway of such claim and provide Railway copies of all correspondence received from the taxing authority. Railway shall have the right to contest, protest, or claim a refund, in Railway's own name, any Sales Taxes paid by Railway to Contractor or for which Railway might otherwise be responsible for under this Agreement; provided, however, that if Railway is not permitted by law to contest any such Sales Tax in its own name, Contractor shall, if requested by Railway at Railway's sole cost and expense, contest in Contractor's own name the validity, applicability or amount of such Sales Tax and allow Railway to control and conduct such contest.

Railway retains the right to withhold from payments made under this Agreement amounts required to be withheld under tax laws of any jurisdiction. If Contractor is claiming a withholding exemption or a reduction in the withholding rate of any jurisdiction on any payments under this Agreement, before any payments are made (and in each succeeding period or year as required by law), Contractor agrees to furnish to Railway a properly completed exemption form prescribed by such jurisdiction. Contractor shall be responsible for any taxes, interest or penalties assessed against Railway with respect to withholding taxes that Railway does not withhold from payments to Contractor.

#### **5) EXHIBIT "C" CONTRACTOR REQUIREMENTS**

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Agreement, and the Contractor Requirements set forth on Exhibit "C" attached to the Agreement and this Agreement, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site. Contractor shall execute a Temporary Construction Crossing Agreement or Private Crossing Agreement (<http://www.bnsf.com/communities/faqs/permits-real-estate/>), for any temporary crossing requested to aid in the construction of this Project, if approved by BNSF.

#### **6) TRAIN DELAY**

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.



For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. The rate then in effect at the time of performance by the Contractor hereunder will be used to calculate the actual costs of train delay pursuant to this agreement.

Contractor and its subcontractors must give Railway's representative ( ) weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.



IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed by its duly authorized officer the day and year first above written.

**Contractor's Name**

**BNSF Railway Company**

By: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Name: \_\_\_\_\_  
Manager Public Projects

Title: \_\_\_\_\_

Accepted and effective this \_\_\_\_\_ day of 20\_\_.

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Fax: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

**EXHIBIT F - GRADE SEPARATIONS**

**EXHIBIT F**

*Grade Separations*

**(FOR USE IN ANY C&M AGREEMENT FOR CONSTRUCTION OF AN OVERPASS OR AN UNDERPASS INITIATED BY A PUBLIC AGENCY)**

**BNSF PROCESS REQUIREMENTS FOR DESIGN & CONSTRUCTION OF GRADE SEPARATION PROJECTS BY A PUBLIC AGENCY ON BNSF RIGHT OF WAY, WHICH IMPACT BNSF PROPERTY OR OPERATIONS**

**1.01 General:**

- 1.01.01 The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "**Railway**" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of  

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- 1.01.02 Definitions:
  - **Operationally Critical, (OC):** defined as Work that requires a submittal and acceptance by BNSF, which impacts, or could impact BNSF operations, on BNSF right-of-way or adjacent to it.
  - **Acceptance:** BNSF's response to plan submittals indicating a notice to proceed with work in the field; **Disclaimer for Acceptance: \*BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.**
  - **Inspector/Coordinator, (I/C):** A third party consultant which BNSF hires to assist in the coordination of the project on BNSF's behalf. When referenced, "I/C" refers to the I/C team consisting of I/C-I, I/C-II, and the Resident Engineer (RE). The I/C team's role is to ensure the project is constructed per accepted\* plans and specifications for that portion of the project on BNSF right of way, as it affects BNSF. The I/C will monitor construction activities to ensure that improvements used by BNSF meet all requirements of BNSF, and accommodate railroad operations.

- 1.01.03 The following submittals and actions are required by BNSF prior to Operationally Critical, (OC) Work being performed on BNSF property or above tracks being operated by BNSF Railway:

## **2.01 Submittals and Actions Required During the Project Design Phase:**

- 2.01.01 The Agency shall be the main contact for BNSF throughout the project. Agency shall be included on all correspondence relating to BNSF.
- 2.01.02 Required Design Submittals: (Allow for 4 weeks for BNSF to review design submittals)

Agency shall refer to the requirements of the UP/BNSF Guidelines on Grade Separation Projects when designing a grade separation which will impact BNSF Railway. Agency will be required to submit plans for BNSF review and comment. Plans shall not be labeled “final” until all comments have been addressed and BNSF has accepted\* the plans.

Examples of required design submittals may be, but are not limited to:

Concept, vertical profile of Top of Rail, 30% plans and final plans

The following submittals will require a Professional Engineer, (PE) stamp:

Overpass design

Underpass design

Hydraulic study

Any non-standard design of a structure which will carry train loading

Work covered by a submittal shall not be performed in field without receiving Acceptance from BNSF.

Work windows will not exceed 6 hours, so project should be designed accordingly.

The following Disclaimer applies to BNSF acceptance of Agency design plans:

*\*BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.*

### **3.01 Submittals and Actions Required During the Construction Phase:**

- 3.01.01 The Agency shall be the main contact for BNSF throughout the project. Agency shall be included on all correspondence relating to BNSF. **BNSF will NOT accept submittals directly from the Agency's Contractor.**
- 3.01.02 BNSF will hire a consultant team to perform the duties of an Inspector/Coordinator, (I/C) on behalf of BNSF for the duration of the field construction of the project. The cost of the I/C will be reimbursable to BNSF by the Agency or their Contractor.

BNSF requires the I/C team be involved in the project throughout the construction phase to represent BNSF.

**The I/C has authority to remove a contractor's employee from BNSF property if that employee fails to comply with the BNSF safety policy, does not have proper PPE or otherwise ignores instructions regarding work on BNSF right-of-way. The I/C has authority to shut down work on BNSF right-of-way if the contractor works in a manner that is in violation of BNSF's safety policy or FRA regulations.**

**Anytime instructions to the contractor by BNSF or the I/C are not complied with, the project may be shut down. All equipment and personnel will be removed from BNSF property until issues causing the shutdown are resolved to BNSF's satisfaction.**

- 3.01.03 Agency must hold a pre-construction meeting with contractor and BNSF prior to work beginning on BNSF property.

The Pre-Construction meeting shall not be held until 30 days after I/C has been selected – this allows time for the I/C to become familiar with the project.

Recommend scheduling two weeks prior to construction commencing to allow for adjustment to work plans, if needed.

- 3.01.04 Required Construction Submittals: : (Allow for 4 weeks for BNSF to review submittals)

All submittals should flow from the Contractor to the Agency, to the I/C Consultant, to the BNSF Project Engineer, (PE), and to BNSF Structures with responses back through the same communication chain. **BNSF will not accept submittals directly from the Contractor.**

Any changes to the work governed by a submittal requires that the submittal be re-accepted\* by BNSF before the work commences.

Examples of construction submittals required include but are not limited to:

Contractors Safety Action Plan, Fire Prevention Plan, Proposed Project Schedule, Demolition, Shoring, Falsework and Lifting of Materials.

The following submittals will require a Professional Engineer, (PE) stamp:

Critical Pick Plan (75% of capacity of crane, or multi-crane pick)

Lifted Material Plan (Placement or Removal) – When lift is within temporary construction clearances and when lift is within 25' of the centerline of the nearest track

Demolition Plan

Temporary Shoring Plan

Bracing Design Plan (non-standard only per DOT)

For overpasses, Agency shall submit as-built plans of the structure, including final clearance dimensions to the I/C. Vertical clearance must be measured from the Top of Rail, horizontal clearance must be measured from the nearest track centerline.



**OPERATIONALLY CRITICAL WORK AND SUBMITTALS:** (4 to 6 weeks review timeline)  
All OC work requires a submittal and acceptance\* by BNSF.

- Operationally Critical (OC) submittals are those that have the potential to affect the safe operation of trains and will need to be reviewed carefully. Work must be monitored to ensure it conforms to the submitted/accepted\* plan.
  - In-person safety review meetings will be required with BNSF representative, I/C, Contractor and Agency representative for all OC work and must be documented. The purpose of the meeting is to ensure all parties understand BNSF requirements and are following the applicable submittals. When a track work window is required the meeting shall occur at least 48 hours in advance of work starting.
  - **Submittals must meet the requirements of the UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects. Submittals must also follow the requirements outlined in BNSF Review Comment Sheets, Use of Cranes & Lifting of Materials Submittal Schedule, BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan and the BNSF-UPRR Guidelines for Temporary Shoring. Some submittals are required to be sealed by a licensed professional engineer.**
- a. See Table 3-1 for Overhead Structures in UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects
  - b. See Table 3-2 for Underpass Structures UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects
  - c. Examples of OC submittals included in the above are:
    - i. Shoring (Follow BNSF-UPRR Guidelines for Temporary Shoring)
    - ii. Falsework
    - iii. Demolition (Need plans for substructure and superstructure. Follow BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan)
    - iv. Erection (overhead and underpass structures)
    - v. Construction Phasing Plans

- d. Additional OC submittals required, but not included in the Guidelines are:
- i. All work plans that remove tracks from service (track outage windows require a detailed Gantt chart when greater than 2 hours)
  - ii. Contingency plans
  - iii. Additional OC submittals may be required on a project by project basis.

For underpasses and other railroad bridges, as required in Sections 4.11 and 4.12 of the UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects, a RE will be on site full-time during construction, at the cost of the project. At the discretion of the RE, as accepted by BNSF, an I/C-I or I/C-II maybe assigned for field duties where the work is not critical to ensuring the bridge is built to accepted project plans and specification.

- BNSF requires temporary and new track and railroad bridges be inspected by an FRA qualified BNSF employee prior to being placed into service. Two week advanced notice to BNSF structures department is required. For underpasses, all pile driving records are to be provided within 3-days of driving to the BNSF PE.
- Agency shall submit an as-built survey of shoo-fly final alignments. Alignments must conform to BNSF Shoo-fly procedures.
- 3.01.05 Prior to any work commencing on BNSF right of way:

Contractors C/C-1 or Right of Entry must be fully executed and their insurance must be approved before they can perform work on BNSF property.

Proof of Contractors insurance approval must be produced to the BNSF PE and the I/C.

- 3.01.06 Contractor must adhere to all other BNSF policies and procedures not specifically mentioned in this agreement.

Version Dated 2017-11-06

**BNSF Engineering Services-Structures Review Comments**  
**Demo Plan Review Comments Sheet**  
 Check for compliance with current AREMA and BNSF Demo Guideline

**No Comment / All Items CLOSED \***   
**Submittal Essentials in RED \*\***  
 I/C & Project Engineer Review Items; KC Structures Review Items

Project Name:	I-55 (Lorenzo, IL)	BNSF Point of Contact:	Ajibade Fashola
Submittal Name:	Demolition Plan	Project CM Contact:	
Plan File Name:		Asset MP Name:	50.51
Plan File Date:		Plan %:	

**PE Seal & Signature of Demolition Plan Package (In State of Project)**  
 No Exceptions Taken  Comments Below

**Scope of Removal (Superstructure removal will require separate Lifted Materials Plan Submittal and Use of Cranes and Lifting Materials Review Comment Sheet)**  
 Deck only  Superstructure  Substructure

**Provide Drainage plan such that all surface water routes away from tracks**  
 No Exceptions Taken  Comments Below  N/A

**Structure in plan, location and elevation views w/ access roads shown**  
 No Exceptions Taken  Comments Below  N/A

**Track Damage Protection Detailed – Track Shield or Frame Protection**  
 No Exceptions Taken  Comments Below  N/A

**List / describe steps to remove, demo /repair structure w/ time required**  
 No Exceptions Taken  Comments Below  N/A

**Specify locations / type of temp supports (Shoring, bracing, cables, etc.)**  
 No Exceptions Taken  Comments Below  N/A

Item No.	Sheet No.	Reviewer Comment Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Reviewer's Comment Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Reviewer's Comment Date:	Initial	Status (Open or Closed)
1.												
2.												
3.												
4.												
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6.												
7.												
8.												

\*BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.  
 \*\* Check Submittal Essentials prior to transmittal to Structures Review. If not included, Project Engineer to reject and request resubmittal.





Version Dated 2017-08-17

**BNSF Review Comment Sheets & Use of Cranes & Lifting of Materials Submittal Schedule**

The following sheets are meant to be used as addenda to the Grade Separation Guidelines and include comment tracking sheets for use in both design and construction plan submittals given in Tables 3-1 & 3-2 of the Union Pacific-BNSF Guidelines for Railroad Grade Separation Projects.

**Use of Cranes and Lifting of Materials Submittal Schedule**

Equipment or Material Planned Location	Submittal Type (Action Item Required)		
	1 - Boomed Equipment Utilization Plan	2 - Critical Pick Plan (75% of capacity or multi-crane pick)	3 - Lifted Material Plan (Placement or Removal)
Within Temporary Const. Clearances	A	A,B,C,D	A,B,C,D
Within 25' of CL Tracks	A	A,B,C,D	A,B,C,D
Work on ROW > 25' from CL Tracks	A	A, B,C,D	A, B
*Work outside BNSF ROW	A	A, C, D	N/A

**Action Item Identifier**

<b>A</b>	Plans Submitted to BNSF PE & J/C for I/C Review (Structures Review not required). Also on hand at site location.
<b>B</b>	DOT Review / Acceptance & Provide Confirmation to Structures Review
<b>C</b>	Plans Submitted to BNSF Structures Review by way of BNSF PE
<b>D</b>	Professional Engineer Seal Required

**Documentation Required per Submittal Type (See Comment Sheet)**

1 - Boomed Equipment Utilization Plan	2 - Critical Pick Plan (75% of capacity or multi-crane pick)	3 - Lifted Material Plan (Placement or Removal)
<ul style="list-style-type: none"> <li>Ground stability analysis / consideration</li> <li>Wind limitations</li> <li>Operator qualifications</li> <li>Equipment inspection certs / docs</li> <li>Equipment identification / load charts / data / specs</li> <li>Boom length</li> <li>Contractor policy or limitations on critical pick</li> <li>Rigging data / specs / outriggers</li> <li>Clearance to track</li> <li>Underground and overhead utilities</li> </ul>	<ul style="list-style-type: none"> <li>PE Seal</li> <li>DOT Acceptance</li> <li>Max wind speed for the pick</li> <li>Radii</li> <li>Location of equipment</li> <li>Clearance to track</li> <li>Load to lifting point geometry</li> <li>Rigging design</li> <li>Groundman</li> <li>Communication plan</li> </ul>	<ul style="list-style-type: none"> <li>Beam stability</li> <li>Sweep / Camber</li> <li>Bracing</li> <li>Splice locations</li> <li>Required number of fasteners</li> <li>Tie downs</li> <li>Material stability plan</li> <li>Pick points</li> </ul>

**BNSF Position on Use of Cranes, Lifting of Material, and Demolition on or over BNSF Right-of-Way**

This generally addresses lifting activities for overhead bridge construction and demolition, but also covers other work using cranes or material lifting near railroad property which has the potential to impact railroad operations. The intent is to ensure necessary planning, engineering and execution to avoid equipment or material failures that can lead to safety issues or unplanned interruptions of railroad traffic. Demolition procedures other than those considered as lifting activities are covered in a Demolition Plan Submittal.

Use of cranes and the lifting of materials on or over the railroad right-of-way shall not cause interruption to railroad operations.

- A PE-sealed lifting plan or demolition plan is necessary for any lifting activities requiring authority or protection over railroad tracks. The Professional Engineer is responsible for addressing all required parameters of the lifting plan or demolition plan, and BNSF has minimum submittal requirements for specific lifting activities.
- For Agency sponsored projects, Agency shall accept the lifting and/or demolition plan and advise BNSF of acceptance of plan(s) prior to submittal
- An onsite, pre-lift safety meeting is mandatory for all lifting activities covered by the lifting and/or demolition plan
  - Representatives of the contractor, the agency and BNSF shall be present
  - Purpose is to confirm all processes and equipment are in place to proceed per the lifting plan, or otherwise track authority will not be provided.
  - Deviations or modifications to the plan require additional review
- Train operations will not be permitted during soliciting, post tensioning or any activities performed during a suspended load until structural stability is achieved. For these reasons, superstructures of these type are not recommended. The method of erection permissible will be dependent upon track time available. This is to be coordinated through the BNSF site representative during construction.
- Prior to the release of Railroad traffic, components lifted over railroad tracks shall be supported by falsework or permanent substructure. Shall be secured and stable and shall not be supported by cranes or other construction equipment.

BNSF publishes position statements to clarify BNSF's position on the subject matter. The information contained in a position statement is neither exhaustive nor exclusive to all circumstances or individuals. The relevance and implementation of these recommendations may be affected by local, state, or federal statutes, other rules or regulations, and differing project conditions. Position statements are not intended to provide any approval of a public agency project. Nothing in this position statement, supersedes or supplements the terms of a governing agency agreement with BNSF. The position statement should not be relied upon as being inclusive of all BNSF's policies on the subject matter, but only as a resource. BNSF takes great care in publishing position statements and reserves the right to rescind or modify these statements at any time.

Approved by Craig Rasmussen, AVP Engineering Services and Structures  
 Date Approved: August 16, 2017

Version Dated 2017-11-06



**BNSF Engineering Services-Structures Review Comments**  
**Use of Cranes and Lifting Materials Review Comments Sheet**  
 Check for compliance with current AREMA and BNSF guidelines

No Comment / All Items CLOSED \*   
 Submittal Essentials in RED \*\*  
 I/C & Project Engineer Review Items; KC Structures Review Items

Project Name:	I-55 (Lorenzo, IL)	BNSF Point of Contact:	Ajibade Fasola
Submittal Name:	Demolition Plan	Project CM Contact:	
Plan File Name:		Asset MP Name:	50.51
Plan File Date:		Plan %:	

**1- Boomed Equipment Utilization Plan**

Inspector Coordinator to receive plan of Submittal Type 1, 2, & 3, as applicable. See documentation required per submittal type on below **Use of Cranes and Lifting of Materials Submittal Schedule**.

Boomed Equipment Utilization Plan Received  Date Received  Not Received   
 Agency Review / Acceptance - Provide Confirmation via e-mail  No Exceptions Taken  Comments Below   
 Professional Engineer Seal & Signature  No Exceptions Taken  Comments Below   
 Pre-lift In-person Meeting (Needed for Type 2 or 3)  Date Complete  Date Scheduled  Not Scheduled   
 Radii Show on Plans for Chart to be Used  No Exceptions Taken  Comments Below  N/A

Contractor policy or limitations for critical pick (prompt Type 2→)  No Exceptions Taken  Comments Below  N/A

Designated Groundman / Signalman  No Exceptions Taken  Comments Below  N/A

Communication Plan (Internal & BNSF Flagman)  No Exceptions Taken  Comments Below  N/A

**2- Critical Pick Plan (75% Capacity or Multi-crane Pick)**

Professional Engineer Seal & Signature  No Exceptions Taken  Comments Below   
 Agency Review / Acceptance - Provide Confirmation via e-mail  No Exceptions Taken  Comments Below

Inspector Coordinator to receive plan of Submittal Type 1, 2, & 3, as applicable. See documentation required per submittal type on below **Use of Cranes and Lifting of Materials Submittal Schedule**.

Boomed Equipment Utilization Plan Received  Date Received  Not Received   
 Agency Review / Acceptance - Provide Confirmation via e-mail  No Exceptions Taken  Comments Below   
 Pre-lift In-person Meeting (Needed for Type 2 or 3)  Date Complete  Date Scheduled  Not Scheduled   
 Radii Show on Plans for Chart to be Used  No Exceptions Taken  Comments Below  N/A

Contractor policy or limitations for critical pick (prompt Type 2→)  No Exceptions Taken  Comments Below  N/A

Designated Groundman / Signalman  No Exceptions Taken  Comments Below  N/A

Communication Plan (Internal & BNSF Flagman)  No Exceptions Taken  Comments Below  N/A

**3- Lifting Materials Plan (Placement or Removal)**

Agency Review / Acceptance - Provide Confirmation via e-mail  No Exceptions Taken  Comments Below   
 Professional Engineer Seal & Signature  No Exceptions Taken  Comments Below

Inspector Coordinator to receive plan of Submittal Type 1, 2, & 3, as applicable. See documentation required per submittal type on below **Use of Cranes and Lifting of Materials Submittal Schedule**.

Boomed Equipment Utilization Plan Received  Date Received  Not Received   
 Agency Review / Acceptance - Provide Confirmation via e-mail  No Exceptions Taken  Comments Below   
 Professional Engineer Seal & Signature  No Exceptions Taken  Comments Below   
 Pre-lift In-person Meeting (Needed for Type 2 or 3)  Date Complete  Date Scheduled  Not Scheduled   
 Radii Show on Plans for Chart to be Used  No Exceptions Taken  Comments Below  N/A

Contractor policy or limitations for critical pick (prompt Type 2→)  No Exceptions Taken  Comments Below  N/A

Designated Groundman / Signalman  No Exceptions Taken  Comments Below  N/A

Communication Plan (Internal & BNSF Flagman)  No Exceptions Taken  Comments Below  N/A

Item No.	Sheet No.	Reviewer's Comment Date:	Initial	Designer's Response Date:	Initial	Reviewer's Comment Date:	Initial	Designer's Response Date:	Initial	Reviewer's Comment Date:	Initial	Reviewer's Response Date:	Initial	Reviewer's Comment Date:	Initial	Reviewer's Response Date:	Initial	Status: Open or Closed
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\* BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.  
 \*\* Check Submittal Essentials prior to transmittal to Structures Review. If not included, Project Engineer to reject and request resubmittal.



**BNSF Engineering Services-Structures Review Comments**  
**Grade Separation Review Comments Sheet**

Check for compliance with current AREMA and BNSF guidelines

Project Name:	1-55 (Lorenzo, IL)	BNSF Point of Contact:	Ajibade Fashola
Submittal Name:		Project CM Contact:	
Plan File Name:		Asset NIP Name:	50.51
Plan File Date:		Plan %:	

**Track Geometry (Curves, run off, grades, track spacing, etc.)**  
 Reviewed No Comments  Comments Below  N/A

**Horizontal Clearance**  
 Reviewed No Comments  Comments Below  N/A

**Temporary Horizontal Clearance (Includes Falsework)**  
 Reviewed No Comments  Comments Below  N/A

**Clearance for Access Road**  
 Reviewed No Comments  Comments Below  N/A

**Drainage – Diverted away from BNSF ROW, no discharge onto track**  
 Reviewed No Comments  Comments Below  N/A

**Impacts to signal, telecom, etc.**  
 Reviewed No Comments  Comments Below  N/A

**Clearance for Future Track(s)**  
 Reviewed No Comments  Comments Below  N/A

**2:1 Slopes**  
 Reviewed No Comments  Comments Below  N/A

**Vertical Clearance**  
 Reviewed No Comments  Comments Below  N/A

**Temporary Vertical Clearance (Includes Falsework)**  
 Reviewed No Comments  Comments Below  N/A

**Demo Plan – Substructures and Falsework removed to 3' below ground or TOT (≤)**  
 Reviewed No Comments  Comments Below  N/A

**Demo/Erection Plan Equipment locations & sequence shown w/ clearances**  
 Reviewed No Comments  Comments Below  N/A

**Falsework – Splices "in-the-air" to be designed, min bolts, depth of piling shown**  
 Reviewed No Comments  Comments Below  N/A

**Faisework/Erection Plan – Max wind for pick, positive connection for single beam**  
 Reviewed No Comments  Comments Below  N/A

**Erection Plan – PE Signature and Stamp (100% Plans)**  
 Reviewed No Comments  Comments Below  N/A

**Erection Plan – Positive Connection for Single Beam**  
 Reviewed No Comments  Comments Below  N/A

**Erection Plan – Ensure Agency/ DOT Review**  
 Reviewed No Comments  Comments Below  N/A

**Erection Plan – Provide max wind speed for the Pick**  
 Reviewed No Comments  Comments Below  N/A

**ROW (all structures should be off of BNSF ROW if possible)**  
 Reviewed No Comments  Comments Below  N/A

**No MSE Walls on BNSF ROW**  
 Reviewed No Comments  Comments Below  N/A

**Track Damage Protection Designed – Track Shield or Frame Protection**  
 Reviewed No Comments  Comments Below  N/A

Item No.	Sheet No.	Reviewer Comment Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Initial	Designer's Response Date:	Reviewer's Response Date:	Status (Open or Closed)
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Add Row															

BNSF review was limited exclusively to potential impacts on train operations. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design of the project.

Version Dated 2017-11-06



**No Comment / All Items CLOSED \***   
**Submittal Essentials in RED \*\***  
**I/C & Project Engineer Review Items; KC Structures Review Items**

**BNSF Engineering Services-Structures Review Comments**  
**Use of Cranes and Lifting Materials Review Comments Sheet**  
 Check for compliance with current AREMA and BNSF guidelines

Project Name:	I-55 (Lorenzo, IL)	BNSF Point of Contact:	Ajibade Fashola
Submittal Name:	Demolition Plan	Project CM Contact:	
Plan File Name:		Asset MP Name:	50.51
Plan File Date:		Plan %:	
8.			
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12.			

\*BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.  
 \*\* Check Submittal Essentials prior to transmittal to Structures Review. If not included, Project Engineer to reject and request resubmittal.



Version Dated 2017-09-22



**BNSF Engineering Services-Structures Review Comments**

No Comment / All Items CLOSED\*

Submit Items in RED\*\*

Temporary Shoring Review Comments Sheet

Check for compliance with current AREMA and BNSF/UP Temporary Shoring Guidelines

I/C & Project Engineer Review Items; KC Structures Review Items

Project Name:	I-55 (Lorenzo, IL)	BNSF Point of Contact:	Ajibade Fashola
Submital Name:	Temporary Shoring Plan	Project CM Contact:	
Plan File Name:		Asset MP Name:	50.51
Plan File Date:		Plan %:	

Professional Engineer Seal & Signature (Plans and Calculations)  
 No Exceptions Taken  Comments Below  N/A

No Tiebacks under track  
 No Exceptions Taken  Comments Below  N/A

Need Shoring Loading Zones shown  
 Within Zone A  Zone B Only  Zone C Only

Show offset face of shoring to CL Tracks at all Changes in Horizontal Alignment  
 No Exceptions Taken  Comments Below  N/A

Substructure Removal Limits (Lesser of 3' below GI or TOT)  
 No Exceptions Taken  Comments Below  N/A

TOT, Top of Wall Elevations Shown on General Plan  
 No Exceptions Taken  Comments Below  N/A

Show BNSF ROW Limits, all tracks labeled w/ track spacing  
 No Exceptions Taken  Comments Below  N/A

Provide geotechnical report (in-situ soil classification, P<sub>a</sub>, P<sub>w</sub>, etc.)  
 No Exceptions Taken  Comments Below  N/A

Horizontal Clearance to CL Tracks at right angle to Nearest Obstruction  
 No Exceptions Taken  Comments Below  N/A

Show Grading at Wall Ends, No More than 2:1 Slopes  
 No Exceptions Taken  Comments Below  N/A

Drainage Along the Wall, Through the Wall  
 No Exceptions Taken  Comments Below  N/A

Show Total Depth of Shoring System w/ controlling dimensions  
 No Exceptions Taken  Comments Below  N/A

All OH and underground utilities located (include fiber, BNSF signal, telecom)  
 No Exceptions Taken  Comments Below  N/A

Handrail Heights and Lengths Detailed  
 No Exceptions Taken  Comments Below  N/A

Call Before You Dig\* Numbers - BNSF Fiber - 1-800-533-2891  
 BNSF Signal - 1-800-832-5452  
 No Exceptions Taken  Comments Below  N/A

Provide Calculations (include sample hand calcs w/ assumptions listed)  
 No Exceptions Taken  Comments Below  N/A

Check FS of overturning for sheeting  
 No Exceptions Taken  Comments Below  N/A

Temp Shoring Specific: E80 Loading Property Applied  
 No Exceptions Taken  Comments Below  N/A

Meets deflection criteria  
 No Exceptions Taken  Comments Below  N/A

Gravity shoring systems analyzed for OT, SL and global stability  
 No Exceptions Taken  Comments Below  N/A

Monitoring Plan: Triggering & max values, survey locations and frequency  
 No Exceptions Taken  Comments Below  N/A

Item No.	Sheet No.	Reviewer Comment Date:	Initial	Designer's Response Date:	Reviewer's Comment Date:	Initial	Designer's Response Date:	Reviewer's Comment Date:	Initial	Designer's Response Date:	Status (Open or Closed)
1.											
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\*BNSF has reviewed these submittals and no exceptions are taken with regard to BNSF's ability to use or accommodate the project as intended. BNSF has not reviewed the design details or calculations for structural integrity or engineering accuracy. BNSF accepts no responsibility for errors or omissions in the design or execution of the project.  
 \*\* Check Submittal Essentials prior to transmittal to Structures Review. If not included, Project Engineer to reject and request resubmittal.

**BNSF CONTRACTOR’S RIGHT OF ENTRY**



**Contractor’s Right of Entry (CROE)**

In addition to a Lease of Land for Construction (CL), BNSF requires a Contractor’s Right of Entry Agreement (CROE) for construction projects on or adjacent to BNSF property. The CROE outlines the scope of services, contractor requirements and liability.

A CROE is always used in conjunction with a CL if the industry’s contractor will enter BNSF’s property to perform certain construction services on the industry’s track.

Prior to construction commencing on BNSF property, the CROE must be executed and all necessary insurance certificates and requirements need to be approved by BNSF Risk Management.

**Major Requirements**

✓	New Business Review (NBR) Approval
✓	Track Application
✓	Approved 100% Track Plans
✓	Insurance Requirements Met (see reverse side)
✓	Executed Construction Lease (CL)
✓	BNSF Contractor Safety Orientation





**Insurance Requirements**

<p><b>General Liability Policy</b></p>	<ul style="list-style-type: none"> <li>• Required limits of \$5M / occurrence; \$10M / aggregate</li> <li>• BNSF Railway and Jones Lang LaSalle Brokerage should be listed as additional insured</li> <li>• Copy of the additional insured endorsement</li> <li>• Primary and non-contributory</li> <li>• Contractual liability for railroads – 50 foot endorsement – CG2417 10 / 01 must be provided if the general liability policy contains an exclusion for work within 50 feet of railroad property</li> <li>• Waiver of Subrogation</li> </ul>
<p><b>Auto Liability Policy</b></p>	<ul style="list-style-type: none"> <li>• Required limits of \$1M, any auto coverage type</li> <li>• BNSF Railway listed as additional insured</li> <li>• Primary and non-contributory</li> <li>• Waiver of subrogation</li> <li>• If the company does not own any vehicles, they must provide hired and non-owned auto coverage with a letter stating they do not own company vehicles</li> </ul>
<p><b>Workers Compensation Policy for State Where Work is Being Performed</b></p>	<ul style="list-style-type: none"> <li>• Required statutory limits</li> <li>• Waiver of subrogation</li> <li>• If employees are leased, an alternate employer endorsement will be required from the leasing company</li> </ul>
<p><b>Railroad Protective Policy</b></p>	<ul style="list-style-type: none"> <li>• Required limits of \$5M / occurrence; \$10M / aggregate</li> <li>• Limited seepage, pollution and contamination coverage endorsement</li> <li>• Evacuation expense coverage endorsement</li> <li>• The industry may participate in Lessor's Blanket Railroad Protective Liability Policy. The limits are the same as above and Jones Lang LaSalle will obtain the quote for the cost.</li> </ul>

**Additional Information**

The named insured on the certificates must be the same name as listed on the contract.

**Self-insurance:** Allowed with prior permission from BNSF Railway. BNSF will require financial statement for a minimum of the last two years and may require additional documentation. The financials must be in the name of the company named on the contract. The statements will be reviewed by BNSF every three years thereafter.

**Parental Guaranty:** If the company requesting the lease cannot meet the financial requirements for self-insurance, but their parent company can, BNSF will propose the parent company enter into a parental guaranty for the financial obligations.

**Insurance Carrier:** If the insurance carrier does not meet the A- /VII AM Best rating or does not participate in AM Best, BNSF can review the lessee's financials to see if they meet the self-insurance assessment in order to obtain approval.

## CN/IC RAILROAD REQUIREMENTS



**Manager Public Works**  
Thomas L. Brasseur  
700 Pershing Road  
Pontiac, MI 48340  
T 248-452-4854  
Email: thomas.brasseur@cn.ca

### Right of Entry (ROE) License Agreement Information

Railroad Company requires everyone (contractor, consultants, etc.) working on Railroad Company property to have a Right-of-Entry (ROE) License Agreement. No work may occur on Railroad Company property nor will flagging protection be provided until ROE License Agreement has been fully executed by both parties and returned.

Follow these steps to obtain a ROE:

1. Applicant will **Email** this completed application to thomas.brasseur@cn.ca
2. Applicant will **mail** a check for the application fee \$1000.00\* to the address listed at the end of this document
3. Applicant will **Email** a COI (Certificate of Insurance) meeting the requirements outlined in the Insurance requirements section of this document
4. Once steps 1-3 are completed, the Railroad Company will begin processing the ROE application
5. If approved, the Applicant will receive an electronic copy of the ROE agreement by email
6. Applicant will have the ROE agreement executed by Applicant's VP or president of Applicant's company
7. Applicant will return a **HARD COPY** of the partially executed ROE agreement by mail to the Railroad Company address listed at the end of this document
8. The Railroad Company will return a fully executed digital copy of the ROE License Agreement by email for the Applicants records.

Please use this form and return by email to submit application request for a Right of Entry agreement.

Contact name and Email address –

Name of Applicant/contractor and email address -

Street Address –

City, State, Zip –

Telephone –

Detailed Purpose for ROE –

Start and Completion Date of ROE –

Public Agency's Project No. –

Public Agency Easement No. (if known) –

Location of project –

Subdivision and Milepost –

FRA/AAR/DOT Crossing No. and Name –  
(Nearest to jobsite)

If unable to locate this number at jobsite, please use following links to obtain:

<http://safetydata.fra.dot.gov/officeofsafety/publicsite/crossing/xingqrvloc.aspx>

In Illinois

<http://www.icc.illinois.gov/railroad/advanced.aspx?>

Please attach an aerial snapshot and a Google Earth kmz file to help identify specific location.

## FAQ

### What time frame can I expect to begin work and have flagging protection for my work?

A **Right of Entry License Agreement usually takes 4 to 6 weeks to obtain**. Once you have a fully executed ROE agreement, you will receive a flagging request form. This flagging request form along with prepayment for flagging fees will need to be *mailed to the physical address listed on the flagging request form*. Once this flagging request form is received, it is usually about **10 days until a flagger can be scheduled**. These are normal time frames. **Time frames can vary substantially** based on many factors. Expedited time frames may be able to be requested at an additional fee.

A brief summary of time frame for each step toward obtaining flagging protection...

1. Right of Entry License Agreement usually takes **4 to 6 weeks to obtain**.
2. Send in flagging check and flagging request form... about **1 week**
3. Once this flagging request form is received, it is usually about **10 days** until a flagger can be scheduled

### What are the insurance requirements?

Railroad Company allows outside parties to come onto Railroad Company property to perform work, such as survey or inspection work, installation of pipelines and wirelines, and other work for projects necessitating the occupancy of Railroad Company. Before commencing work, and until the license of allowing such occupancy ends or is terminated, outside parties shall provide and maintain the following insurance in form and amount with companies satisfactory to and as approved by Railroad Company.

1. Minimum insurance required of outside party:
  - A. Statutory Workers Compensation and Employer's Liability Insurance.
  - B. Automobile Liability Insurance in an amount not less than \$1,000,000 combined single limit.
  - C. Commercial General Liability Insurance (Occurrence Form) in an amount not less than **\$5,000,000 per occurrence, with an aggregate limit of not less than \$10,000,000**. The policy must name Railroad Company and its Parents as additional insureds in the following form:

Illinois Central Railroad Company and its Parents  
Attn: Thomas Brasseur  
700 Pershing Road  
Pontiac, MI 48340  
248-452-4854 (office)  
Thomas.brasseur@cn.ca

**The policy must remove any provisions excluding coverage for injury, loss or damage arising out of or resulting from doing business or undertaking construction or demolition on, near, or adjacent to railroad track or facilities using endorsement CG 2417 10 01 or equivalent approved by Railroad Company.**

- D. When outside party is required by Railroad Company or Governing Authority to purchase Railroad Protective Liability Insurance to cover work on, near or adjacent to railroad track or facilities, and outside party is not being hired for this project by Railroad Company, outside party must procure Railroad Protective Liability Insurance in the following form;

This coverage shall be written on an Occurrence Form with limits of not less than \$5,000,000 per occurrence for Bodily Injury, Personal Injury and Physical Damage to Property, with an aggregate limit of not less than \$10,000,000. The policy must name:

Illinois Central Railroad Company and its Parents  
Attn: Thomas Brasseur  
700 Pershing Road  
Pontiac, MI 48340  
248-452-4854 (office)  
Thomas.brasseur@cn.ca

- E. In the event the privileges provided herein to Applicant involve any work that could result in the discharge, spillage, disposal, release or escape of any Hazardous Material or petroleum product onto the Railroad Company's property, Applicant shall purchase and maintain in effect at all times during the term of this License a Contractor's Pollution Liability policy in an amount not less than two million dollars (\$2,000,000) combined single limit (and with a deductible not to exceed \$50,000) insuring Railroad against any and all damages, costs, liabilities and expenses resulting from on- or off-site bodily injury (including death to any person), on or off-site loss, damage or destruction of property (including that belonging to the parties hereto), and on-or off-site cleanup costs (including expenses incurred in the investigation, removal, remediation, neutralization, or immobilization of contaminated soils, surface water, groundwater or any other contamination) growing out of or incidental to any discharge, spillage, disposal, release, or escape of any Hazardous Material or petroleum product arising therefrom. For purposes of this Agreement, the term "Hazardous Material" shall include, without limit, any flammable explosives, radioactive materials, hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §§ 9601, et seq.), the Hazardous Material Transportation Act, as amended (49 U.S.C. §§ 1801, et seq.), the Resource Conservation and Recovery Act, as amended (42 U.S.C. §§ 6901 et seq.), the Toxic Substances Control Act, as amended (15 U.S.C. §§ 2601, et seq.), similar laws or ordinances enacted by any state, county or municipality in which the Property is located, or in the regulations adopted and publications promulgated pursuant to any of the above, as such laws or regulations now exist or may exist in the future.

Applicant is required to advise Railroad Company by thirty (30) day advance written notice when any work to be performed under this License may require Pollution Liability Insurance pursuant to the previous paragraph.

- F. All policies described above must include description of operations, Railroad Company milepost, highway or street name, city and state of location, project number, and Railroad Company contact person on the certificate.
2. Before commencing work, outside party shall deliver to Railroad Company a certificate of insurance evidencing the foregoing coverages and, if requested by Railroad Company, true and complete copies of the policies described above. If the policy is being issued in conjunction with, or as a result of, a city, county or state contract, the policy should be initially submitted to the respective city, county or state agency that will review it first and then forward it to Railroad Company.
3. Common Policy Provisions. Each policy described in paragraph 1, parts A through E above, must include the following provisions:
- A. Each policy shall include a waiver by the insurer of any right of subrogation against any recovery by or on behalf of any insured.
- B. Each policy shall provide for not less than thirty (30) days prior written notice to Railroad Company at the address listed above of cancellation of or any material change in that policy.

4. It is understood and agreed that the foregoing insurance coverage requirements, and outside party's compliance with those requirements, is not intended to, and shall not, relieve outside party from, or serve to limit, outside party's liability and indemnity obligations under the provisions herein.
5. Railroad Company shall have the right, from time to time, to revise the amount or form of insurance coverage required as circumstances or changing economic conditions may require. Railroad Company shall give outside party written notice of any such requested change at least thirty (30) days before the date of expiration of the then-existing policy or policies, outside party agrees to, and shall, thereupon provide Railroad Company with such revised policy or policies.
6. Insurance required of SUBCONTRACTOR:
  - A. If a SUBCONTRACTOR is to be employed by outside party to perform work on Railroad Company under or by the permission for occupancy granted to outside party by Railroad Company, before commencing work, the SUBCONTRACTOR shall provide and thereafter maintain all of the insurance described in paragraph 1, parts A through E, above, in the same forms and amounts as provided for above and subject to the other terms and conditions provided for in paragraphs 2 through 4 above.
  - B. In the alternative, before the SUBCONTRACTOR commences work for outside party on Railroad Company, outside party may provide and thereafter maintain all of the insurance described in paragraph 1, parts A through E, above, in the same forms and amounts as provided for above and subject to the other terms and conditions provided for in paragraphs 2 through 5 above, provided that all such insurance names SUBCONTRACTOR as an additional insured and all such insurance provides coverage to all additional insureds, including Railroad Company, for any liability arising out of work performed by all other additional insureds, including SUBCONTRACTOR.

**Is safety training required?**

Prior to any entry onto Railroad Company's property, the employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee shall determine by the guidelines hereinafter provided and by the work to be performed the level of safety training to be required.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee not hired by Railroad Company that will work on CN property are required to have minimum [www.contractororientation.com](http://www.contractororientation.com).

- a. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee hired by Railroad Company which will work on Railroad Company property are required to have minimum CN Safety and Security Awareness training, in addition to undergoing a background check. This training and background check must be obtained through the eRailSafe.com website. If not done before, the contractor must contact e-RailSafe at 855-383-7434 to be issued either a vendor number or issued instructions on obtaining a non-railroad contractor vendor number prior to accessing the noted website. Minimum information required of a Contractor, Grantee, Licensee, or Permittee and/or their subcontractor when contacting e-RailSafe is Name, Address, Telephone, Contact Person for State Projects, DOT Contract Number, and the AAR/DOT Number. This training is good for a period of two years.

- a. EXCEPTION: Railroad Company has exempted those employees of contractors providing paving services at a road crossing under construction or repair from this requirement.
- b. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee hired by Railroad Company, whose duties include and who are engaged in the inspection, construction, maintenance, or repair of railroad track, bridges, roadway, signal and communication systems, roadway facilities, or roadway machinery that will work foul of or have the potential to foul a live track are considered Roadway Workers under FRA regulations and CN Policy. They must complete the On-Track Safety Training course approved by Railroad Company and provided by R.R. Safety – AMR, P.O. Box 75, Lomira, WI 53048, telephone (920) 517-1677, email [rrsafetytraining@yahoo.com](mailto:rrsafetytraining@yahoo.com). This training must be repeated at least once each calendar year.

- a. EXCEPTION: Railroad Company has exempted those employees of contractors providing paving services at a road crossing under construction or repair from this requirement.
- b. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.
- c. All the employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee who will operate on-track machinery or those who will provide protection for other employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee must also be trained on CN US Operating Rules pertaining to their duties. They must take and pass the required examination. This training is good for a period of two years.
- d. "Potential to foul a live track" is considered, at a minimum, to be working within twenty-five (25) feet of the track; or as otherwise to be determined by CN Design & Construction Department.

The employees, subcontractors, and/or agents of the Licensee and/or its contractor shall qualify for, and make available for inspection to Railroad Company's employees or other authorized personnel at all times while on Railroad Company property, a photo identification issued by [www.e-railsafe.com](http://www.e-railsafe.com), along with at least one other government-issued form of identification. Licensee and/or their contractor shall bear all costs of compliance with the requirements of this Section. Railroad Company reserves the right to bar any of employees or agents of a Contractor, Grantee, Licensee, or Permittee and/or their contractor from Railroad Company's property at any time for any reason.



**What are the costs and address to mail documents and ROE application fee check?**

**Application Fee Information:**

**Cost is \$1000.00\* for application**

\*Fee may be increased for special handling, expedited handling, or multiple reviews.

Check Payable To: Illinois Central Railroad Company  
Mail To: Illinois Central Railroad Company  
**Attn: Thomas L. Brasseur**  
700 Pershing Road  
Pontiac, MI 48340

**Mailing Address Information:**

Mail To: Illinois Central Railroad Company  
**Attn: Thomas L. Brasseur**  
700 Pershing Road  
Pontiac, MI 48340

**Flagging Protection Rates:**

Basic daily rate – = \$1,300.00 per day  
Monday thru Friday regular business hours  
Includes 8 standard rate hours and 2 OT hours to set flags  
Overtime rate – = \$150.00 per hour  
hours in excess of 8 hours or outside of regular business hours  
Weekend or holiday rate - = \$1,500.00 per day  
\$150.00 per hour with a 10 hour minimum

**Email the completed first page above to: [Thomas.brasseur@cn.ca](mailto:Thomas.brasseur@cn.ca)**

## CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: PHONE (A/C, No, Ext): _____ FAX (A/C, No): _____ E-MAIL ADDRESS: _____ INSURER(S) AFFORDING COVERAGE: _____ NAIC #: _____ INSURER A: _____ INSURER B: _____ INSURER C: _____ INSURER D: _____ INSURER E: _____ INSURER F: _____
----------	--

**COVERAGES** **CERTIFICATE NUMBER:** \_\_\_\_\_ **REVISION NUMBER:** 1

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADD L	SUB R	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
X	<b>GENERAL LIABILITY</b> COMMERCIAL GENERAL LIABILITY CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR	Y	Y		EFF DATE	EXP DATE	EACH OCCURRENCE \$ <b>\$5,000,000</b> DAMAGE TO RENTED PREMISES (Ea occurrence) \$ _____ MED EXP (Any one person) \$ _____ PERSONAL & ADV INJURY \$ _____ GENERAL AGGREGATE <b>\$10,000,000</b> PRODUCTS - COMP/OP AGG \$ _____
X	<b>AUTOMOBILE LIABILITY</b> ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS NON-OWNED AUTOS	Y	Y		EFF DATE	EXP DATE	COMBINED SINGLE <b>\$1,000,000</b> BODILY INJURY (Per person) \$ _____ BODILY INJURY (Per accident) \$ _____ PROPERTY DAMAGE (Per accident) \$ _____
X	<b>UMBRELLA LIAB EXCESS LIAB</b> OCCUR CLAIMS-MADE	Y	Y		EFF DATE	EXP DATE	EACH OCCURRENCE <b>\$5,000,000</b> AGGREGATE <b>\$10,000,000</b>
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y	Y		EFF DATE	EXP DATE	MIN STATUTORY

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)**  
 Certificate holder is an additional insured under all policies on this certificate including Commercial General Liability and Umbrella Liability.  
 A Waiver of Subrogation applies in favor of the Certificate Holder for all policies on this certificate including Commercial General Liability and Umbrella Liability.  
 50 foot railroad exclusion is removed through CG 2417 10 01

<b>CERTIFICATE HOLDER</b> Illinois Central Railroad Company and its Parents  Attn: Thomas L. Brasseur 700 Pershing Rd Pontiac, MI 49340	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE of _____
--	---

**STORM WATER POLLUTION PREVENTION PLAN**




**Storm Water Pollution Prevention Plan**



Route	Marked Route	Section Number
Route 12/20/45	LaGrange Road	2018-133-BR
Project Number	County	Contract Number
6TOL(343)	Cook	62H49

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature	Date	
	9/14/21	
Print Name	Title	Agency
Jose Rios, P.E.	Regional Engineer	Illinois Department of Transportation

**Note:** Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

**I. Site Description:**

**A. Provide a description of the project location; include latitude and longitude, section, town, and range:**

The proposed improvement is located in Countryside, Hodgkins, Justice and Willow Springs in Cook County on the northbound US 12/20/45/LaGrange Road (LaGrange Road) over the ICG (CN) Railroad, I&M Canal, Chicago Sanitary and Ship Canal and on the northbound US 12/20/45 (LaGrange Road) over Des Plaines River and ATSF (BNSF) Railroad. The project limits are on northbound US 21/20/45 (LaGrange Road) between IL 171 and I-55. (Latitude 41°44'55.99" N, Longitude 87°51'28.34" W). The project is located in Section E27, 28, 34, Township 38N, Range 1.

The design, installation, and maintenance of BMPs at these locations are within an area where annual erosivity (R value) is less than or equal to 160. Erosivity is less than 5 in all two-week periods between October 12 and April 15, which would qualify for a construction rainfall erosivity waiver under the US Construction General Permit requirements. At these locations, erosivity is highest in spring to autumn, April 16 - October 11.

**B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:**

The proposed improvement consists of bridge deck replacement, substructure repairs, and drainage system replacements to the existing structures carrying northbound LaGrange Road, as well as reconstruction and stabilization of an eroded area and undermined storm sewer outleting to the Chicago Sanitary and Ship Canal. Riprap will be placed at three bridge piers located in waterways to provide erosion protection for existing pier foundation spread footings.

A vegetated swale is proposed at the base of the abutment of the CSSC to collect and convey runoff to the storm structure located at the bottom of the embankment. The swale will provide conveyance along with filtration by the densely planted vegetation. Existing inlets on the approach pavement of the bridges over the I&M Canal, the CSSC and the Des Plaines River will be removed and replaced outside of the bridge approach slabs on the bridge approach connector pavement. Runoff from the proposed bridge deck will maintain the existing drainage

patterns. The bridges' scuppers and floor drains should be replaced. Pipes that convey runoff from the collections structures down the pier to ground level should also be replaced.

Scour protection is required around three existing spread footing piers. Two piers are located in the CSSC and one pier is located in the Des Plaines River. Riprap will be installed around the three piers, as well as at one end section outlet in the unnamed tributary to the I&M Canal to provide erosion protection. Erosion and sediment control measures should be installed, maintained, and removed per the guidance of the IDOT Erosion and Sediment Control Field Guide for Construction Inspection. ESC measures shall be inspected after major rain events and any damage shall be repaired in a timely manner. The vegetated swale and riprap discussed above are strategies utilized for permanent stabilization.

The specific construction stages are as follows:  
 Prestage -- remove existing guardrail, center median, and other appurtenances. Construct temporary pavement.  
 Stage 1 -- close northbound US 12/20/45 (LaGrange Road) lanes, shift traffic. Construct new northbound lanes.  
 End of Construction -- shift northbound traffic to new northbound structures.

C. Provide the estimated duration of this project:  
 2 years

D. The total area of the construction site is estimated to be 7.9 acres.  
 The total area of the site estimated to be disturbed by excavation, grading or other activities is 7.9 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed; see Section 4-102 of the IDOT Drainage Manual:  
 C = 0.67 (Existing)      C = 0.68 (Proposed)

F. List all soils found within project boundaries; include map unit name, slope information, and erosivity:  
 The unit name, slope, and whole soil K factor are listed below:  
 Will silty clay loam, 0 to 2%, 0.28  
 Peotone silty clay loam, 0 to 2%, 0.24  
 Kane silt loam, 0 to 2%, 0.24  
 Kankakee fine sandy loam, 2 to 4%, 0.20  
 Ozaukee silt loam, 2 to 4%, 0.43  
 Ozaukee silt loam, 6 to 12%, 0.43  
 Orthents, Undulating, stony, 0.15  
 Orthents, loamy, Undulating, 0.37  
 Orthents, clayey, Undulating, 0.32  
 Orthents, clayey, Rolling, 0.32  
 Anthropotic Udorthents – Urban land-Elliott complex, 2 to 4%, 0.43  
 Sawmill silty clay loam, heavy till plain, 0 to 2%, 0.28

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:  
 There are 0.63 acres of wetlands within the project limits. The WOUS and wetlands are listed below:  
 WOUS 1 (UNT to I&M Canal): 0.12 acres/0.001 acres of impact  
 WOUS 2 (Chicago Sanitary and Ship Canal): 1.58 acres/0.089 acres of impact  
 WOUS 3 (Des Plaines River): 1.0 acres/0.019 acres of impact  
 WOUS 4 (I&M Canal): 0.28 acres/0.0 acres of impact  
 Wetland 1: 0.14 acres/0.0 acres of impact  
 Wetland 2: 0.08 acres/0.0 acres of impact  
 Wetland 3: 0.13 acres/0.0 acres of impact  
 Wetland 4: 0.07 acres/0.0 acres of impact  
 Wetland 6: 0.02 acres/0.0 acres of impact

Wetland 7: 0.02 acres/0.0 acres of impact  
Wetland 8: 0.17 acres/0.0 acres of impact

H. Provide a description of potentially erosive areas associated with this project:

Please see the attached NRCS Soil Maps that include maps for soil K-factors and soil wind erodibility.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

Construction will require constructing temporary traffic cross overs across the existing median ditches that will require temporary grading as well as grading to restore to the final condition. There are storm sewer outlets proposed to be constructed on the roadway embankments. A re-established swale is proposed to the west of the Santuary and Ship Canal. 1:4 (V:H) slope is used for the proposed swale.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

IDOT

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located:

Countryside, Hodgkins, Justice and Willow Springs

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the Illinois Department of Natural Resources (IDNR). The location of the receiving waters can be found on the erosion and sediment control plans:

Des Plaines River, Illinois and Michigan Canal, Chicago Sanitary and Ship Canal, Unnamed Tributary to the Illinois and Michigan Canal. There are no Biologically Significant Streams in the project area.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the U.S. (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the U.S. or b) How additional erosion and sediment controls will be provided within that area.

Other than the median ditches the majority of the roadway embankment will remain undisturbed. Construction activities within 50-feet of Waters of the US are authorized by a Section 404 permit.

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

303(d) Listed receiving waters for suspended solids, turbidity, or siltation.

The name(s) of the listed water body, and identification of all pollutants causing impairment:

Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

Applicable Federal, Tribal, State, or Local Programs

Floodplain

Des Plaines River, Chicago Sanitary and Ship Canal

Historic Preservation

Illinois and Michigan Canal

Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

Threatened and Endangered Species/Illinois Natural Areas (INA)/Nature Preserves

Other

Wetland

See Drainage Plans

P. The following pollutants of concern will be associated with this construction project:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Antifreeze / Coolants  | <input checked="" type="checkbox"/> Solid Waste Debris                                |
| <input checked="" type="checkbox"/> Concrete   | <input type="checkbox"/> Solvents   |
| <input checked="" type="checkbox"/> Concrete Curing Compounds                                      | <input checked="" type="checkbox"/> Waste water from cleaning construction equipments |
| <input checked="" type="checkbox"/> Concrete Truck Waste   | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides                                       | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Paints   | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) | <input type="checkbox"/> Other (Specify) _____  |
| <input checked="" type="checkbox"/> Soil Sediment  | <input type="checkbox"/> Other (Specify) _____  |

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in Section I.C above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

**A. Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:

1. Minimize the amount of soil exposed during construction activity;
2. Minimize the disturbance of steep slopes;
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
4. Minimize soil compaction and, unless infeasible, preserve topsoil.

**B. Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II.B.1 and II.B.2, stabilization measures shall be initiated immediately where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching | <input type="checkbox"/> Temporary Turf (Seeding, Class 7) |
| <input type="checkbox"/> Geotextiles                                   | <input checked="" type="checkbox"/> Temporary Mulching     |
| <input checked="" type="checkbox"/> Permanent Seeding                  | <input type="checkbox"/> Vegetated Buffer Strips           |
| <input type="checkbox"/> Preservation of Mature Seeding                | <input type="checkbox"/> Other (Specify) _____             |
| <input type="checkbox"/> Protection of Trees                           | <input type="checkbox"/> Other (Specify) _____             |
| <input type="checkbox"/> Sodding                                       | <input type="checkbox"/> Other (Specify) _____             |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding  | <input type="checkbox"/> Other (Specify) _____             |

Describe how the stabilization practices listed above will be utilized during construction:

Stabilization controls runoff volume and velocity, peak runoff rates and volumes of discharge to minimize exposed soil, disturbed slopes, sediment discharges from construction, and provides for natural buffers and minimization of soil compaction. Existing vegetated areas where disturbance can be avoided will not require stabilization.

Where possible, stabilization of the initial Stage should be completed before work is moved to subsequent stages.

Temporary Erosion Control Seeding - This item will be applied to all bare soil areas every seven days to minimize the amount of exposed surface areas.

Erosion Control Blanket - This item will be applied to all bare soil areas to minimize the amount of exposed surface areas.

Temporary Mulching - Mulch Method 2 should be applied to slopes for temporary stabilization prior to the seasons when permanent seed will not germinate.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Permanent Seeding - This item will be placed according to the landscaping plans at the end of each major stage of construction to permanently stabilize the disturbed areas.

Erosion Control Blanket - This item will be used when seeding is applied to prevent erosion as shown in the erosion control plans.

C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- |  |  |
|--|--|
| <input type="checkbox"/> Aggregate Ditch<br><input type="checkbox"/> Concrete Revetment Mats<br><input checked="" type="checkbox"/> Dust Suppression<br><input type="checkbox"/> Dewatering Filtering<br><input type="checkbox"/> Gabions<br><input checked="" type="checkbox"/> In-Stream or Wetland Work<br><input type="checkbox"/> Level Spreaders<br><input type="checkbox"/> Paved Ditch<br><input type="checkbox"/> Permanent Check Dams<br><input checked="" type="checkbox"/> Perimeter Erosion Barrier<br><input type="checkbox"/> Permanent Sediment Basin<br><input type="checkbox"/> Retaining Walls<br><input checked="" type="checkbox"/> Riprap<br><input type="checkbox"/> Rock Outlet Protection<br><input type="checkbox"/> Sediment Trap<br><input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input checked="" type="checkbox"/> Stabilized Construction Exits<br><input type="checkbox"/> Stabilized Trench Flow<br><input type="checkbox"/> Slope Mattress<br><input type="checkbox"/> Slope Walls<br><input type="checkbox"/> Temporary Ditch Check<br><input type="checkbox"/> Temporary Pipe Slope Drain<br><input type="checkbox"/> Temporary Sediment Basin<br><input type="checkbox"/> Temporary Stream Crossing<br><input type="checkbox"/> Turf Reinforcement Mats<br><input checked="" type="checkbox"/> Other (Specify) <u>Stabilized Flow Line</u><br><input type="checkbox"/> Other (Specify)      _____<br><input type="checkbox"/> Other (Specify)      _____<br><input type="checkbox"/> Other (Specify)      _____<br><input type="checkbox"/> Other (Specify)      _____<br><input type="checkbox"/> Other (Specify)      _____<br><input type="checkbox"/> Other (Specify)      _____ |
|--|--|

Describe how the structural practices listed above will be utilized during construction:

Storm Drain Inlet Protection – Inlet and Pipe Protection will be placed on inlets that have small tributary areas to prevent sediment from entering the system. Inlet filters will be used in all curb structures to prevent silt and sediment from entering the drainage system

Stabilized Construction Exits – Stabilized construction entrances/exits will be used to prevent the tread of soil from excavated areas to paved areas. All work associated with installation and maintenance of Stabilized Construction Entrances, concrete washouts are incidental to the contract

In-Stream Work - In-stream work will be performed in the Chicago Sanitary and Ship Canal and the Des Plaines River to install riprap for scour protection at three existing bridge piers with spread footings

Stabilized Flow Line - The Contractor should provide to the RE a plan to ensure that a stabilized flow line will be provided during storm sewer construction. The use of a stabilized flow line between installed storm sewer and open disturbance will reduce the potential for the offsite discharge of sediment bearing waters, particularly when rain is forecasted so that flow will not erode. Lack of an approved plan or failure to comply will result in an ESC Deficiency Deduction

Perimeter Erosion Barrier - Silt fence should only be used as PEB in areas where the work area is higher than the perimeter. The use of silt fence at the top of the slope/elevations higher than the work area should always be avoided. If necessary, temporary fence should be utilized in these locations (where the top of slope/elevation is higher than the work area) in lieu of silt fence.



Dust Suppression - Dust control watering shall be applied as directed by the engineer.

All work associated with installation and maintenance of Stabilized Construction Entrances, concrete washouts are incidental to the contract.

Avoid using the INLET AND PIPE PROTECTION shown on the Highway Standard Sheets 280001. Straw bales and silt fence should not be used as inlet and pipe protection. Inlet and pipe protection should be comprised of ditch checks, temporary seeding and temporary erosion control blanket and will be installed at all storm sewer and culverts. Inlet filters, as specified in Article 1081.15(h) of the Standard Specifications (current edition) will be installed at all inlets, catch basins, and manholes for the duration of construction. Inlet filters will be cleaned on a regular basis.

This project requires a US Army Corps of Engineers (USACE) 404 Permit that will be secured by the Department. All condition of the 404 Permit, found in the special provisions, must be followed. As a condition of this permit, the contractor will need to submit an in-stream work plan (including work within wetlands) to the Department for approval. Guidelines on acceptable in-stream work techniques (including work within wetlands) can be found on the USACE website. The USACE defines and determines in-stream work. The cost of all materials and labor necessary to comply with the above provisions to prepare and implement an in-stream work plan (including work within wetlands) will not be paid for separately, but shall be considered as included in the unit bid prices of the contract and no additional compensation will be allowed, with the exception of cofferdams which will be paid for as Cofferdam (Type 1) (in-stream/wetland work) with a basis of payment of each.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Riprap - Riprap will be placed around all flared end sections to maintain stability and at three existing bridge piers with spread footings to provide scour protection.

**D. Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project:  Yes  No

If yes above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

**E. Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT BDE Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Catch basins as well as a proposed swale on the east side of the Sanitary and Ship Canal are proposed. Riprap will be installed at one end section outlet in the unnamed tributary to the I&M Canal to provide erosion protection.

**F. Approved State or Local Laws:** The management practices, controls and provisions contained in this plan will be in accordance with

IDOT specifications, which are at least as protective as the requirements contained in the IEPA's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

All practices and procedures shall be in accordance with the IDOT Standard Specifications for Road and Bridge Construction, IDOT Supplemental Specifications and Recurring Special Provisions, and the special provisions and details shown in the Plans.

**G. Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342A.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

- Approximate duration of the project, including each stage of the project
- Rainy season, dry season, and winter shutdown dates
- Temporary stabilization measures to be employed by contract phases
- Mobilization time-frame
- Mass clearing and grubbing/roadside clearing dates
- Deployment of Erosion Control Practices
- Deployment of Sediment Control Practices (including stabilized cons
  
- Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
- Paving, saw-cutting, and any other pavement related operations
- Major planned stockpiling operation
- Time frame for other significant long-term operations or activities that may plan non-storm water discharges as dewatering, grinding, etc
- Permanent stabilization activities for each area of the project

2. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

- Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
- Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal - Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
- Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
- Additional measures indicated in the plan.

### III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacturer's specifications.

The IDOT Erosion and Sediment Control Field Guide for Construction Inspection can now be found on the new website on the Construction tab at the following link: <http://www.idot.illinois.gov/transportation-system/environment/erosion-and-sediment-control>. Per the IDOT field guide, the following techniques for inspection and maintenance need to be performed on the following erosion and sediment control measures during construction.

**Perimeter erosion barrier** - Do not use PEBs in areas of concentrated flows (e.g., streams, channels, drain inlets). Maintain PEB silt fence used as "No Intrusion" practice in accordance with inspection tips. If erosion is present under this PEB, look for correct trenching depth, backfilling and compaction. Pay special attention to transitional areas such as at culverts where PEB gaps could allow sediment to discharge. Repair tears, gaps or undermining. Restore leaning PEB and ensure taut. Repair or replace any missing or broken stakes immediately. Clean PEB if sediment reaches one-third height of barrier. Remove PEB once final stabilization establishes since PEB is no longer necessary and should be removed. Repair PEB if undermining occurs anywhere along its entire length.

**Storm drain inlet protection** - Check for water standing in filter more than one hour following a rain event, check for sediment or trash in the filter, check for tears or damage to the filter, check for tears present in fabric, check for sediment entering device at junction of fabric or bales, check for undermining. Remove sediment from inlet filter basket when basket is 25% full or 50% of the fabric pores are covered with silt. Remove ponded water on road surfaces immediately. Clean filter if standing water is present longer than one hour after a rain event. Clean sediment or replace silt fence and straw bale inlet protection when sediment accumulates to one-third the height of the fabric. Remove trash accumulated around or on top of practice. When filter is removed for cleaning, replace filter if any tear is present.

**Riprap** - stone at riprap should be inspected for slumping, erosion, and displaced stones. After a major rain event and any stones will be replaced due to washout.

**Erosion control blanket/temporary mulch** - Check for erosion under the blanket if dislodged staples, improper spacing and tenting of the blanket is present. Under blanket erosion is commonly the result of not toeing in at the top of the slope. Check the low end of the blanket for sediment buildup, this indicates that water is flowing beneath an ECB. Inspect blanket areas that transition into other drainageways to ensure no gaps in coverage occur where the blanket transitions to another form of protection. Repair damage due to water running beneath the blanket and restore ECBs when displacement occurs. Reseeding may be necessary. Replace all displaced ECBs and restaple.

**Permanent seeding** - Fill or shape any irregularities in the soil's surface to prevent the formation of depressions or water pockets in the sod. Prior to sod placement, the soil shall be clear of trash, debris, large roots, branches, stones and clods larger than 1 inch in length or diameter. All sod shall be free of disease, insects and weeds and consist of a three-fourths inch mat of vigorous turf. Look for gaps at joints where sod pieces abut. Give special attention to abrupt and short ditch grade changes. Limit foot traffic to low use for the first two to three weeks. Ensure irrigation rate does not result in runoff. Install salt-tolerant sod where needed. Replace when >25% of any individual piece of sod is no longer viable. Restore areas where rolling edges are present or sod is displaced.

**Temporary erosion control seeding** - The seed is more likely to germinate if it has more soil contact. Walk on seed, or use a chain drag to lightly incorporate broadcast seed and enhance germination. Seed broadcast on

mineral soils (any soil consisting primarily of mineral (sand, silt and clay) material, rather than organic matter) will suffer from a lack of nutrients and moisture. If mineral soils present, use alternative BMP (e.g., soil binder). Inspect other BMPs around the location of the temporary seeding to ensure its successful function. Check for erosion rills (type of accelerated erosion by water that produces small channels that can be obliterated by tillage) on slopes. Reapply seed if stabilization hasn't been achieved. Apply temporary mulch to hold seed in place if seed has been washed away or found to be concentrated in ditch bottoms. Restore rills, greater than 4 inches deep, as quickly as possible on slopes steeper than 1V:4H to prevent sheetflow from becoming concentrated flow patterns. Mow, if necessary, to promote seed soil contact when excessive weed development occurs, a common indication of ineffective temporary seeding. Supplement BMP if weather conditions (extreme heat or cold) are not conducive for germination.

Temporary ditch checks – Floating ditch checks may indicate that stakes are installed incorrectly. In some circumstances, additional ditch checks or other BMPs may be necessary if current quantity is compromised. Check for sediment accumulation. Check for flow around the device, lengthen if needed. Check for flow-through at joints or where splices occur, adjust if needed. Check for undermining of the device. Correct and stake with fabric when discovered. Remove sediment from upstream side of ditch check when sediment has reached 50% of height of structure. Repair or replace ditch checks whenever tears, splits, unraveling or compressed excelsior is apparent. Replace torn fabric mat that may allow water to undermine the ditch check. Remove debris (garbage, corn stalks, etc.) when observed on check. Reestablish the flow over the center of the ditch check. Water or sediment going around the ditch check indicates incorrect installation. Device needs lengthening or the selected device is inappropriate for the site conditions. Remove ditch checks once all upslope areas are stabilized, seed or otherwise stabilize TDC area(s).

Stabilized construction exit – Inspect surrounding area to ensure all construction traffic is using designated construction exit locations and not leaving site from non-stabilized locations. Inspect all curbs, gutters, inlets, and inlet protection near stabilized construction exits for discharged sediments. Inspect drainage pipe for damage. Check accumulation of debris in stone. Replenish stone or replace exit if vehicles continue to track sediment onto the roadway from the construction site. Sweep sediment on roadway from construction activities immediately. Ensure culverts are free from damage. Use street sweeping in conjunction with this BMP to remove sediment not removed by the stabilized construction exit.

Any damaged or undermining shall be immediately repaired.

#### IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report, BC 2259. Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov), telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:  
Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East

Post Office Box 19276  
Springfield, Illinois 62794-9276

**V. Failure to Comply:**

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.



**Contractor Certification Statement**



Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route	Marked Route	Section Number
Route 12/20/45	LaGrange Road	2018-133-BR
Project Number	County	Contract Number
6TOL(343)	Cook	62H49

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Additionally, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

Signature	Date		
<input type="text"/>	<input type="text"/>		
Print Name	Title		
<input type="text"/>	<input type="text"/>		
Name of Firm	Phone		
<input type="text"/>	<input type="text"/>		
Street Address	City	State	Zip Code
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Items which this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP

## **BLENDED FINELY DIVIDED MINERALS (BDE)**

Effective: April 1, 2021

Revise the second paragraph of Article 1010.01 of the Standard Specifications to read:

“Different sources or types of finely divided minerals shall not be mixed or used alternately in the same item of construction, except as a blended finely divided mineral product according to Article 1010.06.”

Add the following article to Section 1010 of the Standard Specifications:

**“1010.06 Blended Finely Divided Minerals.** Blended finely divided minerals shall be the product resulting from the blending or intergrinding of two or three finely divided minerals. Blended finely divided minerals shall be according to ASTM C 1697, except as follows.

- (a) Blending shall be accomplished by mechanically or pneumatically intermixing the constituent finely divided minerals into a uniform mixture that is then discharged into a silo for storage or tanker for transportation.
- (b) The blended finely divided mineral product will be classified according to its predominant constituent or the manufacturer’s designation and shall meet the chemical requirements of its classification. The other finely divided mineral constituent(s) will not be required to conform to their individual standards.”

## **COMPENSABLE DELAY COSTS (BDE)**

Effective: June 2, 2017

Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.

- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor’s yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.



- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) **Basis of Payment.** After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.
- (b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.
  - (1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

- (2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.
- (c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

**CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)**

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term “equipment” refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 <sup>1/</sup>	600-749	2002
	750 and up	2006
June 1, 2011 <sup>2/</sup>	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 <sup>2/</sup>	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

- 1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.
- 2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

### **Diesel Retrofit Deficiency Deduction**

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

## **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

**CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR.** This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform **17.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

**DBE LOCATOR REFERENCES.** Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:  
<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

**BIDDING PROCEDURES.** Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.
  - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
  - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
  - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
  - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.



- (b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.
- (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "[DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov)" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
  - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
  - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

**CONTRACT COMPLIANCE.** Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at [DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov).
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
  - (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
  - (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

### **FUEL COST ADJUSTMENT (BDE)**

Effective: April 1, 2009

Revised: August 1, 2017

**Description.** Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

**General.** The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.
- (5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units		
Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / \$1000

Metric Units		
Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / \$1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

**Method of Adjustment.** Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$

- Where: CA = Cost Adjustment, \$  
 FPI<sub>P</sub> = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)  
 FPI<sub>L</sub> = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)  
 FUF = Fuel Usage Factor in the pay item(s) being adjusted  
 Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

**Basis of Payment.** Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI<sub>L</sub> and FPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.



## PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2022

Revise Article 1032.05 of the Standard Specifications to read:

**“1032.05 Performance Graded Asphalt Binder.** These materials will be accepted according to the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.” The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

- (a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, $\Delta T_c$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

- (b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

- (1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

- (2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 μm)	95 ± 5
No. 50 (300 μm)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

- (3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: \*.SPA, \*.SPG, \*.IRD, \*.IFG, \*.CSV, \*.SP, \*.IRS, \*.GAML, \*. [0-9], \*.IGM, \*.ABS, \*.DRT, \*.SBM, \*.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Table 4 - Requirements for Softener Modified Asphalt Binders	
Test	Asphalt Grade
Small Strain Parameter (AASHTO PP 113) BBR, $\Delta T_c$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs) <sup>1/</sup>	-5°C min.
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, $\Delta G^* _{peak}$ , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs) <sup>1/</sup>	Results (%) shall be reported to the Central Bureau of Materials

1/ Frequency of the testing will be determined by the Bureau of Materials Policy Memorandum, "Performance Graded Asphalt Binder Qualification Procedure."

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat"

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

“(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

HMA Mixtures - RAP/RAS Maximum ABR % <sup>1/ 2/</sup>			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface <sup>3/</sup>
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.

(2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % <sup>1/ 2/</sup>			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface <sup>3/</sup>
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	--	--	25
IL-4.75	--	--	35

1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

- 3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.”

Add the following to the end of Note 2. of Article 1030.03 of the Standard Specifications.

“A dedicated storage tank for the ground tire rubber (GTR) modified asphalt binder shall be provided. This tank shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent.”

**PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)**

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

“(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time <sup>1/</sup> (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer.”

### **STEEL COST ADJUSTMENT (BDE)**

Effective: April 2, 2004

Revised: January 1, 2022

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate “Yes” for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

- Metal Piling (excluding temporary sheet piling)
- Structural Steel
- Reinforcing Steel

Other steel materials such as dowel bars, tie bars, welded reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in lb (kg)  
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where:  $MPI_M$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

$MPI_L$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $MPI_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $MPI_L$  and  $MPI_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.



**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Welded Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m )	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

**SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)**

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

**“109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.**  
 The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor’s submitted DBE utilization plan.

The report shall be made through the Department’s on-line subcontractor payment reporting system within 21 days of making the payment.”

**SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: November 2, 2017

Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

## **TRAINING SPECIAL PROVISIONS (BDE)**

Effective: October 15, 1975

Revised: September 2, 2021

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 2. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee it employs on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of \$500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

## **IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION**

Effective: August 1, 2012

Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at \$15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

**Method of Measurement:** The unit of measurement is in hours.

**Basis of Payment:** This work will be paid for at the contract unit price of \$15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is 2.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of \$15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

**VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)**

Effective: November 1, 2021

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

“The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. The lights shall be in operation while the vehicle or equipment is engaged in construction operations.”

**WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form “SBE 723” within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

**WORK ZONE TRAFFIC CONTROL DEVICES (BDE)**

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports .....1106.02”

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

“For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer’s specifications.”



Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

**“701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer’s self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device.”

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

**“1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019.”

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

“(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.”

## PROJECT LABOR AGREEMENT

Effective: May 18, 2007

Revised: August 1, 2019

**Description.** The Illinois Project Labor Agreements Act, 30 ILCS 571, states that the State of Illinois has a compelling interest in awarding public works contracts so as to ensure the highest standards of quality and efficiency at the lowest responsible cost. A project labor agreement (PLA) is a form of pre-hire collective bargaining agreement covering all terms and conditions of employment on a specific project that is intended to support this compelling interest. It has been determined by the Department that a PLA is appropriate for the project that is the subject of this contract. The PLA document, provided below, only applies to the construction site for this contract. It is the policy of the Department on this contract, and all construction projects, to allow all contractors and subcontractors to compete for contracts and subcontracts without regard to whether they are otherwise parties to collective bargaining agreements.

**Execution of Letter of Assent.** A copy of the PLA applicable to this project is included as part of this special provision. As a condition of the award of the contract, the successful bidder and each of its subcontractors shall execute a "Contractor Letter of Assent", in the form attached to the PLA as Exhibit A. The successful bidder shall submit a Subcontractor's Contractor Letter of Assent to the Department prior to the subcontractor's performance of work on the project. Upon request, copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization at the pre-job conference.

**Quarterly Reporting.** Section 37 of the Illinois Project Labor Agreements Act requires the Department to submit quarterly reports regarding the number of minorities and females employed under PLAs. To assist in this reporting effort, the Contractor shall provide a quarterly workforce participation report for all minority and female employees working under the PLA of this contract. The data shall be reported on Construction Form BC 820, Project Labor Agreement (PLA) Workforce Participation Quarterly Reporting Form available on the Department's website <http://www.idot.illinois.gov/Assets/uploads/files/IDOT-Forms/BC/BC%20820.docx>.

The report shall be submitted no later than the 15th of the month following the end of each quarter (i.e., April 15 for the January – March reporting period). The form shall be emailed to [DOT.PLA.Reporting@illinois.gov](mailto:DOT.PLA.Reporting@illinois.gov) or faxed to (217) 524-4922.

Any costs associated with complying with this provision shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

Illinois Department of Transportation  
**PROJECT LABOR AGREEMENT**

This Project Labor Agreement (“PLA” or “Agreement”) is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2022, by and between the Illinois Department of Transportation (“IDOT” or “Department”) in its proprietary capacity, and each relevant Illinois AFL-CIO Building Trades signatory hereto as determined by the Illinois AFL-CIO Statewide Project Labor Agreement Committee on behalf of each of its affiliated members (individually and collectively, the “Unions”). This PLA shall apply to Construction Work (as defined herein) to be performed by IDOT’s Prime Contractor and each of its subcontractors of whatever tier (“Subcontractor” or “Subcontractors”) on Contract No. 62H49 (hereinafter, the “Project”).

**ARTICLE 1 - INTENT AND PURPOSES**

- 1.1 This PLA is entered into in accordance with the Project Labor Agreement Act (“Act”, 30 ILCS 571). It is mutually understood and agreed that the terms and conditions of this PLA are intended to promote the public interest in obtaining timely and economical completion of the Project by encouraging productive and efficient construction operations; by establishing a spirit of harmony and cooperation among the parties; and by providing for peaceful and prompt settlement of any and all labor grievances or jurisdictional disputes of any kind without strikes, lockouts, slowdowns, delays, or other disruptions to the prosecution of the work. The parties acknowledge the obligations of the Contractors and Subcontractors to comply with the provisions of the Act. The parties will work with the Contractors and Subcontractors within the parameters of other statutory and regulatory requirements to implement the Act’s goals and objectives.
- 1.2 As a condition of the award of the contract for performance of work on the Project, IDOT’s Prime Contractor and each of its Subcontractors shall execute a “Contractor Letter of Assent”, in the form attached hereto as Exhibit A, prior to commencing Construction Work on the Project. The Contractor shall submit a Subcontractor’s Contractor Letter of Assent to the Department prior to the Subcontractor’s performance of Construction Work on the Project. Upon request copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization consistent with this Agreement and at the pre-job conference referenced in Article III, Section 3.1.

- 1.3 Each Union affiliate and separate local representing workers engaged in Construction Work on the Project in accordance with this PLA are bound to this agreement by the Illinois AFL-CIO Statewide Project Labor Agreement Committee which is the central committee established with full authority to negotiate and sign PLAs with the State on behalf of all respective crafts. Upon their signing the Contractor Letter of Assent, the Prime Contractor, each Subcontractor, and the individual Unions shall thereafter be deemed a party to this PLA. No party signatory to this PLA shall, contract or subcontract, nor permit any other person, firm, company, or entity to contract or subcontract for the performance of Construction Work for the Project to any person, firm, company, or entity that does not agree in writing to become bound for the term of this Project by the terms of this PLA prior to commencing such work and to the applicable area-wide collective bargaining agreement(s) with the Union(s) signatory hereto.
- 1.4 It is understood that the Prime Contractor(s) and each Subcontractor will be considered and accepted by the Unions as separate employers for the purposes of collective bargaining, and it is further agreed that the employees working under this PLA shall constitute a bargaining unit separate and distinct from all others. The parties hereto also agree that this PLA shall be applicable solely with respect to this Project, and shall have no bearing on the interpretation of any other collective bargaining agreement or as to the recognition of any bargaining unit other than for the specific purposes of this Project.
- 1.5 In the event of a variance or conflict, whether explicit or implicit, between the terms and conditions of this PLA and the provisions of any other applicable national, area, or local collective bargaining agreement, the terms and conditions of this PLA shall supersede and control. For any work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of the International Union of Elevator Constructors, and for any instrument calibration work and loop checking performed under the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, the preceding sentence shall apply only with respect to Articles I, II, V, VI, and VII.

- 1.6 Subject to the provisions of paragraph 1.5 of this Article, it is the parties' intent to respect the provisions of any other collective bargaining agreements that may now or hereafter pertain, whether between the Prime Contractor and one or more of the Unions or between a Subcontractor and one or more of the Unions. Accordingly, except and to the extent of any contrary provision set forth in this PLA, the Prime Contractor and each of its Subcontractors agrees to be bound and abide by the terms of the following in order of precedence: (a) the applicable collective bargaining agreement between the Prime Contractor and one or more of the Unions made signatory hereto; (b) the applicable collective bargaining agreement between a Subcontractor and one or more of the Unions made signatory hereto; or (c) the current applicable area collective bargaining agreement for the relevant Union that is the agreement certified by the Illinois Department of Labor for purposes of establishing the Prevailing Wage applicable to the Project. The Union will provide copies of the applicable collective bargaining agreements pursuant to part (c) of the preceding sentence to the Prime Contractor. Assignments by the Contractors or Subcontractors amongst the trades shall be consistent with area practices; in the event of unresolved disagreements as to the propriety of such assignments, the provisions of Article VI shall apply.
- 1.7 Subject to the limitations of paragraphs 1.4 to 1.6 of this Article, the terms of each applicable collective bargaining agreement as determined in accordance with paragraph 1.6 are incorporated herein by reference, and the terms of this PLA shall be deemed incorporated into such other applicable collective bargaining agreements only for purposes of their application to the Project.
- 1.8 To the extent necessary to comply with the requirements of any fringe benefit fund to which the Prime Contractor or Subcontractor is required to contribute under the terms of an applicable collective bargaining agreement pursuant to the preceding paragraph, the Prime Contractor or Subcontractor shall execute all "Participation Agreements" as may be reasonably required by the Union to accomplish such purpose; provided, however, that such Participation Agreements shall, when applicable to the Prime Contractor or Subcontractor solely as a result of this PLA, be amended as reasonably necessary to reflect such fact. Upon written notice in the form of a lien of a Contractor's or Subcontractor's delinquency from any applicable fringe benefit fund, IDOT will withhold from the Contractor's periodic pay request an amount sufficient to extinguish any delinquency obligation of the Contractor or Subcontractor arising out of the Project.
- 1.9 In the event that the applicable collective bargaining agreement between a Prime Contractor and the Union or between the Subcontractor and the Union expires prior to the completion of this Project, the expired applicable contract's terms will be maintained until a new applicable collective bargaining agreement is ratified. The wages and fringe benefits included in any new applicable collective bargaining agreement will apply on and after the effective date of the newly negotiated collective bargaining agreement, except to the extent wage and fringe benefit retroactivity is specifically agreed upon by the relevant bargaining parties.

**ARTICLE II – APPLICABILITY, RECOGNITION, AND COMMITMENTS**

- 2.1 The term Construction Work as used herein shall include all “construction, demolition, rehabilitation, renovation, or repair” work performed by a “laborer or mechanic” at the “site of the work” for the purpose of “building” the specific structures and improvements that constitute the Project. Terms appearing within quotation marks in the preceding sentence shall have the meaning ascribed to them pursuant to 29 CFR Part 5 and Illinois labor laws.
- 2.2 By executing the Letters of Assent, Prime Contractor and each of its Subcontractors recognizes the Unions signatory to this PLA as the sole and exclusive bargaining representatives for their craft employees employed on the jobsite for this Project. Unions who are signatory to this PLA will have recognition on the Project for their craft.
- 2.3 The Prime Contractor and each of its Subcontractors retains and shall be permitted to exercise full and exclusive authority and responsibility for the management of its operations, except as expressly limited by the terms of this PLA or by the terms and conditions of the applicable collective bargaining agreement.
- 2.4 Except to the extent contrary to an express provision of the relevant collective bargaining agreement, equipment or materials used in the Project may be pre-assembled or pre-fabricated, and there shall be no refusal by the Union to handle, transport, install, or connect such equipment or materials. Equipment or materials delivered to the job-site will be unloaded and handled promptly without regard to potential jurisdictional disputes; any such disputes shall be handled in accordance with the provisions of this PLA.
- 2.5 The parties are mutually committed to promoting a safe working environment for all personnel at the job-site. It shall be the responsibility of each employer to which this PLA applies to provide and maintain safe working conditions for its employees, and to comply with all applicable federal, state, and local health and safety laws and regulations.
- 2.6 The use or furnishing of alcohol or drugs and the conduct of any other illegal activity at the job-site is strictly prohibited. The parties shall take every practical measure consistent with the terms of applicable collective bargaining agreements to ensure that the job-site is free of alcohol and drugs.
- 2.7 All parties to this PLA agree that they will not discriminate against any employee based on race, creed, religion, color, national origin, union activity, age, gender or sexual orientation and shall comply with all applicable federal, state, and local laws.

- 2.8 In accordance with the Act and to promote diversity in employment, IDOT will establish, in cooperation with the other parties, the apprenticeship hours which are to be performed by minorities and females on the Project. IDOT shall consider the total hours to be performed by these underrepresented groups, as a percentage of the workforce, and create aspirational goals for each Project, based on the level of underutilization for the service area of the Project (together "Project Employment Objectives"). IDOT shall provide a quarterly report regarding the racial and gender composition of the workforce on the Project.

Persons currently lacking qualifications to enter apprenticeship programs will have the opportunity to obtain skills through basic training programs as have been established by the Department. The parties will endeavor to support such training programs to allow participants to obtain the requisite qualifications for the Project Employment Objectives.

The parties agree that all Contractors and Subcontractors working on the Project shall be encouraged to utilize the maximum number of apprentices as permitted under the terms of the applicable collective bargaining agreements to realize the Project Employment Objectives.

The Unions shall assist the Contractor and each Subcontractor in efforts to satisfy Project Employment Objectives. A Contractor or Subcontractor may request from a Union specific categories of workers necessary to satisfy Project Employment Objectives. The application of this section shall be consistent with all local Union collective bargaining agreements, and the hiring hall rules and regulations established for the hiring of personnel, as well as the apprenticeship standards set forth by each individual Union.

- 2.9 The parties hereto agree that engineering consultants and materials testing employees, to the extent subject to the terms of this PLA, shall be fully expected to objectively and responsibly perform their duties and obligations owed to the Department without regard to the potential union affiliation of such employees or of other employees on the Project.
- 2.10 This Agreement shall not apply to IDOT employees or employees of any other governmental entity.



### **ARTICLE III - ADMINISTRATION OF AGREEMENT**

- 3.1 In order to assure that all parties have a clear understanding of the PLA, and to promote harmony, at the request of the Unions a post-award pre-job conference will be held among the Prime Contractor, all Subcontractors and Union representatives prior to the start of any Construction Work on the Project. No later than the conclusion of such pre-job conference, the parties shall, among other matters, provide to one another contact information for their respective representatives (including name, address, phone number, facsimile number, e-mail). Nothing herein shall be construed to limit the right of the Department to discuss or explain the purpose and intent of this PLA with prospective bidders or other interested parties prior to or following its award of the job.
- 3.2 Representatives of the Prime Contractor and the Unions shall meet as often as reasonably necessary following award until completion of the Project to assure the effective implementation of this PLA.
- 3.3 Any notice contemplated under Article VI and VII of this Agreement to a signatory labor organization shall be made in writing to the Local Union with copies to the local union's International Representative.

### **ARTICLE IV - HOURS OF WORK AND GENERAL CONDITIONS**

- 4.1 The standard work day and work week for Construction Work on the Project shall be consistent with the respective collective bargaining agreements. In the event Project site or other job conditions dictate a change in the established starting time and/or a staggered lunch period for portions of the Project or for specific crafts, the Prime Contractor, relevant Subcontractors and business managers of the specific crafts involved shall confer and mutually agree to such changes as appropriate. If proposed work schedule changes cannot be mutually agreed upon between the parties, the hours fixed at the time of the pre-job meeting shall prevail.
- 4.2 Shift work may be established and directed by the Prime Contractor or relevant Subcontractor as reasonably necessary or appropriate to fulfill the terms of its contract with the Department. If used, shift hours, rates and conditions shall be as provided in the applicable collective bargaining agreement.
- 4.3 The parties agree that chronic and/or unexcused absenteeism is undesirable and must be controlled in accordance with procedures established by the applicable collective bargaining agreement. Any employee disciplined for absenteeism in accordance with such procedures shall be suspended from all work on the Project for not less than the maximum period permitted under the applicable collective bargaining agreement.

- 4.4 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, employment begins and ends at the Project site; employees shall be at their place of work at the starting time; and employees shall remain at their place of work until quitting time.
- 4.5 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, there shall be no limit on production by workmen, no restrictions on the full use of tools or equipment, and no restrictions on efficient use of manpower or techniques of construction other than as may be required by safety regulations.
- 4.6 The parties recognize that specialized or unusual equipment may be installed on the Project. In such cases, the Union recognizes the right of the Prime Contractor or Subcontractor to involve the equipment supplier or vendor's personnel in supervising the setting up of the equipment, making modifications and final alignment, and performing similar activities that may be reasonably necessary prior to and during the start-up procedure in order to protect factory warranties. The Prime Contractor or Subcontractor shall notify the Union representatives in advance of any work at the job-site by such vendor personnel in order to promote a harmonious relationship between the equipment vendor's personnel and other Project employees.
- 4.7 For the purpose of promoting full and effective implementation of this PLA, authorized Union representatives shall have access to the Project job-site during scheduled work hours. Such access shall be conditioned upon adherence to all reasonable visitor and security rules of general applicability that may be established for the Project site at the pre-job conference or from time to time thereafter.

**ARTICLE V – GRIEVANCE PROCEDURES FOR DISPUTES ARISING UNDER A PARTICULAR COLLECTIVE BARGAINING AGREEMENT**

- 5.1 In the event a dispute arises under a particular collective bargaining agreement specifically not including jurisdictional disputes referenced in Article VI below, said dispute shall be resolved by the Grievance/Arbitration procedure of the applicable collective bargaining agreement. The resulting determination from this process shall be final and binding on all parties bound to its process.
- 5.2 Employers covered under this Agreement shall have the right to discharge or discipline any employee who violates the provisions of this Agreement. Such discharge or discipline by a contractor or subcontractor shall be subject to Grievance/Arbitration procedure of the applicable collective bargaining agreement only as to the fact of such violation of this agreement. If such fact is established, the penalty imposed shall not be disturbed. Work at the Project site shall continue without disruption or hindrance of any kind as a result of a Grievance/Arbitration procedure under this Article.

- 5.3 In the event there is a deadlock in the foregoing procedure, the parties agree that the matter shall be submitted to arbitration for the selection and decision of an Arbitrator governed under paragraph 6.8.

#### **ARTICLE VI –DISPUTES: GENERAL PRINCIPLES**

- 6.1 This Agreement is entered into to prevent strikes, lost time, lockouts and to facilitate the peaceful adjustment of jurisdictional disputes in the building and construction industry and to prevent waste and unnecessary avoidable delays and expense, and for the further purpose of at all times securing for the employer sufficient skilled workers.
- 6.2 A panel of Permanent Arbitrators are attached as addendum (A) to this agreement. By mutual agreement between IDOT and the Unions, the parties can open this section of the agreement as needed to make changes to the list of permanent arbitrators.

The arbitrator is not authorized to award back pay or any other damages for a miss assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.

- 6.3 The PLA Jurisdictional Dispute Resolution Process (“Process”) sets forth the procedures below to resolve jurisdictional disputes between and among Contractors, Subcontractors, and Unions engaged in the building and construction industry. Further, the Process will be followed for any grievance or dispute arising out of the interpretation or application of this PLA by the parties except for the prohibition on attorneys contained in 6.11. All decisions made through the Process are final and binding upon all parties.

#### **DISPUTE PROCESS**

- 6.4 Administrative functions under the Process shall be performed through the offices of the President and/or Secretary-Treasurer of the Illinois State Federation of Labor, or their designated representative, called the Administrator. In no event shall any officer, employee, agent, attorney, or other representative of the Illinois Federation of Labor, AFL- CIO be subject to any subpoena to appear or testify at any jurisdictional dispute hearing.
- 6.5 There shall be no abandonment of work during any case participating in this Process or in violation of the arbitration decision. All parties to this Process release the Illinois State Federation of Labor (“Federation”) from any liability arising from its action or inaction and covenant not to sue the Federation, nor its officers, employees, agents or attorneys.

- 6.6 In the event of a dispute relating to trade or work jurisdiction, all parties, including the employers, Contractors or Subcontractors, agree that a final and binding resolution of the dispute shall be resolved as follows:
- (a) Representatives of the affected trades and the Contractor or Subcontractor shall meet on the job site within two (2) business days after receiving written notice in an effort to resolve the dispute. (In the event there is a dispute between local unions affiliated with the same International Union, the decision of the General President, or his/her designee, as the internal jurisdictional authority of that International Union, shall constitute a final and binding decision and determination as to the jurisdiction of work.)
  - (b) If no settlement is achieved subsequent to the preceding Paragraph, the matter shall be referred to the local area Building & Construction Trades Council, which shall meet with the affected trades within two (2) business days subsequent to receiving written notice. In the event the parties do not wish to avail themselves of the local Building & Construction Trades Council, the parties may elect to invoke the services of their respective International Representatives with no extension of the time limitations. An agreement reached at this Step shall be final and binding upon all parties.
  - (c) If no settlement agreement is reached during the proceedings contemplated by Paragraphs "a" or "b" above, the matter shall be immediately referred to the Illinois Jurisdictional Dispute Process for final and binding resolution of said dispute. Said referral submission shall be in writing and served upon the Illinois State Federation of Labor, or the Administrator, pursuant to paragraph 6.4 of this agreement. The Administrator shall, within three (3) days, provide for the selection of an available Arbitrator to hear said dispute within this time period. Upon good cause shown and determined by the Administrator, an additional three (3) day extension for said hearing shall be granted at the sole discretion of the Administrator. Only upon mutual agreement of all parties may the Administrator extend the hearing for a period in excess of the time frames contemplated under this Paragraph. Business days are defined as Monday through Friday, excluding contract holidays.
- 6.7 The primary concern of the Process shall be the adjustment of jurisdictional disputes arising out of the Project. A sufficient number of Arbitrators shall be selected from list of approved Arbitrators as referenced Sec. 6.2 and shall be assigned per Sec. 6.8. Decisions shall be only for the Project and shall become effective immediately upon issuance and complied with by all parties. The authority of the Arbitrator shall be restricted and limited specifically to the terms and provisions of Article VI and generally to this Agreement as a whole.

- 6.8 Arbitrator chosen shall be randomly selected based on the list of Arbitrators in Sec. 6.2 and geographical location of the jurisdictional dispute and upon his/her availability, and ability to conduct a Hearing within two (2) business days of said notice. The Arbitrator may issue a “bench” decision immediately following the Hearing or he/she may elect to only issue a written decision, said decision must be issued within two (2) business days subsequent to the completion of the Hearing. Copies of all notices, pleadings, supporting memoranda, decisions, etc. shall be provided to all disputing parties and the Illinois State Federation of Labor.

Any written decision shall be in accordance with this Process and shall be final and binding upon all parties to the dispute and may be a “short form” decision. Fees and costs of the arbitrator shall be divided evenly between the contesting parties except that any party wishing a full opinion and decision beyond the short form decision shall bear the reasonable fees and costs of such full opinion. The decision of the Arbitrator shall be final and binding upon the parties hereto, their members, and affiliates.

In cases of jurisdictional disputes or other disputes between a signatory labor organization and another labor organization, both of which is an affiliate or member of the same International Union, the matter or dispute shall be settled in the manner set forth by their International Constitution and/or as determined by the International Union’s General President whose decision shall be final and binding upon all parties. In no event shall there be an abandonment of work.

- 6.9 In rendering a decision, the Arbitrator shall determine:
- (a) First, whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between National or International Unions to the dispute or agreements between local unions involved in the dispute, governs;
  - (b) Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality; and,

- (c) Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the well being of the industry, the interests of the consumer or the past practices of the employer shall not be ignored.
  - (d) The arbitrator is not authorized to award back pay or any other damages for a mis-assignment of work. Nor may any party bring an independent action for back pay or any other damages, based upon a decision of an arbitrator.
- 6.10 The Arbitrator shall set forth the basis for his/her decision and shall explain his/her findings regarding the applicability of the above criteria. If lower ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the Project. Agreements of Record, for other PLA projects, are applicable only to those parties signatory to such agreements. Decisions of Record are those that were either attested to by the former Impartial Jurisdictional Disputes Board or adopted by the National Arbitration Panel.
- 6.11 All interested parties, as determined by the Arbitrator, shall be entitled to make presentations to the Arbitrator. Any interested labor organization affiliated to the PLA Committee and party present at the Hearing, whether making a presentation or not, by such presence shall be deemed to accept the jurisdiction of the Arbitrator and to agree to be bound by its decision. In addition to the representative of the local labor organization, a representative of the labor organization's International Union may appear on behalf of the parties. Each party is responsible for arranging for its witnesses. In the event an Arbitrator's subpoena is required, the party requiring said subpoena shall prepare the subpoena for the Arbitrator to execute. Service of the subpoena upon any witness shall be the responsibility of the issuing party.

Attorneys shall not be permitted to attend or participate in any portion of a Hearing.

The parties are encouraged to determine, prior to Hearing, documentary evidence which may be presented to the Arbitrator on a joint basis.

- 6.12 The Order of Presentation in all Hearings before an Arbitrator shall be
- I. Identification and Stipulation of the Parties
  - II. Unions(s) claiming the disputed work presents its case
  - III. Union(s) assigned the disputed work presents its case
  - IV. Employer assigning the disputed work presents its case
  - V. Evidence from other interested parties (i.e., general contractor, project manager, owner)
  - VI. Rebuttal by union(s) claiming the disputed work
  - VII. Additional submissions permitted and requested by Arbitrator
  - VIII. Closing arguments by the parties

- 6.13 All parties bound to the provisions of this Process hereby release the Illinois State Federation of Labor and IDOT, their respective officers, agents, employees or designated representatives, specifically including any Arbitrator participating in said Process, from any and all liability or claim, of whatsoever nature, and specifically incorporating the protections provided in the Illinois Arbitration Act, as amended from time to time.
- 6.14 The Process, as an arbitration panel, nor its Administrator, shall have any authority to undertake any action to enforce its decision(s). Rather, it shall be the responsibility of the prevailing party to seek appropriate enforcement of a decision, including findings, orders or awards of the Arbitrator or Administrator determining non-compliance with a prior award or decision.
- 6.15 If at any time there is a question as to the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process, the primary responsibility for any determination of the arbitrability of a dispute and the jurisdiction of the Arbitrator shall be borne by the party requesting the Arbitrator to hear the underlying jurisdictional dispute. The affected party or parties may proceed before the Arbitrator even in the absence or one or more stipulated parties with the issue of jurisdiction as an additional item to be decided by the Arbitrator. The Administrator may participate in proceedings seeking a declaration or determination that the underlying dispute is subject to the jurisdiction and process of the Illinois Jurisdictional Dispute Resolution Process. In any such proceedings, the non-prevailing party and/or the party challenging the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process shall bear all the costs, expenses and attorneys' fees incurred by the Illinois Jurisdictional Dispute Resolution Process and/or its Administrator in establishing its jurisdiction.

#### **ARTICLE VII - WORK STOPPAGES AND LOCKOUTS**

- 7.1 During the term of this PLA, no Union or any of its members, officers, stewards, employees, agents or representatives shall instigate, support, sanction, maintain, or participate in any strike, picketing, walkout, work stoppage, slow down or other activity that interferes with the routine and timely prosecution of work at the Project site or at any other contractor's or supplier's facility that is necessary to performance of work at the Project site. Hand billing at the Project site during the designated lunch period and before commencement or following conclusion of the established standard workday shall not, in itself, be deemed an activity that interferes with the routine and timely prosecution of work on the Project.

7.2 Should any activity prohibited by paragraph 7.1 of this Article occur, the Union shall undertake all steps reasonably necessary to promptly end such prohibited activities.

7.2.A No Union complying with its obligations under this Article shall be liable for acts of employees for which it has no responsibility or for the unauthorized acts of employees it represents. Any employee who participates or encourages any activity prohibited by paragraph 7.1 shall be immediately suspended from all work on the Project for a period equal to the greater of (a) 60 days; or (b) the maximum disciplinary period allowed under the applicable collective bargaining agreement for engaging in comparable unauthorized or prohibited activity.

7.2.B Neither the PLA Committee nor its affiliates shall be liable for acts of employees for which it has no responsibility. The principal officer or officers of the PLA Committee will immediately instruct, order and use the best efforts of his office to cause the affiliated union or unions to cease any violations of this Article. The PLA Committee in its compliance with this obligation shall not be liable for acts of its affiliates. The principal officer or officers of any involved affiliate will immediately instruct, order or use the best effort of his office to cause the employees the union represents to cease any violations of this Article. A union complying with this obligation shall not be liable for unauthorized acts of employees it represents. The failure of the Contractor to exercise its rights in any instance shall not be deemed a waiver of its rights in any other instance.

During the term of this PLA, the Prime Contractor and its Subcontractors shall not engage in any lockout at the Project site of employees covered by this Agreement.

7.3 Upon notification of violations of this Article, the principal officer or officers of the local area Building and Construction Trades Council, and the Illinois AFL-CIO Statewide Project Labor Agreement Committee as appropriate, will immediately instruct, order and use their best efforts to cause the affiliated union or unions to cease any violations of this Article. A Trades Council and the Committee otherwise in compliance with the obligations under this paragraph shall not be liable for unauthorized acts of its affiliates.

7.4 In the event that activities in violation of this Article are not immediately halted through the efforts of the parties, any aggrieved party may invoke the special arbitration provisions set forth in paragraph 7.5 of this Article.



- 7.5 Upon written notice to the other involved parties by the most expeditious means available, any aggrieved party may institute the following special arbitration procedure when a breach of this Article is alleged:
- 7.5.A The party invoking this procedure shall notify the individual designated as the Permanent Arbitrator pursuant to paragraph 6.8 of the nature of the alleged violation; such notice shall be by the most expeditious means possible. The initiating party may also furnish such additional factual information as may be reasonably necessary for the Permanent Arbitrator to understand the relevant circumstances. Copies of any written materials provided to the arbitrator shall also be contemporaneously provided by the most expeditious means possible to the party alleged to be in violation and to all other involved parties.
  - 7.5.B Upon receipt of said notice the Permanent Arbitrator shall set and hold a hearing within twenty-four (24) hours if it is contended the violation is ongoing, but not before twenty-four (24) hours after the written notice to all parties involved as required above.
  - 7.5.C The Permanent Arbitrator shall notify the parties by facsimile or any other effective written means, of the place and time chosen by the Permanent Arbitrator for this hearing. Said hearing shall be completed in one session. A failure of any party or parties to attend said hearing shall not delay the hearing of evidence or issuance of an Award by the Permanent Arbitrator.
  - 7.5.D The sole issue at the hearing shall be whether a violation of this Article has, in fact, occurred. An Award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the Award. The Permanent Arbitrator may order cessation of the violation of this Article, and such Award shall be served on all parties by hand or registered mail upon issuance.
  - 7.5.E Such Award may be enforced by any court of competent jurisdiction upon the filing of the Award and such other relevant documents as may be required. Facsimile or other hardcopy written notice of the filing of such enforcement proceedings shall be given to the other relevant parties. In a proceeding to obtain a temporary order enforcing the Permanent Arbitrator's Award as issued under this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Permanent Arbitrator's Award shall be served on all parties by hand or by delivery to their last known address or by registered mail.

- 7.6 Individuals found to have violated the provisions of this Article are subject to immediate termination. In addition, IDOT reserves the right to terminate this PLA as to any party found to have violated the provisions of this Article.
- 7.7 Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by parties to whom they accrue.
- 7.8 The fees and expenses of the Permanent Arbitrator shall be borne by the party or parties found in violation, or in the event no violation is found, such fees and expenses shall be borne by the moving party.

### **ARTICLE VIII – TERMS OF AGREEMENT**

- 8.1 If any Article or provision of this Agreement shall be declared invalid, inoperative or unenforceable by operation of law or by any of the above mentioned tribunals of competent jurisdiction, the remainder of this Agreement or the application of such Article or provision to persons or circumstances other than those as to which it has been held invalid, inoperative or unenforceable shall not be affected thereby.
- 8.2 This Agreement shall be in full force as of and from the date of the Notice of Award until the Project contract is closed.
- 8.3 This PLA may not be changed or modified except by the subsequent written agreement of the parties. All parties represent that they have the full legal authority to enter into this PLA. This PLA may be executed by the parties in one or more counterparts.
- 8.4 Any liability arising out of this PLA shall be several and not joint. IDOT shall not be liable to any person or other party for any violation of this PLA by any other party, and no Contractor or Union shall be liable for any violation of this PLA by any other Contractor or Union.
- 8.5 The failure or refusal of a party to exercise its rights hereunder in one or more instances shall not be deemed a waiver of any such rights in respect of a separate instance of the same or similar nature.

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Addendum A

IDOT Slate of Permanent Arbitrators

1. Bruce Feldacker
2. Thomas F. Gibbons
3. Edward J. Harrick
4. Brent L. Motchan
5. Robert Perkovich
6. Byron Yaffee
7. Glenn A. Zipp

**Execution Page**

***Illinois Department of Transportation***

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Director of Highways Project Implementation

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Director of Finance & Administration

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Yangsung Kim, Chief Counsel

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Omer Osman, Secretary

(Date)

***Illinois AFL-CIO Statewide Project Labor Agreement Committee, representing the Unions listed below:***

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(Date)

List Unions:

Exhibit A - Contractor Letter of Assent

(Date)

To All Parties:

In accordance with the terms and conditions of the contract for Construction Work on [Contract No. 62H49], this Letter of Assent hereby confirms that the undersigned Prime Contractor or Subcontractor agrees to be bound by the terms and conditions of the Project Labor Agreement established and entered into by the Illinois Department of Transportation in connection with said Project.

It is the understanding and intent of the undersigned party that this Project Labor Agreement shall pertain only to the identified Project. In the event it is necessary for the undersigned party to become signatory to a collective bargaining agreement to which it is not otherwise a party in order that it may lawfully make certain required contributions to applicable fringe benefit funds, the undersigned party hereby expressly conditions its acceptance of and limits its participation in such collective bargaining agreement to its work on the Project.

(Authorized Company Officer)

(Company)

**IDNR PERMIT**

**R E C E I V E D**  
NOV 15 2021



**Illinois Department of  
Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271  
www.dnr.illinois.gov

**DIST. ONE - DESIGN**

JB Pritzker, Governor  
Colleen Callahan, Director

**Office of Water Resources • 2050 West Stearns Road • Bartlett, Illinois 60103**

October 29, 2021

**SUBJECT: Permit No. NE2021054**  
Coffer Dam for La Grange Road (US12/20/45) Improvements  
Des Plaines River and Chicago Sanitary & Ship Canal  
Cook County, Application No. N20210117

Jose Rios  
Illinois Department of Transportation  
201 West Center Court  
Schaumburg, Illinois 60196-1096

Dear Mr. Rios

Enclosed is Illinois Department of Natural Resources, Office of Water Resources Permit No. NE2021054 authorizing the subject project. This permit does not supersede any other federal, state or local authorizations that may be required for the project. Upon receipt and review of this permit and all conditions included therein, please properly execute and return the attached acceptance slip within sixty (60) days from the date of this permit.

Please be advised that the Illinois Department of Natural Resources, Division of Ecosystems and Environment (DEE) participates in the regulatory programs of the U.S. Army, Corps of Engineers (USACE) and may review this project if a USACE Section 10 or 404 permit is required. Issuance of a permit by the Office of Water Resources does not preclude DEE's provision of comments and/or recommendations, primarily related to biological effects of the proposed action, to the USACE and other federal agencies concerning your project.

If any changes of the permitted work are found necessary, revised plans should be submitted promptly to this office for review and approval. Also, this permit expires on the date indicated in Condition (13). If you are unable to complete the work by that date, the permittee may make a written request for a time extension. Please contact Mark Hoskins at 847/608-3116 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "William T. Boyd".

William T. Boyd, P.E.  
Chief, Northeastern Illinois Regulatory Programs Section  
WTB/MH:

cc: Chicago District, U.S. Army Corps of Engineers  
Village of Justice, Engineering Department  
Village of Willow Springs, Engineering Department  
Fawad Aqueel, Illinois Department of Transportation, District 1

FAU Route 330 (US Route 12/20/45 / La Grange Road)  
Project NHPP-6T0L(343)  
Section 2018-133-BR  
Cook County  
Contract No. 62H49



**PERMIT NO. NE2021054**  
**DATE: October 29, 2021**

**State of Illinois**  
**Department of Natural Resources, Office of Water Resources**

Permission is hereby granted to:

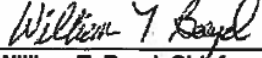
Illinois Department of Transportation  
201 West Center Court  
Schaumburg, Illinois 60196

to construct cofferdams and streambank stabilization in the floodway and public waters of the Des Plaines River and the Chicago Sanitary & Ship Canal as part of a pier repair project for Route 12/20/45 in the Southwest Quarter of Section 27 and the Southeast Quarter of Section 28, Township 38 North, Range 12 East of the Third Principal Meridian in Cook County,


in accordance with an application dated July 30, 2021, and the plans and specifications entitled:

STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION, PROPOSED HIGHWAY PLANS, F.A.P. 330: US ROUTE 12/20/45 (LA GRANGE ROAD), BRIDGE DECK REPLACEMENT OVER I&M CANAL, AND DES PLAINES RIVER, COOK COUNTY, SHEET 1 OF 292, NOT DATED, AND SHEETS 49, 50, 100, 172 OF 292, DATED JUNE 18, 2021, ALL RECEIVED AUGUST 3, 2021

Examined and Recommended:

  
William T. Boyd, Chief  
Northeastern IL Regulatory  
Programs Section

Approval Recommended:

  
Loren Wobig, Director  
Office of Water Resources

Approved:

  
Colleen Callahan, Director  
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein.



FAU Route 330 (US Route 12/20/45 / La Grange Road)  
Project NHPP-6T0L(343)  
Section 2018-133-BR  
Cook County  
Contract No. 62H49

**PERMIT NO. NE2021054**

**THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:**

- 1) This permit is granted in accordance with the Rivers, Lakes and Streams Act "615 ILCS 5."
- 2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.
- 3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.
- 4) This permit does not relieve the permittee of the responsibility to obtain other federal, state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or state agency to do the work, this permit is not effective until the federal and state approvals are obtained. If construction does not begin within two years of the date of this permit, the permittee must submit the project to EcoCat (<http://dnr.illinois.gov/EcoPublic/>) for an updated consultation under the Illinois Endangered Species Protection Act and the Illinois Natural Areas Preservation Act.
- 5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.
- 6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.
- 7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.
- 8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.
- 9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.
- 10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.
- 11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.
- 12) Noncompliance with the conditions of this permit will be considered grounds for revocation.
- 13) If the construction activity permitted is not completed on or before December 31, 2024 this permit shall cease and be null and void.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING SPECIAL CONDITION:**

- a) The Permittee shall remove the coffer dam herein authorized and all associated materials as soon as possible upon completion of the permitted activity.

**404 PERMIT**



REPLY TO  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
CHICAGO DISTRICT, CORPS OF ENGINEERS  
231 SOUTH LA SALLE STREET  
CHICAGO, ILLINOIS 60604-1437

November 16, 2021

Operations Division  
Regulatory Branch  
LRC-2021-00876

SUBJECT: Authorization for LaGrange Road Bridge over the Chicago Sanitary & Ship Canal and the Des Plaines River in the Village of Justice, Cook County, Illinois (Latitude 41.7491009454597, Longitude -87.859545596811)

Jose Rios  
Illinois Department of Transportation  
201 West Center Court  
Schaumburg, Illinois 60196

Dear Mr. Rios:

The U.S. Army Corps of Engineers, Chicago District, has completed its review of your notification for authorization under the Regional Permit Program (RPP). This office has verified that your proposed activity complies with the terms and conditions of Regional Permit RP3 – Transportation Projects and the General Conditions for all activities authorized under the Regional Permit Program. The activity may be performed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans entitled "US 12/20/45 (LaGrange Road) Wetland/Surface Waters Impact Exhibit" in the submittal dated July 22, 2021, prepared by Illinois Department of Transportation. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

This authorization is contingent upon implementing and maintaining the Corps approved soil erosion and sediment control measures in a serviceable condition throughout the duration of the project. You shall notify this office of any changes or modifications to the approved plan set. Please be aware that field conditions during project construction may require the implementation of additional SESC measures for further protection of aquatic resources.

This site is within the aboriginal homelands of several American Indian Tribes. If any human remains, Native American cultural items or archaeological evidence are discovered during any phase of this project, interested Tribes request immediate consultation with the entity of jurisdiction for the location of discovery. In such case, please contact Stasi Brown by telephone at (312) 846-5544, or email at stasi.f.brown@usace.army.mil.

In addition, the permittee understands and agrees that, if future operations by the United States require removal, relocation, or other alteration of the structure or work authorized herein, or if, in the opinion of the Secretary of the Army or his authorized representative said structure or work shall cause unreasonable obstruction to the free navigation of the navigable water, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

This verification does not obviate the need to obtain all other required Federal, state, or local approvals before starting work. Please note that Section 401 Water Quality Certification has been issued by IEPA for this RP. If you have any questions regarding Section 401 certification, please contact Mr. Darin LeCrone at IEPA Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-0610.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Stasi Brown of my staff by telephone at (312) 846-5544, or email at stasi.f.brown@usace.army.mil.

Sincerely,

MURRAY.TER  
ALYN.RENELL  
.1380896385

Digitally signed by  
MURRAY.TERALYN.R  
ENELL.1380896385  
Date: 2021.11.16  
14:14:08 -06'00'

Teralyn R. Murray  
Chief, Regulatory Branch

Enclosures

Copy Furnished:

Will County Land Use Department (Nicole Roedl)  
Illinois Department of Transportation (Vanessa Ruiz, Alycia Klueenberg)



**PERMIT COMPLIANCE  
CERTIFICATION**

Permit Number: LRC-2021-00876  
Permittee: Jose Rios - Illinois Department of Transportation  
Date: November 12, 2021

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.<sup>1</sup>

\_\_\_\_\_  
PERMITTEE

\_\_\_\_\_  
DATE

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers  
Chicago District, Regulatory Branch  
231 South LaSalle Street, Suite 1500  
Chicago, Illinois 60604-1437

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

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<sup>1</sup> If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.



US Army Corps of Engineers®  
Chicago District

## CHICAGO DISTRICT REGIONAL PERMIT PROGRAM

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Effective: April 1, 2017 (As revised January 10, 2020)  
Expiration: April 1, 2022  
Authority: 33 U.S.C. 401 et seq.; 33 U.S.C. 1344

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### A. Introduction

The U.S. Army Corps of Engineers, Chicago District (the District) hereby issues the Regional Permit Program (RPP) that includes a set of Regional Permits for activities with minimal individual and cumulative impacts on the aquatic environment in Cook, DuPage, Kane, Lake, McHenry and Will Counties, Illinois (see Regional Permits). Please visit our website for a copy of the following: joint application form for Illinois; mitigation requirements and various other documents; and Frequently Asked Questions (FAQ's) regarding the RPP. The FAQ contains a comprehensive listing of frequently asked questions and answers that specifically pertain to the RPP. For information on our RPP, please reference the District website at: [www.lrc.usace.army.mil/Missions/Regulatory.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory.aspx).

The purpose of the RPP is to provide a simplified and expeditious means to review activities that meet the specified terms and conditions described herein.

Regional permits are a type of general permit as defined in 33 CFR 322.2(f), 33 CFR 323.2(h) and 325.2(e) (2). A regional permit may be issued by a District Commander for a category of activities that are substantially similar in nature and cause only minimal individual and cumulative environmental impacts.

### B. Applicability

The RPP authorizes activities that involve structures or work in or affecting navigable waters of the United States (U.S.) under Section 10 of the Rivers and Harbors Act of 1899 and/or discharges of dredged or fill material into waters of the U.S. under Section 404 of the Clean Water Act.

For a list of waters that meet the definition of Section 10, please reference the District's website of navigable waterways at [www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx). Section 404 waters are defined at and determined in accordance with 33 CFR 328-329 and 40 CFR 230.3.

### C. Definitions

Definitions found at 33 CFR Parts 320-332 and 40 CFR Part 230 are applicable to the RPP and are incorporated by reference herein.

1. Agency Request for Comments (ARC) is the notice provided to agencies, and Section 106 Consulting Parties, which describes the proposed project and requests comments concerning a "Category II" activity to ensure compliance with the Clean Water Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, and Water Resources Development Act of 1986 (See General Condition 23).



2. Applicant is the individual, organization or company requesting authorization under the RPP. The applicant must be the owner of the property in question, or possess the authority to undertake the activities.
3. Authorization is written verification by the District that an activity qualifies for, and may proceed under, the RPP provided the terms and conditions of the program are followed. Verification under the RPP is valid for a period of three (3) years from the date of verification.
4. Best Management Practices (BMPs) are policies, practices, procedures or structures implemented to mitigate the direct and indirect degradation of surface water quality from an activity. BMPs include non-structural elements such as the preservation of existing natural areas and drainageways, and structural elements such as vegetated swales, filter strips and infiltration trenches which are designed to remove pollutants, reduce runoff rates and velocity, and protect aquatic resources.
5. Buffer is a protective strip of land along the edge of waters of the U.S., including wetlands, that is maintained in native vegetation. Buffers protect shorelines and banks from erosion, provide wildlife habitat, filter pollutants from the water, and protect environmentally sensitive areas from potential effects of development.
6. Compensatory wetland mitigation is the creation, restoration, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. See "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule", dated April 10, 2008 (33 CFR 332) at [www.gpo.gov/fdsys/pkg/CFR-2012-title33-vol3/xml/CFR-2012-title33-vol3-part332.xml](http://www.gpo.gov/fdsys/pkg/CFR-2012-title33-vol3/xml/CFR-2012-title33-vol3-part332.xml)
7. Complete application is all required notification materials submitted by the applicant to the District. If all materials are not submitted, the application is considered incomplete and cannot be processed under the RPP.
8. Conservation area is any national park or forest, natural heritage landmark, State nature preserve or conservation area, Illinois Natural Area Inventory site (including proposed sites), county forest preserve, or land managed by a local government or organization for conservation purposes.
9. Currently serviceable means that a structure or fill is useable as is, or with some maintenance, but not so degraded as to require reconstruction.
10. High-quality aquatic resources (HQARs) are aquatic areas considered to be regionally critical due to their uniqueness, scarcity, and/or value, and other wetlands considered to perform functions important to the public interest, as defined in 33 CFR Part 320.4(b)(2). Descriptions of high-quality aquatic resources are provided in APPENDIX A.
11. Historic Property is any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe that meets the National Register criteria (36 CFR Part 60).



12. Impact is the direct and indirect loss of waters of the U.S., including wetlands, which results from implementation of a proposed activity. This includes waters of the U.S. that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of impact.



13. Independent Utility is a test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend on other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.



14. Linear Project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations.

15. Notification is the submission of application materials by the applicant to the District.

16. Ordinary High Water Mark (OHWM) is that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3(e), 33CFR 329.11(a)(1), and RGL 05-05)

17. Permittee is the individual, organization or company authorized to complete an activity under the RPP.

18. Section 10 Waters are "Navigable Waters of the United States". This is defined to include all those waters that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR Part 329.4). These waters are listed on our internet site at [www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx).



19. Single and complete project is defined (for non-linear projects) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an RPP authorization. Applied to linear projects, the term is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of RPP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

20. Single-family residence is a parcel of land owned by an individual and used by that individual as his/her personal habitation.



21. Special conditions are conditions added by the District to the authorization for projects on a case-by-case basis to ensure an activity has no more than minimal impacts on aquatic resources and complies with the RPP.
22. Terms and conditions are the parameters, including thresholds, limitations and requirements, for completing an activity under the RPP. These parameters are described in each Regional Permit and in Section I (General Conditions) of this document. Case-specific conditions (called “special conditions”) may also be added by the District on individual authorizations to ensure that an activity has minimal individual and cumulative impacts.
23. Unauthorized Activity is a regulated activity that has not received prior authorization.
24. Utility line is any pipeline used to transport a gaseous, liquid, liquescent or slurry substance for any purpose, and any cable, line or wire for the transmission of electrical energy, telephone, radio signals, television signals or data communication. This definition does not include pipes or ditches which serve to drain a water of the United States, such as drainage tile; however, it does apply to pipes conveying drainage from one area to another.
25. Waters of the United States (WOUS) is an all-encompassing term referring to lakes, rivers, streams, wetlands, and other aquatic resources that are regulated by the Corps under Section 404 of the Clean Water Act. A complete definition can be found at 33 CFR 328.3.

#### **D. Permit Expiration**

The Regional Permit Program (RPP) is valid for a period of five (5) years from the date of issuance (or reissuance). The District will periodically review the RPP and their conditions and will decide to modify, reissue, or revoke the permits with opportunity for public comment. If the RPP is not modified or reissued within five years of its effective date, it automatically expires and becomes null and void. Activities authorized under the RPP which was in effect at the time the activity was completed continue to be authorized by the RPP.

A verification letter from the District is valid for a period of three years unless the RPP is modified, suspended, or revoked. A verification letter will remain valid if the RPP authorization is reissued without modification or the activity complies with any subsequent modification of the RPP authorization.

#### **E. Activity Categories**

Activities to be covered under the RPP will fall under one of two categories:

Category I: Activities with minimal impacts requiring review by the District. Authorization may include special conditions to ensure compliance with the RPP. The District has the discretion to elevate a Category I activity to a Category II review when it has concerns for aquatic resources under the Section 404(b)(1) Guidelines or for any factor of the public interest.

Category II: Activities with minimal impacts requiring more rigorous review by the District and coordination with resource agencies. Authorization may include special conditions to ensure compliance with the RPP.

Activities that do not fall into one of the above categories, by definition, have more than minimal impacts and are therefore subject to the Individual Permit review process. Please refer to the Regional Permit Program Activity Categories in Appendix B for a table listing Category I and Category II activities for each Regional Permit.

#### **F. Discretionary Authority**

The District has the discretion to suspend, modify, or revoke authorizations under this RPP. This discretionary authority may be used by the District to further condition or restrict the applicability of the Regional Permits for cases when it has concerns for aquatic resources under the Clean Water Act Section 404(b)(1) Guidelines or for any factor of the public interest. Because of the nature of most Category I activities, the District anticipates that it will not exert discretionary authority except in extraordinary cases. For Category II activities, the District will evaluate each proposed activity before issuing authorization. Should the District determine that a proposed activity may have more than minimal individual or cumulative adverse impacts to aquatic resources or otherwise be contrary to the public interest, the District will notify the applicant that the proposed activity is not authorized by the RPP and provide instructions on how to seek authorization under an Individual Permit. The District may restore authorization under the RPP at any time it determines that the reason for asserting discretionary authority has been resolved or satisfied by a condition, project modification, or new information.

#### **G. Authorization**

Applicants seeking authorization under the RPP must notify the District in accordance with the RPP General Condition 23 prior to commencing a proposed activity. If the District determines that a proposed activity complies with the terms and conditions of the RPP, it will notify the applicant within 60 calendar days of receipt of a complete application. If the District determines that an activity does not comply with the RPP, it will notify the applicant in writing within sixty (60) calendar days following receipt of a complete application and provide instructions on the procedures to seek authorization under an Individual Permit. If the District determines that an unauthorized activity complies with the terms and conditions of the RPP, the District will notify the applicant to commence the after-the-fact permit process.

If the District does not provide a written response to the applicant within 60 calendar days following receipt of a complete application, the applicant may presume the proposed activity qualifies for the requested Regional Permit(s), provided the activity complies with the terms and conditions of the RPP.

The District may add special conditions to an authorization to ensure that the activity complies with the terms and conditions of the RPP and the adverse impacts on the aquatic environment or other aspects of the public interest are individually and cumulatively minimal.

Multiple Regional Permits may be combined to authorize a proposed single and complete project, except as indicated under specific Regional Permits. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold. To use multiple Regional Permits, the applicant will submit notification under General Condition 23 and indicate which Regional Permits are to be used for the project.

Any activity verified by the District under the RPP must be completed within three (3) years of the date it is verified. The verification date of a Regional Permit (RP) is the date the District confirms in writing that the activity meets the terms and conditions of the RPP. A request for a time extension or modifications to the project must be considered on a case by case basis by the District. Only one time extension may be granted per project.

#### **H. Unauthorized Activities**

The District evaluates unauthorized activities for enforcement action under 33 CFR Part 326. After considering whether a violation was knowing or intentional, and consideration of the need for a penalty and/or restoration, the District can suspend enforcement proceedings and allow the submittal of an application for an after the fact authorization under the RPP. An after-the-fact application will not be accepted until signature of the Tolling Agreement has been received by the District. An after-the-fact RPP authorization must be consistent with the Army/EPA Memorandum of Agreement on Enforcement.

## I. General Conditions

The permittee must comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification - Water quality certification under Section 401 of the Clean Water Act may be required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an Individual Permit. Please note that Section 401 Water Quality Certification is a requirement for projects carried out in accordance with Section 404 of the Clean Water Act. Projects carried out in accordance with Section 10 of the Rivers and Harbors Act of 1899 do not require Section 401 Water Quality Certification

On February 16, 2017, the IEPA granted Section 401 certification, with conditions, for all Regional Permits, except for activities in certain waterways noted under RPs 4 and 8. The following conditions of the certification are hereby made conditions of the RPP:

1. The applicant must not cause:
  - a) a violation of applicable water quality standards of the Illinois Pollution Control Board Title 35, Subtitle C: Water Pollution Rules and Regulations;
  - b) water pollution defined and prohibited by the Illinois Environmental Protection Act;
  - c) interference with water use practices near public recreation areas or water supply intakes;
  - d) a violation of applicable provisions of the Illinois Environmental Protection Act.
2. The applicant must provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Except as allowed under condition 7, 9 and 10, any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the Illinois EPA. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction must be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining a NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of (1) one or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2016).

6. The applicant is advised that the following permits(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.
7. Backfill used in stream crossing trenches shall be predominantly sand or larger size material, with less than 20% passing a #230 U.S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow.
9. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
  - a) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or
  - b) excavation and backfilling are done under dry conditions.
10. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
11. Any applicant proposing activities in a mined area or previously mined area shall provide to the IEPA a written determination regarding the sediment and materials used which are considered "acid-producing material" as defined in 35 Il. Adm. Code, Subtitle D. If considered "acid-producing material," the applicant shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.
12. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/stream banks, or 3) placed in waters of the State.
13. Applicants that use site dewatering techniques in order to perform work in waterways for construction activities approved under Regional Permits 1 (Residential, Commercial and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects), 7 (Temporary Construction Activities), 9 (Maintenance), or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.
14. In addition to any action required of the Regional Permit 13 (Cleanup of Toxic and Hazardous Materials Projects) with respect to the "Notification" General Condition 23, the applicant shall notify the Illinois EPA Bureau of Water, of the specific activity. This notification must include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL) for all cleanup activities under BOL jurisdiction, or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.
15. The applicant shall implement Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts to aquatic resources during and after construction. If the project involves a water with an approved Total Maximum Daily Load (TMDL) allocation for any parameter, measures which ensure consistency with the assumption and requirements of the TMDL shall be included. TMDL program information and water listings are available at <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/default.aspx>. If the project involves and impaired water listed on the Illinois Environmental Protection Agency's Section

303(d) list for suspended solids, turbidity, or siltation, measures designed for at least a 25-year, 24-hour rainfall event shall be incorporated. Impaired waters are identified at <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/303d-list.aspx>.

16. Earthen granular fill used for construction of temporary structures in waters of the State shall have less than 20% passing a #230 U.S. sieve.
17. The use of directional drilling to install utility pipelines below surface waters of the State is hereby certified provided that:
  - a) All pits and other construction necessary for the directional drilling process are located outside of surface waters of the State;
  - b) All drilling fluids shall be adequately contained such that they cannot cause a discharge to surface waters of the State. Such fluids shall be managed such that they are not discharged to waters of the State and disposed of appropriately in accordance with the regulations at 35 Il. Adm. Code Subtitle G.
  - c) Erosion and sediment control is provided with Conditions 2, 4, and 5.

2. Illinois Coastal Management Program - Any non-federal entity applying to the Corps for an Individual Permit or a Letter of Permission for a project located within the boundary of the Illinois Coastal Management Program (ICMP), including waters of Lake Michigan, is required to submit a Federal Consistency Determination confirmation from the Illinois Coastal Management Program as part of the permit review process.

On February 18, 2017, the Illinois Department of Natural Resources, Coastal Management Program granted the Federal Consistent Determination for the Regional Permit Program. This determination is confirmation that the activities covered under the Regional Permit Program are consistent with the policies of the ICMP.

PDF maps of the Illinois Coastal Management Program's Zone Boundaries can be found at the bottom of the page at [www.dnr.illinois.gov/cmp/Pages/boundaries.aspx](http://www.dnr.illinois.gov/cmp/Pages/boundaries.aspx) and instructions on requesting an ICMP Federal Consistency Determination can be found at [www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf](http://www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf).

### 3. Threatened and Endangered Species –

- a) For applications where a Federal agency other than the District is designated as the lead agency, the designated lead agency shall follow agency specific procedures for complying with the requirements of Section 7 of the Endangered Species Act of 1973 (Act). Federal permittees must provide the District with the following documentation to demonstrate compliance with those requirements: the species list, your effects determination for each species, and the rationale for your effects determination for each species.
- b) For non-Federal permittees, if the District determines that the activity may affect Federally listed species or critical habitat, the District must initiate section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act of 1973, as amended (Act). Applicants must provide additional information that would enable the District to conclude that the proposed action will have no effect on Federally listed species.

The application packet must indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Act, may be present within areas affected (directly or indirectly)

by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

If no species, their suitable habitats, or critical habitats are listed, then a "no effect" determination can be made, and section 7 consultation is not warranted. If species or critical habitat appear on the list or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have "no effect" or "may affect" the species or suitable habitat. The District must request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation.

If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

Projects in Will, DuPage, or Cook Counties that are located in the recharge zones for Hine's emerald dragonfly critical habitat units may be reviewed under the RPP, with careful consideration due to the potential impacts to the species. All projects reviewed that are located within 3.25 miles of a critical habitat unit will be reviewed under Category II of the RPP. Please visit the following website for the locations of the Hine's emerald dragonfly critical habitat units in Illinois.  
[www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html](http://www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html)

4. Historic Properties - In cases where the District determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity may require an Individual Permit. A determination of whether the activity may be authorized under the RPP instead of an Individual Permit will not be made until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

Federal permittees designated as the lead agency shall follow agency specific procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the District with the appropriate documentation to demonstrate compliance with those requirements.

Non-Federal permittees must include notification to the District if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the permit application must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)).

When reviewing permit submittals, the District will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. Based on the information submitted and these efforts, the District will determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the District, the non-Federal applicant must not begin the

activity until notified by the District either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

The District must take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C, and 36 CFR 800. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP.

Applicants are encouraged to obtain information on historic properties from the SHPO and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois State Historic Preservation Office  
Illinois Department of Natural Resources  
Attn: Review & Compliance  
Old State Capital  
1 Natural Resources Way  
Springfield, IL 62702  
(217) 782-4836  
<https://www2.illinois.gov/dnrhistoric/Pages/default.aspx>

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity, you must immediately notify this office of what you have found, and to the maximum extent practicable, stop activities that would adversely affect those remains and artifacts until the required coordination has been completed. The District will initiate the Federal, Tribal and State coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

5. Soil Erosion and Sediment Control - Measures must be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures must be implemented before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures must be maintained throughout the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan including temporary best management practices (BMPs) to be implemented during construction. It is recommended that the plan be designed in accordance with the Illinois Urban Manual, current edition ([www.aiswcd.org/illinois-urban-manual](http://www.aiswcd.org/illinois-urban-manual)). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans should follow the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement." Additional SESC measures not identified in the Illinois Urban Manual may also be utilized upon District approval.

At the District's discretion, an applicant may be required to submit the SESC plan to the local Soil and Water Conservation District (SWCD) or the Lake County Stormwater Management Commission (SMC) for review. When the District requires submission of an SESC plan, the following applies: An activity may not commence until the SESC plan for the project site has been approved; The SWCD/SMC will review the plan and provide a written evaluation of its adequacy; A SESC plan is considered acceptable when the SWCD/SMC has determined that it meets technical standards. Once a determination has been made, the authorized work may commence unless the SWCD/SMC has requested that they be notified prior to commencement of the approved



plans. The SWCD/SMC may elect to attend pre-construction meetings with the permittee and conduct inspections during construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane-DuPage SWCD  
2315 Dean Street, Suite 100  
St. Charles, IL 60174  
(630) 584-7960 ext.3  
[www.kanedupageswcd.org](http://www.kanedupageswcd.org)

Lake County SMC  
500 W. Winchester Rd, Suite 201  
Libertyville, IL 60048  
(847) 377-7700  
[www.lakecountyil.gov/stormwater](http://www.lakecountyil.gov/stormwater)

McHenry-Lake County SWCD  
1648 South Eastwood Dr.  
Woodstock, IL 60098  
(815) 338-0099 ext.3  
[www.mchenryswcd.org](http://www.mchenryswcd.org)

North Cook County SWCD  
640 Cosman Rd  
Elk Grove Village, IL 60007  
(847) 885-8830  
[www.northcookswcd.org](http://www.northcookswcd.org)

Will/South Cook SWCD  
1201 S. Gougar Rd  
New Lenox, IL 60451  
(815) 462-3106  
[www.will-scookswcd.org](http://www.will-scookswcd.org)

6. Total Maximum Daily Load - For projects that include a discharge of pollutant(s) to waters for which there is an approved Total Maximum Daily Load (TMDL) allocation for any parameter, the applicant must develop plans and BMPs that are consistent with the assumptions and requirements in the approved TMDL. The applicant must incorporate into their plans and BMPs any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. The applicant must carefully document the justifications for all BMPs and plans, and install, implement and maintain practices and BMPs that are consistent with all relevant TMDL allocations and with all relevant conditions in an implementation plan. Information regarding the TMDL program, including approved TMDL allocations, can be found at the following website: [www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/default.aspx](http://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/default.aspx)

7. Floodplain - Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills must be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and the local governing agency (e.g., Village or County) with jurisdiction over activities in the floodplain. Compensatory storage may be required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and the local governing agency with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR/OWR  
2050 Stearns Road  
Bartlett, IL 60103  
(847) 608-3100  
[www.dnr.illinois.gov/WaterResources/](http://www.dnr.illinois.gov/WaterResources/)

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4(j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RPP.

8. Navigation - Regulated activities may not cause more than a minimal adverse effect on navigation. Safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities within navigable waters of the United States. The permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work will cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim will be made against the United States on account of any such removal or alteration.
9. Proper Maintenance - Authorized structures or fill must be properly maintained, including that necessary to ensure public safety.
10. Aquatic Life Movements - Regulated activities may not substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.
11. Equipment - Soil disturbance and compaction in regulated areas must be minimized through the use of low ground pressure equipment, matting for heavy equipment, or other measures as approved by the District.
12. Wild and Scenic Rivers - Regulated activities may not occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.
13. Tribal Rights - Regulated activities or their operation may not impair reserved Tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
14. Water Supply Intakes - Discharges of dredged or fill material may not occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.
15. Shellfish Production - Discharges of dredged or fill material may not occur in areas of concentrated shellfish production.
16. Suitable Material - Discharges of dredged or fill material may not consist of unsuitable material. Material discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Unsuitable material includes trash, debris, vehicle parts, asphalt, and creosote treated wood.
17. Spawning Areas - Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.
18. Obstruction of High Flows - Discharges must not permanently restrict or impede the passage of normal or expected high flows. All crossings must be culverted, bridged or otherwise designed to prevent the restriction

of expected high water flows and designed so as not to impede low water flows or the movement of aquatic organisms.

19. Impacts From Impoundments - If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow must be avoided to the maximum extent practicable.

20. Waterfowl Breeding Areas - Discharges into breeding areas utilized by migratory waterfowl must be avoided to the maximum extent practicable.



21. Removal of Temporary Fills - Temporary fill material must be removed in its entirety and the affected area returned to pre-existing condition.

22. Mitigation - All appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions (33 CFR 332). The proposed compensatory mitigation must utilize a watershed approach and fully consider the ecological needs of the watershed. Where an appropriate watershed plan is available, mitigation site selection should consider recommendations in the plan. The applicant must describe in detail how the mitigation site was chosen and will be developed, and be based on the specific resource need of the impacted watershed. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts. However, the District is responsible for determining the appropriate form and amount of compensatory mitigation required when evaluating compensatory mitigation options and determining the type of mitigation that would be environmentally preferable. In making this determination, the District will assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site, and their significance within the watershed. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation. Compensatory mitigation will be accomplished by establishing a minimum ratio of 1.5 acres of mitigation for every 1.0 acre of impact to waters of the U.S. Furthermore, the District has the discretion to require additional mitigation to ensure that the impacts are no more than minimal. Further information is available at [www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx).

23. Notification - The applicant must provide written notification (i.e., a complete application) for a proposed activity to be verified under the RPP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification information from the applicant (see below). If the District informs the applicant within 60 calendar days that the notification is incomplete (i.e., not a complete application), the applicant must submit to the District, in writing, the requested information to be considered for review under the Regional Permit Program. A new 60 day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 60-day review period. Applications may be either sent to [ChicagoRequests@usace.army.mil](mailto:ChicagoRequests@usace.army.mil) or mailed to our office: USACE Regulatory Branch, 231 South LaSalle Street, Suite 1500, Chicago, Illinois 60604.

For all activities, notification must include:

- a. A detailed narrative of the proposed activity describing all work to be performed, a clear project purpose and need statement, the Regional Permit(s) to be used for the activity, the area (in acres) of permanent and temporary fills proposed in each water of the U.S., and a statement that the terms and conditions of the RPP will be followed. For projects with impacts to multiple aquatic resources, provide a table identifying impact types and amounts.

-  b. A completed application form signed by the applicant or agent. The application form is available at <https://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/>. If the applicant does not sign the application form, notification must include a signed, written statement from the applicant designating the agent as their representative.
- c. A delineation of waters of the U.S., including wetlands, for the project area, and for areas adjacent to the project site (off-site wetlands must be identified through the use of reference materials including review of local wetland inventories, soil surveys, and the most recent available aerial photography), must be prepared in accordance with the current U.S. Army Corps of Engineers methodology ([www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg\\_supp.aspx](http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx)) and generally conducted during the growing season.\* The District's wetland delineation standards are available at [www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf). For sites supporting wetlands, the delineation must include a Floristic Quality Assessment (Flora of the Chicago Region: A Floristic and Ecological Synthesis, Wilhelm and Rericha, 2017). The delineation must also include information on the occurrence of any high-quality aquatic resources (see Appendix A), and a listing of waterfowl, reptile and amphibian species observed while at the project area. The District reserves the right to exercise judgment when reviewing submitted wetland delineations. Flexibility of these requirements may be allowed by the District on a case-by-case basis only.
-  d. A street map showing the location of the project area.
- e. Latitude and longitude for the project in decimal degrees format (for example 41.878639N, -87.631212W).
- f. Preliminary engineering drawings sized 11" by 17" (full-sized may be requested by the project manager) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The plans must include grading contours, proposed and existing structures such as buildings footprints, roadways, road crossings, stormwater management facilities, utilities, construction access areas and details of water conveyance structures. The plans must also depict buffer areas, outlots or open space designations, best management practices, deed restricted areas and restoration areas, if required under the specific RP.
- g. Submittal of soil erosion and sediment control (SESC) plans that identify all SESC measures to be utilized during construction of the project.
- h. A determination whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Endangered Species Act of 1973, as amended, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

In the event there are no species, their suitable habitats, or critical habitats within areas affected (directly or indirectly) by the proposed project, then a "no effect" determination can be made and section 7

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\* If a wetland delineation is conducted outside of the growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that the delineation lacks sufficient evidence, the application will not be considered complete until the information is provided. This may involve re-delineating the project site during the growing season.

consultation is not warranted. If species or critical habitat appear on the list, or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have a “no effect” or a “may affect” determination on the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effects determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

- i. A determination of the presence or absence of any State threatened or endangered species. Please contact the Illinois Department of Natural Resources (IDNR) to determine if any State threatened and endangered species could be in the project area. You can access the IDNR’s Ecological Compliance Assessment Tool (EcoCAT) at the following website: [dnr.illinois.gov/EcoPublic/](http://dnr.illinois.gov/EcoPublic/). For the first general information question, select “To obtain information on Illinois T&E species or INAI sites for federal agency actions” and select “U.S. Army Corps of Engineers” from the drop down menu. Once the EcoCAT and consultation process is complete, forward all resulting information to this office for consideration. The report must also include recommended methods as required by the IDNR for minimizing potential adverse effects of the project.



- j. A statement about the knowledge of the presence or absence of historic properties, which includes properties listed, or properties eligible to be listed in the National Register of Historic Places. The permittee must provide all pertinent correspondence documenting compliance. Initial documentation required for the Illinois State Historic Preservation Officer (ILSHPO) is located here: <https://www2.illinois.gov/dnrhistoric/preserve/pages/resource-protection.aspx>. The Historic and Architectural Resources Geographic Information System (HARGIS) at <http://gis.hpa.state.il.us/hargis/> is the public portal to Illinois’ historic buildings, structures, sites, objects, and districts. This database contains properties that have been listed in the National Register of Historic Places, determined eligible for listing, or surveyed without a determination.

- k. Where an appropriate watershed plan is available, the applicant must address in writing how the proposed activity is aligned with the relevant water quality, hydrologic, and aquatic resource protection recommendations in the watershed plan. A list of watershed plans is available at [www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx).

- l. A discussion of measures taken to avoid and/or minimize impacts to aquatic resources on the project site.

- m. A compensatory mitigation plan for all impacts to waters of the U.S. (if compensatory mitigation is required under the specific RP) in compliance with 33 CFR 332.

- n. A written narrative individually addressing each of the items listed under the specific RP(s) being requested.



For non-commercial and non-institutional projects (e.g. single-family home activities; bank stabilization, docks and piers, etc.), the District may provide one or more “simple application checklist(s)” for applicants to use. If an applicant believes a project qualifies for use of such a checklist, they should provide the information required therein in the notification. The District will determine within 60 days whether the project is appropriate for use of the checklist; and if so, may determine that the application is complete if it includes all required information. If information is missing, or if more information is needed for a particular project (up to the requirements of this condition, listed above), the District will notify the applicant within 60 days of receipt of the notification, and the application will not be considered “complete” until such information is provided.



For Category II activities, the District will provide an Agency Request for Comments (ARC) which describes the proposed activity. The ARC will be sent to the USFWS, USEPA, state natural resource and water quality agencies, any consulting parties if a Section 106 NHPA consultation is included in the ARC, and the USCG for activities in Navigable Waters, for review and comment. The USEPA, USFWS, USCG, IEPA, and IDNR have ten (10) calendar days from the date of the ARC to contact the District and either provide comments or request an extension, not to exceed fifteen (15) calendar days. If a Section 106 consultation is included in the ARC, consulting parties (which include at a minimum the Illinois Historic Preservation Agency and interested Indian Tribes) have thirty (30) calendar days from the date of the ARC to provide comments. The District will fully consider agency comments received within the specified time frame. Additional entities may also be notified as needed, and these entities must provide their comments within 10 days of the ARC if they wish to respond. If the District grants a time extension to an agency with statutory consulting rights, all comments received within that extended time period will be considered.

If the District determines that the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include special conditions if deemed necessary. If the District determines the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an Individual Permit.

24. Compliance Certification - Any permittee who has received authorization under the RPP from the District must submit a signed certification stating that the authorized work has been completed. The certification will be forwarded by the District with the authorization letter and will include: a) a statement that the authorized work was done in accordance with the District's authorization, including any general or specific conditions; b) a statement that any required mitigation was completed in accordance with the permit conditions, and; c) the signature of the permittee certifying the completion of the work and mitigation.

25. Multiple use of Regional Permits - In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant must notify the District in accordance with General Condition 23. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.



In the event that one or more Regional Permit(s) are sought for a subsequent phase of a project, where one or more previous phase(s) have been previously authorized, the District retains the right to determine that the phase(s) were in fact a single and complete project. If the current or future phase(s) would together result in greater impacts than allowable under the RPP, the District may suspend and/or revoke the previous authorization(s) as appropriate, and proceed under the appropriate individual permit and/or enforcement process(es).

26. Other Restrictions - Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.

Approved by:

//ORIGINAL SIGNED//  
Christopher T. Drew  
Colonel, U.S. Army  
District Commander

March 23, 2017  
Date



US Army Corps of Engineers®  
Chicago District

**CHICAGO DISTRICT  
2017 REGIONAL PERMIT PROGRAM  
REVISED JANUARY 10, 2020**

**3. TRANSPORTATION PROJECTS**

RP3 authorizes the construction or replacement of transportation projects, including roads, bridges, runways and taxiways, and railroads. Authorization under RP3 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

- a. The impact to waters of the US must not exceed 1.0 acre for a single and complete project. For projects that impact greater than 0.10 acres of waters of the U.S., the permittee is required to provide compensatory mitigation.
- b. Projects that impact no more than 0.5 acres of waters of the U.S. will be processed under Category I.
- c. Projects that impact over 0.5 acres up to 1.0 acre of waters of the U.S., or cross a Section 10 waterway, will be processed under Category II ([www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx)).
- d. The discharge must be limited to the minimum width necessary to complete the authorized work.
- e. Crossings of waterways and/or wetlands must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows. The crossing must be designed as to not impede low water flows or the safe passage of fish and aquatic organisms. Additional conditions may be required for streams determined to be a high quality fisheries resource such as designing the bottom of the culvert to include "roughness" to reduce flow velocities. "Roughness" can include cemented-in stone, baffles, or the placement of rock along the bottom of the culvert and/or along the culvert wall. Embedding the culvert to a depth greater than 12 inches may also be required.
  - 1) An alternatives analysis must be prepared for perennial stream crossings where a culvert is proposed for a new crossing or to replace a bridge. The analysis must document why a bridged crossing would not be a practicable alternative. If use of a multiple-barrel pipe or multi-cell box culvert is proposed, document why a single pipe or box -culvert system cannot be utilized. For crossings over HQARs, arch span and bottomless culverts must be considered.

- 2) For culverts, the upstream and downstream invert must be embedded 6 to 12 inches below the streambed elevation. This will allow the natural substrate to colonize the structure's bottom, encourage fish movement, and maintain the existing channel slope. Culvert slope should match adjacent elevations. The width of the base flow culvert must be approximately equal to the average channel width to promote the safe passage of fish and other aquatic organisms. Culvert(s) must not permanently widen /constrict the channel or reduce/increase stream depth. Multiple pipe culverts may not be used to receive base flows.
  - 3) For all crossings, provide cross-sections of the stream in three locations: at the crossing, and upstream and downstream of the crossing. The crossing must be designed to maintain the width of the base flow channel through the project area.
- f. The permittee must clearly label the construction drawings to include limits of Waters of the U.S., existing and proposed grading contours, all structures associated with the installation of the crossing such as wing walls, rock and concrete protection measures, existing and proposed utilities lines, outfalls and associated structures. A detailed narrative must accompany the construction plans and describe all work to be performed as indicated on the plans.
  - g. All temporary construction activities must adhere to the requirements of items c through g of Regional Permit 7 (Temporary Construction Activities) and must be addressed in writing and submitted with the notification.
  - h. This permit may not be used to authorize structural bank stabilization methods such as retaining walls, gabion baskets, riprap, etc., other than those structures necessary to assure the integrity of the stream and stream bank immediately adjacent to the crossing.
  - i. To the greatest extent possible, the permittee must establish and maintain a protective upland buffer composed of native plants (or other appropriate vegetation approved by the District) within the right-of-way adjacent to all waters of the U.S.
  - j. The project must consider permanent, post-construction Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts of the project on aquatic resources. BMPs must be evaluated at the earliest planning stages of the project and prior to the purchase of new right-of-way (ROW). Please note that temporary SESC measures are not permanent BMPs.

To the greatest extent practicable, the activity must be designed such that surface water does not directly discharge into waters of the U.S. For each location where stormwater discharges towards a jurisdictional wetland or stream, provide a written narrative discussing opportunities to implement permanent BMPs. The type of BMPs proposed should be based on the scope of work, the change in impervious surface runoff discharging to the waters of the U.S., and the overall direct impacts to waters of the U.S. resulting from the proposed work.

Possible BMPs include, but are not limited to: preserving (i.e. not developing) existing permeable areas on site, native vegetated swales, permanent ditch checks, bioswales, infiltration trenches, naturalized detention basins, and mechanical stormwater treatment units. For bridge replacements, stormwater from the bridge deck should be directed to the roadside ditches and as far from the stream as practicable so that water does not directly enter the stream through drains in the bridge deck.



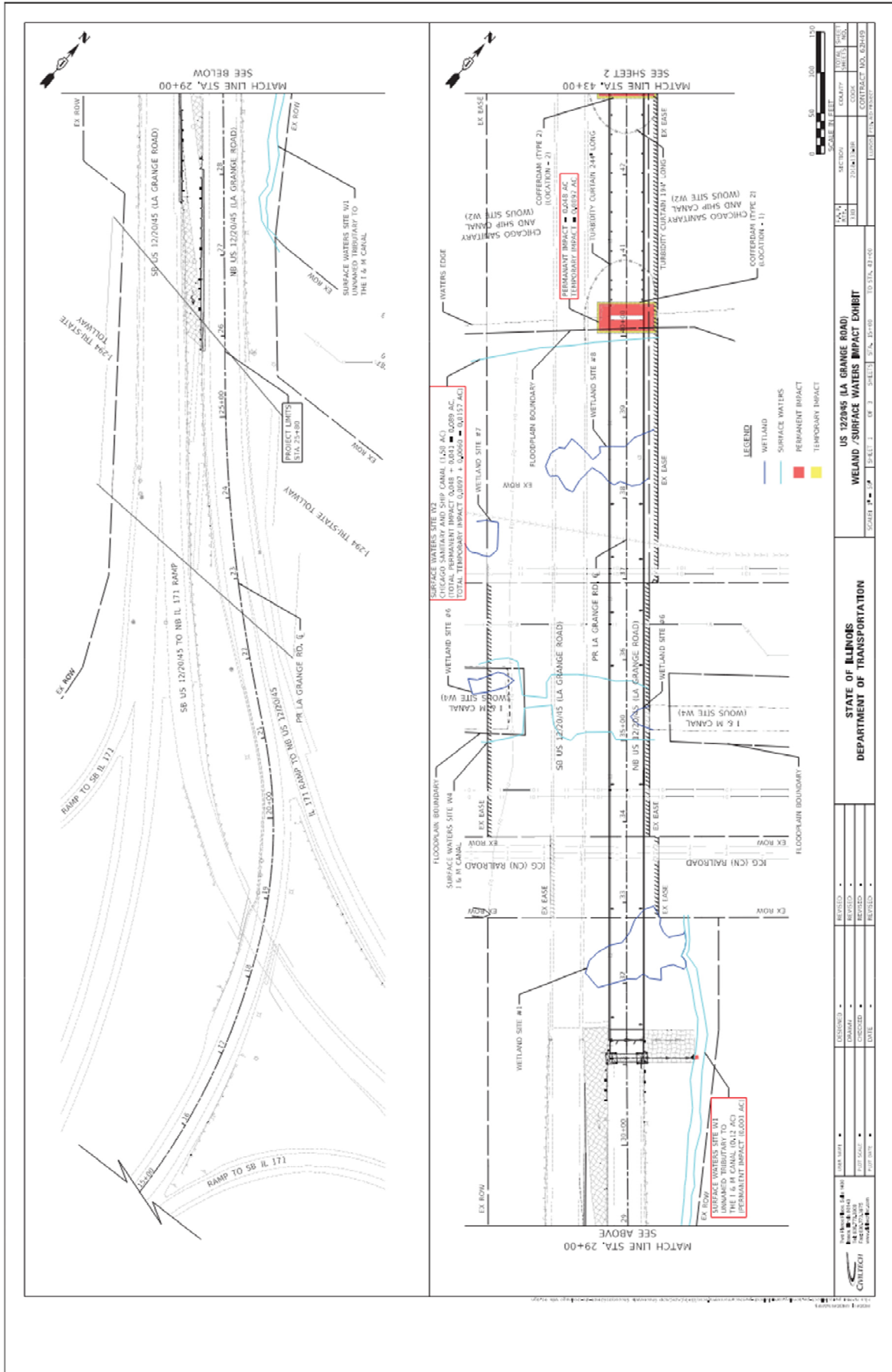
For discharges associated with maintenance projects, partial intersection improvements, and bridge/culvert replacements, native vegetated roadside ditches could be utilized as an appropriate BMP. For capacity improvement projects (intersection reconstructions, road widening) or for projects that impacts HQARs, the use of permanent ditch checks, bioswales or naturalized basins should be utilized. Compensatory storage basins may also be modified to provide water quality benefit. Appropriate BMPs will be determined during permit review.

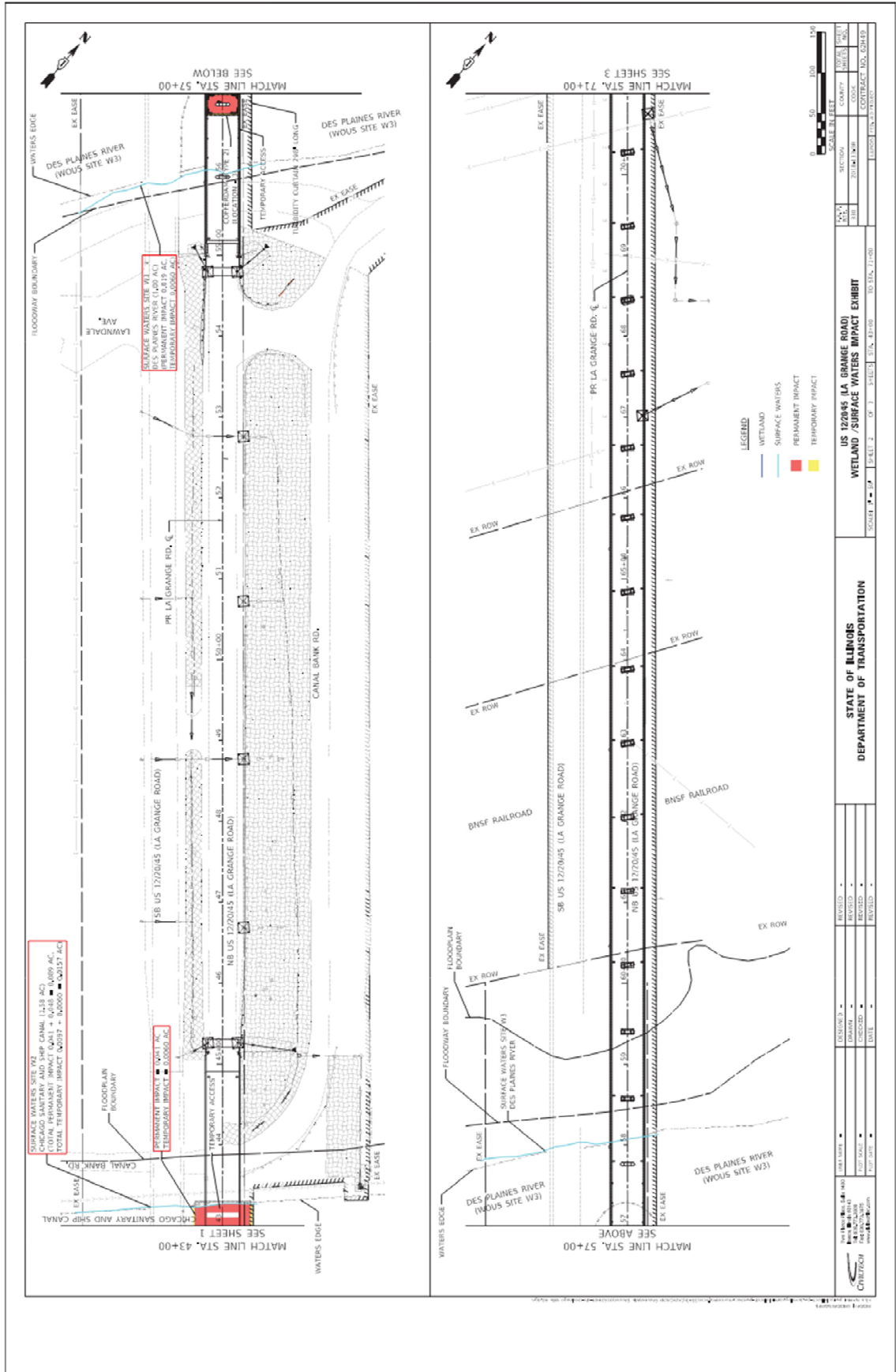
Naturalized detention basin design should include:

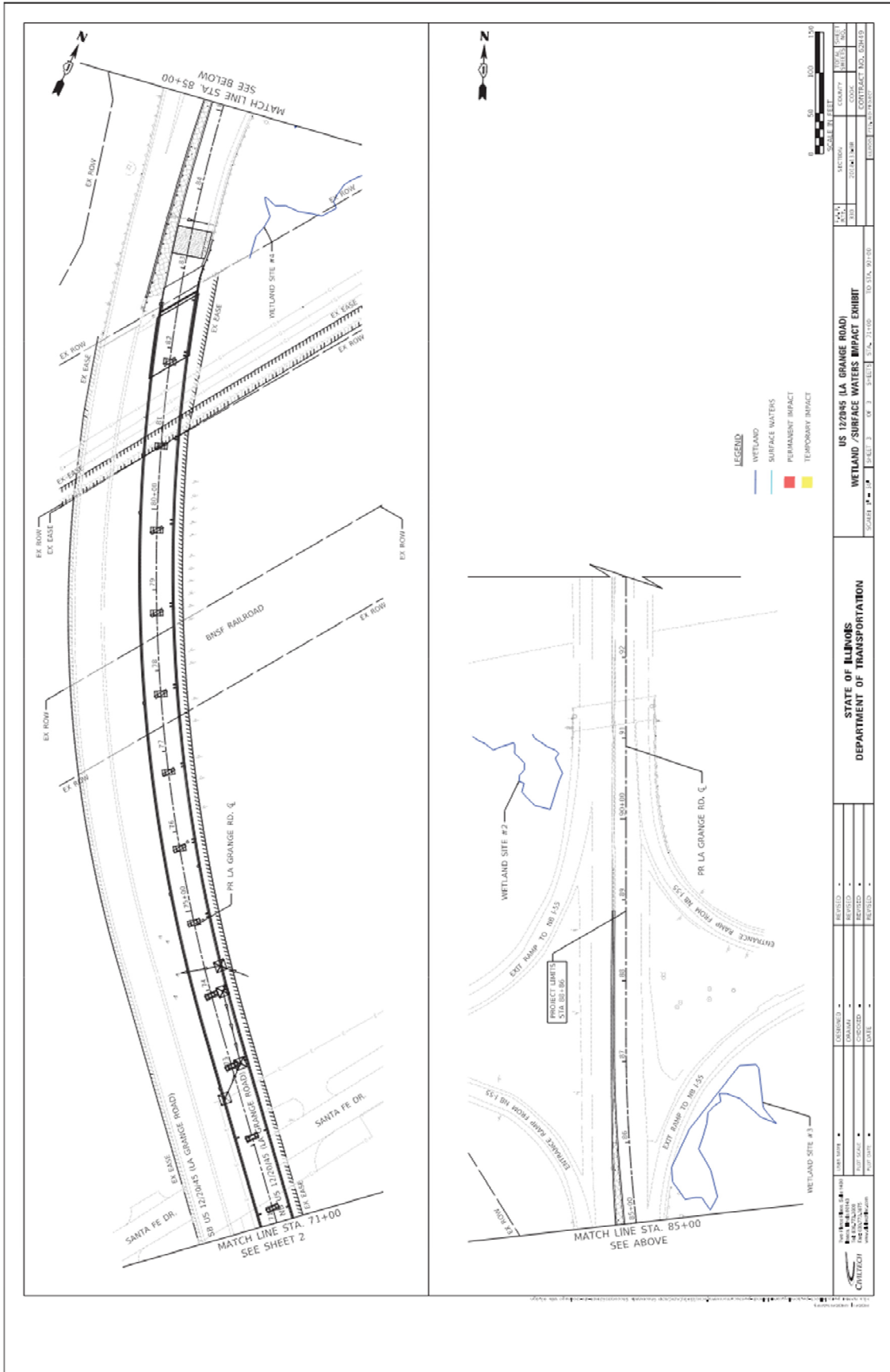
- 1) Emergent vegetation in the bottoms of the wetland basins and along the periphery of wet bottom basins and side slopes vegetated in native prairie (traditional dry bottom basins are not approved BMPs).
- 2) Stilling basins at inlets
- 3) Design the basin to maximize the distance between inlet(s) and outlet(s)

A management and monitoring plan will be required on a case-by-case basis and will include performance standards such as the BMPs ability to function as designed, percent coverage of vegetation, stabilization of soils, and corrective measures to bring areas into compliance. For additional information, please refer to our BMP Maintenance & Monitoring (M&M) Guidelines: [www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/BMPMMG.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/BMPMMG.pdf)

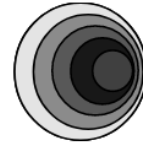
- k. This permit does not authorize discharges into jurisdictional areas for temporary use of construction material or equipment storage.
- l. For a project site adjacent to a conservation area, the permittee must request a letter from the organization responsible for management of the area. The response letter must identify recommended measures to protect the area from impacts that may occur as a result of the development. A copy of the request and any response received from the organization must be submitted to the District with the notification.
- m. This permit cannot be used to authorize the installation of road crossings associated with residential, commercial or institutional developments.







**BUCKEYE PARTNERS RIGHT-OF-WAY USE RESTRICTIONS**



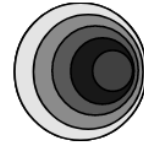
**BUCKEYE PARTNERS, L.P. AND AFFILIATES**  
 Five TEK Park, 9999 Hamilton Boulevard  
 Breinigsville, PA 18031

**Right-of-Way Use Restrictions Specification**  
 Revision 6

**Table of Contents**

<u>SECTION</u>	<u>PAGE NO.</u>
Purpose and Scope-----	2
1.0 General Guidelines-----	2
2.0 Excavation and Construction Restrictions-----	4
3.0 Specific Guidelines-----	5
3.1 Cover, Grading, and Drainage-----	5
3.1.1 Cover and Grading-----	5
3.1.2 Drainage-----	5
3.2 Aboveground and Underground Structures-----	6
3.2.1 General Requirements-----	6
3.2.2 Gardening and Landscaping-----	6
3.2.3 Fences and Walls-----	6
3.3 Roads, Driveways, Sidewalks, and Parking Areas-----	6
3.3.1 General Requirements-----	6
3.4 Foreign Utility Crossings-----	7
3.4.1 General Requirements-----	7
3.4.2 Metallic Utilities-----	8
3.4.3 Non-Metallic Utilities-----	8
3.4.4 Underwater Line Crossings-----	8
3.4.5 Electrical, Fiber-Optic, and Communications Cables-----	8
3.5 Temporary Access Roads and Heavy/Construction Vehicle Crossings-----	9
3.6 Railroad Crossings-----	9
3.7 Farming and Field Tile-----	9
3.8 Construction-Induced Vibrations-----	10
3.9 Blasting Operations-----	10
3.10 Seismic Vibrating Operations-----	11
3.11 Wind Turbines-----	12
4.0 Deviations and Exceptions-----	13
5.0 Additional Information and Buckeye Contacts-----	13
 <u>ATTACHMENTS</u>	
1 Buckeye Facility Locations and Phone Numbers-----	14
2 Right of Way and Engineering Contacts-----	15
3 State One Call Systems-----	17
4 Application for Design Plan Submission and Encroachment Review-----	18
5 Reinforced-Concrete Slab Detail-----	22
6 Earthen Ramp Detail-----	23
7 Foreign Utility Trench Crossing Detail-----	24
8 Blasting Plan Submission Form-----	25
9 Excavation Safety Checklist-----	26

**Buckeye Partners, L.P. and Affiliates**  
**Right-of-Way Use Restrictions Specification**  
**Revision 6**



**Purpose and Scope**

This Right-of-Way Use Restrictions Specification (hereinafter called "Specification") has been developed by Buckeye Partners, L.P. and Affiliates (hereinafter called "Buckeye") and is intended for landowners, utility owners, general contractors and their sub-contractors, pipeline/utility contractors, real estate developers, brokers and agents, lending officers and title underwriters, engineers, architects, surveyors, and local / governmental elected staffs (hereinafter called "Crossing Party") as a guideline for the design and construction of proposed land development.

Buckeye appreciates this opportunity to work with you in the planning stages of your development (or construction activity), and we look forward to working with you proactively. Buckeye's primary concern when activities are taking place near our pipeline is public safety and environmental protection. The intent of this Specification is to provide a clear and consistent set of requirements that will: (1) reduce the risk of damage to our pipeline and related facilities; (2) ensure unencumbered access to our right-of-way and pipeline facilities and the availability of adequate workspace for routine maintenance, future inspection, and/or repair work on our pipeline; and (3) enable the effective corrosion protection of our pipeline.

All such activities and projects that are performed near Buckeye's pipeline facilities are subject to formal review by Buckeye prior to issuance of final written approval. Depending on the scope of the project and its impact on Buckeye's pipeline facilities, additional engineering requirements and protective measures may apply. Furthermore, any damage caused by the encroaching party to Buckeye's pipeline(s), the pipeline cathodic protection system, or other Buckeye assets is the sole responsibility of the encroaching party. Buckeye will pursue reimbursement for all costs associated with the event including, but not limited to, excavation services, inspection services, pipeline repairs, and loss of operations.

The following requirements are not only the policy of Buckeye, but comply with regulations set forth by the United States Department of Transportation, Safety Regulations, 49 CFR, Parts 192 and 195.

We want to be a good neighbor, but to do so requires us to act responsibly in protecting our right-of-way and preventing damage to the pipeline system. While we want to make every effort to accommodate your desired use of your property, our responsibility for public safety is paramount. Through proper planning and communications, we can ensure the safety and integrity of our pipeline system and the welfare of our neighbors.

**The transmittal of this Specification does not constitute Buckeye's approval or permission for the Crossing Party to begin construction or work within or across the pipeline right-of-way. Work may not commence until written authorization approving such work has been issued by Buckeye.**

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**1.0 General Guidelines**

- 1.1 The safety of the pipeline must be considered at all times. No attempt to probe for or engage in any construction activities which might damage the pipeline is permitted.

- 1.2 Before any preliminary field work or construction begins in the vicinity of Buckeye's pipeline, a determination of the exact location and elevation of the pipeline must be made. To coordinate this procedure, please contact our local Field Operations Manager at the Buckeye facility nearest to your proposed project (see [Attachment 1](#) for a listing of Buckeye's facilities and telephone numbers). Buckeye makes no assurance that its permanent pipeline markers are positioned directly over its pipeline(s). Line markers should be placed at intervals determined by "line of sight". The relocation, removal, or destruction of Buckeye's pipeline markers are prohibited by federal law. Pipeline markers damaged or made unusable shall be repaired or replaced at the Encroaching Party's expense.
- 1.3 All proposed drawings/plans must be submitted to Buckeye's Right of Way Department for review to determine to what extent, if any, the pipeline or right-of-way will be affected by the proposed construction and/or development. These drawings/plans must be prepared in strict compliance to [Attachment 4](#), "Requirements for Submission of Design Plans".
- 1.4 Buckeye may require the property owner to provide proof of current ownership of the land where the proposed encroachment is to occur. Such proof may be in the form of a Title Commitment, Title Policy, or a certified copy of a recorded Conveyance Deed.
- 1.5 When any construction activity is conducted in or around our pipeline right-of-way, Buckeye's On-Site Inspector must be present at all times. **NO WORK SHALL TAKE PLACE WITHOUT A BUCKEYE ON-SITE INSPECTOR PRESENT.** For this free-of-charge service, contact our local Field Operations Manager at the Buckeye facility nearest to your proposed project.
- 1.6 The Crossing Party shall contact Buckeye for re-marking of a pipeline if the existing markers are inadequate for any reason, including disturbance due to construction activities.  
  
Note: Federal law prohibits the removal of pipeline markers.
- 1.7 The Crossing Party shall not burn trash, brush, or other items or substances within 50 feet of the pipeline.
- 1.8 The Crossing Party shall not store any equipment or materials on the right-of-way. Full access must be maintained to the pipeline(s) at all times. The stockpiling of items including soil, or topsoil over the pipeline(s) is not permitted.
- 1.9 During routine or emergency maintenance on the pipeline, the cost to restore approved surface improvements (e.g., pavement, landscaping, sidewalks, etc.) shall be the responsibility of the Crossing Party.
- 1.10 Depending on the type and nature of the encroachment, Buckeye may require the pipeline(s) within the proposed encroachment to be exposed, visually inspected, and backfilled by a Buckeye representative at the full expense of the Crossing Party. Buckeye will evaluate the pipeline(s) cathodic protection system, including the coating type and condition, for suitability of service in relation to the proposed encroachment. Should Buckeye deem that the cathodic protection system and/or coating system is insufficient for any reason, Buckeye will repair or upgrade the system at the Crossing Party's expense to accommodate the proposed encroachment. Potential cathodic protection modifications can include, but are not limited to equipment such as rectifiers, anode systems, test stations, casing pipe, and coating.

## 2.0 Excavation and Construction Restrictions

- 2.1 Excavation operations shall be performed in accordance with appropriate State "One-Call" utility locating system requirements. As a matter of State law, anyone undertaking excavation work is required to call three (3) working days before excavating in MA, ME, MI, MO, NJ, PA, RI, SC, TN, and WI; two (2) working days in all other states (see [Attachment 3](#) for State "One-Call" numbers).



- 2.2 The Crossing Party will conduct "white-lining" of any proposed excavation areas. Buckeye will erect temporary pipeline markers/flags (yellow) identifying the location of the pipeline within the work area, and will provide information on how to respond should the pipeline be damaged or a commodity release occur. All personnel operating equipment over or around the pipeline must be made aware of its location and what to do if they make contact with the pipeline.

Note: The Encroaching Party must utilize a qualified contractor of Buckeye's choice to locate and mark the existing Buckeye operated pipeline(s) using current industry practices and agrees to mark the location of the pipeline with buoys or by electronic location methods as approved by Buckeye for the duration of the construction activity in the vicinity of Buckeye's operated pipeline(s). If proposing dredging activities within 150-feet of Buckeye's pipeline(s), a dredging plan must be submitted to Buckeye for review and approval.

- 2.3 When a Crossing Party excavates near Buckeye's pipeline, a Buckeye representative must locate the pipeline and determine the depth of cover before the Crossing Party begins excavation. The Buckeye representative and the excavator must review and complete an Excavation Safety Checklist ([Attachment 9](#)). The Crossing Party shall not perform any excavation, crossing, backfilling, or construction operations until Buckeye's On-Site Inspector has reviewed the proposed work on site and given approval for work to proceed. Buckeye's On-Site Inspector shall have full authority to stop the work if it is determined that the work is being performed in an unsafe manner.
- 2.4 No equipment shall work directly over the pipeline. The Crossing Party shall install temporary fencing along Buckeye's right-of-way boundaries so that equipment will not inadvertently pass over the pipeline at locations other than those established for crossing (see Section 3.6).
- 2.5 When excavating within the right-of-way, the Crossing Party's backhoe shall have a plate welded over the teeth of the backhoe bucket, and the side cutters must be removed prior to excavation. However, if within 24 inches of the outer edge of the pipe (this "tolerance zone" extends on all sides of the pipe), only hand excavation, air cutting, and vacuum excavation are permitted.
- 2.6 No excavations shall be made on land adjacent to the pipeline that will in any way impair, withdraw lateral support, cause subsidence, create the accumulation of water, or cause damage to the pipeline or right-of-way.
- 2.7 The Crossing Party shall ensure all excavation work complies with OSHA's excavation standards outlined in 29 CFR 1926 and correct any noncompliant excavation site before Buckeye's On-Site Inspector or the Crossing Party enters the site to perform work.



- 2.8 If conditions require, the Crossing Party shall be directed by Buckeye to install sand or cement bags or other suitable insulating materials to maintain proper vertical clearance from the pipeline.
- 2.9 At any location where the pipeline is exposed, the Crossing Party shall provide Buckeye the opportunity to inspect the pipeline condition, install cathodic protection test leads, and/or install underground warning mesh.
- 2.10 The maximum unsupported exposed length of pipe shall be 20 feet for 4-inch-diameter pipe, 25 feet for 6-inch- to 10-inch-diameter pipe, and 35 feet for 12-inch- to 24-inch-diameter pipe. When required, the pipeline shall be supported with grout and sand bags or padded skids. At no time shall the pipeline be used as a brace to support equipment or sheeting/shoring materials.

Note: The Crossing Party shall submit a support plan for Buckeye's review and approval.

- 2.11 No buried pipeline may be left exposed for any duration of time without concurrence of Buckeye's On-Site Inspector.
- 2.12 Backfill and compaction shall be performed to the satisfaction and in the presence of Buckeye's On-Site Inspector. Within 5 feet of the pipeline crossing location, the Crossing Party shall place at least 12 inches of sand with no sharp gravel, rock, hard clods, vegetation, or other debris on all sides of any pipeline, and remaining backfill shall be placed so as not to disturb this padding material or damage the pipeline (see [Attachment 7](#) for Foreign Utility Crossing Detail). Backfill over the pipe shall be compacted by hand until 18 inches of cover is achieved. The disturbed ground shall be compacted to the same degree of compaction of surrounding areas. The Crossing Party shall restore the site to its original condition except for items that are part of the Buckeye approved change.

### 3.0 Specific Guidelines

#### 3.1 Cover, Grading, and Drainage

##### 3.1.1 **Cover and Grading:**

- a. The existing cover over the pipeline shall not be modified without Buckeye's written approval.
- b. The final grading shall net a minimum cover of 36 inches over the pipeline.
- c. In areas where buildings are proposed within 50 feet of the pipeline or due to other surface improvements and/or in areas determined by Buckeye, final grading shall net a minimum cover of 48 inches over the pipeline.
- d. The maximum allowable constructed cross-slope within the ROW shall be 5H:1V and shall never be greater than the existing cross-slope.
- e. The maximum allowable cover/soil shall not exceed six (6) feet without Buckeye's written approval.
- f. Use of vibratory equipment larger than walk-behind units are not permitted within 25 feet of the pipeline.

##### 3.1.2 **Drainage:**

- a. Detention ponds, lakes, structures or any type of impoundment of water, temporary or permanent, are prohibited within the right-of-way.
- b. Culverts are not permitted within the right-of-way.

- c. Any modifications to an existing drainage pattern shall be designed such that the erosion of the pipeline cover is controlled.
- d. For streams, drainage channels, and ditches, a minimum of cover of 60 inches is required between the pipeline and the bottom of the drainage canal or ditch (see Section 3.3.1.f for road drainage ditches).

### 3.2 Aboveground and Underground Structures

#### 3.2.1 **General Requirements:**

- a. Buildings or other structures, including, but without limitation, overhanging balconies, patios, decks, swimming pools, wells, walls, septic systems, propane tanks, transformer pads, manholes, valve boxes, storm drain inlets, utility poles, the storage of materials, or any other item which will create an obstruction or prevent the inspection of the right-of-way by air or foot, shall not be erected within the right-of-way.
- b. The Crossing Party shall not develop or build retaining walls, drive piling or sheeting, or install an engineered structure that develops or controls overburden loads that will impact the pipeline (see Section 3.9).
- c. Deep foundations which include piers, caissons, drilled shafts, bored piles, and cast-in-situ piles located within 500 feet of the pipeline shall be installed/drilled using an auger.
- d. Occupied structures shall not be located within 50 feet of the pipeline unless a minimum cover of 48 inches is provided above the top of the pipeline.
- e. Any deviation for aboveground and underground structures will be reviewed by Buckeye on a **case-by-case basis**.

#### 3.2.2 **Gardening and Landscaping:**

- a. Trees, shrubs and bushes are not permitted within the right-of-way. Trees planted outside of the right-of-way should be placed so branches and limbs will not overhang the pipeline right-of-way as the tree matures. Buckeye may trim/remove overhanging branches and limbs that encroach into the right-of-way.
- b. Flowerbeds, vegetable gardens and lawns, are permitted within the right-of-way. Buckeye is not responsible for replacing any plantings located within the right-of-way.

#### 3.2.3 **Fences and Walls:**

- a. Privacy fences or fences that prevent access to the right-of-way are not permitted.
- b. All other fence installations within the right-of-way will be reviewed for approval by Buckeye on a **case-by-case basis**. Upon Buckeye's written approval, fences shall be constructed with a 14-foot gate or removable sections across the right-of-way.
- c. Fence posts shall not be installed within 5 feet of the pipeline and must be equidistant if crossing the pipeline.
- d. No fence shall cross the right-of-way at less than a 60-degree angle.
- e. Fences that run parallel to the pipeline shall be installed outside the right-of-way.
- f. Masonry, brick, or stone walls are not permitted on the right-of-way.

### 3.3 Roads, Driveways, Sidewalks, and Parking Areas

#### 3.3.1 **General Requirements:**

- a. Roads, driveways, sidewalks, or parking areas are strictly prohibited. When extenuating circumstances arise, these items may be reviewed by Buckeye on a

- case-by-case basis. Upon Buckeye's written approval, roads, driveways, and sidewalks shall cross perpendicular to the pipeline.
- b. The maximum allowable cover shall not exceed six (6) feet without Buckeye's written approval.
  - c. Use of vibratory equipment larger than walk-behind units is not permitted within 25 feet of the pipeline.
  - d. Roads or driveways shall not be installed longitudinally within the right-of-way.
  - e. For roads and driveways, a minimum cover of 48 inches with a net cover of 36 inches of undisturbed soil is required above the pipeline.
  - f. A minimum cover of 36 inches over the pipeline is required at road drainage ditches. Upon Buckeye's approval, this cover can be reduced to 24 inches if ditch is rock/rip-rap lined and 12 inches if ditch is concrete lined.
  - g. For asphalt parking lots and sidewalks, a minimum cover of 36 inches with a net cover of 24 inches of undisturbed soil is required above the pipeline. Additional cover may be required by Buckeye based upon specific site conditions.
  - h. Stockpiling of materials on the right-of-way is not permitted. These materials include, but are not limited to soil, snow, stone, boulders, trees, brush, grass clippings, leaves, etc.

### 3.4 Foreign Utility Crossings

#### 3.4.1 **General Requirements:**

- a. Utilities shall cross perpendicular to the pipeline.
- b. Utilities are required to cross beneath the pipeline with a minimum clearance of 24 inches. Exceptions to Buckeye's clearance requirements for underground service entrances to single family dwellings will be reviewed on a **case-by-case basis**.
- c. Sand or select fill shall be placed between the pipeline and utility (see Section 2.8).
- d. Utilities installed parallel to the pipeline shall be reviewed by Buckeye on a **case-by-case basis**. If approved, the utility shall be no closer than 15 feet from the pipeline.
- e. Warning tape, in accordance with A.P.W.A. Uniform Color Code, shall be placed above utility, 12 inches below ground, for a distance of 25 feet on either side of crossing.
- f. Signage shall be placed at crossing as determined appropriate by Buckeye.
- g. Splice boxes, service risers, energized equipment, etc., are not permitted within the right-of-way.

#### h. Trenchless Excavations:

- [1] Utilities installed by a trenchless excavation method (directional drilling, jacking, slick boring, etc.) shall be reviewed by Buckeye on a **case-by-case basis**.
- [2] Buckeye reserves the right to select the method of crossing for the proposed utility.
- [3] A minimum clearance of 60 inches (5 feet) below the pipeline is required.
- [4] For directional drilling operations, a tracking system is required to verify the exact location of the drill head.
- [5] For perpendicular crossings, a 4 feet by 4 feet excavation window, 24 inches below the pipeline is required for visual inspection of the pipeline to ensure the drill (or bore) does not impact the pipeline.
- [6] Blind boring is not permitted within Buckeye's right-of-way.
- [7] When trenchless excavations are authorized by Buckeye parallel to and within 10 feet of an existing pipeline, observation holes shall be excavated at 25-foot intervals to monitor the progress and horizontal/vertical location of the drill head.

[8] Buckeye must be provided with an advance copy of the horizontal directional drill (HDD) plan for the trenchless excavation which specifies how the HDD will be tracked, monitored and controlled at least two weeks before work is to commence. The plan must detail preventative measures to prevent conflicts with Buckeye's existing facility. The plan must state the planned HDD bore diameters, rod lengths, ream diameters, method of guidance, method of drill head tracking, etc. Additionally, the plan needs to include procedures for continuous monitoring and reporting of the drill head location, and state the appropriate vertical and horizontal deviation tolerances for the HDD operations in accordance with API RP 1172 – "6 Final Design". The procedure must include reporting requirements and procedures to correct or shut down the HDD trajectory should the operation exceeds the established tolerances. Buckeye Operations must be notified immediately if tolerances are compromised and should be involved in the recommencement of operations after tolerances are exceeded.

**3.4.2 Metallic Utilities:**

- a. Bonds and test leads shall be installed at the expense of and by the Crossing Party where Buckeye deems necessary.
- b. Utilities shall be coated with a non-conductive coating for a distance of 50 feet on either side of the pipeline crossing.
- c. Ductile water pipe shall include nitrile gaskets within 50 feet of the pipeline crossing or anywhere within 25 feet of horizontal offset locations.

**3.4.3 Non-Metallic Utilities:**

- a. Utilities shall be wrapped with tracer wire within the width of the right-of-way.
- b. Natural gas (or other industrial gases) lines shall be encased in a 6-inch envelope of yellow 3,000 psi concrete across the right-of-way for a minimum distance of 10 feet to each side of each BUCKEYE Pipeline(s) across the right-of-way.
- c. PVC water pipe shall include nitrile gaskets within 50 feet of the pipeline crossing or anywhere within 25 feet of horizontal offset locations.

**3.4.4 Underwater Line Crossings:**

- a. For underwater line location procedures, refer to section 2.2.
- b. The Encroaching Party must provide qualified diving inspectors to Buckeye for use during the crossing activity at no cost to Buckeye.
- c. The Encroaching Party must place sacks filled with sand and cement between Buckeye's pipeline(s) and the encroaching utility to provide and maintain the required minimum vertical clearance between the two utilities.

**3.4.5 Electrical, Fiber-Optic, and Communications Cables**

**a. Buried Cables:**

- [1] Electrical conductors/cable installations shall meet minimum requirements of National Electric Code for buried conductors and be adequately shielded and be impervious to hydrocarbon liquids.
- [2] Cables are required to cross beneath the pipeline with a minimum clearance of 24 inches. Exceptions to Buckeye's clearance requirements for underground service entrances to single family dwellings will be reviewed on a **case-by-case basis**.
- [3] Sand or select fill shall be placed between the pipeline and cable (see Section 2.8).

- [4] All cables shall be installed in Schedule 80 PVC pipe and encased in a 6-inch envelope of color coded (i.e. red for electrical cable, orange for communication cable) 3,000 psi concrete for a minimum distance of 10 feet to each side of each BUCKEYE Pipeline(s) across the right-of-way.
- [5] Warning tape, in accordance with A.P.W.A. Uniform Color Code, shall be placed above the utility, 12 inches below ground, for a distance of 25 feet on either side of the crossing.
- [6] Signage for the crossing shall be placed as determined appropriate by Buckeye.

**b. Aboveground Cables:**

- [1] A minimum of 20 feet of above-grade clearance for a distance of 25 feet on each side of the pipeline is required.
- [2] Mechanical supports and service drops including poles, towers, guy wires, ground rods, anchors, etc., are not permitted within 25 feet of the pipeline.

**3.5 Temporary Access Roads and Heavy/Construction Vehicle Crossings**

**3.5.1 General Requirements:**

- a. The Encroaching Party shall provide Buckeye information as to the type, model, size, and axle weight of construction equipment that will be used over or in the vicinity of the pipeline(s).
- b. Trucks carrying a maximum axle load up to 15,000 pounds may cross the right-of-way after Buckeye has confirmed a minimum cover of 48 inches over the pipeline.
- c. For all other cases, earthen ramps (see Attachment 6), swamp mats, air bridges, reinforced-concrete slabs (see Attachment 5), or steel plates may be required. Loading conditions and protection measures will be evaluated and dictated by Buckeye's Right of Way Department.
- d. When temporary fill must be added, colored sheets of plastic shall be placed under the temporary fill at original grade so that the original grade will not be disturbed when the temporary fill is removed.
- e. At all crossing locations, the Crossing Party will provide 12" of clean AASHTO 1 stone over the pipeline right-of-way.
- f. During the use of an approved temporary construction road, Buckeye may require that the Crossing Party provide additional protective measures deemed necessary to prevent damage to the pipeline.
- g. Buckeye will limit the number of temporary construction roads constructed by the Crossing Party.

**3.6 Railroad Crossings**

**3.6.1 General Requirements:**

- a. A minimum clearance of 72 inches is required between railroad tracks and the pipeline.
- b. A minimum cover of 36 inches is required between the bottom of drainage ditches on either side of a railroad and the pipeline.
- c. For railroad main lines, the pipeline crossing must comply with local railroad guidelines that delineate the requirements for carrier pipe, casing pipe, and clearances. Buckeye shall be consulted for the review of any State submittals.
- d. For private spur crossings, Buckeye will determine the railroad entity having jurisdictional authority to dictate crossing requirements.

3.7 Farming and Field Tile

3.7.1 **General Requirements:**

- a. Field tile running parallel to the pipeline shall be spaced 10 feet from the centerline of the pipeline.
- b. Field tile shall cross the pipeline perpendicularly with a clearance of 12 inches above or below the pipeline.
- c. Buckeye will approve the total number of crossings of the pipeline on a **case-by-case basis**.
- d. Deep plowing or "ripping" operations shall be approved by and coordinated with Buckeye.

3.8 Construction-Induced Vibrations

3.8.1 **General Requirements:**

- a. Construction activities that generate ground vibrations, including, but without limitation, pile driving, sheet driving, soil compaction work, jackhammering, or ramming, shall be reviewed by Buckeye on a **case-by-case basis**.
- b. If the Crossing Party anticipates such an activity within 10 feet of the pipeline, then continuous testing monitored by a seismograph located directly over the pipeline at its closest point to the activity must be conducted. The Crossing Party shall provide, at their expense, the monitoring service which must be approved by Buckeye.
- c. The particle velocity of any one component of a three-component seismograph must not exceed 2.0 inches per second as recorded on the seismograph placed directly over the pipeline.

3.9 Blasting Operations

3.9.1 **Blasting within 500 feet of the pipeline right-of-way:**

- a. The Crossing Party must submit a blast plan to Buckeye for review and approval. Verbal and written notice will be given 14 and 21 days respectively.
- b. Blasting plans must include the following information:
  - Dates blasting to occur
  - Explosives type
  - Maximum shot hole depth and diameter
  - Number of holes and spacing
  - Delay pattern
  - Delay types and intervals
  - Depth of overburden
  - Depth of blast area
  - Maximum charge per hole, per delay
  - Show drilling/blasting pattern plan and profile in relation to Buckeye facilities
  - Calculated radiant peak particle velocity (PPV) at varying distances from the pipeline and at the pipeline itself
  - State permit (copy)
  - Blasting contractor qualifications and insurance certificate (copy)
  - Blasting Safety Plan (copy)

The Crossing Party shall complete Attachment 8, "Blasting Plan Submission Form", and include this form with their submission to Buckeye.

- c. The Crossing Party shall make arrangements for a Buckeye On-site Inspector to be present to witness the blasting operation.

**3.9.2 Blasting within 300 feet of the pipeline right-of-way:**

(Adds to or replaces items in Section 3.10.1)

- a. Blasting shall be monitored by a seismograph located directly over the pipeline at its closest point to the blast hole(s). The Crossing Party shall provide, at their expense, the monitoring service which must be approved by Buckeye.
- b. The particle velocity of any one component of a three-component seismograph must not exceed 2.0 inches per second as recorded on the seismograph placed on the ground directly over the pipeline.
- c. For blast testing, an initial test blast using a maximum charge of one pound shall be performed. The Crossing party shall detonate the first test blast with all necessary monitoring equipment in place to observe the results of the proposed blast design. Each subsequent test blast may be set and detonated only after the seismograph reading from the previous test blast indicates that further blasting can be safely conducted.
- d. Routine production blasting may be initiated after completion of a successful test blast, with allowable charge based on the seismographic vibration recordings of test blasts. However, all blasting must be continuously monitored by a seismograph. The velocity recorded must not exceed the 2.0 inches per second limit noted above.

**3.9.3 Blasting within 50 feet of the pipeline right-of-way:**

(Adds to or replaces items in Section 3.10.2)

- a. The Crossing Party shall hire a consulting firm that specializes in underground blasting to conduct the seismograph survey and certify the results.
- b. Buckeye will approve the Crossing Party's selection of consulting firms that will conduct the seismographic surveys before starting any blasting operation.

**3.9.4 Special Requirements:**

- a. For multiple-delay blasting, the Crossing Party shall begin the blasting sequence at the charge closest to the pipeline and progress away from the pipeline.
- b. If seismographic readings above the limit stated in item 3.10.2.d of this section are recorded, the pipeline must be exposed and inspected for possible damage and/or product release. The Crossing Party conducting blasting operations is responsible for all expenses related to the exposure and any subsequent repairs necessitated by the operation.
- c. At Buckeye's request, the Crossing Party shall install sheet piling, open trench channels, and/or matting to protect the pipeline during blasting operations.

**3.10 Seismic Vibrating Operations**

**3.10.1 Seismic vibrating within 500 feet of the pipeline right-of-way:**

- a. The Crossing Party must submit a seismic vibrating plan to Buckeye for review and approval. Verbal and written notice will be given 14 and 21 days respectively.
- b. Seismic vibrating plans, when using Vibroseis System Vibrators to radiate ground vibrations, must include information on soil conditions and depth of exploration, the anticipated number and type of vibrations, type and weight of vehicle, and peak force of equipment.
- c. The peak force by vehicle weight shall not exceed 45,000 pounds.
- d. The Crossing Party shall also make arrangements for a Buckeye On-Site Inspector to be present to witness the seismic vibrating operation.

**3.10.2 Seismic vibrating within 100 feet of the pipeline right-of-way:**

- a. Vibration shall be monitored by a seismograph located directly over the pipeline at its closest point to the vibrator(s). The Crossing Party shall provide, at their expense, the monitoring service which must be approved by Buckeye.
- b. The Crossing party shall determine and limit the maximum peak force allowed under continuous seismographic vibration monitoring such that the peak particle velocity will not exceed 2.0 inches per second.
- c. Seismic vibration surveys shall not be conducted closer than 100 feet to the pipeline.

**3.10.3 Special Requirements:**

- a. If seismographic readings above the limit stated in item 3.11.2.b of this section are recorded, the pipeline must be exposed and inspected for possible damage and/or product release. The Crossing Party conducting seismic vibrating operations is responsible for all expenses related to the exposure and any subsequent repairs necessitated by the operation.
- b. At Buckeye's request, the Crossing Party shall install sheet piling and/or open trench channels to protect the pipeline during seismic vibrating operations.

**3.11 Wind Turbines**

**3.11.1 Setback Distance from Pipelines**

- a. Wind turbine structures shall be set back from any Buckeye pipeline at least a distance equal to 110% of the structure height, which is defined as the height of the entire wind turbine system as measured from the bottom of the base to the highest vertical point of the system including the base and tower and the highest reach of the turbines or blades.
- b. No facilities associated with a wind turbine installation project shall be permitted to be installed within the pipeline easement.
- c. Warning lights shall be installed on all wind turbines that are located within 1,200 feet of any Buckeye pipeline.

**3.11.2 Construction Equipment and Crane Crossings**

- a. All temporary access roads and heavy/construction vehicle crossings shall comply with Section 3.6 above.
- b. Where cranes and other maintenance vehicles will need to cross Buckeye pipelines on a routine permanent basis for maintenance of the turbine(s), permanent crossing locations must be established, an encroachment agreement must be signed by the landowner and facility owner, and permanent crossing protections must be installed to the satisfaction of Buckeye.
- c. Construction materials or equipment shall not be transported longitudinally over Buckeye's pipelines.

**3.11.3 Underground Utilities**

- a. Cables and electrical conduit shall crossings shall comply with Section 3.5 above.
- b. BUCKEYE may require at the expense of the CROSSING PARTY an AC Arc Fault Study, specific to the CROSSING PARTY'S project encroachments. The study will determine if there is adequate AC Arc Fault protection of and separation from BUCKEYE'S facilities. BUCKEYE will arrange for the engineering, design and installation of AC mitigation and Lightning suppression systems, as deemed necessary by the AC Arc Fault Study. The reasonable cost of such AC remediation



and Lightning suppression systems shall be submitted to CROSSING PARTY for review and approval, which approval shall not be unreasonably delayed, conditioned or withheld, and, upon approval such reasonable cost will be prepaid by CROSSING PARTY to BUCKEYE.

#### **4.0 Deviations and Exceptions**

- 4.1 When and where special circumstances dictate, deviation from these requirements must be formally approved by Buckeye in writing prior to commencement of any excavation or other construction activity that may impact the pipeline. Any such deviations must be explained and documented and provided to Buckeye for review and approval.

#### **5.0 Additional Information and Buckeye Contacts**

- 5.1 Should you have any questions regarding pipeline rights-of-way or your specific easement, contact Buckeye's Right of Way Department at the applicable phone number listed in [Attachment 2](#).
- 5.2 Should you have any questions regarding Buckeye's engineering requirements, contact Buckeye's Encroachment Design Reviewer at [encroachmentreviews@buckeye.com](mailto:encroachmentreviews@buckeye.com).

**Attachment 1: Buckeye Facility Locations and Phone Numbers**

Alabama	Birmingham	(205) 369-0179
	Montgomery	(334) 309-4710
California	San Diego	(714) 269-9028
Connecticut & Massachusetts	Wethersfield	(860) 529-7781
	New Haven	(203) 469-3479
Florida	Port Everglades	(954) 522-8464
Georgia	Birmingham (AL)	(205) 369-0179
Illinois	Argo	(708) 259-1352
	Lemont (West Shore)	(708) 227-0962
	Kankakee	(815) 932-3029
	Hartford	(618) 255-1100
Indiana	Hammond	(219) 781-3383
	Hammond (West Shore)	(708) 227-0962
	Huntington	(260) 356-5802
Iowa	Cedar Rapids	(708) 259-1352
	Council Bluffs	(712) 366-9461
	Des Moines	(515) 226-4017
	Ottumwa	(641) 684-6789
Louisiana	Liberty (TX)	(936) 336-5773
Maine	South Portland	(207) 808-4533
Michigan	Wayne	(734) 721-8834
Missouri	North St. Louis	(314) 231-2000
	Sugar Creek	(816) 836-6000
	Burlington Junction	(660) 725-3386
Nevada	Reno	(760) 802-1535
New Jersey	Linden	(908) 374-5301
New York	Auburn	(315) 253-5395
	New York City	(718) 656-5746
North Carolina	Goldsboro	(919) 778-2712
Ohio	Lima	(419) 993-8025
	Mantua	(330) 274-2234
	Toledo	(419) 698-8190
Pennsylvania	Boothwyn	(610) 459-3441
	Coraopolis	(412) 264-7432
	Duncansville	(814) 695-4852
	Malvern	(610) 249-9430
	Mechanicsburg	(717) 766-7633
	Macungie	(484) 232-4218
Tennessee	Memphis	(901) 395-0122
Texas	Liberty	(936) 336-5773
Wisconsin	Milwaukee (West Shore)	(708) 227-0962
	Madison (West Shore)	(815) 964-3727

**Attachment 2: Right of Way & Engineering Contacts**

Name	Responsibility	Phone / Address / Email
David Boone	<b>Sr. Manager, Right of Way, Real Estate, and Damage Prevention</b>	(610) 904-44015 TEK Park, 9999 Hamilton Blvd. Breinigsville, PA 18031 <a href="mailto:dboone@buckeye.com">dboone@buckeye.com</a>
Chris McPike	<b>Sr. Specialist, Right of Way</b> <i>Central District:</i> Eastern Ohio, Pennsylvania (Central & Western)	(216) 271-8103 4800 East 49 <sup>th</sup> Street Cleveland, OH 44125 <a href="mailto:CMcPike@buckeye.com">CMcPike@buckeye.com</a>
Brandon Allen	<b>Specialist, Right of Way II</b> <i>Central District:</i> Michigan, Ohio (except for Eastern Ohio)	(216) 318-2124 4800 East 49 <sup>th</sup> Street Cleveland, OH 44125 <a href="mailto:BAllen@buckeye.com">BAllen@buckeye.com</a>
Jana Olthoff	<b>Specialist, Right of Way II</b> <i>West District:</i> Northern & Central Illinois, Indiana, Wisconsin	(219) 741-0201 5521 West Lincoln Highway Crown Point, IN <a href="mailto:JOlthoff@buckeye.com">JOlthoff@buckeye.com</a>
Wesley Pekarek	<b>Sr. Specialist, Right of Way</b> <i>West District:</i> Iowa, Missouri, Southern Illinois, California, Nevada	(816) 836-6096 1315 N. Sterling Ave. Sugar Creek, MO 64054 <a href="mailto:WPekarek@buckeye.com">WPekarek@buckeye.com</a>
Chris Scheid	<b>Specialist, Right of Way II</b> <i>East District:</i> Northeast Pennsylvania, Southeast Pennsylvania, Central Pennsylvania, New York (Upstate), Maryland, Virginia	(484) 232-4454 5002 Buckeye Road Emmaus, PA 18049 <a href="mailto:CScheid@buckeye.com">CScheid@buckeye.com</a>
Emily Litwa	<b>Specialist, Right of Way II</b> <i>Northeast District:</i> New Jersey, Connecticut, Maine, Massachusetts, New York	(732)-692-5243 750 Cliff Rd Port Reading, NJ 07064 <a href="mailto:ELitwa@buckeye.com">ELitwa@buckeye.com</a>
Dave Jones	<b>Sr. Specialist, Right of Way</b> <i>Encroachment Design Review:</i> East, Northeast, Central, West Districts	(610)-904-4409 5 TEK Park, 9999 Hamilton Blvd. Breinigsville, PA 18031 <a href="mailto:DAJones@buckeye.com">DAJones@buckeye.com</a>
Daniel Mangum	<b>Sr. Specialist, Right of Way &amp; Development</b> <i>South District:</i> Texas, Louisiana, Tennessee, Alabama, Georgia, South Carolina, Nevada, Florida,	(832) 325-1626 One Greenway Plaza, Suite 600 Houston, Texas 77046 <a href="mailto:DManqum@buckeye.com">DManqum@buckeye.com</a>

	North Carolina	
<b>Teriann Williams</b>	<b>Right of Way Coordinators</b> <u><i>Easements and Records:</i></u> Supporting East, Northeast, Central, and West Districts	(610) 904-4418 5 TEK Park, 9999 Hamilton Blvd. Breinigsville, PA 18031 <a href="mailto:TEWilliams@buckeye.com">TEWilliams@buckeye.com</a>

**Attachment 3: State One Call Systems (National One Call System - Dial 811)**

State	One Call Program	Phone No.	Website
Alabama	Alabama 811	(800) 292-8525	<a href="http://www.al811.com">www.al811.com</a>
California - North	USA North of Central / Northern California & Nevada	(800) 227-2600	<a href="http://www.usanorth.org">www.usanorth.org</a>
- South	Dig Alert & Underground Service Alert South	(800) 422-4133	<a href="http://www.digalert.org">www.digalert.org</a>
Connecticut	Call Before You Dig	(800) 922-4455	<a href="http://www.cbyd.com">www.cbyd.com</a>
Florida	Sunshine State One Call	(800) 432-4770	<a href="http://www.callsunshine.com">www.callsunshine.com</a>
Georgia	Georgia 811	(800) 282-7411	<a href="http://www.georgia811.com">www.georgia811.com</a>
Illinois - Non-Chicago	Julie, Inc.	(800) 892-0123	<a href="http://www.illinois1call.com">www.illinois1call.com</a>
- Chicago	DIGGER - Chicago Utility Alert Network	(312) 744-7000	<a href="http://www.cityofchicago.org/transportation">www.cityofchicago.org/transportation</a>
Indiana	Indiana 811	(800) 382-5544	<a href="http://www.indiana811.org">www.indiana811.org</a>
Iowa	Iowa One Call	(800) 292-8989	<a href="http://www.iowaonecall.com">www.iowaonecall.com</a>
Louisiana	Louisiana One Call System, Inc.	(800) 272-3020	<a href="http://www.laonecall.com">www.laonecall.com</a>
Maine	Dig Safe System Inc.	(888) 344-7233	<a href="http://www.digsafe.com">www.digsafe.com</a>
Massachusetts	Dig Safe System Inc.	(888) 344-7233	<a href="http://www.digsafe.com">www.digsafe.com</a>
Michigan	MISS Dig System, Inc.	(800) 482-7171	<a href="http://www.missdig.net">www.missdig.net</a>
Missouri	Missouri One Call System, Inc.	(800) 344-7483	<a href="http://www.mo1call.com">www.mo1call.com</a>
Nevada	USA North of Central / Northern California & Nevada	(800) 227-2600	<a href="http://www.usanorth.org">www.usanorth.org</a>
New Jersey	New Jersey One Call	(800) 272-1000	<a href="http://www.nj1-call.org">www.nj1-call.org</a>
New York	Dig Safely New York	(800) 962-7962	<a href="http://www.digsafelynewyork.com">www.digsafelynewyork.com</a>
New York City & Long Island	New York 811, Inc.	(800) 272-4480	<a href="http://www.newyork-811.com">www.newyork-811.com</a>
North Carolina	North Carolina 811	(800) 632-4949	<a href="http://www.nc811.org">www.nc811.org</a>
Ohio	Ohio Utilities Protection Service	(800) 362-2764	<a href="http://www.oups.org">www.oups.org</a>
Pennsylvania	Pennsylvania One Call System, Inc.	(800) 242-1776	<a href="http://www.pa1call.org">www.pa1call.org</a>
Rhode Island	Dig Safe System Inc.	(800) 344-7233	<a href="http://www.digsafe.com">www.digsafe.com</a>
South Carolina	South Carolina 811 / PUPS	(888) 721-7877	<a href="http://www.sc811.com">www.sc811.com</a>
Tennessee	Tennessee 811	(800) 351-1111	<a href="http://www.tnonecall.com">www.tnonecall.com</a> OR <a href="http://www.tennessee811.com">www.tennessee811.com</a>
Texas	Texas 811 OR Lone Star Notification Center	(800) 344-8377 (800) 669-8344	<a href="http://www.texas811.org">www.texas811.org</a> <a href="http://www.lsnconecall.com">www.lsnconecall.com</a>
Wisconsin	Wisconsin Diggers Hotline	(800) 242-8511	<a href="http://www.diggershotline.com">www.diggershotline.com</a>

**Attachment 4: Application for Design Plan Submission and Encroachment Review**

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**INSTRUCTIONS**

**Prior to completing the following Application for Design Plan Submission and Encroachment Review (application), please review these instructions to determine if an application is required and to ensure that all necessary information has been obtained. Failure to follow these instructions and/or failure to provide the required information will delay the review process.**

**One Call Notification** – To prevent damages to pipeline facilities from subsurface excavation or any activity that disturbs or impacts the depth of cover over underground facilities, Buckeye participates in "One-Call" organizations in all the states in which Buckeye has operating facilities. A list of the One-Call organizations Buckeye participates in is listed in Attachment 3 of the Right of Way Use Restrictions Specification. Placing a one call notification will put you in contact with the appropriate Buckeye Field Representative

**Buckeye Field Representative Coordination** – Discuss with the Buckeye Field Representative a summary of the project and potential encroachments. The Buckeye Field Representative will determine if any additional information such as pipeline depth of cover is necessary and if an application is required.

**Application and Plan Submission –**

**SUBMIT APPLICATION AND PLANS TO:**

Buckeye Partners, L.P.  
ROW Department  
Attn: Encroachment Review  
5 Tek Park, 9999 Hamilton Blvd.  
Breinigsville, PA 18031

OR

[encroachmentreviews@buckeye.com](mailto:encroachmentreviews@buckeye.com)  
With subject line reading  
"Encroachment Review Application"

Buckeye requires a minimum of 60 days for technical review upon receipt of complete application with all relevant fees and complete and accurate design plans. Submission of plans electronically to the above email address is encouraged and acceptable, but signed application and fees must follow by mail.

**Relocation or Modification** – Should the initial encroachment review result in a determination that Buckeye facilities must be relocated or modified because of the request, additional review time may be required. A Feasibility Study will be performed to prepare a scope of work, cost estimate, schedule and project plan; the cost of which will be borne by a party or parties other than Buckeye and must be paid before the relocation or modification will commence. A Technical Services Agreement between Buckeye and the responsible entity will be prepared to specify the duties of each party. A Letter of No Objection or Encroachment Agreement will be issued which will authorize the construction of the proposed encroachment under certain terms and conditions.

**Permission / Notification** - A fully-executed Approval Letter, Encroachment Agreement, Reimbursement Agreement, and/or Technical Services Agreement is needed prior to construction. Buckeye must be notified 10-days prior to construction to allow for the scheduling of a Buckeye representative to be present. It is also the encroaching entity's responsibility to notify the owners of any other pipelines, communication lines, other third party property or facility owners located within the proposed project area and to secure any additional needed rights from these parties where Buckeye's rights are limited.

If construction of the aforementioned project does not commence within three calendar years of the issued approval letter date, the Crossing Party shall submit a new application and resubmission fee. The Company shall have the right to reconsider the conditions and privileges granted, and have full right to consider current policies and procedures at the time of resubmission.

**APPLICATION FEES:** A non-refundable Encroachment Application Fee must accompany all encroachment review requests for private development within Buckeye's right-of-way. Any request submitted without the required application fee, or that does not contain the specified information in the format requested on the application, may not be considered. Remit payment by check payable to: Buckeye Partners, L.P. Buckeye may require a developer to enter an agreement to pay any outside consultant costs that Buckeye deems necessary for a complete review of the proposed encroachment(s).

**Initial Encroachment Application Fee is \$3,000.** Following initial review, all necessary plan resubmissions until plan approval shall be accompanied by a **Resubmission Fee of \$750.**

**Small Project Application Fee is \$500.** This reduced fee is reserved solely for single utility line service crossings or requests for installation of a fence or other residential-related improvement within Buckeye's pipeline easement.

**Application for Design Plan Submission and Encroachment Review**

PROJECT INFORMATION & LOCATION

**BUCKEYE PARTNERS, L.P.**

Project Title \_\_\_\_\_

Project Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ Municipality \_\_\_\_\_ County \_\_\_\_\_

**APPLICANT INFORMATION:**

Name and Title of Applicant \_\_\_\_\_

Company \_\_\_\_\_ Email Address \_\_\_\_\_ Phone Number \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

**LEGAL NAME OF INDIVIDUAL, COMPANY, OR ENTITY TO WHICH PERMISSION WILL BE GRANTED:**

Name \_\_\_\_\_ Name and Title of authorized signatory for company or entity \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Email Address \_\_\_\_\_ Fax Number \_\_\_\_\_

**PROJECT INVOLVES THE FOLLOWING IMPACTS TO BUCKEYE'S FACILITIES (CHECK ALL THAT APPLY):**

- Cover, grading, and drainage pattern changes
- Aboveground and/or underground structures
- Road, driveway, sidewalks, and parking areas
- Utility crossings including gas, water (steam), sewer (storm/sanitary) – include trench backfill detail
- Electrical, fiber-optic, and communications cables
- Temporary access roads for the crossing of heavy/construction equipment
- Railroad crossings
- Farming and field tile
- Construction-induced vibrations
- Blasting operations (attach BLASTING PLAN)
- Seismic vibrating operations (attach SEISMIC VIBRATING PLAN)
- Exposure of the pipeline (attach SUPPORT PLAN)
- Boring, drilling, or tunneling near the pipeline (attach DRILL PLAN)
- Other: \_\_\_\_\_

**APPLICATION MUST CONTAIN THE FOLLOWING:**

- Completed and Signed "Application for Design Plan Submission and Encroachment Review" Form
- Encroachment Application Fee\*\* (see guidelines on page 1 of the application)
- Design Plans (1 paper copy, 1 electronic copy), depicting the following:
  - Field-verified location of Buckeye pipeline(s) location and width of Buckeye's easement tract

Name of Buckeye Employee	Date of Pipeline Locating Activity	Design One Call No.
--------------------------	------------------------------------	---------------------

- Field-verified depth of Buckeye pipeline(s) along all proposed road or utility crossings, drainage channels, and all other areas of proposed grade change within the pipeline right-of-way (attach a copy of any field data provided by Buckeye Representative)

Name of Buckeye Employee	Date of Pipeline Depth Investigation
--------------------------	--------------------------------------

- Buckeye pipeline(s) labeled " \_-inch High Pressure Petroleum Products Pipeline" (line type "-HPPPP-")
- Buckeye included on Utilities List, and Local Contact and phone number on plans
- Buckeye Pipeline(s) highlighted in yellow. List all plan sheets on which Buckeye facilities are located:

- 
- Location of ground disturbances (blasting, seismic testing, pile driving, jackhammering, etc. within 1,500 feet of Buckeye pipeline(s))
  - Proposed location(s) where construction equipment will cross the pipeline right-of-way
  - Structure setback distances from the pipeline right-of-way and from the nearest pipeline
  - Proposed landscaping within 25 feet of either side of the pipeline(s)
  - Any permanent fencing that will limit/encumber Buckeye's access to the pipeline right-of-way
  - If the drainage pattern will be altered in any way over the Buckeye pipeline(s), a drainage plan that identifies new flow paths and all inlet/outfall/collection points
  - Right-of-Way Use Restrictions specification pages 1-13 included as part of final design plan (can be done by adding a drawing sheet to plans and appending (cut and paste) the specification onto this sheet.

For property improvements that involve grade/pavement alterations, road work (new construction or improvements of existing), utility crossings (buried and overhead), or other subsurface or on-surface structure installations within Buckeye's right-of-way:

- Separate plan and profile drawing of Buckeye pipeline(s) for existing and proposed conditions.
- Subgrade details that show materials and thickness of each paving layer/course.
- Amount of existing cover that will be removed or new cover added over the pipeline(s), and proposed final grade amount of cover over the pipeline(s).
- Clearances between Buckeye's pipeline(s) and any existing and new (buried or overhead) utilities that cross the pipeline right-of-way.
- Show the clearances between Buckeye's pipeline(s) and each proposed substructure at the two closest reference points.
- For any utility to be installed via boring, drilling, or tunneling, include a detailed procedure of this work with your design plans. **Note:** "Blind" boring is not permitted. Buckeye's pipeline(s) must be exposed during the bore operation to ensure that the bore head crosses safely underneath the pipeline(s).



- Indicate any areas of disturbance or other work that will require Buckeye's pipeline(s) to be exposed in order to perform your work.
- Supplemental Plan Information (as applicable)*
- Blasting Vibrating Plan
  - Seismic Vibrating Plan
  - Support Plan
  - Drill Plan
- 

I hereby authorize Buckeye to contact the Engineer/Survey firm which prepared the drawings, survey and attachments.

**I certify that the information provided is accurate and I realize that incomplete information may delay processing or invalidate this application.**

Signature of Applicant

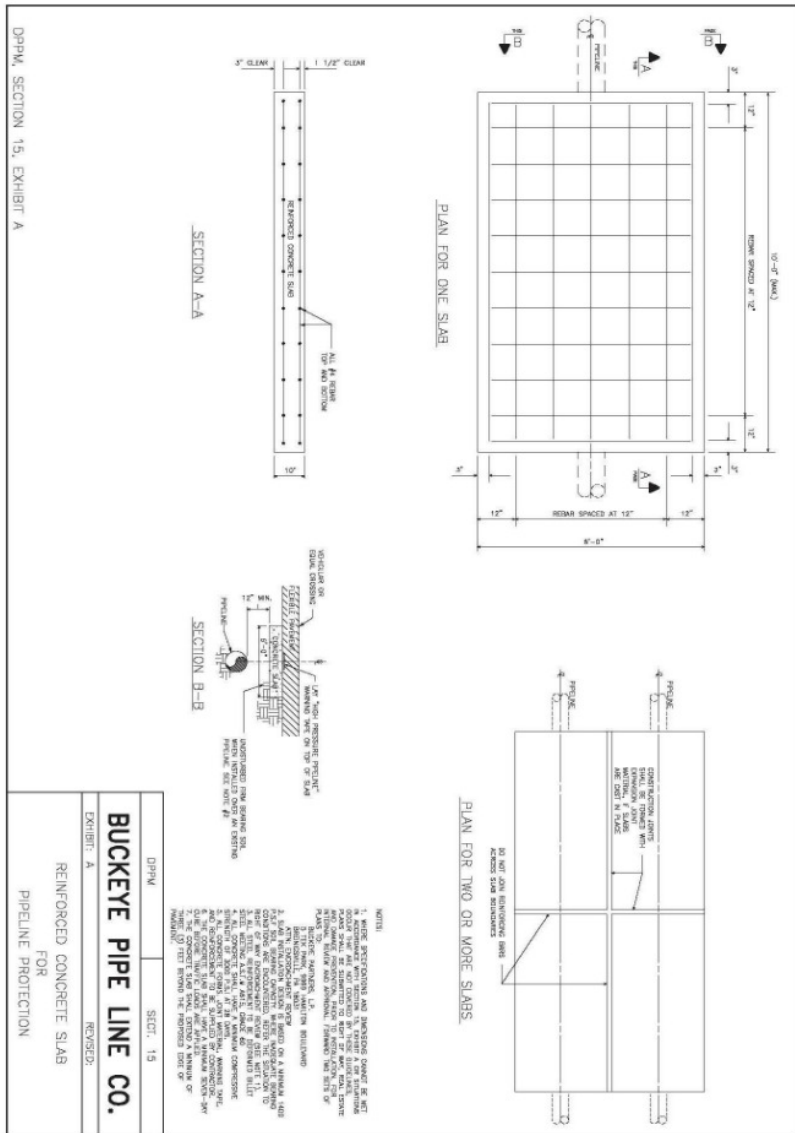
By: \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

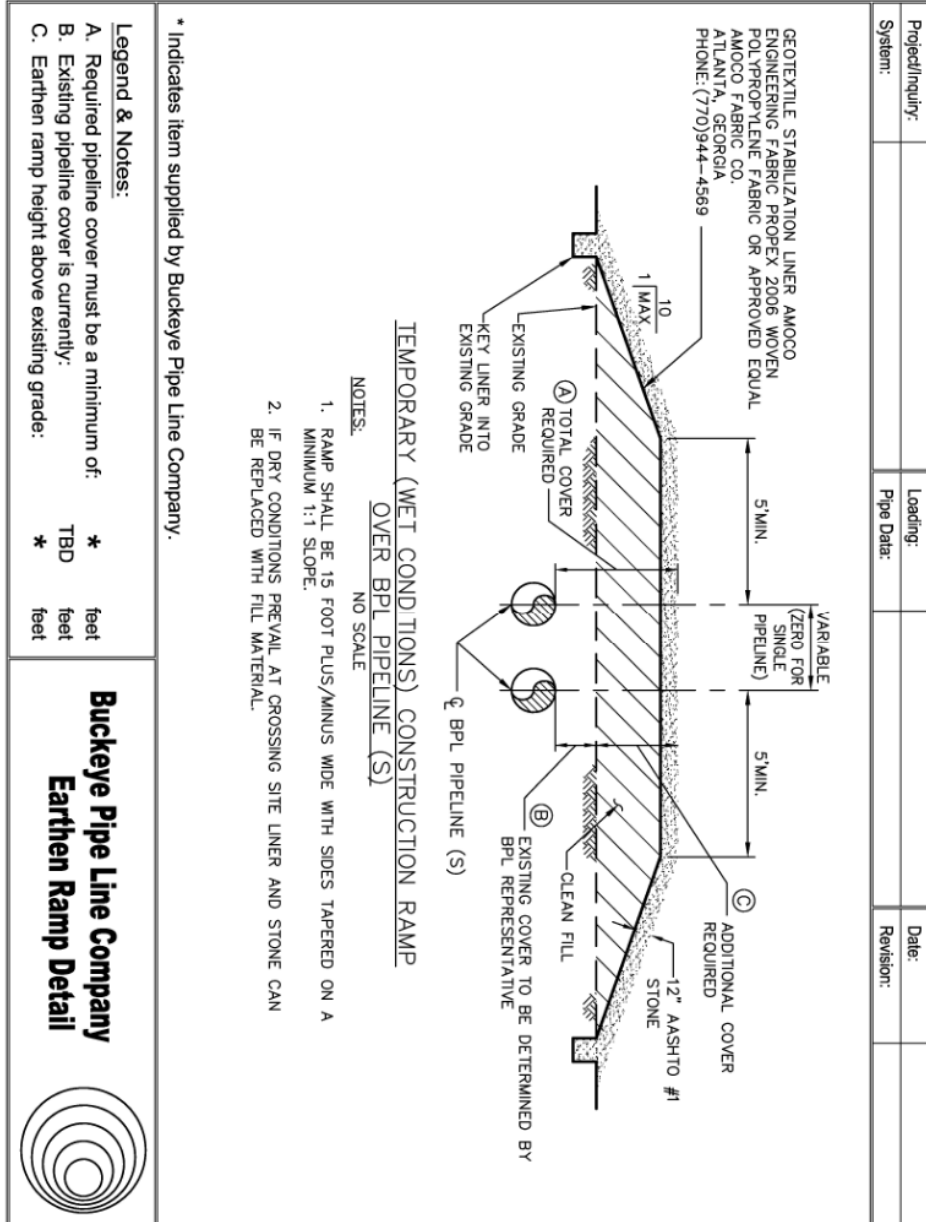
Title: \_\_\_\_\_

<p align="center"><b>PAYMENT INFORMATION (APPLICANT TO COMPLETE)</b></p> <p>Check Number: _____</p> <p>Payment Amount: \$ _____</p>
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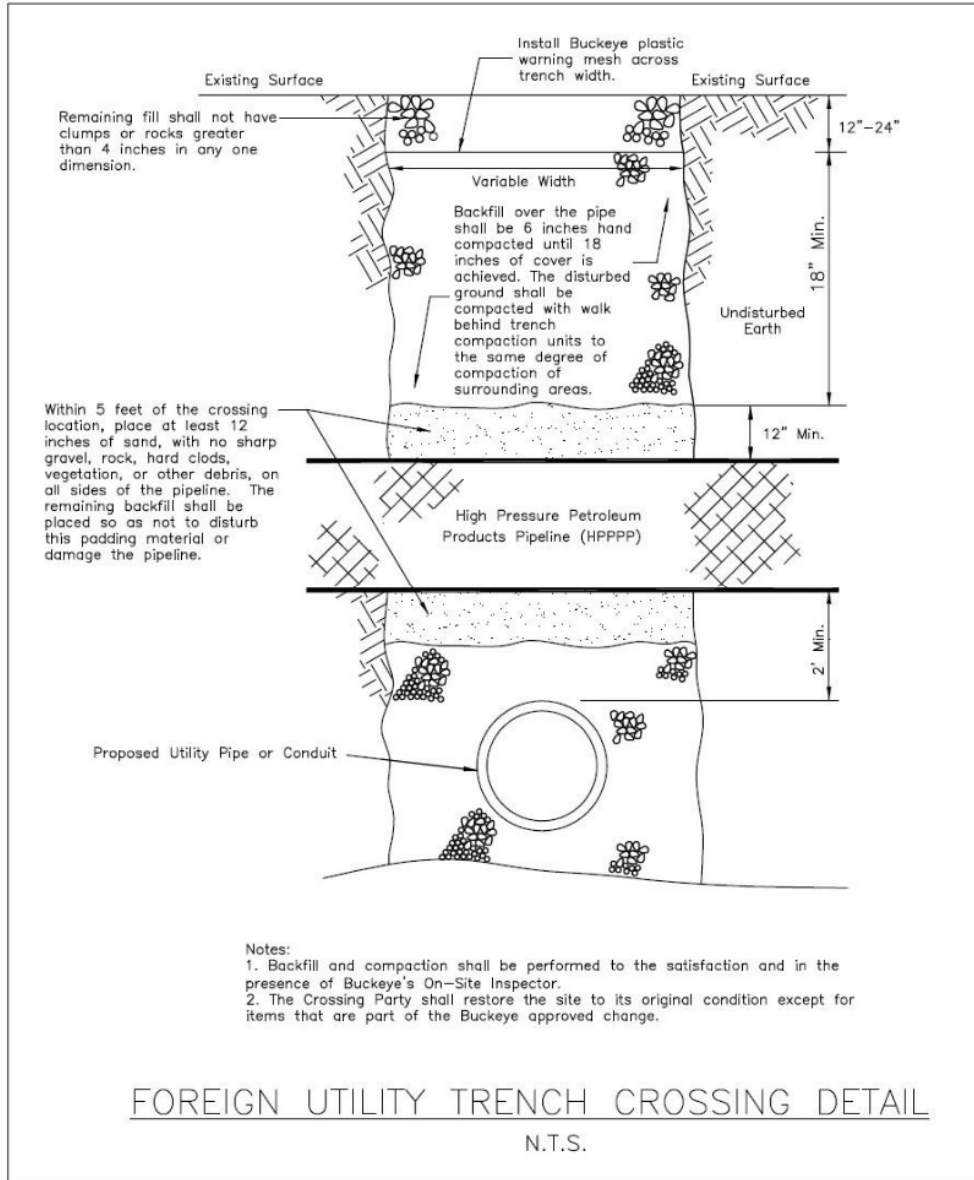
**Attachment 5: Temporary Crossing Reinforced-Concrete Slab Detail**



**Attachment 6: Earthen Ramp Detail**



**Attachment 7: Foreign Utility Trench Crossing Detail**



**Attachment 8: Blasting Plan Submission Form**

<b>INFORMATION SECTION</b>	
<b>Blasting Contractor -</b> Company Name: _____ Phone: _____ Email Address: _____ Contact Person: _____	<b>Contracted by -</b> Company Name: _____ Address: _____ Contact Person: _____
Project Name: _____ Address: _____ *Latitude: _____ *Longitude: _____	
Location and Distance (in feet) to Nearest Buckeye Pipeline: _____ _____	
Date of Blasting: _____	

<b>EXPLOSIVES SECTION</b>	
Type of Explosives: _____	
Max. Charge / Hole (lbs): _____	
Charge Delay (ms): _____	
No. of Holes: _____	
Max. Depth of Charge (ft): _____	
Max. Diameter of Charge (in): _____	
<b><u>Calculated Particle Velocity at a point -</u></b>	
Depth of Blast Area (ft): _____	300 feet from blasting event (in/sec): _____
Depth of Overburden (ft): _____	200 feet from blasting event (in/sec): _____
Type of Rock to be Blasted: _____	100 feet from blasting event (in/sec): _____
Density of Rock (lbs/cu-ft): _____	Directly above pipeline (in/sec): _____ @ _____ ft. _____

<b>ATTACHMENT CHECKLIST</b>
<input type="checkbox"/> Drilling/Blasting Pattern Sketch - include all depths, measurements, and delay patterns relative to Buckeye facility involved and each charge. <input type="checkbox"/> State Approval Letter <input type="checkbox"/> Blasting Contractor's Qualifications <input type="checkbox"/> Blasting Contractor's Insurance Certificate <input type="checkbox"/> Blasting Contractor's Safety Plan
<b>OMISSION OF ANY INFORMATION REQUESTED ABOVE WILL DELAY YOUR BLASTING PLAN REVIEW</b> <small>Buckeye requires a minimum of 14 days for technical review upon receipt of complete and accurate blasting plans</small>

**Attachment 9: Excavation Safety Checklist**  
**195 F-09, FORM A – EXCAVATION SAFETY CHECKLIST**

The information noted on this form is intended to communicate general information about our pipeline(s) and is not intended to be solely relied upon by any party for the purpose of excavation or any similar purpose.

By law, to enable all participating utilities time to mark their facilities, the **One Call Center** in your state requires notification by calling 811 prior to any excavation. Buckeye Partners, L.P. is a member of this One Call enterprise and will automatically be notified through this system. In addition, a Buckeye inspector will perform and/or review with the excavator representative the applicable checklist items below.

**Pipeline Locate Activity:**

- If plans are available, requested a copy of the written project plans and drawings for review with the excavator and/or engineer. Had the excavator and/or engineer explain the extent of the work area, location and depth of the excavation, type of proposed utilities, location of proposed utilities, number of utility crossings, etc.
- Established the pipeline(s) location and marked the line(s) per state One Call requirements throughout the entire work area.
- Photographed all established pipeline markings throughout the work area.

**Communication with the Excavator and/or Engineer:**

- The excavator and/or engineer was advised that a Buckeye inspector must:**
  - **Monitor the excavation site daily when work is performed within 25 feet of a Buckeye pipeline.**
  - **Observe continuously all excavation and backfill activity performed within 10 feet of a Buckeye pipeline or during the installation of any utility across a Buckeye pipeline facility.**
  - **In addition, the excavator was instructed to call 800-331-4115 if they were ready to excavate within either above distance of a Buckeye pipeline and a Buckeye inspector was not present. When called a Buckeye inspector will be sent to perform the inspection, which is free of charge.**
- The excavator was advised that only backhoes or trackhoes with a steel plate welded across the teeth of the bucket are permitted to be used during excavation work around a Buckeye pipeline.
- The excavator was advised that the Buckeye inspector is required by law to perform an external inspection of any Buckeye pipeline exposed during excavation activity. The excavator understands that he/she is responsible to provide an OSHA compliant excavation, allowing the Buckeye inspector safe ingress and egress to examine our exposed pipeline.
- Walked through the work area with the excavator and communicated the locations of all Buckeye pipelines in the planned work area.
- Discussed the number of pipelines, pipe size(s), approximate pressures, approximate depths, excavation tolerance zones, hand digging requirements, and the hazards and characteristics of product(s) in the pipeline system(s) located in the planned work area.
- The excavator was advised to call the One Call Center 811 or contact Buckeye, if the Buckeye markings are destroyed or need to be refreshed in the planned work area. This service is provided free of charge.
- The excavator was advised that before any exposed Buckeye pipeline can be backfilled, the Buckeye inspector will direct the placement of an orange warning mesh over the pipeline.
- The excavator was advised that **any contact** with the pipeline, pipeline coating, test station wiring, or anode beds **must be reported to Buckeye prior to backfilling the excavation** to permit further inspection of the damage to assure continued safe pipeline operations.
- The excavator was advised that failure to comply with the conditions outlined above would result in Buckeye requiring the excavator to expose the pipeline again to allow an examination of the pipeline at the excavator's expense. If damage to the pipeline is discovered, Buckeye may seek monetary compensation for all repair costs. Buckeye may also report this activity to all concerned parties (State One Call Center, Regulatory Agencies, Principal Contractor, Excavator's Insurance Company, etc.).

If you are unable to reach the representative designated below, or in case of an emergency, request assistance by calling 1-800-331-4115.

<b>One Call Ticket:</b>		<b>Line Segments:</b>	
<b>Work Order:</b>		<b>Mile Posts:</b>	
<b>Nearest Street</b>			

Buckeye Information		Property Owner / Excavator /Engineer	
<b>Date:</b>		<b>Name:</b>	
<b>Name:</b>		<b>Phone:</b>	
<b>Cell Phone:</b>		<b>Signature:</b>	

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

**ATTACHMENTS**

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor

performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

**II. NONDISCRIMINATION**

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

## **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.



d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### **10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#).

The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### **III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### **IV. DAVIS-BACON AND RELATED ACT PROVISIONS**

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### **1. Minimum wages**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a

separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice

performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

##### b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

##### d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

#### **10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### **V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one

and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

#### **VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

## IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

## X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

### 1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

## **2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

#### **XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of

Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.



## Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

