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Letting August 2, 2019

Notice to Bidders, Specifications and Proposal

Contract No. 93733
SANGAMON County
Section (109)VB, (110)VB-5, 18-00478-00-BR (Springfield)
Routes FAP 66 ALT. & FAP 666 (5th St. & 6th St.)
Project MFYW-203 ()
District 6 Construction Funds

Prepared by

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Checked by

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

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 10:00 a.m. August 2, 2019 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. 93733
   SANGAMON County
   Section (109)VB, (110)VB-5, 18-00478-00-BR (Springfield)
   Project MFYW-203 ()
   Routes FAP 66 ALT. & FAP 666 (5th St. & 6th St.)
   District 6 Construction Funds

Replace the structures carrying NS Railroad over 5th and 6th streets, and, the construction of new structures to carry the UP railroad over 5th and 6th Street in Springfield.

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 readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

CONTRACT 93733

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2019

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-19)

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BDE SPECIAL PROVISIONS

The following special provisions indicated by an "X" are applicable to this contract. An * indicates a new or revised special provision for the letting.

	File Name	Pg.		Special Provision Title	Effective	Revised
	80099			Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
	80274			Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
	80192			Automated Flagger Assistance Device	Jan. 1, 2008	
	80173			Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
	80241			Bridge Demolition Debris	July 1, 2009	
	5026I	106	X	Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I	150	X	Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I	156	X	Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I	162	X	Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80404			Coarse Aggregate Quality for Micro-Surfacing and Cape Seals	Jan. 1, 2019	
	80384	164	X	Compensable Delay Costs	June 2, 2017	April 1, 2019
	80198			Completion Date (via calendar days)	April 1, 2008	
	80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80277			Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
	80261			Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80387			Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
	80029	168	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
	80402	178	X	Disposal Fees	Nov. 1, 2018	
	80378			Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
	80405			Elastomeric Bearings	Jan. 1, 2019	
*	80415	180	X	Emulsified Asphalts	Aug. 1, 2019	
	80388	183	X	Equipment Parking and Storage	Nov. 1, 2017	
	80229	184	X	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
	80304			Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
	80246	187	X	Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	Aug. 1, 2018
	80398			Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Jan. 1, 2019
	80406			Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Projects)	Jan. 1, 2019	
	80399	189	X	Hot-Mix Asphalt – Oscillatory Roller	Aug. 1, 2018	Nov. 1, 2018
	80347			Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	Aug. 1, 2018
	80383			Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	Jan. 1, 2019
	80392	191	X	Lights on Barricades	Jan. 1, 2018	
	80336			Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
	80411	193	X	Luminaires, LED	April 1, 2019	
	80393	202	X	Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	Mar. 1, 2019
	80400			Mast Arm Assembly and Pole	Aug. 1, 2018	
	80045			Material Transfer Device	June 15, 1999	Aug. 1, 2014
	80394			Metal Flared End Section for Pipe Culverts	Jan. 1, 2018	April 1, 2018
	80165			Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
*	80412			Obstruction Warning Luminaires, LED	Aug. 1, 2019	
	80349			Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
	80371	204	X	Pavement Marking Removal	July 1, 2016	
	80390	205	X	Payments to Subcontractors	Nov. 2, 2017	
	80389	206	X	Portland Cement Concrete	Nov. 1, 2017	
	80359			Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2017

	File Name	Pg.		Special Provision Title	Effective	Revised
	80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
	80328	207	X	Progress Payments	Nov. 2, 2013	
	3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
	80157	208	X	Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
	80306	210	X	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2019
	80407	220	X	Removal and Disposal of Regulated Substances	Jan. 1, 2019	
	80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
	80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2017
	80127	232	X	Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
	80408			Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
*	80413	235	X	Structural Timber	Aug. 1, 2019	
	80397	236	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	237	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
*	80317			Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	Aug. 1, 2019
	80298	238	X	Temporary Pavement Marking	April 1, 2012	April 1, 2017
	20338	241	X	Training Special Provision	Oct. 15, 1975	
	80403			Traffic Barrier Terminal, Type 1 Special	Nov. 1, 2018	
	80409	244	X	Traffic Control Devices – Cones	Jan. 1, 2019	
	80410			Traffic Spotters	Jan. 1, 2019	
	80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
	80288	245	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
	80302	247	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
*	80414			Wood Fence Sight Screen	Aug. 1, 2019	
	80071	248	X	Working Days	Jan. 1, 2002	

The following special provisions are in the 2019 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location(s)	Effective	Revised
80382	Adjusting Frames and Grates	Articles 602.02(s) and (t), 1043.04, and 1043.05	April 1, 2017	
80366	Butt Joints	Article 406.08(c)	July 1, 2016	
80386	Calcium Aluminate Cement for Class PP-5 Concrete Patching	Article 1001.01(e)	Nov. 1, 2017	
80396	Class A and B Patching	Articles 442.06(a)(1) and (2)	Jan. 1, 2018	Nov. 1, 2018
80377	Portable Changeable Message Signs	Articles 701.20(h) and 1106.02(i)	Nov. 1, 2016	April 1, 2017
80385	Portland Cement Concrete Sidewalk	Article 424.12	Aug. 1, 2017	

The following special provision has been deleted from use.

File Name	Special Provision Title	Effective	Revised
80376	Hot-Mix Asphalt – Tack	Nov. 1, 2016	
80401	Portland Cement Concrete Pavement Connector for Bridge Approach Slab	Aug. 1, 2018	

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective as of the: April 26, 2019 Letting

Pg #	√	File Name	Title	Effective	Revised
		GBSP 4	Polymer Modified Portland Cement Mortar	June 7, 1994	Apr 1, 2016
		GBSP 12	Drainage System	June 10, 1994	Jun 24, 2015
		GBSP 13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Apr 1, 2016
		GBSP 14	Jack and Remove Existing Bearings	April 20, 1994	April 13, 2018
		GBSP 15	Three Sided Precast Concrete Structure	July 12, 1994	Dec 21, 2016
		GBSP 16	Jacking Existing Superstructure	Jan 11, 1993	April 13, 2018
		GBSP 17	Bonded Preformed Joint Seal	July 12, 1994	Jan 1, 2007
		GBSP 18	Modular Expansion Joint	May 19, 1994	Dec 29, 2014
		GBSP 21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	April 13, 2018
		GBSP 25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Apr 22, 2016
		GBSP 26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Apr 22, 2016
		GBSP 28	Deck Slab Repair	May 15, 1995	April 13, 2018
		GBSP 29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	March 1, 2019
		GBSP 30	Bridge Deck Latex Concrete Overlay	May 15, 1995	Oct 20, 2017
		GBSP 31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	March 1, 2019
		GBSP 33	Pedestrian Truss Superstructure	Jan 13, 1998	Dec 29, 2014
		GBSP 34	Concrete Wearing Surface	June 23, 1994	Oct 4, 2016
		GBSP 35	Silicone Bridge Joint Sealer	Aug 1, 1995	Oct 15, 2011
		GBSP 45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
249	X	GBSP 51	Pipe Underdrain for Structures	May 17, 2000	Jan 22, 2010
		GBSP 53	Structural Repair of Concrete	Mar 15, 2006	Apr 1, 2016
		GBSP 55	Erection of Curved Steel Structures	June 1, 2007	
		GBSP 56	Setting Piles in Rock	Nov 14, 1996	Apr 1, 2016
		GBSP 59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	Mar 29, 2017
		GBSP 60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
		GBSP 61	Slipform Parapet	June 1, 2007	March 1, 2019
		GBSP 67	Structural Assessment Reports for Contractor's Means and Methods	Mar 6, 2009	Oct 5, 2015
		GBSP 71	Aggregate Column Ground Improvement	Jan 15, 2009	Oct 15, 2011
		GBSP 72	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay	Jan 18, 2011	March 1, 2019
		GBSP 75	Bond Breaker for Prestressed Concrete Bulb-T Beams	April 19, 2012	
		GBSP 77	Weep Hole Drains for Abutments, Wingwalls, Retaining Walls And Culverts	April 19, 2012	Oct 22, 2013
		GBSP 78	Bridge Deck Construction	Oct 22, 2013	Dec 21, 2016
		GBSP 79	Bridge Deck Grooving (Longitudinal)	Dec 29, 2014	Mar 29, 2017
		GBSP 81	Membrane Waterproofing for Buried Structures	Oct 4, 2016	March 1, 2019
		GBSP 82	Metallizing of Structural Steel	Oct 4, 2016	Oct 20, 2017
		GBSP 83	Hot Dip Galvanizing for Structural Steel	Oct 4, 2016	Oct 20, 2017
		GBSP 85	Micropiles	Apr 19, 1996	Oct 5, 2015
250	X	GBSP 86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
		GBSP 87	Lightweight Cellular Concrete Fill	Nov 11, 2011	Apr 1, 2016
		GBSP 88	Corrugated Structural Plate Structures	Apr 22, 2016	April 13, 2018
		GBSP 89	Preformed Pavement Joint Seal	Oct 4, 2016	March 1, 2019
		GBSP 90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	April 13, 2018
262	X	GBSP 91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	
		GBSP 92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	

Pg #	√	File Name	Title	Effective	Revised
		GBSP 93	Preformed Bridge Joint Seal	Dec 21, 2016	March 1, 2019
		GBSP 94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
		GBSP 95	Bituminous Coated Aggregate Slopewall	Mar 21, 1997	Mar 19, 2018

LIST ANY ADDITIONAL SPECIAL PROVISIONS BELOW

The following Guide Bridge Special Provisions have been incorporated into the 2016 Standard Specifications:

File Name	Title	Std Spec Location
GBSP32	Temporary Sheet Piling	522
GBSP38	Mechanically Stabilized Earth Retaining Walls	522
GBSP42	Drilled Soldier Pile Retaining Wall	522
GBSP43	Driven Soldier Pile Retaining Wall	522
GBSP44	Temporary Soil Retention System	522
GBSP46	Geotextile Retaining Walls	522
GBSP57	Temporary Mechanically Stabilized Earth Retaining Walls	522
GBSP62	Concrete Deck Beams	504
GBSP64	Segmental Concrete Block Wall	522
GBSP65	Precast Modular Retaining Wall	522
GBSP73	Cofferdams	2017 Supp
GBSP74	Permanent Steel Sheet Piling (LRFD)	522
GBSP76	Granular Backfill for Structures	2017 Supp
GBSP80	Fabric Reinforced Elastomeric	1028
GBSP84	Precast, Prestressed Concrete Beams	2017 Supp

The following Guide Bridge Special Provisions have been discontinued or have been superseded:

File Name	Title	Disposition:
GBSP70	Braced Excavation	Use TSRS per Sec 522
GBSP95	Bridge Deck Concrete Sealer	Use July 1, 2012 version for Repair projects only

STATE OF ILLINOIS
SPECIAL
PROVISIONS

CONTRACT SPECIFICATIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," (SSRBC) adopted April 1, 2016 and the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" (ILMUTCD) 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 F.A.P. Route 666 ALT. (Fifth Street), F.A.P. Route 666 (Sixth Street), Section (109) VB, (110) VB-5 in the City of Springfield, Sangamon County. In case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

The project begins immediately south of Ash Street on the Norfolk Southern rail corridor and extends south to a point on the Norfolk Southern rail corridor approximately 1,000 ft north of the Stanford Avenue overpass, a distance of approximately 4,550 ft. It also includes improvements to Burton Drive at Iles Avenue for a length of approximately 374 ft.

DESCRIPTION OF IMPROVEMENT

The roadway reconstruction sections consist of the removal of existing pavement including portions of parking lots, curb and gutter, driveway entrances, sidewalk, fencing, abandon utilities and street appurtenances in the existing right of way and within the proposed right of way along Burton Drive, Princeton Avenue and minor improvements along 5th and 6th Streets, drainage structures, storm sewer, sanitary sewer, erosion control items, roadway pavement, curb and gutter, sidewalk, pavement marking, lighting, and fencing.

The railway reconstruction section between Ash Street and Stanford Avenue consists of earth excavation, structure removal, track removal, and the removal of existing street and parking lot pavement. The proposed improvements include grading, interim track and future tracks, sub-ballast, drainage items, erosion control, and fencing. It also includes construction of two railroad structures over 5th Street, two railroad bridges over 6th Street and associated retaining walls.

The NS work forces will install all ballast and track work.

CONSTRUCTION SEQUENCE AND SCHEDULE

The Contractor shall prepare a progress schedule as required by Section 108 of the Standard Specifications. The Contractor shall coordinate items of work in order to keep hazards and traffic inconvenience to homes and businesses to a minimum. The Contractor shall also not interfere with NS railway operations while on NS right-of-way except as approved by the NS. Construction shall be staged as shown on the plans and as listed below to meet the following requirements:

- Cooperation between CWLP Electric and Water utilities for the work they are performing should be included in progress schedules and anticipated staging.
- Cooperation between other utilities for the work they are performing should be included in progress schedule and anticipated staging.
- Lane closures on 5th and 6th Streets will not be allowed until a firm date for delivery of structural steel is established.
- A minimum of two lanes of traffic shall remain open at all times on 5th and 6th Street except as noted below. 5th and 6th Streets shall only be reduced to two lanes for a maximum of 180 calendar days for each street. Should the Contractor fail to satisfy this time requirement, the Contractor shall be liable to the Department for liquidated damages of $1,000 per calendar day at each street for each day beyond the 180 calendar days. The liquidated damages shall be administered in accordance with Article 108.09 at the Standard Specifications and any other additional special provisions which may be attached here in which supplements Article 108.09.
- 5th Street may be closed for the weekend a maximum of one time using the temporary detour shown in the plans. The weekend closure will be allowed for the following occasion:
    - Removing the existing railroad structure.

  The weekend closure is limited to the hours of 7:00 PM on Friday to 3:00 PM on the following Monday.
- 6th Street may be closed for the weekend a maximum of one time using the temporary detour shown in the plans. The weekend closure will be allowed for the following occasion:
    - Removing the existing railroad structure.

  The weekend closure is limited to the hours of 10:00 AM on Friday to 6:00 AM on the following Monday.
- 5th Street may be closed for ten consecutive calendar days a maximum of two times using the temporary detour shown in the plans. The closure will be allowed for each of the following occasions:
    - Erecting structural steel for the proposed NS bridge.
    - Erecting structural steel for the proposed UP bridge.

  The closures are limited to the hours of 7:00 PM on Friday to 3:00 PM on the second following Monday. Beginning on the Monday at the end of each closure to erect structural steel, 5th Street may be closed for four consecutive nights during the hours of 8:00 PM and 5:00 AM to finish erecting structural steel.
- 6th Street may be closed for ten consecutive calendar days a maximum of two times using the temporary detour shown in the plans. The closure will be allowed for each of

the following occasions:

- Erecting structural steel for the proposed NS bridge.
- Erecting structural steel for the proposed UP bridge.

The closures are limited to the hours of 10:00 AM on Friday to 6:00 AM on the second following Monday. Beginning on the Monday at the end of each closure to erect structural steel, 6th Street may be closed for four consecutive nights during the hours of 8:00 PM and 5:00 AM to finish erecting structural steel.

- 5th and 6th Streets may not be closed at the same time or during the Illinois State Fair.
- Should the Contractor fail to complete the 5th Street or 6th Street closure work within the specified amount of time, the Contractor shall be liable to the Department for liquidated damages of $6,500 per hour for each hour beyond the limit. For purposes of calculating damages, a time period greater than one half hour but less than one hour shall be considered one hour. The damage rate is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway and the failure to meet this work schedule if this work is delayed in completion. The liquidated damages shall be administered in accordance with Article 108.09 of the Standard Specifications and any other additional special provision which may be attached herein which supplements Article 108.09.
- Burton Street within the construction limits may be closed for a maximum of four (4) weeks.
- The turnaround in the alley between 5th and 6th Streets shall be constructed prior to any storm sewer or embankment construction in that area.

WORKING DAYS

Working days shall be according to Section 108.04 of the SSRBC. The Contractor shall complete the work within 235 working days. A construction progress schedule indicating project milestones shall be completed and strictly adhered to by the Contractor unless a request to modify the schedule is submitted in writing and approved by the Engineer.

Working days may be suspended by the Engineer at such time that the construction activities by railroad personnel inhibit or become the controlling item of work.

TRAFFIC CONTROL PLAN

Description: Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction (SSRBC), the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, any special details and Highway Standards contained herein and in the plans.

General: Special attention is called to Sections 107 and 701 through 705 of the Standard Specifications for Road and Bridge Construction, and as amended by the Supplemental Specifications, Recurring Special Provisions, the Special Provisions contained herein, and the following highway standards relating to traffic control.

701006, 701601, 701801, 701901, BLR 21

The Contractor shall notify the Engineer and the City of Springfield Department of Public Works at least 72 hours in advance of activating the traffic control to close two lanes of traffic on 5th Street or 6th Street. District 6 Operations Traffic Signal Section shall be contacted at (217) 524-9161 to allow for adjustment of traffic signals near the lane closures. City of Springfield Public Works phone number is (217) 789-2255.

The Contractor shall coordinate the items of work in order to keep hazards and traffic inconveniences to a minimum, as specified below.

Traffic Control and Protection Standard 701006 shall be used for construction within 15 feet on 5th and 6th streets and as shown on the plans.

Traffic Control and Protection Standard 701601 shall be used for lane closures on 5th and 6th streets and as shown on the plans.

Traffic Control and Protection Standard 701801 shall be used for all sidewalk closures on 5th and 6th streets and as shown on the plans.

Traffic Control and Protection Standard 701901 shall be used for traffic control devices during construction.

Traffic Control and Protection Standard BLR 21 shall be used for road closure on Burton Drive and Princeton Avenue and as shown on the plans. This standard will also be used for the three closures (six total) of 5th and 6th streets which will require additional Type III barricades. Prior to beginning any work on the structure or roadway that are included in this project, the Contractor shall erect break away post mounted "Road Construction Ahead" signs, W20-I103(O)-48, as shown on the staging plans.

Finishing earth embankment, HMA surface course, curb and gutter, seeding, and pavement markings may be completed after the road is back open to normal traffic utilizing flaggers in accordance with Traffic Control and Protection, Standards 701601 for necessary lane closures.

The Contractor shall provide, erect, and maintain all the necessary barricades, cones, drums, and lights for the warning and protection of traffic, as required by Sections 107 and 701 through 703 of the Standard Specifications, and as modified.

All advance warning signs shall be in new or like new condition at the start of the project. If an advanced warning sign is damaged or becomes unreadable, the sign shall be replaced by a new or like new sign.

Traffic shall be maintained as described in the traffic control standards or as directed by the Engineer. All debris shall be removed from the pavement and shoulders prior to removal of traffic control.

In addition, to the flaggers required by the various standards, additional flaggers shall be provided by the Contractor, if required by the Engineer, and they will be paid in accordance with Article 109.04 of the Standard Specifications.

The Contractor will be responsible for the traffic devices at all times during construction activities and throughout any winter shutdown periods.

Traffic Control and Protection Standards included in these plans shall be installed and operational at all times during construction of this section.
All commercial and private entrances along the mainline, which are part of this improvement, shall have suitable access, as determined by the Engineer, at all times during construction of this project. All weather access shall be a minimum of 10.0 ft wide. The Contractor may not deviate from this provision, except when he/she has written permission from the owner/tenant to cut off access to their property for a specific period of time.

Furnishing, placing and removing all traffic control and protection (such as Type III barricades, drums, vertical panels, stop signs, etc.) required will not be measured for payment separately and will be considered as part of the traffic control and protection pay items included in the contract.

All permanent pavement markings will be paid for separately.

All other traffic control and protection required for the completion of this improvement will not be paid for separately but will be considered as part of the unit bid prices for the pay item included in the contract.

The contractor shall provide the name and phone number of a contact on a twenty-four (24) hour basis in the event an accident or other unforeseen damage occurs that necessitates replacement or resetting of traffic control items.

Access to Residential Properties: All private entrances along the mainline shall have suitable all weather access at all times during construction, as determined by the Engineer. All weather access shall be a minimum of 10.0 ft wide. The Contractor may not deviate from this provision, except when he/she has written permission from the owner/tenant to cut off access to their property for a specific period of time.

During the road closures, the Contractor shall notify the Engineer at least 21 days in advance of each closure. The closure shall begin only after the City has notified the local emergency services, school system, media, all residents within the traffic control area, etc. This notification must come at least two weeks in advance of the closure. The contractor will be aware of all residents who will be impacted during the road closure and will have personnel located north of the road closure on 5th Street at Broad Place and south of the road closure on 6th Street at Wellesly Avenue who will allow these residents to access their property during the closure.

Basis of Payment: Traffic Control and Protection Standards 701601, 701801 and BLR 21 will not be paid for separately but will be included in the contract lump sum price for TRAFFIC

CONTROL AND PROTECTION (SPECIAL).

All detour signing and any additional traffic control and protection, including those standards listed above, as shown on the plans and described in these specifications will be measured on a lump sum basis and paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL). This work shall include furnishing, placement, maintenance, replacement, relocating and removal of the work zone traffic control devices used for the purpose of regulating, warning, directing, closing and detouring traffic on the local streets impacted by the construction of the project.

CHANGEABLE MESSAGE SIGN

Description: This work shall consist of providing all equipment and labor for furnishing and placing portable changeable message signs.
General: This work shall be performed in accordance with the applicable Articles of Section 701 of the Standard Specifications except as modified herein.

All changeable message signs shall be supplied by the Contractor. The placement of any sign will begin no later than 7 calendar days in advance of the upcoming closure at locations as specified by the District Traffic Control Technician or Engineer. The changeable message signs are in addition to any changeable message sign that may be required and is noted on the applicable Traffic Control and Protection Highway Standards. Signs will be placed at 5th Street and at 6th Street as shown on the detour plans or as designated by the Engineer. The message to be shown on the message board will also be at the discretion of the Engineer and will have to change for the road closures.

Basis of Payment: Changeable Message Signs shall be measured and paid for at the contract unit price per calendar day for CHANGEABLE MESSAGE SIGN. Changeable message signs specified in the Traffic Control and Protection Highway Standards shall be measured and paid for per the applicable pay item for that work.

DETOUR SIGNING

Description: This work shall consist of the furnishing, installation, maintenance, relocation, and removal of temporary detour signing as shown on the plans, as directed by the Engineer, in accordance with Section 701 of the Standard Specifications, and as herein specified.

General: Detour Signing required under this item is that which is required to implement temporary detours during the traffic closures for 5th and 6th Streets and for the detour for the duration of the reconstruction of Burton Drive/Iles Ave. When the detour signing shall be placed shall be coordinated with the Engineer and the City Traffic Engineer.

Detour Signing required under this item includes barricades/drums, Type III barricades, and all temporary signing necessary to mark the detours as shown on the plan detour sheets. This item will also include changing the message on the changeable message signs, though the changeable

message signs will be paid for separately.

This work will also include covering existing signs that conflict with any of the detour signs and shall also include covering or removing the detour signs when the detour is not in effect as directed by the Engineer.

The Contractor shall coordinate the items of work to keep hazards and traffic inconveniences to a minimum.

All detour signs shall be in new or like new condition at the start of the project. If a sign is damaged or becomes unreadable, the sign shall be replaced by a new or like new sign.

Basis of Payment: All the work in this special provision will be paid for at the contract unit price per Lump Sum for DETOUR SIGNING.

STATUS OF UTILITIES TO BE ADJUSTED

The following utilities are involved in this project. The utility companies have provided the estimated dates.

Name & Address of Utility	Type	Location	Estimated Date of Relocation Completed
Ameren CILCO North Mr. Rick Combs 825 North MacArthur Blvd. Springfield, IL 62702 Phone: (217) 753-5187	Gas	Throughout the Project	During Construction
City Water, Light & Power Mr. Michael Johnson 401 North 11th Street Springfield, IL 62702 Phone: (217) 789-2323 Ext. 1617	Water	Throughout the Project	During Construction
City Water, Light & Power Mr. Rick Meadows 1008 East Miller Street Springfield, Illinois 62702 Phone: (217) 321-1354	Electric	Throughout the Project	During Construction
City of Springfield (Sewer Department) Mr. John Higginbotham Room 203 Municipal Center W. 300 S. 7th St. Springfield, IL 62701 Phone: (217) 789-2255	Sewer	Throughout the Project	Completed By Contractor
Sangamon County Water Reclamation District Mr. Gregg Humphrey	Sewer	Throughout the Project	Completed By Contractor

3000 North 8th Street Springfield, IL 62707 Phone: (217) 528-0491			
Comcast Mr. David Bly 711 South Dirksen Parkway Springfield, IL 62703 Phone: (224) 229-5267	Aerial Cable	Throughout the Project	During Construction
AT&T Transmission Mr. Ken Colwell 222 W. Jackson Street Woodstock, IL 60098 Phone (312) 734-2223	Fiber Optic	Burton Drive and Alley N. of Iles	During Construction
AT&T Distribution Mr. James Darr 1640 E. Hazel Dell Rd. Springfield, IL 62703 Phone: (217) 789-8771	Fiber Optic/Telephone	Throughout the Project	During Construction
CentryLink Mr. Bryan Hankins 624 White Oak Drive Chatham, IL 62629 Phone (720) 840-3364	Fiber Optic	5th Street	During Construction
Sprint Mr. Jeff Booker Jeff.l.booker@sprint.com Phone (217) 816-7214	Fiber Optic	Along NS RR south of Iles	No Relocation Anticipated
Norfolk Southern Corporation Mr. Scott Overbey 1200 Peachtree Street NE Atlanta, GA 30309 Phone: (404) 582-5588	RR Communication	Throughout the Project	During Construction
Buried Fiber Optic Taylor Law Offices Mr. Matthew R. Hortenstine 122 East Washington Ave. Effingham, IL 62401 Phone: (217) 342-3925	Service to Springfield Partners III LLC	Rt UP Main1 Sta. 47834+50	During Construction

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Articles 105.07, 107.20, 107.37, 107.38, 107.39, 107.40 and 108.02 of the Standard Specifications for Road and Bridge Construction shall apply.

The estimated utility relocation dates should be part of the progress schedule submitted by the Contractor. If any utility adjustments or relocations have not been completed and when required by the Contractor's operations, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's critical path schedule is affected.

ROADWAY

BUILDING REMOVAL

Description: This work shall consist of removing buildings listed in the table below according the following BDE Special Provisions:

Building Removal – Case I (Non-friable and Friable Asbestos Abatement)
Building Removal – Case II (Non-Friable Asbestos Abatement)
Building Removal – Case III (Friable Asbestos Abatement)
Building Removal – Case IV (No Asbestos)

The asbestos abatement case for each building is identified in the table below.

In addition to the requirements of the BDE Special Provisions, basement floors shall be broken up or perforated to prevent entrapment of water.

Basis of Payment: This work, including breaking or perforating basement floors, shall be paid for at the contract unit prices for the pay items listed in the BDE Special Provisions.

BUILDING REMOVAL LIST

Bldg. No.	Parcel No.	Parcel Address	Building Type	Asbestos Abatement Case
1	SR0192	2264 S 6th Street	Commercial Building	I
2	SR0193	2279 S 6th Street	House	III
3	SR0196	2342 S 5th Street	House	III
4	SR0196	2342 S 5th Street	Shed	IV
5	SR0198	2327 S 6th Street	House	II
6	SR0200	2406 S 5th Street	House	I
7	SR0200	2406 S 5th Street	Garage	IV
8	SR0201	2403 S 5th Street	House	I
9	SR0202	2405 S 5th Street	House	III
10	SR0202	2405 S 5th Street	Garage	IV
11	SR0203	2407 S 5th Street	House	III
12	SR0204	2428 S 4th Street	Garage	IV
13	SR0205	2432 S 4th Street	House	I

14	SR0205	2432 S 4th Street	Garage	IV
15	SR0206	2436 S 4th Street	House	III
16	SR0208	2409 S 5th Street	House	I
17	SR0208	2409 S 5th Street	Garage	IV
18	SR0209	2413 S 5th Street	House	I
19	SR0209	2413 S 5th Street	Garage	IV
20	SR0216	409 E Iles Avenue	Garage	IV
21	SR0217	401 E Iles Avenue	House	II
22	SR0217	401 E Iles Avenue	Garage	IV
23	SR0219	2500 Burton Drive	House	IV
24	SR0221	300 E Iles Avenue	Commercial Office	III
25	SR0221	300 E Iles Avenue	Garage	IV
26	SR0222	2513 Burton Drive	House	I

CHAIN LINK FENCE REMOVAL

Description: This work shall consist of all labor and equipment necessary for the complete removal and disposal of the existing chain link fence on 6th Street as detailed in the plans. This work shall be completed in accordance with the applicable portions of Section 664 of the IDOT SSRBC and as directed by the Engineer. All material included with this removal shall be disposed of off-site by the Contractor.

Basis of Payment: This work shall be paid for at the contract unit price per foot for CHAIN LINK FENCE REMOVAL which price shall include all labor and equipment necessary to remove and properly dispose of the fence to the satisfaction of the Engineer.

CLEARING

Description: This work shall be in accordance with Section 201 of the Standard Specifications. In addition to the items listed in Section 201.01(a), clearing shall include poles, broken concrete and asphalt, concrete blocks, posts, pipes, scrap materials, discarded household furniture, appliances and goods, sheds and outbuildings not listed for payment and any other unclassified material at locations not specifically listed in the schedule of quantities as being measured for payment.

Basis of Payment: CLEARING will not be measured for payment.

CONCRETE STEP REMOVAL

Description: This work shall consist of removing all or part of the existing concrete steps on 6th Street and Princeton Avenue as shown on the plans and as directed by the Engineer. This removal shall be according to Section 501 of the IDOT SSRBC and as described herein.
General: CONCRETE STEP REMOVAL shall consist of whatever portion of the steps that needs to be removed to facilitate the placement of the new retaining wall and sidewalk.

All rubbish, concrete and other debris as the result of the removal operations shall be disposed of by the Contractor at off-site locations provided by the Contractor.

This pay item will also include the removal of the steel railing that is located on the steps and no additional compensation will be allowed.

Basis of Payment: This work shall be paid for at the contract unit price per each for CONCRETE STEP REMOVAL and no additional compensation will be allowed.

CONTROLLED LOW-STRENGTH MATERIAL

Description: This work shall consist of filling steam vaults, handholes or other structures according to Section 593 of the SSRBC at locations directed by the Engineer.

General: Abandoned utility manholes and vaults are potentially located within the project limits. The number, size and location of these are unknown, but if encountered, the Engineer should be contacted immediately. Any castings or lids encountered shall be stockpiled and delivered to the City of Springfield. The Contractor shall determine if any live utilities are located within the vault that would prevent it from being filled. The Contractor shall notify the Engineer whether or not any live utilities are located within the vault and whether it is acceptable to be filled. Should the vault be filled, all open pipe connections shall be grouted shut and the vault filled with controlled low-strength material to the level of the proposed subgrade.

Other structures not intended to be removed by other means as a part of the contract, encountered by the Contractor and known not to contain live utilities, shall be filled with controlled low-strength material, upon approval of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per cubic yard for CONTROLLED LOW-STRENGTH MATERIAL.

EARTH EXCAVATION

Description: This work shall be according to Section 202 of the SSRBC in addition to the following requirements for the roadway cut section drainage.

Drainage: The excavation shall be maintained so that positive drainage is provided at all times. Some drainage structures, such as R260 and R252, will have their outlet pipes constructed in later stages. Temporary ditches, temporary sump pumps or other methods determined by the Contractor shall be used to provide positive drainage during excavation and to protect adjacent property from damage. The method and procedure to provide positive drainage during excavation shall be submitted and approved by the Engineer prior to excavation. If the Engineer determines during construction that the positive drainage is not adequate, the Contractor shall correct this to the satisfaction of the Engineer. This work shall be included in the contract unit price for EARTH EXCAVATION.

FENCE REMOVAL

Description: This work shall consist of removing existing fencing, posts, barbed wire, supports, foundations, gates and associated hardware according to Sections 201, 664 and 665 of the SSRBC and constructing end posts and associated hardware where required to terminate existing fence at locations shown on the plans or as directed by the Engineer.

General: All material included with this removal shall be disposed of off-site by the Contractor.

End post and associated hardware to terminate existing chain link fence shall be according to Standard 664001 and Section 664 of the SSRBC. End posts and associated hardware to terminate existing woven wire fence shall be according to Standard 665001 and Section 665 of the SSRBC.

Basis of Payment: This work including end posts and associated hardware shall be paid for at the contract unit price per foot for FENCE REMOVAL.

FURNISHED EXCAVATION

Description: This work shall be in accordance with Section 204 of the Standard Specifications and shall consist of excavating, transporting and placing suitable material from the optional earthwork staging area or from approved off-site sources.

Earthwork Staging Area: The Contractor has the option to use the areas shown on the plans as an earthwork staging area to stockpile material and as a source of embankment. A large quantity of material has been placed at this location from construction of Usable Segment II. The Contractor may also elect to obtain embankment material from other approved off-site sources. The Contractor shall seed disturbed areas as necessary during earthwork staging to minimize erosion at no additional cost to the contract.

No material from the earthwork staging area may be moved off site or placed in areas other than in embankments.

At completion of the project, the staging area shall be graded to drain in a manner consistent with the existing drainage, and the ground surface elevation shall be no more than 10 feet higher than the surrounding ground elevation.

Any additional excavation due to the Contractor's selected method of earthwork staging or use of the staging area will not be measure for payment. All temporary erosion control, temporary seeding and final seeding at the earthwork staging area will not be measured for payment. Seeding shall be according to Section 250 of the Standard Specifications for Road and Bridge Construction. The final seeding mixture shall be Class 1A.

Any material removed from the earthwork staging area and permanently incorporated into embankments will be measured in accordance with Section 204.07.

This work will be paid for at the contract unit price for FURNISHED EXCAVATION.

GRATING FOR CONCRETE FLARED END SECTIONS

This work shall be in accordance with Section 542 of the Standard Specifications.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)

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 10.

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 PreApprenticeship 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.

INLETS, SPECIAL

Description: This work shall be in accordance with Section 602 of the Standard Specifications and includes removing the existing drainage structure, salvaging the grates and installing new Type B Special inlets with salvaged grates and new flat slab top. The following inlets will be modified as described below.

R220

These inlets shall include a concrete flat slab top (Standard 602601) plus an additional temporary steel cover without an opening for a frame or grate. Minimum thickness of steel cover is 1¼ in., minimum yield strength 36.0 PSI. This steel cover will be bolted to the inlet walls and used during stage track construction when track temporary crosses these inlets. A standard flat slab top with salvaged grate will be used at all other times.

The wall thickness “T” shown on Standard 602306 shall be 6 in. and the inlet walls shall be

reinforced with #4 bars at 12 in. centers.

The bottom slab shall be 9 in. thick and reinforced with #4 bars at 6 in. on center each way in the top of the slab.

Basis of Payment: This work including removal, flat slab top, temporary steel cover, removal and replacement of tops as necessary for construction staging will be paid for at the contract unit price per each for INLETS, SPECIAL.

MANHOLES

Manholes shall be in accordance with Section 602 of the Standard Specifications except that those noted on the plans as sanitary manholes shall have the additional requirements noted below.

Manholes shall be precast reinforced concrete. All joints shall be made with an approved bitumastic material on an approved rubber gasket. The completed manhole shall be watertight.

Where shown on the plans, drop connections shall be constructed in accordance with drawing No. 6 in the Standard Specifications for Water and Sewer Main Construction. Cost for drop connections shall be included in the contract unit price for manholes of the size and type specified.

Manhole steps, when required, shall be gray cast iron ASTM A48 or polypropylene coated steel reinforcing rods with load and pullout ratings meeting OSHA standards.

Channels shall be made to conform in shape and slope to that of the connecting sewers and shall be brought together smoothly with well-rounded junctions, satisfactory to the ENGINEER, and in conformance with details shown on the plans.

All manholes shall be tested by the Contractor for watertightness by either of the following methods in conformance with the requirements specified:

A. ASTM C969: "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines."
B. ASTM C 1244: Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test."

The unit price per each for the size and type specified shall also include any connection to existing or proposed sewers, temporary shoring, excavation and backfill to complete the connection, the removal of existing storm sewer, if necessary, and staging and temporary construction to maintain flow during construction.

This work will be paid for at the contract unit price per each for MANHOLES of the type and size specified.

MANHOLE, SPECIAL

Description: This work shall consist of constructing manholes as shown in the plans in accordance with Section 602 of the SSRBC with exceptions shown on the Plans and as specified herein.

Materials: Manhole Pipe Gaskets: Flexible pipe to manhole connectors shall be installed to create a watertight seal between the pip and the manhole. Connectors shall be A-Lok, Kor-N-Seal or Press-Seal type cast in the structure. Each shall be specifically designed for the size and type of piping installed.

Precast concrete base, if used, and top slab shall be according to section 1042 of the SSRBC except that shop drawings according to Article 1042.03(b) will be required, and concrete shall have a minimum compressive strength of 5000 psi at twenty-eight (28) days.

Construction Requirements: Temporary soil retention system shall be furnished and installed in accordance with Section 522 of the SSRBC based on field verified location of existing storm sewers.

The existing 48 in. diameter brick sewer is a combined sewer that carries waste water as well as storm water. Blockage of the sewer may result in wide spread property damage during a large storm event. Low flow is primarily waste water and shall be conveyed in temporary piping through the manhole excavation. The contractor shall make all necessary provisions to maintain both storm and sanitary flow through the project area.

Existing brick sewer shall be maintained on temporary supports during construction of cast-in-place manhole base. The Contractor shall place concrete collars around the existing sewer prior to removing any brick.

Flexible pipe to manhole connectors shall be provided at all manhole penetrations. The connectors shall be sized specifically for the type of pipe being used. Connector and connecting pipe installation shall be according to the recommendations of the connector manufacturer.

Connections to existing storm sewer shall be completed by constructing a concrete collar around the circumference of the existing brick sewer.

Following installation of all pipes, concrete troughs shall be constructed in the bottom of the manhole to ensure laminar flow through the structure.

Basis of Payment: This work will be paid for at the contract unit price per each for MANHOLE, SPECIAL, which price shall include the cast-in-place concrete structure, collars, existing pipe removal, reinforcement, gaskets, concrete fill, the 48 in. diameter risers, cones, frames and lids, steps, sand cushion, concrete trough, plugging existing pipe opening, and all excavation and backfilling. The unit price per each for MANHOLE, SPECIAL shall also include removal and disposal of existing storm sewer as required for manhole construction and connection to existing

sewers, construction of new storm sewer to connect existing storm sewer to the manhole, and staging and temporary construction to maintain flow during construction.

The temporary soil retention system will be paid for according to Section 522 of the SSRBC, except the removal of existing storm sewer shall be included in the unit price of MANHOLE, SPECIAL.

All manholes shall be tested by the Contractor for watertightness by either of the following methods in conformance with the requirements specified:

A. ASTM C969: "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines."
B. ASTM C 1244: "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test."

This work will be paid for at the contract unit price per each for MANHOLE, SPECIAL.

MANHOLE, TYPE A, 9' DIAMETER, TYPE 1, FRAME, CLOSED LID (SPECIAL)

Description: This work shall consist of constructing sanitary manholes as shown in the plans in accordance with Section 602 of the SSRBC with exceptions shown on the Plans and as specified herein.

Materials: Manhole Pipe Gaskets: Flexible pipe to manhole connectors shall be installed to create a watertight seal between the pipe and the manhole. Connectors shall be A-Lok, Kor-N-Seal or Press-Seal type cast in the structure. Each shall be specifically designed for the size and type of pipe being installed.

Precast concrete base, if used, and top slab shall be according to Section 1042 of the SSRBC except that concrete shall have a minimum compressive strength of 5000 psi at twenty-eight (28) days.

Construction Requirements: Temporary soil retention system shall be furnished and installed in accordance with Section 522 of the SSRBC based on field verified location of existing sewers. The existing 48 in. diameter sewer is a combined sewer that carries waste water as well as storm water and is constructed of brick or concrete. Blockage of the sewer may result in widespread property damage during a large storm event. Low flow is primarily waste water and shall be conveyed in temporary piping through the manhole excavation. The contractor shall make all necessary provisions to maintain both storm and sanitary flow through the project area.

Existing sewer shall be maintained on temporary supports during construction of cast-in-place manhole base. The contractor has the option of constructing a precast manhole base in accordance with Article 602.07 of the SSRBC except that the cushion shall be 8 in. thick well compacted course aggregate for backfill, bedding, and trench backfill for pipe culverts and storm sewers according to Article 1004.05.

Flexible pipe to manhole connectors shall be provided at all manhole penetrations. The connectors shall be sized specifically for the type of pipe being used. Connector and connecting pipe installation shall be according to the recommendations of the connector manufacturer.

Connections to existing storm sewer shall be completed by constructing a reinforced concrete collar 8 in. thick around the full circumference at the connect to the existing pipe.

Following installation of all pipes, concrete troughs shall be constructed in the bottom of the manhole to ensure laminar flow through the structure.

Basis of Payment: This work will be paid for at the contract unit price per each for MANHOLE, TYPE A, 9' DIAMETER, TYPE, FRAME, CLOSED LID (SPECIAL), which price shall include the cast-in-place or precast structures, reinforcement, gaskets, concrete fill, the 48 in. diameter risers, cones or flat slab tops, frames and lids, steps, sand cushion, concrete trough, and backfilling. The unit price per each shall also include removal and disposal of existing storm sewer as required for manhole construction and connection to existing sewers, construction of new sewer to connect existing sewer to the manhole, excavation and backfill to complete the connection, and staging and temporary construction to maintain flow during construction.

ORNAMENTAL FENCE

Description: This work shall consist of all labor, material and equipment necessary for the installation of ornamental fence on 6th Street at locations shown on the plans and as detailed in the plans.
The Contractor shall submit shop drawings showing fence member sizes, member layout, connections, materials and finishes. Submit structural design calculations.

The Contractor shall warranty for a period of one year against failure of assembly and installation. The fence shall have a twenty year manufacturer's warranty against product failure.

General: Fence shall be designed for a 90 mph (3-second gust) in accordance to ASCE 7-05. Wind load on an iced fence to be designed using a wind speed of 40 mph (3-second gust). Design fence for wind exposure Category C. Wind Eposure Category C is defined as open terrain with scattered obstructions having heights generally less than 30 feet. This category includes flat open country with grasslands.

The fence shall also be designed to resist a single concentrated load of 200 pounds applied in any direction at any point on the top rail. The fence shall also be designed to resist a load of 50 pounds/foot applied at any direction along the top rail. This load need not be applied at the same time as the 200 pound concentrated load.

The fence shall include:

1. All fencing components including hardware, unless noted otherwise, shall be

galvanized according to Section 509.05 of the Standard Specifications for Road and Bridge Construction.

2. Hardware for an attachment of fence post to concrete surface to be in accordance with details as shown on the plans and to include:

    i. 6" x 6" x ½" thick A36 steel plate, drilled for anchor bolt holes, to be welded to fence post at point of fence post manufacture. Weld shall be made smooth and flush and shall be AWS Welding code. Weld to be applied prior to galvanizing. The steel plate will receive the same galvanizing as the fence components.
    ii. Anchor bolts shall be as shown on the plans.

Fence installation:

1. The fence shall be installed at the center of the existing and proposed retaining wall at locations shown on the plans and as directed by the Engineer.
2. Posts shall be set plumb. Fence sections shall be securely fastened to posts according to manufacturer's recommendations, taking care to protect the posts and fence from scuffing and other damage.

3. Welding of fence material in the field shall not be performed.

4. Any damage to product or site will be repaired or replaced to the satisfaction of the Engineer.

5. Fence shall be cleaned to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per foot for ORNAMENTAL FENCE which price shall include all labor, material and equipment necessary to properly install the fence as shown on the plans and to the satisfaction of the Engineer.

PAVEMENT REMOVAL

This work shall be in accordance with Section 440 of the Standard Specifications except as follows:

1. Pavement thickness and material type to be removed is not shown on the plans at all locations. Brick pavement removal is included in this work.

2. This work shall include removing asphalt, concrete pavement, brick, aggregate, earth, and curb and gutter at designated locations and for sewer installation along 5th Street and 6th Street. The pavement removal will be to a depth of 18 in. below the surface of the existing pavement and will include all materials within that depth. Any removal required below the 18 in. depth will be paid for as earth excavation. No adjustments will be made for variations in thickness.

3. Paragraph 440.07(c) is deleted.

4. On Princeton, care shall be taken when removing the bricks to keep them intact as much as possible as they will be stockpiled within the right-of-way for subsequent removal by the City of Springfield's forces.

This work will be paid for at the contract unit price per square yard for PAVEMENT REMOVAL.

REMOVAL OF EXISTING STRUCTURES

Description: This work shall be in accordance with Article 501 of the Standard Specifications and will include the following two structures.

- Removal of existing structures No. 2 – NSRR bridge over 5th Street
- Removal of existing structures No. 4 – NSRR bridge over 6th Street

Removal will include track, ballast, railing, superstructure, bearings, piers and abutments. Existing structures shall be removed to at least 1 ft below the proposed elevation except at locations shown on the plans.

Basis of Payment: This work will paid for at the contract unit price per each for REMOVAL OF EXISTING STRUCTURES at the locations designated on the plans.

REMOVAL OF UNCLASSIFIED MATERIAL

Description: This work shall consist of removing any unclassified material including culverts, broken concrete, and existing roadway surface found on this project as designated by the Engineer.

The material shall be disposed of beyond the limits of the right of way in accordance with Article 202.03 of the Standard Specifications, and as directed by the Engineer.

Compliance with this Special Provision will not be paid for separately but will be included in the project contract.

RETAINING WALL REMOVAL (XO322924)

Description: This work shall be in accordance with Section 501 of the Standard specifications. This work consists of removing precast concrete block retaining walls and foundations at locations shown on the plans. This work will be measured for payment in square feet of exposed front face of the wall above the existing round line.

Basis of Payment: This work will be paid for at the contract unit price per square foot for RETAINING WALL REMOVAL.

RETAINING WALL REMOVAL (XO323099)

Description: This work shall be in accordance with Section 501 of the Standard specifications. This work consists of removing reinforced concrete retaining walls at locations shown on the plans. The limits of removal will be determined by the Engineer and may include wall footings. Partial removal of retaining walls may be necessary and shall be in accordance with Section 501.05.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard for RETAINING WALL REMOVAL.

RETAINING WALL REMOVAL (XZ127900)

Description: This work shall consist of removing part of the existing retaining wall on the east side on 6th Street and on the north side of Princeton Avenue for the placement of storm sewer as shown on the plans and as directed by the Engineer. This removal shall be according to Section 501 of the IDOT SSRBC and as described herein.

General: All rubbish, concrete, reinforcement bars and other debris as the result of the removal operations shall be disposed of by the Contractor at off-site locations provided by the Contractor.

Basis of Payment: This work will be measured along the front face of the wall at the existing ground line and shall be paid for at the contract unit price per foot for RETAINING WALL REMOVAL and no additional compensation will be allowed.

SANITARY SEWER

This work will be in accordance with Section 550 of the Standard Specification for Road and Bridge Construction except as follows:

Materials: Except as noted below, all pipe shall be reinforced concrete conforming to ASTM designation C76 of the size and Class shown on the plans. The material for all pipe within 10 ft of the water line crossing shall be in accordance with the Special Provisions for Storm Sewer –

Water Main Requirements. Concrete pipe joints shall conform to ASTM C361 or C443 for flexible gasket material. All pipe shall be marked with the pipe type, grade and standard. All pipe to manhole connectors shall be A-Lok, Kor-N-Seal or Press-Seal type, cast in the structure connectors.

Water Main Separation:

Sanitary sewers shall be separated from water lines (horizontal and vertical) as required by Section 41-2 of the Standard Specifications for water and sewer main construction.

Testing and Inspection:

In addition to the requirements of the Standard Specifications for Road and Bridge Construction, all sanitary sewers shall be tested and inspected by exfiltration of air under pressure in accordance with Section 31-1.12 of the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.

Sanitary Sewer Line Connections:

Sanitary sewer line connections to existing trunks, mains, laterals or side sewers shall be left uncovered until after an acceptance inspection has been made. The Engineer will make such inspection within two (2) working days after notification by the Contractor. After approval of the connection, the trench shall be backfilled as specified.

No existing sanitary sewer shall be connected to a new sanitary sewer unless specifically authorized in each instance by the Engineer.

Bypass Pumping:

Temporary bypass pumping will be from structure to structure. Any damage to or holes cut in existing or proposed pipes or structures will result in replacement of the pipe or structure. Patching will not be allowed.

Basis of Payment: This work, including elbows and any water main quality pipe, will be paid for at the contract unit price per foot measured along the centerline of pipes and elbows for SANITARY SEWER, SPECIAL or SANITARY SEWER of the size shown on the plans. Payment for associated items listed in Section 550.10 shall be paid for in accordance with that section except that pipe elbows will not be measured separately for payment.

SAWING PAVEMENT (FULL DEPTH)

Description: This work shall be used in the removal of driveway pavement, sidewalk, pavement, curb, gutter and combination curb and gutter to ensure a satisfactory transition between replacements and the portion remaining in place. The contractor shall saw cut a joint between the portion of the driveway pavement, sidewalk, pavement and curb and gutter to be removed and that to be left in place in order to prevent the surface from spalling when the concrete is broken out. This work shall be done in such a manner that a straight joint will be secured.

Basis of Payment: This work will not be measured separately but shall be included in the contract unit price for the item to be removed.

SEWER IN METAL LINER, 48"

Description: This work shall consist of constructing 48 in. diameter reinforced concrete sanitary sewer in a metal liner at locations shown on the plans according to the special provision "STORM SEWERS JACKED IN PLACE, 48 in. except that the liner may be installed by open cut method.

All pipe shall be reinforced concrete conforming to ASTM designation C76 of the class shown on the plans. Concrete pipe joints shall conform to ASTM C361 or C443 for flexible gasket material. All pipe shall be marked with the pipe type, grade and standard. All pipe to manhole connectors shall be A-Lok, Kor-N-Seal or Press-Seal type, cast in the structure connectors.

Testing and Inspection:

In addition to the requirements of the Standard Specifications for Road and Bridge Construction, all sanitary sewers shall be tested and inspected in accordance with Section 31-1.12 of the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.

Trench excavation, foundation preparation, and backfill for the metal liner shall be according to Article 550 of the SSRBC except as follows:

Aggregate for bedding and backfill shall be crushed stone with a top size of aggregate no greater than 2 in. and no more than 5 percent passing the number 200 sieve.

Backfill shall be placed in loose 6 in. lifts and compacted to at least 95 percent of its maximum density with a moisture content that is no more than 1 percent greater of 2 percent less than the optimum moisture as determined according to AASHTO T 99 (Method C). When backfill is within 3 ft of the top of sub-ballast elevation, a compaction of at least 98 percent will be required.

Installation:

The Contractor may install the metal liner by jacking rather than open cut methods at the Contractor's option.

Basis of Payment: This work, regardless of whether installed by jacking or open cut methods, a will be paid for at the contract unit price per foot for SEWER IN METAL LINER, 48" which price shall include the concrete sanitary sewer, metal liner, including grouting all voids between the sewer and metal liner, backfill, and all other materials and equipment necessary to install the sewer and all excavation except excavation in rock. The Contractor may install the sewer in metal liner by jacking rather than open cut at no additional cost to the contract.

SIDEWALK REMOVAL

Description: This work shall be in accordance with Section 440 of the Standard Specification and shall include removal of concrete steps.

Steps will be measured for payment in place. Only the horizontal surface will be measured and the area computed in square yards. The vertical risers of steps will not be measured for payment.

Basis of Payment: The work will be paid for at the contract unit price per square foot for SIDEWALK REMOVAL.

STORM SEWERS JACKED IN PLACE, 48"

Description: This work shall consist of furnishing and installing by jacking a steel liner and then installing a sanitary sewer inside the liner in accordance with Section 552 of the Standard Specifications and this Special Provision. The metal liner shall be installed first, then the sanitary sewer installed inside the liner.

The smooth steel liner pipe shall meet the following minimum requirements:

Material – Steel ASTM A-36 or AWWA C-206
Inside Diameter – 66 in.
Wall Thickness – 1 in.
Manufacture – Rolled/Welded
Grade – FY = 36 KSI minimum
Joints – Full Depth Single "V" Groove Butt Weld
Coating – Coal tar epoxy or bituminous asphalt

The sanitary sewer pipe (carrier pipe) shall be reinforced concrete pipe conforming to ASTM designation C76, of the class shown on the plans.

Concrete pipe joints shall conform to ASTM C361 or C443 for flexible gasket material. All pipe shall be marked with the pipe type, grade and standard. All pipe to manhole connectors shall be A-Lok, Kor-N-Seal or Press-Seal type, cast in the structure connectors.

In addition to the requirements of the Standard Specifications for Road and Bridge Construction, all sanitary sewers shall be tested and inspected in accordance with Section 31-1.12 of the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.

The following Norfolk Southern Railroad (NS) requirements shall also apply:
General Requirements

A. Bored, jacked or tunneled installations shall have a bore hole essentially the same as the outside diameter of the pipe plus the thickness of the protective coating.

B. The use of water or other liquids to facilitate casing emplacement and spoil removal is prohibited.

C. If during installation an obstruction is encountered which prevents installation of the pipe in accordance with this specification, the pipe shall be abandoned in place and immediately filled and grout. A new installation procedure and revised plans must be submitted to, and approved by, NS before work can resume.

Jacking (Steel Pipe) Installation Method

A. This method consists of pushing sections of pipe into position with jacks placed against a backstop and excavation performed by hand from within the jacking shield at the head of the pipe. Ordinarily 36-in. (914 mm) pipe is the least size that should be used, since it is not practical to work within smaller diameter pipes.

B. Jacking shall be in accordance with the current American Railway Engineering Association Specifications, Chapter 1, Part 4 "Earth Boring and Jacking Culvert Pipe Through Fills." This operation shall be conducted without hand-mining ahead of the pipe and without the use of any type of boring, auguring, or drilling equipment.

C. Bracing and backstops shall be so designed and jacks of sufficient rating used so that the jacking can be progressed on a 24-hour basis without stoppage (except for adding lengths of pipe) until the leading edge of the pipe has reached the receiving pit.

D. Immediately upon completion of jacking operation, the installation shall be pressure grouted as per this specification.

Grouting

A. For jacked and tunneled installations a uniform mixture of 1:6 (cement:sand) cement grout shall be placed under pressure through the grout holes to fill any voids which exist between the pipe or liner plate and the undisturbed earth.

B. Grouting shall start at the lowest hole in each grout panel and proceed upwards simultaneously on both sides of the pipe.

C. A threaded plug shall be installed in each grout hole as the grouting is completed in that hole.

D. When grouting tunnel liner plates, grouting shall be kept as close to the heading as possible, using grout stops behind the liner plates if necessary. In no event shall more than 6 lin. ft of tunnel be progressed beyond the grouting.

E. The space between the carrier pipe and casing pipe shall be pressure grouted using

a uniform mixture of 1:6 (cement:sand).

Soil Stabilization

A. Pressure grouting of the soils or freezing of the soils before jacking, boring, or tunneling may be required at the direction of NS to stabilize the soils, control water, prevent loss of material and prevent settlement or displacement of embankment. Grout shall be cement, chemical or other special injection material selected to accomplish the necessary stabilization.

B. The materials to be used and the method of injection shall be prepared by a Registered Professional Soils Engineer or by an experienced and qualified company specializing in this work and submitted for approval to NS before the start of work. Proof of experience and competency shall accompany the submission.

Dewatering

A. When water is known or expected to be encountered, pumps of sufficient capacity to handle the flow shall be maintained at the site, provided the contractor has received approval from NS to operate them. Pumps in operation shall be constantly attended on a 24-hour basis until, in the sole judgment of NS, the operation can be safely halted. When dewatering, close observation shall be maintained to detect any settlement or displacement of railroad embankment, tracks, and facilities.

Safety Requirements

A. All operations shall be conducted so as not to interfere with, interrupt, or endanger the operation of trains nor damage, destroy, or endanger the integrity of railroad facilities. All work on or near NS property shall be conducted in accordance with NS safety rules and regulations. The Contractor shall secure and comply with the NS safety rules and shall give written acknowledgement to NS that they have been received, read, and understood by the Contractor and its employees. Operations will be subject to NS inspection at any and all times.

B. All cranes, lifts, or other equipment that will be operated in the vicinity of the railroads' electrification and power transmission facilities shall be electrically grounded as directed by NS.

C. At all times when the work is being progressed, a field supervisor for the work with no less than 12 months experience in the operation of the equipment being used shall be present. If boring equipment or similar machines are being used, the machine operator also shall have no less than 12 months experience in the operation of the equipment being used.

D. Whenever equipment or personnel are working closer than 15 ft (4.6 m) from the centerline of an adjacent rack, that track shall be considered as being obstructed. Insofar as possible, all operations shall be conducted no less than this distance. Operations closer than 15 ft (4.6) from the centerline of a track shall be conducted only with the permission of, and as directed by, a duly qualified NS railroad employee present at the site of the work.

E. Crossing of tracks at grade by equipment and personnel is prohibited except by prior arrangement with, and as directed by, NS.

Blasting

A. Blasting will not be permitted.

Protection of Drainage Facilities

A. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by NS. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.

B. Soil erosion methods shall be used to protect railroad ditches and other drainage facilities during construction on and adjacent to NS right-of-way.

Support of Excavation Adjacent to Track

1.0 Launching and Receiving Pits

A. The location of the near edge of all pits is shown on the plans. The dimension of the pits shall be determined by the Contractor and be shown in the pit design plans submitted by the Contractor. The distance from centerline of adjacent track to face of pit or excavation shall be clearly labeled. Also, the elevation of the bottom of the pit or excavation must be shown on the profile.

B. The face of all pits shall be located a minimum of 25 ft (7.6 m) from centerline of adjacent track, **measured at right angles to track**, unless otherwise approved by NS.

C. If the bottom of the pit excavation intersects the theoretical railroad embankment line interlocking steel sheet piling, driven prior to excavation, must be used to protect the track stability. The use of trench boxes or similar devices are not acceptable in this area.

D. Design plans and computations for the pits, stamped by a Professional Engineer, must be submitted by the Contractor prior to start of construction. The Contractor

shall obtain NS approval prior to beginning any work on or which may affect NS property.

E. The sheeting shall be designed to support all lateral forces caused by the earth, railroad and other surcharge loads.

F. After construction and backfilling, all sheet piling within 10 ft (3.0 m) of centerline track must be cut off 18 in. (457 mm) below final grade and left in place.

G. All excavated areas are to be illuminated (flashing warning lights not permitted), fenced and otherwise protected as directed by NS.

2.0 Parallel Trenching and Other Excavation

A. When excavation for a pipeline or other structure will be within the theoretical railroad embankment line of an adjacent track, interlocking steel sheet piling will be required to protect the track.

B. The design and construction requirements for this construction shall be in accordance with the requirements of Section 1.0 Launching and Receiving Pits, included in this specification.

3.0 Inspection and Testing

A. For pipelines carrying flammable or hazardous materials, ANSI Codes, current at time of constructing the pipeline, shall govern the inspection and testing of the facility on NS property, except as follows:

(1) One hundred percent of all field welds shall be inspected by radiographic examinations, and such field welds shall be inspected for 100 percent of the circumference.

(2) The proof testing of the strength of carrier pipe shall be in accordance with ANSI requirements.

4.0 Reimbursement of NS Costs

A. All NS costs associated with the pipe installation (inspection, flagging, track work, protection of signal cables, etc.) will be reimbursed by the Department as Force Account Work according to the Construction Agreement with the railroads.

The Contractor shall follow all of the requirements contained in the NS Special Provision for Protection of Railway Interests.

Pipeline Marker Sign

The Contractor shall install pipeline marker signs directly above the centerline of the storm sewer at the railroad right-of-way limits, as shown in the plans. The signs shall be durable, weatherproof signs approved by the Engineer and shall show the following information:

CITY OF SPRINGFIELD
SEWER DIVISION
ROOM 203 MUNICIPAL CENTER WEST
300 SOUTH 7TH STREET
SPRINGFIELD, IL 62701
(217) 789-2255
COMBINED ** IN. SEWER
DEPTH TO TOP OF CASING * FT

** Diameter of sewer.
*As-built depth to be determined by Contractor.

Basis of Payment: This work will be paid for at the contract unit price per foot for STORM SEWERS JACKED IN PLACE, 48" which price shall include the sewer, metal liner, grouting all voids between the sewer and metal liner, all other materials and equipment necessary to install the sewer and pipeline marker signs, and all excavation except excavation in rock.

STORM SEWER AND WATER MAIN REMOVAL

Description: This work shall consist of the removal of water mains, storm sewers, sanitary sewer or combined sewers in accordance with Section 551 of the Standard Specifications.

Sewers and water mains smaller than 12 in. will not be measured for removal.

Storm sewer to be removed at STA 47863+00 is in existing railroad sub-ballast. The resulting excavations shall be filled in accordance with the Specifications for Trench Backfill except that the material will be the same material used for sub-ballast. Filling the resulting excavation at STA 747863+00 will be measured and paid for as trench backfill.

Basis of Payment: This work, regardless of the type of sewer or water main, will be paid for at the contract unit price per foot for STORM SEWER AND WATER MAIN REMOVAL, of the diameter specified.

STORM SEWER TO BE FILLED

Description: This work shall consist of filling storm, sanitary or combined sewer to be abandoned, as designated on the plans or as directed by the Engineer, with Controlled Low Strength Material (CLSM) according to Articles 593.02 and 593.03 of the SSRBC and as specified in this special provision.

Materials: CLSM shall meet the requirements of Section 1019 of the SSRBC.

Select rubble shall be pieces of natural rock, broken concrete without protruding metal bars, bricks, or reclaimed asphalt pavement with no expansive aggregate. The pieces shall have a minimum dimension no less than ten (10) times the maximum aggregate size of the CLSM and

a maximum dimension no greater than 20 percent of the minimum dimension of the space to be filled. Select rubble shall be free of regulated waste material.

Construction Requirements: The portion of the sewer to be filled shall be cleaned and inspected to identify connections, locate obstructions, and assess the condition of the pipe prior to CLSM placement. The Engineer shall be notified of any connections that were not identified in the plans to be abandoned, removed, or redirected and reconnected. Irregularities in sewer pipe, obstructions, open joints, or broken pipe shall be documented and the calculated fill volume shall be adjusted to account for the anomalies,

Termini of storm sewers to be filled shall be plugged with Class SI concrete or brick and mortar. The plug shall be adequate to withstand the hydrostatic load created during the filling operation. If the plugs fail during construction, the Contractor shall be responsible for the cost of repairing the plug, and filling the remainder of the pipe.

CLSM shall be placed in a manner that allows all air or water to be displaced as the CLSM fills the pipe and intermediate structures.

The tops of intermediate manholes shall be removed to a depth of 2 ft below finished grade. The structure may be removed to a greater depth, but not deeper than 18 in. above crown of the abandoned sewer. The remaining structure shall be filled with CLSM or select rubble with voids filled with CLSM. After the CLSM has set, the hole formed by removal of the top of the structure shall be backfilled with sand and the sand compacted to 3 in. below finished grade. The upper 3 in. shall be filled with embankment free from debris and clods and stones larger than 2 in. in the largest dimension.

All excess material resulting from filling the sewers and intermediate structures and partial removal of intermediate structures shall be disposed of by the contractor according to Article 202.03 of the SSRBC,

Method of Measurement: STORM SEWER TO BE FILLED shall be measured in place and the volume computed in cubic yards.

Basis of Payment: This work, regardless of the type of sewer, will be paid for at the contract unit price per cubic yard for STORM SEWER TO BE FILLED. The unit price shall include the cost of removal, disposal, and backfill of the tops of intermediate manholes.

STORM SEWER - WATER MAIN REQUIREMENTS

This work shall consist of constructing a storm sewer to meet water main standards, as required by the IEPA or when otherwise specified. The work shall be performed in accordance with applicable parts of Section 550 of the Standard Specifications, applicable sections of the current edition of the IEPA Regulations (Title 35 of the Illinois Administrative Code, Subtitle F, Chapter II, Section 653.119), the applicable sections of the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois, and as herein specified.

This provision shall govern the installation of all storm sewers which do not meet IEPA criteria for separation distance between storm sewers and water mains. Separation criteria for storm sewers placed adjacent to water mains and water service lines are as follows:

1. Water mains and water service lines shall be located at least 10 feet (3.05 meters) horizontally from any existing or proposed drain, storm sewer, or sewer service connection.

2. Water mains and water service lines may be located closer than 10 feet (3.05 meters) to a sewer line when:

   a) local conditions prevent a lateral separation of 10 feet (3.05 meters), and

   b) the water main or water service invert is 18 inches (460 mm) above the crown of the sewer, and

   c) the water main or water service is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

3. A water main or water service shall be separated from a sewer so that its invert is a minimum of 18 inches (460 mm) above the crown of the drain or sewer whenever water mains or services cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main or water services located 10 feet (3.05 meters) horizontally of any sewer or drain crossed.

   When it is impossible to meet 1, 2, and 3 above, the storm sewer shall be constructed of concrete pressure pipe, slip-on or mechanical joint ductile iron pipe, or PVC pipe equivalent to water main standards of construction. Construction shall extend on each side of a crossing until the perpendicular distance from the water main or water service to the sewer or drain line is at least 10 feet (3.05 meters). Storm sewer meeting water main requirements shall be constructed of the following pipe materials:

Concrete Pressure Pipe

Concrete pressure pipe shall conform to the latest ANSI/AWWA C300, C301, C302, or C303.

Joints shall conform to Article 41-2.07B of the "Standard Specifications for Water and Sewer Main Construction in Illinois."

Ductile Iron Pipe

Ductile-iron pipe shall conform to ANSI A 21.51 (AWWA C151), class or thickness designed per ANSI A 21.50 (AWWA C150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C104), with a mechanical or rubber ring (slip seal or push on) joints.

Joints for ductile iron pipe shall be in accordance with the following applicable specifications.

1. Mechanical Joints - AWWA C111 and C600
2. Push-On Joints - AWWA C111 and C600

Plastic Pipe

Plastic pipe shall be marked with the manufacturer's name (or trademark); ASTM or AWWA specification; Schedule Number, Dimension Ratio (DR) Number or Standard Dimension Ratio (SDR) Number; and Cell Class. The pipe and fittings shall also meet NSF Standard 14, and bear the NSF seal of approval. Fittings shall be compatible with the type of pipe used. The plastic pipe options shall be in accordance with the following:

1. Polyvinyl Chloride (PVC) conforming to ASTM D 1785. Schedule 80 is the minimum required for all pipe sizes, except when the pipe is to be threaded, and then it shall be Schedule 120. It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

2. Polyvinyl Chloride (PVC) conforming to ASTM D 2241. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

3. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 441. A minimum of Schedule 80 is required for all pipe sizes. Threaded joints are not allowed. It shall be made from CPVC compound meeting ASTM D 1784, Class 23447.

4. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 442. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from CPVC compound meeting ASTM D 1784, Class 23447.

5. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C900. A minimum of wall thickness of DR 25 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

6. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C905. A minimum of wall thickness of DR 26 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Joining of plastic pipe shall be by push-on joint, solvent welded joint, heat welded joint, flanged joint, or threaded joint, in accordance with the pipe manufacturer's instructions and industry standards. Special precautions shall be taken to insure clean, dry contact surfaces when making solvent or heat welded joints. Adequate setting time shall be allowed for maximum strength.

Elasotmeric seals (gaskets) used for push-on joints on plastic pipe shall comply with ASTM F477.

Solvent cement shall be specific for the plastic pipe material and shall comply with ASTM D 2564 (PVC) or ASTM F 493 (CPVC) and be approved by NSF.

For water-sewer line crossings only, storm sewer meeting water main requirements may also be constructed of reinforced concrete sewer pipe. The pipe shall conform to ASTM C 76 with a joint and rubber gasket meeting ASTM C 443. The joint shall meet the leakage performance test in ASTM C 443. The pipe manufacturer must demonstrate to Illinois Department of Transportation personnel that the joints pass the leakage performance test prior to installation of the pipe. The pipe class shall meet the requirements of Section 550 of the *Standard Specifications for Road and Bridge Construction*.

This work will be paid for at the contract unit price per foot for STORM SEWERS TYPE 1 WATER MAIN QUALITY PIPE of the diameter specified.

TEMPORARY CONCRETE BARRIER

Description: This work shall consist of all labor and equipment necessary for the installation of temporary concrete barrier at the locations as shown in the plans. This work shall be completed in accordance with the applicable portions of Section 704 of the IDOT SSRBC and as directed by the Engineer.

This item shall also include any removal and relocation of this barrier required for the different phases of the project as directed by the Engineer.

Basis of Payment: This work Shall be paid for at the contract unit price per foot for TEMPORARY CONCRETE BARRIER which price shall include all labor and equipment necessary to install, remove and relocated the barrier as many times as is necessary to complete the project to the satisfaction of the Engineer.

TEMPORARY PAVEMENT MARKING REMOVAL

Description: This work shall be in accordance to Section 783 of the Standard Specifications and will consist of removing temporary pavement marking used for traffic control and protection.

Basis of Payment: This work shall be paid for at the contract unit price per square foot.

TREE REMOVAL, ACRES

Description: This work consists of tree removal according to Section 201 of the SSRBC except that trees that are not identified for removal by the Engineer shall be saved.

All right of way within the limits of the project, easement areas, and building demolition parcels are included in the plan quantity for tree removal, acres. The Engineer will indicate any trees within the plan quantity area that are not to be removed.

Basis of Payment: Measurement and payment of TREE REMOVAL, ACRES shall be according to Articles 201.10 and 201.11 of the SSRBC.

RAILWAY

BALLAST

Description: This work shall consist of furnishing, and placing ballast to cover the waterproof membrane of each UPRR bridge deck.

General: Work and material shall conform to the requirements for Mainline Ballast in the Norfolk Southern Standard Specifications for Materials and Construction, as presented below:

1. Ballast must originate from an NSRR approved quarry.
2. Ballast shall be approved by the Engineer prior to installation.
3. Ballast material type shall be granite meeting the material quality specifications.

Material Quality:

1. Prepared ballast shall be crushed stone composed of hard durable particles, free from objectionable amounts of deleterious substances and conforming to the requirements of this specification.
2. Prepared ballast shall meet the following specifications:
   a. Gradation, as determined using ASTM C 136, using square opening sieves conforming to ASTM E 11. One test shall be performed each 1000 tons or fraction thereof of material loaded for delivery.
      i. Mainline ballast shall comply with the NS-modified AREMA gradation #3, as shown in Table 1 below.

Table 1: Ballast Gradations

Percent Passing Standard Sieve Size by Weight									
Type	**2-1/2"**	**2"**	**1-1/2"**	**1"**	**¾"**	**½"**	**3/8"**	**#4**	**#200**
AREMA #3 Mod.	**100**	**95-100**	**30-65**	**0-15**		**0-5**			**0.5 max**

Note: All gradation testing shall be performed according to AASHTO T-27.

   b. Clay lumps and friable material – percentage as determined by ASTM C 142 shall not exceed 0.5%.
   c. Material finer than #200 sieve – percentage as determined by ASTM C 117 shall not exceed 0.5%.
   d. Absorption – as determined by ASTM C 127 shall not exceed 1.0%.
   e. Sodium sulfate soundness – average weighted loss after five (5) cycles shall not exceed 2.5%, as determined by ASTM C 88.
   f. Resistance to degradation – as determined by ASTM C 535, grading type 2 (Los Angeles Abrasion Test 535-2) shall not result in a wear percentage greater than 27.5% for granite, or 25.0% for limestone.
   g. Flat and/or elongated particles – as determined by ASTM D 4791-89, using a 3:1 ratio shall not exceed 5.0%.

3. Contractor shall furnish a certification of compliance stating that the material meets or exceeds the requirements of this specification. For sources not currently approved by NSRR, the Contractor shall provide independent certification as required by the Engineer.
4. Graded aggregates subject to on site stockpiling prior to placement shall be reblended as directed by the Engineer to ensure compliance with the original grading specified.

Delivery:

1. If ballast is specified by the project contract to be furnished by the Contractor:
    a. Rail Delivery:
        i. The Contractor shall be responsible for arranging rail delivery and unloading using cars furnished by NSRR.
        ii. The Contractor is responsible for all freight charges.
        iii. If direct unloading of ballast is not possible, the Contractor shall be responsible for arranging rail delivery to the nearest available track. The Contractor shall be responsible for prompt unloading of the cars and for the transport of the material to the job site for installation or stockpiling.
    b. Truck Delivery:
        i. The Engineer, or person(s) designated by the Engineer, shall collect quarry tickets for each load of ballast delivered to the job site by truck.
2. The Engineer may refuse acceptance, at no cost to the project, if the material being supplied is unsuitable or not in accordance with these specifications.
3. If material is stockpiled, the Contractor shall limit the movement of wheeled or tracked machines over the stockpile.

Installation: Uncompacted ballast shall be placed evenly to completely cover the waterproof membrane at a thickness of 6 in. Placement of material shall be done in a manner that shall not damage or destroy the waterproof membrane.

Basis of Payment: This work shall be paid for at the contract unit price per cubic yard for BALLAST.

CHAIN LINK FENCE (SPECIAL)

Description: This work shall consist of furnishing and constructing chain link fence with a barbed wire top, gates and accessories at the locations shown on the plans or as directed by the Engineer.

General: Except as modified below, the work and materials shall conform to the requirements of Section 664 and Article 1006.27 of the SSRBC. Barbed wire top shall conform to Article 1006.28 of the SSRBC. The materials including all fabric, posts, fasteners, wires, braces, tops, support arms, and 3 rows of barbed wire shall be included in the cost of the work. All labor, materials, and equipment shall be included in the cost of CHAIN LINK FENCE (SPECIAL) of the height specified, and CHAIN LINK GATES (SPECIAL) of the opening

sizes and types specified.

Barbed wire support arms shall be pressed steel, cast iron, or cast aluminum alloy fitted with clips or slots for attaching three strands of barbed wire. Arms shall be set on a 45° angle and be capable of supporting a 250 pound load at outer barbed wire connecting point without causing permanent deflection.

Basis of Payment: This work shall be paid for at the contract unit price per foot for CHAIN LINK FENCE (SPECIAL) of the height specified, and at the contract unit price per each for CHAIN LINK GATES (SPECIAL) of the opening sizes and types specified.

EMBANKMENT AND SUBGRADE PREPARATION

Description: This work shall consist of the construction of embankments underneath railroad track by depositing, placing and compacting earth, stone, gravel, or other materials of acceptable quality above the natural ground or other surface and shall consist of preparing the completed or existing earthwork underneath railroad track as an unimproved subgrade prior to constructing the sub-ballast.

General: Except as modified below, the work and materials shall conform to the requirements of Sections 205 and 301 of the SSRBC.

For embankments:

1. All lifts between 0 ft and 3 ft below the top of the subgrade shall be compacted to not less than 100 percent of the standard laboratory density and all lifts more than 3 ft below the top of the subgrade shall be compacted to not less than 95 percent of the standard laboratory density.

2. The moisture content of the soil shall be between 0 and 6 percentage points above the optimum moisture determined according to AASHTO T-99 (Method C).

In locations beneath the sub-ballast:

1. The contractor shall scarify the top 12 in. of subgrade, adjust the moisture content to between 0 and 6 percentage points above the optimum moisture determined according to AASHTO T-99 (Method C), and compact to not less than 100 percent of the standard laboratory density.

Suitable material taken from drilled shafts, drainage structure excavation, or structure excavation may be used for construction of embankment.

Existing ballast and clean sub-ballast material may be used within the core of the embankment only if the coarse material is thoroughly mixed with fine material. The mixed coarse material shall be homogenous and contain at least 35 percent finer than the No. 200 sieve.

Method of Measurement: This work will not be measured for payment.

Basis of Payment: Subgrade preparation, embankment and any additive or water applied will not be paid for directly but shall be considered as included in the various items of excavation, and their construction shall be included in the unit prices for these items.

NS RAIL OPERATIONS

All work by the Contractor shall be performed in accordance with the NS Special Provisions for Protection of Railway Interests. Train movements along the NS track or in the NS rail yard north of Laurel Street may limit the times that the Contractor may work on NS right-of-way (ROW). The NS will likely limit access to their ROW during train movements in the yard. The Contractor shall schedule his work in coordination with NS operations.

No charge or claims of the Contract against either the Department or the railroad will be allowed for hindrance or delay on account of railway traffic, any work by the railroad or any other delay incident to the necessary or safe maintenance of railway traffic.

NS SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

Special Provisions for Protection of Railway Interests

1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:

   Norfolk Southern Railway Company, hereinafter referred to as "Railroad", and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad's Public Projects Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

   The authorized representative of the Project Sponsor ("Sponsor"), hereinafter referred to as the "Sponsor's Engineer", shall have authority over all other matters as prescribed herein and in the Project Specifications.

   The Sponsor's Prime Contractor, hereinafter referred to as "Contractor" shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

   A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

      1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.

      2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor's Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.

      3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

      4. Obtained Railroad's Flagging Services as required by paragraph 7 herein.

      5. Obtained written authorization from the Railroad to begin work on Railroad's rights-of-way, such authorization to include an outline of specific conditions with which he must comply.

      6. Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

   B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be

notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

   A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.

   B. Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.

   C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.

   D. "One Call" Services do not locate buried Railroad utilities. The contractor shall contact the Railroad's representative 2 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Sponsor, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.

4. TRACK CLEARANCES:

   A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.

      1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.

      2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.

3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.

4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad's representative at least 72 hours in advance of the work.

2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.

3. Receive permission from the Railroad's representative to proceed with the work.

4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Railroad property shall be:

a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.

b. In accordance with the Railroad's written outline of specific conditions.

c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.

d. In accordance with these Special Provisions.

2. Submittal Requirements

a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.

b. The Contractor shall allow for 30 days for the Railroad's review and response.

c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.

d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.

e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.

f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:

(1) General Means and Methods
(2) Ballast Protection
(3) Construction Excavation & Shoring
(4) Pipe, Culvert, & Tunnel Installations
(5) Demolition Procedure
(6) Erection & Hoisting Procedure
(7) Debris Shielding or Containment
(8) Blasting
(9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
(10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.

g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:

(1) Shop Drawings
(2) Bearing Shop Drawings and Material Certifications
(3) Concrete Mix Design
(4) Structural Steel, Rebar, and/or Strand Certifications
(5) 28 day Cylinder Test for Concrete Strength
(6) Waterproofing Material Certification
(7) Test Reports for Fracture Critical Members
(8) Foundation Construction Reports

Fabrication may not begin until the Railroad has approved the required shop drawings.

h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.

C. Excavation:

1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.

2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

D. Excavation for Structures and Shoring Protection:

1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.

2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.

3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.

4. The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.

5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed ½".

6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

7. The front face of shoring located to the closest NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.

E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:

    a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
    b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
    c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.

2. The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8

F. Demolition Procedures

1. General

    a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

    b. Railroad tracks and other Railroad property must be protected from damage during the procedure.

    c. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.

    d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.

    e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.

2. Submittal Requirements

    a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

        (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

(2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

(3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

(4) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.

(5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

3. Overhead Demolition Debris Shield

a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.

b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.

c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.

d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.

f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.

g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.

4. Vertical Demolition Debris Shield

a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

G. Erection & Hoisting Procedures

1. General

a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

b. Railroad tracks and other Railroad property must be protected from damage during the erection procedure.

c. A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.

d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.

e. For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).

2. Submittal Requirements

a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

(1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.

(2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

(3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

(4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

(5) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.

(6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

H. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:

    a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.

    b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.

    c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.

    d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.

    e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.

    f. Explosive materials or loaded holes shall not be left unattended at the blast site.

    g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.

    h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.

    i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.

2. The Railroad representative will:

    a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.

    b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.

3. The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:

    a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.

    b. Confirm that the minimum amounts of explosives are used to remove the rock.

    c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railway.

    d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.

    e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.

    f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.

4. The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:

    a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.

    b. Hole diameter.

    c. Hole spacing and pattern.

    d. Maximum depth of hole.

    e. Maximum number of decks per hole.

    f. Maximum pounds of explosives per hole.

    g. Maximum pounds of explosives per delay.

    h. Maximum number of holes per detonation.

i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.

j. Approximate dates and time of day when the explosives are to be detonated.

k. Type of flyrock protection.

l. Type and patterns of audible warning and all clear signals to be used before and after each blast.

m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.

n. A copy of the Authority's permit granting permission to blast on the site.

o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.

p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.

q. A copy of the borings and Geotechnical information or report.

I. Track Monitoring

1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.

2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.

3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.

4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

J. Maintenance of Railroad Facilities:

1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly

repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.

2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.

3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

K. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.

2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

L. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.

2. Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.

3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.

4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.

2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.

3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer

needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Sponsor will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.

2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.

3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.

4. Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to Railroad Engineer.

2. The Railroad flagman assigned to the project will be responsible for notifying the Sponsor Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Sponsor's Engineer will document such notification in the project records. When requested, the Sponsor's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

   A. Where the plans show or imply that materials of any nature must be hauled across Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.

   B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

   A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.

   B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

   A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

   B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

11. TRAINMAN'S WALKWAYS:

   A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

   A. The Contractor and/or the Sponsor's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway

Worker Protection Training; However the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.

C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.

D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.

E. No one is allowed to cross tracks without specific authorization from the flagman.

F. All welders and cutting torches working within 25' of track must stop when train is passing.

G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.

B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

C. All employees will stay with their machines when crane or boom equipment is pointed toward track.

D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).

E. Swinging loads must be secured to prevent movement while train is passing.

F. No loads will be suspended above a moving train.

G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.

H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.

I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

K. All equipment, loads and cables are prohibited from touching rails.

L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.

N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

14. INSURANCE:

A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

1. a. Commercial General Liability Insurance having a combined single limit of not less than $2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.

b. Automobile Liability Insurance with a combined single limit of not less than $1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.

2. Railroad Protective Liability Insurance having a combined single limit of not less than $2,000,000 each occurrence and $6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of $5,000,000 each occurrence and $10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

a. The insurer must be rated A- or better by A.M. Best Company, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

b. The policy must be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:
   (1) CG 00 35 01 96 and CG 28 31 10 93; or
   (2) CG 00 35 07 98 and CG 28 31 07 98; or
   (3) CG 00 35 10 01; or
   (4) CG 00 35 12 04; or
   (5) CG 00 35 12 07; or
   (6) CG 00 35 04 13.

c. The named insured shall read:

   Norfolk Southern Corporation and its subsidiaries
   Three Commercial Place
   Norfolk, Virginia 23510-2191
   Attn: S. W. Dickerson Risk Management

   (NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)

d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.

e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**

f. The name and address of the prime Contractor must appear on the Declarations.

g. The name and address of the Sponsor must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."

h. Endorsements/forms that rea **required** are:

   (1) Physical Damage to Property Amendment
   (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

i. Other endorsements/forms that will be accepted are:

(1) Broad Form Nuclear Exclusion – Form IL 00 21
(2) 30-day Advance Notice of Non-renewal or cancellation
(3) Required State Cancellation Endorsement
(4) Quick Reference or Index Form CL/IL 240

j. Endorsements/forms that are NOT acceptable are:
(1) Any Pollution Exclusion Endorsement except CG 28 31
(2) Any Punitive or Exemplary Damages Exclusion
(3) Known injury or Damage Exclusion form CG 00 59
(4) Any Common Policy Conditions form
(5) An Endorsement that limits or excludes Professional Liability coverage
(6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
(7) An Endorsement that excludes TRIA coverage
(8) A Sole Agent Endorsement
(9) Any type of deductible endorsement or amendment
(10) Any other endorsement/form not specifically authorized in item no. 2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.

C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:

RAILROAD:
Risk Management
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.

E. Insurance Submission Procedures

1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**

2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:

    a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirely inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.

    b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of $2M per occurrence of general and $1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.

3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

15. FAILURE TO COMPLY:

    A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:

        1. The Railroad Engineer may require that the Contractor vacate Railroad property.

        2. The Sponsor's Engineer may withhold all monies due the Contractor on monthly statements.

    B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor's Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

    A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. PROJECT INFORMATION
    A. Date: _____
    B. NS File No.: _____
    C. NS Milepost: _____
    D. Sponsor's Project No.: _____

PIPE DRAINS (SPECIAL)

Description: This work shall consist of constructing pipe drains of the required diameter according to Sections 601 of the SSRBC at locations shown on the plans or as directed by the Engineer, except that the materials shall be as specified on the detail in the plans.

General:

A. Pipe shall be limited to Smooth Steel Pipe.

B. The steel pipe shall conform to ASTM Specifications A 139 Grade B (No Hydro). The minimum yield strength of this pipe shall be 35,000 psi. The minimum wall thickness is as follows:

Normal Size (Inches)	Minimum Wall Thickness (Inches)
12	0.250
15	0.3125
18	0.3125

C. The pipe shall be coated externally with coal tar epoxy or bituminous asphalt. The pipe shall be shop cut with ends square with centerline, leveled and welded so that the entire length of the pipe shall be straight and true. Weld seams in the field shall be field applied with coal tar epoxy or bituminous asphalt.

Pipe Connections

Smooth steel pipe and pipe connected by welding using a full depth, single "V" groove butt weld. Welding shall be performed by skilled welders, welding operators, and tackers who have had adequate experience in the type of materials to be used. Welders shall be qualified under the provisions of ANSI/AWS D1.1 by an independent local, approved testing agency not more than 6 months prior to commencing work on the pipe. Machines and electrodes similar to those used in the work shall be used in qualifications test. The Contractor shall be responsible for all material and bear the expense of qualifying welders.

Basis of Payment: This work including all elbows, tees, wyes and backfill shall be paid for at the contract unit price per foot for PIPE DRAINS (SPECIAL) of the diameter specified.

PIPE UNDERDRAINS 6" (MODIFIED)

Description: This work shall consist of constructing a perforated pipe encased in fabric, installed in a trench backfilled with fine aggregated, of the required diameter within a trench filled with aggregate according to Section 601 of the SSRBC at locations shown on the plans or as directed by the Engineer. Work shall also consist of removal and proper disposal of the underdrain pipes in the construction stage indicated on the plans.

General: The materials shown in the plans, including all elbows, tees, wyes, backfill, and connections to pipe drain outlets shall be included in the cost for the work. All excavation, labor, equipment and materials necessary for completing the work shall be included in the cost for PIPE UNDERDRAIN 6" (MODIFIED).

Basis of Payment: This work shall be paid for at the contract unit price per foot for PIPE UNDERDRAINS 6" (MODIFIED).

PIPE UNDERDRAINS, TYPE 2

Description: This work shall consist of constructing pipe underdrains of the required diameter within a trench filled with aggregate according to Section 601 of the SSRBC and the details included in the plans at locations shown on the plans or as directed by the Engineer.

General: The materials shown in the plans, including all cleanouts, cleanout covers, elbows, tees, wyes, geotechnical fabric, and backfill shall be included in the cost for the work. All excavation, labor, equipment and materials necessary for completing the work shall be included in the cost for PIPE UNDERDRAINS, TYPE 2 of the diameter specified.

Method of Measurement: Measurement of payment shall be in accordance with paragraph 601.07. The vertical segments of pipe underdrains will be measured for payment along with the horizontal segments.

Basis of Payment: This work shall be paid for at the contract unit price per foot for PIPE UNDERDRAINS, TYPE 2 of the diameter specified.

SUB-BALLAST

Description: This work shall consist of furnishing, placing, and compacting sub-ballast on the prepared subgrade at locations shown on the plans.

General: Work and material shall conform to the requirements of Section 311 of the SSRBC for Subbase Granular Material, Type A with the following modifications:

1. The maximum lift thickness shall be 6 in.

2. The compaction requirement shall be not less than 100 percent of the standard laboratory density.

3. The material shall be crushed stone in accordance with Article 1004.04 of the SSRBC.

4. The gradation shall be CA-6 in accordance with Article 1004.04 of the SSRBC, except that the gradation of the No. 200 sieve shall be 3-8 percent.

Submittals: Submittals shall be made in accordance with Section 106 of the SSRBC and the Bureau of Materials and Physical Research's Policy Memorandum "Aggregate Gradation Control System". Weekly stockpile/loadout tests shall be submitted to the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per cubic yard for SUB-BALLAST.

TRACK REMOVAL

Description: This work shall be in accordance with this Special Provision.

Track material shall be removed during the proper stage of construction and in locations shown on the plans. Contractor shall coordinate the limits and sequencing of all track material removal with Norfolk Southern (NS) during each stage of construction so that NS operations are not impeded.

Track material includes rails, cross ties, tie plates, spikes, joint bars, rail anchors, frogs, switches and appurtenances, and other track material. No cutting of rails will be allowed unless approved by the Engineer.

Track material within the designated limits of removal, as shown on the plans or modified by the Engineer, shall become the property of the Contractor and shall be removed from the project area and salvaged or properly disposed of.

Contractor will be responsible for shaping, smoothing, and compacting the roadbed after removal of track or turnouts. The roadbed shall be free of ruts and depressions and shaped to allow for proper drainage. Cost for this work shall be included in the cost of TRACK REMOVAL.
Removal of pavement and sidewalk within tie width shall be included in the cost of TRACK REMOVAL.

General: This work will include all labor, materials and equipment required to dismantle and remove track and turnouts from locations shown on the plans, or as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per foot for TRACK REMOVAL.

WOVEN WIRE FENCE, 4'

This work shall be in accordance with Section 665 of the Standard Specifications except that the barbed wire shall be omitted, and the design number of the fence fabric shall be either 1047-6-11 or 1047-6-12 ½. This work will be paid for at the contract unit price per foot for WOVEN WIRE FENCE, 4'.

WOVEN WIRE FENCE AND GATES

Description: This work shall consist of installing woven wire fence and gates according to Section 665 of the SSRBC at locations shown on the plans or as directed by the Engineer. The fence and gates shall be installed at the beginning at the project prior to the initial grading of railway embankment. The Contractor shall maintain and avoid damaging the fence and gates during construction. Any maintenance required or damage to the fence or gates by the Contractor during construction shall be repaired to the satisfaction of the Engineer at no additional cost to the contract.

STRUCTURAL

CONCRETE STRUCTURES

General: Except as otherwise specified hereafter, the current Standard Specifications for Road and Bridge Construction, Section 503 – Concrete Structures, shall apply to all work under this section.

Material Requirements: The minimum concrete compressive strength at fourteen (14) days shall be 4,000 psi.

Fly Ash, Silicafume and/or slag cement and any other admixtures, approved by the Engineer, shall be in addition to the minimum cement content listed in the Standard Specifications for Road and Bridge Construction, Section 1020 – Portland Cement Concrete, not in lieu of cement.

Self-Consolidating concrete shall be used for the retaining wall cast-in-place concrete facing that utilize form liners. Self-Consolidating admixtures shall be according to Section 1021.05 of the Standard Specifications.

CONCRETE SURFACE COLOR TREATMENT

Description: This work shall consist of furnishing all labor, materials, and equipment for the application of a concrete surface color treatment and water based polyurethane concrete sealer to the locations shown on the plans.

General: The concrete surface color treatment shall be a two-part, colored cementitious coating. This coating shall be opaque, high-strength, extremely UV-resistant and suitable to apply to vertical surfaces. BRICKFORM Cem-Coat shall be used for the Concrete Surface Color Treatment.

The protection system shall be a water-based polyurethane concrete sealer that forms a high-solids coating with a clear matte finish, provides a chemical-resistant barrier coating that seals and protects the concrete under heavy use conditions, and shall be completed in accordance with this specification, manufacturer's recommendations and applicable sections of Section 587 of the Standard Specifications for Road and Bridge Construction. BRICKFORM UreMax WB shall be used for the Protection System.

Construction Requirements:

Surface Color Treatment: The preparation of the concrete surfaces and application of the concrete coating shall be done in such a manner as to not damage the concrete and according to the manufacturer's written instructions.

The color of the concrete coating should be Blue, Munsell No. 10B 3/6. Submit samples to the Engineer, for approval, on actual substrate in the blue color to verify preliminary selections made

under sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

Store the coating materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F to protect from freezing.

Prior to the application of the concrete coating, the surface shall be clean and free of laitance, dirt, films, paint, coatings, or other foreign matter. Surfaces are to be dry prior to application. The coating should only be applied after the concrete has fully cured, at least twenty-eight (28) days.

The contractor shall use the moisture vapor evaporation rate test per ASTM F1869 to ensure that the rate of moisture vapor emission from the concrete surface is not exceeding 5 pounds per 1,000 sq. ft per twenty-four (24) hours. The contractor shall also perform relative humidity tests per ASTM F2170 to ensure the humidity is below 75 percent.

The coating shall either be sponge, roll or brush applied to the concrete surfaces. If a second coat is required, the second coat shall be applied after two hours of the previous coat but within twenty four hours. Apply each coat according to the manufacturer's written instructions. Use equipment recommended in writing by the manufacturer for material and texture required, and apply the material at not less than manufacturer's recommended spreading rate.

Mix prepackaged ingredients together according to the manufacturer's written instructions. Mix together with mechanical mixer or by hand to required consistency. Mix proportions of the ingredients vary by manufacturer and application equipment type.

Apply coating only when temperature of surfaces to be coated and ambient air temperatures are between 55 and 80 degrees F.

The concrete coating should be allowed to cure before the application of the concrete sealer. Clean spattered coating by washing, scraping, or other methods without damaging the concrete or coating.

Comply with the manufacturer's written instructions for recommendations on curing procedures.

Concrete Sealer: The contractor shall provide all necessary equipment for the application of the concrete sealer.

The preparation of the concrete surfaces and application of the concrete sealer shall be done in such a manner as to not damage the concrete and/or the colored cementitious coating and according to the manufacturer's written instructions.

The concrete sealer shall produce a clear matte finish. Before applying product, test the product for desired results in a discrete location on the back face of the retaining walls. The sealer test area shall be approved by the Engineer.

Store the concrete sealant materials not in use indoors away from heat and direct sunlight, and at

a minimum ambient temperature of 45 degrees F to protect from freezing.

Prior to application of the concrete sealer, the surface shall be clean and free of laitance, dirt, films or other foreign matter. Surfaces are to be dry prior to application. The sealer should only be applied after the concrete (minimum of twenty-eight (28) days) and/or colored cementitious coatings have fully cured.

The concrete sealer shall be applied to the manufacturer's written instructions. If a second coat is required, the second coat shall be applied within four to eight hours of the previous coat. Use equipment recommended in writing by the manufacturer for material and texture required, and apply the material at not less than manufacturer's recommended spreading rate.

Mix prepackaged ingredients together according to the manufacturer's written instructions. Mix together with mechanical mixer or by hand to required consistency. Mix proportions of the ingredients vary by manufacturer and application equipment type.

The concrete sealer shall only be applied when the surface or ambient temperature is between 45 and 95 degrees F. Do not apply the sealer if the ambient temperature is expected to fall below 32°F within the curing cycle of the sealer.

The concrete sealer shall be allowed to cure before any foot traffic is allowed adjacent to the retaining wall. Before the sealer dries, clean spattered locations without damaging the concrete, sealer, and/or colored cementitious coating.

Comply with the manufacturer's written instructions for recommendations on curing procedures.

Method of Measurement: This work will be measured for payment in units of square feet, at the locations specified.

Basis of Payment: This work will be paid for at the contract unit price per square foot for CONCRETE SURFACE COLOR TREATMENT. Price shall be payment in full for all labor, materials, and equipment necessary for the application of the coating and sealer.

CROSSHOLE SONIC LOGGING TESTING OF DRILLED SHAFTS

Description: This work shall be according to all applicable sections of the GBSP #91, Crosshole Sonic Logging Testing of Drilled Shafts, except as noted below.

- The Engineer will perform the CSL testing.
- Six (6) access ducts shall be installed in each 6 ft-6 in. drilled shaft supporting the bridge abutments.
  - CSL testing is not included in contract and is to be paid for by the Engineer.

DRAINAGE SYSTEM

Description: This work shall consist of furnishing all labor, materials, and equipment for

the installation of the deck drainage system and any temporary connections and diversions during stage construction as shown in the plans, including all drain pipes, fittings, steel strap pipe hanger, threaded rods, carriage bolts, and all other items shown on the plans for the drainage system.

General: The drainage system shall be a pipe drain system capable of disposing runoff onto the concrete slope wall. The Contractor shall temporarily divert the drainage system runoff during stage construction if necessary or required by the Engineer.

Construction Requirements: The drain pipe shall be Class 52 ductile iron with 6 in. I.D.

The drainage system shall be an open system and shall outlet onto the slope wall as shown on the plans.

All ductile iron pipe and fittings shall be handled and installed according to guidelines and procedures recommended by the manufacturer or supplier of the material.

Method of Measurement: This work will be measured for payment in units of each for the entire drainage system.

Basis of Payment: This work will be paid for at the contract unit price each for DRAINAGE SYSTEM, at the locations shown on the plans. Price shall be payment in full for all labor, materials, and equipment necessary for the installation of the drainage system.

DRILLED SOLDIER PILE RETAINING WALL

Description: This work shall consist of providing all labor, materials, and equipment necessary to install a non-gravity cantilever wall consisting of closely-spaced, reinforced drilled shafts and unreinforced secant lagging. All work shall be according to the details shown on the plans, Article 522.08 of the SSRBC, GBSP #86 "Drilled Shafts" and as directed by the Engineer in addition to the following requirements.

Materials: The materials used shall satisfy the following requirements:

1. Temporary casing shall be produced by electric seam, butt, or spiral welding to produce a smooth wall surface, fabricated from steel satisfying ASTM A252 Grade 2. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 1/4 in. The temporary casing shall have rock teeth on the bottom of the casing and slots in the top of the casing for twisting the casing into rock. Temporary casing of the appropriate size shall be onsite during drilling operations.
2. Controlled Low Strength Material (CLSM) shall be according to Section 1019, except that compressive strength at 28 and 180 days shall be at least 75 psi.

Submittals: Qualifications and installations procedure submittals shall be according to Article 516.04 GBSP #86 "Drilled Shafts." In addition to these requirements the Contractor's

installation procedure submittal shall include details of soldier pile placement, secant lagging placement and CLSM placement.

Soldier Pile Installation: If the top of rock encountered is below or above that estimated on the plans, the quantities for drilling and setting soldier piles shall be recomputed. Soldier pile lengths and tip elevations shall not be modified.

At locations where shaft excavation is within 75 ft of an active rail line, the Temporary Casing Method of installation shall be used. Temporary casing shall extend at a minimum from the ground surface to the top of rock. Casing shall be socketed into rock as required to prevent loss of ground and control ground water infiltration until encasement concrete can be placed.

The following construction tolerances shall apply instead of Article 522.08(b)(3)a.

a. The top center of the soldier pile shall be within 3 in. of the plan station and -1/2 in. to +3 in. offset. (- offset towards C.I.P facing).

Demonstration Shaft: Contractor shall demonstrate equipment and methods on one of the drilled soldier piles shown on the plans before proceeding with full-scale production. The Engineer shall select the location to be used as the demonstration shaft.

Construct the demonstration shaft according to the requirements of this special provision using the Temporary Casing Method. Do not begin constructing production drilled soldier piles until the Engineer approves the methodology and results of the demonstration shaft.

If the demonstration shaft installation demonstrates that the equipment and methods used to drill and set soldier piles to the requirements of this specification are inadequate, the Engineer will require appropriate alterations in equipment and/or methods, to eliminate the unsatisfactory results. The Contractor may be required to perform additional demonstration shafts until an adequate procedure is demonstrated and approved by the Engineer.

Demonstration shafts used as part of the completed structure shall be measured and paid for in accordance with Section 522 of the SSRBC.

Basis of Payment: This work shall be measured and paid for in accordance with Section 522 of the SSRBC.

Excavation through existing utilities, existing sewers, and existing structures where shown on the plans shall not be considered extra work, but shall be included in the cost for drilling and setting soldier piles (in soil) and drilling and setting soldier piles (in rock).

ERECTION OF STEEL STRUCTURE

Description: In addition to the requirements of Article 505.80(e), and the "NS Special Provision for Protection of Railway Interests" the following shall apply.

The Contractor or sub-Contractor performing the erection of the structural steel is herein referred to as the Erection Contractor.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer, experienced in the analysis and preparation of steel girder erection plans, for the completion of a project-specific erection plan. The structural engineer, herein referred to as the Erection Engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the structural steel.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the structural steel in conformance with the contract documents, contract schedule and as outlined herein. The erection plans shall address and account for all items pertinent to the steel erection including such items as sequencing, falsework, temporary shoring and/or bracing, girder stability, crane positioning and movement, means of access, pick points, girder shape, permissible deformations and roll, interim/final plumbness, floor beam, diaphragm, header beam and knee brace placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. Any pick point connections the Contractor would like to utilize that attach permanently to the structural steel or required modifications to the structural steel such as additional bolt holes shall be designed by the Contractor's Erection Engineer and shall be detailed in the structural steel shop drawings. The attachment shall be part of the Contractor's erection plan. The Erection Contractor shall be responsible for the stability of the partially erected steel structure during all phases of the steel erection.

The erection plans and procedures shall be submitted to the Engineer and Railroad for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department or Railroad shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department and Railroad. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department and Railroad.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 505.13 of the Standard Specifications.

FORM LINER TEXTURED SURFACE

Description: This work shall consist of designing, developing, furnishing and installing form liners and forming concrete using reusable, high-strength urethane form liners to achieve the concrete treatment as shown in the drawings and specifications. Form lined surfaces shall include areas of the wall facing, where shown in the plans. Work shall be performed in

accordance with applicable portions of Sections 503 and 504 of the Standard Specifications.

Form liners shall be installed 12 in. below finish grade unless otherwise shown on the plans. The form liner shall match the exact size of concrete units and adhere to the provisions listed herein and in the Plans.

Materials: Form liners shall be high quality, highly reusable and capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects.

Form liners shall attach easily to pour-in-place forms and be removable without causing concrete surface damage or weakness in the substrate. Liners used for the texture shall be made from high-strength elastomeric urethane material which shall not compress more than 0.02 ft when poured at a rate of 10 vertical ft per hour. Form release agents shall be non-staining, non- residual, non-reactive and shall not contribute to the degradation of the form liner material.

Form Liner Mockup: The Contractor shall provide cast concrete mockup(s) containing the form liner surface.

Purpose of the mockup is to verify the pattern to be used, demonstrate details of form liner construction, and provide a visual quality standard.

1. Locate a mockup on each construction location (Fifth Street and Sixth Street) as directed by the Engineer. Mockup shall be readily accessible to construction personnel and the Engineer at all times during form liner construction. The same mockup may be used at both locations if it is moved when required.
2. The mockup shall be a minimum 4 ft x 4 ft x 6 in. thick and shall be cast in a vertical position, representative of the actual construction.
3. Include examples of each condition required for construction (i.e. liner joints, construction joints, expansion joints, edges of textured surface, form ties, etc.) See Exhibit A, provided below.
4. Upon receipt of comments from inspection of the mockup, adjustments or corrections shall be made where imperfections are found. If required, additional mockups shall be prepared when the initial mockup is found to be unsatisfactory.
5. After mockup is determined to be acceptable by the Engineer, construction of project may proceed.

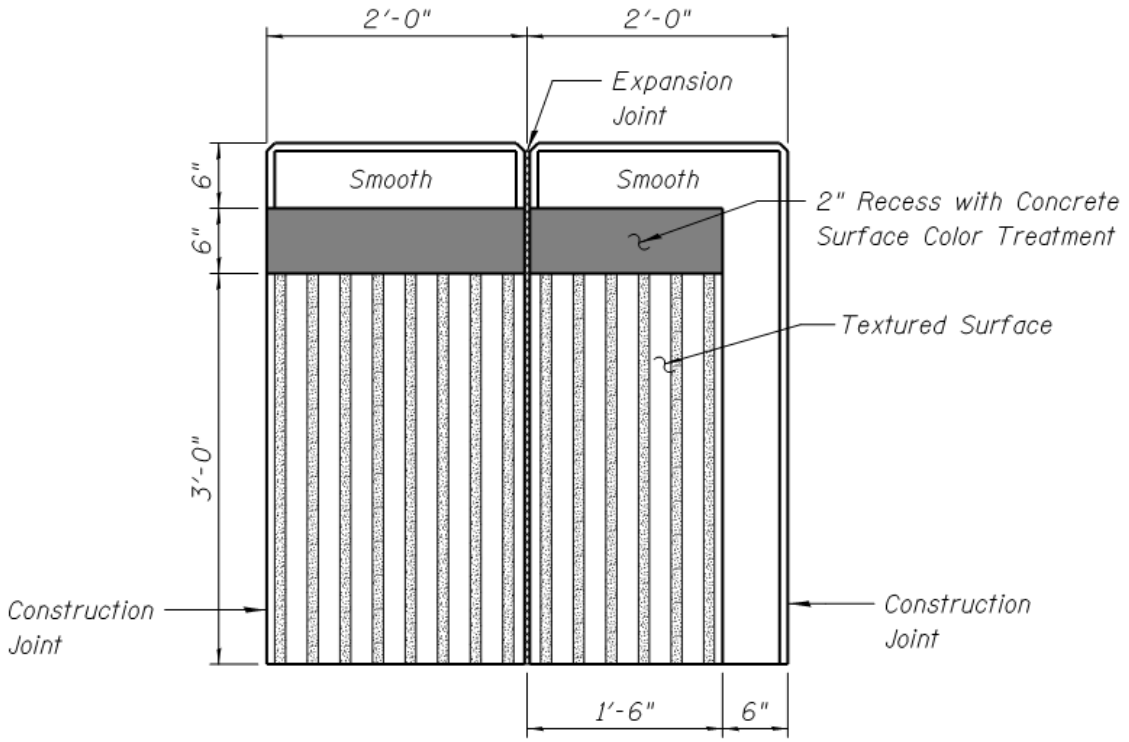


Exhibit A- Elevation View of Mockup Panel

Formliner Pattern: The form liner pattern shall be a large, vertical fractured fin. The uniform spacing between the raised, textured fins shall be not less than 2 in., nor more than 3 in. The maximum depth of the pattern shall be not less than 1.5 in., nor more than 2.0 in.

The following form liner manufacturers are known manufactures that provide a large fractured fin pattern form liner for use with the cast-in-place concrete units.

a. Fitzgerald Formliners, Santa Ana, CA, #16957 Harvard Fin
b. Scott System, Denver, CO, #101 Cleveland Flute
c. customrock, St. Paul, MN, #204 Fractured Fin

A pattern "Exhibit B" is provided below, illustrating the desired appearance.

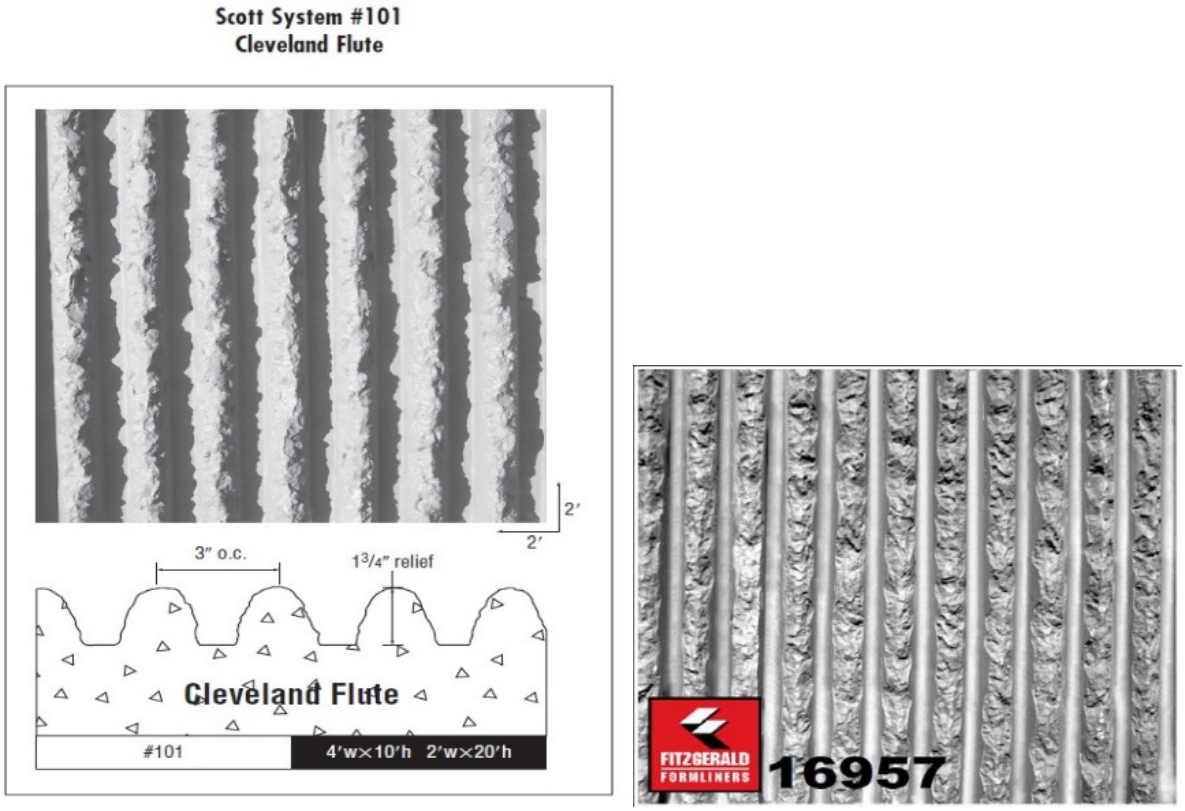


Exhibit B- Cast-in-place Pattern

Installation: Form liners shall be installed in accordance with the manufacturer's recommendations to achieve the highest quality concrete appearance possible. Form liners shall withstand concrete placement pressures without leakage causing physical or visual defects. A form release agent shall be applied to all surfaces of the liner which will come in contact with concrete as per the manufacturer's recommendations. After each use, liners shall be cleaned and made free of build-up prior to the next placement, and visually inspected for blemishes or tears. If necessary, the form liners shall be repaired in accordance with the manufacturer's recommendations. All form liner panels that will not perform as intended or are no longer repairable shall be replaced. An on-site inventory of each panel type shall be established based on the approved form liner shop drawings and anticipated useful life for each form liner type.

The liner shall be securely attached to the forms according to the manufacturer's recommendations. Liners shall be attached to each other with flush seams and seams filled as necessary to eliminate visible evidence of seams in cast concrete. Liner butt joints shall be blended into the pattern so as to create no visible vertical or horizontal seams or conspicuous form butt joint marks. Liner joints must fall within pattern joints or reveals. Finished textures shall be continuous without visual disruption and properly aligned over adjacent and multiple liner panels. Continuous or single liner panels shall be used where liner joints may interrupt the intended pattern. Panel remnants shall not be pieced together.

The Contractor shall coordinate concrete pours to prevent visible differences between individual pours or batches. Concrete pours shall be continuous between construction or expansion joints.

Adjust form liner to align concrete joints between fins of the textured surface. Construction joints may be shifted ±1 inch from plan location to achieve a continuous, uniformly spaced pattern. Wall ties shall be coordinated with the liner and form to achieve the least visible result. Liners shall be stripped between twelve (12) and twenty-four (24) hours as recommended by the manufacturer. Curing methods shall be compatible with the desired aesthetic result. Use of curing compounds will not be allowed.

The Contractor shall employ proper concrete placement and consolidation methods to ensure a high quality finish. A self-consolidating concrete is required in all wall facings where form liners are specified. The finished exposed formed concrete surfaces shall be free of visible vertical seams, horizontal seams, and butt joint marks. Grinding and chipping of finished formed surfaces shall be avoided.

Method of Measurement: This work will be measured for payment in place and the area computed in square feet.

Required adjustments or corrections needed to address mockup comments and the cost of additional mockups, if required, will not be paid for separately, but shall be included in respective pay item.

Basis of Payment: Form lined surfaces will be paid for at the contract unit price per square foot for FORM LINER TEXTURED SURFACE. The unit price bid shall include all labor and material costs associated with designing, developing, furnishing and installing form liners, forming, and disposal of forms, including satisfactory cast concrete mockup panel(s) to the requirements included herein.

FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE

Description: This work shall consist of furnishing, fabricating, transporting, erecting and painting steel structure or portions thereof for the structures listed below.

SN 084-9960 (UPRR over 5th Street) – BRIDGE NO. 1
SN 084-9961 (NSRR over 5th Street) – BRIDGE NO. 2
SN 084-9962 (UPRR over 6th Street) – BRIDGE NO. 3
SN 084-9963 (NSRR over 6th Street) – BRIDGE NO. 4

General: Structural steel shall be fabricated to comply with the requirements indicated on the design drawings. The furnishing and erecting of structural steel shall be in accordance with this specification and applicable sections of Section 505 of the Standard Specifications for Road and Bridge Construction.

Construction Requirements: All structural steel supplied shall comply with the applicable ASTM standards listed in the plans.

Furnishing and installing the bearings shall comply with Section 521 of the Standard Specifications for Road and Bridge Construction.

The preformed fabric bearing pads, for the bearings, approved for use shall be Shock Pad Style No. 15175 as manufactured by Alert Manufacturing and Supply Company, Chicago, Illinois, or FABREEKA Pads as manufactured by Fabreeka Products Company, 1190 Adams Street, Boston, Massachusetts, or SORBTEX Pads as manufactured by Voss Engineering, Inc., Chicago, Illinois.

Field Weld Inspection Requirements: The Contractor shall be responsible for visual inspection and Nondestructive Testing (NDT) according to the ANSI/ASSHTO/AWS D1.5 Bridge Welding Code and necessary correction of all deficiencies in material and workmanship. Fillet welds joining steel deck plates to the top flange of the primary members shall be magnetic particle tested (MT) according to the bridge welding code. Costs of this shall be included in the unit price for FURNISHING AND ERECTING STRUCTURAL STEEL of the respective bridge.

Method of Measurement: This work will be measured for payment according to Section 505.12 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment: This work will be paid for at the lump sum price for FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE NO. 1 and FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE NO. 2, FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE NO. 3 and FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE NO. 4. Price shall be payment in full for all labor, materials, and equipment necessary for furnishing, erecting, fabricating, transporting, and painting structural steel.

The cost for furnishing and installing the bearings and anchor bolts shall be included in the lump sum price for FURNISHING AND ERECTING STRUCTURAL STEEL BRIDGE, NO. 1, NO. 2, NO. 3 or NO. 4,

MEMBRANE WATERPROOFING, SPECIAL

Summary:

A. Section Includes:
   1. Bridge Membrane:
      a. Furnish labor, products and equipment required for the application of a seamless, spray elastomer coating system to suitable concrete, masonry or structural and miscellaneous metal surfaces.
      b. The membrane system shall be capable of sealing across the typical expansion joint system without the need to use a separate gland and bonding agents on the membrane.
         1) This will assure a continuous waterproofing membrane system across the entire deck.

2. Integrated Ballast Protection Mat:
   a. Furnish labor, products and equipment required for the application of a spray Integrated Ballast Mat system to suitable concrete, masonry or metal surfaces.
   b. The Integrated Ballast Mat system shall be a spray applied, 100 percent solids, fast cure, high build polymer system combined with proprietary SBR rubber blend.

3. Expansion Joints:
   a. Furnish labor, products and equipment required for the application of a preformed elastomeric expansion joint system to concrete and steel substrates as shown in the Plans and specified herein.
   b. The joint system shall be a preformed, and constructed using a two-component, fast cure, high build coating system, and shall be chemically compatible with the structure waterproofing membrane system, so that both the joint system and waterproofing membrane form a continuous waterproofing system.
   c. The joint system shall be secured to the concrete or steel structure using the same two-component, fast cure, high build coating system.

B. Related Specification Sections include but are not necessarily limited to:

1. IDOT Standard Specifications for Road and Bridge Construction

Quality Assurance:

A. Referenced Standards:

1. AREMA – American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering
   a. C-8.29.9.10, Cold Liquid-Applied Elastomeric Membrane (2005)

2. ASTM International (ASTM):
   a. C661, Standard Test Method for Indention Hardness of Elastomeric-Type Sealants by Means of a Durometer.
   b. C836, Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
   c. D57, Standard Test Methods for DC Resistance or Conductance of Insulating Materials.
   d. D412, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
   e. D624, Standard Specification for Tear Strength of Conventional

Vulcanized Rubber and Thermoplastic Elastomers.

f. D6378, Standard Test Method for Tensile Properties of Plastics.
g. D2240, Standard Test Method for Rubber Property – Durometer Hardness.
h. D4060, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
i. D4541, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
j. E96, Standard Test Method for Water Vapor Transmission of Materials.

3. The Society for Protective Coating (SSPC):
   a. SP 5, White Metal Blast Cleaning.
   b. SP 6, Commercial Blast Cleaning.
   c. SP 10, Near-White Metal Blast Cleaning.
   d. PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
   e. PA 9, Measurement of Dry Coating Thickness on Cementitious Substrates using Ultrasonic Gages.

4. The Society for Protective Coatings/NACE International (SSPC/NACE):
   a. SP 13/NACE No. 6, Surface Preparation of Concrete.

B. Quality Control Provisions:

1. Manufacturer Qualifications;
   a. Use manufacturer with minimum five years experience providing similar systems on railroad bridge decks.
   b. The manufacturer should be a primary blender with proprietary formulations, an Authorized Applicator training program, capacity to provide field technical services as required and manufacturer to issue warrantee to Owner.
   c. List a manufacturer's batch numbers for each unit of product used in Work.

C. Quality Assurance Provisions:

1. Schedule pre-installation conference to review installation schedule, shut down and restricted access procedures.
   a. Indicate Owner's Representative and Contractor's Superintendent.
2. Inspect surface preparation, application procedures, and review proposed dry film thickness measurements at each installation location.
3. The membrane system shall pass Crack Bridging Test according to ASTM C836 at 80 mils, or the membrane thickness applied shall be at least equal to the thickness used by the manufacturer for ASTM C836 testing.

4. The membrane system shall meet AREMA C-29.9.10 cold applied waterproofing membrane, and shall be applied at a minimum thickness of 80 mils, or the membrane thickness applied shall be at least equal to the thickness used by the manufacturer to pass the Crack Bridging Test according to ASTM C 836.
   a. Primer is required for all membrane applications.
5. The base waterproofing membrane for the integrated ballast protection mat shall pass Crack Bridging Test according to ASTM C836 at the thickness applied and shall be at least equal to the thickness used by the manufacturer for the ASTM C836 testing.
6. Joint membrane material shall be subjected to cyclic displacement testing.
   a. Cyclic displacement testing shall include tests at seismic displacements and velocities.

D. Quality Assurance Provisions:

1. Schedule pre-installation conference to review installation schedule, shut down and restricted access procedures.
   a. Indicate Owner's Representative and Contractor's Superintendent.
2. Inspect surface preparation, application procedures, and review proposed dry film thickness measurements at each installation location.
3. The membrane system shall pass Crack Bridging Test according to ASTM C836 at 80 mils, or the membrane thickness applied shall be at least equal to the thickness used by the manufacturer for ASTM C836 testing.
4. The membrane system shall meet AREMA C-29.9.10 cold applied waterproofing membrane, and shall be applied at a minimum thickness of 80 mils, or the membrane thickness applied shall be at least equal to the thickness used by the manufacturer to pass the Crack Bridging Test according to ASTM C 836.
   a. Primer is required for all membrane applications.
5. The base waterproofing membrane for the integrated ballast protection mat shall pass Crack Bridging Test according to ASTM C836 at the thickness applied and shall be at least equal to the thickness used by the manufacturer for the ASTM C836 testing.
6. Joint membrane material shall be subjected to cyclic displacement testing.
   a. Cyclic displacement testing shall include tests at seismic displacements and velocities.

Definitions:

A. Ballast: Rock or other material used to bed rail track ties.

B. Concrete Surface Preparation: SSPC-SP 13/NACE No. 6.

C. Metal Surface preparation: SSPC Metal Preparation Standards – SSPC-SP 5,

White Metal Blast; SP 6, Commercial Blast; and SP 10 Near White Blast.

Submittals:

A. Submit product data sheets and installation Specification.

B. Submit MSDS sheets for product used in the Work.

C. Submit substrate preparation details.

D. Submit sample of proposed membrane.
1. 4 in. (100 mm) square sample shall include color, texture, and thickness of proposed membrane system.

E. Submit qualifications of applicator at least three weeks prior to installation.

F. Submit spray schedule to Engineer at least two weeks prior to installation.

Project Conditions:

A. Environmental Requirements:
1. Install system when air and substrate temperature is above -20 DegF and substrate is +5 DegF above dew point and rising, or as required by manufacturer.

B. Personnel Requirements:
1. Provide protective clothing, gloves, and respirators for use by installers as required.

Approved Manufacturer:

A. Bridge Preservation:
686 South Adams
Kansas City, KS 66105
913-321-9000

B. Alternative products will be allowed but must meet this specification and/or be approved by the Engineer and railroad.

Materials:

A. Primer
1. Bridge deck concrete primer:
   a. 100 percent solids, two component polymer primer.
2. Bridge deck steel primer:
   a. Single component modified polymer primer.

B. Bridge deck membrane:

1. 100 percent solids, rapid curing elastomer.

a. Spray Installed.

Property, Cured Product	Test Method	Typical Value
Solids Content		100%
Shore Hardness	ASTM D 2240	50 D
Elongation	ASTM D 638	.250%
Tensile Strength, psi Tear	ASTM D 638	>2,000
Strength, pli, Die C	ASTM D 624	390
Tabor Abrasion, mg. Loss (1000 gm, 1000 rev, H-18)	ASTM D 4060	250
Moisture Vapor Transmission	ASTM E 96	<0.025 perms
Gel Time		<10 Seconds
Tack Free		<30 Seconds
Open to Light Traffic		1 Hour
Electrical Resistance	ASTM D 257-99	$\geq 2.0 \times 10^{13}$ ohm-cm
Crack Bridging Test (80 Mils - 1/8 IN Opening @ -15 DegF, 25 cycles)	ASTM C 836-00	Pass
Ballast Test (North American)	2 Million Cycles	No Damage

C. Integrated ballast mat:

1. Bridge deck top coat:

a. 100 percent solids, rapid curing elastomer.

b. Spray Installed.

Property, Cured Product	Test Method	Typical Value
Solids Content		100%
Shore Hardness	ASTM D 2240	<50 D
Elongation	ASTM D 638	>250%
Tensile Strength, psi	ASTM D 638	>2,000
Tear Strength, pli, Die C	ASTM D 624	>390
Tabor Abrasion, mg. Loss (1000 gm, 1000 rev, H-18)	ASTM D 4060	>250
Moisture Vapor Transmission	ASTM E 96	<0.025 perms
Gel Time		<90 Seconds
Tack Free		<2 Minutes
Ballast Loading		1 Hour
Ballast Impact Test, Loading 9.2 - 28.1 Kips, 2,000,000 Cycles		Pass

D. Preformed Joint Materials:

1. Expansion Joint:

a. Preformed elastomeric expansion joint system designed specifically for use on concrete and steel structures.

b. Designed to be used in conjunction with specified spray applied waterproofing membrane, to form a continuous monolithic membrane and joint system across the entire structure.

Properties	Test Method	Typical Value
Shore Hardness	ASTM D2240	<45D
Elongation	ASTM D638	>250%
Tensile Strength, psi	ASTM D638	>2,000
Tear Strength, pli, Die C	ASTM D624	>390

Operating Temperature Range	-40°F to 400°F
Movement Capability (of nominal joint size)	+50% and -50%

E. Coating and Joint Anchoring Materials:

1. Primer – bridge deck concrete primer.
   a. Plural component primer for porous substrates.

Properties	Test Method	Typical Value
Color		Amber/ White
Solids Content, %		89
Elongation		6%
Shore D Hardness	ASTM D2240	71
Tensile Strength, psi	ASTM D638	4,500
Adhesion to Substrate, psi, concrete	ASTM D 4541	>150
Viscosity, cps, neat, 770 F		25
VOC g/1	ASTM D 4541	2.3
Pot Life @ 770 F		5 min
Tack Free @ 770 F Final Cure @ 770 F		15 min
Tack Free @ 770 F Final Cure @ 770 F		20 min

F. Joint Adhesive:

1. Bridge deck joint adhesive.
   a. A slow setting, 100 percent solids, two-component polymer product.

Property, Cured Product	Test Method	Typical Value
Solids Content Shore		100%
Hardness	ASTM D 2240	<50 D
Elongation	ASTM D 638	>250%
Tensile Strength, psi	ASTM D 638	>2,000
Tear Strength, pli, Die C	ASTM D 624	390
Gel Time		>90 Seconds
Tack Free		>2 Minutes

G. Surface Activator:

1. Bridge deck membrane surface activator.
   a. Single component activating agent used to treat expansion joint surfaces prior to adhesive or over coating applications.
   b. May also be used with bridge deck membrane at coating overlap areas where coating has cured for more than 24 HRS.

Typical Physical Properties	Typical Value
Viscosity @ 25°C	N.D.
Appearance	Clear Liquid
Odor	Mild Sweet Odor
Specific Gravity @ 25°C	1.08
Flash Point	>200
Vapor Density (Air = 1)	N.D.

H. Joint Sealant (OPTIONAL):

1. Bridge deck joint sealant.

a. Single component, moisture-curing product which can be used as an optional double joint.

Typical Physical Properties		Typical Value
VOC Content		35.1 g/1
Shore Hardness	ASTM C 661	25A
Elongation	ASTM D 412	>600%
Tensile Strength, psi	ASTM D 412	400
100% Modulus, psi	ASTM D 412	44
Service Temperature		-22°F - 176°F
Specific Gravity		1.17
Tack-Free Time @ 73°F and 50% RH		90 - 150 minutes

Equipment:

A. Contractor shall utilize heated 1:1 plural component heated equipment capable of at least 100 DegF Delta T without recirculation and continuous discharge pressure of 2,500 psi.
   1. Pump shall have heated hose capable of maintaining 170 DegF Temperature at all times.
   2. Spray gun shall be impingement mix with either air or mechanical purge.
   3. Pump shall be capable of recording critical functions, including, product temperature of A component, B component, hose temperature, fluid pressure of A component, B component, number of pump cycles, and pump error codes.
   4. Contractor shall have a minimum of two spray guns in working order present at all times during the application.
   5. Backup parts for critical components such as feed pumps and proportioning cylinders shall be required.
   6. Contractor shall have pump, electrical generator, air compressor, supplies, spare parts and materials in a self-contained truck or trailer.

Execution

Inspection:

A. Assure all owner property construction requirements have been made and completed prior to commencement of primer and coatings installation.

B. Prior to application of primer inspect and approve substrate preparation.

Preparation:

A. Bridge Membrane and Integrated Ballast Mat:
   1. Provide clean, sound and dry surfaces.
   2. Sand blast metal surfaces to remove laitance and other contamination and provide suitable 3-5 mil blast profile.

3. Prepare metal surfaces to SSPS-SP 10 near White Blast or better.
4. Metal surfaces must be above dew point prior to application.
5. Repair spalls and other defects with Five Star Structural Concrete or other as acceptable to the Manufacturer.
6. Prepare concrete surfaces to SSPC SP 13/NACE No. 6 Surface Preparation of Concrete.
7. Concrete to have less than 5.0 percent moisture content prior to installation of primer.
8. Test prepared steel surface using Elcometer adhesion testing (ASTM D 4541).
   a. Minimum pull strength is 400 psi.
9. Test prepared concrete surface suing Elcometer adhesion testing (ASTM D 4541).
   a. Minimum pull strength is 150 psi or failure in the concrete substrate.
10. Mask protected surfaces prior to spray applications.
11. Erect spray curtains and partitions as required.

B. Expansion Joints: Joint fascia shall be of a uniform width and height.

Installation:

A. Bridge Membrane and Integrated Ballast Mat:
   1. Mix all products in accordance with manufacturer's written instructions.
   2. Steel Surfaces:
      a. Spray or roll primer at 600 – 800 SR/GAL over surfaces to receive coating system.
      b. Allow primer to go tack free before spraying Bridge Deck Membrane.
      c. Primer is not necessary provided steel surface is prepared to 5 mil profile or better and no rust present.
   3. Concrete Surfaces:
      a. Spray, squeegee or roll concrete primer at 130-200 SQ FT/GAL over surfaces to receive coating system.
      b. Allow primer to go tack free before spraying Bridge Deck Membrane.
   4. Concrete and masonry surfaces must have less than 5.0 percent moisture prior to installation.
   5. Metal surfaces must be dry, rust-free, and have proper SSPC profile and preparation.
   6. Reapply primer if set more than twenty four (24) HRS.
   7. Spray base coat over primed deck surfaces at 20 SQ FT/GAL for a total thickness of 80 mils on all surfaces.
   8. Retouch coat by filling low spots or areas with inadequate thickness.
   9. Spray additional base coats to achieve specified system thickness.
      a. Retouch as required.
   10. Spray membrane over primed surfaces at 20 SF/GAL (80 mils) by using a

Graco Reactor pumping system or other approved by the manufacturer.

11. Apply a base coat of Bridge Deck Membrane at 80 mils, followed by SBR rubber aggregate broadcast into Bridge Deck Top Coat in two lifts applied at 40 mils per lift with rubber aggregate broadcast.
    a. Apply a third 40 mil lift to seal rubber aggregate particles.
12. Apply immediately broadcast rubber aggregate at 0.25 to 0.35 LBS/FT^2 to achieve 100 percent coverage rate.
    a. Remove excess aggregate after initial set and repeat process a second time, followed by a 40 mil seal coat to lock rubber aggregate.
13. Total thickness of Integrated Ballast Mat system is 1/4 IN (250 mils, 6.3 mm) on all surfaces.

B. Expansion Joints:

1. Concrete and steel structures to receive joint shall be free of surface defects such as air voids, fins, form-release agents and honeycombs, scaling, rust and shall be uniform in width.
2. Apply primer over concrete or masonry surfaces to receive joint system.
    a. Surfaces to receive adhesive membrane must be surface dry prior to application of primer and coating.
3. Reapply primer if set more than 24 HRS.
4. Assemble pre-molded joint sections, cutting joint sections to allow a minimum 4 in. overlap between sections.
5. Surfaces to be adhered and overlap sections must be treated with Bridge Preservation Activator 15 minutes prior to application.
6. Spray applied at 60 to 80 mils to adhere both the joint flanges and sealjoint overlaps.
7. Spray coating over primed surfaces at a rate of 60 to 80 mils, and immediately place joint flaps or overlap sections into the liquid material.
8. For coating and joint anchoring materials, apply uniform pressure to freshly sprayed areas to insure positive contact between joint sections and coating material.
9. For coating and joint anchoring materials, apply by brush, spray, or roller to clean, dry, properly prepared surfaces at 160-200 SF/GAL depending on substrate porosity.
    a. Allow primer to dry to the touch before overcoating.
10. Inspect joint flaps and overlap sections to insure that all areas are properly adhered and sealed.
    a. Retouch areas where additional coating is required to insure a watertight seal.
11. On ballasted decks, the joint system shall have a minimum 3/8 in. galvanized steel plate with a minimum 4 in. overlap on each side of the joint fascia, and shall be held in place by imbedding in a liquid mastic or anchored on one side of the joint header using mechanical fasteners.

C. Coating to Joint Overlap Installation:

1. Apply primer over concrete or masonry surfaces to receive coating system.

a. Surfaces must be surface dry prior to application of primer and coating.
2. Reapply primer if set more than 24 HRS.
3. Surfaces to be over coated must be treated with Bridge Deck Membrane Surface Activator 15 minutes prior to application.
4. Spray coating over treated joint surfaces and primed concrete surfaces at authorized rate.
5. Spray additional base coats to achieve specified base coat thickness.
   a. Retouch as required.

D. Double Joint:
1. Install closed cell backer rod in joint opening (if not utilizing optional Double Joint).
2. Install 3/8 in. galvanized steel plate over finished joint system.
   a. Steel plate provided by others.
   b. Secure to the substrate by mastic caulking or by securing one side using mechanical fasteners.
   c. Apply a sealant in the anchor holes prior to inserting mechanical fasteners to insure a proper seal.

Field Quality Control:

A. Perform dry film thickness tests in accordance with SSPC-PA 2 Measurement of Dry Coating Thickness or SSPC-PA 9, Measurement of Dry Coating Thickness on Cementitious Substrates Using Ultrasonic Gages.

B. Use magnetic or ultrasonic test equipment, destructive testing, or stroke per gallon method of assuring proper film thickness.
1. Spray equipment is calibrated and tested to a stroke count per gallon of product sprayed.
   a. This is suitable for thickness assurance on most project.
2. Ultrasonic testing is usually accurate to +/-5 percent.
3. Repair destructive testing areas by respraying or filling with special two component gun grade material provided by manufacturer.

C. Other components of the system may be wet film tested for thickness.

D. Maintain spray and other installation equipment in proper operating condition throughout installation.
1. Provide reserve equipment as required.

E. Ensure that joint overlaps are a minimum of 4 in. and are properly sealed revealing no pinholes of defects in the joint overlap.

Cleaning:

A. Clean spills and oversprays as they occur.

B. Consult manufacturer's literature and MSDS sheets for proper cleaning products and methods.

C. High pressure water clean any liner of covering material used to contain overspray and other debris.

D. Remove drums and waste material.

E. Clean site to Owner's satisfaction prior to final acceptance.

Protection:

A. Protect installed work prior to acceptance by owner.

B. Provide protective clothing, gloves, and respirators for use by installers as required.

Method of Measurement and Basis of Payment:

Method of Measurement:

A. The elastomeric cold spray applied waterproofing will be measured in square feet of a horizontal surface area of deck finished and in place. Measurement will be based on the horizontal distance between the face of curbs and the horizontal length of the membrane installed. Membrane waterproofing applied to the curb and backwall faces will not be measured for payment but shall be included in the unit price for MEMBRANE WATERPROOFING (SPECIAL).

Basis of Payment:

A. This work will be paid for at the contract unit price per square feet for MEMBRANE WATERPROOFING (SPECIAL) which price will be payment in full for completing the work according to these specifications.

SHOP DRAWING SUBMITTAL (STRUCTURAL ITEMS)

Description: This work shall consist of the submittal of shop drawings to the Engineer for review.

General: Shop drawing submittal shall be in accordance with this specification and Sections 105, 504, 505, 509, and 1042 of the Standard Specifications for Road and Bridge Construction.

Construction Requirements: The following items will require a shop drawing submittal to the Engineer for review.

- Structural Steel, Bearings and Anchor Bolts *
- Steel Railing (Special)
- Membrane Waterproofing (Special)*

* The Engineer will forward to the railroad agency for review.

Basis of Payment: This work will not be paid for separately but shall be included in the cost of the respective item.

STEEL RAILING (SPECIAL)

Description: This work shall consist of furnishing all labor, materials, and equipment for the fabrication and erection of the steel railing.

General: The railing shall be fabricated to comply with the requirements indicated on the design drawings. The railing shall be in accordance with this specification and applicable sections of Section 509 of the Standard Specifications for Road and Bridge Construction.

Construction Requirements: The contractor shall provide all necessary equipment for the installation of the steel railing.

All members supplied shall comply with the applicable ASTM standards.
HSS – ASTM A500, Grade B (46 ksi) (cold formed)
Plate – ASTM A36/A36M
Stainless Steel Strand and Fittings – ASTM A316
Galvanized Steel Anchor Rods – ASTM F1554
Washers for Steel Anchor Rods – ASTM F844 (Standard) or F436 (Hardened)
Nuts for Steel Anchor Rods – ASTM A583 Grade A

All railing components, with the exception of the stainless steel parts, shall be galvanized according to Section 509.05 of the Standard Specifications for Road and Bridge Construction and general notes shown on the plans. Galvanizing will not be measured for payment but included in the unit cost of this pay item.

Stainless steel strands and fittings shall be isolated from the galvanized posts and plates to prevent galvanic corrosion due to dissimilar materials.

Welding procedures and personnel shall be qualified according to AWS D1.1/D1.1M, "Structural Welding Code – Steel."

Shop drawings shall include plans, elevations, sections, and detail views. Detail the posts, rails, strands and fittings. Indicate post and panel types, sizes, orientations and locations. Indicate critical dimensions from adjacent reveals, rustications and joints.

Indicate welded connections by AWS standard symbols. Detail loose and cast-in hardware, inserts, connections, and joints, including accessories.

Indicate locations and details of anchorage devices to be embedded in other construction. Coordinate with other trades to embed anchorages in other construction

Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 in. unless otherwise indicated. Remove sharp or rough areas on exposed surfaces. Provide a weep hole on the back face at the bottom of every HSS post.
Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 1 welds: no evidence of a welded joint.

Intermediate tensioning posts shall be set at maximum of 70 ft spacing.

After threading strands through intermediate posts, hang a 20 pound weight at midpoint of the maximum post spacing on each strand prior to applying tension. Tension each strand to remove the sag to a maximum of 5/8 in.

Set railings accurately in location, alignment, and elevation. Set retaining wall posts plumb within a tolerance of 1/16 in. in 3 ft. Use post-installed chemical anchors for fastening the base plates to the concrete.

Method of Measurement: This work will be measured for payment in place in feet. The length measured will be the overall length along the top longitudinal railing member through all posts and small gaps.

Basis of Payment: This work will be paid for at the contract unit price per foot for STEEL RAILING (SPECIAL). Price shall be payment in full for all labor, materials, and equipment necessary to erect the steel railing.

ELECTRICAL

CONTRACT GUARANTEE

The Contractor shall guarantee all electrical equipment, apparatus, materials, and workmanship provided under the contract for a period of six (6) months after the date of final inspection according to Article 801.14.

All instruction sheets required to be furnished by the manufacturer for materials and supplies and for operations shall be delivered to the Engineer prior to the acceptance of the project, with the following warranties and guarantees:

1. The manufacturer's standard written warranty for each piece of electrical equipment or apparatus furnished under the contract.

2. The Contractor's written guarantee that, for a period of six (6) months after the date of final inspection of the project, all necessary repairs to or replacement of said warranted equipment, or apparatus shall be made by the Contractor at no cost to the Department.

3. The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of 6 months after final inspection of the project.

LOCATION OF UNDERGROUND ELECTRICAL FACILITIES

Description: The Contractor shall be responsible for locating existing City of Springfield and CWLP facilities prior to performing any work. The Contractor shall also be liable for any damage to facilities resulting from inaccurate locating.

The Contractor may obtain, on request, plans for the existing electrical facilities from the agencies listed.

The Contractor shall also be responsible for locating and providing protection for facilities during all phases of construction. If at any time, the facilities are damaged, the Contractor shall immediately notify the Engineer and make all necessary arrangements for repair to the satisfaction of the Engineer.

Basis of Payment: This work will not be paid for separately but shall be included in the contract bid prices.

LUMINAIRE, DECORATIVE ELECTROLUMINESCENT LIGHT TAPE

Description: This work shall consist of furnishing all equipment, material and labor necessary to properly install the proposed luminaires at locations as indicated on the plans.

Materials: The materials shall be in accordance with Article 821.02 of the "Standard Specifications", plan details, and the following:

Luminaires shall have an Electroluminescent light engine. Luminaires will be mounted as detailed on the plans. The fixture shall be catalog number LT200-EXT-CLASSIC NATURAL BLUE-LENGTH as shown on the plans as manufactured by Electro- LuminiX Lighting Corp.

The fixture shall have the following salient characteristics:

- Dimming comes Standard
- Energy Efficient
- UV and Moisture Resistant
- Available in Lengths up to 300 ft
- Highly Visible through smoke and fog
- Thin profile
- Generates No Heat and is cool to the touch
- 0.25 in. clear barrier encapsulation envelops the light engine on all four (4) sides
- 40,000 hour expected life
- Three (3) brightness settings
- 2 in. minimum width of lit area

Included with this pay item provide the power supply and power connector. Provide stainless steel NEMA 4X junction boxes to protect the power supply and power connector.

General: The work shall be completed in accordance with Section 821 of the "Standard Specifications", plan details, and as modified herein.

Basis of Payment: The work will be paid for at the contract unit price per foot for LUMINAIRE, DECORATIVE ELECTROLUMINESCENT LIGHT TAPE. The unit price shall include the cost of all materials, equipment and labor required to furnish and install the luminaires.

LUMINAIRE, LED, SPECIAL

Description: This work shall consist of furnishing all equipment, material and labor necessary to properly install the proposed luminaires at locations as indicated on the plans.

Materials: The materials shall be in accordance with Article 821.02 of the "Standard Specifications", plan details, and the following:

Luminaires shall have a 40 watt LED light engine. Luminaires will be wall mounted in the

recessed notch as detailed on the drawings. The fixture shall be catalog number 24320 LED K4-4000K Color, W/85CRI, SLV as manufactured by Bega.

The fixture shall have the following salient characteristics:

- Housing shall have die-cast aluminum end caps welded to an aluminum extrusion
- The welds are continuous end ground flat to provide a water tight housing
- Die castings are marine grade, copper free A360.0 aluminum alloy
- Fully gasketed with a molded silicone gasket
- ¼ in. tempered white glass lens
- LED light source to meet LM-70 requirements for lumen maintenance and life
- UL listed for wet location and 85 PSI hosedown
- IP-65 Rated
- 25 Year Warranty

As part of this pay item provide the necessary junction boxes within structure to facilitate routing the raceway from the light fixtures to the new lighting controller.

General: The work shall be completed in accordance with Section 821 of the "Standard Specifications," plan details, and as modified herein.

Basis of Payment: The work will be paid for at the contract unit price per each for LUMINAIRE, LED, SPECIAL. The unit price shall include the cost of all materials, equipment and labor required to furnish and install the luminaires.

UNDERPASS LUMINAIRE (SPECIAL)

Description: This work shall consist of furnishing all equipment, material and labor necessary to properly install the proposed luminaires at locations indicated on the plans.

Materials: The materials shall be in accordance with Article 821.02 of the "Standard Specifications", plan details, and the following:

Luminaires shall have a 25 watt LED light engine. Luminaires will be suspended from the bridge above as detailed in the drawings. The fixture shall be catalog number DSXPG LED, 20c 350, 40k TSW MVOH lighting distribution as manufactured by Lithonia Lighting.

The fixture shall have the following salient characteristics:

- Two piece die-cast aluminum housing
- Integral heat sink fins
- Fully gasketed with molded silicone gasket
- LED light source to meet LM-70 requirements for lumen maintenance and life

- Electronic driver with a power factor > 90% and a THD of < 20%, 2.5kv surge rating
- UL listed for wet location
- IP-65 Rated

Power supply to the underside of the bridge shall be provided under other items of work. The underpass luminaire shall include a stainless steel junction box on the power supply conduit located along the edge of the bridge and all conduit, fittings, attachment hardware, cable, and stainless steel junction boxes needed to complete the circuit to the luminaire.

General: The work shall be completed in accordance with Section 821 of the "Standard Specifications", plan details, and as modified herein.

Basis of Payment: The work will be paid for at the contract unit price per each for UNDERPASS LUMINAIRE (SPECIAL). The unit price shall include the cost of all materials, equipment and labor required to furnish and install the luminaires.

STORM WATER POLLUTION PREVENTION PLAN

See following pages.

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section
FAP 666 ALT (5th); FAP 666 (6th)	Business 55	109 VB, (110) VB-5
Project Number	**County**	**Contract Number**
MFYW (203)	Sangamon	93733

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues 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.

Print Name	Title	Agency
Nathan Bottom	City Engineer	City of Springfield

Signature	Date
Nathan Bottom	3/6/19

I. Site Description

A. Provide a description of the project location (include latitude and longitude):

New railroad structures at the 5th and 6th Street underpasses. Railroad grading, drainage and trackwork along the Norfolk Southern corridor from Ash Street to north of Stanford Avenue. LAT 39 degrees 46' 24" LONG 89 degrees 30' 54"

B. Provide a description of the construction activity which is subject of this plan:

The project consists of constructing two new railroad structures at both the 5th Street and 6th Street underpasses. The intersection of Iles Avenue and Burton Drive will also be realigned. A new wider rail corridor will be constructed from south of Ash Street to north of Stanford Avenue. The project is a Usable Segment of the Springfield Rail Improvements Project.

C. Provide the estimated duration of this project:

24 months

D. The total area of the construction site is estimated to be 20 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 20 acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

Rational "C" = 0.6

F. ~~List all soils found within project boundaries. Include map unit name, slope information and erosivity:~~

Using the Web Soil Survey website (http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) the following soil types were identified:

M.U.S. Description
43A Ipava silt loam, 0 to 2% slopes, a somewhat poorly drained soil with moderately high permeability

68A Sable silt clay loam, 0 to 2% slopes, a poorly drained soil with moderately high to high permeability

533 Urban Land

See Attachment A for Soils Mat.

G. Provide an aerial extent of wetland acreage at the site:

Based on the wetlands reconnaissance survey and the NWI mapping, this project does not affect any wetlands regulated under the Clean Water Act of 1972.

H. Provide a description of potentially erosive areas associated with this project:

Areas of exposed dirt from excavation operations.

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 scopes, etc.):

Construction along NSRR

Preliminary grading stage: Soil disturbing activities will consist of trenching for utilities, embankment construction and placing subballast east of the existing tracks.

Final Grading Stage: Same as for preliminary grading except on the west side of the proposed track.

Construction along 5th Street, 6th Street, Princeton Avenue, Iles Avenue and Burton Street: Soil disturbing activities will consist of utility trenching, and earth excavation, drilled shafts and retaining wall construction.

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 off site 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:

City of Springfield

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.

City of Springfield
Sangamon County Water Reclamation District

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

The receiving waters for the project are Sugar Creek which outlets to the Sangamon River.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

There are no protected areas within or adjacent to the job site.

O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- ☐ Floodplain
- ☐ Wetland Riparian
- ☐ Threatened and Endangered Species
- ☐ Historic Preservation
- ☐ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- ☐ Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
- ☐ Applicable Federal, Tribal, State or Local Programs
- ☐ Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

   a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

   b. 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:

   c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

   d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

2. TMDL (fill out this section if checked above)

   a. The name(s) of the listed water body:

   b. 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:

   c. 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 the allocation:

P. The following pollutants of concern will be associated with this construction project:

- ☒ Soil Sediment
- ☒ Concrete
- ☒ Concrete Truck waste
- ☐ Concrete Curing Compounds
- ☐ Solid waste Debris
- ☐ Paints
- ☐ Solvents
- ☐ Fertilizers / Pesticides
- ☐ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- ☐ Antifreeze / Coolants
- ☒ Waste water from cleaning construction equipment
- ☐ Other (specify) _____
- ☐ Other (specify) _____
- ☐ Other (specify) _____
- ☐ Other (specify) _____
- ☐ 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 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:

☐ Preservation of Mature Vegetation	☒ Erosion Control Blanket / Mulching
☐ Vegetated Buffer Strips	☐ Sodding
☐ Protection of Trees	☐ Geotextiles
☒ Temporary Erosion Control Seeding	☐ Other (specify) _____
☐ Temporary Turf (Seeding, Class 7)	☐ Other (specify) _____
☐ Temporary Mulching	☐ Other (specify) _____
☒ Permanent Seeding	☐ Other (specify) _____

Describe how the stabilization practices listed above will be utilized during construction:

Permanent seeding will be placed on bare slopes to prevent erosion. Erosion control blankets will be placed after seeding on 2:1 slopes.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Erosion control blankets will help prevent erosion until vegetation is established.

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.

The following stabilization practices will be used for this project:

☒ Perimeter Erosion Barrier	☐ Rock Outlet Protection
☒ Temporary Ditch Check	☐ Riprap

- [x] Storm Drain Inlet Protection
- [ ] Sediment Trap
- [ ] Temporary Pipe Slope Drain
- [ ] Temporary Sediment Basin
- [ ] Temporary Stream Crossing
- [ ] Stabilized Construction Exits
- [ ] Turf Reinforcement Mats
- [ ] Permanent Check Dams
- [ ] Permanent Sediment Basin
- [ ] Aggregate Ditch
- [ ] Paved Ditch
- [ ] Gabions
- [ ] Slope Mattress
- [ ] Retaining Walls
- [ ] Slope Walls
- [ ] Concrete Revetment Mats
- [ ] Level Spreaders
- [ ] Other (specify) _____
- [ ] Other (specify) _____
- [ ] Other (specify) _____
- [ ] Other (specify) _____
- [ ] Other (specify) _____

Describe how the structural practices listed above will be utilized during construction:

The storm drain inlet protection will be placed at all the inlets and manholes along the rail corridor with open grates to prevent sediment and silt from construction operations from entering the storm sewer system. The inlet protection will consist of inlets filters. These inlet filters should be checked on a regular basis and maintained as necessary to ensure the proper function of each filter.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Once construction operations are completed and vegetation is sufficiently established to prevent erosion, the storm drain inlet filters can be removed.

The perimeter erosion barrier can be removed after exposed surfaces have been constructed to their final condition and all vegetation is sufficiently established to prevent sediment from flowing into the adjacent parking lots and roadways.

D. **Treatment Chemicals**

Will polymer flocculents or treatment chemicals be utilized on this project: ☐ Yes ☐ No

If yes above, identify where and how polymer flocculents or treatment chemicals will be utilized on this project.

E. **Permanent 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 on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment 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:

The proposed storm water management system includes storm sewer and underdrains. Proposed storm sewer will be placed along the curb and gutter for drainage in the roadway, adjacent slopes, and sidewalks. The proposed drainage system will be designed to regulate the amount of additional flow into the existing drainage system and to avoid adverse impacts to the current functionality.

Vehicle entrances and exits must be constructed and maintained to prevent tracking of sediments on opened roadways. The Contractor will provide the resident engineer with a written plan identifying the locations of the entrances and exits and the procedures that will be used to construct and maintain them.

Stockpiles shall be maintained to eliminate pollution of storm water runoff. Runoff from stockpiles containing materials such as aggregates, aggregate subbase, topsoil, fill material, or other materials will be stored for construction can be contained using BMPs such as perimeter erosion barrier, temporary mulch, plastic covers, or storm drain inlet protection. The contractor will provide the resident engineer a written plan of the procedures to be used in addition to how they will be maintained.

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 Illinois Environmental Protection Agency'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:

IDOT Standard Specifications, Supplemental Specifications and Recurring Special Provisions

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 construction entrances/exits)
- 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 operations
- Time frame for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
- Permanent stabilization activities for each area of the project

2. 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:
    - 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 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 to the Contractor for the practices associated with this project. 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 Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

IV. Inspections

Illinois Department of Transportation

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 Contractors/subcontractor completing this form.

Route	Marked Route	Section
FAP 666 ALT (5th); FAP 666 (6th)	Sangamon	109 VB, (110) VB-5
Project Number	**County**	**Contract Number**
MFYW(203)	Sangamon	93733

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. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, 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

Print Name	Signature
Title	**Date**
Name of Firm	**Telephone**
Street Address	**City/State/Zip**

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

Qualified personnel shall inspect disturbed areas of the construction site 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 e-mail at: 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

Additional Inspections Required:

N/A

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.

Soil Map—Sangamon County, Illinois
(South Grand Ave- S. 6th St Rail Corridor)

Map Unit Legend

Sangamon County, Illinois (IL167)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
43A	Ipava silt loam, 0 to 2 percent slopes	117.2	34.6%
68A	Sable silty clay loam, 0 to 2 percent slopes	40.2	11.9%
86B	Osco silt loam, 2 to 5 percent slopes	19.3	5.7%
533	Urban land	162.4	47.9%
Totals for Area of Interest		**339.0**	**100.0%**

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION FOR INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

City of Springfield

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

BUILDING REMOVAL - CASE I (NON-FRIABLE AND FRIABLE ASBESTOS ABATEMENT) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

BUILDING REMOVAL: This work shall consist of the removal and disposal of 7 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
1	SR0192	2264 S 6th Street	One-story brick and concrete block commercial building on concrete slab with low-pitch EPDM roof.
6	SR0200	2406 S 5th Street	One-story wood-framed residence on concrete slab with gabled shingle roof.
8	SR0201	2403 S 5th Street	One-story brick residence on full basement with shingled hip roof.
13	SR0205	2432 S 4th Street	One-story brick residence on full basement with shingled hip roof.
16	SR0208	2409 S 5th Street	One and one-half story wood-framed residence on full basement with gabled shingle roof.
18	SR0209	2413 S 5th Street	One and one-half story wood-framed residence on full basement with gabled shingle roof.
26	SR0222	2513 Burton Drive	One-story wood frame and brick residence on crawl space with gabled shingle roof.

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR
HIGHWAY CONSTRUCTION
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

All friable asbestos shall be removed from the building(s) prior to demolition. The Contractor has the option of removing the non-friable asbestos prior to demolition or demolishing the building(s) with the non-friable asbestos in place. Refer to the Special Provisions titled "Asbestos Abatement (General Conditions)", "Removal and Disposal of Friable Asbestos Building No. 1, 6, 8, 13, 16, 18, 26," and "Removal and Disposal of Non-Friable Asbestos Building No. 1, 6, 8, 13, 16, 18, 26, " contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all asbestos, friable and non-friable, is removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Three separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 1, 6, 8, 13, 16, 18, 26.

2. REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 6, 8, 13, 16, 18, 26.

3. REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1, 6, 8, 13, 16, 18, 26.

The Contractor shall have two options available for the removal and disposal of the non-friable asbestos.

The pay item for removal and disposal of non-friable asbestos will not be deleted regardless of the option chosen by the Contractor.

ASBESTOS ABATEMENT (GENERAL CONDITIONS): This work consists of the removal and disposal of friable and non-friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), the Special Provisions for "Removal and Disposal of Friable Asbestos, Building No. 1, 6, 8, 13, 16, 18, 26," and "Removal and Disposal of Non-Friable Asbestos, Building No. 1, 6, 8, 13, 16, 18, 26," as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages _____ thru _____. Also refer to the Materials Description Table on page _____ for a brief description and location of the various materials. Also included is a Materials Quantities Table on page ____. This table states whether the ACM is friable or non-friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of friable asbestos, and non-friable asbestos if done prior to demolition, shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page _____, to the Engineer for the disposal of all ACM wastes.

Permits: The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of these permits shall be sent to the district office and the Engineer.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition if they are done as separate operations.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276
(217)785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer, except where otherwise specified herein.

B. Submittals that shall be made prior to start of work:

1. Submittals required under Asbestos Abatement Experience.

2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.

3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.

4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.

5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).

6. Submit a list of penalties, including liquidated damages, incurred through non-compliance with asbestos abatement project specifications.

7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.

8. Submit proof of written notification and compliance with Paragraph "Notifications".

C. Submittals that shall be made upon completion of abatement work:

1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;

2. Submit daily copies of work site entry logbooks with information on worker and visitor access;

3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and

4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

Certificate of Insurance:

A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.

B. The Contractor shall document current Workmen's Compensation Insurance coverage.

C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement Experience:

A. Company Experience: Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.

B. Personnel Experience:

1. For Superintendent, the Contractor shall supply:

a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.

b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.

2. For workers involved in the removal of friable and non-friable asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

A. Personal Monitoring: All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits shall be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.

B. Contained Work Areas for Removal of Friable Asbestos: Area samples shall be collected for the department within the work area daily. A minimum of one sample shall be taken outside of the abatement area removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.

C. Interior Non-Friable Asbestos-Containing Materials: The Contractor shall perform personal air monitoring during removal of all nonfriable Transite and floor tile removal

operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.

D. Exterior Non-Friable Asbestos-Containing Materials: The Contractor shall perform personal air monitoring during removal of all nonfriable cementitious panels, piping, roofing felts, and built up roofing materials that contain asbestos.

The Contractor shall conduct down wind area sampling to monitor airborne fiber levels at a frequency of no less than three per day.

E. Air Monitoring Professional

1. All air sampling shall be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".

2. Air sampling shall be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING No.1, 6, 8, 13, 16, 18, 26.

This work consists of the removal and disposal of all friable asbestos from the building(s) prior to demolition. The work shall be done according to the Special Provision titled "Asbestos Abatement (General Conditions)" and as outlined herein.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 1, 6, 8, 13, 16, 18, 26. , as shown, which price shall include furnishing all labor, materials, equipment and services required to remove and dispose of the friable asbestos.

REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO.1, 6, 8, 13, 16, 18, 26.

The Contractor has the option of removing and disposing of the non-friable asbestos prior to demolition of the building(s) or demolishing the building(s) with the non-friable asbestos in place.

Option #1 - If the Contractor chooses to remove all non-friable asbestos prior to demolition, the work shall be done according to the Special Provision titled "Asbestos Abatement (General Conditions)".

Option #2 - If the Contractor chooses to demolish the building(s) with the non-friable asbestos in place, the following provisions shall apply:

1. Continuously wet all non-friable ACM and other building debris with water during demolition.

2. Dispose of all demolition debris as asbestos containing material by placing it in lined, covered transport haulers and placing it in an approved landfill.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1, 6, 8, 13, 16, 18, 26, as shown.

The cost for this work shall be determined as follows:

Option #1 - Actual cost of removal and disposal of non-friable asbestos.

Option #2 - The difference in cost between removing and disposing of the building if all non-friable asbestos is left in place and removing and disposing of the building assuming all non-friable asbestos is removed prior to demolition.

The cost of removing and disposing of the building(s), assuming all asbestos, friable and non-friable is removed first, shall be represented by the pay item "BUILDING REMOVAL NO. 1, 6, 8, 13, 16, 18, 26."

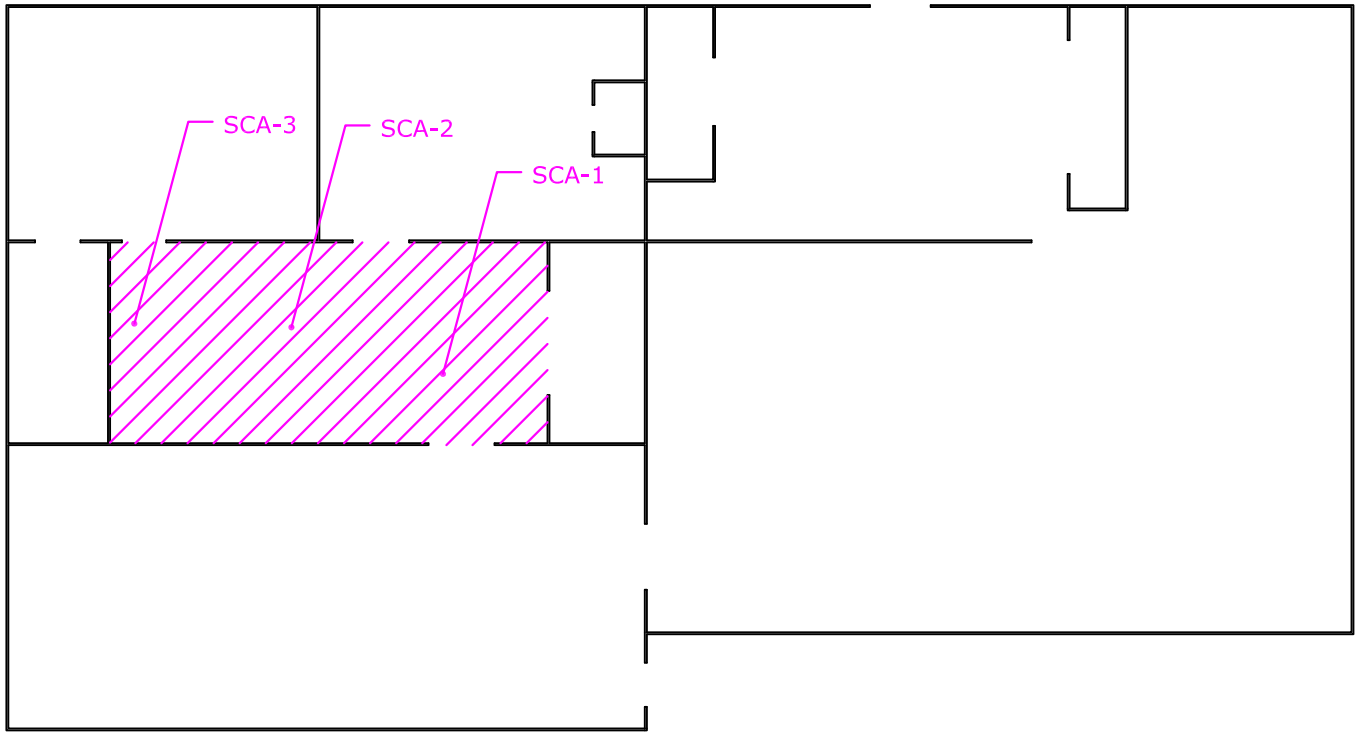
Regardless of the option chosen by the Contractor, this pay item will not be deleted, nor will the pay item BUILDING REMOVAL NO. 1, 6, 8, 13, 16, 18, 26, be deleted.

Appendix A

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY	
	HOMOGENEOUS AREA - SCA TEXTURE ON DRYWALL

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 114 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2406 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-6

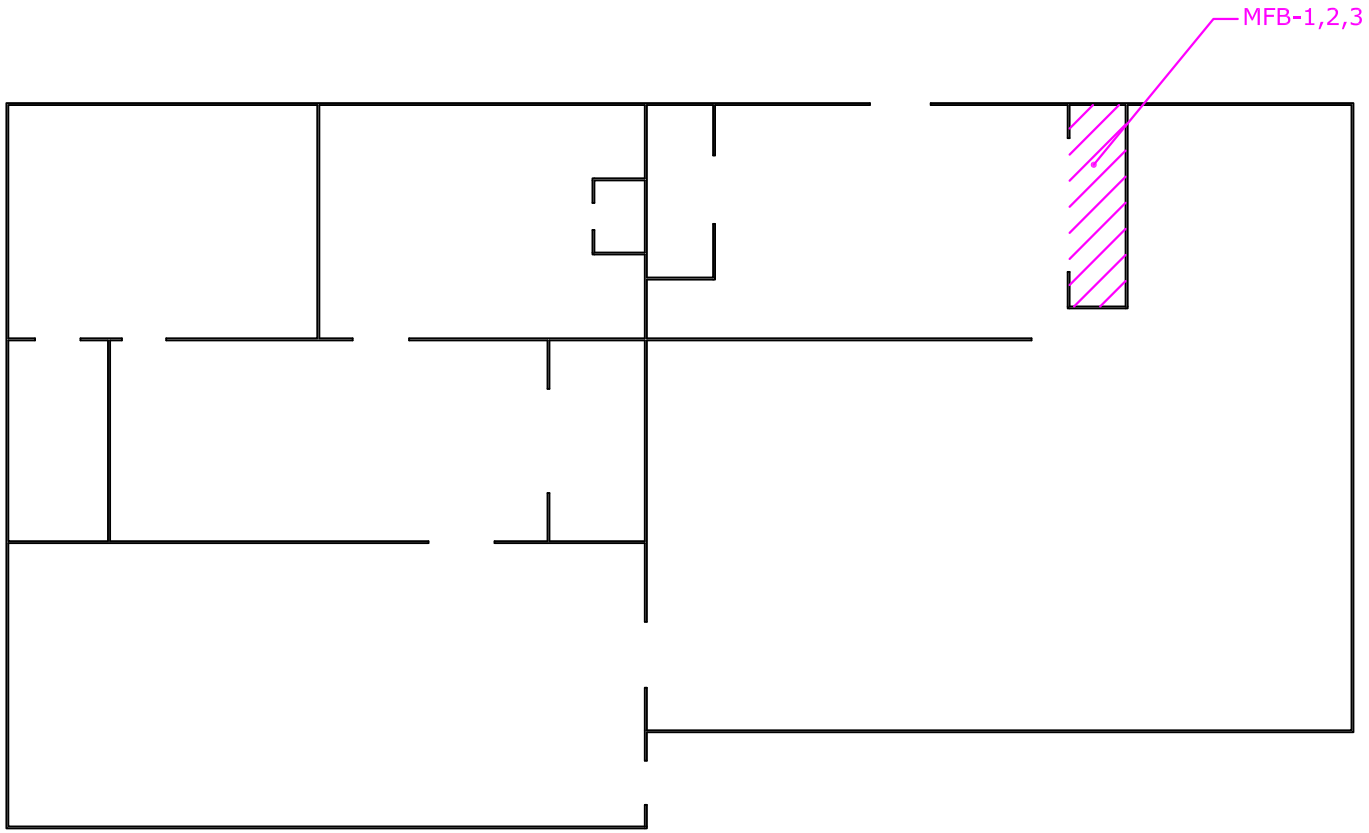
Date: 01/28/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY
HOMOGENEOUS AREA - MFB LINOLEUM, RED AND TAN

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 115 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2406 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-6

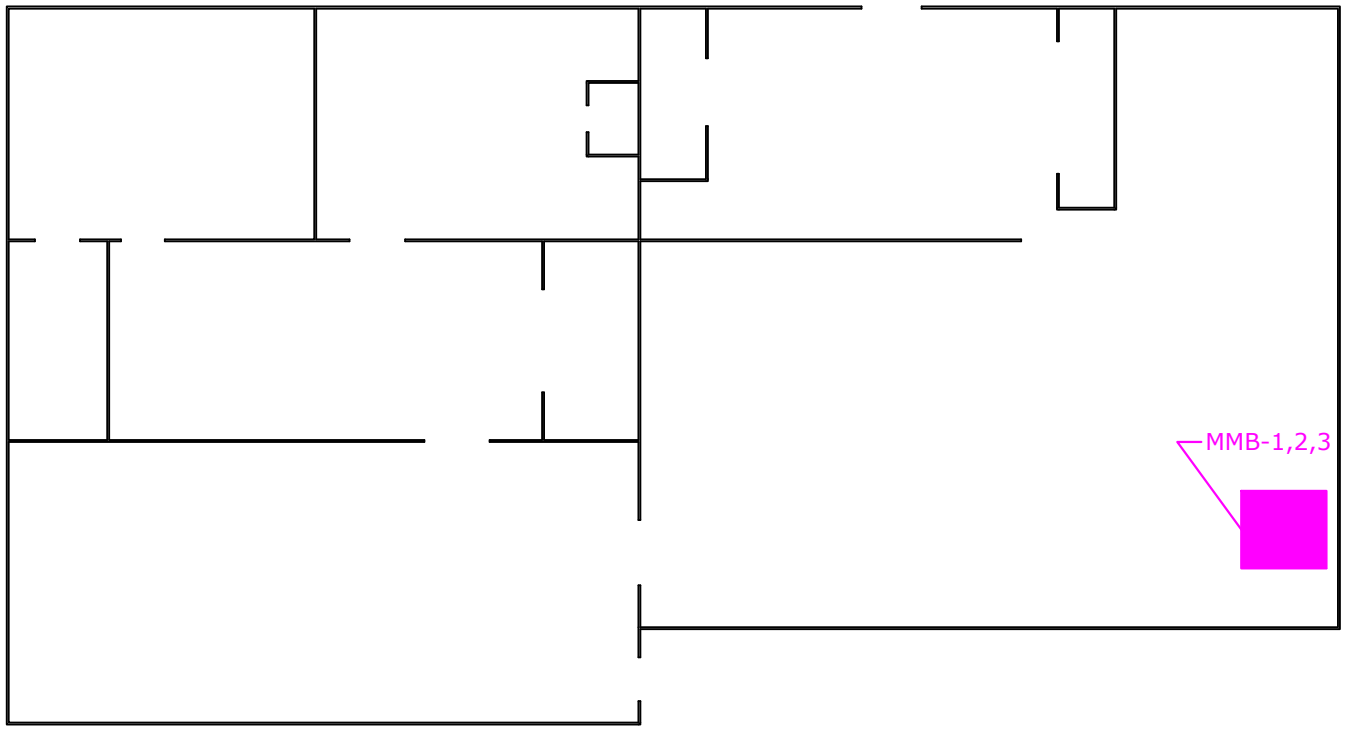
Date: 01/28/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MMB
SINK COATING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 116 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2406 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-6

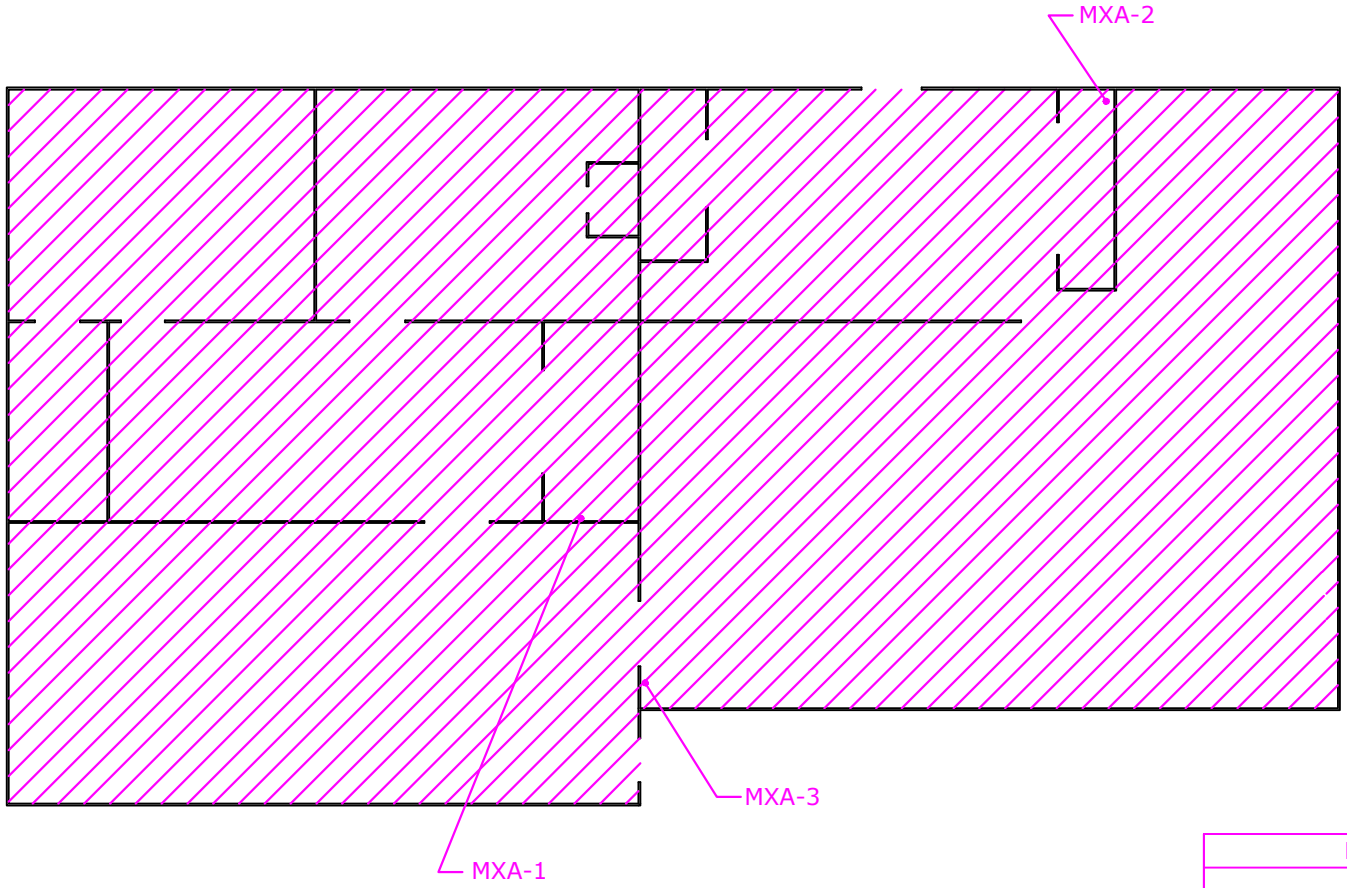
Date: 01/28/2019

SHEET
A1
OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MXA
DRYWALL AND COMPOUND
(WALLS AND CEILINGS)

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 117 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2406 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-6

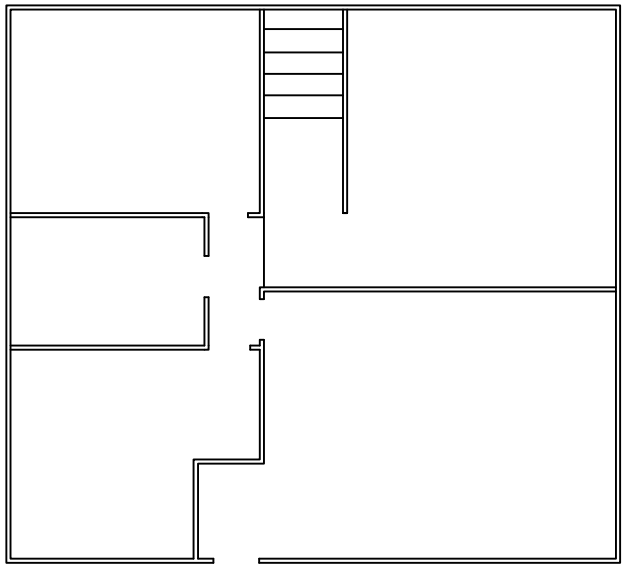
Date: 01/28/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

SCALE: NO SCALE

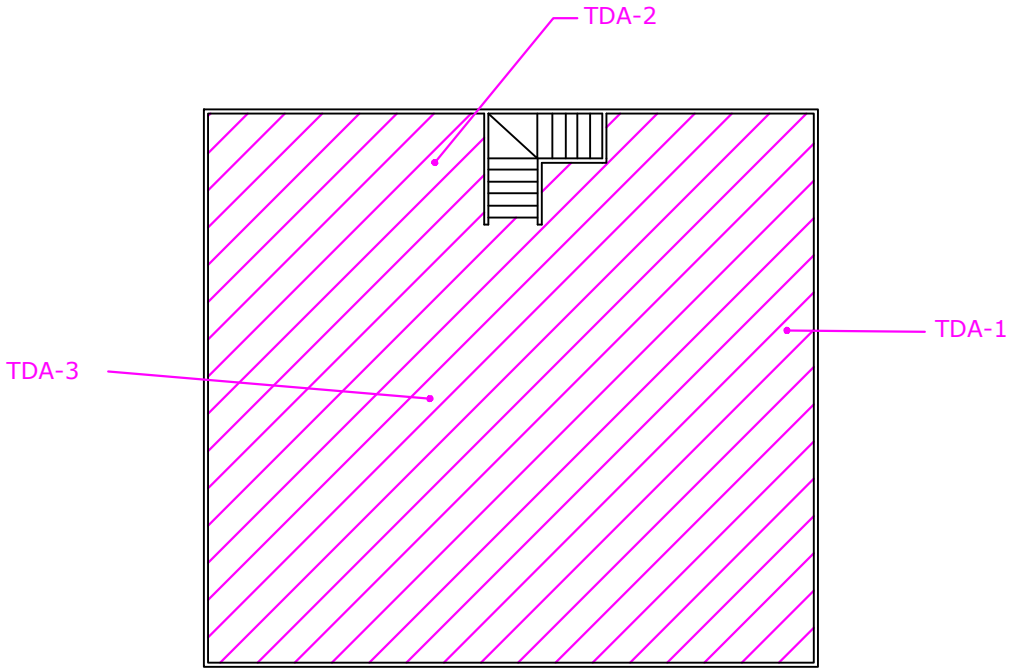
NORTH



BASEMENT PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY

HOMOGENEOUS AREA - TDA
THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 118 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2432 S. 4TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-1

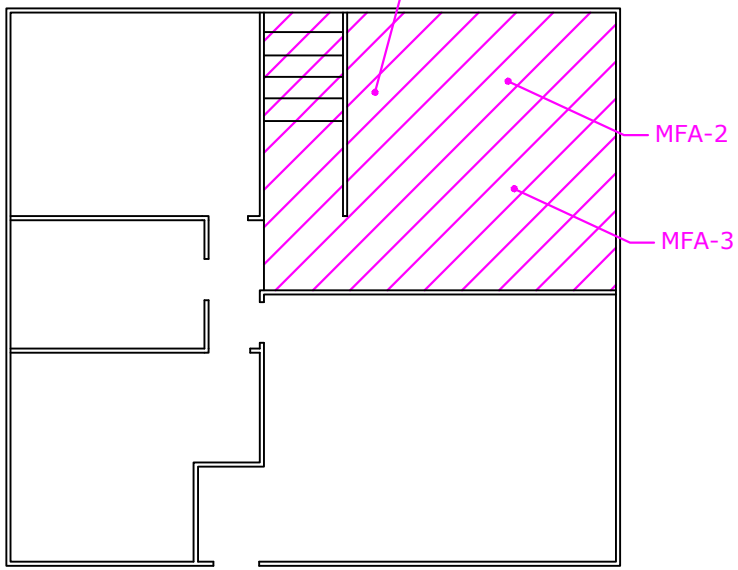
Date: 01/11/2019

SHEET
A1
OF 1 SHEET

FIRST FLOOR PLAN

NORTH

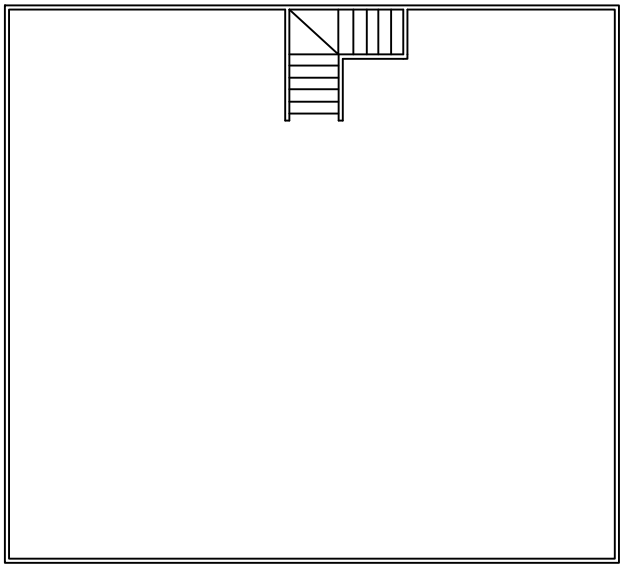
SCALE: NO SCALE



BASEMENT PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MFA
9" X 9" FLOOR TILE AND
MASTIC, WHITE AND PINK

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 119 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2432 S. 4TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-1

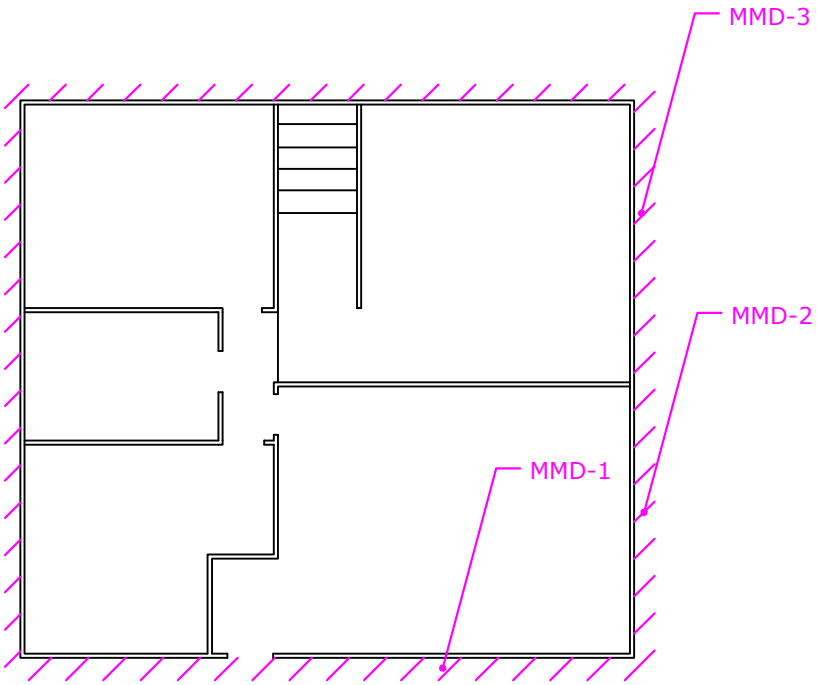
Date: 01/11/2019

SHEET
A1
OF 1 SHEET

FIRST FLOOR PLAN

SCALE: NO SCALE

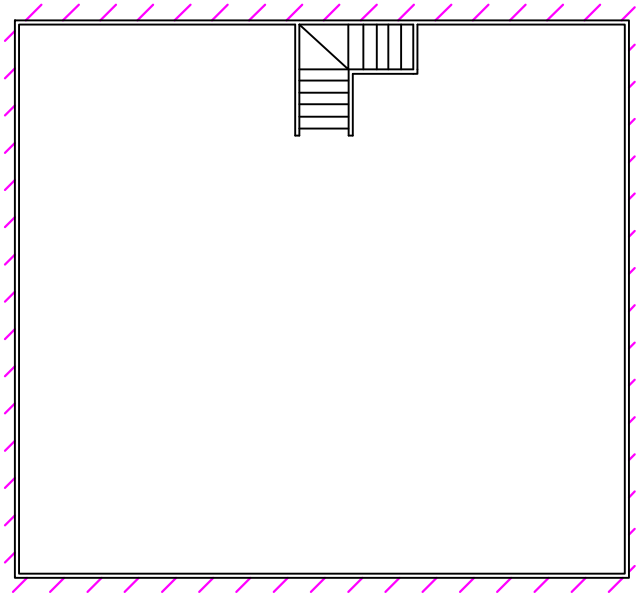
NORTH



BASEMENT PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY

HOMOGENEOUS AREA - MMD WINDOW GLAZING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 120 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2432 S. 4TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-1

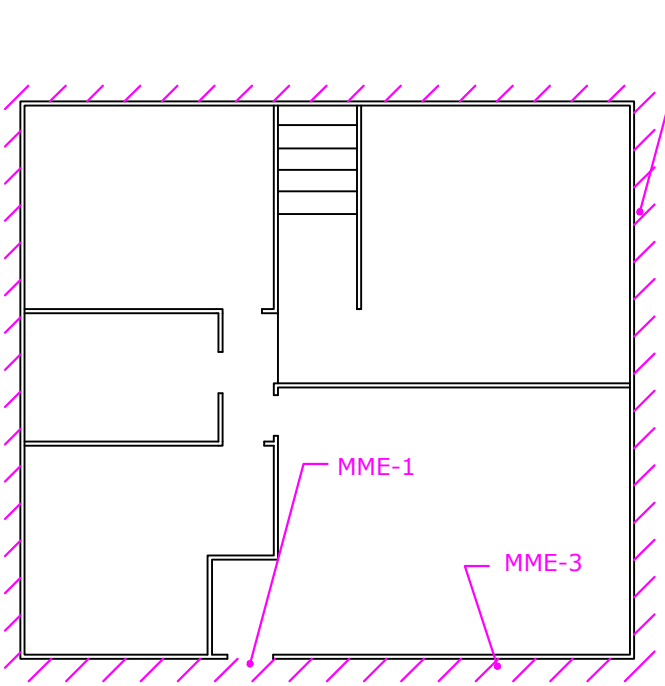
Date: 01/11/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

SCALE: NO SCALE

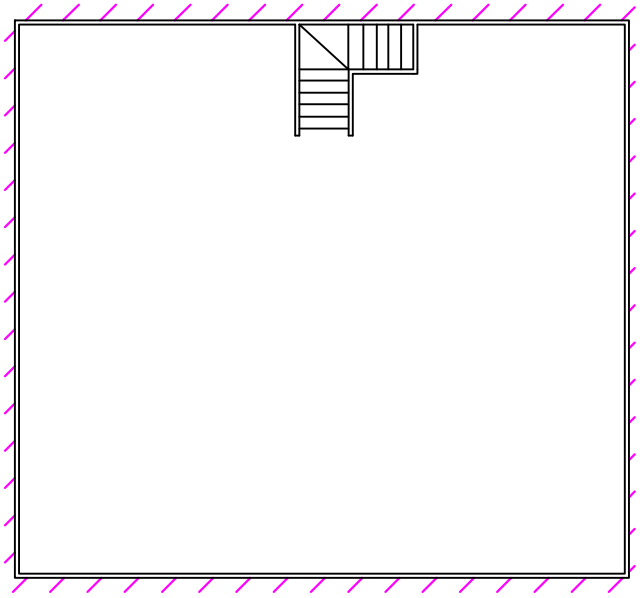
NORTH



BASEMENT PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY

HOMOGENEOUS AREA - MME
EXTERIOR CAULK

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 121 RES

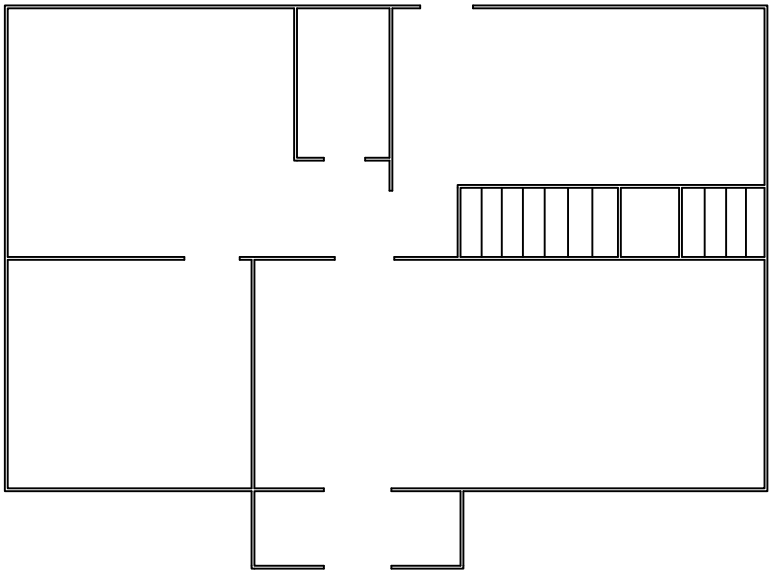
VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2432 S. 4TH STREET
SPRINGFIELD, ILLINOIS

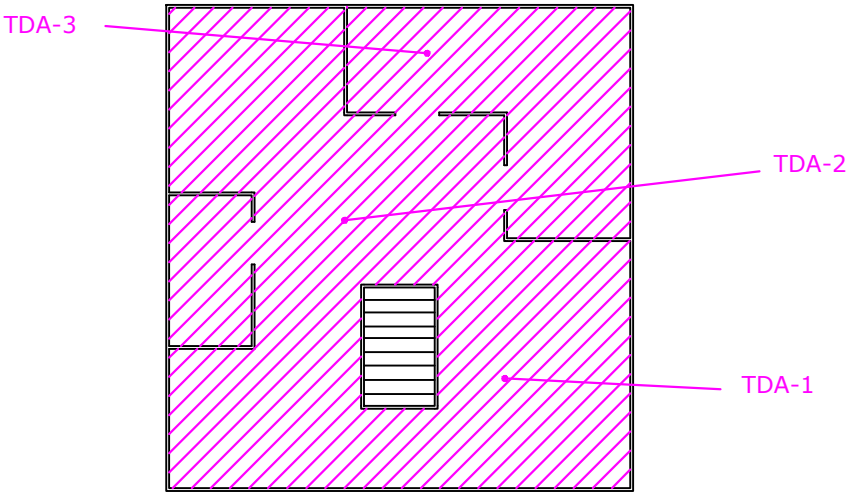
RES Project #: 18312-1

Date: 01/11/2019

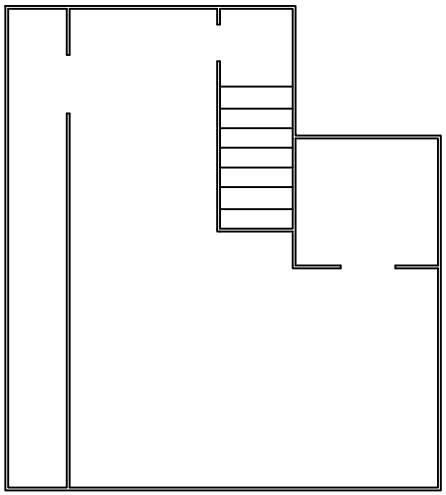
SHEET
A1
OF 1 SHEET



FIRST FLOOR PLAN
NORTH
SCALE: NO SCALE



BASEMENT PLAN
NORTH
SCALE: NO SCALE



SECOND FLOOR PLAN
NORTH
SCALE: NO SCALE

MATERIAL KEY

HOMOGENEOUS AREA - TDA
THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 122 RES

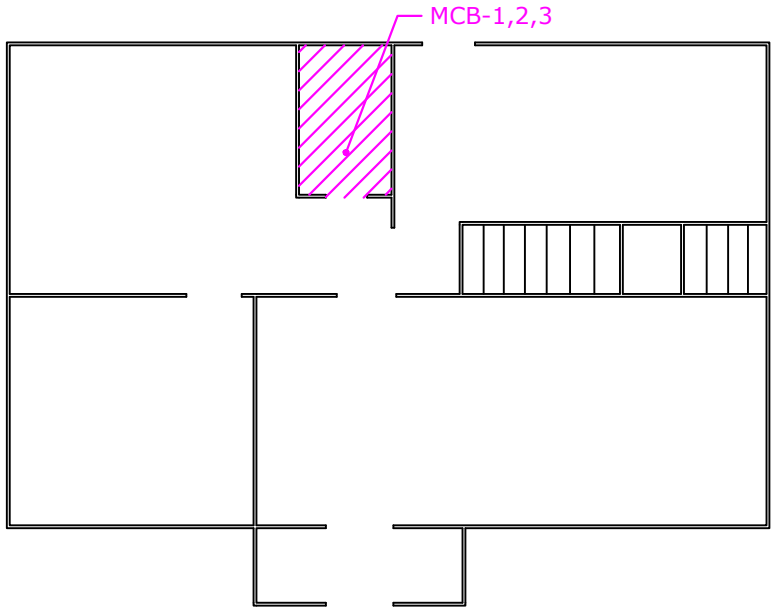
VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2409 S. 5TH STREET
SPRINGFIELD, ILLINOIS

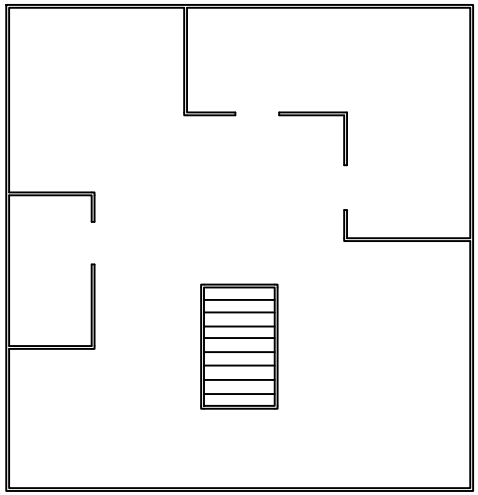
RES Project #: 18312-7

Date: 01/28/2019

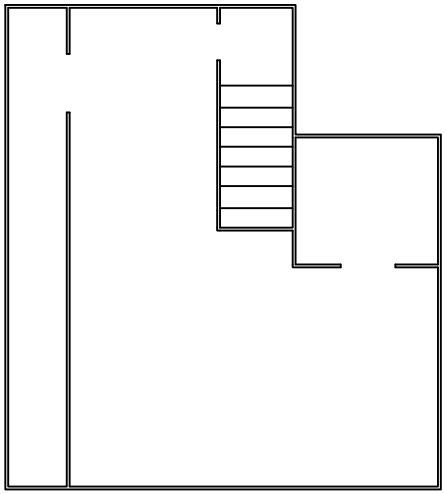
SHEET
A1
OF 1 SHEET



FIRST FLOOR PLAN
NORTH
SCALE: NO SCALE



BASEMENT PLAN
NORTH
SCALE: NO SCALE



SECOND FLOOR PLAN
NORTH
SCALE: NO SCALE

MATERIAL KEY

HOMOGENEOUS AREA - MCB
2' X 2' CEILING TILE,
FISSURES AND PINHOLES

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 123 RES

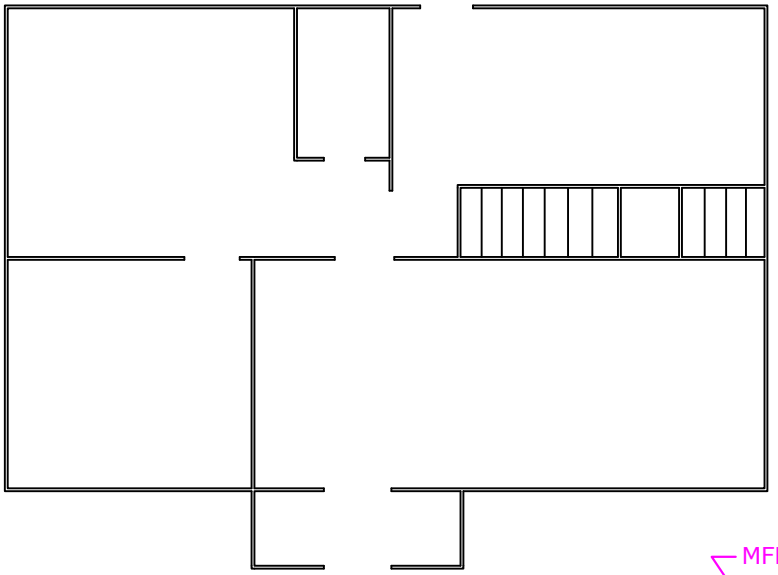
VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2409 S. 5TH STREET
SPRINGFIELD, ILLINOIS

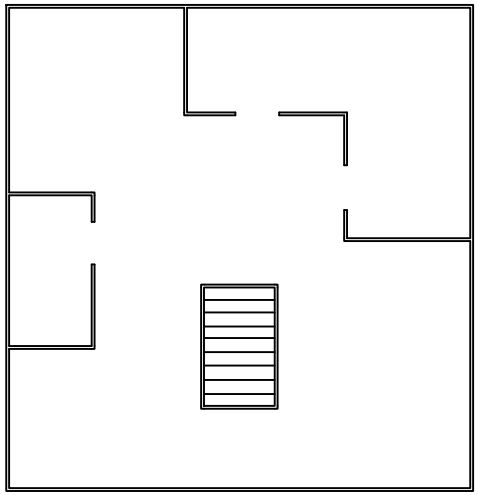
RES Project #: 18312-7

Date: 01/28/2019

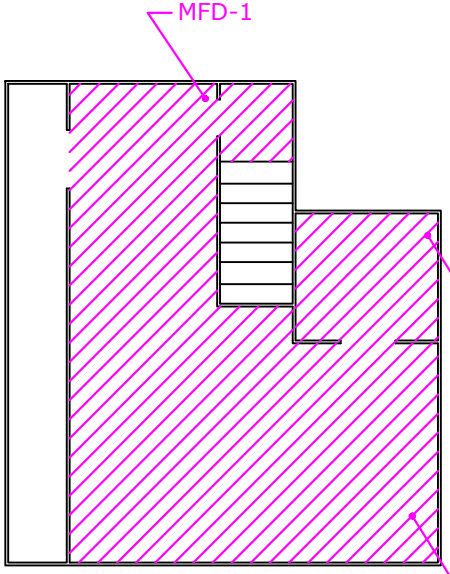
SHEET
A1
OF 1 SHEET



FIRST FLOOR PLAN
NORTH
SCALE: NO SCALE



BASEMENT PLAN
NORTH
SCALE: NO SCALE



SECOND FLOOR PLAN
NORTH
SCALE: NO SCALE

MATERIAL KEY
HOMOGENEOUS AREA - MFD 9" X 9" FLOOR TILE AND MASTIC, BROWN

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 124 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2409 S. 5TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-7

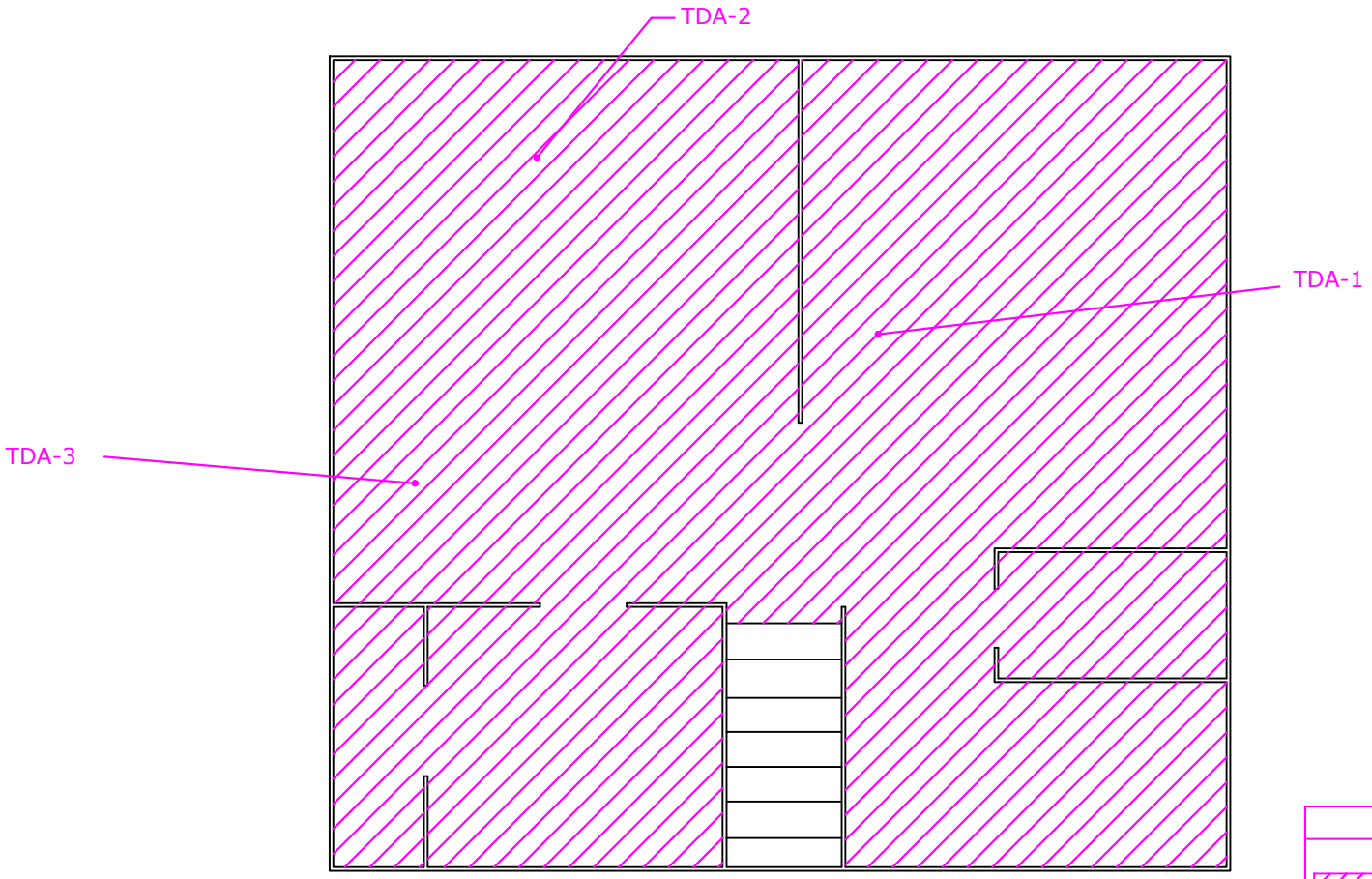
Date: 01/28/2019

SHEET A1 OF 1 SHEET

BASEMENT PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY
HOMOGENEOUS AREA - TDA THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 125 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2413 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-8

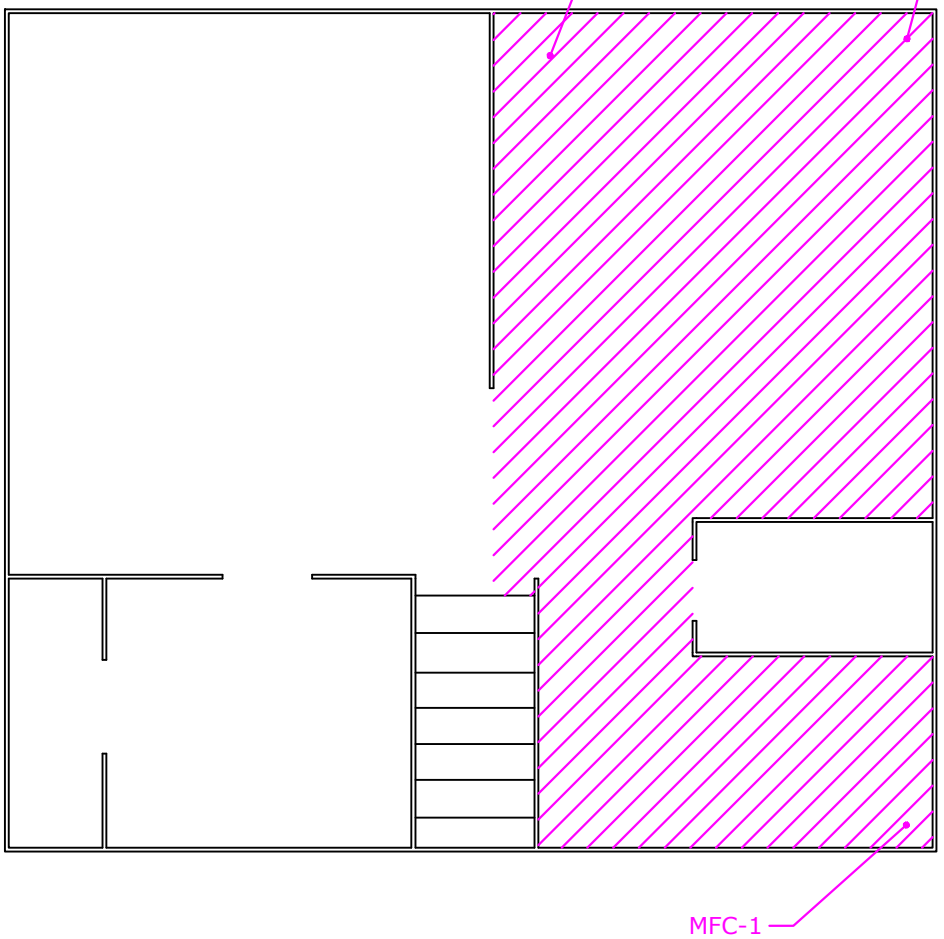
Date: 01/28/2019

SHEET A1 OF 1 SHEET

BASEMENT PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY	
	HOMOGENEOUS AREA - MFC 9" X 9" FLOOR TILE AND MASTIC

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 126 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2413 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-8

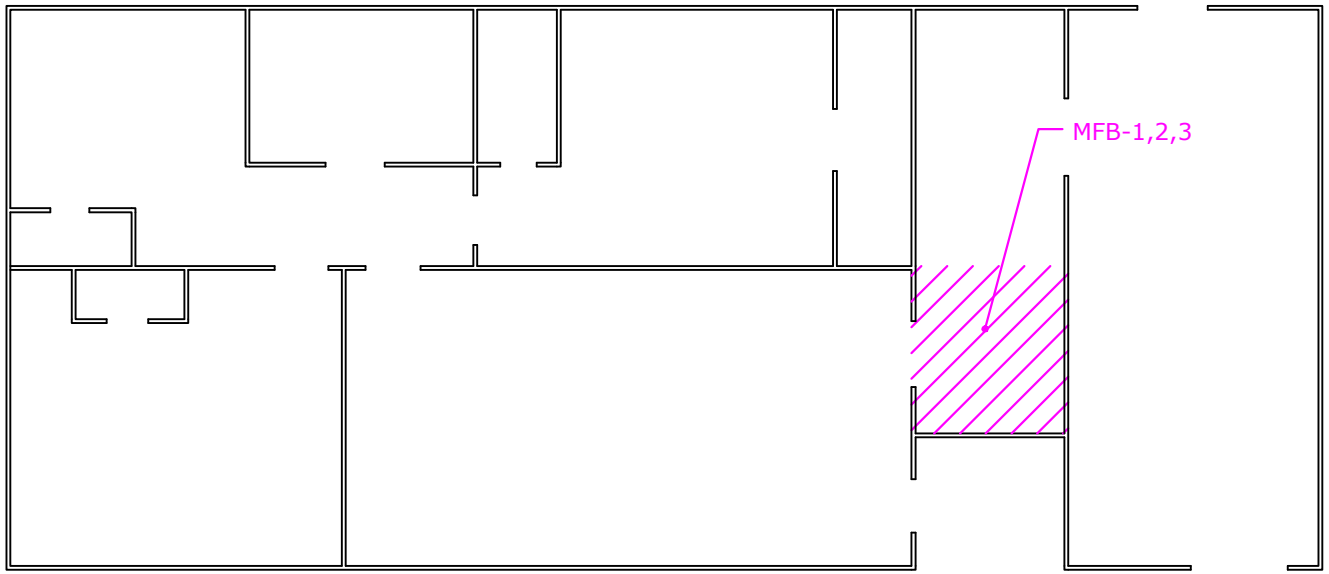
Date: 01/28/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY	
	HOMOGENEOUS AREA - MFB LINOLEUM, DIAMOND PATTERN

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 127 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2513 BURTON DRIVE
SPRINGFIELD, ILLINOIS

RES Project #: 18312-11

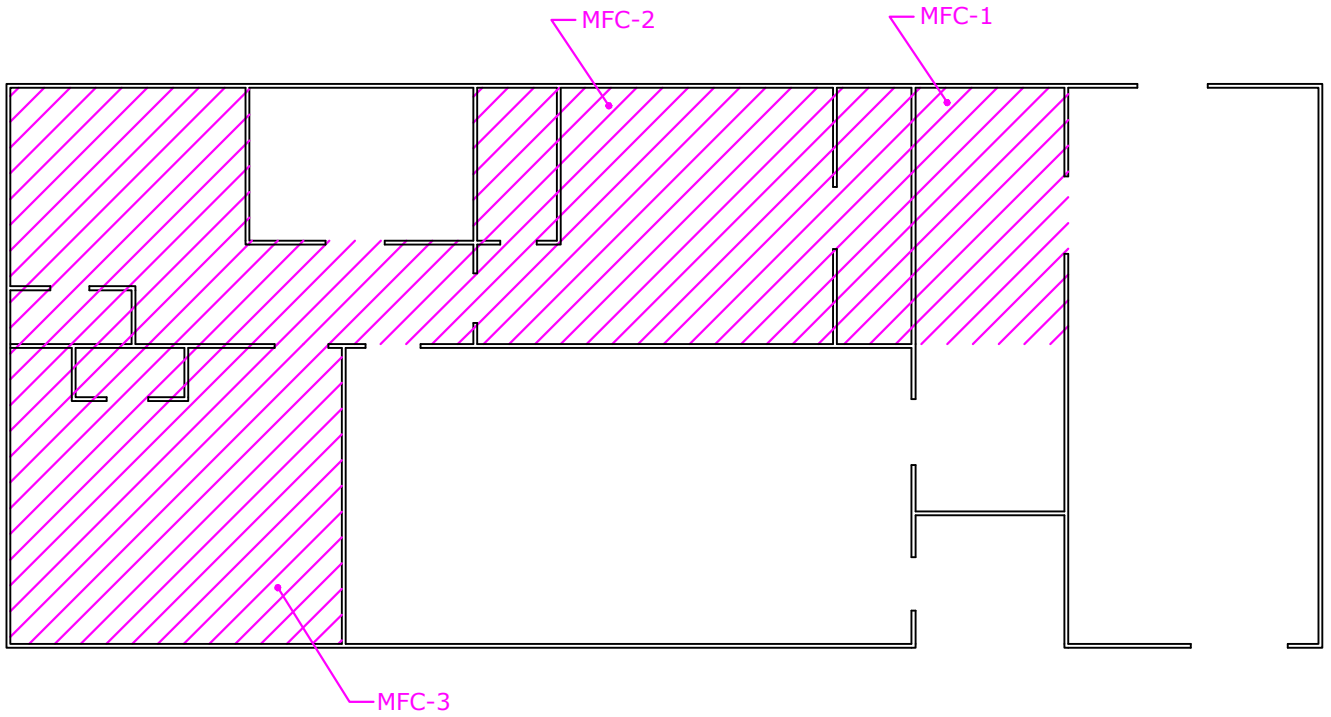
Date: 01/22/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MFC 9" X 9" FLOOR TILE AND MASTIC

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 128 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2513 BURTON DRIVE
SPRINGFIELD, ILLINOIS

RES Project #: 18312-11

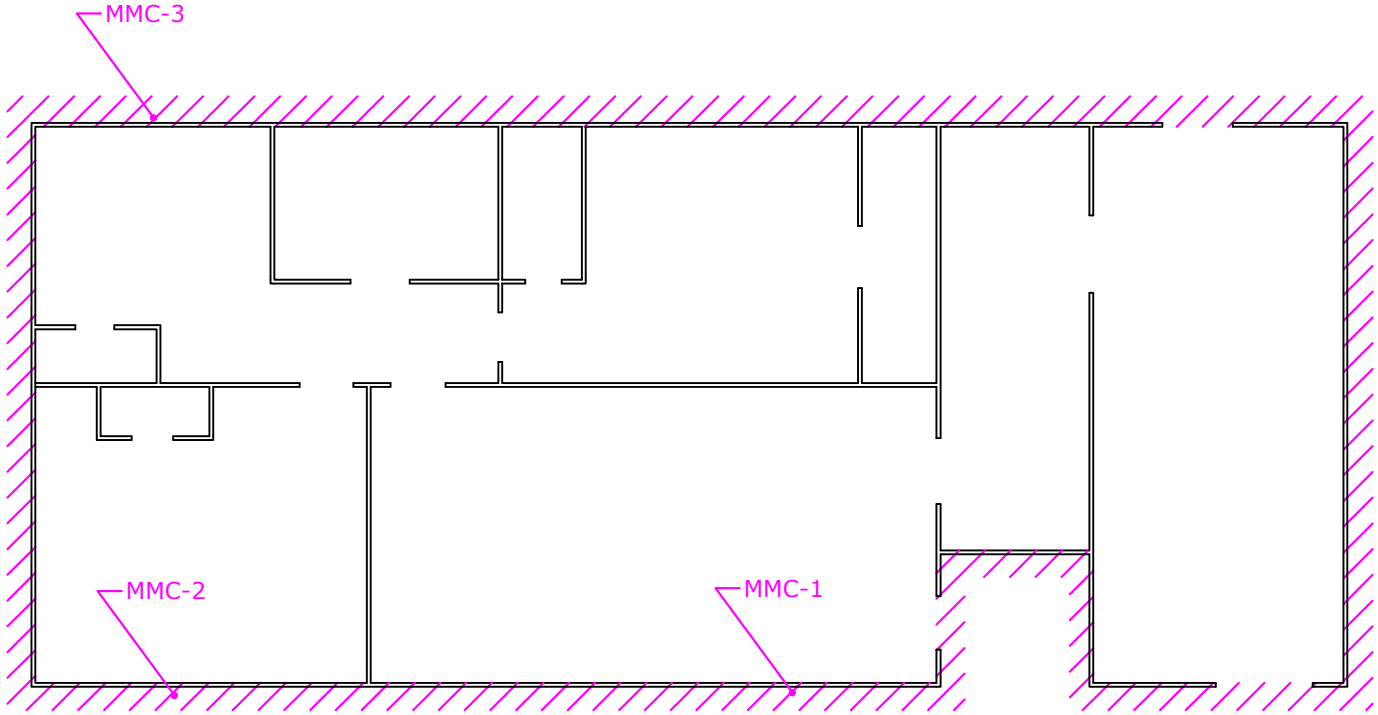
Date: 01/22/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MMC
WINDOW GLAZING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 129 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2513 BURTON DRIVE
SPRINGFIELD, ILLINOIS

RES Project #: 18312-11

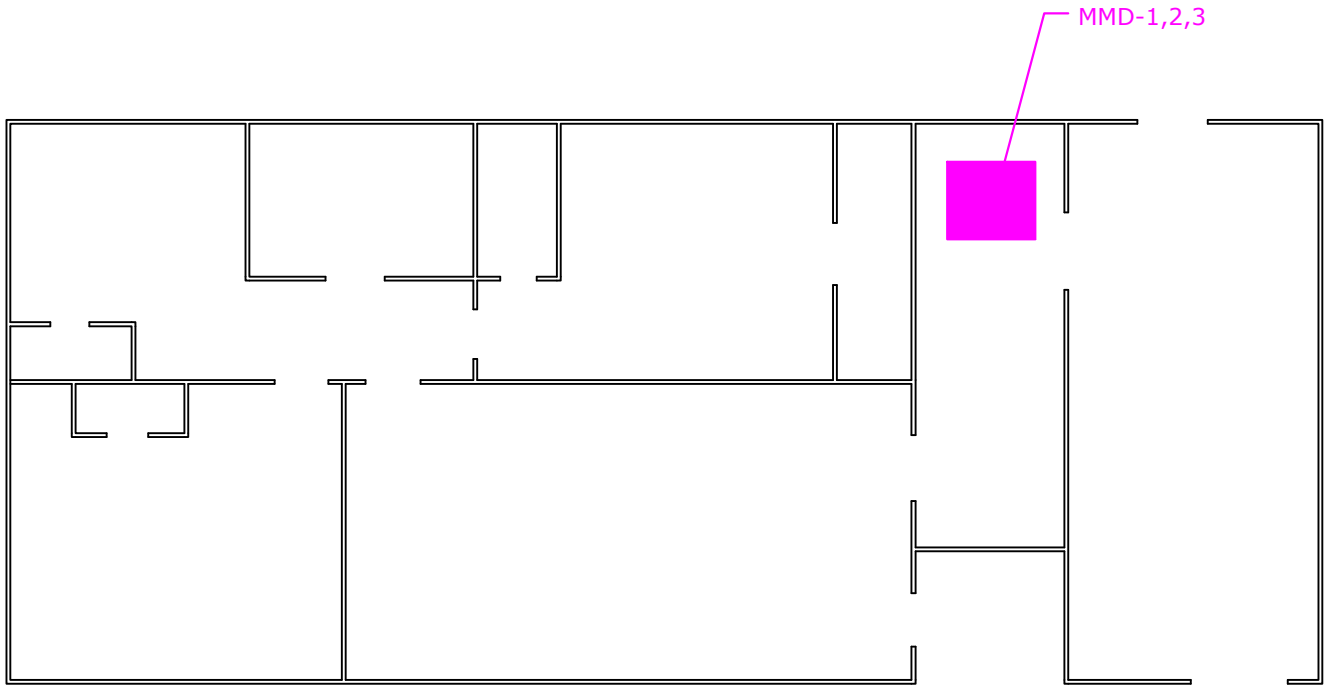
Date: 01/22/2019

SHEET
A1
OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY	
	HOMOGENEOUS AREA - MMD SINK COATING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 130 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2513 BURTON DRIVE
SPRINGFIELD, ILLINOIS

RES Project #: 18312-11

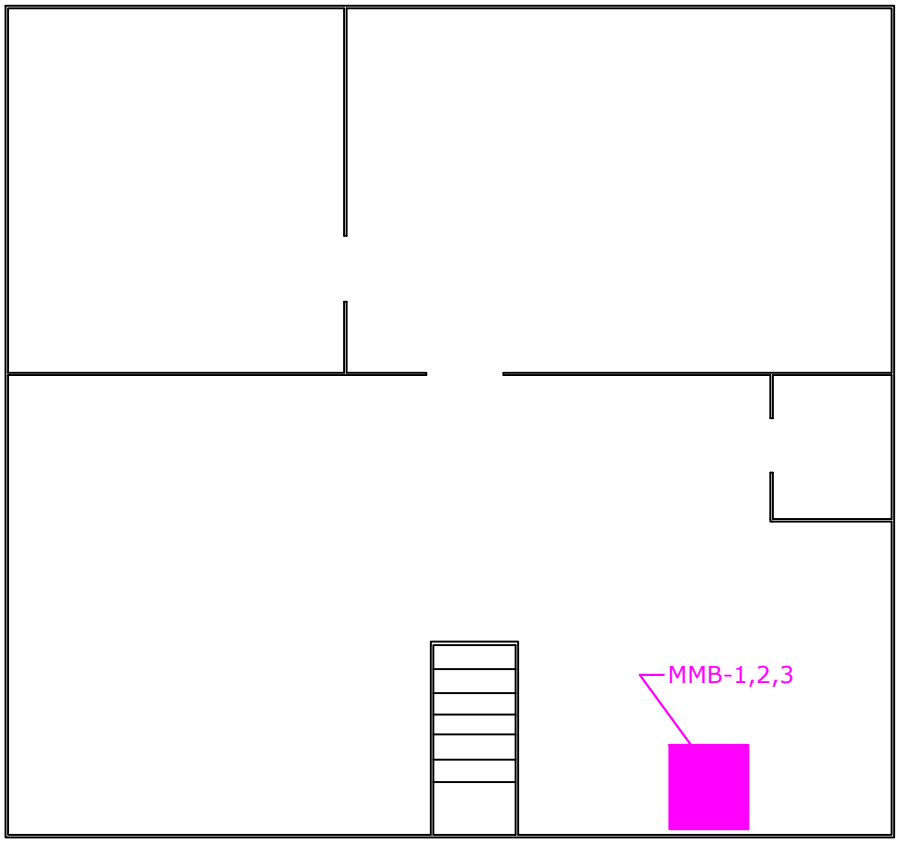
Date: 01/22/2019

SHEET A1 OF 1 SHEET

SECOND FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MMB
SINK COATING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 131 RES

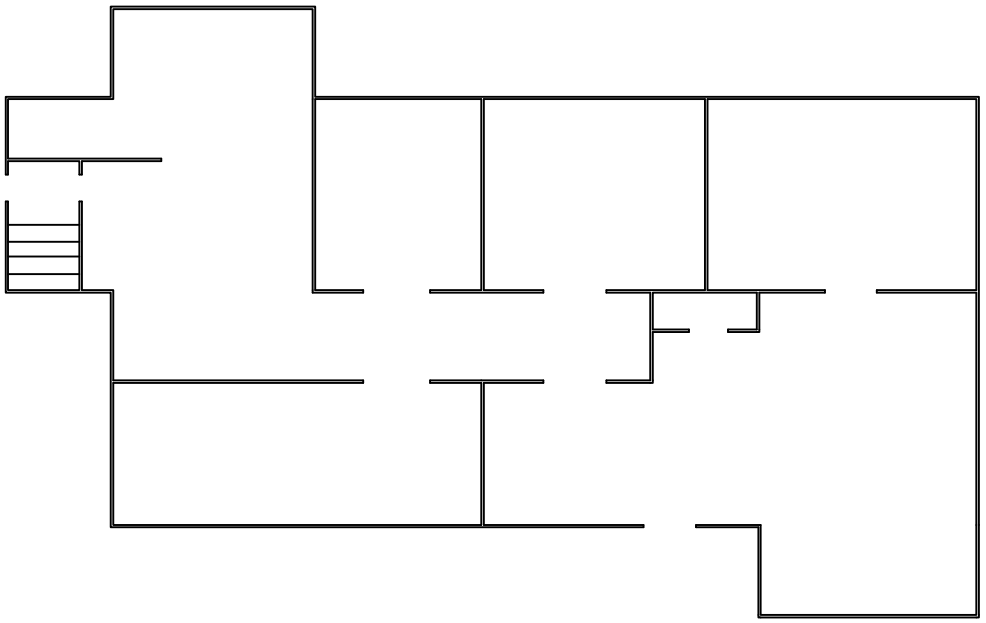
VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2327 S. 6TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-14

Date: 01/31/2019

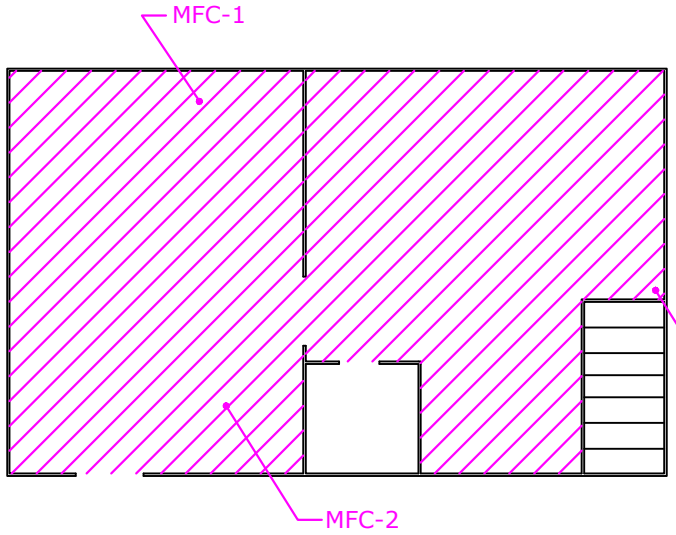
SHEET
A1
OF 1 SHEET



FIRST FLOOR PLAN

SCALE: NO SCALE

NORTH



BASEMENT PLAN

SCALE: NO SCALE

NORTH

MATERIAL KEY

HOMOGENEOUS AREA - MFC 9" X 9" FLOOR TILE AND MASTIC

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 132 RES

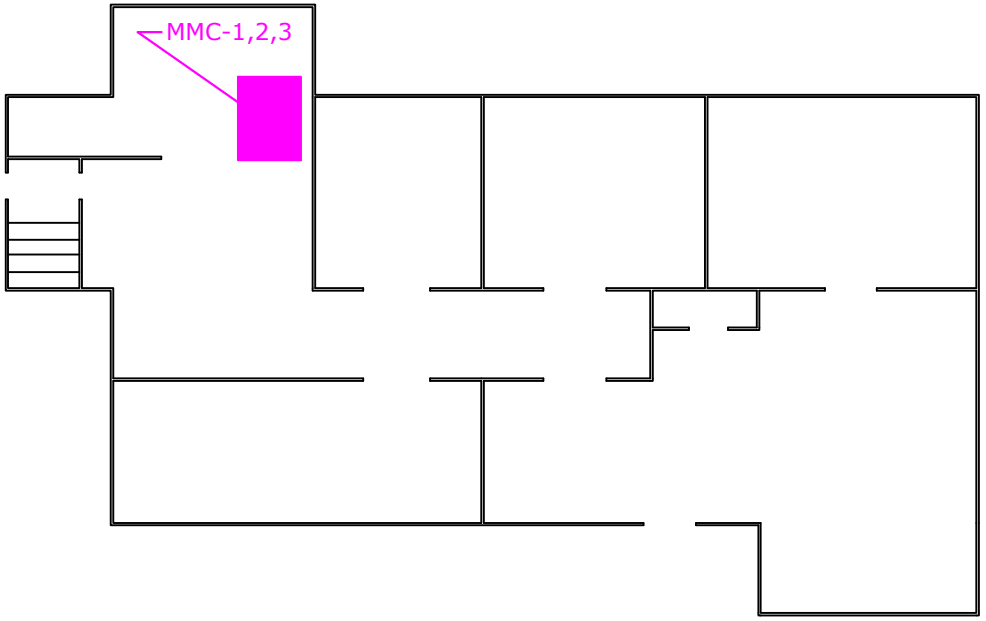
VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
401 EAST ILES
SPRINGFIELD, ILLINOIS

RES Project #: 18312-3

Date: 01/29/2019

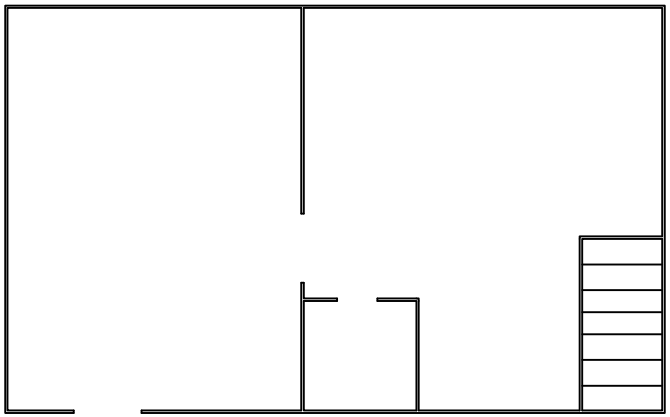
SHEET A1 OF 1 SHEET



FIRST FLOOR PLAN

SCALE: NO SCALE

NORTH



BASEMENT PLAN

SCALE: NO SCALE

NORTH

MATERIAL KEY

HOMOGENEOUS AREA - MMC
SINK COATING

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 133 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
401 EAST ILES
SPRINGFIELD, ILLINOIS

RES Project #: 18312-3

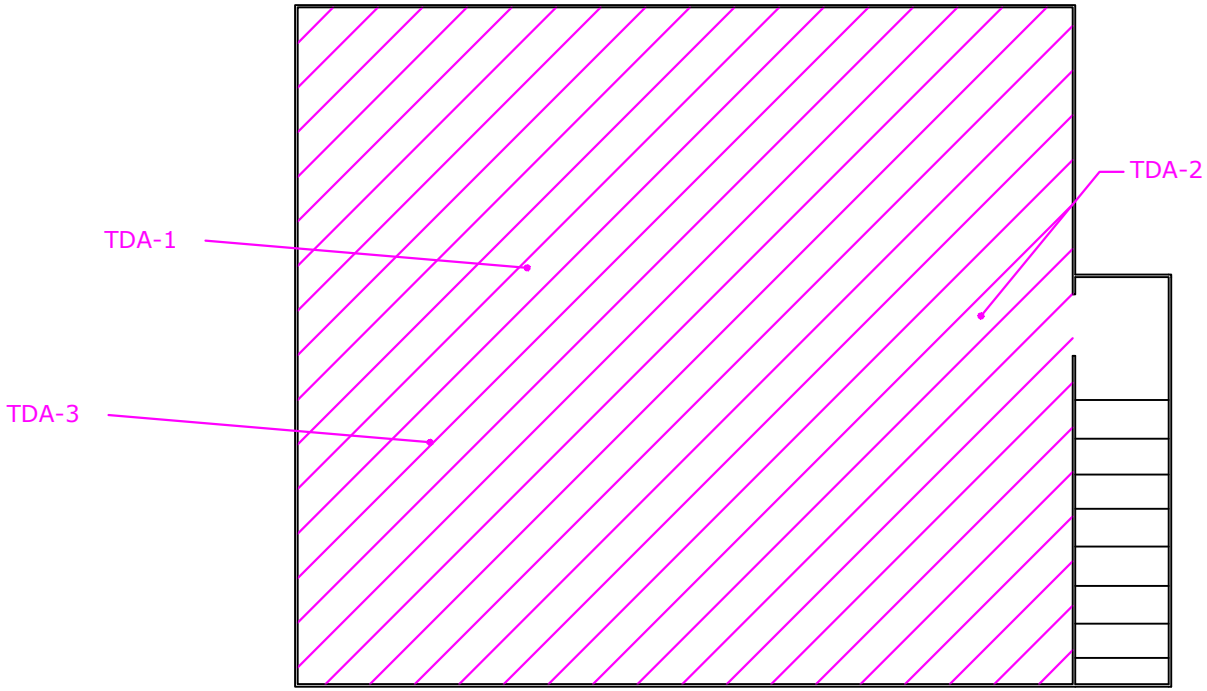
Date: 01/29/2019

SHEET
A1
OF 1 SHEET

BASEMENT PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - TDA
THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 134 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2279 S. 6TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-13

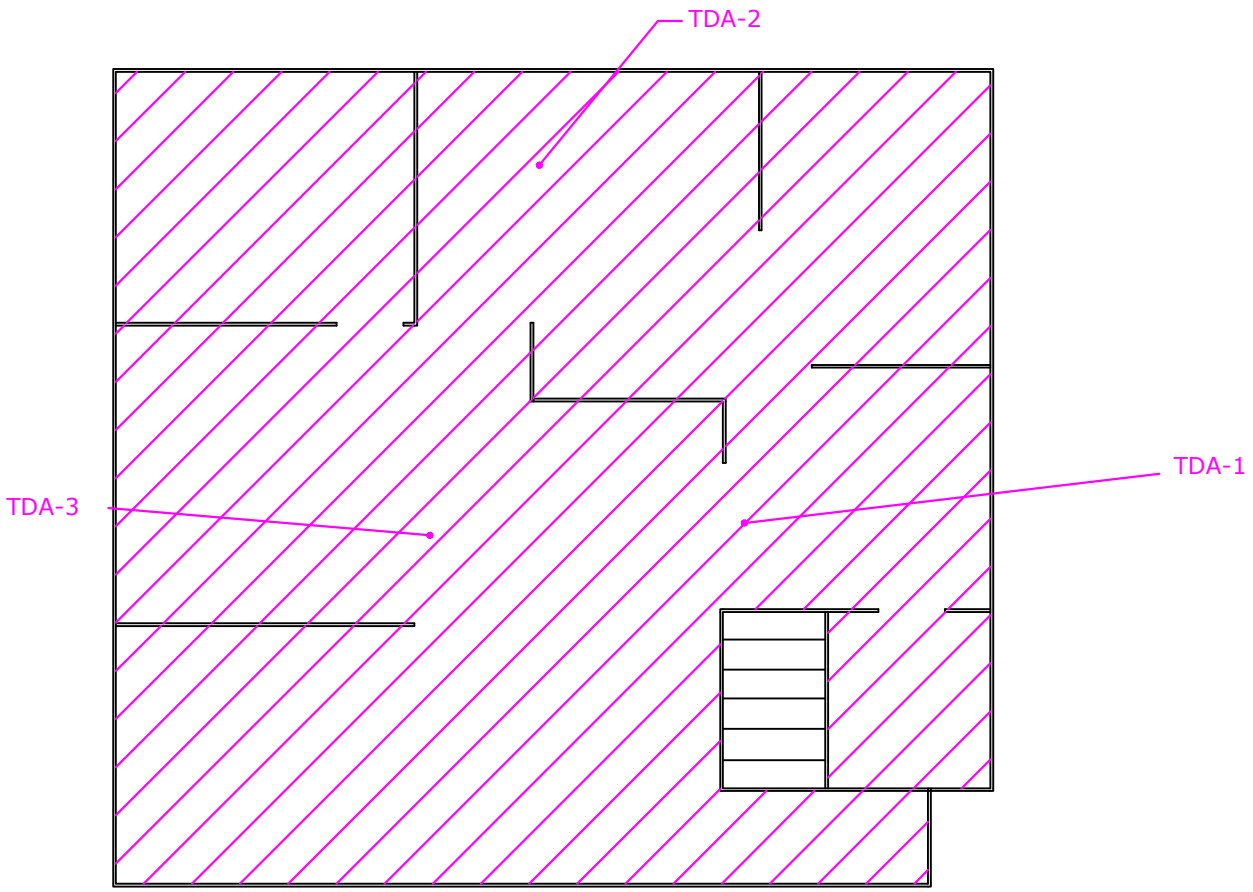
Date: 01/31/2019

SHEET A1 OF 1 SHEET

BASEMENT PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY
HOMOGENEOUS AREA - TDA THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 135 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2342 S. 5TH
SPRINGFIELD, ILLINOIS

RES Project #: 18312-10

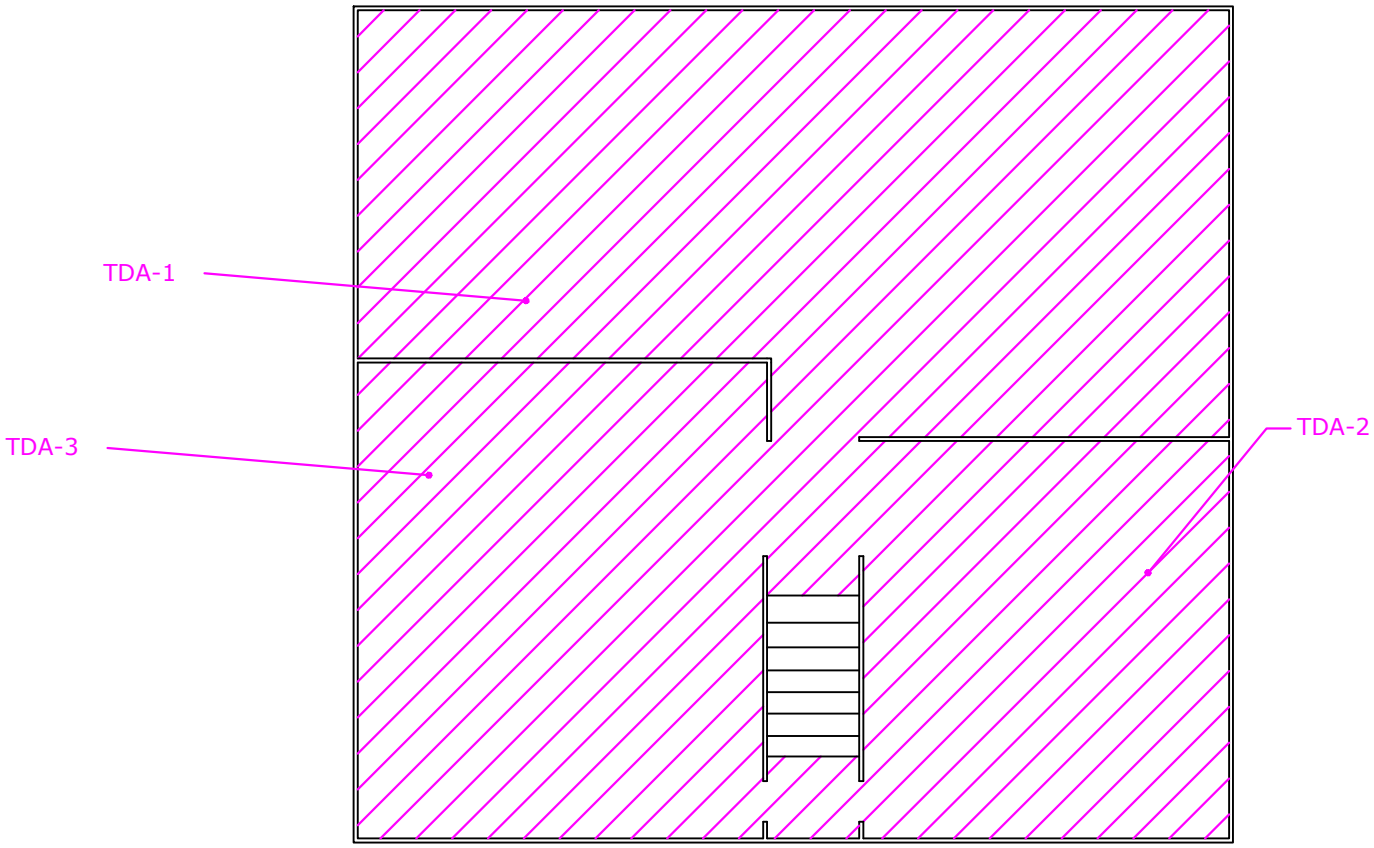
Date: 01/29/2019

SHEET A1 OF 1 SHEET

BASEMENT PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY
HOMOGENEOUS AREA - TDA THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 136 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2405 S. 5TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-5

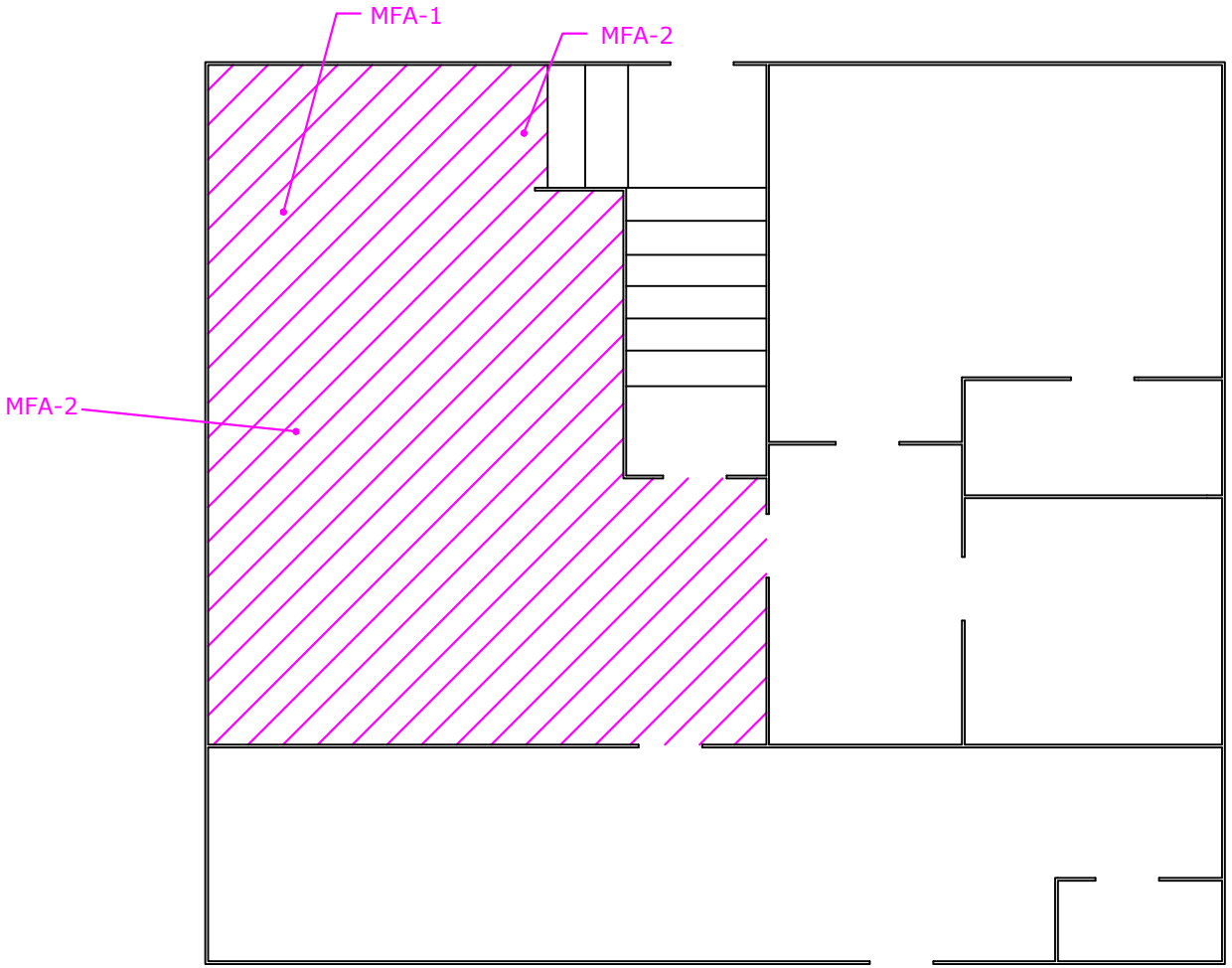
Date: 01/24/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY	
	HOMOGENEOUS AREA - MFA LINOLEUM, DARK GRAY (2 LAYERS)

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 137 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2407 S. 5TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-4

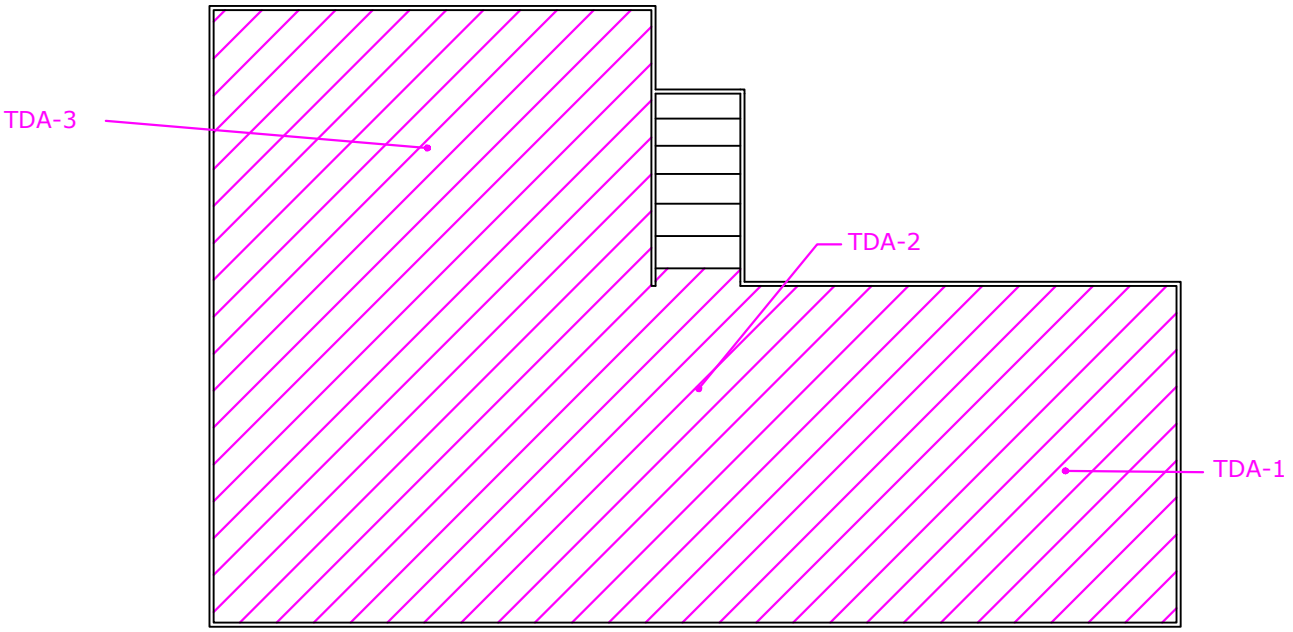
Date: 01/24/2019

SHEET A1 OF 1 SHEET

FIRST FLOOR PLAN

SCALE: NO SCALE

NORTH



MATERIAL KEY
HOMOGENEOUS AREA - TDA THERMAL DUCT WRAP

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 138 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
2436 S. 4TH STREET
SPRINGFIELD, ILLINOIS

RES Project #: 18312-9

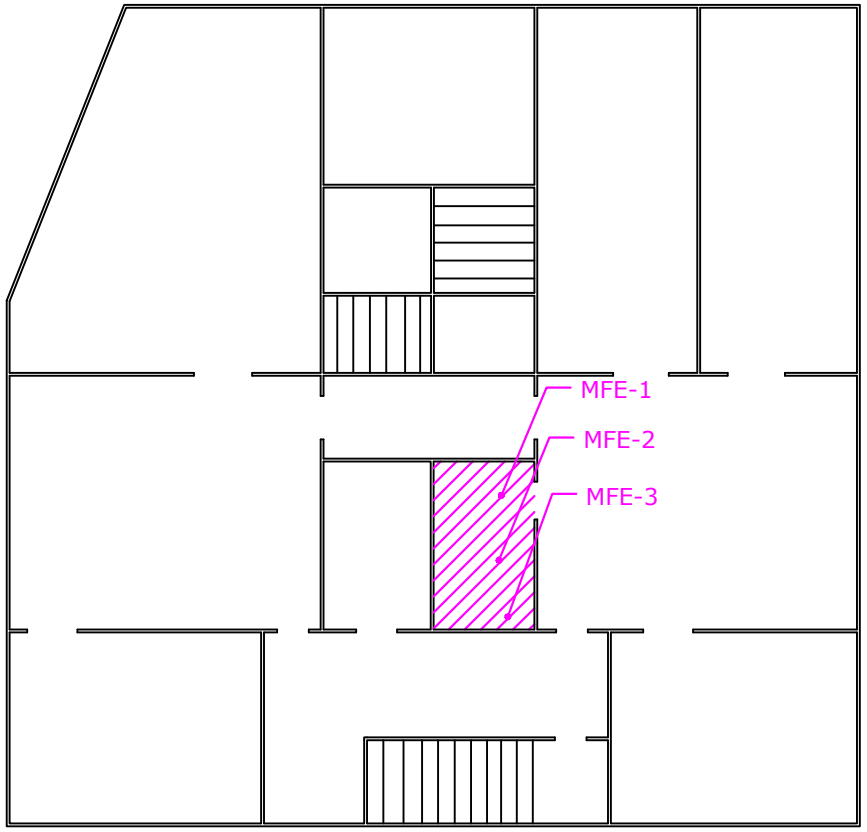
Date: 01/29/2019

SHEET A1 OF 1 SHEET

SECOND FLOOR PLAN

NORTH

SCALE: NO SCALE



MATERIAL KEY

HOMOGENEOUS AREA - MFE
LINOLEUM, PEBBLE PATTERN

REVISIONS		
NO.	DATE	REMARKS

Reliable Environmental Solutions, Inc. 139 RES

VACANT RESIDENCE

ASBESTOS INSPECTION FOR
CITY OF SPRINGFIELD
300 EAST ILES
SPRINGFIELD, ILLINOIS

RES Project #: 18312-12

Date: 03/23/2019

SHEET A1 OF 1 SHEET

APPENDIX B

MATERIAL DESCRIPTION TABLE

Material Description	% and Type of Asbestos	Location, Description, Sample Number (If Applicable)
I. BUILDING REMOVAL - CASE I (NON-FRIABLE AND FRIABLE ASBESTOS ABATEMENT)		
A. Building No. 1	**Parcel No. SR0192**	**2264 S 6th Street**
B. Building No. 6	**Parcel No. SR0200**	**2406 S 5th Street**
Texture on Drywall	3% chrysotile	Texture on drywall located in north hallway. Friable. Sample SCA-1
Linoleum, Red and Tan	3% chrysotile	Linoleum, red and tan, located in southeast closet. Friable. Sample MFB-1(A) Tile
Sink Coating	4% chrysotile	Sink coating located in kitchen. Non-Friable. Sample MMB-1
Drywall and Compound	4% chrysotile	Drywall and compound located throughout first floor. Friable. Sample MXA-3 Joint Compound
C. Building No. 8	**Parcel No. SR0201**	**2403 S 5th Street**
D. Building No. 13	**Parcel No. SR0205**	**2432 S 4th Street**
Thermal Duct Tape	30% chrysotile	Thermal duct wrap located throughout the basement. Friable. Samples TDA-1, TDA-2, TDA-3.
9"x9" Floor Tile and Mastic	3% chrysotile	9"x9" white and pink tile and mastic located in the kitchen underneath the ceramic tile. Non-friable. Sample MFA-1 (A) Tile
Window Glazing	2% chrysotile	Window glazing around the house. Friable. Samples MMD-1, MMD-2, MMD-3.
Exterior Caulk	3% chrysotile	Exterior caulking around the house. Non-friable. Samples MME-1, MME-2, MME-3.
E. Building No. 16	**Parcel No. SR0208**	**2409 S 5th Street**
Thermal Duct Tape	30% chrysotile	Thermal duct tape located on ductwork in the basement. Friable. Sample TDA-1

Material Description	% and Type of Asbestos	Location, Description, Sample Number (If Applicable)
2'x2' Ceiling Tile	3% amosite	2'x2' ceiling tile with fissures and pinholes, located in the first floor bathroom. Friable. Sample MCB-1
9"x9" Floor Tile and Mastic	5% chrysotile	9"x9" brown floor tile and mastic located throughout the second floor. Non-friable. Samples MFD-1(A) Tile, MFD-1(B) Mastic
F. Building No. 18	**Parcel No. SR0209**	**2413 S 5th Street**
Thermal Duct Wrap	30% chrysotile	Thermal duct tape located on ductwork in basement. Friable. Sample TDA-1
9"x9" Floor Tile and Mastic	5% chrysotile	9"x9" floor tile and mastic located on west side of the basement. Non-friable. Samples MFC-1(A) Tile, MFC-1(B) Mastic
G. Building No. 26	**Parcel No. SR0222**	**2513 Burton Drive**
Linoleum	2% chrysotile	Linoleum, diamond pattern, located in kitchen underneath carpet. Friable Sample MFB-1(A) Tile, MFB-1(B) Mastic, MFB-2(A & B)
9"x9" Floor Tile and Mastic	2% chrysotile	9"x9" floor tile and mastic, beige, located throught the house except for the bathroom. Non-friable. Sample MFC-1(A) Tile, MFC-1(B) Mastic, MFC-2(A & B), MFC-3(A & B)
Window Glazing	3% chrysotile	Window glazing around the house. Friable. Sample MMC-1, MMC-2, MMC-3
Sink Coating	7% chrysotile	Sink coating on bottom of kitchen sink. Non-friable. Sample MMD-1, MMD-2, MMD-3

	Material Description	% and Type of Asbestos	Location, Description, Sample Number (If Applicable)
II.	**BUILDING REMOVAL - CASE II (NON-FRIABLE ASBESTOS ABATEMENT)**		
	A. Building No. 5	**Parcel No. SR0198**	**2327 S 6th Street**
	Sink Coating	3% chrysotile	Sink coating located on the underneath side of the kitchen sink. Non-friable. Sample MMC-1
	B. Building No. 21	**Parcel No. SR0217**	**401 E Iles Avenue**
	9"x9" Floor Tile and Mastic	3% chrysotile	Floor tile and mastic located in the basement. Non-friable. Sample MFC-1(A) Tile, MFC-1(B) Mastic
	Sink Coating	7% chrysotile	Sink coating on the underneath of the kitchen sink. Non-firable. Sample MMC-1.

	Material Description	% and Type of Asbestos	Location, Description, Sample Number (If Applicable)
III.	**BUILDING REMOVAL - CASE III (FRIABLE ASBESTOS ABATEMENT)**		
	A. Building No. 2	**Parcel No. SR0193**	**2279 S 6th Street**
	Thermal Duct Tape	20% chrysotile	Thermal duct tape located on ductwork in basement. Friable. Sample TDA-1
	B. Building No. 3	**Parcel No. SR0196**	**2342 S 5th Street**
	Thermal Duct Tape	30% chrysotile	Thermal duct tape located on ductwork in basement. Friable. Sample TDA-1
	C. Building No. 9	**Parcel No. SR0202**	**2405 S 5th Street**
	Thermal Duct Tape	30% chrysotile	Thermal duct tape located on ductwork in the basement. Friable. Samples TDA-1, TDA-2, TDA-3.
	D. Building No. 11	**Parcel No. SR0203**	**2407 S 5th Street**
	Linoleum, Gray (2 layers)	3-15% chrysotile	Linoleum sheet flooring, dark gray and diamond pattern (2 layers) located in the southwest room on the first floor. Friable. Samples MFA-1(C) Vinyl, MFA-1(D) Mastic, MFA-2 (C & D), MFA-3 (C & D).
	E. Building No. 15	**Parcel No. SR0206**	**2436 S 4th Street**
	Thermal Duct Wrap	30% chrysotile	Thermal duct wrap located on ductwok in the basement. Friable. Sample TDA-1
	F. Building No. 24	**Parcel No. SR0221**	**300 E Iles Avenue**
	Linoleum	25% chrysotile	Pebble pattern linoleum located on second floor. Friable. Sample MFE-1

APPENDIX C

MATERIAL QUANTITIES TABLE

The following are approximate quantities of ACM to be removed from the building indicated. These material quantities do not indicate the cleaning required to remove asbestos debris and resulting contaminatin from the work areas.

I. BUILDING REMOVAL - CASE I (NON-FRIABLE AND FRIABLE ASBESTOS ABATEMENT)

A. Building No. 1 **Parcel No. SR0192** **2264 S 6th Street**

Material	Floor	Quantity Present		Friable

B. Building No. 6 **Parcel No. SR0200** **2406 S 5th Street**

Material	Floor	Quantity Present		Friable
Texture on Drywall	1st	65	S.F.	Yes
Linoleum, Red and Tan	1st	30	S.F.	Yes
Sink Coating	1st	1	Each	No
Drywall and Compound	1st	2555	S.F.	Yes

C. Building No. 8 **Parcel No. SR0201** **2403 S 5th Street**

Material	Floor	Quantity Present		Friable

D. Building No. 13 **Parcel No. SR0205** **2432 S 4th Street**

Material	Floor	Quantity Present		Friable
Thermal Duct Tape	Basement	60	L.F.	Yes
9"x9" Floor Tile and Mastic	1st	260	S.F.	No
Window Glazing		14	Each	Yes
Exterior Caulk		180	L.F.	No

E. Building No. 16 **Parcel No. SR0208** **2409 S 5th Street**

Material	Floor	Quantity Present		Friable
Thermal Duct Tape	Basement	150	L.F.	Yes
2'x2' Ceiling Tile	1st	60	S.F.	Yes
9"x9" Floor Tile and Mastic	2nd	468	S.F.	No

F. Building No. 18 **Parcel No. SR0209** **2413 S 5th Street**

Material	Floor	Quantity Present		Friable
Thermal Duct Wrap	Basement	100	L.F.	Yes
9"x9" Floor Tile and Mastic	Basement	360	S.F.	No

G. Building No. 26 **Parcel No. SR0222** **2513 Burton Drive**

Material	Floor	Quantity Present		Friable
Linoleum	1st	100	S.F	Yes
9"x9" Floor Tile and Mastic	1st	480	S.F.	No
Window Glazing		12	Each	Yes
Sink Coating	1st	1	Each	No

II. BUILDING REMOVAL - CASE II (NON-FRIABLE ASBESTOS ABATEMENT)

A. Building No. 5	**Parcel No.**	**SR0198**		**2327 S 6th Street**
Material	Floor	Quantity Present		Friable
Sink Coating	2nd	1	Each	No

B. Building No. 21	**Parcel No.**	**SR0217**		**401 E Iles Avenue**
Material	Floor	Quantity Present		Friable
9"x9" Floor Tile and Mastic	Basement	1092	S.F.	No
Sink Coating	1st	1	Each	No

III. BUILDING REMOVAL - CASE III (FRIABLE ASBESTOS ABATEMENT)

A. Building No. 2	**Parcel No.**	**SR0193**		**2279 S 6th Street**
Material	Floor	Quantity Present		Friable
Thermal Duct Tape	Basement	50	L.F.	Yes

B. Building No. 3	**Parcel No.**	**SR0196**		**2342 S 5th Street**
Material	Floor	Quantity Present		Friable
Thermal Duct Wrap	Basement	70	L.F.	Yes

C. Building No. 9	**Parcel No.**	**SR0202**		**2405 S 5th Street**
Material	Floor	Quantity Present		Friable
Thermal Duct Tape	Basement	90	L.F.	Yes

D. Building No. 11	**Parcel No.**	**SR0203**		**2407 S 5th Street**
Material	Floor	Quantity Present		Friable
Linoleum, Gray (2 layers)	1st	224	S.F.	Yes

E. Building No. 15	**Parcel No.**	**SR0206**		**2436 S 4th Street**
Material	Floor	Quantity Present		Friable
Thermal Duct Wrap	Basement	60	L.F.	Yes

F. Building No. 24	**Parcel No.**	**SR0221**		**300 E Iles Avenue**
Material	Floor	Quantity Present		Friable
Linoleum	2nd			Yes

APPENDIX D

SHIPPING MANIFEST

Generator

1. Work Site Name and Mailing Address	Owner's Name		Owner's Telephone No.
2. Operator's Name and Address			Operator's. Telephone No
3. Waste Disposal Site (WDS) Name Mailing Address, and Physical Site Location			WDS Telephone No.
4. Name and Address of Responsible Agency			
5. Description of Materials			
6. Containers	No.	Type	
7. Total Quantity	M^3	(Yd^3)	
8. Special Handling Instructions and Additional Information			
9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.			
Printed/Typed Name & Title	Signature		Month Day Year

Transporter

10. Transporter 1 (Acknowledgement of Receipt of Materials)		
Printed/Typed Name & Title Address and Telephone No.	Signature	Month Day Year
11. Transporter 2 (Acknowledgement of Receipt of Materials)		
Printed/Typed Name & Title Address and Telephone No.	Signature	Month Day Year

Disposal Site

12. Discrepancy Indication Space		
13. Waste Disposal Site Owner or Operator: Certification of Receipt of Asbestos Materials Covered By This Manifest Except As Noted in Item 12		
Printed/Typed Name & Title	Signature	Month Day Year

APPENDIX D

INSTRUCTIONS

Waste Generator Section (Items 1-9)

1. Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.

2. If a demolition or renovation, enter the name and address of the Company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.

3. Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.

4. Provide the name and address of the local, State, or EPA Regional Office responsible for administering the asbestos NESHAP program.

5. Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is

   - Friable asbestos material
   - Nonfriable asbestos material

6. Enter the number of containers used to transport the asbestos materials listed in Item 5. Also enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below):

   DM - Metal drums, barrels
   DP - Plastic drums, barrels
   BA - 6 mil plastic bags or wrapping

7. Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).

8. Use this space to indicate special transportation, treatment, storage or disposal or Bill of Lading information. If an alternate waste disposal site is designated, note it here. Emergency response telephone numbers or similar information may be included here.

9. The authorized agent of the waste generator shall read and then sign and date this certification. The date is the date of receipt by transporter.

NOTE: The waste generator shall retain a copy of this form.

APPENDIX D

INSTRUCTIONS

Transporter Section (Items 10 & 11)

10. & 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport.

NOTE: The transporter shall retain a copy of this form.

Disposal Site Section (Items 12 & 13)

12. The authorized representative of the WDS shall note in this space any discrepancy between waste described on this mainfest and waste actually received as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to nonasbestos material is considered a WDS.

13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in Item 12. The date is the date of signature and receipt of shipment.

NOTE: The WDS shall retain a completed copy of this form. The WDS shall also send a completed copy to the operator listed in Item 2.

BUILDING REMOVAL - CASE II (NON-FRIABLE ASBESTOS ABATEMENT) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

BUILDING REMOVAL: This work shall consist of the removal and disposal of 2 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
5	SR0198	2327 S 6th Street	One and one-half story wood-framed residence on full basement with gabled shingle roof.
21	SR0217	401 E Iles Avenue	One-story wood-framed and brick residence on full basement with gabled shingle roof.

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR
HIGHWAY CONSTRUCTION
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

The Contractor has the option of removing the non-friable asbestos prior to demolition or demolishing the building(s) with the non-friable asbestos in place. Refer to the Special Provisions titled “Asbestos Abatement (General Conditions)” and “Removal and Disposal of Non-Friable Asbestos Building No. 5, 21 “ contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all non-friable asbestos is removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Two separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 5, 21

2. REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 5, 21

The Contractor shall have two options available for the removal and disposal of the non-friable asbestos.

The pay item for removal and disposal of non-friable asbestos will not be deleted regardless of the option chosen by the Contractor.

ASBESTOS ABATEMENT (GENERAL CONDITIONS): This work consists of the removal and disposal of non-friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), the Special Provision for "Removal and Disposal of Non-Friable Asbestos, Building No. 5, 21 " and as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages _____ thru _____. Also refer to the Materials Description Table on page _____ for a brief description and location of the various materials. Also included is a Materials Quantities Table on page _____. This table states the ACM is non-friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of non-friable asbestos if done prior to demolition, shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page _____, to the Engineer for the disposal of all ACM wastes.

Permits: The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of the permit(s) shall be sent to the district office and the Engineer.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition if they are done as separate operations.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276
(217) 785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.

B. Submittals that shall be made prior to start of work:

1. Submittals required under Asbestos Abatement Experience.

2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.

3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.

4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.

5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).

6. Submit a list of penalties, including liquidated damages, incurred through non-compliance with asbestos abatement project specifications.

7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.

8. Submit proof of written notification and compliance with the "Notifications" paragraph.

C. Submittals that shall be made upon completion of abatement work:

1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;

2. Submit daily copies of work site entry logbooks with information on worker and visitor access;

3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and

4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

Certificate of Insurance:

A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.

B. The Contractor shall document current Workmen's Compensation Insurance coverage.

C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement Experience:

A. Company Experience. Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.

B. Personnel Experience:

1. For Superintendent, the Contractor shall supply:

    a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.

    b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.

2. For workers involved in the removal of asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

A. Personal Monitoring. All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits shall be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.

B. Interior Non-Friable Asbestos-Containing Materials. The Contractor shall perform personal air monitoring during removal of all non-friable Transite and floor tile removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.

C. Exterior Non-Friable Asbestos-Containing Materials. The Contractor shall perform personal air monitoring during removal of all non-friable cementitious panels, piping, roofing felts, and built up roofing materials that contain asbestos.

    The Contractor shall conduct down wind area sampling to monitor airborne fiber levels at a frequency of no less than three per day.

D. Air Monitoring Professional

    1. All air sampling shall be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit

documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".

2. Air sampling shall be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 5, 21

The Contractor has the option of removing and disposing of the non-friable asbestos prior to demolition of the building(s) or demolishing the building(s) with the non-friable asbestos in place.

Option #1 - If the Contractor chooses to remove all non-friable asbestos prior to demolition, the work shall be done according to the Special Provision titled "Asbestos Abatement (General Conditions)".

Option #2 - If the Contractor chooses to demolish the building(s) with the non-friable asbestos in place, the following provisions shall apply:

1. Continuously wet all non-friable ACM and other building debris with water during demolition.

2. Dispose of all demolition debris as asbestos containing material by placing it in lined, covered transport haulers and placing it in an approved landfill.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 5, 21, as shown.

The cost for this work shall be determined as follows:

Option #1 - Actual cost of removal and disposal of non-friable asbestos.

Option #2 - The difference in cost between removing and disposing of the building if all non-friable asbestos is left in place and removing and disposing of the building assuming all non-friable asbestos is removed prior to demolition.

The cost of removing and disposing of the building(s), assuming all non-friable asbestos is removed first, shall be represented by the pay item "BUILDING REMOVAL NO. 5, 21 ".

Regardless of the option chosen by the Contractor, this pay item will not be deleted, nor will the pay item BUILDING REMOVAL NO. 5, 21 be deleted.

5048I

BUILDING REMOVAL - CASE III (FRIABLE ASBESTOS ABATEMENT) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

BUILDING REMOVAL: This work shall consist of the removal and disposal of 6 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
2	SR0193	2279 S 6th Street	One-story wood-framed residence on partial basement and partial concrete slab with gabled shingle roof.
3	SR0196	2342 S 5th Street	One-story wood-framed residence on full basement with gabled shingle roof.
9	SR0202	2405 S 5th Street	One-story brick residence on full basement with shingled hip roof.
11	SR0203	2407 S 5th Street	One-story brick residence on full basement with shingled hip roof.
15	SR0206	2436 S 4th Street	One-story brick residence on full basement with shingles hip roof
24	SR0221	300 E Iles Avenue	Two-story wood-framed office building on full basement with mansard roof with shingles around the perimeter and rubber roof covering in the center.

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR
HIGHWAY CONSTRUCTION
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

All friable asbestos shall be removed from the building(s) prior to demolition. Refer to the Special Provisions titled “Asbestos Abatement (General Conditions)” and “Removal and Disposal of Friable Asbestos Building No. 2, 3, 9, 11, 15, 24 contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all friable asbestos has been removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Two separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 2, 3, 9, 11, 15, 24

2. REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 2, 3, 9, 11, 15, 24

ASBESTOS ABATEMENT (GENERAL CONDITIONS): This work consists of the removal and disposal of friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), the Special Provision for "Removal and Disposal of Friable Asbestos, Building No. 2, 3, 9, 11, 15, 24," and as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages _____ thru _____. Also refer to the Materials Description Table on page _____ for a brief description and location of the various materials. Also included is a Materials Quantities Table on page _____. This table states the ACM is friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of friable asbestos shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page _____, to the Engineer for the disposal of all ACM wastes.

Permits: The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of these permits shall be sent to the district office and the Engineer.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.

B. Submittals that shall be made prior to start of work:

1. Submittals required under Asbestos Abatement Experience.

2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.

3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.

4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.

5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).

6. Submit a list of penalties, including liquidated damages, incurred through non-compliance with asbestos abatement project specifications.

7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be

used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.

8. Submit proof of written notification and compliance with the “Notifications” paragraph.

C. Submittals that shall be made upon completion of abatement work:

1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;

2. Submit daily copies of work site entry logbooks with information on worker and visitor access;

3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and

4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

Certificate of Insurance:

A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.

B. The Contractor shall document current Workmen's Compensation Insurance coverage.

C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement Experience:

A. Company Experience: Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.

B. Personnel Experience:

1. For Superintendent, the Contractor shall supply:

a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model

Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.

b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.

2. For workers involved in the removal of asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

A. Personal Monitoring: All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits will be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.

B. Contained Work Areas for Removal of Friable Asbestos: Area samples shall be collected for the department within the work area daily. A minimum of one sample shall be taken outside of the abatement area removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.

C. Air Monitoring Professional

1. All air sampling will be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".

2. Air sampling will be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

<u>REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 2, 3, 9, 11, 15, 24</u>
This work consists of the removal and disposal of all friable asbestos from the building(s) prior to demolition. The work shall be done according to the Special Provision titled “Asbestos Abatement (General Conditions)” and as outlined herein.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. 2, 3, 9, 11, 15, 24 as shown.

5049I

BUILDING REMOVAL - CASE IV (NO ASBESTOS) (BDE)

Effective: September 1, 1990
Revised: April 1, 2010

BUILDING REMOVAL: This work shall consist of the removal and disposal of 11 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

Bldg. No.	Parcel No.	Location	Description
4	SR0196	2342 S 5th Street	Wood frame storage building with gabled shingle roof.
7	SR0200	2406 S 5th Street	Wood-framed garage with gabled shingle roof.
10	SR0202	2405 S 5th Street	Wood-framed garage with gabled shingle roof.
12	SR0204	2428 S 4th Street	Wood-framed garage with gabled shingle roof.
14	SR0205	2432 S 4th Street	Wood-framed garage with gabled shingle roof.
17	SR0208	2409 S 5th Street	Wood-framed garage with gabled shingle roof.
19	SR0209	2413 S 5th Street	Wood-framed garage with gabled shingle roof.
20	SR0216	409 E Iles Avenue	Wood-framed garage with gabled shingle roof.
22	SR0217	401 E Iles Avenue	Wood-framed garage with gabled shingle roof.
23	SR0219	2500 Burton Drive	One-story wood-framed residence on crawl space with gabled shingle roof.
25	SR0221	300 E Iles Avenue	Wood-framed garage with gabled shingle roof.

Discontinuance of Utilities: The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR
HIGHWAY CONSTRUCTION
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein.

The lump sum unit price(s) for this work shall represent the cost of demolition. Any salvage value shall be reflected in the contract unit price for this item.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any demolition activity.

Asbestos Demolition/Renovation Coordinator
Illinois Environmental Protection Agency
Division of Air Pollution Control
P. O. Box 19276
Springfield, Illinois 62794-9276
(217)785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.

B. Prior to starting work, the Contractor shall submit proof of written notification and compliance with the “Notifications” paragraph.

5053I

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."

80384

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 7.00 % 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" 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.

(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.

80029

DISPOSAL FEES (BDE)

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

"(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first $10,000 and one percent of any amount over $10,000 of the total approved costs of such fees.

(6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

(7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.

b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

c. Quantities of materials, prices and extensions.

d. Transportation of materials.

e. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.

(8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being $100.

(9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form “Extra Work Daily Report”. If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery.”

80402

EMULSIFIED ASPHALTS (BDE)

Effective: August 1, 2019

Revise Article 1032.06 of the Standard Specifications to read:

"**1032.06 Emulsified Asphalts.** Emulsified asphalts will be accepted according to the current Bureau of Materials Policy Memorandum, "Emulsified Asphalt Acceptance Procedure". These materials shall be homogeneous and shall show no separation of asphalt after thorough mixing, within 30 days after delivery, provided separation has not been caused by freezing. They shall coat the aggregate being used in the work to the satisfaction of the Engineer and shall be according to the following requirements.

(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts RS-1, RS-2, HFRS-2, SS-1h, and SS-1 shall be according to AASHTO M 140, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(b) Cationic Emulsified Asphalt. Cationic emulsified asphalts CRS-1, CRS-2, CSS-1h, and CSS-1 shall be according to AASHTO M 208, except as follows.

(1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(c) High Float Emulsion. High float emulsions HFE-90, HFE-150, and HFE-300 are medium setting and shall be according to the following table.

Test	HFE-90	HFE-150	HFE-300
Viscosity, Saybolt Furol, at 122 °F (50 °C), (AASHTO T 59), SFS [1/]	50 min.	50 min.	50 min.
Sieve Test, No. 20 (850 µm), retained on sieve, (AASHTO T 59), %	0.10 max.	0.10 max.	0.10 max.
Storage Stability Test, 1 day, (AASHTO T 59), %	1 max.	1 max.	1 max.
Coating Test (All Grades), (AASHTO T 59), 3 minutes	stone coated thoroughly		
Distillation Test, (AASHTO T 59): Residue from distillation test to 500 °F (260 °C), % Oil distillate by volume, %	65 min. 7 max.	65 min. 7 max.	65 min. 7 max.

Characteristics of residue from distillation test to 500 °F (260 °C): Penetration at 77 °F (25 °C), (AASHTO T 49), 100 g, 5 sec, dmm	90-150	150-300	300 min.
Float Test at 140 °F (60 °C), (AASHTO T 50), sec.	1200 min.	1200 min.	1200 min.

1/ The emulsion shall be pumpable.

(d) Penetrating Emulsified Prime. Penetrating Emulsified Prime (PEP) shall be according to AASHTO T 59, except as follows.

Test	Result
Viscosity, Saybolt Furol, at 77 °F (25 °C), SFS	75 max.
Sieve test, retained on No. 20 (850 µm) sieve, %	0.10 max.
Distillation to 500 °F (260 °C) residue, %	38 min.
Oil distillate by volume, %	4 max.

The PEP shall be tested according to the current Bureau of Materials Illinois Laboratory Test Procedure (ILTP), "Sand Penetration Test of Penetrating Emulsified Prime (PEP)". The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30.

(e) Delete this subparagraph.

(f) Polymer Modified Emulsified Asphalt. Polymer modified emulsified asphalts, e.g. SS-1hP, CSS-1hP, CRS-2P (formerly CRSP), CQS-1hP (formerly CSS-1h Latex Modified) and HFRS-2P (formerly HFP) shall be according to AASHTO M 316, except as follows.

(1) The cement mixing test will be waived when the polymer modified emulsion is being used as a tack coat.

(2) CQS-1hP (formerly CSS-1h Latex Modified) emulsion for micro-surfacing treatments shall use latex as the modifier.

(3) Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout.

(4) The distillation for all polymer modified emulsions shall be performed according to AASHTO T 59, except the temperature shall be 374 ± 9 °F (190 ± 5 °C) to be held for a period of 15 minutes and measured using an ASTM 16F (16C) thermometer.

(5) The specified temperature for the Elastic Recovery test for all polymer modified emulsions shall be 50.0 ± 1.0 °F (10.0 ± 0.5 °C).

(6) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(g) Non-Tracking Emulsified Asphalt. Non-tracking emulsified asphalt NTEA (formerly SS-1vh) shall be according to the following.

Test	Requirement
Saybolt Viscosity at 77 °F (25 °C), (AASHTO T 59), SFS	20-100
Storage Stability Test, 24 hr, (AASHTO T 59), %	1 max.
Residue by Distillation, 500 ± 10 °F (260 ± 5 °C), or Residue by Evaporation, 325 ± 5 °F (163 ± 3 °C), (AASHTO T 59), %	50 min.
Sieve Test, No. 20 (850 µm), (AASHTO T 59), %	0.3 max.
Tests on Residue from Evaporation	
Penetration at 77 °F (25 °C), 100 g, 5 sec, (AASHTO T 49), dmm	40 max.
Softening Point, (AASHTO T 53), °F (°C)	135 (57) min.
Ash Content, (AASHTO T 111), % 1/	1 max.

1/ The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent

The different grades are, in general, used for the following.

Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, NTEA (formerly SS-1vh)	Tack Coat
PEP	Prime Coat
RS-2, HFE-90, HFE-150, HFE-300, CRS-2P (formerly CRSP), HFRS-2P (formerly HFP), CRS-2, HFRS-2	Bituminous Surface Treatment
CQS-1hP (formerly CSS-1h Latex Modified)	Micro-Surfacing Slurry Sealing Cape Seal”

80415

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

"**701.11 Equipment Parking and Storage.** During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

(a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.

(b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.

(c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.

(d) Behind other man-made or natural barriers meeting the approval of the Engineer."

80388

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_P = Fuel Price Index, as published by the Department for the month the work is performed, $/gal ($/liter)
FPI_L = 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_L and FPI_P in excess of five percent, as calculated by:

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.

80229

HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010
Revised: August 1, 2018

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed."

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

"Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4% [1/]	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 [2/]– 97.4%	90.0%

SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0%”

80246

HOT-MIX ASPHALT – OSCILLATORY ROLLER (BDE)

Effective: August 1, 2018
Revised: November 1, 2018

Add the following to Article 406.03 of the Standard Specifications:

"(j) Oscillatory Roller .....1101.01"

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Level Binder: (When the density requirements of Article 406.05(c) do not apply.)	P 3/	- -	V_S, P 3/, T_B, T_F, 3W, O_T	To the satisfaction of the Engineer.
Binder and Surface 1/ Level Binder 1/: (When the density requirements of Article 406.05(c) apply.)	V_D, P 3/, T_B, 3W, O_T, O_B	P 3/, O_T, O_B	V_S, T_B, T_F, O_T	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA 4/ 5/	T_B, 3W, O_T	- -	T_F, 3W, O_T	
Bridge Decks 2/	T_B	- -	T_F	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V_D) or oscillatory roller (O_T or O_B) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder."

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

"O_T - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O_B - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m)."

Add the following to Article 1101.01 of the Standard Specifications:

"(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

(1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm)48 in. (1200 mm);

(2) The minimum length of the drum(s) shall be 57 in. (1480 mm)66 in. (1650 mm);

(3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and

(4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN)."; and

(5) Self-adjusting eccentrics, and reversible eccentrics on non-driven drum(s)."

80399

LIGHTS ON BARRICADES (BDE)

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

"**701.16 Lights.** Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and "ROUGH GROOVED SURFACE" (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer."

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

"**603.07 Protection Under Traffic.** After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours."

80392

LUMINAIRES, LED (BDE)

Effective: April 1, 2019

Description. This work shall consist of furnishing and installing light emitting diode (LED) luminaires. Work shall be according to Sections 801, 821, and 1067 of the Standard Specifications, except as modified herein.

Submittals. In addition to the requirements listed in Article 801.05(a), submittals for LED luminaires shall include the following.

- Completed manufacturer's luminaire ordering form with the full catalog number provided.
- Descriptive literature and catalog cuts for the luminaire, driver, and surge protective device.
- Lighting calculations generated with AGi32 software demonstrating compliance with the Luminaire Performance Table shown in the contract. These calculations shall be performed to the following criteria: photopic units shall be used; calculations shall be performed to an accuracy of two digits (x.xx cd/m^2); point-by-point illuminance, luminance, and veiling luminance ratios demonstrating that the submitted luminaire meets the lighting metrics specified in the Luminaire Performance Table using IES RP-8 methods.

Upon request by the Engineer, submittals for LED Luminaires shall also include any or all the following.

- IES file associated with each submitted luminaire in IES LM-63 format.
- 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).
- 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.
- 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.
- In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.
- Vibration test report in accordance with ANSI C136.31 in PDF format.

- ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.

- ASTM G154 (ASTM D523) gloss test report in PDF format.

- LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).

- 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.

- Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.

- Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.

- Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

Warranty. Replace the last sentence of Article 801.14(a) with the following.

"The warranty, including the maintained minimum luminance, for LED signal head modules, optically programmed LED signal head modules, and LED pedestrian signal head modules shall cover a minimum of 60 months from the date of delivery. The warranty for LED roadway luminaires, LED highmast luminaires, LED underpass luminaires, LED sign lighting luminaires, LED obstruction warning luminaires, and all of their components shall cover a minimum of ten years from the date of delivery."

Roadway Luminaires. Revise Article 821.02(d) to read.

"(d) Light Source .....1067.06"

Revise the third paragraph of Article 821.03 to read.

"Each luminaire driver and/or driver arrangement shall be checked to assure compatibility with the project power supply. When the luminaire driver has a readily accessible electrical compartment, the driver shall be attached so as to be easily removed for maintenance."

Replace the fifth paragraph of Article 821.03 with the following.

"No luminaire shall be installed before it is approved. When independent luminaire testing is required, full approval will not be given until complete test results which demonstrate compliance with the contract documents have been reviewed and accepted by the Engineer. Independent luminaire testing will be required, and shall be conducted, according to Article 1067.01(k)".

Revise the last paragraph of Article 821.03 to read.

"When installing or adjusting the luminaire, care shall be taken to avoid touching the lenses or allowing contaminants to be deposited on any part of the optical assembly. Each lens shall be free of all dirt, smudges, etc. Should the luminaire require cleaning, the luminaire manufacturer's cleaning instructions shall be strictly followed."

Revise Article 821.08 to read.

"**821.08 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; LUMINAIRE, LED, HIGHMAST, of the output designation specified; LUMINAIRE, LED, UNDERPASS, WALLMOUNT, of the output designation specified; LUMINAIRE, LED, UNDERPASS, SUSPENDED, of the output designation specified; LUMINAIRE, LED, SIGN LIGHTING, of the output designation specified.

When independent luminaire testing is required, the work will be paid for at the contract lump sum price for INDEPENDENT LUMINAIRE TESTING."

Luminaires. Revise Articles 1067.01 through 1067.06 to read.

"**1067.01 General.** 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.

(a) 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).

(b) 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.

(c) 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.

(d) Housing. 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.

(e) Driver. The driver shall be integral to the luminaire and shall be capable of receiving 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 (± 10%) or 347 to 480 volts (± 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.

(f) Photometric Performance. The luminaire shall be IES LM-79 tested by a laboratory holding accreditation from the NVLAP for IES LM-79 testing procedures. At a minimum the LM-79 report shall include a backlight/uplight/glare (BUG) rating and a luminaire classification system (LCS) graph showing lumen values and percent lumens by zone as described in IES RP-8. The uplight of the BUG rating shall be U=0.

The luminaire shall also meet the requirements of the Luminaire Performance Table shown in the contract.

(g) Finish. The luminaire shall have a baked acrylic enamel finish. The color of the finish shall be gray, bronze, or black to match the pole or tower on which the luminaire is mounted.

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.

(h) 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.

(i) 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.

(j) Wiring. All wiring in the luminaire shall be rated for operation at 600V, 221 °F (105 °C).

(k) Independent Luminaire Testing. When a contract has 30 or more luminaires of the same manufacturer's catalog number, that luminaire shall be independently tested to verify it will meet the contract requirements. The quantity of luminaires requiring testing shall be one luminaire for the first 30 plus one additional luminaire for each additional 50 luminaires of that catalog number. Testing is not required for temporary lighting luminaires.

Prior to testing the Contractor shall propose a properly accredited laboratory and a qualified independent witness, submitting their qualifications to the Engineer for approval. After approval, the Contractor shall coordinate the testing and pay all associated costs, including travel expenses, for the independent witness.

(1) Independent Witness. The independent witness shall select from the project luminaires at the manufacturer's facility 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. The independent witness shall mark each sample luminaire's shipping carton with the IDOT contract number and a unique sample identifier.

At the time of random selection, the independent witness shall inspect the luminaire(s) for compliance with all physical, mechanical, and labeling requirements for luminaires

according to Sections 821 and 1067. If deficiencies are found during the physical inspection, the Contractor shall have all luminaires of that manufacturer's catalog number inspected for the identified deficiencies and shall correct the problem(s) where found. Random luminaire selection and physical inspection must then be repeated. When the physical inspection is successfully completed, the independent witness shall mark the project number and sample identifier on the interior housing and driver of the luminaires and have them shipped to the laboratory.

The independent witness shall be present when testing is approved to be performed by the luminaire manufacturer. If the tests are performed by a laboratory independent of the luminaire manufacturer, distributor, and Contractor, the independent witness need not be present during the testing.

(2) Laboratory Testing. Luminaires shall be tested at an NVLAP accredited laboratory approved for each of the required tests. The testing shall include photometric, colorimetric, and electrical testing according to IES LM-79. Colorimetric values shall be determined from total spectral radiant flux measurements using a spectroradiometer. Photometric testing shall be according to IES recommendations and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, 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, BUG rating report, and complete calculations based on specified requirements and test results.

All testing shall cover the full spherical light output at a maximum of 5 degree intervals at the vertical angles. The vertical angles shall run from 0 to 180 degrees. There shall be a minimum of 40 lateral test planes listed in Fig. 1 of IES LM-31 plus the two planes containing the maximum candela on the left and right sides of the luminaire axis. Before testing, the luminaire when mounted on the goniometer shall be scanned for vertical and horizontal angles of maximum candela and these planes included in the test. The luminaire shall be checked for a bi-symmetric light distribution. Individual tests must be conducted for each hemisphere, quadrant, and left/right sides.

The results for each photometric and colorimetric test performed shall be presented in a standard IES LM-79 report that includes the contract number, sample identifier, and the outputs listed above. The calculated results for each sample luminaire shall meet or exceed the contract specified levels in the luminaire performance table(s). The laboratory shall mark its test identification number on the interior of each sample luminaire.

Electrical testing shall be in according to IES LM-79 as well as NEMA and ANSI standards. The report shall list luminaire characteristics including input amperes, watts, power factor, total harmonic distortion, and LED driver current for full and partial power.

(3) Summary Test Report. The summary test report shall consist of a narrative documenting the test process, highlight any deficiencies and corrective actions, and clearly state which luminaires have met or exceeded the test requirements and may be released for delivery to the jobsite. Photographs shall also be used as applicable to document luminaire deficiencies and shall be included in the test report. The summary test report shall include the Luminaire Physical Inspection Checklist (form BDE 5650), photometric and electrical test reports, and point-by-point photometric calculations performed in AGi32 sorted by luminaire manufacturers catalog number. All test reports shall be certified by the independent test laboratory's authorized representative or the independent witness, as applicable, by a dated signature on the first page of each report. The summary test reports shall be delivered to the Engineer and the Contractor as an electronic submittal. Hard copy reports shall be delivered to the Engineer for record retention.

(4) Approval of Independent Testing Results. Should any of the tested luminaires fail to satisfy the specifications and perform according to approved submittal information, all luminaires of that manufacturers catalog number shall be deemed unacceptable and shall be replaced by alternate equipment meeting the specifications. The submittal and testing process shall then be repeated in its entirety. The Contractor may request in writing that unacceptable luminaires be corrected in lieu of replacement. The request shall identify the corrections to be made and upon approval of the request, the Contractor shall apply the corrections to the entire lot of unacceptable luminaires. Once the corrections are completed, the testing process shall be repeated, including selection of a new set of sample luminaires. The number of luminaires to be tested shall be the same quantity as originally tested.

The process of retesting, correcting, or replacing luminaires shall be repeated until luminaires for each manufacturers catalog number are approved for the project. Corrections and re-testing shall not be grounds for additional compensation or extension of time. No luminaires shall be shipped from the manufacturer to the jobsite until all luminaire testing is completed and approved in writing.

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen independent witness and laboratory. All summary test reports, written reports, and the qualifications of the independent witness and laboratory shall be submitted for approval to the Engineer with a copy to the Bureau of Design and Environment, 2300 S Dirksen Parkway, Room 330 Springfield, IL 62764.

1067.02 Roadway Luminaires. Roadway luminaires shall be according to Article 1067.01 and the following.

The luminaire shall be horizontally mounted and shall be designed to slip-fit on a 2-3/8 in. (60 mm) outside diameter pipe arm with a stop to limit the amount of insertion to 7 in. (180 mm). It shall not be necessary to remove or open more than the access door to mount the luminaire.

The effective projected area (EPA) of the luminaire shall not exceed 1.6 sq ft (0.149 sq m) and the 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.

The luminaire shall be equipped with both internal and external leveling indicators. The external leveling indicator shall be clearly visible in daylight to an observer directly under the luminaire at a mounting height of 50 ft (15.2 m).

The luminaire shall be fully prewired to accept a seven-pin, twist-lock receptacle that is compliant with ANSI C136.41. All receptacle pins shall be connected according to TALQ Consortium protocol.

The luminaire shall be provided with an installed shorting cap that is compliant with ANSI C136.10.

1067.03 Highmast Luminaires. Highmast luminaires shall be according to Article 1067.01 and the following.

The luminaire shall be horizontally mounted and shall be designed and manufactured for highmast tower use. The EPA of the luminaire shall not exceed 3.0 sq ft (0.279 sq m) and the weight, including accessories, shall not exceed 85 lb (38.6 kg).

The optical assembly shall be capable of being rotated 360 degrees. A vernier scale shall be furnished on the axis of rotation for aiming the luminaire in relation to its mounting tenon arm. The scale shall be graduated in 5 degree increments or less. The luminaire shall be clearly marked at the vernier as to ‘house-side’ and ‘street-side’ to allow proper luminaire orientation.

1067.04 Underpass Luminaires. Underpass luminaries shall be according to Article 1067.01 and the following.

The underpass luminaire shall be complete with all supports, hardware, and appurtenant mounting accessories. The underpass luminaire shall be suitable for lighting a roadway underpass at an approximate mounting height of 15 ft (4.5 m) from a position suspended directly above the roadway edge of pavement or attached to a wall or pier. The underpass luminaire shall meet the requirements of ANSI C136.27.

It shall not be necessary to remove more than the cover, reflector and lens to mount the luminaire. The unit shall be heavy duty, suitable for highway use and shall have no indentations or crevices in which dirt, salt, or other corrosives may collect.

(a) Housing. The housing and lens frame shall be made of heavy duty die cast aluminum or 16 gauge (1.5 mm) minimum thickness Type 304 stainless steel. All seams in the housing enclosure shall be welded by continuous welds.

The housing shall have an opening for installation of a 3/4 in. (19 mm) diameter conduit.

(b) Lens and Lens Frame. The frame shall not overlap the housing when closed. The luminaire shall have a flat glass lens to protect the LEDs from dirt accumulation or be designed to prevent dirt accumulation. The optic assembly shall be rated IP 66 or higher.

1067.05 Sign Lighting Luminaires. Sign lighting luminaries shall be suitable for lighting overhead freeway and expressway guide signs; and shall be according to Article 1067.01.

1067.06 Light Sources. The light sources in all luminaires shall be LED according to Article 1067.01 and the following.

(a) The light source shall be according to ANSI C136.37 for solid state light sources used in roadway and area lighting.

(b) The light source shall have a minimum color rendering index (CRI) of 70 and a nominal correlated color temperature (CCT) of 4000 K.

(c) The rated initial 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.

Output Designations and Initial Luminous Flux			*(for information only)*
Output Designation	**Initial Luminous Flux (lm)**		Approximate High Pressure Sodium (HPS) Equivalent Wattage
A	2,200		35 (Low Output)
B	3,150		50 (Low Output)
C	4,400		70 (Low Output)
D	6,300		100 (Low Output)
E	9,450		150 (Low Output)
F	12,500		200 (Med Output)
G	15,500		250 (Med Output)
H	25,200		400 (Med Output)
I	47,250		750 (High Output)
J	63,300		1,000 (High Output)
K	80,000+		1,000+ (High Output)

Luminaires with an initial luminous flux less than the values listed in the above table may be acceptable if they meet the requirements given in the Luminaire Performance Table shown in the contract."

80411

MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)

Effective: January 1, 2018
Revised: March 1, 2019

Description. In addition to those manufactured according to the current standards included in this contract, manholes, valve vaults, and flat slab tops manufactured prior to March 1, 2019, according to the previous Highway Standards listed below will be accepted on this contract:

Product	Previous Standards		
Precast Manhole Type A, 4' (1.22 m) Diameter	602401-05	602401-04	602401-03
Precast Manhole Type A, 5' (1.52 m) Diameter	602402-01	602402	602401-03
Precast Manhole Type A, 6' (1.83 m) Diameter	602406-09	602406-08	602406-07
Precast Manhole Type A, 7' (2.13 m) Diameter	602411-07	602411-06	602411-05
Precast Manhole Type A, 8' (2.44 m) Diameter	602416-07	602416-06	602416-05
Precast Manhole Type A, 9' (2.74 m) Diameter	602421-07	602421-06	602421-05
Precast Manhole Type A, 10' (3.05 m) Diameter	602426-01	602426	
Precast Valve Vault Type A, 4' (1.22 m) Diameter	602501-04	602501-03	602501-02
Precast Valve Vault Type A, 5' (1.52 m) Diameter	602506-01	602506	602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05	602601-04	

The following revisions to the Standard Specifications shall apply to manholes, valve vaults, and flat slab tops manufactured according to the current standards included in this contract:

Revise Article 602.02(g) of the Standard Specifications to read:

"(g) Structural Steel (Note 4) 1006.04

Note 4. All components of the manhole joint splice shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable."

Add the following to Article 602.02 of the Standard Specifications:

"(s) Anchor Bolts and Rods (Note 5) 1006.09

Note 5. The threaded rods for the manhole joint splice shall be according to the requirements of ASTM F 1554, Grade 55, (Grade 380)."

Revise the second paragraph of Article 1042.10 of the Standard Specifications to read:

"Catch basin Types A, B, C, and D; Manhole Type A; Inlet Types A and B; Drainage Structures Types 1, 2, 3, 4, 5, and 6; Valve Vault Type A; and reinforced concrete flat slab top (Highway Standard 602601) shall be manufactured according to AASHTO M 199 (M 199M), except the minimum wall thickness shall be as shown on the plans. Additionally, catch basins, inlets, and drainage structures shall have a minimum concrete compressive strength of 4500 psi

(31,000 kPa) at 28 days and manholes, valve vaults, and reinforced concrete flat slab tops shall have a minimum concrete compressive strength of 5000 psi (34,500 kPa) at 28 days."

80393

PAVEMENT MARKING REMOVAL (BDE)

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

"**783.02 Equipment.** Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery	1101.12

Note 1. Grinding equipment shall be approved by the Engineer."

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

"**783.03 Removal of Conflicting Markings.** Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours."

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

"The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage."

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

"**783.04 Cleaning.** The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast."

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

"**783.06 Basis of Payment.** This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING."

Delete Article 1101.13 from the Standard Specifications.

80371

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

"If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made."

80390

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	
	PP-1	4.0 - 8.0"
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type."

80389

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

"(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than $1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved."

80328

RAILROAD PROTECTIVE LIABILITY INSURANCE (5 AND 10) (BDE)

Effective: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be 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. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Norfolk Southern Railway Co. Three Commercial Place Norfolk, VA 25310-2191	None	16 Trains / Day 60 mph

DOT/AAR No.: 479343H and 479342B
RR Division: Western
RR Mile Post: DH-416.28 and DH 416.16
RR Sub-Division: Decatur

For Freight/Passenger Information Contact: Fred Schesny Phone: 404-529-1256
For Insurance Information Contact: Scott Dickerson Phone: 757-629-2364

DOT/AAR No.:
RR Division:
RR Mile Post:
RR Sub-Division:

For Freight/Passenger Information Contact: Phone:
For Insurance Information Contact: Phone:

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
Bureau of Design and Environment
2300 South Dirksen Parkway, Room 326
Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

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.

80157

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012
Revise: January 1, 2019

Revise Section 1031 of the Standard Specifications to read:

"**SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

(a) Reclaimed Asphalt Pavement (RAP). RAP is the material produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.

(1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.

(2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

(a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District provide documentation on the quality of the RAP to clarify the appropriate stockpile.

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be fractionated prior to testing by screening into a minimum of two size fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

Mixture FRAP will be used in:	Sieve Size that 100 % of FRAP Shall Pass
IL-19.0	1 1/2 in. (40 mm)
IL-9.5	3/4 in. (20 mm)
IL-4.75	1/2 in. (13 mm)

(2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogeneous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.

(3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.

(4) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP/FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted to improve workability. The sand shall be "B Quality" or better from an

approved Aggregate Gradation Control System source. The sand shall be accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. RAP/FRAP and RAS testing shall be according to the following.

(a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during or after stockpiling.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Each sample shall be split to obtain two equal samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(b) RAS Testing. RAS or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Shingle (RAS) Source”.

Samples shall be collected during stockpiling at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 250 tons (225 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS or RAS blended with manufactured sand shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

Before testing, each sample shall be split to obtain two test samples. One of the two test samples from the final split shall be labeled and stored for Department use. The

Contractor shall perform a washed extraction and test for unacceptable materials on the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

If the sampling and testing was performed at the shingle processing facility in accordance with the QC Plan, the Contractor shall obtain and make available all of the test results from start of the initial stockpile.

1031.04 Evaluation of Tests. Evaluation of test results shall be according to the following.

(a) Evaluation of RAP/FRAP Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation, and when applicable G_{mm}. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	FRAP/Homogeneous/ Conglomerate
1 in. (25 mm)	
1/2 in. (12.5 mm)	± 8 %
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	
No. 30 (600 µm)	± 5 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder	± 0.4 % 1/
G_{mm}	± 0.03

1/ The tolerance for FRAP shall be ± 0.3 %.

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAP/FRAP shall not be used in HMA unless the RAP/FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, “Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)”.

(b) Evaluation of RAS and RAS Blended with Manufactured Sand Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %

No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder Content	± 1.5 %

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, or if the percent unacceptable material exceeds 0.5 percent by weight of material retained on the # 4 (4.75 mm) sieve, the RAS or RAS blend shall not be used in Department projects. All test data and acceptance ranges shall be sent to the District for evaluation.

1031.05 Quality Designation of Aggregate in RAP/FRAP.

(a) RAP. The aggregate quality of the RAP for homogeneous and conglomerate stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

(1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from Class I binder, Superpave/HMA (High ESAL) binder, or (Low ESAL) IL-19.0L binder mixtures are designated as containing Class C quality coarse aggregate.

(b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5000 tons (4500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications.

1031.06 Use of RAP/FRAP and/or RAS in HMA. The use of RAP/FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

(a) RAP/FRAP. The use of RAP/FRAP in HMA shall be as follows.

(1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.

(3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.

(4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.

(5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, or conglomerate.

(6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given Ndesign.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the Max RAP/RAS ABR table listed below for the given Ndesign.

RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures 1/, 2/	RAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
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). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when RAP/RAS ABR exceeds 25 percent (i.e. 26 percent RAP/RAS ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

(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 FRAP/RAS table listed below for the given Ndesign.

FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures 1/, 2/	FRAP/RAS Maximum ABR %					
Ndesign	Binder/Leveling Binder		Surface		Polymer Modified	
	w/o I-FIT	with I-FIT	w/o I-FIT	with I-FIT	w/o I-FIT	with I-FIT
30	50	55	40	45	10	15
50	40	45	35	40	10	15
70	40	45	30	35	10	15
90	40	45	30	35	10	15
SMA	- -	- -	- -	- -	20	25
IL-4.75	- -	- -	- -	- -	30	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). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when FRAP/RAS ABR exceeds 25 percent (i.e. 26 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP and/or RAS stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP/FRAP and/or RAS stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP/FRAP and/or RAS stockpiles may be used in the original mix design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design.

The RAP, FRAP, and RAS stone bulk specific gravities (G_{sb}) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity (G_{sb}) of Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

1031.08 HMA Production. HMA production utilizing RAP/FRAP and/or RAS shall be as follows.

(a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material.

If the RAP/FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP/FRAP and either switch to the virgin aggregate design or submit a new RAP/FRAP design.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) RAP/FRAP and/or RAS. HMA plants utilizing RAP/FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

d. Accumulated dry weight of RAP/FRAP/RAS in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

g. Residual asphalt binder in the RAP/FRAP material as a percent of the total mix to the nearest 0.1 percent.

h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in wet condition.)

(2) Batch Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

d. Mineral filler weight to the nearest pound (kilogram).

e. RAP/FRAP/RAS weight to the nearest pound (kilogram).

f. Virgin asphalt binder weight to the nearest pound (kilogram).

g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B. The use of RAP in aggregate surface course (temporary access entrances only) and aggregate wedge shoulders, Type B shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except “Non-Quality” and “FRAP”. The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.

(b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted.”

80306

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019

Revise Section 669 of the Standard Specifications to read:

"**SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

669.01 Description. This work shall consist of the transportation and proper disposal of contaminated soil and groundwater. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

669.02 Equipment. The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

669.03 Pre-construction Submittals. Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a Regulated Substance Pre-Construction Plan (RSPCP) to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the qualifications of Contractor(s) or firm(s) performing the following work shall be listed.

(a) On-Site Monitoring. Qualification for on-site monitoring of regulated substance work and on-site monitoring of UST removal requires either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and special waste operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements.

Qualification for each individual performing on-site monitoring requires a minimum of one-year of experience in similar activities as those required for the project.

(b) Underground Storage Tank. Qualification for underground storage tank (UST) work requires licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 30 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 30 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field.

CONSTRUCTION REQUIREMENTS

669.04 Contaminated Soil and/or Groundwater Monitoring. Prior to beginning excavation, the Contractor shall mark the limits of removal for approval by the Engineer. Once excavation begins, the work and work area involving regulated substances shall be monitored by qualified personnel. The qualified personnel shall be on-site continuously during excavation and loading of material containing regulated substances. The qualified personnel shall be equipped with either a photoionization detector (PID) (minimum 10.6eV lamp), or a flame ionization detector (FID), and other equipment, as appropriate, to monitor for potential contaminants associated with volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs). The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily, and as field and weather conditions change. Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

The qualified personnel shall document field activities using form BDE 2732 (Regulated Substances Monitoring Daily Record) including the name(s) of personnel conducting the monitoring, weather conditions, PID or FID calibration records, a list of equipment used on-site, a narrative of activities completed, photo log sheets, manifests and landfill tickets, monitoring results, how regulated substances were managed and other pertinent information.

Samples will be collected in accordance with the RSPCP. Samples shall be analyzed for the contaminants of concern (COCs), including pH, based on the property's land use history, the encountered abnormality and/or the parameters listed in the maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605. The analytical results shall serve to document the level of contamination.

Samples shall be grab samples (not combined with other locations). The samples shall be taken with decontaminated or disposable instruments. The samples shall be placed in sealed containers and transported in an insulated container to the laboratory. The container shall maintain a temperature of 39 °F (4 °C). All samples shall be clearly labeled. The labels shall indicate the sample number, date sampled, collection location and depth, and any other relevant observations.

The laboratory shall use analytical methods which are able to meet the lowest appropriate practical quantitation limits (PQL) or estimated quantitation limit (EQL) specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846; "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA-600/4-88/039; and “Methods for the Determination of Organic Compounds in Drinking Water, Supplement III”, EPA 600/R-95/131, August 1995. For parameters where the specified cleanup objective is below the acceptable detection limit (ADL), the ADL shall serve as the cleanup objective. For other parameters the ADL shall be equal to or below the specified cleanup objective.

669.05 Contaminated Soil and/or Groundwater Management and Disposal. The management and disposal of contaminated soil and/or groundwater shall be according to the following:

(a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605, the soil shall be managed as follows:

(1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but they are still considered within area background levels by the Engineer, the excavated soil can be utilized within the construction limits as fill, when suitable. If the soils cannot be utilized within the construction limits, they shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.

(2) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as “uncontaminated soil” at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as “uncontaminated soil” at a CCDD facility or an USFO within an MSA County excluding Chicago or within

the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above, the soil shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the construction limits or managed and disposed off-site as "uncontaminated soil" according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.

(1) The pH of the soil is less than 6.25 or greater than 9.0.

(2) The soil exhibited PID or FID readings in excess of background levels.

(c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 IAC 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way or managed and disposed off-site as "uncontaminated soil" according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.

(d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Illinois Administrative Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste. The groundwater shall be containerized and trucked to an off-site treatment facility or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sewer.

All groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench it must be removed as a special or hazardous waste. The Contractor is

prohibited from managing groundwater within the trench by discharging it through any existing or new storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than 10^{-7} cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall be responsible for transporting and disposing all material classified as a non-special waste, special waste, or hazardous waste from the job site to an appropriately permitted landfill facility. The transporter and the vehicles used for transportation shall comply with all federal, state, and local rules and regulations governing the transportation of non-special waste, special waste, or hazardous waste.

All equipment used by the Contractor to haul contaminated material to the landfill facility shall be lined with a 6 mil (150 micron) polyethylene liner and securely covered during transportation. The Contractor shall obtain all documentation including any permits and/or licenses required to transport the contaminated material to the disposal facility.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Engineer shall coordinate with the Contractor on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate for waste disposal approval with the disposal facility. After the Contractor completes these activities and upon receipt of authorization from the Engineer, the Contractor shall initiate the disposal process.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). The Engineer shall maintain the file for all such documentation. For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation the Contractor (or subcontractor, if a subcontractor is used for transportation) is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

The Contractor shall schedule and arrange the transport and disposal of each load of contaminated material produced. The Contractor shall make all transport and disposal arrangements so no contaminated material remains within the project area at the close of business each day. Exceptions to this specification require prior approval from the Engineer within 24 hours of close of business. The Contractor shall be responsible for all other pre-disposal/transport preparations necessary daily to accomplish management activities.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill mandated by definition of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by definition of the contaminant and whether the disposal facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The Contractor shall be responsible for coordinating permits with the IEPA. The use of a Contractor selected landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

669.06 Non-Special Waste Certification. An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

(a) Definition. A waste is considered a non-special waste as long as it is not:

(1) a potentially infectious medical waste;

(2) a hazardous waste as defined in 35 IAC 721;

(3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 IAC 811.107;

(4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR 61.141;

(5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;

(6) a material subject to the waste analysis and recordkeeping requirements of 35 IAC 728.107 under land disposal restrictions of 35 IAC 728;

(7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or

(8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.

(b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:

(1) the means by which the generator has determined the waste is not a hazardous waste;

(2) the means by which the generator has determined the waste is not a liquid;

(3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;

(4) if the waste does not undergo testing, an explanation as to why no testing is needed;

(5) a description of the process generating the waste; and

(6) relevant material safety data sheets.

669.07 Temporary Staging. The Contractor shall excavate and dispose of all waste material as mandated by the contaminants without temporary staging. If circumstances require temporary staging, he/she shall request in writing, approval from the Engineer.

When approved, the Contractor shall prepare a secure location within the project area capable of housing containerized waste materials. The Contractor shall contain all waste material in leak-proof storage containers such as lined roll-off boxes or 55 gal (208 L) drums, or stored in bulk fashion on storage pads. The design and construction of such storage pad(s) for bulk materials shall be subject to approval by the Engineer. The Contractor shall place the staged storage containers on an all-weather gravel-packed, asphalt, or concrete surface. The Contractor shall maintain a clearance both above and beside the storage units to provide maneuverability during loading and unloading. The Contractor shall provide any assistance or equipment requested by the Engineer for authorized personnel to inspect and/or sample contents of each storage container. All containers and their contents shall remain intact and undisturbed by unauthorized persons until the manner of disposal is determined. The Contractor shall keep the storage containers covered, except when access is requested by authorized personnel of the Department. The Engineer shall authorize any additional material added to the contents of any storage container before being filled.

The Contractor shall ensure the staging area is enclosed (by a fence or other structure) to ensure direct access to the area is restricted, and he/she shall procure and place all required regulatory identification signs applicable to an area containing the waste material. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall clearly mark all containers in permanent marker or paint with the date of waste generation, location and/or area of waste generation, and type of waste (e.g., decontamination water, contaminated clothing, etc.). The Contractor shall place these identifying markings on an exterior side surface of the container. The Contractor shall separately containerize each contaminated medium, i.e. contaminated clothing is placed in a separate container from decontamination water. Containers used to store liquids shall not be filled in excess of 80 percent of the rated capacity. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could classify the material as a hazardous waste in the container.

The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

669.08 Underground Storage Tank Removal. For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department’s Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the “owner” or “operator” of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining all permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Adm. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport,

and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Adm. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the DESU. Upon confirmation of a release of contaminants from the UST and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the UST is located and the DESU Manager);

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

(a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank

(b) Identify and mitigate fire, explosion and vapor hazards;

(c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and

(d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements).

The UST excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. The material shall be approved prior to placement. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

669.09 Regulated Substance Final Construction Report. Not later than 90 days after completing this work, the Contractor shall submit a Regulated Substance Final Construction Report (RSFCR) to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

669.10 Method of Measurement. Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

669.11 Basis of Payment. The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

On-site monitoring of regulated substances, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or faction thereof, for ON-SITE MONITORING OF REGULATED SUBSTANCES.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of removing a UST, soil excavation, soil and content sampling, and the excavated soil, UST content, and UST disposal will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

Payment for temporary staging, if required, will be paid for according to Article 109.04.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

The sampling and testing associated with this work will be paid for as follows.

(a) BETX Soil/Groundwater Analysis. When the contaminants of concern are gasoline only, soil or groundwater samples shall be analyzed for benzene, ethylbenzene, toluene, and xylenes (BETX). The analysis will be paid for at the contract unit price per each for BETX SOIL ANALYSIS and/or BETX GROUNDWATER ANALYSIS using EPA Method 8021B.

(b) BETX-PNAS Soil/Groundwater Analysis. When the contaminants of concern are middle distillate and heavy ends, soil or groundwater samples shall be analyzed for BETX and polynuclear aromatics (PNAS). The analysis will be paid for at the contract unit price per each for BETX-PNAS SOIL ANALYSIS and/or BETX-PNAS GROUNDWATER ANALYSIS using EPA Method 8021B for BETX and EPA Method 8310 for PNAs.

(c) Priority Pollutants Soil Analysis. When the contaminants of concern are used oils, soil samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCs, and priority pollutants metals. The analysis will be paid for at the contract unit price per each for PRIORITY POLLUTANTS SOIL ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs, and using an ICP instrument and EPA Methods 6010B and 7471A for metals.

(d) Priority Pollutant Groundwater Analysis. When the contaminants of concern are used oils, non-petroleum material, or unknowns, groundwater samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCs, and priority pollutants metals. The analysis will be paid for at the contract unit price per each for PRIORITY POLLUTANTS GROUNDWATER ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs, and EPA Methods 6010B and 7470A for metals.

(e) Target Compound List (TCL) Soil Analysis. When the contaminants of concern are unknowns or non-petroleum material, soil samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCS, priority pollutants metals, pesticides, and Resource Conservation and Recovery Act (RCRA) metals by the toxicity characteristic leaching procedure (TCLP). The analysis will be paid for at the contract unit price per each for TCL SOIL ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs,

EPA Method 8081 for pesticides, and ICP instrument and EPA Methods 6010B, 7471A, 1311 (extraction), 6010B, and 7470A for metals.

(f) Soil Disposal Analysis. When the waste material for disposal requires sampling for disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT."

80407

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004
Revised: August 1, 2017

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, mesh 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
Mesh 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)

80127

STRUCTURAL TIMBER (BDE)

Effective: August 1, 2019

Revise Article 1007.03 of the Standard Specifications to read:

"**1007.03 Structural Timber.** Structural timber shall be southern pine, Douglas fir (coast region), or other species listed in Chapter 8 of the AASHTO LRFD Bridge Design Specifications.

(a) Treated and Untreated Timber. When treated material is specified, the method of treatment shall be according to Article 1007.12. There shall be no heartwood requirements for timber which is to receive a preservative treatment and the amount of sapwood shall not be limited. All timber to be used without preservative treatment shall contain not less than 85 percent of heartwood measured on the girth.

(b) Standard Sizes and Grading Requirements. Rough cut and surfaced timber shall meet the applicable requirements for size and grading according to ASTM D 245 and the Southern Pine Inspection Bureau, the West Coast Lumber Inspection Bureau, or other agencies accredited by the American Lumber Standard Committee, except as provided herein.

All pieces shall be cut to length with square ends.

The dimensions and surfacing requirements will be shown in the contract.

(c) Strength Requirements. The design strengths for structural timber shall be as shown on the plans, and according to the Southern Pine Inspection Bureau, the West Coast Lumber Inspection Bureau, or other agencies accredited by the American Lumber Standard Committee. Additionally, the design strengths shall be according to Chapter 8 of the AASHTO LRFD Bridge Design Specifications."

80413

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."

80397

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%"

80391

TEMPORARY PAVEMENT MARKING (BDE)

Effective: April 1, 2012
Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

"**703.02 Materials.** Materials shall be according to the following.

(a) Pavement Marking Tape, Type I and Type III 1095.06
(b) Paint Pavement Markings 1095.02
(c) Pavement Marking Tape, Type IV ..... 1095.11"

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

"Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts."

Revise Article 703.07 of the Standard Specifications to read:

"**703.07 Basis of Payment.** This work will be paid for as follows.

a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.

b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

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

When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard."

Add the following to Section 1095 of the Standard Specifications:

"**1095.11 Pavement Marking Tape, Type IV.** The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

(a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.

(b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.

(1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D 4061 and meet the values described in Article 1095.06 for Type III tape.

(2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

Wet Retroreflectance, Initial R_L

Color	R_L 1.05/88.76
White	300
Yellow	200

(c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 minimum
*Yellow	36-59

*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

(d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.

(e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

80298

TRAINING SPECIAL PROVISIONS (BDE) 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 10 . In the event the contractor subcontracts a portion of the contract work, he 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 insure 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 employed by him 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 that he 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 has successfully completed a training course leading to journeyman status or in which he 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, Manpower Administration, Bureau of Apprenticeship and Training 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 then 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 will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

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.

20338

TRAFFIC CONTROL DEVICES - CONES (BDE)

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

"(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts."

Revise Article 1106.02(b) of the Standard Specifications to read:

"(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer's specifications such that they are not moved by wind or passing traffic."

80409

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012
Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"**1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

(1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.

(2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: April 2, 2015

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 Monday through Sunday 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.

80302

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 235 working days.

80071

PIPE UNDERDRAINS FOR STRUCTURES
Effective: May 17, 2000
Revised: January 22, 2010

Description. This work shall consist of furnishing and installing a pipe underdrain system as shown on the plans, as specified herein, and as directed by the Engineer.

Materials. Materials shall meet the requirements as set forth below:

The perforated pipe underdrain shall be according to Article 601.02 of the Standard Specifications. Outlet pipes or pipes connecting to a separate storm sewer system shall not be perforated.

The drainage aggregate shall be a combination of one or more of the following gradations, FA1, FA2, CA5, CA7, CA8, CA11, or CA13 thru 16, according to Sections 1003 and 1004 of the Standard Specifications.

The fabric surrounding the drainage aggregate shall be Geotechnical Fabric for French Drains according to Article 1080.05 of the Standard Specifications.

Construction Requirements. All work shall be according to the applicable requirements of Section 601 of the Standard Specifications except as modified below.

The pipe underdrains shall consist of a perforated pipe drain situated at the bottom of an area of drainage aggregate wrapped completely in geotechnical fabric and shall be installed to the lines and gradients as shown on the plans.

Method of Measurement. Pipe Underdrains for Structures shall be measured for payment in feet (meters), in place. Measurement shall be along the centerline of the pipe underdrains. All connectors, outlet pipes, elbows, and all other miscellaneous items shall be included in the measurement. Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures, but shall not be included in the measurement for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified. Furnishing and installation of the drainage aggregate, geotechnical fabric, forming holes in structural elements and any excavation required, will not be paid for separately, but shall be included in the cost of the pipe underdrains for structures.

DRILLED SHAFTS
Effective: October 5, 2015
Revised: October 4, 2016

Revise Section 516 of the Standard Specifications to read:

"SECTION 516. DRILLED SHAFTS

516.01 Description. This work shall consist of constructing drilled shaft foundations.

516.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Reinforcement Bars	1006.10
(c) Grout (Note 2)	1024.01
(d) Permanent Steel Casing	1006.05(d)
(e) Slurry (Note 3)	

Note 1. When the soil contains sulfate contaminates, ASTM C 1580 testing will be performed to assess the severity of sulfate exposure to the concrete. If the sulfate contaminate is >0.10 to < 0.20 percent by mass, a Type II (MH) cement shall be used. If the sulfate contaminate is >0.20 to < 2.0 percent by mass, a Type V cement shall be used. If the sulfate contaminate is ≥ 2.0 percent by mass, refer to ACI 201.2R for guidance.

Note 2. The sand-cement grout mix shall be according to Section 1020 and shall be two to five parts sand and one part Type I or II cement. The maximum water cement ratio shall be sufficient to provide a flowable mixture with a typical slump of 10 in. (250 mm).

Note 3. Slurry shall be bentonite, emulsified polymer, or dry polymer, and shall be approved by the Engineer.

516.03 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Equipment	1020.03
(b) Drilling Equipment (Note 1)	
(c) Hand Vibrator	1103.17(a)
(d) Underwater Concrete Placement Equipment	1103.18

Note 1. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans.

516.04 Submittals. The following information shall be submitted on form BBS 133.

(a) Qualifications. At the time of the preconstruction conference, the Contractor shall provide the following documentation.

(1) References. A list containing at least three projects completed within the three years prior to this project's bid date which the Contractor performing this work has installed drilled shafts of similar diameter, length, and site conditions to those shown in the plans. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.

(2) Experience. Name and experience record of the drilled shaft supervisor, responsible for all facets of the shaft installation, and the drill operator(s) who will be assigned to this project. The supervisor and operator(s) shall each have a minimum of three years experience in the construction of drilled shafts.

(b) Installation Procedure. A detailed installation procedure shall be submitted to the Engineer for acceptance at least 28 days prior to drilled shaft construction and shall address each of the following items unless otherwise directed by the Engineer in writing.

(1) Equipment List. List of proposed equipment to be used including cranes, drill rigs, augers, belling tools, casing, vibratory hammers, core barrels, bailing buckets, final cleaning equipment, slurry equipment, tremies, or concrete pumps, etc.

(2) General Sequence. Details of the overall construction operation sequence, equipment access, and the sequence of individual shaft construction within each substructure bent or footing group. The submittal shall address the Contractor's proposed time delay and/or the minimum concrete strength necessary before initiating a shaft excavation adjacent to a recently installed drilled shaft.

(3) Shaft Excavation. A site specific step by step description of how the Contractor anticipates the shaft excavation to be advanced based on their evaluation of the subsurface data and conditions expected to be encountered. This sequence shall note the method of casing advancement, anticipated casing lengths, tip elevations and diameters, the excavation tools used and drilled diameters created. The Contractor shall indicate whether wet or dry drilling conditions are expected and if groundwater will be sealed from the excavation.

(4) Slurry. When the use of slurry is proposed, details on the types of additives to be used and their manufacturers shall be provided. In addition, details covering the measurement and control of the hardness of the mixing water, agitation, circulation, de-sanding, sampling, testing, and chemical properties of the slurry shall be submitted.

(5) Shaft Cleaning. Method(s) and sequence proposed for the shaft cleaning operation.

(6) Reinforcement Cage and Permanent Casing. Details of reinforcement placement including rolling spacers to be used and method to maintain proper elevation and location of the reinforcement cage within the shaft excavation during concrete placement. The method(s) of adjusting the reinforcement cage length and permanent casing if rock is encountered at an elevation other than as shown on the plans. As an option, the Contractor may perform soil borings and rock cores at the drilled shaft locations to determine the required reinforcement cage and permanent casing lengths.

(7) Concrete Placement. Details of concrete placement including proposed operational procedures for free fall, tremie or pumping methods. The sequence and method of casing removal shall also be stated along with the top of pour elevation, and method of forming through water above streambed.

(8) Mix Design. The proposed concrete mix design(s).

(9) Disposal Plan. Containment and disposal plan for slurry and displaced water. Containment and disposal plan for contaminated concrete pushed out of the top of the shaft by uncontaminated concrete during concrete placement.

(10) Access and Site Protection Plan. Details of access to the drilled shafts and safety measures proposed. This shall include a list of casing, scaffolding, work platforms, temporary walkways, railings, and other items needed to provide safe access to the drilled shafts. Provisions to protect open excavations during non-working hours shall be included.

The Engineer will evaluate the drilled shaft installation procedure and notify the Contractor of acceptance, need for additional information, or concerns with the installation's effect on the existing or proposed structure(s).

CONSTRUCTION REQUIREMENTS

516.05 General. Excavation for drilled shaft(s) shall not proceed until written authorization is received from the Engineer. The Contractor shall be responsible for verification of the dimensions and alignment of each shaft excavation as directed by the Engineer.

Unless otherwise approved in the Contractor's installation procedure, no shaft excavation, casing installation, or casing removal with a vibratory hammer shall be made within four shaft diameters center to center of a shaft with concrete that has a compressive strength less than 1500 psi (10,300 kPa). The site-specific soil strengths and installation methods selected will determine the actual required minimum spacing, if any, to address vibration and blow out concerns.

Lost tools shall not remain in the shaft excavation without the approval of the Engineer.

Blasting shall not be used as a method of shaft excavation.

516.06 Shaft Excavation Protection Methods. The construction of drilled shafts may involve the use of one or more of the following methods to support the excavation during the various phases of shaft excavation, cleaning, and concrete placement dependent on the site conditions encountered. Surface water shall not flow uncontrolled into the shaft excavation, however water may be placed into the shaft excavation in order to meet head pressure requirements according to Articles 516.06(c) and 516.13.

The following are general descriptions indicating the conditions when these methods may be used.

(a) Dry Method. The dry construction method shall only be used at sites where the groundwater and soil conditions are suitable to permit the drilling and dewatering of the excavation without causing subsidence of adjacent ground, boiling of the base soils, squeezing, or caving of the shaft side walls. The dry method shall consist of drilling the shaft excavation, removing accumulated water, cleaning the shaft base, and placing the reinforcement cage and concrete in a predominately dry excavation.

(b) Slurry Method. The slurry construction method may be used at sites where dewatering the excavation would cause collapse of the shaft sidewalls or when the volume and head of water flowing into the shaft is likely to contaminate the concrete during placement resulting in a shaft defect. This method uses slurry, or in rare cases water, to maintain stability of the shaft sidewall while advancing the shaft excavation. After the shaft excavation is completed, the slurry level in the shaft shall be kept at an elevation to

maintain stability of the shaft sidewall, maintain stability of the shaft base, and prevent additional groundwater from entering the shaft. The shaft base shall be cleaned, the reinforcement cage shall be set, and the concrete shall be discharged at the bottom of the shaft excavation, displacing the slurry upwards.

(c) Temporary Casing Method. Temporary casing shall be used when either the dry or slurry methods provide inadequate support to prevent sidewall caving or excessive deformation of the shaft excavation. Temporary casing may be used with slurry or be used to reduce the flow of water into the excavation to allow dewatering and concrete placement in a dry shaft excavation. Temporary casing shall not be allowed to remain permanently without the approval of the Engineer.

During removal of the temporary casing, the level of concrete in the casing shall be maintained at a level such that the head pressure inside the casing is a minimum of 1.25 times the head pressure outside the casing, but in no case is less than 5 ft (1.5 m) above the bottom of the casing. Casing removal shall be at a slow, uniform rate with the pull in line with the shaft axis. Excessive rotation of the casing shall be avoided to limit deformation of the reinforcement cage. In addition, the slump requirements during casing removal shall be according to Article 516.12.

When called for on the plans, the Contractor shall install a permanent casing as specified. Permanent casing may be used as a shaft excavation support method or may be installed after shaft excavation is completed using one of the above methods. After construction, if voids are present between the permanent casing and the drilled excavation, the voids shall be filled with grout. Permanent casing shall not remain in place beyond the limits shown on the plans without the specific approval of the Engineer.

When the shaft extends above the streambed through a body of water and permanent casing is not shown, the portion above the streambed shall be formed with removable casings, column forms, or other forming systems as approved by the Engineer. The forming system shall not scar or spall the finished concrete or leave in place any forms or casing within the removable form limits as shown on the plans unless approved as part of the installation procedure. The forming system shall not be removed until the concrete has attained a minimum compressive strength of 2500 psi (17,200 kPa) and cured for a minimum of 72 hours. For shafts extending through water, the concrete shall be protected from water action after placement for a minimum of seven days.

516.07 Slurry. When slurry is used, the Contractor shall provide a technical representative of the slurry additive manufacturer at the site prior to introduction of the slurry into the first shaft where slurry will be used, and during drilling and completion of a minimum of one shaft to adjust the slurry mix to the specific site conditions. During construction, the level of the slurry shall be maintained a minimum of 5 feet (1.5 m) above the height required to prevent

caving of the shaft excavation. In the event of a sudden or significant loss of slurry in the shaft excavation, the construction of that foundation shall be stopped and the shaft excavation backfilled or supported by temporary casing, until a method to stop slurry loss, or an alternate construction procedure, has been approved by the Engineer.

(a) General Properties. The material used to make the slurry shall not be detrimental to the concrete or surrounding ground. Mineral slurries shall have both a mineral grain size that remains in suspension and sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. Polymer slurries shall have sufficient viscosity and gel characteristics to transport excavated material to suitable screening systems or settling tanks. The percentage and specific gravity of the material used to make the slurry shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement.

If approved by the Engineer, the Contractor may use water and excavated soils as drilling slurry. In this case, the range of acceptable values for density, viscosity and pH, as shown in the following table for bentonite slurry shall be met.

When water is used as the slurry to construct rock sockets in limestone, dolomite, sandstone or other formations that are not erodible, the requirements for slurry testing shall not apply if the entire fluid column is replaced with fresh water after drilling. To do so, fresh water shall be introduced at the top of the shaft excavation and existing water used during drilling shall be pumped out of the shaft excavation from the bottom of the shaft excavation until the entire volume of fluid has been replaced.

(b) Preparation. Prior to introduction into the shaft excavation, the manufactured slurry admixture shall be pre-mixed thoroughly with clean, fresh water and for adequate time in accordance with the slurry admixture manufacturer's recommendations. Slurry tanks of adequate capacity shall be used for slurry mixing, circulation, storage and treatment. No excavated slurry pits will be allowed in lieu of slurry tanks without approval from the Engineer. Adequate desanding equipment shall be provided to control slurry properties during the drilled shaft excavation in accordance with the values provided in Table 1.

(c) Quality Control. Quality control tests shall be performed on the slurry to determine density, viscosity, sand content and pH of freshly mixed slurry, recycled slurry and slurry in the shaft excavation. Tests of slurry samples from within two feet of the bottom and at mid-height of the shaft excavation shall be conducted in each shaft excavation during the excavation process to measure the consistency of the slurry. A minimum of four sets of tests shall be conducted during the first eight hours of slurry use on the project. When a series of four test results do not change more than 1% from the initial test, the testing frequency may be decreased to one set every four hours of slurry use. Reports of all tests, signed by an authorized representative of the Contractor, shall be furnished to the

Engineer upon completion of each drilled shaft. The physical properties of the slurry shall be as shown in Table 1.

The slurry shall be sampled and tested less than 1 hour before concrete placement. Any heavily contaminated slurry that has accumulated at the bottom of the shaft shall be removed. The contractor shall perform final shaft bottom cleaning after suspended solids have settled from the slurry. Concrete shall not be placed if the slurry does not have the required physical properties.

Table 1 – SLURRY PROPERTIES				
	Bentonite	Emulsified Polymer	Dry Polymer	Test Method
Density, lb/cu ft (kg/cu m) (at introduction)	65.2 ± 1.6[1] (1043.5 ± 25.6)	63 (1009.0) max.	63 (1009.0) max.	ASTM D 4380
Density, lb/cu ft (kg/cu m) (prior to concrete placement)	67.0 ± 3.5[1] (1073.0 ± 56.0)	63 (1009.0) max.	63 (1009.0) max.	ASTM D 4380
Viscosity[2], sec/qt (sec/L)	46 ± 14 (48 ± 14)	38 ± 5 (40 ± 5)	65 ± 15 (69 ± 16)	ASTM D 6910
pH	9.0 ± 1.0	9.5 ± 1.5	9.0 ± 2.0	ASTM D 4972
Sand Content, percent by volume (at introduction)	4 max.	1 max.	1 max.	ASTM D 4381
Sand Content, percent by volume (prior to concrete placement)	10 max.	1 max.	1 max.	ASTM D 4381
Contact Time[3], hours	4 max.	72 max.	72 max	

Note 1. When the slurry consists of only water and excavated soils, the density shall not exceed 70 lb/cu ft (1121 kg/cu m).
Note 2. Higher viscosities may be required in loose or gravelly sand deposits.
Note 3. Contact time is the time without agitation and sidewall cleaning.

516.08 Obstructions. An obstruction is an unknown isolated object that causes the shaft excavation method to experience a significant decrease in the actual production rate and requires the Contractor to core, break up, push aside, or use other means to mitigate the obstruction. Subsurface conditions such as boulders, cobbles, or logs and buried infrastructure such as footings, piling, or abandoned utilities, when shown on the plans, shall not constitute an obstruction. When an obstruction is encountered, the Contractor shall notify the Engineer immediately and upon concurrence of the Engineer, the Contractor shall mitigate the obstruction with an approved method.

516.09 Top of Rock. The top of rock will be considered as the point where rock, defined as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with augers and/or underreaming tools configured to be effective in the soils indicated in the contract documents.

516.10 Design Modifications. If the top of rock elevation differs from that shown on the plans by more than 10 percent of the length of the drilled shaft above the rock, the Engineer shall be contacted to determine if any drilled shaft design changes may be required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Contractor may be required to extend the drilled shaft length(s) beyond those specified in the plans. In either case, the Engineer will determine if revisions are necessary and the extent of the modifications required.

516.11 Excavation Cleaning and Inspection. Materials removed or generated from the shaft excavations shall be disposed of according to Article 202.03.

After excavation, each shaft shall be cleaned. For a drilled shaft terminating in soil, the depth of sediment or debris shall be a maximum of 1 1/2 in. (38 mm). For a drilled shaft terminating in rock, the depth of sediment or debris shall be a maximum of 1/2 in. (13 mm).

A shaft excavation shall be overreamed when, in the opinion of the Engineer, the sidewall has softened, swelled, or has a buildup of slurry cake. Overreaming may also be required to correct a shaft excavation which has been drilled out of tolerance. Overreaming may be accomplished with a grooving tool, overreaming bucket, or other approved equipment. Overreaming thickness shall be a minimum of 1/2 in. (13 mm) and a maximum of 3 in. (75 mm).

516.12 Reinforcement. This work shall be according to Section 508 and the following.

The shaft excavation shall be cleaned and inspected prior to placing the reinforcement cage. The reinforcement cage shall be completely assembled prior to drilling and be ready for adjustment in length as required by the conditions encountered. The reinforcement cage shall be lifted using multiple point sling straps or other approved methods to avoid reinforcement

cage distortion or stress. Cross frame stiffeners may be required for lifting or to keep the reinforcement cage in proper position during lifting and concrete placement.

The Contractor shall attach rolling spacers to keep the reinforcement cage centered within the shaft excavation during concrete placement and to ensure that at no point will the finished shaft have less than the minimum concrete cover(s) shown on the plans. The rolling spacers or other approved non-corrosive spacing devices shall be installed within 2 ft (0.6 m) of both the top and bottom of the drilled shaft and at intervals not exceeding 10 ft (3 m) throughout the length of the shaft to ensure proper reinforcement cage alignment and clearance for the entire shaft. The number of rolling spacers at each level shall be one for each 1.0 ft (300 mm) of shaft diameter, with a minimum of four rolling spacers at each level. For shafts with different shaft diameters throughout the length of the excavation, different sized rolling spacers shall be provided to ensure the reinforcement cage is properly positioned throughout the entire length of the shaft.

When a specific concrete cover between the base of the drilled shaft and the reinforcement cage is shown on the plans, the bottom of the reinforcement cage shall be supported so that the proper concrete cover is maintained.

If the conditions differ such that the length of the shaft is increased, additional longitudinal bars shall be either mechanically spliced or lap spliced to the lower end of the reinforcement cage and confined with either hoop ties or spirals. The Contractor shall have additional reinforcement available or fabricate the reinforcement cages with additional length as necessary to make the required adjustments in a timely manner as dictated by the encountered conditions. The additional reinforcement may be non-epoxy coated.

516.13 Concrete Placement. Concrete work shall be performed according to the following.

Throughout concrete placement the head pressure inside the drilled shaft shall be at least 1.1 times the head pressure outside the drilled shaft.

Concrete placement shall begin within 1 hour of shaft cleaning and inspection. The pour shall be made in a continuous manner from the bottom to the top elevation of the shaft as shown on the contract plan or as approved in the Contractor's installation procedure. Concrete placement shall continue after the shaft excavation is full and until 18 in. (450 mm) of good quality, uncontaminated concrete is expelled at the top of shaft. Vibration of the concrete will not be allowed when the concrete is displacing slurry or water. In dry excavations, the concrete in the top 10 ft (3 m) of the shaft shall be vibrated.

When using temporary casing or placing concrete under water or slurry, a minimum of seven days prior to concrete placement, a 4 cu yd (3 cu m) trial batch of the concrete mixture shall be

performed to evaluate slump retention. Temporary casing shall be withdrawn before the slump of the concrete drops below 6 in. (150 mm). For concrete placed using the slurry method of construction, the slump of all concrete placed shall be a minimum of 6 in. (150 mm) at the end of concrete placement.

Devices used to place concrete shall have no aluminum parts in contact with concrete.

When the top of the shaft is at the finished elevation and no further concrete placement above the finished elevation is specified, the top of the shaft shall be level and finished according to Article 503.15(a).

Concrete shall be placed by free fall, tremie, or concrete pump subject to the following conditions.

(a) Free Fall Placement. Concrete shall only be placed by free fall when the rate of water infiltration into the shaft excavation is less than 12 in. (300 mm) per hour and the depth of water in the shaft excavation is less than 3 in. (75 mm) at the time of concrete placement.

Concrete placed by free fall shall fall directly to the base without contacting the reinforcement cage, cross frame stiffeners, or shaft sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Drop chutes used to direct placement of free fall concrete shall consist of a smooth tube. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. The drop chute shall be supported so that free fall does not exceed 60 ft (18.3 m) for conventional concrete or 30 ft (9.1 m) for self-consolidating concrete. If placement cannot be satisfactorily accomplished by free fall in the opinion of the Engineer, either a tremie or pump shall be used to accomplish the pour.

(b) Tremie and Concrete Pump Placement. Concrete placement shall be according to Article 503.08, except the discharge end of the steel pipe shall remain embedded in the concrete a minimum of 10 ft (3.0 m) throughout concrete placement when displacing slurry or water.

516.14 Construction Tolerances. The following construction tolerances shall apply to all drilled shafts.

(a) Center of Shaft. The center of the drilled shaft shall be within 3 in. (75 mm) of the plan station and offset at the top of the shaft.

(b) Center of Reinforcement Cage. The center of the reinforcement cage shall be within 1 1/2 in. (40 mm) of plan station and offset at the top of the shaft.

(c) Vertical Plumbness of Shaft. The out of vertical plumbness of the shaft shall not exceed 1.5 percent.

(d) Vertical Plumbness of Reinforcement Cage. The out of vertical plumbness of the shaft reinforcement cage shall not exceed 0.83 percent.

(e) Top of Shaft. The top of the shaft shall be no more than 1 in. (25 mm) above and no more than 3 in. (75 mm) below the plan elevation.

(f) Top of Reinforcement Cage. The top of the reinforcement cage shall be no more than 1 in. (25 mm) above and no more than 3 in. (75 mm) below the plan elevation.

(g) Bottom of shaft. Excavation equipment and methods used to complete the shaft excavation shall have a nearly planar bottom. The cutting edges of excavation equipment used to create the bottom of shafts in rock shall be normal to the vertical axis of the shaft within a tolerance of 6.25 percent.

516.15 Method of Measurement. This work will be measured for payment in place and the volume computed in cubic yards (cubic meters). The volume will be computed using the plan diameter of the shaft multiplied by the measured length of the shaft. The length of shaft in soil will be computed as the difference in elevation between the top of the drilled shaft shown on the plans, or as installed as part of the Contractor's installation procedure, and the bottom of the shaft or the top of rock (when present) whichever is higher. The length of shaft in rock will be computed as the difference in elevation between the measured top of rock and the bottom of the shaft.

When permanent casing is specified, it will be measured for payment in place, in feet (meters). Permanent casing installed at the Contractor's option will not be measured for payment.

Reinforcement furnished and installed will be measured for payment according to Article 508.07.

516.16 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for DRILLED SHAFT IN SOIL, and/or DRILLED SHAFT IN ROCK.

Permanent casing will be paid for at the contract unit price per foot (meter) for PERMANENT CASING.

Reinforcement furnished and installed will be paid for according to Article 508.08.

Obstruction mitigation will be paid for according to Article 109.04."

CROSSHOLE SONIC LOGGING TESTING OF DRILLED SHAFTS
Effective: April 20, 2016

Description. This work shall consist of furnishing and installing materials and equipment necessary to install access ducts in all drilled shafts of structures identified on the plans, and to perform Crosshole Sonic Logging (CSL) testing of selected drilled shafts on these structures. This work shall be according to Illinois Modified ASTM D6760. This work also includes analysis of the CSL data, preparation of reports summarizing the CSL data, and investigating anomalies identified in the CSL data. This work shall also include grouting of all access ducts after testing and approval by the Engineer.

Materials. Materials shall be according to the following.

(a) Grout (Note 1)……1024.01
Note 1. Grout shall attain a minimum strength equal to the required strength of the drilled shaft concrete at 14 days.

Qualifications. A consulting firm experienced in CSL testing shall conduct this work. The CSL consulting firm shall be a company independent from the Contractor with a minimum of 3 years of experience in performing CSL testing of drilled shafts. The individual employee of the CSL consulting firm performing analysis of the CSL data and preparing the report shall be an Illinois Licensed Professional Engineer and have experience on a minimum of 5 projects performing CSL testing of drilled shafts.

The name, contact information, and qualifications of the CSL consulting firm, including the names and experience of the individual employees performing and analyzing the test results and preparing the report, shall be submitted to the Engineer at least 30 days prior to drilled shaft construction.

Construction. Access ducts shall be placed in all drilled shafts for the structures indicated on the plans, attached to the reinforcement cage and situated symmetrically around the diameter of the shaft according to the Illinois Modified ASTM D6760. The Engineer will determine which drilled shafts shall have CSL testing performed after the concrete has been placed in the drilled shafts, and may direct additional tests, if necessary, due to problems encountered or observed during drilled shaft construction.

After permission is given by the Engineer, the access ducts shall be grouted. The grout shall be placed with a pump, starting at the bottom of each access duct.

Superimposed loads, either dead or live, shall not be applied to a drilled shaft until CSL testing is completed, CSL reports have been submitted, any necessary repairs have been completed, access ducts have been grouted, and permission has been granted by the Engineer.

Reports. Reports shall be according to Illinois Modified ASTM D6760. Each anomalous zone detected by the CSL testing shall be identified and discussed in the report. An anomalous zone shall be defined as areas where velocity reduction exceeds 20 percent of the average velocity of properly placed and cured shaft concrete at the time of testing.

Anomalies. If anomalies are identified, they shall be investigated by coring or other methods approved by the Engineer.

Correction of Drilled Shaft Defects. When testing determines that a defect is present, the Engineer will direct the Contractor to submit remedial measures for approval. No compensation will be made for remedial work, or losses, or damage, due to remedial work of drilled shafts found defective or not in accordance with the drilled shaft specifications or plans. Modifications to the drilled shaft design, or any load transfer mechanisms required by the remedial action, must be designed, detailed, and sealed by an Illinois Licensed Structural Engineer, and submitted for approval.

Method of Measurement. Installation and grouting of access ducts will be measured for payment per shaft by the linear foot of drilled shaft(s) with access ducts.

CSL testing, analysis, and reporting will be measured for payment by each drilled shaft foundation tested.

Investigation of anomalies will not be measured for payment.

Basis of Payment. Installation and grouting of access ducts will be paid for at the contract unit price per foot for CROSSHOLE SONIC LOGGING ACCESS DUCTS. CSL testing, analysis, and reporting will be paid for at the contract unit price per each for CROSSHOLE SONIC LOGGING TESTING.

ILLINOIS MODIFIED ASTM D6760

Effective Date: April 20, 2016

Standard Test Method for

Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing

Reference ASTM D6760-14

<table>
<tr><th>ASTM SECTION</th><th>Illinois Modification</th></tr>
<tr><td>3.1.1</td><td>Revise this section as follows:
access ducts, n – preformed steel tubes or drilled boreholes, placed in the concrete to allow probe entry in pairs to measure pulse transmission in the concrete between the probes.</td></tr>
<tr><td>6.1</td><td>Revise the second sentence of this section as follows:
The tubes shall be mild steel.
Delete the third, fourth, and fifth sentences of this section.</td></tr>
<tr><td>7.1.1</td><td>Revise this section as follows:
The access ducts shall be installed during construction of the drilled shaft.

For drilled shafts foundations, access ducts shall be provided according to the following table.
<table>
<tr><th>Reinforcing Cage Diameter (feet)</th><th>Number of access ducts</th></tr>
<tr><td>≤ 4.0</td><td>3</td></tr>
<tr><td>4.1 to 5.0</td><td>4</td></tr>
<tr><td>5.1 to 7.0</td><td>6</td></tr>
<tr><td>> 7.1</td><td>8</td></tr>
</table>
Access ducts shall be spread equally around the perimeter and spaced at an equal distance from the axis.

Delete Fig. 4.</td></tr>
<tr><td>7.1.2</td><td>Revise the second sentence of this section as follows:
The exterior tube surface shall be free from contamination (for example, oil, dirt, loose rust, mill scale, etc.) to ensure a good bond between the tube surface and the surrounding concrete.</td></tr>
<tr><td>7.1.3</td><td>Delete the third sentence of this section.</td></tr>
</table>

ILLINOIS MODIFIED ASTM D6760

Effective Date: April 20, 2016

Standard Test Method for

Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing

Reference ASTM D6760-14

7.2	Revise the first sentence of this section as follows: The access tubes shall be installed such that their bottom is within 4 inches of the bottom of the concrete deep foundation element so that the bottom condition can be tested. Revise the sixth sentence of this section as follows: Access tubes shall be filled with water prior to concrete placement to assure good bonding of the concrete to the tube after the concrete cools. The access tubes shall be kept full of water until the tubes are grouted.
7.3	Revise the first sentence of this section as follows: In cases where drilled shafts to be tested have access ducts that do not permit passage of the probes, do not retain water, are not plumb, are debonded from the concrete, or cannot be used for testing for other reasons, drilled boreholes shall be used to provide probe access.
7.4.2	Revise the second sentence of this section as follows: The tests shall be performed no later than 21 days after concrete casting.
7.6	Delete this section.
7.8.1	Revise the first sentence of this section as follows: If the ultrasonic profile indicates an anomaly, then the suspect anomaly zone shall be further investigated by special test procedures such as fan shaped tests, tests with the probes raised at a fixed offset distance, or other tomographical techniques (1, 2).
7.8.2	Delete Note 5 of this section.

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 contacting 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 contract). “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.

* * * * *

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 contract). “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.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.