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Letting January 21, 2022

Notice to Bidders, Specifications and Proposal

Contract No. 95893
MACON County
Section 09-00933-01-BR (DeCatur)
Route FAU 7448 (Brush College Road)
Project 3ELT-222 ()
District 7 Construction Funds

Prepared by	F
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 12:00 p.m. January 21, 2022 at which time the bids will be publicly opened from the iCX SecureVault.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 95893
   MACON County
   Section 09-00933-01-BR (DeCatur)
   Project 3ELT-222 ()
   Route FAU 7448 (Brush College Road)
   District 7 Construction Funds

Construction of a grade separation structure to carry Brush College Road over the Norfold Southern Railroad and Fairies Parkway in Decatur.

3. **INSTRUCTIONS TO BIDDERS**. (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to re-advertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

CONTRACT 95893

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2022

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

No ERRATA this year.

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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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, 2022
	80274	346	X	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
*	80246	349	X	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
	80436	351	X	Blended Finely Divided Minerals	April 1, 2021	
	80241			Bridge Demolition Debris	July 1, 2009	
	5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I	352	X	Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I	367	X	Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80384	369	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
	80261			Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80434	373	X	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
	80029	385	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
	80229	395	X	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
*	80433			Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
*	80422			High Tension Cable Median Barrier	Jan. 1, 2020	Jan. 1, 2022
*	80442			Hot-Mix Asphalt – Start of Production	Jan. 1, 2022	
*	80438			Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	Sept. 2, 2021
*	80411			Luminaires, LED	April 1, 2019	Jan. 1, 2022
*	80045			Material Transfer Device	June 15, 1999	Jan. 1, 2022
	80418	398	X	Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	Nov. 1, 2020
*	80441			Performance Graded Asphalt Binder	Jan. 1, 2022	
	80430	399	X	Portland Cement Concrete – Haul Time	July 1, 2020	
*	3426I	400	X	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
	80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
*	80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2022
*	80127	401	X	Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
	80397	404	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	405	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
	80437			Submission of Payroll Records	April 1, 2021	
*	80435	406	X	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2022
	80410			Traffic Spotters	Jan. 1, 2019	
*	20338	412	X	Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
	80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
*	80429			Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
	80439	415	X	Vehicle and Equipment Warning Lights	Nov. 1, 2021	
	80440			Waterproofing Membrane System	Nov. 1, 2021	
	80302	416	X	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
	80427	417	X	Work Zone Traffic Control Devices	Mar. 2, 2020	
	80071	419	X	Working Days	Jan. 1, 2002	

The following special provisions are in the 2021 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location(s)	Effective	Revised
80425	Cape Seal	Sections 405, 1003	Jan. 1, 2020	Jan. 1, 2021
80387	Contrast Preformed Pavement Marking	Articles 780.08, 1095.03	Nov. 1, 2017	
80402	Disposal Fees	Article 109.04(b)	Nov. 1, 2018	
80378	Dowel Bar Inserter	Articles 420.03, 420.05, 1103.20	Jan. 1, 2017	Jan. 1, 2018
80421	Electric Service Installation	Articles 804.04, 804.05	Jan. 1. 2020	
80415	Emulsified Asphalts	Article 1032.06	Aug. 1, 2019	
80423	Engineer's Field Office and Laboratory	Section 670	Jan. 1, 2020	
80417	Geotechnical Fabric for Pipe Underdrains and French Drains	Articles 1080.01(a), 1080.05	Nov. 1, 2019	
80420	Geotextile Retaining Walls	Article 1080.06(d)	Nov. 1, 2019	
80304	Grooving for Recessed Pavement Markings	Articles 780.05, 780.14, 780.15	Nov. 1, 2012	Nov. 1, 2020
80416	Hot-Mix Asphalt – Binder and Surface Course	Sections 406, 1003, 1004, 1030, 1101	July 2, 2019	Nov. 1, 2019
80398	Hot-Mix Asphalt – Longitudinal Joint Sealant	Sections 406, 1032	Aug. 1, 2018	Nov. 1, 2019
80406	Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT)	Sections 406, 1030	Jan. 1, 2019	Jan. 2, 2021
80347	Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Sections 406, 1030	Nov. 1, 2014	July 2, 2019
80383	Hot-Mix Asphalt – Quality Control for Performance	Sections 406, 1030	April 1, 2017	July 2, 2019
80393	Manholes, Valve Vaults, and Flat Slab Tops	Articles 602.02, 1042.10	Jan. 1, 2018	Mar. 1, 2019
80424	Micro-Surfacing and Slurry Sealing	Sections 404, 1003	Jan. 1, 2020	Jan. 1, 2021
80428	Mobilization	Article 671.02	April 1, 2020	
80412	Obstruction Warning Luminaires, LED	Sections 801, 822, 1067	Aug. 1, 2019	
80359	Portland Cement Concrete Bridge Deck Curing	Articles 1020.13, 1022.03	April 1, 2015	Nov. 1, 2019
80431	Portland Cement Concrete Pavement Patching	Articles 701.17(e)(3)b, 1001.01(d), 1020.05(b)(5)	July 1, 2020	
80432	Portland Cement Concrete Pavement Placement	Article 420.07	July 1, 2020	
80300	Preformed Plastic Pavement Marking Type D - Inlaid	Articles 780.08, 1095.03	April 1, 2012	April 1, 2016
80157	Railroad Protective Liability Insurance (5 and 10)	Article 107.11	Jan. 1, 2006	
80306	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Section 1031	Nov. 1, 2012	Jan. 2, 2021
80407	Removal and Disposal of Regulated Substances	Section 669	Jan. 1, 2019	Jan. 1, 2020
80419	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Articles 280.02, 280.04, 1080.02, 1080.03, 1081.15	Nov. 1, 2019	July 1, 2021
80408	Steel Plate Beam Guardrail Manufacturing	Article 1006.25	Jan. 1, 2019	
80413	Structural Timber	Article 1007.03	Aug. 1, 2019	
80298	Temporary Pavement Marking	Section 703, Article 1095.06	April 1, 2012	April 1, 2017
80409	Traffic Control Devices – Cones	Article 701.15(a), 1106.02(b)	Jan. 1, 2019	
80288	Warm Mix Asphalt	Sections 406, 1030, 1102	Jan. 1, 2012	April 1, 2016
80414	Wood Fence Sight Screen	Article 641.02	Aug. 1, 2019	April 1, 2020

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective as of the: January 21, 2022 Letting

Pg #	√	File Name	Title	Effective	Revised
		GBSP 4	Polymer Modified Portland Cement Mortar	June 7, 1994	April 1, 2016
		GBSP 13	High-Load Multi-Rotational Bearings	Oct 13, 1988	April 30, 2021
		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 18	Modular Expansion Joint	May 19, 1994	Oct 23, 2020
		GBSP 21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	June 30, 2003	Oct 23, 2020
		GBSP 25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Oct 23, 2020
		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	April 30, 2021
		GBSP 30	Bridge Deck Latex Concrete Overlay	May 15, 1995	April 30, 2021
		GBSP 31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	April 30, 2021
		GBSP 33	Pedestrian Truss Superstructure	Jan 13, 1998	Oct 23, 2020
		GBSP 34	Concrete Wearing Surface	June 23, 1994	Oct 4, 2016
		GBSP 45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
		GBSP 53	Structural Repair of Concrete	Mar 15, 2006	Aug 9, 2019
		GBSP 55	Erection of Curved Steel Structures	June 1, 2007	
		GBSP 59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	April 30, 2021
		GBSP 60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
420	X	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	April 30, 2021
425	X	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 23, 2020
427	X	GBSP 86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
439	X	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	Oct 23, 2020
		GBSP 90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	April 13, 2018
		GBSP 91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	Aug 9, 2019
		GBSP 92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	
		GBSP 93	Preformed Bridge Joint Seal	Dec 21, 2016	Oct 23, 2020
		GBSP 94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
445	X	GBSP 96	Erection of Bridge Girders Over or Adjacent to Railroads	Aug 9, 2019	

LIST ANY ADDITIONAL SPECIAL PROVISIONS BELOW

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the “Standard Specifications for Road and Bridge Construction" adopted January 1st, 2022, the latest edition of the "Manual of Uniform Traffic Control Devices for Streets and Highways,” 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 Sheets included herein which apply to and govern the construction of the Brush College Road at Faries Parkway Grade Separation Contract, Section No.: 09-00933-01-BR, Job No. C-97-106-21, Contract No.: 95893 in Macon County, and 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 proposed project is located along at the intersection of Brush College Road and Faries Parkway in Decatur, Illinois. The project limits are bordered on the south by the NS Rail Yard Viaduct and Mueller Ave to the north. The project limits extend approximately 500 feet along Faries Parkway west of Brush College Road and approximately 3,000 feet east along Faries Partway east of Brush College Road. The approximate latitude and longitude of the project are 39.963340 N, 88.898067 W. The net length and gross length are 5,855.36 feet (1.11 miles).

DESCRIPTION OF PROJECT

The work consists of roadway construction on new alignments, earthwork, landscaping, erosion control, hot-mix asphalt pavement, PCC pavement, pavement removal, mobilization, concrete bridge structure, guardrail, construction layout, retaining walls, approach slab, pavement marking, sidewalk, bicycle path, lighting, traffic signals, railroad track realignment, sanitary sewer relocation, storm sewer and drainage improvements, and building demolition.

AVAILABLE REPORTS

The following report and record information is available for Bidders' reference upon request:

- ☒ Preliminary Environmental Site Assessment (PESA)
- ☒ Preliminary Site Investigation (PSI)
- ☒ Structural Geotechnical Report
- ☒ Roadway Geotechnical Report
- ☒ Boring Logs (Included in referenced geotechnical reports)
    - o Soil boring logs with locations are also shown in the Plans for SN 058-W003, SN 058-W004, SN-W006, SN 058-W007, and SN 058-9202.
- ☒ Pavement cores (included in referenced geotechnical reports)
- ☒ Lead and Asbestos Investigation Reports for Building Demolition Sites

Those seeking these reports should request access from:

Paul Caswell, City Engineer
Decatur Public Works Department
(217) 424-2747
PCaswell@decaturil.gov

PROJECT MAINTENANCE

Should the City determine that an unsafe condition exists within the scope of this project; the City will attempt to contact the Contractor to resolve the unsafe condition. However, if the City is unable to contact the Contractor's designated representative or if the Contractor fails to respond within a four (4) hour period, the City may perform the necessary operations and the cost for time and materials will be deducted from the contract.

CONTRACTOR AVAILABILITY

At all times when work is being performed (by Contractor or subcontractor), the prime Contractor shall have on the job site someone in his/her direct employ who is capable of meeting with the Engineer and making decisions. If authorized by the Engineer, this condition may be satisfied by having a telephone number of someone who satisfies the above requirements.

CONTRACTOR RESPONSIBILITY

The contract plans indicate the location and elevations of the proposed work. Minor changes in the locations and elevations may be directed by the Engineer. Minor changes requested by the Engineer will be made without additional compensation to the Contractor.

Any inconveniences, delays or additional expenses incurred by the Contractor in complying with Special Provisions shall not be a basis for additional payment and shall be considered included in the contract.

PUBLIC SAFETY AND CONVENIENCE

The Contractor shall at all times conduct his work so as to ensure the least possible obstruction to traffic and inconvenience to the general public and residents in the vicinity of the work, and to ensure the protection of persons and property in a manner satisfactory to the Engineer. Roads within the project limits will be closed to thru traffic as indicated in the Traffic Control Plan. The Contractor is responsible for all traffic guidance and detours within the project limits. City of Decatur and Local emergency agencies shall be notified 21 days in advance of any full road closure.

CONSTRUCTION ACCESS

The contractor shall present a plan of the access that will be used during construction of said project by the Contractor or Subcontractor to the Engineer at the time of the Pre-Construction Meeting. The Engineer and Contractor shall both examine the plan noting any areas of concern before construction begins.

Upon completion of the project the Engineer shall examine the streets prior to approving final payment to the Contractor. Any areas that have been damaged, due to construction activity, shall be repaired by the Contractor to the satisfaction of the Engineer. When work is complete, the Contractor shall arrange, within a reasonable time, to clean up and restore areas where

equipment or material has been stored on the right-of-way or easement. This work shall be included in the cost of the contract.

The Engineer may restrict the movement of construction vehicles on the completed surface to prevent damage to these surfaces.

CELL TOWER ACCESS

The contractor shall maintain access all times to the existing Vertical Bridge cell tower on the western portion of the ADM Spiral Plant property (2205 N. Brush College Road). Existing access to the cell tower is via an existing utility access easement on the ADM Spiral Plant property as shown on the plans. The contractor shall maintain access to this utility access easement until construction of the re-aligned E. Harrison Ave. (west leg) has been completed and the road opened to the public.

DRAINAGE DURING CONSTRUCTION AND STAGING

Unless otherwise noted in the contract plans, the existing drainage facilities shall remain in use during construction and through the stages where they are no longer needed to maintain flow for existing or temporary drainage. The Contractor shall maintain existing drainage facilities or provide necessary temporary drainage facilities during construction. It is important that existing roadway, railroad drainage ditches, storm sewers and culverts be maintained and that water not be allowed to pond adjacent to roadways, railroad tracks or in areas of embankment construction. Where necessary, the Contractor shall use pumps to remove surface water.

The storm sewer shall be installed in stages according to the planned Maintenance of Traffic plan for the project. During some stages, the proposed storm sewer will not be constructed to final conditions. Where necessary for staging, Contractor shall temporarily cap storm sewer for later tie-ins, build structures to temporary elevations and install temporary grates to maintain flow where required. Final adjustments and construction including temporary grates will not be paid for separately.

The cost of maintaining drainage, providing temporary drainage facilities, pumping, or any other work necessary so that the area is well drained at all times will not be paid for separately but shall be included in the contract unit price for drainage items in the Contract. The cost of building the storm sewer in stages including temporary caps, adjustments for final grades and temporary grates to maintaining drainage any other work necessary for staging will not be paid for separately but shall be included in the contract unit price for drainage items in the Contract.

PROTECTION OF EXISTING FACILITIES DURING CONSTRUCTION

Locations of existing drainage structures and sewers as shown on the contract plans are approximate. Prior to commencement of work, the Contractor, at their own expense, shall determine the exact location of existing structures that are within the proposed construction site.

All drainage structures are to be kept free from any debris resulting from construction operations. All work and materials necessary to prevent accumulation of debris in the drainage structures will be considered as included in the cost of the associated drainage pay items of the contract. Any accumulation of debris in the drainage structure resulting from construction

operations shall be removed at the Contractor's own expense, and no extra compensation will be allowed.

Existing frames and grates are to remain unless otherwise noted in the contract plans or as directed by the Engineer. Frames and grates that are missing or damaged prior to construction shall be replaced. The type of replacement frame or grate shall be determined by the Engineer, and replacement and payment for same shall be in accordance with Section 604 and Article 104.02 respectively, of the Standard Specifications unless otherwise noted in the plans or Special Provisions.

The Contractor shall take the necessary precautions when working near or above existing watermains, sewers and culverts in order to protect these pipes during construction from any damage resulting from his operations. All work and materials necessary to repair or replace existing pipes damaged because of noncompliance with this provision shall be as directed by the Engineer in accordance with Section 542 or 550 of the Standard Specifications and at the Contractor's own expense, and no extra compensation will be allowed.

Unless otherwise noted, the Contractor will be required to maintain in service all existing water mains, sewers, culverts, ditches, drains, manholes and catch basins during construction. Bypass pumping and temporary support of utilities may be required.

During construction, if the Contractor encounters or otherwise becomes aware of any sewers, culverts, or underdrains within the right-of-way other than those shown on the plans, he shall so inform the Engineer who shall direct the work necessary to maintain the facilities in service and to protect them from damage during construction. Complying with this requirement shall be considered as included in the costs of the various pay items involved.

DOCUMENTATION OF EXISTING CONDITIONS

The Contractor shall provide DVD or Digital video of existing facilities along the route or area of all construction, prior to the start of such construction. Construction of this facility will generally be along street right-of-way containing trees, bushes, fences, driveways and similar items. Special attention shall be given to coverage of the entire easement and immediate adjacent areas which might be disturbed during construction.

The video shall be adequate to serve as a basis for comparison in determining whether the terms of the specifications with respect to replacements, restoration and/or preservation of existing surfaces have been complied with. One print of the video taken shall be given to the Engineer for his files. The cost for this item shall be included in the respective prices for the various items of work.

WINTER WORK

No adjustment will be made in the contract unit prices for any concrete if winter work is necessary to meet the schedule requirements specified in the contract. All concrete work must be protected according to the specifications contained herein.

RAILROAD RIGHT OF ENTRY AND INSURANCE REQUIREMENTS

Contractor shall refer to the NS Public Projects Manual for the latest information on NS Right of Entry Agreement, insurance requirements, fees, and submittal instructions. Excerpts from the NS Public Projects Manual (effective date March 11, 2021) are included herein for reference only.

Contractor shall contact the ICRR (CN) Manager, Public Works, for the latest information on ICRR (CN) Right of Entry Agreement, insurance requirements, fees, and submittal instructions. Examples of the Right of Entry Agreement and insurance requirements are included herein for reference only. The Contractor shall request access permission from the ICRR (CN) as part of the Right of Entry Agreement to complete grading activities on ICRR (CN) property that occurs outside of the temporary easement limits shown on the plans.

PERMITS

In accordance with Article 107.04 – Permits and Licenses, of the Standard Specifications for Road and Bridge Construction dated April 1, 2016, the Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work. These permits may include but are not limited to the ICRR utility crossing permit, NSRR utility crossing permit, IEPA permit, and others.

For this project, all utility installation work crossing underneath or within the railroad's right-of-way -- including the abandonment of any existing utilities -- requires a utility installation/encroachment permit from the affected railroad. The Contractor must comply with the CN Southern Region Utility Crossing/Encroachment Application packet for the ICRR and the NS' Specifications for Pipeline Occupancy of Norfolk Southern Corporation Property. This includes vibration and settlement monitoring requirements of the railroad permits.

The permit application, terms and conditions and insurance requirements can be obtained at:

- the ICRR's (CN) website:
  https://www.cn.ca/en/safety/employees/contractors-erailsafe/utility-installations/

- the NS' website:
  http://www.nscorp.com/content/nscorp/en/real-estate/norfolk-southern-services/wire-pipeline-fiber-optic-projects.html

The Contractor may not start work on any element of work requiring a permit until such permit has been received. All costs related to the permit requirements will be included in the cost of the contract.

National Pollutant Discharge System (NPDES) Permit

The Contractor and Owner will be required to complete a Notice of Intent (NOI) form and the Contractor's Certification Statement, in compliance with the NPDES Phase II guidelines. These forms will be completed by the Engineer, prior to the pre-construction meeting. Work may

commence 30 calendar days after the NOI form is submitted to the Illinois Environmental Protection Agency for the purpose of obtaining a General Construction Permit.

The Storm Water Pollution Prevention Plan, the General Permit, and the Contractor's Certification Statement must be kept on site during working hours. Compliance with this special provision shall be considered as included in the contract unit prices for the various items of work involved.

Illinois Central Railroad (ICRR/CN) Utility Crossing Permit Requirements

The City of Decatur has completed a partial submittal of Utility Crossing Permits for:
 Storm sewer casing and carrier pipe crossing of ICRR tracks along Brush College Road
 Water main casing and carrier pipe crossing ICRR tracks along Brush College Road
 Storm sewer parallel to ICRR tracks along Brush College Road

It is the contractor's responsibility to complete the remainder of the permit submittals on behalf of the City of Decatur and to obtain all necessary permits for work within the railroad right-of-way. The permit submittal shall be in accordance with the requirements of the ICRR Southern Region Utility Crossing/Encroachment Application Packet dated 03/29/2018. Copies of the partial permit submittals and the CN Southern Region Utility Crossing/Encroachment Application Packet is available from the City of Decatur.

The term "Utility" in the CN Southern Region Utility Crossing/Encroachment Application Packet is defined as follows: All work shown in City of Decatur construction plan that takes place within CN right-of-way.

The specific requirements of the contractor are to address the following sections outlined in the initial notification of intent to construct utility crossing/encroachment requirements and instructions:

The Applicant shall submit a completed application for utility crossing engineering review to the appropriate contact shown in the "Pipeline/Wireline Crossing Contacts" Section (Section I). The application can be downloaded from Railroad's website but the application and all supporting documentation must be submitted to the Railroad via certified mail to the address shown on the application. Any application transmitted to Railroad other than by certified mail, or that does not include all requested information or required documentation will be considered incomplete. Railroad shall notify the applicant when Railroad receives an incomplete application but under no circumstances shall Railroad review an incomplete application. Repeat: no application will be reviewed until the application is complete. Unless otherwise advised by Railroad, all submittals necessary to complete a previously submitted incomplete application must also be submitted via certified mail. Any application which remains incomplete one (1) year after the date of the first notification of an incomplete submittal from Railroad will be discarded and a new application must be submitted, including a new application fee. All information and documentation contained in any application must meet the approval of the Railroad, in its sole discretion. Unless otherwise required by law, Railroad will respond to all applications in the order in which they are received. In no event shall any construction related activities be scheduled or conducted on Railroad's property until Railroad has issued its final approval of the application, a written agreement outlining the legal terms of the installation has been signed and flaggers have been secured.

The application includes a non-refundable application fee. Unless otherwise specified by law, the non-refundable application fee shall be $1,350.00, which is intended to cover the cost of

Railroad's review of the application and all required documentation and information. The Applicant will be charged an additional fee of $200 for each review after the initial review of the completed application due to inadequate or missing information or other failure by the Applicant to meet the requirements of Railroad. This fee shall be included with any revision sent. Any revision sent without the accompanying fee will be considered incomplete and will not be reviewed.

Pipeline/Wireline Utility Contacts

Name: Joseph Wojcik
Address: CN
17641 S. Ashland Avenue Homewood, IL 60430
Phone: (708) 332-4739
Email: Josephs.Wojcik@cn.ca

Norfolk Southern Corporation (NS) Pipeline Occupancy Permit

The City of Decatur has completed a partial submittal of Utility Crossing Permits for:
 Storm sewer casing and carrier pipe crossing of NS tracks along Faries Parkway
 Water main casing and carrier pipe crossing NS tracks along Faries Parkway
 Storm sewer parallel to NS tracks along Faries Parkway

It is the contractor's responsibility to complete the remainder of the permit submittals on behalf of the City of Decatur and to obtain all necessary permits for work within the railroad right-of-way. The permit submittal shall be in accordance with the requirements of the Specifications for Wireline Occupancy of Norfolk Southern Corporation Property packet dated 05/01/2020. Copies of the partial permit submittals and the Specifications for Wireline Occupancy of Norfolk Southern Corporation Property packet is available from the City of Decatur.

The specific requirements of the contractor are to address the following sections outlined in the initial notification of intent to construct utility crossing/encroachment requirements and instructions:

The Applicant shall submit a completed application for utility crossing engineering review to the appropriate contact shown in the "Pipeline/Wireline Crossing Contacts" Section (Section I). The application can be downloaded from Railroad's website but the application and all supporting documentation must be submitted to the Railroad via certified mail to the address shown on the application. Any application transmitted to Railroad other than by certified mail, or that does not include all requested information or required documentation will be considered incomplete. Railroad shall notify the applicant when Railroad receives an incomplete application but under no circumstances shall Railroad review an incomplete application. Repeat: no application will be reviewed until the application is complete. Unless otherwise advised by Railroad, all submittals necessary to complete a previously submitted incomplete application must also be submitted via certified mail. Any application which remains incomplete one (1) year after the date of the first notification of an incomplete submittal from Railroad will be discarded and a new application must be submitted, including a new application fee. All information and documentation contained in any application must meet the approval of the Railroad, in its sole discretion. Unless otherwise required by law, Railroad will respond to all applications in the order in which they are received. In no event shall any construction related activities be scheduled or conducted on Railroad's property until Railroad has issued its final approval of the application, a

written agreement outlining the legal terms of the installation has been signed and flaggers have been secured.

An application shall be submitted via the RailPros website (https://ns.railprospermitting.com/) and include a non-refundable application fee. Unless otherwise specified by law, the non-refundable application fee shall be $2,000.00, which is intended to cover the cost of Railroad's review of the application and all required documentation and information.

Pipeline/Wireline Utility Contact
RailPros: NS.Permitting@RailPros.com

ADJACENT CONTRACTS AND ADJACENT SITE COORDINATION

Description: The Contractor shall coordinate construction staging and traffic control operations with adjoining, adjacent or overlapping construction contracts, including barricade placement necessary to provide a uniform traffic detour pattern prior to and throughout the duration of the project. This includes, but is not limited to, the following along with any other construction contract that may impact the staging operations of this contract:

- ICRR (CN) Grade Crossing removals required due to the Brush College Road Grade Separation project
- ICRR (CN) Railroad Signal Equipment Removal and Installation required due to the Brush College Road Grade Separation project
- City of Decatur Sanitary Sewer Improvement Project across Faries Parkway

The Contractor must coordinate the maintenance of traffic with lane closures of concurrent projects. This effort is to help provide the most safe and effective staging environment throughout the project and at locations where adjacent projects impact the limits of staging.

General Requirements: The Contractor is responsible for coordinating the Work with the building owners and their tenants when property access is to be reconstructed and/or otherwise disturbed due to construction activities. The Contractor shall maintain building access for pedestrians, loading docks, refuse collection and emergency vehicles at all times. The Contractor shall submit procedures and protection plans to the Resident Engineer prior to any work. The Contractor shall define the limits of any proposed disturbance and the location of improvements at each individual location in consultation with the building owners/occupants prior to demolition and construction. The Contractor shall provide flaggers as directed by the Resident Engineer to ensure uninterrupted access is maintained during construction activities.

During construction, access to and within the adjacent St. John's Lutheran Cemetery may be limited. The Contractor is responsible for coordinating work with the cemetery owners and providing appropriate signage regarding any limited access to the cemetery or restricted vehicular movements within the cemetery.

Other separate contracts are, or may be, in force that intersects the limits of this project. The Contractor shall cooperate with the other contractors in the staging and performance of this work so as not to delay, interrupt, or hinder the progress or completion of the work being performed by other contractors. The Contractor will be required to provide and maintain access to all private and commercial property within the work areas during the construction period, which may include the installation and removal of temporary aggregate in the work zone to allow trucks to turn into loading bays and vehicles to get in and out of parking lots. No additional payment will be made for the temporary aggregate. The cost shall be included with TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

Basis of Payment: Adjacent Contract and Building Coordination shall be included in the cost of TRAFFIC CONTROL AND PROTECTION, (SPECIAL) which includes any adjustments to traffic control devices, maintenance of access to abutting property and/or staging needed to accommodate adjacent construction contract staging operations.

TRAFFIC CONTROL PLAN

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these special provisions, and any special details and Highway Standards contained herein and in the plans. Layout and maintenance of the traffic control devices shall be the responsibility of the Contractor. The appropriate traffic control devices shall be utilized for the various construction activities being performed by the Contractor.

Special attention is called to Articles 107.09 and 107.14 and Section 701 of the Standard Specifications for Road and Bridge Construction, other special provisions relating to traffic control and the following:

HIGHWAY STANDARDS
701011
701101
701106
701421
701422
701426
701701
701901
704001

DETAILS:
Traffic Control Detour Plan
Maintenance of Traffic – General Notes, Narrative, Typical Sections and Staging Plans

STAGING RESTRICTIONS

Prior to the actual beginning and completion of the various stages of construction and traffic protection, the Contractor will be required to provide lane closures and barricade systems, for preparation work such as pavement marking removal, temporary lane marking, placing temporary concrete barrier, relocating existing guardrail, etc. These lane closures and barricade systems, including barricades, drums, cones, lights, signs, flaggers etc. shall be provided in accordance with details in the plans and these Special Provisions and as approved by the Engineer. The cost of this work will not be paid for separately but shall be considered included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

Road Closure Restrictions

The Contractor's staging shall be approved by the Engineer and be consistent with the following staging restrictions.

1. One lane of westbound and one lane of eastbound traffic on Faries Parkway shall be maintained at all times. Short term, temporary closures may be requested by the contractor, but must be approved by the engineer and coordinated with ADM..

2. Brush College Road north of Faries Parkway and Brush College Road south of Faries Parkway shall never be closed simultaneously short term, temporary closures may be requested by the contractor, but must be approved by the engineer and coordinated with ADM.

3. Access to all businesses must be maintained during all stages of construction including unrestricted truck access to ADM properties. If a temporary interruption in access is required, it must be approved by the engineer and coordinated with the affected business.

4. Construction of new access roads must be completed and open to traffic prior to closure of any existing access roads.

GRADING AND SHAPING OF DITCHES

Description: This work will consist of grading and shaping the existing ditches or areas with poor drainage at the locations shown in the plans and as directed by the Engineer. The ditches or areas shall be graded and shaped to provide positive drainage to existing or proposed inlets and eliminate ponding water.

Any soil disturbed as a result of grading and shaping shall be seeded, fertilized and protected at the direction of the Engineer. This work shall be according to Section 214 of the Standard Specifications for Road and Bridge Construction except as modified herein.

Any additional erosion control measures deemed necessary by the Engineer after grading and shaping will paid for at the contract unit price for the item added.

Method of Measurement: This work will be measured for payment in feet along the centerline of the ditch or the area graded.

Basis of Payment: This work will be paid for at the contract unit price per foot for GRADING AND SHAPING DITCHES, which price shall include all fill, excavation, disposal, seeding, labor, equipment and material necessary to complete the work as specified and to the satisfaction of the Engineer.

PAVEMENT REMOVAL

This work shall be performed in accordance with Section 440 except as follows:

Add the following sentence to the second paragraph of Article 440.01: Pavement removal shall also be defined as built-up oil and chip wearing surfaces over stabilized subbase.

Pavement Removal shall also include removal of the existing adjacent Pipe Underdrains.

CONCRETE HEADWALL REMOVAL

Description. This work shall be in accordance with Section 501 of the Standard Specifications. This work shall include the removal of the cast-in-place concrete end section from the 72" pipe culverts to remain in place. The removal shall be performed so the existing reinforced concrete pipe culvert to remain in place is not damaged.

Basis of Payment. Removal of existing pipe culvert concrete headwall will be paid for at the contract unit price each for CONCRETE HEADWALL REMOVAL, which shall include all labor, material and equipment necessary to complete the work.

PIPE CULVERT REMOVAL

Description. This work shall consist of the removal of the existing pipe culverts, including end sections at locations shown on the plans and as directed by the Engineer, and shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications

The removal and disposal of existing pipe culvert end sections will not be measured and paid for separately, but will be included in the cost of PIPE CULVERT REMOVAL

The removal and disposal of existing pipe culvert concrete headwalls will be paid for separately.

Basis of Payment. This work shall be paid for at the contract unit price, FOOT, for PIPE CULVERT REMOVAL, which price shall include all labor, equipment and materials necessary to complete the work. No additional compensation will be allowed due to the various sizes, types, or lengths. The sizes, types and lengths shown in the plans are for information only and shall be verified by the contractor prior to bidding.

PRECAST MODULAR RETAINING WALL

Description. Work under this item shall be performed in accordance with Section 522 of the Standard Specifications, except as herein modified.

Prequalified Retaining Wall Systems. Add the following to the end of Article 522.04.

"The precast modular retaining wall system selected shall not use soil reinforcement."

SEALING PRECAST PIPE JOINTS

Description: This work applies to precast pipe culverts or storm sewer installed with fill heights greater than 8 ft high. When mastic joint sealer is used, joints shall be sealed with a combination of the mastic joint sealer and non-woven geotechnical fabric according to Article 540.06.

Basis of Payment: This work will not be paid for separately but shall be included in the contract unit price per ft for PIPE CULVERTS or STORM SEWERS of the class, type, and diameter specified.

STORM SEWERS, CLASS B

Description. This work shall consist of furnishing all material, equipment and labor for storm sewers installation to collect the flow from the Type B Inlets located behind Retaining Wall 058-0007, Type A Inlets on Sidewalks of bridge approaches, or the Type C catch basins tying into the existing Class B storm sewer. The pipe shall be in accordance with Section 550 of the Standard Specifications, except as modified herein.

Materials. The storm sewer shall be Polyvinyl Chloride (PVC) Pipe, in accordance with Article 1040.03 (a) of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price per FOOT for STORM SEWERS, CLASS B of the type and size specified in the plans, which shall include all labor, material and equipment necessary to complete the work.

DUCTILE IRON WATER MAIN

Description. This work shall consist of the furnishing and installation of a ductile iron pipe water main, as indicated on the plans or as directed by the Engineer.

General Requirements. The work shall be constructed in accordance with the applicable sections of the Section 40 and 41 of the "Standard Specifications for Water and Sewer Main Construction in Illinois" the latest addition, in the details shown in the plans, and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein. All pipe, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

Water main pipe: Water main shall be Ductile Iron Pipe, push-on, Class 52 (minimum) conforming to ANSI A.21.51 (AWWA C151) latest revision. Piping shall have a standard pipe coating outside and be lined with cement mortar lining inside without a seal coating accordance with ANSI A21.4 (AWWA C104 - latest revision) and as further specified herein. Ductile iron pipe shall be designed in accordance with ANSI A21.50 (AWWA C150 - latest revision) using 60,000 psi tensile strength, 42,000 psi yield strength and 10% elongation. All pipe shall have a minimum Class 52 pipe including the following: 3-1/2 feet to 6 feet cover (or as indicated on the plans), laying condition Type 5 (see AWWA C600 Figure 1), and at least 100 psi water hammer allowance and 2 to 1 factor of safety. The pressure rating, metal thickness class, net weight of pipe without lining, length of pipe and name of manufacturer shall be clearly marked on each length of pipe. All pipe, fittings and glands shall be completely coated outside with asphaltic coating, 1 mil thick, to which sufficient oil has been added to make a smooth coating, tough and tenacious when cold, not "tacky" and not brittle. All pipe shall be new and secured from responsible manufacturers. Any pipe delivered along the line of the improvement that is broken or damaged will be rejected.

Joints: All water main pipe joints shall be the push-on type consisting of bells cast integrally with the pipe, except where restrained joints are required as specified. The interior angular recesses of the bell shall conform to the shape and dimensions of a single molded rubber seating gasket, as described in ANSI A.21.11 (AWWA C111 - latest revision). The interior dimensions of a single molded rubber seating gasket is such that it will admit the insertion of the spigot end of the joining pipe in a manner that will compress the gasket tightly between the bell of the pipe and the inserted spigot, thus securing the gasket and sealing the joint. Lubricant used in conjunction with slip joints shall be that recommended by the suppliers or as approved by the Engineer. Where detailed on the drawings, Contractor shall utilize Fluoroelastomer (Viton) gaskets that protect against entrance of hydrocarbons and other soil contaminates through permeation through any pipe joint sealing material used in construction of the line.

All joints shall be furnished with two silicon bronze serrated wedges or conductive gaskets (or other conductive accessory, as approved by the Engineer) at each joint. The wedges shall be installed at 180-degree intervals after the joint is completed.

Pipe Restraint: All water main joints and fittings shall be restrained in accordance with restrained joint table below and the notes located after the table.

Fitting Type		6" Diameter	8" Diameter	12" Diameter	16" Diameter	24" Diameter	30" Diameter
HORIZONTAL	Theta/2	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**
90 degree bend	0.79	45	59	86	112	164	201
45 degree bend	0.39	19	25	36	47	68	84
22.5 degree bend	0.20	9	12	17	23	33	40
11.25 degree bend	0.10	5	6	9	1 1	17	20
Tee (or tapping sleeve)		40	58	93	128	199	251
Plug (dead end)		42	55	80	105	156	193
VERTICAL	Theta/2	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**	**DIP**
90 degree bend	0.79	83	110	159	210	311	386
45 degree bend	0.39	35	46	66	87	129	160
22.5 degree bend	0.20	17	22	32	42	62	77
11.5 degree bend	0.10	9	11	16	21	31	38

1. All nuts and bolts shall be Corten or stainless steel.
2. The required length of restrained pipe at all fittings, valves, plugs, etc. shall conform to the Table included herewith.
3. Install the total restrained length of pipe for elbows as shown in the Table on each side of each elbow.
    a. The restrained lengths shown for vertical bends are for vertical down bends.
    b. The restrained length for vertical up bends is the same as for horizontal bends.
4. Plugs require restrained pipe in only one direction.
5. The length of restrained pipe at valves: Same as for plugs or dead ends.
    a. Install the restrained length of pipe as noted in the Table on both sides of each valve.
6. Base the length of restrained pipe for tees on the perpendicular branch, as shown in the Table, on the size of the run or branch of the tee whichever is the larger diameter.
    a. Tees require only the perpendicular branch to be restrained.
    b. Restrain both plugs and tees to the distances given in the Table. Distances shown are in feet.

The approved types of restrained joints are listed in the table below.

No.	Piping Application	Restrained Joint Requirements
1	16-inch diameter water main and smaller[1]	Field Lok Gaskets, Fast Grip Gasket, Romac Grip Rings, or TR Flex
2	24-inch and 30-inch diameter water main	Flex Ring, TR Flex, or HDSS
3	All sizes of water main installed in casing pipe	Flex Ring, TR Flex, or HDSS
4	Connections with MJ (or TR flex) solid sleeves (12-inch diameter and smaller)	Romac Grip Rings, Megalugs, or TR Flex
5	Connections with TR flex (or MJ) solid sleeves (16-inch diameter and greater)	TR Flex or Megalugs
6	Other, when required for construction	As submitted by the Contractor and approved by the Engineer
1. This does not apply when the water main is installed in a casing pipe (see No. 3).		

Thrust blocks shall also be provided in accordance with the plans.

Polyethylene Encasement: All water main and fittings shall be encased in a high-density cross-laminated polyethylene encasement (8 mil minimum thickness) with its material specification and installation method in accordance with ANSI A21.5/AWWA 105 – latest revision and using "Method A" installation. Any slack in the encasement shall be neatly folded around the pipe and taped flat. All pipe, fittings and appurtenances such as valves, tees tapping saddles and crosses shall be polyethylene encased when they are installed within the area requiring such encasement. Polyethylene encasement shall stop short of hydrants to allow proper draining of the hydrant shoe.

Insulation: Where indicated on the plans or where water main has less than 42-inches of cover, Contractor shall provide and install 1" thick (minimum) insulation for water main with waterproof jacket (Foamglas with Pittwrap Jacketing, K-Flex, Owens Corning Foamular XPS).

Construction Requirements.

Excavation: The minimum bury depth of the water main shall not be less than 3.5 feet. If the excavation has been made deeper than necessary, or is required deeper for adjustments for fire hydrants, valves, services or for separation from sewer and other utilities, or as indicated in the drawings, the work shall be performed at no additional cost, regardless of depth. If necessary, bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe providing sufficient room for joint making, and to ensure uniform bearing for the pipe. The cost associated with the excavated material removal and disposal, trench/pit protection, and stockpile protection shall be included to this pay item.

Any temporary support or bracing of existing utilities (including telephone poles, light poles, protection and/or temporary relocation and reinstallation of guy wires) is included under this item and must be coordinated with the affected utilities. As required for construction, remove and dispose of abandoned utilities located within the limits of water main work area. Any water main dewatering required during the installation of water main pipe shall be considered included as part of the installation of the water main. For work within 50' of existing railroad track center line, the Contractor is responsible to meet all railroad requirements including but not limited to permitting, sheeting, shoring, dewatering and excavation.

Contractor will not be paid for WATER MAIN REMOVAL when the proposed water main replaces an existing water main within the same trench and/or excavated area. In these cases, the removal and disposal of the water main shall be included in this pay item.

Sequence of Operations: All existing valve and hydrant operations shall only be performed by the City of Decatur (City). The Contractor's proposed sequencing and schedule of operations shall be submitted to the City a minimum of two weeks before any shut down of the water system can be made.

Protection of Water Mains and Water Service Lines: Contractor shall follow IEPA water/sewer separation requirements, including, but not limited to the following: Water main shall be laid at least 10 feet horizontally from any sanitary sewer, storm sewer or sewer manholes, whenever possible. The distance shall be measured edge-to-edge. When local conditions prevent a horizontal separation of 10 feet, a water main may be laid closer to a storm or sanitary sewer provided that:

1. The bottom of the water main is at least 18 inches above the top of the sewer.
2. Where this vertical separation cannot be obtained, the sewer shall be constructed of materials and with joints that are equivalent to water main standards of construction.

Water main crossing storm or sanitary services or sewers shall be laid to provide a separation of at least 18 inches between the bottom of the water main and the top of the sewer. When local conditions prevent a vertical separation of at least 18 inches the following construction shall be used.

1. Sewers passing over or under water main should be constructed of the materials described for parallel installation where vertical separation cannot be obtained.
2. Water mains passing under sewer shall, in addition, be protected by providing:
    a. A vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main.
    b. Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking the water mains.
    c. As an alternate, either the water main or the sewer could be installed inside a casing pipe which would extend at least ten (10) feet on each side of all crossings.

In making such crossings, it is preferable to center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer and as remote there from as possible. Where a water main must cross under a sewer, a vertical separation of eighteen (18) inches between the bottom of the sewer and the top of the water main shall be maintained, along with means to support the sewer lines to prevent their settling.

Installation and Backfilling: The work shall be constructed in conformance with the applicable sections of “Standard Specifications for Water and Sewer Main Construction in Illinois” and City of Decatur Standard Specifications for Water Main Construction, except as specified herein. This work shall include all excavation and backfill with native soil materials. Trench backfill shall be paid separately.

Backfilling and excavation of all water main shall be made in accordance with Section 561 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, latest revision, unless otherwise noted. Jetting, including IDOT compaction methods 2 and 3,will not be permitted, and trench backfill shall be coarse aggregate material. After the pipe is laid (and as soon as possible after testing,) the trench shall be filled with either selected earth or select graded aggregate free from boulders or any foreign matter. Ashes, cinders, or other corrosive material shall not be allowed. Backfill around the pipes and to a depth of six (6) inches above the top of the pipes shall be thoroughly compacted. Place material in eight (8) inch lifts and compact using a mechanical tamper or roller. Care should be taken to prevent any lateral movement of the pipe from the tamping operation. When not otherwise ordered, the backfilling shall not be left unfinished more than three hundred (300) feet behind the completed pipe work.

During the installation of all water mains, care must be exercised so that the trees within the right-of-way area and on adjacent private property will not be disturbed.

In case the character of the ground requires it, to protect the work, the street or the workmen, the side of the trenches shall be supported with suitable bracing and sheeting. Wherever soft or unsuitable ground is encountered, or wherever trenches are excavated through cinder fills or other unsuitable materials, the trench shall be excavated to an additional depth of six (6) inches (or more) and clean sand, crushed rock or selected trench backfill, as directed by the Engineer, shall be tamped into the trench for minimum depth of six (6) inches below the bottom of the pipe.

The trenches shall be kept free of water during the progress of the work. All tools and equipment for pumping and bailing and all materials for building drains or other work necessary to keep the trenches free of water shall be furnished by the Contractor. This work and equipment shall be included in this pay item and no extra compensation will be allowed.

All sewer, water, gas and other pipes or conduits and service connections encountered shall be carefully supported and protected from damage while the excavations are being made and backfilling finished.

Water main pipe shall be handled and installed per ANSI/AWWA C600 (latest revision) and by the following additions:

Pipe shall be handled by mechanical equipment or other approved means. Handling of pipe by means of hooks at both ends of the pipe will not be allowed.

All pipe and fittings shall be thoroughly cleaned by brushing with a wire brush at joints and by swabbing the pipe interior.

Pipe shall be laid on a firm bed and as straight as possible. Excavation must be made under the bell of each pipe so the entire length of pipe will lay on the bottom of the trench and the pipe weight will not rest on the bell.

In laying mechanical joint pipe, all surfaces which come in contact with the rubber gasket seals shall be thoroughly brushed with a wire brush and just prior to slipping the gasket over the spigot end and into the bell, all surfaces including the gasket, shall be thoroughly cleaned with soap and water. The gland and gasket shall then be placed on the spigot end and the pipe inserted in the bell. The gasket shall then be pushed into position and evenly seated, the gland shall be placed in position, the bolts inserted, and the nuts tightened. When tightening bolts, the gland shall be brought up toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This shall be done by partially tightening the bottom bolt first, then the top bolt, next the bolts on either side, and last the remaining bolts. This cycle shall be repeated until all bolts are within the following range of torque (or as recommended by the manufacturer. If a conflict exists, Contractor shall notify the Engineer):

BOLT SIZE INCHES	RANGE OF TORQUE FT. - LB.
5/8	40 - 60
3/4	60 - 90
1	70 - 100
1-1/4	90 - 120

The above torque loads shall be applied with torque measuring wrenches.

Mechanical joint pipe, fittings, and other appurtenances shall be furnished according to ANSI A21.11 (AWWA C111 - latest revision) and furnished complete with mechanical joint accessories. The bolts and nuts shall be stainless steel or Corten. Gaskets to be made of plain rubber with 70-75 durometer.

In laying "Push-On" pipe, the bell socket and the plain end of the entering pipe must be absolutely clean and free of foreign matter prior to the seating of the gasket. The gasket shall be wiped clean, flexed, and then placed in the socket with the large round end entering first, so that the gasket is seated evenly around the inside of the socket with the groove fitted over the bead. As the gasket fits snugly in the gasket seat it may be necessary to smooth out the gasket

around the entire circumference to remove any bulges which might interfere with the proper entry of the spigot end.

A thin film of lubricant shall be applied to the inside surface of the gasket which will come in contact when entering the plain end of the pipe. In some cases, it is desirable to apply a thick film of lubricant to the outside of the plain end for about one inch back from the end. Lubricant other than that furnished with the pipe shall not be used. The plain end of the pipe shall be aligned and carefully entered into the socket until it just makes contact with the gasket.

Joint assembly shall then be completed by forcing the plain end of the entering pipe past the gasket until it makes contact with the bottom of the socket. The first painted stripe shall be inside the socket and the front edge of the second stripe shall be approximately flush with the bell face. If the assembly is not accomplished with the application of reasonable force, the plain end of the pipe shall be removed to check for the proper positioning of the gasket. After proper assembly, the bronze serrated wedges shall be installed. All work shall be done in accordance with the pipe manufacturer's requirements.

Installation of restrained joint pipe, when required, shall be the same or similar as "push-on" pipe, except that they shall also be installed in accordance with the restrained joint manufacturer's recommendations.

Trench water shall be kept out of the pipe and the pipe kept closed by means of test plugs whenever the work is not in progress.

Caps or plugs shall be put on all open ends of pipe, open bends, open tees, or crosses. Pipe laid adjacent to curbs and on all unsupported changes of direction, all tees, crosses, and other fittings receiving right angle or diagonal thrusts, and all plugs at blanked openings shall be firmly backed against solid earth with suitable masses of concrete of a minimum thickness equal to the pipe diameter and of a length to reach from end to end. See CONCRETE THRUST BLOCKS (SPECIAL) for additional details.

All required connections to existing water mains or services shall be completed so that no service or existing water main shall be left open and unconnected at the close of a working day.

Water Main Crossing Utilities: Wherever the water main crosses existing and/or proposed utilities, including sewer, telephone, electric, gas, etc., the Contractor shall be responsible for determining the existing depth of said utilities prior to installation at no additional cost.

Land Surveying:

1. Contractor shall employ a Land Surveyor registered in State of Illinois and acceptable to the Engineer/City.
2. Contractor shall locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.
3. Verify and confirm drawing dimensions, elevations, and water main locations.
4. Provide field engineering services. Establish pipeline elevations, utilizing recognized engineering survey practices.
5. Maintain a complete and accurate log of control and survey work as it progresses.
    a. After installation and prior to backfilling, Contractor shall survey the location of the following items:

i. Pipeline (at least one shot per stick (18' or 20') of pipeline installed, but not including piping when installed in a casing pipe)
ii. Beginning and end of steel casing pipes
iii. All fittings
iv. Valves and boxes
v. Fire Hydrants

b. Survey locations shall include northings, eastings, and elevations.

6. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
7. The project shall not be considered substantially complete until the City has received and approved the AutoCAD .dwg files and survey points (including elevations, northings, eastings, point numbers, point descriptions, etc.) of all survey work performed during the course of the project. The Contractor shall also provide GIS (i.e. .shp files) data of the installed water main alignment, fittings, valves, boxes, hydrants, and casing pipes. All survey work shall be performed in state plan coordinates with a City approved datum and in approved state plane coordinates.

Flushing, Pressure Testing, and Chlorination: Submit procedures to Engineer and City for review and approval, detailing method and means of pressure test, plan for preliminary flushing and final flushing (including discharge and drainage points), ability to meet minimum flushing velocity requirements, method of disinfection, proposed chemicals, and treatment levels for review. Submit procedures for neutralizing and disposal of heavily chlorinated water. Indicate and describe proposed procedure of chlorination, dechlorination and flushing, including sampling point(s). The time and procedure for the flushing of new water mains shall be approved by the City and the Engineer to ensure any special water distribution system considerations are addressed. All tests shall be made in the presence of the City's assigned representative.

Any additional taps, outlets, piping, valves, and appurtenances (including but not limited to excavation, backfill, compaction, temporary pavement, restoration) required for pressure testing, flushing, and disinfection shall be the responsibility of the Contractor at no additional cost to the City. Copper whips for flushing or sampling shall be utilized as needed. Contractor shall be responsible for protecting and/or backfilling any required excavations before, during, and after the flushing and disinfection operations in accordance with the Contract documents.

Pressure and Leakage Test: The work of laying the pipes, fittings, hydrants, valves and other appurtenances shall be of such character as to leave all the pipes and connections watertight. To confirm these conditions, the water main and all appurtenances shall be subjected to a test of water pressure of not less than one hundred ten (110) pounds per square inch.

The tests shall be made between valves as far as practicable, or as directed by the Engineer, within two (2) working days of the completion of each section of main. Where it is impracticable to test between valves or near connections to existing mains, temporary caps or plugs shall be placed on the mains to close off a section of the main so that it may be tested. The pressure shall be raised to a minimum of one hundred ten (110) pounds and so maintained for a period of not less than two (2) hours.

The amount of water forced into the main during this time shall be determined and this amount shall be taken as a basis to compute the leakage for twenty-four (24) hours.

Pressure shall not vary more than two (2) pounds from the above during the test period. Results of tests shall be submitted to the City.

Allowable leakage shall be computed on the basis of fifteen (15) gallons per inch of pipe diameter, per mile of length, per twenty-four (24) hours. On this basis, the allowable leakage per one thousand (1,000) linear feet of water main is as follows:

PIPE DIAMETER (INCHES)	LEAKAGE PER 1,000 FEET IN 24 HOURS (GALLONS)
2	0.14
3	0.21
4	0.28
6	0.43
8	0.57
10	0.71
12	0.85
14	0.99
16	1.13
18	1.28
20	1.42
24	1.70
30	2.13

For water mains of various sizes, Contractor shall calculate the allowable leakage in accordance with AWWA C-600. If the leakage is at a greater rate than that specified, the trenches shall be re-excavated where necessary, the joints re-made and all defective work and materials replaced until the leakage is reduced to the allowable amount. This work is at the Contractor's expense.

When the City can conveniently furnish water for testing pipe joints or other purposes, there shall be no charge, except for the labor of turning the water off and on. However, the City shall not be obligated to furnish water, with or without charge, unless it can do so with reasonable convenience and entire safety to the public.

The necessary regulation or operation of valves to allow for the connections being made shall be performed only by the employees of the City. Notice must be given a minimum of forty-eight (48) hours in advance when a shut off is to be made to allow for a connection.

Additional leakage/pressure testing requirements include the following

1. Perform all testing in accordance with AWWA C600, except as noted herein.

2. Slowly fill each valve section with potable water.

3. Expel all air from the pipe by means of taps at the high points in the pipeline. After the pipe, or section thereof, has been completely filled, it shall be allowed to stand under a slight pressure for sufficient time to allow the escape of air from

any air pockets. During this period, the valve vaults and other connections shall be examined for leaks. If any are found, they shall be stopped prior to the pressure test.

4. All valves shall be field tested to the specified hydrostatic pressure in both directions. There shall be no visible leakage under hydrostatic pressure during the pipeline test.

5. Plug the taps.

6. Remove and replace any cracked or defective pipe discovered during test at no cost to the City.

7. Repeat the pressure test until satisfactory.

8. All line valves shall be open after the field test.

Preliminary Flushing:

1. Perform the flushing operation after the pressure test has been made and in accordance with AWWA C651. All flushing of mains shall be done during periods of low water demand or at such times as may be directed by the Engineer and the City.

2. Flush each valve section of the completed main prior to disinfection, as thoroughly as possible with water pressure and outlets available. Minimum flushing velocity shall be 3 fps and in accordance with AWWA requirements.

3. Contractor shall provide hard piping as needed from flushing points to local inlets and catch basins or other location as approved by the Engineer.

4. Provide all fittings, piping, valves, appurtenances, hydrants, energy dissipation, and adapters, whether temporary or permanent, to meet the flushing requirements of this specification.

5. Flushing shall be done through open ends of the water main or temporary piping. Any temporary piping shall be sized to be at least equivalent to the proposed water main being flushed (e.g. a temporary flushing pipe for the proposed 30-inch diameter water shall be a minimum of 30-inch diameter). Flumes, temporary storage, weirs, and/or other suitable means shall be provided to assist in the flushing operation and to convey the waste water up to and over the ground surface to an appropriate outlet and to minimize the discharge of sediment and mud to the drainage system. To keep the waste water to a minimum and to assist in scouring the inside of the water main being flushed, a "pig" shall be inserted into the upstream end of the new pipe during construction. Flushing through fire hydrants will not be permitted. Provide energy dissipation, temporary tanks, and storage as required to complete the flushing operation.

6. Prior to approval of flushing, turbidity of the water must be shown to be less than or equal to 1 NTU or as approved by the City. Samples shall be taken in the presence of the Engineer, and Engineer shall approve the sample prior to analysis. Provide certified results of analysis to Engineer and the City.

7. All flushing of mains shall be done during periods of low water demand or at such times as may be directed by the Engineer and the City.

Disinfection:

1. To guard against a contaminated water supply and to provide safe, potable water for domestic use, all mains shall be thoroughly sterilized before being placed in service.

2. Water mains shall be sterilized as soon as pressure tests and flushing are completed.

3. Disinfect all new mains and existing piping, disturbed in any manner by the work, before being placed in service. Draining the water from existing piping or even lowering the water pressure more than one-half will constitute disturbances of the piping.

4. Disinfect water mains, valves and other appurtenances incorporated into the main construction by utilizing chemicals in accordance with AWWA C651 and AWWA B300. The form of chlorine to be used shall be granular calcium hypochlorite. Any deviation from this must have written approval from the Engineer**.** Provide dechlorination at the discharge point in accordance with AWWA and IEPA requirements.

5. During the disinfection operation; Operate valves, hydrants and other mechanical devices controlling the flow of water to permit full effectiveness of the chlorine solution within the main being disinfected. Operate valves so that the strong solution will not flow back into the supply line nor flow into water mains already in service.

6. Samples should be taken at approximately 500-foot intervals and at each branch line. Under special conditions on long construction runs, samples may be taken every 1,000 feet, but only with approval of the Engineer.

7. When the water in the treated main is proven comparable to that of the source, collect water samples at each of the sampling taps and submit to a laboratory on two separate successive days. Samples cannot be collected from hydrants or hose connections that have not been disinfected. If the results of the bacteriological examination are satisfactory, the main shall be placed in service after any final connections are made (with additional disinfection performed in accordance with AWWA, City of Decatur, and IEPA requirements. If the initial disinfecting fails to result in approval, repeat the disinfecting procedure until satisfactory results are obtained.

8. Final flushing, bacteriological tests and any re-disinfection shall be done per AWWA C651 and State of Illinois requirements.

9. All bacteriological analyses shall be paid for by the Contractor until the satisfactory results are obtained.

Method of Measurement. This work will be measured in feet along the centerline of the pipe at the ground level. Measurement shall not include fittings and valves.

Basis of Payment. This work as described above, shall be paid for at the Contract Unit price per FOOT for DUCTILE IRON WATER MAIN, of the diameter specified, whether restrained or unrestrained, which price shall be payment in full for all labor, equipment, and materials, necessary to perform said work, including, but not limited to, excavation, native backfill, bedding, sheeting or shoring (including to support work areas where buildings have been demolished and basements have been backfilled with suitable granular material), pipe, polyethylene encasement, gaskets, restrained joints, special couplings (see DUCTILE IRON WATER MAIN FITTINGS for payment for solid sleeves, elbows, tees, etc.), pressure testing, flushing, and chlorination required for a complete and operational installation. Work also includes the removal and proper disposal of excavated material.

Payment for restrained piping, joints, and/or retainer glands or appurtenances will not be measured separately for payment but shall be INCLUDED in the cost of the DUCTILE IRON WATER MAIN.

TRENCH BACKFILL will be paid for separately.

WATER VALVES

Description. This work shall consist of the furnishing and installation of valves at locations as shown on the plans and as directed by the Engineer. The work shall be constructed in accordance with the applicable sections of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition and the City of Decatur Standard Specifications for Water Main Construction, except as noted herein. All valves, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Standard Specifications for Water and Sewer Main Construction in Illinois, and City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Water valves are to be gate valves manufactured by the Mueller Co. (A-2361) with mechanical joints meeting the requirements of AWWA C-111/A21.11 and supplied with factory installed 304 Stainless Steel trim. Manufacturer's certification will be required, no substitutions unless approved by the City of Decatur. All mechanical joints on valves shall be supplied with 304 Stainless Steel or Corten T-Head Bolts and Nuts. All valve operating nuts are to be housed in a valve box.

Valves 16-inch diameter and larger shall also meet the following requirements:

1. Valve shall be laid horizontal and shall include a bevel gear actuator
2. Valves 18-inch diameter and larger shall include a bypass valve.

All valves shall be AWWA Resilient-Wedge type gate valves and shall equal or exceed the AWWA C509 - latest revision standard. The valves shall be ductile iron body, bronze mounted, with non-rising stem.

All valves through 12 inches in size shall have a working pressure rating of 200 psi with a test pressure of 400 psi. Valves larger than 12 inches shall have a working pressure rating of 150 psi with a test pressure of 300 psi. All valves shall be provided with a 2-inch operating nut which opens to the right (clockwise).

Gate valves shall be provided with two "O" ring stem seals. One "O" ring shall be located below the thrust collar. The space between the "O" rings and around the thrust collar shall be filled with a lubricant to provide for thrust collar lubrication each time the valve is operated.

The interior of the valve body shall be free of pockets or ledges where sediment or debris can collect and shall be bubble tight at their specified working pressure in either direction and with the valve in any position.

The upper "O" ring stem seal(s) shall be replaceable with the valve under working pressure.

The valve body and bonnet shall be coated on all exterior and interior surfaces with a bonded epoxy coating conforming to the requirements of AWWA C550 - latest revision - Protective Interior Coatings for Valves and Hydrants. Interior wetted ferrous surfaces shall be coated a nominal 10 mils thick for long life; and body exterior shall have a minimum 3 to 4 mils coating thickness in order to provide protection in shipment and storage.

Valves shall be furnished with mechanical joint end connections along with gaskets, restraint glands, bolts, nuts and any accessories for a complete and fully operational installation

All valves shall have the name of the manufacturer and year of manufacture clearly cast on the valve body

All valves shall be new and secured from responsible manufacturers and use of valves other than specified above must receive written approval from the Engineer not later than two (2) weeks prior to bid opening.

Valves and fittings shall be set on a foundation or footing of concrete laid on firmly compacted ground. The foundations shall be solid concrete block(s) not less than 8” X 8” X 16” for 6" and 8" water mains and a minimum of 2 - 8” X 8” X 16” solid concrete blocks for 10" and larger water mains. Leveling shims shall be of hard wood material.

The elevation of the valves and fittings and their foundations shall be such as to conform to the height of the connecting pipe so there will be no strain on the joints.

Prior to the purchasing and/or ordering any valves, the Contractor shall field verify the location of all existing and proposed utilities, facilities, and structures, in order to confirm that the proposed valve is able to be installed as designed. The Contractor shall confirm his findings to the Engineer in writing.

Method of Measurement. This work will be measured at the contract unit of each water valve installed and at the size specified. The Contractor shall verify, under the control of the Engineer and City, that all newly installed valves are in fully operating condition, open and in service unless otherwise specified by the Engineer and the City prior to final acceptance and payment.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for WATER VALVES, of the size specified, which price shall include all labor, equipment, materials, excavation, sheeting or shoring, disposal, and native backfill necessary to perform said work. Valve boxes and hydrant valves shall be paid for separately, under the pay items “VALVE BOX” and “FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX”.

TRENCH BACKFILL will be paid for separately

REMOVE AND RELOCATE WATER MAIN

Description. This work shall consist of providing labor, equipment and materials required in order to relocate a water main or larger water service (3" diameter and larger) due to unforeseen utility conflicts, change in cover, or other issues, when directed by the Engineer.

General Requirements. The work shall be constructed in accordance with the applicable sections of the Section 40 and 41 of the "Standard Specifications for Water and Sewer Main Construction in Illinois" the latest addition, in the details shown in the plans, and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein. All pipe, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details). The work shall conform to the following Special Provisions, unless specified otherwise herein, and not including Method of Measurement and Basis of Payment:
DUCTILE IRON WATER MAIN
DUCTILE IRON WATER MAIN FITTINGS
WATER MAIN REMOVAL
CONCRETE THRUST BLOCKS (SPECIAL)
NON-PRESSURE CONNECTION TO EXISTING WATER MAIN

Contractor shall only be paid for DUCTILE IRON WATER MAIN FITTINGS that are required beyond what is shown in the construction details in the Drawings. Contractor shall not be paid for solid sleeves and up to four (4) bends of the specified size. Contractor shall roll bends as required for construction and will not be paid for additional bends that are installed for the Contractor's convenience.

When ordered by the Engineer in writing, the Contractor is required to complete the relocation of the water main at the required size, which includes all labor, equipment, and materials to install the additional water main, bends, fittings, couplings, and appurtenances, including poured concrete thrust blocks, which shall be designed by the Contractor when specified in the Drawings. All joints shall be restrained using mechanical joints and Megalugs or Romac Grip Rings. Removal of the existing water main will not be paid for separately but shall be included in this pay item. Contractor shall meet all IEPA water/sewer separation requirements. Prior to the assembly, all piping and fittings shall be swabbed with a chlorine solution in accordance with AWWA disinfection requirements. For pressure testing, the water main shall be brought to normal system pressure and all joints shall be visually inspected for leakage. Any leaks shall be repaired by the Contractor at no additional cost. For flushing, the Contractor shall coordinate with the City and/or property owners and utilize existing hydrants (or other means) to flush the relocated water main. The City will operate all existing valves and hydrants, and the Contractor shall be responsible for all coordination of the flushing work. The Contractor shall provide all required taps, outlets, piping, valves to meet AWWA disinfection requirements.

If pressure connections and/or linestops are required, these items will be paid for separately, in accordance with the PRESSURE CONNECTION and WATER MAIN LINE STOP pay items. All other ancillary work that may be required to utilize these pay items in conjunction with the REMOVE AND RELOCATE WATER MAIN work shall be included in this pay item. Refer to the Detail Sheets in the Drawings for additional details and requirements.

Method of Measurement. The work will be measured in feet along the centerline of the relocated water main at the ground level and shall include all fittings used.

Basis of Payment. This work as described above shall be paid for at the contract unit price per FOOT for REMOVE AND RELOCATE of the diameter specified, which price shall be payment in full for all labor, equipment, and materials, necessary to perform said work, including excavation, pipe, sheeting or shoring, polyethylene encasement, gaskets, restrained joints, connections to existing water mains, solid sleeves, fittings, thrust blocks, pressure testing, flushing, native backfill and disinfection required for a complete and operational installation approved by the Engineer and the City. Work also includes the removal and proper disposal of excavated material and existing water main and fittings.

FIRE HYDRANTS TO BE REMOVED AND REPLACED

Description. This work shall consist of removing and replacing existing City fire hydrants and auxiliary valve boxes affected by new grading at locations shown on the Plans or as directed by the Engineer. Contractor shall not be paid to adjust any proposed hydrants. The Contractor shall be responsible to coordinate and sequence the construction of proposed fire hydrants with all other work to avoid adjustments to any proposed hydrants. If the adjustment of a proposed hydrant is required, it shall be at the Contractor's expense.

General Requirements. Contractor shall temporarily remove any existing City of Decatur fire hydrant that may conflict with the construction. Contractor shall not operate any hydrant auxiliary valves but shall coordinate closing of hydrant auxiliary valves with the City of Decatur. No other shutdowns of the City's water supply system will be permitted. The existing auxiliary valve shall be closed, and the existing hydrant and lead shall be disconnected from the flanged or mechanical joint of the valve. The Contractor shall replace the existing hydrant with a new fire hydrant that has been approved by the City of Decatur and meets the requirements of AWWA C502. Contractor shall salvage and return all existing hydrants to the City of Decatur Department of Public Works. The applicable requirements for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX shall also apply herewith, including, but not limited to, hydrant requirements and approved hydrant models.

If required for construction sequencing and phasing, Contractor shall install a temporary cap or plug on the valve or hydrant lead to protect the water main from contamination. Contractor shall also install any temporary thrust blocking and bracing that may be required. Otherwise, the Contractor shall install the new hydrant at the same time that the existing hydrant is removed. Prior to installation, the hydrant shall be protected from any damage and temporarily stored in a weather tight, climate-controlled enclosure in an environment favorable to the hydrant.

After roadway improvements have been performed, Contractor shall remove the temporary cap or plug, supply all piping, appurtenances, fittings, fire hydrant extensions, and adapters required for a complete installation and to adjust the hydrant to meet the finished grade. All piping, appurtenances, fittings and adapter shall meet the requirements of AWWA C104, AWWA C110, AWWA C151, AWWA C153, and AWWA C150 and shall be disinfected according to the requirements of AWWA C651. All joints shall be restrained. Install hydrant with a minimum of 3.5 ft. of cover over the connection pipe. The frost ring shall be set at the finished grade. The grade ring of the hydrant shall be set 0.2' above the finished grade or nearest top of curb.

The existing valve box shall be adjusted as required to meet the finished grade. If the grade change is such that the existing valve box cannot be adjusted to meet the finished grade, then the Contractor shall provide a new City of Decatur approved valve box or extension. No new auxiliary valve will be required.

The temporary thrust block, old permanent thrust block and drainage gravel shall be removed from the site and properly disposed. Set each hydrant on a concrete block and provide not less than 1/2 cubic yard of new crushed stone at the base for drainage per the detail drawing. Back or brace hydrants with a new concrete thrust block extending from the hydrant to the wall of the excavation and placed to permit removal of the hydrant.

Method of Measurement. The work will be measured for payment in place for each fire hydrant to be removed and replaced.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for FIRE HYDRANTS TO REMOVED AND REPLACED which price shall be payment in full for performing the work herein and shall include the hydrant, temporary cap or plug, permanent thrust block, drainage gravel, appurtenances, all saw cutting, excavation, sheeting or shoring, native backfill and compaction, existing and temporary thrust block removal, proper disposal and all materials, labor and equipment necessary to perform the work as specified. Salvaging and return of any materials will be included in this item.

All DUCTILE IRON WATER MAIN piping, DUCTILE IRON WATER MAIN FITTINGS, TRENCH BACKFILL, VALVE BOXES TO BE ADJUSTED, and FIRE HYDRANT EXTENSION shall be paid separately.

FIRE HYDRANT EXTENSION

Description. This work shall consist of performing a fire hydrant extension to adjust the existing hydrant to the new grade elevation at locations shown on the Plans or as directed by the Engineer. All appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. This work shall be performed in accordance with the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Hydrant extension kits shall be in accordance with the specified hydrant manufacturer's requirements (i.e. Mueller A-320-35). Nuts and bolts shall be stainless steel.

If the hydrant extension size is not available, Contractor shall provide 6-inch diameter DUCTILE IRON WATER MAIN and DUCTILE IRON WATER MAIN FITTINGS (including all necessary restrained joint appurtenances) to assist in meeting the required hydrant elevation.

Method of Measurement. The work will be measured for payment in place in feet of lift kit provided. If only DUCTILE IRON WATER MAIN and DUCTILE IRON WATER MAIN FITTINGS are required to make the necessary adjustment, then the Contractor will be paid for those items only and will not be paid for FIRE HYDRANT EXTENSION.

Basis of Payment. This work shall be paid for at the contract unit price per FOOT for FIRE HYDRANT EXTENSION, at the specified size, which price shall be payment in full for performing the work therein and shall include all excavation, native backfill, sheeting or shoring, and all materials, labor and equipment necessary to perform the work as specified. If Contractor installs a FIRE HYDRANT EXTENSION for his own convenience or due to a mistake by the Contractor, this work shall be not be paid for, but shall be at the Contractor's own expense.

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

Description. The contract unit price shall be full compensation for all labor, equipment and materials to excavate, prepare trench bedding, install valve, valve box and hydrant, placement of 1" washed stone for drain field, backfill, compaction and proper disposal of waste or surplus materials. Contractor shall not be paid to adjust any proposed hydrants. The Contractor shall be responsible to coordinate and sequence the construction of proposed fire hydrants with all other work to avoid adjustments to any proposed hydrants. If the adjustment of a proposed hydrant is required, it shall be at the Contractor's expense. All hydrants, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements.

All fire hydrants shall equal or exceed the AWWA C502 - latest revision standard. They shall be of the compression type with the main valve closing with pressure. They shall be of the dry barrel, dry top design.

The hydrant body shall be cast of ASTM A-126 Grade B gray iron with all interior parts fully bronze mounted, including a permanent bronze bushing threaded and locked into the shoe casting providing bronze to bronze threads between the seat ring and shoe for easy removal of the main valve assembly.

Hydrants shall be of the "breakable" type so designed that neither the barrel nor stem shall be damaged on impact and so designed that repairs may be performed by easily replaceable components.

The hydrant shall have only one flange above ground line secured with a traffic model breakable safety flange that will break clean on vehicular impact. The breaking point of the stem coupling shall be below the flange so that a tire cannot depress the stem and open the main valve.

The hydrant bonnet assembly shall be provided with an integral lubricant reservoir so designed that operating nut threads, stem threads, and thrust collar are automatically lubricated each time the hydrant is operated. The lubricant reservoir, stem threads, and operating nut shall be sealed from the waterway by two (2) "O" ring stem seals bearing on a bronze bushing near the top of the stem. The lubricant reservoir and operating nut shall also be sealed to the atmosphere to prevent leakage of lubricant and contamination of lubricant by the elements.

Hydrants shall have a specially molded rubber main valve which shall seat against an ASTM B-62 bronze seat ring with an inside diameter of 5-1/4 inches. The main valve assembly shall include two integral drain valves which operate automatically each time the hydrant is opened or closed with no toggles, springs, and adjustable mechanisms. There shall be at least two bronze lined drain ports located in the hydrant shoe.

Hydrants shall be furnished with two 2-1/2-inch hose nozzles and one 4-inch pumper nozzle. Pumper nozzle to face the street. All nozzle threads shall be National Standard Threads. They shall be furnished with a pentagon-shaped 1-1/4-inch bronze operating nut with an approved weather cap. All hydrants shall be opened by turning right (clockwise).

Each fire hydrant shall be installed using an auxiliary valve that is tied to the main line through the use of a mechanical joint hydrant (or anchor) tee with rotating gland. The fire hydrant valve and line shall be 6 inches. The fire hydrant shall be installed using a 6-inch diameter anchor

coupling (to be measured and paid in accordance with the pay item DUCTILE IRON WATER MAIN FITTINGS) and if needed, a FIRE HYDRANT EXTENSION. The Contractor may substitute DUCTILE IRON WATER MAIN, 6-INCH and a 6-inch diameter offset nipple fitting (measured and paid in accordance with the pay item DUCTILE IRON WATER MAIN FITTINGS).

Hydrants shall be furnished with Mechanical Joint inlet (shoe) connection and shall be sized for a minimum bury (trench) depth of 4-1/2 feet.

The Mueller Centurion Model A423 (preferred) or the Modern Centurion Model A442 (only if Contractor can document that A423 is not available) are approved hydrants.

Use of Hydrants other than as specified above, must receive written approval from the City and with sufficient notice for an addendum to be issued prior to bidding.

Fire Hydrants shall be set in such a manner that the steamer connection is facing the closest street. They shall be set vertically upon a solid concrete block not less than 12”X12”X8” as shown in the detail drawing.

Hydrants shall be set with solid concrete blocking (12”X12”X8”), placed behind the barrel and behind the tee connection to prevent movement of the pipe or hydrant (per the detail drawing). Poured concrete blocking is allowed, but only with the approval of the Engineer. Hydrant thrust blocks will not be paid separately but shall be included with the FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX pay item. When shims are required, they shall be hard wood shims.

To provide adequate drainage, construct a drain field around the base of the hydrant using 1”-1 ½” washed stone per the detail drawing.

After fire hydrants have been set at the proposed grade, backfilled and tested, the surfaces of the hydrant above the ground line shall be cleaned by wire brushing and washing with soap and water, and the exposed surfaces shall be painted with one (1) coat of Valspar Syn-Gard. The color shall be red and in accordance with the City of Decatur requirements.

The valve boxes shall be of the adjustable type, shall be set at finished grade, and shall have the valve box covers stamped “Water”. The applicable portions of VALVE BOX special provision shall also apply. The applicable portions of WATER VALVE special provision shall apply to the auxiliary gate valve.

The Contractor shall verify under the control of the Engineer and the City that all new fire hydrants are in proper operating condition prior to final acceptance and payment.

For work within 50’ of existing railroad track center line, the Contractor is responsible to meet all railroad requirements including but not limited to permitting, sheeting, shoring, dewatering and excavation. The Contractor shall assume that the proposed excavation will take place within the “Zone of Influence” and/or “Theoretical Embankment Line.

Method of Measurement. This work shall be measured per each fire hydrant with auxiliary valve and valve box complete, including all appurtenances, at each location.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX which price shall include furnishing

and installing the fire hydrant with auxiliary valve and valve box, all labor, equipment, and materials, including excavation, native backfill, drainage stone, thrust block, fittings, making any required water main connections (Contractor will not be paid separately for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN), and all appurtenances necessary to complete the work.

Six (6) inch water main connection piping and fittings as specified shall be measured and paid for separately, either under “DUCTILE IRON WATER MAIN” or “DUCTILE IRON WATER MAIN FITTINGS”.

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (VARIABLE WIDTH GUTTER FLAG)

Description: This work shall consist of constructing combination concrete curb and gutter in accordance with Section 606 of the Standard Specifications, and at the locations and transition dimensions specified on the plans, and as directed by the Engineer.

Curing: The combination concrete curb and gutter shall be cured in accordance with Article 1020.13 of the Standard Specifications.

Method of Measurement: COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (VARIABLE WIDTH GUTTER FLAG) shall be measured for payment in feet in the flow line of the gutter and along the face of concrete curb.

Basis of Payment: This work shall be paid for at the contract unit price per FOOT for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (VARIABLE WIDTH GUTTER FLAG), which price includes payment in full for all labor, tools, equipment, and incidentals required to perform the work as specified herein.

CONCRETE MEDIAN SURFACE, 6 INCH

Description. This work shall consist of constructing concrete median.

Construction. This work shall be completed in conformance with Section 606 of the Standard Specifications and IDOT Standard 606301.

Basis of Payment. This work shall be paid for at the contract unit price per SQUARE FOOT for CONCRETE MEDIAN SURFACE, 6 INCH.

PIPE CULVERTS TO BE CLEANED

Description. This work shall be completed in accordance with section 609 of the Standard Specifications except as modified below and as directed by the Engineer.

Add the following after the last sentence of 609.02: At the completion of each pipe culvert cleaning, the Contractor shall televise the pipe culvert and provide the televised inspection recording to the Engineer to ensure existing debris has been sufficiently cleared. Any culverts which are deemed not sufficiently cleaned shall be subsequently cleaned at no additional compensation.

Televising for verification of proper cleaning of existing storm sewer, pipe culverts or drainage structures will not be paid for separately but shall be considered in the cost of the item being cleaned.

Add the following after the last sentence of 609.04 Basis of Payment. This price shall include all material, equipment, and labor necessary for the successful cleaning and televising for verification.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

Description. This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

Contract Specific Sites. The excavated soil and groundwater within the areas listed below shall be managed as either "uncontaminated soil", hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

- Station 77 + 58.90 & offset 87.00 feet LT to Station 77 + 81.82 & offset 43.00 feet RT relative to CL of North Brush College Road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Chromium, Iron, Manganese, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno[1,2,3-cd]pyrene.
- Station 64 + 84.03 & offset 35.31 feet LT to Station 67 + 21.02 & offset 72.59 feet RT relative to CL of North Brush College Road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Arsenic, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluorathene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene.
- Station 208 + 50.33 & offset 0.00 feet LT to Station 210 + 15.90 & offset 42.50 feet LT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: Iron, TCLP Iron.
- Station 212 + 40.11 & offset 131.55 feet RT to Station 214 + 00.44 & offset 44.62 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(1). COC sampling parameters: pH.
- Station 304 + 22.52 & offset 66.42 feet LT to Station 306 + 03.53 & offset 1.51 feet LT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(1). COC sampling parameters: Iron, Manganese, pH.
- Station 306 + 05.83 & offset 27.61 feet RT to Station 307 + 04.80 & offset 115.37 feet RT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Benzo(a)pyrene.
- Station 305 +94.49 & offset 70.08 feet LT to Station 307 + 07.82 & offset 28.52 feet LT relative to CL of Jug Handle road. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Chromium, Lead, TCLP Lead, Cobalt, Iron, TCLP Iron, Manganese, TCLP Manganese, Benzo(a)pyrene, pH.
- Station 222 + 58.18 & offset 62.62 feet RT to Station 224 + 03.75 & offset 83.12 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material

meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: pH.

- Station 230 + 10.56 & offset 50.85 feet LT to Station 232 + 35.63 & offset 60.88 feet RT relative to CL of East Faries Parkway. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(a)(5). COC sampling parameters: Benzo(a)pyrene; Iron.
- Station 607 + 58.58 & offset 29.14 feet RT to Station 607 + 60.56 & offset 30.87 feet LT relative to CL of Logan Street. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: iron, pH.
- Station 404 + 50.92 & offset 71.03 feet RT to Station 405 + 90.30 & offset 51.29 feet LT relative to CL of James Street. The Engineer has determined this material meets the criteria of, and shall be managed in accordance with, Article 669.05(b). COC sampling parameters: iron, pH.

Additional information on the above sites collected during the regulated substances due-diligence process is available through the City of Decatur Division of Public Works.

Pay Items. In accordance with Section 669.16, the following pay items are anticipated for the site.

SOIL DISPOSAL ANALYSIS
NON-SPECIAL WASTE DISPOSAL
SPECIAL WASTE GROUNDWATER DISPOSAL
REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN
REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT
REGULATED SUBSTANCES MONITORING
ENGINEERED BARRIER
BACKFILL PLUGS

ELECTRIC UTILITY SERVICE CONNECTION

Description. This item shall consist of payment for work performed by the electric utility in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE.

CONSTRUCTION REQUIREMENTS

General. It shall be the Contractor's responsibility to contact the electric utility. The Contractor shall coordinate his work fully with the electric utility both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact AMEREN ILLINOIS construction & engineering services (888-659-4540) that will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with electric utility for service. In the event of delay by the electric utility, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by the electric utility for its services. Work provided by the Contractor for electric service will be paid separately as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as $15,000

Basis Of Payment. This work will be paid for at the contract LUMP SUM price for **ELECTRIC UTILITY SERVICE CONNECTION** which shall be reimbursement in full for electric utility service charges.

UNDERGROUND CONDUIT

Description. This work shall consist of furnishing and installing a conduit of the type and size specified, in accordance with Section 810 of the Standard Specifications except as described herein.

General Requirements. When PVC is specified, the substitution of Coilable Nonmetallic Conduit, in accordance with Article 1088.01 (c), in place of the PVC conduit of the size and type specified in the plans is permitted with no change in compensation for this item.

When PVC Conduit is required to be spliced to steel conduit sections, a heavy wall set screw connector with a PVC female adapter shall be installed and sealed by duct seal and plastic tape.

A ¼" polypropylene pull rope shall be installed in all conduit runs exceeding 20 feet. A minimum of 2 feet of rope shall be provided at each end of a conduit run.

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

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

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

Method of Measurement. UNDERGROUND CONDUIT shall be measured per foot as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per FOOT, for UNDERGROUND CONDUIT, of the size and type specified.

HANDHOLE / DOUBLE HANDHOLE

Description. This work shall consist of furnishing and installing a handhole or double handhole in accordance with Section 814 and Articles 1088.05 of the Standard Specifications except as described herein.

General Requirements. The frame and cover shall be constructed of a polymer concrete and reinforced with a heavy-weave fiberglass cloth. The nominal dimensions of the handhole shall be a minimum 17" (W) c 30" (L) x 36" (D) and the nominal dimensions of the double handhole shall be a minimum 30" (W) x 48" (L) x 36" (D).

The cover shall contain the legend "Traffic Signals" and shall be held down by two stainless steel hex head bolts. The cover shall contain 2 recessed lift pins. The cover for a double handhole shall be a split lid, two-piece cover. All covers shall be rated a minimum of tier 22.

Method of Measurement. HANDHOLE / DOUBLE HANDHOLE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid will be paid for at the contract unit price, per EACH, for HANDHOLE / DOUBLE HANDHOLE.

ELECTRIC CABLE IN CONDUIT

Description. This work shall consist of furnishing and installing electric cable in conduit in accordance with Sections 873, 1066 and 1076.04 of the Standard Specifications except as described herein.

General Requirements. The conductors shall be solid copper.

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

Underground cable marking tape shall comply with Article 1066.05 of the Standard Specifications.

Method of Measurement. ELECTRIC CABLE IN CONDUIT shall be measured per foot of the type, size and number of conductors specified.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, of the type, size, and number of conductors specified.

ROADWAY LUMINAIRE, LED

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

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

Submittal Requirements.

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

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device. Completed manufacturer's luminaire ordering form with the full catalog number provided

2. LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.

3. LED efficacy per luminaire expressed in lumens per watt (l/w).

4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.

5. IES file associated with each submitted luminaire in the IES LM-63 format.

6. Computer photometric calculation reports as specified and in the luminaire performance table.

7. TM-15 BUG rating report.

8. lsofootcandle chart with max candela point and half candela trace indicated.

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

10. Written warranty.

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

a. TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F (25 °C).

b. LM-79 report with National Voluntary Laboratory Accreditation Program (NVLAP) current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and

maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.

c. LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.

d. AGi32 calculation file matching the submittal package.

e. In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.

f. Vibration test report in accordance with ANSI C136.31 in PDF format.

g. ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.

h. ASTM G154 (ASTM D523) gloss test report in PDF format.

i. LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).

j. Power factor (pf) and total harmonic distortion (THD) at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.

k. Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.

l. Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.

m. Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

A sample luminaire shall also be provided upon request of the Engineer. The sample shall be as proposed for the contract and shall be delivered by the Contractor to the office City Engineer of Decatur, the IDOT District Headquarters, or another location as designated by the City or the Engineer. After review, the Contractor shall retrieve the luminaire.

Manufacturer Experience.

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

Housing.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Driver.

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

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

The driver shall have an input voltage range of 120 to 277 volts (± 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.

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

LED Optical Assembly

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

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

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

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

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

Photometric Performance.

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

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

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

Photometric Calculations.

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

Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided in accordance with IESNA RP-8 recommendations. Lighting calculations shall be performed using AGi32 software with all luminance calculations performed to one decimal place (i.e. x.x cd/m2). Uniformity ratios shall also be calculated to one decimal place (i.e. x.x:1). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Table(s). Values shall be rounded to the number of significant digits indicated in the luminaire performance table(s).

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

IDOT LUMINAIRE PERFORMANCE TABLE
ROADWAY LIGHTING

GIVEN CONDITIONS

ROADWAY DATA	Pavement Width	48 (ft)
	Number of Lanes	4
	Median Width	4
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA	Mounting Height	40 (ft)
	Mast Arm Length	12 (ft)
	Pole Set-Back From Edge Of Pavement	3-varies (ft)
LUMINAIRE DATA	Lumens	19,500 lumens
	BUG Rating	B3 – U0 – G3 (Max)
	I.E.S. Vertical Distribution	Medium
	I.E.S. Lateral Distribution	Type 3
	Total Light Loss Factor	0.70
LAYOUT DATA	Spacing	200 (ft)
	Configuration	Opposite
	Luminaire Overhang over EOP	9 (ft)

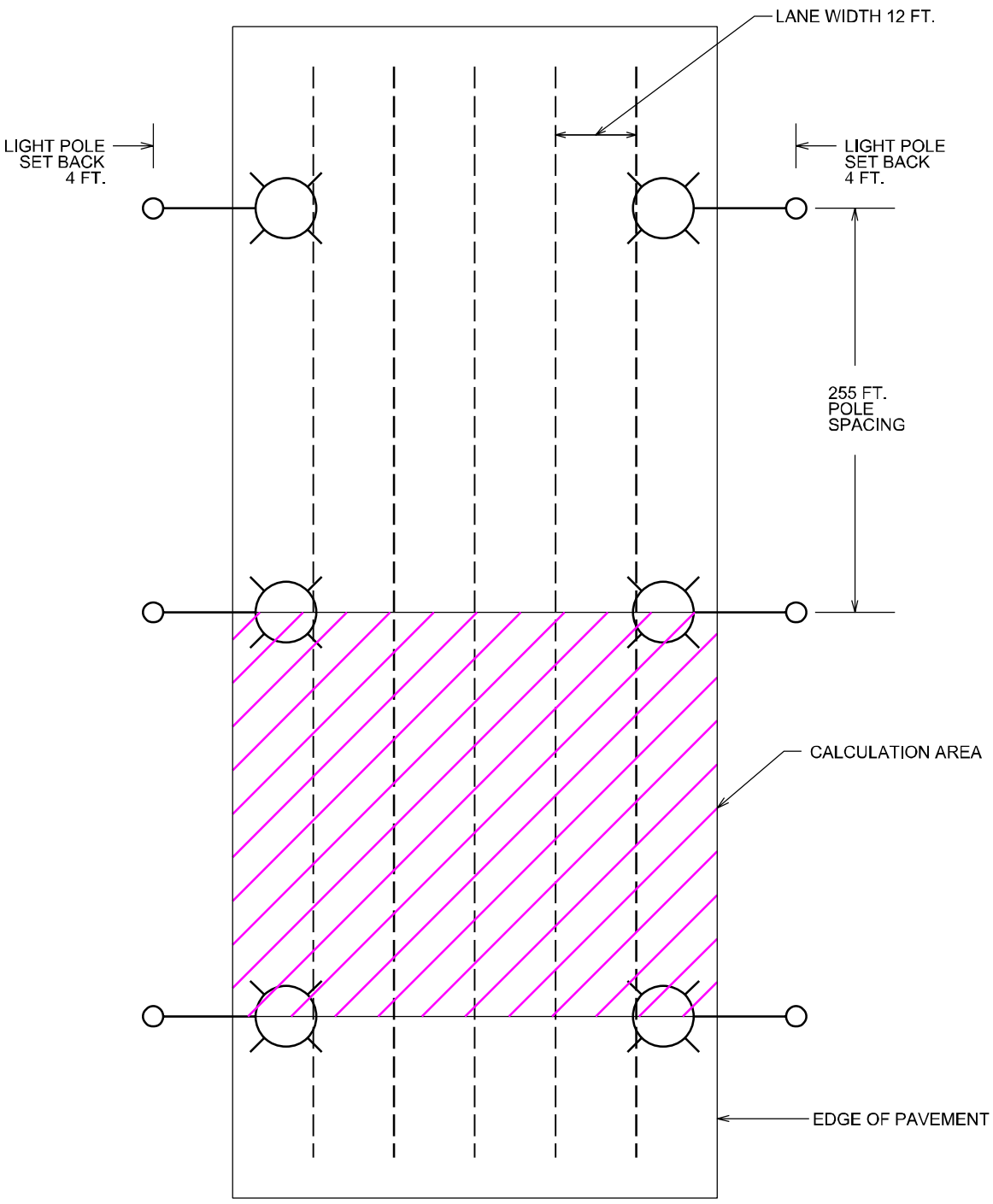
NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS

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

ROADWAY LUMINANCE	Average Luminance, L_{AVE}	1.2	Cd/m^2 (Max)
		.9	Cd/m^2 (Min)
	Uniformity Ratio, L_{AVE}/L_{MIN}	3:1	(Max)
	Uniformity Ratio, L_{MAX}/L_{MIN}	5:1	(Max)
	Veiling Luminance Ratio, L_V/L_{AVE}	0.3:1	(Max)

LIGHT POLE LAYOUT
6 LANE OPPOSITE



Independent Testing

When a contract has 30 or more luminaires of the same type (distribution type and lumen output/wattage), that luminaire type shall be independently tested, unless otherwise noted. The quantity of luminaires to be tested shall be as specified in the following table.

Contract Quantity	Luminaires to be Tested
1-29	0 (unless otherwise noted)
30-80	2
81-130	3
131-180	4
181-230	5
231-280	6
281-330	7

Testing is not required for temporary lighting luminaires.

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

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

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

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

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

The testing performed shall include photometric and electrical testing.

All tests shall be conducted at the luminaire system operating voltage of 240 volts unless specified differently in the contract plans.

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

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

Two copies of the summary report and the test results including IES photometric files (including CDROM) shall be certified by the test laboratory and shall be sent by certified mail directly to the City of Decatur.

To: City of Decatur
Attn: Paul Caswell, P.E.
City Engineer
1 Gary K Anderson Plaza
Decatur, IL 62523

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

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

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

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

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

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

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

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

Installation.

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

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

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

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

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

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

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

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

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

Warranty.

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

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

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

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

Method of Measurement.

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

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

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

Basis of payment. This work will be paid for at the contract unit price per EACH for LUMINAIRE, LED, ROADWAY, of the output designation specified.

FULL-ACTUATED CONTROLLER AND CABINET

Description. This work shall consist of furnishing and installing a full-actuated controller and cabinet of the type specified, in accordance with Section 857 and Articles 1073.01 and 1074.03 of the Standard Specifications except as described herein.

General Requirements. This shall include a copy of the latest version of software for programing the controller. Software shall be installed on the department's laptop. This shall also include any necessary cables that connect the laptop to the installed controller.

Method of Measurement. FULL-ACTUATED CONTROLLER AND CABINET shall be measured per each unit completed and installed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price for EACH for FULL-ACTUATED CONTROLLER AND CABINET, of the type specified.

UNINTERRUPTABLE POWER SUPPLY

Description. This work shall consist of furnishing and installing an uninterruptable power supply, in accordance with Section 862 and Article 1074.04 of the Standard Specifications except as described herein.

General Requirements. The cabinet shall have minimum dimensions of 48" tall, 16' wide, and 16" deep.

The cabinet shall be mounted to the side of the traffic signal cabinet and shall contain the UPS module, transfer switches, and the batteries.

Method of Measurement. UNINTERRUPTABLE POWER SUPPLY shall be measured per each unit completed of the type and construction shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for UNINTERRUPTABLE POWER SUPPLY, of the type specified.

TRAFFIC SIGNAL EQUIPMENT

Description. The traffic signal equipment furnished for this contract shall be Eagle Brand in accordance with the proprietary letter between the State of Illinois and the City of Decatur dated March 14, 2014.

General Requirements.

TRAFFIC SIGNAL POST

This work shall consist of furnishing and installing a traffic signal post of the type and length specified, in accordance with Sections 875 and 1077.01 of the Standard Specifications except as described herein.

The base of the post shall have a thread less collar which extends above the threads on top of the base and adds one inch to its overall height. The collar shall be an integral part of the casting. Prior to assembly, the contractor shall apply anti-seize compound to the threads of the post and base.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for TRAFFIC SIGNAL POST, of the type and length specified.

PEDESTRIAN PUSH-BUTTON

Description. This work shall consist of furnishing and installing pedestrian push-buttons of the type specified in accordance with Section 888 and Article 1074.02 of the Standard Specifications except as modified herein.

General Requirements. The push-buttons shall meet ADA requirements. All pedestrian push-buttons shall have a case and be equipped with a 2" diameter button for easy access. The push-buttons shall have a yellow housing and utilize a solid-state switch or reed relay. The following model is approved within the District: Polara Bulldog model BDSP-010.

The pedestrian push-button shall be in a modular station assembly accommodating the two different sizes of signs listed below. The push-button will be part of the modular station with a four-hole mount round cover assembly. The modular stations assemblies shall be the Pelco models SE-2132-12 P4HLED and SE-2132-15-P4HLED both yellow in color.

The pedestrian push-button installation shall include all crossing signs and hardware required to mount the pedestrian push-button. All hardware shall be of stainless-steel construction. All bolts shall be Hex Head and no self tapping/drilling screws will be allowed. Anti-seize paste shall be installed on all fasteners.

All signs for pedestrian push-buttons shall be MUTCD sign R10-3e. All signs **shall not** be digitally printed.

Method of Measurement. PEDESTRIAN PUSH-BUTTON shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for PEDESTRIAN PUSH-BUTTON.

STEEL COMBINATION MAST ARM ASSEMBLY AND POLE

Description. This work shall consist of furnishing and installing a steel combination mast arm of the length specified, in accordance with Section 877 of the Standard Specifications and Standard 877011 except as described herein.

General Requirements. The height of the luminaire installation shall be reduced from 45 feet to 35 feet.

The davit arm shall be 15 feet in length.

Method of Measurement. STEEL COMBINATION MAST ARM ASSEMBLY AND POLE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, of the type and length specified.

MAST ARM DAMPENING DEVICE

Description. This work shall consist of installing a dampening device on mast arms, greater than 46 feet in length, equidistant between the two outermost signal heads.

General Requirements. The dampening device shall consist of a 36” x 72” Type 1 unpainted aluminum sign stock mounted horizontally on top of the mast arm with the 36” length perpendicular to the arm.

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

Basis of Payment. This work shall be considered as included in the unit cost, per EACH, for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE and STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, of the size specified

SIGNAL HEAD, POLYCARBONATE LED HEADS

Description. This work shall consist of furnishing and installing polycarbonate signal heads of the type specified, in accordance with Section 880 of the Standard Specifications except as modified herein.

General Requirements. The polycarbonate heads provided for this project shall have the terminal compartment for two-way, post mounted signal heads on top of the post in accordance with Standard 880006.

Method of Measurement. POLYCARBONATE SIGNAL HEADS shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for SIGNAL HEAD, POLYCARBONATE, LED HEADS of the type specified.

TEMPORARY TRAFFIC SIGNAL INSTALLATION

Description. This work shall consist of furnishing, installing, maintaining, and removing a temporary traffic signal installation in accordance with Section 890 of the Standard Specifications except as described herein.

The installation shall include the wood poles, electrical cable, signal heads, backplates, span wire, tether wire, vehicle detection, interconnect to the railroad bungalows, and all associated hardware to complete the installation.

The Emergency Fire Station Pre-Emption will be wired into the temporary signals and be functional during construction.

The traffic signal cabinet and controller shall be according to NEMA standards for Traffic Control Systems.

The vehicle detection shall be a microwave-based motion or video detection used to detect vehicles, motorcycles, and bicycles. It shall be capable of sending a signal representative of a loop type detector in a presence mode to a traffic controller device. The sensor shall operate in the field under harsh environments and shall be immune to the effects of weather, sun rays, night problems and headlight glare. It shall not be necessary to mount any hardware in the roadway. The sensor shall be immune to all privacy issues.

All temporary traffic signal installations shall have vehicular detection installed as shown on the plans or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection shall be approved by the City of Decatur prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project.

Basis of Payment. This work will be paid for at the contract unit price EACH for TEMPORARY TRAFFIC SIGNAL INSTALLATION.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Description. This work shall consist of the removal of existing traffic signal equipment and the existing controller cabinet and its contents at Brush College Rd and East Faries Pkwy, in accordance with Section 895 of the Standard Specifications except as described herein. The list of removal items is listed in the plans.

The following salvaged items removed shall become the property of the City of Decatur. Items shall be delivered to the City of Decatur (2600 North Jasper St, Decatur, IL 62526). The contractor shall contact the City to arrange for delivery of said items.

- All traffic controllers
- Master controller
- Traffic signal cabinet
- Dual Mast Arm assembly

All remaining salvaged items removed shall become the property of the Contractor.

Basis of Payment. This work will be paid for at the contract unit price EACH for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.

REMOVE EXISTING DOUBLE HANDHOLE

Add the following to Article 895.05 of the Standard Specifications.

Description.
The existing double handhole which is to be removed and is to become the property of the Contractor shall be disposed of at the Contractor's expense. This work shall include all of the necessary work to remove the existing double handholes from the ground and to restore the existing pavement or ground to match the adjacent conditions at the site. Holes created should be filled or barricaded immediately to prevent safety hazards.

Basis of Payment. This work shall be paid for at the contract unit price, per EACH, for REMOVE EXISTING DOUBLE HANDHOLE, of the type indicated on the plans, which price shall include all work, excavation, materials, all equipment and labor required to complete the work as specified and to restore the existing ground or pavement.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”

Description. This work shall consist of the furnishing, placing and compacting hot-mix asphalt driveway pavement at the locations and thickness specified on the plans, as directed by the Engineer, and according to applicable portions of the Standard Specifications. The HMA driveway pavement shall consist of the HMA surface and binder as specified in the plans.

This work shall be performed according to Article 406.06 of the Standard Specifications. Bituminous Materials (Prime Coat) shall be applied in accordance with Article 406.05(b)(2) of the Standard Specifications. The HMA driveway pavement shall be constructed on a granular base.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”. BITUMINOUS MATERIALS (PRIME COAT), BITUMINOUS MATERIALS (TACK COAT) and AGGREGATE BASE COURSE, TYPE A 8” will be paid for separately.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL

Description. This work consists of furnishing equipment, labor, tools and materials necessary for the removal and satisfactory disposal of all existing bituminous driveways in accordance with the applicable requirements of Section 440 of the Standard Specifications for Road and Bridge Construction except as follows:

This work shall include complete removal of the existing hot-mix asphalt driveway, its base course, and excavation to the proposed subgrade elevation as shown in the Plans. Excavation and grading for the proposed aggregate base course improvement for the full width of the proposed driveway shall be performed in accordance with Section 202 of the Standard Specification except that earth excavation will not be paid for separately but shall be included in the cost of HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL.

Method of Measurement and Basis of Payment. This item shall be paid for at the contract unit price per SQ YD for HOT-MIX ASPHALT DRIVEWAY PAVEMENT REMOVAL. This cost shall include removal and disposal of the existing hot-mix asphalt driveway pavement composition, base course, and subgrade materials to the final aggregate base course elevation required to construct the proposed surfaces.

STORM SEWER, (WATER MAIN QUALITY PIPE)

Description: This work consists of constructing storm sewer to meet water main standards, as required by the IEPA or when otherwise specified. In addition to this special provision, this 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.

General Requirements: Storm sewer will be of the type shown on the plans. If it is determined in the field the separation required by IEPA cannot met due to differences in assumed utility locations Storm Sewer meeting the criteria of this provision must be provided. If a change in storm sewer type is required, the Contractor will be paid, at the unit price for the material supplied.

All proposed grades are subject to change depending on utility conflicts. There will be no additional compensation for investigating depths of existing utilities.

Testing shall be as required in section 550 of the “Standard Specifications for Road and Bridge Construction” and in accordance with the plans and as provided below. Contractor shall provide televised inspection (CCTV) as specified here-in the special provisions. Pipe installation shall be free of defects and inflow and infiltration. Any defects of inflow or infiltration shall be repaired prior to
acceptance at no cost to the owner.

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, sanitary sewer, or sewer service connections.

(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 within 10 feet (3.05 meters) horizontally of any sewer or drain crossed.

When it is impossible to meet (1), (2) or (3) above, the storm sewer shall be constructed of concrete pressure pipe, slip-on or mechanical joints ductile iron pipe, or PVC pipe equivalent to

water main standards of construction. Construction shall extend on each side of the 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 Standard 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.

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.

Elastomeric seals (gaskets) used for push-on joints 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.

Basis of Payment: This work shall be measured and paid for at the contract unit price per linear FOOT for STORM SEWER (WATER MAIN QUALITY PIPE) of the size and type specified.

Televising the storm sewer shall be paid for separately.

DEBRIS REMOVAL

This work shall consist of the complete removal and satisfactory disposal of debris located on the subject parcels that are to be removed as described herein, the applicable portions of Section 202 of the Standard Specifications and as directed by the Engineer.

The following is a general list of items, estimated amount and location of debris to be removed.

The Contractor shall note the list is not all-inclusive and there might be additional items that must be removed as part of this contract. Any debris items removed that are not listed below will not be paid for separately but shall be included in the LUMP SUM unit price for DEBRIS REMOVAL:

DEBRIS REMOVAL TABLE

DESCRIPTION	BUILDING REMOVAL LOCATION									
	1	2	3	4	5	6	7	8	9/10	11
Metal Post		1								
Landscaping Retaining Wall Rocks									2	
Parking stop		4								
Garbage Bin	3						1			
Picnic Tables	2						1			
Shed							1			1
Landscaping Knee Wall Blocks / Bench Multiple			1							
Metal Container		1								
Business Sign and Sign Foundation Removal	2		1							
Bollards	5	2	17							
Railing		1								

CLEANING EXISTING DRAINAGE STRUCTURES AND STORM SEWERS

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

All existing drainage structures which are specified to be cleaned on the plans or as directed by the Engineer will be cleaned according to Article 602.15 of the Standard Specifications.

Construction Requirements. At the completion of cleaning, the contractor shall televise the pipe structures and storm sewers and provide the televised inspection recording to the Engineer to ensure existing debris has been sufficiently cleared. Any structures or storm sewers which are deemed not sufficiently cleared shall be subsequently cleaned at no additional compensation.

Basis of Payment. This work will be paid for at the contract unit price EACH for DRAINAGE STRUCTURES TO BE CLEANED, and at the contract unit price per FOOT for STORM SEWERS TO BE CLEANED, of the diameter specified. This price shall include all material, equipment, and labor necessary for the successful cleaning and televising for verification.

Televising for verification of proper cleaning of existing drainage structures or storm sewers will not be paid for separately but shall be considered in the cost of the item being cleaned.

FENCE REMOVAL

Description. This work includes the removal and disposal the existing fence, regardless of material type and height, including rails and posts at the locations shown on the plans and as directed by the Engineer that conflict with the proposed improvements. The limits of removal must be marked and measured for payment by the Engineer prior to removal. The Contractor at his/her expense shall repair any fence damaged or property damaged outside the removal limits.

The fence shall be removed from the posts and posts completely removed, and all materials disposed of outside the limits of the Right-of-Way in accordance with all State and Federal solid waste disposal laws. The hole from the removal of the post and foundation shall be filled with coarse aggregate gradation CA-6.

For areas of fence to remain in place, the terminations and supports shall be constructed in accordance with the applicable Section 664 or 665 of the Standard Specifications and as directed in Standard 664001 or 665001 and as direct by the Engineer.

Method of Measurement. This work shall be measured for payment per lineal foot of fence removed.

Basis of Payment. This work will be paid for at the contact unit price per FOOT for FENCE REMOVAL or CHAIN LINK FENCE REMOVAL, which price shall include the full compensation for all removal and off-site disposal of fencing, post, fabric, barbed wire, foundation and hardware, backfilling holes, labor, equipment and materials required for performing the work as herein specified and detailed on the plans.

FILLING EXISTING CISTERNS

Description. This work shall consist of filling existing cisterns per applicable portions of Section 605.

Construction Requirements. Revise Article 605.04 to read, "…All soft soil and other materials that might consolidate shall be removed. If feasible, the cistern shall be dewatered and then filled with sand; if this is not feasible, a granular fill shall be placed to the water level at the time of filling and with suitable borrow above that. Any masonry, pipe, concrete or other suitable material within twelve (12") inches of final grade shall be removed. This work and its material shall be subject to the approval of the Engineer and shall be paid for at the contract unit price each for FILLING EXISTING CISTERNS."

The Contractor shall coordinate the FILLING EXISTING CISTERNS with other utility removals with the Engineer in accordance with the requirements of the various Special Provisions for utility removals.

Method of Measurement. FILLING EXISTING CISTERNS shall be measured for payment per EACH in place.

Basis of Payment. This work will be paid for at the contract unit price per EACH for FILLING EXISTING CISTERNS, which price shall include removing and disposing of the top portion of the structure as necessary, removal of unsuitable material, any necessary dewatering, and filling the existing structure with suitable backfill.

FILLING EXISTING SEPTIC TANK

The abandonment of septic tanks shall be done in accordance with the following:
TITLE 77: PUBLIC HEALTH
CHAPTER I: DEPARTMENT OF PUBLIC HEALTH
SUBCHAPTER R: WATER AND SEWAGE
PART 905 PRIVATE SEWAGE DISPOSAL CODE
SECTION 905.40 SEPTIC TANKS

SECTION 905.40 (f) SEPTIC TANKS: Abandoned treatment units such as Septic Tanks, Cesspools, Pit Privies, Aerobic Treatment Plants and Seepage Pits that are no longer in use shall be completely pumped by a licensed pumper and disposed of properly. The floor and walls shall be cracked or crumbled so the tank will not hold water and the tank shall be filled with sand or soil. If the tank is removed from the ground, the excavation shall be filled with soil such that the property can be site graded, seeded and present a neat and clean appearance on completion of this project.

The Contractor is advised to inspect the various parcels involved prior to bidding, as no additional compensation will be allowed for the filler material of these septic tanks, and the sizes and types may vary from parcel to parcel.

Basis of Payment. All additional work as noted above will be paid for at the unit price EACH per septic tank, cesspool, privy, aerobic treatment plant, etc. as noted in the plans for FILLING EXISTING SEPTIC TANK which price shall be payment in full for all necessary equipment, labor, materials, pumping, and disposal costs required to complete the entire removal of the structure and contents as specified herein and as shown in the plans.

The grading will not be paid for separately, but considered included in the contract price EACH for FILLING EXISTING SEPTIC TANK from the various properties involved.

FILLING EXISTING WELL

Description. This work shall be done according to Section 440, 501, and 672 of the Standard Specifications and this Special Provision. This work shall consist of the removal and satisfactory disposal of a concrete slab over the well, all the well pump and piping system, and shall fill and seal the well.

The Contractor shall remove the concrete slab and all associated structural elements, shortwalls or foundations, both above ground and below grade down to a plane a minimum of 1 ft. below the bottom of the concrete slab. It shall be the responsibility of the Contractor to determine the thickness and volume of the concrete to be removed and the extent to which it is reinforced. No additional compensation will be allowed because of variations in the amount of reinforcement.

Any reinforcement encountered shall be removed and disposed of properly without any additional compensation. Holes or voids created in the earth due to concrete removal shall be filled with aggregate, gradation CA6. The method of backfill and compaction must be approved by the Engineer.

The Contractor shall note any such existing utilities which conflict with the concrete to be removed, and request direction from the Engineer prior to removal activities at these locations.

Any damage to existing utilities by the Contractor shall be repaired by the Contractor at his own expense to the satisfaction of the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per Each for FILLING EXISTING WELLS which price shall include all labor, materials, and equipment necessary to complete the work as indicated in this Special Provision and no additional compensation will be allowed.

TEMPORARY INFORMATION SIGNING

Description.
This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

Materials.
Materials shall be according to the following Articles of Section 1000 - Materials:

	Item	Article/Section
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.
Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.
Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

GENERAL CONSTRUCTION REQUIREMENTS

Installation.
The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Method of Measurement.
This work shall be measured for payment in square feet edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis of Payment.

This work shall be paid for at the contract unit price per SQUARE FOOT for TEMPORARY INFORMATION SIGNING.

LUMINAIRE SAFETY CABLE ASSEMBLY

Description. This item shall consist of providing a luminaire safety cable assembly for all roadway luminaires.

Materials. Materials shall be according to the following:

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

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

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

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

CONSTRUCTION REQUIREMENTS.

General. The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm.

Method of Measurement. LUMINAIRE SAFETY CABLE ASSEMBLY shall be measured per each.

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

COMMUNICATIONS VAULT

This work shall be in accordance with Sections 814 and 1088 of the Standard Specifications except as modified herein.

This work shall consist of furnishing and installing a communications vault constructed of precast polymer concrete.

Materials. The communications vault and lid shall conform to the following specifications:

1. Cover
    a. Material: Polymer Concrete
    b. Nominal Dimensions: 24” W x 36 L”
    c. Gasketed, Heavy Duty Lid with 2 Bolts
    d. Design/Test Load: 15,000/22,500 lbs.
    e. ANSI Tier: 15
    f. Gasketed
    g. Logo: “City of Decatur Fiber”

2. Box
    a. Material: Polymer Concrete
    b. Nominal Dimensions: 24" W x 36" L x 30" D
    c. Open Bottom
    d. Design/Test Load: 22,500/33,750 lbs.
    e. ANSI Tier: 22

The location of the handhole shall be excavated so that the top of the handhole is set flush with the sidewalk or paved surface. When installed in earth shoulder away from the pavement edge, the top surface of the handhole shall be 1 in. (25 mm) above the finished grade. The excavation shall be deep enough to accommodate the depth of the box and french drain.

The french drain shall be constructed underneath the proposed handhole according to Article 601.06 and in accordance with Highway Standard 814006.

The conduits shall enter the vault at 24" minimum and the Contractor shall install six inches of CA 5 or CA 7 in the bottom of the vault.

After the handhole has been placed, the contractor shall backfill around the handhole with coarse aggregate, of the same material as the french drain, and other suitable fill material as shown on the Plans. The surface conditions shall be restored to match the existing surroundings unless covered elsewhere by project specific site restoration plans.

The Contractor shall submit testing reports to verify that the communications vaults and lids meet the requirements of ANSI Tier 15 and ANSI Tier 22 loading.

The locating cable shall be continuous and accessible on the outside of each communication vault. The Contractor shall utilize appropriate corrosion resistant hardware (stainless steel) and connections to the locating wire. The Contractor shall submit material and installation methods to the City for review.

Basis of Payment: This work will be paid for at the contract unit price of EACH for COMMUNICATIONS VAULT, which shall be payment in full for all labor, equipment, and materials required to provide and install the equipment described above, complete.

PAINT CURB

Description. This work consists of furnishing all materials, equipment, and labor required for applying paint pavement marking in accordance with the applicable portions of Section 780 and Article 1095.02 of the Standard Specifications

Paint pavement marking shall be in accordance with Article 780.07 of the Standard Specifications and will require yellow or white marking on the face and top of curbs as shown on the plans and standards.

Method of Measurement. This item of work will be measured for payment per foot for painting the tops and faces of curbs as required by the Engineer, specifications, and these Special Provision.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for PAINT CURB.

PRESSURE CONNECTION

Description. This work shall consist of all labor, material and equipment required to perform a pressure connection (or hot tap) to connect the proposed water main to the existing main at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein. All valves, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. The work shall include all equipment necessary to make the pressure connection. Any fittings, sleeves, piping, valves, or any other appurtenances required for the connection, shall be included. The City shall be notified, and a tentative installation schedule of operations shall be submitted to the City a minimum of 48 hours before any connection to the water system can be made. No water main shutdown or disruption will be allowable during the connection. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City.

It shall be the responsibility of the Contractor to verify that flow rates and pressures in the existing water main are within acceptable ranges for the tapping operation and shall coordinate required adjustments with the City of Decatur and the Engineer. Contractor shall power wire brush and grind the exterior of the main to remove any debris, corrosion deposits, or other surface irregularities that might interfere with proper seating and sealing of each tapping fitting against each main. Any structural defects in main, service connections, appurtenances, adjacent utilities, etc., that could interfere with the installation of the tapping fitting or equipment shall be immediately reported to Engineer. As required for construction, remove and dispose of abandoned utilities located within the limits of pressure connection work area. All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the access pits is included under this item. For work within 50' of existing railroad track center line, the Contractor is responsible to meet all railroad requirements including but not limited to permitting, sheeting, shoring, dewatering and excavation. The Contractor shall assume that the proposed excavation will take place within the "Zone of Influence" and/or "Theoretical Embankment Line.

The tapping sleeve shall be full sleeve, Mueller H-304 or Ford Meter Box FTSAS-U100, stainless-steel throughout (including the body and flange), and rated for 150 psi (minimum) working pressure. Provide a flanged outlet with a stainless-steel test plug, nuts, bolts, and washers.

Tapping valve shall be AWWA, MJ X Flanged, meeting all applicable requirements of the WATER VALVE specification, including a full-size unobstructed waterway capable of passing a full-sized shell cutter equal to the nominal diameter of the tapping valve, and meeting all manufacturer requirements of a tapping valve.

Contractor shall pour a minimum of 12-inches of concrete under the tapping sleeve for structural support of the valve, sleeve, and piping. This material shall be paid by CONCRETE THRUST BLOCKS (SPECIAL). Pressure connections are to be made by a qualified subcontractor. Subcontractor shall have a minimum of 10 years' experience performing hot taps, and shall have recent, direct experience performing hot taps on the size and type of pipeline being tapped. The tapping procedure, sequence and schedule shall be submitted for approval to the Engineer. Pressure connections will be performed under the supervision of the City.

Method of Measurement. The work will be measured for payment in place for each pressure connection, at the specified size, made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for PRESSURE CONNECTION, of the size specified, which shall be payment in full for all labor, equipment, materials, and all other work required to complete the installation of the water main connection including pipe, tapping valve, fittings, sleeve, excavation, sheeting or shoring, native backfill and all appurtenances necessary for a complete installation.

CONCRETE THRUST BLOCKS (SPECIAL) and TRENCH BACKFILL shall be paid for separately.

PROTECTING OR RESETTING SURVEY MARKERS

Description. This work shall consist of protecting or resetting existing survey markers and existing survey marker vaults at the locations shown on the plans and as described in section 105.09 and 107.20 of the standard specifications. Survey markers may consist of property corners, section corners, subsection corners, or existing permanent survey markers.

Construction Requirements. All the existing survey markers listed in the plans or discovered in the field shall be documented and cross-tied by an Illinois Professional Land Surveyor prior to the start of work. Existing survey marker vaults shall be adjusted so the cover is ¼" below the final pavement elevation.

Property Corners, Section Corners, and Subsection Corners. For those to be reset outside the paved surface, a 5/8 inch diameter by minimum 30 inch long reinforcement bar and a 1-7/8 inch minimum diameter cap shall be installed. The cap shall be a corrosion-resistant aluminum survey cap of a design compatible with the reinforcement bar for a solid, tight fit after installation. The cap shall be marked as appropriate and shall also display the license number of the Illinois Professional Land Surveyor.

For those to be reset within the paved surface, a rebar and cap shall be installed in a hole cored into the paved surface. A survey marker vault shall be installed according to District 7 Detail No. Z0070202 and the associated special provision.

As required, a new monument record shall be prepared and filed in the appropriate county court house for all government corners in accordance with Illinois Statutes, Chapter 765 ILCS Section 220 "Land Survey Monuments Act" and a recorded copy sent to the District 7 Chief of Surveys.

Permanent Survey Markers. Permanent survey markers to be reset shall be in accordance with Section 667 of the Standard Specifications and as shown on Highway Standard 667101.

Basis of Payment. The work for protecting or resetting survey markers shall be paid for at the contract unit price per EACH for PROTECTING OR RESETTING SURVEY MARKERS, which price shall include hiring an Illinois Professional Land Surveyor, and providing the labor and equipment necessary to protect or reset survey markers and to adjust existing vaults.

SURVEY MARKER VAULT

Description. This work shall consist of furnishing and installing survey marker vaults for protection and access to survey markers at the locations noted in the plans.

Materials. The access cover will be cast from a special aluminum alloy that is comparable to bronze in hardness. The access cover shall be specially engineered and designed to provide a snug fit, incorporating equidistant locking ridges, inside a standard 6" (150 mm) diameter, or outside a standard5" (125 mm) diameter, schedule 40 pvc pipe. The access cover shall have special uniform 1" (25 mm) thick top surface to permit information to be easily machine-stamped into it. The access cover shall include a stainless captured screw and an opposing recessed hinge assembly as its locking mechanism. The access cover shall incorporate a special access hole for cleaning and drainage, drilled at 30° inside the ring of the access cover, to the drilled and tapped hole provided for the stainless captured screw. Composition: aluminum 92-93%; magnesium 6.5-7.5%. Strength: yield - 19,000-21,000 psi (131-145 mpa); Tensile - 38,000-44,000 psi (262-303 mpa); Elongation - 10-15% in 2" (50 mm). Specifications: alloy 535.0; qq-a601es. No exceptions.

Work shall not start on this item until the final lift of surface has been completed.

The survey monument cover assembly shall be centered above the survey monument to be protected.

Modification of the aluminum casting shall be done by grinding or sawing when a decrease in height is required.

Aluminum casting shall be placed over a 5" (125 mm) PVC pipe or inside of a 6" (150 mm) PVC pipe when an increase in height is required.

All survey monument cover assemblies shall be placed 1/4" (6 mm) below the final surface.

The casting shall be anchored in the 8" (200 mm) diameter core hole with two-component epoxy conforming to applicable portions of article 1025.01 of the standard specifications.

Basis of Payment. This work will be paid for at the contract unit price per each for SURVEY MARKER VAULT which price shall include all labor and material as specified including coring the new pavement surface and epoxy. No additional compensation will be allowed.

STORM SEWERS

Description: This work shall consist of constructing storm sewers and shall be performed in accordance with Section 550 of the Standard Specifications, except has modified herein.

General Requirements: Storm sewer will be of the type shown on the plans. If it is determined in the field the required separation between water and storm sewer cannot met due to differences in assumed utility locations, Storm Sewer meeting the criteria of the provision STORM SEWER (WATER MAIN QUALITY PIPE) must be provided. If a change in storm sewer type is required and approved by the Engineer, the Contractor will be paid, at the unit price for the material supplied.

All proposed grades are subject to change depending on utility conflicts. There will be no additional compensation for investigating depths of existing utilities.

Testing shall be as required in section 550 of the "Standard Specifications for Road and Bridge Construction" and in accordance with the plans and as provided below. Contractor shall provide televised inspection (CCTV) as specified here-in the special provisions. Pipe installation shall be free of defects and inflow and infiltration. Any defects of inflow or infiltration shall be repaired prior to acceptance at no cost to the owner.

Basis of Payment. This work will be paid for at the contract unit price per ft for STORM SEWER of the size specified, which price shall include all labor, equipment and materials necessary to complete the work.

Televising the storm sewer shall be paid for separately.

TEMPORARY PAVEMENT

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

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

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

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

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

Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY PAVEMENT.

SELECTIVE CLEARING

Selective Clearing shall consist of the removal of logs, shrubs, bushes, saplings, grass, weeds, other vegetation and stumps of a diameter less than 6 in. (150 mm) at locations designated by the Engineer.

Care shall be taken to direct work activity away from and protecting desirable trees, shrubs, turf, and herbaceous plants within the project area.

Repair or replacement of existing plant material damaged by the Contractor shall consist of restoring to original condition specific plant material that was designated to be saved within the limits of construction or restoring plant material outside the limits of construction that was damaged by the Contractor.

Additional grading and shaping of disturbed areas shall be performed in advance of the seeding operation(s), as deemed necessary by the Engineer and shall be considered included in the Selective Clearing pay item.

The work will be paid for at the contract unit price per ACRE for SELECTIVE CLEARING which price shall include all materials, equipment and labor necessary to complete the work as specified.

STEEL CASINGS

Description. This work shall consist of jacking and boring (or augur jacking, the terms shall be considered interchangeable) a steel casing pipe at the location, line and grades provided on the plans or as directed by the Engineer. The Contractor shall field verify the elevations and locations of any and all utilities that may cross beneath or over the proposed auger prior to beginning the auger operation so as not to damage any existing utilities during auger operations. Contractor will not be paid for jacking and boring work that is performed but must be subsequently abandoned due to conflicts with existing utilities. All pipe, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

The Contractor shall take all necessary precautions to prevent the undermining of the roadways, railroads, structures, embankments, or property including the utilization of trench boxes, sheeting, temporary soil retention systems, etc. to properly maintain the auger and receiving pit excavations such that underlying soils between the pavement edge/back of curb and the auger limits are prevented from entering the excavation. In the event that settlement or any other damage occurs to adjacent roadways, railroad, property, utilities or structures, the Contractor shall be fully responsible for any repairs deemed necessary by the Engineer.

The Contractor is advised to review the site and familiarize himself with the soil conditions (see soil borings in contract documents) prior to finalizing his bid for this portion of the work. No additional compensation shall be allowed for changes in the construction method due to ground conditions that may exist at the time of construction.

General Requirements. This work shall consist of the construction of steel casing pipe at the locations indicated in the Plans or as directed by the Engineer and shall conform to the Contract and the applicable sections of the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

In advance of constructing the jacking pit, the Contractor shall physically verify the location of all utilities, whether existing or abandoned, that cross over and/or under the proposed casing pipe alignment. If the Contractor installs the casing pipe without performing this utility verification, it shall be at his own risk. The Contractor will not be paid for any work that must abandoned due to utility conflicts, whether with existing or abandoned utilities. After installation of the casing pipe is completed, the proposed water main shall be constructed in place within the casing.

All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the jacking and receiving pits is included under this item.

Casing pipe thicknesses shall be as noted in the following table:

Under Roadways		Under Railroads	
Effective I.D. of Casing (Inches)	Wall thickness of Smooth Steel Pipe (Inches).	Effective I.D. of Casing (Inches)	Minimum wall thickness of Smooth Steel (Inches)
30	0.375	30	0.5625
42	0.415	42	0.7000
48	0.500	48	0.7500
Other	As required to meet E80 loading requirements		

The smooth steel pipe shall conform to ASTM A139, Grade B. Steel plate with a minimum yield strength of 36,000 psi (ASTM A-36, A570 Gr. 36) shall be used. The pipe ends shall be beveled for field butt welding. All field welding of steel casing pipe shall be done in accordance with AWWA C206, "Field Welding of Steel Water Pipe". The exterior of the casing pipe shall be coated with a coal tar epoxy coating (Targuard by Sherwin Williams, Amercoat 78HB by PPG, or Rust-Oleum C9578) applied in accordance with the manufacturer's recommendations.

Any temporary soil retention system required to support jacking and receiving pit excavation shall be designed and constructed by the Contractor, reviewed by the Engineer, and must meet railroad requirements. The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer and Railroad for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads. The Contractor shall assume that for the ICRR crossing, the proposed excavation will take place within the "Zone of Influence".

Any temporary soil retention system installation and subsequent removal shall consider the adjacent paved surfaces and buildings. Any measurable settlement or heave, as determined by the Engineer, of adjacent pavements shall be repaired at no additional cost to the Contract.

All excavated areas are to be illuminated with flashing warning lights and shall be fenced (6' tall) throughout the time the pits are excavated. This work shall be included in this pay item. The jacking pit dimensions shown in the plan are approximate only. The Contractor shall determine the final dimensions of the pit. However, no change in price is permitted due to different sized pits, whether for the pit itself or in the event of conflicts due to the construction of a jacking pit that is wider or longer than shown in the plans. Any water main that is subsequently installed in the area formerly occupied by the jacking or receiving pits shall be installed and backfilled in accordance with the water main specifications, requirements and details. The remainder of the jacking and receiving pit areas shall be backfilled to the finished grade with either suitable excavated material from the pit or backfilled in accordance to the water main construction requirements and details. The backfill material shall be placed in 6 inch lifts, loose measurements, and compacted by mechanical tamper of a type approved by the Engineer before the next layer is placed, and the backfill shall be compacted to not less than 95% of the maximum dry density as determined by ASTM D1557. All backfill material shall be deposited in such a manner as not to damage the pipe. The filling of pit shall be carried on simultaneously on both sides of the pipe. Any temporary support or bracing of existing above or below ground utilities must be coordinated with the affected utilities and is included under this item. Any nearby fences must be protected for the duration of construction, unless otherwise noted for replacement in the plans.

Utility marker signs for the CNRR crossing shall be placed on the north side of Faries Parkway at a location field approved by the Engineer and the railroad. Utility marker signs for the NSRR crossing shall be placed directly above the proposed casing pipe, just north of Faries Parkway, at a location field approved by the Engineer and the railroad.

Ends of casing pipes shall be completely sealed with 12-inch thick concrete brick and mortar.

Method of Measurement. This work will be measured in feet along the centerline of the casing. Pipe to be installed within the casing will be measured separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for STEEL

CASINGS, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including steel casing pipe and accessories, furnishing, placing, protecting, removing and backfilling of jacking and receiving pits, temporary soil retention systems, preparation of shop drawing submittals, excavation, temporary support or bracing of excavations and existing utilities, excavations to confirm locations of adjacent existing utilities, and dewatering. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

DUCTILE IRON WATERMAIN IN CASING PIPE will also be paid for separately.

TEMPORARY TRAFFIC SIGNAL TIMING

Description.
This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for the City of Decatur. The Contractor shall contact the Traffic Signal Engineer for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMING.

(a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.

(b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.

(c) Consultant shall provide monthly observation of traffic signal operations in the field.

(d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.

(e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.

(f) Return original timing plan once construction is complete.

Basis of Payment.
The work shall be paid for at the contract unit price EACH for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

REMOVE WOOD POST

Description: This work shall consist of the removal and disposal of wood posts as shown on the plans and as directed by the Engineer. This work shall be performed prior to grading, culvert installation, or utility relocations as part of the proposed improvement.

All voids left from the removal of wood posts shall be backfilled with suitable material approved by the Engineer. The surface of the filled holes shall be treated to match the surrounding area.

All debris resulting from this operation shall be removed from the right-of-way.

Basis of Payment: This work will be paid for at the contract unit price per EACH for REMOVE WOOD POST, which price shall include all excavation, labor, equipment, and material necessary to remove and dispose of existing wood posts to the satisfaction of the Engineer.

SPECIAL EXCAVATION

Description: This work will consist of furnishing all labor, equipment and materials for the removal of unreinforced concrete, reinforced concrete, masonry materials and other buried items utilized as thrust blocks, building foundations, septic tanks, detention basins, vaults, walls, slabs, and other structures that are required to be removed for construction. The work shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications. This work also includes related buried sheeting, shoring, piles, reinforced steel etc. that conflicts with the proposed construction and is required to be removed for construction.

General Requirements: Locations where concrete removal is expected to be necessary are identified on the Plans. Additional locations requiring removal may be encountered and will be paid for as SPECIAL EXCAVATION. The Engineer shall determine if removal is required based upon the proposed structure or utility improvements. The removal required may only need to be partial due to minor conflict with the proposed improvement as well as to minimize the impact to adjacent utilities. Sheet piling, shoring and other forms utilized discovered must also be removed (if required for construction) and will not be measured or paid for separately. The thrust block, foundation, footing, slab or other item to be removed may be located adjacent to utility or sewer structures, pipes, ducts and other elements. The thrust block, foundation, footing, slab, or other item may be located deep within the ground. In all cases, the Contractor shall provide all necessary shoring and bracing in order to remove the structure. All concrete, reinforcing steel, piling, masonry or other materials removed under this Item shall become the property of the Contractor and shall be disposed of by the Contractor off the site and in a lawful manner meeting all IDOT Policies and Procedures.

Method of Measurement: The existing thrust blocks, foundations, footings or other elements requiring removal shall be measured in place. All work to be paid for as SPECIAL EXCAVATION shall be agreed upon with the Engineer and be measured in place prior to the start of removal by the Contractor. The Contractor can be authorized to begin SPECIAL EXCAVATION by the Engineer and the final volume measurements in cubic yards may take place after the removal of the thrust block, foundation, footing, slab, or other item at the location of removal prior to disposal. Trench backfill utilized as backfill for the areas vacated by the concrete that was removed will be measured for payment according to Article 208.03.

Basis of Payment: This work will be paid for at the contract unit price per CU YD for SPECIAL EXCAVATION at the volume measured which includes excavation, native backfill, sheeting or shoring, and all labor, equipment, and materials. TRENCH BACKFILL will be paid for according to Article 208.04. Removal and replacement of unsuitable material below plan bedding grade will be paid for according to Article 109.04.

SANITARY SEWER REMOVAL AND REPLACEMENT 8”

Description. This work will consist of the removal and replacement of an existing 8” diameter sanitary sewer which may require relocation as a result of a conflict with a proposed storm sewer, as indicated in the Drawings. This work includes all connections, testing, fittings, piping, and appurtenances. The Contractor is to provide all temporary equipment and facilities to maintain continuous service to customers while performing the work. This includes providing all bypass piping and pumping; temporary holding tanks; hauling and disposal of sewerage, coordination with sewer customers, and all other necessary activities.

General Requirements. Perform all work in accordance with City of Decatur standards, the latest edition of the 10 State Standards for Wastewater, and the latest addition of Standard Specifications for Water and Sewer Main Construction in Illinois, all except as noted herein.

The sanitary sewer shall be plastic Pipe and Fittings, Polyvinyl Chloride (PVC) material conforming to D3034, O-ring joints, ASTM F-477, SDR 26 (minimum). Shape and form the bedding material so that the bottom quarter of each pipe is uniformly supported along its entire length. Recess the material at the bells so that they are relieved of any load. Lay each pipe in conformity with line and grade shown on Contract Drawings and lay pipe upgrade. Maintain alignment and joint closure until sufficient backfill has been completed to hold pipe in place. At the end of each day, a watertight plug shall be installed at all pipe fittings or openings. As required for construction, provide Fernco Strong Back RC 1000 Series couplings.

Pipe invert elevations are not known at this time but shall be as determined by the Engineer based on field conditions. Refer to the Water Main Key Map Plan View Drawings 10 and 11 for additional detail. The actual grade of the invert of the sewer shall not deviate by more than 0.1 feet/100 feet, and not more than 0.2 ft. in total. Alignment of sewer shall be within 0.2 feet/100 feet and within 0.5 feet in total. Install pipe in accordance with the manufacturer’s recommended installation instructions. Provide backfill for all piping in accordance with standard IDOT pipe laying requirements. Bedding shall be CA-6, placed a minimum of 4-inches under the sewer invert and up to the centerline of the sanitary sewer, and shall be in accordance with IDOT standards.

The existing sanitary sewer shall be removed at the same time that the replacement sanitary sewer is being installed.

The Contractor shall maintain flow through the existing sanitary sewers within the project limits during the construction of the proposed sanitary sewer, as noted below. Flow must be maintained at all times, unless otherwise approved by the City of Decatur. Based on the flow within the sewers, this work may need to be performed during overnight hours or on weekend days. No additional compensation shall be allowed for work during these hours. At the preconstruction meeting, the Contractor shall submit his plan for the construction of the proposed sewer, the connections to the existing sewers, and how the existing flow will be maintained. Prior to starting any work on the sanitary sewer, the Contractor shall obtain approval of the plan from the City. Forty-eight (48) hours advance notice is required prior to beginning any sanitary sewer work.

If pumping bypass is required to maintain service, bypass shall be made by diversion of the flow from an existing upstream location, around the section(s) to an existing downstream location. The bypass system shall be of adequate capacity to handle all flows, including wet weather related flows. If bypass pumping is utilized by the Contractor to control flows, the Contractor shall be responsible for monitoring the bypass pumping operation at all times until the work is

complete. The location of pump(s), force main, discharge point, pumping rates, etc., shall be approved by the Engineer. The Contractor shall prepare a detailed Flow Control Plan that describes the measures to be used to control flows. The Contractor shall submit the Plan to the Engineer for review prior to beginning any flow control work.

Test all sewers for leakage utilizing infiltration, exfiltration, or air testing methods. Perform the applicable test(s) as directed by and in the presence of the Engineer or his representative.

Infiltration Test

A. Measure infiltration by means of a 90-degree, V-notch weir with a free fall discharge, provided and maintained at the low end of the test section.
    a. Other methods for measuring flow may be used if approved by Engineer.
B. Include each manhole in a test section.
C. Remove the weir after it has been demonstrated that the leakage in the test section is within allowable limits.
D. Infiltration leakage shall not exceed 50 gallons per mile per inch of diameter of sewer pipe per 24-hour day, including manholes in the test section.

Exfiltration Test

A. Seal the section of sewer to be tested by inserting inflatable rubber bags in the pipes or by other approved means.
    1. Introduce water into a manhole until the test section is filled.
    2. Fill the pipe before beginning the test to allow normal absorption into the pipe walls.
B. Throughout a test period of at least 1/2 hour, maintain the water level in the upper manhole at least 4 ft above the crown of the upper end of the pipe or at least 4 ft (1 m) above the ground water table whichever is higher.
    1. The volume of water added during the 30-minute period not to exceed the allowable exfiltration.
C. Limit the length of pipe tested so that the pressure on the centerline of the lower end of the section does not exceed 8 ft of water column.
D. Include each manhole in a test section.
E. Exfiltration leakage: Not exceed 50 gallons per mile per inch of diameter of sewer pipe per 24-hour day, including manholes on the test section.

Air Test

A. Place pneumatic plugs with a sealing length equal to or greater than the diameter of the pipe to be tested in both ends of the pipe and inflate to 25 psi.
    1. Pressurize the sealed sewer pipe to 4 psi above the average back pressure of ground water over the sewer pipe and allow the air pressure to stabilize for at least 2 minutes.
B. After the stabilization period, pressurize the line to 3.5 psi and measure the time in minutes for pressure to drop to 2.5 psi.
    1. When ground water is present, increase the air pressure within the pipe to 3.5 psi above the level of the ground water, and measure in minutes the time for the pressure to drop 1 psi.

C. Air pressure drop of one psi: Not occur in less time than 50 seconds per square foot of pipe cross-sectional area per 25 ft of pipe length.

Deflection Test for PVC Pipe

A. Engineer to randomly select portions of the project to be deflection tested. Such portions consist of the manhole intervals for the initial sewer construction up to 1,200 ft and not less than 10 percent of the remainder of the sewer project.
B. The 5 percent deflection test for pipe sizes 6 to 15-inch diameter is to be run using a nine-arm mandrel having a diameter equal to 95 percent of the base diameter of the pipe as established in ASTM D-3034.
    1. For pipe sizes 18 to 27-inch diameter, the nine-arm mandrel size shall be 95 percent of the inside diameter as determined using the pipe outside diameter and wall thickness dimensions shown on Table 1 of ASTM F-679, latest issue.
    2. Perform the test without mechanical pulling devices.
C. Test the individual lines no sooner than 30 days after they have been installed.
D. Initiate testing at the downstream lines and proceed towards the upstream lines wherever possible and practical.
E. Pipe deflection: Not to exceed 5 percent.
F. In the event that the deflection exceeds the 5 percent limit in 10 percent or more of the manhole intervals tested, test the total sewer project.
G. Where deflection is found to be in excess of 5 percent of the original pipe diameter, excavate to the point of excess deflection and carefully compact around the point where excess deflection was found.
    1. Retest the line or deflection.
    2. However, should after the initial testing the deflection pipe fail to return to the original size and shape (inside diameter) replace the line.

CCTV Inspection

A. Contractor shall televise sanitary sewers after the work constructed in this Project.
    1. Televising Work shall consist of complete closed-circuit television (CCTV) survey of proposed sewers. Perform survey in presence of Engineer.
        a. Provide television camera mounted on skids, specifically designed and constructed for inspection of sewers.
        b. Supply lighting capable of lighting entire periphery of pipe.
        c. Camera shall provide a minimum of 650 lines of resolution and operate in 100% humidity.
        d. Advance camera at uniform slow rate by means of winch located at downstream manhole.
        e. Provide written report of inspection indicating location of defects measured from centerline of downstream manhole.
    2. Provide digital video recording of survey on DVD.
        a. Recorded for each ft of pipe viewed.
        b. Include audio track which indicates date, sewer section, and location (distance from centerline of manhole) of each joint and connection.
        c. Furnish copies of recordings in digital DVD format to City.
        d. Provide table of contents for complete set of DVDs created indicating position on DVD where televising of each sewer section began.
        e. Provide schematics of televised sewer sections on 8 1/2 in. by 11 in. sheets accompanying table of contents.
B. Conduct internal inspections when groundwater is at normal level or above top of pipe, whichever is greater.
    1. Where groundwater is not above top of pipe during inspection, raise groundwater level by jetting or water soaking. Provide test pits or well holes at 200 ft intervals to measure groundwater levels during inspection. In areas where jetting is used

to compact granular backfill, inspection shall be performed during jetting operations.

C. Sewer considered to have failed internal inspection if any of following are observed.
    1. Visible infiltration at joint or connection which, in opinion of Engineer, exceeds 2.0 gal/hr for RCP, 1.0 gal/hr for PVC, and 0.1 gal/hr for other pipe materials.
    2. Joints open in excess of ½ in. more than width of opening when joint is "home."
    3. Improperly connected lateral or service sewer.
    4. Cracked or broken pipe (beyond 0.01 in. for RCP).
    5. Noncompliance with Specifications or requirement of Contract Documents.
D. Repair failed sewers by removing and replacing defective pipe sections or by other approved means.

Perform tests with water for each 1,200 ft of sewer installed unless longer sections are authorized by Engineer. Shorter lengths may be tested if more convenient. Backfill trenches before making tests. Perform air tests between consecutive manholes or between the last manhole on a line and the discharge end. Engineer has the right to select the length and location of test sections when construction operations or materials change or where construction difficulties indicate leakage or deflection may be present.

Method of Measurement. This work will be measured in feet along the centerline of the sanitary sewer.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for SANITARY SEWER REMOVAL AND REPLACEMENT 8”. The contract unit price shall include all excavation, bedding, native backfill, sheeting or shoring, dewatering, disposal, piping, appurtenances, all for a complete installation. The contract unit price shall include all labor, material, and equipment necessary to complete the work as specified. It is the Contractor’s responsibility to verify existing depths. No additional compensation will be made for variances in the depth of the sewer pipe.

TRENCH BACKFILL will be paid for separately. Removal and disposal of the existing sanitary sewer pipe will not be paid separately but shall be included in the cost of SANITARY SEWER REMOVAL AND REPLACEMENT 8”.

GATE REMOVAL

Description. This work consists of the removal of existing gates 4083 West Faries Parkway, ADM Renovation Facility. This work also includes the removal of the gate posts, hardware and any attached brace posts which are not attached to other fencing.

The Contractor shall contact ADM prior to the removal of the gate. The Contractor shall coordinate with ADM regarding retention of gates, posts and hardware. If ADM indicates they will keep ownership of the material, care shall be taken to minimize damage to the material during removal, and the Contractor shall stockpile the material in a central location for pickup by ADM or onsite at ADM's Renovation Facility. Otherwise, the material shall become the property of the Contractor and shall be disposed of offsite at no additional cost.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for GATE REMOVAL, which shall include all labor and equipment necessary for the completion of the work.

CONNECTION TO EXISTING SEWER

Description. This item shall consist of connection of existing sewers to proposed sewers with the installation of watertight flexible rubber connectors.

The connector shall be a heavy duty, designed for exposure and resistance to heavy earth loads and conform to ASTM C-1173 & D-5926. Connector shall include stainless steel sealing bands, nuts and bolt clamps. The connector shall provide a watertight connection between the new storm sewer and existing storm sewer.

Contractor shall take care removing the existing inlets around the storm sewer to remain. The portion remaining to be connected to shall be free of damage. Contractor shall field verify existing pipe slope and make approved adjustment to the proposed pipe slope and length to construct a sealed and watertight connection.

Basis of Payment. This item shall be paid for at the contract unit price, per EACH, for CONNECTION TO EXISTING SEWER and shall include all equipment, labor and materials to complete the work.

FILL EXISTING SANITARY SEWERS

Description. Work under this item will include the filling of existing sanitary sewer with CLSM at locations indicated on the Plans or directed by the Engineer. This work shall include all bends, fittings, and all other appurtenances related to the piping to be filled.

General Requirements. All existing or previously abandoned sewer shall be filled with Controlled Low Strength Material (CLSM). Confirm sewer is abandoned prior to beginning work.

Prior to the start of work under this item, the following items shall be approved by the Engineer: Controlled Low Strength Material mix design, access plan and construction details for filling location, access plan and construction details for the filling Location, CLSM placement sequence and finishing details.

The filling shall be performed from a minimum of two locations. No additional payment for excavation, etc. shall be made if more than two (2) locations are required. Prior to the start of filling, any required venting points shall be installed. CLSM shall be placed in a manner that completely fills the sanitary piping between the access points, regardless of piping elevation differences between access points. Filling shall be from the upstream end to the downstream end of the piping. Pumping shall be continued until all air is expelled and the piping is completely full of flowable fill.

Cleanouts and structures shall be removed to a minimum depth of 3’ below grade. Cleanouts shall be filled with CLSM. Structures shall be backfilled as required by the Engineer with either native backfill or TRENCH BACKFILL. All pipes to be filled under this item shall have all openings sealed with a one (1) foot minimum length concrete mortar plug. Any required pipe cutting shall be included in this pay item.

Any opening created in the existing pipe, including fill or vent points, shall be completely filled with CLSM and plugged. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

Any necessary equipment, saw cutting, and excavation required to access the existing pipe and to perform all work under this item shall be included.

Method of Measurement. This work will be measured in cubic yards for the actual volume of CLSM installed.

Basis of Payment. This work will be paid for at the contract unit price per CU YD for FILL EXISTING SANITARY SEWERS, and includes all labor, equipment, and materials necessary to complete the work as described, including excavation, native backfill, sheeting or shoring, access locations, venting points, concrete mortar plugs, and CLSM. Concrete mortar plugs will not be paid for separately but are included in the cost of this pay item.

TRENCH BACKFILL will be paid for separately.

PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE

Description. This work shall consist of making a storm sewer connection to an existing manhole or inlets at locations as shown in the plans.

The Contractor shall carefully core a hole into the existing manhole or inlet the same size as the external diameter of the proposed storm sewer at the line and grade as shown in the plans. The protrusion of the proposed storm sewer into the manhole/inlet must not exceed one inch. After the storm sewer is installed, the manhole shall be mortared with a non-shrink concrete grout.

Basis of Payment. The work shall be paid for at the contract unit price per EACH for PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE and shall include all equipment, labor and materials to complete the work.

PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER

Description: This work shall consist of installing a new manhole or catch basin over an existing storm sewer pipe. The work shall be done in accordance with the applicable portions of Sections 502, 550 and 602 of the Standard Specifications. The manhole or catch basin and frame and grate will be paid for separately. The manhole catch basin type and size and type of frame and grate are shown in the plans for each location of this work.

Construction: The Contractor shall carefully remove the existing storm sewer which falls within the structure. After the structure is installed, the void spaces around the pipe openings shall be mortared with a non-shrink concrete grout. Damage to the existing storm sewer pipe to remain shall be repaired by the Contractor at his own expense.

Basis of Payment: The work shall be paid for at the contract unit price EACH for PROPOSED MANHOLE/CATCH BASIN CONNECTION OVER EXISTING STORM SEWER which shall include all equipment, labor and materials to complete the work.

WATER VALVE BOXES TO BE ABANDONED

Description. This work shall consist of the abandonment and/or removal of existing valve boxes that are part of the water main to be abandoned as called out on the plans, at locations shown on the plans, or as directed by the Engineer. The tops of existing valve boxes to be abandoned shall be removed to a minimum elevation of at least 3 inches below the earth subgrade of the proposed improvement and the boxes filled.

General Requirements. This work will be done in accordance with section 605 of the Standard Specifications. The existing valve shall be left in place. The existing valve box to be abandoned in place shall be filled with CLSM or concrete.

Method of Measurement. This work will be measured for payment for each valve box being abandoned. Valve box removal for fire hydrants will be paid separately, in accordance with FIRE HYDRANTS TO BE REMOVED AND SALVAGED.

Basis of Payment. This work will be paid for at the contract unit price per EACH as WATER VALVE BOXES TO BE ABANDONED. The unit price shall include all equipment, materials and labor required to perform this work.

TELEVISION INSPECTION OF SEWER

Description. This work consists of providing all labor, equipment, transportation, services and technical competence for performing all operations required to professionally execute the internal inspection of existing and new sewers in a Pipeline Assessment and Certification Program (PACP) format as established by the National Association of Sewer Service Companies (NASSCO) with strict accordance with this specification and the applicable drawings and subject to the terms and conditions of the contract.

Contractor shall televise existing storm sewers, existing culverts, or existing field tiles to remain or to be filled at the locations shown on the plans and other locations as directed by the Engineer. The purpose of the televising is to locate and document any blind connections to the storm sewers or condition of pipes or culverts to remain. Existing storm sewers and culverts shall be cleaned prior to televising.

All new storm sewer trunk lines within the project limits as shown on the schedules shall be televised before acceptance. The entire length between manholes of sewer sections shall be televised. If the new sewers are found not to be clean during televising, the Contractor will be required to flush and clean and re-televise said sewers found not to be clean. Unless otherwise specified, sewers must be straight between manholes. They may be tested for straightness by flashing a light from manhole to manhole, lamping, or by other suitable means.

The timing of the televising of new sewer mains is of the utmost importance. No roadway work will be allowed over new sewers until the video records have been viewed and accepted with the approval of the Engineer.

Requirements. Conventional color inspection cameras specifically designed for use in sewer line inspection work shall be utilized. The inspection contractor may be required to submit sample video recordings from recently completed projects demonstrating the picture quality, PACP requirements, and video compatibility to City of Decatur viewing program Granite Net by CUES Inc.

All cameras used shall be color units specifically designed or modified for use in large-diameter sewer inspection work, capable of inspecting up to 1,200 lineal feet of sewer from a single access point. The camera lens shall have not less than a 65-degree viewing angle and shall have either automatic or remote focus and iris controls. The camera shall provide a color recorded image and be equipped with a rotating imaging unit for viewing lateral connections, defects, and other objects discovered in the sewer. In this respect the camera shall have a high-resolution lens capable of spanning a 360-degree circumference and 270 degrees on a horizontal axis. Camera lighting shall be sufficient for use with color inspection cameras. In all cases, the complete video system (cameras, lens, power, lighting, cables, monitors and recorders) shall be capable of providing a picture quality acceptable to the Engineer.

The camera shall be driven through the sewer line at a speed not greater than 30 feet per minute, stopping as necessary to permit proper documentation of the sewer's condition and the precise location of service laterals and blind ties.

Accurate and continuous footage readings shall be superimposed on the video recording for each line inspected by remote inspection methods. Also shown shall be the date of inspection and the manhole number designation for each origin and destination manhole on the sewer line section being inspected.

The Contractor shall be responsible for having the necessary camera equipment available to allow for inspection of the sewer lines covered by this project in a manner acceptable to the Engineer under live flow conditions.

Documentation and Reports. All inspections are required to be in accordance with Pipeline Assessment and Certification Program (PACP) format as established by the National Association of Sewer Service Companies (NASSCO). Contractor shall be certified by NASSCO in the PACP program. The download format and inspections reports shall be compatible with Granite XP, Version 5.4.14 by CUES Inc. All video file naming shall be approved by the Engineer. The file naming is Quarter Section – Upstream Manhole Number _ Quarter Section – Downstream Manhole Number (example: 54-21_54-20). All videos and inspection reports shall become the property of the City of Decatur.

In addition to the video documentation a printed report shall be provided to summarize the observations for each pipe segment. The report shall present the locations and descriptions of the observed conditions and defects, including the following:

1. Service connection locations by station and by clock reference,
2. Service connection type (break-in, factory tees, tap, abandoned)
3. Root infestation generally identified by severity
4. Structural pipe condition, deformation or failure (collapse)
5. Missing pieces of pipe (size and position by clock reference)
6. Pipe crack positions and type (longitudinal, circumferential, multiple)
7. Open joint location and description
8. Offset joint location and severity

Existing Storm Sewer:
If any deficiencies are found in existing system to remain, the Contractor shall either repair or replace the existing storm sewer, existing culvert, and existing field tile as directed by the Engineer. The cost of the repairs or replacement for the existing field tile shall be paid for using pay items included in the contract or in accordance with Article 109.04 of the Standard Specifications. If blind-ties are noted in existing system to be abandoned, the Engineer shall be notified for further disposition prior to abandoning and filling the existing storm sewer.

New Storm Sewer Mains:
If the new sewers inspected are not acceptable, the problems found shall be repaired and the televising repeated until satisfactory. Contractor will be required to make repairs at no additional cost.

After the Contractor has completed any repairs or replacements, the Contractor shall re-televise the storm sewer, culvert or field tile as directed by the Engineer. The Contractor shall provide a new report of the re-televised area. The cost of video inspection of the storm sewers, culverts, or field tile after any repairs or replacements will not be paid for separately and shall be included in the contract unit price for television inspection of sewer.

Method of Measurement. This work will be measure for payment in sewer televising per foot based on the length of the video inspection.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for TELEVISION INSPECTION OF SEWER regardless of sewer diameter. This price shall include all material, equipment, and labor necessary for the successful televising the storm sewer main and structures including re-televising where necessary.

Televising for verification of proper cleaning of existing storm sewer, pipe culverts or drainage structures will not be paid for separately.

TEMPORARY CONNECTION TO EXISTING STORM SEWER

Description: Proposed storm sewers shall be connected to existing storm sewer to maintain storm water flow in the temporary condition to allow for staged construction of the proposed storm sewer. Work shall be in accordance with the applicable portions of Sections 550 of the Standard Specifications.

This work shall include placement and removal of temporary pipe necessary and concrete collars or other connections to allow unrestricted flow from the existing storm sewer. Any additional storm sewer pipe required to make the connection shall be of the same size and material as the existing storm sewer.

This work shall include temporary pumping of storm water from drainage structures as directed by the Engineer if a rain event occurs before temporary connections can be made. Pumping shall continue until the connection is made.

Prior to beginning work the Contractor shall field verify the location and grade of existing storm sewer and notify the Engineer if field conditions vary from the plans.

Method of Measurement: This work will be measured for payment per Each location of a temporary connection, including any pumping of storm water if necessary.

Basis of Payment: Payment for this work shall be at the contract unit price per EACH for TEMPORARY CONNECTION TO EXISTING STORM SEWER, which will include all labor, material, and equipment necessary to complete the work.

The existing pipe to be removed for the placement of the proposed storm sewers shall be paid for as STORM SEWER REMOVAL. No additional compensation will be allowed for pumping.

FIRE HYDRANTS TO BE REMOVED AND SALVAGED

Description. This work shall consist of the complete removal of fire hydrants and abandonment of auxiliary valves, valve boxes, piping and all associated appurtenances from the excavated site at locations indicated on the Plans or directed by the Engineer. The complete hydrant and valve box lid shall be salvaged and delivered to the City.

General Requirements. This work shall conform to the applicable sections of the Standard Specifications for Water and Sewer Main Construction. The Contractor shall excavate and remove the fire hydrant, up to and including the hydrant shoe. Downstream of the shoe the hydrant piping, valve and valve box shall be abandoned in place or removed as shown on the drawings or as directed by the Engineer. Any abandoned piping and fittings abandoned in place shall be completed filled with CLSM and plugged. The auxiliary valve box is permitted to be abandoned in place, but the top of the valve box shall be removed to a minimum elevation of 3 inches below the earth subgrade of the proposed improvement and the boxes filled with CLSM. The Contractor shall backfill the excavation with appropriate backfill, as approved by the Engineer, to the specified elevation. Excavation and proper disposal of materials required to remove the hydrant and assembly are included in this work. All plugs or caps required to seal pipe openings are included in this work.

The Contractor is advised that the work will be performed on a potable water system owned and operated by the City of Decatur. As such, all operations shall be performed in such a way as to avoid contamination of the water system through the introduction of contaminants or the process of the work. All work will require the review and approval of the City of Decatur prior to the commencement of work operations.

The water main shutdown required to perform the Work will only be allowed based upon scheduling by the City of Decatur. The Work must be substantially complete in order to place the water main back into service in coordination with the City of Decatur. The construction schedule must clearly indicate when testing of the new water main items will be made and for the water main to be inspected by City of Decatur prior to placing the new water main into service.

Any water main dewatering required during the removal of the fire hydrants shall be considered included as part of the successful removal of the fire hydrants.

Method of Measurement. This work will be measured per each fire hydrant removed. Salvaging and return of any materials will be included in this pay item.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for FIRE HYDRANTS TO BE REMOVED & SALVAGED, which price shall include all labor, equipment and material necessary to complete the work as specified herein, including excavation, native backfill, making any required water main connections (Contractor will not be paid separately for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN), and all appurtenances necessary to complete the work. Contractor shall include the abandonment and removal of any hydrant auxiliary valves, valve boxes, and other accessories, as required for construction.

WATER MAIN TO BE ABANDONED and TRENCH BACKFILL will be paid separately.

ABANDON EXISTING UTILITIES

Description. This work shall consist of the removal of all underground utilities (water service, sanitary service, storm sewer, gas service, electrical service, telephone service, etc.) including pipes and appurtenances between the buildings to be demolished and the main lines.

General. Existing sanitary services shall be abandoned at the main. Sanitary service connections will need to be fully cut out of the City main and a new section of main installed with non-shear mission couplings.

Existing water services shall be abandoned at the main. Water service connections will need to be fully removed and restored with a sleeve. B-boxes shall also be removed.

Basis of payment. This work will be for at the LUMP SUM price for ABANDON EXISTING UTILITIES, which price shall be payment in full for the complete removal of all underground utilities and appurtenances as specified herein.

TEMPORARY SOIL RETENTION SYSTEM (SPECIAL)

Description. This work shall consist of furnishing all labor, equipment and materials necessary for the installation and subsequent removal of temporary soil retention system within the CN Zone of Influence and as shown on the plans. This work shall be done in accordance with Section 522.07 of the Standard Specifications, as described herein, as detailed in the plans and as directed by the Engineer.

General Requirements. Any temporary shoring or soil retention system installed within the railroad right-of-way shall be completely removed at the completion of the project unless approval is obtained from the CN/ICRR for the shoring to remain in place.

Shoring Requirements. CN/ICRR zone of influence is defined as shown in the attached sketch and consists of a break in the ground line located 15' from centerline of track measured at 18" below base of rail and sloping 2H:1V. If the excavation falls within the region described (known as zone of influence), CN/ICRR requires shoring. Design live load for shoring shall be Cooper E90.

Submittal. Submittals shall be in accordance with Section 522.05 of the Standard Specifications. To expedite shoring review, in addition to the items identified in Section 522.05, the following items should be submitted with the review package.

1. Design calculations stamped and signed by Illinois Licensed Structural Engineer
2. Lateral pressure diagram
3. Deflection calculations at top of wall and bracing locations including elastic deflection of the wall and the passive deflection of the resisting soil mass.
4. Drawings or sketches of the proposed shoring consisting of:
    a. Plan view showing wall limits and distances from centerline of track.
    b. Cross section showing excavation support system, top of rail elevation, distance from centerline of track to near face of excavation support, maximum excavation depth with elevations, elevation of bracing, tip elevation, etc.
    c. Connection details.
5. Soil report and boring logs

Shoring Design. Design of the Temporary Soil Retention System shall include the following:

1. Excavation support shall be based on AREMA Manual for Railway Engineering, Chapter 8, Section 20 and Section 24.
2. Lateral Pressure from train loads shall be based on Cooper E 90 train load and active earth pressure due to railroad surcharge shall be calculated using the Boussinesq Equation for strip load per AREMA 8-20.3.2.2. Uniform surcharge (q) shall be based on an 8.5 foot long tie, 5 foot axle spacing and 90 kip axle load resulting in q=2.11ksf.
3. All shoring systems must be analyzed for overturning, sliding and global stability.
4. Lateral live load deflection shall be limited to 3/8" for shoring located within 18'-0" of centerline of track and ½" for shoring located outside 18'-0". The maximum allowable vertical or horizontal displacement of rail shall be ¼".
5. Material allowable stresses shall be based on AREMA.
6. No allowable stress increase for temporary loading condition will be allowed.

Method of Measurement. The temporary soil retention system furnished and installed will be measured for payment in place, in square feet. The area measured shall be the minimum of vertical exposed surface area envelope of the excavation supported by temporary soil retention system.

Portions of a temporary soil retention system or temporary sheet piling left in place for reuse in later stages of construction will only be measured for payment once.

Any temporary soil retention system installed beyond dimensions shown on the Plans or the approved Contract's design without the written permission of the Engineer, shall not be measured for payment but shall be done at the Contractor's own expense.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for TEMPORARY SOIL RETENTION SYSTEM (SPECIAL).

Payment for any excavation, related solely to the installation and removal of the temporary soil retention system and/or its components, shall not be paid for separately but shall be included in the unit bid price for TEMPORARY SOIL RETENTION SYSTEM (SPECIAL).

Payment for additional work required in design or construction to adequately protect any utilities and/or structures shall be included in the bid price for TEMPORARY SOIL RETENTION SYSTEM (SPECIAL).

Obstruction mitigation will be paid for according to Article 109.04.

Any costs related to obtaining technical assistance for the construction of a wall system from a particular supplier will not be paid for separately.

MAILBOX REMOVE AND REPLACE

Description. This work shall consist of relocating existing mailboxes located at locations specified on the plans to a suitable alternate location approved by the Engineer and the Postmaster.

Construction Requirements. Contractor shall remove the existing mailbox from its current location and set it in concrete with a minimum depth of 2'-0" below finished grade with a casing diameter of 12" centered about the post.

General Requirements. Should the existing post already be set in a concrete foundation, this pay item shall include removal of the existing 4"x4" post from the mailbox and replacing it with a new post. The existing post and foundation shall be fully excavated and disposed of as part of this item.

Alternatively, if the existing mailbox support post does not allow for replacement with a nominal depth of 2'-0" below grade, the 4"x4" shall be replaced with a new post.

Based on the timing of the Contractor's excavation operations, this mailbox may require placement at one or more temporary locations prior to final placement. These temporary locations do not need to be set in concrete but must be anchored in such a way that it is upright and stable for mail delivery.

Multiple temporary relocations shall not be paid for separately but considered included in the cost of this pay item.

Basis of Payment. This work will be paid for at the contract unit price per EACH for MAILBOX REMOVE AND REPLACE which shall include all time, materials, and labor to complete the excavation and relocation including any/all new wooden support posts, concrete, and material disposals.

VALVE VAULTS TO BE ABANDONED

Description. This work shall consist of removing valve vaults, water valves, piping, and appurtenances at locations indicated on the Plans or directed by the Engineer in accordance with the applicable requirements of Section 605 in the IDOT Standard Specifications and the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specification and as modified herein:

General Requirements. All water main shut-downs shall be coordinated with the City of Decatur. At a minimum, the Contractor shall remove the top 3' of the vault (minimum) including the lid, frame, cone, barrel, and all appurtenances. The lid and frame shall be salvaged and delivered to the City of Decatur. If required, any water main openings shall be securely sealed with a one (1) foot minimum length concrete mortar plug.

Excavation and proper disposal of materials required to remove the vault will be included in this work and shall be disposed of per Article 202.03. The bottom of the vault shall be partially broken out before being backfilled and compacted to grade. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work will be included in the cost of the pay item, and no further compensation will be provided.

Method of Measurement. This work shall be measured per each valve vault to be removed.

Basis of Payment. This work shall be paid for at the contract unit price EACH for VALVE VAULTS TO BE ABANDONED which price shall include removing and properly disposing of the existing structure, pipe sealing, excavation, native backfill and all labor, equipment, and materials necessary to perform said work. Salvaging and return of any materials will be included in this pay item.

TRENCH BACKFILL will be paid for separately.

NON-PRESSURE CONNECTION TO EXISTING WATER MAIN

Description. This work shall consist of all labor, material and equipment required to connect the proposed water main to the existing main (or cut-in connection) at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of Section 41 of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

General Requirements. The work shall include all labor, material and equipment necessary to make the connection. Any sleeves or other fittings required for the connection, shall be installed and paid for as DUCTILE IRON WATER MAIN FITTINGS. Any pipe required for the connection shall be installed and paid for as DUCTILE IRON WATER MAIN. All valves to be closed for the purpose of shutting down the water main shall be performed by the City. The City shall be notified, and a tentative installation schedule of operations shall be submitted to the City a minimum of 48 hours before any shut down of the water system can be made. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City. Cut-in connections shall be performed only after pressure testing, leakage testing and disinfecting of the new water main has been performed and accepted by the City. Cut-in connections will be performed under the supervision of the City.

All connections with existing mains and adjustments of existing mains and service lines shall be made as part of the work. Any special fittings, plugs, or similar appurtenances necessary to complete the work shall be furnished by the Contractor. Ductile iron water main fittings will be paid in accordance with DUCTILE IRON WATER MAIN FITTINGS. Ductile iron pipe will be paid in accordance with DUCTILE IRON WATER MAIN. All other appurtenances and couplings shall be at no additional cost to the contract.

Prior to the final connection, all piping and fittings shall be swabbed with a chlorine solution in accordance with AWWA disinfection requirements.

Contractor shall cut and bevel existing pipe in accordance with DIPRA (Ductile Iron Pipe Research Association) and the manufacturer's installation instructions.

Method of Measurement. The work will be measured for payment in place for each non-pressure connection made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN, which shall be payment in full for all labor, equipment, materials, including excavation, sheeting or shoring, dewatering, native backfill and all other work necessary for a complete installation of the water main connection.

CONCRETE THRUST BLOCKS (SPECIAL), TRENCH BACKFILL, DUCTILE IRON WATER MAIN FITTINGS and DUCTILE IRON WATER MAIN shall be paid for separately.

For the fire hydrant relocations and piping replacement work along Faries Parkway (e.g. refer to Water Main Plan View Sheets 9, 10, 11, and 12), the Contractor will not be paid for NON-PRESSURE CONNECTION TO EXISTING WATER MAIN. Rather, the cost for making any connections to the existing water main shall be included in the cost of the FIRE HYDRANTS TO BE REMOVED AND SALVAGED or of FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX.

WATERMAIN CASING PIPE

Description. This work shall consist of installing a 42-inch diameter steel casing pipe at the location, line and grades provided on the plans or as directed by the Engineer via open cut construction, not jack and bore construction. All pipe, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. This work shall consist of the construction of steel casing pipe at the locations indicated in the Plans or as directed by the Engineer and shall conform to the Contract and the applicable sections of the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

The applicable requirements for STEEL CASINGS shall also apply herewith, including, but not limited to, casing pipe thicknesses, stainless steel spacers, filling of casing pipe annular space, and grading.

IDOT standard utility excavation and trenching standards shall also apply.

After installation of the casing pipe is completed, the proposed water main shall be constructed in place within the casing.

Method of Measurement. This work will be measured in feet along the centerline of the casing. Pipe to be installed within the casing will be measured separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATERMAIN CASING PIPE, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including steel casing pipe and accessories, furnishing, placing, protecting, temporary soil retention systems, preparation of shop drawing submittals, excavation, temporary support or bracing of excavations and existing utilities, native backfill, excavations to confirm locations of adjacent existing utilities, and dewatering. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

WATERMAIN IN CASING PIPE, DUCTILE IRON will be paid for separately.

GATE VALVE 18” WITH VAULT, 5’ DIAMETER

Description.

This item shall consist of furnishing and installing an 18” Line Gate Valve connected to an 18” concrete storm sewer inside a 5-foot diameter precast concrete valve vault at locations shown on the plans and as directed by the engineer.

General Requirements.

The gate valve shall be an 18” Waterman H-30 T-1 Line Gate Valve for concrete pipe including any necessary handle extensions or couplings required to extend the hand wheel through the top of the valve vault and any additional materials required to install per the manufacturer stated recommendations.

The valve vault shall be at least 60” in diameter and designed to accommodate the Waterman H-30 T-1 Line Gate Valve and include manhole steps. The valve vault shall conform to section 602 of the standard specifications. The top of the valve vault shall extend 12” above the final grade of the adjacent proposed pavement and have a hole cored in the top slab to accommodate the extension of the line gate valve hand wheel to allow the shut-off to be operated from outside of the valve vault. CA-6 crushed compacted limestone shall be utilized to backfill all around the outside of the valve vault and below the valve vault to prevent mud from penetrating valve vault.

The construction and operation of the GATE VALVE 18” WITH VAULT, 5’ DIAMETER and all incidental work shall be coordinated with the ADM Renovation facility and must not impact the site drainage or environmental requirements for this property.

Method of Measurement. The GATE VALVE 18” WITH VAULT, 5’ DIAMETER pay item will be measured for payment in units of Each for each individual location as specified on the contract plans.

Basis of Payment. This work will be paid for at the contract unit price per Each for GATE VALVE 18” WITH VAULT, 5’ DIAMETER which shall include the price of all materials, equipment, labor, and other incidental costs required to complete the work as specified above.

WATERMAIN IN CASING PIPE, DUCTILE IRON

Description. This work will consist of the installation of ductile iron water main pipe within steel casing pipe at the size specified, including all required appurtenances (e.g. pipe spacers). Installation of the casing pipe is not included under this Item.

Water main shall be installed according to Article 561 of the "Standard Specifications" and in conformance with City of Decatur Standard Specifications for Water Main Construction, except as noted herein.

General Requirements. The furnishing and installation of WATER MAIN IN CASING PIPE, DUCTILE IRON shall conform to the Contract and the applicable sections of DUCTILE IRON WATER MAIN. The applicable sections include, but are not limited to, pipe thickness, internal and external coatings, joints, gaskets, conductivity, restraint, polyethylene encasement, sequencing, water/sewer separation requirements, grouting of annular spaces, bulkheading of casing pipe openings, flushing, testing, disinfection, etc., and other items as determined by the Engineer.

For carrier pipe support:

1. Casing spacers: Provide electrically isolating stainless steel spacers of Type 304 stainless steel shells, PVC liner, high molecular weight polymer runners, and stainless steel bolts and lock nuts. Spacers shall be by Cascade, Advance Products & Systems, or CCI Piping Systems.
2. Spacers shall be placed at a maximum distance of 10-feet on center, with a minimum of three (3) spacers per pipe length, with one (1) spacer within two (2) feet from any end.
3. When noted in the Drawings, provide spacers capable of conveying both the proposed water main and an additional 4-inch diameter HDPE pipe that will be used for a conduit for future fiber optic cable installation (by others). Utilize Cascade Multi Carrier Spacer, Advance Products & Systems, or CCI Piping Systems.

After the pipeline has been installed in the cased tunnel, and before completion of pressure and leakage testing of the main, the annular space between the casing and main shall be filled completely with pea gravel (or other material approved by the Engineer) pumped into place meeting ACI 523.3R code and at each end of the tunnel shall be closed with a twelve (12") inch thick brick bulkhead.

All water main installed within a casing pipe shall be restrained.

Method of Measurement. This work will be measured in feet along the centerline of the pipe at the ground level.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATERMAIN IN CASING PIPE, DUCTILE IRON, of the diameter specified, and includes all spacers, appurtenances, labor, equipment, and materials necessary to complete the work as described.

STEEL CASINGS and UNDERGROUND CONDUIT, HDPE, 4" DIA. will be paid for separately.

STEEL LUMINAIRE MAST ARM ASSEMBLY 15 FT.

Description. This work shall consist of furnishing and installing Steel Street lighting mast arms on steel poles as specified herein and as shown on the plans.

General Requirements. The work described under this item involves the contractor furnishing and installing steel lighting mast arms of the size and type shown on the plans and specified here in. The lighting mast arms specified here are the additional lighting mast arms installed on combination lighting and traffic signal poles with two lighting arms.

Furnish and install a second steel lighting mast arm on steel traffic signal poles with two lighting mast arms.

Steel mast arms shall be according to Article 1069.03(a) of the IDOT standard specifications.

Aluminum mast arms shall be according to Article 1069.02(a) of the IDOT standard specifications.

Method of Measurement. STEEL LUMINAIRE MAST ARM ASSEMBLY 15 FT. shall be measured per each additional mast arm of the type and size specified here and shown on the plans.

Basis of Payment. This item shall be paid for at the contract unit price EACH for STEEL LUMINAIRE MAST ARM ASSEMBLY 15 FT. of the size and type indicated on the plans, which shall be payment in full for furnishing and installing the second lighting mast arm on steel poles shown with two lighting mast arms, as described herein, shown on the plans, and approved by the engineer.

VIDEO DETECTION SYSTEM COMPLETE

Description. This specification sets forth the minimum requirements for a video detection system that detects vehicles, bicycles, and motorcycles on a roadway by processing video images and that provides presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

Materials.

System Hardware

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

Video Sensor

The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video performing detection.

Camera and Processor

The camera shall be a color CMOS imaging array.

The camera shall include a minimum 10X optical zoom.

It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection.

It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate.

The camera shall have direct, real-time iris and shutter and speed control by the integrated processor.

The processor shall support H.264 video compression for streaming output.

Video Sensor Enclosure Assembly

The camera and processor shall be housed in a sealed IP-67 enclosure.

The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the exterior surface to reduce debris accumulation and maintenance.

The faceplate shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation, snow, ice and frost.

An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources.

An integral aiming sight shall assist in aiming the camera for the detection objectives.

A removable rear cap and cable strain relief shall seal the power connection.

The rear cap shall be tethered to the enclosure to avoid dropping the cap during installation.

The rear cap shall be fastened to the body of the video sensor with single, captive bolt.

The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure.

The sensor shall be self-supporting on manufacturer's mounting brackets for easier fastening during installation.

It shall be possible to rotate the field-of-view 360º without changing the angle of the visor.

Power and Communications

Power and communications for the video sensor shall be carried over a single three-conductor cable.

Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection.

The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz.

Power consumption shall be no more than 16 watts typical

No supplemental surge suppression shall be required outside the cabinet.

All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

Communications Interface Panel

The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center, a maintenance technician, and the traffic cabinet itself.

Video Sensor Connection

The communications interface panel shall provide connection points for four video sensors.

Each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor.

The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps.

The broadband-over-power connection shall support 1,000 feet of cabling to the video sensor.

Each video sensor connection shall include a power switch.

There shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications.

Each video sensor connection shall contain a resettable fuse.

Each video sensor connection shall provide high-energy transient protection.

Traffic Management Center (TMC) Communications

An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC).

The TMC connection shall support 10/100/1000 Mbps Ethernet communication.

The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors.

All communications to the video detection system through the TMC connection shall be to a single IP address.

Local User Communications

A wired Ethernet port shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes.

The maintenance port shall support 10/100/1000 Mbps Ethernet communication.

All communications to the video detection system through the maintenance port shall be to a single IP address.

The maintenance port shall support DHCP to automatically assign an IP address to the user's computer, if desired.

An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.

All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address.

The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer.

The Wi-Fi access point shall include a dipole, omnidirectional antenna.

A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off.

The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices.

An LED shall indicate when the Wi-Fi access point is enabled.

The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.

Traffic Controller Connection

The communications interface panel shall provide one connection to communicate to the traffic controller through the cabinet.

The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.

The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.

The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).

The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.

The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.

The wired I/O data communications link shall support at least 24 outputs and 16 inputs.

It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

USB Ports

The communications interface panel shall include two USB 2.0 ports.

If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.

Power

The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet.

The communications interface panel shall be protected by two slow blow fuses. Spares shall be attached to the panel.

Wired Input/Output Card

The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module.

The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File.

The card shall occupy two slots of the detector rack.

The card shall provide four detector outputs on its rear-edge connector.

A front connector shall provide communication to the communications interface panel.

A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet.

A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output.

The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card.

The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

System Software

The video detection system shall include management software for configuration, monitoring and data collection purposes.

Management Software

Management software shall be a Windows-based application.

The software shall be compatible with Windows 7 and Windows 10 operating systems. The software shall communicate with the video detection system via Ethernet.

The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices.

The management software shall provide the user a means to name individual video sensors and communications interface panels.

The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream.

The management software shall provide a means for the user to calibrate distances in the field of view.

The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video.

The management software will overlay an outline of each detection zone over the background image.

It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection.

It shall be possible for the user to set the desired color of both the on and off states of the detection zone overlay.

It shall be possible for the user to alter the size and shape of any previously created zone. It shall be possible for the user to overlap zones, either partially or fully.

It shall be possible for the user to name each zone uniquely.

It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type.

It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle.

It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on.

The management software shall be capable of creating at least 99 detection zones per video sensor.

It shall be possible for the management software to retrieve all configuration parameters from video sensors or communications interface panels.

It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file.

The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel.

The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors.

The management software shall provide a screen to monitor operation of a video sensor.

The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution.

The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.

It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone.

The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text.

An indication of when an output is on or off, along with a user-configurable name for that indicator.

The current time in the video sensor.

A user-configurable title or name.

The version number of the video sensor software.

It shall be possible for the user to turn the overlay graphics on or off with a single setting.

The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel.

The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels.

It shall be possible for the user to configure the order that the sensor videos appear in the quad-view.

The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously.

While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a “snapshot” or single-frame image to save to a named file on a laptop.

While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

System Functionality

The video detection system shall provide the following features and functionality.

Detection Performance

The video detection system shall detect the presence of vehicles in defined zones and turn on the assigned output when the vehicle is present in the zone.

Stop Line Detection

For detection zones placed at the stop line, the probability of not detecting the presence of a vehicle shall be 1% or less under all operating conditions when the video sensor is installed and configured properly.

For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less under all operating conditions when the video sensor is installed and configured properly.

Advance Detection

It shall be possible to place advance detector zones such that the farthest point of the zone is up to 600 feet from the video sensor. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone.

To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

Failsafe Mode

The video detection system shall provide three (3) failsafe options during optical contrast loss.

The default shall be maximum recall. The end-user may choose to use minimum recall or fixed recall in which a user-defined number of seconds may be implemented to hold call during green. The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe glare, extreme fog, or temporary ice/snow on the faceplate), the sensor shall enable the chosen failsafe mode. When sufficient contrast is restored in the video, the sensor will exit the failsafe mode.

The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall end.

Data Collection

The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary. The data shall include:

Vehicle counts.

Vehicle average speeds.

The management software shall be able to retrieve collected data for a specified period of time or for all currently stored data and save into a standard CSV file.

Operations Log

The communications interface panel and each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

Time Synchronization

The video detection system and management software shall provide three methods to synchronize the time of day clocks in the communication interface panel and the video sensors, as follows:

Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.

A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.

A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

Video Streaming

In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a tablet, smartphone or laptop computer.

Video bitrate is user-definable between 100 Kbps-5000 Kbps. The default shall be 2048 Kbps. All bitrates shall provide 30 fps.

Installation and Setup

The video detection system hardware shall be designed for flexible, fast and easy installation and setup.

Install the video sensor on a traffic signal post or mast arm, as mentioned above and as shown on the plans, per the applicable portions of Section 880.03 of the Standard Specifications.

No special tools or extra equipment, other than a laptop for configuration, will be required.

Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach, 8-phase intersection in 15 minutes or less.

Warranty, Service and Support

The video detection system shall be provided with the following warranty, service and support options.

Warranty

The manufacturer shall warrant the video detection system for a minimum of three (3) years. An option for up to six (6) years of warranty shall be available.

Service

Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the contracting agency in the form of a separate agreement for continuing support.

Support

A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available.

Training shall be available to personnel of the contracting agency in application design, operation, setup, and maintenance of the video detection system.

Manufacturer shall provide a tech support website and an 800 number for technical support.

Method of Measurement. VIDEO DETECTION SYSTEM, COMPLETE shall be measured per each unit constructed as shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price, per EACH, for VIDEO DETECTION SYSTEM, COMPETE.

CONCRETE BARRIER BASE (SPECIAL NO. 1)

Description. This work shall consist of constructing a concrete barrier base with reinforcement bars below a concrete barrier wall as detailed in the plans.

Construction Requirements. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier base shall be constructed as detailed in the plans. The concrete barrier wall shall be constructed separately and not poured monolithically with the concrete barrier base.

Method of Measurement. CONCRETE BARRIER BASE (SPECIAL NO. 1) will be measured for payment in feet in place along the centerline of the barrier base. The concrete barrier wall of the type specified will be paid for separately in accordance to the special provision for CONCRETE BARRIER.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER BASE (SPECIAL NO. 1), which price shall include all equipment, labor, and materials necessary to construct the concrete barrier base including all reinforcement bars in the concrete barrier base and those extending into the concrete barrier wall or concrete barrier transition, and epoxy coated tie bars.

CONCRETE BARRIER , VERTICAL FACE (SPECIAL)

Description. This work shall consist of constructing a concrete barrier wall with reinforcement bars as detailed in the plans.

Construction Requirements. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. The concrete barrier wall shall be constructed on a concrete barrier base as detailed in the plans.

Method of Measurement. Concrete barrier walls shall be measured for payment in feet in place, along the centerline of the concrete barrier. Concrete barrier base will be paid for separately according to CONCRETE BARRIER BASE and CONCRETE BARRIER BASE (SPECIAL NO. 1), per the number indicated on the plans.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CONCRETE BARRIER, VERTICAL FACE (SPECIAL) or as shown in the plans. This contract unit price shall include all equipment, labor and materials necessary to construct the concrete barrier wall including all reinforcement bars in the concrete barrier wall.

CONCRETE BARRIER WALL (SPECIAL NO. 1)

Description. This work shall consist of all materials and labor necessary to form and construct the concrete barrier wall along the west side of Brush College Road at the southern end of the project limits as shown on the plans and specified herein.

General Requirements. This work shall follow the requirements in Section 503. Slip forming of the constant slope parapet shape is allowed in accordance with IDOT GBSP 61.

Materials shall be according to the following:

- The concrete shall be Class BS and shall conform to Article 1020.04 of the Standard Specifications.
- Reinforcement shall conform to Section 508 of the Standard Specifications.
- Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-290, Type S, Grade NS. Use T with a 5/8" backer rod.
- The ½" Preformed Self-Expanding Cork Joint Filler shall conform to Article 1051.07 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in place and the length computed in linear feet.

Basis of Payment. This work will be paid for at the contract unit price per linear FOOT for CONCRETE BARRIER WALL (SPECIAL NO. 1). The unit price shall include the concrete, reinforcement, cork joints, and all labor, tools, equipment and incidentals to complete the work as specified.

STUMP REMOVAL ONLY

Special attention is called to this item since the Contractor will, in this case, be required to remove stumps only and associated surface roots. The trees have previously been removed by others. A tree stump that cuts off at a height of 4.4 feet or below will be considered as a stump for the purposes of measurement and removal. All excess chips and debris from this operation shall be removed from State right-of-way.

This work shall be done in accordance with Section 201 of the Standard Specifications for tree removal, except that stumps are to be removed to a minimum of twelve (12) inches below the natural surface of the ground and surface roots shall be ground out.

Method of Measurement. Stumps to be removed as a payment item will be measured per unit of diameter, where one unit is equal to one (1) inch, at flush with the ground. Surface roots will not be measured for payment but shall be included in the stump removal.

Basis of Payment. Stump removal shall be paid for at the contract unit price per UNIT diameter for STUMP REMOVAL ONLY. All references to tree removal in the Standard Specifications shall include the item STUMP REMOVAL ONLY. Payment for STUMP REMOVAL ONLY shall include the cost of all material, equipment, labor, removal, disposal, cleanup, and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

EXPLORATION TRENCH, SPECIAL

Description.

This item shall consist of physically locating certain existing utilities by excavating a trench, potholing, or alternative location method at the contractor's discretion and as approved by the resident engineer. The existing utilities to be located include but are not limited to existing water service, sanitary sewer lines, existing gas lines, and other utilities as identified in the table below.

General Requirements.

For the locations specified the contractor shall locate the potential utility conflict at the beginning of the project schedule, well in advance of beginning construction or ordering materials for the identified proposed design improvement. The contractor shall excavate to the depth necessary to fully identify and locate the utility to verify that it is not in conflict with the proposed design. If a conflict is found between the existing utility and the proposed design element the contractor shall immediately notify the Engineer and receive approval before ordering materials or beginning construction activities.

A 10 foot length of Exploration Trench, Special is provided for each location identified below and any additional length required to complete the locate will be at the contractors own expense. No additional quantity or contingency amount has been provided and this pay item only applies to the locations specified in the table below. This pay item does not absolve the contractor from the requirement to coordinate and verify the accuracy of all other existing utility information throughout the project and clearing any potential utility conflicts prior to beginning construction activities in other areas of the project. The contractor will not be paid for any utility locates outside of what is included in the table below and all other utility coordination and verification required by the contractor is covered by the overall cost of the project.

Exploration Trench, Special - Utility Locations

Name and Address of Utility	Existing Utility Type	Location	Proposed Design Element
Troy Lancaster Manager, ADM 4666 Faries Parkway Decatur, IL 62526	Existing abandoned 16" force main in casing pipe	Brush College Road/Faries Parkway intersection 62+06, 49.8' RT	30" water main in 48" casing pipe
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Existing 16" water main in casing pipe	Brush College Road/Faries Parkway intersection 62+26, 46.7' RT	30" water main in 48" casing pipe
Troy Lancaster Manager, ADM 4666 Faries Parkway Decatur, IL 62526	Existing abandoned oil process lines (4)	Brush College Road/Faries Parkway intersection 62+13, 48.7' RT	30" water main in 48" casing pipe
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Existing 24" water main	Brush College Road/Faries Parkway intersection 61+43, 6.9' RT	16" water main

Troy Lancaster Manager, ADM 4666 Faries Parkway Decatur, IL 62526	Underground Sanitary Sewer to be abandoned	Along Wall W007 - Brush College Road, Approx. 47+11, 21.8’ RT	Pile 5 & 4 of Soldier Pile Wall
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 206+00, 16' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer	Faries Road, Approximately located at 207+37, 41’ RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer	Faries Road, Approximately located at 208+50, 41’ RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer	Faries Road, Approximately located at 209+47, 41’ RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer	Faries Road, Approximately located at 210+12, 41’ RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	Faries Road, Approximately located at 221+70, 52' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 222+83, 15' LT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	Faries Road, Approximately located at 222+83, 4' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 225+30, 9' LT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 228+44, 3' LT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 231+18, 0' LT	Storm Sewer

City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 232+53, 2' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 233+85, 1' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	Faries Road, Approximately located at 235+00, 1' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	E Harrison (West Leg), Approximately located at 809+80, 32' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	E Harrison (East Leg), Approximately located at 700+76, 23' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	E Harrison (East Leg), Approximately located at 701+00, 23' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	E Harrison (East Leg), Approximately located at 701+36, 17' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	E Harrison (East Leg), Approximately located at 703+08, 14' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Sanitary	E Harrison (East Leg), Approximately located at 706+00, 14' RT	Storm Sewer
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Water	E Harrison (East Leg), Approximately located at 707+35, 14' RT	Storm Sewer

Method of Measurement. The EXPLORATION TRENCH, SPECIAL pay item will be measured for payment in length of feet, with an additional 10’ length applied to each individual EXPLORATION TRENCH, SPECIAL location.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for EXPLORATION TRENCH, SPECIAL which shall include the price of all materials, equipment, labor, and other incidental costs required to complete the work as specified above.

PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL

Description. This work shall consist of constructing Portland cement concrete sidewalk 5 inch, on a prepared subgrade. Work shall be performed in accordance with Section 424 with the exceptions noted below.

Subgrade Preparation. The subgrade shall be tamped or rolled until thoroughly compacted and at the proper line and grade as shown on the plans. At the bridge approach footing, the sidewalk shall be thickened to the thickness of the adjacent bridge approach slab.

Construction Joints. Construction joints shall be made only at locations shown on the plans or approved by the Engineer, except in cases of breakdowns or other unforeseen and unavoidable delays.

All construction joints shall be bonded unless noted otherwise. The reinforcing steel shall extend through such joints.

The face edges of all joints which are exposed to view shall be carefully finished true to line and elevation.

Care shall be exercised not to injure the concrete or break the concrete-steel bond at any time. In constructing slabs where longitudinal joints are specified, personnel will not be permitted to stand or walk on the projecting reinforcement bars until the concrete has hardened.

(a) Unbonded Construction Joints. Unbonded construction joints shall be made by forming or striking off the initial concrete placed to a true and even surface and allowing it to set. Loose material shall be removed. The new concrete shall be thoroughly consolidated against the existing concrete.

(b) Bonded Construction Joints. For bonding to hardened concrete, the existing cement paste shall be removed to create a prepared surface. The surface shall be prepared by washing with water under pressure or by sandblasting to expose clean, well bonded aggregate.

To facilitate the removal of the cement paste, the form in contact with the first pour or the exposed surface of the first pour, may be thoroughly covered with a surface retarder. When the surface retarder is applied directly to the fresh concrete surface, its application shall be completed within 30 minutes after concrete placement.
The surface retarder shall be a ready-to-use liquid compound that delays the set of a concrete surface, and shall be approved by the Engineer in advance of beginning the work. It shall produce results satisfactory to the Engineer and will be evaluated on the tests performed by the Engineer, and on the manufacturer's data recommendations.
The prepared surface of the existing concrete shall be wetted a minimum of one hour before application of the new concrete. The surface shall be maintained in a dampened condition during that period. Immediately before placing the new concrete, any excess water shall be removed.

Expansion Joints. Expansion joints of the width specified below shall consist of preformed joint filler. The top of the joint shall be placed 1/4 in. below the surface of the slab. Reinforcement shall not be continuous through expansion joints.

Transverse expansion joints ½ in. wide shall be placed at intervals recommended by the supplier of the mechanically stabilized earth retaining walls. Joints shall be placed for the full width of the slab and extend through the coping of the precast panels. Expansion joints shall also be placed where the slab abuts adjacent sidewalks.

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

Welded wire fabric and preformed expansion joint fillers will not be measured for payment.
Protective coat will be measured for payment in place and the area computed in square yards.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL.

Protective coat will be paid for at the contract unit price per square yard for PROTECTIVE COAT.

CURB REMOVAL (SPECIAL)

Description. Work under this item shall be performed according to Section 440 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified. Work under this item shall consist of the removal and disposal of the existing curb section from the top of the existing curb to the bottom of the proposed driveway subgrade.

Method of Measurement. This work will be measured for payment in place in feet.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for CURB REMOVAL (SPECIAL).

SIDEWALK REMOVAL (SPECIAL)

Description. This item shall consist of removing and disposing of the PCC walking surface behind the existing sheet pile retaining wall along Brush College Road at the locations as shown in the plans and as directed by the Engineer.

General. This work shall be completed in accordance with Section 440 of the Standard Specifications. The method of removal shall not damage the existing sheet pile wall.

Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, hot-mix asphalt surfaces, and sheet pile wall and is included in the cost of this item and will not be paid for separately.

Method of Measurement. This work will be measured for payment in place in square foot.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for SIDEWALK REMOVAL (SPECIAL).

PRECAST CONCRETE BOX CULVERTS 2' X 2' (SPECIAL)

Description: This work shall consist of furnishing and constructing a 2’ X 2’ precast concrete box culvert with end sections or transitions according to applicable portions of Sections 540 of the Standard Specifications.

Precast Concrete Box Culverts 2' x 2' shall be in accordance with the ASTM C1577. The box sections and end section shall be designed for an HL-93 loading with a Design Fill equal to or less than 2 feet in accordance with the AASHTO LRFD Bridge Design Specification, 8th Edition. The haunch dimension shall be equal to the sidewall thickness. Shear stirrups are not allowed. The minimum box segment length shall be 4 feet.

Shop drawings for the precast concrete box culvert with end transition details or precast end sections shall be submitted according to Article 1042.03(b) and Article 105.04 of the Standard Specifications. The supplier selected by the Contractor shall submit complete design calculations and shop drawings, prepared and sealed by an Illinois Licensed Structural Engineer, for approval by the Engineer. The shop drawings shall include a general plan and elevation sheet of the precast concrete culvert with end transitions or precast end sections showing limits, noting any deviations from the plans, transition or end sections, structural design and any other aspect of the project necessary to demonstrate to the Engineer’s satisfaction that the design fits the site.

The Contractor shall make all necessary approved dimensional adjustments to fit the overall dimensions of the precast concrete culvert. The end sections or transitions shall be modified and designed by the Contractor’s supplier to fit the proposed conditions. The invert shall remain as shown in the contract documents.

Method of Measurement: PRECAST CONCRETE BOX CULVERTS 2' x 2' (SPECIAL) will be measured for payment in feet except the length measured shall not exceed the length shown in the plans or authorized by the Engineer. The overall length shall be measured as shown on the plans along the centerline of cell of the culvert including any end section or transition pieces.

End sections will not be measured or paid for separately.

Porous Granular Embankment backfill shall be included and will not be measured or paid for separately

Basis of Payment: This work will be paid for at the contract unit price per FOOT for PRECAST CONCRETE BOX CULVERTS 2' x 2' (SPECIAL), which price shall include any end sections or transitions and all labor, equipment and material necessary to complete the work.

ABANDON AND FILL EXISTING STORM SEWER

Description. This work shall consist of filling storm sewers to be abandoned as shown on the plans or as directed by the Engineer. The storms sewers to be abandoned shall be cleaned and televised prior to filling. If blind-ties or other unknown connections are noted in existing system to be abandoned, the Engineer shall be notified for further disposition prior to abandoning and filling the existing storm sewer. All storm sewer pipes to be abandoned in place shall be completely filled with Controlled Low Strength Material (CLSM).

Existing storm sewer pipe ends shall be securely sealed in accordance with Article 605.03 except as modified below.

Materials: CLSM shall meet the requirements of Section 1019 of the Standard Specifications.

General Requirements. The storm sewer pipe shall be plugged on both ends with Class SI Concrete. 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 pipe plugs and filling the remainder of the storm sewer.

The Contractor shall be responsible for removing any debris associated with this work from the downstream storm sewer.

Storm sewers intended for use to maintain storm water flow during staged construction shall not be abandoned and filled until proposed storm sewer construction is completed to maintain flow.

Basis of Payment. This work shall be measured in place and paid for at the contract unit price per FOOT for ABANDON AND FILL EXISTING STORM SEWER. This price shall include all costs for completely filling sewer pipe with CLSM, capping and all other labor, equipment, and materials necessary to complete the work.

Cleaning and televising the storm sewer shall be paid for separately.

TEMPORARY STORM SEWER, CLASS A, TYPE 2 12”

Description. This work shall consist of furnishing, installing, maintaining, removing or abandoning temporary storm sewer pipe. Temporary storm sewers shall be connected to existing drainage structures or temporary inlets to maintain storm water flow in the temporary condition to allow for staged construction of the proposed storm sewer. Work shall be in accordance with the applicable portions of Sections 550 of the Standard Specifications.

The Contractor is responsible for determining the appropriate invert elevations of the temporary storm sewer in order for proper drainage during each Maintenance of Traffic Stage in which the temporary storm sewers are in use.

If called out on the plans or if determined in the field the required separation between water and storm sewer cannot met due to differences in assumed utility locations, Storm Sewer meeting the criteria of the provision STORM SEWER (WATER MAIN QUALITY PIPE) must be provided for the temporary storm sewer.

The Contractor is responsible for supplying and installing temporary sewer pipe as required and/or functioning mission couplings as needed to provide a watertight connection between the storm sewer and the drainage structures. Any storm sewers that are damaged during construction shall be replaced in kind by the Contractor at no additional cost to the contract.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for TEMPORARY STORM SEWER, CLASS A, TYPE 2 12”, which shall include all labor, material and equipment necessary to complete the work.

PLUG PIPE PENETRATION

Description. This work shall consist of permanent plugging any holes left in the wall of concrete storm sewer or drainage structures to remain. Concrete plugs shall be installed after removal of the existing storm sewer or temporary storm sewer connections at the locations shown on the plans or as directed by the Engineer.

Construction Requirements. The contractor shall completely remove the existing/temporary pipe penetrating the existing main or drainage structure to remain as specified in the plans. Extra care shall be taken when removing the penetrating pipe as to minimize the damage to the wall of the existing pipe or structure to remain. All loose concrete around the pipe opening shall be removed. The proposed concrete plug shall be formed flush with and shaped to match the curvature of the inside face of the wall of the existing pipe or structure to remain. The thickness of the concrete plug shall be a minimum of 3" greater than the wall thickness of the existing pipe or structure to remain. On the outside face of the existing pipe to remain, the plug shall extend a minimum of 4" beyond the edges of the wall opening.

Class SI concrete meeting the requirements of Section 1020 of the Standard Specifications shall be used to construct the concrete plug. The wall penetration shall be completely sealed to prevent groundwater seepage.

The excavation shall be backfilled and compacted after the concrete plug has cured.
The contractor shall maintain flow in the existing pipe at all times.

Basis of Payment. At all locations where existing or temporary connections are to be removed, the cost of permanently plugging the storm sewer or structure to remain shall be included in the cost of STORM SEWER REMOVAL.

STORM SEWER REMOVAL

Description. This work shall consist of the complete removal of the existing storm sewer at locations shown on the plans and as directed by the Engineer and shall be done in accordance with the applicable portions of Section 551 of the Standard Specifications. Existing storm sewer pipe that is removed is not considered salvageable for re-use.

The area of excavation required to expose and remove the storm sewer shall be filled with trench backfill meeting the requirements of Section 208 of the Standard Specifications. Areas 2' beyond the limits of new pavement, sidewalks or retaining walls may be backfilled with materials meeting requirements of Section 208 except that the aggregate may be a local material meeting the approval of the Engineer.

All work and materials necessary to backfill, including trench backfill, will be included in the cost of the storm sewer removal pay item and no further compensation will be provided.

The removal and disposal of existing drainage structures will be paid for separately.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for STORM SEWER REMOVAL, regardless of the diameter of the pipe or depth removed which price shall include all labor, equipment and materials necessary to complete the work. No additional compensation will be allowed due to the various sizes, types, depths or lengths. The sizes, types and lengths shown in the plans are for information only and shall be verified by the contractor prior to bidding.

STORM SEWER JACKED IN PLACE (SPECIAL)

Description-This work shall be in accordance with Section 552 of the Standard Specifications, this Special Provision, and the requirements outlined in the following specifications at the specified locations (hereafter referred to as the "RR owner specifications"):

- At NS Spur Railroad location: Specifications for Pipeline Occupancy of Norfolk Southern Corporation Property (NSCE-8, 11/6/2020)
- At IC Railroad location: CN Southern Region Utility Crossing/Encroachment Application Packet (Revised 12/4/2018)

When in conflict, design and construction requirements in the RR owner specifications shall take precedent when superior to the requirements in the Standard Specifications.

General Requirements. A metal liner (casing pipe) shall be installed first followed by installation of the storm sewer and grouting the annular space between the casing and storm sewer. The casing pipe shall be installed by jacking or jacking and boring (or auger jacking, the terms shall be considered interchangeable) as accepted and approved by the RR owner. The casing pipe shall meet the following minimum requirements:

Material – Steel
Inside Diameter – 28" for 15" RC pipe, 38" for 24" pipe (contractor to verify clearances for carrier pipe selected before ordering materials)
Wall Thickness (min) – .438" (28" casing), .562" (38" casing).
Manufacture – Rolled/Welded
Grade – FY = 35 KSI minimum
Joints – welded
The carrier pipe shall be reinforced concrete pipe, Class A, Type 4, 15" (NS Spur) and reinforced concrete pipe, Class A, Type 4 , 24" (IC). Carrier pipe shall be rubber gasket type joint suitable for jacking.

The Contractor shall follow all of the requirements contained in the RR owner specifications. Excavation shall not commence until the RR owner has approved all required submittals. Any excavation methods using blasting will not be allowed. Any resubmittal fees imposed by the RR owner due to inadequate or missing information or other failure by the Contractor to the meet the requirement of the Railroad will not be reimbursed. Railroad costs associated with the pipe installation (construction monitoring, flagging, track work, protection of signal cables, etc.) will be reimbursed by the Department.

Soil borings have been included in the contract documents for the Contractor's review. The Contractor is advised to review the site and familiarize himself with the soil conditions prior to finalizing his bid for this portion of the work. No additional compensation shall be allowed for changes in the construction method due to ground conditions that may exist at the time of construction.

The Contractor should be aware of the possibility of existing utilities at boring and jacking locations. Prior to beginning construction of required temporary soil retention systems and jacking and receiving pits, the Contractor shall field verify the elevations and locations of any and all utilities that may cross beneath or over the proposed sewer so as not to damage the existing utilities during jacking operations. Contractor will not be paid for work that has been performed and must be abandoned and no additional compensation shall be given for any modifications required to be made to the proposed sewer design or for any delay time incurred due to a difference in assumed and actual elevations of the existing utilities.

The Contractor shall take all necessary precautions to prevent the undermining of the roadways, railroads, structures, embankments, or property including the utilization of trench boxes, sheeting, etc. to properly maintain the jacking and receiving pit excavations such that underlying soils between the pavement edge/back of curb and the jacking limits are prevented from entering the excavation. In the event that settlement or any other damage occurs to adjacent roadways, railroad, property, utilities or structures, the Contractor shall be fully responsible for any repairs deemed necessary by the Engineer.

Any temporary soil retention system required to support jacking and receiving pit excavation shall be designed and constructed by the Contractor and reviewed by the Engineer. The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or Railroads.

Any temporary soil retention system installation and subsequent removal shall consider the adjacent railroad, paved surfaces and buildings. Any measurable settlement or heave, as determined by the Engineer, of adjacent pavements shall be repaired at no additional cost to the Contract.

All excavated areas are to be illuminated with flashing warning lights and shall be fenced throughout the time the pits are excavated. This work shall be included in this item. Any storm sewer that is subsequently installed in the area formerly occupied by the jacking or receiving pits shall be installed and backfilled in accordance with the storm sewer special provisions and details. The remainder of the jacking and receiving pit areas shall be backfilled to the finished grade with either suitable excavated material from the pit or backfilled in accordance to the storm sewer special provisions and details. The backfill material shall be placed in 6 inch lifts, loose measurements, and compacted by mechanical tamper of a type approved by the Engineer before the next layer is placed, and the backfill shall be compacted to not less than 95% of the maximum dry density as determined by ASTM D1557. All backfill material shall be deposited in such a manner as not to damage the pipe. The filling of the pit shall be carried on simultaneously on both sides of the pipe.

Any temporary support or bracing of existing utilities must be coordinated with the affected utilities and is included under this item.

All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, stabilization and backfilling of the jacking and receiving pits is included under this item.

Basis of Payment: This work will be paid for at the contract unit price per ft for STORM SEWERS JACKED IN PLACE (SPECIAL), of size specified, which price shall include the storm sewer pipe, casing pipe and end plates, grouting all voids between the storm sewer and casing pipe, furnishing, removing, and backfilling of jacking and receiving pits, temporary soil retention systems, preparation of shop drawing submittals, temporary support or bracing of excavations and existing utilities, excavations to confirm locations of adjacent existing utilities, dewatering, sheeting, bracing, and all other labor, materials, and equipment necessary to complete the described work and all excavation except excavation in rock. Installation and subsequent removal of required temporary soil retention systems shall not be paid separately but shall be considered included with this work.

DUCTILE IRON WATER MAIN FITTINGS

Description. This work shall consist of the furnishing and installation of ductile iron water main fittings, either on existing or proposed water mains at locations indicated on the Plans or directed by the Engineer. Installation of ductile iron pipe or casing pipe is not included under this item. All fittings, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements.

1. New ductile iron fittings, meeting the requirements of AWWA C110 latest revision.
2. Fittings include, but are not limited to, bends, tees, permanent plugs or caps, anchoring tees, anchor couplings (i.e. for fire hydrants), offsets, reducers, and solid sleeves.
3. All restrained glands and other appurtenances associated with joint restraint (including locking segments, Romac Grip Rings or Megalugs) shall be included in the cost of DUCTILE IRON WATER MAIN FITTINGS.
4. 6-inch to 12-inch diameter shall be class 350 (minimum), greater than 12-inch diameter shall be class 250 (minimum).
5. Mechanical joint (with Megalugs or Romac Grip Rings), TR Flex, HDSS, and Flex Ring are all acceptable fitting joints. See also the restrained joint requirements in DUCTILE IRON WATER MAIN.
6. Cement mortar lined and coated with asphaltic material outside only (no internal seal coat) in accordance with ANSI/AWWA A21.4/C104
7. At the proposed locations where a tee for fire hydrant is to be installed with a branch valve, a mechanical joint fire hydrant anchoring tee with rotating gland shall be installed in the main line to secure the valve. For these anchor tee fittings, AWWA C153 may accepted in lieu of AWWA C110.
8. All nuts, bolts, and washers shall be Corten or stainless steel.
9. All fitting joints shall be furnished with two silicon bronze serrated wedges or conductive gaskets at each joint. The wedges shall be installed at 180-degree intervals after the joint is completed.
10. All applicable sections of DUCTILE IRON WATER MAIN shall also apply to this specification.
11. All caps/plugs for dead end water main shall be restrained. A thrust block shall also be installed.
12. Acceptable fitting manufacturers include American, US Pipe, McWane, or Tyler Union.
13. All fittings, appurtenances and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details). Contractor shall provide certification that all products meet these requirements.

Method of Measurement. The work under this item as described herein will measured in pounds of each DUCTILE IRON WATER MAIN FITTINGS installed. Measurement will include only the weight of the raw fitting and does not include retainer glands, restrained joint locking segments, nuts, bolts, and any other appurtenances or accessories that may be required for a complete and working installation.

DUCTILE IRON WATER MAIN will be measured and paid separately.

Basis of Payment. This work will be measured and paid for at the contract unit price per POUND for DUCTILE IRON WATER MAIN FITTINGS and includes all water main fittings shown on the plans and any additional water main fittings, including all excavation, native backfill, disposal, sheeting or shoring, and all labor, equipment, and materials required for a complete and fully operational installation.

WATER MAIN TO BE ABANDONED

Description. Work under this item will include the abandonment and filling of water main after the piping has been removed from service at locations indicated on the Plans at the specified size or directed by the Engineer. This work shall include all bends, fittings, valves, water services (4-inch diameter and smaller) and all other appurtenances related to the piping to be abandoned.

General Requirements. All abandoned piping shall be completely filled with Controlled Low Strength Material (CLSM). Prior to the start of work under this item, the following items shall be approved by the Engineer: CLSM mix design, access plan and construction details for filling and venting locations, CLSM placement sequence and finishing details. The water main abandonment shall be performed from a minimum of two locations. No additional payment for excavation, etc. shall be made if more than two (2) locations are required. Prior to the start of filling, any required venting points shall be installed. CLSM shall be placed in a manner that completely fills the water main pipe between the access points, regardless of piping elevation differences between access points. All pipes to be abandoned under this item shall have all openings sealed with a one (1) foot minimum length concrete mortar plug. Any required pipe cutting is included in this pay item. Any opening created in the existing pipe, including fill or vent points, shall be completely filled with CLSM and plugged. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

Any water services lines (4-inch diameter and smaller) that are connected to the water main to be abandoned shall also be filled with flowable fill and abandoned in place. This water service abandonment work shall not be measured and paid for separately but shall be included in the cost and measurement of abandoning the water main to which it is connected. As an example, see the existing water service line (approx. Sta. 57+16, RT 39') on Water Main Key Map Plan View No. 2. Existing water buffalo (or service) boxes shall be abandoned in place a minimum of 2' below the proposed grade. If necessary, the top 2' of the Buffalo (or service) box shall be removed and properly disposed. This work is included in the cost of WATER MAIN TO BE ABANDONED. Work shall be coordinated with all Building Removal work (Case I through IV), which includes only the disconnection of existing utilities (including water service).

Any necessary equipment, saw cutting, and excavation required to access the existing water main (or service) and to perform all work under this item shall be included. Contractor will not be paid for WATER MAIN TO BE ABANDONED that is subsequently removed (WATER MAIN REMOVAL). If the Contractor chooses to perform the construction in this manner, only payment will be made for WATER MAIN REMOVAL.

Method of Measurement. This work will be measured in feet along the centerline of the abandoned pipe at the ground level, and the measurement shall extend through fittings and valves. The length will include all concrete mortar plugs placed and CLSM placed within pipes to remain.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATER MAIN TO BE ABANDONED, of the diameter specified, and includes all labor, equipment, and materials necessary to complete the work as described, including excavation, native backfill, sheeting or shoring, access locations, venting points, concrete mortar plugs, and CLSM. Concrete mortar and CLSM will not be paid for separately but are included in the cost of this pay item.

TRENCH BACKFILL will be paid for separately.

WATER MAIN REMOVAL

Description. This work shall consist of complete removal of the existing water main piping shown on the plans or as directed by the Engineer.

General Requirements. All water shutdowns shall be coordinated with the City of Decatur. The area of excavation required to expose the water main being removed shall be backfilled in accordance with IDOT requirements. All work necessary to remove the water main will be included in the cost of the pay item and no further compensation will be provided. Removal shall include the removal and proper disposal of any piping, fittings, bends, valves, existing thrust blocks, and appurtenances, as required for construction.

If the existing piping is encased (e.g. in a steel casing pipe), the removal shall include both the casing and carrier pipe. The cost of the casing pipe removal will be included in the cost of the carrier pipe being removed.

Contractor will not be paid for WATER MAIN REMOVAL when the proposed water main replaces an existing water main within the same trench and/or excavated area. In these cases, the removal and disposal of the water main shall be included DUCTILE IRON WATER MAIN pay item.

For work within 50’ of existing railroad track center line, the Contractor is responsible to meet all railroad requirements including but not limited to permitting, sheeting, shoring, dewatering and excavation. The Contractor shall assume that the proposed excavation will take place within the “Zone of Influence” and/or “Theoretical Embankment Line.

Method of Measurement. This work will be measured in feet along the centerline of the removed pipe at the ground level. If the existing piping is encased, the Contractor will only be paid at the contract unit price for the carrier pipe being removed. Any casing pipe removal will be included in the cost of carrier pipe removal. The removal and disposal of any material filling (CLSM, sand, pea gravel, etc.), whether installed by the Contractor or by others, shall be included in WATER MAIN REMOVAL.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for WATER MAIN REMOVAL, regardless of size, which price shall include excavation, native backfill, sheeting or shoring, and all labor, equipment, and materials necessary to perform said work.

TRENCH BACKFILL will be paid for separately.

WATER MAIN LINE STOP

Description. This work shall consist of all labor, material and equipment required to install a water main line stop at locations indicated on the Plans or directed by the Engineer. It shall be performed in accordance with applicable portions of the Standard Specifications for Water and Sewer Main Construction in Illinois and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein. All valves, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. The work shall include all necessary equipment necessary to make the line stop. Any fittings, sleeves, piping, valves, or any other appurtenance required for the line stop, shall be included. The City shall be notified, and a tentative installation schedule of operations shall be submitted to the City a minimum of 48 hours before any shut down of the water system can be made. No other water main shutdowns or disruption to the system will be permitted during the line stopping work. The actual sequence of construction installation shall be discussed and scheduled at a pre-construction meeting with the Contractor, Engineer and the City.

It shall be the responsibility of the Contractor to verify that flow rates and pressures in the existing water main are within acceptable ranges for the line stopping operation and shall coordinate required adjustments with the City and the Engineer. Contractor shall power wire brush and grind the exterior of the main to remove any debris, corrosion deposits, or other surface irregularities that might interfere with proper seating and sealing of each line stop fitting against each main. Any structural defects in main, service connections, appurtenances, adjacent utilities, etc., that could interfere with the line stop installation shall be immediately reported to Engineer.

The tapping sleeve shall be full sleeve, Mueller or Ford Meter Box, stainless-steel throughout (including the body and flange), and rated for 150 psi (minimum) working pressure. Provide a flanged outlet with a stainless-steel test plug, nuts, bolts, and washers.

Line stops are to be performed by a qualified subcontractor. Subcontractor shall have a minimum of 10 years' experience performing line stops, and shall have recent, direct experience performing line stops on the size and type of pipeline being line stopped.

Contractor shall pour a minimum of 12-inches of concrete under the tapping sleeve for structural support of the sleeve, piping, and other appurtenances. The Contractor shall also obtain the services of an Illinois Licensed Structural Engineer to design the required thrust block restraint system for all linestops. The design shall be submitted for review and approval by the Engineer prior to construction.

All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the required access pits is included under this item. For work within 50' of existing railroad track center line, the Contractor is responsible to meet all railroad requirements including but not limited to permitting, sheeting, shoring, dewatering and excavation. The Contractor shall assume that the proposed excavation will take place within the "Zone of Influence" and/or "Theoretical Embankment Line.

The tapping procedure, sequence and schedule shall be submitted for approval to the Engineer. Line stops will be performed under the supervision of the City.

Method of Measurement. The work will be measured for payment in place for each line stop, at the specified size, made to an existing water main.

Basis of Payment. This item shall be paid for at the contract unit price per EACH for WATER MAIN LINE STOP, of the size specified, which shall be payment in full for all labor, equipment, materials, and all other work required to complete the installation of the line stop including pipe, valve, fittings, sleeve, excavation, sheeting or shoring, thrust restraint, native backfill and all appurtenances necessary for a complete installation. All concrete for the linestop shall be included in the WATER MAIN LINE STOP and will not be paid for separately. Any piles, sheeting, or other structural reinforcements required for the thrust block shall also be included in the cost of the WATER MAIN LINE STOP.

TRENCH BACKFILL will be paid for separately.

WATER SERVICE LINE RELOCATED

Description. This work shall consist of providing labor, equipment and materials required in order to relocate water services 2-inch in diameter and smaller due to unforeseen utility conflicts, when directed by the Engineer.

General Requirements. The work shall be constructed in accordance with the applicable sections of the Section 40 and 41 of the "Standard Specifications for Water and Sewer Main Construction in Illinois" the latest addition, in the details shown in the plans, and the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein. All pipe, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

The water service piping material shall be copper Type K piping. When ordered by the Engineer in writing, the Contractor is required to complete the relocation of the water service at the required size determined by the City at no additional cost, which includes all excavation, native backfill, removal of existing water service, disposal, and all labor, equipment, and materials to install the relocated water service, fittings, couplings, and appurtenances. Removal of the existing water service will not be paid for separately but shall be included in this pay item. Contractor shall meet all IEPA water/sewer separation requirements. Prior to the assembly, all piping and fittings shall be swabbed with a chlorine solution in accordance with AWWA disinfection requirements. For pressure testing, the water main shall be brought to normal system pressure and all joints shall be visually inspected for leakage. Any leaks shall be repaired by the Contractor at no additional cost. Contractor shall provide any necessary tapping valves, equipment, and materials to shut down the existing water service. Coordinate with the property owner as needed for construction. For flushing, the Contractor shall coordinate with the local property owner and utilize the existing plumbing. The City will operate all existing valves, and the Contractor shall be responsible for all coordination of the flushing work. The Contractor shall provide all required taps, outlets, piping, valves to meet AWWA disinfection requirements.

If pressure connections and/or linestops are required, these items will be paid for separately, in accordance with the PRESSURE CONNECTION and WATER MAIN LINE STOP pay items. All other ancillary work that may be required to utilize these pay items in conjunction with the WATER SERVICE LINE RELOCATED work shall be included in this pay item.

Refer to Detail Sheets in the Drawings for additional detail and requirements.

Method of Measurement. The work will be measured in feet along the centerline of the relocated water service at the ground level and shall include all fittings used.

Basis of Payment. This work as described above shall be paid for at the contract unit price per FOOT for WATER SERVICE LINE RELOCATED, which price shall be payment in full for all labor, equipment, and materials, necessary to perform said work, including excavation, pipe, sheeting or shoring, polyethylene encasement, gaskets, restrained joints, sleeves, fittings, pressure testing, flushing, native backfill and disinfection required for a complete and operational installation approved by the Engineer and the City. Work also includes the removal and proper disposal of excavated material and existing water service piping and fittings.

ABANDON EXISTING FORCE MAIN, FILL WITH CLSM

Description. Work under this item will include the filling of previously abandoned utility piping with CLSM at locations indicated on the Plans or directed by the Engineer. Records provided by the utility owner indicate that this force main has already been abandoned and is no longer in service. This does not include the abandonment of water main, which shall be paid under WATER MAIN TO BE ABANDONED. This work shall include all bends, fittings, and all other appurtenances related to the piping to be filled.

General Requirements. All existing or previously abandoned piping shall be completely filled with Controlled Low Strength Material (CLSM).

Prior to the start of work under this item, the following items shall be approved by the Engineer: Controlled Low Strength Material mix design, access plan and construction details for filling and venting locations, CLSM placement sequence and finishing details.

The filling shall be performed from a minimum of two locations. No additional payment for excavation, etc. shall be made if more than two (2) locations are required. Prior to the start of filling, any required venting points shall be installed. CLSM shall be placed in a manner that completely fills the utility piping between the access points, regardless of piping elevation differences between access points. Filling shall be from the upstream end to the downstream end of the piping. Pumping shall be continued until all air is expelled and the piping is completely full of flowable fill.

Cleanouts and structures shall be removed to a minimum depth of 3' below proposed grade. Cleanouts shall be filled with CLSM. Structures shall be backfilled as required by the Engineer with either native backfill or TRENCH BACKFILL. All pipes to be filled under this item shall have all openings sealed with a one (1) foot minimum length concrete mortar plug. Any required pipe cutting is included in this pay item.

Any opening created in the existing pipe, including fill or vent points, shall be completely filled with CLSM and plugged. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

Any necessary equipment, saw cutting, and excavation required to access the existing pipe and to perform all work under this item shall be included.

Contractor will not be paid for any ABANDON EXISTING FORCE MAIN, FILL WITH CLSM that is subsequently removed (REMOVAL AND DISPOSAL OF EXISTING FORCE MAIN). If the Contractor chooses to perform the construction in this manner, only payment will be made for REMOVAL AND DISPOSAL OF EXISTING FORCE MAIN.

If the abandoned force main has already been filled, either with CLSM, sand or other approved material, then the abandoned line is not required to be filled with CLSM. The quantity of the pay item shall be 0.

The Contractor's attention is especially called to the ABANDON EXISTING FORCE MAIN, FILL WITH CLSM just north of the NSRR tracks in Brush College Road (see Water Main Key Map Plan View No. 3). The 16" abandoned force main at this location is encased in a 30" steel casing pipe. The Contractor will be required to access the existing, abandoned casing pipe by potholing or other Contractor means and methods that are approved by NSRR. Once the casing pipe has been accessed, the Contractor shall drill, cut, or use other Contractor means and

methods that are approved by NSRR to access the existing casing pipe and force main in order to perform the abandonment. The above approach will assist the Contractor in performing the abandonment within the right-of-way limits shown on the Drawings.

Method of Measurement. This work will be measured in feet along the centerline of the abandoned utility pipe at the ground level, and the measurement shall extend through fittings and valves. The length will include all concrete mortar plugs placed and CLSM placed within pipes to remain.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for ABANDON EXISTING FORCE MAIN, FILL WITH CLSM, and includes all labor, equipment, and materials necessary to complete the work as described, including excavation, native backfill, sheeting or shoring, access locations, venting points, concrete mortar plugs, and CLSM. Concrete mortar and CLSM will not be paid for separately but are included in the cost of this pay item.

TRENCH BACKFILL will be paid for separately.

CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL

Description. This work shall consist of furnishing and placing controlled low-strength material (CLSM) to backfill the space between the sides of the excavation and the outside of proposed catch basins, manholes, inlets or drainage structures at the locations noted on the plans or as directed by the Engineer. This work shall be performed in accordance with Section 593 of the Standard Specifications, except as herein modified.

Add the following to Article 593.04 of the Standard Specifications:

(c) Installation of proposed Catch Basins, Manholes, Inlets and Drainage Structures. When backfilling the space between the sides of the excavation and the outside of proposed catch basins, manholes, inlets or drainage structures, the CLSM shall be distributed evenly in the space between the sides of the excavation and the outer surface of proposed structure.

Add the following to Article 593.05 of the Standard Specifications:

(3) Catch Basins, Manholes, Inlets and Drainage Structures. When CLSM is specified for backfilling the space between the sides of the excavation and the other surface of proposed catch basins, manholes, inlets or drainage structures, the maximum payment volume (V) will not exceed the volume computed by multiplying the height (h) of the structure as measured from subgrade elevation to the bottom of structure base elevation by the difference between the circular area of the outside diameter (OD) of the structure plus 4 feet and the circular area of the outside diameter (OD) of the structure.

$V = (h ((\pi (OD+4)^2/4 - (\pi OD^2/4))) / 27$

Revise 593.06 of the Standard Specifications to read:

593.06 Basis of Payment. This work will be paid for at the contract unit price per CUBIC YARD for CONTROLLED LOW-STRENGTH MATERIAL, SPECIAL, which price shall include all labor, equipment and materials necessary to complete the work.

PIPE DRAINS 4" (SPECIAL)

Description: This work shall be in accordance with the details shown in the plans, Section 601 of the Standard Specifications and this special provision. This work shall include field verifying the locations of all existing pipe drains and pipe underdrains, connections to existing storm sewer and concrete headwall outlets for areas along Brush College Road and Faries Parkway where existing pavement is to remain.

In areas where pavement is to remain, the existing pipe drains and pipe underdrains shall not be damaged. Any damage to pipe drains and pipe underdrains to remain in place shall be repaired at the Contractor's expense.

New pipe drains shall be connected to:

1. Existing pipe underdrains to provide outlet of existing pavement underdrains into new or existing drainage structures.

2. New pipe underdrains for structures as shown on the plans or as directed by the Engineer to provide outlet from pipe underdrain for structures top new or existing drainage structures.

At locations shown on the plans or as directed by the Engineer, new pipe drains shall be connected to a drainage structure. The connection shall be made by coring or forming a hole of the required size in the drainage structure. The protrusion of the proposed pipe drain into the drainage structure or culvert must not exceed one inch. After the pipe drain is installed, the drainage structure or culvert shall be mortared with a non-shrink concrete grout or fitted with a manufactured collar approved by the Engineer to provide a watertight seal.

Materials. The storm sewer shall be Polyvinyl Chloride (PVC) Pipe, in accordance with Article 1040.03 (a) of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for PIPE DRAINS 4" (SPECIAL) which price shall include the field verification, backfill material as shown in Standard 601001 and all connections to existing pipe underdrain, proposed pipe underdrains for structures and to new or existing drainage structures.

Removal and disposal of the existing pipe underdrains, connection and concrete headwalls for pipe drains will not be paid for separately, but will be considered included with Pavement Removal.

INLETS, TYPE B, WITH TYPE 3V FRAME AND GRATE

Description. This work shall be performed in accordance with Section 602 and 604 of the Standard Specifications and as modified below.

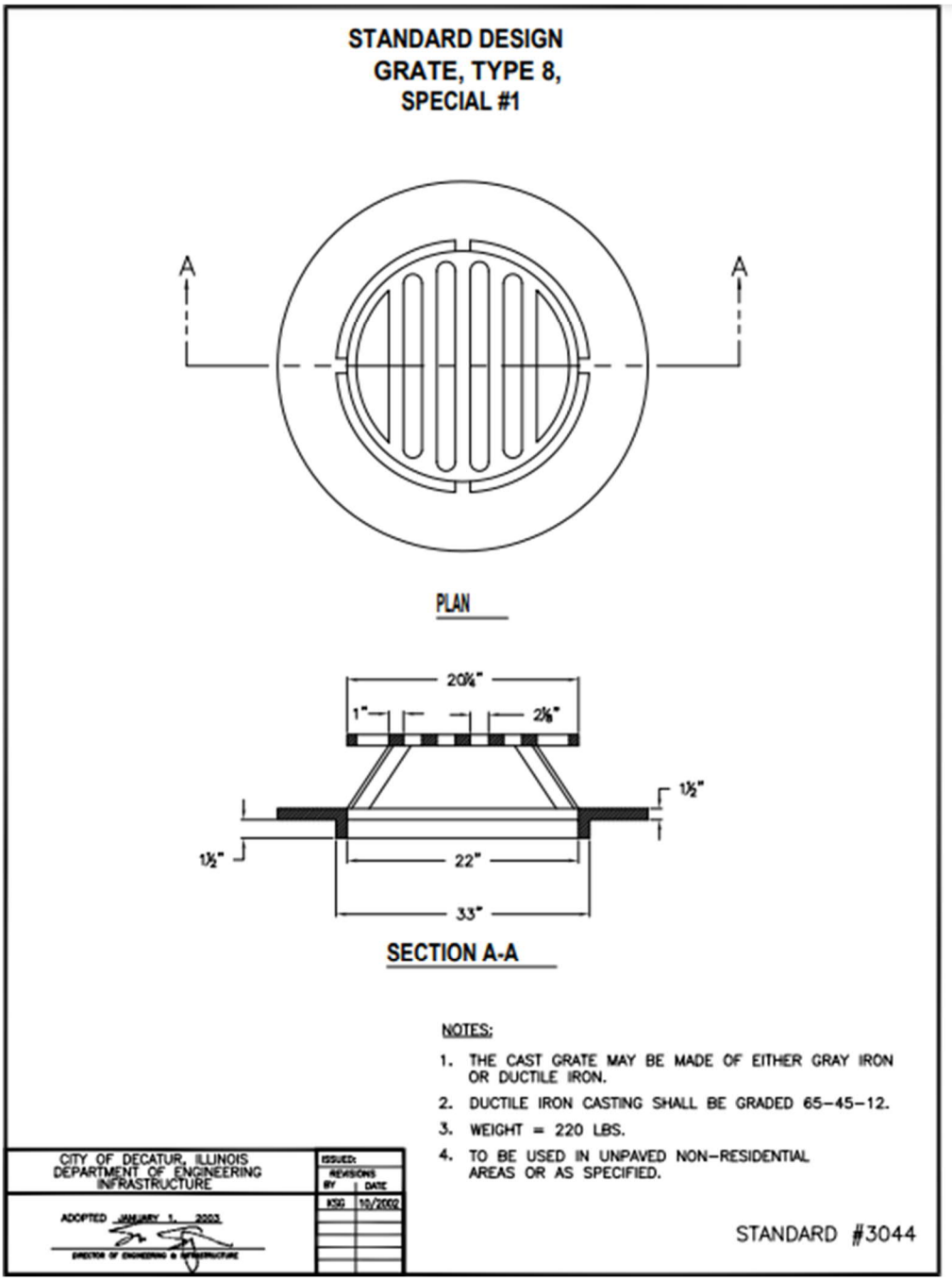
The frame and grate shall be Type 3V according to Highway Standard 604011.

Basis of Payment. This work will be paid for at the contract unit price each for INLETS, TYPE B, WITH TYPE 3V FRAME AND GRATE, which price shall include all labor, equipment, and materials necessary to complete the work.

CATCH BASINS OR MANHOLES, WITH SPECIAL FRAME AND GRATE

Description. This work shall be performed in accordance with the applicable portions of Section 602 except as follows:

Special frames and grates for structures listed on the plans shall be according to City of Decatur Standard #3044 Type 8, Special #1.



Basis of Payment. This work will be paid for at the contract unit price per each for CATCH BASINS or MANHOLES, of the type and diameter specified, WITH SPECIAL FRAME AND GRATE, which shall include all equipment, labor and materials to complete the work.

MANHOLES, SANITARY, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID

Description. This work shall consist of constructing sanitary manholes at the locations shown on the plans or as directed by the Engineer.

General Requirements. Perform all work in accordance with City of Decatur standards, the latest edition of the 10 State Standards for Wastewater, and the latest addition of Standard Specifications for Water and Sewer Main Construction in Illinois, all except as noted herein.

Manhole sections to be constructed of reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923. When required and at no additional cost, utilize a drop stack type manhole.

All masonry joints in the structure shall be sealed using premium rope mastic. Adjusting rings on the casting shall be sealed using 2 loops of ¾" premium rope mastic.

Set precast structures bearing firmly and fully on crushed stone bedding. Assemble multi-section structures by lowering each section into excavation. Remove foreign materials from joint surfaces and verify sealing materials are placed properly.

Provide cover and Type 1 frame (Neenah or East Jordan). ASTM A48, Class 30B, Cast iron construction, indented top design, closed cover design; sealing gasket, and in accordance with the Drawing details.

Final upward adjustment to grade shall be made using precast concrete adjusting rings. If required adjustment is 12" or greater (and not greater than 3 adjusting rings), additional manhole sections shall be installed below the cone. Downward adjustment shall be accomplished by removing existing masonry units to adjust to final grade.

For the sewer pipe connection seal, use a resilient type connector (A-lock press wedge, Kor-n-seal, Res-seal, or Link Seal), in accordance with ASTM C-923, to be used to connect pipes to all manholes. Install in accordance with the manufacturer's instructions.

Seal the outside of the manhole cone section to the grade rings and manhole frame with a heat shrinkable wrap or a compressible rubber seal (i.e. chimney seals) with 304 stainless steel compression bands (CCI WrapidSeal Manhole Encapsulation System, SSI Infi-shield or Cretex). Install in accordance with the manufacturer's instructions.

Seal the outside of the manhole section joints (external joint seals) with a flexible, watertight seal with 304 stainless steel compression bands (MarMac MacWrap, Cretex Wrap or CCI). Install in accordance with the manufacturer's instructions.

Provide plastic coated steel rung steps, ¾-inch diameter, 12-inch-wide, 12 inch on center vertically, formed integral with manhole wall.

Testing requirements: After completion of manhole construction and backfill is in place, inspect all manholes for leakage and repair all visible leaks. After repairing all leaks, and during pipe testing, re-inspect all manholes for leakage and repair all visible leaks. Testing of sanitary manholes shall be in accordance with either ASTM C969-94 (Infiltration and Exfiltration Acceptance Testing) or ASTM C1244-93 (Vacuum Testing).

Testing shall be in accordance with Illinois Administrative Code Title 35, Subtitle C, Chapter II, Part 370 – Recommended Standards for Sewerage Works; and Standard Specifications for Water & Sewer Construction in Illinois, latest edition.

Method of Measurement. This work will be measured per each manhole installed, regardless of manhole depth.

Basis of Payment. This work will be paid for at the contract unit price per EACH for MANHOLES, SANITARY, 4'-DIAMETER, TYPE 1 FRAME, CLOSED, which price shall include excavation, native backfill, sheeting or shoring, disposal, precast concrete manhole base and sections, frame and cover, chimney and joint seals, concrete, benching, piping and fittings for a drop stack manhole, forming and sealing pipe inlets and outlets, testing, and bedding for a complete installation.

TRENCH BACKFILL will be paid for separately.

INLETS, TYPE A, WITH SPECIAL FRAME AND GRATE

Description. This work shall be performed in accordance with Section 602 and 604 of the Standard Specifications and as modified below.

The special frame and grate to be used over the Type A Inlet, shall utilize a 24” square grate with a frame dimensions to be adequately supported by the Type A inlet. The grate shall meet all ADA requirements including grate opening size, orientation, and placement and have a min flow area of 150 square inches.

Basis of Payment. This work will be paid for at the contract unit price EACH for INLETS, TYPE A, WITH SPECIAL FRAME AND GRATE, which price shall include all labor, equipment, and materials necessary to complete the work.

TEMPORARY INLET

Description. This work shall consist of furnishing, installing, maintaining and removing temporary Inlets complete with frames, grates and lids of the type specified and at the locations shown in the plans for the purpose of providing positive pavement drainage during stages of construction. This work shall be performed in accordance with Section 602 of the Standard Specifications.

Temporary Inlets, Type A shall meet the requirements of Illinois Department of Transportation Highway Standard 602301. Temporary Inlets, Type B shall meet the requirements of Illinois Department of Transportation Highway Standard 602306.

The Contractor is responsible for determining the appropriate rim elevations of the temporary structures in order for them to properly drain during each Maintenance of Traffic Stage in which the structures are in use. Concrete adjusting rings may be used to bring temporary structures to grade, with the approval of the Engineer.

The Contractor shall tie temporary storm sewers to the appropriate inlets at the side of the temporary pavement or at the appropriate local low point. The Contractor is responsible for supplying and installing temporary sewer pipe as required and/or functioning mission couplings as needed to provide a watertight connection between the storm sewer and the temporary drainage structure. Any storm sewers that are damaged during construction shall be replaced in kind by the Contractor at no additional cost to the contract.

Temporary Inlets may be re-used with the approval of the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per EACH for TEMPORARY INLET, regardless of the type or diameter specified, which shall include Frames, Grates and Lids, couplings and all costs for installation and removal of the temporary structures.

CATCH BASINS TO BE ADJUSTED (SPECIAL)

Description. This work shall consist of adjusting and performing minor repairs of existing catch basins at a location shown on the plans or as directed by the engineer.

Construction Requirements. This work shall consist of the removal of the frame, repairing or replacing adjusting rings, adding class SI concrete extension to match existing catch basin geometry to new elevations, mortaring the structure and reinstalling the frame as noted in the plans for each location and as directed by the engineer. The catch basins shall be adjusted to the elevation shown in the plans or otherwise as directed by the engineer. The work shall follow the applicable portions of Section 603 of the Standard Specifications and the details in the plans for frames and lids adjustment with milling.

Method of Measurement. Existing catch basins adjusted will be measured for payment per each.

Basis of Payment. This work will be paid at the contract unit price per EACH for CATCH BASINS TO BE ADJUSTED (SPECIAL) of the type specified, which price shall be payment in full for all labor, materials, and equipment necessary including any Class SI necessary to complete the work.

SANITARY MANHOLES TO BE ADJUSTED

Description. This work shall consist of adjusting sanitary manholes at the locations shown on the plans or as directed by the Engineer.

General Requirements. Perform all work in accordance with City of Decatur or the Sanitary District of Decatur standards, the latest edition of the 10 State Standards for Wastewater, and the latest addition of Standard Specifications for Water and Sewer Main Construction in Illinois, all except as noted herein.

Contractor shall provide a new cone section (as needed for construction), precast concrete adjusting rings (maximum of two in number, 6-inches in total height), type 1 frame, and bolt down lid (stamped with SANITARY DISTRICT OF DECATUR or as otherwise required by the Sanitary District), all in accordance with Sanitary District of Decatur Requirements.

Manhole precast concrete sections to be constructed of reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923. All masonry joints in the structure shall be sealed using premium rope mastic. Adjusting rings on the casting shall be sealed using 2 loops of ¾" premium rope mastic.

Seal the outside of the manhole cone section to the grade rings and manhole frame with a heat shrinkable wrap or a compressible rubber seal (i.e. chimney seals) with 304 stainless steel compression bands (CCI WrapidSeal Manhole Encapsulation System, SSI Infi-shield or Cretex). Install in accordance with the manufacturer's instructions.

Unless otherwise noted, meet all requirements of IDOT Standard Specifications for Road and Bridge Construction (latest edition) Section 602.

Method of Measurement. This work will be measured per each manhole adjusted.

Basis of Payment. This work will be paid for at the contract unit price per EACH for SANITARY MANHOLES TO BE ADJUSTED, which price shall include excavation, native backfill, sheeting or shoring, disposal, precast concrete sections, frame and cover, chimney seals, to indicated depth, manhole cleaning, bedding, and native backfill for a complete installation.

TRENCH BACKFILL will be paid for separately.

SANITARY MANHOLES TO BE REMOVED

Description. This work shall consist of removing sanitary manholes at locations indicated on the Plans or directed by the Engineer in accordance with the applicable requirements of Section 605 in the IDOT Standard Specifications and the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specification and as modified herein:

General Requirements. Contractor shall remove and dispose of the manhole structure to a minimum depth of 4' below grade. If required for construction, additional structure shall be removed at no additional cost to the contract. The lid and frame shall be salvaged and delivered to the utility owner. If required, any existing pipe openings shall be securely sealed with a one (1) foot minimum length concrete mortar plug.

Excavation and proper disposal of materials required to remove the manhole will be included in this work and shall be disposed of per Article 202.03. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work will be included in the cost of the pay item, and no further compensation will be provided.

Method of Measurement. This work shall be measured per each manhole to be removed.

Basis of Payment. This work shall be paid for at the contract unit price EACH for SANITARY MANHOLES TO BE REMOVED which price shall include removing and properly disposing of the existing structure, pipe sealing, excavation, native backfill and all labor, equipment, and materials necessary to perform said work. Salvaging and return of any materials shall be included in this pay item.

TRENCH BACKFILL will be paid for separately.

SANITARY MANHOLES TO BE RECONSTRUCTED WITH NEW TYPE 1 FRAME, CLOSED LID

Description. This work shall consist of reconstructing sanitary manholes at the locations shown on the plans or as directed by the Engineer.

General Requirements. Perform all work in accordance with City of Decatur or the Sanitary District of Decatur standards, the latest edition of the 10 State Standards for Wastewater, and the latest addition of Standard Specifications for Water and Sewer Main Construction in Illinois, all except as noted herein.

Contractor shall provide a new sanitary manhole barrel section, cone section, precast concrete adjusting rings (maximum of two in number, 6-inches in total height), type 1 frame, and bolt down lid (stamped with SANITARY DISTRICT OF DECATUR or as otherwise required by the Sanitary District), all in accordance with Sanitary District of Decatur Requirements.

Manhole precast concrete sections to be constructed of reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923. All masonry joints in the structure shall be sealed using premium rope mastic. Adjusting rings on the casting shall be sealed using 2 loops of ¾" premium rope mastic.

Seal the outside of the manhole cone section to the grade rings and manhole frame with a heat shrinkable wrap or a compressible rubber seal (i.e. chimney seals) with 304 stainless steel compression bands (CCI WrapidSeal Manhole Encapsulation System, SSI Infi-shield or Cretex). Install in accordance with the manufacturer's instructions.

Seal the outside of the manhole section joints (external joint seals) with a flexible, watertight seal with 304 stainless steel compression bands (MarMac MacWrap, Cretex Wrap or CCI). Install in accordance with the manufacturer's instructions.

Unless otherwise noted, meet all requirements of IDOT Standard Specifications for Road and Bridge Construction (latest edition) Section 602.

Remove any existing concrete or concrete slabs located on top of the existing manhole

Method of Measurement. This work will be measured per each manhole reconstructed.

Basis of Payment. This work will be paid for at the contract unit price per EACH for SANITARY MANHOLES TO BE RECONSTRUCTED WITH NEW TYPE 1 FRAME, CLOSED LID, which price shall include excavation, native backfill, sheeting or shoring, disposal, precast concrete sections, frame and cover, chimney and joint seals, to indicated depth, manhole cleaning, bedding, and native backfill for a complete installation.

TRENCH BACKFILL will be paid for separately.

VALVE BOX

Description. This work shall consist of installation of valve boxes at all water valve locations shown on the plans or as directed by the Engineer. All boxes, appurtenances, and accessories shall meet IDOT's domestic requirements (see Article 106 CONTROL OF MATERIALS for additional details).

General Requirements. Cast iron valve boxes shall be provided for all valves. The valve boxes shall be provided with screw type adjustable boxes, marked "Water", approximately 5 inches in diameter, and so constructed that the removable cover will not be displaced by vehicular travel over the box. Boxes shall be provided with a hood at the base of the lower section to relieve any strain on the valve bonnet. They shall extend from 36 inches to 54 inches unless otherwise required. The valve boxes shall be new and secured from responsible manufacturers (Clow, Tyler Union, or East Jordan).

Valve boxes shall be set so that the base will be two (2) inches or more above the flanged joints of the valve dome. The operating nut of the valve shall be in line with the hub or upper part of the valve box base where it is connected with the upright jacket. After the valve boxes have been placed in proper position, they shall be backfilled with appropriate material and thoroughly hand tamped up to the surface of the ground. In no case shall the boxes be allowed to shift from a perpendicular position.

For water valves that require a bypass valve, two (2) valve boxes shall be installed, and the Contractor shall be paid for each box.

Any valve box which has been moved from its original position by direct or indirect actions of the Contractor, so as to prevent the operation of the valve, must be reset and/or replaced as applicable, by the Contractor. This work will be included in this pay item and not considered for additional payment. Any valve key extension or stem, which has been damaged so that it is inoperable, must also be replaced, and will included in this pay item and no additional payment will be allowed.

Method of Measurement. This work will be measured at the contract unit of each valve box installed.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for VALVE BOX, which price shall include all labor, equipment, and materials, including excavation and native backfill necessary to perform said work.

WATER VALVES and TRENCH BACKFILL shall be paid for separately.

VAULTS TO BE REMOVED

Description. This work shall consist of removing valve vaults, communication vaults, electrical vaults, piping, conduit and appurtenances at locations indicated on the Plans or directed by the Engineer in accordance with the applicable requirements of Section 605 in the IDOT Standard Specifications and the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specification and as modified herein:

General Requirements. Contractor shall completely remove and dispose of the entire concrete vault structure to its full depth. The lid and frame shall be salvaged and delivered to the utility owner. If required, any existing pipe or conduit openings shall be securely sealed with a one (1) foot minimum length concrete mortar plug.

Excavation and proper disposal of materials required to remove the vault will be included in this work and shall be disposed of per Article 202.03. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work will be included in the cost of the pay item, and no further compensation will be provided.

Method of Measurement. This work shall be measured per each vault to be removed.

Basis of Payment. This work shall be paid for at the contract unit price EACH for VAULTS TO BE REMOVED which price shall include removing and properly disposing of the existing structure, pipe sealing, excavation, native backfill and all labor, equipment, and materials necessary to perform said work. Salvaging and return of any materials shall be included in this pay item.

TRENCH BACKFILL will be paid for separately.

VALVE BOXES TO BE REMOVED

Description. This work shall include all required excavation and the removal and proper disposal of existing valve boxes, at locations shown on the plans or when directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specifications

General Requirements. . All water shut downs shall be coordinated with the City. The Contractor shall remove and properly dispose of the existing valve box. The void space shall be backfilled with an Engineer approved material and compacted to the satisfaction of the Engineer.

Excavation and disposal of materials required to remove the box will be included in this work and shall be disposed of per Article 202.03. Valve boxes shall be removed to the depth as directed by the Engineer being backfilled and compacted to grade. The remainder of the excavated area shall be backfilled in accordance with Section 208. All work and materials necessary, except for TRENCH BACKFILL, will be included in the cost of the valve boxes to be removed pay item and no further compensation will be provided.

Method of Measurement. This work shall be measured per each valve box to be removed.

Basis of Payment. The removal and disposal of existing water valves and valve boxes will be paid for at the contract unit price EACH for VALVE BOXES TO BE REMOVED, which price shall include all labor, material, disposal and equipment necessary to complete the work, including disposal, excavation and native backfill.

TRENCH BACKFILL will be paid for separately.

CORRUGATED MEDIAN REMOVAL

This work shall consist of removing and disposing the existing corrugated median in accordance with the applicable portions of Section 440 of the Standard Specifications at the locations shown on the plans and as directed by the Engineer.

Method of Measurement. The Portland cement concrete corrugated median removal will be measured for payment according to the requirements of Article 440.07 (a) or (b) of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per SQUARE FOOT for CORRUGATED MEDIAN REMOVAL, which price includes all labor, material and equipment necessary to remove and dispose of the corrugated median surfaces as shown in the plans or as directed by the Engineer.

CONCRETE THRUST BLOCKS (SPECIAL)

Description. This work shall consist of concrete thrust blocks installed at locations shown on the Plans or as directed by the Engineer.

General Requirements. This work shall be performed in accordance with the City of Decatur Standard Specifications for Water Main Construction, all except as noted herein.

Concrete thrust blocks shall be constructed at plugs, tees, and bends of 3000 PSI concrete in accordance with section 41- 2.10 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, and City of Decatur Standard Specifications for Water Main Construction, except as noted herein. The concrete thrust blocks shall be a minimum of 12 inches thick. The concrete thrust blocks shall completely fill the space between the bends or fittings and the walls of the trench from 6 inches below the fittings to 12 inches above the fitting with no possible interference with the making or remaking of the joints. In addition to the concrete thrust blocking, joints, bends of 11 degrees and larger, and fire hydrants shall be restrained as detailed in DUCTILE IRON WATER MAIN.

The following materials are required; class SI concrete (2,500 PSI minimum), #5 reinforcement bars shall be used as shown on the Drawings, and 16-gauge sheet metal plates cut to size as shown on the Drawings.

Contractor shall follow the standard dimensions in the Drawings as close as possible, but in no case will a smaller dimensioned thrust block be acceptable. The bottom of the foundation for the block shall be clean and conform to the shape shown in the standard. The sides of the block shall conform to the shape shown on the standard. Forms are required to ensure the block configuration is being adhered to and to insure the retention of the concrete during its consolidation. The concrete shall not hinder the removal of any bolts or restrained appurtenances.

The back side of the block must be poured against undisturbed earth. If during the installation of the water main, additional earth has been excavated or disturbed, the concrete block shall be extended to an undisturbed area. No backfilling must take place until the poured concrete has taken its initial set. Reinforcement bars must be placed in proper position prior to pouring. Floating the bars into position will not be allowed.

Precast concrete blocks are acceptable for water mains 12-inch diameter and smaller, unless otherwise indicated in the drawings. Thrust blocks for water mains 16-inch diameter and larger shall be poured in place. For any PRESSURE CONNECTION, thrust block requirements are equivalent to those of tees.

Contractor shall obtain the services of an Illinois licensed structural engineer to design the thrust blocks required for caps/plugs and for other fittings noted in the Drawings. The design shall be submitted for review and approval by the Engineer prior to construction. Contractor shall be responsible any and all construction costs associated with the this thrust block, including, but not limited, concrete, reinforcement, piles, bracing, forms, thrust collars, and any other appurtenances required to install the thrust blocks.

Method of Measurement. The work will be measured for payment in place for each concrete thrust block provided, whether precast or poured in place.

Basis of Payment. This work shall be paid for at the contract unit price per EACH for CONCRETE THRUST BLOCKS (SPECIAL) which price shall be payment in full for performing the work herein and shall include all excavation, native backfill, sheeting or shoring, concrete forms, and all materials, labor and equipment necessary to perform the work as specified. Water main pipe, fittings, and TRENCH BACKFILL shall be paid for under other items.

TEMPORARY CHAIN LINK FENCE

Description. This work shall consist of furnishing, installing, maintaining and removing temporary chain link fence and gates. Temporary chain link fence with screening must be utilized around the private properties where portions of existing fence has been removed to accommodate construction of the project. Temporary chain link fence shall be used to provide access control at these private properties after the removal of the existing fence and gate and prior to the installation of the final fence and gate. The fence and gates are to be installed at locations as specified on the plans, or as directed by the Engineer Work under this item shall be performed according to section 664 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

General Requirements. The Temporary Chain Link Fence shall be at least 8 feet in height. The Temporary Chain Link Fence shall be self-standing without the need to disturb the surface ground by excavation. The stand shall be made of galvanized steel pipe or similar materials. The Temporary Chain Link Fence utilized shall include the anchorage of posts into existing concrete pavement. Each fence panel shall be made from welded wire panels or out of chain link fence materials. All the necessary bases, panel clamps and bolts shall be included and installed in accordance to the manufacturer specifications and to the satisfaction of the Engineer.

Existing fence connections shall be according to Article 664.10 of the Standard Specifications.

The Temporary Chain Link Fence shall utilize opaque fabric meshing affixed to the chain link fence face. The fabric meshing shall allow passage of air but shall contain dust and dirt. The mesh fabric shall be the full height of the fence and cover the entire length of the fence including any gated opening. The fabric meshing and fence shall not contain any advertisement. The color of the fabric shall be approved by the Engineer.

Method of Measurement. Temporary Chain Link Fence shall be measured for payment in feet, along the top of the fence from center to center of end posts, including the length occupied by gates.

Basis of Payment. Temporary Chain Link Fence will be paid for at the contract unit price per FOOT for TEMPORARY CHAIN LINK FENCE for which said price shall include all labor, materials, equipment, furnishing, installing, maintaining and incidentals necessary for placement and removal and disposal of the temporary chain link fence and gates.

CHAIN LINK FENCE, ATTACHED TO STRUCTURE

Description. This work shall consist of all labor, materials and equipment necessary for the mounting of a chain link fence on retaining walls, in accordance with the details and locations shown on the plans and the requirements of Section 664 of the Standard Specifications.

Construction Requirements. All posts shall be vertical when erected; the base plate must be welded to the post at the proper angle to account for any slope along the top of the wall.

The fence fabric shall be Type 1, Class D and shall be in accordance with Article 1006.27 of the Standard Specifications.

The steel base plate and fence posts shall be galvanized in accordance with the requirements of AASHTO M111.

The steel base plate shall meet the requirements of AASHTO M183.

Method of Measurement. Measurement shall be made along the top of the fence center to center of the end posts, in feet, completed in place.

Basis of Payment. The work under this item will be paid for at the contract unit price per FOOT for CHAIN LINK FENCE, (of the height specified) ATTACHED TO STRUCTURE, measured in place, which price shall be payment for all work necessary to complete the work as herein specified, as shown on the plans or as directed by the Engineer.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

Specific traffic control plan details and Special Provisions have been prepared for this contract. This work shall include all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

When traffic is to be directed over a detour route, the Contractor shall furnish, erect, maintain and remove all applicable traffic control devices along the detour route according to the details shown in the plans.

Method of Measurement. All traffic control indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

Basis of Payment. All traffic control and protection will be paid for at the contract LUMP SUM price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

CHANGEABLE MESSAGE SIGN, SPECIAL

This work consists of furnishing, installation, maintenance, and removal of Changeable Message Signs as directed by the Engineer, in accordance with Section 701 of the Standard Specifications, and as herein specified.

The Changeable Message Signs to be installed under this item are to be used as advanced notification of the impending work and to provide additional direction to trucks exiting the ADM facility. The Engineer will determine the messages to be displayed. Five (5) Changeable Message Signs will be required for this project, one for each approach to the project at Brush College Rd and East Faries Pkwy and one along Hubbard Ave near the ADM Probe Station exit. The Engineer will determine the exact locations of the Changeable Message Signs.

The Changeable Message Signs at the intersection of Brush College Rd and East Faries Pkwy shall be in place a minimum of the 14 days directly prior to and during the commencement of work that requires a lane closure, detour route or change in staging, unless approved by the Engineer. The Changeable Message Sign near ADM shall be in place for the duration of the project. Delays caused by failure to provide the required notice shall not be considered justification for a change in the working days allowed on the contract.

This work will be paid for at the contract unit price per CAL MO for each sign as CHANGEABLE MESSAGE SIGNS, SPECIAL.

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SIGN REMOVAL

This work shall consist of furnishing all labor, materials and equipment necessary to complete Sign Removal, and shall conform to section 724 of the Standard Specifications for Road and Bridge Construction.

The Contractor shall remove the existing signs and posts as specified in the contract plans. All removed signs and posts shall become the property of the Contractor.

This work shall be paid for at the contract unit price per EACH for SIGN REMOVAL.

UNDERGROUND CONDUIT, HDPE, 4" DIA.

Description. This work will consist of furnishing and installing HDPE conduit, fittings and accessories as part of the raceway whether laid in trench, bored and pulled in place or installed within a casing pipe (provided by others). Schedule 80 HDPE conduit, fittings and accessories shall be used when specified in the plans.

Construction Requirements. Furnishing and installing the conduits shall meet the requirements according to Section 810 of the Standard Specifications. Marker signs shall be installed in accordance with the requirements contained in Section 2.10, Marker Signs, of the "Specifications for Wireline Occupancy of Norfolk Southern Corporation Property".

Materials. High-density polyethylene (HDPE) conduit must conform to the requirements of the National Electrical Manufacturers Association Standard, Publication Number TC7. Conduit color will be determined by the Resident Engineer.

Tracer Wire. A tracer wire shall be installed with all HDPE conduit. One tracer wire shall be installed in each raceway.

The tracer wire shall be a direct burial rated, number 12 AWG (minimum) solid (.0808" diameter), steel core soft drawn high strength tracer wire. The wire shall have a minimum 380 pound average tensile break strength. The wire shall have a 30 mil high density yellow polyethylene (HDPE) jacket complying with ASTM-D-1248, and a 30 volt rating.

Connection devices used shall be as approved by the tracer wire manufacturer, except wire nuts of any type are not acceptable and shall not be used.

The cost of the tracer wire shall be included in the cost of the conduit and not paid for separately.

Method of Measurement. This work will be measured for payment in feet in place. Measurements will be made in straight lines along the centerline of the conduit between ends and changes in direction. Vertical conduit will be measured for payment. The vertical distance required for breakaway devices, barrier wall, concrete pedestals, etc. and the depth of any burial will be measured. Changes in direction assume perfect straight line runs, ignoring actual raceway sweeps.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for UNDERGROUND CONDUIT of the type and size as specified, which price will be payment in full for furnishing and installing the conduit and fittings complete.

LIGHTING CONTROLLER FOUNDATION

Description. The Contractor shall install a concrete foundation for a base mounted street light controller cabinet, as shown in the plans.

General Requirements. The work described under this item involves the contractor furnishing and installing all materials and equipment in order to construct a concrete foundation for a base mounted lighting controller cabinet.

Material. Concrete shall be Portland cement concrete, SI Class, meeting the requirements of Article 1020 of the Standard Specifications. Grounding and ground rods must meet the requirements of Standard Specification Section 806 and material specifications shall meet materials requirements in Article 1087 of the Standard Specifications. Conduit shall be PVC meeting the requirements of Material Specification article 1088.01. Anchor rods must meet the applicable requirements of Standard Specifications section 825 and related Material Specification Articles.

Construction. The contractor shall install the concrete foundation as shown on IDOT Standard Drawing 825021. Work under this item shall be performed in accordance with section 800 of the Standard Specifications except as modified herein.

The Contractor shall confirm the orientation of the lighting controller, and its door side, with the Engineer, prior to installing the foundation. A portland cement concrete foundation shall be constructed to the details shown on the plans. The lighting controller enclosure shall be set plumb and level on the foundation. It shall be fastened to the anchor rods with hot-dip galvanized or stainless steel nuts and washers. Foundation mounted lighting controllers shall be caulked at the base with silicone.

Where the controller has a metal bottom plate, the plate shall be sealed with a rodent and dust/moisture barrier.

The foundation must have a minimum depth of at least fifty inches (50") below grade and shall have large radius conduit elbows in quantity, size and type shown and required by the design plans. The elbow ends above ground shall be capped with standard conduit bushings. The Contractor must furnish anchor bolts, hardware, conduit elbows, and all other material shown on the foundation construction drawing.

All excavation and restoration of parkway shall be included in this item. If the foundation is in sidewalk, an expansion joint shall be required between the sidewalk and the foundation.

Method of Measurement. LIGHTING CONTROLLER FOUNDATION shall be measured per each unit completed of the type and construction shown on the plans.

Basis of Payment. Unit price will include cost of all material and labor required to install this foundation, as per applicable construction plans and these specifications to the satisfaction of the engineer and the City. The conduit elbows will be considered as part of the foundation and will not be paid for as a separate item or as part of the conduit laterals leading to the foundation. All necessary excavation and restoration of parkway to the original condition will be included in the unit price. Any sidewalk removal will be paid for as a separate pay item. However, any restoration of sidewalk will be considered as part of this item, including any expansion joint between the sidewalk and the foundation. This work will be paid for at the Contract Unit Price of EACH for LIGHTING CONTROLLER FOUNDATION.

EMERGENCY VEHICLE PRIORITY SYSTEM

Description. This work shall consist of installing and testing of an emergency vehicle priority system of the type supplied by the city of Decatur, in accordance with manufacturer's specifications and with Section 887 and Articles 1072 of the Standard Specifications except as described herein.

General Requirements.

GPS SYSTEM CABLE AND DEVICE BOX INSTALLATION SPECIFICATIONS

A device box shall be mounted to the signal mast arm support above or below so the horizontal arm does not obstruct the radio line of sight. The GPS radio must be mounted at a 45 degree angle with the large part of the radio pointing to the center of the intersection. It will be suitable for use with an Opticom EVP Radio/GPS unit supplied by the city of Decatur. The device box shall be installed using ¾ inch NPT electrical pipe materials including a malleable iron device box approved for rain-tight locations including the appropriate cover and gasket. A PELCO AB-0163-SS Cable Mount Mini-Brac, shall be used to attach the device boxes to the signal mast arm. All equipment and mounting hardware shall be supplied by the city of Decatur. All hardware shall be securely mounted to be level/plumb and retain its alignment.

The GPS system cable shall extend from the traffic signal cabinet to the signal mast arm located nearest the traffic signal cabinet. It shall be a continuous run with no splices. This wire run shall not exceed 250 feet in total length. There shall be a minimum of 10 feet of wire identified and secured inside of the in-ground pull box located nearest the traffic signal cabinet and the mast arm pole. The device box shall have a minimum of 2 foot of wire inside of it. A minimum of 15 foot of wire shall be identified and secured inside of the traffic signal cabinet for future use.

For additional information on device placement or questions regarding the Emergency Vehicle Pre-Emption, please contact Traffic Technician city of Decatur Mark Freeman Contact information (217) 875-4879 Work or (217) 329-2005 Mobile.

Material Specifications

Opticom GPS System Cable (Supplied by the City of Decatur)

- 300-volt rating
- 90 degree Celsius (194 degree Fahrenheit) temperature range
- Outer Jacket: Black SR-PVC, UV and moisture resistant
- Ten twisted pair conductors (5 pairs) AWG #20 (7 x 28) stranded, individually tinned copper:
    - Yellow/Yellow Black
    - Blue/Blue-White
    - Orange/Orange-Green
    - Brown/Brown-White
    - Purple/Purple-White
- Aluminized polyester shield
- Drain wire AWG #22 (7 x 28) stranded, individually tinned copper
- UL and cUL recognized

- Estimated Quantities for Labor Cost:
- Intersection of Brush College Road and the connector road 173 Foot
- Intersection of Faries Parkway and the connector road 250 Foot
- Total Est for (2) Intersections: 423 Foot

Device Box for Beacon Socket &/or Radio/GPS Unit (Supplied by the city of Decatur)

- Malleable Iron
- Tri-coat finish of electrozinc, chromate sealant and electrostatically applied powder coating
- Single gang with Iron blank cover for single gang boxes electrostatically applied powder coating
- 4-Inlets
- Hub Size ¾"
- Estimated Quantities for Labor Cost:
- Intersection of Brush College Road and the connector road 1 Each
- Intersection of Faries Parkway and the connector road 1 Each
- Total Est for (2) Intersections: 2 Each

Astro Mini-Brac Clamp Kit (Supplied by the city of Decatur)

- ¾" – 14 NPT
- Cable Mount
- Stainless Steel
- Estimated Quantities for Labor Cost:
- Intersection of Brush College Road and the connector road 1 Each
- Intersection of Faries Parkway and the connector road 1 Each
- Total Est for (2) Intersections: 2 Each

Method of Measurement. EMERGENCY VEHICLE PRIORITY SYSTEM shall be measured per each unit of the type and construction shown on the plans.

Basis of Payment. This work will be paid for at the contract unit price for EACH for EMERGENCY VEHICLE PRIORITY SYSTEM, which price shall include all labor necessary to install complete, configure and test the work as specified.

REMOVAL AND DISPOSAL OF EXISTING FORCE MAIN

Description. This work shall consist of complete removal of the previously abandoned force main piping shown on the plans or as directed by the Engineer. Records provided by the utility owner indicate that this force main has already been abandoned and is no longer in service.

General Requirements. The area of excavation required to expose the abandoned force main being removed shall be backfilled in accordance with IDOT requirements. All work necessary to remove the force main will be included in the cost of the pay item and no further compensation will be provided. Removal shall include the removal and disposal of any piping, fittings, bends, valves, existing thrust blocks, and appurtenances, as required for construction.

If the existing piping is encased (e.g. in a steel casing pipe), the removal shall include both the casing and carrier pipe. The cost of the casing pipe removal will be included in the cost of the carrier pipe being removed.

The removal and disposal of any material filling (CLSM, sand, pea gravel, etc.), whether installed by the Contractor or by others, shall be included in REMOVAL AND DISPOSAL OF EXISTING FORCE MAIN.

Method of Measurement. This work will be measured in feet along the centerline of the removed pipe at the ground level. If the existing piping is encased, the Contractor will only be paid at the contract unit price for the carrier pipe being removed. Any casing pipe removal will be included in the cost of carrier pipe removal.

Basis of Payment. This work will be paid for at the contract unit price per FOOT for REMOVAL AND DISPOSAL OF EXISTING FORCE MAIN, regardless of size, which price shall include all excavation, native backfill, sheeting or shoring, and all labor, equipment, and materials necessary to perform said work.

TRENCH BACKFILL will be paid for separately.

SANITARY SERVICE TO BE ADJUSTED

Description. This work shall consist of providing labor, equipment and materials required to relocate a sanitary lateral (or service) due to unforeseen utility conflicts, when directed by the Engineer, or to replace a lateral to meet IEPA water and sewer separation requirements. The Contractor is to provide all temporary equipment and facilities to maintain continuous service to customers while performing the work. This includes providing all bypass piping and pumping; temporary holding tanks; hauling and disposal of sewerage, coordination with sewer customers, and all other necessary activities.

General Requirements. Perform all work in accordance with City of Decatur standards, the latest edition of the 10 State Standards for Wastewater, and the latest addition of Standard Specifications for Water and Sewer Main Construction in Illinois, all except as noted herein.

The sanitary sewer service laterals shall be plastic Pipe and Fittings, Polyvinyl Chloride (PVC) material conforming to D3034, O-ring joints, ASTM F-477, SDR 26 (minimum). If required to meet IEPA water sewer separation requirements, Contractor shall provide water main quality pipe meeting the requirements of AWWA C-900 at no additional cost. Shape and form the bedding material so that the bottom quarter of each pipe is uniformly supported along its entire length. Recess the material at the bells so that they are relieved of any load. Lay each pipe in conformity with line and grade as determined by the Engineer. Maintain alignment and joint closure until sufficient backfill has been completed to hold pipe in place. At the end of each day, a watertight plug shall be installed at all pipe fittings or openings. Laterals shall be 6-inch diameter (minimum) or matching the existing size, all at no additional cost.

Verify that field measurements and elevations are sloped at a minimum of 1% or as approved by the Engineer to meet field conditions. Install pipe in accordance with the manufacturer's recommended installation instructions. Provide backfill and bedding for all piping in accordance with standard IDOT pipe laying requirements.

The Contractor shall maintain flow through the existing sanitary laterals within the project limits during the construction of the proposed sanitary lateral, as noted below. Flow must be maintained at all times, unless otherwise approved by the City of Decatur. Based on the flow within the sewers, this work may need to be performed during overnight hours or on weekend days. No additional compensation shall be allowed for work during these hours. At the preconstruction meeting, the Contractor shall submit his plan for the construction of the proposed sewer, the connections to the existing sewers, and how the existing flow will be maintained. Prior to starting any work on the sanitary sewer, the Contractor shall obtain approval of the plan from the City. A minimum of forty-eight (48) hours advance notice is required prior to beginning any sanitary sewer work.

If pumping bypass is required to maintain service, bypass shall be made by diversion of the flow from an existing upstream location, around the section(s) to an existing downstream location. The bypass system shall be of adequate capacity to handle all flows, including wet weather related flows. If bypass pumping is utilized by the Contractor to control flows, the Contractor shall be responsible for monitoring the bypass pumping operation at all times until the work is complete. The location of pump(s), force main, discharge point, pumping rates, etc., shall be approved by the Engineer. The Contractor shall prepare a detailed Flow Control Plan that describes the measures to be used to control flows. The Contractor shall submit the Plan to the Engineer for review prior to beginning any flow control work.

Prior to performing any work, Contractor shall field verify the limits of lateral replacement that is required. The maximum limits of the lateral replacement shall be from just outside of the building being serviced to the main line sewer. Contractor shall provide all piping, cleanouts, fittings, and appurtenances required for a complete installation. The cleanout shall be Neenah R-1975-A encased in SI concrete at the ground surface (24" diameter and 12" deep, centered on the cleanout) If a new connection to the main line sanitary sewer is required, the existing connection piece shall be removed, and the Contractor shall provide and install a new T or Y connection fitting for the main line sewer, regardless of size. Where possible, provide pipe risers at a 45° angle. The limits of relocation shall be as needed for construction, which shall include the entire length of the existing lateral from the building to the connection to the mainline sewer (for both a tapped connection or a manhole connection).

Provide all Fernco Strong Back RC 1000 Series couplings as needed for construction.

Method of Measurement. This work will be measured by EACH sanitary sewer service lateral to be relocated or adjusted.

Basis of Payment. This work will be paid for at the contract unit price per EACH for SANITARY SERVICE TO BE ADJUSTED of the required diameter. The contract unit price shall include all excavation, concrete, bedding, fittings, piping, and appurtenances, native backfill, sheeting or shoring, disposal and all labor, material, and equipment necessary to complete the work as specified. It is the Contractor's responsibility to verify existing depths. No additional compensation will be made for variances in the depth of the sewer pipe.

TRENCH BACKFILL will be paid for separately.

IN-STREAM WORK

Description. This work shall consist of furnishing all labor, tools, equipment, and materials to install, maintain, operate and remove all necessary diversions and dewatering systems to divert, remove water from the channel or designed to control sediment discharge in dewatering applications where water is being pumped for the construction of the proposed culvert, headwall, stone rip rap channel lining and other work associated with the construction of the proposed culvert extension or channel re-alignment to ensure that work can be completed in the dry or in manageable conditions as approved by the Engineer.

For the purposes of this item diversion structure will mean a “diversion system” for isolation of the in-stream work area using a diversion system constructed of non-erodible materials such as steel sheets, aqua barriers, rip rap and geotextile liner or other material approved by the Engineer. Earthen cofferdams will not be permitted.

This item will also include constructing a dewatering filtering system consisting of filtration or sediment bags for collecting sediment from pumping operations within the coffered area and sump pits. Construction waters will include, but not be limited to, all waters generated from the removal of the bridge pier, channel grading, riprap placement, proposed drainage systems and aggregate base construction.

Prior to performing any in-stream work associated with the project, the Contractor shall identify the proposed dewatering and/or diversion/isolation method to be used and obtain approval from Engineer prior to starting work. In-stream work shall take place only during low flow conditions unless otherwise allowed by the Engineer. The Contractor shall maintain the channel’s 5-year flow at all times. Concentrated flow shall be isolated from the work area. Dewatering shall comply with all requirements contained in the Storm Water Pollution Prevention Plan (SWPPP) contained in the plans.

The Contractor is ultimately responsible for the choice of the materials, product(s) and equipment; for the subsequent removal of the diversion structure(s) and dewatering systems and their safety and for conformity with local codes, regulations, and these Specifications, as well as “means and methods” for the Site Dewatering and Diversion Work to be performed. All products and “means and methods” selected shall be adequate for the intended use/application within the construction limits represented on the plans. The Engineer’s review does not relieve the Contractor from compliance with the requirements of the Drawings, Standard Specifications, and the requirements of this special provision.

Submittal. The Contractor shall submit for review to the Engineer for a description of the diversion system, dewatering techniques and equipment to be used, together with detailed drawings showing items such as, but not limited, to the location of the diversion structures by stage, type of pumps, pump size, lengths and sizes of discharge piping and points(s) of discharge including erosion control.

This project requires a US Army Corps of Engineers (USACE) 404 permit. As a condition of this permit, the Contractor shall submit an In-Stream Work Plan to the Engineer for review and approval prior to any structure removal or in-stream work. Guidelines on acceptable in-stream work techniques can be found on the USACE website. The USACE defines and determines in-stream work.

RAILROAD FLAGGING

Description. The work under this Section shall include the use of NS and IC RR flagging personnel in conjunction with construction performed adjacent to in-service railroad tracks, as required by the railroad, and approved by the Commissioner. Flagging personnel and associated flagging equipment will be provided by the respective railroad to the location of the work being performed. Labor, equipment, and materials for track crossings over the NS and IC will also be provided by the railroad under this item. Labor, equipment, and materials for track crossings over the IC/CN tracks will be the responsibility of the Contractor and will not be measured for payment but shall be included in the cost for MOBILIZATION.

General Requirements.

The Contractor shall notify the City of Decatur in writing a minimum of two (2) weeks in advance of the intent to work adjacent to in-service railroad tracks.

The Contractor, at the time, shall also provide the approximate duration and nature of the work adjacent to in-service railroad tracks.

The Contractor shall notify the City of Decatur in writing at least one working day in advance of the cancellation of railroad flagging.

A flagman is required anytime the Contractor does any work on or near RAILROAD property within twenty-five (25) feet horizontally of the centerline or any work over any railroad track. The IC and NS, however reserve the right to require a flagman for work on RAILROAD property, which is more than twenty-five (25) feet from the centerline of a railroad track when there are other conditions, or considerations that would dictate the need for a flagman to safeguard the RAILROAD's operations.

The final decision for the need of railroad flagging shall be with the respective railroad and subject to the approval of the City of Decatur. The City of Decatur shall decide all questions which arise as the quality and the acceptability of equipment and materials furnished, work performed, rate of progress of the work and interpretation of the Contract Documents acceptable fulfillment of the Contract.

The Contractor shall obey all signals and directions given by flagging personnel and shall take whatever actions necessary to ensure compliance with the signals and directions.

Construction Requirements. The work under this contract includes the construction of utilities, TSRS, modular block retaining walls, bridge piers and abutments, roadway pavement and associated improvements, removal of existing roadway elements, and other construction elements as shown on the plans adjacent to and over both the NS and IC railroad tracks. The Contractor shall carry on their construction operations so as to cause no interference with the movement of freight trains within the project limits unless approved by the City of Decatur and the respective railroad.

For Projects requiring more than 30 consecutive days of flagging, Contractor shall provide the flagman 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.

In addition to the General Requirements, the Contractor is alerted to the following requirements of the individual railroads:

a) For RAILROAD FLAGGING within NS property, the Contractor shall contact:

Brian Taylor
Engineer Public Improvements
Norfolk Southern Corporation
1200 Peachtree Street, NE
Atlanta, GA 30309
(678) 333-4274 (p)
(404) 529-2589 (f)
george.taylor3@nscorp.com

b) For RAILROAD FLAGGING within the IC property, the Contractor shall contact:

Nick Burwell
Manager, Public Works
(319) 427-1031 (c)
Nicholas.Burwell@cn.ca

Method of Measurement. The worked outlined for RAILROAD FLAGGING will not be measured for payment.

Basis of Payment. No separate payment shall be due for RAILROAD FLAGGING. Costs for this work will be paid for in accordance with Article 107.12 and reimbursed according to Article 109.05 of the Standard Specifications, with the following exceptions:

Cost arising on the part of the Contractor from either the failure to provide sufficient notice to cancel or request railroad flagging shall be borne solely by the Contractor. These costs shall be based upon actual hours and dollars of railroad flagging required including show-up time, meals, clean-up time and other benefits as negotiated by the respective railroad with its personnel and any applicable NS or IC/CN applied accounting fees, overheads, burdens and profits.

CONTRACTORS RIGHT-OF-ENTRY AGREEMENT

Description. In accordance with Article 107.04, the Contractor shall be required to procure a Contractor's Right-of-Entry Agreement with the Norfolk Southern Corporation and the Illinois Central (Canadian National) Railroad that will allow the Contractor to perform work as shown in the plans within railroad property.

General Requirements. This item will not be measured separately for payment, but shall be included in the cost of the contract.

The right-of-entry application fee for the Norfolk Southern is $750.00 and the right-of-entry application fee for the Illinois Central (Canadian National) is $750.00.

BORROW AREAS

In addition to the provisions contained in Article 107.22 of the Standard Specifications, any required submittal(s) to the District office shall require four (4) copies sent for processing. All copies of pictures submitted shall be in color.

STATUS OF UTILITIES

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

Add the following after the first paragraph of Article 105.07 of the Standard Specifications:

Underground utilities have been plotted from available surveys and records and, therefore, the locations must be considered approximate only. There also may be utilities for which the locations are unknown. Verification of locations of underground utilities, shown or not shown, will be the responsibility of the Contractor. Utility companies that have facilities within the project limits anticipate some adjustments will be required. The Contractor shall be required to verify this. Service lines may need to be adjusted during construction. The Illinois Underground Utility Facilities Damage Prevention Act requires the person excavating to contact the one-call system (J.U.L.I.E. 800-892-0123) before digging.

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified from the survey information and coordination with utilities. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work. The responsible agency must relocate or complete new installations; this work has been deemed necessary to be complete for the Department's contractor to then work in the location for which the item has been listed.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 47+10, 2' LT to 69+84, 22' LT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 51+73, 2' RT to 69+61, 14' RT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 52+22, 3' LT to 52+25, 148' RT	Adjusted according to project plans During Construction

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 57+12, 53’ RT to 57+14, 2’ RT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately located at 210+30, 83’ RT to 210+69, 83’ RT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately 209+13, 3’ RT to 211+27, 1’ RT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Faries Parkway, Approximately 204+25, 108’ LT to 210+70, 113’ LT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 65+73, 93’ LT to 65+85, 3’ RT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 65+73, 93’ LT to 66+08, 98’ LT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+06, 110’ LT to 66+08, 99’ LT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+06, 110’ LT to 66+22, 113’ LT	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 66+18, 33' LT to 66+34, 85' RT	Adjusted according to project plans During Construction

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Watermain	Brush College Road, Approximately located at 69+55 11’ RT to 50’ RT	Adjusted according to project plans During Construction
Troy Lancaster Manager ADM 4666 Faries Parkway Decatur, IL 62526	Underground Sanitary Sewer Force Main	Brush College Road, Approximately located at 46+80, 42’ RT to 59+19, 37’ LT	Abandoned
Troy Lancaster Manager ADM 4666 Faries Parkway Decatur, IL 62526	Underground Sanitary Sewer Force Main	Brush College Road, Approximately located at 59+37, 53’ LT to 62+05, 123’ RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, near Olive St	Brush College Road, Approximately located at STA. 52+22, 10' RT to 52+29, 148’ RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, near New Back Door Restaurant	Brush College Road, Approximately located at 55+83, 53’ RT to 56+76, 35’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, from Logan to Faries	Brush College Road, Approximately located at 56+76, 26' RT to 60+61, 99’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, under NS RR	Brush College Road, Approximately located at 61+64, 3’ RT to 62+13, 82’ RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, north of NS RR to line in BCR west lane	Brush College Road, Approximately located at 62+17, 82’ Rt to 76+42, 18’ LT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main, near Cemetery	Brush College Road, Approximately located at 62+13, 46’ RT to 64+74, 47’ Rt and 70’ RT	Abandoned

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 64+74, 70' Rt to 76+26, 34' RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 65+36, 66' RT to 66+38, 80' RT to 68+84, 48' RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 65+94, 4' RT to 65+80, 100' LT	Abandoned
Ameren Gas Transmission Collinsville, IL 62234	Underground 4" High Pressure Gas Main	Brush College Road, Approximately located at 66+03, 150' LT to 66+38, 95' LT to 66+63, 50' RT to 69+61, 36' RT to 69+90, 36' RT	During Construction. Staged after water main work in the area is completed
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	Brush College Road, Approximately located at 65+69, 72' RT to 65+79, 146' RT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 68+84, 48' RT to 69+05, 49' RT to 69+90, 51' RT	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Brush College Road, Approximately located at 69+05, 49' RT to 69+00 90' RT to 69+56, 90' RT to 69+64, 36' RT	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Transmission Collinsville, IL 62234	Underground 4" High Pressure Gas Main	Brush College Road, Approximately located at 69+61, 36' RT to 69+56, 90' RT	During Construction. Staged after water main work in the area is completed
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Faries Parkway, Approximately located at 211+26, 62' RT to 212+25, 41' RT to 214+03, 37' RT to 215+16, 25' RT	During Construction to be retired

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	Faries Parkway, Approximately located at 215+16, 25’ RT to 215+14, 76’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service ADM	Faries Parkway, Approximately located at 220+61, 90’ RT to 220+78, 37’ LT	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service Walston South	Faries Parkway, Approximately located at 223+09, 36’ LT to 223+05, 57’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service Walston North	Faries Parkway, Approximately located at 223+66, 36’ LT and 70’ LT	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	Jug Handle Connector, Approximately located at 300+55, 124’ LT to 304+11, 94’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	Jug Handle Connector, Approximately located at 300+51, 168’ LT to 300+74, 163’ LT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	East Logan Street, Approximately located at 600+88, 23’ RT to 600+84 4’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 600+88, 23’ RT to 609+27, 17’ RT	During Construction to be retired
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	East Logan Street, Approximately located at 601+84, 16’ RT to 35’ RT	During Construction. If adjustments are required coordinate with Ameren

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	East Logan Street, Approximately located at 602+83, 29' Rt to 603+13, 16' Rt	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Transmission Collinsville, IL 62234	Underground Gas (old regulator feed)	East Logan Street, Approximately located at 608+46, 24' RT to 609+23, 22' RT	Abandoned
Ameren Gas Transmission Collinsville, IL 62234	Underground Gas (old regulator)	East Logan Street, Approximately located at 609+23, 22' RT	Abandoned
Ameren Gas Transmission Collinsville, IL 62234	Underground Gas Main	East Logan Street, Approximately located at 609+18, 24' LT to 609+35, 17' LT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	North James Street, Approximately located at 405+01, 11' LT to 405+00, 1' LT	Abandoned
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Main	E Harrison (East Leg), Approximately located at 706+45, 32' RT to 707+84, 32' RT to 708+37, 36' LT	During Construction. If adjustments are required coordinate with Ameren
Ameren Gas Distribution Collinsville, IL 62234	Underground Gas Service	E Harrison (East Leg), Approximately located at 706+35, 42' LT to 706+45, 32' RT	During Construction. If adjustments are required coordinate with Ameren
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 47+37, 55' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 48+06, 24' RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 48+61, 38’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 49+55, 27’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 50+59, 10.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 51+70, 6’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 52+68, 3’ RT	During Construction. Coordinate with Ameren relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	Overhead Aerial Copper	Brush College Road, Approximately located at 52+60, 44’ RT	During Construction. Coordinate with AT&T relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor	Brush College Road, Approximately located at 53+02, 5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 52+84, 101’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 52+93, 92’ RT	Before Construction

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 52+87, 55’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 52+99, 55’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+35, 5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+48, 5.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+65, 6’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+65, 45’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+65, 59’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+74, 55’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+87, 55’ RT	Before Construction

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Substation	Brush College Road, Approximately located at 53+91, 92’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Substation Guy Anchor	Brush College Road, Approximately located at 53+98, 100.5’ RT	Before Construction
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 53+99, 25.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 54+69, 3’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 55+13, 5.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 55+26, 5.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 55+25, 64’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 56+48, 5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 56+59, 4’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 56+67, 15.5' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 56+68, 25' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 56+69, 41' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 58+63, 29' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 58+94, 37' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 59+38, 45' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 59+49, 47' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 59+58, 48' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 60+02, 54' RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 60+00, 72' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 60+13, 69' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 60+15, 69' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 62+11, 55' RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 63+75, 103' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 64+11, 56' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 64+22, 80' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 64+31, 55' LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Transmission	Brush College Road, Approximately located at 64+35, 81' LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 64+33, 132’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 64+33, 134’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 64+33, 150’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 64+78, 55’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 64+75, 67’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+20, 74.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+25, 73’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+27, 74’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+51, 71’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 65+68, 70’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 65+72, 52’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 65+95, 49 RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 66+00, 49’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 66+07, 48’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 66+14, 47.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Brush College Road, Approximately located at 66+19, 47’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Transmission	Brush College Road, Approximately located at 66+34, 74’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 67+15, 45.5’ LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 68+81, 37’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Brush College Road, Approximately located at 70+14, 37’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+22, 66’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+49, 45’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+53, 53’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 211+78, 79’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 212+14, 45’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 212+21, 44’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 212+53 44’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 212+58 44’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+64, 44’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+41, 93’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+50, 50’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+66, 45’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 213+99, 96’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 215+85, 19’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 216+15, 17’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 216+11, 102’ LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 218+80, 99’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 219+19, 10’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 219+19, 10’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 219+38, 44’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 219+66, 44’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 220+26, 76’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 220+30, 76’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 220+31, 46’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 220+31, 52’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 220+66, 87’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 221+44, 96’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 222+63, 42’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 222+68, 97’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 222+88, 42’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 223+10, 21’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 223+52, 16’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 223+64, 15’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 224+84, 59’ LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 225+04, 60’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Faries Parkway, Approximately located at 225+37, 42’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 225+60, 41’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Faries Parkway, Approximately located at 228+50, 42’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 301+94, 6’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 302+37, 69’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 303+15, 19’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 303+85, 50’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 303+94, 56’ LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 305+25, 106’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 305+39, 109’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 306+57, 95.5’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 306+87, 7.5’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Jug Handle Connector, Approximately located at 306+99, 111’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Jug Handle Connector, Approximately located at 307+25, 109’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 600+40, 45’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 600+43, 48’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 600+95, 26’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 601+05, 24’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 602+54, 21’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 603+85, 19’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 604+00, 20’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 605+16, 19’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 606+21, 19’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 606+21, 38’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 606+39, 19’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 607+40, 19’ RT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 607+41, 26’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 607+42, 36’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	East Logan Street, Approximately located at 607+40, 47’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 607+62, 26’ LT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 608+59, 18’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	East Logan Street, Approximately located at 609+08, 17’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	North James St, Approximately located at 404+95, 7’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	North James St, Approximately located at 405+03, 13’ RT	During Construction. Coordinate with Ameren relocation project.
Ameren IP South Collinsville, IL 62234	Guy Anchor Electric Distribution	Olive Street, Approximately located at 500+85, 19’ LT	During Construction. Coordinate with Ameren relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Ameren IP South Collinsville, IL 62234	Overhead Electric Distribution	Olive Street, Approximately located at 500+98, 21’ LT	During Construction. Coordinate with Ameren relocation project.
AT&T	Underground Electric	Brush College Road, Approximately located at 51+70, 6' RT to 51+97, 43’ RT	During Construction. Coordinate with AT&T relocation project.
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Brush College Road, Approximately located at 58+76, 28' RT to 62+25, 29’ LT	Retired according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Brush College Road, Approximately located at 60+19, 71' LT to 62+69, 26’ LT	Retired according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Faries Parkway, Approximately located at 208+79, 82' RT to 211+21, 66’ RT	Retired according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Underground Electric (traffic signals)	Faries Parkway, Approximately located at 211+05, 52' LT to 211+71, 46’ LT	Retired according to project plans During Construction
Windstream	Underground Fiber Optic (from Handhole to Handhole)	Faries Parkway, Approximately located at 208+86, 84' RT 210+97, 88' RT	Before Construction
Windstream	Underground Fiber Optic (from Handhole to Pole)	Brush College Road, Approximately located at 60+36, 68' RT to 62+43, 52’ RT to 64+76, 52’ RT to 65+68, 69’ RT	Before Construction
Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 52+61 194’ RT to 52+62 10’ RT to 58+74, 31’ RT to 60+53, 76’ RT to 62+02, 64’ RT	During Construction. Coordinate with Metro Communication relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
Metro Communication	Underground Fiber Optic	Brush College Road, Approximately located at 64+76, 58' RT to 70+23, 30' RT	During Construction. Coordinate with Metro Communication relocation project.
Comcast	Overhead Fiber Optic	Faries Parkway, Approximately located at 209+65, 81' LT to 60+02 54' RT Brush College Road	During Construction. Coordinate with Comcast relocation project.
Comcast	Underground Fiber Optic	Brush College Road, Approximately located at 62+59, 60' LT to 67+88, 94' LT to 69+03, 62' RT to 69+06, 99' RT	During Construction. Coordinate with Comcast relocation project.
Comcast	Underground Fiber Optic	E Harrison (E Leg), Approximately located at 706+45, 26' RT to 708+69, 31' RT	During Construction. Coordinate with Comcast relocation project.
ADM	Underground Fiber Optic	Harrison Ave (west), Approximately located at 805+58, 29' LT to 805+78, 25' RT	Abandoned
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T duct Main Trunk (manhole to split)	Brush College Road, Approximately located at 48+24, 44' RT (Manhole) to 50+52, 30' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T duct MAIN Trunk (in north lane from split to manhole by Harrison)	Brush College Road, Approximately located at 50+52, 30' RT to 51+33, 4' LT to 55+65, 8' LT (Manhole) to 57+20, 7' LT to 60+26, 36' RT to 60+99, 41' RT to 63+02, 44' RT to 70+51, 6' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper Split to RT Xbox and on North West to Pedestal on Faries for proposed tie in	Brush College Road, Approximately located at 50+52, 30' RT to 51+99, 27' RT to 52+59, 45' RT to 52+68, 9' RT to 55+16, 2' RT to 55+24, 13' RT to 55+32, 0' RT to	Retired During Construction. Coordinate with AT&T relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
		55+65, 8' LT to 55+60, 74' LT to 59+91, 55' LT to 60+01, 60' LT to 60+05, 78' LT	
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	The AT&T RT (Remote Terminal) & XBOX (Cross Connect Cabinet)	Brush College Road, Approximately located at 52+00 RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper cables & pedestals East line along BCR to south of New Back Door to Logan	Brush College Road, Approximately located at 55+24, 13' RT to 56+55, 7' RT to 56+65, 10' RT to 56+69, 42' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable	Brush College Road, Approximately located at 56+69, 42' RT to 56+59, 4' RT to 58+63, 29' RT to 59+38, 45' RT to 59+58, 48' RT to building	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper cables & pedestals Warehouse line	Brush College Road, Approximately located at 57+20, 7' LT to 57+18, 44' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Fiber Manhole by Cemetery to left turn across BCR to West.	Brush College Road, Approximately located at 63+02, 44' RT to 63+46, 51' RT to 65+41, 46' RT to 66+06, 50' RT to 67+94, 37' RT to 67+90, 91' LT to 67+84, 185' LT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper Cemetery line continues north past Harrison	Brush College Road, Approximately located at 64+76, 135' RT to 64+74, 76' RT to 65+41, 67' RT to 66+60, 51' RT to 66+78, 50' RT to 67+31, 44' RT to 67+99, 39' RT to 70+51, 38' RT	Retired During Construction. Coordinate with AT&T relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Main Trunk feed to buried copper line	Brush College Road, Approximately located at 66+74, 20' RT to 66+78, 50' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Main Trunk feed to buried copper line	Brush College Road, Approximately located at 67+27, 15' RT to 67+31, 44' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Pepsi Fiber Optic line	Brush College Road, Approximately located at 68+04, 96' RT to 68+02, 91' RT to 69+04, 48' RT to 69+78, 34' RT to 70+51, 34' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper line across BCR to West down subdivision easement	Brush College Road, Approximately located at 67+98, 39' RT to 67+93, 91' LT to 67+84, 188' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Harrison East leg feed Optic line	Brush College Road, Approximately located at 69+04, 92' RT to 68+94, 47' RT to 69+59, 34' RT to 69+78, 34' RT to 70+51, 32' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Fiber optic Empty duct	Faries Parkway, Approximately located at 209+24, 53' RT to 209+45, 49' RT to 209+98, 55' RT to 210+31, 56' RT to 210+50, 65' RT to 210+65, 102' RT	Abandoned
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper Empty duct	Faries Parkway, Approximately located at 209+69, 14' RT to 211+83, 15' RT	Abandoned
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Fiber optic Main trunk	Faries Parkway, Approximately located at 210+65, 30' RT to 211+83, 15' RT to 212+23, 16' (manhole) to 213+96, 13' RT	Retired During Construction. Coordinate with AT&T relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
		(manhole) to 216+39, 8' RT to 218+34, 8' RT to 220+83, 9' RT (pedestal) to 222+00, 12' RT (manhole) to 224+82, 8'RT to 225+49, 4' RT (pedestal) to 229+75, 16' RT to 232+03, 34' RT	
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper	Faries Parkway, Approximately located at 213+66, 45' RT to 213+72, 44' RT to 213+96, 13' RT (manhole)	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper	Faries Parkway, Approximately located at 221+82, 12' RT to 221+82, 16' RT to 222+00, 12' RT (manhole) to 223+03, 4' RT (pedestal) to 223+75, 12' RT (pedestal) to 223+86, 108' LT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Fiber Optic	Faries Parkway, Approximately located at 221+78, 94' RT to 222+00 12' RT (manhole)	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T pole, Pedestal & AT&T aerial copper cable	Brush College Rd to Olive Street, Approximately located at 52+59, 45' RT to 500+98, 21' LT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable	Jug Handle Connector, Approximately located at 300+62, 115' LT to 302+37, 69' LT to 303+95, 56' LT to 305+25, 106' LT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable	Jug Handle Connector, Approximately located at 302+37, 69' LT to 303+15, 19' LT to 303+79, 51' RT	Retired During Construction. Coordinate with AT&T relocation project.

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T aerial copper cable	East Logan Street, Approximately located at 600+43, 48' RT to 601+05, 24' RT to 602+54, 21' RT 603+85, 19' RT to 605+16, 19' RT to 606+21, 19' RT to 607+40, 19' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T Aerial Fiber Optic	E Harrison (E Leg), Approximately located at 700+95, 29' RT to 701+94, 30' RT to 704+95, 30' RT to 706+42, 29' RT to 707+20, 29' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper	E Harrison (E Leg), Approximately located at 707+16, 29' RT to 707+20, 23' RT to 708+47, 20' RT to 708+59, 23' RT	Retired During Construction. Coordinate with AT&T relocation project.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	Underground Fiber Optic	E Harrison (W Leg), Approximately located at 801+78, 45' RT to 801+79, 10' LT to 802+23, 25' LT to 803+29, 33' LT	Coordinate with AT&T relocation project During Construction.
ATT 1000 Commerce Drive, Floor 1 Oak Brook, IL 60523	AT&T buried copper cable To Cell Tower	E Harrison (W Leg), Approximately located at 801+78, 45' RT to 801+79, 10' LT to 802+26, 34' LT to 803+29, 34' LT	Abandoned
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures within project limits	Brush College Road, Approximately located at 46+59, to 76+26	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures within project limits	Faries Parkway, Approximately located at 205+18 to 235+42	Adjusted according to project plans During Construction
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures within project limits	Harrison Ave (east leg), Approximately located at 700+00 to 709+00	Adjusted according to project plans During Construction

Name and Address of Utility	TYPE	Location	Estimated Relocation Completed
City of Decatur Utilities One Gary K. Anderson Plaza Decatur, IL 62523	Storm Sewer with adjacent drainage structures	Harrison Ave (west leg), Approximately located at 800+20, 25' LT to 800+20, 25" RT	Adjusted according to project plans During Construction

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

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	Address	e-mail address
AT&T	Janet C. Ahern	630.573.6414	**1000 Commerce Drive, Floor 1 Oak Brook, IL 60523**	ja1763@att.com
ADM	Troy Lancaster	217.451.2569	**4666 Faries Parkway Decatur, IL 62526**	Troy.lancaster@adm.com
Ameren IP South	Nathan Hill	618.301.5327	**Collinsville, IL 62234**	nhill2@ameren.com
Ameren Gas Transmission	Kevin Verhofstad	W: 217.424.8278 C: 217.358.9228	**370 S. Main Street Decatur, IL 62521**	KVerhofstad@ameren.com
Ameren Gas Distribution	Marty Behrens	T: 217.424.8745 C: 309.826.0851	**2460 N. Jasper Street Decatur, IL 62526**	MBehrens@ameren.com
Ameren Electric Transmission	Mike Kurecki	217.424.6430	**370 S. Main St. (MC: C-25) Decatur, IL 62523**	MKurecki@ameren.com

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	Address	e-mail address
Ameren Electric Distribution	Marty Behrens	T: 217.424.8745 C: 309.826.0851	**2460 N. Jasper Street Decatur, IL 62526**	MBehrens@ameren.com
Ameren Electrical Substation	Andrew Bonny	Unknown	**Unknown**	ABonny@ameren.com
City of Decatur	Don Cisco	T: 217.424.2747 C: 217.521.7570	**One Gary K. Anderson Plaza Decatur, IL 62523**	dcisco@decaturil.gov
Comcast	Martha Gieras	224.229.5862	**Unknown**	martha_gieras@comcast.com
Metro Communication	Jason Koonce	217.728.3605	**8 South Washington St Sullivan IL, 61951**	jkoonce@metrocomm.com
Sanitary District of Decatur	Don Miller	217.422.6931 X216	**One Gary K. Anderson Plaza Decatur, IL 62523**	donm@ssd.dst.il.us
Windstream	Kyle Schliemann	800.289.1901	**929 Martha's Way Hiawatha, IA 52233**	Kyle.R.Schliemann@windstream.com

UTILITIES TO BE WATCHED AND PROTECTED

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

All Stages

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road Approximately located at 48+27, 42' Rt	AT&T Manhole	Tie in point for South Relocations of AT&T lines	AT&T	Watch and Protect
Brush College Road, Approximately located at 48+14, 105' LT to 48+29, 67' RT	ADM Electric Distribution	East – West Crossing BCR. 34.5KV	ADM	Watch and Protect
Brush College Road, Approximately located at 48+27, 42' RT	ADM Electric Distribution	Guy Anchor for East - West aerial lines	ADM	Watch and Protect
Brush College Road Approximately located at 48+21, 59' RT to 49+46, 52' RT	ADM Overhead Utility Pipe	Contains ADM Fiber Optic Cable	ADM	Watch and Protect
Brush College Road Approximately located at 49+37, 94' LT to 49+46, 52' RT	ADM Overhead Utility Pipe	Vertical clearance of 22' - 2"	ADM	Watch and Protect
Brush College Road Approximately located at 46+59, 2' LT to 47+10, 2' LT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect
Brush College Road Approximately located at 69+83, 22' LT to 75+85, 22' LT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect
Brush College Road Approximately located at 70+05, 11' RT to 75+85, 11' RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 205+19, 15' RT to 209+13, 3' RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway Approximately located at 205+76, 16' RT to 205+76, 48' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 211+27, 0’ RT to 235+41, 2’ RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 221+30, 10’ LT to 221+26, 70’ RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 221+62, 10’ LT to 221+62, 11’ RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 225+47, 9’ LT to 225+47, 4’ RT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 225+47, 9’ LT to 225+47, 4’ RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Harrison (E Leg) Approximately located at 700+52, 21' LT to 708+86, 22 LT	Water	Tie in point water relocation. Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Harrison (E Leg) Approximately located at 706+43, 28' LT to 706+43, 22' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Harrison (E Leg) Approximately located at 707+29, 22' LT to 707+29, 275' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Harrison (E Leg) Approximately located at 703+46, 22' LT to 703+46, 28' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Harrison (E Leg) Approximately located at 703+08, 29' RT to 703+08, 22' LT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Harrison (W Leg) Approximately located at 800+08, 74' LT to 800+08, 75' RT	Water	Proposed design is to be constructed in surrounding area near this water line	City of Decatur	Watch and Protect.
Brush College Road, Approximately located at 69+90, 36’ RT to 76+26, 35’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
Brush College Road, Approximately located at 69+90, 51’ RT to 76+26, 46’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Distribution	Watch and Protect.
Faries Parkway, Approximately located at 205+18, 32’ LT to 208+90, 35’ LT to 210+98, 22’ LT to 216+12, 37’ LT to 224+18, 37’ LT to 228+41, 27’ LT to 231+22, 14’ LT to 235+67, 19’ LT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
Faries Parkway, Approximately located at 222+50, 36’ LT to 222+46, 76’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
Faries Parkway, Approximately located at 230+98, 37’ LT to 231+80, 45’ RT 231+80, 45’ RT to 236+55 40’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
East Logan Street, Approximately located at 608+46, 24’ LT to 608+37, 100’ LT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
East Logan Street, Approximately located at 608+46, 24’ RT to 608+41, 24’ RT to 609+16, 21’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
North James Street, Approximately located at 404+55, 18’ LT to 404+07, 16’ LT to 404+05, 13’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Transmission	Watch and Protect.
North James Street, Approximately located at 404+03, 7’ LT to 14’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Distribution	Watch and Protect.
E Harrison (West Leg), Approximately located at 800+00, 17’ South of Roadway	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Distribution	Watch and Protect.
E Harrison (East Leg), Approximately located at 700+93, 33' RT to 706+45, 32’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Distribution	Watch and Protect.
E Harrison (East Leg), Approximately located at 703+14, 33’ RT	Underground Gas	Proposed design is to be constructed in surrounding area near this gas line	Ameren Gas Distribution	Watch and Protect.
Brush College Road, Approximately located at 67+96, 93’ LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Transmission	Watch and Protect.
Brush College Road, Approximately located at 72+06, 94’ LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Transmission	Watch and Protect.
Brush College Road, Approximately located at 72+20, 38’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Brush College Road, Approximately located at 73+60, 41’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Brush College Road, Approximately located at 75+28, 42.5’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway, Approximately located at 205+40, 49’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located 207+50, 68’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 207+65, 70’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 208+13, 76’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 209+02, 42’ LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 208+93, 86’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 231+90, 40’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 232+03, 40’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 232+90, 45’ LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 232+94, 33’ LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 233+41, 38’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located 234+81, 45 LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 235+64, 36’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
North James St, Approximately located at 403+96, 141' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 700+95, 29' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 701+94, 29.5' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 702+53, 20' LT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 703+41, 29' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 704+95, 30' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 706+42, 29' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 706+45, 38' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 707+20, 29' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 707+20, 23' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 707+26, 30' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 708+75, 30' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
E Harrison (E Leg), Approximately located at 708+72, 37' RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Cemetery Access, Approximately located at 901+36, 44’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Cemetery Access, Approximately located at 901+33, 44’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Cemetery Access, Approximately located at 901+50, 44’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Cemetery Access, Approximately located at 901+76, 43’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Cemetery Access, Approximately located at 903+17, 42’ RT	Overhead Electric	Proposed design is to be constructed in surrounding area near this power line	Ameren Electric Distribution	Watch and Protect.
Faries Parkway, Approximately located at 209+25, 102' LT to 209+77, 121’ LT	Underground Electric Communications	Proposed design is to be constructed in surrounding area near this communication line	IC RR	Watch and Protect.
Brush College Road, Approximately located at 58+69, 84' LT to 62+52, 46’ LT	Underground Electric Communications	Proposed design is to be constructed in surrounding area near this communication line	IC RR	Watch and Protect.
Faries Parkway, Approximately located at 207+51, 78.5' LT to 213+41, 74' LT	Underground Electric Communications	Proposed design is to be constructed in surrounding area near this communication line	NS RR	Watch and Protect.
Faries Parkway, Approximately located at 204+80, 41' RT to 208+86, 84' RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Windstream	Watch and Protect.
Olive Street, Approximately located at 501+47, 18’ LT to 504+11, 15’ LT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Metro Communication	Watch and Protect.
Brush College Road, Approximately located at 62+02, 64' RT to 64+76, 58’ RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Metro Communication	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road, Approximately located at 70+23, 30' RT to 72+10, 31' RT to 77+00, 44' RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Metro Communication	Watch and Protect.
Faries Parkway, Approximately located at 204+54, 81' LT to 209+65, 81' LT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Comcast	Watch and Protect.
Brush College Road, Approximately located at 62+12, 58' LT to 62+59, 60' LT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Comcast	Watch and Protect.
E Harrison (E Leg), Approximately located at 701+03, 27' RT to 706+45, 26' RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	Comcast	Watch and Protect.
Brush College Road, Approximately located at 67+88, 94' LT to 67+94, 42' RT to 68+61, 41' RT to	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	ADM	Watch and Protect.
Brush College Road, Approximately located at 46+37, 55' RT to 48+10, 52' RT to 48+19, 125' RT and 48+27, 61' RT to 48+16, 74' RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	ADM	Watch and Protect.
Harrison Ave (west), Approximately located at 805+58, 29' LT to 805+53, 31' RT	Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	ADM	Watch and Protect.
Brush College Road, Approximately located at 46+37, 42' RT to 48+24, 44' RT (Manhole)	AT&T duct	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Brush College Road, Approximately located at 70+51, 6' RT to 71+38, 6' RT to 76+60, 9' RT	AT&T duct	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Brush College Road, Approximately located at 70+51, 38' RT 71+38, 37' RT to 73+67, 41' RT to 73+90, 36' RT to 76+75, 37' RT	AT&T buried copper	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Brush College Road, Approximately located at 70+51, 34' RT to 71+38, 34' RT to 71+38, 6' RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Brush College Road, Approximately located at 70+51, 32' RT to 71+38, 34' RT to 71+38, 6' RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Brush College Road, Approximately located at 71+38, 34' RT to 71+38, 87' RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Brush College Road, Approximately located at 73+67, 41' RT to 73+64, 109' RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Faries Parkway, Approximately located at 204+04, 51' RT to 205+44, 51' RT to 206+93, 67' RT to 208+89, 85' RT to 209+23, 93' RT to 209+37, 101' RT to 209+56, 120' RT to 209+55, 135' RT	AT&T buried copper	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Faries Parkway, Approximately located at 232+03, 34' RT to 236+29, 32' RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Olive Street, Approximately located at 500+98, 21' LT to 502+45, 21' LT	AT&T aerial copper cable	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
East Logan Street, Approximately located at 606+21, 19’ RT to 606+37, 25’ RT	AT&T Underground Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
East Logan Street, Approximately located at 606+21, 19’ RT to 606+25, 168’ LT	AT&T Aerial Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Cemetery Access, Approximately located at 901+77, 43’ RT to 903+17, 42’ RT to 904+36, 42’ RT	AT&T Aerial Fiber Optic	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
Cemetery Access, Approximately located at 900+18, 39’ LT to 900+20, 38’ RT to 901+71, 38’ RT to 901+77, 43’ RT to 901+81, 37’ RT to 904+36, 38’ RT	AT&T buried copper cable	Proposed design is to be constructed in surrounding area near this communication line	AT&T	Watch and Protect.
E Harrison (W Leg) Approximately located at 808+80, 130' RT to 809+80, 132' RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer	City of Decatur	Watch and Protect.
Brush College Road, Approximately located at 69+10, 68’ RT to 69+10, 84’ LT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer. Provisions in plans for adjustments if needed.	City of Decatur	Watch and Protect.
Brush College Road, Approximately located at 69+10, 84’ LT to 71+43, 85’ LT to 75+05, 82’ LT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer. Provisions in plans for adjustments if needed.	City of Decatur	Watch and Protect.
Faries Parkway, Approximately located at 221+68, 91’ RT to 221+71, 4’ RT to 225+64, 0’ RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer. Provisions in plans for adjustments if needed.	ADM	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway, Approximately located at 225+15, 123' LT to 225+64, 0' RT to 225+79, 34' RT to 228+14, 69' RT to 229+75, 41' RT to 232+00, 181' RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer. Provisions in plans for manhole adjustments.	Sanitary District	Watch and Protect.
E Harrison (E Leg) Approximately located at 700+72, 23' RT to 709+35, 22' RT	Sanitary Sewer	Proposed design is to be constructed in surrounding area near this sanitary sewer. Provisions in plans for adjustments if needed.	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 46+59, 7' LT to 47+78, 8' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 47+70, 32' LT to 55+50, 70' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 62+79, 28' LT to 67+02, 52' LT to 67+63, 38' LT to 77+00, 32' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 68+38, 77' LT to 78+19, 71' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 69+77, 77' LT to 68+78, 65' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 66+20, 116' LT to 66+31, 49' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Brush College Road Approximately located at 71+02, 40' RT to 76+48, 41' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Faries Parkway Approximately located at 206+00, 1' RT to 206+10, 37' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 206+00, 1' RT to 206+10, 37' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 207+90, 38' LT to 207+92, 3' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 206+36, 107' RT to 206+34, 50' RT to 208+90, 80' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
Faries Parkway Approximately located at 235+00, 24' LT to 237+77, 25' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
E Harrison (E Leg) Approximately located at 700+47, 47' LT to 708+57, 47' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
E Harrison (E Leg) Approximately located at 700+68, 45' LT to 707+57, 41' LT to 708+52, 46' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.
E Harrison (E Leg) Approximately located at 702+06, 99' RT to 706+59, 44' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	Private	Watch and Protect.
Cemetery Access, Approximately located at 901+11, 125' LT to 903+28, 17' LT	Storm Sewer	Proposed design is to be constructed in surrounding area	Private	Watch and Protect.
Harrison (W Leg) Approximately located at 800+20, 75' LT to 800+20, 75' RT	Storm Sewer	Proposed design is to be constructed in surrounding area	City of Decatur	Watch and Protect.

Utility schedules have been included in the construction plans for the potential conflicts that were identified during design. These schedules along with the above represents the best information available and is only included for the convenience of the bidder. The applicable provisions of Section 102, Articles 105.07, 107.20, 107.39, and 108.02 of the Standard Specification for Road and Bridge Construction shall apply.

The estimated utility relocation dates coordinated by the Contractor with each utility company should be part of the progress schedule submitted by the Contractor. If any utility adjustments or relocations have not been completed by the dates required by the Contractor's progress schedule, 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.

A utility kickoff meeting will be scheduled between the City of Decatur, the City of Decatur's Contractor, and the utility companies. The City of Decatur's Contractor is responsible for contacting J.U.L.I.E., ADM, and the Railroads prior to all excavation work. ADM and the Railroads do not participate in J.U.L.I.E.

LIST OF WORK INCLUDED IN THE COST OF OTHER PAY ITEMS

The Contractor's attention is called to several specific incidental work items as noted on the Contract Plans and Special Provisions and in addition to the lists in the Standard Specifications. Listed below is a listing of these items for general information only. The list is not intended to be all-inclusive and, therefore, the Contractor is responsible to perform all work according to the Plans, Special Provisions, and the Standard Specifications.

PAY ITEM NUMBER	**ITEM**	WORK INCLUDED IN THE COST OF ANOTHER PAY ITEM
44000100	PAVEMENT REMOVAL	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, and hot-mix asphalt surfaces. Removal of any existing pavement fabric.
44000600 X4404700	SIDEWALK REMOVAL SIDEWALK REMOVAL (SPECIAL)	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, hot-mix asphalt surfaces, and sheet pile wall. Removal of any existing pavement fabric.
50105220	PIPE CULVERT REMOVAL	In-stream work and the removal and disposal of existing pipe culvert end sections
54213717	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 72"	In-stream work
60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	Saw Cut (full depth) shall be required at the joint between pavement, sidewalk, curb, and curb and gutter, median, driveway pavement, and hot-mix asphalt surfaces. Removal of any existing pavement fabric.
70400100	TEMPORARY CONCRETE BARRIER	Cost of anchoring temporary traffic control barrier to proposed bridge decks
Z0045100	PRESSURE CONNECTION	Excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the access pits.

PAY ITEM NUMBER	**ITEM**	WORK INCLUDED IN THE COST OF ANOTHER PAY ITEM
Z0068410	STEEL CASINGS	Excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the jacking and receiving pits. Illumination with flashing warning lights and fencing (6' tall) around the excavated areas throughout the time the pits are excavated. Temporary support or bracing of existing above or below ground utilities and must be coordinated with the affected utilities. Installation and subsequent removal of required temporary soil retention systems.
X1200149	DUCTILE IRON WATER MAIN	Excavated material removal and disposal, trench/pit protection, and stockpile protection. Temporary support or bracing of existing utilities. Water main dewatering required during the installation of water main pipe. Removal and disposal of an existing water main within the same trench and/or excavated area as the proposed water main. All tools and equipment for pumping and bailing and all materials for building drains or other work necessary to keep the trenches free of water. Restrained piping, joints, and/or retainer glands or appurtenances
X1200246	WATERMAIN CASING PIPE	Installation and subsequent removal of required temporary soil retention systems.
X5510100	STORM SEWER REMOVAL	Permanently plugging the main storm sewer at all locations where minor storm sewers at blind connections are to be removed. All work and materials necessary to backfill, including trench backfill.
X5610700	WATER MAIN REMOVAL	Casing pipe removal if the existing piping is encased.
X5610746	WATER MAIN LINE STOP	All required work for excavating, temporary soil retention system installation and removal, shoring, dewatering, utility locating, stabilization and backfilling of the required access pits.

PAY ITEM NUMBER	**ITEM**	WORK INCLUDED IN THE COST OF ANOTHER PAY ITEM
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	Removal or covering of existing regulatory, warning, and/or traffic signs which interfere with construction and/or conflict with construction traffic patterns. Cost of supplying, erecting, and maintaining barricades, warning lights, and standard signs along the detour route.
Contract	STABILIZED CONSTRUCTION ENTRANCE	All work associated with the installation and maintenance shall be incidental to the Contract.
Contract	CONCRETE WASHOUTS	All work associated with the installation and maintenance shall be incidental to the Contract.
Contract	CONSTRUCTION ACCESS RESTORATION	Clean up and restoration of areas where equipment or material has been stored on the right-of-way or easement when the work is complete.
Contract	TEMPORARY EROSION CONTROL	Compliance with all permit requirements at the direction of the permitting agencies.
Contract	WATER MAIN RELOCATION	Adjustment of hydrant bury depth to accommodate the piping and ground elevations shown in the plans.
Contract	EXISTING CONDITIONS	Documentation of existing conditions
Contract	RAILROAD FLAGGING	All work associated with coordinating and obtaining railroad flagging.
Contract	PERMIT COSTS	All costs related to the permit requirements
Contract	RAILROAD PERMITS	The contractor is responsible for monitoring vibration and settlement affecting the railroad tracks during construction of any work permitted by the railroads (e.g. jack and bore installation of water main)
Contract	RAILROAD RIGHT-OF-ENTRY	The contractor is responsible for obtaining right-of-entry agreement for any work on the respective railroad properties.

CONTRACTOR WORKING ON BEHALF OF PROJECT SPONSOR
COSTS REIMBURSED BY PROJECT SPONSOR
NS File: **BR1113299**

NORFOLK SOUTHERN
CONTRACTOR RIGHT OF ENTRY AGREEMENT

WHEREAS, _____
("Principal") has requested that Norfolk Southern Railway Company ("Company") permit Principal to be on or about Company's premises and/or facilities in the vicinity of Company milepost
MP IT-43.59 Decatur, IL
(the "Premises") for the sole purpose of **New Overhead Bridge Construction**
, on behalf of **The City of Decatur**
(the "Project Sponsor") during the period _____, 20**22**, to _____, 20____ (the "Right of Entry").

WHEREAS, Company is willing to grant the Right of Entry subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereby agree as follows.

Company hereby grants Principal the Right of Entry. The Right of Entry shall extend to Principal and to subcontractors and other entities affiliated with Principal who are specifically approved for entry by authorized representatives of Company in writing, as well as to the officers and employees of the foregoing (collectively "Licensees"). The Right of Entry shall apply to those portions of the Premises, and to such equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises, only to the extent specifically designated and approved in writing by authorized representatives of Company (collectively, "Designated Property").

Principal agrees:

(i) that Licensees' access to the Premises shall be limited to the Designated Property and that Principal shall be liable and fully responsible for all actions of Licensees while on the Premises pursuant to the Right of Entry;

(ii) that Licensees shall (a) be subject to Company's direction when upon the Premises, and (b) be subject to Company's removal from the Premises, in Company's sole discretion, due to negligence, misconduct, unsafe actions, breach of this agreement or the failure to act respectfully, responsibly, professionally, and/or in a manner consistent with Company's desire to minimize risk and maintain its property with maximum security and minimum distractions or disruptions or for any other lawful reason;

(iii) that Licensees shall perform all work with such care, diligence and cooperation with Company personnel as to reasonably avoid accidents, damage or harm to persons or property and delays or interference with the operations of any Company's facilities and in accordance with Company's "Special Provisions for Protection of Railway Interest", attached and incorporated herein.

(iv) to give Company's officer signing this agreement, or his or her authorized representative, advance notification of the presence of Licensees on Designated Property in accordance with Company's "Special Provisions for Protection of Railway Interest";

(v) to indemnify and save harmless Company, its officers, agents and employees from and against any and all claims, demands, losses, suits, judgments, costs, expenses (including without limitation reasonable attorney's fees) and liability resulting from (a) injury to or death of any person, including without limitation the Licensees, and damage to or loss of any property, including without limitation that belonging to or in the custody of Licensees (the "Licensee Property"), arising or in any manner growing out of the presence of either the Licensees or the Licensee Property, or both, on or about the Premises, regardless of whether negligence on the part of Company, its officers, agents or employees caused or contributed to said loss of life, personal injury or property loss or damage in whole or in part; (b) any alleged violation of any law, statute, code, ordinance or regulation of the United States or of any state, county or municipal government (including, without limitation, those relating to air, water, noise, solid waste and other forms of environmental protection, contamination or pollution or to discrimination on any basis) that results in whole or in part, directly or indirectly, from the activities of Licensees related in any way to their presence on the Premises or from any other act or omission of Licensees contributing to such violation, regardless of whether such activities, acts or omissions are intentional or negligent, and regardless of any specification by Company without actual knowledge that it might violate any such law, statute, code, ordinance or regulation; (c) any allegation that Company is an employer or joint employer of a Licensee or is liable for related employment benefits or tax withholdings; or (d) any decision by Company to bar or exclude a Licensee from the Premises pursuant to subsection (ii)(b) above;

(vi) to have and keep in effect the appropriate kinds of insurance as listed in the Company's "Special Provisions for Protection of Railway Interest, with insurance companies satisfactory to Company, during the entire time Licensees or Licensee Property, or both, is on the Premises: and to provide certificates of insurance showing the foregoing coverage, as well as any endorsements or other proper documentation showing and any change or cancellations in the coverage to the Company officer signing this agreement or to his or her authorized representative;

(vii) to reimburse Company for any costs not covered under the existing project agreement between the Company and the Project Sponsor, including any material, labor, supervisory and protective costs (including flagging) and related taxes and overhead expenses required or deemed necessary by Company because of the presence of either Licensees or Licensee Property on the Premises;

(viii) to exercise special care and precautions to protect the Premises and equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises (whether or not constituting Designated Property) and to avoid interference with Company's operations;

(ix) to not create and not allow drainage conditions which would be adverse to the Premises or any surrounding areas;

(x) to refrain from the disposal or release of any trash, waste, and hazardous, dangerous or toxic waste, materials or substances on or adjacent to the Premises and to clean up or to pay Company for the cleanup of any such released trash, waste, materials or substances; and

(xi) to restore the Premises and surrounding areas to its original condition or to a condition satisfactory to the Company officer signing this agreement or to his or her authorized representative (ordinary wear and tear to rolling stock and equipment excepted) upon termination of Licensees' presence on the Premises.

As a part of the consideration hereof, Principal further hereby agrees that Company shall mean not only Norfolk Southern Railway Company but also Norfolk Southern Corporation and any and all subsidiaries and affiliates of Norfolk Southern Railway Company or Norfolk Southern Corporation, and that all of Principal's indemnity commitments in this agreement in favor of Company also shall extend to and indemnify Norfolk Southern Corporation and any subsidiaries and affiliated companies of Norfolk Southern Railway Company or Norfolk Southern Corporation and its and/or their directors, officers, agents and employees.

It is expressly understood that the indemnification obligations set forth herein cover claims by Principal's employees, agents, independent contractors and other representatives, and Principal expressly waives any defense to or immunity from such indemnification obligations and/or any subrogation rights available under any applicable state constitutional provision, laws, rules or regulations, including, without limitation, the workers' compensation laws of any state. Specifically, (i) in the event that all or a portion of the Premises is located in the State of Ohio, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code"; and (ii) in the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to the Pennsylvania Workers' Compensation Act, 77 P.S. 481".

This agreement shall be governed by the internal laws of the Commonwealth of Virginia, without regard to otherwise applicable principles of conflicts of laws. If any of the foregoing provisions is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable be severed and deleted from this agreement and that the balance of this agreement remain a binding enforceable agreement to the fullest extent permitted by law.

This agreement may be amended only in a writing signed by authorized representatives of the parties.

Name of Principal: _____

By: _____

Print Name: _____

Title _____

Date _____, 20____

NORFOLK SOUTHERN RAILWAY COMPANY

By_____

Print Name: _____

Title _____

Date _____, 20_____

SPECIAL PROVISIONS FOR PROTECTION OF RAILWAY INTEREST

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.
   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: Risk Management

(NOTE: NS 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 Department 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 Department must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."

h. All coverages must be in full force and effect upon receipt and the railroad protective policy period term must be active for a one (1) year minimum policy period term

i. Endorsements/forms that are **required** are:
   (1) Physical Damage to Property Amendment
   (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

j. 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

k. 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.

DEPARTMENT:

RAILROAD:

Risk Management
Norfolk Southern Corporation and its subsidiaries
Three Commercial Place
Norfolk, Virginia 23510-2191

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

E. Norfolk Southern – 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: Risk Manager

   (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 electronic 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 Corporation and its subsidiaries
Three Commercial Place
Norfolk, Virginia 23510-2191
NSRISK3@NSCORP.COM

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 email to NSRISK3@NSCORP.COM. Railroad will NOT accept initial insurance submissions via hard copies that would be sent either US Mail or Overnight carrier or faxes as only electronic versions only are to be submitted to Railroad. 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 electronic insurance submission to NSRISK3@NSCORP.COM to be submitted under a cover letter providing details of the project and containing the contact information:

   a. The full original or certified true electronic 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 Corporation and its subsidiaries, 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 or certified true electronic 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.: _____

CN RIGHT OF ENTRY (ROE) LICENSE AGREEMENT

Paul Chojenski
Manager Public Works
17641 South Ashland Avenue
Homewood, IL 60430
T 708.332.3557
F 708.332.3514
Email: Paul.Chojenski@cn.ca

Right of Entry (ROE) License Agreement Information

Cost is $750.00* for application

Railroad Company requires everyone (contractor, consultants, etc.) working on Railroad Company property to have a Right-of-Entry (ROE) License Agreement. ROE license agreement applications are handled by email. Once Railroad Company receives the information requested below, and if application is approved, Railroad Company will draw up a ROE License Agreement, and will forward electronic copy by email for applicant's execution. Applicant must return one (1) executed original copy, a check for $750.00*, and proof of insurance, together in one package to the address above. Application and ROE License Agreement will be delayed if Railroad Company receives the required documents separately, incomplete, or inaccurate. Railroad Company will return a fully executed digital copy of the ROE License Agreement by email for Applicant's files and records. No work may occur on Railroad Company property nor will flagging protection be provided until ROE License Agreement has been fully executed by both parties and returned. * Fee may be increased for special handling.

Please use this form and return by email to submit application request for a Right of Entry agreement.

Contact name –

Name of Applicant/contractor -

Street Address –

City, State, Zip –

Telephone –

Reason for ROE –

Duration of ROE –

Public Agency's Project No. –

Public agency Easement No. (if known) –

Location of project –

FRA/AAR/DOT Crossing No. –

If unable to locate this number at jobsite, please use following links to obtain:
http://safetydata.fra.dot.gov/officeofsafety/publicsite/crossing/xingqryloc.aspx

In Illinois
http://www.icc.illinois.gov/railroad/advanced.aspx?

If project job site does not have a FRA/AAR/DOT Crossing Number, please attach an aerial snapshot to help identify specific location.

ROE may take up to 4+ weeks to obtain

FAQ

What are the insurance requirements?

Railroad Company allows outside parties to come onto Railroad Company property to perform work, such as survey or inspection work, installation of pipelines and wirelines, and other work for projects necessitating the occupancy of Railroad Company. Before commencing work, and until the license of allowing such occupancy ends or is terminated, outside parties shall provide and maintain the following insurance in form and amount with companies satisfactory to and as approved by Railroad Company.

1. Minimum insurance required of outside party:

   A. Statutory Workers Compensation and Employer's Liability Insurance.

   B. Automobile Liability Insurance in an amount not less than $1,000,000 combined single limit.

   C. Commercial General Liability Insurance (Occurrence Form) in an amount not less than $5,000,000 per occurrence, with an aggregate limit of not less than $10,000,000. The policy must name Railroad Company and its Parents as additional insureds in the following form:

      Railroad Company name and its Parents
      Attn: Paul Chojenski
      17641 South Ashland Avenue
      Homewood, IL 60430
      708.332.3557 (office)
      Paul.Chojenski@cn.ca

      The policy must remove any provisions excluding coverage for injury, loss or damage arising out of or resulting from doing business or undertaking construction or demolition on, near, or adjacent to railroad track or facilities using endorsement CG 2417 10 01 or equivalent approved by Railroad Company.

   D. When outside party is required by Railroad Company or Governing Authority to purchase Railroad Protective Liability Insurance to cover work on, near or adjacent to railroad track or facilities, and outside party is not being hired for this project by Railroad Company, outside party must procure Railroad Protective Liability Insurance in the following form;

      This coverage shall be written on an Occurrence Form with limits of not less than $5,000,000 per occurrence for Bodily Injury, Personal Injury and Physical Damage to Property, with an aggregate limit of not less than $10,000,000. The policy must name:

      Railroad Company name and its Parents
      Attn: Paul Chojenski
      17641 South Ashland Avenue
      Homewood, IL 60430
      708.332.3557 (office)
      Paul.Chojenski@cn.ca

   E. In the event the privileges provided herein to Applicant involve any work that could result in the discharge, spillage, disposal, release or escape of any Hazardous Material or petroleum product onto the Railroad Company's property, Applicant shall purchase and maintain in effect at all times during the term of this License a Contractor's Pollution Liability policy in an amount not less than two million dollars ($2,000,000) combined single limit (and with a deductible not to exceed $50,000) insuring Railroad against any and all damages, costs, liabilities and expenses resulting from on- or off-site bodily injury (including death to any person), on or off-site loss, damage or destruction of property (including that belonging to the parties hereto), and on-or off-site cleanup costs (including expenses incurred in the investigation, removal, remediation, neutralization, or immobilization of contaminated soils, surface water, groundwater or any other contamination) growing out of or incidental to any discharge, spillage, disposal, release, or escape of any Hazardous Material or petroleum product arising therefrom. For purposes of this Agreement, the term "Hazardous

Material" shall include, without limit, any flammable explosives, radioactive materials, hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. §§ 9601, et seq.), the Hazardous Material Transportation Act, as amended (49 U.S.C. §§ 1801, et seq.), the Resource Conservation and Recovery Act, as amended (42 U.S.C. §§ 6901 et seq.), the Toxic Substances Control Act, as amended (15 U.S.C. §§ 2601, et seq.), similar laws or ordinances enacted by any state, county or municipality in which the Property is located, or in the regulations adopted and publications promulgated pursuant to any of the above, as such laws or regulations now exist or may exist in the future.

Applicant is required to advise Railroad Company by thirty (30) day advance written notice when any work to be performed under this License may require Pollution Liability Insurance pursuant to the previous paragraph.

F. All policies described above must include description of operations, Railroad Company milepost, highway or street name, city and state of location, project number, and Railroad Company contact person on the certificate.

2. Before commencing work, outside party shall deliver to Railroad Company a certificate of insurance evidencing the foregoing coverages and, if requested by Railroad Company, true and complete copies of the policies described above. If the policy is being issued in conjunction with, or as a result of, a city, county or state contract, the policy should be initially submitted to the respective city, county or state agency that will review it first and then forward it to Railroad Company.

3. Common Policy Provisions. Each policy described in paragraph 1, parts A through E above, must include the following provisions:

   A. Each policy shall include a waiver by the insurer of any right of subrogation against any recovery by or on behalf of any insured.

   B. Each policy shall provide for not less than thirty (30) days prior written notice to Railroad Company at the address listed above of cancellation of or any material change in that policy.

4. It is understood and agreed that the foregoing insurance coverage requirements, and outside party's compliance with those requirements, is not intended to, and shall not, relieve outside party from, or serve to limit, outside party's liability and indemnity obligations under the provisions herein.

5. Railroad Company shall have the right, from time to time, to revise the amount or form of insurance coverage required as circumstances or changing economic conditions may require. Railroad Company shall give outside party written notice of any such requested change at least thirty (30) days before the date of expiration of the then-existing policy or policies, outside party agrees to, and shall, thereupon provide Railroad Company with such revised policy or policies.

6. Insurance required of SUBCONTRACTOR:

   A. If a SUBCONTRACTOR is to be employed by outside party to perform work on Railroad Company under or by the permission for occupancy granted to outside party by Railroad Company, before commencing work, the SUBCONTRACTOR shall provide and thereafter maintain all of the insurance described in paragraph 1, parts A through E, above, in the same forms and amounts as provided for above and subject to the other terms and conditions provided for in paragraphs 2 through 4 above.

   B. In the alternative, before the SUBCONTRACTOR commences work for outside party on Railroad Company, outside party may provide and thereafter maintain all of the insurance described in paragraph 1, parts A through E, above, in the same forms and amounts as provided for above and subject to the other terms and conditions provided for in paragraphs 2 through 5 above, provided that all such insurance names SUBCONTRACTOR as an additional insured and all such insurance provides coverage to all additional insureds, including Railroad Company, for any liability arising out of work performed by all other additional insureds, including SUBCONTRACTOR.

Is safety training required?

Prior to any entry onto Railroad Company's property, the employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee shall determine by the guidelines hereinafter provided and by the work to be performed the level of safety training to be required.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee not hired by Railroad Company that will work on CN property are required to have minimum www.contractororientation.com.

a. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee hired by Railroad Company which will work on Railroad Company property are required to have minimum CN Safety and Security Awareness training, in addition to undergoing a background check. This training and background check must be obtained through the eRailSafe.com website. If not done before, the contractor must contact CN Special Agent James Conroy at 708-332-5947 or James.Conroy@cn.ca to be issued a vendor number prior to accessing the noted website. Minimum information required of of a Contractor, Grantee, Licensee, or Permittee and/or their contractor when contacting either Special Agent James Conroy or e-RailSafe is Name, Address, Telephone, Contact Person for State Projects, DOT Contract Number, and the AAR/DOT Number. This training is good for a period of two years.

a. EXCEPTION: Railroad Company has exempted those employees of contractors providing paving services at a road crossing under construction or repair from this requirement.

b. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

All employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee hired by Railroad Company, whose duties include and who are engaged in the inspection, construction, maintenance, or repair of railroad track, bridges, roadway, signal and communication systems, roadway facilities, or roadway machinery that will work foul of or have the potential to foul a live track are considered Roadway Workers under FRA regulations and CN Policy. They must complete the On-Track Safety Training course approved by Railroad Company and provided by R.R. Safety – AMR, P.O. Box 75, Lomira, WI 53048, telephone (920) 517-1677, email rrsafetytraining@yahoo.com. This training must be repeated at least once each calendar year.

a. EXCEPTION: Railroad Company has exempted those employees of contractors providing paving services at a road crossing under construction or repair from this requirement.

b. EXCEPTION: Railroad Company has exempted those it classifies as "Delivery Persons" from this training. This will include contractors such as UPS, FedEx, trucking companies, etc. who merely access the property to supply materials or equipment.

c. All the employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee who will operate on-track machinery or those who will provide protection for other employees and/or subcontractors of a Contractor, Grantee, Licensee, or Permittee must also be trained on CN US Operating Rules pertaining to their duties. They must take and pass the required examination. This training is good for a period of two years.

d. "Potential to foul a live track" is considered, at a minimum, to be working within twenty-five (25) feet of the track; or as otherwise to be determined by CN Design & Construction Department.

The employees, subcontractors, and/or agents of the Licensee and/or its contractor shall qualify for, and make available for inspection to Railroad Company's employees or other authorized personnel at all times while on Railroad Company property, a photo identification issued by www.e-railsafe.com, along with at least one other government-issued form of identification. Licensee and/or their contractor shall bear all costs of compliance with the requirements of this Section. Railroad Company reserves the right to bar any of employees or agents of a Contractor, Grantee, Licensee, or Permittee and/or their contractor from Railroad Company's property at any time for any reason.

What are the flagging protection rates?

Flagging protection Rates:

Basic rate - 8 hour minimum = $1,000.00 – Monday thru Friday regular business hours

Overtime rate - hours in excess of 8 hours = $150.00/hr non regular business hours

Weekend or holiday rate = $150.00 per hour with a 8 hour minimum or $1,200.00

Email the above back to Paul.Chojenski@cn.ca

Revised 02-27-2015

REVISIONS TO CN INDUSTRIAL TRACK SPECIFICATIONS

Please note the following changes to the existing CN Industrial Track Specifications:

1. All mainline turnouts should be #12-136 lb RBM with switch blower. Mainline turnouts with blowers shall be ordered through CN. Power for the blower should be supplied by the customer via a 220V power drop at fence line, adjacent to mainline switch.

2. Crushed ballast specification found on p.10 has been revised to the following:

Crushed Gravel Ballast

.1 Gradations to be within limits specified (Irricana Pit).

Sieve Size	Percent Passing
45.3 mm (1-3/4")	100
32.0 mm (1-1/4")	70-95
25.4 mm (1")	50-80
19.0 mm (3/4")	30-60
12.7 mm (1/2")	10-30
4.76 mm (No. 4)	0-3
74 micron (No. 200)	0-1

.2 Percentage of crushed particles in size range shall not be less than 70% by weight of all particles in that size range. Particles having one or more fractured faces will be used in calculating this percentage.

.3 Material in sample finer than No. 4 (4.76 micron) sieve will not be considered in determining the percentage of fractured faces.

.4 Grading of crushed gravel ballast shall be determined by ASTM C316, latest edition.

.5 Amount of material finer than No. 200 (74 micron) shall be determined by ASTM C117, latest edition.

3. Minimum ballast depth should be 9 inches, as oppose to 6 inches. Ballast depth increases for unit train or HAZMAT facilities (see p. 25).

4. Switch stands must be 36 E, no 22E stands permitted.

5. Culvert specification on p. 29 should be replaced by CN's Culvert Spec R7A, as attached.

6. Quality of second hand rail must be at least 3 spot rail.

May 2014

ENGINEERING SPECIFICATIONS
FOR
INDUSTRIAL TRACKS

CN – ENGINEERING
OFFICE of DESIGN & CONSTRUCTION

Effective: June 15, 2011

Specifications for Industrial Tracks

Table of Contents

1.0 Foreword

These specifications are provided only as a guideline for design purposes and should not be taken as authority to construct industry trackage without prior review and approval from CN Design and Construction. This document is addressed to firms, developers and local authorities who want to construct a rail siding to an existing facility, to a green field site, including rail access to industrial parks, and to rail-truck transload facilities. The document is an especially useful guide to the Consulting Engineers and to the Contractors retained by groups/firms requiring rail access.

The specifications represent the minimum standard of construction and design for Industrial lead and service tracks and in-plant tracks. Tracks exceeding 1/2 mile in length or that are planned for speeds in excess of 10 mph or that are to handle cars greater than 70 feet in length, hazardous materials, and unit trains are subject to more restrictive specifications. Deviations from these standards, as provided for within the specifications, must have approval from the office of the CN Senior Manager Design and Construction. All other changes requested must be approved by office of the CN Chief Regional Engineer.

2.0 Development of Industrial Projects

2.1 Process for Industrial Track Projects

The development of an Industrial Project requiring rail service by CN can be broken into five distinct steps. These steps identify the various stages of development and levels of contact with CN.

Step 1 - Initial Contact with CN Business Development/Real Estate

The initial contact for Industries requiring rail service is the CN Business Development / Real Estate Group. The Business Development/Real Estate Group can provide assistance with site location, preliminary rail layout, rail serviceability, and shipping rates. The Business Development/Real Estate Group will consult with the CN Engineering and Transportation Departments to ensure the project is the most effective combination of location, shipping rates and serviceability.

Step 2 - Development of Detailed Design

Once the conceptual work has been completed with the assistance of CN Business Development/Real Estate, the Industry is to obtain the services of an Engineering Consultant or Rail Contractor to develop a detailed design for their facility. The development at this stage will ensure the rail portion of the project integrates with the remainder of the project and will provide sufficient details to allow CN Design and Construction to evaluate the design for compliance to CN Engineering Track Standards.

Step 3 - Submission of Detailed Design to CN Design and Construction

The detailed design drawing prepared by the Industry's consultant is to be submitted to CN Design and Construction for review. The proposed design will be evaluated against CN Engineering Track Standards, which are outlined in this document. The design will also be confirmed with CN Transportation to verify serviceability. Approval at this stage ensures the design meets requirements specific to CN. The drawings must be approved and signed and stamped by a Professional Engineer prior to submission.

Step 4 - Construction

CN forces will be involved in any work that is located on CN property. This usually involves installation of mainline turnouts, signals work, etc. It is the Industry's responsibility, along with its contractors, to ensure that construction of the project is in accordance with the project design specifications.

Step 5 - Completion

Once construction is complete and the rail facility is ready to enter into service, CN will conduct a final inspection to ensure the track is safe for rail operation. This is typically done by the local track supervisor, which can be arranged through CN Design and Construction. CN also requires a paper or electronic copy of the As-Constructed/Agreement drawing(s) for sidetrack agreement purposes and will retain a copy of the sidetrack agreement(s) for CN's records.

2.2 Contacts

Primary Contact is:

Local CN Business Development/Real Estate Manager

Name	Phone Number
Fax Number	Email Address

Local CN Design and Construction Contact

Name	Phone Number
Fax Number	Email Address

3.0 Design Standards

When designing track to serve an Industrial Facility or Lead Track, the following elements must be considered:

- Direction of Inbound and Outbound traffic;
- Car Lengths and car floor heights (if applicable)
- Loading method and capacity;
- Frequency of service
- Commodity transported.

3.1 General

1. All new construction is to comply with all CN Engineering Track Standards and appropriate regulatory requirements including those outlined in Section 4.
2. Industrial spurs or lead tracks longer than ½ mile in length must provide for a run-around track. If a spur or lead track is less than a ½ mile but does not have all switch points facing the same direction, a run-around may also be required.
3. Maximum gradient on industrial spur track is to be no greater than 2% and should be limited to 1% on lead tracks. Grades on track at locations used for spotting rail cars should be 0%, but in no case should exceed 0.2%.
4. Track shall be designed for standard gauge of 56-1/2”.
5. Minimum track centers shall be as follows:
    a. Unless physically restricted, 25' track centers should be used to provide safe working space for employees between Main and industrial spurs or lead tracks.
    b. Between industrial or yard tracks: 14 ft.
    c. Greater track centers may be required to accommodate loading of specific commodities. For example, a minimum of 25’ track centers is required at log/pole loading facilities.
6. The horizontal clearance envelope as well as the minimum distance between track centers shall be increased to account for curvature and super elevation as follows:
    a. 1” per degree of curvature of track for single track
    b. 2” per degree of curvature of track for parallel track
7. Clearance envelopes will comply with the Regulatory Requirements per Section 4.2.
8. Industrial track shall be constructed with maximum 20” tie spacing.
9. For new construction the minimum railway clearance requirements (in addition to or at least to meet regulatory requirements) will be:

Vertical: 23'-0" Nearest Obstruction (clear headway above the top of the highest rail) except:
27’-0” Overhead Wire Lines (clear headway above the top of the highest rail)

Horizontal: 8' 6" from the centerline of track to the nearest obstruction, unless otherwise provided in these specifications.

3.2 Design Process

All design work is to be reviewed by CN Design and Construction.

3.2.1 Drawings

1. Drawing submissions to CN may be in hard copy format or electronic in AutoCAD format and pdf. Six (6) copies of the design are required if they are submitted in hard copy.

2. The drawings shall be to scale (minimum scale of 1"=200' OR 1:2000) and a minimum of 11" x 17" in size. The submitted drawing shall comply with the standard format as indicated on pages 36, 37 and 38 and contain the following information:
    - Mile and subdivision of the mainline connection
    - Legal Land description of the proposed development
    - Width of the CN Right of Way
    - Plan, profile and typical cross-sections
    - Proposed top of rail grades
    - Rail Size
    - Turnout type and locations
    - Stationing will be in 100 foot increments
    - Actual mainline stationing on point of switch (PS) locations
    - Stationing for PS, clearance point, right-of-way line, and derail shall be shown, with PS = 1 + 00
    - Derail type
    - Curve data including PC/PT points, spirals (if any), and degree of curve
    - Vertical curve data, including length of vertical curve
    - Track center dimensions
    - Drainage and culverts
    - Wetlands delineation
    - Easements
    - Location of utilities
    - Location and details of fencing and gates
    - Proposed car spots, maximum car lengths and proposed maximum gross weight
    - Track length
    - Clearance envelopes superimposed on cross-section
3. A proposed schedule for completing the work shall also be included with any submission for a proposed development.

3.2.2 Approval of Material and Equipment

Both Industry and Contractor must certify that track related materials and equipment meet CN specifications.

3.3 Curves

1. Maximum curvature on industrial track should be 9° unless approved by CN Sr. Manager Design and Construction. (or equivalent curve compensation per AREMA 3.7),
2. The chord definition of curvature is to be used. Degree of Curve is defined as the angle at the center of a circular arc subtended by a 100' chord. Degree of Curve is related to radius as follows:

$$\sin(Dc/2) = 50/R$$

Where Dc = Degree of Curve and R = Radius

3. If cars are to be coupled on a curve, the maximum curvature shall be 9°. This will help prevent couplers from bypassing and cars derailing. Where the curve is in excess of 9° there must be a minimum of 30 feet of tangent track between the last car and the point of curve (PC) in order to couple cars on the section of tangent track.
4. Gauge of track on all curves will be 56-1/2".
5. The minimum tangent distance shall be at least 70 feet between reverse curves.

6. The rate of change for Vertical Curves should not be more than 1.2% per station in Sags and 1.5% per station in Summits for industrial tracks. The rate of change for Vertical Curves should not be more than 0.60% per station in Sags and 1.0% per station in Summits for lead tracks.

7. No portion of mainline turnouts is to be located in horizontal or vertical curves, spirals or within track with superelevation. Point of switch of any turnout or switch point derail not to be within twenty-five (25) feet of point of vertical curve. See Chart for minimum distances to bridges, curves, and road crossings. It is highly desired that no portion of the mainline turnout be installed closer than 100 feet to any bridge or public road crossing.

3.4 Road Bed and Ditching

1. Construction of an adequate roadbed and drainage system is the responsibility of the individual industry. The subgrade / sub-ballast / ballast structure must be designed by a Professional Engineer licensed in the state or province of the project to ensure structural capacity based upon the anticipated loading (i.e. 286,000 lb cars).
2. The drainage system shall be capable of handling the maximum expected flow of water and may not compromise the existing drainage system of the railway. Post-development flow rates to CN property must not be increased as a result of altered runoff characteristics.
3. Grading shall ensure there is adequate drainage away from the track structure.
4. Compact full width of subgrade and sub-ballast to density not less than 95% maximum dry density in accordance with Standard Proctor Density Compaction Test (ASTM D698).
5. Roadbed shall conform with Typical Cross-section as shown on page 20
    a. The top of the subgrade shall be shaped with a minimum 1:40 slope for drainage, typically each way from the centerline of the track.
    b. Embankments must have a slide slope of not less than 2H: 1V.
    c. Minimum depth of sub-ballast structure must be 12” and must extend at least 4 feet beyond the edge of ballast, unless otherwise approved by CN Design and Construction. Maintained top width shall be a minimum of 24 feet
    d. Minimum depth of ballast structure must be 6” under industrial track and must provide a minimum 6” shoulder for jointed rail or 12" shoulder for continuous welded rail. Minimum ballast depth of mainline track class 2 or higher is 12”. Particular attention must be paid to turnout locations to ensure all minimum requirements are met.
6. The width of sub-ballast on the diverging side of turnouts shall be increased to create a walkway for train service employees. The sub-ballast width shall taper from the minimum of 12’-0” up to 20’ from the centerline of the tangent side of the turnout at the end of the stock rail ahead of the point of switch, until it reaches a point that is 12’-0” from the centerline of the diverging track. The 12’-0” minimum width should be maintained away from the point of switch until either 4’ past the location of a derail or 50’ past the clearance point if no derail is installed, and then should be tapered (if needed) to minimum width of 12’-0” from centerline of the track. Tennessee law requires that a walkway be provided, which requires a sub-ballast width a minimum of 12’-0’ from track centerline be provided on one side of any industry track for the entire length.
7. Ditch profile must be designed prior to the commencement of any excavation.
8. Drainage must be given particular attention at the following places: Switches, frogs, diamond crossings, grade crossings, and other places with limited vertical and side clearance.
9. Culverts shall be Corrugated Steel Pipes, Structural Plate Corrugated Steel Pipes, Seamless Steel Pipes or Reinforced Concrete Pipes to the latest CN and ASTM Specifications and must be sufficient to withstand 286,000 lb loading. These documents

are available upon request.

3.5 Turnouts

1. Mainline turnouts must be new and comply with the current CN Engineering Standard Plans, copies of which are available from CN Design and Construction. The turnout must be of rail weight equivalent or greater than the mainline track and must be number 10 turnout or higher.
2. All turnouts within Industrial facilities may be new or second hand and must be a number 8 turnout or higher, or a number 10 turnout or higher if facility is to be serviced by six axle locomotives. Turnout rail weight must be 115RE or greater, unless approved by CN Design and Construction. Second hand turnouts must be of acceptable quality; rail may only be one spot rail, as defined in RM 1303-0. One spot rail is rail that is free of physical defects and has less than 20% of allowable head wear.
3. Industrial turnouts should be in accordance with CN Engineering Track Standard Plans. CN Sr. Manager Design and Construction may approve alternate turnout designs upon review.
4. All turnouts must have new hardwood switch ties.
5. All turnouts must be equipped with adjustable braces.
6. Second hand turnout material is not to be painted.
7. Switch stands will be of ergonomic design and can be new or second hand, and must be complete with connecting rods, targets, and reflective tips as required.
8. Frogs in other than Main Track turnouts will be either Self Guarded Solid Manganese (SGSM) or Rail Bound Manganese (RBM). Frogs in Main Track turnouts will be Rail Bound Manganese (RBM), Spring (SPR), or Flange Bearing (FB).

3.6 Derails

1. Derails must be installed:
    a. Where there is any possibility of equipment, which has been left standing on tracks other than main tracks or sidings, being moved by gravity so as to obstruct a main track or siding;
    b. On tracks on which an industry will move cars or equipment and
    c. On mining and other bulk loading facility tracks where cars are dropped by gravity toward the main or other track that is to be protected
    d. Any location where directed by CN Sr. Manager Design and Construction.
2. Hinge and sliding type derails may be used where the speed of the equipment to be derailed will not exceed 15 mph. A derail wheel crowder should also be installed where any of the following conditions apply:
    a. Derailing speed could exceed 9 mph; or
    b. The derail is installed on the inside of a curve.
3. Switch point derails must be used when speed of the equipment to be derailed could exceed 15 mph. Where switch point derails are used, adequate rail anchorage must be provided to prevent rail creep.
4. Where a private locomotive, track mobile or other car moving device is in use on industrial track, a switch point derail must be installed on the industrial track where it joins railway track. Exact locations will be coordinated with CN Design and Construction.
5. CN Regional Chief Engineer or designate will approve the derail selection for each installation.

6. The following table shall be used in selecting the appropriate derail:

Distance (Feet) in which a Free-Rolling Car will achieve the Following Speed:

Gradient (%)	**8 mph**	**9 mph**	**12 mph**	**15 mph**
0.30	1000	1280	2350	3800
0.50	485	615	1125	1805
0.75	310	395	700	1090
1.00	225	285	555	785
1.50	155	190	330	510
2.00	115	140	245	380

7. Derails must be installed so that equipment will derail away from the track being protected and shall be at least 20' beyond the 13' 6" clearance (fouling) point. Derails must be far enough behind any insulated joints to ensure that equipment derails before fouling the track circuit.
8. Hinge and sliding derails will be painted yellow, and any track equipped with a derail shall have the switch stand lever painted yellow. Proper signage shall also be erected at derail locations.

3.7 Cable Progressioners (Car Movers)

1. Must comply with clearance specifications.
2. Must have adequate lighting to ensure permanent mounted snatch blocks are visible at all times and that cables will not impede normal working activity.
3. Must be painted a conspicuous color.
4. Lockout controls must be installed on car progressioner panel to ensure no operation during switching or track maintenance.
5. Alarm system (i.e. bell, buzzer, etc.) should be integrated with start control so that a five second warning is given to personnel in the vicinity that car progressioner will be operating.
6. Standard warning sign should read “Caution: Car Puller Cables on Ground”.

3.8 Under Track Pits

1. Unloading Pits shall be designed and constructed in accordance with the provisions of the AREMA Manual, Specifications, Chapter 15, Part 8, Section 8.4 and must be stamped by a Structural Engineer Licensed in the state or province which the project is in.
2. Unsupported Running Rail
    a. No Joints in running rail shall be permitted over the pit.
    b. The top of the concrete pit walls shall be true and level to provide full bearing for the running rails.
3. Structural supporting Beams
    a. Running rails should be attached to the supporting beams at 2’ centers.

b. Welding of rails to beams is not permitted.

c. Beams should be provided with masonry plates.

d. Two anchor bolts for each masonry plate (bearing plate) should be provided.

4. The cover for the unloading pit will have to be installed flush with the top of the ties or constructed to provide minimum slopes of 4:1 from top of the ties to top of the opening and must not protrude above the rail. Both the cover and slope sections should be of metal and removable for ready inspection of rail and supports.

3.9 Material

3.9.1 Rail

1. Continuous Welded Rail (CWR) may be specified and will be laid and anchored under separate specifications per CN Engineering Track Standards.
2. For tracks handling dangerous commodities, all rail must be control cooled and approved by CN.
3. New rail, if used, shall be 115RE or greater.
4. Secondhand rail may be used in all locations except mainline switches, provided it meets the following standards:
   a. Rail lengths of 27 feet or greater are acceptable although rail less than 39 feet may not make up more than 25% of the total rail. Rails 78 foot or longer should be used through road crossing with joints no closer than 25' from each end of the crossing surface.
   b. Rail section shall be 112RE or greater U.S and **100RA or greater Canada only**.
   c. If rail of a smaller section is desired due to availability it may be used on approval from CN Sr. Manager Design and Construction.
   d. Quality must be at least 4 spot rail, meaning: Rails may have minor imperfections in line and/or surface, or minor physical defects that will not interfere with the safe use of the rail in yard tracks, industrial tracks and light density spurs.
5. Rail must be within the following limits of wear:

Section	136RE	132RE	115RE	112RE	100RA **(Canada Only)**
Maximum Loss of Vertical Height	3/8"	9/16"	1/2"	3/8"	5/16"
Maximum Gauge Face Wear	3/8"	3/8"	3/8"	3/8"	3/8"
End Batter	5/32"	5/32"	5/32"	5/32"	5/32"

3.9.2 Joint Bars

1. All rail joints must be of proper design and dimension for the rail on which it is to be applied.
2. "Skirted" or "Toed" bars are not permitted.
3. Second hand joint bars in good condition may be used; except insulated or compromise joints

which must be new in all cases.
4. All joints shall be fully bolted with rail drilling that conforms to proper dimension and design for the rail section.

3.9.3 Sub-ballast

1. Sub-ballast gradation shall be sufficient to prevent penetration of the sub-ballast into the subgrade and shall conform to AREMA Manual Chapter 1, Section 2.11.2.5.

3.9.4 Ballast (Crushed Gravel)

1. Ballast shall conform to the following gradation, or be subject to the approval of CN Sr. Manager Design and Construction (type and size may be modified slightly to meet local conditions):

Nominal Size	1-½"	1"	¾"	½"	⅜"	No. 4
% Passing by Weight	100	90 - 100	40 - 75	15 - 35	0 - 15	0 - 5

2. Upon request of CN Design and Construction, customer must provide a sieve analysis of the ballast.
    a. Provide a sample for testing by a recognized materials testing consultant.
    b. Pay for material testing.

3. Ballast to have a minimum count of particles with one or more fractured faces of 70% on each sieve size.
4. The percent of wear due to abrasion shall be less than 30% for the ballast per ASTM C 131 “A” Grading

3.9.5 Rail Anchors

1. Rail anchors are to be new or manufacturer certified refurbished rail anchors of appropriate size.
2. A minimum of 8 ties per 39 feet of track shall be fully box anchored (unless using Continuously Welded Rail or otherwise directed by CN)

3.9.6 Tie Plates

1. Recommended Tie Plate Usage found on “Turnout Return Curves and Spiking Pattern for Industrial Track” drawing, see page 33.
2. Tie plates for 5 ½” base rail to be a minimum of 12” in tangent up to a 2 degree curve, 14” greater than 2 degrees and tie cast Pandrol plated as per turnout spike pattern Page 33 greater than 6 degrees.
3. Tie plates for 6” base rail a minimum of 14” in tangent up to a 2 degree curve, 16” up to 6 degrees and tie cast Pandrol plated as per turnout spike pattern Page 33 greater than 6 degrees.
4. Tie Plates to be double shouldered with 1 in 40 cant.
5. Tie plates may be second hand provided they are not broken or damaged.
6. All ties are to be fully plated.

3.9.7 Ties

1. All ties are to be treated in accordance with the latest edition of AREMA Manual Chapter 30.
2. Timber Track Ties
    a. Track ties are to be a minimum of #2 hardwood ties. Ties should be new, however, second hand ties, of quality approved by the CN Sr. Manger Design and Construction, may be allowed if used in tangents.
    b. Track ties are to be a minimum 8'-6" in length and have minimum cross section dimensions of 6" x 8". The corners may be beveled provided a minimum 7-1/2" flat surface exists on the top and bottom.
3. Where desired or if readily available the use of concrete ties is permitted with approval by CN Design and Construction.
4. Steel ties are not to be used in industrial tracks except upon approval from CN Design and Construction.
5. Switch Ties shall be new hardwood ties, minimum 7"x9" in size with length as required per the appropriate CN Engineering Track Standard plan.

3.9.8 Hardware

1. All hardware (bolts, nuts, spring washers, etc.) shall be new.
2. Track bolts shall be of appropriate size, complete with nuts and conform to latest edition of AREMA Manual, Chapter 4.
3. Spring washers shall be of appropriate size and conform to the latest edition of the AREMA Manual, Chapter 4.

3.9.9 Track and Screw Spikes

Track spikes shall be new 6" x 5/8" square.
Screw spikes shall be new 6" x 7/8" diameter with rectangular head

3.9.10 Bumping Posts/Earthen Bumpers

1. Bumping posts shall be Hayes Type WG or HD (or equivalent) for the designated rail section.
2. Install bumping posts/earthen bumpers 10 feet from the end of track, with 10 ties in front of and all ties behind it fully anchored.
3. Due to the potential damage to rail car undercarriages, wheel stops are not acceptable for new track construction, except upon approval by CN Design and Construction.
4. A typical earthen bumper is shown on page 21.

3.9.11 Derails

1. Install derails in accordance with the appropriate standard plans, as follows:
    a. Hayes EB (Hinged Type Derail)
    b. Hayes HB (Sliding Type Derail
    c. Switch Point Derail - See Page 31
2. The correct size of derail to be used on various rail sections is as follows:
    a. Size 6: 100# (Canada only), 112 lb & 115 lb (worn)
    b. Size 7: 115 lb (new) and larger
3. A plywood or steel shim of the correct thickness with holes punched or drilled for all fasteners may be necessary under the derail to ensure the block lies flat on the top of the rail.

3.9.12 Bonding and Track Grounding

1. At any location where flammable commodities may be loaded or off-loaded, bonding wires and track grounding are to be provided per CN Engineering Track Standards.

4.0 Regulatory Requirements

Regulatory requirements pertaining to the design and construction of railway tracks are established at the national, state and local level. They pertain to a variety of issues such as the handling of Hazardous Materials, Pipe and Wire Crossings, Regulatory Clearances, minimum construction and maintenance requirements, and road crossings. Prior to commencing development of a project, the CN Business Development/Real Estate department should be contacted to acquire current and local information pertaining to regulatory requirements and submissions.

4.1 Pipe and Wire Crossings

Pipe and Wire crossings must be submitted for approval to CN. Detailed instructions and requirements for pipe and wire crossings are available through the CN Design and Construction contact. U.S. information is also available on the CN website:

www.cn.ca and view “quick links public issues”

The general process is as follows:

1. Submissions to CN for permission to cross the railway with any type of pipe or wire must conform to the relevant General Order or Standard. The application must be submitted to the appropriate CN contact for approval. The steps for obtaining approval for an application are as follows:

    a. Application - submit for review three (3) copies of an acceptable plan to CN with the Application Fee.
    b. Agreement - once the plans are approved an agreement will be sent outlining the agreement, costs, special conditions, and Industry’s responsibilities.
    c. Installation - installation of pipes or wires may begin once the terms and condition letter is received by CN and three (3) working days notice is given to arrange flagging protection and signals locating as required.
    d. Additional information regarding the requirements for an Application for a Pipe or Wire crossing may be obtained from CN Design and Construction.

4.2 Operating and Structural Clearances

4.2.1 Restricted Clearance Proposals

1. Requests for permanent restricted clearances require approval from the appropriate governing Regulatory agency. Any proposal for permanent restricted clearances shall be reviewed by CN Design and Construction in order to:

    a. Ensure that there is business justification for the proposed restriction and that it cannot be economically or conveniently eliminated.
    b. Ensure that the proposal is reviewed in the engineering context of structure adequacy and safety.
    c. Ensure that CN Transportation is satisfied that locomotives, railcars, and employees can safely operate past the proposed restriction.

2. Requests for approval of restricted clearances shall be submitted to CN Design and Construction and shall include the following information:

    a. Location of the facility and restricted clearance, including mile post and subdivision;

b. Location of standard restricted clearance signs;
c. Reason(s) for restricted clearance;
d. Method of operations over the track concerned (locomotive, car progressioner or gravity);
e. Need for locomotives to pass the point of restricted clearance;
f. Operations to be conducted over the track concerned;
g. Confirmation that the restricted clearance is unavoidable;
h. Nature of the restricted clearance (permanent or temporary);
i. Six (6) copies of drawing showing the relative position of the track and the obstruction, with cross sections at each point of restricted clearance. That drawing will indicate the following:
    i. Vertical clearance from the top of rail;
    ii. Horizontal clearance from the centerline of track;
    iii. Location of the "Restricted Clearance" sign.

4.3 Safety and Right of Entry

Authorized personnel working within the CN right of way must adhere to “Safety Guidelines for Contractors and Non-CN Personnel” and must be in the possession of a "Right of Entry Permit" issued by an Officer of the Railway that is only valid for the time period outlined in the document. To obtain a copy of the permit, contact CN Design and Construction. Insurance required by the “Right of Entry Permit” must be approved prior to working on CN property.

4.4 Certification and Training

Contractors working on or near CN property must present proof that all personnel have completed the required training. All contractor personnel must also complete safety and security training per CN Police and Risk Management requirements (including Erailsafe.com).

CN Training requirements are:

U.S.	FRA On-Track Worker Safety E-Railsafe
Canada	Contractor Safety Orientation Canadian Rail Operating Rules (CROR)

Flagging will be required for all work performed by contractors within 25 feet of CN operating tracks, or where CN representative deems it necessary.

5.0 Track Construction

5.1 Site Grading

Construction of an adequate subgrade, which conforms to all submitted drawings, will be the responsibility of the individual industry. The Industry shall retain the services of a Professional Engineer to design the subgrade. The subgrade shall be designed and constructed to ensure there is adequate drainage away from the track structure.

5.1.1 Site Clearing and Grubbing

1. The contractor is responsible for the identification and protection of overhead and underground utilities at the site, including the portion of CN right-of-way affected by the

construction.

2. The Contractor shall clear all vegetation and brush (except for trees and shrubs which are to be preserved, as indicated on the drawings), rocks, expansive soils, and other similar objectionable materials from the project site, including the portion of CN right-of-way affected by the construction. The contractor is responsible for the safe and appropriate disposal of materials removed.

5.1.2 Embankment Construction

Embankments shall be constructed and compacted to the lines and grades set forth in the submitted drawings. If the quantity of materials required for construction of embankments is in excess of the quantity of material removed from excavations.

Additional material may be obtained by widening cuts in the grading area, with the approval of CN Design and Construction; cuts shall be widened in such a manner as to:

a. Be stable
b. Provide adequate drainage for the cut slope and roadbed
c. Provide adequate protection against erosion
d. Adequately permitted by governing authorities.

5.1.3 Moisture and Density Control

Unless otherwise shown on the Drawings, embankments and those portions of cut sections designated, shall be constructed with moisture and density control. The moisture content of the soil at the time of compaction shall be at the optimum moisture content plus or minus four (4) percentage points of the optimum moisture content as determined by ASTM specification D 698.

5.1.4 Erosion Control

A seed and fertilizer mixture, in compliance with local, state/province and federal specifications, shall be applied so as to provide adequate erosion control and slope protection. Creeping grasses shall not be used. Additional erosion control methods, such as the use of Jute fabric or geo-textiles, or silt fence shall be applied to ensure the long-term integrity of slopes and embankments, as required.

5.2 Sub-ballast

1. Sub-ballast material may be placed once the finished subgrade is inspected. It shall be placed, using methods that do not lead to segregation or degradation of material.

2. Place material to full width of section in uniform layers not exceeding 12" thickness and compact to specified density.
3. Compact full width to density not less than 95% maximum dry density in accordance with Standard Proctor Density Compaction Test (ASTM D698).
4. Control
    a. Representative samples should be taken for laboratory tests to approve its quality and nature prior and/or during its use.
    b. Finished sub-ballast surface to be within ½" of design elevations but not uniformly high or low.

5.3 Use and Handling of Track Material

5.3.1 Timber Track Ties

1. Line the end of the track ties true on one side of the entire length of the track. All ties are to be installed at right angles to the rail.
2. Treated ties must not be handled with any tool having sharp points that will penetrate beyond the depth of the treatment, or cause damage to the ties.
3. When ties are re-spiked, the spike holes must be plugged.

5.3.2 Rail

1. Use rail saws and rail drills only for cutting and drilling rail respectively. Rail having cuts or holes made with an oxy-acetylene torch or an electric arc must not be used. When sawing rail for re-use, saw cut must be made at least 4" from any torch mark on the rail.
2. Rail must be handled carefully at all times. It should be unloaded by use of a crane, skids or threader and must not be dropped. Rail must not be struck with a steel hammer or similar tool.
3. Expansion space between rail ends, when laying bolted rail or track panels, must be provided. Fiber, hardwood or metal shims may be used to obtain the proper expansion space by bringing rail ends squarely together against the expansion shims. Expansion shims must not be removed until the rail is properly spiked, the bolts tightened and rail anchors applied. Expansion space should conform to the following:

Expansion Gap Inches	33 ft. Rail Temp. Degree F.	39 ft. Rail Temp. Degree F.
5/16	Below 10	Below 6
¼	10 to 14	6 to 25
3/16	15 to 34	26 to 45
1/8	35 to 59	46 to 65
1/16	60 to 85	65 to 85
0	Above 85	Above 85

4. Where the length of rail being laid is in excess of 78', rails 39' or less in length shall be laid on each side of non-bonded insulated joints, turnouts and railway crossings at grade.
5. Lay second hand rail in the same position it occupied before removal from the previous track so that the gauge side remains the gauge side.
6. All installations shall be designed using the same rail section throughout, if possible. Use compromise rails, compromise welds or compromise joints to join rails of different sections.

7. Rail joints on opposite rails shall be staggered by at least 12 feet. Rail joints must not be placed in road crossings if possible.
8. If Continuous Welded Rail (CWR) is used, ensure that it is destressed before placing the track into service and that Neutral Temperature of 105 degrees F has been achieved, unless the track is north of Duluth, MN. or in Canada, where the neutral temperature is 100 degrees F.
9. Anchor rails immediately after installation or proper destressing.
10. Place joint bars and tighten bolts before spiking the rail.
11. Tighten bolts in the rail joints in the following sequence:
    a. The two bolts at the center of the bar,
    b. The second bolt from the end of each rail,

c. The third bolt from the end of each rail.

12. Tighten bolts to the following torque:

Size of Bolt	Torque (ft-lb)
1"	490
⅞"	375

13. Gauge of track after laying must be uniform and within 1/8” of design.
14. Where new rail adjoins second hand rail the maximum mismatch shall not exceed 1/8". Where required, mismatch shall be reduced through welding, grinding or replacement of the rail.

5.3.3 Turnouts

1. Minimum 13" Tie Plates are to be used in all turnout construction.
2. Tamp turnout ties firmly throughout the entire length.
3. The turnout stock rail must be bent horizontally, as shown on the standard plan. Only standard carbon and 3HB rail, in 115 lb section or smaller, may be field bent with an approved bender. For safety reasons, under no circumstances are head hardened rails or rails greater than 115 lb to be bent in the field.
4. Ensure the switch point fits snugly against the stock rail for the entire length of the planed portion.
5. Bolt switches, frogs and guard rails fully. Provide proper washers and cotter pins for bolts as required. Lock tight nuts are recommended.
6. Switch stands must be securely bolted or lagged to the head block ties.
7. All switches must be equipped with the appropriate reflectorized target assembly (in some locations a double bladed target tip is required). Target assemblies will be properly adjusted to display green when the switch is lined for the normal route and yellow (siding/industrial) or red (main line) when lined for the diverging route.
8. Switch targets will bear 3” black numbers on the yellow target representing the track number.
9. Install switch rod bolts and connecting rod bolts, except the bolt under the switch stand, with the nut on the upper side to permit ready inspection of the cotter pin.
10. Install the connecting rod bolt under the switch stand with the head on the upper side.
11. Install cotter pins on all connecting and switch rod bolts.
12. Position the handle to be on the frog side of switch stand when the switch is lined in the normal position.
13. Ergonomically designed switch stands are to be used on all turnouts.
14. Lubricate switch stands, switch plates, connecting rod bolts and spring frogs properly after assembly.
15. Maintain the distance between the gauge side of a frog and the bearing side of the guard rail at 4' 6-⅝".
16. Fully anchor the length of the turnout as per CN Engineering Track Standards Section 3.1, to the maximum extent possible.
17. Once installed, line new turnouts for through movement and clamp or spike the switch point. Switch points shall remain clamped or spiked until inspected by a CN Track Supervisor or his designate.

5.3.4 Other Track Materials

1. Anchor rails per “Anchor Pattern for Continuous Welded & Jointed Track”, page 28.
2. Spiking on Industrial Spurs is to be done per “Turnout Return Curves & Spike

Patterns for Industrial Tracks". .

3. Spiking on Industrial Leads is to be done per "Turnout Return Curves & Spike Patterns for Industrial Tracks".
4. Spiking in Turnouts must fill all spike holes in the plate, up to a maximum of 6 spikes per plate.
5. Pandrol Plates and clips required on every other tie in curves 6 and greater.
6. Pandrol Plates will require four (4) screw spikes installed per plate.
7. Screw spikes shall be 6" x 7/8" diameter with rectangular head.

5.4 Lifting, Lining, and Surfacing

5.4.1 Distribute Ballast

1. The Contractor is cautioned that damage caused by his equipment to track and turnouts during the distribution of ballast will be repaired by the Contractor at his expense.
2. Lifts in excess of 6" are prohibited.
3. Care must be taken to protect signal appliances during track surfacing operations.

5.4.2 Lifting

1. Raise all tracks and turnouts with the ballast to provide a minimum depth of 6" from the bottom of the tie to top of sub-ballast or to a depth directed by the Engineer.
2. Use tamping machines or other mechanical tamping equipment to tamp the ballast.
3. Tamp both sides of ties from a point 16" inside each rail to the end of the ties.
    a. Tamp inside and outside of the rail simultaneously.
    b. Do not tamp at the center of the ties between the inside limits stated above.
4. Tamp turnout ties firmly for 16 inches on either side of the mainline and turnout rails.
    a. Tamp by hand the areas under the frog, guard rails, and heel castings, using bars or mechanical hand tampers
    b. Hand tamping to be permitted only where power or mechanical tamping is not possible.

5.4.3 Lining

Line all track and turnouts to conform to the approved drawings.

5.4.4 Dressing

Dress the ballast to conform to the ballast sections as shown on attached standard drawing "Typical Cross Section Detail".

5.4.5 Surfacing

Bring track to a uniform gradient with corresponding cross-level to suit the alignment.

5.4.6 Tolerances

1. Gauge: The difference between gauge measurements taken 19'-6" apart may not be more than 1/4".
2. Alignment: The maximum out-of-alignment measured from mid-ordinate of a 62' chord may not be more than 1/8".
3. Surface: The deviation from uniform profile on either rail at the mid-ordinate of a 62' chord may not be more than 3/16".
4. Cross-level: The deviation in height from one rail to the other may not exceed 3/16".

5.5 Road Crossings

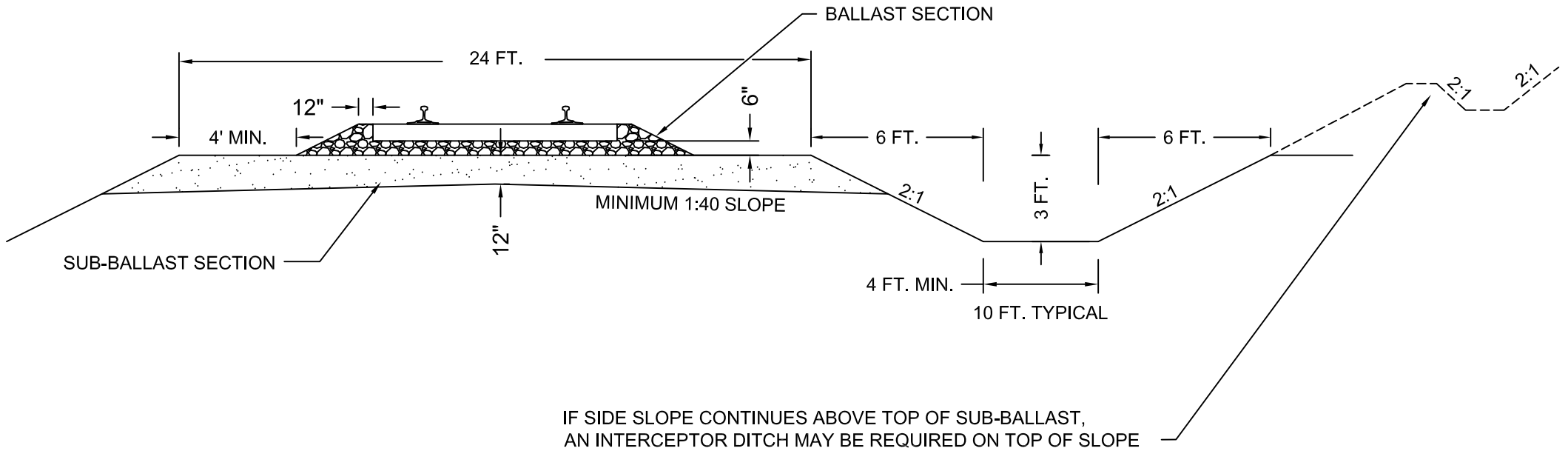
1. All new crossings shall conform to all applicable regulations.
2. All crossings shall be located clear of turnouts, switches and other track appliances.
3. Rail joints shall be kept clear of crossings and where practicable should not be located closer than 25' to the edge of the crossing.
4. Insulated rail joints at crossings shall be installed per CN Engineering Track Standards.
5. Drainage of the track at all crossings must be properly maintained at all times.
6. Crossing surface to be as follows:
    a. Only fully planked timber, asphalt, concrete or solid rubber planking will be accepted. Gravel crossing surfaces are not permitted.
    b. Planks to be full depth of the crossing to match the height of rail. Planks shall not protrude above the top of the rail.
    c. Shim planks with shims covering the full contact area between the tie and the plank.
7. Provide a flangeway space of not more than 3" or less than 2” deep, and not less that 2 ½" or more than 3" wide.
8. Fasten timber planks with ½" x 12" crossing spikes or lag screws, with one fastening in every other tie and at each end. Countersink planks for recessing of the washer and the lag bolt head.
9. Trim the ends of the planks parallel to the road centerline. Bevel edges to prevent dragging equipment from catching on planks
10. Where the width of crossing necessitates, replace jointed rail with welded rail.
11. Crossing sightlines are to comply with all regulatory requirements.

6.0 Post Construction

6.1 Post Construction Requirements and Submissions

1. Once construction is complete, the local CN Track Supervisor must inspect the track before the facility is placed into service. The inspection can be arranged directly with the Track Supervisor or by contacting CN Design and Construction.
2. CN also requires that an agreement/as–constructed drawing be submitted to complete their records and to form the basis for an agreement for service. The preparation of this drawing is the responsibility of Industries’ Engineering Consultant or Rail Contractor. The drawing may be submitted in the same manner as the design drawing, but must include the following additional information:
    a. Track that is owned by the Industry is to be colored Green.
    b. Track that is owned by CN is to be colored Red.
    c. Complete formal name of Industry to be registered on the Agreement.
3. The electronic file (AutoCAD format) or six (6) copies of the Agreement/As-Constructed drawing are to be submitted to the Business Development/Real Estate Manager as soon as possible after construction, prior to track being put into service.

7.0 Sample Documents



TYPICAL CROSS SECTION

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TYPICAL CROSS SECTION DETAIL

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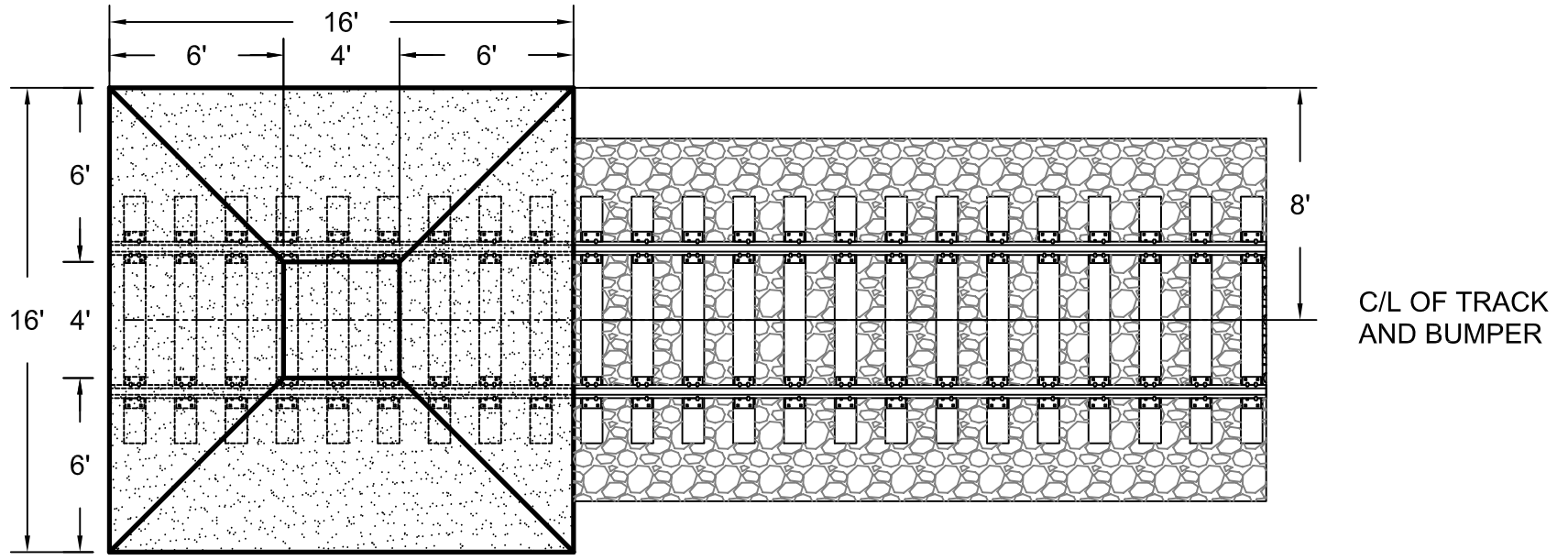

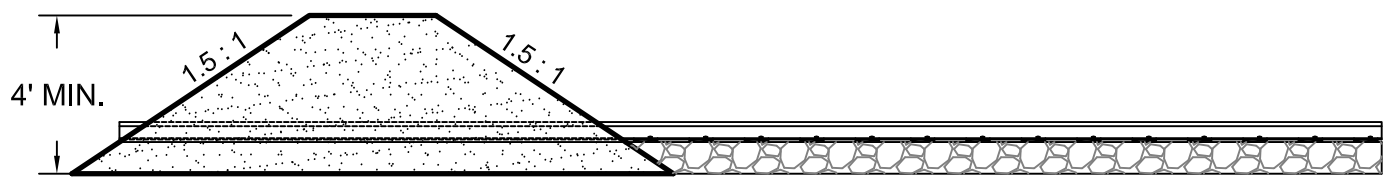

STANDARD EARTHEN BUMPER FOR END OF TRACK

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EARTHEN BUMPER DETAIL

VERTICAL

STATES	GENERAL STRUCTURES	THROUGH BRIDGES	HIGHWAY BRIDGES	TUNNELS	BUILDING DOORS	STRUCTURES IN BUILDINGS	ENGINE HOUSES (SHOPS, SHEDS ETC.)	TIPPLES, STONE CRUSHERS, ETC.	AWNINGS AND CANOPIES	POLES, POSTS AND SIGNS	FENCES (BETWEEN TRACKS)	TELLTALE REQUIRED FOR LESS THAN MINIMUM CLEARANCE	WARNING SIGNS REQUIRED FOR LESS THAN MINIMUM CLEARANCE
ALABAMA	--	–	23' 0"	–	--	--	–	--	--	--	--	--	--
ILLINOIS	21' 6"	21' 3"	21' 6"	21' 6"	H	--	H	H	21' 6"	15' 0"	4' 6"	--	YES
INDIANA	22' 0"	22' 0"	22' 0"	22' 0"	22' 0"	22' 0"	21' 0"	21' 0"	21' 0"	21' 0"	--	--	--
IOWA	--	–	--	–	--	--	H	H	22' 0"	17' 0"	4' 0"	--	YES
KENTUCKY	--	–	22' 0"	–	--	--	–	--	--	--	--	YES	--
LOUISIANA	--	–	--	–	--	--	–	--	--	--	--	YES	--
MICHIGAN	22' 6"	E	E	22' 6"	22' 6"	22' 6"	22' 6"	22' 6"	22' 6"	22' 6"	–	--	YES
MINNESOTA	22' 0"	22' 0"	22' 0"	22' 0"	22' 0"	22' 0"	17' 6"	22' 0"	22' 0"	--	–	YES	YES
MISSISSIPPI	--	–	--	–	--	--	–	--	--	--	--	YES	--
NEBRASKA	22' 6"	22' 6"	23' 0"	23' 0"	17' 0"	18' 0"	E	--	--	--	–	YES	YES
OHIO	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	--	--	--
PENNSYLVANIA	22' 0"	22' 0"	22' 0"	22' 0"	18' 0"	18' 0"	18' 0"	--	--	–	--	--	--
TENNESSEE	22' 0"	22' 0"	22' 0"	22' 0"	17' 0"	17' 0"	17' 0"	22' 0"	22' 0"	22' 0"	--	--	--
WISCONSIN	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	23' 0"	--	YES	--

HORIZONTAL

STATES	GENERAL STRUCTURES	THROUGH BRIDGES	HIGHWAY BRIDGES	TUNNELS	BUILDING DOORS	STRUCTURES IN BUILDINGS	ENGINE HOUSES (SHOPS, SHEDS ETC.)	TIPPLES, STONE CRUSHERS, ETC.	AWNINGS AND CANOPIES	POLES, POSTS AND SIGNS	ORE AND COAL DOCKS	BUILDING MATERIAL AND SUPPLY STORAGE (LONG TERM)	WARNING SIGNS REQUIRED FOR LESS THAN MINIMUM CLEARANCE
ALABAMA	--	9' 0"	9' 0"	–	–	–	–	--	--	--	--	--	--
ILLINOIS	8' 0"	8' 0"	8' 0"	8' 0"	7' 0"	8' 0"	7' 0"	8' 0"	8' 0"	9' 0"	8' 0"	9' 0"	YES
INDIANA	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	6' 6"	7' 0"	8' 0"	8' 0"	8' 0"	9' 0"	YES
IOWA	--	--	--	–	--	--	--	--	--	--	–	--	--
KENTUCKY	--	--	--	–	--	--	--	--	--	--	–	--	--
LOUISIANA	--	--	--	–	--	--	--	--	--	--	–	--	--
MICHIGAN	8' 6"	E	E	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	E	8' 6"	YES
MINNESOTA	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	8' 6"	14' 6"	8' 6"	8' 6"	--
MISSISSIPPI	--	--	--	–	–	--	–	–	--	--	--	--	--
NEBRASKA	8' 6"	8' 0"	8' 6"	8' 0"	7' 0"	7' 0"	E	–	--	8' 6"	8' 6"	8' 6"	YES
OHIO	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	–	–	--		8' 0"	8' 0"	--
PENNSYLVANIA	12' 0"	8' 0"	12' 0"	8' 0"	8' 0"	8' 0"	–	–	--	12' 0"	E	--	--
TENNESSEE	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	8' 0"	--
WISCONSIN	8' 6"	E	8' 6"	8' 6"	8' 6"	8' 6"	–	–	--	12' 0"	8' 6"	--	--

NOTE: FOR CANADIAN LINES, TRANSPORT CANADA CLEARANCES GOVERN.

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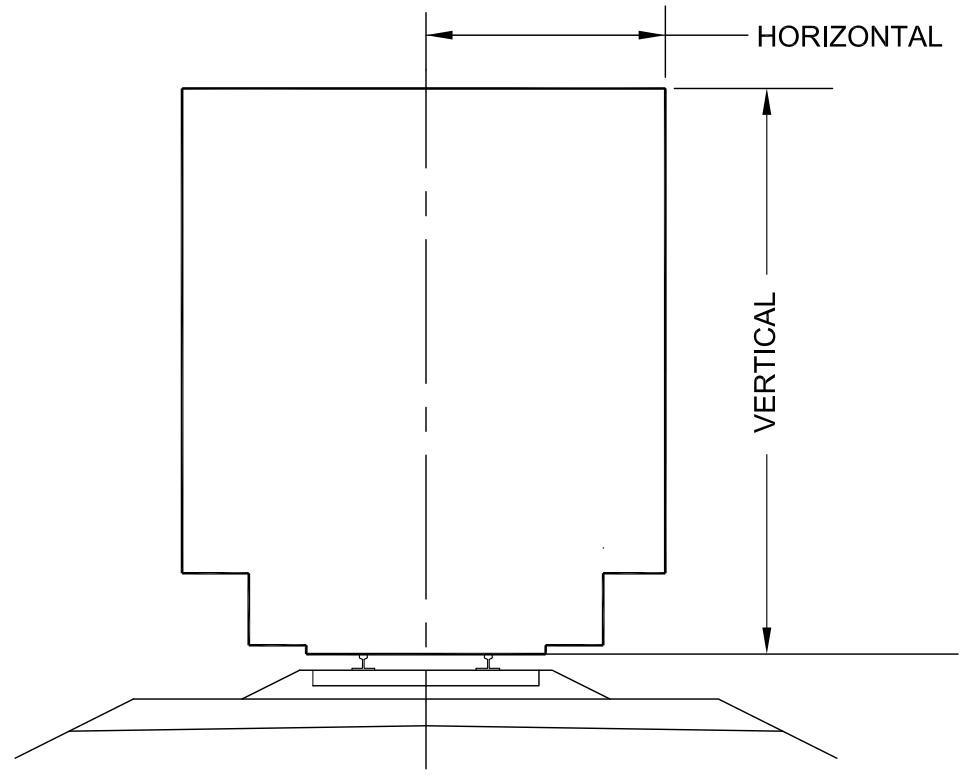
FOLLOW CURRENT STATE REGULATORY CRITERIA
Source: Chapter 28, Table 3-3, AREMA Engineering Manual



E= EXEMPT
H= HEIGHT OF CAR GOVERNS

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PLATFORMS

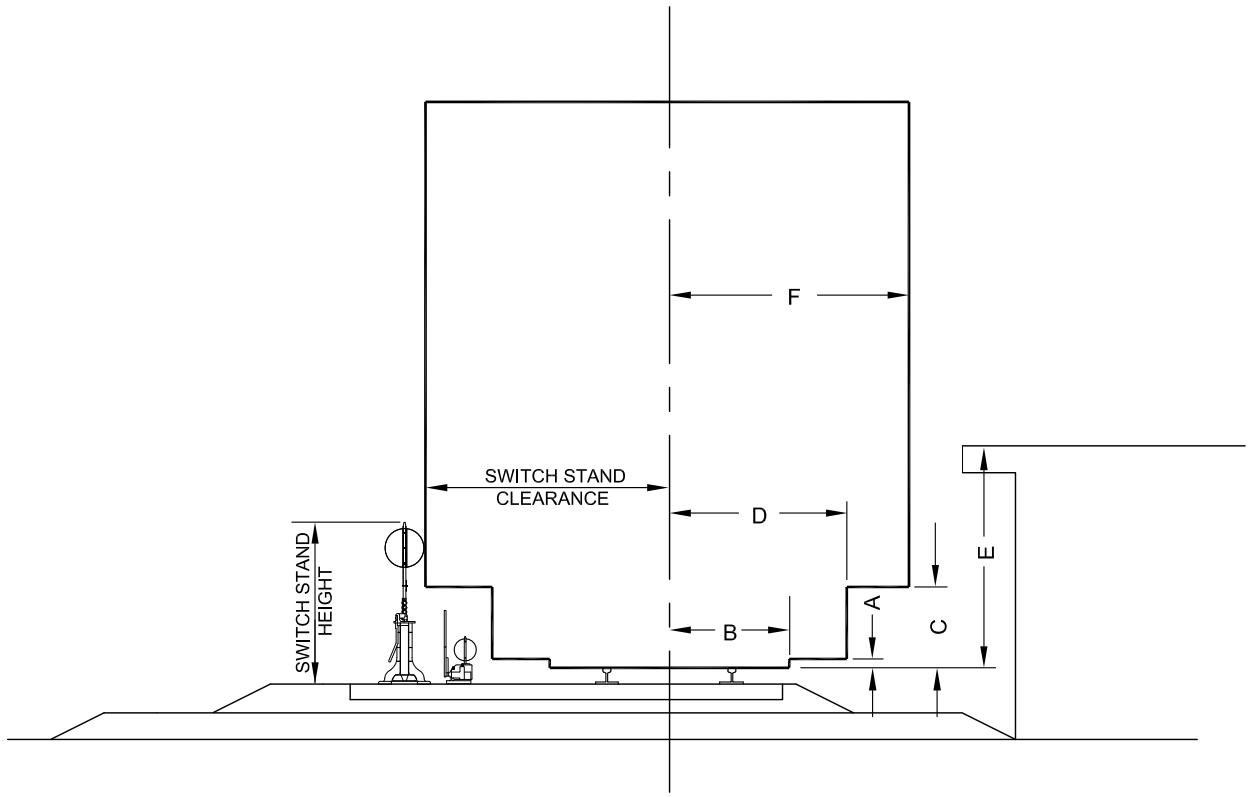
STATES	DIAGRAM DIMENSIONS A	B	C	D	E	F
ALABAMA	--	--	--	--	--	--
ILLINOIS	0' 4"	4' 6"	4' 8"	5' 1"	CFH	6' 2"
INDIANA	--	--	--	--	--	--
IOWA	--	--	--	--	--	--
KENTUCKY	--	--	--	--	--	--
LOUISIANA	--	--	--	--	--	--
MICHIGAN	--	--	--	--	--	--
MINNESOTA	--	--	--	--	--	--
MISSISSIPPI	--	--	--	--	--	--
NEBRASKA	0' 8"	5' 0"	4' 0"	5' 9"	4' 0"	8' 6"
OHIO	--	--	--	--	--	--
PENNSYLVANIA	0' 8"	5' 1"	4' 0"	5' 7"	4' 0"	8' 6"
TENNESSEE	0' 8"	4' 8"	4' 0"	5' 9"	4' 0"	7' 6"
WISCONSIN	0' 4"	4' 6"	1' 9"	6' 0"	5' 0"	6' 4"
	0' 8"	5' 1"				

E= EXEMPT
CFH = CAR FLOOR HEIGHT

SIGNALS

STATES	SWITCH STANDS: MAIN HEIGHT ABOVE BASE OF RAIL	MAIN CLEARANCE	SECONDARY HEIGHT ABOVE BASE OF RAIL	SECONDARY CLEARANCE	LOW, BETWEEN OR ADJACENT TO TRACKS HEIGHT	LOW, BETWEEN OR ADJACENT TO TRACKS CLEARANCE	SWITCH BOXES ETC. HEIGHT	SWITCH BOXES ETC. CLEARANCE	HIGH (SEMAPHORE & COLOR LIGHT)
ALABAMA	--	--	--	--	–	--	--	–	--
ILLINOIS	2' 10" to 4' 0"	8' 0"	2' 10" to 4' 0"	7' 6"	0 to 2' 10"	8' 0"			8' 6"
	over 4' 0"	8' 3"	over 4' 0"	8' 0"					
INDIANA	--	--	--	--	–	--	--	–	8' 0"
IOWA	2' 10" to 4' 0"	8' 0"	2' 10" to 4' 0"	7' 6"	–	--	--	–	--
	over 4' 0"	8' 3"	over 4' 0"	8' 0"					
KENTUCKY	--	--	--	--	–	--	--	–	--
LOUISIANA	--	--	--	--	–	--	--	–	--
MICHIGAN	--	--	--	--	–	--	E	E	E
MINNESOTA	--	--	--	--	–	--	--	–	8' 6"
MISSISSIPPI	--	--	--	--	–	--	--	–	--
NEBRASKA	3' 0" +	8' 3"	3' 0" +	8' 3"	3' 0"	6' 0"	0' 4"	3' 0"	8' 6"
OHIO	--	--	--	--	–	--	--		8' 0"
PENNSYLVANIA	--	--	--	--	3' 0"	6' 0"	0' 4"	3' 0"	12' 0"
TENNESSEE	--	--	--	--	–	6' 6"	0' 4"	3' 0"	8' 0"
WISCONSIN	--	--	--	--	E	E	E	E	8' 6"

NOTE: FOR CANADIAN LINES, TRANSPORT CANADA CLEARANCES GOVERN.



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PLATFORM AND SIGNAL CLEARANCES

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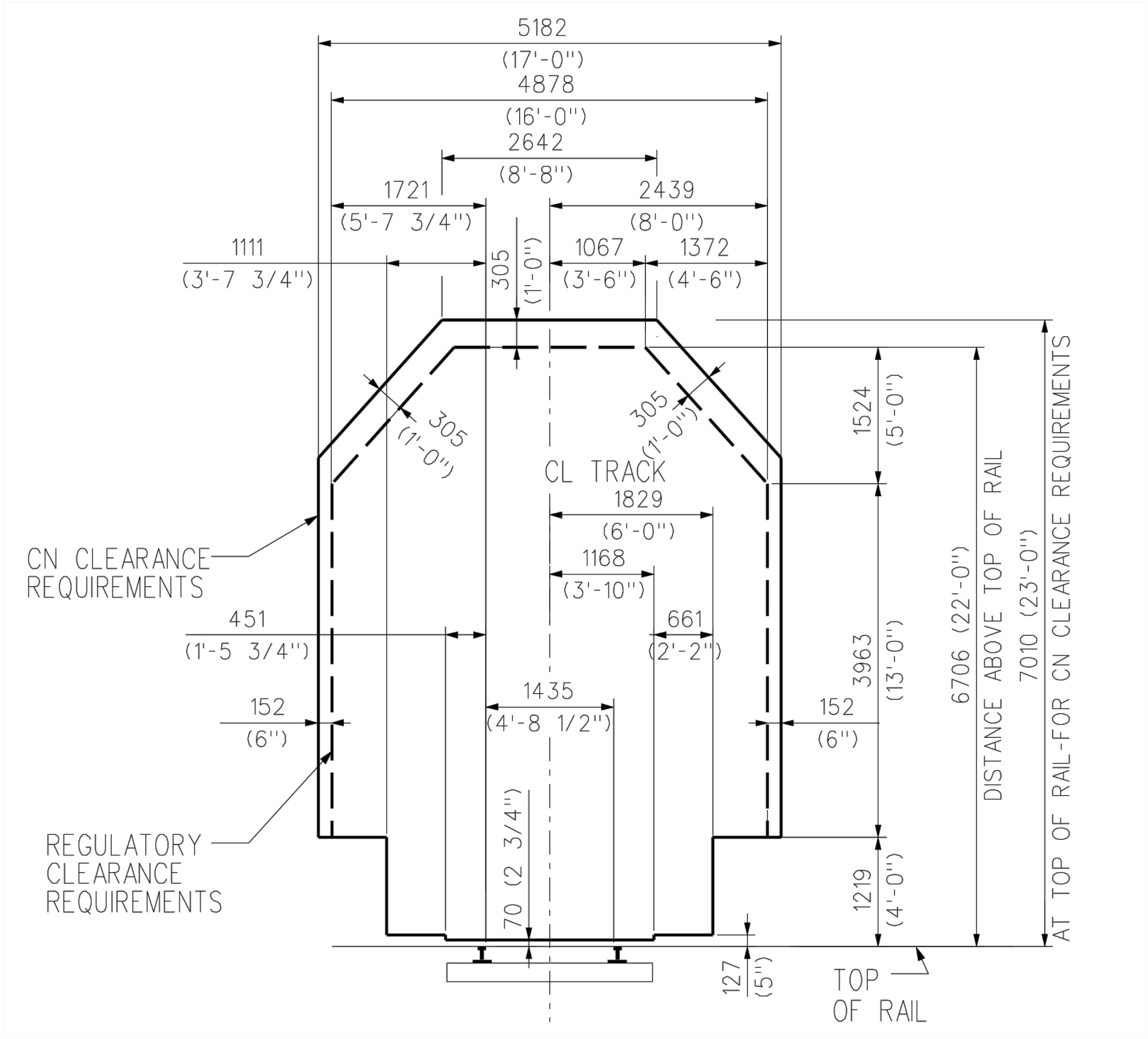

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HORIZONTAL AND VERTICAL CLEARANCES

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Design Criterion

Track Classification		Maximum (M) Minimum (m)	Industry Lead Track						Industry Service Track					
			HAZMAT/Leads > 1/2 mi		Unit Train		General Service		HAZMAT		Unit Train		General Service	
			Switched by		Switched by		Switched by		Switched by		Switched by		Switched by	
Design Criterion			RR	Industry	RR	Industry	RR	Industry	RR	Industry	RR	Industry	RR	Industry
Degree of Curve		M	7 deg 30 min		8 deg		9 deg		7 deg 30 min		8 deg		9 deg	
Radius of Curve			764.48		716.78		637.27		764.48		716.78		637.27	
Grade	**Moving**		0.80%				1.50%		1.00%				2.00%	
	Spotting		0% optimum not to exceed 0.20%											
Vertical Curve Factor	**Sag**		0.60% per 100 ft										1.20% per 100 ft	
	Summit		1.00% per 100 ft										1.50% per 100 ft	
Tangent Between Curves			100'				70'							
Track Centers	**Main**	m	25' TC's minimum from Working Track to Main											
	Other		15'				14'							
Distance from T/O	**To Curve**		100'									70'		
	To Bridge-Xing		100'											

Material Specifications

Track Classification		Maximum (M) Minimum (m)	Industry Lead Track (1)						Industry Service Track (1)					
			HAZMAT/Leads > 1/2 mi		Unit Train		General Service		HAZMAT		Unit Train		General Service	
			Switched by		Switched by		Switched by		Switched by		Switched by		Switched by	
Design Criterion			RR	Industry	RR	Industry	RR	Industry	RR	Industry	RR	Industry	RR	Industry
Operating Speed		M	25 MPH / 15 MPH	15 MPH	25 MPH	15 MPH		< 10 MPH	15 MPH				< 10 MPH	
Turnout No/Wgt/Type		m	#12 New / #10 New	#10 New	#12 New	#10 New		#8 New	#10 New					#8 New/SH
Type of Frog	**Mainline**		Spring (SPR) or Rail Bound Manganese (RBM)											
	Other		Rail Bound Manganese (RBM) or Self Guarded Solid Manganese (SGSM)											
Rail Weight/Section			115# RE New				115# RE SH					112# RE SH (100# RA SH Canada Only)		
Switch Tie - size			7" x 9" hardwood											
Cross Tie - size			7"x9"x8'-6" Grade HW				7"x9"x8'-6" Ind Grade HW					6"x8"x8'-6" Grade HW		
Cross Tie - spacing (2)		M	20"										22"	
Ballast depth		m	12"				6"		12"				6"	
Sub-ballast depth			12"											

(1) - mainline turnout weight to match main line section (not less than #10-115# New)

(2) - tie spacing in xing areas are to match crossing surface specifications

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DESIGN AND MATERIAL TABLES

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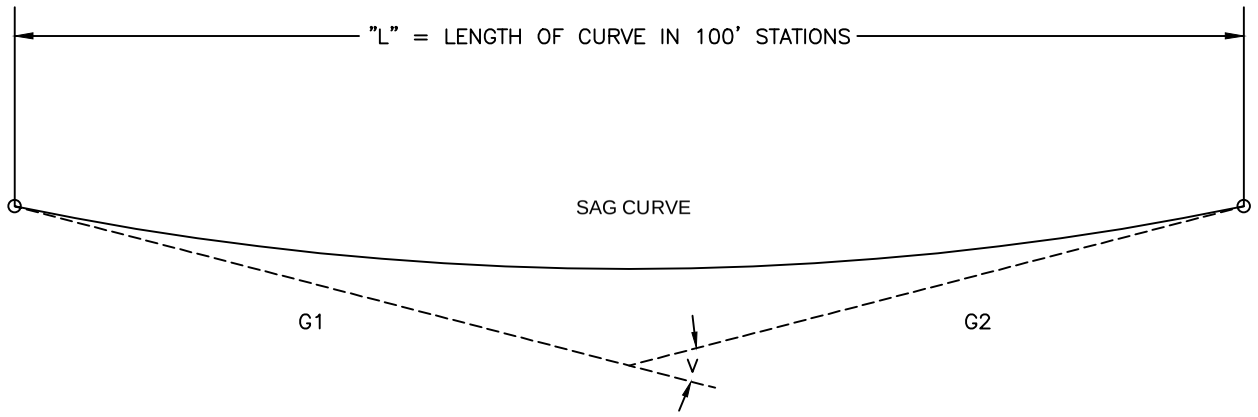

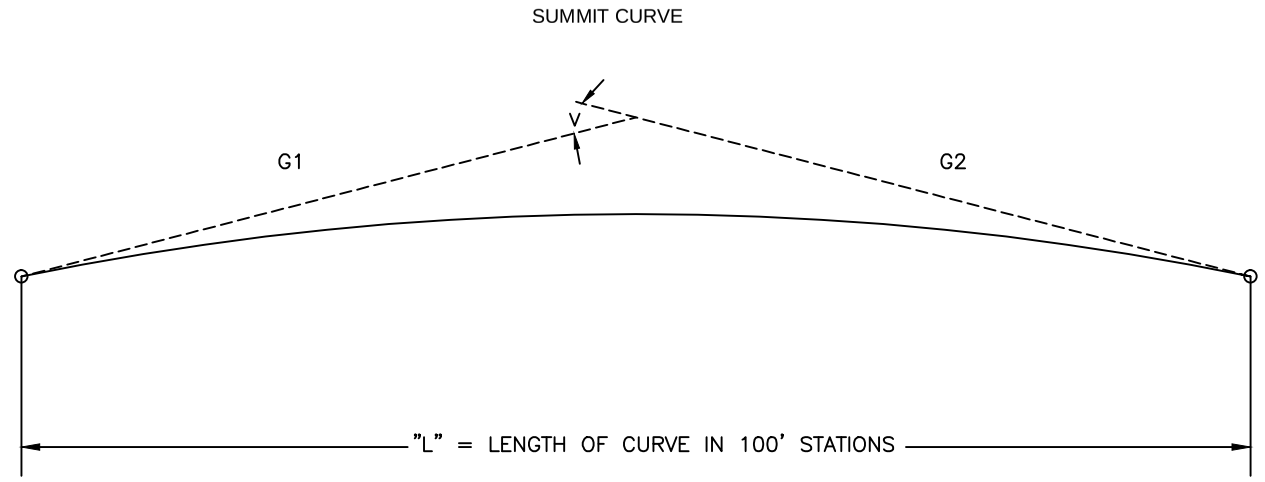

$$V/L = \frac{(G2-G1)}{L}$$

TRACK	MAXIMUM V/L	
	SAG	SUMMIT
YARD TRACKS	0.40	0.80
INDUSTRIAL LEADS	0.60	1.00
INDUSTRY TRACK	1.20	1.50

G1 AND G2 DESIGNATE GRADES IN PERCENT.
L= LENGTH OF CURVE IN 100' STATIONS
V= ALGEBRAIC DIFFERENCE IN GRADES IN PERCENT (G2−G1)
V/L= AVERAGE CHANGE IN GRADIENT PER 100' STATIONS
TO DETERMINE LENGTH (L), DIVIDE V BY THE DESIRED V/L
ROUND UP THE RESULT TO THE NEAREST 100' STATION.

EXAMPLES:
GIVEN G1 = 1.05 AND G2 = 0.71 V=(−.71)−(1.05) = 1.76%
GIVEN V/L = .10 L= −1.76/.10= 17.6' STATION.
VERTICAL CURVE LENGTH = 1800' (ROUNDED UP).

NOTES:

VERTICAL CURVES SHALL NOT FALL WITHIN THE LIMITS OF HORIZONTAL CURVES OR TURNOUTS UNLESS AUTHORIZED BY THE CHIEF ENGINEER.

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VERTICAL CURVES FOR INDUSTRIAL TRACKS

OFFICE OF DESIGN & CONSTRUCTION

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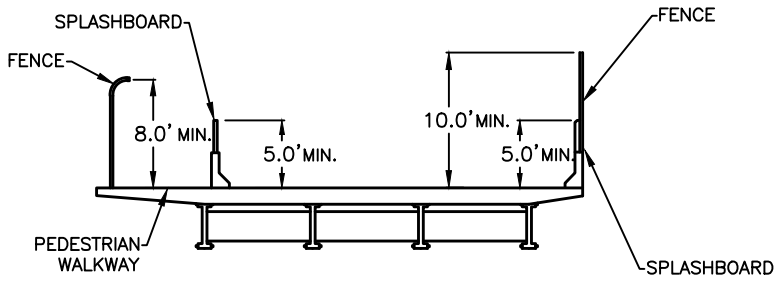
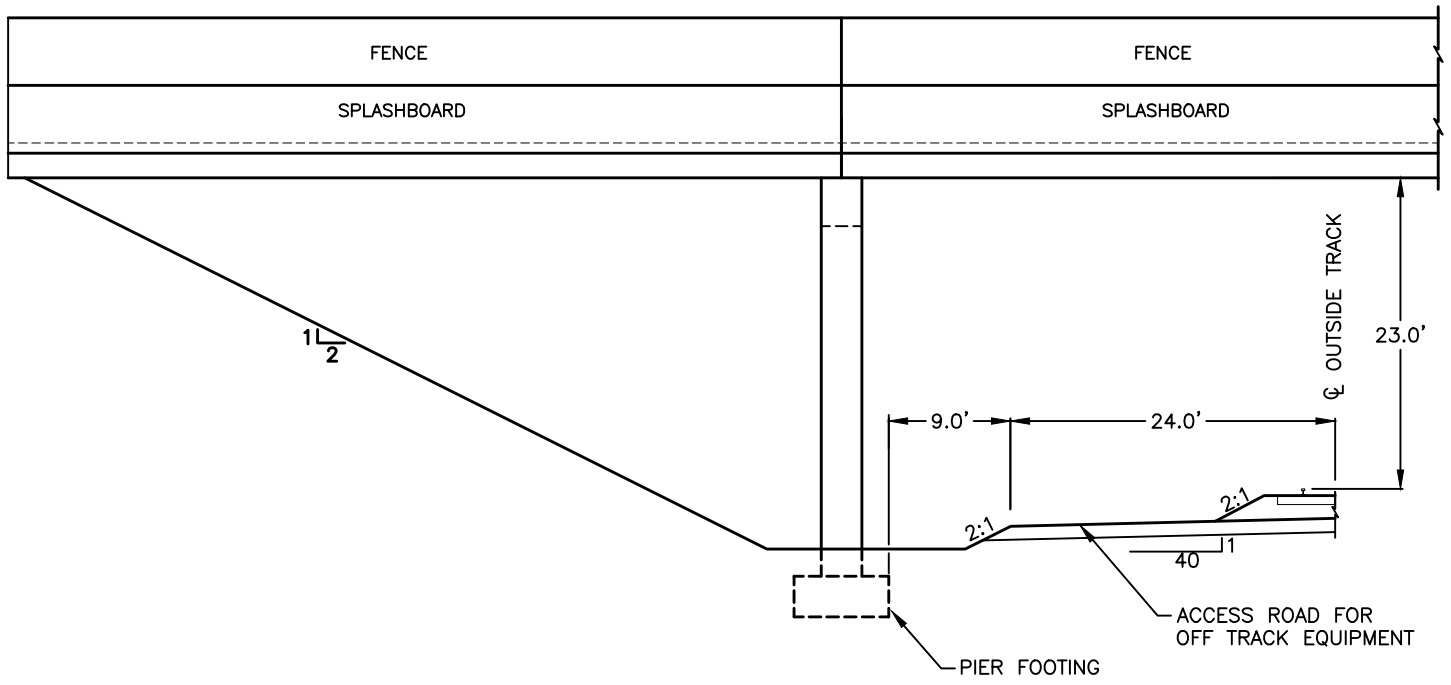


OVERPASS CROSS SECTION



ELEVATION

GENERAL:

1. FENCE SHALL BE PROVIDED AS INDICATED ON THE CROSS SECTION ON BOTH SIDES OF THE VIADUCT. THE FENCE SHALL EXTEND COMPLETELY ACROSS THE STRUCTURE OR CN RIGHT–OF–WAY, WHICHEVER IS SHORTER.
2. SPLASH BOARDS SHALL BE PROVIDED ON BOTH SIDES OF THE VIADUCT IN LOCATIONS WHERE SWITCHING OR OTHER FREQUENT RAILROAD ACTIVITIES ARE PERFORMED.THE SPLASH BOARD SHALL EXTEND COMPLETELY ACROSS THE STRUCTURE OR CN RIGHT–OF–WAY, WHICHEVER IS SHORTER.
3. LIGHTS ARE TO BE INSTALLED ON THE UNDERSIDE OF THE VIADUCT WHERE SHADOWS CAST BY THE STRUCTURE WOULD INTERFERE WITH THE RAILROAD OPERATIONS.
4. SLOPE PAVING SHALL BE PROVIDED WHERE END SLOPES ARE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.
5. FALSEWORK, NETTING OR OTHER SUITABLE PROTECTION SHALL BE PROVIDED TO PREVENT DEBRIS FROM FALLING ON THE TRACK DURING DEMOLITION AND CONSTRUCTION OPERATIONS.
6. APPLICANT SHALL BE RESPONSIBLE FOR IDENTIFICATION, LOCATION AND PROTECTION OF EXISTING UTILITIES.
7. CONTACT CN'S PUBLIC WORKS ENGINEER FOR THE DESIGNATED PROJECT IN THE STATE IN WHICH IT IS LOCATED AT LEAST 1 WEEK PRIOR TO COMMENCEMENT OF WORK TO LOCATE CN UNDERGROUND SIGNAL INFRASTRUCTURE.
8. 2 WEEKS PRIOR TO PROJECT START, CONTACT PUBLIC WORKS ENGINEER WHO WILL ARRANGE FOR FLAG PROTECTION TO BE PUT IN PLACE.
9. APPLICANT MUST CONTACT JOINT UTILITY LOCATION SERVICE TO DETERMINE LOCATION OF FIBER OPTICS.
10. CERTAIN LOCATIONS MAY REQUIRE ADDITIONAL CLEARANCES OR FEATURES BEYOND THOSE SHOWN IN THIS DRAWING BASED ON LOCAL CONDITIONS.
11. EXCEPTIONS TO THESE STANDARDS MUST BE APPROVED BY CN.

NOTES:

1. CLEARANCES:

   MINIMUM VERTICAL CLEARANCE SHALL BE 23' ABOVE THE PLANE OF TOP–OF–RAIL, ADDITIONAL CLEARANCE MAY BE REQUIRED IF SAG OF VERTICAL CURVE MUST BE ADJUSTED OR IF FUTURE TRACK RAISE FOR FLOOD CONSIDERATIONS OR MAINTENANCE IS PROBABLE.

   MINIMUM HORIZONTAL CLEARANCES, MEASURED AT RIGHT ANGLE FROM THE CENTERLINE OF TRACK, SHALL BE AS SHOWN.

   MINIMUM CONSTRUCTION CLEARANCES SHALL BE 22' VERTICAL ABOVE THE PLANE OF TOP–OF–RAIL AND 12' HORIZONTAL AT RIGHT ANGLE FROM CENTERLINE OF TRACK. DEPENDING ON TYPE OF STRUCTURE, CLEARANCES MAY BE INCREASED.

   HORIZONTAL CLEARANCES ARE TO BE INCREASED 1 ½" PER DEGREE OF CURVE WHERE THE STRUCTURE IS LOCATED ADJACENT TO OR WITHIN 80' OF THE CURVE LIMITS.

2. FUTURE TRACKS:

   SPACE IS TO BE PROVIDED FOR ONE OR MORE FUTURE TRACKS AS REQUIRED FOR LONG RANGE PLANNING OR OTHER OPERATING REQUIREMENTS, WHERE PROVISION IS MADE FOR MORE THAN TWO TRACKS, SPACE IS TO BE PROVIDED FOR ACCESS ROADS ON BOTH SIDES OF TRACK.

3. PIERS:

   PIER PROTECTION (CRASH WALLS) SHALL BE PROVIDED IN ACCORDANCE WITH AREMA CHAPTER 8, PART 2.1.5 FOR PIERS WITHIN 25 FEET OF THE CENTERLINE OF TRACK.

   TOP OF FOOTING SHALL BE A MINIMUM OF 6' BELOW BASE OF RAIL AND A MINIMUM OF 1 FOOT BELOW FLOW LINE OF DITCH.

   TEMPORARY OR PERMANENT SHORING SHALL BE DESIGNED AND SEALED BY A LICENSED ENGINEER OF THE STATE IN WHICH THE STRUCTURE IS BEING BUILT AND SUBMITTED TO CN'S STRUCTURES GROUP FOR REVIEW (SEE SPECIFICATION DRAWING)

4. DRAINAGE:

   DRAINAGE FROM THE OVERPASS SHALL BE DIVERTED AWAY FROM CN TRACKS AND NOT DISCHARGED ONTO THE TRACKS OR ROADBED.

   A STANDARD FLAT–BOTTOM DITCH SHALL BE PROVIDED ON EACH SIDE OF TRACKS AS NECESSARY

   CULVERTS MAY BE INSTALLED ON THE OPPOSITE SIDES OF COLUMN FROM TRACK IN LIEU OF STANDARD RAILROAD DITCHES WHEN APPROVED BY TECHNICAL SERVICE ENGINEER. MAINTENANCE OF CULVERTS IS TO BE AT APPLICANT'S EXPENSE.

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US ONLY
DESIGN CLEARANCES FOR HIGHWAY AND PEDESTRIAN OVERPASS

OFFICE OF DESIGN & CONSTRUCTION

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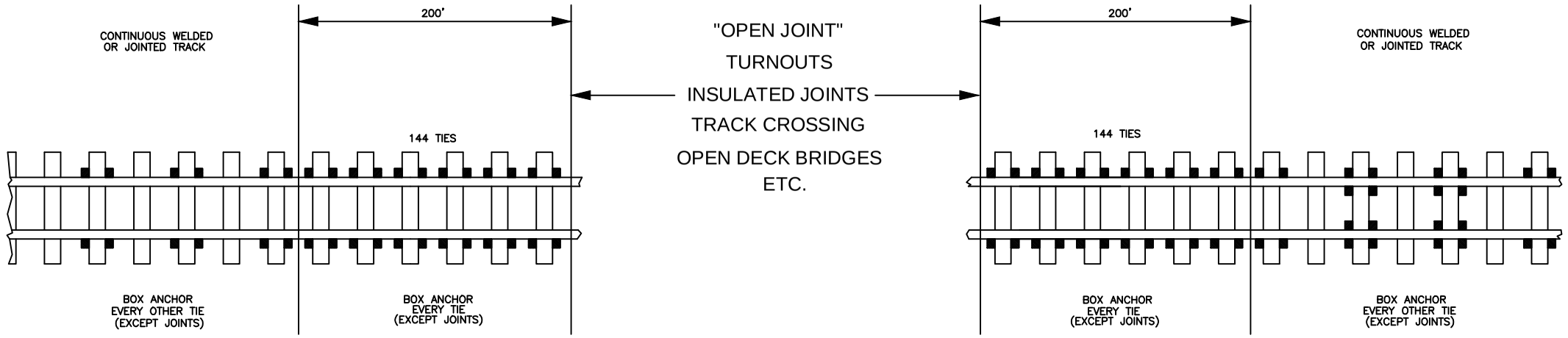
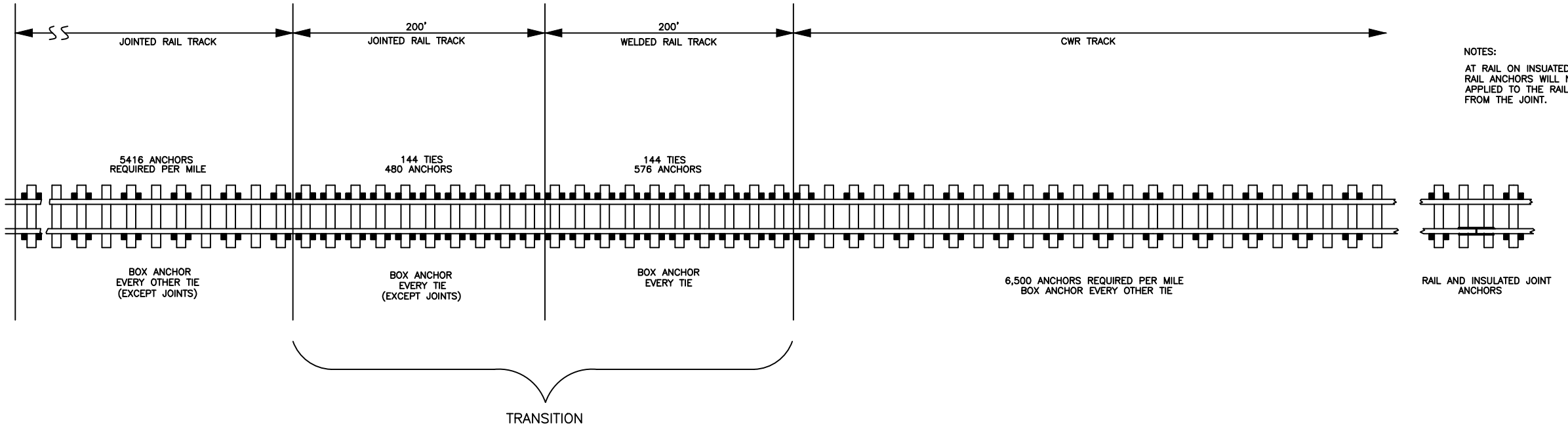
ANCHOR PATTERN NEAR FIXED OBJECTS.



NOTES:

ANCHORS WILL BE APPLIED TO BOTH SIDES OF EACH TIE.

ANCHOR PATTERN OF TRACK.



NOTES:

AT RAIL ON INSUATED JOINTS, RAIL ANCHORS WILL NOT BE APPLIED TO THE RAIL ACROSS FROM THE JOINT.

NOTE:

ON JOINTED RAIL ABUTTING A COMPLETED LENGTH OF CONTINUOUS WELDED RAIL, THE FIRST 6 JOINTED RAILS (234') IN EACH DIRECTION MUST BE FULLY BOX ANCHORED ON ALL TIES BUT JOINT TIES AND THEREAFTER EVER OTHER TIE MUST BE BOX ANCHORED.

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ANCHOR PATTERN FOR CONTINUOUS WELDED & JOINTED TRACK

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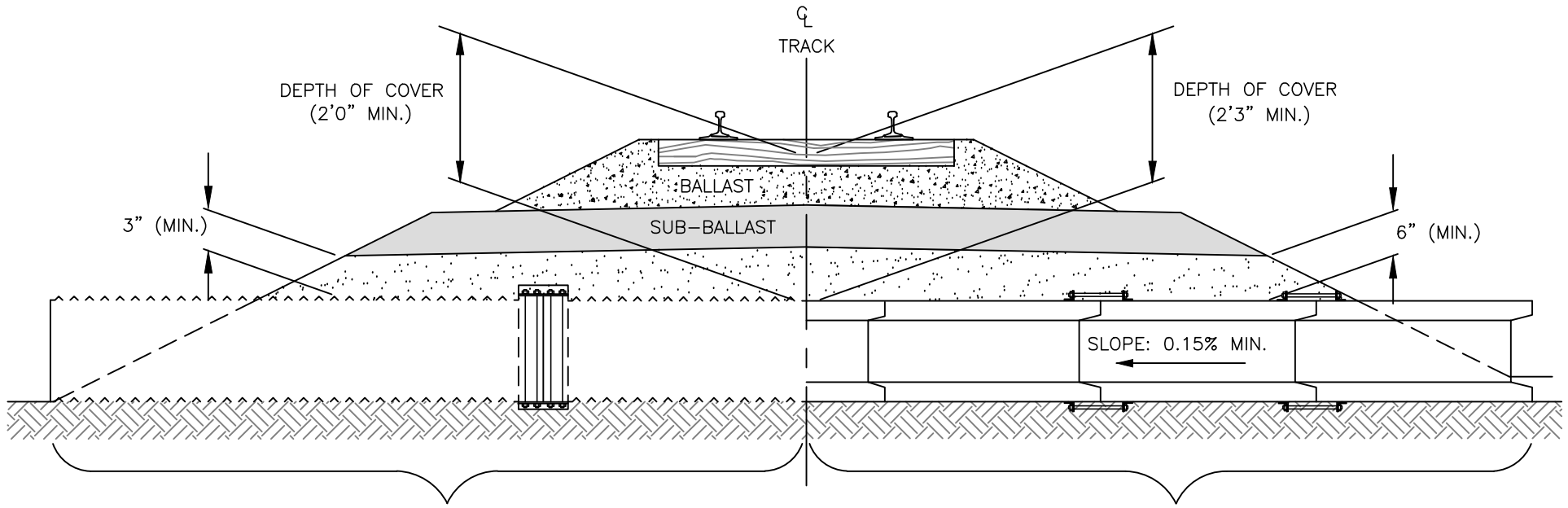

TYPICAL SECTION CMP/ ALUMINUM/ STEEL

DEPTH OF COVER	PIPE DIA.	MIN. GAUGE
MIN. TO 20'–0"	24" TO 30"	12
	36" TO 42"	10
	48" TO 60"	8

DEPTH OF COVER – ROUND CMP (MINIMUM):

24" TO 36" MINIMUM AS SHOWN ABOVE.
42" TO 60" 1/2 NOMINAL PIPE DIAMETER.
OVER 60" INSTALLATION TO BE APPROVED BY CN DESIGN & CONSTRUCTION

TYPICAL SECTION RCP

DEPTH OF COVER	PIPE DIA.	CLASS	WALL
MIN. TO 25'–0"	24" TO 72"	IV	B
GREATER THAN 25–0"	24" TO 48"	V	
	54" TO 72"		C

DEPTH OF COVER – ROUND RCP (MINIMUM):

24" TO 54" MINIMUM AS SHOWN ABOVE.
54" TO 72" 1/2 NOMINAL PIPE DIAMETER.
OVER 72" INSTALLATION TO BE APPROVED BY CN DESIGN & CONSTRUCTION
(* PIPE TO BE BOLT CONNECTED *)

CMP NOTES:

1. CORRUGATED METAL PIPE (CMP) DESIGN, MATERIALS AND FABRICATION TO BE IN ACCORDANCE WITH AREMA CHAPTER 1, PART 4 CLASS I & II.
2. CMP TO BE GALVANIZED, FIBER – BONDED AND BITUMINOUS COATED OR ALUMINUM.
3. JOINTS BY STANDARD COUPLING BAND.
4. BEDDING TO BE CLASS B OR BETTER
5. BITUMINOUS PAVING ONLY IF WARRANTED BY ABRASIVE FLOW.
6. OTHER THAN ROUND SECTION TO BE APPROVED BY CN'S STRUCTURES DEPT.
7. CMP LESS THAN 24" TO BE AVOIDED.

RCP NOTES:

1. REINFORCED CONCRETE PIPE (RCP) DESIGN, MATERIALS, AND FABRICATION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C–76.
2. CLASS WALL DESIGN TO BE AS NOTED.
3. BEDDING TO BE CLASS B OR BETTER
4. OTHER THAN ROUND SECTION TO BE APPROVED BY CN'S STRUCTURES DEPT.
5. JOINTS AND LIFT HOLES TO BE MORTARED.
6. RCP LESS THAN 24" TO BE AVOIDED.

GENERAL NOTES:

1. A DEPTH OF COVER GREATER THAN 25'–0" NEEDS TO BE APPROVED BY THE CN'S STRUCTURES DEPARTMENT.
2. 24" DIAMETER MINIMUM.

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CULVERT INSTALLATION GUIDELINES

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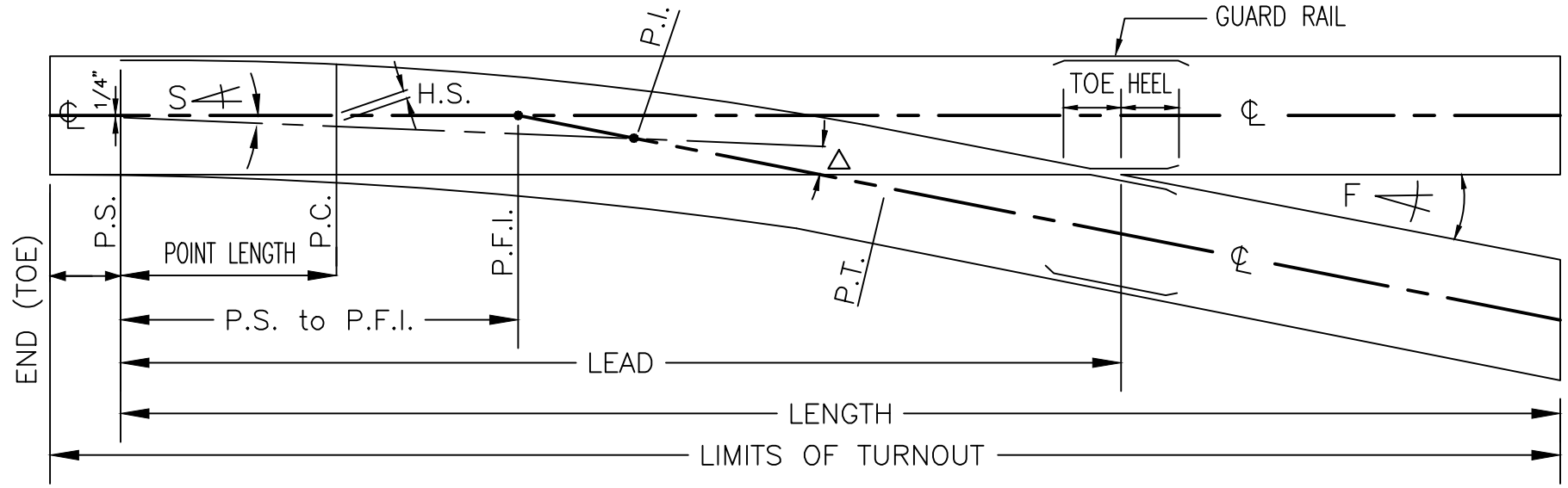

PLAN OF RIGHT HAND TURNOUT

	#8	#10	#12	#15	#20
END TO P.S.	3'– 5 5/8"	3'– 5 5/8"	3'– 5 5/8"	3'– 5 5/8"	3'– 5 5/8"
POINT LENGTH	16'– 6"	31'– 6"	36'– 7"	45'– 9"	58'– 10"
S ∠	1° 42' 01"	1° 42' 01"	1° 16' 31"	1° 02' 00"	1° 04' 30"
H.S. (HEEL SEPARATION)	5 5/8"	6 1/4"	6 1/4"	6 1/4"	6 1/4"
P.S. TO P.F.I.	29'– 10 3/4"	34' – 0 1/2"	41' – 1"	41' – 1 1/8"	61'– 1 3/64"
LEAD	67'– 10 3/4"	81' – 6"	98' – 1"	112'– 4 1/8"	156'– 0 1/2"
LENGTH	91'– 0 3/8"	110'– 8 7/8"	137'– 3 3/4"	175'– 1 1/2"	220'– 0"
△(F ∠ – S ∠)	5° 27' 09"	4° 01' 28"	3° 29' 48"	2° 47' 06"	1° 47' 21"
TOE LENGTH (FROG)	5'– 0"	12'– 0"	14'– 3"	13'– 8"	16'– 1 1/2"
HEEL LENGTH (FROG)	8'– 0"	14'– 0"	17'– 3"	18'– 3"	24'– 10 1/2"
F ∠ (FROG)	7° 09' 10"	5° 43' 29"	4° 46' 19"	3° 49' 06"	2° 51' 51"
LIMITS OF TURNOUT	94'– 6"	114'– 2 1/2"	140'– 9 3/8"	178'– 7 1/8"	223'– 5 5/8"

ABBREVIATIONS:

P.S.	POINT OF SWITCH
S∠	SWITCH ANGLE
H.S.	HEEL SEPARATION
P.C.	POINT OF CURVE
P.F.I.	POINT OF FROG INTERSECTION
P.I.	POINT OF CURVE INTERSECTION
P.T.	POINT OF TANGENCY
F∠	FROG ANGLE

NOTES:

1. LEFT HAND TURNOUT IS OPPOSITE HAND.
2. HEAVY LINES REPRESENT TRACK GAUGE LINE

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TURNOUT GEOMETRY

OFFICE OF DESIGN & CONSTRUCTION

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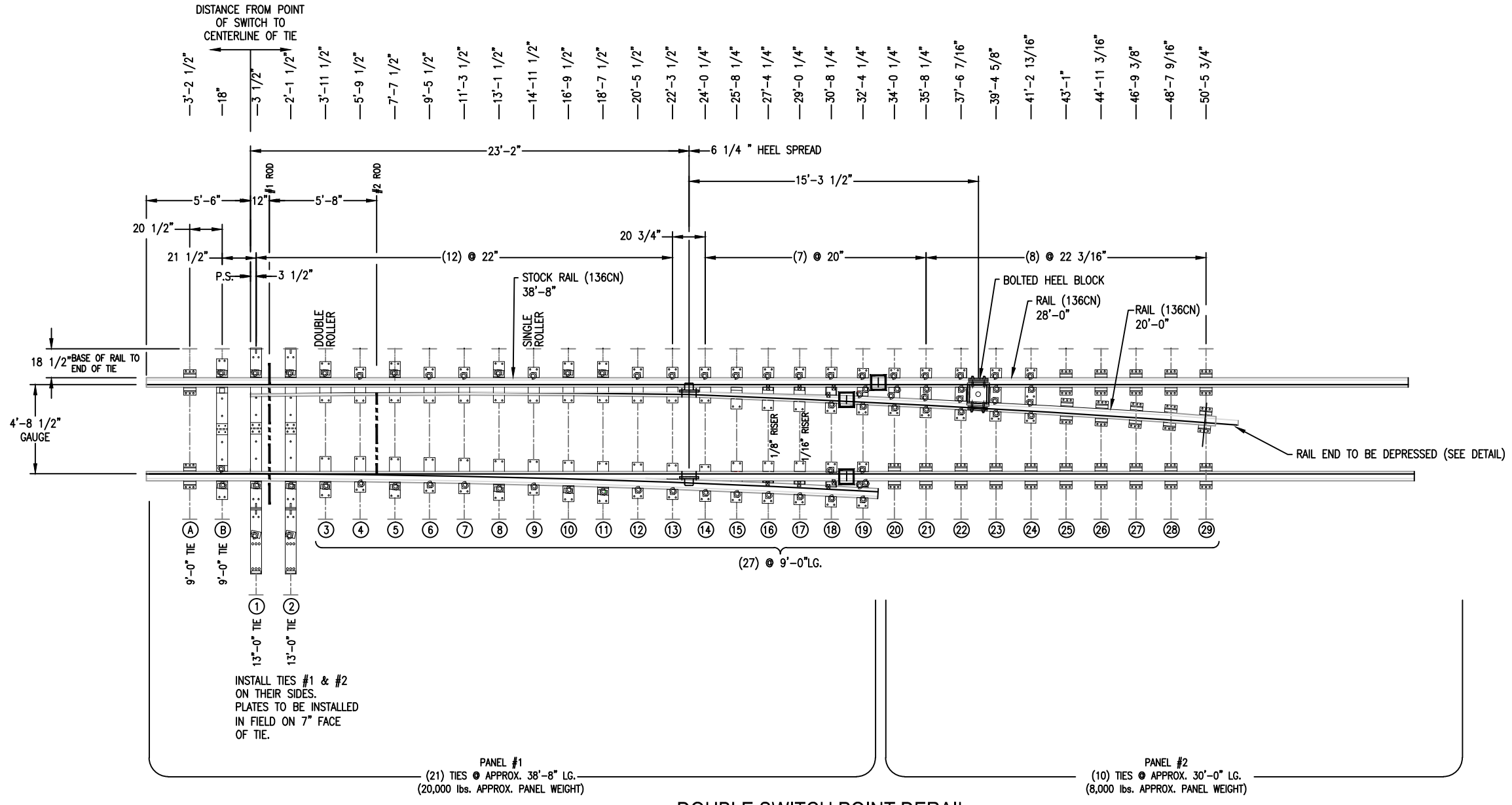


DOUBLE SWITCH POINT DERAIL

RIGHT HAND SHOWN, LEFT HAND OPPOSITE

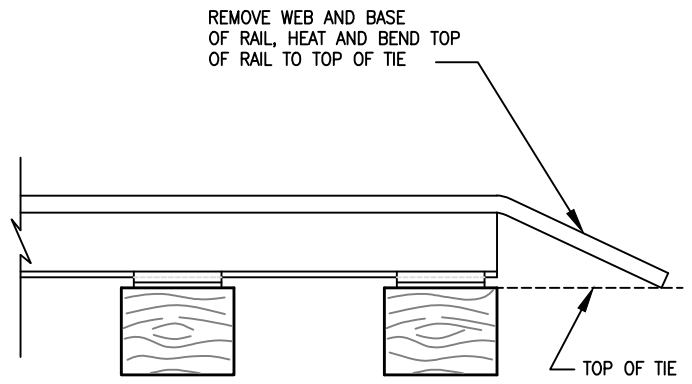
NOTES:
1. TIES TO BE PRE-DRILLED FOR SCREW SPIKES 21/32" DIA. 6" DEEP.
2. □ – INDICATES LOCATION OF FIELD WELDED JOINTS 0" OPENING.
3. ☒ – INDICATES LOCATION OF RAIL HOLD DOWN CLIP ASSEMBLIES.
4. END DRILLING 9 1/2" x 6" ~ 1 5/16" DIA. 3 3/32" A.B.
5. BEFORE SHIPPING, THROW THE SWITCH, PLACE WOOD BLOCK BETWEEN OPEN SWITCH & STOCK RAIL TO HOLD THROW, THEN BAND BOTH SWITCH POINTS TO STOCK RAILS.

	DERAIL DATA	
SWITCH	LENGTH OF POINT	23'-2" ON 31'-6"
	HEEL SPREAD	6 1/4"
	POINT THICKNESS	0"
	RADIUS OF CVD. POINT	809.55'
	SWITCH ANGLE	0°-27'-58"
	CENTERLINE RADIUS	807.20'

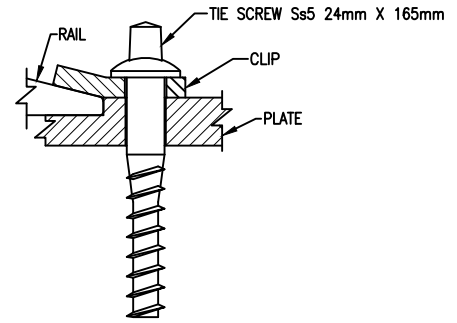
TANGENT OFFSETS FROM HEEL OF SWITCH	
5'-0"	8 21/32"
10'-0"	11 13/32"
15'-0"	14 17/32"
20'-0"	18 1/32"
25'-0"	21 15/16"

TIE SCHEDULE	
29	7" x 9" x 9'-0"
2	7" x 9" x 13'-0" HEADBLOCK TIES

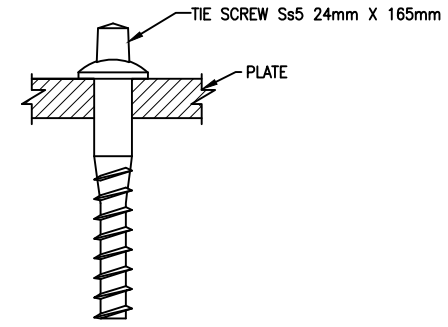
SWITCH POINT THROW	
@ #1 ROD	5"
@ #2 ROD	3 23/32"



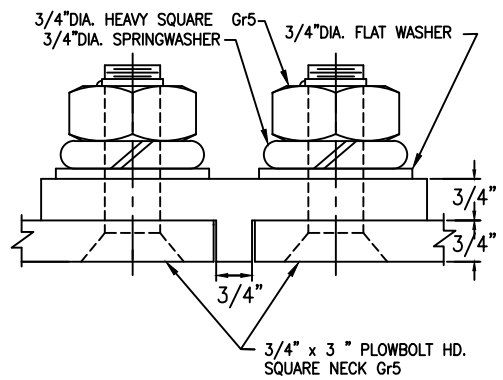
DEPRESS RAIL HEAD DETAIL



HOLD DOWN CLIP ASSEMBLY



TIE SCREW ASSEMBLY DETAIL



INSULATED PLATE JOINT ASSEMBLY

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DOUBLE SWITCH POINT DERAIL

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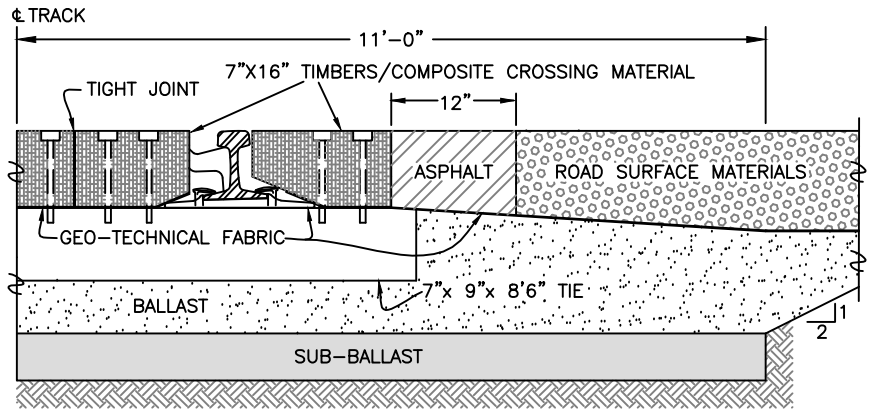

HALF SECTION SOLID OR COMPOSITE CROSSING

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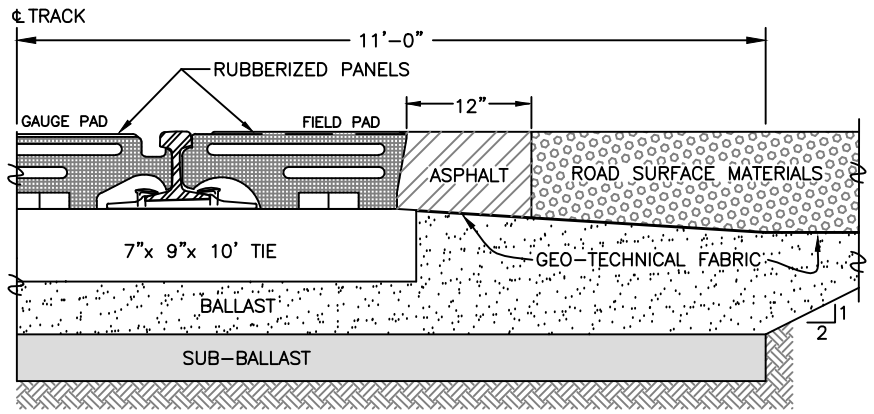

HALF SECTION RUBBERIZED CROSSING

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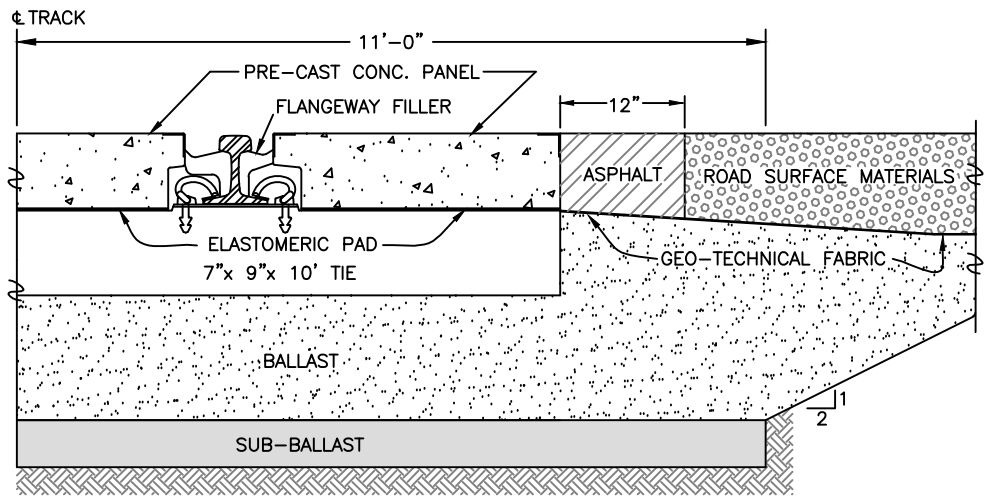

HALF SECTION CONCRETE CROSSING

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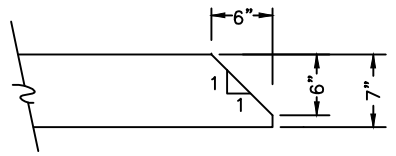

END CHAMFER DETAIL

FOR WOOD CROSSING TIMBER ONLY

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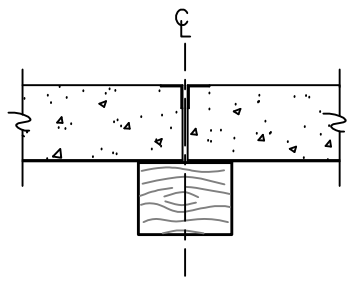

PANEL END DETAIL

CROSSING PANELS ARE TO BE BUTTED TOGETHER OVER THE ℄ OF TIE

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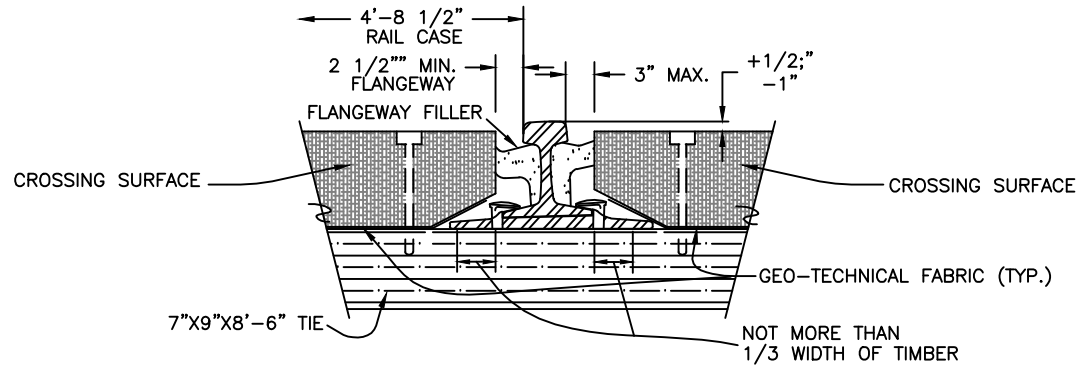

TYPICAL DETAIL FLANGEWAY

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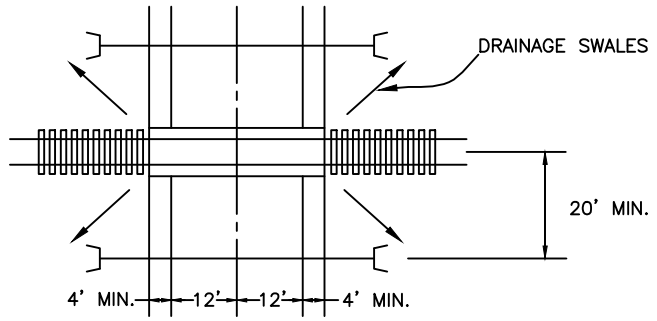
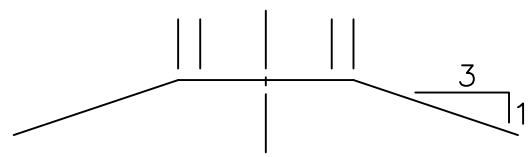


PLAN



CROSS-SECTION

NOTES:

1. CROSSING LENGTH SHOULD EXTEND ENTIRE WIDTH OF USABLE SHOULDERS.
2. CROWN IN ROADWAY SHOULD BE ELIMINATED AT CROSSING SO AS TO MATCH GRADE AND PROFILE OF RAILROAD.
3. DRAINAGE CULVERTS IN TRACKSIDE DITCHES SHOULD BE APPROPRIATELY SIZED (24"MINIMUM DIAMETER) AND INSTALLED AT AN ELEVATION WHICH PERMITS UNRESTRICTED FLOW. CULVERTS SHOULD ALSO BE OF SUFFICIENT LENGTH AND/OR EQUIPPED WITH FLARED ENDS OR HEADWALLS TO PRECLUDE COLLAPSE OF ROADWAY SHOULDER AT OR AROUND CULVERT ENDS.

NOTE:

1. FASTENING TO BE WITH 5/8" DRIVE SPIKE OF A LENGTH TO PENETRATE CROSS TIE 3" OR MORE.
2. USE ONE FASTENING PER TIMBER PER CROSS TIE, ALTERNATE POSITION BORE TIMBER 9/16" AND COUNTERSINK PILOT BORE CROSS TIE.
3. FULLY ASPHALTED OR AGGREGATE CROSSINGS ARE NOT ALLOWED
4. CROSSINGS IN CURVES WILL NEED TIES TO BE SPACED IN RADIAL FAN ARRANGEMENT
5. CROSSINGS IN CURVES MAY NEED TO BE SPECIALLY ORDERED.

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ROAD CROSSING DETAILS

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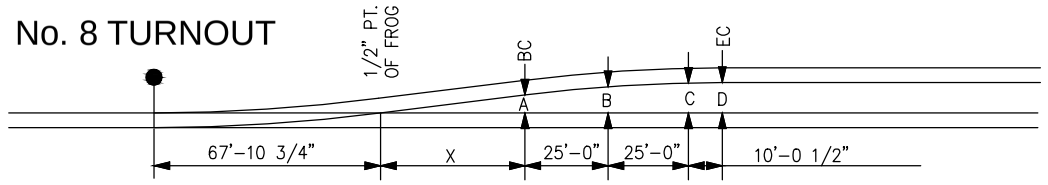
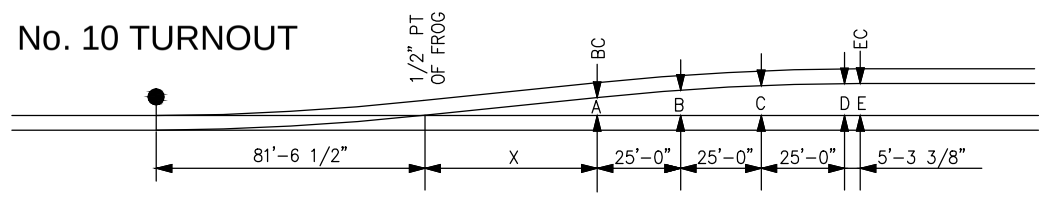
TURNOUT RETURN CURVES

No. 8 TURNOUT



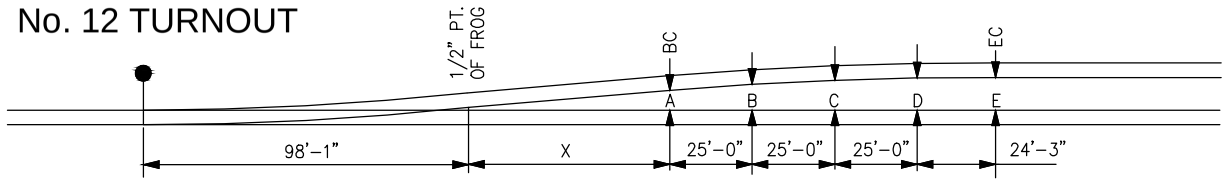
TRACK CENTERS	X	A	B	C	D
13'–0"	35'–10"	4'–6 1/2"	7'–0 1/4"	8'–2 1/4"	8'–3 1/2"
13'–6"	39'–9 13/16"	5'–0 1/2"	7'–6 1/4"	8'–8 1/4"	8'–9 1/2"
14'–0"	43'–9 5/8"	5–6 1/2"	8'–0 1/4"	9'–2 1/4"	9'–3 1/2"
14'–6"	47'–9 7/16"	6'–0 1/2"	8'–6 1/4"	9'–8 1/4"	9'–9 1/2"
15'–0"	51'– 9 1/4"	6'–6 1/2"	9'–0 1/4"	10'–2 1/4"	10'–3 1/2"

No. 10 TURNOUT



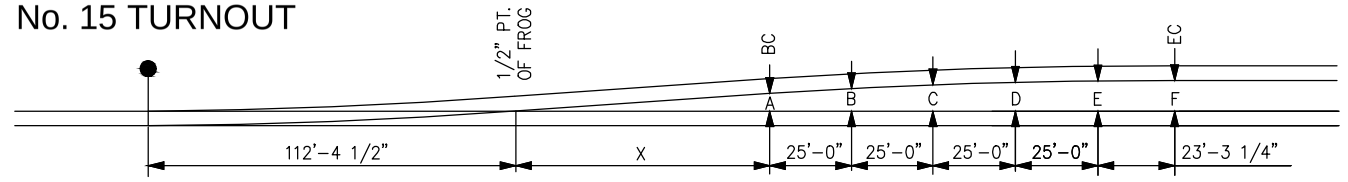
TRACK CENTERS	X	A	B	C	D	E
13'–0"	42'– 3 1/8"	4'–3 3/8"	6'–4 3/4"	7'–8 5/8"	8'–3 1/4"	8'–3 1/2"
13'–6"	47'–2 15/16"	4'–9 3/8"	6'–10 3/4"	8'–2 5/8"	8'–9 1/4"	8'–9 1/2"
14'–0"	52'–2 13/16"	5'–3 3/8"	7'–4 3/4"	8'–8 5/8"	9'–3 1/4"	9'–3 1/2"
14'–6"	57'–2 11/16"	5'–9 3/8"	7'–10 3/4"	9'–2 5/8"	9'–9 1/4"	9'–9 1/2"
15'–0"	62'–2 1/2"	6'–3 3/8"	8'–4 3/4"	9'–8 5/8"	10'–3 1/4"	10'–3 1/2"

No. 12 TURNOUT



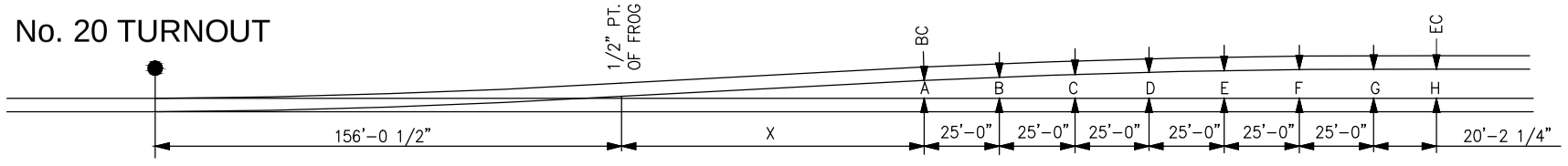
TRACK CENTERS	X	A	B	C	D	E
13'–0"	49'–3 3/8"	4'–1 7/8"	5'–11 3/4"	7'–3 1/4"	8'–0 1/2"	8'–3 1/2"
13'–6"	55'–3 1/4"	4'–7 7/8"	6'–5 3/4"	7'–9 1/4"	8'–6 1/2"	8'–9 1/2"
14'–0"	61'–3 1/8"	5'–1 7/8"	6'–11 3/4"	8'–3 1/4"	9'–0 1/2"	9'–3 1/2"
14'–6"	67'–3"	5'–7 7/8"	7'–5 3/4"	8'–9 1/4"	9'–6 1/2"	9'–9 1/2"
15'–0"	73'–2 7/8"	6'–1 7/8"	7'–11 3/4"	9'–3 1/4"	10'–0 1/2"	10'–3 1/2"

No. 15 TURNOUT



TRACK CENTERS	X	A	B	C	D	E	F
13'–0"	62'–0 1/2"	4'–2 1/4"	5'–8 1/8"	6'–10 1/8"	7'–7"	8'–1 3/4"	8'–3 1/2"
13'–6"	69'–6 3/8"	4'–8 1/4"	6'–2 1/8"	7'–4 1/8"	8'–1"	8'–7 3/4"	8'–9 1/2"
14'–0"	77'–0 5/16"	5'–2 1/4"	6'–8 1/8"	7'–10 1/8"	8'–7"	9'–1 3/4"	9'–3 1/2"
14'–6"	84'–6 3/16"	5'–8 1/4"	7'–2 1/8"	8'–4 1/8"	9'–1"	9'–7 3/4"	9'–9 1/2"
15'–0"	92'–0 1/8"	6'–2 1/4"	7'–8 1/8"	8'–10 1/8"	9'–7"	10'–1 3/4"	10'–3 1/2"

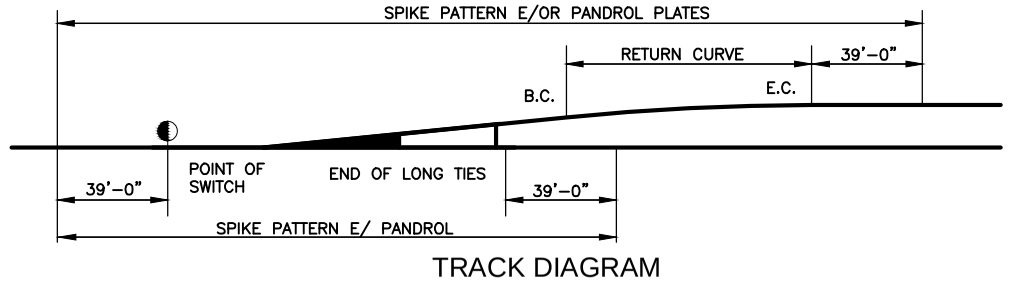
No. 20 TURNOUT



TRACK CENTERS	X	A	B	C	D	E	F	G	H
13'–0"	79'–10 1/4"	4'–0 1/2"	5'–2 3/8"	6'–2"	6'–11 1/2"	7'–6 7/8"	7'–11 7/8"	8'–2 3/4"	8'–3 1/2"
13'–6"	89'–10 1/4"	4'–6 1/2"	5'–8 3/8"	6'–8"	7'–5 1/2"	8'–0 7/8"	8'–5 7/8"	8'–8 3/4"	8'–9 1/2"
14'–0"	99'–10 1/8"	5'–0 1/2"	6'–2 3/8"	7'–2"	7'–11 1/2"	8'–6 7/8"	8'–11 7/8"	9'–2 3/4"	9'–3 1/2"
14'–6"	109'–10 1/8"	5'–6 1/2"	6'–8 3/8"	7'–8"	8'–5 1/2"	9'–0 7/8"	9'–5 7/8"	9'–8 3/4"	9'–9 1/2"
15'–0"	119'–10"	6'–0 1/2"	7'–2 3/8"	8'–2"	8'–11 1/2"	9'–6 7/8"	9'–11 7/8"	10'–2 3/4"	10'–3 1/2"

SPIKING PATTERNS NO.	FIELD	GUAGE	MGT'S PER YEAR	DEGREE OF CURVE: TANGENT UP TO 2°	2° TO 6°	6° TO 8°	MORE THAN 6°
B			0–20	X			
C		OR	0–20		X		
			MORE THAN 20	X			
D			0–20			*X	
			MORE THAN 20		X		
E			MORE THAN 20			*X	
			TURNOUTS SPIKING PATTERN E WILL BE APPLIED TO TURNOUTS AS PER TRACK DIAGRAM				
G							*X
			PLATES WILL BE APPLIED TO TURNOUTS AS PER TRACK DIAGRAM				
* EVERY OTHER TIE CAST PANDROL PLATED							

TURNOUT SPIKE PATTERN



TRACK DIAGRAM

NOTE:

MEASUREMENTS ARE FROM THE GAUGE SIDE OF RAIL TO GAUGE SIDE OF RAIL

REVISIONS DATE	BY
21 OCT 10	DAP

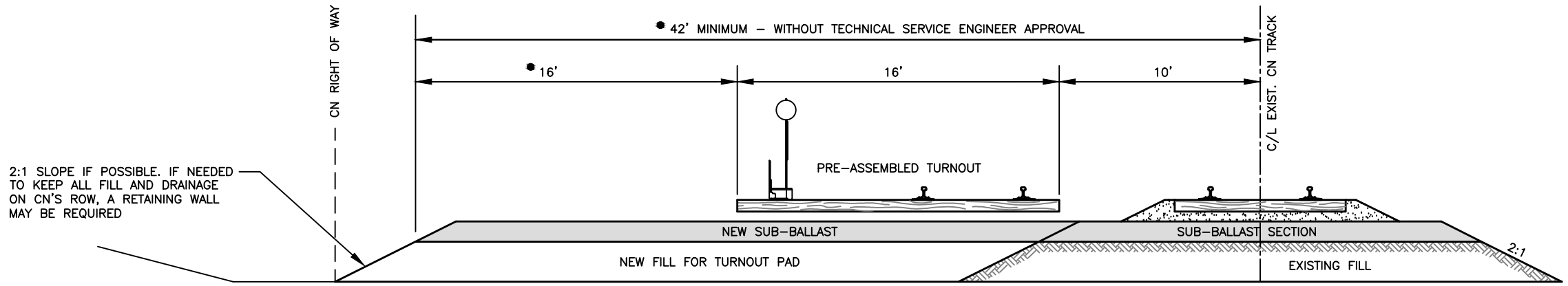
APPROVALS

SHEET 1 OF 1

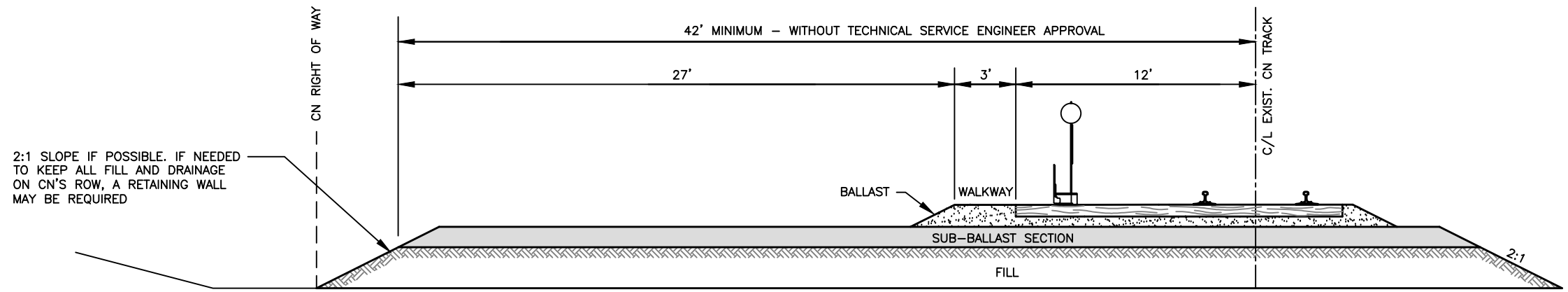
TURNOUT RETURN CURVES & SPIKING PATTERNS FOR INDUSTRIAL TRACKS

OFFICE OF DESIGN & CONSTRUCTION

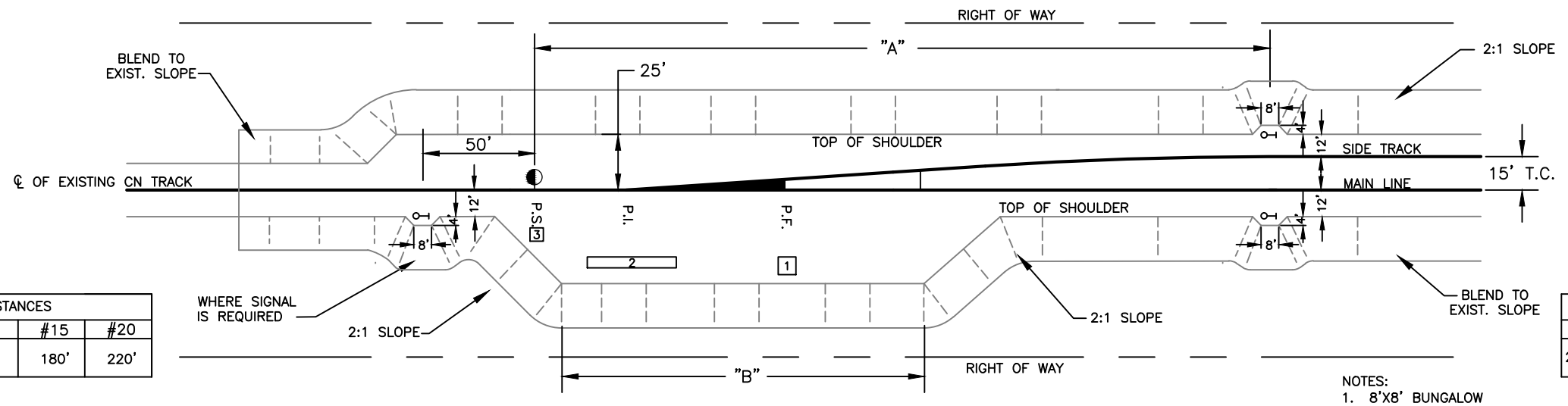
DRAWN BY: DAP	SCALE: NONE	DWG NO:
CHECKED BY: JEB	DATE: 19 JUL 10	FILE:



PRE CONSTRUCTION GRADING - TURNOUT PAD



POST CONSTRUCTION GRADING - TURNOUT PAD



LOCATION	TURNOUT DISTANCES				
	#8	#10	#12	#15	#20
"B"	102'	120'	140'	180'	220'

"A" DISTANCE FOR 15' TRACK CENTERS			
#10	#12	#15	#20
224'–0 3/8"	270'–6 7/8"	327'–7 1/2"	446'–0 3/4"

NOTES:
1. 8'X8' BUNGALOW
2. PROPANE TANK
3. 6'X6' SWITCH HEATER HOUSING

PLAN VIEW

NOTE: CONSTRUCTION OF INDUSTRY TURNOUT PAD IS FOR THE PLACEMENT OF THE PROPOSED PACKAGE TURNOUT FOR ASSEMBLY AND INSTALLATION. TURNOUT PAD IS ALSO TO PROVIDE FOUNDATION FOR ANY REQUIRED SIGNAL EQUIPMENT.

TURNOUT PAD FILL MATERIAL SHALL BE PLACED BY THE INDUSTRY AS PART OF THE GRADING FOR THE NEW INDUSTRY SPUR. PAD IS TO BE CONSTRUCTED USING STANDARD COMPACTION AND FILL PLACEMENT PROCESSES AS PER THE CN INDUSTRY TRACK GUIDELINES. TOP OF PAD IS TO BE 2' BELOW THE EXISTING TOP OF RAIL.

CONTRACTOR SHALL COORDINATE WITH THE TECHNICAL SERVICE ENGINEER AND ASSOCIATED PROJECT ENGINEER FOR ANY DEVIATION OF FILL AND FOR FLAGMAN PROTECTION.

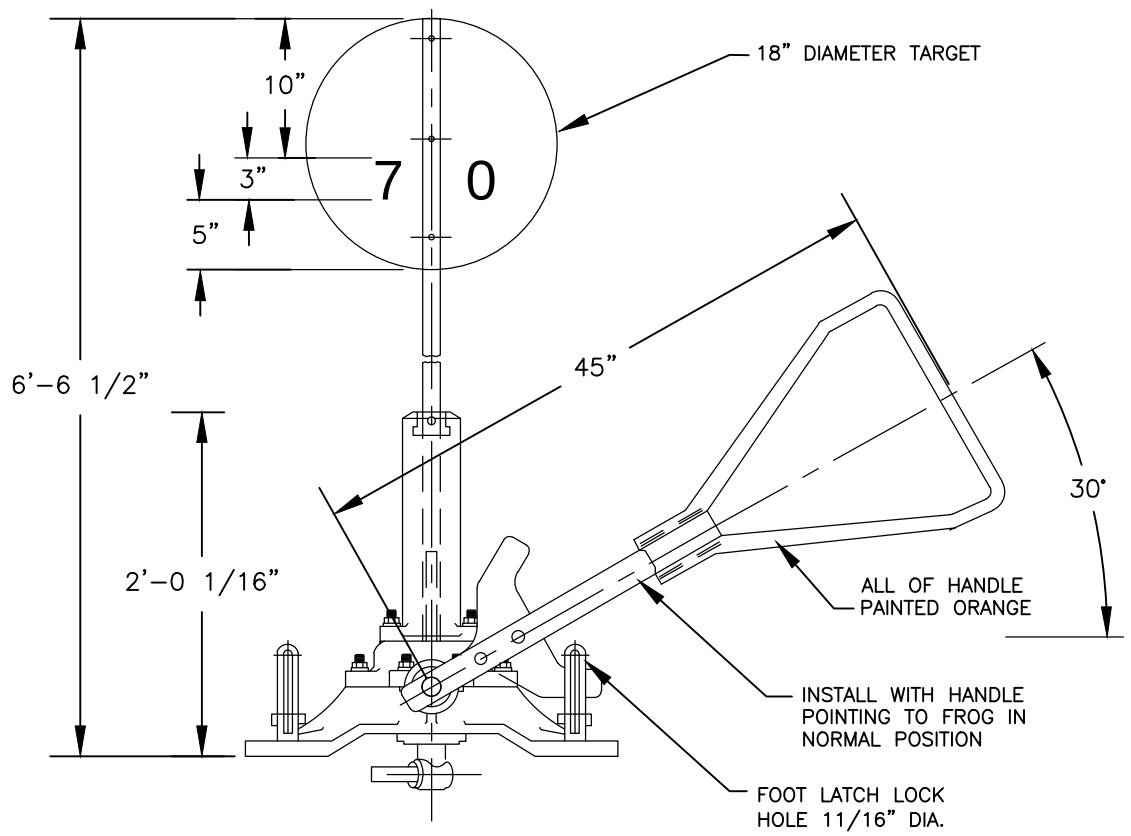
● NOTE: IF RIGHT OF WAY IS OVER 50' FROM ℄ OF EXISTING CN TRACK, THIS DISTANCE SHALL BE INCREASED TO 25' AND 50' RESPECTIVELY

ROADWAY ACCESS SHALL BE PROVIDED

REVISIONS	
DATE	BY
APPROVALS	
SHEET 1 OF 1	

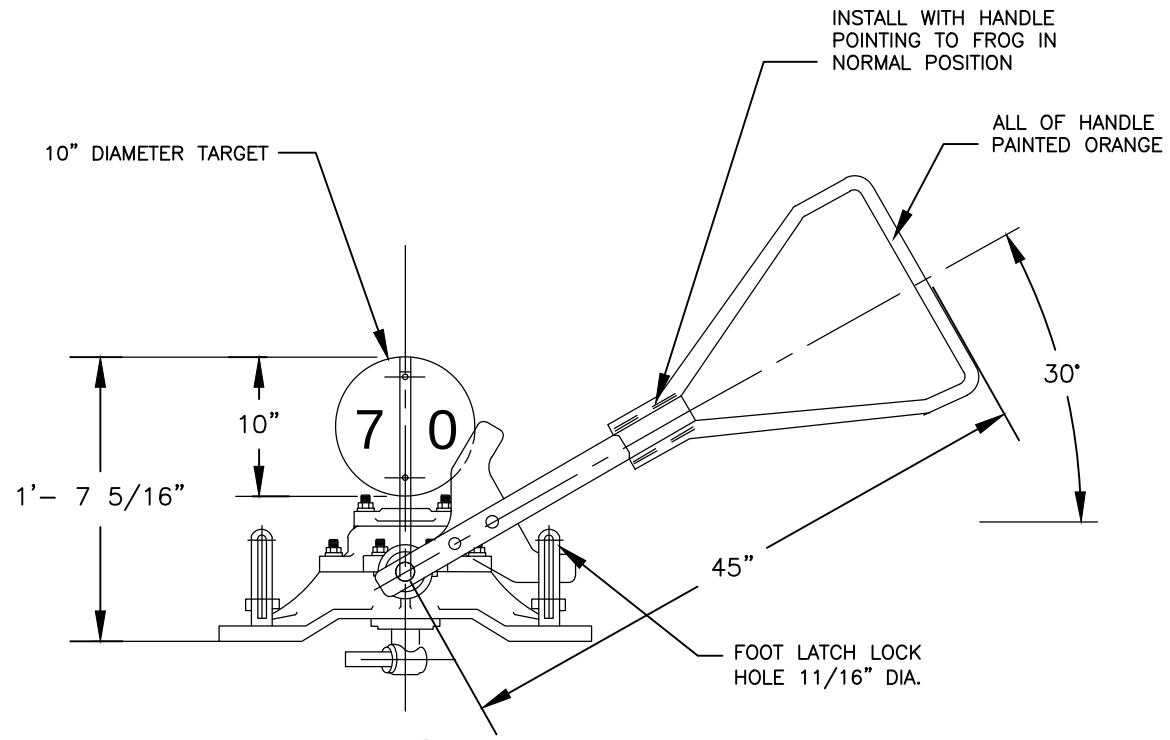
TYPICAL GRADING AT MAINLINE TURNOUT LOCATIONS

OFFICE OF DESIGN & CONSTRUCTION		
DRAWN BY: DAP	SCALE: NONE	DWG NO:
CHECKED BY:	DATE: 19 JUL 10	FILE:



ELEVATION VIEW

36EH STANDS
SHOWN WITH HIGH STAFF
AND TRI–HANDLE

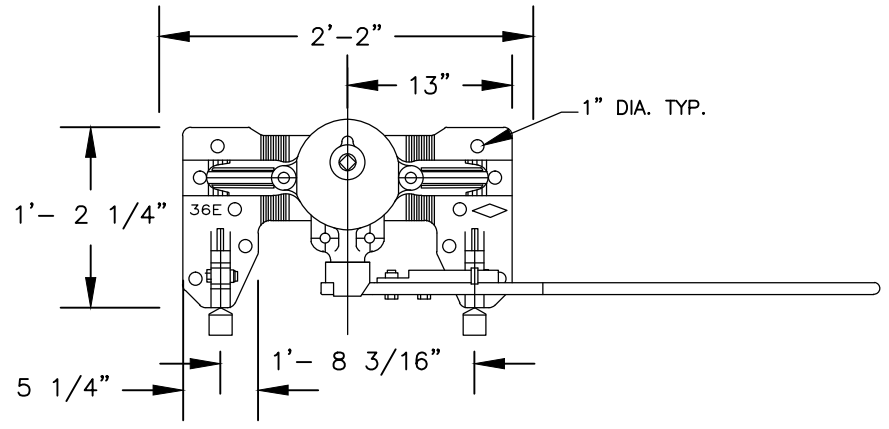


ELEVATION VIEW

36E STANDS
SHOWN WITH LOW STAFF
AND TRI–HANDLE

NOTES:

1. SEE DWG. 2156 & 2160 FOR SPINDLE AND CRANK EYE DETAILS.
2. HANDLE KITS (STRAIGHT OR TRI–HANDLE) ARE AVAILABLE FROM FIELD RETRO FIT OR EXISTING 36 STYLE SWITCH STANDS.
3. STAND 36 EH IS FOR MAIN LINE USE ONLY. FURNISHED WITH NO. 1.2 STAFF.
4. STAND 36E IS FOR MAIN LINE OR YARD USE, FURNISHED WITH NO. 2 STAFF.
5. USE 18" TARGETS FOR 36EH STANDS AND 10" TARGETS FOR 36E STANDS.
6. SWITCH STANDS ARE TO BE INSTALLED WITH HANDLE DIRECTED TOWARD FROG WHEN LINED TO THE NORMAL POSITION.
7. USE RED TARGETS TO INDICATE "REVERSE" ROUTE ON MAINLINE TURNOUTS. USE YELLOW TARGETS TO INDICATE "REVERSE" ROUTE ON ALL OTHER TURNOUTS.
8. GREEN TARGETS WILL BE INSTALLED ON ALL TURNOUTS INDICATING "NORMAL" POSITION
9. TRACK IDENTIFICATION NUMBERS TO BE APPLIED TO EACH SIDE OF "REVERSE" TARGET.
10. TRACK IDENTIFICATION NUMBERS TO BE 3" FLAT BLACK BLOCK TYPE FONT.
11. SWITCH STAND TO BE SECURED WITH SCREW SPIKES



PLAN VIEW

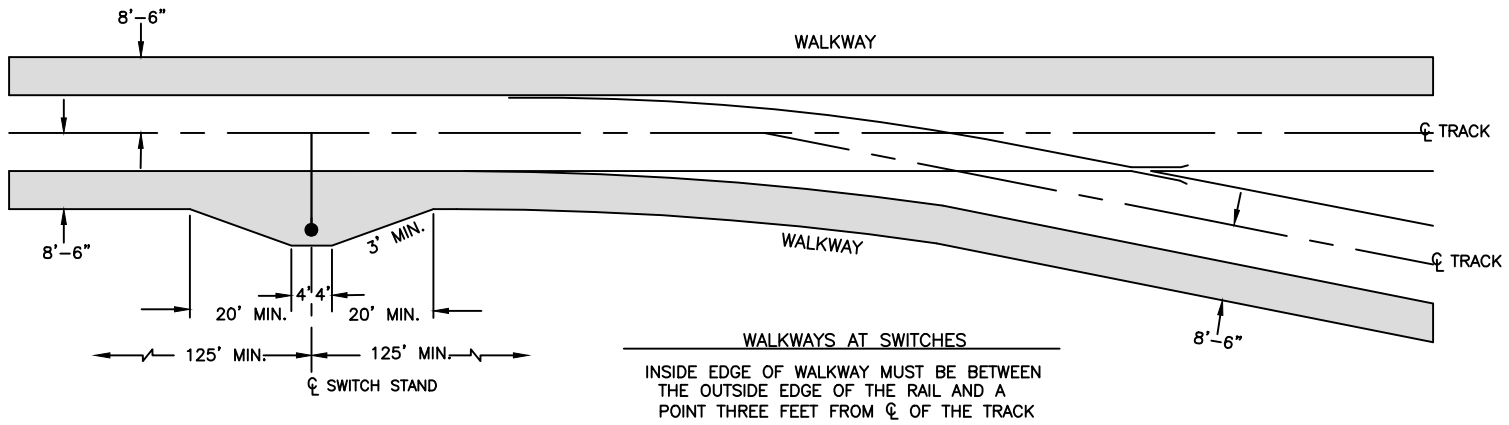
36 E STANDS,
SHOWN WITH LOW STAFF
AND TRI–HANDLE

REVISIONS	
DATE	BY
18 OCT 10	DAP
APPROVALS	

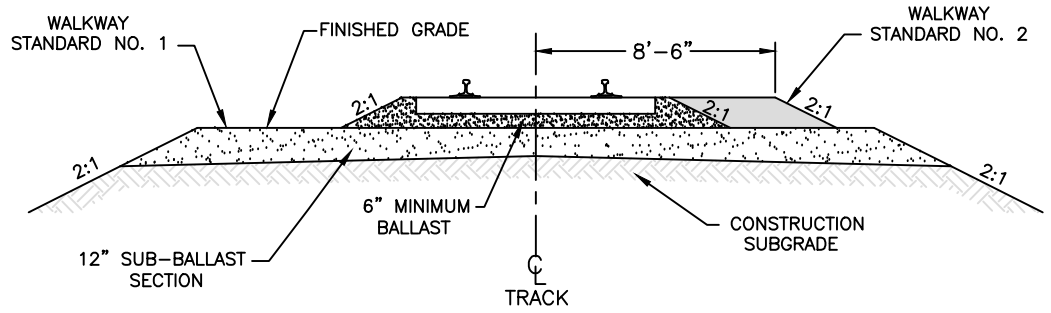
SWITCH STAND
36E & 36EH

OFFICE OF DESIGN & CONSTRUCTION

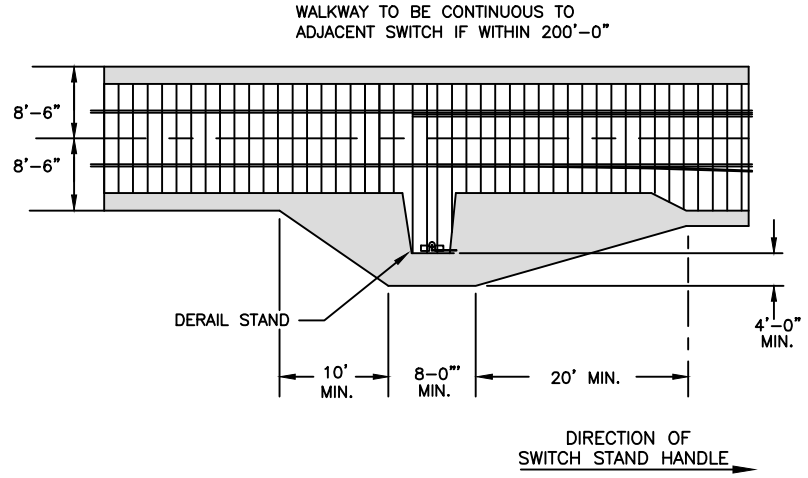
SHEET	DRAWN BY: DAP	SCALE: NONE	DWG NO:
1 OF 1	CHECKED BY:	DATE: 22 JUL 10	FILE:



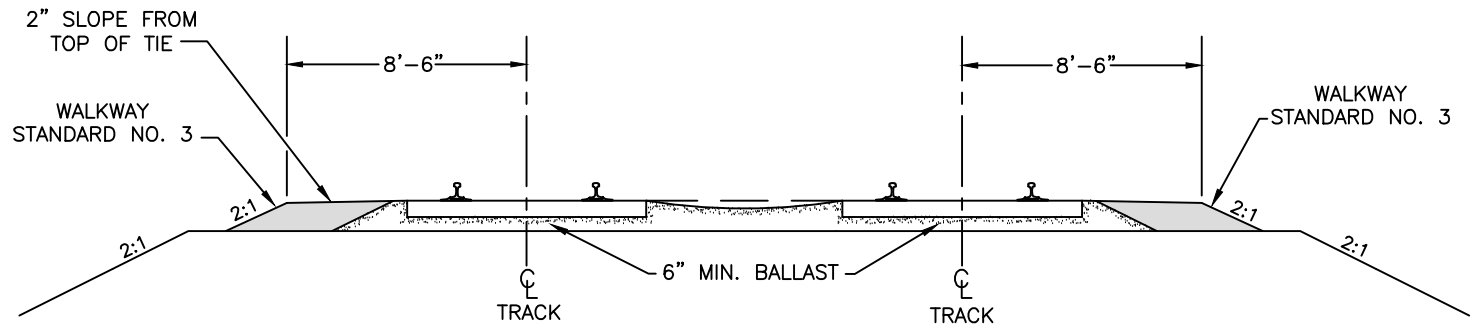
WALKWAY STANDARD NO. 3
INDUSTRIAL TRACK ROADBED ONLY



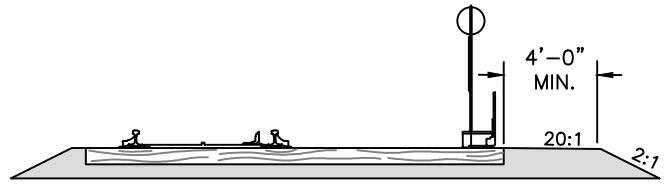
WALKWAY STANDARD NO. 1 AND 2
INDUSTRIAL TRACK ROADBED



WALKWAY STANDARD NO. 4
INDUSTRIAL TRACK ROADBED



WALKWAY STANDARD NO. 5
INDUSTRIAL ROADBED FOR TWO OR MORE TRACKS



TYP. SWITCH STAND SECTION

NOTE:

WALKWAYS ARE TO BE CONSTRUCTED ONLY WITHIN LIMITS OF INDUSTRIAL TRACKS AND ARE NOT TO BE BUILT ALONG MAIN TRACK SWITCHES. USE ONLY NO. 5 TYPE BALLAST

REVISIONS	
DATE	BY
APPROVALS	

WALKWAYS FOR INDUSTRIAL TRACKS

OFFICE OF DESIGN & CONSTRUCTION

SHEET	DRAWN BY: DAP	SCALE: NONE	DWG NO:
1 OF 1	CHECKED BY:	DATE: 26 JUN 10	FILE:

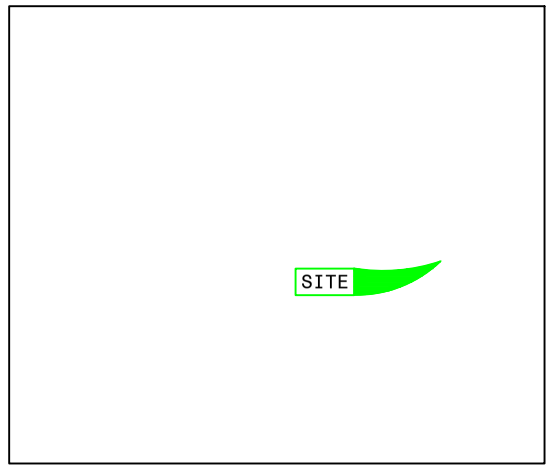
CONSTRUCTION DRAWINGS

TITLE SPECIFIC TO PROJECT

NNN STNAME STREET

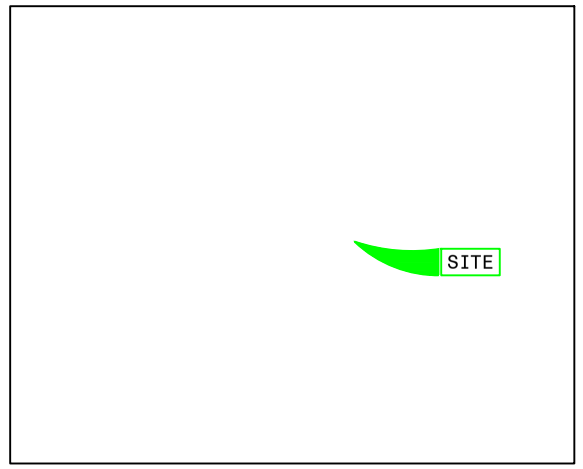
XXCITYXX, XXSTATE/PROV.XX XZIP/POSTALCODEX

DD MMM YYYY



SITE LOCATION MAP

SCALE: N.T.S.



SITE VICINITY MAP

SCALE: N.T.S.

INDEX

STANDARD REFERENCE DRAWINGS

THE REFERENCE DRAWINGS LISTED ON THIS PLAN SHALL BE CONSIDERED A PART THEREOF:

NONE USED

BENCHMARKS

BM #1
TOP OF RAILROAD TRACK AT _____. TOP OF THE LETTER "O" OF "xx". PAINTED _____.
ELEVATION = XXX.XX' (NAVD XX)

BM #2

FLOOD ZONE INFORMATION

THIS IS TO CERTIFY THAT THIS PROPERTY (THE SUBJECT PROPERTY OR PORTION OF SURVEYED) IS NOT WITHIN THE LIMITS OF A DESIGNATED FLOOD HAZARD AREA. THIS PROPERTY FALLS WITHIN AN "OTHER AREAS", ZONE X BEING DEFINED AS, "AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN" PER FEMA FIRM MAP NUMBER _____ DATED MMM XX, YYYY BASED UPON OUR INTERPRETATION OF THE LOCATION OF THE FLOOD HAZARD BOUNDARY LIMITS IN RELATION TO THE PROPERTY LINES. NO FLOOD STUDY WAS PERFORMED FOR THIS SURVEY.

ISSUED FOR
XXXXXX

SUBIVISION: XXSUBDIVISION NAMEXX
MILE POST.: XXNUMBER.OXX
RR STATION: XXNEAREST STATIONXX

FOR CN REVIEW

DIG LOGO

SAFE DIGGING INFORMATION
CALL BEFORE YOU DIG
1-800-XXX-XXXX

STAMP

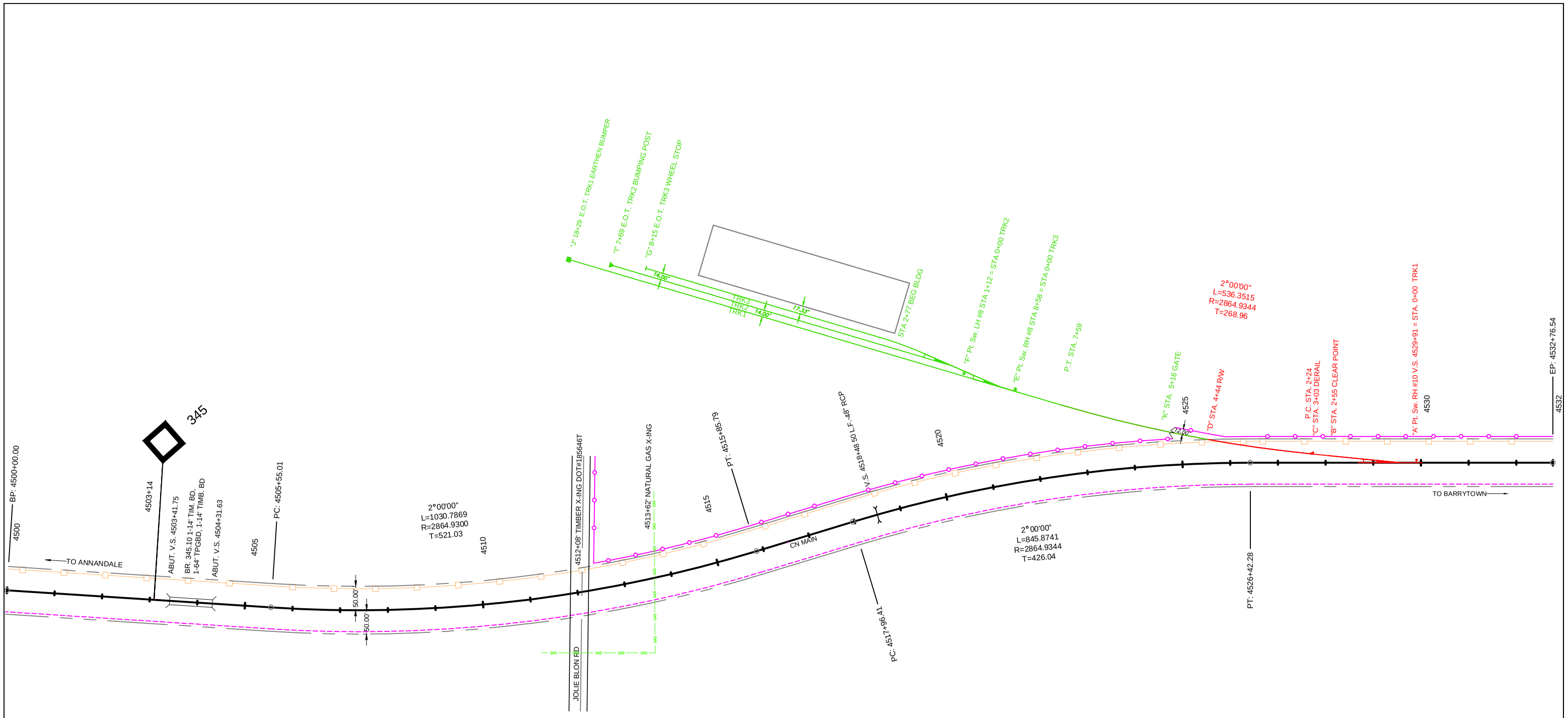
REV.	DATE	DRN.	CHK'D	REVISIONS DESCRIPTION	APPR.

INDUSTRY LOGO HERE

APPROVED FOR CONST.	REV. #	LOCATION		TITLE
BY	DATE	UNIT-BLDG		TITLE SHEET
		DRN.		
		DATE		
		CHK'D		
		DATE		DRAWING NO. / REV.
		SCALE		
		PLOT		
PROJ. #		PROJ. TITLE		TITLE SPECIFIC TO PROJECT

ENGINEER LOGO

ADDRESS
CITY, STATE
PHONE: (XXX)XXX-XXXX
FAX: (XXX)XXX-XXXX
www.WEBSITE.com



DESIGN FIRM NAME
AND/OR LOGO
GOES HERE

LEGEND:

- EXISTING MAIN TRACK
- EXISTING SIDING/SPUR TRACK
- PROPOSED TRACK
- INDUSTRY MAINTAIN
- REMOVED TRACK
- SHIFTED TRACK
- FUTURE TRACK
- RIGHT OF WAY
- TURNOUTS HAND THROWN/POWER
- WHEEL STOP
- BUMPING POST
- FIBER OPTIC
- EARTHEN BUMPER
- DERAIL
- SWITCH POINT DERAIL
- CULVERT
- BRIDGE
- BUILDING
- FENCE
- OVERHEAD POWER LINE
- GAS LINE

NOTES:

WORK BY CN
1. CN TO INSTALL MAINLINE RH #10 TURNOUT
2. CN TO BUILD TO THE CLEARANCE POINT STA. 2+55

WORK BY CONTRACTOR
1. INSTALL TRACK FROM CLEARANCE POINT. 2888 T.F.
2. INSTALL 1-RH #8 TURNOUT, 1-LH #8 TURNOUT
3. INSTALL 1 EARTHEN BUMPER, 1-BUMPING POST, 1-SET WHEEL STOPS

REVISIONS	
DATE	BY
DD MMM YY	XXX
APPROVALS	

SHEET 1 OF 1

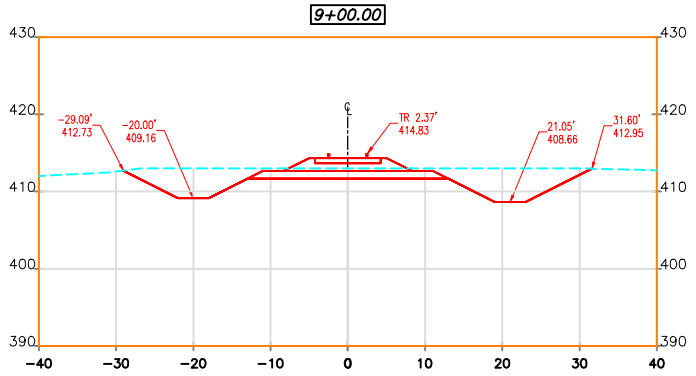
OPERATNG RAILROAD
XXXX DIVISION
XXX SUB
LOCATION

TRACKAGE TO SERVE: INDUSTRY NAME

OFFICE OF DESIGN & CONSTRUCTION

DRAWN BY: XXX	SCALE: 1" TO XXX'	DWG NO:
CHECKED BY: XXX	DATE: DD MMM YY	FILE:

9+00.00



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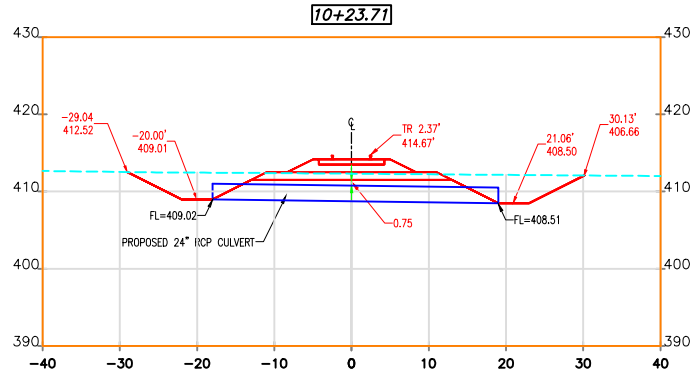

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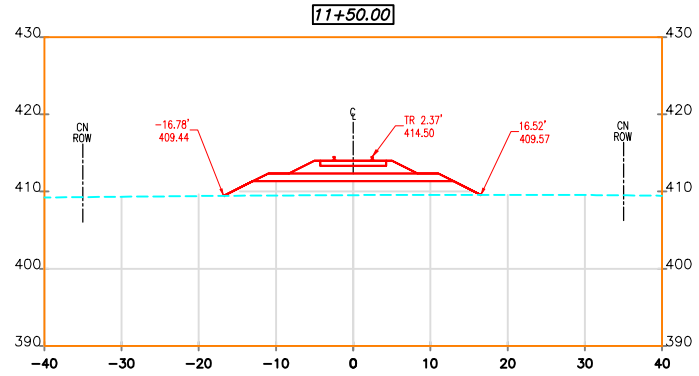

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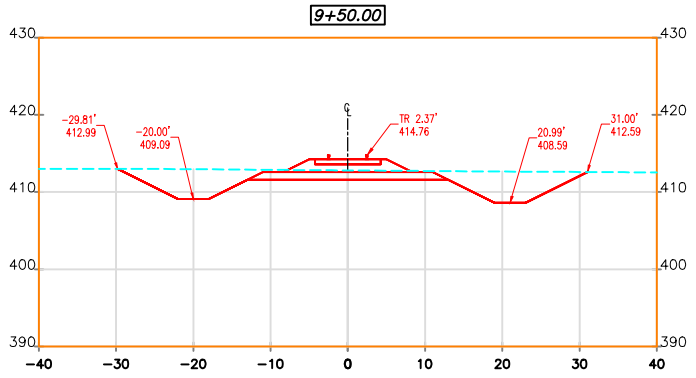

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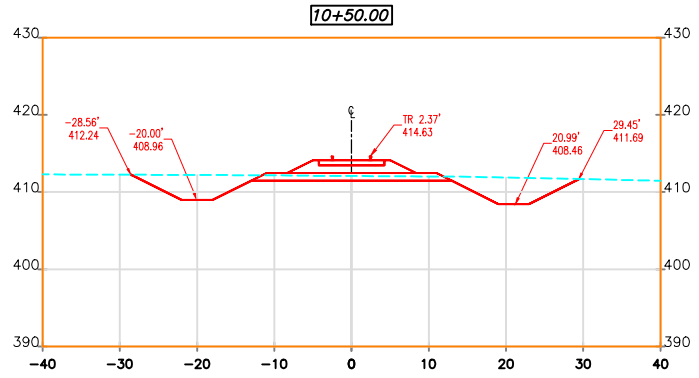

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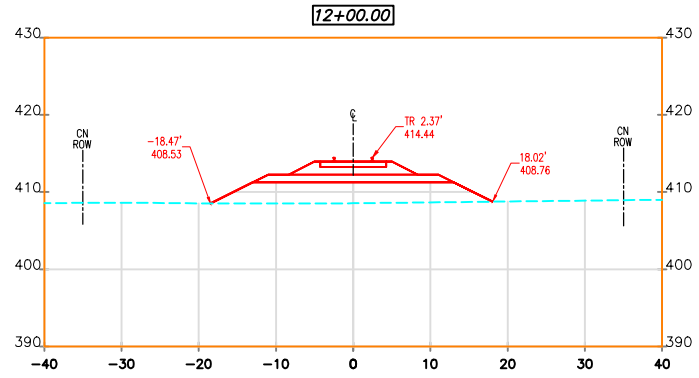

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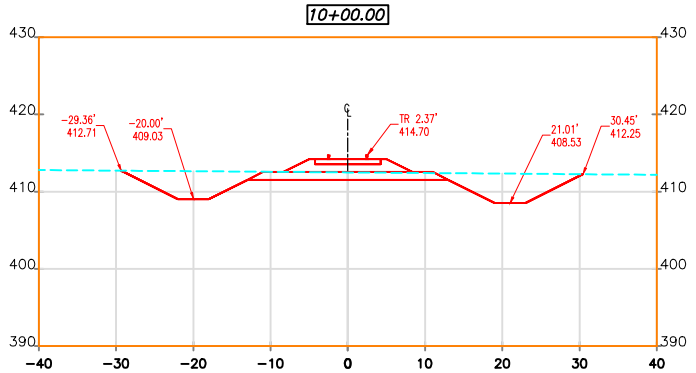

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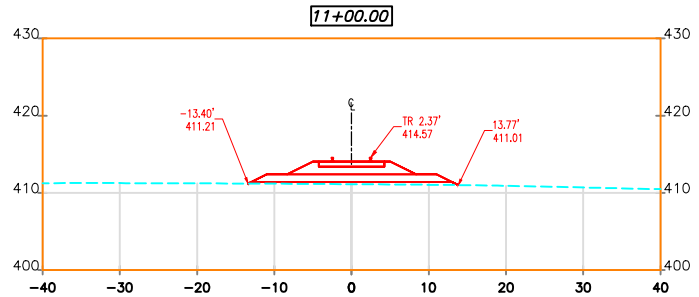

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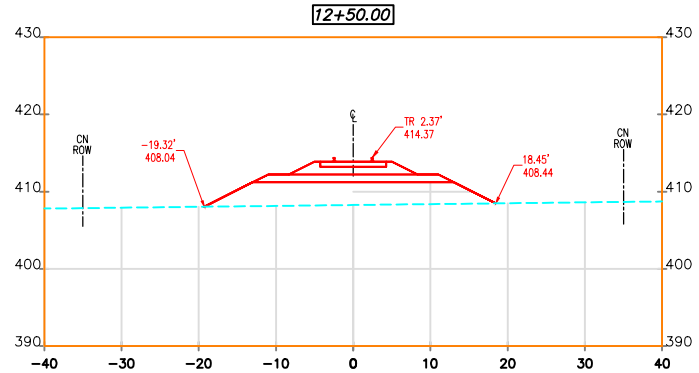


DESIGN FIRM NAME
AND/OR LOGO
GOES HERE

LEGEND:

EXISTING GROUND

PROPOSED SECTION

REVISIONS	
DATE	BY
DD MMM YY	XXX

APPROVALS

SHEET
1 OF 1

OPERATNG RAILROAD
XXXXX DIVISION
XXXXX SUB
LOCATION

PROJECT NAME
TYPICAL CROSS SECTIONS
9+00 TO 12+50

OFFICE OF DESIGN & CONSTRUCTION

DRAWN BY: XXX	SCALE: 1" TO XXX'	DWG NO:
CHECKED BY: XXX	DATE: DD MMM YY	FILE:

REPLY TO
ATTENTION OF

April 21, 2021

Regulatory Division

SUBJECT: CEMVR-RD-2021-0532

Mr. Matthew Newall
City of Decatur
1 Gary K. Anderson Plaza
Decatur, Illinois 62523

Dear Mr. Newall:

Our office has reviewed your application received April 1, 2021, concerning the proposed improvements to Faries Parkway where it crosses the unnamed tributary to Lake Decatur in Section 8, Township 16 North, Range 3 East, Macon County, Illinois.

Your project is authorized under Nationwide Permit No. 14, provided you meet the Nationwide Permit terms and conditions which are contained in the enclosed Fact Sheet No. 8(IL) including the Illinois Regional Conditions which are also included in the Fact Sheet, and any special conditions that have been included in this nationwide permit verification letter. The Corps has made a determination of no effect on federally threatened and endangered species or critical habitat. The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

Please contact our office if the project plans change and there are different impacts caused by dredged or fill material into Corps' regulated waters. This may require modification of your Department of the Army 404 authorization.

This verification is valid until March 18, 2022, unless the nationwide permit is modified, reissued or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We will issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you will have twelve months from this date to complete your activity under the present terms and conditions of this nationwide permit.

This authorization does not eliminate the requirement that you must still obtain other applicable Federal, state, and local permits. If you have not already coordinated your project with the ILDNR, please contact them by telephone 217/782-6302 to determine if a floodplain development permit is required for your project. You may contact the IEPA Facility Evaluation Unit at 217/782-3397 to determine whether additional authorizations are required from the IEPA. Please send any electronic correspondence to EPA.401.bow@illinois.gov.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of your project in accordance with General Condition No. 30 of the nationwide permits.

Should you have any questions, please contact our Regulatory Division by letter, or telephone Brant Vollman at 309/794-5380.

Sincerely,

Trevor Popkin
Chief, Eastern Branch
Regulatory Division

When the structure(s) or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s), of the property. To validate the transfer of this nationwide permit and the liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

Transferee Date

Copies Furnished:

w/o enclosures:

Mr. William Milner, P.E.
Section Chief - Downstate Regulatory Programs
Illinois Department of Natural Resources
Office of Water Resources
1 Natural Resources Way
Springfield, Illinois 62702
bill.milner@illinois.gov (email)

Mr. Darin LeCrone, P.E.
Manager, Permit Section, 15
Division of Water Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794-9276
darin.lecrone@Illinois.gov (email)

Ms. Virginia Flynn
Kaskaskia Engineering Group, LLC
208 E. Main Street, Suite 100
Belleville, Illinois 62220
vflynn@kaskaskiaeng.com

COMPLETED WORK CERTIFICATION

Permit Number: CEMVR-RD-2021-0532

Name of Permittee: Mr. Matthew Newall, City of Decatur, Illinois

County/State: Macon / Illinois

Date of Issuance: April 21, 2021

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Engineer District, Rock Island
ATTN: Regulatory Division
Clock Tower Building
Post Office Box 2004
Rock Island, Illinois 61204-2004

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above reference permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee Date

BV

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue, East; Post Office Box 19276; Springfield, IL 62794-9276
Division of Public Water Supplies Telephone 217/782-1724

PUBLIC WATER SUPPLY CONSTRUCTION PERMIT

SUBJECT: DECATUR (1150150)

Permit Issued to:
City of Decatur
#1 Gary K. Anderson Plaza
Decatur, IL 62523

PERMIT NUMBER: 0434-FY2021

DATE ISSUED: February 17, 2021
PERMIT TYPE: Water Main Extension

The issuance of this permit is based on plans and specifications prepared by the engineers/architects indicated and are identified as follows. This permit is issued for the construction and/or installation of the public water supply improvements described in this document, in accordance with the provisions of the Environmental Protection Act, Title IV, Sections 14 through 17, and Title X, Sections 39 and 40, and is subject to the conditions printed on the last page of this permit and the ADDITIONAL CONDITIONS listed below.

FIRM: AECOM Technical Services, Inc.
NUMBER OF PLAN SHEETS: 159
TITLE OF PLANS: "FAU Route 7448"
APPLICATION RECEIVED DATE: November 24, 2020

PROPOSED IMPROVEMENTS:

Install approximately 850 lineal feet of 30 inch diameter, 1,400 lineal feet of 24 inch diameter, 220 lineal feet of 16 inch diameter, 15 lineal feet of 12 inch diameter, 410 lineal feet of eight (8) inch diameter and 20 lineal feet of six (6) water main along Bush College Road, East Logan Street and Faries Parkway.

CONDITIONS:

1. The community water supply shall provide a lead informational notice to each potentially affected residence at least 14 days prior to permitted water main work. The notification provided by the community water supply must satisfy the requirements of Section 17.11 of the Act, 415 ILCS 5/17.11. The Responsible Operator in Charge of the community water system is responsible for preparing the notice. A copy of the notice used must be submitted to the Agency with the Application for Operating Permit.

2. All water mains shall be satisfactorily disinfected prior to use pursuant to Ill. Adm. Code, Title 35, Subtitle F, Section 602.310. Two consecutive sets of samples collected at least 24 hours apart must show the absence of coliform bacteria. The samples must be collected from every 1,200 feet of new water main along each branch and from the end of the line. An operating permit must be obtained before the project is placed in service

3. The permit approval is for the Application, the Schedule "B" and plan sheets received by the Agency on November 24, 2020.

DCC:CLK

cc: AECOM Technical Services, Inc..
IDPH/DEH – Plumbing and Water Quality Program
Champaign Regional Office

David C. Cook, P.E.
Manager, Permit Section
Division of Public Water Supplies

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (415 ILCS 5/39) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:

   a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.

   b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.

   c. to inspect at reasonable times, including during any hours or operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.

   d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

   e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. does not release the permittee from compliance with the other applicable statues and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. does not take into consideration or attest to the structural stability of any units or parts of the project;

   e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. These standard conditions shall prevail unless modified by special conditions.

7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:

   a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or

   b. upon finding that any standard or special conditions have been violated; or

   c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

Lead Informational Notice

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Dear Water Customer: Today's Date:_____

Our water system will soon begin a water line maintenance and/or construction project that may affect the lead content of your potable water supply. Lead, a metal found in natural deposits, is harmful to human health, especially young children. The most common exposure to lead is swallowing or breathing in lead paint chips and dust. However, lead in drinking water can also be a source of lead exposure. In the past, lead was used in some water service lines and household plumbing materials. Lead in water usually occurs through corrosion of plumbing products containing lead; however, disruption (construction or maintenance) of lead service lines may also temporarily increase lead levels in the water supply. This disruption may be sometimes caused by water main maintenance/replacement. As of June 19, 1986, new or replaced water serviced lines and new household plumbing materials could not contain more than 8% lead. Lead content was further reduced on January 4, 2014, when plumbing materials must now be certified as "lead-free" to be used (weighted average of wetted surface cannot be more than 0.25% lead).

The purpose of this notice is for informational purposes only. While it's not known for certain whether or not this particular construction project will adversely affect the lead (if present) plumbing in and outside your home, below describes some information about the project and some preventative measures you can take to help reduce the amount of lead in drinking water.

Project Start Date:_____ Project expected to be completed by:_____

Project location and description:

_____

_____

_____

What you can do to reduce lead exposure in drinking water during this construction project:

Run your water to flush out lead. If the plumbing in your home is accessible; you may be able to inspect your own plumbing to determine whether or not you have a lead service line. Otherwise, you will most likely have to hire a plumber.

- If you do not have a lead service line, running the water for 1 – 2 minutes at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking, cooking, and preparing baby formula throughout the day.
- If you do have a lead service line, flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. Flushing for at least 3 – 5 minutes is recommended.

Use cold water for drinking, cooking, and preparing baby formula. Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.

Look for alternative sources or treatment of water. You may want to consider purchasing bottled water or a water filter that is certified to remove "total lead".

Clean and remove any debris from faucet aerators on a regular basis.

Do not boil water to remove lead. Boiling water will not reduce lead.

Purchase lead-free faucets and plumbing components.

Remove the entire lead service line.

Test your water for lead. Call us at: _____ to find out how to get your water tested for lead. While we do not do the testing, we can provide a list of laboratories certified to do the testing. Laboratories will send you the bottles for sample collection. Please note that we are not affiliated with the laboratories and they will charge you a fee.

- If test results indicate a lead level above 15 ug/L, bottled water should be used by pregnant women, breast-feeding women, young children, and formula-fed infants.

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Division of Public Water Supplies, Permit Section
Application for Operating Permit

*This form may be completed online, a copy saved locally and printed before it is signed. You may also complete a printed copy manually. Submit the completed and signed form to the **Illinois EPA, Division of Public Water Supplies, Permit Section** at the address listed above.*

Facility Name: City of Decatur
Address 1:
Address 2: #1 Gary K. Anderson Plaza
City: Decatur State: IL Zip Code: 62523
County: Macon

Facility ID: IL1150150
Construction Permit No.: 0434-FY2021
Permit Type: Water Main
Date Permit Issued: February 17, 2021

Project Title: "FAU Route 7448"
Firm Name: AECOM Technical Services, Inc.

Project Status: ◯ Final ◯ Partial

_____
Partial A, B, C, etc.

Application Requirements (check when complete):

☐ Permit Number, Facility Number, and Facility Name identified on the Lab Report(s).
☐ Sample results attached to the Application.
(If a new well was constructed, provide a copy of the sample results as required by Section II, Part g of the C-I application).

If you select Partial, you must *also* submit the following items:

☐ Cover letter describing which sections were completed.
☐ General project layout plans.
☐ For water main projects, identify the length the Partial: _____ LF

Date of Project Completion: _____ (Provide the date construction was completed on the project or partial)

Certified Operator in Responsible Charge:

Name: _____ Classification: _____ Number: _____
Telephone: _____ Email (optional): _____

Owner of the Completed Project:

Name: _____ Title: _____ Telephone: _____
Address: _____ City: _____ State: ____ Zip Code: _____

The Owner hereby certifies that the project named and described has been constructed in accordance with plans and specifications approved by the Illinois EPA. See instructions for further information. For Verbal Approvals, please call 217-782-1724.

_____ _____
Owner/Authorized Personnel Signature Date

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

FOR IEPA USE ONLY

This operating permit _____-FY_____ issued on _____ is valid until revoked.
This permit is valid only for the work completed under the Construction Permit of the same number.

_____
David C. Cook, P.E.
Manager, Permit Section
Division of Public Water Supplies

Instructions for Operating Permit Application

The Operating Permit Application must be submitted for all Public Water Supply projects that required a construction permit. The Operating Permit *must* be obtained before the project is placed in service.

Fill out the top section using the corresponding Construction Permit for reference.

- **Facility Name** is the name of the village, city or entity distributing community water supplies.
- **Facility ID Number** can be found on the Construction Permit. This number is specific to your facility.
- **Address** is the same as the address on the Construction Permit.
- **Construction Permit Number** is the assigned permit number of the corresponding Construction Permit. The Operating Permit and the corresponding Construction Permit will have the same permit number.
- **Permit Type** identifies whether the project involved is a Water Main, a Plant Improvement or Both.
- **Date Permit Issued** is the date the Construction Permit was granted.
- **Date of Project Completion** is the date construction was completed for the section of project you are requesting the Operating Permit for. If you are requesting an Operating Permit for a Partial project, the Date of Project Completion is the date construction was completed on that partial section. The Date of Project Completion will never be a date in the future, and must be a date *after* the issue date of the Construction Permit.
- **Title of Project** is the same title of project listed on the corresponding Construction Permit. The Operating Permit and the Construction Permit will have the same Title of Project.
- **Firm Name** is the engineering entity that designed the project.

Project Status will either be Final or Partial.

- **Final:** If construction on the project is complete, you will select **Final**.
- **Partial:** If construction on the total project is only *partially* complete, but you want to operate the completed section, you will select **Partial**. If this is the first partial, you will identify it as "Partial A", if this is the second partial, you will identify it as "Partial B" and so forth. Once the last partial section has been completed, identify it as such and also select Final in the Project Status.

The **Certified Operator in Responsible Charge** and **Owner of the Completed Project** should fill out his/her respective section. Please print your name legibly and sign where appropriate. By signing the application, the owner hereby certifies that the project named and described has been constructed in accordance with plans and specifications approved by the Illinois EPA, including specifications for bacteriological samples, and that bacteriological samples (if required) were taken under the supervision of a representative from the Public Water Supply. The owner also certifies that the project will be operated in accordance with the provisions of the Illinois Environmental Protection Act and the Rules and Regulations adopted by the Illinois Pollution Control Board pursuant to provisions of the Act.

Requests for **Verbal Approval** and questions can be addressed at (217) 782-1724.

Disinfection and bacteriological analysis must be performed for the completed project in accordance with the requirements of AWWA C651, C652, C653 or C654. For projects requiring these procedures, the sample results must be attached to the application. The construction permit number should be clearly visible on the sample results. Samples are to be taken every 1,200 feet of new water main unless otherwise approved by the Illinois EPA. Samples must be measured using the Membrane Filter technique. Colilert/Colisure will not be accepted for new construction projects.

This form may be completed online, a copy saved locally and printed before it is signed. You may also complete a printed copy manually. Submit the completed form to the Illinois EPA, Bureau of Water, Permit Section at the following address:

Illinois Environmental Protection Agency
Division of Public Water Supplies, Permit Section #13
1021 North Grand Avenue East, PO Box 19276
Springfield, IL 62794-9276

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Brush College Road Office Phone Number, if available: _____

Physical Site Location (address, inclduding number and street): _____

City: Decatur State: IL Zip Code: 60439

County: Macon Township: Decatur

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 39.863278 (Decimal Degrees) Longitude: -88.898031 (-Decimal Degrees)

Identify how the lat/long data were determined:

☐ GPS ☒ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	City of Decatur	Name:	City of Decatur
Street Address:	1 Gary K. Anderson Plaza	Street Address:	1 Gary K. Anderson Plaza
PO Box:		PO Box:	
City:	Decatur State: IL	City:	Decatur State: IL
Zip Code:	62523 Phone: 217-424-2747	Zip Code:	62523 Phone: 217-424-2747
Contact:	Matt Newell	Contact:	Matt Newell
Email, if available:	mnewell@decaturil.gov	Email, if available:	mnewell@decaturil.gov

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

IL 532-2922
LPC 663 Rev. 8/2012

Project Name: Brush College Road

Latitude: 39.863278 Longitude: -88.898031

Uncontaminated Site Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Spatially distributed sampling locations were chosen within the proposed work area that covered the extents of the proposed construction/excavation areas. Upon review of historical land use and current land use it was determined that there is no likely ongoing source for soil contamination which limited necessary soil sampling.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

Please see the attached environmental assessment report for supporting documentation of compliance. Please see the soil management plan that identifies areas with soils that are not eligible for CCDD disposal or reuse due to soil sample results showing levels above MAC and TACO Tier 1 screening criteria.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Dorian Gohr (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: AECOM Technical Services Inc.

Street Address: 303 E. Wacker Drive Suite 1400

City: Chicago State: IL Zip Code: 60601

Phone: 312-861-4034

Dorian Gohr

Printed Name:

Dorian Gohr

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

2/9/21

Date:

P.E. or L.P.G. Seal:

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Brush College Road	Marked Rte.	FAU 7448 (Brush College Road)
Section	09-00933-01-BR	Project No.	3ELT (222)
County	Macon	Contract No.	95893

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Virginia Flynn	Virginia Flynn
Print Name	Signature
Senior Environmental Scientist	11/5/2020
Title	Date
Kaskaskia Engineering Group, LLC	
Agency	

Note: Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

I. Site Description:

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

Decatur, Illinois. Latitude: 39.863346 N, Longitude: -88.898179 W, Section 8, T16N, R3E.

B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:

The proposed overpass of Brush College Road at Faries Parkway consists of a 2-span bridge with retaining walls for along the bridge approaches. The bridge will carry two 12'-lanes in each direction and a shared-use path along the east side. A ramp located in the south-east quadrant of the intersection (called a "jug handle") will provide a connection between the two grade separated roadways.

Faries Parkway will also be widened in this area to provide two 12' lanes in each direction, along with an 8' shared use path. The constraint of the NSRR located parallel to and north of Faries Parkway requires the north edge of the roadway to be maintained and the widening to occur on the south side.

Stormwater runoff within the project limits will be collected through a combination of ditches and storm sewers. Along the east leg of Faries Parkway, stormwater run-off will flow into a combination of storm sewers and a roadside vegetated ditches before entering and into an intermittent stream south of the roadway. The intermittent stream is considered a Water of the U.S. (WOUS).

An existing culvert at station 176+15 connects the stormwater discharge north of Faries Parkway with the intermittent stream. Due to the widening of Faries Parkway to the south, the existing culvert will need to be extended. The intermittent stream will need to be partially re-aligned to tie in with the extended culvert.

Construction will consist of three pre-construction stages and five construction stages.
- All tempporary sediment and erosion control devices will be functional before the project site is otherwise disturbed.
- All vegetative and structural erosion and sediment control practices will be constructed according to IDOT Standard Specifications for road and bridge construction and the Illinois Urban Manual, Latest Editions.

Inspections will be conducted every seven calendar days and after a storm event of 1/2 inch of rain or equivelent snowfall.
- All temporary erosion control BMPs will be maintained in effective operating condition.
- Permanent erosion control measures will be implemented after contruction in an are is complete and will be maintained until 70% perennial vegetative cover or equivalent permanent stabilization is achieved.
- Temporary erosion control measures will be removed once permanent measures are implemented and fully established.

C. Provide the estimated duration of this project:

27 months

D. The total area of the construction site is estimated to be 24.64 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 24.64 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed (See Section 4-102 of the IDOT Drainage Manual):

Existing Runoff Coefficient before construction: 0.69
Proposed Runoff Coefficient after construction activities are completed: 0.70

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

Map Unit Symbol	Map Unit Name	Erosion Rating
152A	Drummer silty clay loam, 0-2 percent slopes	Slight
154A	Flanagan silt loam, 0-2 percent slopes	Slight
171B	Catlin silt loam, 2-5 percent slopes	Moderate
233B	Birkbeck silt loam, 2-5 percent slopes	Moderate
322C2	Russel silt loam, Bloomington Ridges Plain, 5-10 percent slopes, eroded	Severe
533	Urban Land	Not Rated
802B	Orthents, loamy undulating	Moderate

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site (See Phase I report):

N/A

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

Severly erosive areas of the project area are along E. Faries Parkway approx. 1000 feet east of Brush College Rd.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

Stage 1: South Portion of Brush College Road and retaining wall, new James St. connection, new cemetery access road - Catlin silt loam, 2-5 percent slopes (171B), Russell silt loam, Bloomington Ridges Plain, 5-10 percent slopes, Drummer silty clay loam, 0-2 percent slopes, Orthents, loamy undulating (802B), Flanagan silt loam, 0-2 percent slopes, and Urban Land.

Stage 2: Portion of Brush College Road Adjacent to Harrison Construction, E. Harrison IC RR At-Grade Crossing Signal, E. Harrison St. (West Leg), new roadway connection, Logan St., Jug Handle connector road, E. Half of Brush College Road S. of the Jug Handle connector road, retaining walls - Catlin silt loam, 2 to 5 percent slopes, Flanagan silt loam, 0 to 2 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

Stage 3: West half of Brush Colleg Road, N. of E. Harrison St. (East Leg), S. Half of Faries Pkwy Rdwy, Retaining Walls, North and South Bridge Abutments, Center Bridge PIer along Faries Pkwy, S. Half of E. Harrison Rd. (East Leg) - Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded, Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

Stage 4: Center lane of Faries Pkwy near E. project limits, traffic signals for new Faries Pkwy and Jug Handle connector, resurface E. Harrison Rd. (East Leg), east of reconstruction limits, N. half of E. Harrison Rd (East Leg), E. Half of Brush College Rd. N. of E. Harrison St. (East Leg), N. Half of Faires Pkwy Rdwy, retaining walls, N. and S. Bridge abutments, Faries at IC RR At-Grade Crossing Signal Equip - Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded, Urban Land.

Stage 5: Roadway lighting for Brush Colleg Rd., traffic signal for New Brush College Rd and Jug Handle connector, remaining Brush College Rd. south, Faries Pkwy Median West of IC RR Tracks, retaining walls, Brush College Road Bridge structure and abutments - Flanagan silt loam, 0 to 2 percent slopes, Catlin silt loam, 2 to 5 percent slopes, Drummer silty clay loam, 0 to 2 percent slopes, Urban Land.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

City of Decatur Public Works

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

Decatur, Decatur Township, Macon County

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the IDNR. The location of the receiving waters can be found on the erosion and sediment control plans:

Receiving water on site: UNT to Lake Decatur. Ultimate receiving water off site: Lake Decatur.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the US (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the United States, or b) How additional erosion and sediment controls will be provided within that area.

Slopes of 1:3 or steeper, areas near streams (Unnamed Tributary to Lake Decatur), and areas with highly erodible soils will be protected with erosion control blankets or riprap, where applicable.

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

☐ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation

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

Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

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

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

☐ Applicable Federal, Tribal, State or Local Programs

☐ Floodplain

☐ Historic Preservation

☐ Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

☐ Threatened and Endangered Species/Illinois Natural Areas (INAI)/Nature Preserves

☒ Other
Concrete, curing compounds, concrete truck waste, solid waste, oil and grease, solvents, trash and debris, waste water from cleaning construction equipment.

☐ Wetland

P. The following pollutants of concern will be associated with this construction project:

☒ Antifreeze / Coolants	☒ Solid Waste Debris
☒ Concrete	☒ Solvents
☒ Concrete Curing Compounds	☒ Waste water from cleaning construction equipment
☒ Concrete Truck Waste	☐ Other (specify)
☐ Fertilizers / Pesticides	☐ Other (specify)
☐ Paints	☐ Other (specify)
☒ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)	☐ Other (specify)
☒ Soil Sediment	☐ 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:

- ☒ Erosion Control Blanket / Mulching
- ☐ Geotextiles
- ☒ Permanent Seeding
- ☒ Preservation of Mature Vegetation
- ☒ Protection of Trees
- ☐ Sodding
- ☒ Temporary Erosion Control Seeding
- ☐ Temporary Turf (Seeding, Class 7)
- ☒ Temporary Mulching
- ☐ Vegetated Buffer Strips
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)

Describe how the stabilization practices listed above will be utilized during construction:

The following stabilization practices will be used during all phases of construction.

- IDOT's Preservation and Replacment of Trees (D&E-18) will be followed throughout all phases of construction.
- Inlet and pipe protection and inlet filters: protection of existing and new stormwater inlets and pipes from runoff and sediment.
- Temporary erosion control seeding and temporary mulch: temporary stabilization of disturbed soil on low gradient slopes and roadsides.
- Permanent erosion control seeding and mulch: permanent stablization of distrubed soil on low gradient slopes and roadsides.
- Erosion Control Blanket (ECB): temporary and permanent stabilization of steep slopes (1:3), channels, and exposed soil.
- Heavy Duty ECB: temporary and permanent stabilization of steep slopes (1:2) and low flow channels.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Temporary stabilization practices will remain in place until all constuction activities are complete, permanent stabilization measures are in place, and permanent vegetation is established at 70% cover of perennials.

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 structural practices will be used for this project:

- ☐ Aggregate Ditch
- ☐ Concrete Revetment Mats
- ☐ Dust Suppression
- ☒ Dewatering Filtering
- ☐ Gabions
- ☒ In-Stream or Wetland Work
- ☐ Level Spreaders
- ☐ Paved Ditch
- ☐ Permanent Check Dams
- ☒ Perimeter Erosion Barrier
- ☐ Permanent Sediment Basin
- ☐ Retaining Walls
- ☒ Riprap
- ☒ Rock Outlet Protection
- ☐ Sediment Trap
- ☒ Storm Drain Inlet Protection
- ☐ Stabilized Construction Exits
- ☐ Stabilized Trench Flow
- ☐ Slope Mattress
- ☐ Slope Walls
- ☒ Temporary Ditch Check
- ☐ Temporary Pipe Slope Drain
- ☐ Temporary Sediment Basin
- ☐ Temporary Stream Crossing
- ☒ Turf Reinforcement Mats
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)

Describe how the structural practices listed above will be utilized during construction:

The following structural practices will be used during all phases of construction.

- Inlet and pipe protection and inlet filters: protection of existing and new stormwater inlets and pipes from runoff and sediment.Temporary Ditch Checks: Slow runoff in roadside ditches.
- Perimeter Erosion Barrier: Reduce sediment movement off-site and down steep slopes.
- Turf Reinforcement Mat: Concentrated flow areas along roadsides.
- Stone Riprap, Class A3: Culverts inlets/outlets, stormwater outlets, concentrated flow areas.
- Stone Riprap, Class A4: Permanent stabilization of steep slopes.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Temporary stabilization practices will remain in place until all constuction activities are complete, permanent stabilization measures are in place, and permanent vegetation is established at 70% cover of perennials. Permanent structural practices will be left in place for stabilization (riprap, final seeding, turf reinforcement mats).

D. **Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project: ☐ Yes ☒ No

If *yes* above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

E. **Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

   The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design and 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:

   Velocity dissipation (riprap pads) will be provided at culvert outlets according to IDOT Standards and Specifications.

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:

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 timeframe
- 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
- Timeframe 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. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

- Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
- Vehicle Entrances and Exits – Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use – Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
- Stockpile Management – Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal – Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control – Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes – Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management – Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling – Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance – Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Dewatering Activities – Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
- Polymer Flocculants and Treatment Chemicals – Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
- Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures

and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

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 Contractor/subcontractor completing this form.

Route	FAU 7448	Marked Rte.	Brush College Road
Section	09-00933-01-BR	Project No.	3ELT (222)
County	Macon	Contract No.	95893

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

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 this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

BDE 2342a
Construction Schedule
Location and Type of BMPs

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION
Effective: August 1, 2012 Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at $15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

METHOD OF MEASUREMENT: The unit of measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of $15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is _4___.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of $15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

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 Decatur

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads & Streets
SPECIAL PROVISION
FOR
LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA
Effective: January 1, 2022

Replace the first five paragraphs of Article 1030.06 of the Standard Specifications with the following:

"**1030.06 Quality Management Program.** The Quality Management Program (QMP) will be Quality Control / Quality Assurance (QC/QA) according to the following."

Delete Article 1030.06(d)(1) of the Standard Specifications.

Revise Article 1030.09(g)(3) of the Standard Specifications to read:

"(3) If core testing is the density verification method, the Contractor shall provide personnel and equipment to collect density verification cores for the Engineer. Core locations will be determined by the Engineer following the document "Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations" at density verification intervals defined in Article 1030.09(b). After the Engineer identifies a density verification location and prior to opening to traffic, the Contractor shall cut a 4 in. (100 mm) diameter core. With the approval of the Engineer, the cores may be cut at a later time."

Revise Article 1030.09(h)(2) of the Standard Specifications to read:

"(2) After final rolling and prior to paving subsequent lifts, the Engineer will identify the random density verification test locations. Cores or nuclear density gauge testing will be used for density verification. The method used for density verification will be as selected below.

Density Verification Method	
☐	Cores
☒	Nuclear Density Gauge (Correlated when paving ≥ 3,000 tons per mixture)

Density verification test locations will be determined according to the document "Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations". The density testing interval for paving wider than or equal to 3 ft (1 m) will be 0.5 miles (800 m) for lift thicknesses of 3 in. (75 mm) or less and 0.2 miles (320 m) for lift thicknesses greater than 3 in. (75 mm). The density testing interval for paving less than 3 ft (1 m) wide will be 1 mile (1,600 m). If a day's paving will be less than the prescribed density testing interval, the length of the day's paving will be the interval for that day. The density testing interval for mixtures used for patching will be 50 patches with a minimum of one test per mixture per project.

If core testing is the density verification method, the Engineer will witness the Contractor coring, and secure and take possession of all density samples at the

density verification locations. The Engineer will test the cores collected by the Contractor for density according to Illinois Modified AASHTO T 166 or AASHTO T 275.

If nuclear density gauge testing is the density verification method, the Engineer will conduct nuclear density gauge tests. The Engineer will follow the density testing procedure detailed in the document "Illinois Modified ASTM D 2950, Standard Test Method for Density of Bituminous Concrete In-Place by Nuclear Method".

A density verification test will be the result of a single core or the average of the nuclear density tests at one location. The results of each density test must be within acceptable limits. The Engineer will promptly notify the Contractor of observed deficiencies."

Revise the seventh paragraph and all subsequent paragraphs in Section D. of the document "Hot-Mix Asphalt QC/QA Initial Daily Plant and Random Samples" to read:

"Mixtures shall be sampled from the truck at the plant by the Contractor following the same procedure used to collect QC mixture samples (Section A). This process will be witnessed by the Engineer who will take custody of the verification sample. Each sample bag with a verification mixture sample will be secured by the Engineer using a locking ID tag. Sample boxes containing the verification mixture sample will be sealed/taped by the Engineer using a security ID label."

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012
Revised: April 1, 2016

Add the following Section to the Standard Specifications:

"SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

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

303.02 Materials. Materials shall be according to the following.

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

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradations CS 01, CS 02, and RR 01 but shall not exceed 40 percent of the total product. The top size of the RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in. (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradations CS 01, CS 02, or RR 01 are used in lower lifts.

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

303.03 Equipment. The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer.

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

303.05 Placing Aggregate. The maximum nominal lift thickness of aggregate gradations CA 02, CA 06, or CA 10 shall be 12 in. (300 mm). The maximum nominal lift thickness of aggregate gradations CS 01, CS 02, and RR 01 shall be 24 in. (600 mm).

303.06 Capping Aggregate. The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When the contract specifies that a granular subbase is to be placed on the aggregate subgrade improvement, the 3 in. (75 mm) of capping aggregate shall be the same gradation and may be placed with the underlying aggregate subgrade improvement material.

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

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

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

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

Add the following to Section 1004 of the Standard Specifications:

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

(a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. In applications where greater than 24 in. (600 mm) of subgrade material is required, gravel may be used below the first 12 in (300 mm) of subgrade.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.

(c) Gradation.

(1) The coarse aggregate gradation for total subgrade thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 01.

The coarse aggregate gradation for total subgrade thickness more than 12 in. (300 mm) shall be CS 01 or CS 02 as shown below or RR 01 according to Article 1005.01(c).

	COARSE AGGREGATE SUBGRADE GRADATIONS				
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)

Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

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

80274

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006
Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$

Where: CA = Cost Adjustment, $.
BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, $/ton ($/metric ton).
BPI_L = Bituminous 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, $/ton ($/metric ton).
$\%AC_V$ = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.
Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: Q, tons = A x D x (G_{mb} x 46.8) / 2000. For HMA mixtures measured in square meters: Q, metric tons = A x D x (G_{mb} x 1) / 1000. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: Q, tons = V x 8.33 lb/gal x SG / 2000
For bituminous materials measured in liters: Q, metric tons = V x 1.0 kg/L x SG / 1000

Where: A = Area of the HMA mixture, sq yd (sq m).
D = Depth of the HMA mixture, in. (mm).
G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.

V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

Percent Difference = $\{(BPI_L - BPI_P) \div BPI_L\} \times 100$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

80173

BLENDED FINELY DIVIDED MINERALS (BDE)

Effective: April 1, 2021

Revise the second paragraph of Article 1010.01 of the Standard Specifications to read:

"Different sources or types of finely divided minerals shall not be mixed or used alternately in the same item of construction, except as a blended finely divided mineral product according to Article 1010.06."

Add the following article to Section 1010 of the Standard Specifications:

"**1010.06 Blended Finely Divided Minerals.** Blended finely divided minerals shall be the product resulting from the blending or intergrinding of two or three finely divided minerals. Blended finely divided minerals shall be according to ASTM C 1697, except as follows.

(a) Blending shall be accomplished by mechanically or pneumatically intermixing the constituent finely divided minerals into a uniform mixture that is then discharged into a silo for storage or tanker for transportation.

(b) The blended finely divided mineral product will be classified according to its predominant constituent or the manufacturer's designation and shall meet the chemical requirements of its classification. The other finely divided mineral constituent(s) will not be required to conform to their individual standards."

80436

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 9 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	13-08-101-004	1940 N. Brush College Rd.	Commercial Property; one-story building
3	13-08-101-013	1980 N. Brush College Rd.	Commercial Property; one story office
4	13-08-101-002	3915 E. Faries Pkwy.	Commercial Property; one-story restaurant

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. 2“ and “Removal and Disposal of Non-Friable Asbestos Building No. 3“ and “Removal and Disposal of Non-Friable Asbestos Building No. 4“ 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. 2 and BUILDING REMOVAL NO. 3 and BUILDING REMOVAL NO. 4

2. REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 2 and REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 3 and REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 4

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 2," and "Removal and Disposal of Non-Friable Asbestos, Building No 3," and "Removal and Disposal of Non-Friable Asbestos, Building No 4," as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages 10 thru 15. 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 pages 7 thru 9. 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 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 noncompliance 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. 2, 3, & 4: 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. 2, REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 3, REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 4, 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 nonfriable 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. 2" and "BUILDING REMOVAL NO. 3" and "BUILDING REMOVAL NO. 4".

Regardless of the option chosen by the Contractor, this pay item will not be deleted, nor will the pay item BUILDING REMOVAL NO. 2 and BUILDING REMOVAL NO. 3 and BUILDING REMOVAL NO. 4 be deleted.

EXECUTIVE SUMMARY: ASBESTOS AND LEAD PAINT SURVEY

8

Site No.:	PESA 36 A
Building Name:	SJ Smith Co.
Location:	1980 North Brush College Road
City, State:	Decatur, Illinois
Building Size:	8,578 SF

SURVEY INFORMATION

AECOM Survey Date:	September 29, 2020
AECOM Inspector:	Katie Gurnicz
Inspector License No.:	IDPH No.: 100-20350

SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING MATERIALS

Material	Location	Quantity	Content	Date Sampled/ Identified
9x9 Solid Gray Vinyl Floor Tile	Maintenance Room	10 SF	2% Chrysotile	9/29/2020
White Exterior Sealant	Along Horizontal Exterior Metal/Brick Seams	92 LF*	<1% Chrysotile	9/29/2020

SF—Square Feet

SUMMARY OF IDENTIFIED LEAD-CONTAINING PAINTS

Sample Description	Location	Quantity	Lead Concentration (% weight)	Date Sampled/ Identified
Brown Exterior Paint	Exterior Walls	8,000 SF	0.017%	9/29/2020
Yellow Exterior Paint	Dock	80 SF	0.39%	9/29/2020
Golden Yellow Exterior Paint	Dock Stairs and Curb	50 SF	0.097%	9/29/2020

SF—Square Feet

EXECUTIVE SUMMARY: ASBESTOS AND LEAD PAINT SURVEY

Site No.:	PESA Site 37
Building Name:	Empty Warehouse
Location:	1940 North Brush College Road
City, State:	Decatur, Illinois
Building Size:	10,685 SF

SURVEY INFORMATION

AECOM Survey Date:	September 28-29, 2020
AECOM Inspector:	Katie Gurnicz
Inspector License No.:	IDPH No.: 100-20350

SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING MATERIALS

Material	Location	Quantity	Content	Date Sampled/ Identified
12x12" Tan VFT w/ White, Green, Gray Specks	Throughout Offices/ Beneath Carpet	1,200 SF	2% Chrysotile	9/28-29/2020
12x12" Blue VFT w/ Blue, Gray, and White Specks	Restroom	93 SF	2% Chrysotile	9/28-29/2020
12x12" Solid Blue VFT	Front Entrance/ Doorway off Brush College Road	4 SF	2% Chrysotile	9/28-29/2020

SF—Square Feet

SUMMARY OF IDENTIFIED LEAD-CONTAINING PAINTS

Sample Description	Location	Quantity	Lead Concentration (% weight)	Date Sampled/ Identified
Interior White	Interior on CMU Block	2,700 SF	0.023%	9/28-29/2020
Exterior Cream	Exterior	8,315 SF	0.014%	9/28-29/2020

SF—Square Feet

EXECUTIVE SUMMARY: ASBESTOS AND LEAD PAINT SURVEY

Site No.:	PESA Site 38
Building Name:	Cheap Ass Auto Repair
Location:	3915 East Faries Parkway
City, State:	Decatur, Illinois
Building Size:	5,250 SF

SURVEY INFORMATION

AECOM Survey Date:	September 28, 2020
AECOM Inspector:	Katie Gurnicz
Inspector License No.:	IDPH No.: 100-20350

SUMMARY OF IDENTIFIED ASBESTOS-CONTAINING MATERIALS

Material	Location	Quantity	Content	Date Sampled/ Identified
Black Roofing Tar	West Section Shingle Roof	128 SF	5% Chrysotile	9/28/2020

SF—Square Feet

SUMMARY OF IDENTIFIED LEAD-CONTAINING PAINTS

Sample Description	Location	Quantity	Lead Concentration (% weight)	Date Sampled/ Identified
Interior Red Paint	West Section on Brick Pillars	120 SF	0.21%	9/28/2020

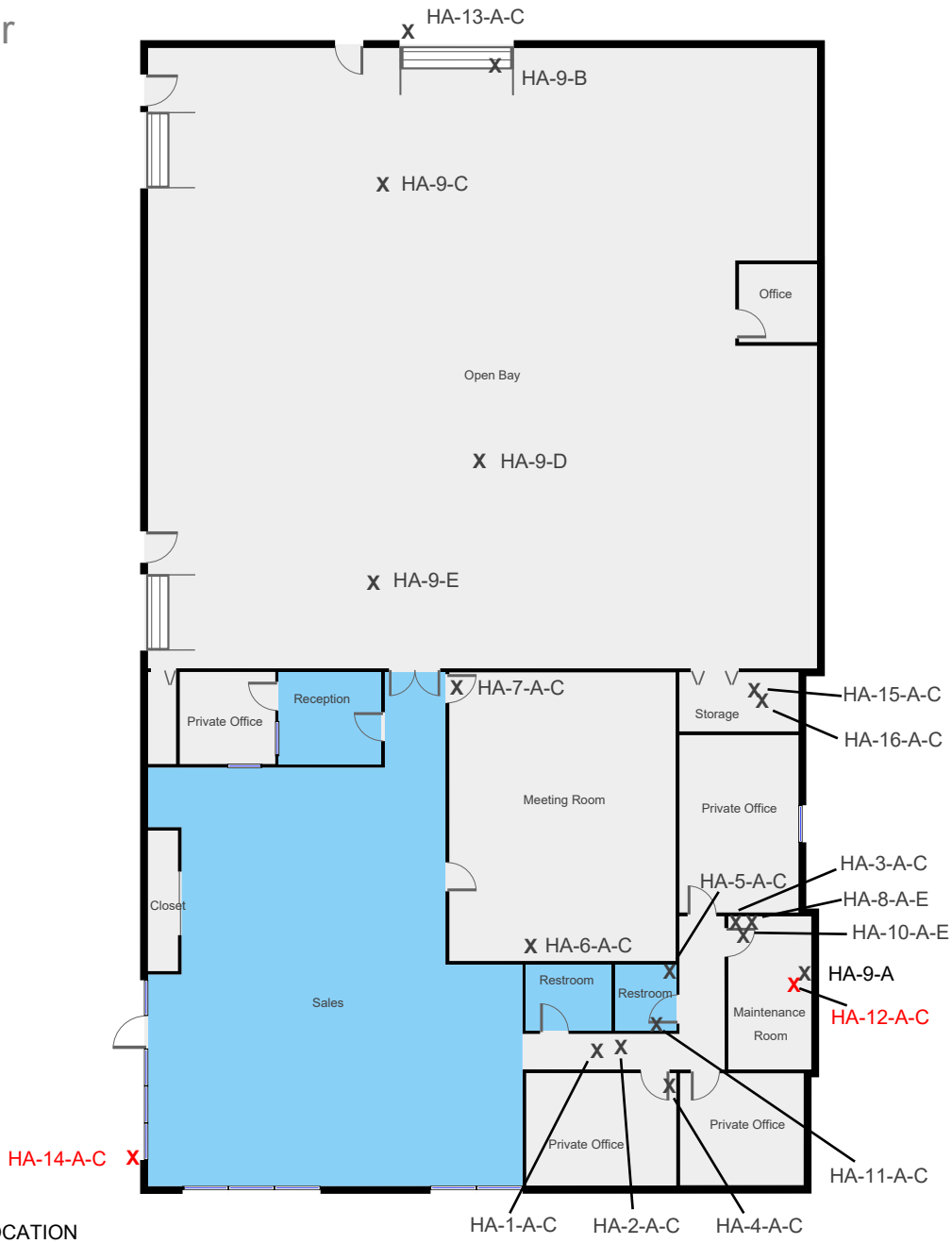
SF—Square Feet

Asbestos Sample Location Map
PESA Site 36 A
1980 North Brush College Road Decatur, IL

Statistics

7,700 sq ft
1 Floor

Ground Floor



LEGEND:

X ASBESTOS SAMPLE LOCATION

X POSTIVE ASBESTOS SAMPLE LCOATION

Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

Figure 2

0' 4' 8' 12' 16' 20'
1:116

Asbestos-Containing Materials Location Map
PESA Site 36 A
1980 North Brush College Road Decatur, IL

Statistics

7,700 sq ft
1 Floor

Ground Floor

LEGEND:

- LOCATION OF ASBESTOS-CONTAINING 9x9" SOLID GRAY VINYL FLOOR TILE & ASSOC. BLACK MASTIC
- LOCATION OF <1% ASBESTOS-CONTAINING WHITE EXTERIOR SEALANT

Figure 5

0' 4' 8' 12' 16' 20'
1:116

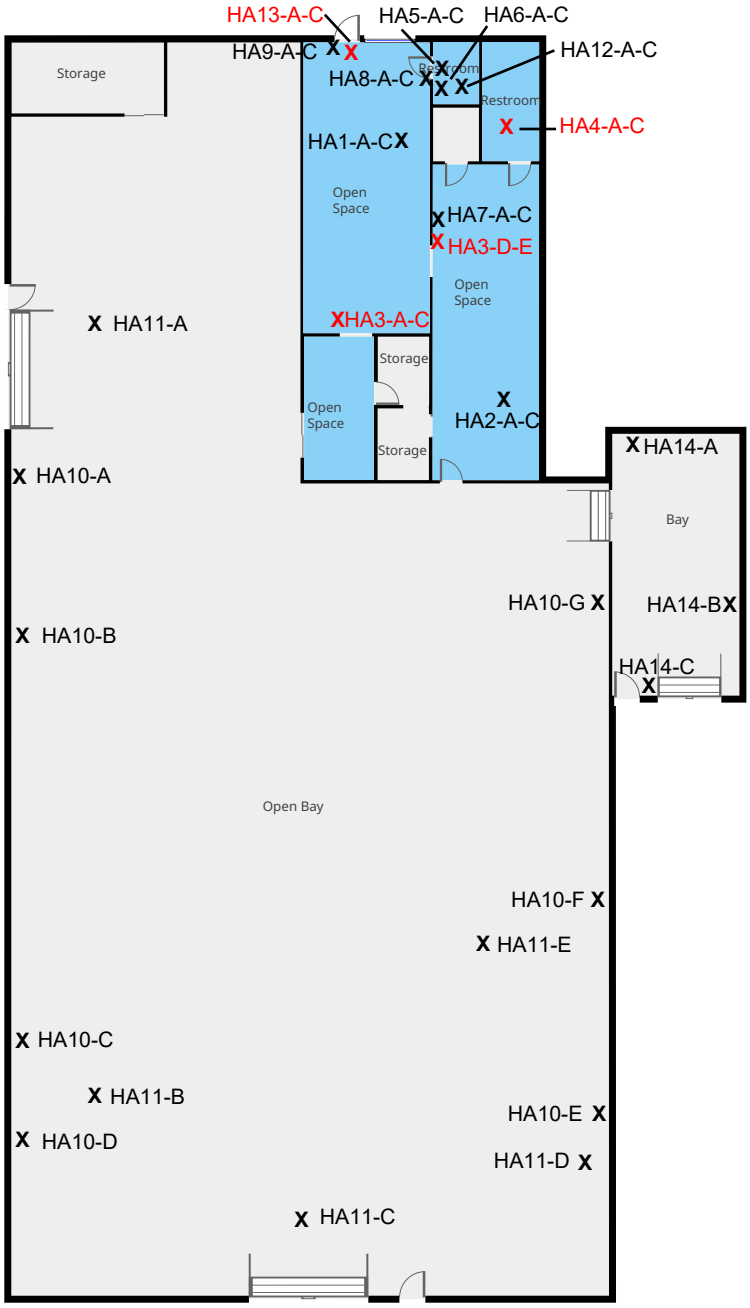
Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

Asbestos Sample Location Map
PESA Site 37
1940 North Brush College Road Decatur, IL

Statistics

10,685 sq ft
1 Floor

Ground Floor



LEGEND:

X ASBESTOS SAMPLE LOCATION

X POSITIVE ASBESTOS SAMPLE LOCATION

Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

Figure 2

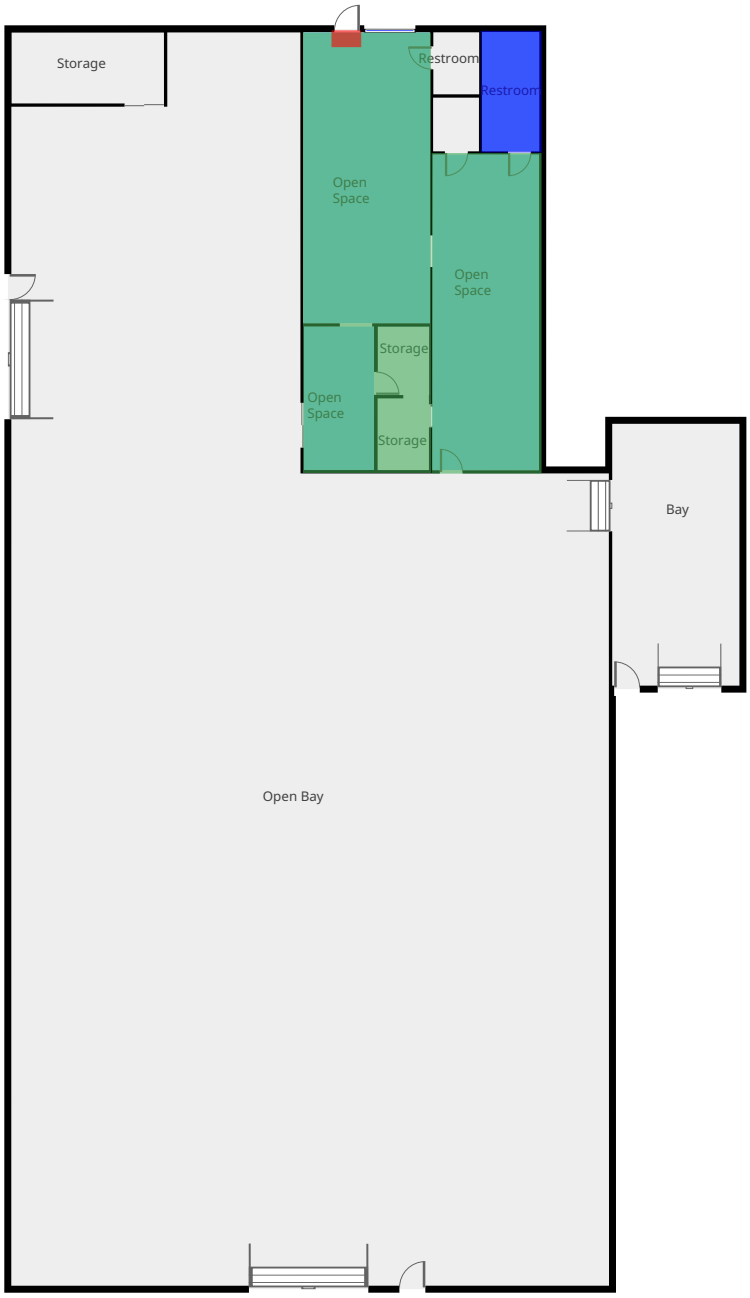
0' 4' 8' 12' 16' 20'
1:116

ACM Location Map
PESA Site 37
1940 North Brush College Road Decatur, IL

Statistics

10,685 sq ft
1 Floor

Ground Floor



LEGEND:

- HA3: 12X12" Tan VFT w/ specks
- HA4: 12X12" Blue VFT w/ specks
- HA13: 12X12" Solid Blue VFT

Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

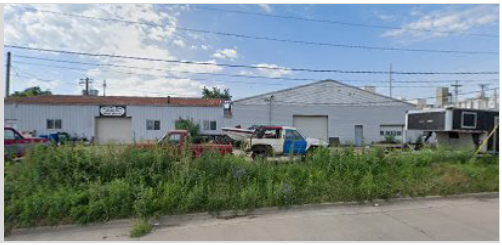
Figure 5

0' 4' 8' 12' 16' 20'
1:116

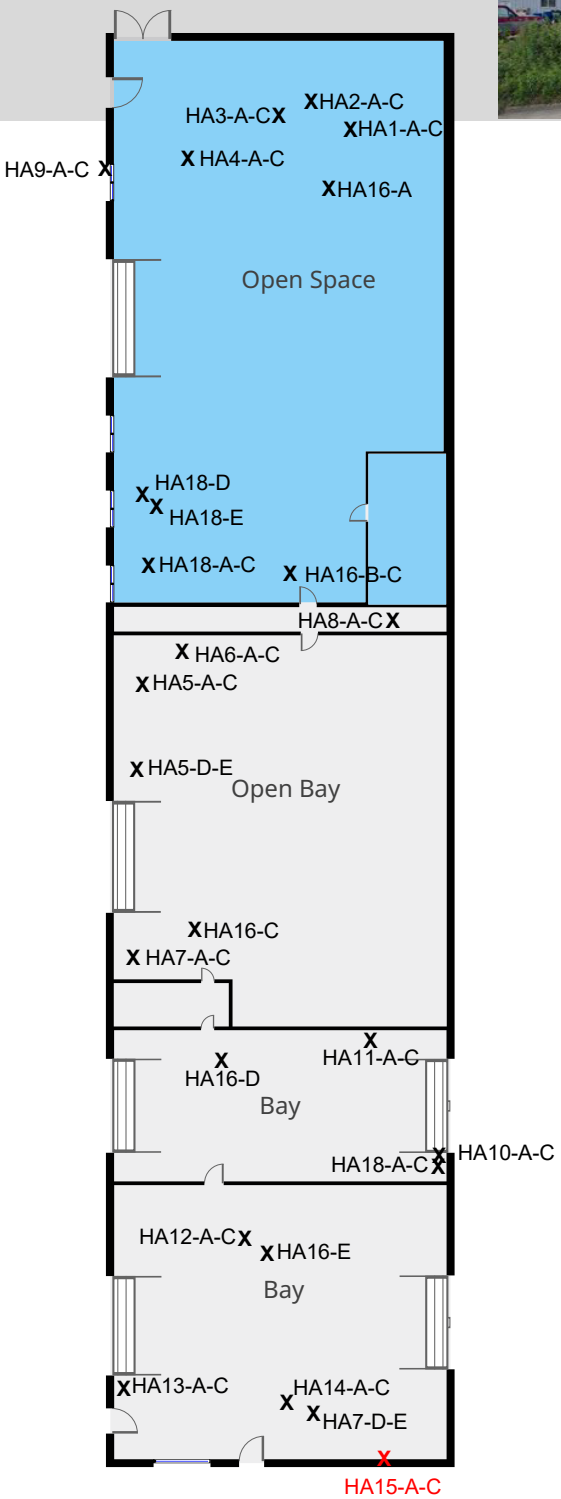
Asbestos Sample Location Map
PESA Site 38
3915 East Faries Parkway Decatur, IL

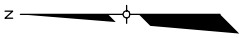
Statistics

5,250 sq ft
1 Floor



Ground Floor

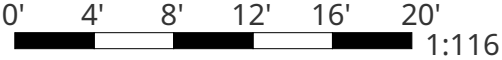




LEGEND:
X ASBESTOS SAMPLE LOCATION

X POSITIVE ASBESTOS SAMPLE LOCATION

Figure 2

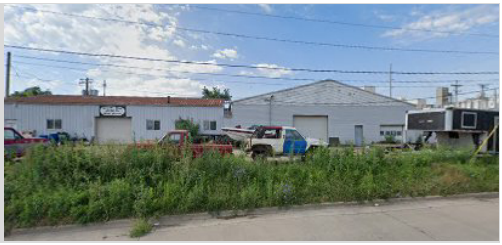


Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

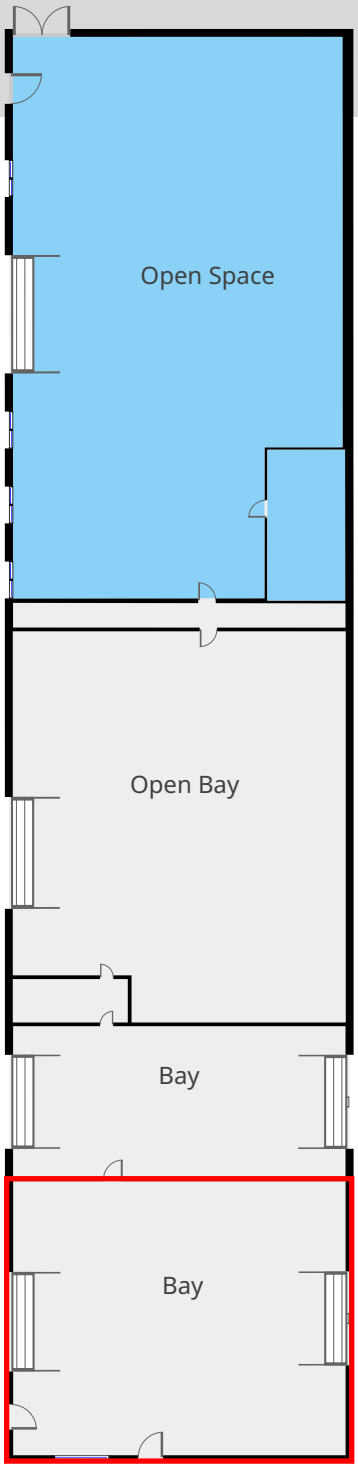
ACM Location Map
PESA Site 38
3915 East Faries Parkway Decatur, IL

Statistics

5,250 sq ft
1 Floor



Ground Floor



LEGEND:

ACM LOCATION

Dimensions are measured to the extent possible. No guarantee of accuracy is implied.

Figure 5

0' 4' 8' 12' 16' 20'
1:116

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 **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	**13-08-102-001**	**1880 N. Brush College Rd.**	**Commercial Property; restaurant**
5	**13-08-101-006**	**3925 E. Faries Pkwy.**	**Commercial Property; restaurant**
6	**13-08-101-009**	**3941 E. Faries Pkwy.**	**Commercial Property; 2-story bldg**
7	**13-08-101-011**	**4147 E. Faries Pkwy.**	**Residential Property; garage**
8	**13-08-101-011**	**4147 E. Faries Pkwy.**	**Residential Property; 1.5 story w/ basement**
9	**13-08-101-013**	**1980 N. Brush College Rd.**	**Commercial Property**
10	**13-08-101-013**	**1980 N.Brush College Rd.**	**Commercial Property**

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

CORRUGATED PLASTIC PIPE (CULVERT AND STORM SEWER) (BDE)

Effective: January 1, 2021

Revise Tables IIIA and IIIB of Article 542.03 and the storm sewers tables of Article 550.03 of the Standard Specifications to read:

(SEE TABLES ON NEXT 10 PAGES)

"PIPE CULVERTS
TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 1					Type 2					Type 3					Type 4				
	Fill Height: 3' and less, with 1' min					Fill Height: Greater than 3', not exceeding 10'					Fill Height: Greater than 10', not exceeding 15'					Fill Height: Greater than 15', not exceeding 20'				
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP
10	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA
12	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
15	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL
18	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
21	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	NA	NA
24	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
27	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA
30	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
36	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
42	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
48	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	QPL	QPL	NA	NA	NA	QPL	QPL	NA	NA	NA	NA	QPL	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

PIPE CULVERTS (metric)
TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (mm)	Type 1					Type 2					Type 3					Type 4				
	Fill Height: 1 m and less, with 0.3 m min. cover					Fill Height: Greater than 1 m, not exceeding 3 m					Fill Height: Greater than 3 m, not exceeding 4.5 m					Fill Height: Greater than 4.5 m, not exceeding 6 m				
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP
250	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA
300	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
375	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL
450	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
525	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	NA	NA
600	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
675	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA
750	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
900	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
1050	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
1200	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
1350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1500	NA	NA	NA	QPL	QPL	NA	NA	NA	QPL	QPL	NA	NA	NA	NA	QPL	NA	NA	NA	NA	NA

Notes:
- PVC Polyvinyl Chloride Pipe
- CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
- PE Polyethylene Pipe
- CPE Corrugated Polyethylene Pipe with a Smooth Interior
- CPP Corrugated Polypropylene Pipe with a Smooth Interior
- X Permitted
- QPL Permitted for the producers approved for that diameter in the Department's qualified product list
- NA Not Acceptable

PIPE CULVERTS
TABLE IIIB: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 5					Type 6			Type 7		
	Fill Height: Greater than 20', not exceeding 25'					Fill Height: Greater than 25', not exceeding 30'			Fill Height: Greater than 30', not exceeding 35'		
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	PVC	CPVC	PE
10	X	QPL	X	QPL	NA	X	QPL	X	X	QPL	X
12	X	QPL	X	QPL	QPL	X	QPL	X	X	QPL	X
15	X	QPL	NA	NA	QPL	X	QPL	NA	X	QPL	NA
18	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
21	X	QPL	NA	NA	NA	X	QPL	NA	X	QPL	NA
24	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
27	X	NA	NA	NA	NA	X	NA	NA	X	NA	NA
30	X	QPL	X	NA	QPL	X	QPL	X	X	QPL	X
36	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
42	X	NA	X	NA	NA	X	NA	X	X	NA	X
48	X	NA	X	NA	NA	X	NA	X	X	NA	X
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

PIPE CULVERTS (metric)
TABLE IIIB: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (mm)	Type 5					Type 6			Type 7		
	Fill Height: Greater than 6 m, not exceeding 7.5 m					Fill Height: Greater than 7.5 m, not exceeding 9 m			Fill Height: Greater than 9 m, not exceeding 10.5 m		
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	PVC	CPVC	PE
250	X	QPL	X	QPL	NA	X	QPL	X	X	QPL	X
300	X	QPL	X	QPL	QPL	X	QPL	X	X	QPL	X
375	X	QPL	NA	NA	QPL	X	QPL	NA	X	QPL	NA
450	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
525	X	QPL	NA	NA	NA	X	QPL	NA	X	QPL	NA
600	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
675	X	NA	NA	NA	NA	X	NA	NA	X	NA	NA
750	X	QPL	X	NA	QPL	X	QPL	X	X	QPL	X
900	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
1000	X	NA	X	NA	NA	X	NA	X	X	NA	X
1200	X	NA	X	NA	NA	X	NA	X	X	NA	X
1350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 1								Type 2							
	Fill Height: 3' and less, with 1' min.								Fill Height: Greater than 3', not exceeding 10'							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
10	NA	3	X	X	QPL	X	QPL	NA	NA	1	*X	X	QPL	X	QPL	NA
12	IV	NA	X	X	QPL	X	QPL	QPL	II	1	*X	X	QPL	X	QPL	QPL
15	IV	NA	NA	X	QPL	NA	QPL	QPL	II	1	*X	X	QPL	NA	QPL	QPL
18	IV	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
21	III	NA	NA	X	QPL	NA	QPL	NA	II	2	X	X	QPL	NA	QPL	NA
24	III	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
27	III	NA	NA	X	NA	NA	NA	NA	II	3	X	X	NA	NA	NA	NA
30	IV	NA	NA	X	QPL	X	QPL	QPL	II	3	X	X	QPL	X	QPL	QPL
33	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
36	III	NA	NA	X	QPL	X	QPL	QPL	II	NA	X	X	QPL	X	QPL	QPL
42	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
48	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
54	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
60	II	NA	NA	NA	NA	NA	QPL	QPL	II	NA	NA	NA	NA	NA	QPL	QPL
66	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
72	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
78	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
84	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
90	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
96	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
102	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
108	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable
* May also use Standard Strength Clay Pipe

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 1								Type 2							
	Fill Height: 1 m and less, with 300 mm min,								Fill Height: Greater than 1 m, not exceeding 3 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
250	NA	3	X	X	QPL	X	QPL	NA	NA	1	*X	X	QPL	X	QPL	NA
300	IV	NA	X	X	QPL	X	QPL	QPL	II	1	*X	X	QPL	X	QPL	QPL
375	IV	NA	NA	X	QPL	NA	QPL	QPL	II	1	*X	X	QPL	NA	QPL	QPL
450	IV	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
525	III	NA	NA	X	QPL	NA	QPL	NA	II	2	X	X	QPL	NA	QPL	NA
600	III	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
675	III	NA	NA	X	NA	NA	NA	NA	II	3	X	X	NA	NA	NA	NA
750	IV	NA	NA	X	QPL	X	QPL	QPL	II	3	X	X	QPL	X	QPL	QPL
825	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
900	III	NA	NA	X	QPL	X	QPL	QPL	II	NA	X	X	QPL	X	QPL	QPL
1050	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
1200	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
1350	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1500	II	NA	NA	NA	NA	NA	QPL	QPL	II	NA	NA	NA	NA	NA	QPL	QPL
1650	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1800	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1950	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2100	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2250	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2400	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2550	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2700	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable
* May also use Standard Strength Clay Pipe

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 3								Type 4							
	Fill Height: Greater than 10' not exceeding 15'								Fill Height: Greater than 15' not exceeding 20'							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
10	NA	2	X	X	QPL	X	QPL	NA	NA	3	X	X	QPL	X	QPL	NA
12	III	2	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
15	III	3	X	X	QPL	NA	QPL	QPL	IV	NA	NA	X	QPL	NA	QPL	QPL
18	III	NA	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
21	III	NA	NA	X	QPL	NA	QPL	NA	IV	NA	NA	X	QPL	NA	NA	NA
24	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
27	III	NA	NA	X	NA	NA	NA	NA	IV	NA	NA	X	NA	NA	NA	NA
30	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
33	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
36	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
42	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
48	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
54	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
60	III	NA	NA	NA	NA	NA	NA	QPL	IV	NA	NA	NA	NA	NA	NA	NA
66	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
72	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
78	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
84	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
90	III	NA	NA	NA	NA	NA	NA	NA	1680	NA	NA	NA	NA	NA	NA	NA
96	III	NA	NA	NA	NA	NA	NA	NA	1690	NA	NA	NA	NA	NA	NA	NA
102	III	NA	NA	NA	NA	NA	NA	NA	1700	NA	NA	NA	NA	NA	NA	NA
108	1360	NA	NA	NA	NA	NA	NA	NA	1710	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.)
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 3								Type 4							
	Fill Height: Greater than 3 m, not exceeding 4.5 m								Fill Height: Greater than 4.5 m, not exceeding 6 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
250	NA	2	X	X	QPL	X	QPL	NA	NA	3	X	X	QPL	X	QPL	NA
300	III	2	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
375	III	3	X	X	QPL	NA	QPL	QPL	IV	NA	NA	X	QPL	NA	QPL	QPL
450	III	NA	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
525	III	NA	NA	X	QPL	NA	QPL	NA	IV	NA	NA	X	QPL	NA	NA	NA
600	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
675	III	NA	NA	X	NA	NA	NA	NA	IV	NA	NA	X	NA	NA	NA	NA
750	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
825	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
900	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
1050	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
1200	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
1350	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1500	III	NA	NA	NA	NA	NA	NA	QPL	IV	NA	NA	NA	NA	NA	NA	NA
1650	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1800	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1950	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
2100	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
2250	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2400	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2550	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2700	70	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 25.4 micro-meter crack.)
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 5						Type 6				Type 7			
	Fill Height: Greater than 20', not exceeding 25'						Fill Height: Greater than 25', not exceeding 30'				Fill Height: Greater than 30', not exceeding 35'			
	RCCP	PVC	CPVC	PE	CPE	CPP	RCCP	PVC	CPVC	PE	RCCP	PVC	CPVC	PE
10	NA	X	QPL	X	QPL	NA	NA	X	QPL	X	NA	X	QPL	X
12	IV	X	QPL	X	QPL	QPL	V	X	QPL	X	V	X	QPL	X
15	IV	X	QPL	NA	NA	QPL	V	X	QPL	NA	V	X	QPL	NA
18	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
21	IV	X	QPL	NA	NA	NA	V	X	QPL	NA	V	X	QPL	NA
24	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
27	IV	X	NA	NA	NA	NA	V	X	NA	NA	V	X	NA	NA
30	IV	X	QPL	X	NA	QPL	V	X	QPL	X	V	X	QPL	X
33	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
36	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
42	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
48	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
54	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
60	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
66	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
72	V	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
78	2020	NA	NA	NA	NA	NA	2370	NA	NA	NA	2730	NA	NA	NA
84	2020	NA	NA	NA	NA	NA	2380	NA	NA	NA	2740	NA	NA	NA
90	2030	NA	NA	NA	NA	NA	2390	NA	NA	NA	2750	NA	NA	NA
96	2040	NA	NA	NA	NA	NA	2400	NA	NA	NA	2750	NA	NA	NA
102	2050	NA	NA	NA	NA	NA	2410	NA	NA	NA	2760	NA	NA	NA
108	2060	NA	NA	NA	NA	NA	2410	NA	NA	NA	2770	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.)
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 5						Type 6				Type 7			
	Fill Height: Greater than 6 m, not exceeding 7.5 m						Fill Height: Greater than 7.5 m, not exceeding 9 m				Fill Height: Greater than 9 m, not exceeding 10.5 m			
	RCCP	PVC	CPVC	PE	CPE	CPP	RCCP	PVC	CPVC	PE	RCCP	PVC	CPVC	PE
250	NA	X	QPL	X	QPL	NA	NA	X	QPL	X	NA	X	QPL	X
300	IV	X	QPL	X	QPL	QPL	V	X	QPL	X	V	X	QPL	X
375	IV	X	QPL	NA	NA	QPL	V	X	QPL	NA	V	X	QPL	NA
450	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
525	IV	X	QPL	NA	NA	NA	V	X	QPL	NA	V	X	QPL	NA
600	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
675	IV	X	NA	NA	NA	NA	V	X	NA	NA	V	X	NA	NA
750	IV	X	QPL	X	NA	QPL	V	X	QPL	X	V	X	QPL	X
825	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
900	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
1050	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
1200	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
1350	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1500	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1650	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1800	V	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1950	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2100	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2250	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2400	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA
2550	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA
2700	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 25.4 micro-meter crack.)
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable"

Revise the first paragraph of Article 1040.03 of the Standard Specifications to read:

"**1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The pipe shall meet the following additional requirements."

Revise Article 1040.04(b) of the Standard Specifications to read:

"(b) Corrugated PE Pipe with a Smooth Interior. The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 294 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type S or D."

Revise the first paragraph of Article 1040.04(d) of the Standard Specifications to read:

"(d) PE Pipe with a Smooth Interior. The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350."

Revise the first paragraph of Article 1040.08 of the Standard Specifications to read:

"**1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer's recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The pipe shall meet the following additional requirements."

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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 5.00 % 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

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

MECHANICALLY STABILIZED EARTH RETAINING WALLS (BDE)

Effective: November 1, 2019
Revised: November 1, 2020

Revise Articles 1003.07(f)(2) and 1004.06(f)(2) of the Standard Specifications to read:

"(2) The chlorides shall be a maximum of 100 parts per million according to Illinois Modified AASHTO T 291."

Revise Articles 1003.07(f)(3) and 1004.06(f)(3) of the Standard Specifications to read:

"(3) The sulfates shall be a maximum of 200 parts per million according to Illinois Modified AASHTO T 290."

Revise Articles 1003.07(g) and 1004.06(g) of the Standard Specifications to read:

"(g) Testing Protocol. Prior to the start of and during construction, the internal friction angle and pH shall be determined in order to demonstrate the select fill material meets the specification requirements. Resistivity, chlorides, sulfates, and organic content test results shall also be determined if steel reinforcement is used. Testing shall be according to the current Bureau of Materials Policy Memorandum "Fine and Coarse Aggregates Used as Select Fill in MSE Walls Acceptance Procedures for Approved/Qualified Aggregate Sources"."

80418

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

"(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time 1/ (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer."

80430

RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)

Effective: December 1, 1986
Revised: January 1, 2022

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Norfolk Southern 1735 East Condit Street Decatur, IL 62521	-0-	18 trains/day@ 10 mph

Class 1 RR (Y or N): Y
DOT/AAR No.: 328516E
RR Division: Southern Region
RR Mile Post: 43.60
RR Sub-Division: Chicago District

For Freight/Passenger Information Contact: Scott Overbey Phone: 404-582-5588
For Insurance Information Contact: Scott Overbey Phone: 404-582-5588

Illinois Central Railroad Company And Its Parents 17641 S. Ashland Ave Homewood, IL 60430-1345	-0-	12 trains/day @ 10 mph

Class 1 RR (Y or N): Y
DOT/AAR No.: 291386B
RR Division: Illinois
RR Mile Post: 29.00
RR Sub-Division: Lafayette

For Freight/Passenger Information Contact: Nick Burwell Phone: 319-236-9205
For Insurance Information Contact: Nick Burwell Phone: 319-236-9205

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

3426I

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004
Revised: January 1, 2022

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, welded reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of $10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

(a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.

(b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$SCA = Q \times D$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$D = MPI_M - MPI_L$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Welded Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

80127

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

SURFACE TESTING OF PAVEMENTS – IRI (BDE)

Effective: January 1, 2021
Revised: January 1, 2022

Description. This work shall consist of testing the ride quality of the finished surface of pavements, according to Illinois Test Procedure 701, "Ride Quality Testing Using the International Roughness Index (IRI)". Work shall be according to Sections 406, 407, or 420 of the Standard Specifications, except as modified herein.

Hot-Mix Asphalt (HMA) Overlays

Add Article 406.03(n) to the Standard Specifications:

"(n) Pavement Surface Grinding Equipment.....1101.04"

Revise Article 406.11 of the Standard Specifications to read:

"**406.11 Surface Tests.** Prior to pavement improvements, the Engineer will measure the smoothness of the existing high-speed mainline pavement. The Contractor shall measure the smoothness of the finished high-speed mainline, low-speed mainline, and miscellaneous pavements within seven days of paving. Testing shall be performed in the presence of the Engineer and according to Illinois Test Procedure 701. The pavement will be identified as high-speed mainline, low-speed mainline, or miscellaneous as follows.

(a) Test Sections

(1) High-Speed Mainline Pavement. High-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit greater than 45 mph. These sections shall be tested with an inertial profiling system (IPS).

(2) Low-Speed Mainline Pavement. Low-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit of 45 mph or less. These sections shall be tested with an IPS and will be analyzed using the rolling 16 ft (5 m) straightedge simulation in ProVAL.

(3) Miscellaneous Pavement. Miscellaneous pavement includes segments that either cannot readily be tested by an IPS or conditions beyond the control of the contractor preclude the achievement of smoothness levels typically achievable with mainline pavement construction. This may include the following examples or as determined by the Engineer.

(a) Pavement on horizontal curves with a centerline radius of curvature of less than or equal to 1,000 ft (300 m) and the pavement within the superelevation transition of such curves;

(b) Pavement on vertical curves having a length less than or equal to 200 ft (60 m) in combination with an algebraic change in tangent grade greater than or equal to 3 percent as may occur on urban ramps or other constricted-space facilities;

(c) The first and last 50 ft (15 m) of a pavement section where the Contractor is not responsible for the adjoining surface;

(d) Intersections and the 25 ft (7.6 m) before and after an intersection or end of radius return;

(e) Variable width pavements;

(f) Side street returns, to the end of radius return;

(g) Crossovers;

(h) Connector pavement from the mainline pavement expansion joint to the bridge approach slab;

(i) Bridge approach slab;

(j) Pavement that must be constructed in multiple short segments, typically defined as 600 ft (180 m) or less;

(k) Pavement within 25 ft (7.6 m) of manholes, utility structures, or other appurtenances;

(l) Turn lanes; and

(m) Pavement within 5 ft (1.5 m) of jobsite sampling locations for HMA volumetric testing that fall within the wheel path.

Miscellaneous pavement shall be tested using a 16 ft (5 m) straightedge.

(4) International Roughness Index (IRI). An index computed from a longitudinal profile measurement using a quarter-car simulation at a simulation speed of 50 mph (80 km/h).

(5) Mean Roughness Index (MRI). The average of the IRI values for the right and left wheel tracks.

(6) Areas of Localized Roughness (ALR). Isolated areas of roughness, which can cause significant increase in the calculated MRI for a given sublot.

(7) Lot. A lot will be defined as a continuous strip of pavement 1 mile (1,600 m) long and one lane wide. When the length of a continuous strip of pavement is less than 1 mile (1,600 m), that pavement will be included in an adjacent lot. Structures will be omitted when measuring pavement length, but will not be considered as a discontinuity and the numbering of sublots will not restart. The limits of the structure shall include the entire length between the outside ends of both connector pavements.

(8) Sublot. Lots will be divided into 0.1 mile (160 m) sublots. A partial sublot greater than or equal to 264 ft (80 m) resulting from an interruption in the pavement will be subject to the same evaluation as a whole sublot. Partial sublots less than 264 ft (80 m) shall be included with the previous sublot for evaluation purposes.

(b) Corrective Work. Corrective work shall be completed according to the following.

(1) High-Speed Mainline Pavement. For high-speed mainline pavement, any 25 ft (7.6 m) interval with an ALR in excess of 150 in./mile (2,400 mm/km) will be identified by the Engineer and shall be corrected by the Contractor. Any sublot having a MRI greater than MRI_D, including ALR, shall be corrected to reduce the MRI to the MRI_F, or replaced at the Contractor's option.

(2) Low-Speed Mainline Pavement. Bumps in low-speed mainline pavement which exceed the 5/16 in. (8 mm) tolerance using a simulated 16 ft (5 m) straightedge will be identified by the Engineer and shall be corrected by the Contractor.

(3) Miscellaneous Pavements. Bumps in miscellaneous pavement which exceed the 5/16 in. (8 mm) tolerance on a 16 ft (5 m) straightedge will be identified by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed with pavement surface grinding equipment or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area normal to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the sublot(s) shall be retested. The Contractor shall furnish the data and reports to the Engineer within 2 working days after corrections are made. If the MRI and/or ALR still do not meet the requirements, additional corrective work shall be performed.

Corrective work shall be at no additional cost to the Department.

(c) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each sublot of high-speed mainline pavement per the Smoothness Assessment Schedule. Assessments will be based on the MRI of each sublot prior to performing any corrective work unless the Contractor has chosen to remove and replace the sublot. For

sublots that are replaced, assessments will be based on the MRI determined after replacement.

The upper MRI thresholds for high-speed mainline pavement are dependent on the MRI of the existing pavement before construction (MRI_0) and shall be determined as follows.

Upper MRI Thresholds [1/]	MRI Thresholds (High-Speed, HMA Overlay)	
	$MRI_0 \leq 125.0$ in./mile (≤ 1,975 mm/km)	$MRI_0 > 125.0$ in./mile [1/] (> 1,975 mm/km)
Incentive (MRI_I)	45.0 in./mile (710 mm/km)	$0.2 \times MRI_0 + 20$
Full Pay (MRI_F)	75.0 in./mile (1,190 mm/km)	$0.2 \times MRI_0 + 50$
Disincentive (MRI_D)	100.0 in./mile (1,975 mm/km)	$0.2 \times MRI_0 + 75$

1/ MRI_0, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

Smoothness assessments for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, HMA Overlay)	
Mainline Pavement MRI Range	Assessment Per Sublot [1/]
$MRI \leq MRI_I$	$+ (MRI_I - MRI) \times \$33.00$ [2/]
$MRI_I < MRI \leq MRI_F$	+ \$0.00
$MRI_F < MRI \leq MRI_D$	$- (MRI - MRI_F) \times \$20.00$
$MRI > MRI_D$	– \$500.00

1/ MRI, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed \$500.00.

Smoothness assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein."

Hot-Mix Asphalt (HMA) Pavement (Full-Depth)

Revise the first paragraph of Article 407.03 of the Standard Specifications to read:

"**407.03 Equipment.** Equipment shall be according to Article 406.03."

Revise Article 407.09 of the Standard Specifications to read:

"**407.09 Surface Tests.** The finished surface of the pavement shall be tested for smoothness

according to Article 406.11, except as follows:

The testing of the existing pavement prior to improvements shall not apply and the smoothness assessment for high-speed mainline pavement shall be determined according to the following table.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, Full-Depth HMA)	
Mainline Pavement MRI, in./mile (mm/km)	Assessment Per Sublot [1/]
≤ 45.0 (710)	+ (45 – MRI) × $80.00 [2/]
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $30.00
> 100.0 (1,580)	– $750.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,200.00."

Portland Cement Concrete Pavement

Delete Article 420.03(i) of the Standard Specifications.

Revise Article 420.03(j) of the Standard Specifications to read:

"(i) Coring Machine (Note 1)"

Revise Article 420.10 of the Standard Specifications to read:

"**420.10 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows.

The testing of the existing pavement prior to improvements shall not apply. The Contractor shall measure the smoothness of the finished surface of the pavement after the pavement has attained a flexural strength of 250 psi (3,800 kPa) or a compressive strength of 1,600 psi (20,700 kPa).

Membrane curing damaged during testing shall be repaired as directed by the Engineer at no additional cost to the Department.

(a) Corrective Work. No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to ground areas according to Article 420.18 at no additional cost to the Department.

Pavement corrected by removal and replacement, shall be corrected in full panel sizes.

(b) Smoothness Assessments. Smoothness assessment for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, PCC)	
Mainline Pavement MRI, in./mile (mm/km) [3/]	Assessment Per Sublot [1/]
≤ 45.0 (710)	+ (45 – MRI) × $120.00 [2/]
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $45.00
> 100.0 (1,580)	– $1,125.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,800.00.

3/ If pavement is constructed with traffic in the lane next to it, then an additional 10 in./mile will be added to the upper thresholds."

Removal of Existing Pavement and Appurtenances

Revise the first paragraph of Article 440.04 of the Standard Specifications to read:

"**440.04 HMA Surface Removal for Subsequent Resurfacing.** The existing HMA surface shall be removed to the depth specified on the plans with a self-propelled milling machine. The removal depth may be varied slightly at the discretion of the Engineer to satisfy the smoothness requirements of the finished pavement. The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work shall be such that the milled surface is not torn, gouged, shoved or otherwise damaged by the milling operation. Sufficient cutting passes shall be made so that all irregularities or high spots are eliminated to the satisfaction of the Engineer. When tested with a 16 ft (5 m) straightedge, the milled surface shall have no surface variations in excess of 3/16 in. (5 mm)."

80435

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975
Revised: September 2, 2021

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 4. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee it employs on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of $500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

20338

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

"The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. The lights shall be in operation while the vehicle or equipment is engaged in construction operations."

80439

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

"For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer's specifications."

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

"**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer's self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device."

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

"**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019."

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

"(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis."

80427

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 285 working days.

80071

SLIPFORM PARAPET
Effective: June 1, 2007
Revised: March 1, 2019

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

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

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

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

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

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

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

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

is interrupted by more than 15 minutes, the portion of the wall within the limits of the slipform machine will be rejected. Any portion of the parapet where the slipforming operation is interrupted or stopped within the 15 minute window may be subject to coring to verify acceptance.

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

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

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

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

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

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

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

After the slipform machine has been set to proper grade and prior to concrete placement, the clearance between the slipform machine inside faces and reinforcement bars shall be checked during a dry run by the Contractor in the presence of the Engineer. The dry run shall not begin until the entire reinforcing cage has been tied and the Engineer has verified and approved the placement and tying of the reinforcing bars. Any reinforcement bars

found to be out of place by more than ½ in. (13 mm), or any dimensions between bars differing from the plans by more than ½ in. (13 mm) shall be re-tied to the plan dimensions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Engineer or his representative will be responsible for evaluation the cores. Any cores showing voids of any size adjacent to the reinforcement bars, or showing voids not adjacent to reinforcement bars of 1/4 square inch (160 square millimeters) in area or more, or

showing signs of segregation, or showing signs of cracking shall be considered failures and the parapet section from which it was taken will be rejected. Parapets with less than 1 1/2 inches of concrete cover over the reinforcement shall be rejected.

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

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

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

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

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

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

BRIDGE DECK CONSTRUCTION
Effective: October 22, 2013
Revised: December 21, 2016

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

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

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

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

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

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

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

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

"(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have

the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder."

Delete the last paragraph of Article 503.06(b).

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.”

LIGHTWEIGHT CELLULAR CONCRETE FILL
Effective: November 11, 2001
Revised: April 1, 2016

General: This work consists of providing lightweight cellular concrete fill (LCCF) at the locations(s) and according to the dimensions shown in the contract plans.

Submittals: Within 45 calendar days prior to proposed installation, the Contractor shall submit the following:

(a) The name of the subcontractor providing and installing the light weight cellular fill. The Contractor shall present an organization chart including names, telephone numbers, current certifications and/ or titles, and roles and responsibilities of all those involved in the manufacturing and installation of the lightweight cellular fill.

(b) Manufacturer's specifications, catalog cuts, and other product data needed to demonstrate compliance with specified requirements. These shall include reports and test results from laboratories.

(c) The subcontractor installing the lightweight fill shall be certified in writing by the Manufacturer of the lightweight fill. The certified applicator shall be regularly engaged in the placement of lightweight fill of a similar nature including the completion of mass fills having a minimum of 13,000 cu yd (9,950 cu m) in the past five years.

(d) A description of the proposed installation procedure. The procedure shall address the following.

(1) Proposed construction sequence and schedule.

(2) Location of the equipment and batching areas.

(3) Type of equipment and tools to be used.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement	1001
(b) Fly Ash	1010
(c) Water	1002
(d) Fine Aggregate	1003
(e) Concrete Admixtures	1021
(f) Foaming Agent (Note 1)	

Note 1. The foaming agent shall be according to ASTM C 869, and shall be listed on the Department's Qualified Product List of Foaming Agents for Cellular Concrete. The manufacturer shall provide an infrared spectrophotometer trace no more than five years old. When the infrared spectrophotometer trace is more than seven years old, a new one shall be provided.

Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Mixers and Trucks	1103.01
(b) Batching and Weighing Equipment	1103.02
(c) Automatic and Semi-Automatic Batching Equipment	1103.03
(d) Water Supply Equipment	1103.11
(e) Mobile Portland Cement Concrete Plants	1103.04
(f) Foam Generator (Notes 1 & 3)	
(g) Mobile Site Batch Plant (Notes 2 & 3)	

Note 1. Foam generating equipment shall be calibrated daily to produce an accurate volume of foam.

Note 2. Mobile site batch plants shall be capable of mixing and pumping cellular concrete, and shall have a minimum 1 cu yd (0.76 cu m) capacity. Mobile site plants shall be calibrated before the start of the project, and then during the project as determined by the Engineer.

Note 3. Foam generators and mobile site batch plants shall be certified in writing by the manufacturer of the lightweight cellular concrete and approved by the Engineer.

Lightweight Cellular Concrete Classes. The four general classes of lightweight cellular concrete delineated by maximum as-cast density and minimum compressive strength are given in Table 1. If the class of lightweight cellular concrete is not specified in the contract, the class to use shall be as directed by the Engineer.

Table 1. CLASSES OF LIGHTWEIGHT CELLULAR CONCRETE

Class	Maximum Lift Height ft (m)	Maximum As-Cast Density lb/cu ft (kg/cu m)	Minimum Compressive Strength Psi (kPa) Days (Note 1)	
			7	28
I	4 (1.2)	30 ± 2 (481 ± 32)	30 (205)	40 (275)
II	4 (1.2)	36 ± 2 (577 ± 32)	60 (415)	80 (550)
III	2.5 (0.76)	42 ± 2 (673 ± 32)	90 (620)	120 (825)
IV	2.5 (0.76)	50 ± 2 (801 ± 32)	115 (795)	150 (1035)

Notes:
(1) When fly ash is used, the required 7-day and 28-day strengths may be reached at 14 and 56 days, respectively.

Other Lightweight Cellular Concrete Criteria. The lightweight cellular concrete shall be according to the following.

(a) Proportioning and Mix Design. For all Classes of lightweight cellular concrete, it shall be the Contractor's responsibility to determine the mix design material proportions and to proportion each batch. The Contractor shall provide the mix designs a minimum of 45 calendar days prior to production. The Engineer will verify the mix design submitted by the Contractor.

For a new mix design to be verified, the Engineer will require the Contractor to provide a trial batch at no cost to the Department. The trial batch shall be scheduled a minimum of 30 calendar days prior to anticipated use and shall be performed in the presence of the Engineer. A minimum of 1 cu yd (0.75 cu m) trial batch shall be produced and placed offsite. The trial batch shall be produced with the equipment, materials, and methods intended for construction. The trial batch will be evaluated and tested by the Contractor and Engineer via split samples for as-cast density and compressive strength according to the sampling and testing requirements specified herein. The lightweight cellular concrete will also be evaluated and tested by the Engineer according to Illinois Test Procedure 501, as applicable.

Verification of the mix design will include trial batch test results and other criteria as determined by the Engineer. The Contractor will be notified in writing of verification. Verification of a mix design shall in no manner be construed as acceptance of any mixture produced. Tests performed at the jobsite will determine if a mix design can meet specifications.

(b) Admixtures. Admixture use shall be according to Article 1020.05(b).

(c) Temperature. The air temperature at the time of placement and for 24 hours thereafter shall be a minimum of 35 °F (2 °C). The temperature of the lightweight cellular concrete at point of discharge shall be a minimum of 45 °F (7 °C) and a maximum of 95 °F (35 °C).

Curing. Curing may be required for applications with significant surface area exposed (least width dimension of minimum 80 ft (24 m)) to the elements if rapid drying conditions are expected during placement, as determined by the Engineer. When curing is required, each lift shall be cured with a method recommended by the manufacturer of the lightweight cellular concrete. If curing compound is used, it shall be compatible with other construction materials it may interact with, and shall not inhibit bond of subsequent lifts.

Quality Control Sampling and Testing by the Contractor. The Contractor shall sample and test the lightweight cellular concrete as follows:

(a) As-Cast Density. The first batch placed each day and every 2 hours thereafter shall be sampled and tested as described for "experimental density of the concrete after pumping" according to ASTM C 796, except the hose length shall be that used for jobsite placement. The as-cast density shall be the average of at least two tests.

If the average as-cast density is outside the specified tolerance from Table 1, the Contractor shall reject the batch or make an adjustment to the mix before placement. Adjustments to the mix shall be accomplished by either increasing or decreasing the foam only.

(b) Compressive Strength. First batch placed each day and every 200 cu yd (155 cu m) thereafter shall be sampled according to ASTM C 495, except that samples shall not be oven dried at any time before testing. The minimum number of batches sampled per day shall be two. Eight 3 in. x 6 in. (75 mm x 150 mm) cylindrical test specimens shall be molded from each sample.

A compressive strength test is defined as the average of four cylinder breaks. For each sample, tests shall be conducted at 7 and 28 days, except when the mix includes fly ash, in which case, the tests may be conducted at 14 and 56 days, respectively.

Quality Assurance Sampling and Testing by the Engineer. The Engineer will sample and test the lightweight cellular concrete for quality assurance on independent and split samples. An independent sample is a field sample obtained and tested by only one party. A split sample is one of two equal portions of a field sample, where two parties each receive one portion for testing. The Engineer may request the Contractor to obtain a split sample. Any failing strength test specimen shall be retained until permission is given by the Engineer for disposal. The results of all quality assurance tests by the Engineer will be made available to the Contractor. However, Contractor split sample test results shall be provided to the Engineer before Department test results are revealed. The Engineer's quality assurance independent sample and split sample testing for placement or acceptance will be as follows:

(a) As-Cast Density. One independent or split sample test for the first batch placed each day and as determined by the Engineer thereafter.

(b) Compressive Strength. One independent or split sample for the first batch placed each day and as determined by the Engineer thereafter.

Comparing Test Results. Differences between the Engineer's and the Contractor's split sample test results will be considered reasonable if within the following limits.

Test Parameter	Acceptable Limits of Precision
Compressive Strength	5 psi (34.5 kPa)
Density	1 lb/cu ft (16 kg/cu m)

Action shall be taken when either the Engineer's or the Contractor's test results are not within specification limits for strength or density. Action may include, but is not limited to, the Contractor being required to replace or repair test equipment as determined by the Engineer.

Placed material that fails in compressive strength will be considered unacceptable.

Acceptance by the Engineer. Final acceptance will be based on the Standard Specifications and the following:

(a) Validation of Contractor quality control test results using split samples. Any quality control or quality assurance test determined to be flawed may be declared invalid only when reviewed and approved by the Engineer. The Engineer will declare a test result invalid only if it is proven that improper sampling or testing occurred. The test result is to be recorded and the reason for declaring the test invalid will be provided by the Engineer.

(b) Comparison of the Engineer's quality assurance test results with specification limits using samples independently obtained by the Engineer.

The Engineer may suspend mixture production, reject materials, or take other appropriate action if the Contractor does not control the quality of lightweight cellular concrete. The decision will be determined according to (a) or (b).

Installation. Prior to installation, the ground surface shall be cleared of organic top soils, debris, sharp objects, and trees. Tree stumps shall be either removed or cut to the level of the ground surface. All wheel tracks or ruts in excess of 3 in. (75 mm) in depth shall be graded smooth or otherwise filled with soil to provide a reasonable smooth surface.

If a geotechnical fabric for ground stabilization or geomembrane is specified in conjunction with the LCCF, it shall be furnished and installed as specified elsewhere in the Contract and shall be in place prior to placing the LCCF.

The lightweight cellular concrete fill shall be placed according to the approved installation procedures provided by the manufacturer.

There shall be no standing water in the area to be filled. If necessary, dewatering shall be continuous during the time the lightweight cellular concrete fill is constructed. Lightweight cellular concrete fill shall not be placed during or when periods of precipitation are expected unless placed in an enclosed, covered area and the ground water is diverted away from the LCCF.

If any items are to be encased in the fill, the items shall be set to the final location both horizontally and vertically prior to installation of the LCCF.

Mixing and placement of the LCCF shall be done as follows:

(a) After mixing, the materials shall be promptly placed in the final location.

(b) No mechanical vibration of the LCCF shall be permitted.

(c) The material shall be placed to prevent segregation. Intermediate lifts shall be placed horizontal while only the top lift shall be sloped to grade. The final surface elevation of the lightweight cellular concrete fill shall be within ±1.5 inches (±38 mm) of the plan elevation.

(d) Limit the area of placement to the volume that can be placed within 1 hour, up to the maximum lift height. Stagger placements such that the vertical joints are at least 10 ft (3 m) apart.

(e) The cellular concrete shall be placed with a hose. The discharge hose length shall not exceed 800 ft (244 m) in length. Discharge from the hose shall not be allowed to flow more than 30 ft (9 m) from where it is deposited to its final position.

(f) Heavy construction equipment or other unusual loading of the lightweight cellular concrete fill shall not be permitted.

(g) Construction activities on any recently placed lift will not be permitted until at least 12 hours has elapsed and a minimum compressive strength of 8 psi (55 kPa) has been achieved. However, if any work on the recently placed LCCF resulting in cracking or indentations of more than an 0.125 inch (3 mm), the contractor shall discontinue construction, revise their wait time, mix strength or equipment used and submit to the Engineer for approval.

(h) Sawing or ripping of the lightweight cellular concrete fill for utilities, drains or other conflicts will be by methods approved by the Engineer and lightweight cellular concrete fill Manufacturer.

Method of Measurement. Lightweight cellular fill shall be measure for payment in cubic yards (cubic meters) according to Article 202.07.

Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for LIGHTWEIGHT CELLULAR CONCRETE FILL.

ERECTION OF BRIDGE GIRDERS OVER OR ADJACENT TO RAILROADS
Effective: August 9, 2019

Description: In addition to the requirements of Article 504.06(d) and 505.08(e), the following shall apply.

The Contractor or sub-Contractor performing the erection of steel or concrete beams or girders over, or adjacent to (within 25 ft. of), active railroad tracks shall submit an erection plan to the Engineer for approval prior to starting the work.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer 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 beams or girders.

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 members in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the 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, cross frame/diaphragm placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The Erection Contractor shall be responsible for the stability of the partially erected structure during all phases of erection.

The erection plans and procedures shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department 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. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 504.08 or 505.13 of the Standard Specifications.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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.