A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: October 27, 2015
Date of Addendum: October 6, 2015

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
001	78-0801-372	BRIDGE NEW - STEEL GIRDER	POTTAWATTAMIE	IM-NHS-080-1(372)4--03-78 IM-NHS-080-1(373)4--03-78 IM-NHS-080-1(374)4--03-78 IM-NHS-080-1(375)4--03-78 IM-NHS-080-1(376)4--03-78 IM-NHS-080-1(377)4--03-78 IM-NHS-080-1(420)4--03-78 IM-NHS-080-1(462)4--03-78	27OCT001.A01

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

Add Proposal Line No. 3841 2599-9999099 Temporary RW0100 – Waler, Steel, W14x34 ; 25.000 LF

Change Proposal Line No. 3420 2513-0001020 CONCRETE BARRIER, BA-102:
From: 695.800 LF
To: 796.000 LF

If the above changes are not made, they will be made as shown here.

Make the following change to the Proposal Special Provisions List and the Proposal Special Provisions Text.:

Add the attached SP-150027 - DRILLED-IN SOLDIER PILE AND LAGGING WALL

Replace SP-150008 with attached SP-150008a

REPLACE Railroad Data sheets for BNSF Railroad with the attached sheets:

IM-NHS-80-1(372)--03-78
IM-NHS-80-1(377)--03-78
IM-NHS-80-1(374)--03-78

New data sheets decrease the railroad frequency from 46 trains/day to 2 trains/day.

Make the following changes to Plans:

IM-NHS-080-1(372)4--03-78

Replace sheets J.1 & J.4 with attached plan sheets.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

J.4 Revised Access Routes for the rail yard area:

IM-NHS-080-1(373)4--03-78
Replace sheets J.1 with attached plan sheet.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

IM-NHS-080-1(374)4--03-78
Replace sheets C.2, J.1, & J.5 with attached plan sheets.

C.2 - Updated ESTIMATE REFERENCE INFORMATION for
Item Code 243-0254902 — Intake Tops shall be Cast-In-Place

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

J.5 Revised Access Routes for the rail yard area:

IM-NHS-080-1(375)4--03-78
Replace sheets J.1 with attached plan sheet.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

IM-NHS-080-1(376)4--03-78
Replace sheets J.1 with attached plan sheet.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

IM-NHS-080-1(377)4--03-78
Replace sheets J.1 & J.25 with attached plan sheets.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

J.25 Revised Access Routes for the rail yard area:

IM-NHS-080-1(420)4--03-78
Replace sheets J.1 with attached plan sheet.

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

IM-NHS-080-1(462)4--03-78
Replace sheets C.1, C.2, J.1, V.4, V.5, & V.6 with attached plan sheets

C.1 - Update Project Quantities for IM-NHS-80-1(462)4—03-78
Item Code 2513-0001020 – Concrete Barrier, BA-102 – 762 LF

C.2 - Update ESTIMATE REFERENCE INFORMATION for
Item Code 2435-0256210 – Intake Tops for SW-549 shall be cast-in-place

J.1 - Update Traffic Control Plan Notes to include Friday lane closure times for I-80 eastbound (east of the I-29 southbound diverge in the east system interchange)

V.4 - Drilled-in Soldier Pile and Lagging Retaining Wall Situation Plan:
Plan revises the retaining wall design to include a waler and increases pile spacing to accommodate an existing sanitary sewer line.

V.5 - Revised locations and elevations for soldier pile. Added Quantities for Temporary RW0100 – Item Code 2599-99990099 – Waler, Steel, W14x34 – 25 LF
Added General Notes for waler installation.

V.6 - Added notes and detail for installation of waler

Iowa Department of Transportation

SPECIAL PROVISIONS
FOR
DRILLED-IN SOLDIER PILE AND LAGGING WALL

Pottawattamie County
IM-NHS-080-1(462)4--03-78

Effective Date
October 27, 2015

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150027.01 DESCRIPTION.

A. This work shall consist of furnishing and constructing drilled-in soldier pile and lagging walls in accordance with this special provision and with the lines, grades and dimensions shown on the contract drawings and per the shop drawings prepared by the specialty wall Contractor.

B. A drilled-in soldier pile and lagging wall is a cut retaining wall system composed of drilled-in steel soldier piles placed in pre-bored holes. The portion of the piles that will be embedded below the excavation are encased in structural concrete while controlled low strength material (CLSM) or approved equivalent encase the portion of the soldier piles above the proposed bottom of excavation. After the soldier piles are installed, timber lagging is placed between the soldier piles to transfer lateral loads from the soil to the soldier piles.

C. Sequence of construction for the drilled-in soldier pile and lagging wall is shown on the contract drawings. The soldier piles will be drilled in from the existing grade to the tip elevation, followed by filling of the pre-drilled hole with structural concrete and CLSM around the steel element. Sequential excavation and placement of the timber lagging will follow. As necessary, granular fill or approved equivalent will be used to fill any voids between the timber lagging and retained soil.

150027.02 MATERIALS.

A. Steel Soldier Pile.

1. Conform to Section 4167 of the Standard Specifications.

2. Storing, transporting, and handling shall be performed in a manner to prevent bending stresses or other damage.

B. Concrete for Drilled in Soldier Piles.

1. All materials, proportioning, air entraining, mixing, slump, and transporting of PCC shall be according to Section 2403 of the Standard Specifications, except as modified herein.

2. Water/cement ratio: not to exceed 0.45.

3. Drilled-in soldier pile construction: use Class D PCC mixture with a slump of 8 inches ±1.5 inches.

4. Portland cement: meet the requirements of ASTM C 150 Type I / II and Section 4101 of the Standard Specifications.

5. Air entrainment: apply Section 2403 of the Standard Specifications.

6. Mid-range water reducer is required according to Materials I.M. 403.

7. Retarder is required according to Materials I.M. 403 to maintain workable concrete.

8. Do not use Ground Granulated Blast Furnace Slag (GGBFS).

C. Timber Lagging.
Graded for extreme fiber stress of at least 1000 psi and with the full dimension thickness shown on the shop drawings.

D. Granular Backfill Material.
Ensure the backfill material meets the requirements of Section 4133 of the Standard Specifications, except that the percent passing the No. 200 sieve is not to exceed 5.0%.

E. Controlled Low Strength Material (CLSM).
Apply Section 2552.02 of the Standard Specifications.

F. Waler.

1. Conform to Section 4167 of the Standard Specifications.

2. Storing, transporting, and handling shall be performed in a manner to prevent bending stresses or other damage.

150027.03 CONSTRUCTION.

A. Contractor Qualifications.
Prior to initiating construction of the drilled-in soldier pile and lagging wall, the Contractor shall submit to the Engineer a report which identifies the Contractor's personnel who will be performing and supervising the work. The report shall include the names of an engineer-in-charge, on-site supervisors, and drill operators. The report shall also contain a list of employer's names and telephone numbers, location and dates of previous projects, and the extent of work performed. This information must be verifiable.

1. An on-site supervisor shall be present at the job site at all times during the performance of the work. The on-site supervisor shall have 1 year of construction experience in the installation of soldier pile and lagging walls and shall have supervised the successful installation of three walls. The work experience time period is computed by the addition of all documented durations of the work time on construction projects.

2. Drill operators shall have successfully installed three soldier pile and lagging walls.

B. Submittals.

The Contractor shall submit their proposed drilled-in soldier pile and lagging wall installation plans to the Engineer for review and approval. The submission shall consist of details required to completely describe the retaining wall system and shall include the following:

1. Shop drawings for the drilled-in soldier pile and lagging wall shown on the contract drawings at least 2 weeks before beginning the work, which indicate at a minimum, the following:
- **a.** Grade and strengths of all construction materials used.
- **b.** Materials, details, arrangement, and method of construction of the proposed soldier pile and lagging retaining wall system.
- **c.** Details for the timber lagging.
- **d.** Method for installing soldier piles, including pre-drilling procedures. Driven soldier piles are not permitted.
- **e.** Mix designs for structural concrete and procedures for placing and verifying installation elevations of the structural concrete in accordance with the contract documents.
- **f.** Mix design for the CLSM and procedures for placing the CLSM in accordance with the contract documents.
- **g.** Details outlining additional grading to create a working platform (if needed).
- **h.** Details outlining traffic control (if needed) to prevent lane closures of the existing Woodbury Avenue Bridge.
- **i.** Sequence of construction.

2. Descriptive data and operating procedure for all equipment to be used. This shall include, at a minimum; machinery required to install soldier piles (including drilling procedures), timber lagging, excavate soil, and remove obstructions. Submit all pertinent equipment data including sizes, weights, capacities, torques, and operating frequencies.

3. Review and approval of the above submittals for the soldier pile and lagging retaining wall by the Engineer will not relieve the Contractor from the responsibility for the adequacy of the construction of drilled-in soldier pile and lagging wall to achieve the required results.

C. General Construction Methods.

1. Install and maintain the drilled-in soldier pile and lagging wall in accordance with the design as shown on the contract drawings and on the accepted shop drawings, and in such a manner as to minimize movement, settlement, loss of ground, removal of fines from adjacent ground, and damage to or movement of adjacent structures or utilities.

2. Ensure no gaps or pockets occur between the retained fill and timber lagging.

D. Drilled-in Soldier Pile and Lagging Construction.

1. Excavate or fill as needed to provide a suitable working pad at the proposed location where each soldier pile is to be installed, as shown on the contract drawings.

2. Predrill holes for soldier pile installation. If needed use steel casing to prevent collapse of the hole. Diameter of the pre-drilled holes shall meet the dimensions shown on the contract drawings. Prior to inserting the soldier pile, the Contractor shall make the necessary provisions to allow the Engineer to sound each hole to assure that loose soil has been removed to the Engineer's satisfaction. Once the design depth has been reached and loose soil removed from the bottom of the hole, the bottom of the hole shall be cleaned such that no more than 1 inch of loose/soft soil remains at the bottom. The soldier pile section shall then be lowered into the hole to the tip elevation specified on the contract drawings and structural concrete shall be immediately tremied to the proposed elevation shown on the contract drawings. CLSM is then to be tremied from the top elevation of the structural concrete to the existing grade. If casing is used for the construction of the soldier pile excavation, remove the

casing as concrete placement progresses and throughout concrete placement. The Contractor shall maintain the bottom of the casing at least 3 feet below the level of structural concrete. Drilling for adjacent soldier piles shall not be permitted until concrete and CLSM in adjacent drilled holes has set for a period of at least 24 hours.

3. After installation of the soldier piles, excavate along the proposed wall face in stages to the elevation shown on the contract drawings.

4. Allow no more than 5 feet of unsupported excavation prior to placing lagging. Install lagging as detailed in the contract drawings.

5. Fill any gap between the soldier pile and lagging wall and the retained fill with granular backfill specified in Section 2.

E. Construction Tolerances.

1. Ensure the drilled-in soldier pile is within 3 inches of plan position.

2. Ensure the vertical alignment of soldier pile excavation does not vary from the plan alignment by more than 1/4 inch per foot.

3. Soldier pile excavations and completed soldier piles not constructed within the required tolerances will be considered unacceptable. Correct all unacceptable excavations and completed soldier piles to the Engineer's satisfaction. Furnish materials and work necessary, including engineering analysis and redesign, to complete corrections for out of tolerance excavations (without either cost to the Contracting Authority or an extension of the completion dates of the project).

150027.04 METHOD OF MEASUREMENT.

A. The soldier piles will be measured from the finished tip elevation to the top of the soldier pile elevation for payment in units of linear feet, as shown on the contract drawings.

B. The drilled-in pile will be measured for payment in units of linear feet along the axis of the drilled-in pile from the top of the concrete encasement to the bottom of the drilled-in pile, as shown on the contract drawings.

C. Installation of timber lagging will be measured by area in units of square yards, as shown on the contract drawings. Includes all costs of furnishing and installing timber lagging, including hardwood shimming, wood spacer plates, nails and clips. No additional payment will be provided to furnish damaged or otherwise unsuitable lagging boards.

D. Class 20 excavation will be measured by volume in units of cubic yards, as shown on the contract drawings. This includes only the excavation of soil immediately in front (a maximum of 2 feet in front of the finished face of the wall) of the soldier pile wall to install the timber lagging. Excavation does not include the excavation quantity for roadway earthwork that will take place to construct the proposed I-80 west bound lanes. Additional payment will not be provided for furnishing and placing granular backfill specified in Section 2 to fill voids between retained fill and timber lagging due to over-excavation.

E. The waler will be measured along the horizontal distance across specified piles for payment in units of linear feet, as shown on the contract drawings.

150027.05 BASIS OF PAYMENT.

A. Payment for Piles, Steel, W21X132 shall be made at the contract unit price per linear foot. The unit price bid per vertical linear foot of pile shall include all labor, material, and equipment for furnishing the pile and the cost of one splice per pile (if required).

B. Payment for Drilled-in Pile, 30 Inch Diameter shall be made at the contract unit price per linear foot. The unit price bid per vertical linear foot of pile shall include all labor, material and equipment for drilling and installing the drilled-in pile, including structural concrete, and incidental items include CLSM and the cost of centralizers (if necessary). The cost shall include drilled-in pile excavation from ground surface to tip of the pile, including temporary casing (if necessary), disposal of excavated material, water, installing the pile and all other materials, providing equipment for checking the dimensions, and alignment of each hole. No additional payment will be given for site preparation, establishing a working platform, or maintenance of traffic.

C. Payment for Timber Lagging, 3 Inch Thick will be made at the contract unit price per square yard. The unit price will constitute full compensation for providing all labor, material, and equipment required for installation.

D. Payment for Excavation, Class 20 will be made at the contract unit price per cubic yard. The unit price will constitute full compensation for providing all labor, material, and equipment. Incidental items are to include furnishing and placing of granular material defined in Section 2 to fill voids between retained fill and timber lagging as a result of over excavation.

E. Payment for Waler, Steel, W14X34 shall be made at the contract unit price per linear foot. The unit price bid per horizontal linear foot of pile shall include all labor, material, and equipment for furnishing the pile and the cost of welding and shims (if required).

SPECIAL PROVISION
FOR
MSE WALL WITH LIGHTWEIGHT FOAMED CONCRETE FILL

Pottawattamie County
IM-NHS-080-1(374)4--03-78

Effective Date
October 27, 2015

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150008a.01 DESCRIPTION.

A. This work shall consist of providing and placing lightweight foamed concrete fill, hereafter referred to as LFCF, as backfill for mechanically stabilized earth (MSE) walls at locations designated on the plans, and, as specified in these special provisions.

B. The LFCF manufacturer shall be recommended in writing by the MSE wall vendor. The LFCF manufacturer and installer shall coordinate its work with the MSE wall designer/supplier and the MSE wall installer.

C. Section 2432 of the Standard Specifications shall be used with the exception of what is specified herein.

150008a.02 DESIGN AND MATERIALS.

A. Design.

1. Design Requirements.

a. The design by the wall system supplier shall consider the internal stability of the wall mass. Wall design shall be according to the LRFD Bridge Design Specifications AASHTO (2014), with a minimum service life of 75 years.

b. All appurtenances behind, in front of, under, mounted upon, or passing through the wall such as drainage structures, utilities, or other appurtenances shown on the plans shall be accounted for in the stability design of the wall.

2. Submittals.

a. Submit a LFCF quality control (QC) and placement plan. Placement of the MSE backfill shall be in accordance with the information provided in the QC plan. Submit the plan to the Engineer for review and comment no later than 2 weeks prior to LFCF

placement. LFCF production shall not begin before the plan has been reviewed and accepted by the Engineer. The submitted plan shall provide, as a minimum, the following elements:

1) An organizational chart including names, telephone numbers, current certifications / titles, roles, and responsibilities of those involved with the quality control program.

2) The process of communication by which the quality control information will be disseminated to the appropriate persons, including materials suppliers. This shall include a list of recipients, the communication means that will be used, action time frames, and report formats.

3) Materials list of items proposed to be provided under this section.

4) Manufacturer's specifications, catalog cuts, and other engineering data needed to demonstrate compliance with the specified requirements.

5) Mix designs for the LFCF, prepared by the manufacturer, showing compliance with the specified properties.

6) Certification of batch, mixing and placing equipment by the LFCF manufacturer meeting the requirements specified herein.

7) Written evidence of acceptance of the certified producer/supplier by the foam agent manufacturer.

8) Written evidence that LFCF Installer is certified by and approved by the foam agent manufacturer.

9) LFCF curing procedures.

b. At least 2 weeks prior to placement, a trial batch will be prepared and trial batch testing results submitted showing that the proposed LFCF material properties comply with the requirements of this specification and design requirements of the MSE wall. This shall include certified test results of the LFCF reinforcing pullout resistance and pullout friction factor, f*, meeting the minimum requirements of the MSE wall design and written certification that the reinforcing material is not susceptible to corrosion when in contact with the proposed LFCF material. The accepted trial batch mix design and tested properties will become the standard of the material furnished under this contract.

c. At least two weeks prior to placing, the contractor shall submit ten 3 inch diameter by 6 inch high cylinder samples of the designed and tested LFCF to the Engineer. Specimens shall be covered after casting to prevent loss of moisture and shall not be oven dried. At the department's option, the samples may be tested for strength and density in accordance with the requirements of ASTM C495 and ASTM C796, respectively, to verify the submitted test results and validate the contractor's testing procedures and quality of the furnished product.

B. Materials.

1. The materials used for the LFCF Backfill shall meet the following requirements:

a. Portland cement and Portland pozzolan cement type 1 meeting the requirements of Section 4101 of the Standard Specifications.

b. Air Entraining, water reducing, set retarding admixtures meeting the requirement of Section 4103 of the Standard Specifications.

c. Engineering fabrics meeting the requirements of Materials I.M. 496.01

d. Pozzolans and admixtures (for accelerating, water reducing, retaining, improving the bond, etc.) may only be used if specifically designated and approved by the LFCF Manufacturer.

e. During placement of the initial batches, the density shall be checked and the mix adjusted as required to obtain the specified cast density at the point of placement. Take four test specimens for each 300 cubic yards of LFCF placed or every 4 hours of placing.

f. Testing shall be performed by the LFCF manufacturer in accordance with ASTM C796 (except do not oven dry load test specimens). The specimens shall be 3 inch diameter by 6 inch high cylinders covered after casting to prevent damage and loss of moisture. Moist

cure the specimens at for at least 7 days prior to a 28 day compressive strength test. Specimens may be tested at any age to monitor the compressive strength. The manufacturer shall report test results to its certified applicator for distribution.

g. The foaming agent from the selected manufacturer should produce a lightweight foamed concrete fill material that complies with the specifications in table below.

PROPERTY	REQUIREMENTS	TEST METHOD
Class B: Maximum/ Minimum Dry Density Minimum Unconfined Compressive Strength 28 days curing Class B	48.0 pcf / 40.0 pcf ~~50 psi /~~120 psi	Unit Weight (ASTM C 796) (No oven drying) ASTM C 796 (No oven drying)
Internal Friction Angle	45 degrees (min.)	AASHTO T236 (ASTM D3080-72)
Frost Heave Sample @ 250 hr exposure, 4.5 inches high x 4 inch dia.	< 0.5 in	British Road Research Laboratory, Lab Report LR 90, 1967, by Croney, Jacobs.
Freeze-Thaw Resistance - minimum cycles @ relative E = N/N ≥ 70% per ASTM C666 modified per Bidwell Report dated April, 1975	Relative Young's Modulus, E ≥ 80% at 300 cycles.	ASTM C 666 Procedure B (Rapid freezing in air and Thawing in water) As modified below
Coefficient of permeability @ 2.0 psi	1 x 10-5 cm/sec	

150008a.03 CONSTRUCTION.

A. Construction Supervision

LFCF suppliers shall provide a qualified and experienced representative on site at the beginning of the wall construction for up to 3 days at no additional cost to the Contracting Authority.

B. Personnel Requirements.

1. The LFCF installer shall be certified by the manufacturer of the foaming agent and regularly engaged in the production and placement of the LFCF. This shall include the completion of lightweight foamed concrete fills having a minimum of 1000 total cubic yards in the past 4 years. Furthermore, the material shall have been successfully applied on at least three LFCF projects, which have performed satisfactorily for at least 3 years.

2. The LFCF installer shall be certified and approved in writing by the foam agent manufacturer of the LFCF material. The Installer's foreman shall have a minimum of 2 years of experience in this type of work and shall have worked on at least one of the three successful LFCF projects presented.

3. The Installer shall use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed to assure proper performance of the work noted in this Section.

4. The manufacturer's representative shall be experienced in the placement of LFCF and shall be on site full time during placement.

C. Reinforcement Placement within the LFCF.

1. The reinforcement shall be installed in accordance with the manufacturer's recommendations, unless otherwise modified by this special provision. The reinforcement shall be placed within the layers of the LFCF as shown on the plans.

2. The reinforcement shall be placed in continuous longitudinal strips in the direction of the main reinforcement.

3. Place only that amount of reinforcement required for immediately pending work to prevent undue damage. Suitable arrangement shall be made to hold the reinforcement in place before placing the LFCF. Care should be taken that the reinforcement is not damaged or displaced during the placement of the LFCF.

4. After the specified LFCF layer has been placed, the next reinforcement layer shall be installed. The process shall be repeated for each subsequent layer of reinforcement and LFCF.

5. During construction, the surface of the fill should be kept relatively horizontal.

6. Reinforcements are to be placed within 3 inches of the design elevations and extend the length as shown on the elevation view unless otherwise directed by the Engineer. Correct orientation of the reinforcement shall be verified by the Contractor.

D. Placement of LFCF.

1. LFCF shall be a homogeneous mixture and all materials shall be approved prior to use.

2. The areas to be filled shall not have any standing water prior to placement of the LFCF. The contractor shall ensure the LFCF remains above the water table at all times during construction.

3. Subgrade for LFCF fill will be prepared in accordance with Section 2109 of the Standard Specifications.

4. Material shall be protected before, during, and after installation and the LFCF installer shall protect the work and materials of other trades. In the event of damage, immediately make replacements and repairs to the acceptance of the Engineer at no additional cost to the Department.

5. Precast panels and MSE steel reinforcing strips should be fully or partially encased in the LCFC and properly set and stable prior to the installation of the LFCF. Drainage pipes, or any other items that will be encased in the LFCF shall be set and stable prior to installation of the LFCF.

6. LFCF shall not be placed at a temperature below 32°F, nor when freezing conditions are expected in less than 24 hours unless precautions are taken to maintain temperatures above freezing. Do not place LFCF on frozen ground.

7. Cure LFCF in accordance with the accepted placement plan.

8. LFCF shall only be proportioned, mixed, and placed using equipment approved by the manufacturer as indicated in the accepted LFCF placement plan. Once mixed, the LFCF concrete shall be conveyed promptly to the location of placement without excessive handling.

9. LFCF shall be placed in lifts not exceeding 24 inches in depth. The first lift shall be at least 2 inches below the top of the lowest MSE wall precast panel or wire face.

10. Prior to placing LFCF, vertical and horizontal joints between MSE wall panels and the wire mesh facing shall be covered with geotextile fabric on the back face of the panels or wire face.

11. Scarify each lift before placing the next lift. Each lift shall be scarified to a minimum depth of 1/2 inch using a hand rake or other suitable means. Scarifying shall be done in a manner to not disturb the alignment of the reinforcing strips/mesh. Scarifying shall be done after sufficient curing time such that foot traffic will not excessively damage the lift surface (no greater than 1/4 inch indentation).

12. Allow a minimum of 24 hours between subsequent lifts. Prior to verification of the minimum specified compressive strength by testing, additional lifts may be placed after the one day minimum at the Contractor's risk. Any material that does not meet the minimum specified strength within 28 days shall be removed and replaced by the Contractor at no additional cost.

13. Move the discharge hose(s) sufficiently to ensure leveled filling through the specified fill area. Uneven filling is not permitted.

14. Limit the area of placement to the volume that can be placed within 1 hour, up to the maximum lift height of 2 feet. Stagger placements such that the vertical joints are at least 10 feet apart.

15. The discharge hose length shall not exceed 500 feet in length.

16. The final surface finish of LFCF shall be within + 0.1 foot of the elevations shown on the plans, and shall be sloped to promote drainage as indicated on the plans.

17. Paving machines, heavy construction equipment or other unusual loading of the LFCF shall not be permitted until it has attained the specified 28-day compressive strength.

18. Sawing or ripping of the LFCF for utilities, drains, or other conflicts will be by methods approved by the Engineer.

19. Any material that does not comply with the minimum specified criteria shall be removed and replaced at no additional cost.

20. The LFCF will be applied at locations designated on the plans and in accordance with the manufacturer's recommendation.

150008a.04 METHOD OF MEASUREMENT.

The quantity of Class B Lightweight Foamed Concrete Fill, in cubic yards, required in the reinforced earth zone and the zone behind the MSE wall reinforcement identified in the contract documents will be the quantity shown in the contract documents. LFCF material placed outside the limits shown on the plans will not be measured for payment unless authorized in advance of placement by the Engineer.

150008a.05 BASIS OF PAYMENT.

A. For Contractor furnished Class B Lightweight Foamed Concrete Fill for the reinforced earth zone; any core-outs or other remedial/ground improvement locations; and placed in the zone behind the reinforced earth zone as shown in the contract documents, the Contractor will be paid for the quantity of material furnished, hauled, and placed at the contract unit price per cubic yard.

B. Payment is full compensation for preparation of written submittals, material testing, coordination of and scheduling of LFCF placement with MSE retaining wall erection, on site manufacturer representative, specialized equipment to mix, transport, and place LFCF, geotextile fabric, groundwater control and temporary shoring, and include all associated costs such as materials, labor, equipment and incidentals necessary to complete the work in accordance with the contract.

RAILROAD DATA SHEET

COUNTY: POTTAWATTAMIE
PROJECT NUMBER: IM-NHS-080-1(372)4--03-78
ROUTE: I 80
LOCATION: WB I-80 (Viaduct) Over NB I-29, Railroads and Harry Langdon Blvd.
WORK TYPE: Bridge New-Steel Girder

The following information is furnished to aid in the determination of a proper premium for the Railroad Highway Insurance Protection required of the Contractor.

RAILROAD: BNSF RAILWAY COMPANY
RAILROAD CONTACT: Calvin Nutt
TITLE: Manager of Public Projects
ADDRESS: 80 44th Ave NE
Minneapolis MN 55421
TELEPHONE NUMBER: 763-782-3495
EMAIL: calvin.nutt@bnsf.com

INSURANCE SUBMITTAL: Engineering Services, Insurance Approval
BNSF Railway Company
2500 Lou Menk Drive
Building AOB-1
Ft. Worth, Texas 76131
TELEPHONE NUMBER: 817-352-3485

Total number of trains/day: 2
Freight or Coal: 2 Speed: 10
Passenger: -- Speed: --
Number of Tracks: Mainline: 1 Branchline:

Number of railroad crossings within or near project limits with potential railroad traffic interference: 1 FRA Number: 378238C

This information is the most current FRA crossing inventory data supplied to the Iowa DOT by the Railroad Company. Actual conditions may vary at the time of construction. It shall be the contractor's responsibility to contact the railroad for additional information needed to fully provide required Railroad Highway Insurance Protection.

GENERAL REQUIREMENTS

1. The cost of railroad flagging and temporary grade crossings will be the responsibility of the Contractor, UNLESS other arrangements are specifically outlined elsewhere in the contract documents

RAILROAD DATA SHEET

COUNTY: POTTAWATTAMIE
PROJECT NUMBER: IM-NHS-080-1(374)4--03-78
ROUTE: I 80
LOCATION: I-29/80 from E of S Expressway to Ramp A/Viaduct (NB/WB)
WORK TYPE: Unknown Pavement - Grade and Replace

The following information is furnished to aid in the determination of a proper premium for the Railroad Highway Insurance Protection required of the Contractor.

RAILROAD: BNSF RAILWAY COMPANY
RAILROAD CONTACT: Calvin Nutt
TITLE: Manager of Public Projects
ADDRESS: 80 44th Ave NE
Minneapolis MN 55421
TELEPHONE NUMBER: 763-782-3495
EMAIL: calvin.nutt@bnsf.com

INSURANCE SUBMITTAL: Engineering Services, Insurance Approval
BNSF Railway Company
2500 Lou Menk Drive
Building AOB-1
Ft. Worth, Texas 76131
TELEPHONE NUMBER: 817-352-3485

Total number of trains/day: 2
Freight or Coal: 2 Speed: 10
Passenger: -- Speed: --
Number of Tracks: Mainline: 1 Branchline: 2

Number of railroad crossings within or near project limits with potential railroad traffic interference: 1 FRA Number: 084230h

This information is the most current FRA crossing inventory data supplied to the Iowa DOT by the Railroad Company. Actual conditions may vary at the time of construction. It shall be the contractor's responsibility to contact the railroad for additional information needed to fully provide required Railroad Highway Insurance Protection.

GENERAL REQUIREMENTS

1. The cost of railroad flagging and temporary grade crossings will be the responsibility of the Contractor, UNLESS other arrangements are specifically outlined elsewhere in the contract documents

RAILROAD DATA SHEET

COUNTY: POTTAWATTAMIE
PROJECT NUMBER: IM-NHS-080-1(377)4--03-78
ROUTE: I 80
LOCATION: Westbound I-80 to Southbound I-29, Ramp G over I-80, I-29, Ramps, CBEC RR, IAIS RR and BNSF RR.
WORK TYPE: Bridge New-Steel Girder

The following information is furnished to aid in the determination of a proper premium for the Railroad Highway Insurance Protection required of the Contractor.

RAILROAD: BNSF RAILWAY COMPANY
RAILROAD CONTACT: Calvin Nutt
TITLE: Manager of Public Projects
ADDRESS: 80 44th Ave NE
Minneapolis MN 55421
TELEPHONE NUMBER: 763-782-3495
EMAIL: calvin.nutt@bnsf.com

INSURANCE SUBMITTAL: Engineering Services, Insurance Approval
BNSF Railway Company
2500 Lou Menk Drive
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Ft. Worth, Texas 76131
TELEPHONE NUMBER: 817-352-3485

Total number of trains/day: 2
Freight or Coal: 2 Speed: 10
Passenger: -- Speed: --
Number of Tracks: Mainline: 1 Branchline:

Number of railroad crossings within or near project limits with potential railroad traffic interference: 1 FRA Number: 378238C

This information is the most current FRA crossing inventory data supplied to the Iowa DOT by the Railroad Company. Actual conditions may vary at the time of construction. It shall be the contractor's responsibility to contact the railroad for additional information needed to fully provide required Railroad Highway Insurance Protection.

GENERAL REQUIREMENTS

1. The cost of railroad flagging and temporary grade crossings will be the responsibility of the Contractor, UNLESS other arrangements are specifically outlined elsewhere in the contract documents

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. All I-29 / I-80 lanes, ramps and local roadways will be maintained at all times except as provided for in the following. Large venue entertainment events at the CenturyLink Center, TD Ameritrade Ballpark, MAC Center, casinos, Tom Hanafan Park, Westfair, retail outlets, and other locations will generate traffic volumes exceeding lane closure thresholds. Two week notification to the contractor will be provided so lane closures can be coordinated with the engineer. For areas that overlap, the more restrictive time period shall govern.

2. A. The contractor will be allowed to close one lane of traffic except for the following:

I-80 westbound (east of the I-29 northbound merge in the east system interchange) as follows (June, July, August, September, and October):
Monday through Thursday – No lane closures allowed 5:30 AM – 7:00 PM
Friday – No lane closures allowed 6:00 AM – 8:00 PM
Saturday – No lane closures allowed 8:00 AM – 7:00 PM
Sunday – No lane closures allowed 9:30 AM – 7:00 PM

I-80 westbound (east of the I-29 northbound merge in the east system interchange) as follows (November through May excluding Thanksgiving Week, Christmas Week and Memorial Day Week):
Monday through Thursday – No lane closures allowed 5:30 AM – 9:30 AM and 2:00 PM – 7:00 PM
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Saturday – No lane closures allowed 8:00 AM – 7:00 PM
Sunday – No lane closures allowed 9:30 AM – 7:00 PM

I-80 eastbound (east of the I-29 southbound diverge in the east system interchange) as follows:
Monday through Friday – No lane closures allowed 7:00 AM – 8:00 PM
Saturday – No lane closures allowed 9:00 AM – 7:00 PM
Sunday – No lane closures allowed 10:00 AM – 7:00 PM

I-29 northbound (south of the I-80 westbound merge in the east system interchange) as follows:
Monday through Thursday – No lane closures allowed 6:00 AM – 9:00 AM and 3:00 PM – 7:00 PM
Friday – No lane closures allowed 6:00 AM – 9:00 AM and 2:00 PM – 7:00 PM
Saturday and Sunday – No time restrictions

I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
Monday through Thursday – No lane closures allowed from 2:00 PM – 7:00 PM
Friday – No lane closures allowed from 11:00 AM – 7:00 PM
Saturday and Sunday – No time restrictions

Combined I-29 northbound / I-80 westbound as follows:
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Saturday – No lane closures allowed 6:30 AM – 11:30 PM
Sunday – No lane closures allowed 8:00 AM – 10:30 PM

Combined I-29 southbound / I-80 eastbound as follows:
Monday through Friday - No lane closures allowed 7:00 AM - 7:30 PM
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B. The Contractor will be allowed to close two lanes of traffic for Combined I-29 southbound / I-80 eastbound except as follows:

Monday through Friday - No lane closures allowed 5:30 AM - 11:00 PM
Saturday - No lane closures allowed 7:00 AM - 11:30 PM
Sunday - No lane closures allowed 7:00 AM - 9:30 PM

C. Traffic will be maintained on 29th Avenue at all times.

D. Nighttime road closures of an interstate segment will be permitted to set bridge beams and shall be in accordance with the layouts outlined in the plans. Short duration closures will be allowed daily from 12:00 Midnight to 4:00 AM except on Saturdays and Sundays. The Contractor shall notify the Engineer two weeks advance of the closure time for approval.

E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short duration closures will be allowed daily from 10:00 PM – 6:00 AM.
The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.

F. Ramp closures shall be in accordance with the layouts outlined in the plans or allowed daily from 10:00 PM - 6:00 AM.
The Contractor shall notify the Engineer two weeks in advance of the closure time for approval.

G. Shoulder Closures will be allowed during non-peak hours. Peak Hours are 6 AM to 9 AM and 3 PM to 6 PM, Monday thru Saturday. If the lane closure time is less restrictive than the shoulder closure time, then the shoulder closure will be allowed during the less restrictive lane closure time.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

3. The Contractor shall submit any traffic control plan modifications to the Engineer for review and approval 2 weeks prior to any changes being made.

4. All shy distance to TBR shall be 3' minimum from the travel lane unless otherwise noted in the plans.

5. The Contractor shall notify the Engineer at least 5 calendar days in advance of all lane closures, lane shifts, traffic pattern changes, and transition between traffic control stages.

6. The Contractor shall provide notification to the Statewide Traffic Operations Center (515-237-3300) immediately prior to deployment and upon removal of lane closures. If a planned lane closure does not occur at the scheduled time immediately contact the Statewide Traffic Operations Center.

111-01
04-17-12

COORDINATED OPERATIONS

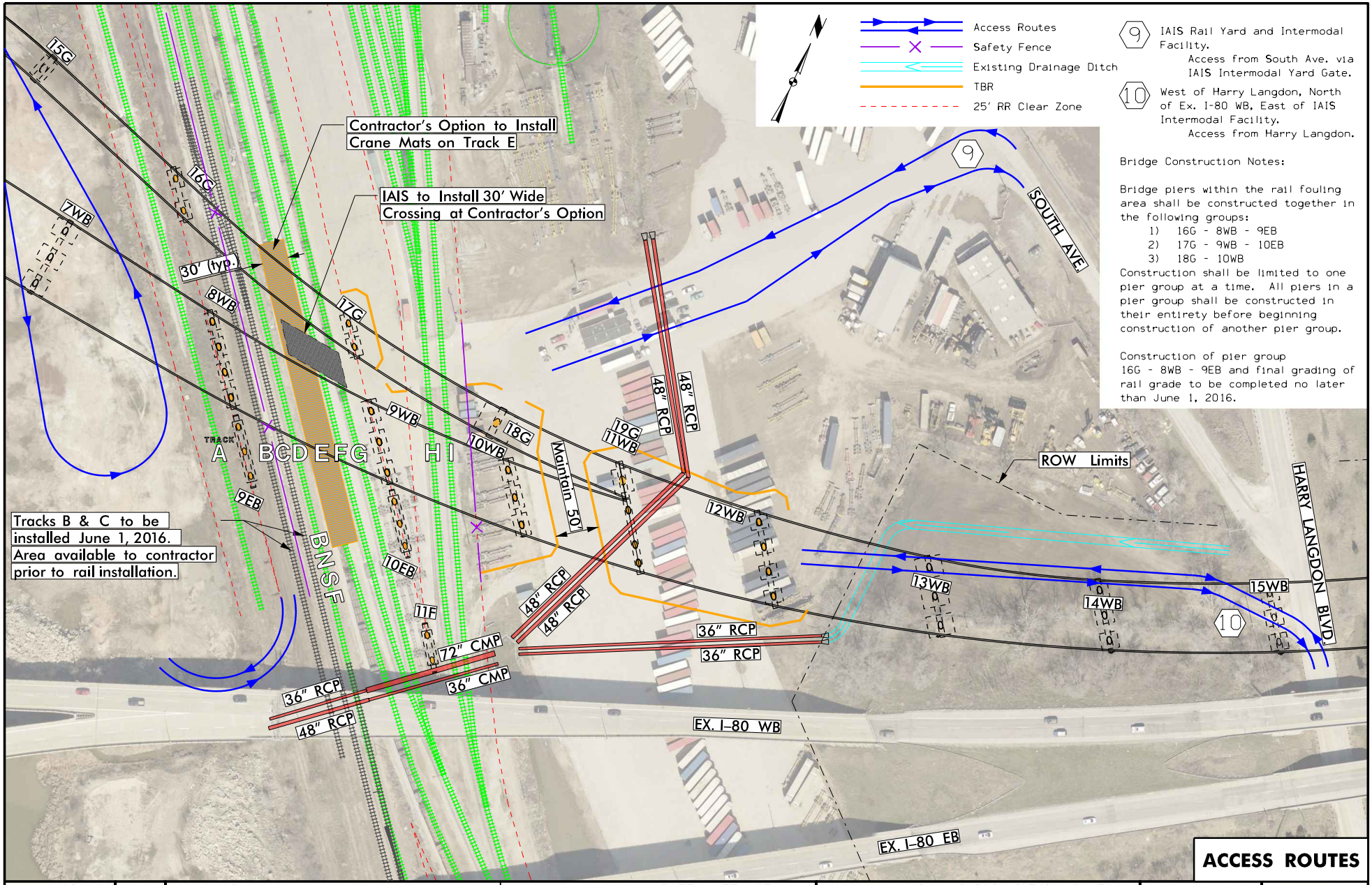
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
IM-NHS-080-1(373)4--03-78	Bridge Replacement
IM-NHS-080-1(377)4--03-78	Bridge Replacement
IM-NHS-080-1(371)3--03-78	Bridge Replacement
IM-NHS-080-1(384)3--03-78	Bridge Replacement
IM-NHS-080-1(374)4--03-78	Grade and Pave
IM-NHS-080-1(375)4--03-78	Lighting
IM-NHS-080-1(376)4--03-78	Traffic Signs
IM-NHS-080-1(420)4--03-78	Noise Wall
IMN-080-1(366)4--0E-78	Railroad Grading
IM-029-3(102)48--03-78	Grade and Pave
IM-029-3(103)48--03-78	Traffic Signs
IM-029-3(104)48--03-78	Traffic Signals
IM-029-3(110)48--03-78	Lighting
IM-NHS-029-3(122)48--03-78	Culvert Replacement
IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacement

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
NONE												



FILE NO. 30169	ENGLISH	DESIGN TEAM Strum \ Nading	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(372)4--03-78	SHEET NUMBER J.4	REVISED 10/2/2015

9:31:27 AM 10/5/2015 jcarter pw:\\PWAPPOMA001:NorthCentral_Omaha\Documents\001210\000000000216837\13.00_CAD\Roadway\Drawings\Base\C-2_HaulRoutes.dsn

Includes Addenda: a01

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. All I-29 / I-80 lanes, ramps and local roadways will be maintained at all times except as provided for in the following. Large venue entertainment events at the CenturyLink Center, TD Ameritrade Ballpark, MAC Center, casinos, Tom Hanafan Park, Westfair, retail outlets, and other locations will generate traffic volumes exceeding lane closure thresholds. Two week notification to the contractor will be provided so lane closures can be coordinated with the engineer. For areas that overlap, the more restrictive time period shall govern.

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   C. Traffic will be maintained on 29th Avenue at all times.

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   E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short Short duration closures will be allowed daily from 10:00 PM – 6:00 AM. The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.

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108-23A
08-01-08

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111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

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IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacemen

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
NONE												

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	**2101-0850001**	**CLEARING AND GRUBBING**
		Refer to Sheet U.4.
-	-	-
2	**2102-0425070**	**SPECIAL BACKFILL**
		Refer to Tab. 100-24 on sheet C.6 and Tab. 112-9 on sheet C.7.
		Refer to typicals I-29NB PAVING, I-80WB PAVING, E029A PAVING, and E029E PAVING on B Sheets.
-	-	-
3	**2102-2710070**	**EXCAVATION, CLASS 10, ROADWAY AND BORROW**
		Refer to "T" sheets.
		Overhaul will not be measured or paid for, but shall be considered incidental to
		roadway excavation on this project.
		For grading area:
		Includes 39 cu. yds. from Template Cut and 104,776 cy. yds. from Borrow.
		For subgrade adjustment areas:
		Includes 5,374 cy. yds. of material to be wasted.
		The quantity is for I-29, I-80, and Ramp E subgrade adjustment assuming 26" of settlement.
		Includes 2,355 cy. yds. of material to be wasted.
		The quantity is for Ramp A subgrade adjustment area assuming 14" of settlement.
-	-	-
4	**2102-2712015**	**EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS**
		Refer to Tab. 103-7 on Sheet CS.1.
		Dispose of excess material according to Article 1106.07 of the current specifications.
-	-	-
5	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD
		Refer to Tab. 103-4 on sheet C.9.
-	-	-
6	2107-0875100	COMPACTION WITH MOISTURE CONTROL
		Refer to Tab. 103-6 on Sheet CS.1.
		Cubic yards shown on the contract documents as determined by the template fill volume.
		Shrinkage will not be included in the moisture control quantity.
-	-	-
7	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN
		Refer to Sheets Q.12-Q.19 and Q.26-Q.28.
		Refer to Tab. 104-5C on Sheet CS.1.
-	-	-
8	2111-8174100	GRANULAR SUBBASE
		Refer to Tab. 100-24 on sheet C.6 and Tab. 112-9 on sheet C.7.
		Refer to typicals I-29NB PAVING, I-80WB PAVING, E029A PAVING, and E029E PAVING on B Sheets.
-	-	-
9	2112-0000100	WICK DRAIN
		Refer to Q Sheets, Tab. 104-5C and Tab. 103-8 on Sheet CS.1.
-	-	-
10	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID
		Refer to typicals I-29NB PAVING, I-80WB PAVING, E029A PAVING, and E029E PAVING on B Sheets.
-	-	-
11	2122-5190115	PAVED SHOULDER, P.C. CONCRETE, 11.5 IN.
12	**2123-7450000**	**SHOULDER CONSTRUCTION, EARTH**
		Refer to Tab. 112-9 on sheet C.7.
		Refer to typicals I-29NB PAVING, I-80WB PAVING, E029A PAVING, E029E PAVING on B Sheets.
	2123-7450000	SHOULDER CONSTRUCTION, EARTH
		Requires 7083.8 cu. yds. of Topsoil for Earth Shoulder Fill.
		No payment for overhaul allowed for this material.
		Material is available from Borrow and excess top soil(refer to tab 103-4).
-	-	-
13	2301-1004115	STANDARD OR SLIP-FORM PORTLAND CEMENT CONCRETE PAVEMENT, QM-C, CLASS 3I DURABILITY, 11.5 IN.
		Refer to Tab. 100-24 on sheet C.6 for details.
-	-	-
14	2402-0425040	FLOODED BACKFILL
15	**2402-2720100**	**EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT**
		Refer to Tab. 104-3 on Sheet CD.1.
	2402-0425040	**FLOODED BACKFILL**
		Includes 193 cu.yds. for backfill over culvert.
-	-	-
16	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
		1 apron -refer to Tab. 104-5B on Sheet M.1.
		6 aprons -refer to Tab. 104-3 on Sheet CD.1.
-	-	-
17	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
		Refer to Tab. 104-3 on Sheet CD.1.
-	-	-
18	**2416-0100036**	**APRONS, CONCRETE, 36 IN. DIA.**
		Refer to Tab. 104-3 on Sheet CD.1 and Tab 104-5B on sheet M.1 for details.
-	-	-

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
19	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
20	**2416-1180030**	**CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.**
21	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.
		Refer to Tab. 104-3 on Sheet CD.1.
-	**-**	**-**
22	**2435-0254900**	**BARRIER INTAKE, SW-549**
23	**2435-0254902**	**BARRIER INTAKE, SW-549, WELL ONLY**
		Refer to M Sheets for locations and details. Intake Tops shall be Cast-In-Place
-	-	-
24	**2502-8212034**	**SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.**
		Refer to tab 104-9 on Sheet CS.2
-	-	-
25	**2502-8212204**	**SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA.**
		Refer to tab 104-5C on Sheet CS.1
-	-	-
26	**2502-8221304**	**SUBDRAIN OUTLET, DR-304**
		Refer to tab 104-9 on Sheet CS.2
-	-	-
27	**2502-8221305**	**SUBDRAIN OUTLET, DR-305**
		Refer to tab 104-5C on Sheet CS.1
-	-	-
28	**2503-0110024**	**STORM SEWER GRAVITY MAIN, TRENCHED, 24 IN.**
29	2503-0110030	STORM SEWER GRAVITY MAIN, TRENCHED, 30 IN.
30	2503-0110036	STORM SEWER GRAVITY MAIN, TRENCHED, 36 IN.
		Refer to M Sheets for locations and details.
-	**-**	**-**
31	**2505-4008300**	**STEEL BEAM GUARDRAIL**
32	**2505-4008400**	**STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION**
33	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
34	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL
		Refer to Tab. 108-8C on sheet C.9.
-	**-**	**-**
35	**2506-4984000**	**FLOWABLE MORTAR**
		Refer to Tab. 104-3 on Sheet CD.1.
		Includes 11 cu.yds. for backfill over culvert.
-	**-**	**-**
36	2518-6910000	SAFETY CLOSURE
		Refer to Tab. 108-13A on sheet C.8.
-	-	-
37	**2519-4200120**	**REMOVAL OF FENCE, CHAIN LINK**
		Refer to Tab. 100-7 on sheet C.7 for details.
-	-	-
38	2526-8285000	CONSTRUCTION SURVEY
		Information included in the plans for previously graded areas are based on estimated settlement.
		Item includes survey to determine actual elevations of these areas.
-	-	-
39	**2528-8400048**	**TEMPORARY BARRIER RAIL, CONCRETE**
		Refer to Tab. 108-33 on sheet C.8 for details.
-	-	-
40	2528-8445110	TRAFFIC CONTROL
		- -
-	-	-
41	2533-4980005	MOBILIZATION
		- -
-	-	-
42	2551-0000110	TEMP CRASH CUSHION
		Refer to Tab. 108-30 on sheet C.8 for details.
-	-	-
43	2590-0000020	PROJECT MANAGEMENT
		- -
-	-	-
44	2599-9999010	('LUMP SUM' ITEM) PROGRESS SCHEDULING
		Refer to "Special Provisions for Progress Scheduling" for details.
-	-	-
45	2601-2634100	MULCHING
		Mulching per Article 2601.03, E, 2. Anchor mulch into the soil using mulch anchoring equipment with a
		minimum of two passes.
		Included for areas requiring reshaping and seedbed preparation. Mulch shall be Certified Noxious Weed Seed
		Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement
		Associations.
		Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
-	-	-
46	2601-2634105	MULCHING, BONDED FIBER MATRIX
		A Bonded Fibre Matrix shall be applied as the mulch for all areas designated as "Stabilizing Crop-Seeding and
		Fertilizing (Urban)".

108-23A
08-01-08

TRAFFIC CONTROL PLAN

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   - Saturday – No lane closures allowed 8:00 AM – 7:00 PM
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   - Monday through Thursday – No lane closures allowed 5:30 AM – 9:30 AM and 2:00 PM – 7:00 PM
   - Friday – No lane closures allowed 6:00 AM – 8:00 PM
   - Saturday – No lane closures allowed 8:00 AM – 7:00 PM
   - Sunday – No lane closures allowed 9:30 AM – 7:00 PM

   - Monday through Friday – No lane closures allowed 7:00 AM – 8:00 PM
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   I-29 northbound (south of the I-80 westbound merge in the east system interchange) as follows:
   - Monday through Thursday – No lane closures allowed 6:00 AM – 9:00 AM and 3:00 PM – 7:00 PM
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   I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
   - Monday through Thursday – No lane closures allowed from 2:00 PM – 7:00 PM
   - Friday – No lane closures allowed from 11:00 AM – 7:00 PM
   - Saturday and Sunday – No time restrictions

   Combined I-29 northbound / I-80 westbound as follows:
   - Monday through Thursday – No lane closures allowed 5:00 AM – 10:30 PM
   - Friday – No lane closures allowed 5:00 AM – 11:00 PM
   - Saturday – No lane closures allowed 6:30 AM – 11:30 PM
   - Sunday – No lane closures allowed 8:00 AM – 10:30 PM

   Combined I-29 southbound / I-80 eastbound as follows:
   - Monday through Friday - No lane closures allowed 7:00 AM - 7:30 PM
   - Saturday - No lane closures allowed 9:00 AM - 6:30 PM
   - Sunday - No lane closures allowed 10:00 AM - 6:00 PM

   B. The Contractor will be allowed to close two lanes of traffic for Combined I-29 southbound / I-80 eastbound except as follows:

   - Monday through Friday - No lane closures allowed 5:30 AM - 11:00 PM
   - Saturday - No lane closures allowed 7:00 AM - 11:30 PM
   - Sunday - No lane closures allowed 7:00 AM - 9:30 PM

   C. Traffic will be maintained on 29th Avenue at all times.

   D. Nighttime road closures of an interstate segment will be permitted to set bridge beams and shall be in accordance with the layouts outlined in the plans. Short duration closures will be allowed daily from 12:00 Midnight to 4:00 AM except on Saturdays and Sundays. The Contractor shall notify the Engineer two weeks advance of the closure time for approval.

   E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short Short duration closures will be allowed daily from 10:00 PM – 6:00 AM. The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.

   F. Ramp closures shall be in accordance with the layouts outlined in the plans or allowed daily from 10:00 PM - 6:00 AM. The Contractor shall notify the Engineer two weeks in advance of the closure time for approval.

   G. Shoulder Closures will be allowed during non-peak hours. Peak Hours are 6 AM to 9 AM and 3 PM to 6 PM, Monday thru Saturday. If the lane closure time is less restrictive than the shoulder closure time, then the shoulder closure will be allowed during the less restrictive lane closure time.

3. The Contractor shall submit any traffic control plan modifications to the Engineer for review and approval 2 weeks prior to any changes being made.

4. All shy distance to TBR shall be 3' minimum from the travel lane unless otherwise noted in the plans. Interstate shy distances less than 3' shall not be used over the winter.

5. The Contractor shall notify the Engineer at least 5 calendar days in advance of all lane closures, lane shifts, traffic pattern changes, and transition between traffic control stages.

6. The Contractor shall provide notification to the Statewide Traffic Operations Center (515-237-3300) immediately prior to deployment and upon removal of lane closures. If a planned lane closure does not occur at the scheduled time immediately contact the Statewide Traffic Operations Center

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
IM-NHS-080-1(373)4--03-78	Bridge Replacement
IM-NHS-080-1(377)4--03-78	Bridge Replacement
IM-NHS-080-1(371)3--03-78	Bridge Replacement
IM-NHS-080-1(384)3--03-78	Bridge Replacement
IM-NHS-080-1(372)4--03-78	Bridge Replacement
IM-NHS-080-1(375)4--03-78	Lighting
IM-NHS-080-1(376)4--03-78	Traffic Signs
IM-NHS-080-1(420)4--03-78	Noise Wall
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IM-NHS-080-1(462)4--03-78	Grade and Pave
IMN-080-1(366)4--0E-78	Railroad Grading
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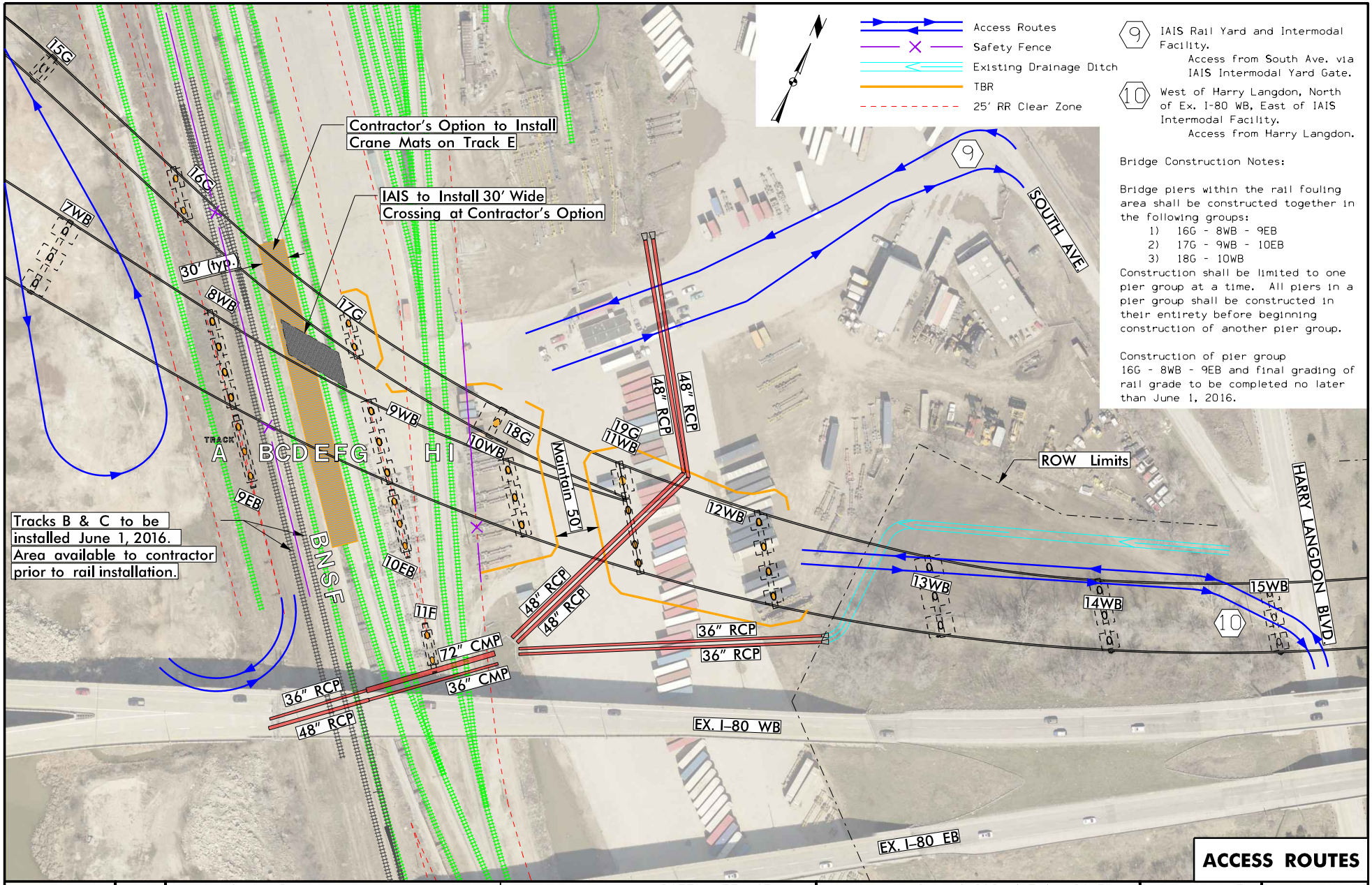
IM-029-3(110)48--03-78	Lighting
IM-NHS-029-3(122)48--03-78	Culvert Replacement
IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacement


Access Routes
Safety Fence
Existing Drainage Ditch
TBR
25' RR Clear Zone
9 IAIS Rail Yard and Intermodal Facility.
Access from South Ave. via IAIS Intermodal Yard Gate.
10 West of Harry Langdon, North of Ex. I-80 WB, East of IAIS Intermodal Facility.
Access from Harry Langdon.
Bridge Construction Notes:
Bridge piers within the rail fouling area shall be constructed together in the following groups:
1) 16G - 8WB - 9EB
2) 17G - 9WB - 10EB
3) 18G - 10WB
Construction shall be limited to one pier group at a time. All piers in a pier group shall be constructed in their entirety before beginning construction of another pier group.
Construction of pier group 16G - 8WB - 9EB and final grading of rail grade to be completed no later than June 1, 2016.
Contractor's Option to Install Crane Mats on Track E
IAIS to Install 30' Wide Crossing at Contractor's Option
Tracks B & C to be installed June 1, 2016. Area available to contractor prior to rail installation.
TRACK
A B C D E F G H I
BNSF
30' (typ.)
Maintain 50'
ROW Limits
SOUTH AVE.
HARRY LANGDON BLVD.
EX. I-80 WB
EX. I-80 EB
15G
16G
7WB
8WB
17G
9WB
18G
10WB
19G
11WB
12WB
13WB
14WB
15WB
9EB
10EB
11F
48" RCP
36" RCP
72" CMP
36" CMP
ACCESS ROUTES
FILE NO.
ENGLISH
DESIGN TEAM Strum\Brinkman\Janus
POTTAWATTAMIE COUNTY
PROJECT NUMBER IM-NHS-080-1(374)4--03-78
SHEET NUMBER J.5
REVISED 10/2/2015
9:33:46 AM 10/5/2015 jcarter pw:\\PWAPPOMA001:NorthCentral_Omaha\Documents\001210\000000000216837\13.00_CAD\Roadway\Drawings\Base\C-2_HaulRoutes.dsn
Includes Addenda: a01

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. All I-29 / I-80 lanes, ramps and local roadways will be maintained at all times except as provided for in the following. Large venue
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- Sunday – No lane closures allowed 9:30 AM – 7:00 PM

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- Friday – No lane closures allowed 6:00 AM – 9:00 AM and 2:00 PM – 7:00 PM
- Saturday and Sunday – No time restrictions

I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
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C. Traffic will be maintained on 29th Avenue at all times.
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111-01
04-17-12

COORDINATED OPERATIONS

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IM-NHS-080-1(374)4--03-78	Grade and Pave
IM-NHS-080-1(373)4--03-78	Bridge Replacement
IM-NHS-080-1(377)4--03-78	Bridge Replacement
IM-NHS-080-1(371)3--03-78	Bridge Replacement
IM-NHS-080-1(384)3--03-78	Bridge Replacement
IM-NHS-080-1(372)4--03-78	Bridge Replacement
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IM-NHS-080-1(376)4--03-78	Traffic Signs
IM-NHS-080-1(420)4--03-78	Noise Wall
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IM-NHS-080-1(462)4--03-78	Grade and Pave
IMN-080-1(366)4--0E-78	Railroad Grading
IM-029-3(102)48--03-78	Grade and Pave
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IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacement

108-23A
08-01-08

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- Saturday and Sunday – No time restrictions

I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
- Monday through Thursday – No lane closures allowed from 2:00 PM – 7:00 PM
- Friday – No lane closures allowed from 11:00 AM – 7:00 PM
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Combined I-29 northbound / I-80 westbound as follows:
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E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short duration closures will be allowed daily from 10:00 PM – 6:00 AM. The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.
F. Ramp closures shall be in accordance with the layouts outlined in the plans or allowed daily from 10:00 PM – 6:00 AM. The Contractor
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111-01
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108-23A
08-01-08

TRAFFIC CONTROL PLAN

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Sunday – No lane closures allowed 9:30 AM – 7:00 PM

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

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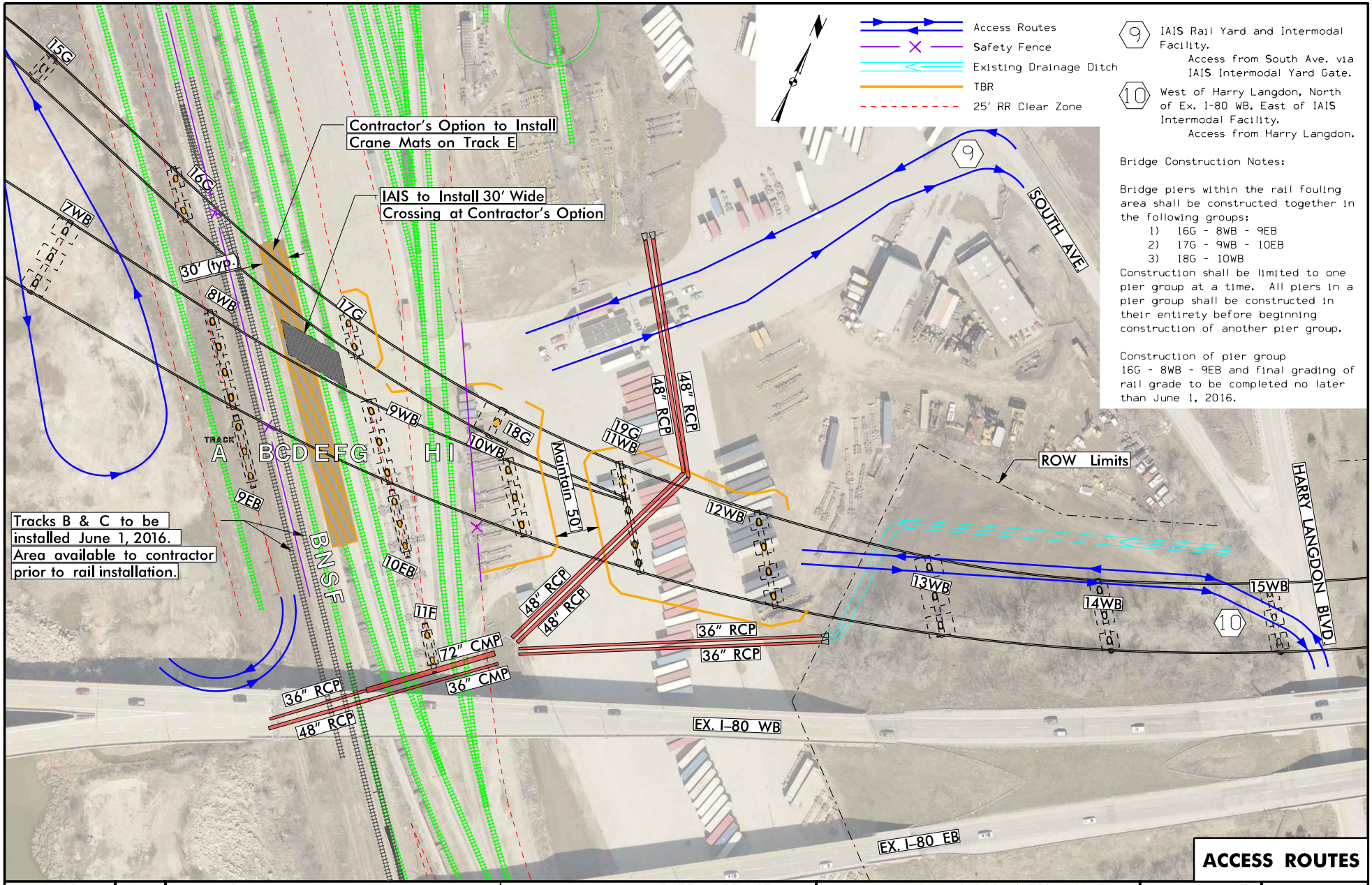
108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
NONE												



FILE NO. 30169	ENGLISH	DESIGN TEAM Strum \ Nading	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(377)4--03-78	SHEET NUMBER J.25	REVISED 10/2/2015

9:57:43 AM 10/5/2015 jcarter pw:\\PWAPPOMA001:NorthCentral_Omaha\Documents\001210\000000000216837\13.00_CAD\Roadway\Drawings\Base\C-2_HaulRoutes.dsn

Includes Addenda: a01

108-23A
08-01-08

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   - Saturday and Sunday – No time restrictions

   I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
   - Monday through Thursday – No lane closures allowed from 2:00 PM – 7:00 PM
   - Friday – No lane closures allowed from 11:00 AM – 7:00 PM
   - Saturday and Sunday – No time restrictions

   Combined I-29 northbound / I-80 westbound as follows:
   - Monday through Thursday – No lane closures allowed 5:00 AM – 10:30 PM
   - Friday – No lane closures allowed 5:00 AM – 11:00 PM
   - Saturday – No lane closures allowed 6:30 AM – 11:30 PM
   - Sunday – No lane closures allowed 8:00 AM – 10:30 PM

   Combined I-29 southbound / I-80 eastbound as follows:
   - Monday through Friday - No lane closures allowed 7:00 AM - 7:30 PM
   - Saturday - No lane closures allowed 9:00 AM - 6:30 PM
   - Sunday - No lane closures allowed 10:00 AM - 6:00 PM

   B. The Contractor will be allowed to close two lanes of traffic for Combined I-29 southbound / I-80 eastbound except as follows:

   - Monday through Friday - No lane closures allowed 5:30 AM - 11:00 PM
   - Saturday - No lane closures allowed 7:00 AM - 11:30 PM
   - Sunday - No lane closures allowed 7:00 AM - 9:30 PM

   C. Traffic will be maintained on 29th Avenue at all times.

   D. Nighttime road closures of an interstate segment will be permitted to set bridge beams and shall be in accordance with the layouts outlined in the plans. Short duration closures will be allowed daily from 12:00 Midnight to 4:00 AM except on Saturdays and Sundays. The Contractor shall notify the Engineer two weeks advance of the closure time for approval.

   E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short Short duration closures will be allowed daily from 10:00 PM – 6:00 AM.
   The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.

   F. Ramp closures shall be in accordance with the layouts outlined in the plans or allowed daily from 10:00 PM - 6:00 AM.
   The Contractor shall notify the Engineer two weeks in advance of the closure time for approval.

   G. Shoulder Closures will be allowed during non-peak hours. Peak Hours are 6 AM to 9 AM and 3 PM to 6 PM, Monday thru Saturday. If the lane closure time is less restrictive than the shoulder closure time, then the shoulder closure will be allowed during the less restrictive lane closure time.

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08-01-08

TRAFFIC CONTROL PLAN

3. The Contractor shall submit any traffic control plan modifications to the Engineer for review and approval 2 weeks prior to any changes being made.

4. All shy distance to TBR shall be 3' minimum from the travel lane unless otherwise noted in the plans.

5. The Contractor shall notify the Engineer at least 5 calendar days in advance of all lane closures, lane shifts, traffic pattern changes, and transition between traffic control stages.

6. The Contractor shall provide notification to the Statewide Traffic Operations Center (515-237-3300) immediately prior to deployment and upon removal of lane closures. If a planned lane closure does not occur at the scheduled time immediately contact the Statewide Traffic Operations Center

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
IM-NHS-080-1(372)4--03-78	Bridge Replacement
IM-NHS-080-1(377)4--03-78	Bridge Replacement
IM-NHS-080-1(371)3--03-78	Bridge Replacement
IM-NHS-080-1(384)3--03-78	Bridge Replacement
IM-NHS-080-1(374)4--03-78	Grade and Pave
IM-NHS-080-1(375)4--03-78	Lighting
IM-NHS-080-1(376)4--03-78	Traffic Signs
IM-NHS-080-1(373)4--03-78	Bridge Replacement
IMN-080-1(366)4--0E-78	Railroad Grading
IM-029-3(102)48--03-78	Grade and Pave
IM-029-3(103)48--03-78	Traffic Signs
IM-029-3(104)48--03-78	Traffic Signals
IM-029-3(110)48--03-78	Lighting
IM-NHS-029-3(122)48--03-78	Culvert Replacement
IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacement
IM-NHS-080-1(385)2--03-78	Grade and Pave

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Restrictions Expected									

100-1D
10-18-05

PROJECT DESCRIPTION

This project includes grading and paving portion of I-80WB.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	6.3	
2	2102-0425070	SPECIAL BACKFILL	TON	23,694.8	
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	116,282.0	
4	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	50.0	
5	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	22,450.0	
6	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	29,780.0	
7	2111-8174100	GRANULAR SUBBASE	SY	15,870.3	
8	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	13,975.2	
9	2115-0100000	MODIFIED SUBBASE	CY	244.0	
10	2122-5190115	PAVED SHOULDER, P.C. CONCRETE, 11.5 IN.	SY	3,896.7	
11	2122-5191005	REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER	SY	22.0	
12	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	128.04	
13	2301-1004115	STANDARD OR SLIP-FORM PORTLAND CEMENT CONCRETE PAVEMENT, QM-C, CLASS	SY	10,908.3	
		3I DURABILITY, 11.5 IN.			
14	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C,	SY	610.8	
		CLASS 3 DURABILITY, 10 IN.			
15	2304-0100000	DETOUR PAVEMENT 8 IN PCC OR 11 IN HMA	SY	4,830.8	
16	2304-0100000	DETOUR PAVEMENT 8.5 IN PCC OR 12 IN HMA	SY	5,124.5	
17	2304-0100000	DETOUR PAVEMENT 9 IN PCC 13 HMA	SY	6,597.5	
18	2304-0101000	TEMPORARY PAVEMENT	SY	1,099.1	
19	2402-0425031	GRANULAR BACKFILL	TON	976.7	
20	2402-0425040	FLOODED BACKFILL	CY	584.0	
21	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	4,282.0	
22	2414-6444100	STEEL PIPE PEDESTRIAN HAND RAILING	LF	740	
23	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EACH	1	
24	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	9	
25	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	1	
26	2416-0100060	APRONS, CONCRETE, 60 IN. DIA.	EACH	1	
27	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	461	
28	2416-1263024	CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 24 IN. DIA.	LF	160	
29	2417-5895018	BEVELED PIPE AND GUARD, 18 INCH	EACH	1	
30	2432-0000100	MECHANICALLY STABILIZED EARTH RETAINING WALL	SF	9427	
31	2435-0140310	MANHOLE, STORM SEWER, SW-403 MODIFIED	EACH	2	
32	2435-0251224	INTAKE, SW-512, 24 IN.	EACH	17	
33	2435-0251310	INTAKE, SW-513 MODIFIED	EACH	1	
34	2435-0254900	BARRIER INTAKE, SW-549	EACH	7	
35	2435-0254902	BARRIER INTAKE, SW-549, WELL ONLY	EACH	2	
36	2435-0256210	INTAKE, SW-562 MODIFIED	EACH	1	
37	2501-8400172	TEMPORARY SHORING	LS	1.00	
38	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	7,133.8	
39	2502-8221304	SUBDRAIN OUTLET, DR-304	EACH	32	
40	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP),	LF	32.0	
		2000D (CLASS III), 15 IN.			
41	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP),	LF	1,034.0	
		2000D (CLASS III), 18 IN.			
42	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP),	LF	895.0	
		2000D (CLASS III), 24 IN.			
43	2503-0114230	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP),	LF	134.0	
		2000D (CLASS III), 30 IN.			
44	2503-0114260	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP),	LF	302.0	
		2000D (CLASS III), 60 IN.			
45	2503-0144660	STORM SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHLESS, REINFORCED	LF	394	
		CONCRETE PIPE (RCP), 3750D (CLASS V), 60 IN.			
46	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	138	
47	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	525.0	
48	2505-4008300	STEEL BEAM GUARDRAIL	LF	362.5	
49	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION	EACH	3	
50	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	3	
51	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL	EACH	3	
52	2506-4984000	FLOWABLE MORTAR	CY	48.4	
53	2507-3250005	ENGINEERING FABRIC	SY	55.7	
54	2507-8029000	EROSION STONE	TON	30.6	
55	2510-6745850	REMOVAL OF PAVEMENT	SY	18,303.6	
56	2513-0001020	CONCRETE BARRIER, BA-102	LF	762.0	
57	2513-0001050	CONCRETE BARRIER, BA-105	EACH	1	
58	2513-0001070	CONCRETE BARRIER RAIL, BA-107	EACH	1	
59	2516-8725000	P.C. CONCRETE RETAINING WALL	CY	0.6	
60	2518-6910000	SAFETY CLOSURE	EACH	2	
61	2519-1001000	FENCE, CHAIN LINK, VINYL COATED	LF	2,777.0	
62	2519-4200120	REMOVAL OF FENCE, CHAIN LINK	LF	3,026.0	
63	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
64	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	531.31	

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
65	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	97.26	
66	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	149.29	
67	2528-3800000	MODULAR GLARE SCREEN SYSTEM	LF	20,212.5	
68	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	20,212.5	
69	2528-8400055	TEMPORARY TO PERMANENT BARRIER CONNECTION	EACH	1	
70	2528-8445110	TRAFFIC CONTROL	LS	1.00	
71	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	See Proposal	
72	2533-4980005	MOBILIZATION	LS	1.00	
73	2551-0000110	TEMP CRASH CUSHION	EACH	13	
74	2590-0000020	PROJECT MANAGEMENT	LS	1.00	
75	2599-9999003	('CUBIC YARDS' ITEM) CLASS B LIGHTWEIGHT FOAMED CONCRETE FILL	CY	8,313.0	
76	2599-9999003	('CUBIC YARDS' ITEM) GRANULAR BACKFILL, WORKING PAD STONE	CY	1,200.0	
77	2599-9999003	('CUBIC YARDS' ITEM) MACADAM STONE	CY	519.0	
78	2599-9999009	('LINEAR FEET' ITEM) RIGID INCLUSIONS	LF	20,000.0	
79	2599-9999010	('LUMP SUM' ITEM) INSTRUMENTATION	LS	1.00	
80	2599-9999010	('LUMP SUM' ITEM) LOAD TEST	LS	1.00	
81	2599-9999010	('LUMP SUM' ITEM) PROGRESS SCHEDULING	LS	1.00	
82	2599-9999020	('TONS' ITEM) CRUSHED LIMESTONE	TON	132.9	
83	2601-2634100	MULCHING	ACRE	10.9	
84	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1.0	
85	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	11.9	
86	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	112.0	
87	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	11.9	
88	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	22.40	
89	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
90	2602-0000020	SILT FENCE	LF	11,500.0	
91	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	1,474.0	
92	2602-0000050	SILT BASINS	EACH	6	
93	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	1,395.0	
94	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	800.0	
95	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	800.0	
96	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	1,600.0	
97	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
98	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	
		ALTERNATE AA OPTION 1			
99	2102-0425070	SPECIAL BACKFILL	TON	31.9	
100	2122-5190007	PAVED SHOULDER, P.C. CONCRETE, 7 IN.	SY	77.8	
		ALTERNATE AA OPTION 2			
101	2102-0425070	SPECIAL BACKFILL	TON	26.8	
102	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	77.8	

SEE V SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
		Refer to Sheet U.13.
-	-	-
2	2102-0425070	**SPECIAL BACKFILL**
		Refer to Tab. 100-24 on sheet C.7 and Tab. 112-9 on Sheet C.9 and typicals I-80WB PAVING and E029G PAVING
		on Sheets B.2 to B.3.
		Refer to Tab. 100-24MOD on Sheet C.8 and Typicals on Sheets B.5-B.11.
-	-	-
3	2102-2710070	**EXCAVATION, CLASS 10, ROADWAY AND BORROW**
		Refer to "T" sheets.
		Overhaul will not be measured or paid for, but shall be considered incidental to roadway excavation
		on this project.
		Includes 92,975 CY of template cut and 23,307 CY from optional borrow. Refer to Sheet R.1-R.4 for borrow
		details.
		79,035 CY of template cut to be wasted per Article 1106.07 of the current specifications.
		Includes 3 settlement plates. Refer to Tab 103-5 for locations.
		Refer to "Special Provision for Alternate Borrows (Loess Hills)" for the Contractor's responsibilities
		for locating alternate borrow areas in the Loess Hills Region of Western Iowa.
-	-	-
4	2102-2712015	**EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS**
		Refer to Tab. 103-7 on Sheet CS.1. Dispose of excess material according to Article 1106.07 of the current
		specifications.
-	-	-
5	2105-8425015	**TOPSOIL, STRIP, SALVAGE AND SPREAD**
		Refer to Tab. 103-4 on Sheet C.11.
-	-	-
6	2107-0875100	**COMPACTION WITH MOISTURE CONTROL**
		Refer to Tab. 103-6 on Sheet CS.1. Shrinkage is not included in the moisture control quantity.
-	-	-
7	2111-8174100	**GRANULAR SUBBASE**
		Refer to Tab. 100-24 on sheet C.7 and Tab. 112-9 on Sheet C.9 and typicals I-80WB PAVING and E029G PAVING
		on Sheets B.2 to B.3.
-	-	-
8	2113-0001100	**SUBGRADE STABILIZATION MATERIAL, POLYMER GRID**
		Refer to typicals I-80WB PAVING and E029G PAVING on Sheets B.2 to B.3.
-	-	-
9	2115-0100000	**MODIFIED SUBBASE**
		Refer to Typical MDAVEC PAVING on Sheet B.4 and Tab 100-24 on Sheet C.7.
-	-	-
10	2122-5190115	**PAVED SHOULDER, P.C. CONCRETE, 11.5 IN.**
		Refer to Tab. 112-9 on Sheet C.9.
		Refer to typicals I-80WB PAVING and E029G PAVING on Sheets B.2-B.3.
-	-	-
11	2122-5191005	**REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER**
		Refer to Tab. 112-9 on Sheet C.9.
-	-	-
12	2123-7450000	**SHOULDER CONSTRUCTION, EARTH**
		Refer to Tab. 112-9 on Sheet C.9 and typicals on sheet B.1-B.4.
		Refer to Detour typicals on sheets B.5-B.11 for additional location and quantities.
-	-	-
13	2301-1004115	**STANDARD OR SLIP-FORM PORTLAND CEMENT CONCRETE PAVEMENT, QM-C, CLASS 3I DURABILITY, 11.5 IN.**
		Refer to Tab. 100-24 on Sheet C.7 and typicals I-80WB PAVING and E029G PAVING on Sheets B.2 to B.3.
-	-	-
14	2301-1033100	**STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.**
		Refer to Typical MDAVEC PAVING on Sheet B.4 and Tab 100-24 on Sheet C.7.
-	-	-
15	2304-0100000	**DETOUR PAVEMENT 8 IN PCC OR 11 IN HMA**
16	2304-0100000	**DETOUR PAVEMENT 8.5 IN PCC OR 12 IN HMA**
17	2304-0100000	**DETOUR PAVEMENT 9 IN PCC 13 HMA**
18	2304-0101000	**TEMPORARY PAVEMENT**
		Refer to Tab. 100-24MOD on Sheet C.8.
	2304-0100000	**DETOUR PAVEMENT 8 IN PCC OR 11 IN HMA**
		Refer to Typical DET_303300 on Sheet B.7 , and Typical DET_304000 on Sheet B.8,
		Typical DET_309000 on Sheet B.9.
	2304-0100000	**DETOUR PAVEMENT 8.5 IN PCC OR 12 IN HMA**
		Refer to Typical DET_300100 on Sheet B.5.
	2304-0100000	**DETOUR PAVEMENT 9 IN PCC 13 HMA**
		Refer to Typical DET_300400 on Sheet B.5, and Typical DET_300500 on Sheet B.6,
		and Refer to Typical DET_309100 on Sheet B.10.
	2304-0101000	**TEMPORARY PAVEMENT**

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Refer to Typical TEMP on Sheet B.11.
		Type A quality coarse aggregate for HMA must meet the requirements in Standard Specification 4127 with
		the exception of the A-freeze limit of 15%.
-	-	-
19	2402-0425031	**GRANULAR BACKFILL**
		Item is for backfill between Noise Wall and Barrier.
		Refer to typical I-80 PAVING on Sheet B.2 and retaining wall detail on Sheet U.1.
		Includes Engineering Fabric to be placed over all buried joints of the Noise Wall.
-	-	-
20	2402-0425040	**FLOODED BACKFILL**
21	2402-2720100	**EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT**
		Refer to Tab. 104-3 on Sheet CD.1.
	2402-2720100	**EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT**
		Includes 1020 CY for excavation of the soil and CLSM in front of the Soldier Pile Wall to install the
		timber lagging. This does not include the excavation quantity for the roadway earthwork.
-	-	-
22	2414-6444100	**STEEL PIPE PEDESTRIAN HAND RAILING**
		Refer to sheet U.15 and tab 100-7 on sheet C.16 for location and details.
-	-	-
23	2416-0100015	**APRONS, CONCRETE, 15 IN. DIA.**
		Refer to tab 104-5B on sheet M.1.
-	-	-
24	2416-0100024	**APRONS, CONCRETE, 24 IN. DIA.**
		Refer to Tab. 104-3 on Sheet CD.1.
		3 aprons -Refer to tab 104-5B on sheet M.1.
-	-	-
25	2416-0100030	**APRONS, CONCRETE, 30 IN. DIA.**
26	2416-0100060	**APRONS, CONCRETE, 60 IN. DIA.**
		Refer to M Sheets and Tab 104-5B on sheet M.1 for location and details.
-	-	-
27	2416-1180024	**CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.**
28	2416-1263024	**CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 24 IN. DIA.**
		Refer to Tab. 104-3 on Sheet CD.1.
	2416-1263024	**CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 24 IN. DIA.**
		The Contractor shall take special care to avoid trenchless operations during any rain event or
		take measures to protect the installation area to avoid any damaging effects to the existing
		pavement, subbase, and embankment.
-	-	-
29	2417-5895018	**BEVELED PIPE AND GUARD, 18 INCH**
		Refer to M sheets and Standard Road Plan DR-212 for location and details.
-	-	-
30	2432-0000100	**MECHANICALLY STABILIZED EARTH RETAINING WALL**
		Includes 6581 SF for RW 3050 and 2846 SF for RW3150
		Refer to Sheet V.1, V.2, V.11 and Q sheets for details.
-	-	-
31	2435-0140310	**MANHOLE, STORM SEWER, SW-403 MODIFIED**
		Refer to M Sheets and Tab. 104-5B on sheet M.1 for locations and details.
-	-	-
32	2435-0251224	INTAKE, SW-512, 24 IN.
		Refer to M Sheets for locations and details. Requires SW-604 - Type 4 casting.
-	-	-
33	2435-0251310	INTAKE, SW-513 MODIFIED
34	2435-0254900	**BARRIER INTAKE, SW-549**
35	2435-0254902	**BARRIER INTAKE, SW-549, WELL ONLY**
36	2435-0256210	**INTAKE, SW-562 MODIFIED**
		Refer to M Sheets and Tab. 104-5B on sheet M.1 for locations and details.
		Intake Tops for SW-549 shall be cast-in-place
-	-	-
37	2501-8400172	**TEMPORARY SHORING**
		Temporary shoring (sheet pile or other) shall be required as necessary to prevent the earth under the traffic
		lane from sloughing in during construction of Detour 300500 form STA 30503+25 to STA 30507+60.
		The Contractor shall submit a Temporary Shoring Plan. The Temporary Shoring Plan shall be designed and
		certified by a Professional Engineer licensed in the State of Iowa.
		The Contractor shall not proceed with installation of the Temporary Shoring without notice to proceed from
		the Engineer.
		The temporary Shoring submittal shall include:
		- Design calculations (including a global stability analysis)
		- Soil properties
		- Shoring material properties
		- Shoring plan layout (showing location of traffic)
		- Shoring details
		Temporary Shoring shall be paid as a lump sum including all cost for designing and furnishing, installing
		and removal. All material used for shoring shall remain the property of the Contractor.
		Shoring is to be removed after backfilling has been completed. In addition to the requirements noted above
		Article 1107.07 of the Standard Specifications still applies.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. All I-29 / I-80 lanes, ramps and local roadways will be maintained at all times except as provided for in the following. Large venue entertainment events at the CenturyLink Center, TD Ameritrade Ballpark, MAC Center, casinos, Tom Hanafan Park, Westfair, retail outlets, and other locations will generate traffic volumes exceeding lane closure thresholds. Two week notification to the contractor will be provided so lane closures can be coordinated with the engineer. For areas that overlap, the more restrictive time period shall govern.

2. A. The contractor will be allowed to close one lane of traffic except for the following:

I-80 westbound (east of the I-29 northbound merge in the east system interchange) as follows (June, July, August, September, and October):
- Monday through Thursday – No lane closures allowed 5:30 AM – 7:00 PM
- Friday – No lane closures allowed 6:00 AM – 8:00 PM
- Saturday – No lane closures allowed 8:00 AM – 7:00 PM
- Sunday – No lane closures allowed 9:30 AM – 7:00 PM

I-80 westbound (east of the I-29 northbound merge in the east system interchange) as follows (November through May excluding Thanksgiving Week, Christmas Week and Memorial Day Week):
- Monday through Thursday – No lane closures allowed 5:30 AM – 9:30 AM and 2:00 PM – 7:00 PM
- Friday – No lane closures allowed 6:00 AM – 8:00 PM
- Saturday – No lane closures allowed 8:00 AM – 7:00 PM
- Sunday – No lane closures allowed 9:30 AM – 7:00 PM

I-80 eastbound (east of the I-29 southbound diverge in the east system interchange) as follows:
- Monday through Friday – No lane closures allowed 7:00 AM – 8:00 PM
- Saturday – No lane closures allowed 9:00 AM – 7:00 PM
- Sunday – No lane closures allowed 10:00 AM – 7:00 PM

I-29 northbound (south of the I-80 westbound merge in the east system interchange) as follows:
- Monday through Thursday – No lane closures allowed 6:00 AM – 9:00 AM and 3:00 PM – 7:00 PM
- Friday – No lane closures allowed 6:00 AM – 9:00 AM and 2:00 PM – 7:00 PM
- Saturday and Sunday – No time restrictions

I-29 southbound (south of the I-80 eastbound diverge in the east system interchange) as follows:
- Monday through Thursday – No lane closures allowed from 2:00 PM – 7:00 PM
- Friday – No lane closures allowed from 11:00 AM – 7:00 PM
- Saturday and Sunday – No time restrictions

Combined I-29 northbound / I-80 westbound as follows:
- Monday through Thursday – No lane closures allowed 5:00 AM – 10:30 PM
- Friday – No lane closures allowed 5:00 AM – 11:00 PM
- Saturday – No lane closures allowed 6:30 AM – 11:30 PM
- Sunday – No lane closures allowed 8:00 AM – 10:30 PM

Combined I-29 southbound / I-80 eastbound as follows:
- Monday through Friday - No lane closures allowed 7:00 AM - 7:30 PM
- Saturday - No lane closures allowed 9:00 AM - 6:30 PM
- Sunday - No lane closures allowed 10:00 AM - 6:00 PM

B. The Contractor will be allowed to close two lanes of traffic for Combined I-29 southbound / I-80 eastbound except as follows:

- Monday through Friday - No lane closures allowed 5:30 AM - 11:00 PM
- Saturday - No lane closures allowed 7:00 AM - 11:30 PM
- Sunday - No lane closures allowed 7:00 AM - 9:30 PM

C. Traffic will be maintained on 29th Avenue at all times.

D. Nighttime road closures of an interstate segment will be permitted to set bridge beams and shall be in accordance with the layouts outlined in the plans. Short duration closures will be allowed daily from 12:00 Midnight to 4:00 AM except on Saturdays and Sundays. The Contractor shall notify the Engineer two weeks advance of the closure time for approval.

E. Nighttime road closures of Harry Langdon Boulevard will be permitted to set bridge beams. Short duration closures will be allowed daily from 10:00 PM - 6:00 AM. The Contractor shall submit the traffic control plan two weeks in advance of the closure time for approval.

F. Ramp closures shall be in accordance with the layouts outlined in the plans or allowed daily from 10:00 PM - 6:00 AM. The Contractor shall notify the Engineer two weeks in advance of the closure time for approval.

G. Shoulder Closures will be allowed during non-peak hours. Peak Hours are 6 AM to 9 AM and 3 PM to 6 PM, Monday thru Saturday. If the lane closure time is less restrictive than the shoulder closure time, then the shoulder closure will be allowed during the less restrictive lane closure time.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

3. The Contractor shall submit any traffic control plan modifications to the Engineer for review and approval 2 weeks prior to any changes being made.

4. All shy distance to TBR shall be 3' minimum from the travel lane unless otherwise noted in the plans. Interstate Shy distances less than 3' shall not be used over the winter.

5. The Contractor shall notify the Engineer at least 5 calendar days in advance of all lane closures, lane shifts, traffic pattern changes, and transition between traffic control stages.

6. The Contractor shall provide notification to the Statewide Traffic Operations Center (515-237-3300) immediately prior to deployment and upon removal of lane closures. If a planned lane closure does not occur at the scheduled time immediately contact the Statewide Traffic Operations Center

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
IM-NHS-080-1(373)4--03-78	Bridge Replacement
IM-NHS-080-1(377)4--03-78	Bridge Replacement
IM-NHS-080-1(371)3--03-78	Bridge Replacement
IM-NHS-080-1(384)3--03-78	Bridge Replacement
IM-NHS-080-1(372)4--03-78	Bridge Replacement
IM-NHS-080-1(375)4--03-78	Lighting
IM-NHS-080-1(376)4--03-78	Traffic Signs
IM-NHS-080-1(420)4--03-78	Noise Wall
IM-NHS-080-1(459)4--03-78	Grade and Pave
IM-NHS-080-1(374)4--03-78	Grade and Pave
IMN-080-1(366)4--0E-78	Railroad Grading
IM-029-3(102)48--03-78	Grade and Pave
IM-029-3(103)48--03-78	Traffic Signs
IM-029-3(104)48--03-78	Traffic Signals
IM-029-3(110)48--03-78	Lighting
IM-NHS-029-3(122)48--03-78	Culvert Replacement
IM-029-3(105)48--13-78	Bridge Replacement
NHS-029-3(106)48--11-78	Bridge Replacement

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			NO RESTRICTIONS EXPECTED									

FILE NO.	ENGLISH	DESIGN TEAM Strum\Brinkman\Janus	POTTAWATTAMIE COUNTY	PROJECT NUMBER IM-NHS-080-1(462)4--03-78	SHEET NUMBER J.1

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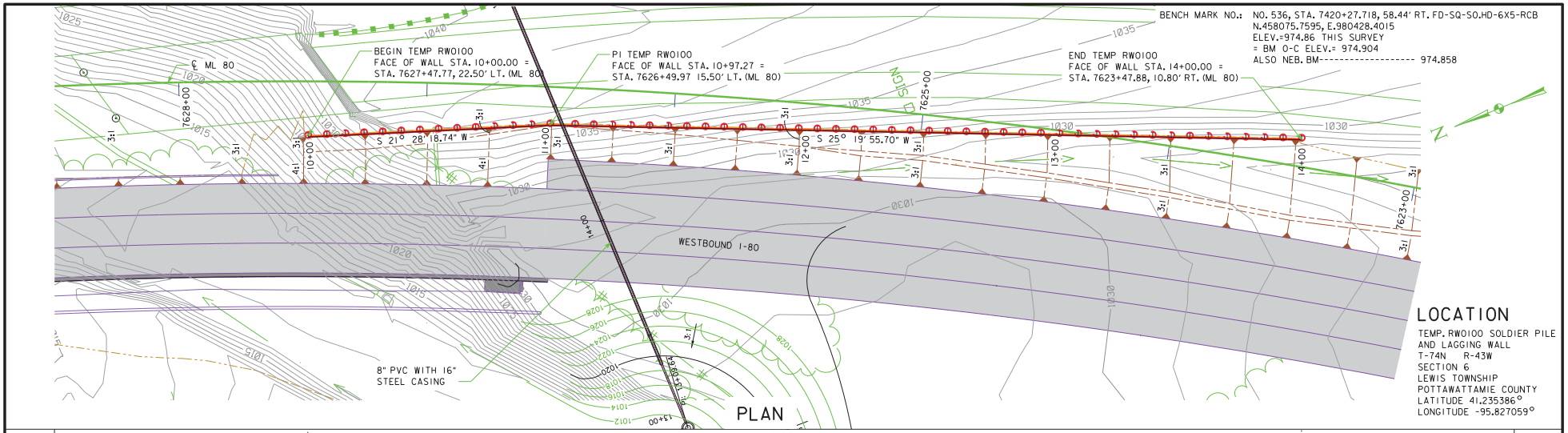

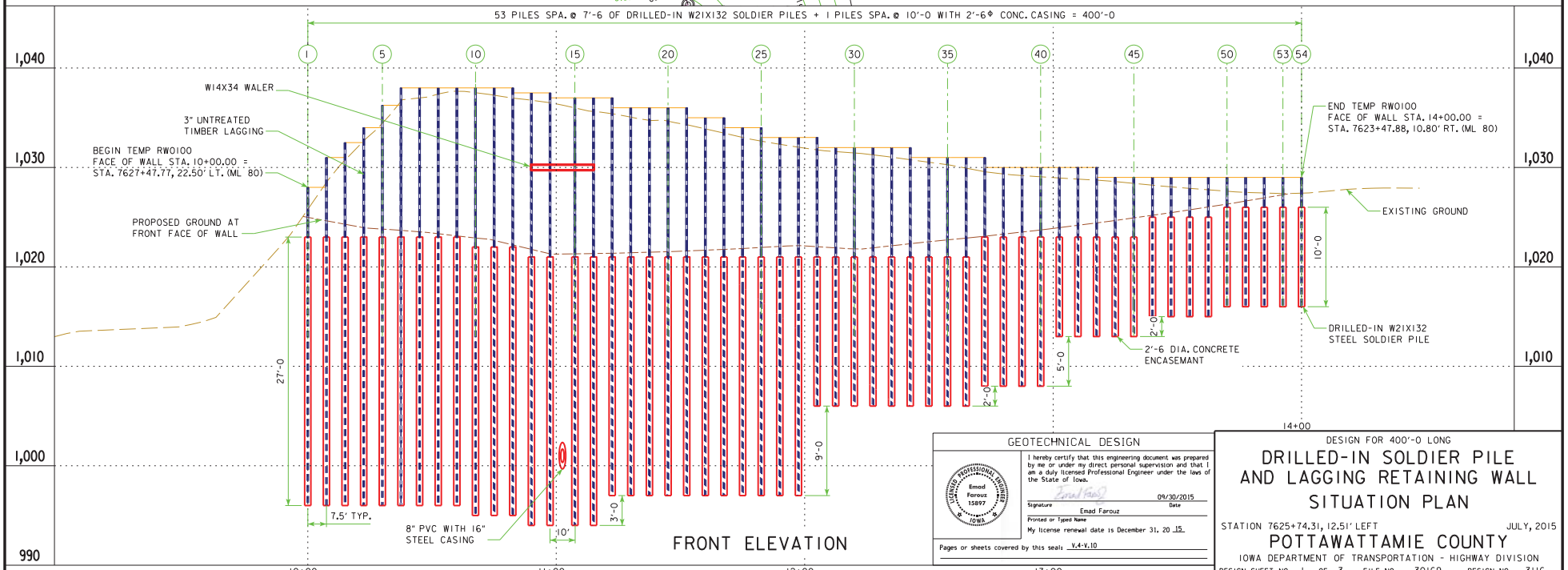

GEOTECHNICAL DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Emad Farouz — Date: 09/30/2015

Printed or Typed Name: Emad Farouz

My license renewal date is December 31, 2015

Pages or sheets covered by this seal: V.4-V.10

DESIGN FOR 400'-0 LONG

DRILLED-IN SOLDIER PILE AND LAGGING RETAINING WALL SITUATION PLAN

STATION 7625+74.31, 12.51' LEFT — JULY, 2015

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 — FILE NO. 30169 — DESIGN NO. 3116

DESIGN TEAM: CH2M HILL | POTTAWATTAMIE COUNTY | PROJECT NUMBER IM-NHS-080-1(462)4--03-78 | SHEET NUMBER V.4

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Includes Addenda: a01

SOLDIER PILE AND LAGGING WALL DATA TABLE

PILE NO.	I-80 ML STA.	OFFSET TO CENTER OF PILE	TOP OF SOLDIER PILE ELEV.	FINISHED GRADE ELEV. AT FRONT FACE OF WALL	TOP OF CONCRETE ENCASEMENT ELEV.	SOLDIER PILE TIP ELEV. (FT)
1	7624+47.77	22.39 LT.	1028.00	1024.98	1023.00	996.00
2	7627+40.21	22.00 LT.	1031.00	1024.63	1023.00	996.00
3	7627+32.66	21.59 LT.	1032.50	1024.29	1023.00	996.00
4	7627+25.10	21.15 LT.	1034.00	1023.94	1023.00	996.00
5	7627+17.55	20.69 LT.	1036.25	1023.80	1023.00	996.00
6	7627+10.00	20.20 LT.	1038.00	1023.67	1023.00	996.00
7	7627+02.46	19.69 LT.	1038.00	1023.53	1023.00	996.00
8	7626+94.91	19.16 LT.	1038.00	1023.33	1023.00	996.00
9	7626+87.37	18.61 LT.	1038.00	1023.12	1023.00	996.00
10	7626+79.84	18.03 LT.	1038.00	1022.90	1022.00	995.00
11	7626+72.31	17.43 LT.	1038.00	1022.66	1022.00	995.00
12	7626+64.78	16.80 LT.	1038.00	1022.21	1022.00	995.00
13	7626+57.26	16.15 LT.	1037.50	1021.76	1021.00	994.00
14	7626+49.74	15.49 LT.	1037.50	1021.31	1021.00	994.00
15	7626+39.68	15.23 LT.	1037.00	1021.31	1021.00	994.00
16	7626+32.13	15.01 LT.	1037.00	1021.34	1021.00	994.00
17	7626+24.59	14.76 LT.	1037.00	1021.37	1021.00	997.00
18	7626+17.05	14.49 LT.	1036.00	1021.42	1021.00	997.00
19	7626+09.51	14.20 LT.	1036.00	1021.48	1021.00	997.00
20	7626+01.97	13.88 LT.	1036.00	1021.53	1021.00	997.00
21	7625+94.44	13.54 LT.	1036.00	1021.60	1021.00	997.00
22	7625+86.90	13.18 LT.	1035.00	1021.68	1021.00	997.00
23	7625+79.37	12.79 LT.	1035.00	1021.76	1021.00	997.00
24	7625+71.84	12.38 LT.	1034.00	1021.85	1021.00	997.00
25	7625+64.32	11.94 LT.	1034.00	1021.96	1021.00	997.00
26	7625+56.80	11.48 LT.	1033.00	1022.06	1021.00	997.00
27	7625+49.28	11.00 LT.	1033.00	1022.14	1021.00	997.00
28	7625+41.76	10.50 LT.	1033.00	1022.03	1021.00	1006.00
29	7625+34.25	9.97 LT.	1032.00	1021.91	1021.00	1006.00
30	7625+26.74	9.42 LT.	1032.00	1021.81	1021.00	1006.00
31	7625+19.23	8.84 LT.	1032.00	1021.92	1021.00	1006.00
32	7625+11.73	8.24 LT.	1032.00	1022.13	1021.00	1006.00
33	7625+04.23	7.62 LT.	1032.00	1022.33	1021.00	1006.00
34	7624+96.73	6.98 LT.	1031.00	1022.53	1021.00	1006.00
35	7624+89.24	6.31 LT.	1031.00	1022.71	1021.00	1006.00
36	7624+81.76	5.61 LT.	1031.00	1022.90	1021.00	1006.00
37	7624+74.28	4.90 LT.	1031.00	1023.09	1023.00	1008.00
38	7624+66.80	4.16 LT.	1030.00	1023.29	1023.00	1008.00
39	7624+59.32	3.40 LT.	1030.00	1023.50	1023.00	1008.00
40	7624+51.85	2.61 LT.	1030.00	1023.72	1023.00	1008.00
41	7624+44.39	1.880 LT.	1030.00	1023.94	1023.00	1013.00
42	7624+36.93	0.97 LT.	1030.00	1024.18	1023.00	1013.00
43	7624+29.48	0.12 LT.	1030.00	1024.42	1023.00	1013.00
44	7624+22.03	0.76 RT.	1029.00	1024.67	1023.00	1013.00
45	7624+14.59	1.66 RT.	1029.00	1024.93	1023.00	1013.00

SOLDIER PILE AND LAGGING WALL DATA TABLE

PILE NO.	I-80 ML STA.	OFFSET TO CENTER OF PILE	TOP OF SOLDIER PILE ELEV.	FINISHED GRADE ELEV. AT FRONT FACE OF WALL	TOP OF CONCRETE ENCASEMENT ELEV.	SOLDIER PILE TIP ELEV. (FT)
46	7624+07.15	2.58 RT.	1029.00	1025.19	1025.00	1015.00
47	7623+99.72	3.53 RT.	1029.00	1025.46	1025.00	1015.00
48	7623+92.30	4.50 RT.	1029.00	1025.74	1025.00	1015.00
49	7623+84.88	5.49 RT.	1029.00	1026.03	1025.00	1015.00
50	7623+77.47	6.51 RT.	1029.00	1026.32	1026.00	1016.00
51	7623+70.06	7.55 RT.	1029.00	1026.62	1026.00	1016.00
52	7623+62.66	8.61 RT.	1029.00	1026.94	1026.00	1016.00
53	7623+55.27	9.70 RT.	1029.00	1027.25	1026.00	1016.00
54	7623+47.88	10.80 RT.	1029.00	1027.42	1026.00	1016.00

BENCH MARK NO.: NO. 536, STA. 7420+27.718, 58.44' RT. FD-SQ-SO.HD-6X5-RCB
N.458075.7595, E.980428.4015
ELEV.=974.86 THIS SURVEY
= BM O-C ELEV.= 974.904
ALSO NEB. BM---------- 974.858

ROADWAY QUANTITIES ARE SHOWN ELSEWHERE IN THESE PLANS

ESTIMATED QUANTITIES FOR TEMPORARY RW0100

	ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
	1	2402-2720000	EXCAVATION, CLASS 20	CY	320	
	2	2533-4980005	MOBILIZATION	LS	1	
*	3	2599-9999009	PILES, STEEL, W 21X132	LF	1590	
*	4	2599-9999009	DRILLED-IN PILE, 30 IN. DIAMETER	LF	1025	
*	5	2599-9999018	TIMBER LAGGING, 3 IN. THICK	SY	480	
*	6	2599-9999009	WALER, STEEL, W14X34	LF	25	

* SEE SPECIAL PROVISIONS

SPECIFICATIONS:

DESIGN: AASHTO LRFD 6th Ed, SERIES OF 2012, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT. SPECIAL PROVISIONS INCLUDE "DRILLED-IN SOLDIER PILES AND LAGGING WALL".

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6th ED. SERIES OF 2012, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL. CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO SECTION 6, ASTM A709 GRADE 50. TIMBER LAGGING MUST BE GRADED FOR EXTREME FIBER STRESSES OF AT LEAST 1,000 PSI.

GENERAL NOTES:

THIS DESIGN IS FOR THE CONSTRUCTION OF A TEMPORARY VARIABLE HEIGHT SOLDIER PILE AND LAGGING WALL ALONG THE WESTERN EMBANKMENT THAT APPROACHES THE WOODBURY AVENUE BRIDGE ON EXISTING I-80 WB.

THE CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

REMOVAL OF THIS TEMPORARY WALL SHOULD BE CONSIDERED IN THE BID PRICE OF A LATER CONTRACT THAT INCLUDES EXCAVATION OF THE RETAINED FILL AND CONSTRUCTION OF THE FUTURE I-80 EAST BOUND LANES.

DURING CONSTRUCTION OF THIS PROJECT THE RETAINING WALL CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA.

DESIGN PILE LOCATIONS ARE BASED ON THE PROPOSED LOCATION OF A RELOCATED PIPELINE RUNNING THROUGH WALL RW0100. LOCATION OF THE PROPOSED PIPELINE SHOULD BE VERIFIED IN THE FIELD AND PILE LOCATIONS MAY HAVE TO BE ADJUSTED AS NEEDED BY THE DESIGN ENGINEER.

ITEM NO.	ESTIMATE REFERENCE INFORMATION
1.	INCLUDES THE EXCAVATION OF THE SOIL AND CLSM IN FRONT OF THE SOLDIER PILE WALL TO INSTALL THE TIMBER LAGGING. THIS DOES NOT INCLUDE THE EXCAVATION QUANTITY FOR THE ROADWAY EARTHWORK.
3.	INCLUDES ALL COSTS OF FURNISHING THE W21X132 STEEL CORE.
4.	INCLUDES ALL COSTS OF DRILLED-IN PILE EXCAVATION FROM GROUND SURFACE TO PILE TIP THROUGH SOIL; FURNISHING AND PLACING OF CONCRETE AND CLSM; AND DISPOSAL OF EXCAVATED MATERIALS, WATER, AND ALL OTHER MATERIALS. ALSO INCLUDES THE COSTS FOR PLACING THE W21X132 CORE, INCLUDING CENTRALIZERS, INTO THE DRILLED-IN PILE EXCAVATION.
5.	INCLUDES ALL COSTS OF FURNISHING AND INSTALLING TIMBER LAGGING INCLUDING HARDWOOD SHIMMING, NAILS AND WOOD SPACER PLATES.
6.	INCLUDES ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING THE WALER, INCLUDING WELDING AND PLACEMENT OF SHIMS AS NEEDED.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN

I-80 WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

PROJECT WEBSITE:
http://www.e-Builder.net
ACCESS TO THE PROJECT WEBSITE FOR SUBCONTRACTORS, FABRICATIONS, AND SUPPLIERS SHALL BE GRANTED BY THE PRIME CONTRACTOR.

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS AND FALSEWORK DRAWINGS SHALL BE SUBMITTED THROUGH THE PROJECT WEBSITE AND WILLBE REVIEWED BY:
CH2M HILL
4200 UNIVERSITY AVE.
SUITE 309
WEST DES MOINES, IA 50266-5945

DESIGN FOR 400'-0 LONG

DRILLED-IN SOLDIER PILE AND LAGGING RETAINING WALL GENERAL NOTES AND DETAILS

STATION 7625+74.31, 12.51' LEFT — JULY, 2015

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30169 DESIGN NO. 3116

DESIGN TEAM: CH2M HILL | POTTAWATTAMIE COUNTY | PROJECT NUMBER IM-NHS-080-1(462)4--03-78 | SHEET NUMBER V.5

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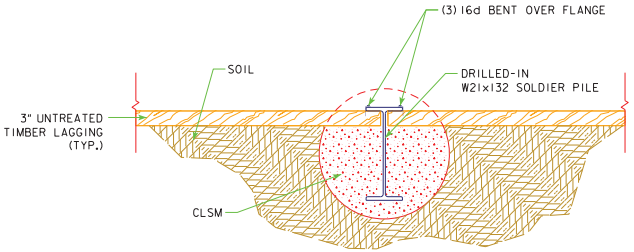
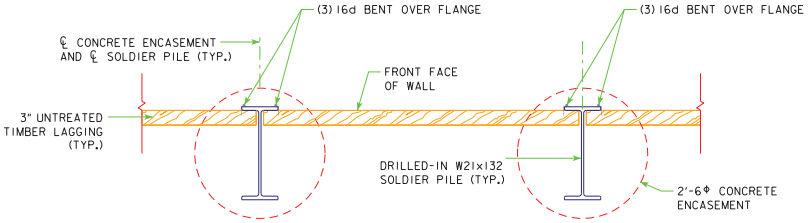


TIMBER LAGGING CONNECTION DETAIL

NOTE: THIS DETAIL OR AN APPROVED EQUIVALENT SHOULD BE USED.

N.T.S



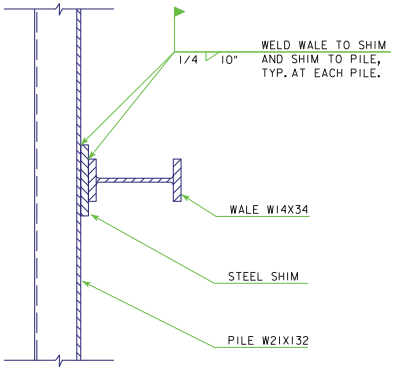
SECTION A-A

N.T.S

REQUIRED CONSTRUCTION SEQUENCE

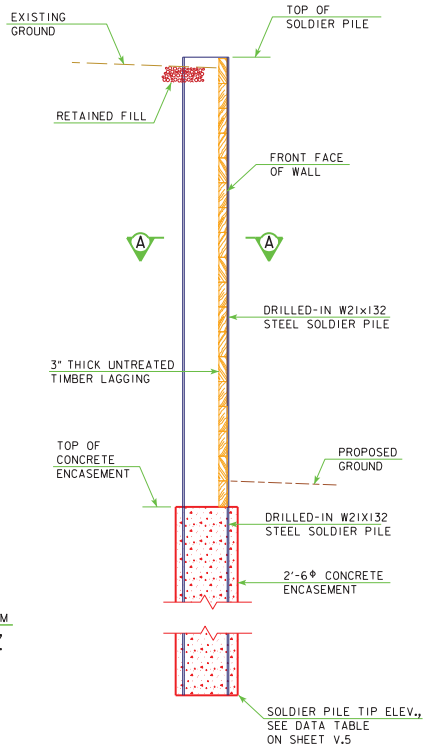
DUE TO THE CONSIDERABLE INTERACTION OF THE PROPOSED RETAINING WALL, EXISTING EMBANKMENT LEADING UP TO THE WOODUBURY AVENUE BRIDGE, AND FUTURE GRADING OF PROPOSED I-80, THE FOLLOWING CONSTRUCTION SEQUENCE IS REQUIRED. SEE SPECIAL PROVISIONS FOR FURTHER DETAILS. THE CONTRACTOR MUST ATTAIN APPROVAL FROM THE ENGINEER BEFORE DEVIATING FROM THIS SEQUENCE.

1. DRILL HOLE FOR SOLDIER PILE AND IMMEDIATELY PLACE SOLDIER PILE IN HOLE.
2. POUR STRUCTURAL CONCRETE FROM TIP ELEVATION TO SPECIFIED ELEVATION FOR THE TOP OF CONCRETE ENCASEMENT ON THE PLANS. THEN POUR CLSM FROM THE TOP OF ENCASEMENT ELEVATION TO THE EXISTING GROUND SURFACE ELEVATION. DO NOT ALLOW HOLE TO STAND UNSUPPORTED WITHOUT STRUCTURAL CONCRETE AND CLSM FOR MORE THAN 3 HOURS.
3. EXCAVATE ALONG THE FACE OF THE WALL AND PLACE TIMBER LAGGING, ALLOWING NO MORE THAN 5 FEET OF EXPOSED/UNSUPPORTED EXCAVATION PRIOR TO SUBSEQUENT EXCAVATION.
4. OVEREXCAVATION RESULTING IN ANY GAP BETWEEN THE TIMBER LAGGING AND RETAINED FILL MUST BE FILLED WITH GRANULAR BACKFILL SPECIFIED IN THE SPECIAL PROVISION.
5. A WALER IS PLACED ACROSS PILES 13, 14, 15, AND 16 AT ELEVATION 1,030 FEET. ADD STEEL SHIMS WHERE NEEDED.



DETAIL

N.T.S



CANTILEVER SPL WALL

N.T.S

DESIGN FOR 400'-0 LONG

DRILLED-IN SOLDIER PILE AND LAGGING RETAINING WALL DETAILS

STATION 7625+74.31, 12.51' LEFT — JULY, 2015

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30169 DESIGN NO. 3116

DESIGN TEAM: CH2M HILL | POTTAWATTAMIE COUNTY | PROJECT NUMBER IM-NHS-080-1(462)4--03-78 | SHEET NUMBER V.6

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