

Index of Sheets	
No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design 424
V.1 - V.4	Design 424
Road Sheets	Road Plan
C.1	Estimated Quantities - Road
J.1	Traffic Control Sheet



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

LINN COUNTY

Slope Protection

Emmons Street over I-380

0.9 MI. N OF IA 100

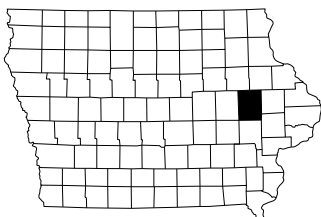
Refer to the Plan Sheets for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.



	TOTAL
	8
PROJECT IDENTIFICATION NUMBER	
23-57-380-050	
CONTRACT ID NUMBER	
57-3806-567	
PROJECT NUMBER	
MBIN-380-6(567)25--0M-57	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
5738005023	



Standard Road Plans

Standard Road Plans are listed on C.1

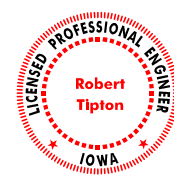
Design Data Rural

Emmons Street	
2019 AADT	3660 V.P.D.
TRUCKS	Unknown %
I-380 Southbound	
2022 AADT	18,850 V.P.D.
TRUCKS	18 %
I-380 Northbound	
2022 AADT	18,850 V.P.D.
TRUCKS	18 %

Index Of Seals

Sheet No.	Name	Type
A.1	Robert Tipton	Structural Design & Roadway Design

Structural 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.

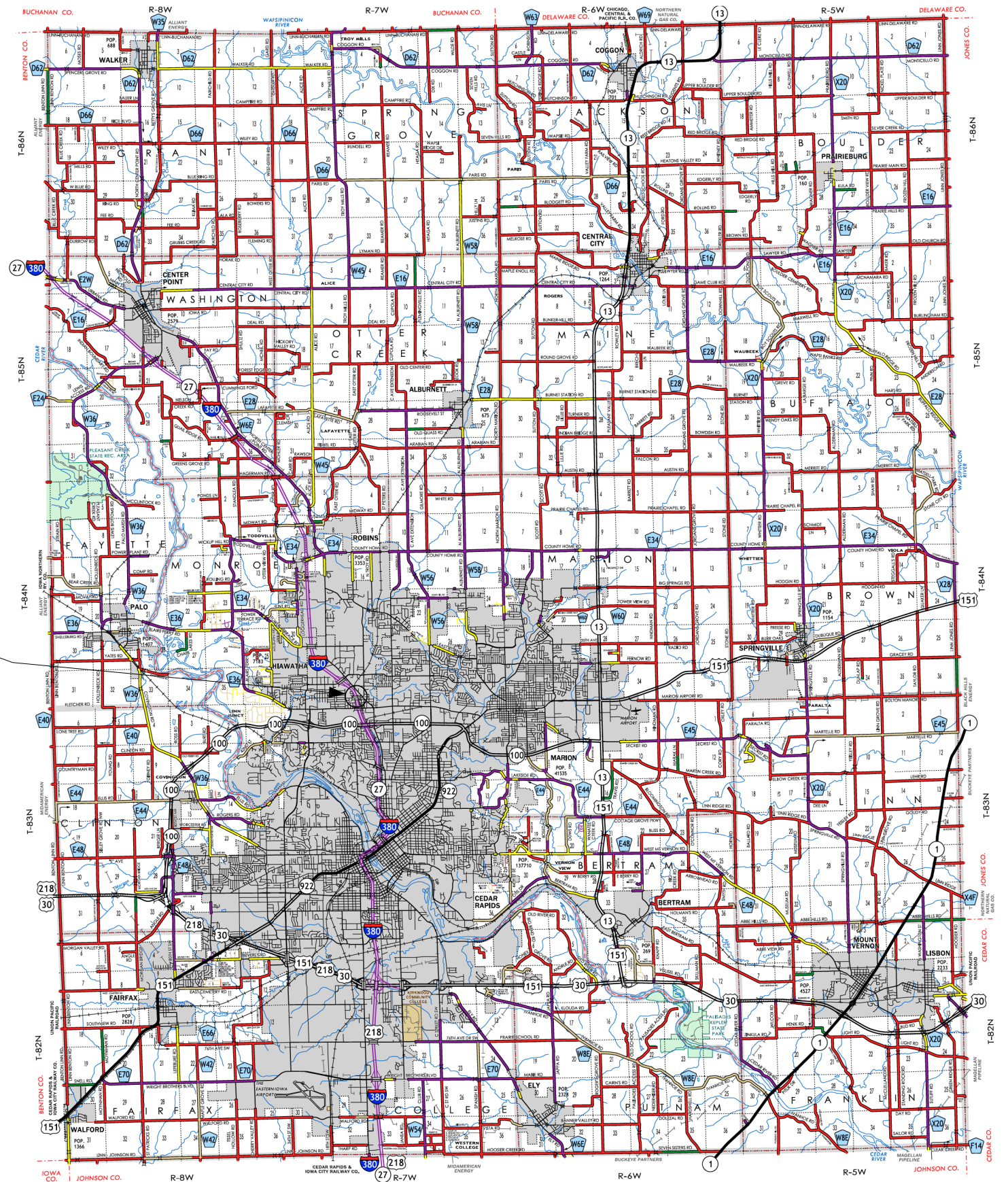
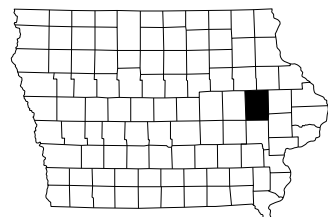
Signature Robert Tipton Date 06-23-2023

Printed or Typed Name _____

My license renewal date is December 31, 2024

Pages or sheets covered by this seal: V.1-V.4, C.1, J.1

Design No. 424
FHWA No. 604735



LEGEND

INTERSTATE HIGHWAY

PRIMARY HIGHWAY-DIVIDED

PRIMARY HIGHWAY

PORTLAND CEMENT CONCRETE ROAD

ASPHALT ROAD

BITUMINOUS ROAD

GRAVEL ROAD

EARTHEN ROAD

INTERSTATE HIGHWAY

UNITED STATES HIGHWAY

STATE HIGHWAY

COUNTY HIGHWAY

RAILROAD

PIPELINE

AIRPORT

HYDROLOGY

BRIDGE

STATE BOUNDARY

COUNTY BOUNDARY

CORPORATE BOUNDARY

TOWNSHIP LINE

SECTION LINE

ROAD NAMES

UNINCORPORATED PLACE

STATE PARKS

STATE INSTITUTIONS

FEDERAL LAND

Linn County Location Map

Not To Scale

General Notes:

This design is for repairs to the existing 241'-3 x 32'-0 Pretensioned Prestressed Concrete Beam Bridge on Emmons Street over I-380 in Linn County. Project location is approximately 0.9 miles north of Jct. 100.

Electronic copies of original design plans will be made available to the Contractor as part of the E-Files supplied with the contract documents. Dimensions shown on these plans are based on design plans (Original Design No. 1079).

Repair shall consist of:

1. Remove concrete slope protection at both abutments.
2. Underpin the east abutment with flowable mortar.
3. Fill in washed out areas of slope with macadam stone base.
4. Place macadam stone slope protection at both abutments to the toe of slope.

The roadway will be open to traffic during construction. See Traffic Control Plan note.

All dimensions and details shown on these plans pertinent to new construction shall be verified in the field by the Contractor before starting construction.

Faint lines on plans indicate the existing structure.

Utility Companies and municipalities 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.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing the existing concrete slope protection panels. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to any steel or concrete not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.

Specifications:

Design:
AASHTO series of 2002.

Construction:

Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project including Construction or Maintenance Work on Railroad Right-of-Way (Chicago, Central, & Pacific Railroad Company and Cedar River Railroad Company).

Estimated Bridge Repair Quantities

Item No.	Item Code	Item	Unit	Quantity	As Built Quantity
1	2210-0475290	Macadam Stone Base	Ton	61.0	
2	2401-6750001	Removals, As Per Plan	LS	1.00	
3	2506-4984000	Flowable Mortar	CY	13.0	
4	2507-2638620	Macadam Stone Slope Protection	SY	336.0	
5	2533-4980005	Mobilization	LS	1.00	

Estimate Reference Information

Item No.	Item Code	Description
1	2210-0475290	Includes furnish and placement of macadam stone base as required at the East abutment to repair the existing slope to the elevations necessary for placement of the macadam stone slope protection. Compaction requirements in accordance with Article 2210.03, C, of the Standard Specifications are waived. Material shall be compacted as required to provide a stable working surface for placement of macadam stone slope protection. Estimated at 1.75 ton/cu yd. Macadam stone base may be constructed on natural soil subgrade as indicated on the drawings.
2	2401-6750001	Includes all work for removal and off-site disposal of removal of existing concrete slope protection. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state.
3	2506-4984000	Includes cost to furnish and install 13.0 CY of flowable mortar at North end of East abutment footing. Method of measurement will be quantity placed installed. Prior approval of the Engineer is required to exceeding 13.0 CY.
4	2507-2638620	Includes furnishing and placing engineering fabric, macadam stone, 4" x 6" treated timbers, 1/2" diameter steel pins (or rebars), porous backfill or granular subbase backfill at front face of abutment footing and furnishing and placing subdrain and subdrain outlet, and all required excavating, shaping and compacting.

Roadway Quantities shown elsewhere in these plans.

Traffic Control Plan
The roadway will be open to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Design History
at this Site

(Includes this Design)	
Des. No.	Type of Work
1079	Original Design
424	Slope Protection

Design For Repairs To 12°52'31" R.A.

241'-3 x 32'-0 Pretensioned
Prestressed Concrete Beam Bridge

30'-9 & 51'-7 End Spans81'-6 & 77'-5 3/8 Interior Span

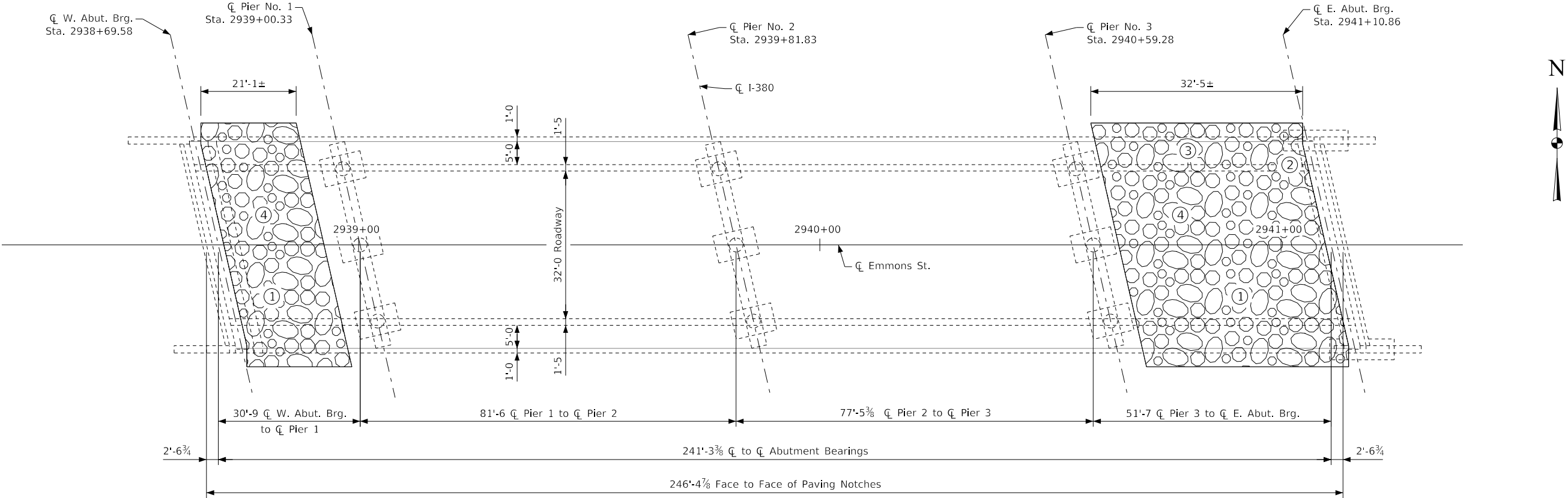
General Notes and Quantities

STA. 2939+81.83 (C Emmons St)Turn-in Date: Jan 2024

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 424Design Sheet No. 1 of 4FHWA No. 604735



Situation Plan



Deteriorated East Abutment Slope Protection



Void Under North End East Abutment

Repairs Shall Consist Of:

- ① Remove concrete slope protection at both abutments.
- ② Underpin the east abutment with flowable mortar.
- ③ Fill in washed out areas of slope with macadam stone base to repair the existing slope as required for the placement of macadam stone slope protection.
- ④ Place macadam stone slope protection at both abutments to the toe of slope.

Traffic Estimate

2019 AADT 3,660 V.P.D.
TRUCKS Unknown %

Utilities:

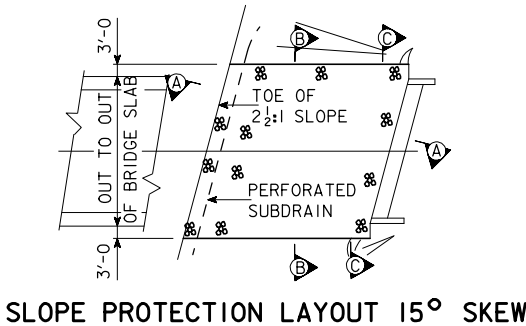
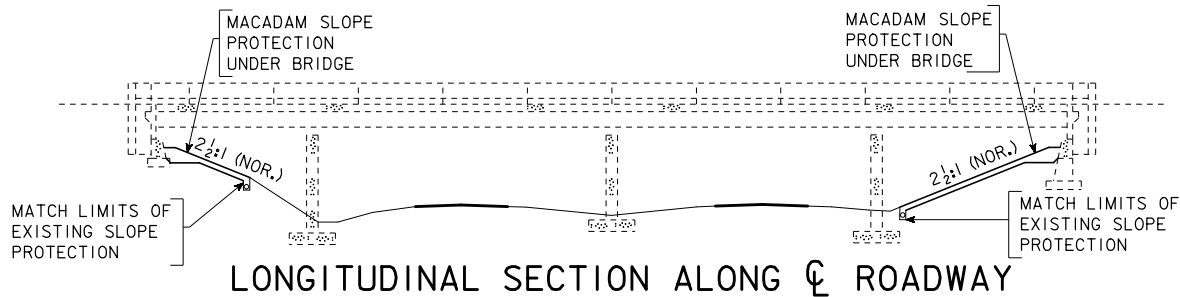
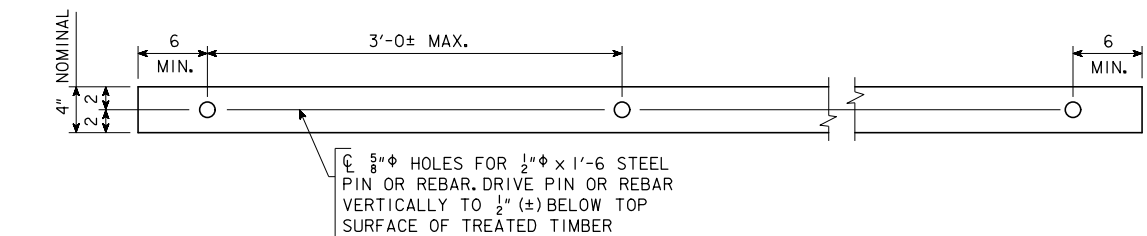
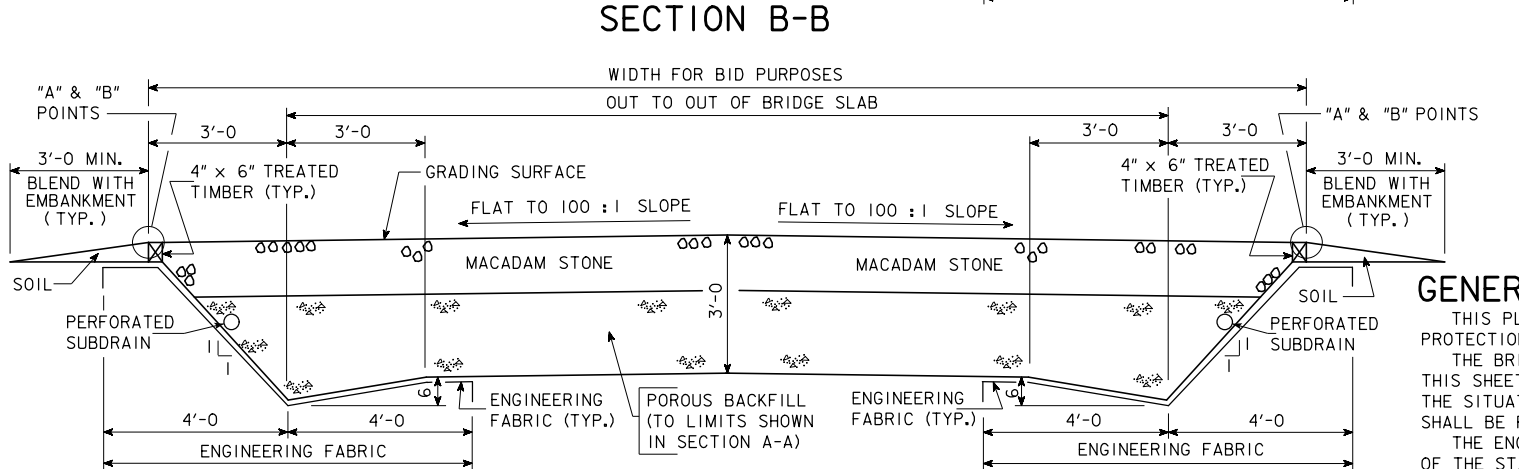
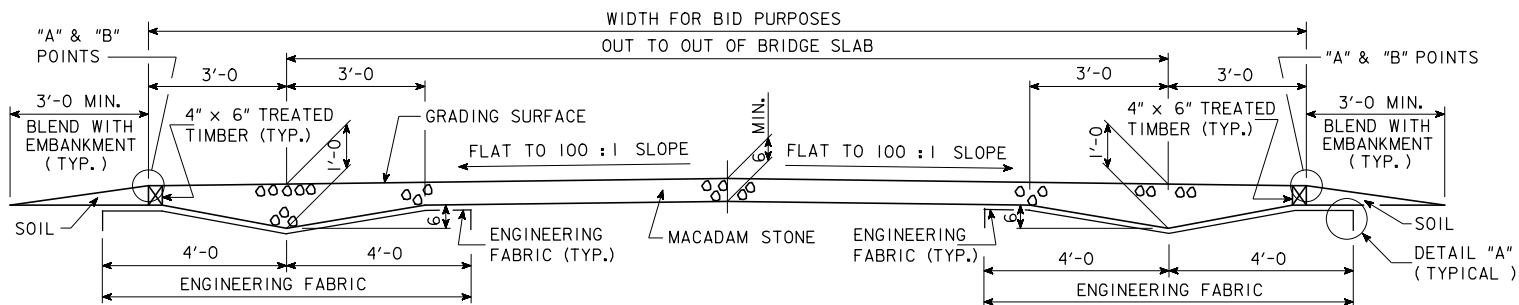
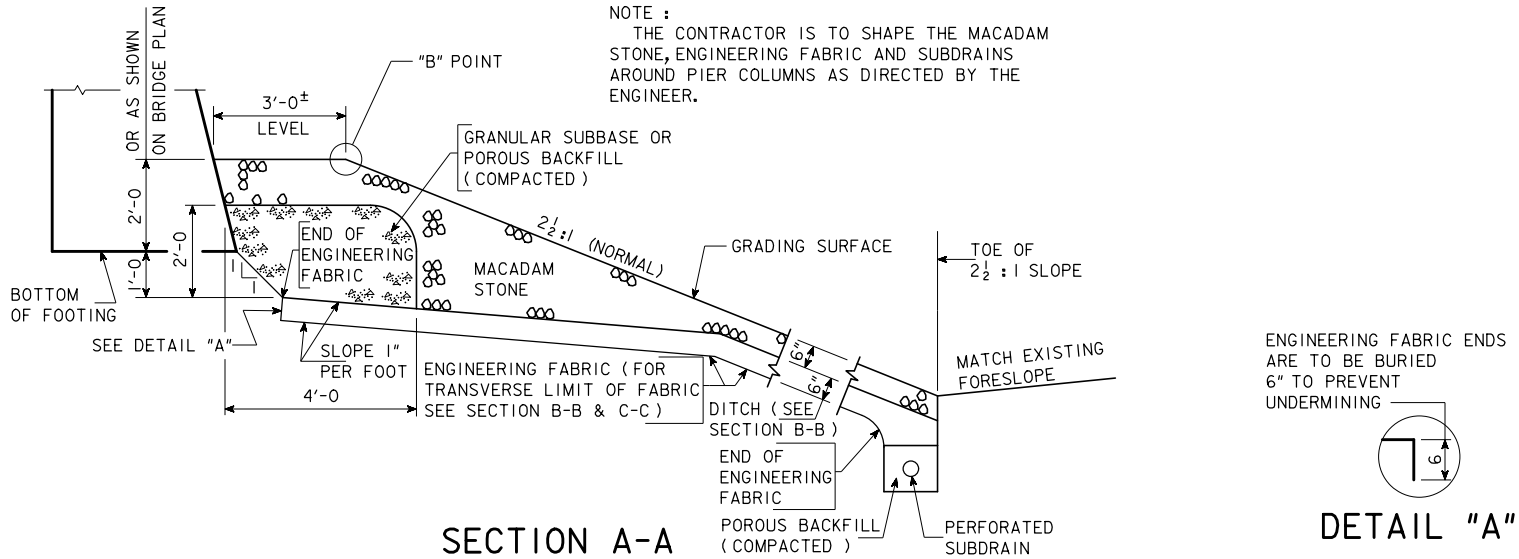
Electrical: Alliant Energy
Communications: Century Link
Communications: Enseva Networks
Communications: Iowa Communications Network
Communications: MediaCom
Communications: Unite Private Networks, LLC
City of Hiawatha
City of Cedar Rapids
Gas: MidAmer-Gas

Location

Emmons Street over I-380
In City of Hiawatha
T-84N R-7W
Section 33
Rapids Township
Linn County
FHWA No. 604735
Bridge Maint. No. 5724.70380
Latitude 42.03876113°
Longitude -91.67764539°

Design For Repairs To 12°52'31" R.A.
241'-3 x 32'-0 Prestensioned
Prestressed Concrete Beam Bridge
30'-9 & 51'-7 End Spans 81'-6 & 77'-5 3/8 Interior Span
Situation Plan
STA. 2939+81.83 (CL Emmons St) Turn-In Date: Jan 2024
Linn County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 424 Design Sheet No. 2 of 4 FHWA No. 604735

REVISED 10-12 - LOCATED THE "A" AND "B" POINTS IN SECTION A-A.
ENGLISH FORESLOPE PROTECTION BRIDGES.DGN 1006C - THIS SHEET ISSUED 9-16-92



GENERAL NOTES:

- THIS PLAN SHEET SHOWS DETAILS FOR PLACING A "MACADAM STONE SLOPE PROTECTION" UNDER OVERHEAD STRUCTURES.
- THE BRIDGE BERM FORESLOPE SHALL BE COMPACTED AND SHAPED AS SHOWN ON THIS SHEET, SHAPING WILL INCLUDE EXCAVATION, FROM THE GRADING SURFACE SHOWN, THE SITUATION PLAN, AND AS DIRECTED BY THE ENGINEER. THE BERM FORESLOPE SHALL BE FIRM WHEN THE ENGINEERING FABRIC AND MACADAM STONE ARE PLACED.
- THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.
- THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).
- WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.
- THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.
- PAYMENT FOR "MACADAM STONE SLOPE PROTECTION" WILL BE MADE ON A SQUARE YARD BASIS FOR SLOPE PROTECTION CONSTRUCTED. THE UNIT PRICE BID PER SQUARE YARD SHALL INCLUDE ALL COSTS FOR MATERIAL AND LABOR REQUIRED TO CONSTRUCT THE SLOPE PROTECTION SHOWN ON THESE PLANS.
- THE BERM FORESLOPE SHAPING AND COMPACTING AND THE DISPOSAL OF EXCESS SOIL FROM SHAPING OR TRENCHING SHALL BE CONSIDERED INCIDENTAL TO PLACING THE SLOPE PROTECTION.
- WHERE EROSION CONTROL WORK HAS BEEN COMPLETED THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLANT MATERIALS DESTROYED ADJACENT TO THE SLOPE PROTECTION AREA. THE CONTRACTOR SHALL REPLANT, RESEED AND REMULCH ALL DISTURBED AREAS, DESIGNATED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 2601, OF THE STANDARD SPECIFICATIONS, AT THE CONTRACTOR'S EXPENSE.
- THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS AS DETAILED ON THE SUBDRAIN DETAILS SHEET.

ESTIMATED QUANTITIES		
DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	EAST ABUT.	203.8 SQ. YDS.
MACADAM STONE SLOPE PROTECTION	WEST ABUT.	132.2 SQ. YDS.
TOTAL		336.0 SQ. YDS.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
EXCAVATING, SHAPING AND COMPACTING
ENGINEERING FABRIC
MACADAM STONE
4" x 6" TREATED TIMBER EDGING
1/2" STEEL PINS (OR REBARS)
POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT
FRONT FACE ABUTMENT FOOTING

Design For Repairs To 12°52'31" R.A.

**241'-3 x 32'-0 Pretensioned
Prestressed Concrete Beam Bridge**

30'-9 & 51'-7 End Spans 81'-6 & 77'-5 3/8 Interior Span

Macadam Stone Slope Protection

STA. 2939+81.83 (C Emmons St) Turn-in Date: Jan 2024

Linn County

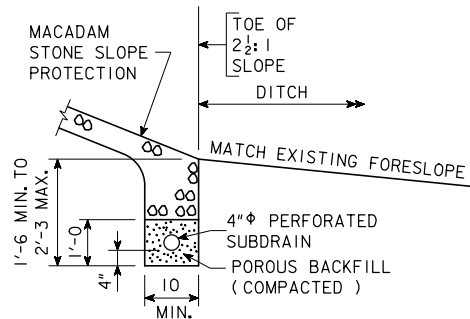
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 424 Design Sheet No. 3 of 4 FHWA No. 604735

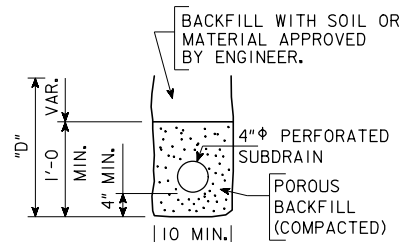
REVISED 07-11 - THE BERM SLOPE IS IDENTIFIED AS THE GRADING SURFACE.
ENGLISH FORESLOPE PROTECTION BRIDGES.DGN 1007A - THIS SHEET ISSUED 06-02.

ENGINEERING FABRIC ENDS
ARE TO BE BURIED
6" TO PREVENT
UNDERMINING.

ENGINEERING FABRIC DETAIL



SECTION B-B



SECTION C-C
(TYPICAL)

"D" = DEPTH REQUIRED TO PROVIDE PROPER
FLOW LINE FOR SUBDRAIN.

SUBDRAIN OUTLET ELEVATIONS

LOCATION	ELEVATION
TOE OF WEST BERM	AS REQUIRED*
TOE OF EAST BERM	AS REQUIRED*

* DAYLIGHT AT LOW POINT IN ROADWAY DITCH NEAR BRIDGE

SUBDRAIN NOTES :

THIS PLAN SHEET SHOWS DETAILS FOR PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS
REQUIRED FOR THIS STRUCTURE.

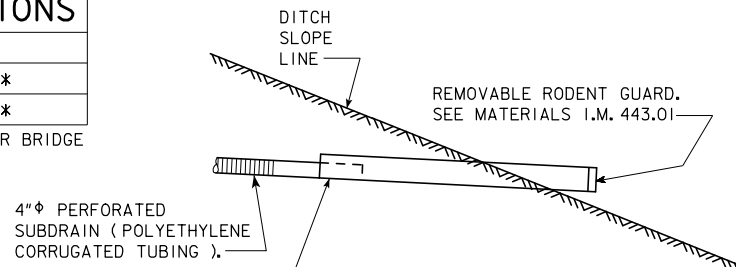
THE SUBDRAINS SHALL BE 4" IN DIAMETER AND SHALL BE IN ACCORDANCE WITH
ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL
CONSIST OF A 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON
THIS SHEET.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR
BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID
FOR "MACADAM STONE SLOPE PROTECTION". NO EXTRA PAYMENT WILL BE MADE.

THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED
GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY.
REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE
DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

THE UPHILL END OF THE PERFORATED SUBDRAIN AT THE TOE OF SLOPE PROTECTION
SHALL BE CAPPED AS APPROVED BY THE ENGINEER.

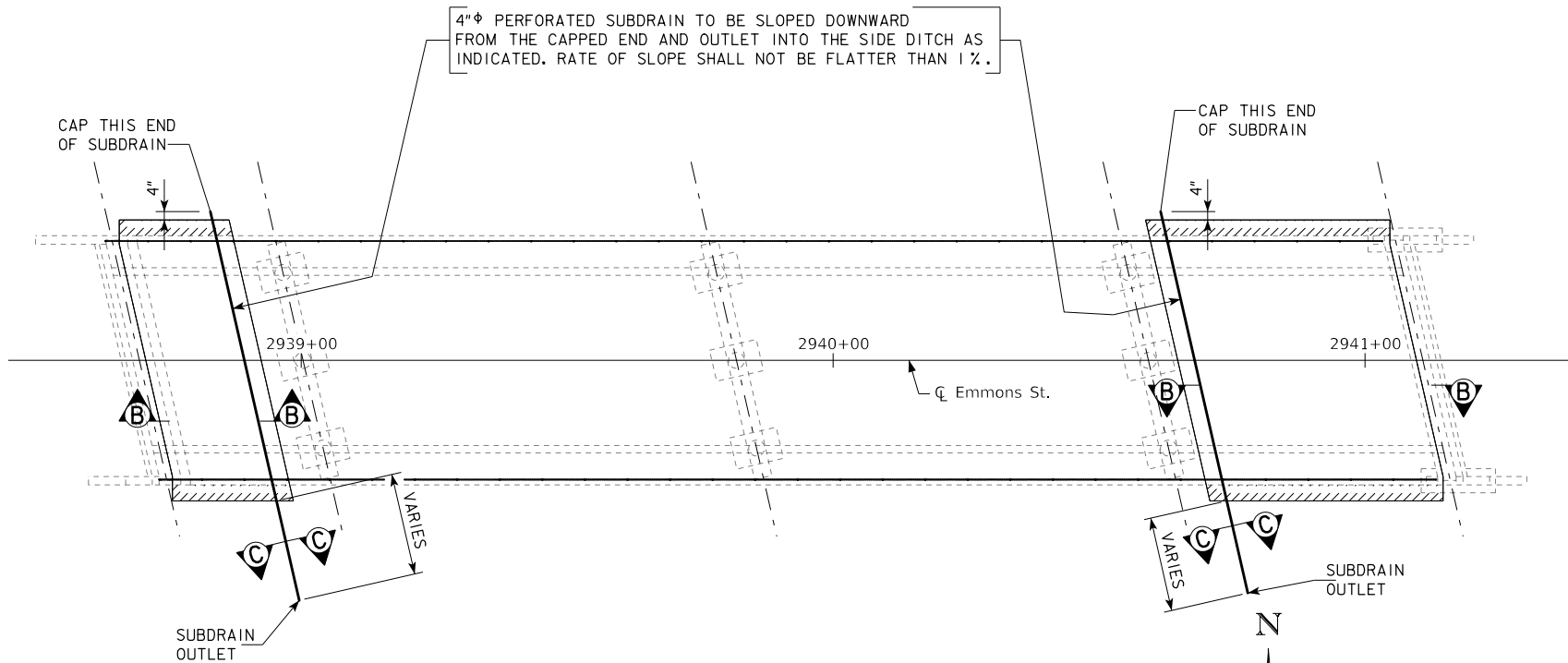
THE POROUS BACKFILL AND SUBDRAIN ARE TO BE CARRIED AROUND PIER COLUMNS IF THE
COLUMN PLACEMENT INTERFERES WITH ALIGNMENT OF SUBDRAIN AS SHOWN ON THIS SHEET.



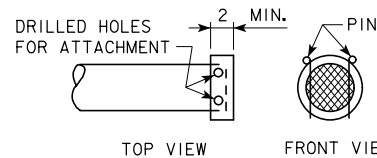
SUBDRAIN OUTLET AT DITCH SLOPE

6" CORRUGATED METAL PIPE OUTLET, OR 4" CORRUGATED DOUBLE-WALLED PE OR PVC PIPE
OUTLET WITH AN APPROPRIATE COUPLER. IF METAL
PIPE IS USED, THE PIPES SHOULD BE COUPLED IN
ONE OF THE TWO FOLLOWING WAYS.

1. USE AN INSIDE FIT REDUCER COUPLER
(COUPLER MUST BE INSERTED A MINIMUM
OF 1'-0 INTO CMP.
2. INSERT 1'-0 OF THE 4" SUBDRAIN INTO
THE 6" METAL OUTLET PIPE, THEN FULLY
SEAL THE ENTIRE OPENING WITH GROUT.



SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS



REMOVABLE RODENT GUARD DETAILS
OUTLET DETAILS

Design For Repairs To 12°52'31" R.A.

241'-3 x 32'-0 Prestressed Concrete Beam Bridge

30'-9 & 51'-7 End Spans 81'-6 & 77'-5 3/8 Interior Span

Subdrain Details

STA. 2939+81.83 (C Emmons St) Turn-in Date: Jan 2024

Linn County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 424 Design Sheet No. 4 of 4 FHWA No. 604735

100-1D
10-18-05

PROJECT DESCRIPTION

This project is for slope protection placement on Emmons St over I-380.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2528-8445110	TRAFFIC CONTROL	LS	1.0	
2	2528-8445113	FLAGGERS	EACH	See Proposal	
3	2595-0005120	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR CCP / CEDAR RIVER RAILROAD	LS	1.0	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2528-8445110	TRAFFIC CONTROL Refer to J-Sheets for details.
2	2528-8445113	FLAGGERS
		-
3	2595-0005120	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR CCP / CEDAR RIVER RAILROAD FRA No. 307835P. Refer to the Developmental Specifications for additional information, including method of measurement and basis of payment.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 3. A copy of this permit is available from the Iowa DOT website (<http://www.envpermits.iowadot.gov/>). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

232-3B
10-19-21

EROSION CONTROL
(URBAN SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,4 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-212	04-18-23	Spot Location Lane Closure with Flaggers
TC-402	04-18-23	Work Within 15 ft of Traveled Way

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A	ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.1
105-4	STANDARD ROAD PLANS	C.1
111-25	INDEX OF TABULATIONS	C.1
232-3B	EROSION CONTROL (URBAN SEEDING)	C.1
232-3C	EROSION CONTROL (NATIVE GRASS SEEDING)	C.1
262-6	UTILITIES (NOT A POINT 25 PROJECT)	C.1
281-1	SECTION 404 PERMIT AND CONDITIONS	C.1

262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

232-3C
10-19-21

EROSION CONTROL
(NATIVE GRASS SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the Contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:
Big bluestem (Andropogon gerardii) 6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans) 6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium) 6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata) 4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula) 4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis) 2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum) 1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa) 32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is bearded or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.

Place seed according to the requirements of Article 4169.02 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.

108-23A 08-01-08											
TRAFFIC CONTROL PLAN											
All lanes of I-380 and Emmons St will remain open at all times for the duration of the project.											
I-380 Shoulder closures are not permitted between 6AM to 9AM and 3PM to 6PM, Monday through Friday.											

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.									

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								
MPIN-380-6(718)0--0N-52			PCC Patching								
IMN-380-6(377)18--0E-57			Bridge Deck Overlay								
IMN-380-6(386)24--0E-57			Bridge Deck Overlay								
ITS-380-6(383)25--25-57			ITS Infrastructure								
IM-380-6(358)25--13-57			PCC Pavement - Grade & New								
IM-380-6(359)25--13-57			Bridge Replacement - PPCB								
HSIPX-000-T(290)--3L-00			High Friction Surf. Treatment								
IMN-000-T(70)0--0E-00			Guardrail Repair								