LETTING DATE 02-15-2022

SLIDE REPAIR

NHSN-027-1(003)--2R-56

LEE Co.

IOWA DOT

REVISIONS

TOTAL 12
PROJECT IDENTIFICATION NUMBER
22-56-027-010
PROJECT NUMBER
NHSN-027-1(003)--2R-56
R.O.W. PROJECT NUMBER

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

LEE COUNTY

SLIDE REPAIR

At the US 218 Interchange (NB)

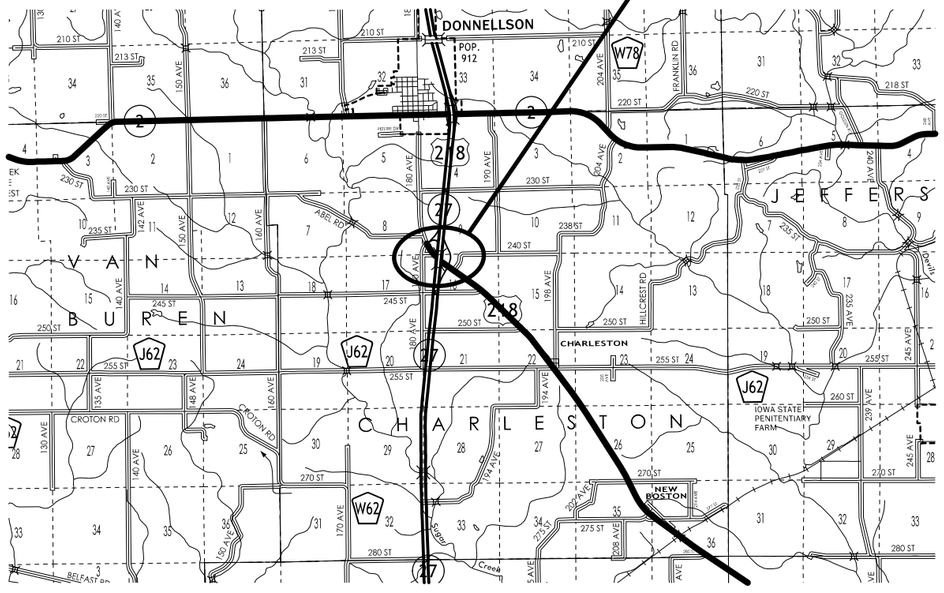
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

PROJECT LOCATION
Ref. Loc. 17.4



LOCATION MAP SCALE
0 1 2 3
Miles

INDEX OF SHEETS

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Jason M. Holst	Primary Signature Block
CS.1	Mark A. Dell	Geotechnical Design
RC.1	Seana K. Godbold	Landscape Design

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
Jason M. Holst
16923
IOWA

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 12-07-2021 Date

Jason M. Holst
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: A.1, C.1-C.2, D.1, J.1

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Dudley	LEE COUNTY	PROJECT NUMBER NHSN-027-1(003)--2R-56	SHEET NUMBER A.1

1:47:40 PM 12/3/2021 kschroc pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\5602701022\Design\CADD_Files\Sheet_Files\SHT_56027003_A01_2021.dgn

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	421	Refer to Tab. 103-12 in CS sheets. Material shall be provided by the Contractor.
2	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	665	All waste must be removed from the project site. Overhaul will not be measured or paid for , but shall be considered incidental to excavation on this project.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	244	Refer to Tab. 103-10 and 103-12 in the CS sheets.
4	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	421	Refer to Tab. 103-6 in CS sheets. Cubic yards shown on the contract documents as determined by the template fill volume. Shrinkage will not be included in the moisture control quantity.
5	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	40	Refer to Tab. 103-12 in the CS sheets.
6	2502-8212024	SUBDRAIN, LONGITUDINAL, (BACKSLOPE) 4 IN. DIA.	LF	330	Refer to Tab.104-9 in the CS sheets. Remove and dispose of the excavation material according to Article 1106.07 of the current specifications.
7	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	2	Refer to Tab. 104-9 in the CS sheets.
8	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan in J sheets.
9	2533-4980005	MOBILIZATION	LS	1	--

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-16-18	Precast Concrete Headwall for Subdrain Outlets
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-415	04-21-20	Stort Term Lane Closure with TMA
TC-418	04-21-20	Lane Closure on Divided Highway

253-1
10-18-11

MEDIAN CROSSOVER

The Contractor is prohibited from using any established or other type median crossover on this project unless specifically designated for the Contractor’s use by this plan.

SEE RC SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES.

103-12
10-20-20

SLIDE REPAIR

Site No.	Location		Side	Class 13 Excavation Waste	Embankment-in-Place	Excavation, Class 10		Class "E" Revetment	Engineering Fabric	Erosion Stone	Gra. Material Blankets & Subdrain	Macadam Stone Slope Protection	Topsoil		Remarks
	Begin Sta.	End Sta.				Roadway and Borrow	Waste						Furnish & Spread	Strip, Salvage & Spread	
				CY	CY	CY	CY	Tons	SY	Tons	CY	SY	CY	CY	
1	173+98.00	174+46.00	Rt.		421		665				40		244		Stationing is in metric

103-10
04-18-17

TOPSOIL STRIPPING AND PLACEMENT

Location				Topsoil Stripping Thickness	Topsoil Placement Thickness	Remarks
Road Identification	Dir. of Traffic	Begin Station	End Station			
				IN	IN	
IA 27	NBL	173+98.00	174+46.00		8.0	Stationing is in metric

103-6
10-17-17

EMBANKMENT WITH MOISTURE CONTROL

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control

104-9
10-17-17

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Line No.	Location			Side	Depth (D)	Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
	Road or Lane Identification	Station to Station				Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306				
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
1	NBL	173+98.00	174+46.00	RT	66.0			4.0	165.0				174+21	DR-306	20.4		Place on upper bench. Stationing is in metric
2	NBL	173+98.00	174+46.00	RT	66.0			4.0	165.0				174+23	DR-306	20.4		Place on middle bench. Stationing is in metric.
Total							0.0		330.0					DR-306 = 2			

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
Mark A. Dell
21208
IOWA

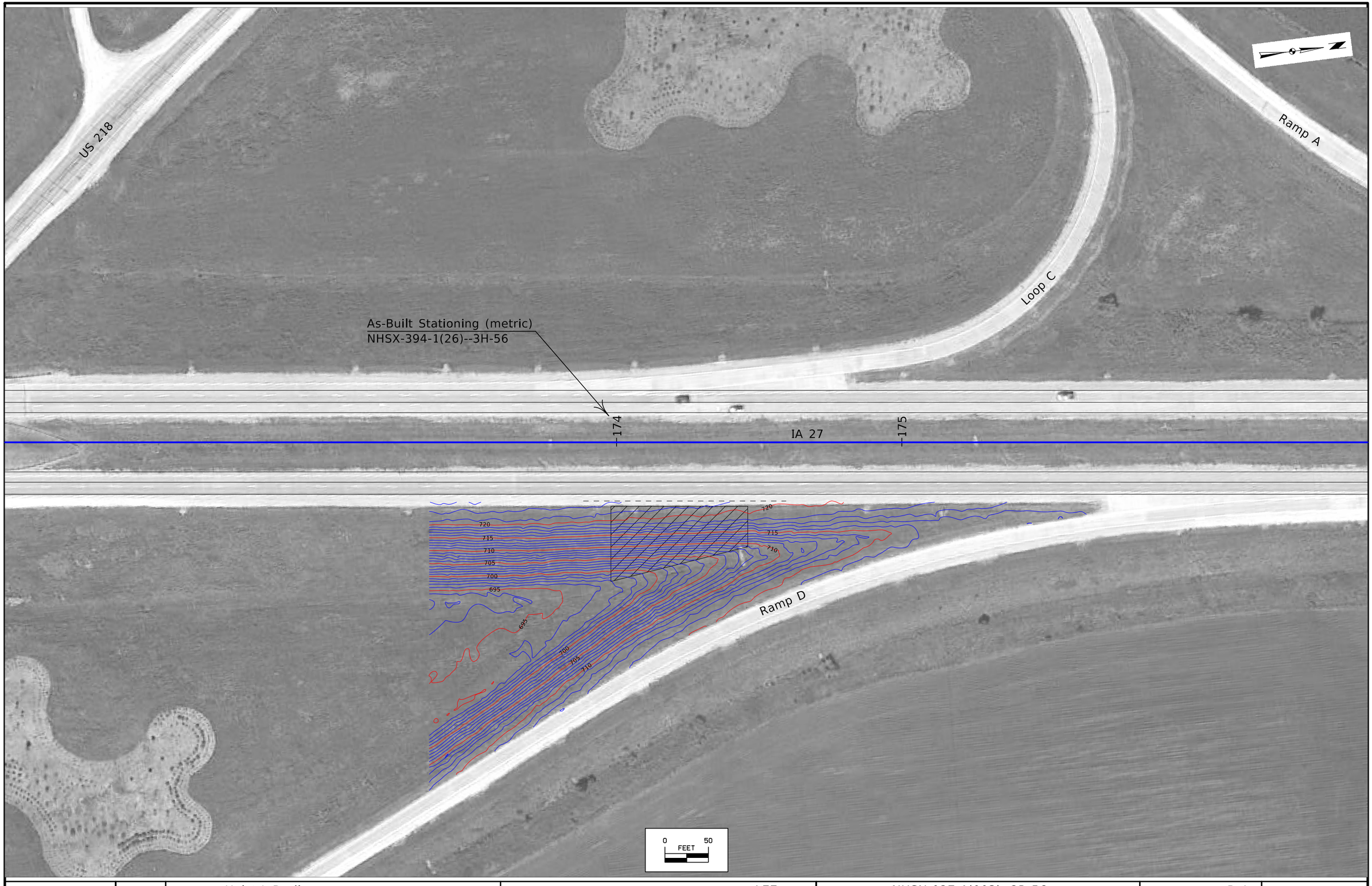
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Mark A Dell 11/22/21
Signature Date

Mark A. Dell
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: CS.1, Q.1



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Dudley	LEE COUNTY	PROJECT NUMBER NHSN-027-1(003)--2R-56	SHEET NUMBER D.1

3:47:55 PM 11/30/2021 ddudley pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\5602701022\Design\CADD_Files\Sheet_Files\SHT_56027003_D01.dgn

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic shall be maintained at all times on IA 27 and the IA 27/US 218 interchange ramps.
Single lane closures on IA 27 will be limited only to the delivery and hauling of materials and equipment.

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
NHSN-218-1(80)--2R-56	PCC PAVEMENT - GRADE AND NEW

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.									

IA 27, Lee Co.
Slide Repair

GENERAL NOTES:
The design intent is to repair the foreslope instability along the east side of IA 27 at its interchange with US 218 located south of the City of Donnellson in Lee County, Iowa. Be aware that the actual limits of the repair discussed below may be found to have changed (enlarged) at the time of construction due to possible continued slope movements.

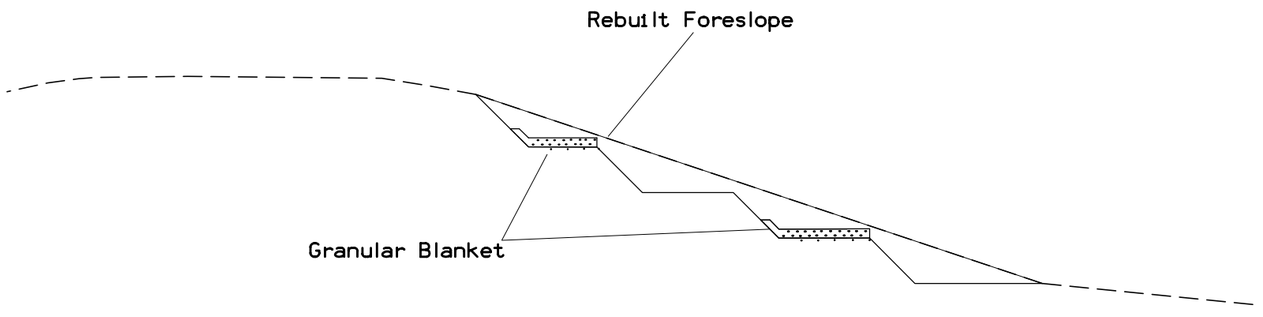
EXISTING CONDITIONS:
Based on field conditions observed on June 9, 2021, the foreslope instability can be described as a shallow circular slope failure which, as a result of the movement, has created a scarp located about 20 feet away from the outside edge of the gravel shoulder. The scarp has a maximum height of about 2 to 3 feet. Sloughed material was not evident at the toe of slope.

PROPOSED FORESLOPE REPAIR:
From Station 173+98 to Station 174+46 (metric stationing), cut benches in the existing foreslope as shown in the Typical Section below and waste excavated material off-site. Prior to benching, the surficial 12 inches of material shall be stripped from the foreslope and stockpiled to be used later to topsoil the reconstructed foreslope. The foreslope repair shall start at the toe of the existing foreslope and then extend up-slope to within about 10 feet from the outside edge of the gravel shoulder.

Install 6-inch diameter "backslope type" subdrains on specific cut benches to move water away more efficiently from the rebuilt foreslope. These drains shall be installed per Standard Road Plan DR-303 for Subdrains using Type 11 installation. Subdrains shall then outlet on the rebuilt foreslope using DR-306 outlets. Please refer to the Longitudinal Subdrain Shoulder and Backslope tab (104-9) on Sheet CS.1 for additional details regarding the drain and outlet locations.

The cut benches shall then be backfilled with suitable cohesive furnished embankment to rebuild the foreslope back to pre-existing conditions. Place 8 inches of furnished topsoil on the final foreslope surface. The rebuilt foreslope shall transition back to the existing foreslope at the limits of the repair.

Typical Section (Not to Scale)



Benches shall extend a minimum of 6 feet into the undisturbed foreslope.

LANDSCAPE DESIGN

STATE OF IOWA
Seana K. Godbold
LANDSCAPE ARCHITECT NO. 508
PROFESSIONAL LANDSCAPE ARCHITECT

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.

Signature — Date: 12/2/2021

Seana K. Godbold
Printed or Typed Name

My license renewal date is June 30, 2023

Pages or sheets covered by this seal: RC.1 - 3; RR.1 - 2

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	112	
2	2602-0000020	SILT FENCE	LF	196.9	Refer to Tab. 100-17. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
3	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	196.9	This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.This item is included for silt fence and silt fence for ditch check removal. Remove silt fence and posts after mulching or vegetation is established and approved by the engineer.
4	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	19.7	This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.
5	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	196.9	Refer to Tab. 100-19. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
6	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	196.9	

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
RC Sheets		
	SIGNATURE SHEET	RC.1
	ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES	RC.2
100-17	TABULATION OF SILT FENCES	RC.3
100-19	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES	RC.3
100-22	ROLLED EROSION CONTROL	RC.3
105-4	STANDARD ROAD PLANS	RC.3
111-25	INDEX OF TABULATIONS	RC.3
232-3A	EROSION CONTROL (RURAL SEEDING)	RC.3
232-11	EROSION CONTROL (STABILIZING CROP SEEDING)	RC.3
281-3	STORM WATER BEST MANAGEMENT PRACTICES	RC.3

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
EC-104	04-17-18	Turf Reinforced Mat (TRM)
EC-201	04-20-21	Silt Fence
EC-204	04-20-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-502	04-21-15	Seeding in Rural Areas

281-3
10-17-17

STORM WATER BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: TRM Type 2, PSSCD, Seeding

232-3A
04-16-19

EROSION CONTROL (RURAL SEEDING)

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 lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 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.

232-11
04-16-19

EROSION CONTROL (STABILIZING CROP SEEDING)

If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,1 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 incidental to mobilization and will not be paid for separately.

100-22
04-21-15

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104

Location				(L)	(W)	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103)	Special Ditch Control (EC-101)	Remarks
Road Identification	Begin Station	End Station	Side			Type 1	Type 2	Type 3	Type 4			
				FT	FT	Squares	Squares	Squares	Squares	Squares	Squares	
IA 27	173+98.00	174+46.00	Rt	160	70		112					
	Rolled Erosion Control Tab Totals:						112					

100-19
Modified

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope Length of Installation			Ditch Check Length of Installation		Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	LF	LF	
173+98.00	174+46.00	Rt		157.5				45' OS Station in Metric
CD Tab Totals:				157.5				
CD Bid Totals:				196.9				125% of Bid Total
PSSCD Removal Totals:				196.9				100% of Bid Total

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
173+98.00	174+46.00	Rt	157.5	Station in Metric
SF Tab Totals:			157.5	
SF Bid Totals:			196.9	125% of Tab Total
SF maintenance Totals:			19.7	10% of Bid Total
SF Removal Totals:			196.9	100% of Bid Total

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

- Silt Fence
- Perimeter and Slope Sediment Control Device (9")
- Perimeter and Slope Sediment Control Device (12")
- Perimeter and Slope Sediment Control Device (20")
- Open-Throat Curb Intake Sediment Filter
- Concentrated Flow
- Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

- Temporary Sediment Control basin
- Erosion Control for Circular Intake or Manhole Well
- Erosion Control for Rectangular Intake or Manhole Well
- Grate Intake Sediment Filter Bag
- Silt Basin
- Silt Fence Tail
- Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

- Seeding and Fertilizing
- R — Seeding and Fertilizing (Rural)
- U — Seeding and Fertilizing (Urban)
- N — Native Grass Seeding
- ST — Salt Tolerant Seeding
- WL — Wetland Grass Seeding
- WF — Wildflower Seeding
- SOD — Sodding
- Turf Reinforcement Mat Type 1
- Turf Reinforcement Mat Type 2
- Turf Reinforcement Mat Type 3
- Turf Reinforcement Mat Type 4
- Slope Protection, Wood Excelsior Mat
- Transition Mat
- Rock Features, Permanent
- Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

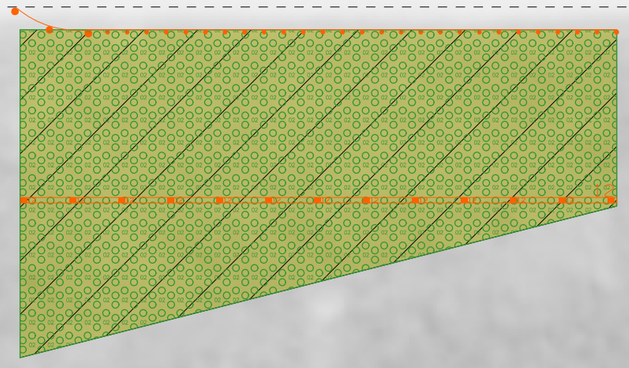
FILE NO.	ENGLISH	DESIGN TEAM GODBOLD/POHLEN/MCDONALD	LEE COUNTY	PROJECT NUMBER NHSN-027-1(3)--2R-56	SHEET NUMBER RR.1

10:24:27 AM 12/2/2021 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\5602701022\Roadside\56027003_LGD.dgn

As-Built Stationing (metric)
NHSX-394-1(26)--3H-56

174

IA 27



0 20
FEET

Ramp D

FILE NO.	ENGLISH	DESIGN TEAM GODBOLD/POHLEN/MCDONALD	LEE COUNTY	PROJECT NUMBER NHSN-027-1(3)--2R-56	SHEET NUMBER RR.2

10:25:07 AM 12/2/2021 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\5602701022\Roadside\56027003_PPP.dgn