

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Estimated Project Quantities & Reference Information
C.2	Standard Road Plans
C.2	Tabulations
CS Sheets	Soils Tabulations
CS.1	Soils Tabulations
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
Q Sheets	Soils Sheets
Q.1	Soils Legend & Symbol Information Sheet
Q.2 - 4	Soils Sheets US 61
R Sheets	Erosion Control Sheets
RC.1 - 7	Est. Quantities, PPP, General Notes and Tabulations
RR.1 - 2	Erosion Control Legend and Symbol Information Sheet



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
MUSCATINE COUNTY
SLIDE REPAIR
0.25 mi S of IA 22 (NB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.13 of the Specifications.



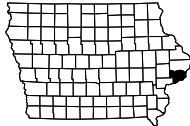
REVISIONS

PROJECT IDENTIFICATION NUMBER	TOTAL
	21
27-70-061-010	
PROJECT NUMBER	
NHSN-061-4(113)--2R-70	
R.O.W. PROJECT NUMBER	

Scan the QR code or click the link below to leave plan quality feedback and help us improve future projects.



Design QR Feedback Link



INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Paul W. Flattery	Primary Signature Block	C.1
CS.1	Mark A. Dell	Geotechnical Design	—
RC.1	Rachel A. Harris	Landscape Design	RC.2

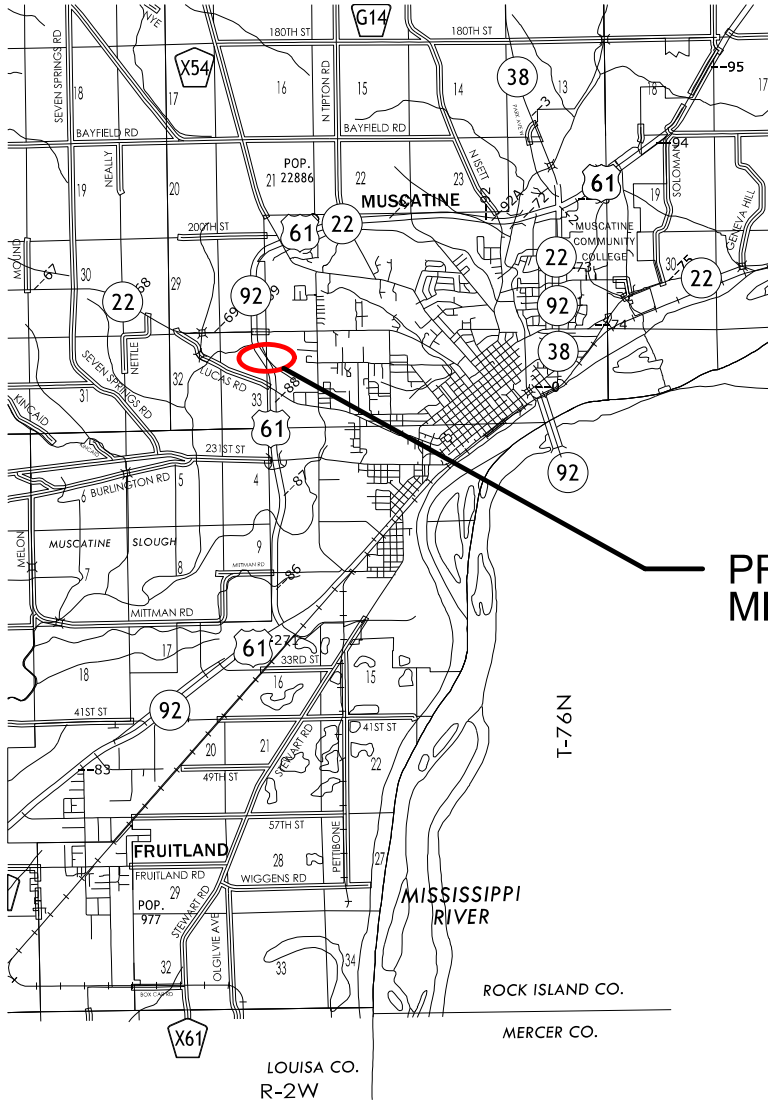
ROADWAY DESIGN



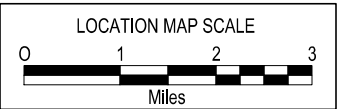
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

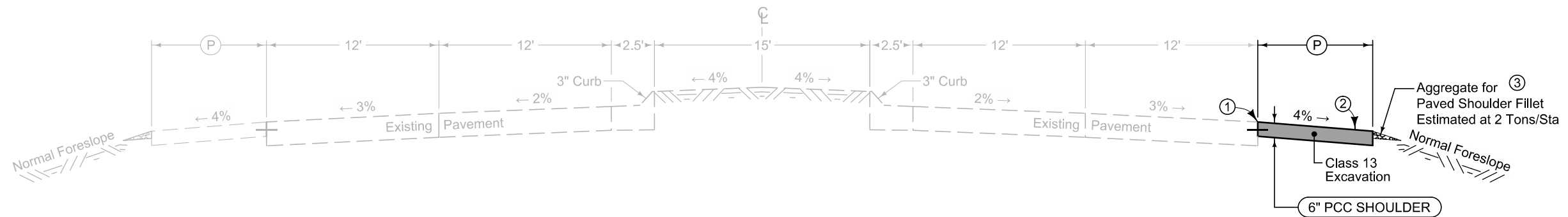
Signature: *Paul W. Flattery* Date: 10-20-2026
Printed or Typed Name: Paul W. Flattery
My license renewal date is December 31, 2027

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



PROJECT LOCATION
MP 88.27 (NB)





Notes:

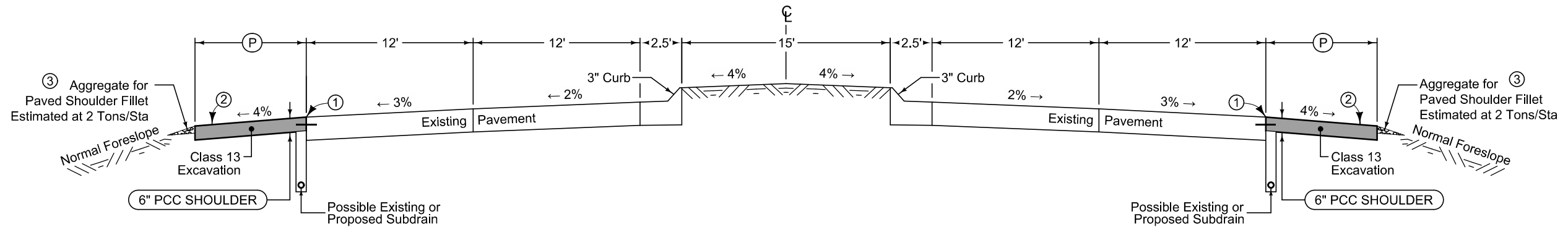
- ① 'BT-5' Joint. Refer to PV-101.
- ② Saw 'C' Joints to match the existing pavement jointing. Refer to PV-101.
- ③ Not a bid item. The furnishing and finishing of aggregate for paved shoulder fillets is incidental to the paved shoulder. Refer to Article 2122.05, A, 2, c. Class 13 Excavation material may be used.

PCC Paved Shoulder

4_P_PCC_ Modified			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
NB	143+90.00	144+90.00	10

See Tab 112-9 for shoulder quantities.

US 61



PCC Shoulder - Left							
STATION TO STATION		Length Feet	(P) Feet	Class 13 Excavation Widening CY	PCC Paved Shoulder SY	Aggregate Fillet Tons	Remarks
1288+65.00	1+45.00	155.00	10	29.0	172.6	3.1	Along IA 92 NW Return
1+45.00	27+20.00	2575.00	10	465.5	2872.2	51.5	See Note #4 Below
27+20.00	28+15.00	95.00	10-6	12.3	73.6	1.9	Refer to Typical 7154B, Type A
MITTMAN ROAD							
29+75.00	34+30.00	455.00	6	50.6	303.3	9.1	Along Turn Lane
34+30.00	34+95.00	65.00	6-10	9.1	54.3	1.3	Refer to Typical 7154B, Type A
34+95.00	60+40.78	2545.78	10	471.4	2828.6	50.9	
EQUATION: 60+40.78 BK = 1259+51.47 AH							
1259+51.47	1277+15.00	1763.53	10	326.6	1959.5	35.3	
1277+15.00	1277+65.00	50.00	10-6	6.6	39.8	1.0	Refer to Typical 7154B, Type A
1277+65.00	1285+10.00	745.00	6	82.8	496.7	14.9	Along Acceleration Lane
HERSHEY AVE.							
1287+30.00	1290+00.00	270.00	6	30.0	180.0	5.4	Along Deceleration Lane
HERSHEY AVE. BRIDGE							
1292+15.00	1292+38.00	23.00	8.3	3.5	21.2	0.5	Refer to Typical 7156
1292+38.00	1292+75.00	37.00	8.3-9.9	6.2	37.4	0.7	Refer to Typical 7156
1292+75.00	1293+08.00	33.00	9.9	6.1	36.3	0.7	Refer to Typical 7156
1293+08.00	1298+60.00	552.00	6	61.3	368.0	11.0	Along Deceleration Lane
1298+60.00	1299+75.00	115.00	6-10	16.5	98.8	2.3	Refer to Typical 7154B, Type A
1299+75.00	1301+34.23	159.23	10	29.5	176.9	3.2	
EQUATION: 1301+34.23 BK = 101+34.23 AH							
101+34.23	129+00.00	2765.77	10	512.2	3073.1	55.3	
129+00.00	129+75.00	75.00	10-6	10.2	61.1	1.5	Refer to Typical 7154B, Type A
LUCAS STREET							
131+00.00	135+65.00	465.00	6	51.7	310.0	9.3	Along Turn Lane
135+65.00	136+25.00	60.00	6-10	8.0	47.8	1.2	Refer to Typical 7154B, Type A
136+25.00	146+00.53	975.53	10	180.7	1083.9	19.5	
EQUATION: 146+00.53 BK = 147+13.92 AH							
147+13.92	164+00.00	1686.08	10	312.2	1873.4	33.7	
164+00.00	164+40.00	40.00	10-6	4.9	29.1	0.8	Refer to Typical 7154B, Type A
CEDAR STREET							
165+85.00	170+40.00	455.00	6	50.6	303.3	9.1	Along Turn Lane
170+40.00	171+00.00	60.00	6-10	8.1	48.8	1.2	Refer to Typical 7154B, Type A
171+00.00	220+25.00	4925.00	10	912.0	5472.2	98.5	
220+25.00	221+35.00	110.00	10-6	15.6	93.8	2.2	Refer to Typical 7154B, Type A
MULBERRY AVE.							
SHEET TOTALS:				3673.2	22115.7	425.1	

For Information Only
HSIPX-061-4(4110)--3L-40

PCC Shoulder - Right							
STATION TO STATION		Length Feet	(P) Feet	Class 13 Excavation Widening CY	PCC Paved Shoulder SY	Aggregate Fillet Tons	Remarks
1291+25.00	1+75.00	177.00	10	32.7	196.8	3.0	Along IA 92 NE Return
1+75.00	23+80.00	2205.00	10	408.3	2450.0	44.1	
23+80.00	24+40.00	60.00	10-6	8.7	52.3	1.2	Refer to Typical 7154B, Type A
24+40.00	28+80.00	440.00	6	48.9	293.3	8.8	Along Turn Lane
MITTMAN ROAD							
29+85.00	30+40.00	55.00	6-10	7.0	41.9	1.1	Refer to Typical 7154B, Type A
30+40.00	60+40.78	3000.78	10	555.7	3334.2	60.0	
EQUATION: 60+40.78 BK = 1259+51.47 AH							
1259+51.47	1277+70.00	1818.53	10	336.8	2020.6	36.4	
1277+70.00	1278+05.00	35.00	10-6	7.6	45.9	0.7	Refer to Typical 7154B, Type A
1278+05.00	1285+10.00	705.00	6	78.3	470.0	14.1	Along Turn Lane
HERSHEY AVE.							
1287+35.00	1288+79.00	144.00	6	16.0	96.0	2.9	Along Acceleration Lane
1288+79.00	1289+11.00	32.00	9	5.3	32.0	0.6	Refer to Typical 7156
1289+11.00	1289+49.00	38.00	9.0-7.5	5.8	35.0	0.8	Refer to Typical 7156
1289+49.00	1289+67.00	18.00	7.5	2.5	15.0	0.4	Refer to Typical 7156
HERSHEY AVE. BRIDGE							
1292+05.00	1301+34.23	929.23	6	103.2	619.5	18.6	Along Acceleration Lane
EQUATION: 1301+34.23 BK = 101+34.23 AH							
101+34.23	110+40.00	905.77	6	100.6	603.8	18.1	Along Acceleration Lane
110+40.00	112+55.00	215.00	6-10	30.1	180.6	4.3	Refer to Typical 7154B, Type A
112+55.00	123+55.00	1100.00	10	203.7	1222.2	22.0	
123+55.00	124+15.00	60.00	10-6	8.0	47.9	1.2	Refer to Typical 7154B, Type A
124+15.00	128+65.00	450.00	6	50.0	300.0	9.0	Along Turn Lane
LUCAS STREET							
130+05.00	130+80.00	75.00	6-10	10.4	62.2	1.5	Refer to Typical 7154B, Type A
130+80.00	146+00.43	1520.43	10	281.6	1689.4	30.4	
EQUATION: 146+00.53 BK = 147+13.92 AH							
147+13.92	159+35.00	1221.08	10	226.1	1356.8	24.4	
159+35.00	160+00.00	65.00	10-6	8.1	48.6	1.3	Refer to Typical 7154B, Type A
160+00.00	164+50.00	450.00	6	50.0	300.0	9.0	Along Turn Lane
CEDAR STREET							
165+90.00	166+70.00	80.00	6-10	11.0	65.8	1.6	Refer to Typical 7154B, Type A
166+70.00	216+25.00	4955.00	10	917.6	5505.6	99.1	
216+25.00	216+85.00	60.00	10-6	8.4	50.2	1.2	Refer to Typical 7154B, Type A
216+85.00	221+30.00	445.00	6	49.4	296.7	8.9	Along Turn Lane
MULBERRY AVE.							
SHEET TOTALS:				3571.8	21432.3	424.7	

Notes:

- ①

'BT-5' Joint. Refer to PV-101.
- ②

Saw 'C' Joints to match the existing pavement jointing. Refer to PV-101.
- ③

Not a bid item. The furnishing and finishing of aggregate for paved shoulder fillets is incidental to the paved shoulder. Refer to Article 2122.05, A, 2, c. Additional material may be needed at driveway locations. Class 13 Excavation material may be used.
- ④

Quantities include the 2' wide grade transition pavement at the existing HMA driveway at Station 8+66 LT.

US 61
PCC SHOULDERS
BOP TO MULBERRY AVE

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	930	See Tab. 103-12 on the CS Sheet.
2	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	788	See Tab. 103-12 on the CS Sheet. Removal of the existing foreslope bench drains shall be incidental to this bid item.
3	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	10	See Tab. 103-07 on the CS Sheet.
4	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	18.5	See Tab. 112-9M in the C Sheets for locations and details. Removal of the damaged concrete shoulder on the foreslope shall be incidental to this item.
5	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	504	See Tab. 103-12 on the CS Sheet.
6	2122-5190006	PAVED SHOULDER, P.C. CONCRETE, 6 IN.	SY	111.1	See Tab. 112-9M in the C Sheets for locations and details.
7	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.	LF	300	See Tab. 104-09B on the CS Sheet for locations and details.
8	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	10	
9	2507-3250005	ENGINEERING FABRIC	SY	665.8	See Tab. 103-12 on the CS Sheet.
10	2507-8029000	EROSION STONE	TON	1,269.3	
11	2528-8445110	TRAFFIC CONTROL	LS	1	
12	2533-4980005	MOBILIZATION	LS	1	
13	2548-0000200	MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE	STA	1	See Tab. 112-10 in the C Sheets for locations and details.

105-4
10-18-11

[illegible]

112-9M
Modified

- Calculations assume a HMA unit weight (lbs/cf) of 140, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

[illegible]

112-10
10-20-20

* Calculated at 18" width for Shoulder.

[illegible]

SLIDE REPAIR

Line No.	Site No.	Station From	Station To	Side	Class 13 Excavation Waste (CY)	Embankment-in-Place (CY)	Excavation Class 10 Roadway and Borrow (CY)	Excavation Class 10 Waste (CY)	Class "E" Revetment (TON)	Engineering Fabric (SY)	Erosion Stone (TON)	Gra. Material Blankets and Subdrain (CY)	Macadam Stone Slope Protection (SY)	Topsoil Furnish and Spread (CY)	Topsoil Strip Salvage and Spread (CY)	Remarks
1.0	1	143+10.00	145+34.00	Right			930.0	788.0		665.8	1269.300			504.0		See Sheets Q.1-4

LONGITUDINAL SUBDRAIN BACKSLOPE

Refer to Soils Sheets

* Not a bid item.

Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
1.0	US 61	143+30.00	143+30.00	Right		6.0	30.0	143+30.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
2.0	US 61	143+50.00	143+50.00	Right		6.0	30.0	143+50.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
3.0	US 61	143+70.00	143+70.00	Right		6.0	30.0	143+70.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
4.0	US 61	143+90.00	143+90.00	Right		6.0	30.0	143+90.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
5.0	US 61	144+10.00	144+10.00	Right		6.0	30.0	144+10.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
6.0	US 61	144+30.00	144+30.00	Right		6.0	30.0	144+30.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
7.0	US 61	144+50.00	144+50.00	Right		6.0	30.0	144+50.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
8.0	US 61	144+70.00	144+70.00	Right		6.0	30.0	144+70.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
9.0	US 61	144+90.00	144+90.00	Right		6.0	30.0	144+90.00	DR-306	3.0	Place transversely at bottom of Yugo Drain
10.0	US61	145+10.00	145+10.00	Right		6.0	30.0	145+10.00	DR-306	3.0	Place transversely at bottom of Yugo Drain

Total

Number of Records : 10

300

10 DR-306

30.0

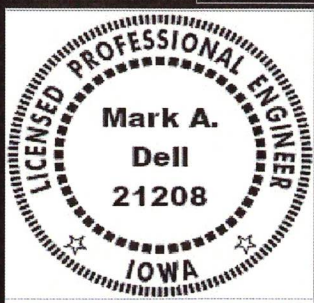
TOPSOIL STRIPPING AND PLACEMENT

Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks
1.0	US 61	NB	143+10.00	145+34.00		8.0	

SHRINKAGE DATA

Material	%	Remarks
Class 10	30.0	
Topsoil	40.0	
Boulders	0.0	10 CY

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: Mark A. Dell

Date: 10/19/26

Printed or Typed Name: Mark A. Dell

My license renewal date is December 31, 20 27

Pages or sheets covered by this seal: CS.1 & Q.1-Q4

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on US 61 shall be maintained at all times per TC-418.

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 Travel 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
None Provided	

FILE NO.

DESIGN TEAM Flattery\Jack

MUSCATINE COUNTY

PROJECT NUMBER NHXN-061-4(113)--2R-70

SHEET NUMBER J.1

10/15/20264:55:40 PMmjackc:\pw_work\pwmain\mjack\d2749623\SHI_01_70061113Z14.xlsm

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Satellite TV Dish
	Fruit Tree		Water Hook Up
	Shrub (Bushes)		Radio Tower
	Timber		Tower Anchor
	Hedge		Guardrail (Beam or Cable)
	Stump		Guard Post (one or two)
	Swamp		Guard Post (over two)
	Rock Outcrop		Filler Pipe
	Broken Concrete		Gas Valve
	Revetment (Rip Rap)		Water Valve
	Cemetery		Speed Limit Sign
	Grave		Mile Marker Post
	Cave		Sign
	Sink Hole		Traffic Signal Control Box
	Board Fence		Rail Road Signal Control Box
	Chain Link or Security Fence		Telephone Switch Box
	Wire Fence		Electric Box
	Terrace		
	Earth Dam or Dike (Existing)		
	Tile Outlet		
	Edge of Water		
	Existing Drainage		
	Right of Way Rail or Lot Corner		
	Concrete Monument		
	Well		
	Windmill		
	Beehive Intake		
	Existing Intake		
	Existing Utility Access (Manhole)		
	Fire Hydrant		
	Water Hydrant (Rural)		

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Purple (Halo)	(15)	Backslope Drains
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	Design Color No.	
Brown, Light	(236)	Core Out

PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design Color No.	
Blue	(1)	Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)	Existing Ground Line Profile
Green, Med	(2)	Topsoil
Green, Med	(2)	Slope Dressing Only
Orange	(6)	Loam
Aqua (Cyan)	(7)	Class 10
Brown, Med	(4)	Sand
Red	(3)	Unsuitable A
Pink, Dark	(13)	Unsuitable B
Pink	(11)	Unsuitable C
Red	(3)	Shale
Red	(3)	Waste
Gray, Light	(48)	Broken and Weathered Rock
Gray, Med	(80)	Rock
Gray, V.Dark	(128)	Boulders

PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

	Drill		Dig/Core	Date(s) Drilled _____	
	Water		Treatment		Sandstone
	Dry		Sand Blanket		Unsuitable A
	Sample		Soil Remediation Area		Unsuitable B
	Plugged		Select Soil		Unsuitable C
	Moisture		Select Sand		Sandy Soil
	Shelby		Slope Dressing Only		Boulders
	Blow Count		Broken and Weathered Rock		Shale
	Dens. Core		Rock		

	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Clearing & Grubbing Area
	Pavement Removal

RIGHT-OF-WAY LEGEND	
	Proposed Right-of-Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Borrow
	Easement (Temporary)
	Easement
	Excess
	Access Control

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

SOILS
LEGEND AND SYMBOL
INFORMATION SHEET

(COVERS SHEET SERIES Q)

FORESLOPE SLIDE REPAIR US 61, RIGHT FORESLOPE, STATION 143+10 TO 145+34, MUSCATINE COUNTY

General Notes:

This general area of the foreslope was previously repaired in 2020. At that time, the repair consisted of benching and rebuilding the foreslope with cohesive embankment. Foreslope bench drains and outlets were also installed to aid in removing water from the foreslope.

The design intent of this project is to reestablish the foreslope to pre-existing conditions prior to the current instability and install a series of trench (Yugo) drains perpendicular to the slope. The Yugo drains will collect groundwater and increase the overall shear strength of the existing soils.

Foreslope Rebuilding/Repair:

The foreslope shall be regraded to an approximate 3.75:1 slope and in a manner to blend uniformly into the unaffected slope to the north and south. Necessary regrading is assumed to extend longitudinally about 20 feet beyond the overall Yugo drain area, approximately between Stations 143+10 and 145+34. Minor benching shall be performed to properly integrate new cohesive embankment with the existing slope.

Per the Standard Specifications, do not construct embankments on frozen ground. Do not use frozen material to construct embankments.

Removal of the existing broken shoulder concrete located on the foreslope will be considered incidental to Excavation, Class 13 Waste.

Slope repair activities shall not disturb an existing tree vegetation present just beyond the right of way limits.

The existing foreslope bench drains and outlets installed as part of the previous slope repair shall be removed from the foreslope.

To avoid causing any additional foreslope instability, material will not be allowed to be stockpiled on-site or within the surrounding right of way.

Yugo Installation:

After regrading the foreslope, install a total of 10 Yugo drains at approximately 20-foot centers as depicted on the Q Sheets. Yugo drains shall extend from the top of the foreslope beginning at the outside edge of the recently placed paved shoulder and extend downslope to within 10 feet of the right of way limits.

Trenching near the top of the foreslope shall not undermine the existing paved shoulder.

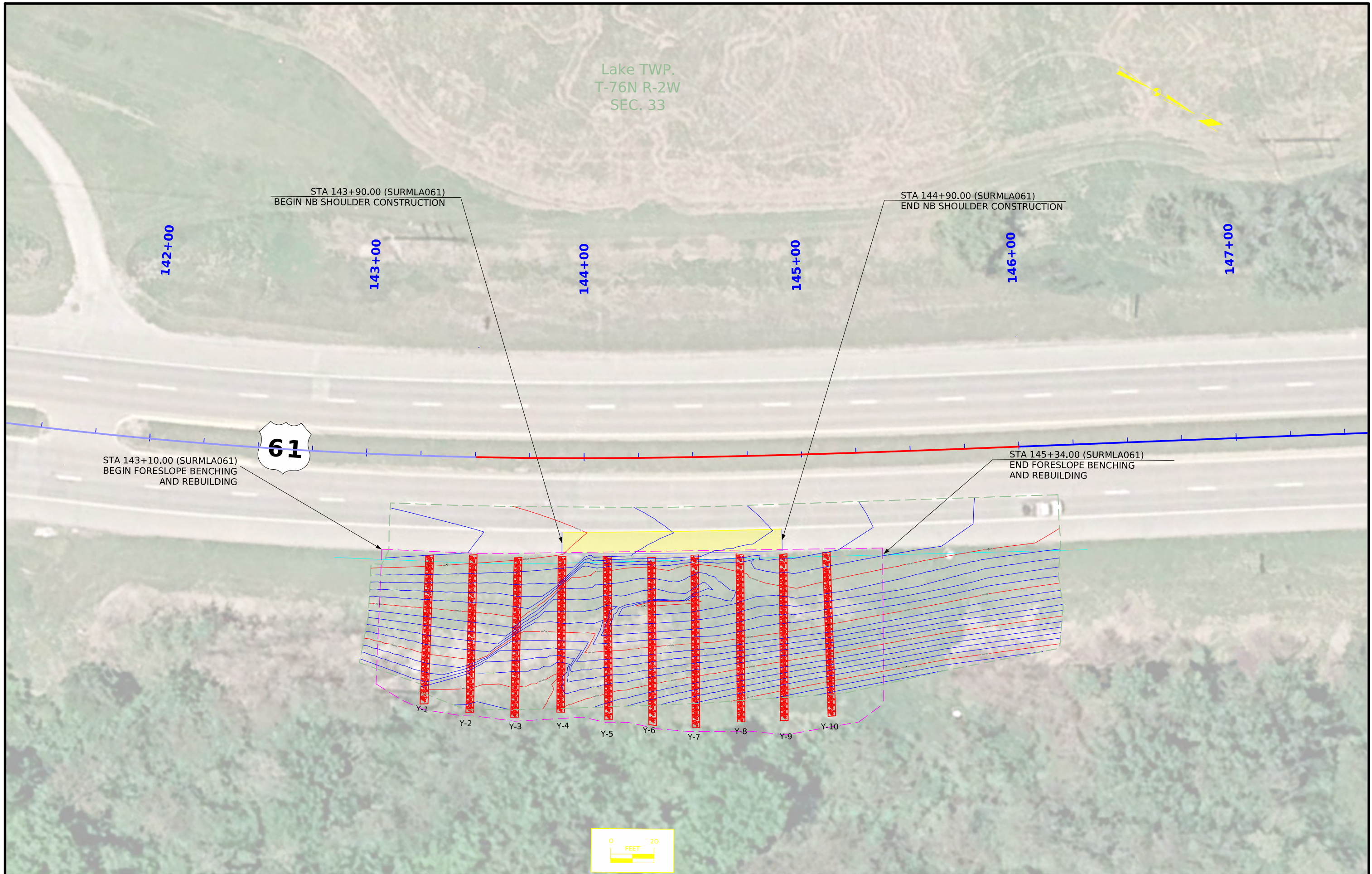
The length of the trenches will vary from approximately 68 feet to 80 feet. The width of each drain shall be a nominal 4 feet, and the depth of excavation is estimated to be about 12 feet below finished grade.

Install a 6-inch diameter perforated pipe at the base of each Yugo drain with a DR-306 subdrain outlet. The bottom of the trench shall be graded to slope to subdrain outlet.

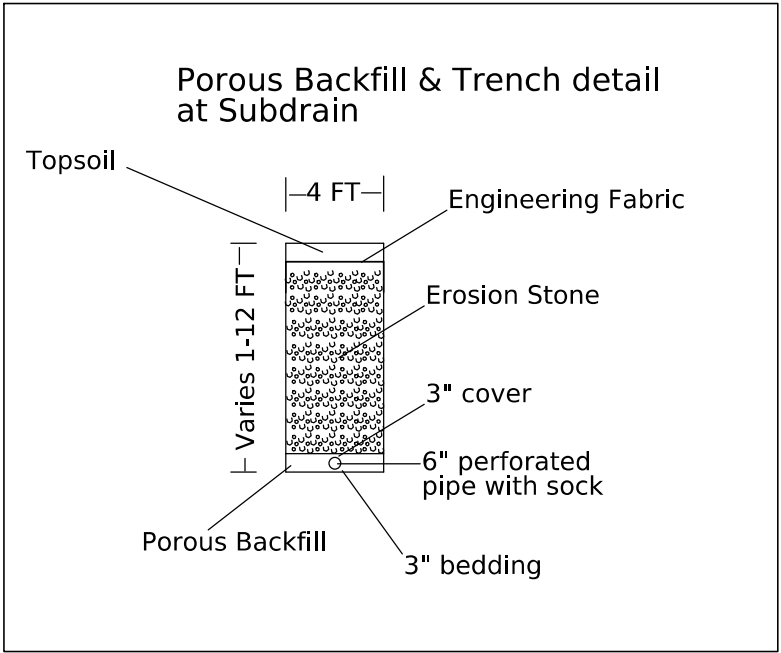
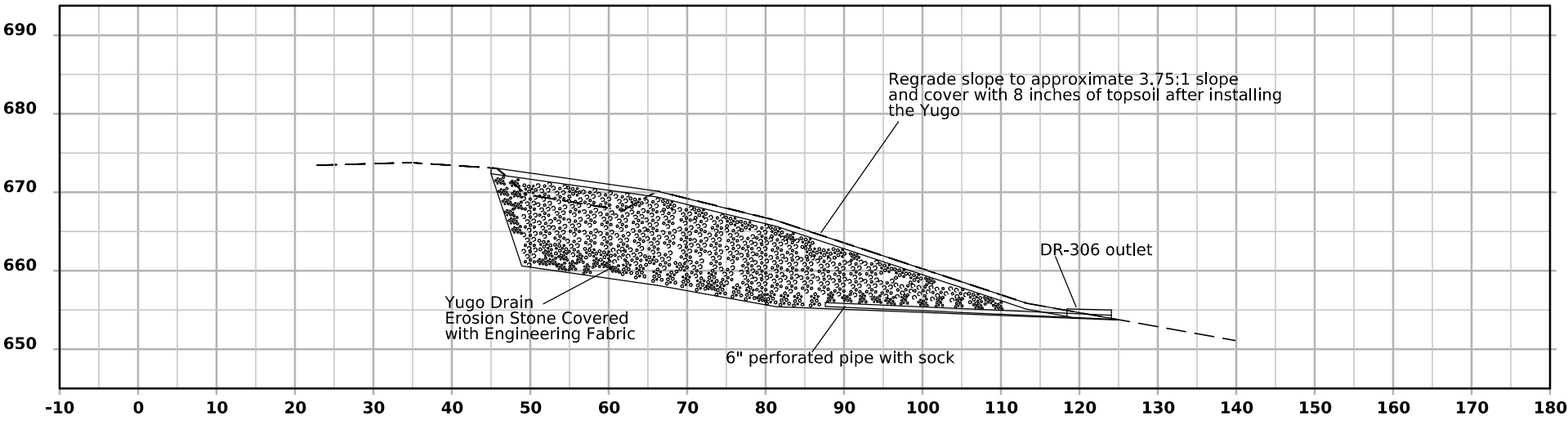
Backfill the Yugo trenches with Erosion Stone to within 8 inches of the finished ground surface. The top of the Erosion Stone and the upper 2 feet of the sides of the trenches shall be covered with Engineering Fabric.

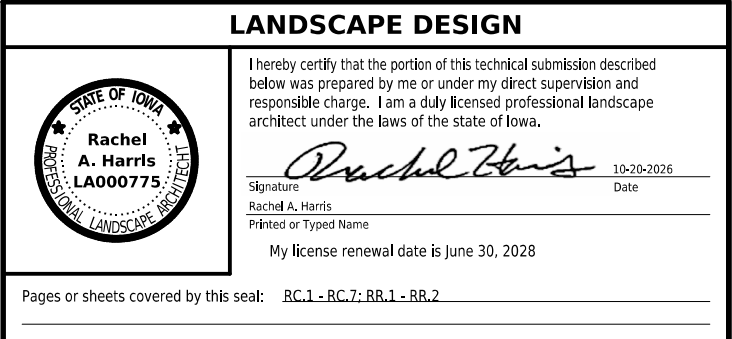
Each Yugo drain shall be backfilling immediately after completing the trench excavation and installing the subdrain.

Place 8 inches of topsoil over the entire foreslope including the top of each Yugo drain.



Typical Yugo Section and Detail





Signature Rachel Harris Date 10-20-2026

My license renewal date is June 30, 2028

Pages or sheets covered by this seal: BC.1 - BC.7; BB.1 - BB.2

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadside Items : Roadside Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	41	Estimate for watering Special Ditch Control, Slope Protection Areas, Turf Reinforcement Mat, or Transition Mat is based on a total of four waterings at a rate of 50 gallons maximum per square, per watering. The first watering should be done no later than the day following placement of the materials with 3 additional watering at intervals of 5 to 8 calendar days. The amount of water used should be sufficient to saturate the seedbed to a depth of approximately 2 inches.
2	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
3	2601-2643413	TURF REINFORCEMENT MAT, TYPE 3	SQ	205	Refer to Tab 100-22 for locations. Refer to Standard Road Plan EC-104. Install according to Article 2601.03, H, 3 of the Standard Specifications. Use Permanent Rural seed mix for the first 8 feet adjacent to the roadway and Native seed mix on the remaining disturbed area.
4	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1,140	Refer to Tab. 100-19 for locations. Refer to Standard Road Plan EC-204. The tabulation includes estimated locations for placement of "Ditch Check 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.
5	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	1,140	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. Item may be used in addition to, or as a direct replacement for "Perimeter and Slope Sediment Control Device, 12 in. dia." with proper spacing adjustments and upon approval of the Engineer.
6	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	2,280	

281_03
11/9/23

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: Perimeter and Slope Sediment Control Devices, Turf Reinforcement Mat Type 3, and Seeding.

111_25 10/20/26		
INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
111_25	INDEX OF TABULATIONS	RC.4
105_04	STANDARD ROAD PLANS	RC.5
100_19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	RC.6
100_22	ROLLED EROSION CONTROL	RC.7

105_04
10/20/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
EC-104	04-17-18	Turf Reinforced Mat (TRM)
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-502	04-21-15	Seeding in Rural Areas

						100_19 10/15/24
PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE						
Possible Standards: EC-204						
Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
143+10.00	145+54.00	Right	Perimeter and Slope	12 inch	250.00	Along edge of shoulder.
143+00.00	146+18.00	Right	Perimeter and Slope	12 inch	330.00	
143+00.00	146+18.00	Right	Perimeter and Slope	12 inch	330.00	30' Offset
Total					910.00	

100_22 8/15/22										
ROLLED EROSION CONTROL										
Refer to EC-101, EC-103 and EC-104.										
Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	TRM Type (EC-104)	TRM Quantity (Squares)	Slope Protection (EC-103) (Squares)	Special Ditch Control (EC-101) (Squares)	Remarks
US 61	143+00.00	146+18.00	Right	320.0	64.0	Type 3	205.0			
Total							205			

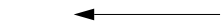
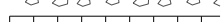
PLAN VIEW CELL LEGEND	
CELL	Design Element
	Clearing & Grubbing

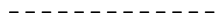
CELL LEGEND OF EROSION CONTROL	
CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

CELL LEGEND OF LANDSCAPING		
CELL	Design Element	Plant Diameter
	Overstory-# Overstory Tree	30 FT
	Evergreen-# Evergreen Tree	18 FT
	Understory-# Understory Tree	12 FT
	Shrub-# Shrub	6 FT
	Shrub-# Shrub	6 FT

PLAN VIEW PATTERN LEGEND			
PATTERN	Design Element	PATTERN	Design Element
	Seeding and Fertilizing		Turf Reinforcement Mat Type 1
	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
	Native Grass Seeding		Turf Reinforcement Mat Type 4
	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
	Wetland Grass Seeding		Transition Mat
	Wildflower Seeding		Rock Features, Permanent
	Sodding		Rock Features, Temporary

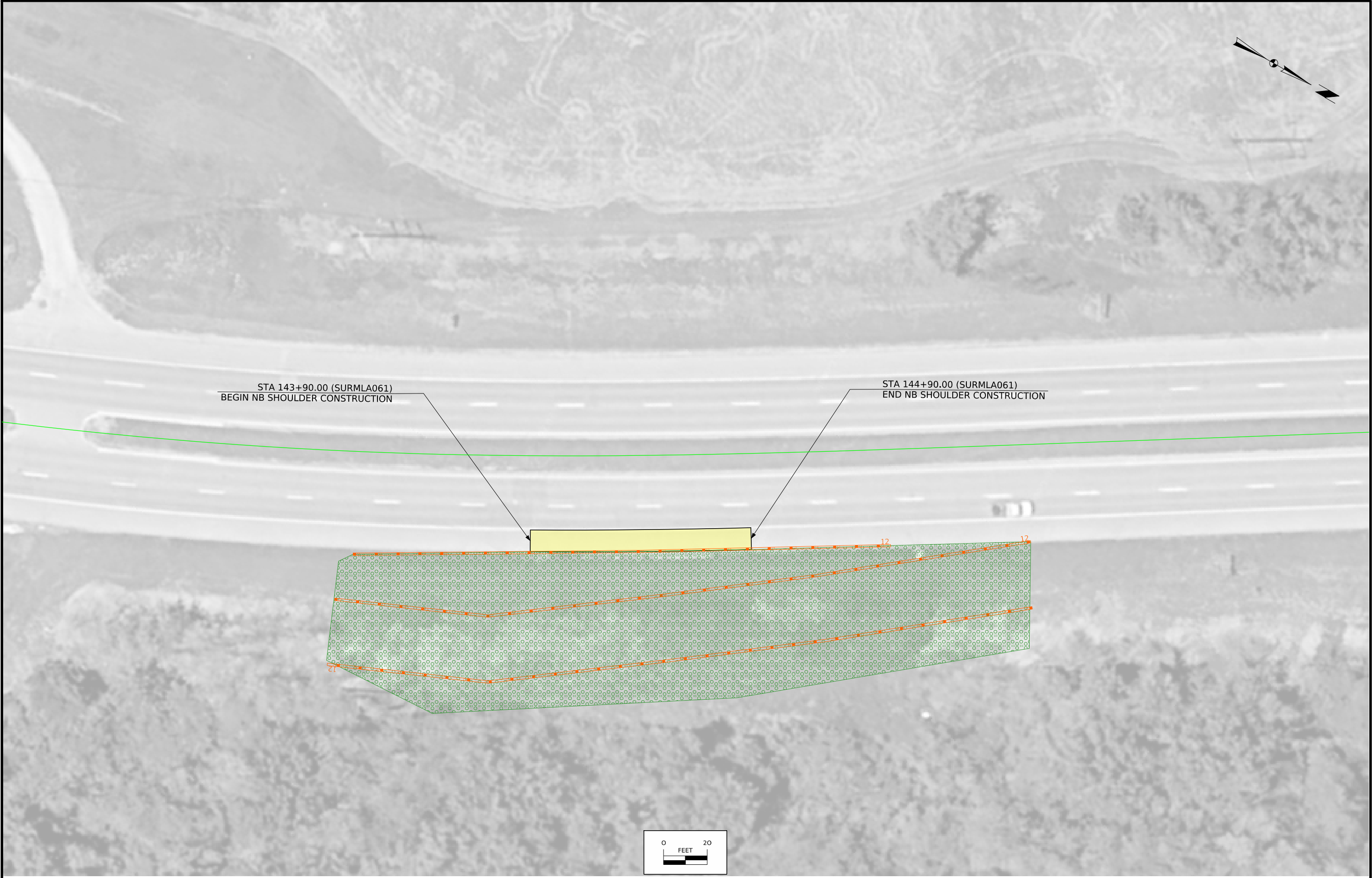
PLAN VIEW COLOR LEGEND		
LINEWORK	Design Color No.	
Green	(2)	 Existing Topographic Features and Labels
Blue	(1)	 Proposed Alignment, Stationing, Tic Marks, and Annotation
Magenta	(5)	 Existing Utilities
Black	(0)	 Permanent Erosion Control Features
Blaze Orange	(222)	 Temporary Erosion Control Features
SHADING	Design Color No.	Transparency
Citron	(234)	 Mulching, All Types 50%
Light Brown	(238)	 Special Ditch Control, Wood Excelsior Mat 0%
Grass Green	(233)	 8FT Mow Strip 50%
HATCHING	Design Color No.	
Red	(3)	 Delineates Restricted Areas
Yellow	(4)	 Brush Clearing
Yellow	(4)	 Clearing & Grubbing
Orange	(228)	 Spray Area

LINE STYLE LEGEND OF EROSION CONTROL SHEETS	
LINESTYLE	Design Element
	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
	Rock Check and Rock Check Dam
	Sheet Flow

LINE STYLE LEGEND OF LANDSCAPE SHEETS	
LINESTYLE	Design Element
	Living Snow Fence Single Row
	Living Snow Fence Double Row
	Mechanical Edge

LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)



FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Muscatine COUNTY	PROJECT NUMBER NHSN-061-4(113)--2R-70	SHEET NUMBER RR.2
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