GRADING
LETTING DATE 03-21-2017
NHSX-032-1(36)--3H-31
DUBUQUE COUNTY

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 - 6	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Project Description
C.1 - 2	Estimated Project Quantities
C.2 - 4	Estimate Reference Information
C.5	Standard Road Plans
C.5	Index of Tabulations
C.5 - 6	Pollution Prevention Plan
C.7 - 30	Tabulations (beg. with tab. of incidentals if needed)
CS Sheets	**Soils Tabulations**
CS.1	Soils Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	Southwest Arterial
E Sheets	**Side Road Plan and Profile Sheets**
* E.1	Access Road "B"
* E.2	Military Road
* E.3	U.S. 61 Connector Road "A"
* E.4	U.S. 61 Connector Road "B"
* E.5 - 6	U.S. 61 Ramp Coonections
G Sheets	**Survey Sheets**
G.1 - 2	Reference Ties and Bench Marks
G.3 - 7	Horizontal Control Tab. & Super for all Alignments
H Sheets	**Right-of-Way Sheets**
H.1 - 4	Southwest Arterial
H.5	U.S. 61 Connector Roads "A" & "B"
H.6	U.S. 61 Ramps "A" & "D" and Loops "B" & "C"
J Sheets	**Traffic Control and Staging Sheets**
* J.1 - 2	Traffic Control Plan, Tabulation of Special Events, Staging Notes
K Sheets	**Interchange Sheets**
* K.1	Southwest Arterial & U.S. 61
* K.2	U.S. 61 Ramp "A"
* K.3	U.S. 61 Loop "B"
* K.4	U.S. 61 Loop "C"
* K.5	U.S. 61 Ramp "D"
L Sheets	**Geometric, Staking and Jointing Sheets**
L.1 - 3	Intersection Southwest Arterial Ramp A and Loop C
L.4 - 6	Intersection Southwest Arterial Loop B and Ramp D
L.7 - 9	Intersection Southwest Arterial and Olde Davenport Rd.
M Sheets	**Storm Sewer Sheets**
M.1	Storm Sewer Tabulations
* M.2	Storm Sewer Plan and Profile Sheet "Southwest Arterial"
MIT Sheets	**Wetland Sheets**
MIT.1 - 2	Wetland Sheets
Q Sheets	**Soils Sheets**
Q.1	Soils Legend & Symbol Information Sheet
Q.2 - 20	Soils Sheets
S Sheets	**Sidewalk Sheets**
* S .1	Sidewalk Legend & Symbol Information Sheet
* S .2 - 4	Shared Use Path Plan & Profile Sheets
SPS Sheets	**Bridge Plan Soils Sheets**
SPS.1 - 5	Bridge Plan Soils Sheets
T Sheets	**Earthwork Quantity Sheets**
T.1 - 15	Earthwork Quantity Sheets
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1 - 14	500 Series, Modified Standards and Detail Sheets
V Sheets	**Bridge and Culvert Situation Plans**
V.1 - 24	Bridge and Culvert Situation Plans
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 82	Mainline Cross Sections
X Sheets	**Side Road Cross Sections**
X.1 - 128	Side Road Cross Sections
Y Sheets	**Ramp Cross Sections**
Y.1 - 75	Ramp Cross Sections

* Color Plan Sheets

IOWADOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

DUBUQUE COUNTY

GRADING

US 61/US 151 to US 20 (SW Arterial in Dubuque)
Military Road to Old Davenport Rd.

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
	Access Road B Sta. 81+89.60 to Sta. 86+51.22	462.51	0.088
	Southwest Arterial Sta. 315+00.00 to Sta. 380+48.56	6548.56	1.240
	U.S. 61 Connector Road "A" Sta. 6+95.00 to Sta. 29+44.05	2249.05	0.426
	Silverwood Drive Sta. 16+50.00 to Sta. 18+80.00	230.00	0.044
	U.S. 61 Connector Road "B" Sta. 10+55.12 to Sta. 40+00.00	2944.88	0.558
	Ramp A Sta. 1519+08.66 to Sta.1536+48.79	1740.13	0.330
	Loop B Sta. 2522+75.00 to Sta. 2530+26.57	751.57	0.142
	Loop C Sta. 3522+48.98 to Sta. 3529+94.64	745.66	0.141
	Ramp D Sta. 4517+38.72 to Sta. 4531+87.06	1448.34	0.274
	Project Totals=	16658.19	3.243

REVISIONS

TOTAL
449
PROJECT IDENTIFICATION NUMBER
94-31-032-010
PROJECT NUMBER
NHSX-032-1(36)--3H-31
R.O.W. PROJECT NUMBER
NHSN-032-1(20)--2R-31

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811

APPROVED

CITY ENGINEER DATE
CITY OF DUBUQUE, IOWA

DESIGN DATA RURAL

20--	AADT	N/A	V.P.D.
2030	AADT	21,100	V.P.D.
2030	DHV	2030	V.P.H.
TRUCKS		--	%
Total Design ESALs		--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Mark D. Durbahn, PE AECOM	Primary Signature Block
CS.1, Q.1-Q.20	Theresa M. Stromberg-Murphy, PE Terracon	Soils Sheets
SPS.1-SPS.5	Theresa M. Stromberg-Murphy, PE Terracon	Soils Sheets
V.1-V.24	Michael P. Caven, PE AECOM	RCB Sheets
CULVERT STANDARDS	Norman L. McDonald	Structural Design

LICENSED PROFESSIONAL ENGINEER
MARK DURBAHN 13157
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 Durbahn 12/21/16
MARK DURBAHN Date

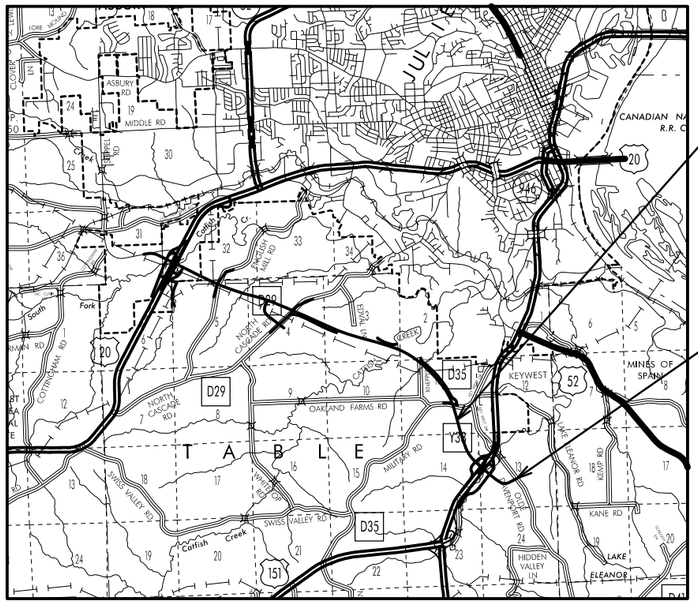
License number 13157

My license renewal date is December 31, 2016

Pages or sheets covered by this seal:
A.1-2, B.1-6, C.1-30, D.1-4, E.1-6, G.1-7, H.1-6, J.1-J.2, K.1-5, L.1-9, M.1-2, MIT.1-2, S.1-4, T.1-15, U.1-14, W.1-82, X.1-128, Y.1-75

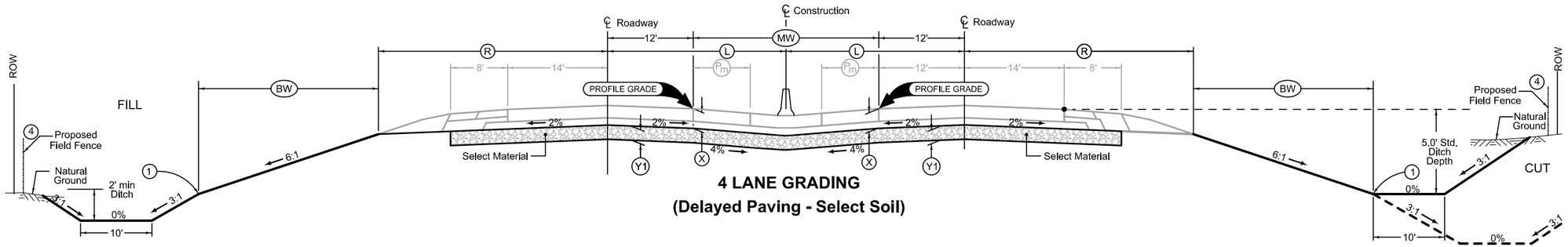
ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER A.1

4:14:15 PM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_a01.sht

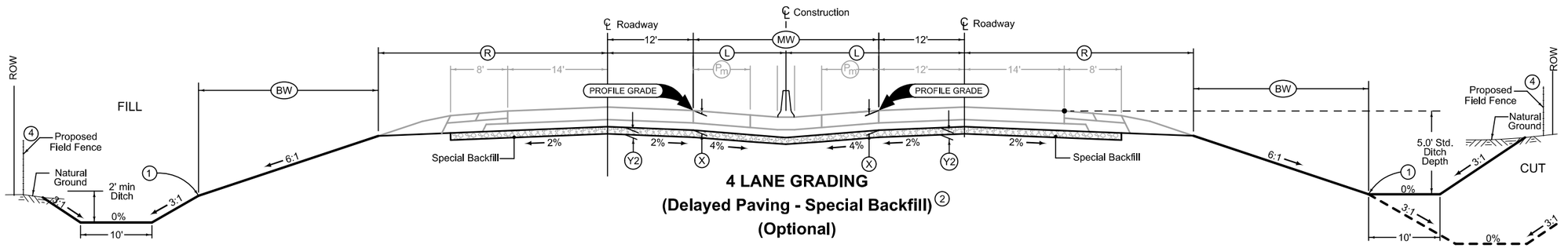


ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	A.2

G_4D_Grade_Delay_S
Modified



4 LANE GRADING
(Delayed Paving - Select Soil)



4 LANE GRADING
(Delayed Paving - Special Backfill) (2)
(Optional)

(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment.
See Detail 'A"

(3) Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.

(4) See Tabulation 100-7 and Plan Sheets for Locations.

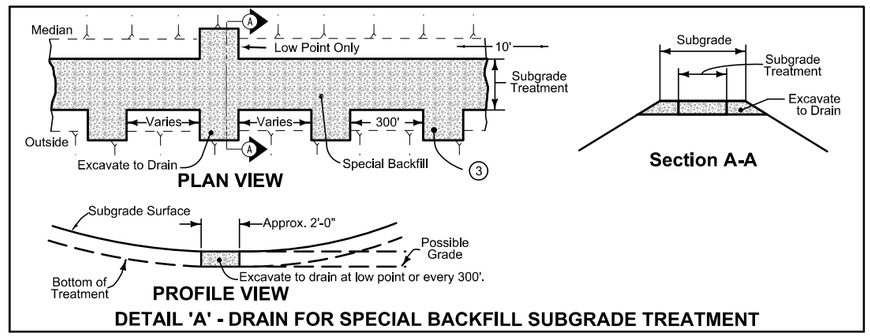
(5) Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

Quantity calculations based on Contractor-supplied Select Soil (Y-1 dimensions) except as modified by detail AECOM-1 on sheet B.5.

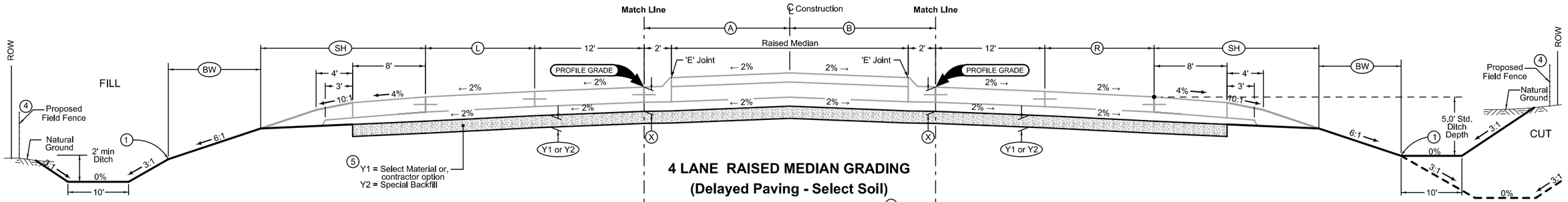
LOCATION			DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(MW) Feet	(Y1) Inches	(Y2) Inches
Southwest Arterial	315+00	338+65	25	32.5	16.0	19.3	26.0	24.0	12.0
Southwest Arterial	338+65	340+15	25-22	32.5	16.0	19.3	20.0	24.0	12.0



DETAIL 'A' - DRAIN FOR SPECIAL BACKFILL SUBGRADE TREATMENT

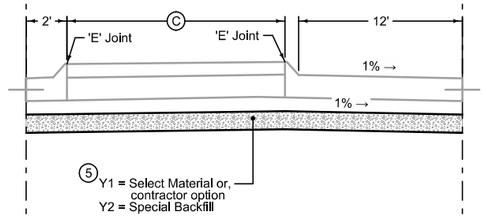
ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	B.1

2:19:54 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_B01.sht

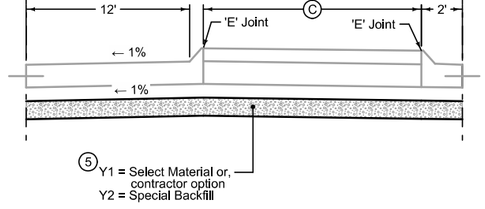


4 LANE RAISED MEDIAN GRADING
(Delayed Paving - Select Soil)
(or optional Special Backfill) (2)

BEGIN STATION	END STATION	(C) Feet
341+35.0	344+53.1	5



BEGIN STATION	END STATION	(C) Feet
345+30.7	346+90.1	5
358+37.4	360+50.1	5



(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A"

(3) Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.

(4) See Tabulation 100-7 and Plan Sheets for Locations.

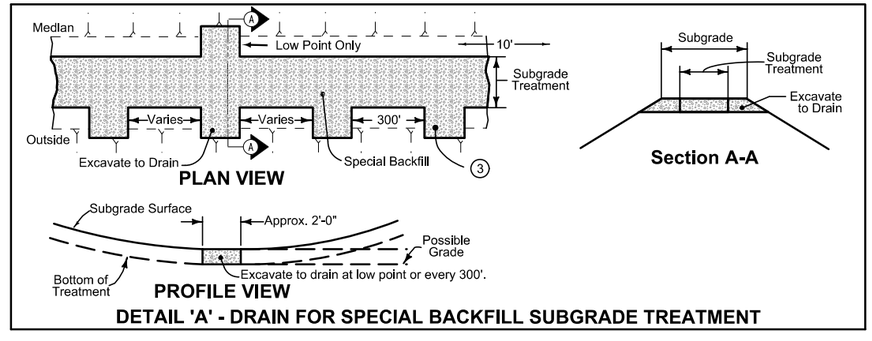
(5) Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

Quantity calculations based on Contractor-supplied Select Soil (Y-1 dimensions) except as modified by detail AECOM-1 on sheet B.5.

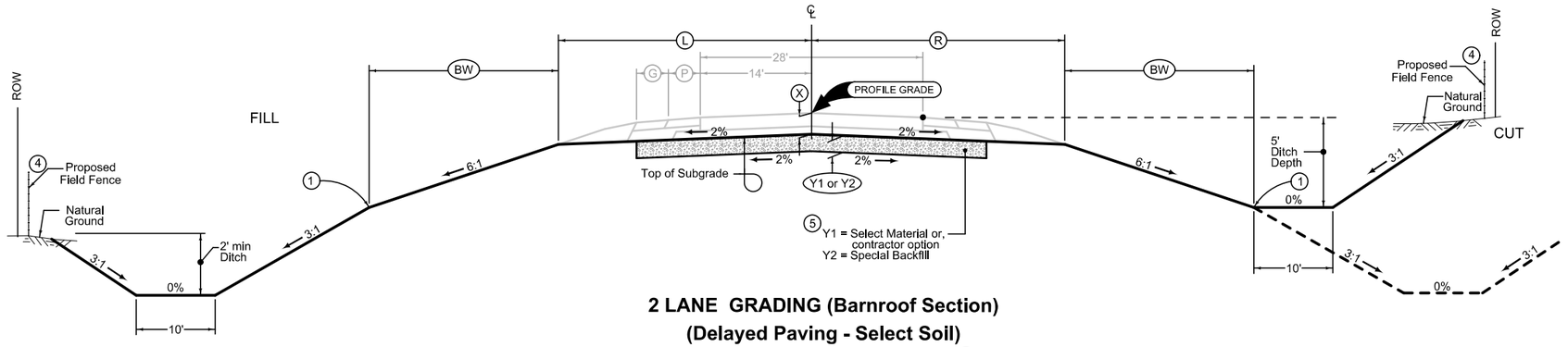
LOCATION			DIMENSIONS										
ROAD IDENTIFICATION	STATION TO STATION		(A) Feet	(B) Feet	(X) Inches	(SH) Feet	(BW) Feet	(Y1) Inches	(Y2) Inches	(L1) Feet	(L2) Feet	(R1) Feet	(R2) Feet
Southwest Arterial	340+15	346+43.6	10.0	10.0	16.0	19.0	18.6	24.0	12.0	12.0	14.0	12.0	14.0
Southwest Arterial	346+43.6	348+10.0	10-8.2	-	16.0	19.0	18.6	24.0	12.0	12.0	14.0	-	-
Southwest Arterial	348+10.0	349+90.1	8.2-4	-	16.0	19.0	18.6	24.0	12.0	12.0	14-2	-	-
Southwest Arterial	349+90.1	350+01.6	4.0	-	16.0	19.0	18.6	24.0	12.0	12.0	2.0	-	-
Southwest Arterial	346+43.6	346+50.4	-	10.0	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Southwest Arterial	346+50.4	349+30.2	-	10-4	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Southwest Arterial	349+30.2	350.01.6	-	4.0	16.0	19.0	18.6	24.0	12.0	-	-	12.0	14.0
Bridge	350+01.6	355+62.6											
Southwest Arterial	355+62.6	357+81.6	4.0	4.0	16.0	19.0	18.6	24.0	12.0	12.0	2.0	12.0	14.0
Southwest Arterial	357+81.6	360+50.0	4.0	-	16.0	19.0	18.6	24.0	12.0	12.0	12.0	-	-
Southwest Arterial	360+50.0	362+50.0	4-2	-	16.0	19.0	18.6	24.0	12.0	12.0	2.0	-	-
Southwest Arterial	362+50.0	364+50.0	0	-	16.0	19.0	18.6	24.0	12.0	14.0	0	-	-
Southwest Arterial	357+81.6	358+37.4	-	4-16	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0
Southwest Arterial	358+37.4	360+50.0	-	16.0	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0
Southwest Arterial	360+50.0	364+50.0	-	16-0	16.0	19.0	18.6	24.0	12.0	-	-	14.0	0



DETAIL 'A' - DRAIN FOR SPECIAL BACKFILL SUBGRADE TREATMENT

G_2_Grade_BR
Modified

1. Refer to project plan and cross sections for specific location of foreslope change.
2. If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A"
3. Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
4. See Tabulation 100-7 and Plan Sheets for Locations.
5. Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

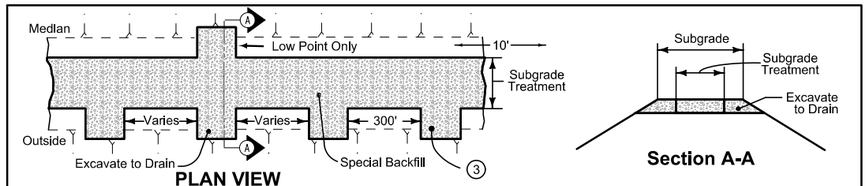


2 LANE GRADING (Barnroof Section)
(Delayed Paving - Select Soil)
(or optional Special Backfill) (2)

LOCATION			DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(Y1) Inches	(Y2) Inches
Southwest Arterial	364+50.0	380+37.37	31.9	31.9	16	19.9	24	12

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

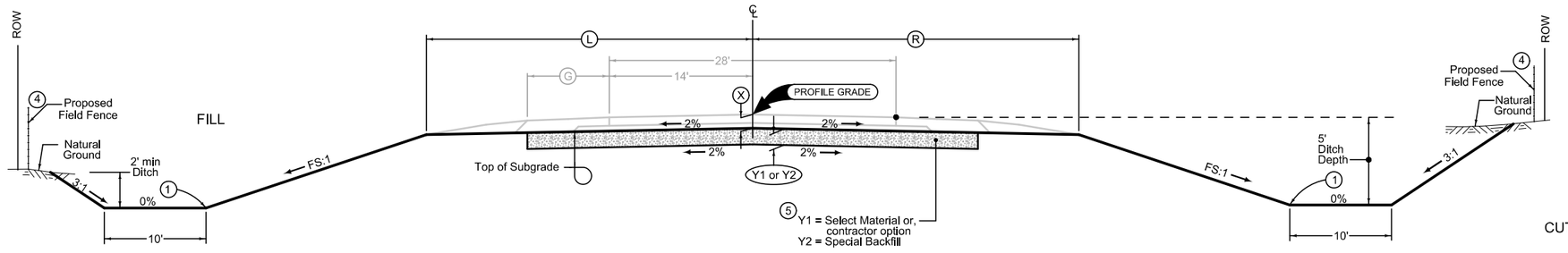
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.



DETAIL 'A' - DRAIN FOR SPECIAL BACKFILL SUBGRADE TREATMENT

G_2_Grade
Modified

1. Refer to project plan and cross sections for specific location of foreslope change.
2. If contractor chooses to utilize special backfill, no extra payment shall be made and this item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment. See Detail 'A"
3. Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.
4. See Tabulation 100-7 and Plan Sheets for Locations.
5. Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.

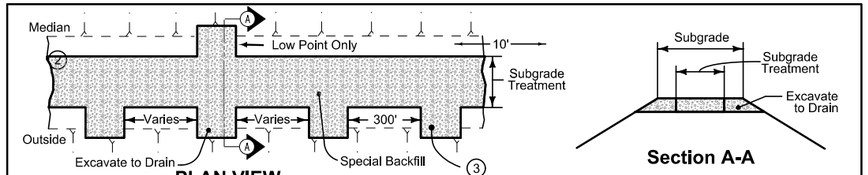


2 LANE GRADING
(Delayed Paving - Select Soil)
(or optional Special Backfill) (2)

LOCATION			DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS	(Y1) Inches	(Y2) Inches
US61 CONN RD A	6+95.00	29+08.04	22.4	22.4	14.5	3	24	12
SILVERWOOD DRIVE	1116+50.00	1117+81.51	22.4	22.4	14.5	3	24	12
US61 CONN RD B	10+55.00	17+55.63	22.4	22.4	14.5	3	24	12
US61 CONN RD B	20+21.82	39+69.50	22.4	22.4	14.5	3	24	12

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.



DETAIL 'A' - DRAIN FOR SPECIAL BACKFILL SUBGRADE TREATMENT

G_1R_Grade
Modified

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

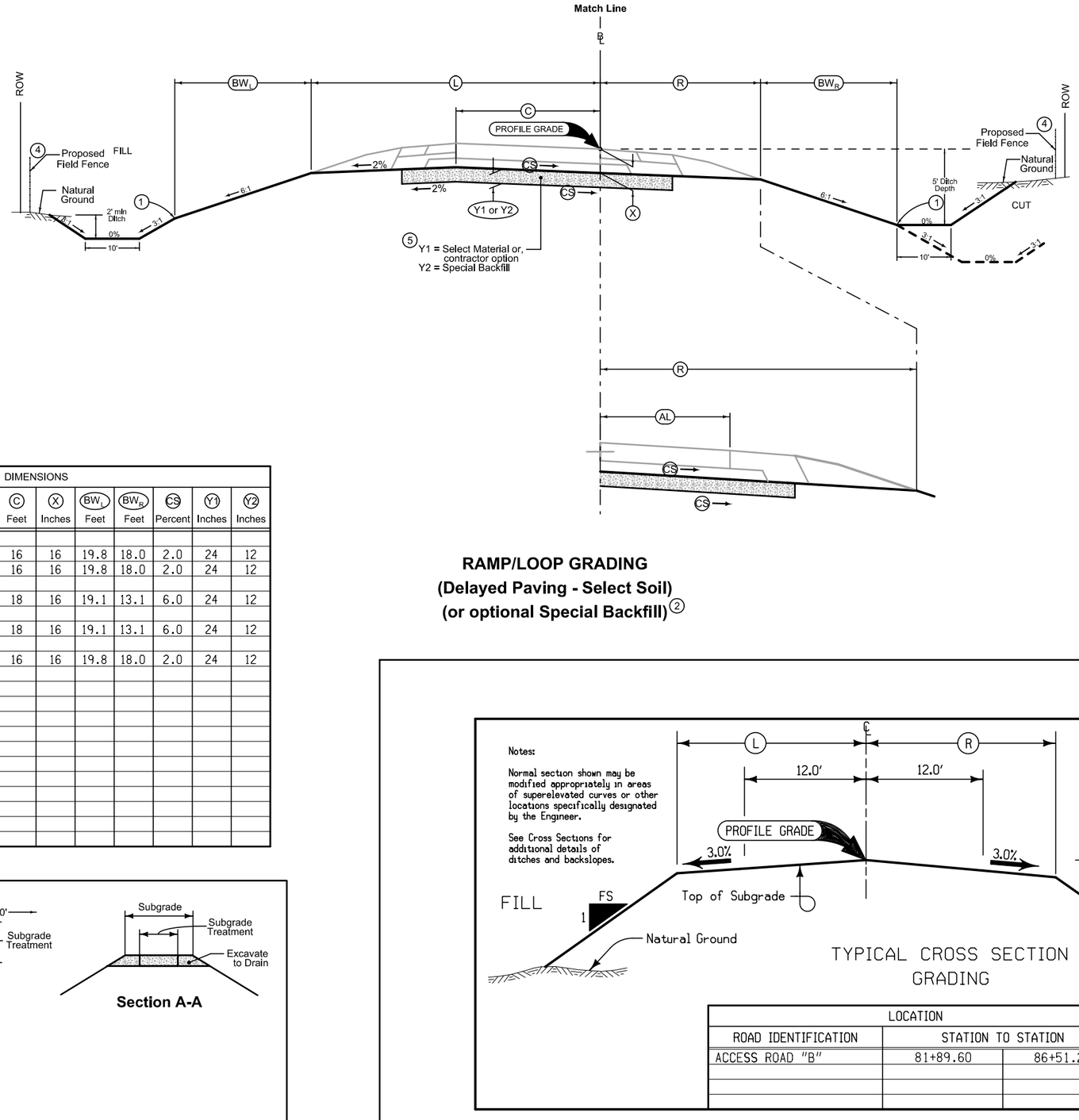
(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) If contractor chooses to utilize special backfill, no extra payment shall be made and this Item will be incidental to the price bid for Select Soil. Select Soil shall be paid at the contract unit price even though the special backfill is used as the optional subgrade treatment.
See Detail 'A"

(3) Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.

(4) See Tabulation 100-7 and Plan Sheets for Locations.

(5) Compaction with Moisture Control for Select Soil is incidental and will not be paid for separately. Maintain moisture content within limits specified in Tab. 103-6 on CS Sheets.



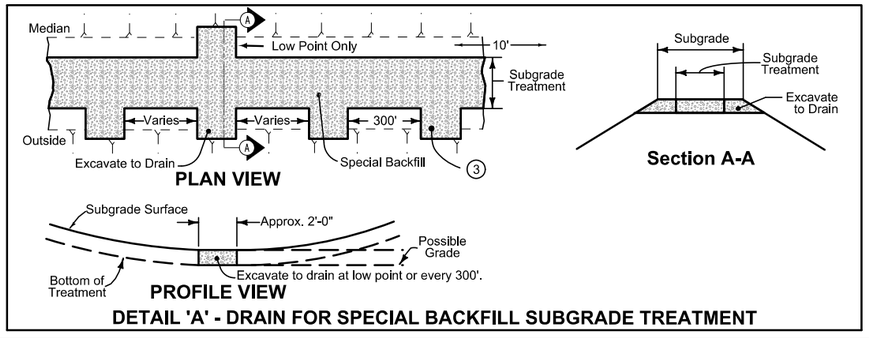
Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

STATION TO STATION		(AL) Feet	(R) Feet
1522+38.90	1525+58.12	12-0	28.0-16.0

RAMP/LOOP GRADING
(Delayed Paving - Select Soil)
(or optional Special Backfill)(2)

LOCATION			DIMENSIONS								
INTERCHANGE	RAMP	STATION TO STATION	(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet	(CS) Percent	(Y1) Inches	(Y2) Inches
US-61/151											
	A	1522+38.90 1525+58.12	30.3	-	16	16	19.8	18.0	2.0	24	12
	A	1525+58.12 1536+00.00	30.3	16.0	16	16	19.8	18.0	2.0	24	12
	B	2522+75.00 2530+26.00	32.9	21.0	18	16	19.1	13.1	6.0	24	12
	C	3522+48.98 3529+88.90	32.9	21.0	18	16	19.1	13.1	6.0	24	12
	D	4517+66.72 4531+87.06	30.3	16.0	16	16	19.8	18.0	2.0	24	12



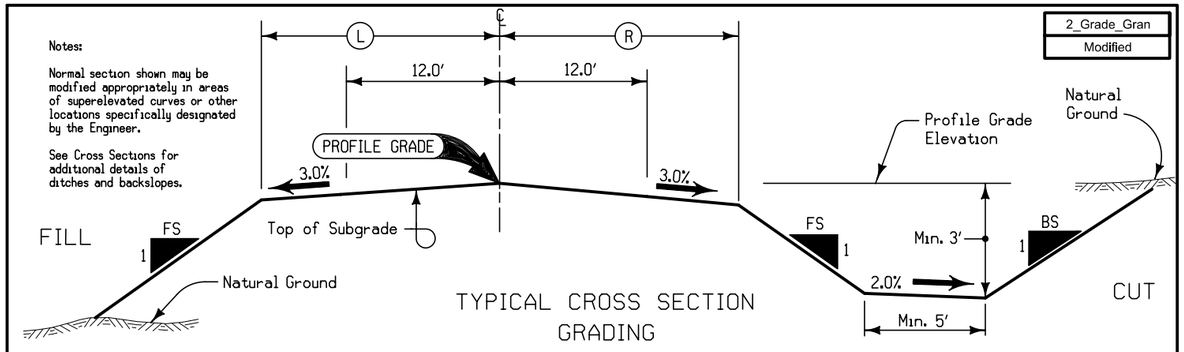
DETAIL 'A' - DRAIN FOR SPECIAL BACKFILL SUBGRADE TREATMENT

2_Grade_Gran
Modified

Notes:

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Cross Sections for additional details of ditches and backslopes.



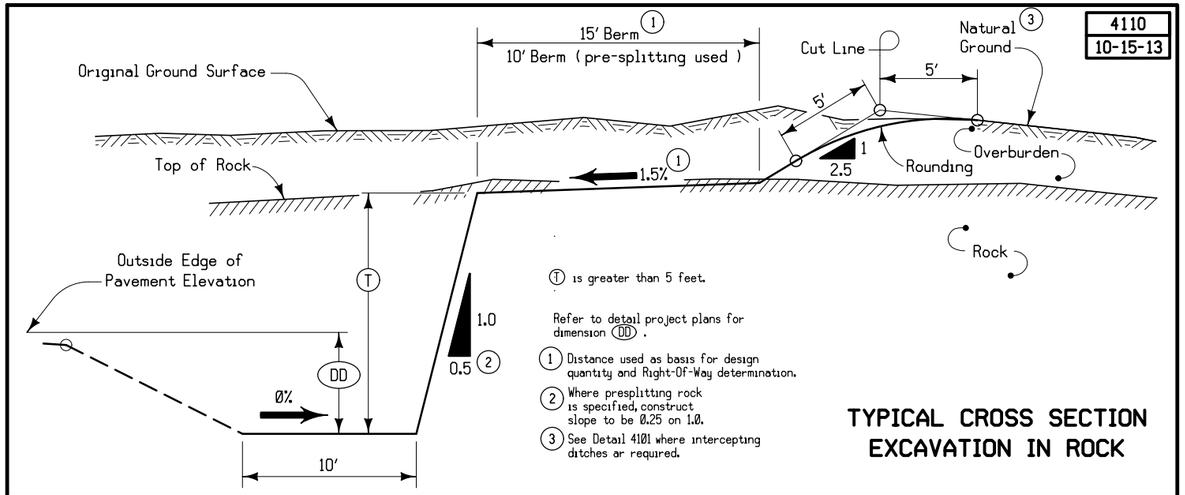
TYPICAL CROSS SECTION GRADING

LOCATION			DIMENSIONS		SLOPES	
ROAD IDENTIFICATION	STATION TO STATION		(L)	(R)	FS	BS
ACCESS ROAD "B"	81+89.60	86+51.22	15'	15'	3	3

ENGLISH | IOWA DOT | DESIGN TEAM | AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER B.4

2:19:57 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_B01.sht

4110
10-15-13



T is greater than 5 feet.

Refer to detail project plans for dimension (DD).

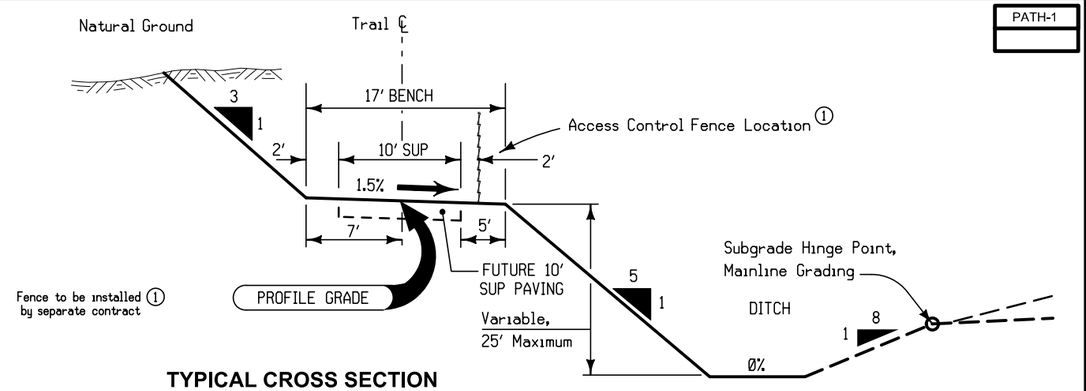
(1) Distance used as basis for design quantity and Right-Of-Way determination.

(2) Where presplitting rock is specified, construct slope to be 0.25 on 1.0.

(3) See Detail 4101 where intercepting ditches ar required.

TYPICAL CROSS SECTION EXCAVATION IN ROCK

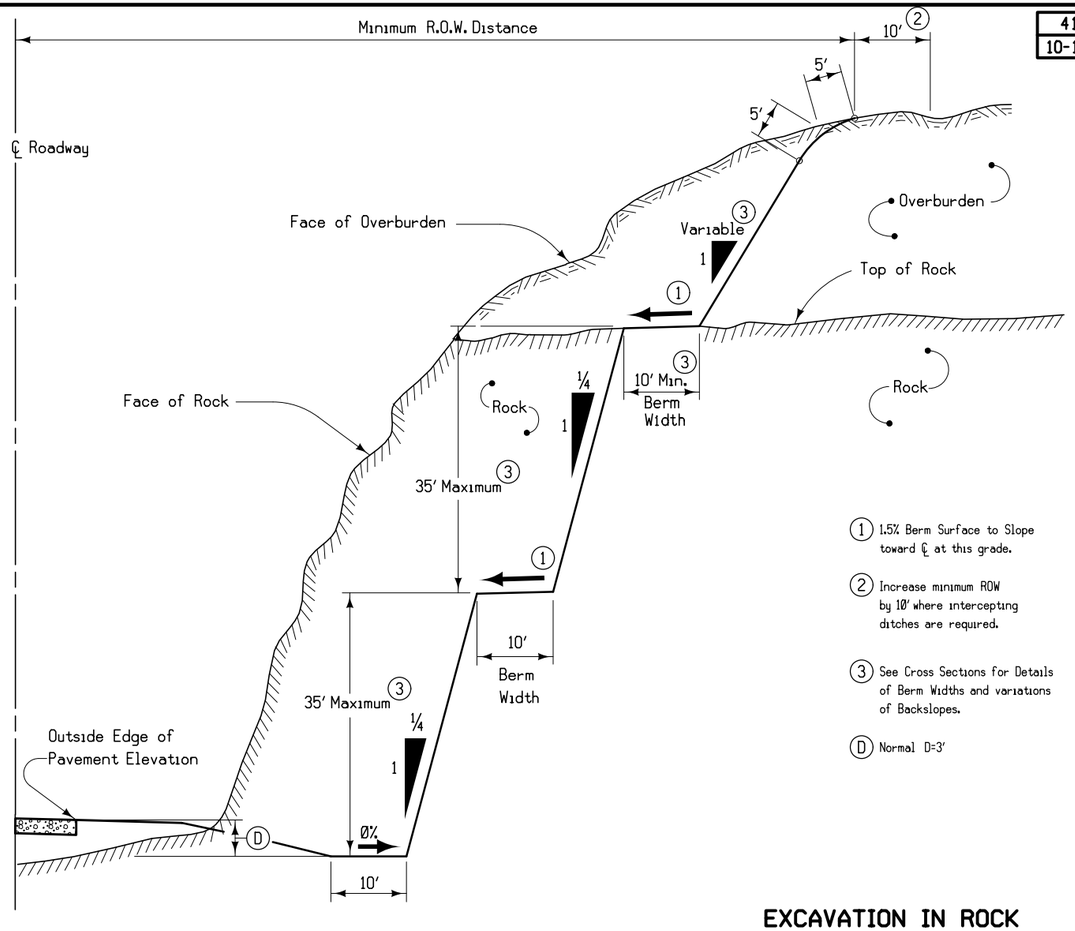
PATH-1



TYPICAL CROSS SECTION SHARED USE PATH BENCHED INTO BACKSLOPE

Sta. 8359+25± to Sta. 8369+00±, 'Bike8'
Sta. 8372+14± to Sta. 8379+30±, 'Bike8'

4111
10-15-13



(1) 1.5% Berm Surface to Slope toward ℄ at this grade.

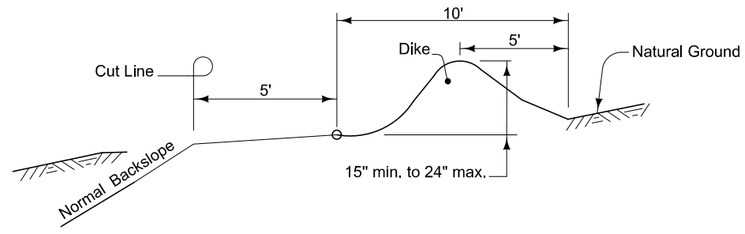
(2) Increase minimum ROW by 10' where intercepting ditches are required.

(3) See Cross Sections for Details of Berm Widths and variations of Backslopes.

(D) Normal D=3'

EXCAVATION IN ROCK USING PRE-SPLITTING METHOD

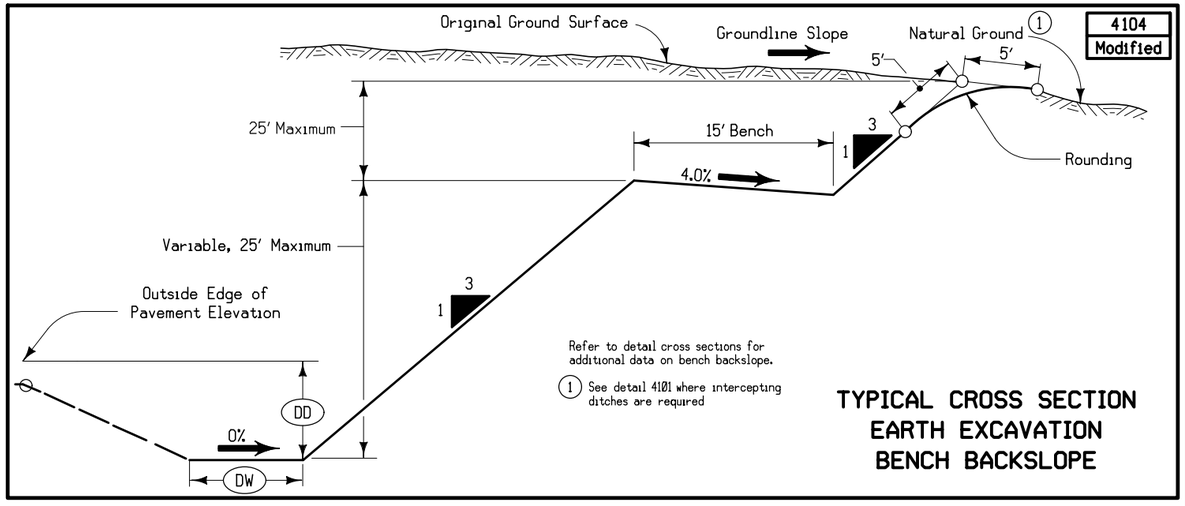
4101
04-20-10



Refer to plans for locations of intercepting ditches. Dike for intercepting ditch shall be made by taking earth from roadway side. Do not excavate back of dike.

TYPICAL CROSS SECTION INTERCEPTING DITCH

4104
Modified



Refer to detail cross sections for additional data on bench backslope.

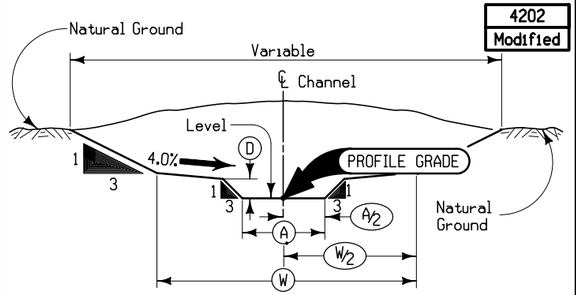
(1) See detail 4101 where intercepting ditches are required

TYPICAL CROSS SECTION EARTH EXCAVATION BENCH BACKSLOPE

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER B.5

2:19:58 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_B01.sht

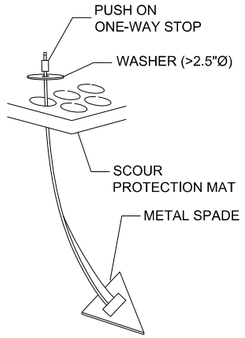
4202
Modified



TYPICAL CROSS SECTION
TYPE 2 CHANNEL

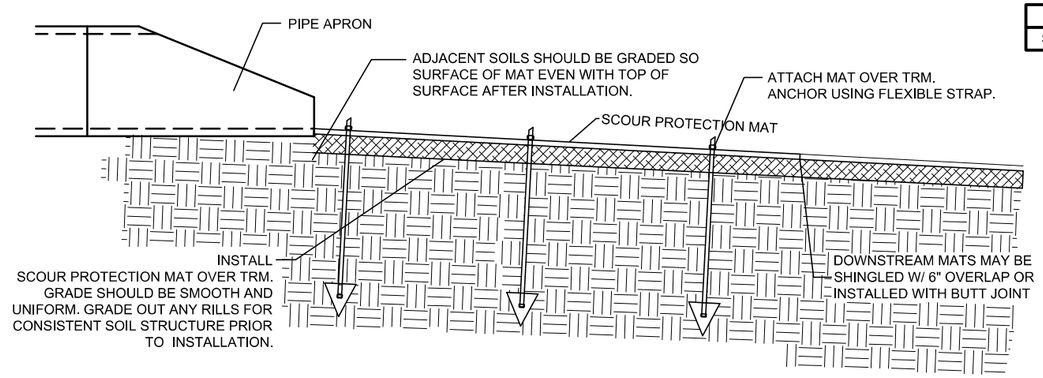
LOCATION		WIDTH (A)	WIDTH (W)	DEPTH (Average) (D)
STATION	SIDE			
Granger Creek				
10+10 to 11+80	Both	20′	52′	4′
13+15 to 16+65	Both	20′	52′	4′

X-5
SPECIAL



TYPICAL SCOUR PROTECTION MAT ANCHOR

X-4
SPECIAL



Refer to Tabulation 100-22 for additional information.

TYPICAL TURF REINFORCEMENT MAT (TRM) AND SCOUR PROTECTION MAT PLACEMENT

AECOM-1

Contractor shall excavate Class 12 area as indicated, dispose of the material and replace as described in this detail.

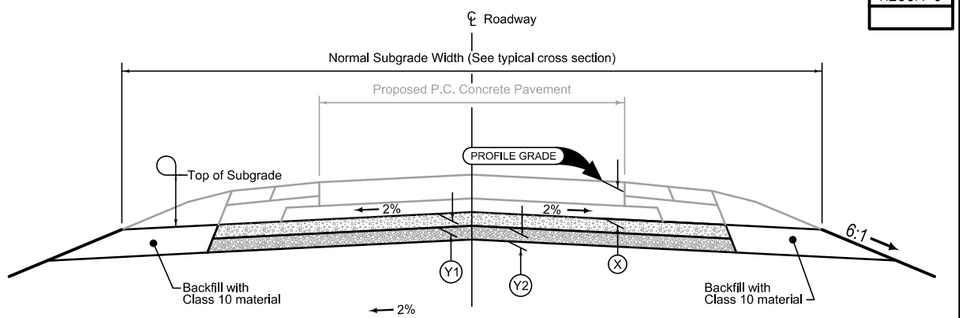
Shale Cut: Y1 is 12 inches thick backfill material which can be either Select Cohesive Soil (quantified within the plans) or Special Backfill at the Contractor's option. Y2 is 12 inches and will include Select Cohesive Soil. Select Cohesive Soil shall meet the requirements of Article 2102.02. D. 1. a. Special Backfill shall meet the requirements of Article 4132.

Limestone Cut: Y1 is 12 inches thick which can either be Select Soil or Special Backfill (quantified within the plans) at the Contractor's option. If Y1 is Select Soil then Y2 is 12 inches thick and will also contain Select Soil.

If the optional treatment is utilized, it shall be incidental to the price bid for the quantified item. The quantified treatment shall be paid at the contract unit price even though the optional subgrade treatment is utilized.

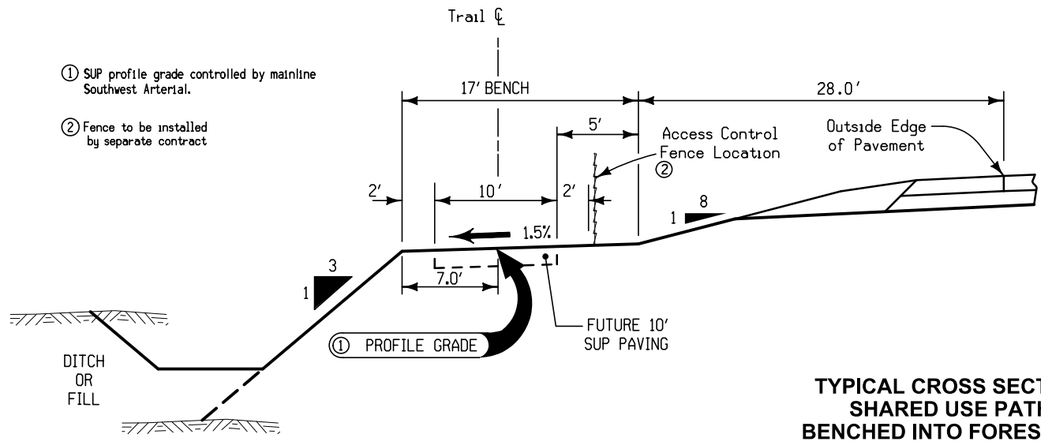
See T-Sheet quantities for additional information.

See typical cross sections for ditches and backslopes.



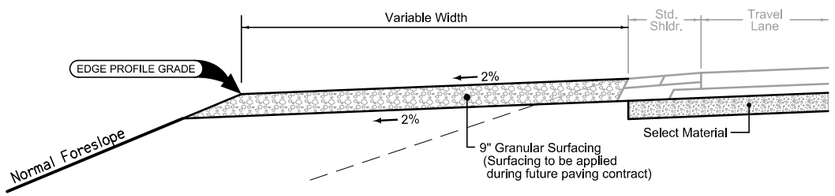
TYPICAL CROSS SECTION
SUBCUT EXCAVATION AND BACKFILL
IN LIMESTONE AND SHALE

PATH-2



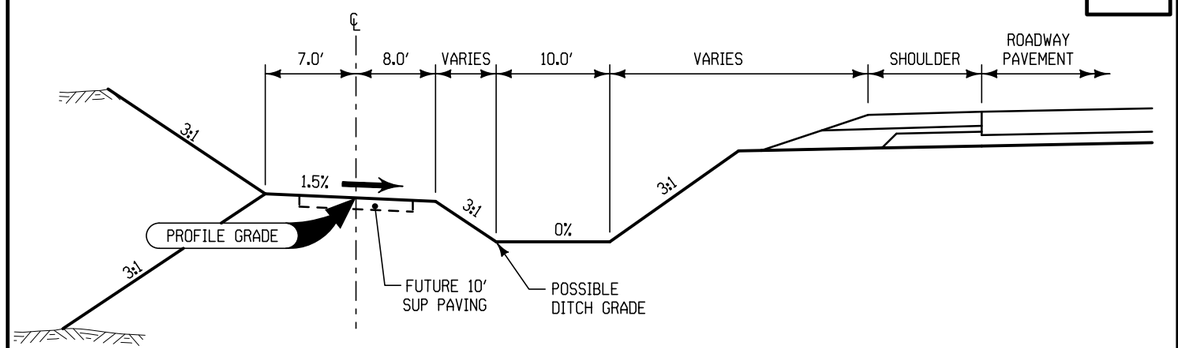
TYPICAL CROSS SECTION
SHARED USE PATH
BENCHED INTO FORESLOPE
(Controlled by Mainline Profile)

AECOM-2



TYPICAL CROSS SECTION
SHOULDER WIDENING
FOR OVERSIZE/OVERWEIGHT VEHICLES

PATH-3



TYPICAL CROSS SECTION
SHARED USE PATH

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER B.6

2:19:58 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_B01.sht

100-1D
10-18-05

PROJECT DESCRIPTION

This project includes 4-lane grading of Southwest Arterial from Military Road to Olde Davenport Road. Grading of US-61 interchange ramps A' and 'D', and loops 'B' and 'C'. Grading of US-61 Connector Roads 'A' and 'B' including property accesses. Construction of a wetland mitigation site.

100-1C
04-17-12

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
1	2101-0850001	CLEARING AND GRUBBING	ACRE	12.8					12.8					
2	2101-0850002	CLEARING AND GRUBBING	UNIT	366					366					
3	2102-0425071	SPECIAL BACKFILL	CY	1808.0					1808.0					
4	2102-2200000	INTERCEPTING DITCHES AND FLUMES	LF	5675.0					5675.0					
5	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT	CY	70512.2					70512.2					
6	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	657763.0					657763.0					
7	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	150.0					150.0					
8	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY	137328.0					137328.0					
9	2102-3240000	WATER FOR EMBANKMENT CONSTRUCTION	MGAL	250.00					250.00					
10	2102-4560000	LOCATING TILE LINES	STA	370.00					370.00					
11	2103-0000100	PRESPLITTING OF ROCK CUT	SY	29530.0					29530.0					
12	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	86925.0					86925.0					
13	2105-8425020	TOPSOIL, STRIP AND STOCKPILE	CY	8283.0					8283.0					
14	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	728275.2					728275.2					
15	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	1136.0					1136.0					
16	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	669.8					669.8					
17	2402-0425040	FLOODED BACKFILL	CY	2524.5					2524.5					
18	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	1561.5					1561.5					
19	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EACH	5					5					
20	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	2					2					
21	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	10					10					
22	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	2					2					
23	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	2					2					
24	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH	6					6					
25	2416-0100054	APRONS, CONCRETE, 54 IN. DIA.	EACH	2					2					
26	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.	LF	18.0					18.0					
27	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	218.0					218.0					
28	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	50.0					50.0					
29	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	122.0					122.0					
30	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	346.0					346.0					
31	2416-1180054	CULVERT, CONCRETE ROADWAY PIPE, 54 IN. DIA.	LF	258.0					258.0					
32	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	172.0					172.0					
33	2416-1240048	CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	250.0					250.0					
34	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA.	EACH	4					4					
35	2422-0360036	APRONS, UNCLASSIFIED, 36 IN. DIA.	EACH	4					4					
36	2422-1722024	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA.	LF	114.0					114.0					
37	2422-1722036	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 36 IN. DIA.	LF	116.0					116.0					
38	2435-0254702	BARRIER INTAKE, SW-547, WELL ONLY	EACH	7					7					
39	2435-0254902	BARRIER INTAKE, SW-549, WELL ONLY	EACH	3					3					
40	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.	LF	390.0					390.0					
41	2502-8221305	SUBDRAIN OUTLET, DR-305	EACH	1					1					
42	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE	LF	709.0					709.0					
		PIPE (RCP), 2000D (CLASS III), 15 IN.												
43	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE	LF	250.0					250.0					
		PIPE (RCP), 2000D (CLASS III), 18 IN.												
44	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE	LF	120.0					120.0					
		PIPE (RCP), 2000D (CLASS III), 24 IN.												
45	2506-4984000	FLOWABLE MORTAR	CY	49.3					49.3					
46	2507-3250005	ENGINEERING FABRIC	SY	7460.4					7460.4					
47	2507-6800061	REVETMENT, CLASS E	TON	179.6					179.6					
48	2507-8029000	EROSION STONE	TON	4672.1					4672.1					
49	2510-6745850	REMOVAL OF PAVEMENT	SY	99.7					99.7					
50	2518-6910000	SAFETY CLOSURE	EACH	20					20					
51	2520-3350015	FIELD OFFICE	EACH	1					1					
52	2526-8285000	CONSTRUCTION SURVEY	LS	1.00					1.00					
53	2528-8445110	TRAFFIC CONTROL	LS	1.00					1.00					
54	2533-4980005	MOBILIZATION	LS	1.00					1.00					
55	2599-9999001	STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING	ACRE	83.6					83.6					
56	2599-9999001	SUBGRADE STABILIZATION	ACRE	23.0					23.0					
57	2599-9999009	DITCH CHECKS	LF	17795.0					17795.0					
58	2599-9999009	MAINTENANCE OF DITCH CHECKS	LF	1779.5					1779.5					
59	2599-9999009	REMOVAL OF DITCH CHECKS	LF	17795.0					17795.0					
60	2601-2633100	MOWING	ACRE	50.0					50.0					
61	2601-2634100	MULCHING	ACRE	167.2					167.2					
62	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	3815					3815					
63	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	83.6					83.6					
64	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	986.80					986.80					
65	2601-2643300	MOBILIZATION FOR WATERING	EACH	3					3					
66	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	1119					1119					
67	2602-0000020	SILT FENCE	LF	2013.0					2013.0					

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
68	2602-0000050	SILT BASINS	EACH	86					86					
69	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	2013.0					2013.0					
70	2602-0000080	REMOVAL OF SILT BASINS	EACH	86					86					
71	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	201.3					201.3					
72	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN	EACH	6					6					
73	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	6					6					
74	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	18					18					
75	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE	LF	800.0					800.0					
76	2602-0000160	ROCK CHECK DAM	LF	6596.0					6596.0					
77	2602-0000170	MAINTENANCE OF ROCK CHECK DAM	EACH	963					963					
78	2602-0000180	REMOVAL OF ROCK CHECK DAM	EACH	741					741					
79	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1800.0					1800.0					
80	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	36560.0					36560.0					
81	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	38360.0					38360.0					
82	2602-0000400	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10					10					
83	2602-0000410	MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10					10					
84	2602-0000420	REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	10					10					
85	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1					1					
86	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1					1					
87	2610-0000120	TREES	EACH	177					177					
		NOTE: SEE V-SHEETS FOR ADDITIONAL STRUCTURAL QUANTITIES.												

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING
		See Tabulation 110-17 and the D, E and K-Sheets for locations and details.
-	-	-
2	2101-0850002	CLEARING AND GRUBBING
		Item is for the removal of field fence within the project construction limits. See Tabulation 110-17
		for location and details.
-	-	-
3	2102-0425071	SPECIAL BACKFILL
		Item is for subgrade treatment in areas with existing limestone cut. See Typical AECOM-1 on the
		B-sheets for details. Also see CS-Sheets and W-Sheets for additional information.
-	-	-
4	2102-2200000	INTERCEPTING DITCHES AND FLUMES
		Refer to Tabulation 100-16, B-Sheet Detail 4101 and the U-sheets for locations and details.
-	-	-
5	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT
		Quantity is for subgrade treatment under Southwest Arterial. See Typical 4 Lane Grading, (Delayed
		Paving-Select Soil), on the B-Sheets and Tabulation 103-11 for locations and details. Also see
		D-Sheets and W-Sheets for additional information. Compaction with Moisture Control is required for
		placement of this item.
-	-	-
6	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW
		Item is for Class 10 excavation. Refer to Tabulation 107-28 for template quantities.
-	-	-
7	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS
		Item is for boulders that may be uncovered during excavation. See Tabulation 103-7 for details.
-	-	-
8	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW
		Item is for limestone (rock), and shale uncovered during excavation. Bedrock, mostly consisting of
		shale, was encountered at various depths across the Southwest Arterial alignment. Some of the
		excavations will extend into the bedrock. Rippability of the bedrock will vary depending on the type
		of bedrock. In general, significant penetration into the shale bedrock was possible when the soil
		borings were obtained. The shale material is typically weathered and behaves similar to a hard soil.
		Therefore, excavation with backhoes equipped with teeth may be possible in the shale bedrock, although
		no guarantees of this condition can be made. Placement of the shale in the new constructed embankments
		shall comply with the Special Provisions for Shale and Soft Rock Embankments. No payment for overhaul
		will be allowed for this item. Measurement and payment for this item will include all work necessary
		to meet this Special Provision. There is a stockpile of shale east of North Cascade Road near Sta.
		175+00 which is to be used as fill on this project following the same requirements as described in the
		Special Provision above. Refer to Tabulation 107-28 for template quantities. Total quantity is based
		on Template Rock Volume column, [6] plus Template Shale Volume column, [7].

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Refer to Tabulation 107-25 on the CS Sheet for locations of rock splitting. The contractor may also
		choose to crush the excavated rock and use it as special backfill in lieu of select soil on the project.
-	-	-
9	2102-3240000	WATER FOR EMBANKMENT CONSTRUCTION
		Item is for the shale processing as described in the special provision.
-	-	-
10	2102-4560000	LOCATING TILE LINES
		Item is for locating tile lines along Southwest Arterial corridor. See Standard Road Plan DR-302 for
		farm tile replacement. Tile replacement or repair will be handled as extra work.
-	-	-
11	2103-0000100	PRESPLITTING OF ROCK CUT
		Item for pre-splitting of limestone encountered on the project. See Tabulation 107-25 for details.
-	-	-
12	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD
		Topsoil will be stripped at locations as described in Tabulation 103-4. Also refer to Tabulation 107-28
		for locations. No payment for overhaul will be allowed for this item. Topsoil shall be placed at a
		depth of 8" on all disturbed areas. Measurement and payment per cubic yard will be full compensation
		for constructing this item in accordance with the specifications and the following provisions. Payment
		shall include all materials, equipment, tools and labor necessary to strip, salvage and spread topsoil.
-	-	-
13	2105-8425020	TOPSOIL, STRIP AND STOCKPILE
		Excess stripped topsoil shall be stockpiled for future SW Arterial grading construction. Refer to
		Tabulation 103-4 for locations and details. Also refer to Tabulation 107-28 for locations.
		Measurement and payment per cubic yard will be full compensation for constructing this item in
		accordance with the specifications and the following provisions. Payment shall include all materials,
		equipment, tools and labor necessary to strip and stockpile the topsoil.
-	-	-
14	2107-0875100	COMPACTION WITH MOISTURE CONTROL
		Refer to Tabulation 103-6 for details and locations requiring Compaction with Moisture Control.
-	-	-
15	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN
		Item is for backfill in drainage ways. Refer to Tabulation 104-5C for locations and details.
-	-	-
16	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE
		Refer to Tabulation 102-3 and the D-sheets, E-Sheets and K-Sheets for locations and details.
-	-	-
17	2402-0425040	FLOODED BACKFILL
		Quantity is for pipe culvert and box culvert backfill. Refer to Tabulation 104-3 for pipe culvert
		locations and details. Refer to Tabulation 104-4 for box culvert locations and details.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	-
18	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT
		Quantity is for excavation of the roadway pipe culvert locations. Refer to Tabulation 104-3 for
		locations and details.
-	-	-
19-37	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.
	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.
	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.
	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.
	2416-0100054	APRONS, CONCRETE, 54 IN. DIA.
	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.
	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.
	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.
	2416-1180054	CULVERT, CONCRETE ROADWAY PIPE, 54 IN. DIA.
	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.
	2416-1240048	CULVERT, 3000D CONCRETE ROADWAY PIPE, 48 IN. DIA.
	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA.
	2422-0360036	APRONS, UNCLASSIFIED, 36 IN. DIA.
	2422-1722024	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA.
	2422-1722036	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 36 IN. DIA.
		See Tabulations 102-3, 104-3, 104-5B and the D, E, K, M and S Sheets for locations and details.
-	-	-
38-39	2435-0254702	BARRIER INTAKE, SW-547, WELL ONLY
	2435-0254902	BARRIER INTAKE, SW-549, WELL ONLY
		See the D-Sheets and the M-Sheets for locations and details.
-	-	-
40-41	2502-8212206	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.
	2502-8221305	SUBDRAIN OUTLET, DR-305
		Items are for subdrain to be placed around the working blanket in drainage ways. Refer to Tabulation
		104-5C for locations and details.
-	-	-
42-44	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.
	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.
	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.
		See Tabulation 104-5B and the D and M sheets for locations and details.
-	-	-
45	2506-4984000	FLOWABLE MORTAR
		Quantity is for pipe culvert backfill. Refer to Tabulation 104-3 for locations and details.
-	-	-
46-48	2507-3250005	ENGINEERING FABRIC
	2507-6800061	REVETMENT, CLASS E
	2507-8029000	EROSION STONE
		Items are for the construction of rock splash basins at culvert outlets. They are also for the
		construction of rock erosion control in ditches. See Tabulation 100-23 and the U-Sheets for locations
		and details.
-	-	-
49	2510-6745850	REMOVAL OF PAVEMENT
		Refer to Tabulation 110-1 for location and details.
-	-	-
50	2518-6910000	SAFETY CLOSURE
		See Tabulation 108-13A for locations and details.
-	-	-
51	2520-3350015	FIELD OFFICE
	-	In addition to meeting the requirements of Specification 2520.03, the field office shall have two
		separate rooms with each having an outside entrance and a doorway between. The rooms shall be at least
		8’x20’ (nominal dimensions) with climate control in each room. One room shall be set up as an office
		with at least 2 work stations. The other room shall be equipped with a microwave, a work bench, and be
		mostly open to allow for meeting space. An 8’ folding table with a dozen chairs shall also be provided.
-	-	-
53	2528-8445110	TRAFFIC CONTROL
	-	Item is for all tools, materials, labor, and equipment necessary for traffic control, except for those
		items which are specifically covered by another bid item. Refer to Tabulations 108-23A and 108-26A on
		the J-Sheets for details.
-	-	-
55	2599-9999001	STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING
		Seed for "STABILIZING CROP - NATIVE GRASS SEEDING AND FERTILIZING" will be furnished and mixed by the
		Contracting Authority.
		Contact the contracting authority 48 hours before seeding and the seed will be delivered to the project
		site.
		Seed will be delivered in lots of 40 acres per delivery. Once the seed is delivered to the project,
		the seed must be stored inside a rodent and moisture free environment.
		Included for areas where topsoil slope dressing has been spread and the final grading is completed, and
		for areas identified for Native Grass Seeding per Standard Road Plan EC-502.
		Prepare seedbed according to 2601.03, B, 4, a. Fertilize all disturbed areas per Article 2601.03, C.1.
		Seed may be applied by broadcasting or with a Native Grass Drill. Broadcasted seed will require one

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		complete rolling of the area seeded with a cultipacker within 24 hours after seeding and prior to
		mulching or hydromulching.
		Native Grass Drilled Seed must meet Article 2601.03, A, 11 and be completed per Article 2601.03, C, 5
		prior to mulching or hydromulching.
-	-	-
56	2599-9999001	SUBGRADE STABILIZATION
		Subgrade Stabilization shall be installed from hinge point to hinge point of roadway cross section,
		(including across subgrade treatment), when select soil is used for subgrade treatment. In locations
		where special backfill is used for subgrade treatment in lieu of select soil, only apply the subgrade
		stabilization across area from hinge point to start of subgrade treament on each side of cross section.
		Subgrade Stabilization does not need to be installed over granular materials.
		Apply and distribute evenly and uniformly 1.5 tons per acre of dry cereal straw or native grass straw.
		Use Certified Noxious Weed Seed Free Mulch certified by the Iowa Crop Improvement Association or other
		state's Crop Improvement Program.
		The general absense of straw longer than 6 inches after the distribution will be considered excessive
		pulverization and will not be accepted.
		After the application of the dry cereal straw or native grass straw, apply a tackifier that will easily
		mix with water and shall be noncorrosive to hydraulic application equipment. The tackifier will be
		nonfoaming and contain mixture enhancers to prevent foaming and mixing problems during agitation in the
		application equipment.
		Application equipment will have both mechanical agitation and a slurry bypass.
		Application rate will be as indicated by the manufacturer product label for the site conditions and
		time of year.
		Tackifiers will be considered safe to the applicator, adjacent workers and the environment when
		properly applied according to the Environmental Protection Agency (EPA) and other regulatory agencies.
		Material Safety Data Sheets (MSDS) will be required to be submitted to the Engineer prior to
		application.
		The tackifier will be nontoxic to plants, fish and other wildlife and 100% biodegradable.
		The tackifier will be water soluble natural proteins, vegetable gums, guar gums, starch, psyllium,
		pitch, or rosen type blended with gelling and hardening agents, or a water soluble blend of hydrophilic
		polymers, viscosifiers, sticking aids or other gums.
		Guar gum based tackifiers will consist of a minimum of 95% guar gum, by weight. The remaining 5% will
		consist of dispersing and cross-link additives. Starch will be a non-iconic, cold-water soluble
		(pre-gelatinized) granular cornstarch. Psyllium will be a finely ground muciloid coating of plantago
		seeds that is applied in a wet slurry to the surface of the soil. Pitch and Rosen will be a non-ionic
		pitch and rosin emulsion that has a minimum solids content of 48 percent. The rosin will be a minimum
		of 26 percent of the total solids content. The tackifier will be a non-corrosive, water dilutable
		emulsion that cures to water-insoluble binding and cementing agent upon application.
		Approved products include:
		Hyrdatack P by Innovative Turf Solutions, LLC
		HF5000 Tack by Rantec Corporation
		Second Nature Tacpac GTX by Central Fiber Corp.
		Startak 100 P by Chemstar
		Method of Measurement will be in acres to the nearest 0.1 acre of subgrade stabilized.
		Basis of Payment for Subgrade Stabilization will be the contract unit price per acre to the nearest 0.1
		acre for Subgrade Stabilization. Payment is full compensation for preparing the area and all
		materials, labor and for equipment required to stabilize the subgrade.
-	-	-
57	2599-9999009	DITCH CHECKS
		Install silt fence per contract documents or slash mulch berm at locations indicated on Tabulation
		100-18 and the U-Sheets.
		The slash mulch berms shall be a trapezoid 6 feet wide at the base, minimum 30 inches in height, and
		1/2:1 side slopes. The maximum height of the berm shall not exceed 40 inches.
		All material used for the slash mulch berms will have a maximum length of individual pieces not to
		exceed 20 inches. Maximum width shall not exceed 2 inches. Material shall be accepted based upon a
		visual inspection.
		Method of Measurement: Linear feet to the nearest 0.1 foot.
		Basis of Payment: Per linear foot for the length of ditch check properly installed.
-	-	-
58	2599-9999009	MAINTENANCE OF DITCH CHECKS
		Maintain silt fence or slash muclh berm ditch checks. Refer to Article 2602.03, G and H for maintenance
		of silt fence and clean out of slash mulch berms.
		Maintenance on slash mulch berms will be required when the berm height is less than 30 inches or the
		base is less than 6 feet wide. The Contractor shall be responsible for all labor, materials, equipment
		and services that may be necessary for, and incidental to, the maintenance of the slash mulch berms.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Method of Measurement: Linear feet to the nearest 0.1 foot.
		Basis of Payment: Per linear foot for the length of the ditch check properly clearned out or repaired.
-	-	-
59	2599-9999009	REMOVAL OF DITCH CHECKS
		Dispose of the ditch check material off the project unless Engineer approves a suitable site within the
		project limits.
-	-	-
60	2601-2633100	MOWING
		All mowings must be completed with a flail type mower. No rotary, disk or sickle type mowers will be
		allowed.
		Areas inacessible to field equipment shall be cut with appropriate hand equipment and kept current with
		the mowing of adjacent areas.
-	-	-
61	2601-2634100	MULCHING
		Straw Mulch: Rate 1 ½ tons of straw per acre. All mulch is to be consolidated into the soil with the
		mulch stabilizer. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop
		Improvement Association or adjacent state's Crop Improvement Associations.
-	-	-
62	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT
		See Tabulation 100-22 and U-Sheets for locations and details. Seed according to Table 2601.03-7.
-	-	-
63	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING
		Included for disturbed areas prior to final grading and topsoil placement. Refer to "STABILIZING
		CROP-NATIVE GRASS SEEDING AND FERTILIZING" for seeding once final grading and topsoil is placed. Seed
		and fertilize all disturbed areas per Article 2601.03, C.1.
-	-	-
64-65	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION
	-	Quantities are for watering special ditch control and turf reinforcement mat items. Refer to C-sheets
		and U-sheets for locations and details.
-	-	-
66	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2
		See Tabulation 100-22 and the U-Sheets for locations and details. Seed according to Table 2601.03-7.
-	-	-
67	2602-0000020	SILT FENCE
		Refer to Tabulation 100-17 and the U-Sheets for locations and details. The tabulation includes
		estimated locations for placement of Silt Fence to address possible erosion during construction.
		Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25%
		additional quantity for field adjustments and replacements.
-	-	-
68	2602-0000050	SILT BASINS
		Refer to Tabulation 100-14 and the U-Sheets for locations and details. The tabulation includes
		estimated locations for placement of Silt Basins to address possible erosion during construction.
		Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100%
		additional quantity for field adjustments and maintenance.
-	-	-
69	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
		This item is included for silt fence removal required for staging reasons, for replacement (replacement
		to be paid separately), or for areas where grading activities are complete. See Tabulations 100-17 and
		100-18 for details.
-	-	-
70	2602-0000080	REMOVAL OF SILT BASINS
		Refer to Tabulation 100-14 and the U-Sheets for locations and details. Bid item includes 100%
		additional quantity for field adjustments and maintenance.
-	-	-
71	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
		This item is included for cleanout and repair of the silt fence during the project. See Tabulations
		100-17 and 100-18 for details.
-	-	-
72	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN
		See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by
		count for each Temporary Sediment Control Basin installed. Basis of payment for Temporary Sediment
		Control Basin will be at the contract unit price per each for Temporary Sediment Control Basin.
		Payment is full compensation for preparing the areas and all materials, labor and equipment required to
		install the temporary sediment control basin.
-	-	-
73	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN
		See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by
		count for each Temporary Sediment Control Basin removed. Basis of payment for Temporary Sediment
		Control Basin will be at the contract unit price per each Temporary Sediment Control Basin removed.
		Payment is full compensation for all labor required to remove each Temporary Sediment Control Basin.
-	-	-
74	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN
		See Tabulation 100-33 and the U-Sheets for locations and details. Method of measurement will be by
		count for each Temporary Sediment Control Basin maintained. Basis of payment for Maintenance of
		Temporary Sediment Control Basin will be at the contract unit price per each time maintenance is
		required for a temporary sediment control basin.
-	-	-
75	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE
		Construct temporary entrances at locations where construction traffic leaves construction site and
		enters onto a public road. Method of measurement will be per linear feet for Stabilized Construction
		Entrances. Basis of Payment for Stabilized Construction Entrance will be at the contract unit price

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		per linear foot to the nearest 0.1 linear foot for Stabilized Construction. Assume 100 linear feet per
		entrance. Payment is full compenstaion for preparing the area and all materials, labor and equipment
		required to construct and maintain the entrances.
-	-	-
76	2602-0000160	ROCK CHECK DAM
		Bid quantity includes both rock check dams used to replace silt fence for ditch checks as needed and
		rock check dams used for storm water storage. See Tabulation 100-32 and the U-Sheets for locations and
		details. Method of measurement will be per linear foot for Rock Check Dams. Basis of payment for Rock
		Check Dams will be at the contract unit price per linear foot to the nearest linear foot for Rock Check
		Dam. Payment is full compensation for preparing the areas and all materials, labor and equipment
		required to install the rock check dams.
-	-	-
77	2602-0000170	MAINTENANCE OF ROCK CHECK DAM
		This item is included for cleanout and repair of the rock check dams during the project. See Tabulation
		100-32 for details. Method of measurement for Maintence of Rock Check Dam will be by count for each
		Rock Check Dam maintained. Basis of payment for Maintenance of Rock Check Dam will be at the contract
		unit price per each time maintenance is required for a rock check dam.
-	-	-
78	2602-0000180	REMOVAL OF ROCK CHECK DAM
		This item is included for rock check dam removal required for staging reasons, for replacement
		(replacement to be paid separately), or for areas where grading activities are complete. See
		Tabulations 100-32 for details. Method of measurement will be by count for each Rock Check Dam
		removed. Basis of payment for Removal of Rock Check Dam will be at the contract unit price per each
		Rock Check Dam removed. Payment is full compensation for all labor required to remove each Rock Check
		Dam.
-	-	-
79-81	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.
	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.
	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
		See Tabulation 100-19 and the U-Sheets for locations and details. Method of measurement and basis of
		payment shall be per Section 2601 of the Standard Specifications.
-	-	-
82-84	2602-0000400	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY
	2602-0000410	MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY
	2602-0000420	REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY
		Items are for temporary cover on median intakes. Refer to Tabulation 100-11 and the U-Sheets for
		locations and details.
-	-	-
85	2602-0010010	MOBILIZATIONS, EROSION CONTROL
		Quantity is for installation and maintanance of erosion control within the project limits.
-	-	-
86	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
		Quantity is for repair or reinstallation of erosion control due to events requiring emergency measures
		as determined by the engineer.
-	-	-
87	2610-0000120	TREES
		See Tabulation 100-20 and the U-Sheets for locations and details.
-	-	-
		NOTE: SEE V-SHEETS FOR ADDITIONAL STRUCTURAL QUANTITIES.

232-10
10-21-14

EMERALD ASH BORER

Dispose of all wood material generated as a result of clearing and/or grubbing according to the Iowa Department of Agriculture and Land Stewardship's Emerald Ash Borer (EAB) Quarantine Order. For more information refer to http://www.iowatreepests.com/eab_regulations.html.

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.

281-1
10-15-13

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Regional Permit 7, Permit No. 2015-154. A copy of this permit is available from the Iowa DOT website (http://envpermits.iowadot.gov/CMEPortalENV/Home.aspx). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
DR-101	04-19-16	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-111	04-21-15	Box Culvert (Backfill)
DR-121	10-20-15	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-21-15	Pipe Bends and Half Pipe
DR-201	04-21-15	Concrete Aprons
DR-213	04-21-15	Pipe Apron Guard
DR-301	04-21-15	Subdrains for Fill or Foundation Drainage (Standard)
DR-302	10-20-15	Subdrains Standard (Farm Tile Replacement)
DR-305	04-21-15	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
DR-601	10-20-15	Reinforced Concrete Pipe Culvert
DR-611	04-21-15	Reinforced Concrete Pipe Culvert Letdown Structure
DR-621	04-21-15	Pipe Extension
DR-641	10-18-16	Concrete/Corrugated Pipe Culvert Letdown Structure with Metal Apron
DR-651	10-20-15	Unclassified Pipe Culvert
DR-652	04-21-15	Unclassified Letdown Structure Single Elbow
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-201	10-18-16	Silt Fence
EC-204	04-19-16	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EC-502	04-21-15	Seeding in Rural Areas
EW-101	10-20-15	Embankment and Rebuilding Embankments
EW-102	10-20-15	Allowable Placement of Unsuitable Soil in Embankments
EW-103	10-20-15	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-110	10-20-15	Ditch Blocks and Dikes
EW-202	04-19-16	Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section)
EW-204	04-21-15	Bridge Berm Grading with Recoverable Slope (Barnroof Section)
EW-301	10-20-15	Guardrail Grading
EW-402	10-20-15	Temporary Stream Diversion
EW-403	10-18-16	Temporary Erosion Control Measures
EW-501	10-20-15	Rural Entrance
EW-503	10-20-15	Side Road Grading
PV-301	04-19-11	Superelevation Details Two Lane Roadway
PV-302	04-17-12	Superelevation Details Four Lane Roadway Depressed Median
PV-303	04-19-11	Superelevation Details Ramps
PV-412	10-18-11	Deceleration Taper for 18' Exit Loop
PV-414	10-18-11	Acceleration Taper for 18' Entrance Loop
SI-881	10-18-16	Special Signs for Workzones
SW-547	04-21-15	Triple-Grate Barrier Intake
SW-549	04-21-15	Single-Grate Barrier Intake, Rectangular
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-212	04-16-13	Spot Location Lane Closure with Flaggers
TC-271	10-18-16	Signalized Equipment Crossing
TC-272	10-18-16	Unsignalized Equipment Crossing
TC-273	04-20-10	Construction Site Entrance
TC-402	04-21-15	Work Within 15 ft of Traveled Way

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-1C	ESTIMATED PROJECT QUANTITIES (UP TO A 5 DIVISION PROJECT)	C.1 - C.2
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.2 - C.4
100-11	EROSION CONTROL FOR INTAKE OR MANHOLE WELL	C.9
100-14	SILT BASINS	C.7 - C.7
100-16	TABULATION OF INTERCEPTING DITCHES	C.7
100-17	TABULATION OF SILT FENCES	C.7 - C.8
100-18	SILT FENCES FOR DITCH CHECKS	C.17 - C.20
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.21 - C.24
100-20	PLANTING QUANTITIES LISTING	C.25
100-22	ROLLED EROSION CONTROL	C.8 - C.9
100-23	ROCK EROSION CONTROL	C.9 - C.12
100-32	ROCK CHECK DAM	C.13 - C.16
100-33	TEMPORARY SEDIMENT CONTROL BASIN	C.24
100-34	STORMWATER DRAINAGE BASIN	C.25
100-35	SUMMARY OF STORMWATER STORAGE	C.25
102-3	ACCESS POINTS AND SAFETY RAMPS	C.26
103-4	TABULATION OF SPREADING TOPSOIL	C.26
103-11	SELECT TREATMENT	C.27
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.29 - C.30
104-4	DRAINAGE STRUCTURES BY CULVERT CONTRACTOR	C.28
105-4	STANDARD ROAD PLANS	C.5
108-13A	SAFETY CLOSURES	C.26
110-1	REMOVAL OF PAVEMENT	C.25
110-2	REMOVAL OF EXISTING STRUCTURES	C.25
110-12A	POLLUTION PREVENTION PLAN	C.5 - C.6
110-17	CLEARING AND GRUBBING	C.28
111-25	INDEX OF TABULATIONS	C.5

110-12A
10-18-16

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Signature authority on the Base PPP and NOI.

B. Contractor/Subcontractor:
1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Submit an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 and any additional plan notes.
3. Install and maintain appropriate controls.
4. Supervise and implement good housekeeping practices.
5. Conduct joint required inspections of the site with inspection staff.
6. Comply with training and certification requirements of Specifications Section 2602.
7. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.

C. RCE/Inspector:
1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
2. Maintain an up-to-date record that identifies contractors and subcontractors as co-permittees.
3. Make these plans available to the DNR upon their request.
4. Conduct joint required inspections of the site with the contractor/subcontractor.
5. Complete an inspection report after each inspection.
6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

POLLUTION PREVENTION PLAN

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the grading of the SW Arterial project, east of the Military Road project.

B. This PPP covers approximately 776.0 acres with an estimated 416.5 acres being disturbed. The portion of the PPP covered by this contract has 83.6 acres disturbed.

C. The PPP is located in an area of one soil association, (Downs-Fayette-Nordess). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.20.

D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
1. Drainage patterns – Plan and Profile sheets and Situation plans.
2. Proposed Slopes – Cross Sections.
3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
4. Location of Structural Controls – Tabulations on C sheets.
5. Locations of Non-structural Controls – Tabulations on C sheets.
6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
8. Locations where storm water is discharged – Plan and Profile sheets.

E. The base site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.

F. Runoff from this work will flow into Catfish Creek.

III. CONTROLS

A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Stabilization practices shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plans or are referenced in the Standard Road Plans Tabulation.

c. Storm Water Management
1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS

a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
7) Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onside fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water.
9) Litter Management - Ensure employees properly dispose of litter.
10) Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
6. Major observations related to the implementation of the PPP.
7. Identify corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.

B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and fieldbook entries made by the inspector.

C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and bid item postings.

D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).

E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
Signature

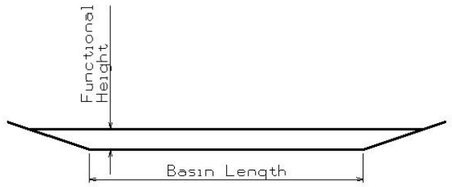
_____
Printed or Typed Name

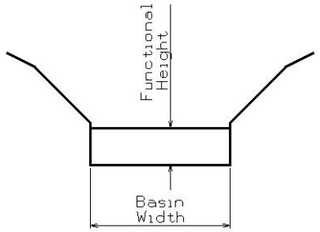
_____
Signature

_____
Printed or Typed Name

SILT BASINS

Possible Standard: EW-403



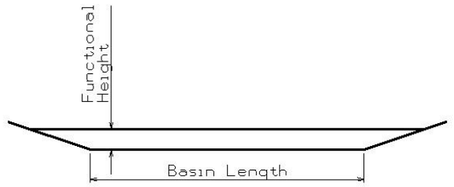


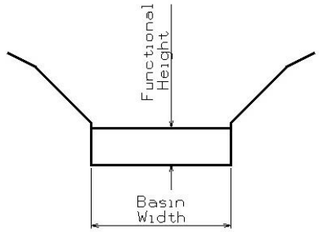
* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
1	321+35.00	LT	1	1	10.0	50.0	2.85	9.8%	712.5	
1	323+45.00	LT	1	1	10.0	50.0	2.85	12.8%	712.5	
1	331+25.00	LT	1	1	10.0	50.0	2.85	2.2%	1150.0	
1	332+50.00	LT	1	1	10.0	50.0	2.85	8.6%	712.5	
1	333+30.00	LT	1	1	10.0	50.0	2.85	8.6%	712.5	
1	309+25.00	RT	1	1	10.0	50.0	2.85	4.5%	862.5	
1	309+65.00	RT	1	1	10.0	50.0	2.85	9.9%	712.5	
1	310+55.00	RT	1	1	10.0	50.0	2.85	8.2%	712.5	
1	324+95.00	RT	1	1	10.0	50.0	2.85	5.2%	775.0	
Basin 1 Totals:			9	9					7062.5	
2	337+30.00	LT	1	1	10.0	50.0	2.85	7.4%	712.5	
2	338+30.00	LT	1	1	10.0	50.0	2.85	7.6%	712.5	
2	338+50.00	RT	1	1	10.0	50.0	2.85	2.1%	1162.5	
2	339+25.00	RT	1	1	10.0	50.0	2.85	5.8%	712.5	
Basin 2 Totals:			4	4					3300.0	
3	27+00.00	LT	1	1	10.0	50.0	2.85	3.6%	975.0	Conn. Rd. A
3	27+65.00	LT	1	1	10.0	50.0	2.85	16.8%	712.5	Conn. Rd. A
3	515+75.00	LT	1	1	10.0	50.0	2.85	2.0%	1175.0	U.S. 61
Basin 3 Totals:			3	3					2862.5	
4	12+65.00	LT	1	1	10.0	50.0	2.85	4.3%	887.5	Conn. Rd. A
4	15+65.00	LT	1	1	10.0	50.0	2.85	4.5%	862.5	Conn. Rd. A
4	12+00.00	RT	1	1	10.0	50.0	2.85	2.7%	1087.5	Conn. Rd. A
4	15+60.00	RT	1	1	10.0	50.0	2.85	4.5%	862.5	Conn. Rd. A
Basin 4 Totals:			4	4					3700.0	
5	514+90.00	LT	1	1	10.0	50.0	2.85	2.0%	1175.0	U.S. 61
Basin 5 Totals:			1	1					1175.0	
6	363+25.00	RT	1	1	10.0	50.0	2.85	5.6%	725.0	
6	37+60.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	Conn. Rd. B
6	38+40.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	Conn. Rd. B
Basin 6 Totals:			3	3					2150.0	
7	375+65.00	LT	1	1	10.0	50.0	2.85	12.0%	712.5	
7	377+95.00	LT	1	1	10.0	50.0	2.85	15.6%	712.5	
7	378+90.00	LT	1	1	10.0	50.0	2.85	15.6%	712.5	
7	373+40.00	RT	1	1	10.0	50.0	2.85	19.7%	712.5	
7	378+20.00	RT	1	1	10.0	50.0	2.85	10.7%	712.5	
7	379+05.00	RT	1	1	10.0	50.0	2.85	6.1%	712.5	
Basin 7 Totals:			6	6					4275.0	
8	34+45.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	Conn. Rd. B
8	34+00.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
8	34+00.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	Conn. Rd. B
Basin 8 Totals:			3	3					3937.5	
9	17+20.00	LT	1	1	10.0	50.0	2.85	2.2%	1150.0	Conn. Rd. B.
9	20+70.00	LT	1	1	10.0	50.0	2.85	1.2%	1275.0	Conn. Rd. B.
9	25+65.00	LT	1	1	10.0	50.0	2.85	1.4%	1250.0	Conn. Rd. B.
9	17+00.00	RT	1	1	10.0	50.0	2.85	2.4%	1125.0	Conn. Rd. B.
9	20+70.00	RT	1	1	10.0	50.0	2.85	1.2%	1275.0	Conn. Rd. B.
9	29+65.00	RT	1	1	10.0	50.0	2.85	0.9%	1312.5	Conn. Rd. B.
Basin 9 Totals:			6	6					7387.5	

SILT BASINS

Possible Standard: EW-403





* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
10	364+10.00	LT	1	1	10.0	50.0	2.85	4.2%	900.0	
10	4524+10.00	RT	1	1	10.0	50.0	2.85	14.5%	712.5	Ramp D
Basin 10 Totals:			2	2					1612.5	
11	1532+30.00	LT	1	1	10.0	50.0	2.85	3.0%	1050.0	Ramp A
11	1533+07.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	Ramp A
Basin 11 Totals:			2	2					2412.5	
Tab Quantity			43	43					39875.0	
Bid Tab Quantity (Tab Quantity*2)			86	86						

TABULATION OF INTERCEPTING DITCHES

Location			Length	Remarks
Station to Station		Side		
			LF	
330+00.00	338+50.00	RT	850.0	
364+00.00	380+00.00	RT	1600.0	
14+25.00	24+00.00	LT	975.0	Connector Road A
23+50.00	36+50.00	RT	1300.0	Connector Road B
1527+00.00	1536+50.00	LT	950.0	Ramp A
	Total:		5675.0	

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side		
			LF	
Box Culverts				
316+00.00	316+00.00	RT	20.0	
320+00.00	320+00.00	LT	20.0	
325+00.00	325+00.00	LT	20.0	
329+00.00	329+00.00	RT	20.0	
330+20.00	330+20.00	RT	50.0	Box Culvert
331+75.00	331+75.00	LT	50.0	Box Culvert
332+95.00	332+95.00	LT	20.0	
336+50.00	336+50.00	LT	20.0	
337+95.00	337+95.00	LT	40.0	
338+90.00	338+90.00	RT	40.0	
373+85.00	373+85.00	RT	40.0	
375+15.00	375+15.00	LT	40.0	
378+35.00	378+35.00	LT	40.0	
378+70.00	378+70.00	RT	40.0	
1527+55.00	1527+55.00	LT	50.0	Ramp A Box Culvert
1528+55.00	1528+55.00	RT	50.0	Ramp A Box Culvert
1532+20.00	1532+20.00	RT	30.0	Ramp A
1532+65.00	1532+65.00	LT	30.0	Ramp A

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
4527+00.00	4527+00.00	LT	30.0	Ramp D
4527+00.00	4527+00.00	RT	30.0	Ramp D
4532+15.00	4532+15.00	RT	50.0	Ramp D Box Culvert
515+31.00	515+31.00	LT	30.0	U.S. 61
520+92.00	520+92.00	LT	30.0	U.S. 61
520+92.00	520+92.00	RT	30.0	U.S. 61
535+30.00	535+30.00	LT	30.0	U.S. 61 Ex. Pipe
535+45.00	535+45.00	RT	30.0	U.S. 61 Ex. Pipe
543+30.00	543+30.00	RT	30.0	U.S. 61 Ex. Pipe
7325+05.00	7355+05.00	LT	30.0	Bike-7
7325+20.00	7325+20.00	RT	30.0	Bike-7
8363+65.00	8363+65.00	LT	20.0	Bike-8
8363+80.00	8363+80.00	RT	20.0	Bike-8
27+38.00	27+38.00	LT	30.0	Conn. Rd. A
27+38.00	27+38.00	RT	30.0	Conn. Rd. A
34+40.00	34+40.00	LT	30.0	Conn. Rd. B
34+40.00	34+40.00	RT	30.0	Conn. Rd. B
38+00.00	38+00.00	LT	40.0	Conn. Rd. B
38+00.00	38+00.00	RT	40.0	Conn. Rd. B
11+55.00	11+55.00	RT	50.0	Conn. Rd. A Box Culv
12+05.00	12+05.00	LT	50.0	Conn. Rd. A Box Culv
14+60.00	14+60.00	LT	30.0	Conn. Rd. A Entr.
14+70.00	14+70.00	RT	30.0	Conn. Rd. A Entr.
15+30.00	15+30.00	RT	30.0	Conn. Rd. A Entr.
15+40.00	15+40.00	LT	30.0	Conn. Rd. A Entr.
24+70.00	24+70.00	LT	30.0	Conn. Rd. B Entr.
25+25.00	25+25.00	LT	30.0	Conn. Rd. B Entr.
28+80.00	28+80.00	RT	30.0	Conn. Rd. B Entr.
29+15.00	29+15.00	RT	30.0	Conn. Rd. B Entr.
18+95.00	18+95.00	RT	30.0	Key West Dr. Ex Pipe
19+00.00	19+00.00	LT	30.0	Key West Dr. Ex Pipe
round Intakes				
Tab Quantity:			1610.0	
Bid Quantity:			2013.0	Tab Quantity x 125%
Maintenance of Silt Fence				
	Bid Quantity:		201.3	Bid Quantity x 10%
Removal of Silt Fence				
	Bid Quantity:		2013.0	Bid Quantity x 100%

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	
Final Stabilization												
Southwest Arterial-Left Ditches	315+05.00	315+90.00	Lt.	85	22		19					
	316+05.00	319+65.00	Lt.	360	22						79	
	320+10.00	321+00.00	Lt.	90	22		20					
	321+65.00	322+15.00	Lt.	50	22		11					
	322+50.00	323+00.00	Lt.	50	22		11					
	323+75.00	324+75.00	Lt.	100	22						22	
	325+10.00	330+60.00	Lt.	550	22						121	
	333+60.00	334+90.00	Lt.	130	22		29					
	335+70.00	336+30.00	Lt.	60	22		13					
	336+60.00	336+95.00	Lt.	35	22		8					
	338+60.00	340+20.00	Lt.	160	22		35					
	341+25.00	343+35.00	Lt.	240	22						53	
	341+75.00	344+00.00	Lt.	470	27						111	
	364+35.00	370+15.00	Lt.	580	34						197	
Southwest Arterial-Right Ditches	316+60.00	324+40.00	Rt.	780	22						172	
	358+95.00	362+80.00	Rt.	385	22		85					
	363+60.00	369+85.00	Rt.	625	34						213	
	367+05.00	371+15.00	Rt.	410	33						135	
	370+75.00	371+45.00	Rt.	70	34						24	
	371+45.00	372+65.00	Rt.	120	22						26	
	372+80.00	373+15.00	Rt.	35	22		8					
	373+90.00	374+35.00	Rt.	45	22						10	
	374+45.00	375+55.00	Rt.	110	22		24					
	376+85.00	377+95.00	Rt.	110	22		24					
Southwest Arterial-Median Ditches	315+15.00	330+60.00	Med.	1545	26						402	
61CONRDA Right Ditches	12+25.00	13+60.00	Rt.	135	22						30	
	16+05.00	22+20.00	Rt.	615	22						135	
	23+65.00	27+20.00	Rt.	355	22						78	
	24+95.00	27+45.00	Rt.	250	27						68	
	27+65.00	27+70.00	Rt.	55	27						15	
	27+65.00	28+55.00	Rt.	140	22						31	
61CONRDA Left Ditches	12+95.00	14+35.00	Lt.	140	22						31	
	16+05.00	22+20.00	Lt.	615	22						135	
	16+85.00	18+70.00	Lt.	185	27						50	
	20+15.00	22+00.00	Lt.	185	27						50	
	22+85.00	27+35.00	Lt.	450	27						122	
	23+65.00	26+80.00	Lt.	315	22						69	
	24+15.00	27+20.00	Lt.	305	27						82	
61CONRDB Right Ditches	14+05.00	16+55.00	Rt.	250	22						55	
	21+05.00	23+45.00	Rt.	240	22						53	
61CONRDB Left Ditches	15+05.00	16+90.00	Lt.	185	22		41					
	24+15.00	24+45.00	Lt.	30	22		7					
61RAMP-D Right Ditch	4519+95.00	4522+80.00	Rt.	285	22						63	
	4522+90.00	4523+80.00	Rt.	90	22		20				20	
61LOOP-C Right Ditch	3523+85.00	3526+55.00	Rt.	270	28						76	
61LOOP-C Left Ditch	3521+35.00	3526+65.00	Lt.	530	42		223					
	3521+85.00	3525+70.00	Lt.	385	28						108	
	3525+70.00	3529+85.00	Lt.	415	28						116	
61RAMP-A Right Ditch	1519+65.00	1522+40.00	Rt.	275	28						77	
61RAMP-A Left Ditch	1520+60.00	1522+55.00	Lt.	195	28						55	
	1523+05.00	1525+55.00	Lt.	250	22		55					
	1528+25.00	1531+80.00	Lt.	355	22						78	
	1533+45.00	1533+95.00	Lt.	50	47						24	
	1534+95.00	1535+80.00	Lt.	85	30						26	
	1535+80.00	1536+45.00	Lt.	65	47						31	
	1535+25.00	1535+75.00	Lt.	50	27						14	
	1535+95.00	1536+45.00	Lt.	50	22		11					
US61 Left Ditch	510+55.00	511+75.00	Lt.	120	22		26					
	512+20.00	518+55.00	Lt.	635	22						140	
	514+10.00	514+40.00	Lt.	30	22		7					
	536+50.00	539+20.00	Lt.	270	40		108					
	536+85.00	537+95.00	Lt.	110	22						24	
	538+10.00	538+95.00	Lt.	85	22		19					
	538+35.00	538+70.00	Lt.	35	23		8					
	539+10.00	539+55.00	Lt.	45	22						10	
	540+45.00	540+90.00	Lt.	45	22						10	

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	
	541+15.00	542+30.00	Lt.	115	22						25	
Bike 7 Right Ditch	7314+75.00	7315+85.00	Rt.	110	12						13	
	7318+25.00	7320+45.00	Rt.	220	22						48	
	7324+45.00	7325+05.00	Rt.	60	22		13					
	7325+45.00	7328+25.00	Rt.	280	22		62					
	7330+60.00	7331+75.00	Rt.	115	22		25					
	7334+80.00	7337+05.00	Rt.	225	27						61	
	7335+85.00	7337+80.00	Rt.	195	22						43	
	7339+55.00	7340+15.00	Rt.	60	22						13	
	7340+60.00	7343+15.00	Rt.	255	27						69	
	7342+45.00	7344+10.00	Rt.	165	22						36	
	7348+25.00	7349+15.00	Rt.	90	22						20	
	7349+25.00	7349+95.00	Rt.	70	22		15					
Bike 8 Left Ditch	8359+20.00	8360+95.00	Rt.	175	22		39					
	8361+10.00	8362+20.00	Rt.	110	22						24	
	8362+35.00	8364+60.00	Rt.	225	22		50					
	8370+65.00	8374+20.00	Rt.	355	22		78					
	8375+15.00	8376+10.00	Rt.	95	22						21	
	8376+20.00	8376+65.00	Rt.	45	22		10					
	8378+25.00	8378+95.00	Rt.	70	22		15					
						Totals:	1119				3815	

EROSION CONTROL FOR INTAKE OR MANHOLE WELL

Possible Detail: 570-5

Location Station	Side	Cover Assembly	Remarks
		EACH	
316+00.00	Med.	1	
320+00.00	Med.	1	
325+00.00	Med.	1	
329+00.00	Med.	1	
331+00.00	Med.	1	
332+50.00	Med.	1	
332+94.00	Med.	1	
333+50.00	Med.	1	
334+50.00	Med.	1	
336+50.00	Med.	1	
Temporary Intake or Manhole Cover Assembly			
Total:		10 Each	
Maintenance of Temporary Intake or Manhole Cover Assembly			
Total:		10 Each	
Removal of Temporary Intake or Manhole Assembly			
Total:		10 Each	

ROCK EROSION CONTROL

Refer to EC-301

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class E Revetment	Eng. Fabric	
			Lt./Rt.	FT	FT						TON	TON	SY	
SW Arterial	316+00.00	316+00.00	Rt.	9	9				1		9.7		13.0	
SW Arterial	320+00.00	320+00.00	Lt.	9	9				1		9.7		13.0	
SW Arterial	325+00.00	325+00.00	Lt.	9	9				1		9.7		13.0	
SW Arterial	329+00.00	329+00.00	Rt.	9	9				1		9.7		13.0	
SW Arterial	332+95.00	332+95.00	Lt.	11	11				1		14.5		18.3	
SW Arterial	336+50.00	336+50.00	Lt.	9	9				1		9.7		13.0	
SW Arterial	337+92.00	337+92.00	Lt.	14	14				1			21.6	28.0	
SW Arterial	375+19.00	375+19.00	Lt.	15	15				1			24.8	31.7	
SW Arterial	378+34.00	378+34.00	Lt.	14	14				1			21.6	28.0	
Bike-7	7325+24.00	7325+24.00	Rt.	11	11				1		14.5		18.3	
Bike-8	8363+54.00	8363+54.00	Lt.	10	10				1		12.0		15.6	
Connector Road A	14+54.00	14+54.00	Lt.	13	13				1			18.6	24.6	Entrance Pipe
Connector Road A	14+64.00	14+64.00	Rt.	11	11				1		14.5		18.3	Entrance Pipe
Connector Road A	27+38.00	27+38.00	Rt.	11	11				1		14.5		18.3	
Connector Road B	24+66.00	24+66.00	Lt.	11	11				1		14.5		18.3	Entrance Pipe
Connector Road B	28+73.00	28+73.00	Rt.	13	13				1			18.6	24.6	Entrance Pipe
Connector Road B	34+40.00	34+40.00	Lt.	12	12				1			15.8	21.3	
Connector Road B	38+00.00	38+00.00	Lt.	14	14				1			21.6	28.0	
Ramp A	1532+18.00	1532+18.00	Rt.	11	11				1		14.5		18.3	
Ramp D	4527+00.00	4527+00.00	Rt.	11	11				1		14.5		18.3	
U.S. 61	520+93.00	520+93.00	Rt.	13	13				1			18.6	24.6	
U.S. 62	535+29.00	535+29.00	Lt.	11	11				1		14.5		18.3	
U.S. 63	543+27.00	543+27.00	Rt.	13	13				1			18.6	24.6	
Key West Drive	19+00.00	19+00.00	Lt.	11	11				1		14.5		18.3	
Final Stabilization														
SW Arterial	315+10.00	315+10.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	315+35.00	315+35.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	315+60.00	315+60.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	315+85.00	315+85.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	319+85.00	319+85.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+15.00	320+15.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+35.00	320+35.00	Lt.	22	4	1					15.8		24.4	

ROCK EROSION CONTROL

Refer to EC-301

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class E Revetment	Eng. Fabric	
			Lt./Rt.	FT	FT						TON	TON	SY	
SW Arterial	320+55.00	320+55.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+75.00	320+75.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	320+95.00	320+95.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	321+70.00	321+70.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	322+10.00	322+10.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	322+55.00	322+55.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	322+75.00	322+75.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	322+95.00	322+95.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	333+65.00	333+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	333+85.00	333+85.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+05.00	334+05.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+25.00	334+25.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+45.00	334+45.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+65.00	334+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	334+85.00	334+85.00	Lt.	22	4	1					15.8		24.4	
Bike-7	7324+50.00	7324+50.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7324+65.00	7324+65.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7324+85.00	7324+85.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+00.00	7325+00.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+55.00	7325+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+75.00	7325+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7325+95.00	7325+95.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+15.00	7326+15.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+35.00	7326+35.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+55.00	7326+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+75.00	7326+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7326+95.00	7326+95.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7327+15.00	7327+15.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7327+40.00	7327+40.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7327+65.00	7327+65.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7327+90.00	7327+90.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7328+20.00	7328+20.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7330+65.00	7330+65.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7330+90.00	7330+90.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+15.00	7331+15.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+40.00	7331+40.00	Rt.	22	4	1					15.8		24.4	
Bike-7	7331+70.00	7331+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	335+75.00	335+75.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+00.00	336+00.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+25.00	336+25.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+65.00	336+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	336+90.00	336+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	338+65.00	338+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	338+90.00	338+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+15.00	339+15.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+40.00	339+40.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+65.00	339+65.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	339+90.00	339+90.00	Lt.	22	4	1					15.8		24.4	
SW Arterial	340+15.00	340+15.00	Lt.	22	4	1					15.8		24.4	
Bike-7	7349+30.00	7349+30.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7349+55.00	7349+55.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7349+75.00	7349+75.00	Rt.	22	10		1				18.5		35.2	
Bike-7	7350+65.00	7350+65.00	Rt.	22	10		1				18.5		35.2	
U.S. 61	510+60.00	510+60.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	510+85.00	510+85.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	511+05.00	511+05.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	511+45.00	511+45.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	511+70.00	511+70.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	514+15.00	514+15.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	514+35.00	514+35.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	359+00.00	359+00.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+30.00	359+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+60.00	359+60.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	359+90.00	359+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+20.00	360+20.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+50.00	360+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	360+80.00	360+80.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+10.00	361+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+40.00	361+40.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+70.00	361+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	361+90.00	361+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+10.00	362+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+30.00	362+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+50.00	362+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	362+70.00	362+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	371+40.00	371+40.00	Rt.	33	4	1					23.8		36.7	
Bike-8	8370+70.00	8370+70.00	Lt.	14	4	1					10.1		15.6	
Bike-8	8370+95.00	8370+95.00	Lt.	15	4	1					10.8		16.7	
Bike-8	8371+25.00	8371+25.00	Lt.	17	4	1					12.2		18.9	
Bike-8	8371+45.00	8371+45.00	Lt.	18	6		1				6.5		20.8	

ROCK EROSION CONTROL

Refer to EC-301

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class E Revetment	Eng. Fabric	
			Lt./Rt.	FT	FT						TON	TON	SY	
Bike-8	8371+70.00	8371+70.00	Lt.	19	7		1				9.1		24.1	
Bike-8	8372+00.00	8372+00.00	Lt.	20	8		1				12.0		27.6	
Bike-8	8372+25.00	8372+25.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8372+45.00	8372+45.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8372+65.00	8372+65.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8372+85.00	8372+85.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+05.00	8373+05.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+20.00	8373+20.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+40.00	8373+40.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+60.00	8373+60.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+80.00	8373+80.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8373+95.00	8373+95.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8374+15.00	8374+15.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8376+25.00	8376+25.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8376+45.00	8376+45.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8376+65.00	8376+65.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8378+30.00	8378+30.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8378+50.00	8378+50.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8378+70.00	8378+70.00	Lt.	22	10		1				18.5		35.2	
Bike-8	8378+90.00	8378+90.00	Lt.	22	10		1				18.5		35.2	
SW Arterial	372+85.00	372+85.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	373+10.00	373+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+50.00	374+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+70.00	374+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	374+90.00	374+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+10.00	375+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+30.00	375+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	375+50.00	375+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	376+90.00	376+90.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+10.00	377+10.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+30.00	377+30.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+50.00	377+50.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+70.00	377+70.00	Rt.	22	4	1					15.8		24.4	
SW Arterial	377+90.00	377+90.00	Rt.	22	4	1					15.8		24.4	
Connector Road A	15+10.00	15+10.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+35.00	15+35.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+60.00	15+60.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	15+85.00	15+85.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+10.00	16+10.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+35.00	16+35.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+60.00	16+60.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	16+85.00	16+85.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	24+20.00	24+20.00	Lt.	22	4	1					15.8		24.4	
Connector Road A	24+40.00	24+40.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+25.00	8359+25.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+45.00	8359+45.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+70.00	8359+70.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8359+95.00	8359+95.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+20.00	8360+20.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+45.00	8360+45.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+70.00	8360+70.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8360+90.00	8360+90.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+40.00	8362+40.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+65.00	8362+65.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8362+90.00	8362+90.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+10.00	8363+10.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+30.00	8363+30.00	Lt.	22	4	1					15.8		24.4	
Bike-8	8363+70.00	8363+70.00	Lt.	18	6		1				6.5		20.8	
Bike-8	8363+90.00	8363+90.00	Lt.	17	5		1				4.1		17.8	
Bike-8	8364+30.00	8364+30.00	Lt.	14	4	1					10.1		15.6	
Bike-8	8364+55.00	8364+55.00	Lt.	13	4	1					9.4		14.4	
Ramp D	4522+95.00	4522+95.00	Rt.	22	10		1				18.5		35.2	
Ramp D	4523+15.00	4523+15.00	Rt.	22	10		1				18.5		35.2	
Ramp D	4523+35.00	4523+35.00	Rt.	22	10		1				18.5		35.2	
Ramp D	4523+55.00	4523+55.00	Rt.	22	10		1				18.5		35.2	
Ramp D	4523+75.00	4523+75.00	Rt.	22	10		1				18.5		35.2	
Ramp D	4524+45.00	4524+45.00	Rt.	22	10		1				18.5		35.2	
Loop C	3521+40.00	3521+40.00	Lt.	22	4	1					15.8		24.4	
Loop C	3521+65.00	3521+65.00	Lt.	22	4	1					15.8		24.4	
Loop C	3521+95.00	3521+95.00	Lt.	22	4	1					15.8		24.4	
Loop C	3522+25.00	3522+25.00	Lt.	22	4	1					15.8		24.4	
Loop C	3522+65.00	3522+65.00	Lt.	28	4	1					20.2		31.1	
Loop C	3522+90.00	3522+90.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+10.00	3523+10.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+30.00	3523+30.00	Lt.	28	4	1					20.2		31.1	
Loop C	3523+55.00	3523+55.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+00.00	3524+00.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+50.00	3524+50.00	Lt.	28	4	1					20.2		31.1	
Loop C	3524+80.00	3524+80.00	Lt.	28	4	1					20.2		31.1	
Loop C	3525+25.00	3525+25.00	Lt.	28	4	1					20.2		31.1	

ROCK EROSION CONTROL

Refer to EC-301

Location						Rock Erosion Control (REC)					Material Bid Quantities			
Road Identification	Begin Station	End Station	Side	L	W	Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Erosion Stone	Class E Revetment	Eng. Fabric	Remarks
			Lt./Rt.	FT	FT						TON	TON	SY	
Loop C	3525+45.00	3525+45.00	Lt.	28	4	1					20.2		31.1	
Loop C	3525+85.00	3525+85.00	Lt.	28	4	1					20.2		31.1	
Loop C	3526+35.00	3526+35.00	Lt.	28	4	1					20.2		31.1	
Loop C	3526+60.00	3526+60.00	Lt.	28	4	1					20.2		31.1	
Ramp A	1523+10.00	1523+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+30.00	1523+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+50.00	1523+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+70.00	1523+70.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1523+90.00	1523+90.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+10.00	1524+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+30.00	1524+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+50.00	1524+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+70.00	1524+70.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1524+90.00	1524+90.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+10.00	1525+10.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+30.00	1525+30.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1525+50.00	1525+50.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+00.00	1536+00.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+20.00	1536+20.00	Lt.	22	10		1				18.5		35.2	
Ramp A	1536+40.00	1536+40.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+15.00	538+15.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+40.00	538+40.00	Lt.	22	10		1				18.5		35.2	
U.S. 61	538+65.00	538+65.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	538+90.00	538+90.00	Lt.	22	4	1					15.8		24.4	
U.S. 61	536+55.00	536+55.00	Lt.	38	20		1				77.5		103.0	
U.S. 61	536+75.00	536+75.00	Lt.	38	20		1				77.5		103.0	
U.S. 61	536+95.00	536+95.00	Lt.	38	20		1				77.5		103.0	
U.S. 61	537+15.00	537+15.00	Lt.	39	21		1				84.2		110.1	
U.S. 61	537+35.00	537+35.00	Lt.	40	22		1				91.2		117.3	
U.S. 61	537+55.00	537+55.00	Lt.	40	22		1				91.2		117.3	
U.S. 61	537+75.00	537+75.00	Lt.	40	22		1				91.2		117.3	
U.S. 61	537+95.00	537+95.00	Lt.	41	23		1				98.4		124.8	
U.S. 61	538+15.00	538+15.00	Lt.	41	23		1				98.4		124.8	
U.S. 61	538+35.00	538+35.00	Lt.	42	24		1				105.8		132.5	
U.S. 61	538+55.00	538+55.00	Lt.	42	24		1				105.8		132.5	
U.S. 61	538+75.00	538+75.00	Lt.	42	24		1				105.8		132.5	
U.S. 61	538+95.00	538+95.00	Lt.	42	24		1				105.8		132.5	
U.S. 61	539+15.00	539+15.00	Lt.	42	24		1				105.8		132.5	
					Totals:	132	73		24		4672.1	179.6	7460.4	

Notes:

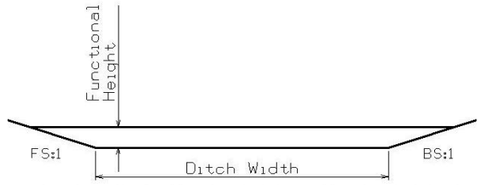
Erosion Stone for Rock Splash Basins shall be used on all pipes less than 30" and Rip Rap shall be used on all pipes equal to or great than 30" unless otherwise specified.

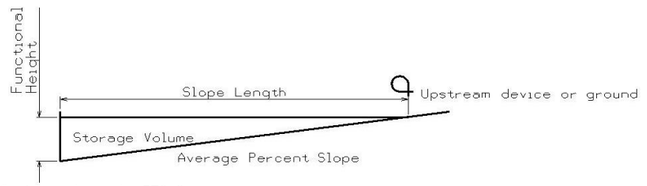
Erosion Stone and/or Rip Rap shall have a minimum thickness of 2 feet for Rock Splash Basins.

Erosion Stone shall be used for Rock Ditch Checks and shall have a minimum thickness of 3 feet.

ROCK CHECK DAM

Possible Detail: 570-2





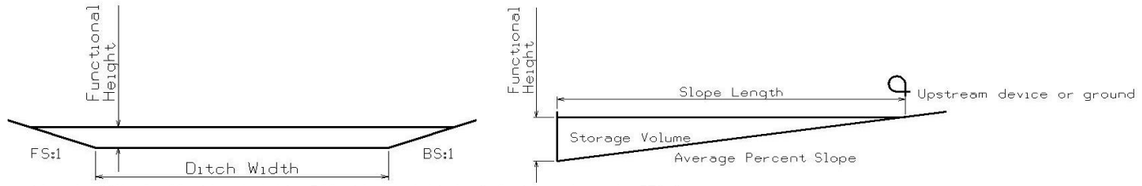
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.

* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
			FT	LF	Each	Each	FS:1	BS:1	FT		CF	
1	315+10.00	LT	187.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+35.00	LT	188.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+60.00	LT	189.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	315+85.00	LT	190.0	22.0	22	22	3.0	3.0	10.0	6.6%	346.5	
1	319+85.00	LT	126.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+15.00	LT	135.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+35.00	LT	138.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+55.00	LT	140.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+75.00	LT	143.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	320+95.00	LT	146.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	321+70.00	LT	156.0	22.0	22	22	3.0	3.0	10.0	9.8%	277.2	
1	322+10.00	LT	150.0	22.0	22	22	3.0	3.0	10.0	2.4%	1108.8	
1	322+55.00	LT	143.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	322+75.00	LT	147.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	322+95.00	LT	152.0	22.0	22	22	3.0	3.0	10.0	12.8%	277.2	
1	333+65.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	333+85.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+05.00	LT	104.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+25.00	LT	99.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+45.00	LT	95.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+65.00	LT	90.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	334+85.00	LT	85.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
1	7324+50.00	RT	24.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7324+65.00	RT	27.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7324+85.00	RT	29.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+00.00	RT	30.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+55.00	RT	36.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+75.00	RT	40.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7325+95.00	RT	43.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+15.00	RT	47.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+35.00	RT	50.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+55.00	RT	54.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+75.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7326+95.00	RT	62.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7327+15.00	RT	66.0	22.0	22	22	3.0	3.0	10.0	10.3%	277.2	Bike-7
1	7327+40.00	RT	69.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7327+65.00	RT	72.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7327+90.00	RT	75.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7328+20.00	RT	78.0	22.0	22	22	3.0	3.0	10.0	7.2%	346.5	Bike-7
1	7330+65.00	RT	59.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7330+90.00	RT	52.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+15.00	RT	43.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+40.00	RT	40.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
1	7331+70.00	RT	34.0	22.0	22	22	3.0	3.0	10.0	7.0%	346.5	Bike-7
Basin 1 Totals:				968.0	968	968					13929.3	
2	335+75.00	LT	83.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+00.00	LT	89.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+25.00	LT	94.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+65.00	LT	103.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	336+90.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
2	338+65.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	338+90.00	LT	111.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+15.00	LT	105.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+40.00	LT	99.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+65.00	LT	94.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	339+90.00	LT	88.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
2	340+15.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	7.6%	346.5	
Basin 2 Totals:				264.0	264	264					4158.0	
3	7349+30.00	RT	46.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7349+55.00	RT	53.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7349+75.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
3	7350+65.00	RT	58.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	Bike-7
Basin 3 Totals:				88.0	88	88					1108.8	

ROCK CHECK DAM

Possible Detail: 570-2

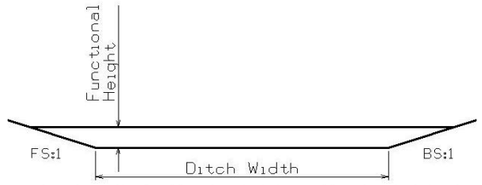


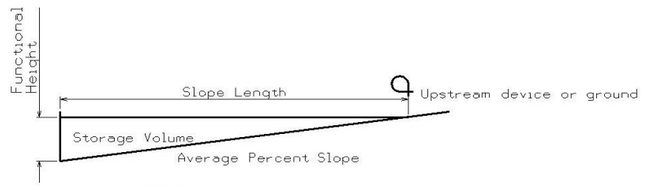
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
			FT	LF	Each	Each	FS:1	BS:1	FT		CF	
5	510+60.00	LT	128.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper
5	510+85.00	LT	137.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper
5	511+05.00	LT	139.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	U.S. 61 Loop C Taper
5	511+45.00	LT	151.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper
5	511+70.00	LT	151.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61 Loop C Taper
5	514+15.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	10.4%	277.2	U.S. 61 Loop C Taper
5	514+35.00	LT	121.0	22.0	22	22	3.0	3.0	10.0	10.4%	277.2	U.S. 61 Loop C Taper
												U.S. 61 Loop C Taper
Basin 5 Totals:				154.0	154	154					2217.6	
6	359+00.00	RT	134.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	359+30.00	RT	121.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	359+60.00	RT	108.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	359+90.00	RT	103.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	360+20.00	RT	100.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	360+50.00	RT	98.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	360+80.00	RT	95.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	361+10.00	RT	91.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	361+40.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	361+70.00	RT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	
6	361+90.00	RT	80.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2	
6	362+10.00	RT	77.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2	
6	362+30.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2	
6	362+50.00	RT	70.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2	
6	362+70.00	RT	67.0	22.0	22	22	3.0	3.0	10.0	8.8%	277.2	
6	371+40.00	RT	192.0	33.0	33	33	6.0	3.0	15.0	6.0%	623.7	
Basin 6 Totals:				363.0	363	363					6167.7	
7	8370+70.00	LT	19.0	14.0	14	14	3.0	3.0	2.0	8.0%	166.5	Bike-8N
7	8370+95.00	LT	26.0	15.0	15	15	3.0	3.0	3.0	8.0%	189.0	Bike-8N
7	8371+25.00	LT	31.0	17.0	17	17	3.0	3.0	5.0	8.0%	234.0	Bike-8N
7	8371+45.00	LT	34.0	18.0	18	18	3.0	3.0	6.0	12.0%	205.2	Bike-8N
7	8371+70.00	LT	39.0	19.0	19	19	3.0	3.0	7.0	12.0%	223.2	Bike-8N
7	8372+00.00	LT	46.0	20.0	20	20	3.0	3.0	8.0	12.0%	241.2	Bike-8N
7	8372+25.00	LT	52.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8372+45.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8372+65.00	LT	61.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8372+85.00	LT	65.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+05.00	LT	70.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+20.00	LT	74.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+40.00	LT	78.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+60.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+80.00	LT	86.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8373+95.00	LT	91.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8374+15.00	LT	95.0	22.0	22	22	3.0	3.0	10.0	9.0%	277.2	Bike-8N
7	8376+25.00	LT	75.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N
7	8376+45.00	LT	82.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N
7	8376+65.00	LT	88.0	22.0	22	22	3.0	3.0	10.0	10.5%	277.2	Bike-8N
7	8378+30.00	LT	81.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N
7	8378+50.00	LT	73.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N
7	8378+70.00	LT	67.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N
7	8378+90.00	LT	63.0	22.0	22	22	3.0	3.0	10.0	14.5%	277.2	Bike-8N
7	372+85.00	RT	83.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
7	373+10.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	
7	374+50.00	RT	91.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	374+70.00	RT	85.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	374+90.00	RT	79.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	375+10.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	375+30.00	RT	67.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	375+50.00	RT	61.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	
7	376+90.00	RT	60.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	
7	377+10.00	RT	66.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	
7	377+30.00	RT	73.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	
7	377+50.00	RT	78.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	
7	377+70.00	RT	83.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	
7	377+90.00	RT	88.0	22.0	22	22	3.0	3.0	10.0	8.2%	277.2	

ROCK CHECK DAM

Possible Detail: 570-2





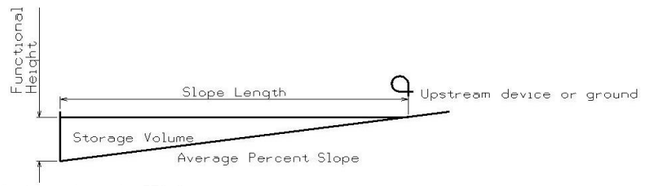
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.

* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
			FT	LF	Each	Each	FS:1	BS:1	FT		CF	
Basin 7 Totals:				807.0	807	807					10268.1	
9	15+10.00	LT	42.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+35.00	LT	46.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+60.00	LT	51.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	15+85.00	LT	56.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+10.00	LT	60.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+35.00	LT	69.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+60.00	LT	77.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	16+85.00	LT	81.0	22.0	22	22	3.0	3.0	10.0	6.8%	346.5	Connector Road B
9	24+20.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	9.2%	277.2	Connector Road B
9	24+40.00	LT	53.0	22.0	22	22	3.0	3.0	10.0	9.2%	277.2	Connector Road B
Basin 9 Totals:				220.0	220	220					3326.4	
10	8359+25.00	LT	41.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+45.00	LT	36.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+70.00	LT	32.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8359+95.00	LT	31.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+20.00	LT	28.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+45.00	LT	25.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+70.00	LT	20.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8360+90.00	LT	17.0	22.0	22	22	3.0	3.0	10.0	6.7%	346.5	Bike-8N
10	8362+40.00	LT	23.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	Bike-8N
10	8362+65.00	LT	22.0	22.0	22	22	3.0	3.0	10.0	7.4%	346.5	Bike-8N
10	8362+90.00	LT	19.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+10.00	LT	18.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+30.00	LT	18.0	22.0	22	22	3.0	3.0	10.0	8.5%	277.2	Bike-8N
10	8363+70.00	LT	18.0	18.0	18	18	3.0	3.0	6.0	10.4%	205.2	Bike-8N
10	8363+90.00	LT	16.0	17.0	17	17	3.0	3.0	5.0	10.4%	187.2	Bike-8N
10	8364+10.00	LT	13.0	15.0	15	15	3.0	3.0	3.0	10.4%	151.2	Bike-8N
10	8364+30.00	LT	11.0	14.0	14	14	3.0	3.0	2.0	8.5%	133.2	Bike-8N
10	8364+55.00	LT	9.0	13.0	13	13	3.0	3.0	1.0	8.5%	115.2	Bike-8N
10	4522+95.00	RT	50.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+15.00	RT	55.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+35.00	RT	63.0	22.0	22	22	3.0	3.0	10.0	12.3%	277.2	Ramp D
10	4523+55.00	RT	70.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	4523+75.00	RT	77.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	4524+45.00	RT	104.0	22.0	22	22	3.0	3.0	10.0	14.4%	277.2	Ramp D
10	3521+40.00	LT	73.0	22.0	22	22	3.0	3.0	10.0	8.0%	346.5	Loop C
10	3521+65.00	LT	80.0	22.0	22	22	3.0	3.0	10.0	8.0%	346.5	Loop C
10	3521+95.00	LT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	Loop C
10	3522+25.00	LT	84.0	22.0	22	22	3.0	3.0	10.0	6.0%	415.8	Loop C
10	3522+65.00	LT	93.0	28.0	28	28	6.0	3.0	10.0	8.0%	407.3	Loop C
10	3522+90.00	LT	93.0	28.0	28	28	6.0	3.0	10.0	15.0%	325.8	Loop C
10	3523+10.00	LT	88.0	28.0	28	28	6.0	3.0	10.0	13.0%	325.8	Loop C
10	3523+30.00	LT	89.0	28.0	28	28	6.0	3.0	10.0	14.0%	325.8	Loop C
10	3523+55.00	LT	96.0	28.0	28	28	6.0	3.0	10.0	8.0%	407.3	Loop C
10	3524+00.00	LT	89.0	28.0	28	28	6.0	3.0	10.0	4.5%	733.1	Loop C
10	3524+50.00	LT	96.0	28.0	28	28	6.0	3.0	10.0	16.0%	325.8	Loop C
10	3524+80.00	LT	99.0	28.0	28	28	6.0	3.0	10.0	17.0%	325.8	Loop C
10	3525+25.00	LT	98.0	28.0	28	28	6.0	3.0	10.0	25.0%	325.8	Loop C
10	3525+45.00	LT	88.0	28.0	28	28	6.0	3.0	10.0	25.0%	325.8	Loop C
10	3525+85.00	LT	74.0	28.0	28	28	6.0	3.0	10.0	3.6%	814.5	Loop C
10	3526+35.00	LT	79.0	28.0	28	28	6.0	3.0	10.0	3.6%	814.5	Loop C
10	3526+60.00	LT	74.0	28.0	28	28	6.0	3.0	10.0	6.0%	488.7	Loop C
Basin 10 Totals:				947.0	947	947					14222.3	
11	1523+10.00	LT	51.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+30.00	LT	57.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+50.00	LT	63.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+70.00	LT	68.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1523+90.00	LT	74.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+10.00	LT	80.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+30.00	LT	86.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+50.00	LT	92.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A

ROCK CHECK DAM

Possible Detail: 570-2



* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in 570-2.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
			FT	LF	Each	Each	FS:1	BS:1	FT		CF	
11	1524+70.00	LT	97.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1524+90.00	LT	103.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+10.00	LT	109.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+30.00	LT	114.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1525+50.00	LT	121.0	22.0	22	22	3.0	3.0	10.0	12.5%	277.2	Ramp A
11	1536+00.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	1536+20.00	LT	123.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	1536+40.00	LT	117.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	Ramp A
11	538+15.00	LT	157.0	22.0	22	22	3.0	3.0	10.0	12.0%	277.2	U.S. 61
11	538+40.00	LT	129.0	22.0	22	22	3.0	3.0	10.0	10.0%	277.2	U.S. 61
11	538+65.00	LT	128.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61
11	538+90.00	LT	157.0	22.0	22	22	3.0	3.0	10.0	7.5%	346.5	U.S. 61
11	536+55.00	LT	117.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	536+75.00	LT	118.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	536+95.00	LT	116.0	38.0	38	38	6.0	3.0	20.0	10.0%	505.8	U.S. 61
11	537+15.00	LT	113.0	39.0	39	39	6.0	3.0	21.0	10.0%	523.8	U.S. 61
11	537+35.00	LT	114.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+55.00	LT	112.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+75.00	LT	112.0	40.0	40	40	6.0	3.0	22.0	10.0%	541.8	U.S. 61
11	537+95.00	LT	111.0	41.0	41	41	6.0	3.0	23.0	10.0%	559.8	U.S. 61
11	538+15.00	LT	106.0	41.0	41	41	6.0	3.0	23.0	10.0%	559.8	U.S. 61
11	538+35.00	LT	105.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+55.00	LT	104.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+75.00	LT	102.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	538+95.00	LT	101.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
11	539+15.00	LT	100.0	42.0	42	42	6.0	3.0	24.0	10.0%	577.8	U.S. 61
Basin 11 Totals:				1005.0	1005	1005					13357.8	
Tab Quantity:				4816.0	4816	4816						

Rock Check Dams Used for Storm Water Storage Subtotals

Rock Check Dam Bid Tab Quantity = Tab Quantity = 4816 LF

Maintenance of Rock Check Dam Bid Tab Quantity = Tab Quantity x 3 Cleanouts = 210 x 3 = 630 Each

Removal of Rock Check Dams Bid Tab Quantity = Tab Quantity = 630 Each

Rock Check Dams Used to Replace Silt Fence for Ditch Checks Subtotals

Rock Check Dam Bid Tab Quantity = Silt Fence for Ditch Check Bid Quantity x 10% = 1780 LF

Maintenance of Rock Check Dam Bid Tab Quantity = Rock Check Dam Bid Quantity / 16 = 111 Each x 3 Cleanouts = 333 Each

Removal of Rock Check Dam Bid Tab Quantity = Rock Check Dam Bid Quantity / 16 = 111 Each

Total Quantities

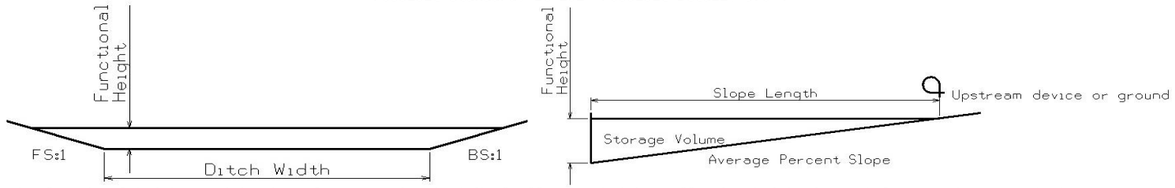
Rock Check Dam Bid Tab Quantity = 4816 LF + 1780 LF = 6596 LF

Maintenance of Rock Check Dam Bid Tab Quantity = 630 Each + 333 Each = 963 Each

Removal of Rock Check Dam Bid Tab Quantity = 630 Each + 111 Each = 741 Each

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



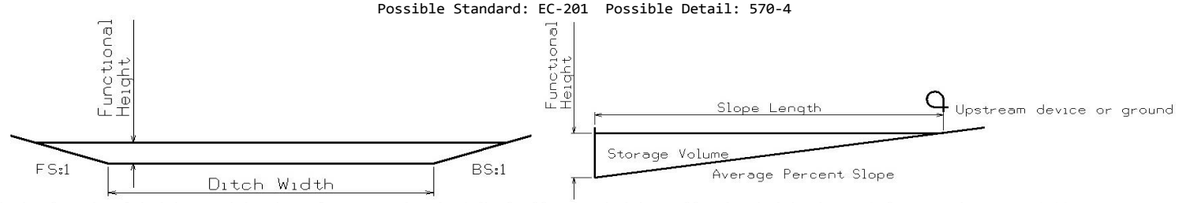
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
1	1	316+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	316+35.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	316+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	316+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	317+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	317+35.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.6%	235.5	
1	1	317+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	318+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	318+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	319+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	319+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	323+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	324+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	324+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	325+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	325+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	326+05.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	326+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	326+95.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	327+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	327+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	328+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	328+75.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	329+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	329+65.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	330+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	330+55.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	
1	1	315+20.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	315+50.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	315+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	316+10.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	316+40.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	316+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	317+00.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	317+30.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	317+60.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	317+90.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	318+20.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	318+50.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	318+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	319+10.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	319+40.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	319+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	320+00.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	320+30.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	320+60.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	320+90.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	321+20.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	321+50.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	321+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	322+10.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	322+40.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	322+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	323+00.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	323+30.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	323+60.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	323+90.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	324+20.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	324+50.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	324+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	325+10.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	325+40.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	325+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.3%	797.2	
1	1	326+00.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.0%	930.1	
1	1	326+35.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.0%	930.1	
1	1	326+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	5.0%	930.1	
1	1	327+05.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	4.5%	930.1	

100-18
10-18-16

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



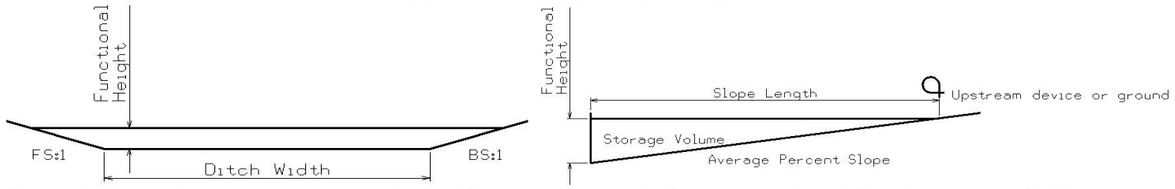
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
1	1	327+40.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	4.0%	1063.0	
1	1	327+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	4.0%	1063.0	
1	1	328+25.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	3.5%	1195.9	
1	1	328+70.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	3.5%	1195.9	
1	1	329+20.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	3.0%	1328.7	
1	1	329+80.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	2.5%	1594.5	
1	1	330+55.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	2.0%	1993.1	
1	1	331+55.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	1.5%	2657.5	
1	1	333+10.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	1.0%	4119.1	
1	1	315+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.6%	1460.2	
1	1	316+65.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.6%	1460.2	
1	1	317+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	317+35.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	317+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	318+05.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	318+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	318+75.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	319+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	319+45.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	319+80.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	320+15.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	320+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
1	1	320+85.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	321+20.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	321+55.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	321+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	322+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	322+60.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	322+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	323+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	323+65.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	324+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	324+45.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.6%	329.7	
1	1	7314+75.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.6%	471.0	
1	1	7315+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.6%	471.0	
1	1	7315+80.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.6%	471.0	
1	1	7318+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7318+65.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7319+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7319+35.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7319+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7320+05.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7320+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.9%	329.7	
1	1	7331+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	
1	1	7332+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	
1	1	7333+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	
1	1	7335+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	
1	1	7334+85.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
1	1	7335+20.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
1	1	7335+55.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
	Basin 1 Totals:			2785.0	2785.0	2785.0					77952.0	
2	1	340+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	
2	1	341+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	
2	1	341+30.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	
2	1	341+70.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	
2	1	336+25.00	MED	26.0	26.0	26.0	25.0	25.0	6.0	0.5%	8371.0	
2	1	339+40.00	MED	23.0	23.0	23.0	25.0	25.0	6.0	0.4%	8371.0	
2	1	7335+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	Bike-7
2	1	7336+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	Bike-7
2	1	7337+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	Bike-7
2	1	7337+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	Bike-7
2	1	7335+90.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.4%	447.2	Bike-7
2	1	7336+25.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.4%	447.2	Bike-7
2	1	7336+60.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.4%	447.2	Bike-7
2	1	7336+95.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.4%	447.2	Bike-7
2	1	7339+60.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.7%	235.5	Bike-7

FILE NO.	ENGLISH	DESIGN TEAM **AECOM**	**DUBUQUE** COUNTY	PROJECT NUMBER **NHSX-032-1(36)--3H-31**	SHEET NUMBER **C.17**

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



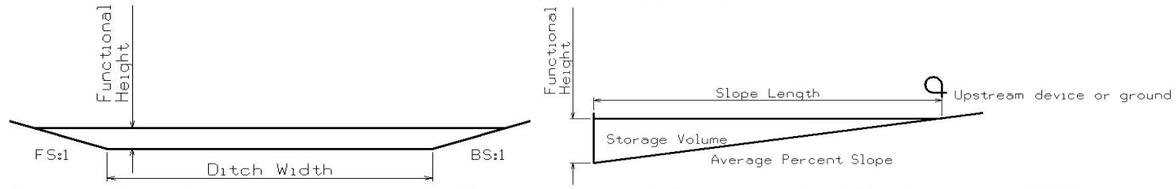
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
2	1	7339+85.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.7%	235.5	Bike-7
2	1	7340+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.7%	235.5	Bike-7
2	1	7340+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	Bike-7
2	1	7340+65.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
2	1	7341+05.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
2	1	7341+45.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
2	1	7341+85.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
Basin 2 Totals:				539.0	539.0	539.0					30452.9	
3	1	7342+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	Bike-7
3	1	7343+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	Bike-7
3	1	7344+05.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	Bike-7
3	1	28+00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A
3	1	7342+30.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
3	1	7342+70.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
3	1	7342+60.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	Bike-7
3	1	7343+15.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	2.0%	958.3	Bike-7
3	1	7347+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.5%	942.0	Bike-7
3	1	7348+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	Bike-7
3	1	7349+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	Bike-7
3	1	24+20.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.7%	447.2	CONN A
3	1	24+55.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.7%	447.2	CONN A
3	1	24+90.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.7%	447.2	CONN A
3	1	25+25.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.7%	447.2	CONN A
3	1	25+60.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.7%	447.2	CONN A
3	1	26+10.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.6%	447.2	CONN A
3	1	26+45.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.6%	447.2	CONN A
3	1	26+80.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.6%	447.2	CONN A
3	1	27+15.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.6%	447.2	CONN A
3	1	23+30.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
3	1	23+70.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
3	1	24+10.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
3	1	24+50.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
3	1	24+85.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	25+20.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	25+55.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	25+90.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	26+25.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	26+60.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	26+95.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	27+30.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.8%	447.2	CONN A
3	1	23+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	CONN A
3	1	24+45.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A
3	1	24+95.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	CONN A
3	1	25+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	CONN A
3	1	25+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	CONN A
3	1	26+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	CONN A
3	1	26+75.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	CONN A
3	1	23+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	CONN A
3	1	24+45.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A
3	1	24+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	CONN A
3	1	25+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.3%	423.9	CONN A
3	1	25+85.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.5%	423.9	CONN A
3	1	26+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
3	1	26+65.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.9%	376.8	CONN A
3	1	27+15.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN A
3	1	25+00.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	25+30.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	25+60.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	25+90.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	26+20.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	26+50.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	26+80.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	27+10.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.5%	383.3	CONN A
3	1	27+40.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.3%	383.3	CONN A
3	1	27+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	CONN A
3	1	28+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A

100-18
10-18-16

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4

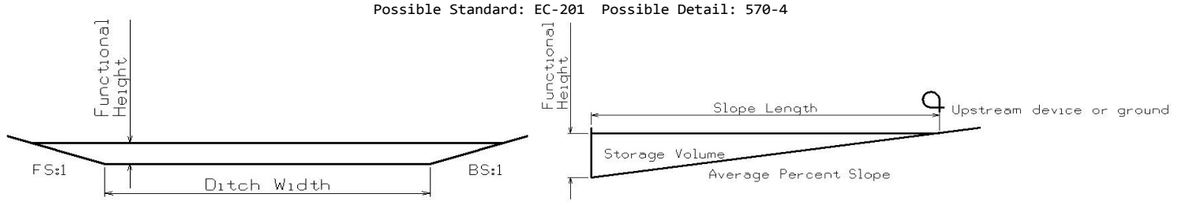


* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
3	1	28+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.2%	565.2	CONN A
3	1	27+65.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	5.3%	383.3	CONN A
3	1	27+70.00	RT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
3	1	515+45.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.4%	329.7	US 61
3	1	515+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.9%	376.8	US 61
3	1	516+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.9%	376.8	US 61
3	1	516+55.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
3	1	516+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
3	1	517+65.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
3	1	518+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
3	1	515+60.00	LT	16.0	16.0	16.0	0.0	3.0	10.0	2.0%	605.1	US 61
3	1	516+35.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	2.0%	1311.6	US 61
3	1	517+10.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	2.0%	1311.6	US 61
Basin 3 Totals:				1768.0	1768.0	1768.0					38788.4	
4	1	13+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	13+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.2%	423.9	CONN A
4	1	13+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.2%	423.9	CONN A
4	1	14+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.2%	423.9	CONN A
4	1	16+90.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	17+15.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	17+40.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	17+65.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	17+90.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	18+15.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	18+40.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	18+65.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.7%	319.4	CONN A
4	1	20+20.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	20+55.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	20+90.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	21+25.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	21+60.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	21+95.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	5.0%	447.2	CONN A
4	1	22+30.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	CONN A
4	1	16+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	16+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	16+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	17+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	17+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	19+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	19+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	21+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	CONN A
4	1	22+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A
4	1	12+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A
4	1	13+05.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.7%	471.0	CONN A
4	1	13+55.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.7%	471.0	CONN A
4	1	16+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	16+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	16+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	17+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	17+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	18+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	19+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	19+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	20+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.0%	376.8	CONN A
4	1	21+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	CONN A
4	1	22+15.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	CONN A

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



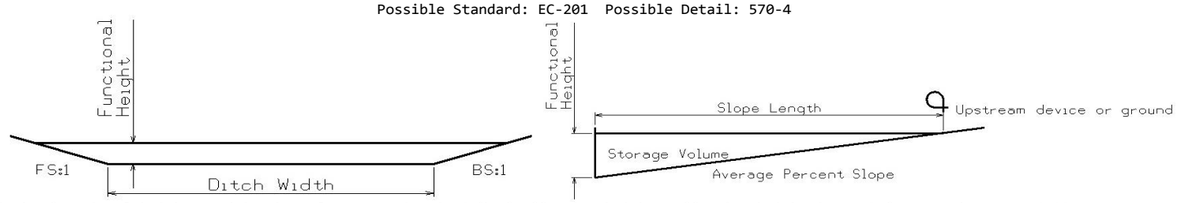
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
	Basin 4 Totals:			1219.0	1219.0	1219.0					21199.7	
5	1	512+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
5	1	512+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.5%	565.2	US 61
5	1	513+45.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.5%	565.2	US 61
5	1	513+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.5%	423.9	US 61
5	1	514+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
5	1	515+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
5	1	510+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	1.5%	1748.8	US 61
5	1	511+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	1.5%	1748.8	US 61
5	1	512+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	1.5%	1748.8	US 61
5	1	513+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	1.5%	1748.8	US 61
5	1	514+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	1.5%	1748.8	US 61
	Basin 5 Totals:			322.0	322.0	322.0					12418.1	
6	1	36+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	CONN B
6	1	363+60.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	363+85.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	364+10.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	364+35.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	364+60.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	364+85.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	365+10.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	365+35.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	365+60.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	365+85.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	366+10.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.8%	303.1	
6	1	366+40.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.5%	363.8	
6	1	366+75.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	5.0%	424.4	
6	1	367+10.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	4.5%	424.4	
6	1	367+50.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	4.0%	485.0	
6	1	367+95.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	3.5%	545.7	
6	1	368+45.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	3.0%	606.3	
6	1	369+05.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	2.5%	727.6	
6	1	369+80.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	2.0%	909.4	
6	1	370+80.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	1.5%	1212.6	
6	1	371+30.00	RT	34.0	34.0	34.0	6.0	6.0	10.0	4.5%	424.4	
6	1	367+10.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.5%	423.9	
6	1	367+40.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.5%	423.9	
6	1	367+70.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.5%	423.9	
6	1	368+00.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.5%	423.9	
6	1	368+30.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.0%	494.6	
6	1	368+65.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.0%	494.6	
6	1	369+00.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	5.0%	494.6	
6	1	369+35.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
6	1	369+70.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
6	1	370+05.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
6	1	370+40.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
6	1	370+75.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
6	1	371+10.00	RT	33.0	33.0	33.0	6.0	3.0	15.0	4.5%	494.6	
	Basin 6 Totals:			1165.0	1165.0	1165.0					18572.5	
7	1	8375+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.4%	282.6	
7	1	8375+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.4%	282.6	
7	1	8375+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.4%	282.6	
7	1	8376+05.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.4%	282.6	
7	1	371+55.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	
7	1	371+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	
7	1	372+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	
7	1	372+60.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	
7	1	373+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
7	1	374+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	
7	1	376+10.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	0.5%	3393.6	

100-18
10-18-16

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4

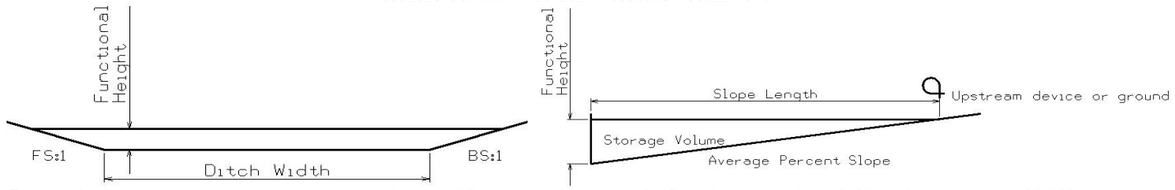


* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
	Basin 7 Totals:			248.0	248.0	248.0					6502.3	
8	1	32+35.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	CONN B
8	1	32+55.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	CONN B
8	1	34+55.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	CONN B
	Basin 8 Totals:			66.0	66.0	66.0					7395.1	
9	1	14+10.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.0%	1460.2	CONN B
9	1	21+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	22+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	23+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	24+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	26+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	27+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	28+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	29+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	30+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	CONN B
9	1	14+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.3%	565.2	CONN B
9	1	14+70.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.3%	565.2	CONN B
9	1	15+30.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.3%	565.2	CONN B
9	1	15+90.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.3%	565.2	CONN B
9	1	16+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	2.3%	565.2	CONN B
9	1	21+10.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.2%	942.0	CONN B
9	1	21+60.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN B
9	1	22+05.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN B
9	1	22+50.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN B
9	1	22+95.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN B
9	1	23+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.4%	423.9	CONN B
9	1	24+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	25+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	26+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	27+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	1.3%	942.0	CONN B
9	1	28+40.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.9%	1460.2	CONN B
9	1	30+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.9%	1460.2	CONN B
9	1	31+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.9%	1460.2	CONN B
	Basin 9 Totals:			616.0	616.0	616.0					26000.5	
10	1	347+35.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	1.5%	1077.3	
10	1	348+35.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	1.5%	1077.3	
10	1	8361+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	Bike-8
10	1	8361+65.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	Bike-8
10	1	8362+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	Bike-8
10	1	364+40.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	4.0%	485.0	
10	1	364+80.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	4.0%	485.0	
10	1	365+05.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.9%	303.1	
10	1	365+30.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.9%	303.1	
10	1	365+55.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.9%	303.1	
10	1	365+85.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.2%	363.8	
10	1	366+10.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.9%	303.1	
10	1	366+40.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.5%	363.8	
10	1	366+70.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.5%	363.8	
10	1	367+05.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	5.0%	424.4	
10	1	367+40.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	4.5%	424.4	
10	1	367+80.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	4.0%	485.0	
10	1	368+25.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	3.5%	545.7	
10	1	368+75.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	3.0%	606.3	
10	1	369+35.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	2.5%	727.6	
10	1	370+10.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	2.0%	909.4	
10	1	371+10.00	LT	28.0	28.0	28.0	6.0	6.0	10.0	1.5%	1212.6	
10	1	4520+00.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	RAMP D
10	1	4520+75.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	RAMP D
10	1	4521+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	RAMP D
10	1	4521+75.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	RAMP D
10	1	4522+25.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	RAMP D
10	1	4522+75.00	RT	22.0	22.0	22.0	3.0	3.0	10.0	3.0%	471.0	RAMP D
10	1	1519+70.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	2.3%	646.4	RAMP A

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



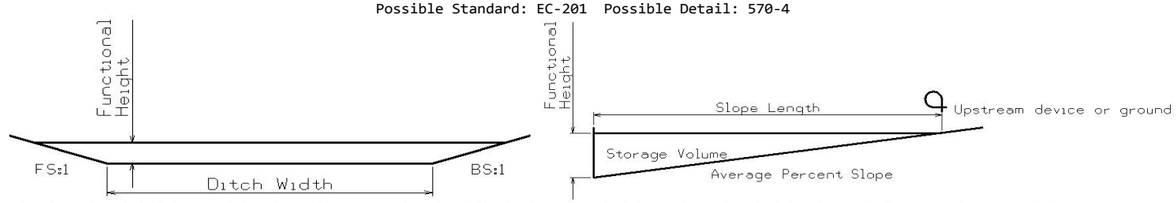
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
10	1	1520+10.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	2.3%	646.4	RAMP A
10	1	1520+70.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	2.3%	646.4	RAMP A
10	1	1521+20.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.0%	538.7	RAMP A
10	1	1521+60.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	4.0%	430.9	RAMP A
10	1	1521+90.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	5.5%	323.2	RAMP A
10	1	1522+15.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	5.9%	269.3	RAMP A
10	1	1522+35.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	5.9%	269.3	RAMP A
10	1	3521+90.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	3.0%	874.4	LOOP C
10	1	3522+40.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	3.0%	874.4	LOOP C
10	1	3522+70.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	5.5%	524.6	LOOP C
10	1	3523+10.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.0%	699.5	LOOP C
10	1	3523+60.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	3.0%	874.4	LOOP C
10	1	3524+00.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.0%	699.5	LOOP C
10	1	3524+35.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.5%	612.1	LOOP C
10	1	3524+70.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.5%	612.1	LOOP C
10	1	3525+05.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.5%	612.1	LOOP C
10	1	3525+40.00	LT	38.0	38.0	38.0	6.0	3.0	20.0	4.5%	612.1	LOOP C
10	1	3526+00.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	2.2%	646.4	LOOP C
10	1	3526+60.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	2.2%	646.4	LOOP C
10	1	3526+95.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	4.8%	377.1	LOOP C
10	1	3527+30.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	4.8%	377.1	LOOP C
10	1	3527+65.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	4.8%	377.1	LOOP C
10	1	3528+00.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	4.8%	377.1	LOOP C
10	1	3528+35.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	4.8%	377.1	LOOP C
10	1	3528+60.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3528+85.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3529+10.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3529+35.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3529+60.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3529+85.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	5.7%	269.3	LOOP C
10	1	3523+90.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	4.5%	377.1	LOOP C
10	1	3524+25.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	4.5%	377.1	LOOP C
10	1	3524+70.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.4%	484.8	LOOP C
10	1	3525+15.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.4%	484.8	LOOP C
10	1	3525+60.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.4%	484.8	LOOP C
10	1	3526+05.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.4%	484.8	LOOP C
10	1	3526+50.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	3.4%	484.8	LOOP C
Basin 10 Totals:				1894.0	1894.0	1894.0					36237.8	
11	1	342+05.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
11	1	342+40.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
11	1	342+75.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
11	1	343+10.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
11	1	343+30.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.2%	447.2	
11	1	342+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.4%	565.2	
11	1	343+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.4%	565.2	
11	1	343+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.4%	565.2	
11	1	1520+35.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.4%	565.2	
11	1	1520+70.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.4%	565.2	RAMP A
11	1	1521+30.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	2.4%	646.4	RAMP A
11	1	1521+90.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	2.3%	646.4	RAMP A
11	1	1522+50.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	2.3%	646.4	RAMP A
11	1	1526+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	0.5%	2967.4	RAMP A
11	1	1528+30.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	RAMP A
11	1	1528+65.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	RAMP A
11	1	1529+00.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	RAMP A
11	1	1529+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	RAMP A
11	1	1530+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	RAMP A
11	1	1530+80.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	RAMP A
11	1	1531+40.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.1%	565.2	RAMP A
11	1	1531+75.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	3.0%	538.7	RAMP A
11	1	1533+50.00	LT	47.0	47.0	47.0	6.0	3.0	29.0	4.0%	941.3	RAMP A
11	1	1533+90.00	LT	47.0	47.0	47.0	6.0	3.0	29.0	4.0%	941.3	RAMP A
11	1	1535+00.00	LT	28.0	28.0	28.0	6.0	3.0	10.0	0.5%	3393.6	RAMP A
11	1	1535+30.00	LT	22.0	22.0	22.0	3.0	3.0	15.0	4.0%	511.1	RAMP A
11	1	1535+70.00	LT	27.0	27.0	27.0	3.0	3.0	15.0	4.0%	511.1	RAMP A
11	1	1536+05.00	LT	47.0	47.0	47.0	6.0	3.0	29.0	3.1%	1058.9	RAMP A

100-18
10-18-16

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201 Possible Detail: 570-4



* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
11	1	1536+40.00	LT	47.0	47.0	47.0	6.0	3.0	29.0	3.1%	1058.9	RAMP A
11	1	536+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	US 61
11	1	537+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	US 61
11	1	537+60.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	US 61
11	1	537+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	4.5%	329.7	US 61
11	1	539+15.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	539+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	2.0%	706.5	US 61
11	1	540+50.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	1.5%	942.0	US 61
11	1	540+85.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	541+20.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	541+55.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	541+90.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	542+25.00	LT	22.0	22.0	22.0	3.0	3.0	10.0	5.0%	329.7	US 61
11	1	540+15.00	LT	41.0	41.0	41.0	6.0	3.0	23.0	1.5%	1950.3	US 61
11	1	541+15.00	LT	41.0	41.0	41.0	6.0	3.0	23.0	1.5%	1950.3	US 61
11	1	542+15.00	LT	41.0	41.0	41.0	6.0	3.0	23.0	1.5%	1950.3	US 61
												US 61
Basin 11 Totals:				1185.0	1185.0	1185.0					32970.4	
12	1	539+40.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	0.5%	3393.6	US 61
12	1	541+20.00	RT	28.0	28.0	28.0	6.0	3.0	10.0	0.5%	3393.6	US 61
Basin 12 Totals:				56.0	56.0	56.0					6787.1	
Tab Quantity:				11863.0	11863.0	11863.0					315276.8	

Silt Fence For Ditch Checks Bid Tab Quantity = Tab Quantity x 150% = 17795 LF

Maintenance of Silt Fence For Ditch Checks Bid Tab Quantity = Bid Quantity x 10% = 1779.5 LF

Removal of Silt Fence For Ditch Checks Bid Tab Quantity = Bid Quantity x 100% = 17795 LF

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
Wood Excelsior Slope Protection						
315+00.00	317+20.00	Lt.			220.0	
315+00.00	318+30.00	Lt.			340.0	
318+25.00	320+85.00	Lt.			270.0	
320+65.00	323+40.00	Lt.			280.0	
322+85.00	326+00.00	Lt.			320.0	
323+80.00	329+20.00	Lt.			540.0	
327+85.00	333+50.00	Lt.			550.0	
336+25.00	339+40.00	Lt.			320.0	
340+45.00	343+60.00	Lt.			310.0	
340+50.00	343+90.00	Lt.			340.0	
355+60.00	356+90.00	Lt.			140.0	
355+60.00	357+25.00	Lt.			170.0	
315+00.00	317+60.00	Rt.			260.0	
355+65.00	357+55.00	Rt.			190.0	
355+65.00	357+55.00	Rt.			190.0	
365+10.00	367+20.00	Rt.			240.0	
366+25.00	372+40.00	Rt.			690.0	
368+40.00	371+70.00	Rt.			380.0	
368+30.00	370+90.00	Rt.			310.0	
375+50.00	377+30.40	Rt.			210.0	
377+20.00	379+50.00	Rt.			230.0	
7327+10.00	7332+00.00	Rt.			490.0	Bike-7
7331+70.00	7338+70.00	Rt.			710.0	Bike-7
7333+10.00	7337+70.00	Rt.			470.0	Bike-7
7333+50.00	7343+35.00	Rt.			410.0	Bike-7
7340+10.00	7343+50.00	Rt.			380.0	Bike-7
7346+10.00	7348+40.00	Rt.			240.0	Bike-7
8366+80.00	8370+70.00	Lt.			390.0	Bike-8
8372+40.00	8379+00.00	Lt.			660.0	Bike-8
8373+40.00	8378+00.00	Lt.			440.0	Bike-8
12+25.00	14+80.00	Lt.			270.0	
15+30.00	17+30.00	Lt.			200.0	US 61 Connector Road A
16+30.00	20+70.00	Lt.			440.0	US 61 Connector Road A
19+70.00	27+80.00	Lt.			850.0	US 61 Connector Road A
23+00.00	27+30.00	Lt.			500.0	US 61 Connector Road A
11+00.00	14+80.00	Rt.			360.0	US 61 Connector Road A
21+80.00	27+40.00	Rt.			520.0	US 61 Connector Road A
15+50.00	17+50.00	Lt.			210.0	US 61 Connector Road B
20+30.00	24+50.00	Lt.			420.0	US 61 Connector Road B
35+20.00	38+80.00	Lt.			370.0	US 61 Connector Road B
14+00.00	17+40.00	Rt.			330.0	US 61 Connector Road B
20+40.00	22+60.00	Rt.			230.0	US 61 Connector Road B
23+80.00	28+80.00	Rt.			530.0	US 61 Connector Road B
26+00.00	28+80.00	Rt.			310.0	US 61 Connector Road B
29+20.00	35+10.00	Rt.			600.0	US 61 Connector Road B
30+30.00	32+30.00	Rt.			200.0	US 61 Connector Road B
515+20.00	518+50.00	Lt.			330.0	US 61
535+10.00	537+70.00	Lt.			250.0	US 61
539+30.00	542+40.00	Lt.			290.0	US 61
541+45.00	544+25.00	Rt.			290.0	US 61
541+70.00	543+80.00	Rt.			220.0	US 61
1520+80.00	1522+30.00	Lt.			160.0	US 61 Ramp A
1521+10.00	1521+60.00	Lt.			60.0	US 61 Ramp A
1524+10.00	1527+60.00	Lt.			370.0	US 61 Ramp A
1525+00.00	1530+00.00	Lt.			510.0	US 61 Ramp A
1531+00.00	1533+40.00	Lt.			230.0	US 61 Ramp A
1526+10.00	1529+50.00	Rt.			350.0	US 61 Ramp A
1527+70.00	1530+80.00	Rt.			330.0	US 61 Ramp A
2524+50.00	2527+00.00	Lt.			320.0	US 61 Loop B
2521+20.00	2530+25.00	Rt.			890.0	US 61 Loop B
3522+80.00	3529+90.00	Lt.			460.0	US 61 Loop C
4518+50.00	4520+60.00	Lt.			200.0	US 61 Ramp D
4518+70.00	4520+60.00	Lt.			200.0	US 61 Ramp D
4524+75.00	4528+55.00	Lt.			390.0	US 61 Ramp D
4523+30.00	4534+20.00	Rt.			1070.0	US 61 Ramp D
4527+10.00	4533+75.00	Rt.			930.0	US 61 Ramp D
Ditch Protection - Final Stabilization						
316+10.00	316+10.00	LT			20.0	
316+35.00	316+35.00	LT			20.0	
316+60.00	316+60.00	LT			20.0	
316+85.00	316+85.00	LT			20.0	
317+10.00	317+10.00	LT			20.0	
317+35.00	317+35.00	LT			20.0	
317+75.00	317+75.00	LT			20.0	
318+15.00	318+15.00	LT			20.0	
318+55.00	318+55.00	LT			20.0	
318+95.00	318+95.00	LT			20.0	

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
319+35.00	319+35.00	LT			20.0	
323+80.00	323+80.00	LT			20.0	
324+20.00	324+20.00	LT			20.0	
324+60.00	324+60.00	LT			20.0	
325+00.00	325+00.00	LT			20.0	
325+40.00	325+40.00	LT			20.0	
325+80.00	325+80.00	LT			20.0	
326+20.00	326+20.00	LT			20.0	
326+60.00	326+60.00	LT			20.0	
327+00.00	327+00.00	LT			20.0	
327+40.00	327+40.00	LT			20.0	
327+80.00	327+80.00	LT			20.0	
328+20.00	328+20.00	LT			20.0	
328+60.00	328+60.00	LT			20.0	
329+00.00	329+00.00	LT			20.0	
329+40.00	329+40.00	LT			20.0	
329+80.00	329+80.00	LT			20.0	
330+20.00	330+20.00	LT			20.0	
315+20.00	315+20.00	MED		30.0		
315+45.00	315+45.00	MED		30.0		
315+70.00	315+70.00	MED		30.0		
315+95.00	315+95.00	MED		30.0		
316+20.00	316+20.00	MED		30.0		
316+45.00	316+45.00	MED		30.0		
316+70.00	316+70.00	MED		30.0		
316+95.00	316+95.00	MED		30.0		
317+20.00	317+20.00	MED		30.0		
317+45.00	317+45.00	MED		30.0		
317+70.00	317+70.00	MED		30.0		
317+95.00	317+95.00	MED		30.0		
318+20.00	318+20.00	MED		30.0		
318+45.00	318+45.00	MED		30.0		
318+70.00	318+70.00	MED		30.0		
318+95.00	318+95.00	MED		30.0		
319+20.00	319+20.00	MED		30.0		
319+45.00	319+45.00	MED		30.0		
319+70.00	319+70.00	MED		30.0		
319+95.00	319+95.00	MED		30.0		
320+20.00	320+20.00	MED		30.0		
320+45.00	320+45.00	MED		30.0		
320+70.00	320+70.00	MED		30.0		
320+95.00	320+95.00	MED		30.0		
321+20.00	321+20.00	MED		30.0		
321+45.00	321+45.00	MED		30.0		
321+70.00	321+70.00	MED		30.0		
321+95.00	321+95.00	MED		30.0		
322+20.00	322+20.00	MED		30.0		
322+45.00	322+45.00	MED		30.0		
322+70.00	322+70.00	MED		30.0		
322+95.00	322+95.00	MED		30.0		
323+20.00	323+20.00	MED		30.0		
323+45.00	323+45.00	MED		30.0		
323+70.00	323+70.00	MED		30.0		
323+95.00	323+95.00	MED		30.0		
324+20.00	324+20.00	MED		30.0		
324+45.00	324+45.00	MED		30.0		
324+70.00	324+70.00	MED		30.0		
324+95.00	324+95.00	MED		30.0		
325+20.00	325+20.00	MED		30.0		
325+45.00	325+45.00	MED		30.0		
325+70.00	325+70.00	MED		30.0		
325+95.00	325+95.00	MED		30.0		
326+20.00	326+20.00	MED		30.0		
326+45.00	326+45.00	MED		30.0		
326+70.00	326+70.00	MED		30.0		
327+00.00	327+00.00	MED		30.0		
327+35.00	327+35.00	MED		30.0		
327+70.00	327+70.00	MED		30.0		
328+10.00	328+10.00	MED		30.0		
328+50.00	328+50.00	MED		30.0		
328+90.00	328+90.00	MED		30.0		
329+45.00	329+45.00	MED		30.0		
330+00.00	330+00.00	MED		30.0		
331+00.00	331+00.00	MED		30.0		
332+35.00	332+35.00	MED		30.0		
315+10.00	315+10.00	RT			20.0	
316+65.00	316+65.00	RT			20.0	
316+90.00	316+90.00	RT			20.0	
317+15.00	317+15.00	RT			20.0	
317+40.00	317+40.00	RT			20.0	
317+65.00	317+65.00	RT			20.0	

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
317+90.00	317+90.00	RT			20.0	
318+15.00	318+15.00	RT			20.0	
318+40.00	318+40.00	RT			20.0	
318+65.00	318+65.00	RT			20.0	
318+90.00	318+90.00	RT			20.0	
319+15.00	319+15.00	RT			20.0	
319+40.00	319+40.00	RT			20.0	
319+65.00	319+65.00	RT			20.0	
319+90.00	319+90.00	RT			20.0	
320+15.00	320+15.00	RT			20.0	
320+40.00	320+40.00	RT			20.0	
320+70.00	320+70.00	RT			20.0	
321+00.00	321+00.00	RT			20.0	
321+30.00	321+30.00	RT			20.0	
321+60.00	321+60.00	RT			20.0	
321+90.00	321+90.00	RT			20.0	
322+20.00	322+20.00	RT			20.0	
322+50.00	322+50.00	RT			20.0	
322+80.00	322+80.00	RT			20.0	
323+25.00	323+25.00	RT			20.0	
323+70.00	323+70.00	RT			20.0	
324+15.00	324+15.00	RT			20.0	
7314+75.00	7314+75.00	RT			20.0	Bike-7
7315+25.00	7315+25.00	RT			20.0	Bike-7
7315+75.00	7315+75.00	RT			20.0	Bike-7
7318+30.00	7318+30.00	RT			20.0	Bike-7
7318+60.00	7318+60.00	RT			20.0	Bike-7
7318+90.00	7318+90.00	RT			20.0	Bike-7
7319+20.00	7319+20.00	RT			20.0	Bike-7
7319+50.00	7319+50.00	RT			20.0	Bike-7
7319+80.00	7319+80.00	RT			20.0	Bike-7
7320+10.00	7320+10.00	RT			20.0	Bike-7
7320+40.00	7320+40.00	RT			20.0	Bike-7
7331+95.00	7331+95.00	RT			20.0	Bike-7
7333+05.00	7333+05.00	RT			20.0	Bike-7
7334+15.00	7334+15.00	RT			20.0	Bike-7
7335+00.00	7335+00.00	RT			20.0	Bike-7
7334+85.00	7334+85.00	RT			30.0	Bike-7
7335+20.00	7335+20.00	RT			30.0	Bike-7
7335+55.00	7335+55.00	RT			30.0	Bike-7
340+25.00	340+25.00	LT			20.0	
341+60.00	341+80.00	LT			20.0	
341+30.00	341+30.00	LT			30.0	
341+65.00	341+65.00	LT			30.0	
336+25.00	336+25.00	MED		30.0		
337+60.00	337+60.00	MED		30.0		
338+95.00	338+95.00	MED		30.0		
7335+90.00	7335+90.00	RT			20.0	Bike-7
7336+50.00	7336+50.00	RT			20.0	Bike-7
7337+10.00	7337+10.00	RT			20.0	Bike-7
7337+70.00	7337+70.00	RT			20.0	Bike-7
7335+90.00	7335+90.00	RT			30.0	Bike-7
7336+20.00	7336+20.00	RT			30.0	Bike-7
7336+50.00	7336+50.00	RT			30.0	Bike-7
7336+80.00	7336+80.00	RT			30.0	Bike-7
7339+60.00	7339+60.00	RT			20.0	Bike-7
7339+85.00	7339+85.00	RT			20.0	Bike-7
7340+10.00	7340+10.00	RT			20.0	Bike-7
7340+95.00	7340+96.00	RT			20.0	Bike-7
7340+65.00	7340+65.00	RT			30.0	Bike-7
7341+00.00	7341+00.00	RT			30.0	Bike-7
7341+35.00	7341+35.00	RT			30.0	Bike-7
7341+70.00	7341+70.00	RT			30.0	Bike-7
7342+50.00	7342+50.00	RT			20.0	Bike-7
7343+15.00	7343+15.00	RT			20.0	Bike-7
7343+80.00	7343+80.00	RT			20.0	Bike-7
28+00	28+00	LT			20.0	CONN A
7342+30.00	7342+30.00	RT			30.0	Bike-7
7342+65.00	7342+65.00	RT			30.0	Bike-7
7342+60.00	7342+60.00	RT			30.0	Bike-7
7343+15.00	7343+15.00	RT			30.0	Bike-7
7347+30.00	7347+30.00	RT			20.0	Bike-7
7348+30.00	7348+30.00	RT			20.0	Bike-7
7349+10.00	7349+10.00	RT			20.0	Bike-7
24+20.00	24+20.00	LT			20.0	CONN A
24+50.00	24+50.00	LT			20.0	CONN A
24+80.00	24+80.00	LT			20.0	CONN A
25+10.00	25+10.00	LT			20.0	CONN A
25+40.00	25+40.00	LT			20.0	CONN A
25+70.00	25+70.00	LT			20.0	CONN A
26+00.00	26+00.00	LT			20.0	CONN A

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
26+30.00	26+30.00	LT			20.0	CONN A
26+60.00	26+60.00	LT			20.0	CONN A
26+90.00	26+90.00	LT			20.0	CONN A
23+30.00	23+30.00	LT			20.0	CONN A
23+65.00	23+65.00	LT			20.0	CONN A
24+00.00	24+00.00	LT			20.0	CONN A
24+35.00	24+35.00	LT			20.0	CONN A
24+70.00	24+70.00	LT			20.0	CONN A
25+00.00	25+00.00	LT			20.0	CONN A
25+30.00	25+30.00	LT			20.0	CONN A
25+60.00	25+60.00	LT			20.0	CONN A
25+90.00	25+90.00	LT			20.0	CONN A
26+20.00	26+20.00	LT			20.0	CONN A
26+50.00	26+50.00	LT			20.0	CONN A
26+80.00	26+80.00	LT			20.0	CONN A
27+10.00	27+10.00	LT			20.0	CONN A
23+70.00	23+70.00	LT			20.0	CONN A
24+35.00	24+35.00	LT			20.0	CONN A
24+80.00	24+80.00	LT			20.0	CONN A
25+25.00	25+25.00	LT			20.0	CONN A
25+65.00	25+65.00	LT			20.0	CONN A
26+05.00	26+05.00	LT			20.0	CONN A
26+45.00	26+45.00	LT			20.0	CONN A
23+70.00	23+70.00	RT			20.0	CONN A
24+35.00	24+35.00	RT			20.0	CONN A
24+80.00	24+80.00	RT			20.0	CONN A
25+20.00	25+20.00	RT			20.0	CONN A
25+60.00	25+60.00	RT			20.0	CONN A
26+00.00	26+00.00	RT			20.0	CONN A
26+40.00	26+40.00	RT			20.0	CONN A
26+80.00	26+80.00	RT			20.0	CONN A
27+20.00	27+20.00	RT			20.0	CONN A
25+00.00	25+00.00	RT			30.0	CONN A
25+25.00	25+25.00	RT			30.0	CONN A
25+50.00	25+50.00	RT			30.0	CONN A
25+75.00	25+75.00	RT			30.0	CONN A
26+00.00	26+00.00	RT			30.0	CONN A
26+25.00	26+25.00	RT			30.0	CONN A
26+50.00	26+50.00	RT			30.0	CONN A
26+75.00	26+75.00	RT			30.0	CONN A
27+00.00	27+00.00	RT			30.0	CONN A
27+25.00	27+25.00	RT			30.0	CONN A
27+70.00	27+70.00	RT			20.0	CONN A
28+25.00	28+25.00	RT			20.0	CONN A
28+50.00	28+50.00	RT			20.0	CONN A
27+65.00	27+65.00	RT			30.0	CONN A
27+70.00	27+70.00	RT			30.0	CONN A
515+45.00	515+45.00	LT			20.0	US 61
515+80.00	515+80.00	LT			20.0	US 61
516+15.00	516+15.00	LT			20.0	US 61
516+40.00	516+40.00	LT			20.0	US 61
516+65.00	516+65.00	LT			20.0	US 61
516+90.00	516+90.00	LT			20.0	US 61
517+55.00	517+55.00	LT			20.0	US 61
518+20.00	518+20.00	LT			20.0	US 61
515+60.00	515+60.00	LT			20.0	US 61
516+25.00	516+25.00	LT			40.0	US 61
516+90.00	516+90.00	LT			40.0	US 61
13+00.00	13+00.00	LT			20.0	CONN A
13+40.00	13+40.00	LT			20.0	CONN A
13+80.00	13+80.00	LT			20.0	CONN A
14+20.00	14+20.00	LT			20.0	CONN A
16+90.00	16+90.00	LT			30.0	CONN A
17+15.00	17+15.00	LT			30.0	CONN A
17+40.00	17+40.00	LT			30.0	CONN A
17+65.00	17+65.00	LT			30.0	CONN A
17+90.00	17+90.00	LT			30.0	CONN A
18+15.00	18+15.00	LT			30.0	CONN A
18+40.00	18+40.00	LT			30.0	CONN A
18+65.00	18+65.00	LT			30.0	CONN A
20+20.00	20+20.00	LT			30.0	CONN A
20+45.00	20+45.00	LT			30.0	CONN A
20+70.00	20+70.00	LT			30.0	CONN A
20+95.00	20+95.00	LT			30.0	CONN A
21+20.00	21+20.00	LT			30.0	CONN A
21+45.00	21+45.00	LT			30.0	CONN A
21+70.00	21+70.00	LT			30.0	CONN A
21+95.00	21+95.00	LT			30.0	CONN A
22+20.00	22+20.00	LT			30.0	CONN A
22+45.00	22+45.00	LT			30.0	CONN A
22+80.00	22+80.00	LT			30.0	CONN A

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
16+10.00	16+10.00	LT			20.0	CONN A
16+45.00	16+45.00	LT			20.0	CONN A
16+80.00	16+80.00	LT			20.0	CONN A
17+15.00	17+15.00	LT			20.0	CONN A
17+50.00	17+50.00	LT			20.0	CONN A
17+85.00	17+85.00	LT			20.0	CONN A
18+20.00	18+20.00	LT			20.0	CONN A
18+55.00	18+55.00	LT			20.0	CONN A
18+90.00	18+90.00	LT			20.0	CONN A
19+25.00	19+25.00	LT			20.0	CONN A
19+60.00	19+60.00	LT			20.0	CONN A
19+95.00	19+95.00	LT			20.0	CONN A
20+30.00	20+30.00	LT			20.0	CONN A
20+65.00	20+65.00	LT			20.0	CONN A
21+00.00	21+00.00	LT			20.0	CONN A
21+35.00	21+35.00	LT			20.0	CONN A
21+70.00	21+70.00	LT			20.0	CONN A
22+05.00	22+05.00	LT			20.0	CONN A
12+30.00	12+30.00	RT			20.0	CONN A
12+80.00	12+80.00	RT			20.0	CONN A
13+30.00	13+30.00	RT			20.0	CONN A
16+10.00	16+10.00	RT			20.0	CONN A
16+45.00	16+45.00	RT			20.0	CONN A
16+80.00	16+80.00	RT			20.0	CONN A
17+15.00	17+15.00	RT			20.0	CONN A
17+50.00	17+50.00	RT			20.0	CONN A
17+85.00	17+85.00	RT			20.0	CONN A
18+20.00	18+20.00	RT			20.0	CONN A
18+55.00	18+55.00	RT			20.0	CONN A
18+90.00	18+90.00	RT			20.0	CONN A
19+25.00	19+25.00	RT			20.0	CONN A
19+60.00	19+60.00	RT			20.0	CONN A
19+95.00	19+95.00	RT			20.0	CONN A
20+30.00	20+30.00	RT			20.0	CONN A
20+65.00	20+65.00	RT			20.0	CONN A
21+00.00	21+00.00	RT			20.0	CONN A
21+35.00	21+35.00	RT			20.0	CONN A
21+70.00	21+70.00	RT			20.0	CONN A
22+05.00	22+05.00	RT			20.0	CONN A
512+25.00	512+25.00	LT			20.0	US 61
512+80.00	512+80.00	LT			20.0	US 61
513+35.00	513+35.00	LT			20.0	US 61
513+90.00	513+90.00	LT			20.0	US 61
514+45.00	514+45.00	LT			20.0	US 61
515+10.00	515+10.00	LT			20.0	US 61
510+60.00	510+60.00	LT			40.0	US 61
511+60.00	511+60.00	LT			40.0	US 61
512+60.00	512+60.00	LT			40.0	US 61
513+60.00	513+60.00	LT			40.0	US 61
514+60.00	514+60.00	LT			40.0	US 61
36+20.00	36+20.00	LT			20.0	CONN B
363+60.00	363+60.00	RT			40.0	
363+85.00	363+85.00	RT			40.0	
364+10.00	364+10.00	RT			40.0	
364+35.00	364+35.00	RT			40.0	
364+60.00	364+60.00	RT			40.0	
364+85.00	364+85.00	RT			40.0	
365+10.00	365+10.00	RT			40.0	
365+35.00	365+35.00	RT			40.0	
365+60.00	365+60.00	RT			40.0	
365+85.00	365+85.00	RT			40.0	
366+10.00	366+10.00	RT			40.0	
366+40.00	366+40.00	RT			40.0	
366+75.00	366+75.00	RT			40.0	
367+05.00	367+05.00	RT			40.0	
367+40.00	367+40.00	RT			40.0	
367+80.00	367+80.00	RT			40.0	
368+25.00	368+25.00	RT			40.0	
368+90.00	368+90.00	RT			40.0	
369+90.00	369+90.00	RT			40.0	
370+90.00	370+90.00	RT			40.0	
370+20.00	370+20.00	RT			40.0	
367+10.00	367+10.00	RT			40.0	
367+35.00	367+35.00	RT			40.0	
367+60.00	367+60.00	RT			40.0	
367+85.00	367+85.00	RT			40.0	
368+10.00	368+10.00	RT			40.0	
368+35.00	368+35.00	RT			40.0	
368+60.00	368+60.00	RT			40.0	
368+85.00	368+85.00	RT			40.0	
369+10.00	369+10.00	RT			40.0	

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
369+35.00	369+35.00	RT			40.0	
369+65.00	369+70.00	RT			40.0	
369+95.00	370+05.00	RT			40.0	
370+25.00	370+40.00	RT			40.0	
370+55.00	370+75.00	RT			40.0	
370+85.00	371+05.00	RT			40.0	
371+15.00	371+35.00	RT			40.0	
8375+20.00	8375+20.00	LT			20.0	Bike-8
8375+45.00	8375+45.00	LT			20.0	Bike-8
8375+70.00	8375+70.00	LT			20.0	Bike-8
8375+95.00	8375+95.00	LT			20.0	Bike-8
371+55.00	371+55.00	RT			20.0	
371+85.00	371+85.00	RT			20.0	
372+15.00	372+15.00	RT			20.0	
372+45.00	372+45.00	RT			20.0	
373+95.00	373+95.00	RT			20.0	
374+20.00	374+30.00	RT			20.0	
376+10.00	376+10.00	RT			30.0	
32+35.00	32+35.00	LT			20.0	CONN B
32+55.00	32+55.00	LT			20.0	CONN B
34+55.00	34+55.00	LT			20.0	CONN B
14+10.00	14+10.00	LT			20.0	CONN B
21+00.00	21+00.00	LT			20.0	CONN B
22+15.00	22+15.00	LT			20.0	CONN B
23+30.00	23+30.00	LT			20.0	CONN B
24+45.00	24+45.00	LT			20.0	CONN B
25+60.00	25+60.00	LT			20.0	CONN B
26+75.00	26+75.00	LT			20.0	CONN B
27+90.00	27+90.00	LT			20.0	CONN B
29+05.00	29+05.00	LT			20.0	CONN B
30+20.00	30+20.00	LT			20.0	CONN B
14+10.00	14+10.00	RT			20.0	CONN B
14+70.00	14+70.00	RT			20.0	CONN B
15+30.00	15+30.00	RT			20.0	CONN B
15+90.00	15+90.00	RT			20.0	CONN B
16+50.00	16+50.00	RT			20.0	CONN B
21+10.00	21+10.00	RT			20.0	CONN B
21+60.00	21+60.00	RT			20.0	CONN B
22+00.00	22+00.00	RT			20.0	CONN B
22+40.00	22+40.00	RT			20.0	CONN B
22+80.00	22+80.00	RT			20.0	CONN B
23+20.00	23+20.00	RT			20.0	CONN B
24+35.00	24+35.00	RT			20.0	CONN B
25+50.00	25+50.00	RT			20.0	CONN B
26+65.00	26+65.00	RT			20.0	CONN B
27+80.00	27+80.00	RT			20.0	CONN B
29+15.00	29+15.00	RT			20.0	CONN B
30+50.00	30+50.00	RT			20.0	CONN B
347+35.00	347+35.00	LT			30.0	
348+35.00	348+35.00	LT			30.0	
8361+15.00	8361+15.00	LT			20.0	Bike-8
8361+65.00	8361+65.00	LT			20.0	Bike-8
8362+15.00	8362+15.00	LT			20.0	Bike-8
364+40.00	364+40.00	LT			30.0	
364+75.00	364+75.00	LT			30.0	
365+00.00	365+00.00	LT			30.0	
365+35.00	365+35.00	LT			30.0	
365+70.00	365+70.00	LT			30.0	
366+05.00	366+05.00	LT			30.0	
366+40.00	366+40.00	LT			30.0	
366+75.00	366+75.00	LT			30.0	
367+10.00	367+10.00	LT			30.0	
367+35.00	367+35.00	LT			30.0	
367+70.00	367+70.00	LT			30.0	
368+15.00	368+15.00	LT			30.0	
368+70.00	368+70.00	LT			30.0	
369+35.00	369+35.00	LT			30.0	
370+35.00	370+35.00	LT			30.0	
4520+00.00	4520+00.00	RT			20.0	RAMP D
4520+75.00	4520+75.00	RT			20.0	RAMP D
4521+20.00	4521+25.00	RT			20.0	RAMP D
4521+65.00	4521+75.00	RT			20.0	RAMP D
4522+10.00	4522+25.00	RT			20.0	RAMP D
4522+55.00	4522+75.00	RT			20.0	RAMP D
1519+70.00	1519+70.00	RT			30.0	RAMP A
1520+10.00	1520+10.00	RT			30.0	RAMP A
1520+70.00	1520+70.00	RT			30.0	RAMP A
1521+20.00	1521+20.00	RT			30.0	RAMP A
1521+65.00	1521+65.00	RT			30.0	RAMP A
1522+00.00	1522+00.00	RT			30.0	RAMP A
1522+25.00	1522+25.00	RT			30.0	RAMP A

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
1522+45.00	1522+45.00	RT			30.0	RAMP A
3521+90.00	3521+90.00	LT			40.0	LOOP C
3522+25.00	3522+25.00	LT			40.0	LOOP C
3522+50.00	3522+50.00	LT			40.0	LOOP C
3522+85.00	3522+85.00	LT			40.0	LOOP C
3523+20.00	3523+20.00	LT			40.0	LOOP C
3523+55.00	3523+55.00	LT			40.0	LOOP C
3523+90.00	3523+90.00	LT			40.0	LOOP C
3524+25.00	3524+25.00	LT			40.0	LOOP C
3524+60.00	3524+60.00	LT			40.0	LOOP C
3524+95.00	3524+95.00	LT			40.0	LOOP C
3525+55.00	3525+55.00	LT			30.0	LOOP C
3526+15.00	3526+15.00	LT			30.0	LOOP C
3526+50.00	3526+50.00	LT			30.0	LOOP C
3526+80.00	3526+80.00	LT			30.0	LOOP C
3527+10.00	3527+10.00	LT			30.0	LOOP C
3527+40.00	3527+40.00	LT			30.0	LOOP C
3527+70.00	3527+70.00	LT			30.0	LOOP C
3528+00.00	3528+00.00	LT			30.0	LOOP C
3528+30.00	3528+30.00	LT			30.0	LOOP C
3528+55.00	3528+55.00	LT			30.0	LOOP C
3528+80.00	3528+80.00	LT			30.0	LOOP C
3529+05.00	3529+05.00	LT			30.0	LOOP C
3529+30.00	3529+30.00	LT			30.0	LOOP C
3529+55.00	3529+55.00	LT			30.0	LOOP C
3529+80.00	3529+80.00	LT			30.0	LOOP C
3523+90.00	3523+90.00	RT			30.0	LOOP C
3524+20.00	3524+20.00	RT			30.0	LOOP C
3524+60.00	3524+60.00	RT			30.0	LOOP C
3525+00.00	3525+00.00	RT			30.0	LOOP C
3525+40.00	3525+40.00	RT			30.0	LOOP C
3525+80.00	3525+80.00	RT			30.0	LOOP C
3526+20.00	3526+20.00	RT			30.0	LOOP C
342+05.00	342+05.00	LT			30.0	
342+35.00	342+35.00	LT			30.0	
342+65.00	342+65.00	LT			30.0	
342+95.00	342+95.00	LT			30.0	
343+25.00	343+25.00	LT			30.0	
342+40.00	342+40.00	LT			20.0	
343+00.00	343+00.00	LT			20.0	
343+60.00	343+60.00	LT			20.0	
1520+35.00	1520+35.00	LT			20.0	RAMP A
1520+70.00	1520+70.00	LT			20.0	RAMP A
1521+30.00	1521+30.00	LT			30.0	RAMP A
1521+90.00	1521+90.00	LT			30.0	RAMP A
1522+50.00	1522+50.00	LT			30.0	RAMP A
1526+25.00	1526+25.00	LT			20.0	RAMP A
1528+30.00	1528+30.00	LT			20.0	RAMP A
1528+60.00	1528+60.00	LT			20.0	RAMP A
1528+90.00	1528+90.00	LT			20.0	RAMP A
1529+55.00	1529+55.00	LT			20.0	RAMP A
1530+20.00	1530+20.00	LT			20.0	RAMP A
1530+85.00	1530+85.00	LT			20.0	RAMP A
1531+50.00	1531+50.00	LT			20.0	RAMP A
1531+95.00	1531+95.00	LT			30.0	RAMP A
1532+30.00	1532+30.00	LT			50.0	RAMP A
1532+65.00	1532+65.00	LT			50.0	RAMP A
1535+00.00	1535+00.00	LT			30.0	RAMP A
1535+35.00	1535+35.00	LT			20.0	RAMP A
1535+70.00	1535+70.00	LT			30.0	RAMP A
1536+15.00	1536+15.00	LT			50.0	RAMP A
536+90.00	536+90.00	LT			20.0	US 61
537+20.00	537+20.00	LT			20.0	US 61
537+50.00	537+50.00	LT			20.0	US 61
537+80.00	537+80.00	LT			20.0	US 61
538+10.00	538+10.00	LT			20.0	US 61
538+40.00	538+40.00	LT			20.0	US 61
538+70.00	538+70.00	LT			20.0	US 61
539+00.00	539+00.00	LT			20.0	US 61
539+65.00	539+65.00	LT			20.0	US 61
540+30.00	540+30.00	LT			20.0	US 61
540+65.00	540+65.00	LT			20.0	US 61
540+90.00	540+90.00	LT			20.0	US 61
541+15.00	541+15.00	LT			20.0	US 61
541+40.00	541+40.00	LT			20.0	US 61
541+65.00	541+65.00	LT			20.0	US 61
541+90.00	541+90.00	LT			20.0	US 61
542+15.00	542+15.00	LT			20.0	US 61
540+15.00	540+15.00	LT			40.0	US 61
541+15.00	541+15.00	LT			40.0	US 61
542+15.00	542+15.00	LT			40.0	US 61

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

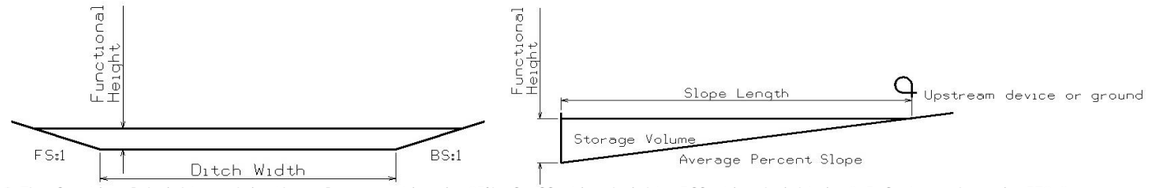
Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
539+40.00	539+40.00	RT			30.0	US 61
541+20.00	541+20.00	RT			30.0	US 61
308+00.00	308+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
312+00.00	312+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
316+00.00	316+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
320+00.00	320+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
325+00.00	325+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
329+00.00	329+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
331+00.00	331+00.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
332+50.00	332+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
332+94.00	332+94.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
333+50.00	333+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
334+50.00	334+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
336+50.00	336+50.00	MED			50.0	Place around median intakes. See Road Design Detail 570-5.
			Totals:	1800.0	36560.0	

100-33
10-18-16

TEMPORARY SEDIMENT CONTROL BASIN

Possible Detail 570-3



* The functional height used in the volume equation is 95% of effective height. Effective height is 2.5 feet as shown in 570-3.
* Volume equation: $[(1/4(FS*H^2))+(DW*H)+(1/4*(BS*H^2))]*(H/Avg\%Slope)$

Basin No.	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Average % Slope	Volume*	
			Each	Each	Each	FS:1	BS:1	FT		CF	
1	329+45.00	RT	1	1	1	3.0	3.0	10.00	3.1%	1558.0	
1	330+70.00	RT	1	1	1	3.0	3.0	10.00	7.0%	690.0	
Basin 1 Totals:			2	2	2					2248.0	
10	3520+65.00	LT	1	1	1	3.0	6.0	10.00	0.5%	11669.0	
10	3521+60.00	LT	1	1	1	3.0	6.0	10.00	0.5%	11669.0	
Basin 10 Totals:			2	2	2					23338.1	
11	1526+75.00	LT	1	1	1	3.0	3.0	10.00	0.5%	9659.6	
11	1528+00.00	LT	1	1	1	3.0	3.0	10.00	4.1%	1178.0	
Basin 11 Totals:			2	2	2					10837.6	
Tab Quantity:			6	6	6					36423.6	

Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantity = 6 Each

Maintenance of Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantityx 3 Cleanouts = 6x3 = 18 Each

Removal of Temporary Sediment Control Basin Bid Tab Quantity = Tab Quantity = 6 Each

100-20
08-01-08

PLANTING QUANTITIES LISTING

No.	Code	Botanical Names	Common Name	Size	Unit	Total	As Built Quan.
1	PWP	Pinus strobus	White Pine	3" CAL	B+B	17	
2	PNS	Picea abies	Norway Spruce	3" CAL	B+B	15	
3	ACF	Abies concolor	White Fir	3" CAL	B+B	15	
4	CRD	Cornus sericea occidentalis	Red Osier Dogwood	3" CAL	B+B	15	
5	PCN	Physocarpus Opulus Intermedia	Common Ninebark	3" CAL	B+B	30	
6	SCL	Syringa vulgaris	Common Lilac	3" CAL	B+B	30	
7	VNB	Viburnum lentago	Nannyberry	3" CAL	B+B	20	
8	CAH	Corylus americana	American Hazelnut	3" CAL	B+B	35	
					Total	177	

100-34
04-19-16

STORMWATER DRAINAGE BASIN

Basin No.	Station to Station		Side	Disturbed Area Acres	Discharge Point Station	Discharge Point Side	Required Storage Volume CF	Remarks
1	315+00.00	335+70.00	Both	13.7	332+00.00	LT	49320.0	
2	335+70.00	342+00.00	Both	4.6	337+90.00	LT	16560.0	
3	342+00.00	351+30.00	RT	8.3	342+00.00	LT	29880.0	
4	11+00.00	23+10.00	Both	5.3	11+00.00	RT	19080.0	Connector Road A Stationing
5	510+40.00	515+30.00	LT	1.3	510+85.00	LT	4680.0	U.S. 61 Stationing
6	351+30.00	371+50.00	RT	7.7	355+10.00	RT	27720.0	
7	368+80.00	380+50.00	Both	5.7	378+40.00	LT	20520.0	
8	31+25.00	35+20.00	Both	1.4	33+90.00	LT	5040.0	Connector Road B Stationing
9	14+00.00	31+25.00	Both	5.6	19+10.00	RT	20160.0	Connector Road B Stationing
10	344+85.00	371+45.00	Both	16.7	4524+70.00	RT	60120.0	Discharge Point-Ramp D Stationing
11	1521+50.00	1536+50.00	Both	13.7	4532+45.00	RT	49320.0	Start and End-Ramp A Stationing
								Discharge Point-Ramp D Stationing
12	534+25.00	544+25.00	RT	1.9	542+80.00	RT	6840.0	U.S. 61 Stationing

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
ML032						
368+19.70		Lt	PCC	99.7		Concrete slab from former silo

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
U.S. 61		
Station 509+51.40 LT	Remove 7' - Existing 36" RCP	For Pipe Extension, see E Sheets and Cross Sections for details.
	Remove 1 - Existing 36" Concrete Apron	
Station 515+31.25 LT	Remove 10' - Existing 24" RCP	For Pipe Extension, see E Sheets and Cross Sections for details.
	Remove 1 - Existing 24" Concrete Apron	
Station 520+92.32 LT	Remove 8' - Existing 36" RCP	For Pipe Extension, see E Sheets and Cross Sections for details.
	Remove 1 - Existing 36" Concrete Apron	
Station 520.92.32 RT	Remove 22' - Existing 36" RCP	For Pipe Extension, see E Sheets and Cross Sections for details.
	Remove 1 - Existing 36" Concrete Apron	
		Removal of existing RCP and aprons shall be included in payment for related pipe extension construction bid items.

100-35
04-19-16

SUMMARY OF STORMWATER STORAGE

Basin No.	Item	Total Storage Volume Provided CF	Total Storage Volume Required CF	Remarks
1	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	77952.0		
	Rock Check Dams	13923.3		
	Silt Basins	7062.5		
	Temporary Sediment Control Basins	2248.0		
	Basin 1 Totals:	101185.8	49320.0	
2	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	30452.9		
	Rock Check Dams	4158.0		
	Silt Basins	3300.0		
	Basin 2 Totals:	37910.9	16560.0	
3	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	38788.4		
	Rock Check Dams	1108.8		
	Silt Basins	2862.5		
	Basin 3 Totals:	42759.7	29880.0	
4	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	21199.7		
	Silt Basins	3700.0		
	Basin 4 Totals:	24899.7	19080.0	
5	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	12418.1		
	Rock Check Dams	2117.6		
	Silt Basins	1175.0		
	Basin 5 Totals:	15710.7	4680.0	
6	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	18572.5		
	Rock Check Dams	6167.7		
	Silt Basins	2150.0		
	Basin 6 Totals:	26890.2	27720.0	
7	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	6502.3		
	Rock Check Dams	10268.1		
	Silt Basins	4275.0		
	Basin 7 Totals:	21045.4	20520.0	
8	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	7395.1		
	Silt Basins	3937.5		
	Basin 8 Totals:	11332.6	5040.0	
9	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	26000.5		
	Rock Check Dams	3326.4		
	Silt Basins	7387.5		
	Basin 9 Totals:	36714.4	20160.0	
10	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	36237.8		
	Rock Check Dams	14222.3		
	Silt Basins	1612.5		
	Temporary Sediment Control Basins	23338.1		
	Basin 10 Totals:	75410.7	60120.0	
11	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	32970.4		
	Rock Check Dams	13357.8		
	Silt Basins	2412.5		
	Temporary Sediment Control Basins	10837.6		
	Basin 11 Totals:	59578.3	49320.0	
12	Silt Fence for Ditch Checks, (or Optional Slash Mulch Berms)	6787.1		
	Basin 12 Totals:	6787.1	6840.0	

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
(1) Refer to MI-210
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

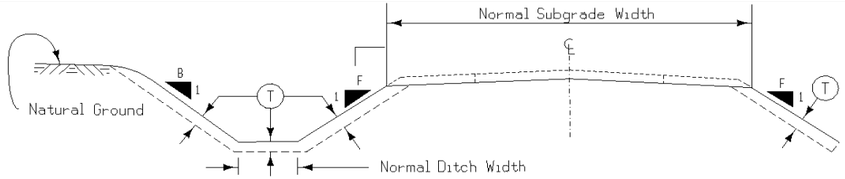
Location		Type	Length of Opening (1)			W	(1)(2) PR	(2) SR	Pipe Culvert (3)					Aprons	Driveway Surface Area		Driveway Surfacing Material	Remarks
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb				H	Size	Pipe Length	Lt.	Rt.		HMA	PCC		
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF	No.	SY	SY	TON	
61 Conn Rd A																		
15+00.00	Lt	C				24.0		15.0	5.0	36.0	82.0	47.4	50.2	2			85.890	Provide surfacing across
15+00.00	Rt	C				24.0		15.0	2.5	24.0	62.0	37.6	36.3	2			51.205	Provide surfacing across
																		roadway subgrade
61 Conn Rd B																		
25+00.00	Lt	C				24.0		15.0	3.0	24.0	52.0	32.6	31.6	2			40.110	
29+00.00	Rt	C				24.0		15.0	1.2	36.0	34.0	23.1	26.9	2			492.555	Surfacing quantity includes
35+20.00	Rt	C				24.0		15.0										No surfacing required
Totals:																	669.760	
										24" Pipe	114.0							
										36" Pipe	116.0							
										4" Apron	4.0							
										6" Apron	4.0							

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
7316+00.00	1		Bike-7 Project Start
315+00.00	1		SW Arterial Project Start
330+60.00 LT		1	Box Culvert
331+60.00 LT		1	Box Culvert
328+25.00 RT		1	Wetland
330+20.00 RT		1	Box Culvert
331+30.00 RT		1	Box Culvert
331+45.00 RT		1	Wetland
380+50.00	1		SW Arterial Project End
11+35.00	1		Conn. Rd. A Project Start
12+05.00		1	Conn. Rd. A-Box Culvert
14+00.00	1		Conn. Rd. B Project Start
1527+80.00		1	Ramp A-Box Culvert
1528+20.00		1	Ramp A-Box Culvert
1533+00.00	1		Ramp A-Stop Grading
1535+50.00	1		Ramp A-Continue Grading
23+85.00	1		Davenport Road-Project End
4531+90.00		1	Ramp D-Box Culvert Ext.
542+60.00 LT	1		U.S. 61-Project End
544+25.00 RT	1		U.S. 61-Project End
Totals:	10	10	
	20 Safety Closures		

TABULATION OF SPREADING TOPSOIL



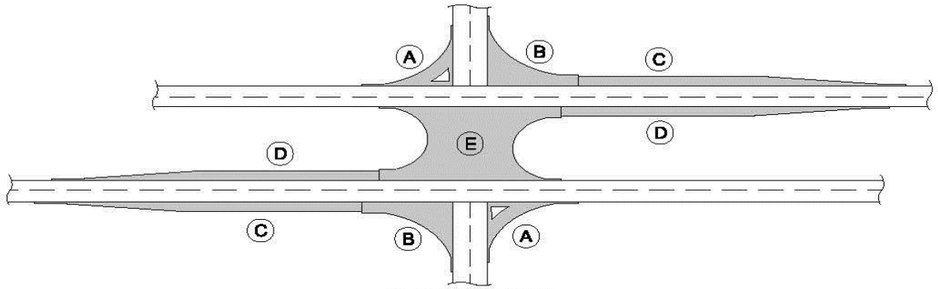
Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

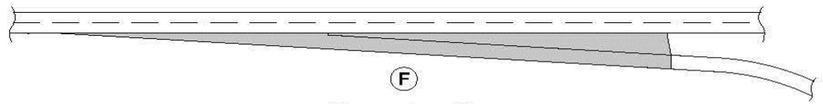
Placement Description								Topsoil Excavation Available From			
Area	Quantity	Location		Side	Slope	(T)	Remarks	Amount Reserved	Station to Station		Remarks
No.	CY	Station to Station		L. or R.	B. or F.	IN		CY			
1	1076.0	285+75.00	290+50.00	L. and R.	B. and F.	8.0		1365.0	285+75.00	290+50.00	SW Arterial
								142.0	315+25.00	350+50.00	SW Arterial
2	15481.0	315+25.00	350+50.00	L. and R.	B. and F.	8.0		21674.0	315+25.00	350+50.00	SW Arterial
3	8526.0	7+00.00	29+00.00	L. and R.	B. and F.	8.0		3443.0	7+00.00	29+00.00	61 Connector Road A
								3507.0	315+25.00	350+50.00	SW Arterial
								4987.0	1519+50.00	1536+45.00	US 61 Ramp A
4	5779.0	1519+50.00	1536+45.00	L. and R.	B. and F.	8.0		6064.0	1519+50.00	1536+45.00	US 61 Ramp A
								2027.0	3522+50.00	3529+53.54	US 61 Loop C
5	2684.0	3522+50.00	3529+53.54	L. and R.	B. and F.	8.0		3045.0	3522+50.00	3529+53.54	US 61 Loop C
								713.0	506+70.00	542+50.00	US 61 SB
6	4642.0	506+70.00	542+50.00	L. and R.	B. and F.	8.0		6499.0	506+70.00	542+50.00	US 61 SB, (1,045 CY Excess)
	38188.0	Stage 1 Subtotal						53466.0			1,045 CY Excess, (Rounded to Match T-Sheet)
7	11704.0	355+00.00	380+25.00	L. and R.	B. and F.	8.0		16386.0	355+00.00	380+25.00	SW Arterial, (5,433 CY Excess)
8	5786.0	14+00.00	39+00.00	L. and R.	B. and F.	8.0		8101.0	14+00.00	39+00.00	61 Connector Road B
9	4340.0	4518+00.00	4531+55.00	L. and R.	B. and F.	8.0		4960.0	4518+00.00	4531+55.00	US 61 Ramp D
								1116.0	14+00.00	39+00.00	61 Connector Road B, (1,008 CY Excess)
	2068.0	2522+75.00	2529+75.00	L. and R.	B. and F.	8.0		2896.0	2522+75.00	2529+75.00	US 61 Loop B, (797 CY Excess)
	23898.0	Stage 2 Subtotal						33459.0			7,238 CY Excess
Total:	62086.0						Totals:	86925.0			8283
								Topsoil, Strip, Salvage and Spread			Topsoil, Strip and Stockpile

SELECT TREATMENT

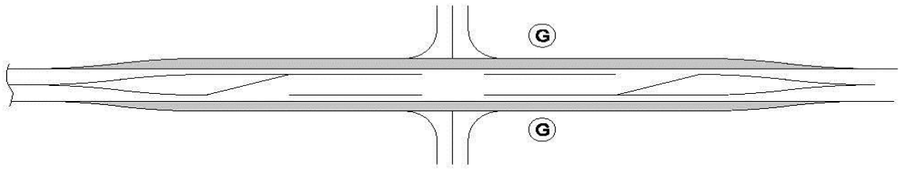
Possible Detail: G_4D_Grade_Delay_S



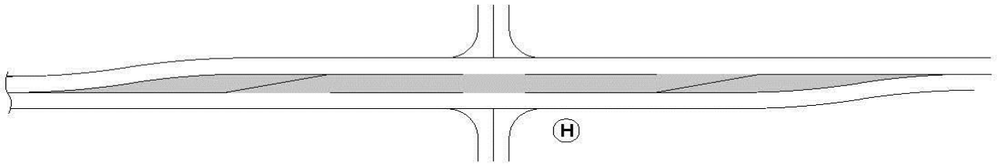
Typical Intersection



Ramp or Loop Taper



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

Location				Mainline								Section Area										Total Area (Mainline + Section)	Select Treament Thickness (Y1)	Contractor Furnished Select Treatment	Remarks
						Shoulder Width																			
						Median Side		Outside																	
Road Identification	Direction of Travel	Station to Station		Length	Width	(GM)	(PM)	(PO)	(GO)	Pavement & Subgrade Thickness (X)	Area	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	Area				
				FT	FT	FT	FT	FT	FT	IN	SF	SF	SF	SF	SF	SF	SF	SF	SF	SF	SF	SF	IN	CY	
Southwest Arterial	WB	315+00.00	338+65.00	2365.0	26.0	5.0	8.0	8.0			111155.0											111155.0	24.0	8233.7	
Southwest Arterial	EB	315+00.00	338+65.00	2365.0	26.0	5.0	8.0	8.0			111155.0											111155.0	24.0	8233.7	
Southwest Arterial	WB	338+65.00	340+15.00	150.0	26.0	5.0	8.0	8.0			7050.0								1652.2	1652.2		8702.2	24.0	644.6	
Southwest Arterial	EB	338+65.00	340+15.00	150.0	26.0	5.0	8.0	8.0			7050.0								1797.7	1797.7		8847.7	24.0	655.4	
Southwest Arterial	WB	340+15.00	346+43.60	628.6	26.0			8.0			21372.4	5065.7	2106.2						5972.9	13144.8		34517.2	24.0	2556.8	
Southwest Arterial	EB	340+15.00	346+43.60	628.6	26.0			8.0			21372.4	2757.7	2595.9						6107.6	11461.2		32833.6	24.0	2432.1	
Southwest Arterial	WB	346+43.60	348+10.00	166.4	26.0			8.0			5657.6								1794.8	1794.8		7452.4	24.0	552.0	
Southwest Arterial	WB	348+10.00	349+90.10	180.1	26.0			8.0			6123.4								791.6	791.6		6915.0	24.0	512.2	
Southwest Arterial	WB	349+90.10	350+01.60	11.5	26.0			8.0			391.0								34.4	34.4		425.4	24.0	31.5	
Southwest Arterial	EB	346+43.60	346+50.40	6.8	26.0			8.0			231.2								57.2	57.2		288.4	24.0	21.4	
Southwest Arterial	EB	346+50.40	349+30.20	279.8	26.0			8.0			9513.2								1887.1	1887.1		11400.3	24.0	844.5	
Southwest Arterial	EB	349+30.20	350+01.60	71.4	26.0			8.0			2427.6								213.9	213.9		2641.5	24.0	195.7	
Southwest Arterial	WB	355+62.60	357+81.60	219.0	26.0			8.0			7446.0	1899.0							646.0	2545.0		9991.0	24.0	740.1	
Southwest Arterial	EB	355+62.60	357+81.60	219.0	26.0			8.0			7446.0	2327.7							646.1	2973.8		10419.8	24.0	771.8	
Southwest Arterial	WB	357+81.60	360+50.00	268.4	26.0			8.0			9125.6		3273.4							3273.4		12399.0	24.0	918.4	
Southwest Arterial	WB	360+50.00	362+50.00	200.0	26.0			8.0			6800.0								400.1	400.1		7200.1	24.0	533.3	
Southwest Arterial	WB	362+50.00	364+50.00	200.0	26.0			8.0			6800.0								1046.3	1046.3		7846.3	24.0	581.2	
Southwest Arterial	EB	357+81.60	358+37.40	55.8	26.0			8.0			1897.2								529.3	529.3		2426.5	24.0	179.7	
Southwest Arterial	EB	358+37.40	360+50.00	212.6	26.0			8.0			7228.4		1874.7						3189.1	5063.8		12292.2	24.0	910.5	
Southwest Arterial	EB	360+50.00	364+50.00	400.0	26.0			8.0			13600.0								2880.3	2880.3		16480.3	24.0	1220.8	
Southwest Arterial	WB	364+50.00	380+37.37	1587.4	26.0			8.0			53970.6	3504.3								3504.3		57474.9	24.0	4257.4	
Southwest Arterial	EB	364+50.00	380+37.37	1587.4	26.0			8.0			53970.6		2932.4							2932.4		56903.0	24.0	4215.0	
US61 Conn Rd A	NB	6+95.00	29+08.04	2213.0	26.0			4.0			66391.2											66391.2	24.0	4917.9	
US61 Conn Rd A	SB	6+95.00	29+08.04	2213.0	26.0			4.0			66391.2		1489.6							1489.6		67880.8	24.0	5028.2	
Silverwood Drive	WB	1116+50.00	1117+81.51	131.5	26.0			4.0			3945.3											3945.3	24.0	292.2	
Silverwood Drive	EB	1116+50.00	1117+81.51	131.5	26.0			4.0			3945.3											3945.3	24.0	292.2	
US61 Conn Rd B	NB	10+55.00	17+55.63	700.6	26.0			4.0			21018.9											21018.9	24.0	1557.0	
US61 Conn Rd B	SB	10+55.00	17+55.63	700.6	26.0			4.0			21018.9											21018.9	24.0	1557.0	
US61 Conn Rd B	NB	20+21.82	39+69.50	1947.7	26.0			4.0			58430.4											58430.4	24.0	4328.2	
US61 Conn Rd B	SB	20+21.82	39+69.50	1947.7	26.0			4.0			58430.4											58430.4	24.0	4328.2	
US 61 Ramp A		1522+38.90	1525+58.12	319.2	26.0						8299.7						2368.1			2368.1		10667.9	24.0	790.2	
US 61 Ramp A		1525+58.12	1536+00.00	1041.9	26.0						27088.9											27088.9	24.0	2006.6	
US 61 Loop B		2522+75.00	2530+26.00	751.0	26.0						19526.0											19526.0	24.0	1446.4	
US 61 Loop C		3522+48.98	3529+88.90	739.9	26.0						19237.9											19237.9	24.0	1425.0	
US 61 Ramp D		4517+66.72	4531+87.06	1420.3	26.0						36928.8						7636.9			7636.9		44565.8	24.0	3301.2	
																							Total:	70512.2	

DRAINAGE STRUCTURES BY CULVERT CONTRACTOR

* Not a Bid Item

Location	Design Number	Size	Kind	Lgth. New Const.	No. of Aprons	Flow Line Elevation				Dimensions - Lin. Ft.				Skew Ahead		By Road Contractor					Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks
										Total		Extensions		Degrees		Dike				Comp. Backfill				
																Rt. / Lt.	Location Station	Top. Elev.	Type					
		Ft.		Lin. Ft.		Left	Right	Other	Other	Left	Right	Left	Right	Left	Right					Cu. Yds.	(A) Cu. Yds.	(B) Cu. Yds.	(A+B) Cu. Yds.	
331+00.00		10x6	RCB	302	2	731.61	737.95			146	156			33							391.5	51.7	443.2	
11+75.00		12x8	RCB	125	2	724.18	722.24			74	51			30							162.0	24.4	186.4	U.S. 61 Connector Road A
1528+00.00		10x8	RCB	204	2	709.99	706.17			93	111				30						264.4	34.9	299.3	U.S. 61 Ramp A
4531+55.00		6x6	RCB	38	1	697.86	697.56				38				33						49.3	4.6	54.0	U.S. 61 Ramp D, Box Culvert Extension
Totals:																							982.9	

CLEARING AND GRUBBING

Location		Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters													All Other Materials		Estimated Quantities			Remarks
Station to Station or Milepost to Milepost or Description	Direction of Travel		3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length	Width	Units	Area	Herbicide Application	
																FT	FT	Units	Acres	Each	
ML032																					
331+38 - 332+58	Both	Field Fence - Clearing														480.0		28.8			
371+94 - 372+69	Both	Field Fence - Clearing														150.0		9.0			
375+15 - 376+35	Both	Field Fence - Clearing														345.0		20.7			
376+85 - 377+99	Both	Field Fence - Clearing														425.0		25.5			
380+17	Both	Field Fence - Clearing														320.0		19.2			
US-61 Ramp A																					
1523+85	Both	Field Fence - Clearing														675.0		40.5			
1526+59	Both	Field Fence - Clearing														530.0		31.8			
1527+69	Both	Field Fence - Clearing														525.0		31.5			
1530+81	Both	Field Fence - Clearing														250.0		15.0			
US-61/151																					
492+49 - 495+19	NB	Field Fence - Clearing														255.0		15.3			
518+36 - 521+39	NB	Field Fence - Clearing														315.0		18.9			
520+61 - 529+54	SB	Field Fence - Clearing														915.0		54.9			
528+76 - 531+45	NB	Field Fence - Clearing														280.0		16.8			
US-61 Conn. Rd. 'A'																					
20+53 - 22+29	Both	Field Fence - Clearing														365.0		21.9			
US-61 Conn. Rd. 'B'																					
29+71 - 31+95	Both	Field Fence - Clearing														275.0		16.5			
ML032																					
Sta. 316+00 Lt		Trees - Grubbing																	0.4		
Sta. 327+15 Lt		Trees - Grubbing																	0.7		
Sta. 331+00 Lt & Rt		Trees - Grubbing																	1.7		
Sta. 338+45 Lt & Rt		Trees - Grubbing																	1.1		
Sta. 350+20 Lt		Trees - Grubbing																	0.6		
Sta. 353+25 Lt		Trees - Grubbing																	0.2		
Sta. 374+80 Lt & Rt		Trees - Grubbing																	0.2		
Sta. 378+25 Lt & Rt		Trees - Grubbing																	0.7		
US-61/151																					
Sta. 499+30 Rt		Trees - Grubbing																	2.6		
Sta. 513+00 Rt		Trees - Grubbing																	0.5		
Sta. 524+65 Lt		Trees - Grubbing																	0.5		
Sta. 526+40 Rt		Trees - Grubbing																	0.6		
Sta. 528+75 Lt		Trees - Grubbing																	0.5		
Sta. 533+17 Lt		Trees - Grubbing																	0.1		
Sta. 537+40 Lt		Trees - Grubbing																	0.3		
Sta. 539+50 Rt		Trees - Grubbing																	1.7		
Sta. 540+85 Lt		Trees - Grubbing																	0.4		
Totals:																		366.3	12.8		

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft.				Skew Ahead Degrees		Dike				Class 20	Flowable Mortar	Floodable* Backfill	Porous* Backfill	Flooded Backfill	Remarks
																								Total		Extensions				Rt. / Lt.	Location Station	Top Elevation	Type			(A)	(B)	(A+B)	
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
	SW Arterial																																						
23.3	338+46	DR-601	48	RCP	238	B	13.2		1	1									Type 3		740.41	751.24			134.4	119.4				24					279.1	0.0	251.7	27.4	279.1	
				2000D																																				
29.7	374+26	DR-641	54	RCP	258	B	14.2		1	1		2							Type 3		756.41	772.38	756.65	770.57	170.2	101.9			29						36.7	0.0	33.3	3.4	36.7	2-15°ELBOWS
				2000D																																				A=188' B=52'
																																							C=1' D=190'
																																							E=18', L=8'
																																							DR-641 with
																																							RCP Letdown
32.6	378+57	DR-641	48	RCP	250	B	18.4		1	1		2							Type 3		756.25	769.80	756.43	767.88	159.2	105.0				9					94.0	0.0	87.1	6.9	94.0	2-17°ELBOWS
				3000D																																				A=200' B=38'
																																							C=1'
																																							D=202'
																																							E=12' L=8'
																																							DR-641 with
																																							RCP Letdown
	CONN. RD. A																																						
3.3	27+38	DR-601	24	RCP	48	B	2.7		1	1	2								Type 3		757.89	757.26			30.4	29.9									99.9	16.0	78.8	5.1	83.9	
				2000D																																				
	CONN. RD. B																																						
9.1	34+40	DR-601	30	RCP	50	B	2.0		1	1	2								Type 3		736.30	736.95			32.2	30.1									112.4	17.4	89.3	5.7	95.0	
				2000D																																				
24.9	38+00	DR-641	48	RCP	108	B	6.8		1	1	2	2							Type 3		719.23	729.20	719.37	728.43	76.1	46.5									163.1	0.0	151.6	11.5	163.1	2-17° ELBOWS
				2000D																																				A=70' B=30'
																																							C=1' D=78'
																																							E=8' L=8'
																																							DR-641 with
																																							RCP Letdown
	US 61 RAMP A																																						
2.3	1532+50.00	DR-601	24	RCP	114	B	6.1		1	1	2								Type 3		718.87	716.59			41.3	85.0			25						355.1	0.0	346.1	9.0	355.1	
				2000D																																				
	US 61 RAMP D																																						
4.2	4527+00	DR-601	24	RCP	172	B	20.3		1	1									Type 3		704.07	702.80			98.7	85.6									29.1	0.0	13.6	15.6	29.2	
				3000D																																				
	BIKE 7																																						
9.8	7325+10.71	DR-611	24	RCP	36	B	5.8		1	1		1							Type 3		777.72	769.75	770.06		19.7	29.5				22					83.3	0.0	108.5	4.2	112.7	
				2000D																																				1-15°ELBOW
																																							F=22.1'
	BIKE 8																																						
2.7	8363+60.06	DR-611	18	RCP	18	B	2.0		1	1		1							Type 3		758.42	759.92	758.54		12.4	17.7				30					25.9	6.0	17.5	2.3	19.8	1-4°ELBOW
				2000D																																				F=12.1'
	US 61																																						
2.9	515+31.25	DR-621	24	RCP	20	B	2.0			1									Type 3		723.73	723.15					77.7	51.0LT							30.8	6.3	21.9	2.6	24.5	Remove Ex.
				2000D																																				Pipe and
																																							Apron up to
																																							tie in.
15.8	520+92.32 LT	DR-621	36	RCP	34	B	2.0			1		1							Type 3		722.27	720.13	721.02				91.2	49.0LT							10.1	3.6	4.7	1.8	6.5	1-5° ELBOW
				2000D																																				F=10'
																																							Extension
																																							in form of
																																							DR-611.
																																							Remove Ex.
																																							Pipe and
																																							Apron up to
																																							tie in.
15.8	520+92.32 RT	DR-621	36	RCP	88	B	12.5			1		1							Type 3		711.40	702.54	702.71				74.6	171.1L							242.0	0.0	234.5	7.5	242.0	1-5° ELBOW
																																							F=14'

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt. / Lt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
	Totals:	18" RCP Aprons			2	Each					8	10																							1561.5	49.3	1438.6	103.0	1541.6	
		24" RCP Aprons			9	Each																																		
		30" RCP Aprons			2	Each																																		
		36" RCP Aprons			2	Each																																		
		48" RCP Aprons			6	Each																																		
		54" RCP Aprons			2	Each																																		
		2000D 18" RCP			18	LF																																		
		2000D 24" RCP			218	LF																																		
		2000D 30" RCP			50	LF																																		
		2000D 36" RCP			122	LF																																		
		2000D 48" RCP			346	LF																																		
		2000D 54" RCP			258	LF																																		
		3000D 24" RCP			172	LF																																		
		3000D 48" RCP			250	LF																																		

Notes: For letdown structures, use Class C Bedding under the letdown portion and class B Bedding on the portion of the pipe under the roadway.

Flooded backfill quantity has been calculated as if the pipe continued to the foreslope at the same slope as the cross road portion of the pipe. See IOWA DOT design manual section 5B-2 for further details.

For roadway pipes not installed under pavements, bedding and backfill is incidental to pipe culvert and pipe excavation, respectively.

103-6
04-19-11

EMBANKMENT WITH MOISTURE CONTROL

Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.

Moisture Control is required for all Class 10 fill and Embankment in-place, Contractor Furnished fill placed at all locations and depths. Topsoil will not require Moisture Control.

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Topsoil	40%	
Unsuitable Type A	35%	
Unsuitable Type B	35%	
Class 10	30%	
Limestone	10%	Swelling Factor
Estimated Boulder Quantity		150 CY

107-25
08-01-08

TABULATION OF ROCK SPLITTING

Location				Remarks
No.	Station to Station		Side	
1	1532+25	1534+00	R/L	Limestone
2	3522+50	3526+75	R/L	Limestone
3	511+00	518+50	R/L	Limestone
4	537+00	542+00	R/L	Limestone

104-5C
04-21-15

LIST OF SUBDRAIN WORK

Refer to DR-121, DR-201, DR-203, DR-301, DR-302, DR-303, DR-304, and DR-305.

* Not a bid item

Location			Pipe			Aprons		Outlets			Connected Pipe Joints*		Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks
No.	Station to Station		Type of Installation	Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length	DR-201	DR-203	DR-304	DR-305		DR-121						
			DR-301, DR-302, DR-303		IN	LF	No.	No.	No.	Type	No.	Type	No.	LF	Blanket CY	CY	CY	
1	329+00	333+00													1136.0			Working blanket in existing drainage way. Refer to Note 1.

Note 1: The Working Blanket shown on the Q sheets and on Tab. 104-5C may be deleted if determined not to be necessary at the time of construction.

LICENSED PROFESSIONAL ENGINEER
THERESA STROMBERG-MURPHY
16934
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.

Theresa Stromberg Murphy 12/2/16
Signature Date

THERESA STROMBERG-MURPHY
Printed or Typed Name

My license reneval date is December 31, 2017

Pages or sheets covered by this seal: CS.1, Q.1-Q.20

FILE NO.	ENGLISH	DESIGN TEAM AECOM\TERRACON	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER CS.1

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Earth Dam or Dike (Proposed)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Proposed Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Proposed Intake
- Existing Utility Access (Manhole)
- Proposed Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)

- ST Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Luminaire
- Traffic Signal
- Traffic Signal with Luminaire
- TP Telephone Pedestal
- TVP Television Pedestal
- Telephone Pole
- Telephone Pole (Second Company)
- Telephone Pole (Third Company)
- Telephone Pole (Fourth Company)
- Telephone Pole (Fifth Company)
- Power Pole
- Power Pole (Second Company)
- Power Pole (Third Company)
- Power Pole (Fourth Company)
- Power Pole (Fifth Company)
- Electrical Highline Tower (Metal or Concrete)
- Telephone Riser Pole
- Power Riser Pole
- Telegraph Pole
- Satellite TV Dish
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- EB Electric Box
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box

UTILITY LEGEND

— W — — — — San. — — —
City of Dubuque Water Works
Bob Schiesl
563-589-4270
bschiesl@cityofdubuque.org

— E1 — — —
Alliant Energy
(formerly Interstate Light and Power)
Jason Hogan
608-458-4871
jasonhogan@alliantenergy.com

— G2 — — —
Black Hills Energy (formerly Aquila)
Brad Fleming
402-221-2714
brad.fleming@blackhillscorp.com

— G3 — — —
BP Pipelines (North America) Inc.
David Sommerfeld
630-536-2729
david.sommerfeld@bp.com

— E2 — — —
Maquoketa Valley Rural Electric
James Lauzon
319-462-3541
jlauzon@mvec.com

— TV — — —
Mediacom (cable TV)
Bob Frazor
563-387-6119
bfrazor@mediacomcc.com

— T1 — — —
Windstream Communications (formerly PAETEC)
Terry Burke
641-787-2259
terry.r.burke@windstream.com

— T2 — — —
— FO2 — — —
Centurylink (formerly Qwest Communications)
Steven Parker
515-265-0968
steven.parker4@centurylink.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE 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
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point — Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	D.1

NOTE:
Grading from Sta. 300+00.00
to Sta. 315+00.00 to be
completed by others
Refer to Project HDP-2100(664)--71-31

Sta. 308+00
SW-549
76'x24" RCP
By Project HDP-2100(664)--71-31

Sta. 311+26.55
418'x36" RCP
Skew=48° Lt. Ahd.
By Project HDP-2100(664)--71-31

Sta. 315+00.00
Start Grading

Curve Data
Δ = 28° 35' 02.91" (LT)
T = 1,019.00
L = 1,995.55
R = 4,000.00
E = 127.75

Sta. 329+00
Install SW-547
Install 143'x15" 2000D
F.L. = Lt. 759.85
Rt. 741.49
Other 760.30
Other 741.28

Sta. 331+00
Build 10' x 6' RCB
F.L. = Lt. 731.61
Rt. 737.95

℄ Southwest Arterial

Shared Use Path

Sta. 312+00
SW-547
90'x24" RCP
By Project HDP-2100(664)--71-31

Sta. 316+00
Install SW-549
Install 94'x15" 2000D
F.L. = Lt. 824.45
Rt. 817.26
Other 823.82
Other 817.37

Sta. 320+00
Install SW-547
Install 120'x15" 2000D
F.L. = Lt. 787.40
Rt. 803.30
Other 802.76
Other 787.70

Sta. 325+00
Install SW-547
Install 148'x15" 2000D
F.L. = Lt. 751.54
Rt. 776.73
Other 776.06
Other 751.82

Sta. 332+94
Install SW-547
Install 116'x24" 2000D
F.L. = Lt. 738.53
Rt. 754.31
Other 753.72
Other 738.96

Curve Data
Δ = 59° 29' 35.10" (RT)
T = 4,286.00
L = 7,787.63
R = 7,500.00
E = 1,138.28

For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.3.
For RCB Situation Plan, Precast option, Refer to Sheet V.6.
Note: CIP option shown on this sheet.

For Shared Use Path Details
Refer to S-Sheets

For Storm Sewer Details
Refer to M-Sheets

0 FEET 100

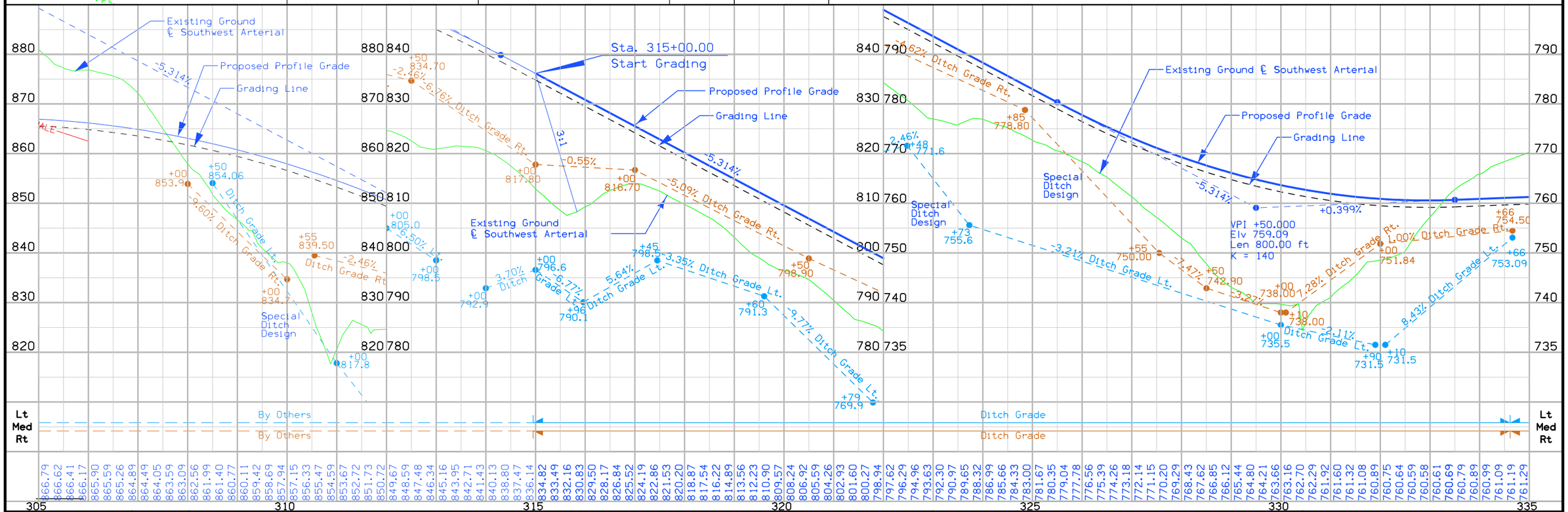


TABLE MOUND TWP.
T-88N R-2E
SEC. 14

Sta. 338+46
Skew = 24° R.A.
Install 238'x48" 2000D
F.L. = Lt. 740.41
Rt. 751.24

℄ U.S. 61 Ramp "A"

℄ U.S. 61 Loop "C"

Sta. 336+50
Install SW-547
Install 84'x15" 2000D
F.L. = Lt. 755.62
Rt. 750.19

℄ Southwest Arterial

O-337

P-337

I-337

Shared Use Path

℄ U.S. 61 Connector Road "A"

For Storm Sewer Details
Refer to M-Sheets

For Side Road Details
Refer to E-Sheets

For Shared Use Path Details
Refer to S-Sheets

For Interchange Details
Refer to K-Sheets

Granger Creek

℄ U.S. 61
Loop "B"

℄ U.S. 61
Ramp "D"

Proposed
Channel
Shaping

Shared Use Path

℄ Southwest
Arterial

Proposed
Channel
Shaping

℄ U.S. 61 Connector Road "B"

For Side Road Details
Refer to E-Sheets

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

0 100
FEET

VPI +80.000
Elv 765.20
Len 800.00 ft
K = 339

+0.399%

-1.963%

Sta 350+01.49 BK =
Sta 350+00.00 AH

Proposed Profile Grade

Existing Ground
℄ Southwest Arterial

Proposed Profile
Grade

Grading Line

+0.399%

+00
756.14

+00
757.52

+00
753.54

+00
755.52

+90
751.00

+90
740.00

-2.71%

5.93%

-7.13% Ditch Grade Lt.

7.39%

Ditch Grade Rt.

℄ U.S. 61

Granger Creek

Existing Ground ℄ Southwest Arterial

VPI +00.000
Elv 737.30
Len 800.00 ft
K = 106

-1.963%

+5.600%

+25.0 Lt.
732.70

+85.0 Lt.
731.02

+85.0 Rt.
725.10

+1.2% Lt.

+6.7% Lt.

+6.0% Rt.

+25.0 Lt.
748.15

+00.0 Lt.
744.42

+50.0 Rt.
741.00

+3.0% Lt.

+6.8% Rt.

+1.4% Lt.

+00.0 Lt.
759.62

+00.0 Rt.
754.24

Lt Med Rt	Std. 5' Ditch	Ditch Grade	Standard 5' Ditch	Ramp A/C	Standard 5' Ditch	Bridge	No Ditch	Ramp B/D	Ditch Grade	Std. 5' Ditch	Lt Med Rt
	Std. 5' Ditch	Ditch Grade	Standard 5' Ditch	61 Conn. Rd 'A'	Standard 5' Ditch	Bridge	No Ditch	61 Conn. Rd 'B'	Ditch Grade	Std. 5' Ditch	

335	340	345	350	355	360	365
761.39 761.49 761.59 761.68 761.78 761.88 761.98 762.08 762.18 762.28 762.38 762.48 762.58 762.68 762.78 762.88 762.98 763.08 763.18 763.28 763.38 763.48 763.58 763.68	763.75 763.81 763.85 763.87	763.87 763.85 763.82 763.77 763.69 763.60 763.50 763.37 763.22 763.06 762.88 762.68 762.46 762.22 761.96 761.69 761.39 761.08 760.75 760.40 760.04 759.65 759.25 758.82 758.38 757.92 757.45 756.96	756.46 755.97 755.48 754.99 754.47 753.98 753.49 753.00 752.51 752.02 751.53 751.04 750.55 750.06 749.57 749.07 748.58 748.09 747.60 747.11 746.62 746.13 745.64 745.15	744.69 744.29 743.95 743.68 743.47 743.32 743.23 743.20 743.24 743.34 743.50 743.72 744.00 744.34 744.75 745.22 745.75 746.34 747.00 747.71	748.49 749.33 750.24 751.20 752.19 753.19 754.18 755.18 756.17 757.17 758.16 759.16 760.15 761.15 762.14 763.14 764.13 765.13 766.12 767.12	

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	D.3

7:42:18 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_D01.sht

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

Sta. 374+26
Skew = 29° L.A.
Install 258x54" 2000D
F.L. = Lt. 756.41
Rt. 772.38
Other 756.65
Other 770.57

Sta. 378+57
Skew = 9° R.A.
Install 250'x48" 3000D
F.L. = Lt. 756.25
Rt. 769.80
Other 756.43
Other 767.88

Curve Data
Δ = 75° 29' 10.42" (LT)
T = 774.09
L = 1,317.48
R = 1,000.00
E = 264.60

PC Sta 364+68.13

Remove Pavement

BARN

PASTURE

CONC.

℄ Southwest Arterial

Shared Use Path

Sta 377+85.62

Olde Davenport Road

POT Sta 380+48.56
Southwest Arterial =
POT Sta 44+52.77
Olde Davenport Road

Sta. 380+37.37
End Project

RL Sta 372+42.27

BASKETBALL & TENNIS COURTS

0 FEET 100

For Shared Use Path Details
Refer to S-Sheets

For Side Road Detail
See E-Sheets

Existing Ground ℄ Southwest Arterial

Proposed Profile Grade

VPI +25.000
Elv 794.70
Len 600.00 ft
K = 93

VPI +00.000
Elv 789.00
Len 200.00 ft
K = 93

END GRADING
Sta. 380+37.23
794.73

+5.600%
-0.844%
-0.844%
+1.310%
-4.83% Rt.
-9.00% Rt.
-8.03% Ditch Grade Lt.
4.75%
-9.00%
14.49% Ditch Grade Lt.
9.26% Grade Lt.
-8.80%
-6.35%

+25 787.47
+50 781.44
+50 778.38
+48 774.4
+83 770.8
+50 783.84
+80 785.56
+17 773.5
+80 769.5
+00 767.17
+05 757.9
+33 755.2
+00 779.4

SHALE
ROCK

Lt Med Rt

Standard 5' Ditch | Ditch Grade | Std. 5' Ditch | Ditch Grade | No Ditch | Olde Davenport Road

768.11 769.11 770.10 771.10 772.09 773.09 774.08 775.08 776.07 777.07 778.06 779.06 780.05 781.03 781.95 782.82 783.64 784.41 785.13 785.80 786.42 786.99 787.52 787.99 788.41 788.78 789.11 789.38 789.60 789.78 789.90 789.98 790.00 789.98 789.90 789.80 789.70 789.60 789.50 789.40 789.33 789.31 789.34 789.42 789.56 789.75 790.00 790.29 790.62 790.94 791.26 791.59 791.91 792.23 792.55 792.88 793.20 793.52 793.85 794.17

810 800 790 780 770 760 750

365 370 375 380

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	D.4

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

For Main Line Details
Refer to D-Sheets

Curve Data
Δ = 8° 25' 11.54" (RT)
T = 491.57
L = 981.36
R = 6,678.00
E = 18.07

Curve Data
Δ = 4° 26' 25.46" (RT)
T = 352.53
L = 704.70
R = 9,093.00
E = 6.83

Curve Data
Δ = 30° 54' 45.75" (LT)
T = 181.11
L = 353.39
R = 655.00
E = 24.58

Curve Data
Δ = 75° 56' 41.15" (RT)
T = 234.15
L = 397.65
R = 300.00
E = 80.56

PI Sta. 100+00.00 Access Road "B"
POT Sta. 1046+04.65 Military Road

Sta. 81+89.60
Begin Project

Sta. 86+51.22
Stop Grading

PI Sta 88+30.66

PCC Sta 84+78.13

PRC Sta 91+82.83

PI Sta 93+65.87

PCC Sta 95+36.22

PRC Sta 96+95.08

PI Sta 97+70.38

CULT. FIELD

CONCENTRIC

℄ Access Rd. "B"

Shared Use Path

℄ Southwest Arterial

Military Road

GARAGE

RESIDENT

STOCK PILES

SHED

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

0 FEET 100

ACCESS ROAD "B"

END PROFILE
Sta. 99+86.25
Elev. 873.05

VPI +50.000
Elv 870.34
Len 250.00 ft
K = 68

+2.000%

+5.665%

Existing Ground
℄ Access Road "B"

Proposed Profile Grade

VPI +00.000
Elv 827.85
Len 200.00 ft
K = 1209

+5.665%

+5.500%

0.51% Ditch Grade Lt.

+00
849.7

+50
851.5

+40
838.8

+00
822.6

10.70%

+00
811.9

Sta. 86+51.22
Stop Grading

Existing Ground
℄ Access Road "B"

Proposed Profile Grade

3:1

8.38% Ditch Grade Lt.

3:1

1.49% Ditch Grade Lt.

+50
765.8

Sta. 81+89.60
Begin Project

820 810 800 790 780 770 760

820 810 800 790 780 770 760

870 860 850 840 830 820 810

Lt
Rt

Ditch Grade

Standard Ditch

Ditch Grade

See Mainline Sheets

774.23 775.60 776.98 778.35 779.73 781.10 782.48 783.85 785.23 786.60 787.98 789.35 790.73 792.10 793.48 794.85 796.23 797.60 798.98 800.35 801.73 803.10 804.48 805.85 807.23 808.60 809.98 811.35 812.73 814.10 815.48 816.85 818.23 819.60 820.98 822.35 823.73 825.11 826.50 827.89 829.29 830.69 832.10 833.52 834.93 836.35 837.76 839.18 840.60 842.01 843.43 844.85 846.26 847.68 849.10 850.51 851.93 853.34 854.76 856.18 857.59 859.01 860.43 861.84 863.26 864.63 865.91 867.10 868.19 869.20 870.11 870.93 871.66 872.29 872.84

85 90 95 100

5065

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	E.1

7:59:43 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

Military Road-O.R.
PI Sta. 2039+46.32
Δ = 8° 13' 41.91" (RT)
T = 82.43
L = 164.58
R = 1,146.00
E = 2.96

℄ Southwest Arterial

POT Sta. 1043+19.40 Military Road=
POC Sta. 300+89.97 SWA

Sta. 2039+43.28
Install 2-18"x54' RCP 2000D
F.L. = Lt. 897.10
Rt. 902.58
Other 897.33
See Y-Sheets for details

℄ Military Road

Begin Construction
Sta. 2038+63.89

℄ Military Road-O.R.

5' Curb Drop
Transition, 10'R

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

Military Road-O.R.
PI Sta. 2041+90.75
Δ = 11° 45' 28.64" (RT)
T = 117.33
L = 233.84
R = 1,139.50
E = 6.02

Military Road-O.R.
PI Sta. 2045+36.60
Δ = 2° 53' 42.29" (LT)
T = 53.07
L = 106.11
R = 2,100.00
E = 0.67

℄ Access Road "B" (Future)

Military Road-O.R.
PI Sta. 2046+65.27
Δ = 2° 53' 42.29" (RT)
T = 53.07
L = 106.11
R = 2,100.00
E = 0.67

Military Road-O.R.
PI Sta. 1051+57.57
Δ = 40° 17' 28.84" (LT)
T = 350.32
L = 671.52
R = 954.93
E = 62.23

Military Road
PI Sta. 1041+11.23
Δ = 19° 59' 10.56" (RT)
T = 201.93
L = 399.75
R = 1,146.00
E = 17.65

Shared Use Path (Future)

CONCENTRIC

POT Sta 1037+22.36 CUL T
POT Sta 1038+00.00 FIELD
POC Sta 2039+62.62
PC Sta 2040+28.45
PT Sta 2041+11.22
PC Sta 2041+90.75
PT Sta 1043+09.06 FIELD
PC Sta 2044+89.54
PT Sta 2045+69.65
PC Sta 2046+05.57
PT Sta 2046+65.27
PC Sta 1048+07.25
POT Sta 1054+78.78
POT Sta 1055+22.59

DR-401

Begin Shared Use Path

End Shared Use Path

End Construction
Sta. 2047+18.32

POT Sta. 2043+23.33 Military Road-O.R.=
POC Sta. 300+98.63 SWA

For On-Site Detour Details
Refer to Sheet No. F.1

For Shared Use Path Details
Refer to Sheet No. S.1

For Bridge Plans and Details
Refer to V-Sheets

0 FEET 100

NOTES:
① Concrete Barrier, Tapered End, BA-108. Refer to Sheet U.1 for details.
② Concrete Barrier, Approach, Modified. Refer to Sheet U.2 for details.
③ Paved Shoulder, Cross Slope Details. Refer to Sheet U.7 for details.
④ Rock Flume. See Sheet U.3 for details.
⑤ Buildings, flatwork, and septic tanks to be removed, and well to be plugged by others.

MILITARY ROAD

19.22' Transition from existing cross slope
3.35% RT. Full Super
28.21' Transition
2.00% RT. Full Super
82' Transition
Normal Crown

+63.89 +83.11 +86.38 +14.59 +68.35 +50.35 +18.32

BEGIN PROFILE
Sta. 2038+63.89
Elev. 908.28

-2.856%

VPI +00.900
Elv 895.80
K = 65
Len 300.00 ft

Proposed Profile Grade
Military Road-O.R.

-7.459%

END PROFILE
Sta. 2047+18.32
Elev. 864.66

+50 Rt
872.2

+20 Rt
861.6

Existing Ground at
℄ Military Road-O.R.

No Ditch
Match Existing
Urban Section

No Ditch
Ditch Grade

920 910 900 890 880 870 860

907.96 907.25 906.53 905.82 905.10 904.39 903.68 902.96 902.25 901.53 900.82 900.11 899.35 898.49 897.54 896.50 895.35 894.12 892.78 891.35 889.83 888.21 886.49 884.68 882.81 880.95 879.08 877.22 875.35 873.49 871.62 869.76 867.89 866.03

2040 2045

NOTE:
Confirm tie-in elevations at time of construction. Adjust pavement cross-slope in last 50' of pavement to match existing cross-slope.

MILITARY ROAD CONSTRUCTION
BY PROJECT HDP-2100(664)--71-31
for reference only

ENGLISH	IOWA DOT	DESIGN TEAM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER E.2

7:59:45 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

For Side Road Details
Refer to E-Sheets

For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.9.
For RCB Situation Plan, Precast option, Refer to Sheet V.12.
Note: CIP option shown on this sheet.

For Mainline Details
Refer to D-Sheets

For Interchange Details,
Refer to K-Sheets

ACCESS LOCATIONS
Sta. 15+00 Lt.
Sta. 15+00 Rt.

TABLE MOUND TWP.
T-88N R-2E
SEC. 14

Curve Data
Δ = 40° 51' 46.06" (LT)
T = 111.76
L = 213.86
R = 300.00
E = 20.14

Sta. 11+75
Install 12'x8' RCB
Skew 30° L.A.
F.L. = Lt. 724.18
Rt. 722.24

Prospective sale-
2 acres to Mulgrew Oil Co.

Silverwood Drive

Sta. 11+30.00
Begin Construction

POT Sta 6+00.00

PC Sta 7+96.58

PI Sta 10+18.55

PI Sta 9+08.34

PI Sta 12+82.55

PC Sta 13+11.56

PT Sta 14+50.98

+00 Prop.
Type "C" Ent.

Sta. 15+00 LT.
Skew 11° Lt. Ahd.
Install 82'x36" UNCL
Entrance Pipe
F.L. = Lt. 732.75
Rt. 741.96

+00 Prop.
Type "C"
Ent.

US-61 Connector Road "A"

Sta. 15+00 RT.
Skew 10° Rt. Ahd.
Install 62'x24" UNCL
Entrance Pipe
F.L. = Lt. 740.84
Rt. 733.60

POT Sta. 11+30.00 US-61 Conn. Rd."A" =
PI Sta 1118+80.00 Silverwood Drive

Do Not Disturb Sign

Do Not Disturb
Sign and Plantings

℄ U.S. 61

Curve Data
Δ = 26° 37' 39.48" (RT)
T = 70.99
L = 139.42
R = 300.00
E = 8.29

Sta. 27+38
Install 48'x24" 2000D
Lt. 757.89
F.L. = Rt. 757.26

PI Sta 26+44.64

POT Sta 29+44.05

PC Sta 25+49.01

PT Sta 27+32.46

Curve Data
Δ = 23° 59' 39.67" (RT)
T = 95.63
L = 188.45
R = 450.00
E = 10.05

℄ Southwest Arterial

℄ US 61
Ramp "A"

PI Sta 29+44.05 =
US 61 Connector Road "A"
POT Sta 345+02.79
Southwest Arterial

℄ US 61
Loop "C"

0 FEET 100

U.S.-61 CONNECTOR ROAD "A"

BEGIN PROFILE
Sta. 6+95.00
Elev. 760.35

-4.868%

Existing Ground
℄ US 61
Connector Road "A"

Proposed Profile Grade

Begin Grading
Sta. 11+30.00

3:1

VPI +25.000
Elv 734.55
Len 550.00 ft
K = 62

Prop. Type 'C' Ent.
Sta. 15+00.00 Lt.

Prop. Type 'C' Ent.
Sta. 15+00.00 Rt.

-8.5%
+0.5%
-2%
-12%

+4.000%
+9.71% Lt.
+9.96% Rt.
+4.00% Lt.
+2.00% Rt.

+50.00 Lt./Rt.
742.24

+25.00 Lt.
730.10

+80.00 Rt.
725.30

+10.00 Lt.
721.50

+40.00 Rt.
720.50

No Ditch
Ditch Grade
Ditch Grade

Existing Ground
℄ US 61
Connector Road "A"

VPI +00.000
Elv 777.55
Len 400.00 ft
K = 53

+4.000%
-3.514%

Proposed Profile Grade

END PROFILE
Sta. 29+08.04
Elev. 762.14
℄ Southwest
Arterial

+2.000%

VPI +00.000
Elv 759.98
Len 200.00 ft
K = 36

Standard Ditch
Standard Ditch

Lt
Rt

760.11 758.89 757.67 756.46 755.24 754.02 752.80 751.59 750.37 749.15 747.94 746.77 745.70 744.74 743.88 743.11 742.45 741.89 741.43 741.07 740.81 740.65 740.59 740.63 740.77 741.02 741.36 741.81 742.36 743.00 743.75 744.60 745.55 746.55 747.55 748.55 749.55 750.55 751.55 752.55 753.55 754.55 755.55 756.55 757.55 758.55 759.55 760.55 761.55 762.55 763.55 764.55 765.55 766.55 767.55 768.55 769.55 770.49 771.32 772.02 772.61 773.08 773.44 773.67 773.79 773.79 773.68 773.45 773.10 772.63 772.04 771.34 770.52 769.64 768.76 767.89 767.01 766.13 765.25 764.37 763.49 762.70 762.08 761.63 761.36 761.25 761.32 761.56 761.98

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	E.3

7:59:48 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

For Mainline Details
Refer to D-Sheets

For Interchange Details
Refer to K-Sheets

ACCESS LOCATIONS
Sta. 25+00 Lt
Sta. 29+00 Rt
Sta. 35+20 Rt

℄ U.S. 61

Sta. 14+00.00
Begin Grading

Sta. 25+00
Install 52'x24" UNCL
Entrance Pipe
Lt. 728.44
F.L. = Rt. 731.72

Sta. 34+40
Install 50'x30" 2000D
Lt. 736.30
F.L. = Rt. 736.95

Sta. 38+00
Install 108'x48" 2000D
F.L. = Lt. 719.23
Rt. 729.20
Other 719.37
Other 728.43

℄ Granger Creek
Realignment

℄ Southwest Arterial

Granger Creek

+00 Prop.
Type "C" Ent.

PC Sta 21+21.28

PT Sta 19+93.32

PI Sta 24+33.25

PT Sta 27+17.15

℄ US 61
Connector
Road "B"

16.5' UTILITY ESMT. (TEL)

PE FOR WATER/FO

PE FOR CENTURYLINK

16.5'
20.0'

PI Sta 40+00.00
US 61 Connector Road "B"=
POT Sta 358+13.44
Southwest Arterial

Shared Use Path

+20 Prop. Ent. Type "C"

TABLE MOUND TWP.
T-88N R-2E
SEC. 14

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

Curve Data
Δ = 59° 43' 38.96" (RT)
T = 516.77
L = 938.20
R = 900.00
E = 137.81

Curve Data
Δ = 37° 33' 09.61" (LT)
T = 305.97
L = 589.88
R = 900.00
E = 50.59

Sta. 29+00
Install 34'x36" UNCL
Entrance Pipe
F.L. = Lt. 737.26
Rt. 736.59

0 FEET 100

U.S.-61 CONNECTOR ROAD "B"

BEGIN PROFILE
Sta. 10+55.00
Elev. 742.82

Prop. Ent. Type 'C'
Sta. 11+10.00 Rt.

VPI +75.000
Elv 741.97
K = 244
Len 200.00 ft

Begin Grading
Sta. 14+00.00

Proposed Profile Grade

VPI +00.002
Elv 733.00
Len 300.00 ft
K = 124

Prop. Ent. Type 'C'
Sta. 25+00.00 Lt.

Existing Ground at
℄ US 61 Conn. Rd. "B"

Prop. Ent. Type 'C'
Sta. 29+00.00 Rt.

VPI +00.002
Elv 745.00
Len 300.00 ft
K = 128

VPI +25.000
Elv 738.66
Len 200.00 ft
K = 68

END PROFILE
Sta. 39+70.000
Elev 743.36

-0.268% -1.087% +1.333% +1.333% -1.014% -1.014% +1.918%

+50 731.85 -2.14% Ditch Grade Rt.
+00 736.10 -1.20%
+85 722.60 -2.43% Ditch Grade
+50 719.00
+15 717.00 +30 717.00
1.20% Ditch Grade Rt.
+50 723.80 3.60%
+26 730.14 8.80%
+00 731.60
1.23% Ditch Grade Lt.
+00 722.80
+00 735.10 +0.86% Ditch Grade Rt.
+73 736.59 1.37%
736.40 +50 -3.87% Ditch Grade Lt.
+00 730.60
+23 737.26 0.86%
+20 738.05 4.52% Ditch Grade Lt.
+80 738.75 -2.21%
+50 735.00 1.20%
+50 736.20 -9.14%
+68 725.10
+40 736.78 -1.014%
5.0% Ditch Rt.

Lt: Standard Ditch | Ditch Grade | Standard Ditch | Ditch Grade | Standard Ditch
Rt: Ditch Grade | Standard Ditch | Ditch Grade | Standard Ditch | Ditch Grade

742.77 742.70 742.64 742.57 742.50 742.44 742.37 742.30 742.23 742.15 742.05 741.92 741.76 741.58 741.37 741.14 740.88 740.61 740.34 740.06 739.79 739.52 739.25 738.98 738.71 738.43 738.16 737.89 737.62 737.35 737.08 736.80 736.53 736.26 735.99 735.72 735.45 735.17 734.90 734.63 734.38 734.19 734.04 733.95 733.90 733.91 733.96 734.07 734.23 734.43 734.69 735.00 735.33 735.67 736.00 736.33 736.67 737.00 737.33 737.67 738.00 738.33 738.67 739.00 739.33 739.67 740.00 740.33 740.67 741.00 741.33 741.67 742.00 742.33 742.67 743.00 743.31 743.57 743.78 743.94 744.06 744.12 744.13 744.10 744.02 743.89 743.71 743.48 743.22 742.97 742.72 742.46 742.21 741.96 741.70 741.45 741.20 740.94 740.69 740.44 740.18 739.93 739.67 739.47 739.35 739.33 739.39 739.55 739.80 740.14 740.58 741.06 741.54 742.02 742.50 742.98

10 15 20 25 30 35 40

760 750 740 730 720 710 700

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	E.4

7:59:51 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

For Mainline Details
Refer to D-Sheets

For Interchange Details
Refer to K-Sheets

℄ US 61
Connector Road "A"

Sta. 515+31.25
U.S. 61
Outlet Offset = 77.10' LT.
Tie-In Offset = 50.97' LT.
Remove 10' of Existing 24" RCP
Remove 1-Existing 24" Apron
Install 20'x24" 2000D
F.L. = Lt. 723.73
Rt. 723.15

℄ Southwest Arterial

Sta. 510+85.38
Begin Grading

℄ US 61

Sta. 531+95.48
Begin Grading

℄ Granger Creek
Realignment

Sta. 520+92.32 LT
U.S. 61
Outlet Offset = 91.20' LT.
Tie-In Offset = 49.00' LT.
Remove 22'-Existing 36" RCP
Remove 1-Existing 36" Apron
Install 34'x36" 2000D
Install 1-5° Elbow
F.L. = Lt. 722.27
Rt. 720.13
Other. 721.02

℄ US 61
Loop "C"

Sta. 522+51.69
End Grading

℄ US 61
Ramp "A"

Sta. 521+65.44
End Grading

℄ US 61
Loop "B"

Sta. 520+92.32 RT
U.S. 61
Outlet Offset = 171.10' RT.
Tie-In Offset = 75.48' RT.
Remove 8'-Existing 36" RCP
Remove 1-Existing 36" Apron
Install 88'x36" 2000D
Install 1-5° Elbow
F.L. = Lt. 711.40
Rt. 702.54
Other. 702.71

℄ US 61
Ramp "D"

0 FEET 100

U.S.-61 RAMP CONNECTION

US 61 ℄ PROGILE GRADE

LEFT PAVEMENT EDGE PROFILE

RIGHT PAVEMENT EDGE PROFILE

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER E.5

7:59:53 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

For Mainline Details
Refer to D-Sheets

For Interchange Details
Refer to K-Sheets

Sta. 542+60.70
End Grading

Sta. 544+25.67
End Grading

Sta. 536+50.80
Begin Grading

℄ US 61
Ramp "A"

℄ US 61
Loop "B"

Sta. 535+12.87
Resume Grading

Sta. 533+91.47
Stop Grading

Sta. 531+95.48
Begin Grading

℄ US 61
Ramp "D"

PE FOR SANITARY

PE FOR SANITARY/WATERFD

F02

T2

45.0

0 FEET 100

U.S.-61 RAMP CONNECTION

750
740
730
720
710
700

RIGHT PAVEMENT
EDGE PROFILE

LEFT PAVEMENT EDGE PROFILE

US 61 ℄ PROGILE GRADE

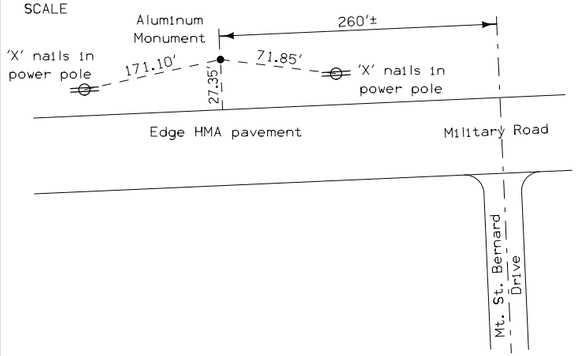
530 535 540 545

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	E.6

7:59:55 AM 12/21/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_E01.sht

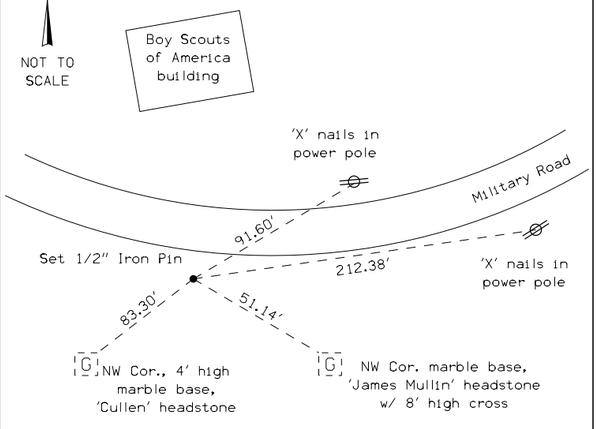
SURVEY REF. PT. #G426

Found County aluminum monument
under access cover
3638227.40 North, 5678566.73 East
Elevation 905.50



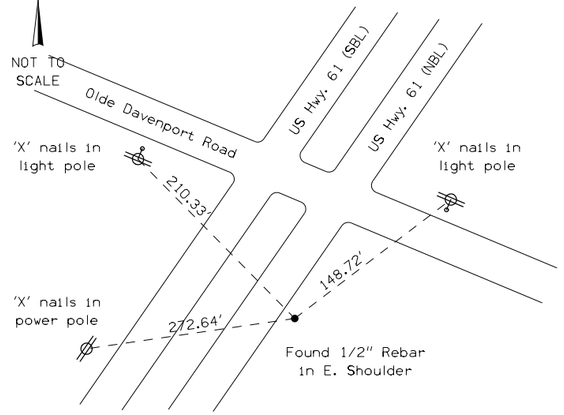
SURVEY REF. PT. #G033

Set pin 6" deep, 7.1' off edge of asphalt
3637992.09 North, 5680212.73 East
Elevation 850.66



SURVEY REF. PT. #G036

Found 1/2" rebar in E. shoulder
3634727.74 North, 5682148.64 East
Elevation 727.86



DETAILS OF REFERENCE INFORMATION

All References are Plumb Distances unless otherwise noted.

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER G.1

3:20:49 PM 11/22/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_G01.sht

BENCHMARK NUMBER	ELEVATION	DESCRIPTION
MILITARY ROAD		
G426	905.5 RECORD	DUBUQUE COUNTY ALUMINUM MONUMENT UNDER ACCESS COVER NORTH SIDE OF MILITARY ROAD + 300' WEST OF DRIVE (MT. ST. BERNARD RD)
GO32	901.75	TOP OF REBAR + 67' EAST OF MT. ST. BERNARD ROAD AND + 25' NORTH OF CENTERLINE OF MILITARY ROAD
BM MR1	903.23	12" SPIKE IN POWER POLE AT NORTH SIDE MILITARY ROAD AND MT. ST. BERNARD ROAD
BM MR2	854.65	12" SPIKE IN POWER POWER AT NORTH SIDE OF MILITARY ROAD + 50' EAST OF DRIVEWAY SOUTH TO CEMETARY MAINTENANCE BUILDING
GO33	850.66 RECORD	TOP OF REBAR AT + 10' SOUTH OF SOUTH EDGE OF MILITARY ROAD - ACROSS ROAD FROM BOY SCOUT BUILDING
US HIGHWAY 61		
GO34	790.29 RECORD	REBAR 6" DEEP ON TRIANGULAR MEDIAN BETWEEN NORTHBOUND LANE AND ON-RAMP OF HWY 61 - 11' + EAST OF REFLECTOR POST - 21' + WEST OF ON-RAMP CENTERLINE
BM 61.1	762.39	"X" CUT ON LIGHT POLE BASE AT INTERSECTION OF HWY 61 AND EAST TAMARACK DRIVE
BM 61.2	725.65	12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 6TH POWER POLE NORTH OF EAST TAMARACK DRIVE
BM 61.3	750.39	12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 100' + SOUTHEAST OF OLD 4-STALL GARAGE AT HOUSE NO. 9475
BM 61.4	752.87	12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 5TH POWER POLE SOUTH OF COUNTY ROAD Y38
GO36	727.86 RECORD	REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61 - 108' + SOUTH OF OLDE DAVENPORT ROAD CENTERLINE - 17.5' + NORTHWEST OF EAST "DO NOT ENTER" SIGN
BM 61.5	722.79	12" SPIKE WEST SIDE POWER POLE EAST SIDE OF HWY 61 - 100' + NORTH OF OLDE DAVENPORT ROAD
BM 61.6	733.65	12" SPIKE WEST SIDE POWER POWER EAST SIDE OF HWY 61 - 3RD POWER POLE NORTH OF OLDE DAVENPORT ROAD
GO37	773.76 RECORD	REBAR 6" DEEP IN EAST CORNER OF HWY 61 AND DIGITAL DRIVE - 37' + SOUTHEAST OF "KEEP RIGHT" SIGN IN MEDIAN ENTRANCE - 95' + SOUTHEAST OF HYDRANT - 54' + WEST OF GREEN HIGH VOLTAGE BOX - 6" + BEHIND CURB
OLDE DAVENPORT ROAD		
GO36	727.86 RECORD	REBAR 6" DEEP IN SOUTHEAST SHOULDER OF HWY 61 - 108' + SOUTH OF OLDE DAVENPORT ROAD CENTERLINE - 17.5' + NORTHWEST OF EAST "DO NOT ENTER" SIGN
BM ODR1	709.67	"X" CUT NORTHWEST CORNER BARRIER RAIL OF BRIDGE 500' + SOUTHEAST OF HWY 61 ON OLDE DAVENPORT ROAD
BM ODR2	745.57	12" SPIKE IN SOUTH SIDE OF POWER POLE - NORTH SIDE OF OLDE DAVENPORT ROAD ACROSS FROM DRIVE TO HOUSE NO. 9491
BM ODR3	814.14	
GO36	727.86 RECORD	REBAR 6" DEEP IN SOUTHEAST SHOULDER OF HWY 61 - 108' + SOUTH OF OLDE DAVENPORT ROAD CENTERLINE - 17.5' + NORTHWEST OF EAST "DO NOT ENTER" SIGN
MAINLINE - N. CASCADE RD TO KNEPPER LANE		
BM NCR1	888.90 RECORD	12" SPIKE SOUTH SIDE POWER POLE NORTH SIDE OF NORTH CASCADE ROAD AT HOUSE NO. 12430 NORTH CASCADE ROAD
BM 21	863.67	7" SPIKE IN CORNER POST 900' + SOUTH OF NORTH CASCADE ROAD - EAST SIDE OF LANE TO HOUSE NOS. 12204 AND 12208
BM 22	840.48	7" SPIKE IN CORNER POST 1000' + SOUTH OF NORTH CASCADE ROAD - 1000' + EAST OF LANE TO HOUSE NOS. 12204 AND 12208
BM 23	844.24	7" SPIKE IN CORNER POST 1600' + SOUTH OF NORTH CASCADE ROAD - 1000' + EAST TO LANE TO HOUSE NOS. 12204 AND 12208 (CORNER OF VALENTINE PROPERTY)
BM 24	846.48	60d SPIKE BRACE POST ON HILL TO, ON E/W FENCE, 1ST POST E. OF N-S FENCE 1000' M/L SW OF 90 DEGREE BEND IN ROAD AT VALENTINE'S DRIVEWAY
BM 25	769.06	20d SPIKE S GATE POST 800' M/L S OF 90 DEGREE BEND IN ROAD AT VALENTINE'S DRIVEWAY
BM 26	750.04	60d SPIKE CORNER POST AT SE CORNER CATTLE YARD 800' M/L S OF TWIN BLUE HARVESTOR SILOS AT RON VALENTINE'S FARM
BM 27	745.35	60d SPIKE NW GATE POST AT SW CORNER FIELD, 1000' M/L SE OF TWIN BLUE SILOS AT RON VALENTINE'S FARM
BM 28	721.93	20d SPIKE CORNER POST 100' M/L NW OF GATE TO ACCESS TO CATFISH CREEK FROM FIELD 2000' M/L SE OF SE OF TWIN BLUE SILOS AT RON VALENTINE'S FARM
BM 20	724.98 RECORD	7" SPIKE IN CORNER POST 3/4-MILE NORTH OF OAKLAND FARM ROAD AND 1/4-MILE WEST OF KNEPPER LANE
MAINLINE - KNEPPER LANE TO MILITARY RD		
BM 20	724.98 RECORD	7" SPIKE IN CORNER POST 3/4-MILE NORTH OF OAKLAND FARM ROAD AND 1/4-MILE WEST OF KNEPPER LANE
BM 19	803.63	7" SPIKE IN 1' DIA. BRACE POST AT TOP OF HILL - + 3/4-MILE NORTH OF OAKLAND FARM ROAD AND + 600' WEST OF KNEPPER LANE
BM 18	758.32	7" SPIKE IN POWER POLE WITH TRANSFORMER - WEST SIDE OF KNEPPER LANE - 1ST POLE SOUTH OF BUILDINGS AT NORTH END KNEPPER LANE
BM 17	781.95	7" SPIKE IN POWER POLE WEST SIDE OF KNEPPER LANE - 7TH POLE NORTH OF OAKLAND FARM ROAD
BM 16	833.65	7" SPIKE IN POWER POLE WEST SIDE OF KNEPPER LANE - 3RD POLE NORTH OF OAKLAND FARM ROAD
F81	846.42	CENTER SECTION 11 - TOP IRON PIN WITH CAP
G426	905.5 RECORD	DUBUQUE COUNTY ALUMINUM MONUMENT UNDER ACCESS COVER AT NORTH SIDE MILITARY ROAD + 300' WEST OF DRIVE (MT. ST. BERNARD RD)
MAINLINE - MILITARY RD TO HWY 61		
BM MR1	903.23 RECORD	12" SPIKE IN POWER POLE NORTH SIDE OF MILITARY ROAD AT MT. ST. BERNARD ROAD
BM 15	830.89	7" SPIKE IN WOOD POST AT NORTH-SOUTH FENCE LINE + 1400' SOUTH OF MILITARY ROAD ON EXTENSION OF MT. ST. BERNARD ROAD (SOUTHEAST OF OLD BARN)
BM 14	769.84	7" SPIKE IN CORNER POST + 2000' SOUTH OF MILITARY ROAD ON EXTENSION OF DRIVE AT MT. ST. BERNARD ROAD AT NORTH-SOUTH FENCE / EAST-WEST FENCE T-INTERSECTION
BM 13	733.18	7" SPIKE IN GATE POST IN VALLEY + 1/4-MILE WEST OF HWY 61 IN NORTH-WEST / SOUTH-EAST FENCE LINE - (STEEL GATE) NORTH OF CREEK
BM 61.3	750.39 RECORD	12" SPIKE EAST SIDE POWER POLE AT WEST SIDE OF HWY 61 - + 100' SOUTHEAST OF OLD 4-STALL GARAGE AT HOUSE NO. 9475

DETAILS OF REFERENCE INFORMATION

Vertical Control Points
(Benchmark listing)

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
ML032	Southwest Arterial Centerline																		
21000		55+00.09	3,648,592.07	5,657,653.83															
21001								61+47.98	3,648,714.17	5,658,290.11	66+09.11	3,648,801.07	5,658,742.98	70+28.48	3,648,562.34	5,659,137.50			
21002								95+17.82	3,647,273.61	5,661,267.28	112+10.59	3,646,397.26	5,662,715.55	128+81.18	3,645,955.73	5,664,349.73			
21003								141+99.25	3,645,611.94	5,665,622.18	149+85.07	3,645,406.97	5,666,380.80	157+68.64	3,645,104.83	5,667,106.20			
21004								168+62.03	3,644,684.42	5,668,115.54	175+69.35	3,644,412.46	5,668,768.48	182+76.21	3,644,100.89	5,669,403.47			
21005								192+23.66	3,643,683.55	5,670,254.04	197+91.97	3,643,433.21	5,670,764.25	203+58.39	3,643,257.50	5,671,304.73			
21006								238+66.28	3,642,173.01	5,674,640.77	281+52.28	3,640,847.95	5,678,716.81	316+53.91	3,636,663.51	5,679,644.35			
21007								324+04.45	3,635,930.76	5,679,806.77	334+23.45	3,634,935.91	5,680,027.29	344+00.00	3,634,167.82	5,680,696.92			
21008								346+41.41	3,633,985.86	5,680,855.56	347+86.25	3,633,876.68	5,680,950.75	349+30.20	3,633,787.73	5,681,065.06			
21009		351+01.49	3,633,682.54	5,681,200.25															
ML032-2	Southwest Arterial Centerline																		
21010		350+00.00	3,633,743.95	5,681,121.33															
21011								364+68.13	3,632,842.37	5,682,280.02	372+42.23	3,632,367.00	5,682,890.96	377+85.62	3,632,839.31	5,683,504.26			
21012		380+48.56	3,632,999.74	5,683,712.59															
61CONRDA	U.S. 61 Connector Road "A"																		
22411		6+00.00	3,632,044.25	5,679,776.44															
22412								7+96.58	3,632,193.81	5,679,904.02	9+08.34	3,632,278.83	5,679,976.55	10+10.54	3,632,390.58	5,679,975.78			
22413								13+11.56	3,632,691.60	5,679,973.70	13+82.55	3,632,762.59	5,679,973.21	14+50.98	3,632,826.27	5,680,004.59			
22415								25+49.01	3,633,811.22	5,680,489.92	26+44.64	3,633,897.00	5,680,532.19	27+37.46	3,633,958.18	5,680,605.69			
22416		29+44.05	3,634,090.35	5,680,764.47															
61CONRDB	U.S. 61 Connector Road "B"																		
22501		10+35.32	3,631,240.99	5,679,708.97															
22502								10+55.12	3,631,260.04	5,679,714.40	15+71.89	3,631,756.97	5,679,856.17	19+93.32	3,631,885.05	5,680,356.82			
22503								21+27.27	3,631,918.25	5,680,486.59	24+33.24	3,631,994.08	5,680,783.01	27+17.15	3,632,234.87	5,680,971.80			
22504		40+00.00	3,633,244.42	5,681,763.32															
US61	U.S. Highway 61																		
20066		497+27.60	3,631,885.28	5,679,896.01															
20062					528+13.90	3,634,316.98	5,681,796.57	531+63.90	3,634,599.09	5,682,003.50	536+94.76	3,635,011.01	5,682,339.01	541+64.50	3,635,541.19	5,682,305.10	545+14.50	3,635,891.03	5,682,300.47
20063		581+95.62	3,639,568.62	5,682,139.41															
61RAMP-A	U.S.61 Ramp "A"																		
20100		1519+08.66	3,634,105.07	5,680,751.64															
20101								1522+38.78	3,634,327.10	5,680,995.93	1524+01.64	3,634,436.64	5,681,116.45	1525+58.12	3,634,477.54	5,681,274.09			
20102								1528+46.71	3,634,550.02	5,681,553.43	1532+51.17	3,634,651.59	5,681,944.93	1536+00.00	3,635,021.74	5,682,107.92			
20103								1536+00.00	3,635,021.74	5,682,107.92	1536+24.40	3,635,044.07	5,682,117.76	1536+48.79	3,635,066.65	5,682,126.99			
61LOOP-B	U.S.61 Loop "B"																		
20201		2521+23.00	3,633,718.26	5,681,441.03															
20202								2522+75.00	3,633,831.52	5,681,542.40	2567+14.01	3,637,139.25	5,684,502.76	2530+32.27	3,633,520.04	5,681,932.52			
61LOOP-C	U.S.61 Loop "C"																		
20301		3517+00.00	3,633,477.33	5,681,062.63															
20302								3517+75.00	3,633,536.41	5,681,108.82	3520+35.36	3,633,741.52	5,681,269.20	3522+95.00	3,633,965.69	5,681,401.63			
20303								3522+95.00	3,633,965.69	5,681,401.63	3537+38.39	3,635,208.42	5,682,135.81	3529+94.64	3,634,285.00	5,681,026.45			
61RAMP-D	U.S.61 Ramp "D"																		
20401		4517+38.72	3,633,234.59	5,681,775.95															
20402								4520+66.41	3,633,493.22	5,681,977.19	4522+19.21	3,633,613.81	5,682,071.02	4523+56.98	3,633,765.80	5,682,055.25			
20403								4527+23.25	3,634,130.11	5,682,017.45	4529+44.07	3,634,349.75	5,681,994.66	4531+55.00	3,634,551.94	5,682,083.42			
20404		4534+25.00	3,634,799.17	5,682,191.95															
DAVENPORT	Olde Davenport Road																		
11001		11+93.88	3,635,435.95	5,681,647.24															
11002								12+67.41	3,635,363.89	5,681,661.88	15+83.45	3,635,054.17	5,681,724.82	18+54.54	3,634,915.87	5,682,009.01			
11003								21+53.03	3,634,785.26	5,682,277.41	22+91.88	3,634,724.50	5,682,402.26	24+25.51	3,634,613.46	5,682,485.62			
11004		36+06.11	3,633,669.34	5,683,194.46															
11005		46+78.62	3,632,820.91	5,683,850.53															
ACCRD-B	Access Road B																		
ARB101		57+00.00	3,641,405.40	5,676,977.34															
ARB102								58+47.66	3,641,258.41	5,676,963.19	59+28.35	3,641,178.09	5,676,955.46	59+95.73	3,641,127.37	5,677,018.22			
ARB103								64+02.24	3,640,871.86	5,677,334.40	69+20.96	3,640,545.83	5,677,737.85	74+37.11	3,640,155.38	5,678,079.35			
ARB105								74+96.76	3,640,110.48	5,678,118.63	79+88.33	3,639,740.48	5,678,442.26	84+78.13	3,639,327.08	5,678,708.22			
ARB106								84+78.13	3,639,327.08	5,678,708.22	88+30.66	3,639,030.60	5,678,898.96	91+82.83	3,638,720.25	5,679,066.17			
ARB107								91+82.83	3,638,720.25	5,679,066.17	93+63.94	3,638,560.81	5,679,152.07	95+36.22	3,638,468.15	5,679,307.68			
ARB108								95+36.22	3,638,468.15	5,679,307.68	97+70.38	3,638,348.35	5,679,508.87	99+33.87	3,638,124.09	5,679,441.51			
ARB109		100+00.00	3,638,060.76	5,679,422.49															

SPIRAL OR CIRCULAR CURVE DATA

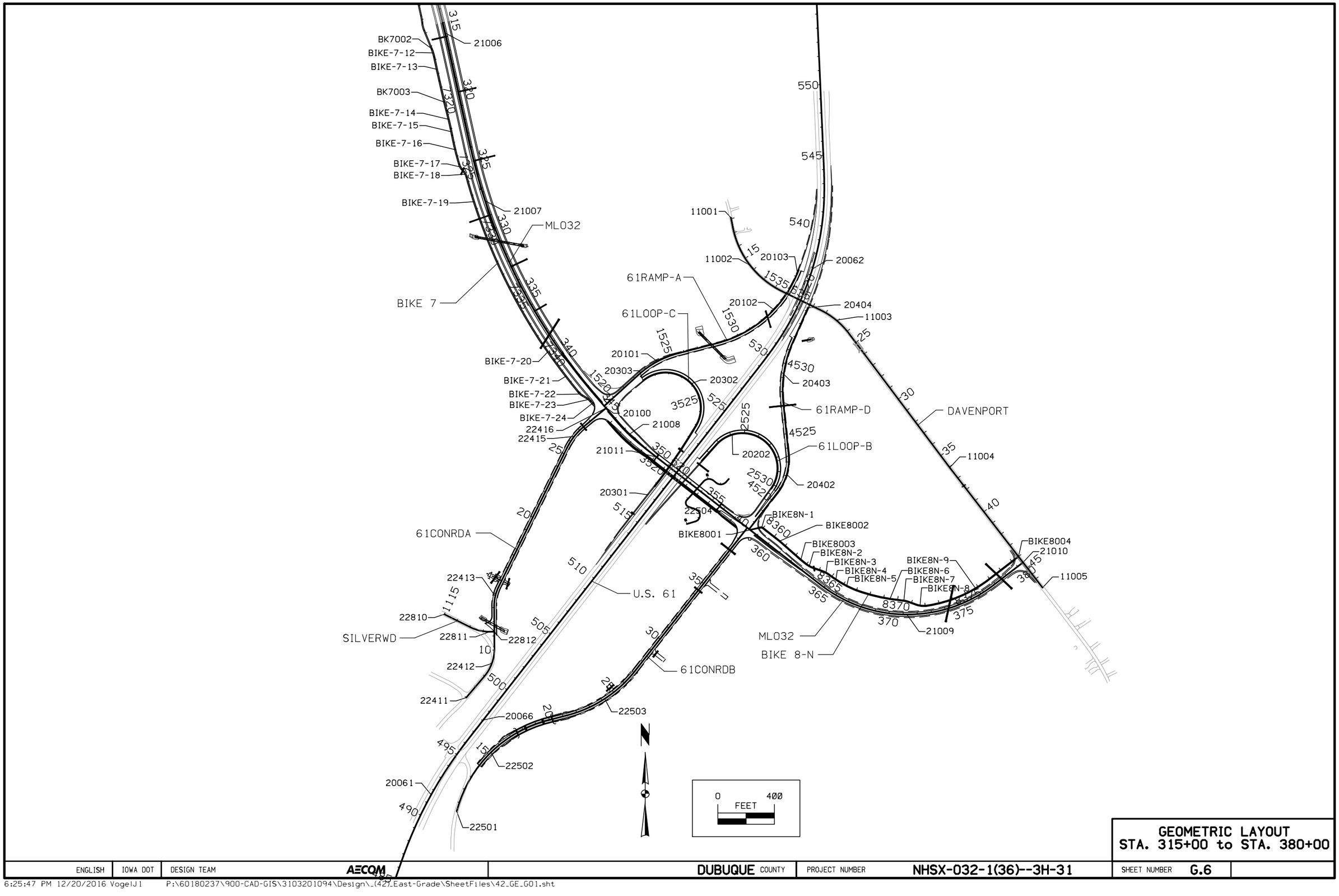
101-17
04-19-11

Name	Location	Δ_{scs}	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E	
ML032	Southwest Arterial Centerline															
21001											42° 02′ 26.77″ RT	461.13′	880.50′	1,200.00′	85.55′	
21002											16° 03′ 31.95″ LT	1,692.78′	3,363.36′	12,000.00′	118.81′	
21003											7° 29′ 35.83″ RT	785.82′	1,569.39′	12,000.00′	25.70′	
21004											3° 31′ 22.38″ RT	707.31′	1,414.18′	23,000.00′	10.87′	
21005											8° 07′ 36.90″ LT	568.32′	1,134.73′	8,000.00′	20.16′	
21006											59° 29′ 35.10″ RT	4,286.00′	7,787.63′	7,500.00′	1,138.28′	
21007											28° 35′ 02.91″ LT	1,019.00′	1,995.55′	4,000.00′	127.75′	
21008											11° 01′ 51.80″ LT	144.84′	288.79′	1,500.00′	6.98′	
ML032-2	Southwest Arterial Centerline															
21011											75° 29′ 10.42″ LT	774.09′	1,317.48′	1,000.00′	264.60′	
61CONRDA	U.S. 61 Connector Road "A"															
22412											40° 51′ 46.06″ LT	111.76′	213.96′	300.00′	20.14′	
22413											26° 37′ 39.48″ RT	70.99′	139.42′	300.00′	8.29′	
22415											23° 59′ 39.67″ RT	95.63′	188.45′	450.00′	10.05′	
61CONRDB	U.S. 61 Connector Road "B"															
22502											59° 43′ 38.96″ RT	516.77′	938.20′	900.00′	137.81′	
22503											37° 33′ 09.61″ LT	305.97′	589.88′	900.00′	50.59′	
US61	U.S. Highway 61															
20062		40° 31′ 05.00″ LT	5° 15′ 00.00″	-350.00′	TS	116.76′	349.71′	10.68′	233.44′	116.76′	30° 01′ 05.00″ LT	512.07′	1,000.60′	1,909.86′	67.46′	
61RAMP-A	U.S.61 Ramp "A"															
20101											27° 43′ 19.93″ RT	162.86′	319.34′	660.00′	19.80′	
20102											51° 41′ 19.93″ LT	404.45′	753.29′	835.00′	92.80′	
20103											1° 31′ 44.84″ LT	24.40′	48.79′	1,828.13′	0.16′	
61LOOP-B	U.S.61 Loop "B"															
20202											173° 33′ 11.30″ RT	4,439.01′	757.27′	250.00′	4,196.04′	
61LOOP-C	U.S.61 Loop "C"															
20302											7° 26′ 54.17″ LT	260.36′	520.00′	4,000.00′	8.46′	
20303											160° 20′ 50.60″ LT	1,443.39′	699.65′	250.00′	1,214.88′	
61RAMP-D	U.S.61 Ramp "D"															
20402											43° 48′ 38.65″ LT	152.80′	290.56′	380.00′	29.57′	
20403											29° 37′ 32.60″ RT	220.82′	431.75′	835.00′	28.70′	
DAVENPORT	Olde Davenport Road															
11002											52° 33′ 44.87″ LT	316.05′	587.13′	640.00′	73.78′	
11003											27° 09′ 04.17″ RT	138.85′	272.48′	575.00′	16.53′	
ACCRD-B	Access Road B															
ARB102											56° 33′ 22.43″ LT	80.69′	148.06′	150.00′	20.33′	
ARB103											9° 52′ 56.15″ RT	518.72′	1,034.87′	6,000.00′	22.38′	
ARB105											8° 25′ 11.54″ RT	491.57′	981.36′	6,678.00′	18.07′	
ARB106											4° 26′ 25.46″ RT	352.53′	704.70′	9,093.00′	6.83′	
ARB107											30° 54′ 45.75″ LT	181.11′	353.39′	655.00′	24.58′	
ARB108											75° 56′ 41.15″ RT	234.15′	397.65′	300.00′	80.56′	

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
ML032	21006	7500	2.45	102	84	PV-302	237+10.88	237+94.88	238+78.88	238+96.88				238+66.28		237+94.88			Design Speed 70mph
							318+09.31	317+25.31	316+41.31	316+23.31				316+53.91		317+25.31			
ML032	21007	4000	2.70	97	72	PV-302	322+64.55	323+36.55	324+08.55	324+33.55				324+04.45		323+36.55			Design Speed 50mph
							339+89.90	339+17.90	338+45.90	338+20.90				338+50.00		339+17.90			
ML032	21009	1000	3.80	84	44	PV-302	364+75.20	365+19.20	365+63.20	366+03.20			365+78.00			365+19.20			Design Speed 34mph
							378+85.42	378+41.42	377+97.42	377+57.42			377+82.62			378+41.42			
61RAMP-A	20101	660	-5.80	140	48	PV-303	1520+92.78	1521+40.78	1522+38.78	1522+80.78									Design Speed 40mph
							1527+04.12	1526+56.12	1525+58.12	1525+16.12									
61RAMP-A	20102	835	6.00	168	56	PV-303	1527+85.11		1528+46.71	1528+97.11						1527+29.11			Design Speed 50mph
							1536+61.60		1536+00.00	1535+49.60						1537+17.60			
61RAMP-A	20103	1828	6.00	75	19	PV-303	1535+66.50		1536+00.00	1536+22.50						1535+47.50			Design Speed 100mph
							1536+82.29		1536+48.79	1536+26.29						1537+01.29			
61RAMP-D	20402	380	6.00	135	45	PV-303	4519+26.91	4519+71.91	4520+66.41	4521+06.91						4519+71.91			Design Speed 35mph
							4524+96.48	4524+51.48	4523+56.98	4523+16.48						4524+51.48			
61RAMP-D	20403	835	6.00	168	56	PV-303	4526+61.65		4527+23.25	4527+73.65						4526+05.65			Design Speed 30mph
							4532+16.60		4531+55.00	4531+04.60						4532+72.60			
61LOOP-B	20202	250	-6.00	137	46	PV-303	2522+25.10		2522+75.00	2523+16.10									Design Speed 30mph
							2530+82.17		2530+32.27	2529+91.17									
61LOOP-C	20303	250	6.00	137	46	PV-303	3522+45.10		3522+95.00	3523+36.10						3521+99.10			Design Speed 30mph
							3530+44.54		3529+94.64	3529+53.54						3530+90.54			
61CONRDA	22413	300	4.00	73	36	PV-301	12+24.46	12+60.46	12+96.46	13+33.46			13+11.56			12+60.46			Design Speed 30mph
							15+38.08	15+02.08	14+66.08	14+29.08			14+50.98			15+02.08			
61CONRDA	22415	450	3.50	64	36	PV-301	24+68.21	25+04.21	25+40.21	25+68.21			25+49.01			25+04.21			Design Speed 30mph
							28+18.26	27+82.26	27+46.26	27+18.26			27+37.46			27+82.26			
61CONRDB	22502	900	3.60	75	41	PV-301	9+61.62	10+02.62	10+43.62	10+77.62			10+55.12			10+02.62			Design Speed 40mph
							20+86.82	20+45.82	20+04.82	19+70.82			19+93.32			20+45.82			
61CONRDB	22503	900	3.60	75	41	PV-301	20+33.77	20+74.77	21+15.77	21+49.77			21+27.27			20+74.77			Design Speed 40mph
							28+10.65	27+69.65	27+28.65	26+94.65			27+17.15			27+69.65			



GEOMETRIC LAYOUT
STA. 315+00 to STA. 380+00

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER G.6

6:25:47 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_G01.sht

Shared Use Path Curve Data

CIRCULAR CURVE COORDINATE

CIRCULAR CURVE DATA

RT-1
01-05-08

NO.	Offset Measured From Roadway:	Roadway Station at Curve PI	Offset From Roadway	No.	P.C. Station	P.C. Coordinates		P.I. Station	P.I. Coordinates		P.T. Station	P.T. Coordinates		No.	△	D	T	L	E	R
BIKE7	Southwest Arterial			BIKE7										BIKE7						
BK7001	Southwest Arterial	299+39.37	215.78′ RT	BK7001				7298+83.45	3,638,187.43	5,678,891.42										
BIKE-7-1	Southwest Arterial	299+83.24	240.96′ RT	BIKE-7-1	7298+98.68	3,638,172.25	5,678,890.04	7299+32.87	3,638,138.21	5,678,886.95	7299+62.29	3,638,114.83	5,678,911.89	BIKE-7-1	52° 03′ 32.50″ LT	81° 51′ 04.0″	34.19′	63.60′	7.90′	70.00′
BIKE-7-2	Southwest Arterial	302+23.37	143.96′ RT	BIKE-7-2	7301+46.26	3,637,989.03	5,679,046.13	7301+81.37	3,637,965.03	5,679,071.75	7302+15.56	3,637,932.99	5,679,086.13	BIKE-7-2	22° 41′ 19.58″ RT	32° 44′ 25.6″	35.11′	69.30′	3.49′	175.00′
BIKE-7-3	Southwest Arterial	303+95.40	139.83′ RT	BIKE-7-3	7303+31.54	3,637,827.18	5,679,133.62	7303+49.27	3,637,811.00	5,679,140.88	7303+66.99	3,637,795.38	5,679,149.27	BIKE-7-3	4° 03′ 45.54″ LT	11° 27′ 33.0″	17.73′	35.45′	0.31′	500.00′
BIKE-7-4	Southwest Arterial	306+08.66	114.33′ RT	BIKE-7-4	7305+39.41	3,637,643.48	5,679,230.83	7305+60.44	3,637,624.95	5,679,240.78	7305+81.04	3,637,604.14	5,679,243.84	BIKE-7-4	19° 52′ 45.65″ RT	47° 44′ 47.3″	21.03′	41.64′	1.83′	120.00′
BIKE-7-5	Southwest Arterial	306+50.09	122.97′ RT	BIKE-7-5	7305+82.54	3,637,602.67	5,679,244.05	7306+01.70	3,637,583.71	5,679,246.84	7306+20.74	3,637,565.62	5,679,253.17	BIKE-7-5	10° 56′ 44.02″ LT	28° 38′ 52.4″	19.16′	38.21′	0.92′	200.00′
BIKE-7-6	Southwest Arterial	307+77.49	123.80′ RT	BIKE-7-6	7306+90.34	3,637,499.93	5,679,276.17	7307+26.89	3,637,465.44	5,679,288.25	7307+62.63	3,637,428.91	5,679,287.35	BIKE-7-6	20° 42′ 36.38″ RT	28° 38′ 52.4″	36.54′	72.29′	3.31′	200.00′
BIKE-7-7	Southwest Arterial	310+18.13	207.99′ RT	BIKE-7-7	7309+19.11	3,637,272.48	5,679,283.50	7309+75.99	3,637,215.61	5,679,282.10	7310+25.35	3,637,178.53	5,679,325.24	BIKE-7-7	50° 43′ 32.34″ LT	47° 44′ 47.3″	56.88′	106.24′	12.80′	120.00′
BIKE-7-8	Southwest Arterial	311+00.74	157.09′ RT	BIKE-7-8	7310+40.37	3,637,168.74	5,679,336.63	7310+63.80	3,637,153.46	5,679,354.40	7310+86.65	3,637,132.63	5,679,365.11	BIKE-7-8	22° 05′ 37.30″ RT	47° 44′ 47.3″	23.43′	46.27′	2.27′	120.00′
BIKE-7-9	Southwest Arterial	312+49.88	128.47′ RT	BIKE-7-9	7311+89.47	3,637,041.20	5,679,412.15	7312+12.29	3,637,020.90	5,679,422.59	7312+34.86	3,636,998.61	5,679,427.47	BIKE-7-9	14° 51′ 41.21″ RT	32° 44′ 25.6″	22.82′	45.39′	1.48′	175.00′
BIKE-7-10	Southwest Arterial	314+37.73	136.55′ RT	BIKE-7-10	7313+72.43	3,636,864.22	5,679,456.92	7313+96.74	3,636,840.48	5,679,462.12	7314+21.00	3,636,816.35	5,679,465.00	BIKE-7-10	5° 33′ 53.76″ RT	11° 27′ 33.0″	24.30′	48.56′	0.59′	500.00′
BIKE-7-11	Southwest Arterial	314+96.13	143.72′ RT	BIKE-7-11	7314+30.12	3,636,807.29	5,679,466.08	7314+54.45	3,636,783.14	5,679,468.96	7314+78.46	3,636,760.68	5,679,478.31	BIKE-7-11	15° 49′ 37.11″ LT	32° 44′ 25.6″	24.33′	48.34′	1.68′	175.00′
BK7002	Southwest Arterial	316+61.77	117.20′ RT	BK7002				7316+19.16	3,636,630.48	5,679,531.62										
BIKE-7-12	Southwest Arterial	316+93.46	112.05′ RT	BIKE-7-12	7316+26.20	3,636,623.94	5,679,534.23	7316+51.27	3,636,600.65	5,679,543.51	7316+76.22	3,636,576.15	5,679,548.80	BIKE-7-12	9° 33′ 11.27″ RT	19° 05′ 54.9″	25.07′	50.02′	1.05′	300.00′
BIKE-7-13	Southwest Arterial	318+12.33	112.71′ RT	BIKE-7-13	7316+86.80	3,636,565.81	5,679,551.03	7317+70.03	3,636,484.45	5,679,568.59	7318+53.26	3,636,403.27	5,679,586.94	BIKE-7-13	0° 33′ 25.48″ LT	00° 20′ 04.8″	83.23′	166.46′	0.20′	17,120.09′
BK7003	Southwest Arterial	320+50.10	111.72′ RT	BK7003				7320+07.79	3,636,252.54	5,679,621.01										
BIKE-7-14	Southwest Arterial	321+75.03	107.08′ RT	BIKE-7-14	7320+67.91	3,636,194.29	5,679,635.90	7321+32.82	3,636,131.57	5,679,652.58	7321+97.69	3,636,068.10	5,679,666.17	BIKE-7-14	2° 47′ 52.52″ RT	02° 09′ 21.1″	64.90′	129.78′	0.79′	2,657.69′
BIKE-7-15	Southwest Arterial	322+64.86	107.90′ RT	BIKE-7-15	7321+97.69	3,636,068.10	5,679,666.17	7322+22.62	3,636,043.69	5,679,671.22	7322+47.55	3,636,019.27	5,679,676.24	BIKE-7-15	0° 01′ 37.64″ RT	00° 03′ 15.9″	24.93′	49.86′	0.00′	105,317.11
BIKE-7-16	Southwest Arterial	323+94.69	111.59′ RT	BIKE-7-16	7322+47.55	3,636,019.27	5,679,676.24	7323+52.51	3,635,916.14	5,679,695.71	7324+57.28	3,635,815.53	5,679,725.60	BIKE-7-16	5° 51′ 32.68″ LT	02° 47′ 37.3″	104.95′	209.73′	2.68′	2,050.90′
BIKE-7-17	Southwest Arterial	325+19.27	104.25′ RT	BIKE-7-17	7324+59.56	3,635,813.34	5,679,726.25	7324+80.20	3,635,793.55	5,679,732.13	7325+00.27	3,635,777.71	5,679,745.36	BIKE-7-17	23° 19′ 26.79″ LT	57° 17′ 44.8″	20.64′	40.71′	2.11′	100.00′
BIKE-7-18	Southwest Arterial	325+75.42	77.08′ RT	BIKE-7-18	7325+21.38	3,635,761.51	5,679,758.90	7325+43.16	3,635,744.80	5,679,772.86	7325+64.27	3,635,723.79	5,679,778.60	BIKE-7-18	24° 34′ 20.37″ RT	57° 17′ 44.8″	21.78′	42.89′	2.34′	100.00′
BIKE-7-19	Southwest Arterial	332+32.68	128.54′ RT	BIKE-7-19	7325+67.53	3,635,720.64	5,679,779.47	7332+17.83	3,635,093.39	5,679,951.06	7338+57.26	3,634,550.64	5,680,309.26	BIKE-7-19	18° 07′ 29.72″ LT	01° 24′ 19.2″	650.30′	1,289.73′	51.54′	4,077.04′
BIKE-7-20	Southwest Arterial	339+40.36	76.22′ RT	BIKE-7-20	7338+57.26	3,634,550.64	5,680,309.26	7339+33.70	3,634,487.69	5,680,352.61	7340+10.11	3,634,426.41	5,680,398.28	BIKE-7-20	2° 08′ 57.90″ LT	01° 24′ 22.5″	76.43′	152.85′	0.72′	4,074.34′
BIKE-7-21	Southwest Arterial	341+50.69	76.33′ RT	BIKE-7-21	7340+10.11	3,634,426.41	5,680,398.28	7341+48.01	3,634,314.25	5,680,478.50	7342+85.80	3,634,207.76	5,680,566.12	BIKE-7-21	3° 52′ 37.30″ LT	01° 24′ 22.7″	137.90′	275.69′	2.33′	4,074.19′
BIKE-7-22	Southwest Arterial	343+10.08	74.07′ RT	BIKE-7-22	7342+92.87	3,634,202.30	5,680,570.62	7343+10.29	3,634,188.85	5,680,581.68	7343+27.36	3,634,179.94	5,680,596.65	BIKE-7-22	19° 45′ 44.18″ LT	57° 17′ 44.8″	17.42′	34.49′	1.51′	100.00′
BIKE-7-23	Southwest Arterial	343+76.13	51.05′ RT	BIKE-7-23	7343+64.85	3,634,160.75	5,680,628.86	7343+80.87	3,634,152.55	5,680,642.61	7343+96.61	3,634,140.47	5,680,653.12	BIKE-7-23	18° 11′ 41.39″ RT	57° 17′ 44.8″	16.01′	31.76′	1.27′	100.00′
BIKE-7-24	Southwest Arterial	344+14.13	51.02′ RT	BIKE-7-24	7344+00.18	3,634,137.78	5,680,655.46	7344+18.90	3,634,123.65	5,680,667.75	7344+37.63	3,634,109.63	5,680,680.17	BIKE-7-24	0° 31′ 47.87″ LT	01° 24′ 53.4″	18.73′	37.46′	0.04′	4,049.63′
BIKE8N	Southwest Arterial			BIKE8N										BIKE8N						
BIKE8001	Southwest Arterial	358+37.74	00.00′ LT	BIKE8001				8358+05.15	3,633,229.50	5,681,782.49										
BIKE8N-1	Southwest Arterial	358+91.57	66.00′ LT	BIKE8N-1	8358+80.82	3,633,246.41	5,681,856.25	8358+90.32	3,633,248.53	5,681,865.51	8358+98.55	3,633,242.70	5,681,873.00	BIKE8N-1	50° 48′ 00.98″ RT	286° 28′ 44.0″	9.50′	17.73′	20.00′	2.14′
BIKE8002	Southwest Arterial	360+51.14	66.00′ LT	BIKE8002				8360+48.63	3,633,150.54	5,681,991.45										
BIKE8003	Southwest Arterial	362+51.33	53.99′ LT	BIKE8003				8362+49.18	3,633,018.12	5,682,142.07										
BIKE8N-2	Southwest Arterial	363+26.59	53.24′ LT	BIKE8N-2	8362+95.76	3,632,989.15	5,682,178.55	8363+24.44	3,632,971.31	5,682,201.00	8363+52.61	3,632,961.58	5,682,227.97	BIKE8N-2	18° 36′ 44.37″ LT	32° 44′ 25.6″	28.68′	56.85′	175.00′	2.33′
BIKE8N-3	Southwest Arterial	364+48.14	92.82′ LT	BIKE8N-3	8364+25.55	3,632,936.81	5,682,296.58	8364+51.77	3,632,927.91	5,682,321.24	8364+77.60	3,632,912.18	5,682,342.21	BIKE8N-3	17° 02′ 24.72″ RT	17° 02′ 24.7″	26.22′	52.05′	175.00′	1.95′
BIKE8N-4	Southwest Arterial	365+38.75	92.03′ LT	BIKE8N-4	8364+77.60	3,632,912.18	5,682,342.21	8365+35.45	3,632,877.45	5,682,388.48	8365+93.15	3,632,848.89	5,682,438.80	BIKE8N-4	7° 18′ 27.51″ LT	06° 19′ 26.8″	57.85′	115.55′	905.99′	1.85′
BIKE8N-5	Southwest Arterial	366+71.08	93.01′ LT	BIKE8N-5	8366+07.07	3,632,842.02	5,682,450.91	8366+55.30	3,632,818.21	5,682,492.85	8367+03.29	3,632,801.86	5,682,538.21	BIKE8N-5	9° 45′ 25.54″ LT	10° 08′ 27.0″	48.22′	96.22′	565.00′	2.05′
BIKE8N-6	Southwest Arterial	368+84.01	94.15′ LT	BIKE8N-6	8367+03.29	3,632,801.86	5,682,538.21	8368+47.71	3,632,752.88	5,682,674.08	8369+90.91	3,632,735.54	5,682,817.45	BIKE8N-6	12° 55′ 29.45″ LT	04° 29′ 37.6″	144.42′	287.62′	1,275.00′	8.15′
BIKE8N-7	Southwest Arterial	371+18.23	95.83′ LT	BIKE8N-7	8370+41.43	3,632,729.47	5,682,867.61	8370+57.98	3,632,727.48	5,682,884.04	8370+74.40	3,632,721.96	5,682,899.65	BIKE8N-7	12° 35′ 43.28″ RT	38° 11′ 49.9″	16.55′	32.97′	150.00′	0.91′
BIKE8N-8	Southwest Arterial	372+35.81	51.27′ LT	BIKE8N-8	8371+38.28	3,632,700.65	5,682,959.86	8371+75.45	3,632,688.24	5,682,994.90	8372+11.15	3,632,693.63	5,683,031.68	BIKE8N-8	27° 50′ 11.50″ LT	38° 11′ 49.9″	37.17′	72.88′	150.00′	4.54′
BIKE8N-9	Southwest Arterial	375+30.31	20.24′ LT	BIKE8N-9	8372+11.15	3,632,693.63	5,683,031.68	8374+58.59	3,632,729.54	5,683,276.50	8376+95.22	3,632,880.51	5,683,472.54	BIKE8N-9	29° 15′ 22.92″ LT	06° 02′ 37.9″	247.43′	484.07′	948.00′	31.76′
BIKE8004	Southwest Arterial	380+48.56	52.00′ LT	BIKE8004				8379+58.16	3,633,040.94	5,683,680.86										

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	G.7

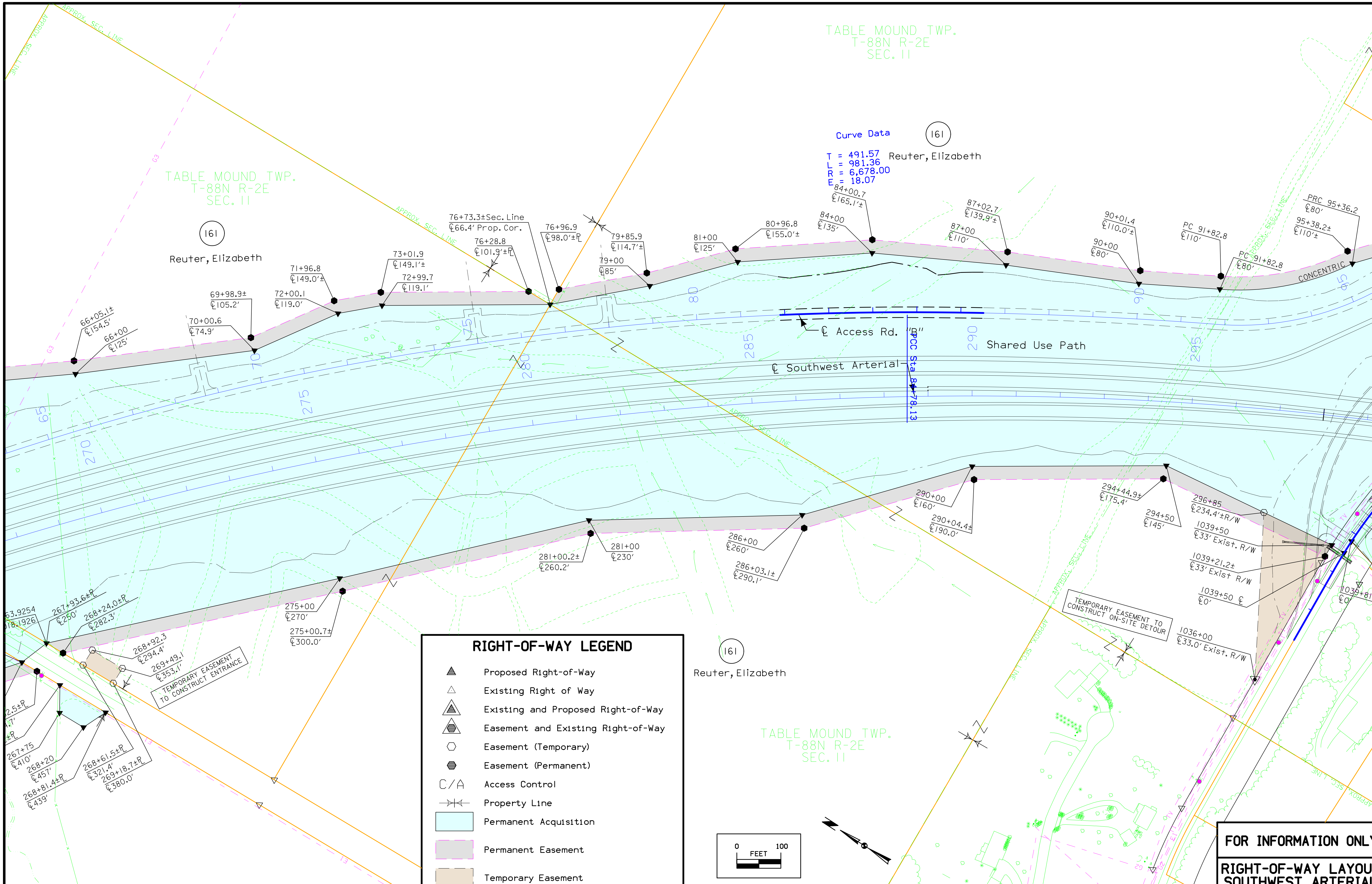


TABLE MOUND TWP.
T-88N R-2E
SEC. 11
APPROX. SEC. LINE
161
Reuter, Elizabeth
Curve Data
T = 491.57
L = 981.36
R = 6,678.00
E = 18.07
66+05.1±
℄154.5'
66+00
℄125'
69+98.9±
℄105.2'
70+00.6
℄74.9'
71+96.8
℄149.0'±
72+00.1
℄119.0'
73+01.9
℄149.1'±
72+99.7
℄119.1'
76+73.3±Sec. Line
℄66.4' Prop. Cor.
76+28.8
℄101.9'±PL
76+96.9
℄98.0'±PL
79+85.9
℄114.7'±
79+00
℄85'
81+00
℄125'
80+96.8
℄155.0'±
84+00
℄135'
84+00.7
℄165.1'±
87+02.7
℄139.9'±
87+00
℄110'
90+01.4
℄110.0'±
90+00
℄80'
PC 91+82.8
℄110'
PC 91+82.8
℄80'
PRC 95+36.2
℄80'
95+38.2±
℄110'±
CONCENTRIC
℄ Access Rd. "B"
PCC Sta 84+78.13
Shared Use Path
℄ Southwest Arterial
267+93.6±PL
℄250'
268+24.0±PL
℄282.3'
268+92.3
℄294.4'
269+49.1
℄353.1'
TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE
267+75
℄410'
268+20
℄457'
268+81.4±PL
℄439'
268+61.5±PL
℄321.4'
269+18.7±PL
℄380.0'
275+00
℄270'
275+00.7±
℄300.0'
281+00.2±
℄260.2'
281+00
℄230'
286+00
℄260'
286+03.1±
℄290.1'
290+00
℄160'
290+04.4±
℄190.0'
294+44.9±
℄175.4'
294+50
℄145'
296+85
℄234.4'±R/W
1039+50
℄33' Exist. R/W
1039+21.2±
℄33' Exist R/W
1039+50 ℄
℄0'
1039+81.5±
TEMPORARY EASEMENT TO CONSTRUCT ON-SITE DETOUR
1036+00
℄33.0' Exist. R/W
RIGHT-OF-WAY LEGEND
Proposed Right-of-Way
Existing Right of Way
Existing and Proposed Right-of-Way
Easement and Existing Right-of-Way
Easement (Temporary)
Easement (Permanent)
C/A Access Control
Property Line
Permanent Acquisition
Permanent Easement
Temporary Easement
0 FEET 100

FOR INFORMATION ONLY

RIGHT-OF-WAY LAYOUT SOUTHWEST ARTERIAL

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.1

9:28:11 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht

161
Reuter, Elizabeth
TEMPORARY EASEMENT TO CONSTRUCT ON-SITE DETOUR AND DRAINAGE IMPROVEMENTS
1051+00 ℄49.8'± Exist. R/W
98+50 ℄130'
1047+58.6± ℄42.6' Ex. R/W
96+96.1± ℄130'
98+50 ℄100'
1048+58.2±℄ ℄50' Exist. R/W
97+00 ℄100'
PRC 95+36.2 ℄80'
95+38.2± ℄110'±
1047+39.6± ℄0'
1048+00 ℄50'
℄ Access Rd. "B"
CONCENTRIC
300+90.5±℄ ℄254.7' Prop. Cor.
1046+54.8±℄ ℄50'
305+09.0±℄ ℄126.4' Prop. Cor.
307+00 ℄110'
PC 91+82.8 ℄80'
Farrey, Rodney S. & Janet M.
176
300
305
310
℄ Southwest Arterial
315
320
325
Shared Use Path
175
Troester, Dennis C. & Susan D.
℄ Military Road
FOR STATE OF IOWA
174
303+78.2±℄ ℄220' A/C
Lambert, David L. & Shirley A.
173
302+00 ℄265'
Lambert, Michael D. & Charles A.
FOR CITY OF DUBUQUE
303+63.5±℄ ℄308'
1039+85.9±℄ ℄65.90' A/C
300+97.0 436.9±℄
302+29.7 464.9±℄
303+31.2±℄ ℄494.2' Prop. Cor.
296+85 ℄234.4'±R/W
1039+50 ℄33' Exist. R/W
1039+21.2± ℄33' Exist R/W
1039+81.5±℄ ℄0'
1039+50 ℄ ℄0'
1036+00 ℄33.0' Exist. R/W
306+50 ℄163.2'
307+50 ℄160'
308+50 ℄270'
308+50 ℄210'
310+20 ℄230'
310+20 ℄270'
TEMPORARY EASEMENT TO SHAPE
172
Mt. Olivet Cemetery
TABLE MOUND TWP. T-88N R-2E SEC. 11
TEMPORARY EASEMENT TO SHAPE
313+00 ℄310'
314+80 ℄310'
312+00 ℄256'
314+80 ℄249.5'±℄
170
Simon, Connie F.
319+00 ℄165' (Future R/W)
FOR CITY OF DUBUQUE
FOR STATE OF IOWA
323+14.8± Sec. Line ℄427.2' Exist. ℄
324+00 ℄200' (Future R/W)
FOR CITY OF DUBUQUE
FOR STATE OF IOWA
312+50 ℄160'
314+25.6±℄ ℄165'
317+00 ℄160'
322+10.7± Sec. Line ℄160'
170
Simon, Connie F.
TABLE MOUND TWP. T-88N R-2E SEC. 11
APPROX. SEC. LINE
15' ACCESS EASMT.

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

0 100 FEET

FOR INFORMATION ONLY

RIGHT-OF-WAY LAYOUT SOUTHWEST ARTERIAL

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.2

9:28:14 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht

Timmerman, Stephen J.

323+14.8± Sec. Line ℄427.2′ Exist. ℄

330+07.0± ℄535.3′ Exist. Prop. Cor.

332+65.1± ℄489.3′ Exist. Prop. Cor.

341+18.9±℄ ℄721.0′ Prop. Cor.

℄ U.S. 61 Ramp "D"

FOR CITY OF DUBUQUE

324+00 ℄200′ (Future R/W)

170 Simon, Connie F.

FOR STATE OF IOWA

327+00 ℄185′ (Future R/W)

329+83.7±℄ ℄195′ (Future R/W)

188A Herbst, Dean E. & Nancy H.

195A O'Rourke Farms, L.L.C.

TABLE MOUND TWP. T-88N R-2E SEC. 14

TABLE MOUND TWP. T-88N R-2E SEC. 13

332+50 ℄185′ (Future R/W)

333+60 ℄160′ (Future R/W)

℄ U.S. 61 Ramp "A"

℄ U.S. 61 Loop "B"

℄ U.S. 61 Loop "C"

337+23.7±℄ ℄166.7′ Prop. Cor.

℄ Southwest Arterial

339+00 ℄160′

343+00 ℄220′

FOR CITY OF DUBUQUE

FOR STATE OF IOWA

326+87.6±℄ ℄185′

328+00 ℄270′

329+00 ℄220′

331+00 ℄220′

332+00 ℄195′

332+00 ℄270′

334+00 ℄275′

336+00 ℄275′

338+85.9±℄ ℄180′

339+42.9±℄ ℄312.0′

TEMPORARY EASEMENT TO SHAPE

169 River City Development Group LLC

DUBUQUE CO. TABLE MOUND TWP. T-88N R-2E SEC. 14

Shared Use Path

CONCENTRIC

340+00 ℄185′ A/C

344+00 ℄185′ A/C

FOR STATE OF IOWA

FOR CITY OF DUBUQUE

338+85.9±℄ ℄180′ A/C

347+25 ℄180′ A/C

352+18.4±℄ ℄336.48′ A/C

Simon Connie F. 170

Simon, Connie F. 170

TABLE MOUND TWP. T-88N R-2E SEC. 14

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

0 100 FEET

FOR INFORMATION ONLY

RIGHT-OF-WAY LAYOUT SOUTHWEST ARTERIAL

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.3

9:28:17 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht

FOR INFORMATION ONLY

RIGHT-OF-WAY LAYOUT SOUTHWEST ARTERIAL

187
Luckstead, Jon

℄ U.S. 61
Loop "B"

℄ U.S. 61
Ramp "D"

353+18.4±℄
℄336.48
A/C

355

16.5' UTILITY ESMT. (TEL)

FOR STATE OF IOWA

FOR CITY OF DUBUQUE

195A
O'Rourke Farms, L.L.C.

357+00
℄200'
A/C

194
Tracy, WM D & Betty J-75%
& Tracy, WM Craig & Kay J-25%

PE FOR CENTURYLINK 16.5' 20.0'

PE FOR WATER/FO

APPROX. SEC. LINE

195B
O'Rourke Farms, L.L.C.

PERMANENT EASEMENT FOR UTILITY

359+70
℄165'

360

℄ U.S. 61
Connector Road "B"

362+85
℄110'

Access Control Limit
Sta. 364+29.44

365

366+58.6±
1/4 Sec. Line
℄165'

TEMPORARY EASEMENT TO REMOVE SLAB

367+80
℄200'

368+80
℄200'

Shared Use Path

℄ Southwest Arterial

365+50
℄175'

370

371+00
℄140'

372+50
℄140'

TEMPORARY EASEMENT TO SHAPE

374+50
℄180'

375+50
℄180'

376+20
℄210'

378+00
℄200'

379+00
℄200'

380+15.0±℄
℄150'

375

380

380+48.0±℄
℄150'

380+48.6±℄
℄170'

STA. 380+48.29
SOUTHWEST ARTERIAL
STA.44+52.77
OLDE DAVENPORT RD.

OLDE DAVENPORT ROAD

368+47.3±
1/4 Sec. Line
℄295'

370+00
℄320'

371+00
℄275'

373+00
℄185'

374+50
℄175'

375+00
℄125'

377+50
℄180'

380+15.6±℄
℄170'

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

195A
O'Rourke Farms, L.L.C.

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

0 100 FEET

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.4

9:28:20 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement (Permanent)
- C/A Access Control
- Property Line
- Permanent Acquisition
- Permanent Easement
- Temporary Easement

TABLE MOUND TWP.
T-88N R-2E
SEC. 14

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

River City Development Group LLC

Simon, Connie F.

Luckstead, Jon

Luckstead, Jon D.

Tracy, WM D & Betty J-75%
& Tracy, WM Craig & Kay J-25%

O'Rourke Farms, L.L.C.

US-61 Connector Road "A"

US 61 Connector Road "B"

Riverwood Drive

Prospective sale 2.2 acres to Walgreen Co.

FOR CITY OF DUBUQUE

FOR STATE OF IOWA

16.5' UTILITY ESMT. (TEL)

16.5' PE FOR CENTURYLINK 20.0'

TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

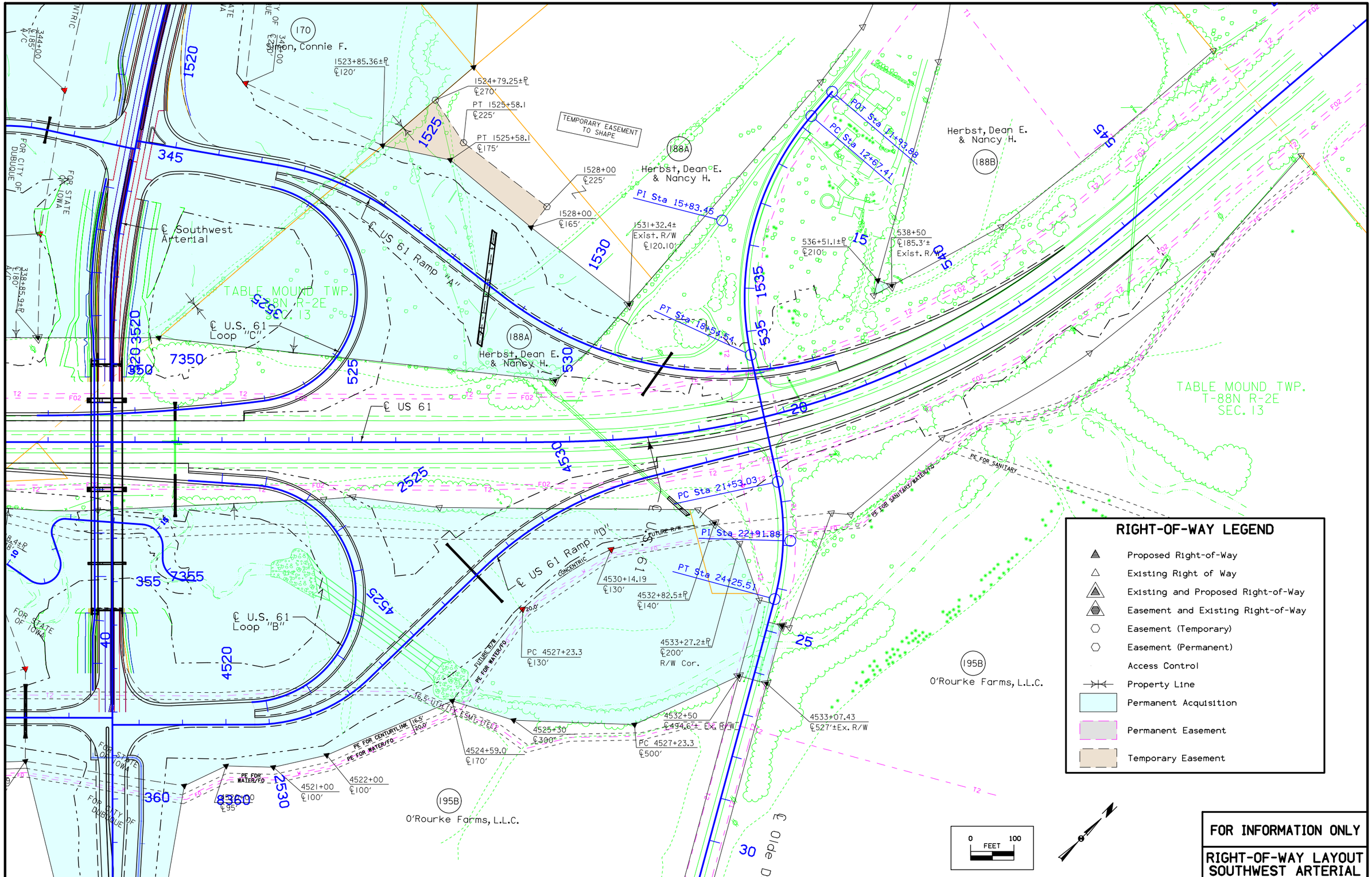
0 FEET 100

FOR INFORMATION ONLY

RIGHT-OF-WAY LAYOUT SOUTHWEST ARTERIAL

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.5

9:28:23 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht



ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	H.6

9:28:26 AM 11/30/2016 Drostej P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_H01.sht

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic control on this project shall be in accordance with Standard Road Plans listed on Tab 105-4.

US 151 / 61
- Maintain two lanes of traffic, both northbound and southbound, at all times during construction.

- An equipment crossing is not to be used to cross US 151/61. However, the Contractor may use legal load vehicles to transport material on US 151/61, using existing intersections/access points to enter the highway. Direct crossing of US 151 / 61 is not allowed at Key West Drive / Olde Davenport Road and at driveways and field entrances. The Contractor is not to utilize E. Tamarack Drive. U-Turns are not allowed at Tamarack Drive, Lake Eleanor Road and at driveways and field entrances.

- Construction shall not include the removal of the existing shoulder. See TC-402 for traffic control.

Key West Drive, Olde Davenport Road, Elmwood Road and Tamarack Business Park roads shall remain open at all times. The Contractor is responsible for any damage occuring due to hauling on roadways. See TC-1, TC-202 and TC-272 for traffic control.

108-26A
08-01-08

STAGING NOTES

Stage 1 Construction:
The construction of the wetland mitigation site shall be constructed as a first priority. This includes grading, wetland seeding and planting of trees.

There are not specific construction staging requirements for this project other than the staged construction described above. There are, however, some features of this project which may require special sequencing of operations. These features include:

1. Access to Parcel 194 across Connector Road "B" utilizing the entrance at Sta. 25+00 left and the entrance at Sta. 29+00 right. 24' wide, 6" thick granualr surfacing shall be placed for access across Connector Road "B".

2. Construction of Military Road will be occuring during the construction of this project ans is shown on J.2 and described as Site 00. Site 00 will not be available until the Military Road Bridge is open to traffic and the Military Road project has finished grading, pavement removal, topsoiling and seeding. The approximate availability date is April 1, 2018.

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
Military Road	Pave, Grade and Bridge
HDP-2100(664)--71-31	
Southwest Arterial Bridge	Bridge
Over US 151/61	
NHSX-032-1(40)--3H-31	
Elmwood Drive Bridge	Bridge
Over Granger Creek	
NHSX-032-1(41)--3H-31	

SITE 00 IS THE CONSTRUCTION SITE OF THE MILITARY ROAD PROJECT, HDP-2100(664)--71-31. SITE WILL NOT BE AVAILABLE UNTIL MILITARY ROAD BRIDGE IS OPEN TO TRAFFIC AND THE MILITARY ROAD PROJECT HAS FINISHED THEIR GRADING, PAVEMENT REMOVAL, TOPSOILING AND SEEDING.

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

Curve Data
T = 491.57
L = 981.36
R = 6,678.00
E = 18.07

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

CULT.FIELD
CULT. FIELD
CONCENTRIC
Access Rd. "B"
Shared Use Path
POC Sta 84+78.13
290
295
300
305
310
315
CULT. FIELD
CULT.FIELD
SEPTIC SYSTEM DRAINAGE BED
SHED
CUL END
BIT.
RES.ENT
HO. CONC.
RET. WALL
CULT. FIELD
CULT.FIELD
SITE 00
GAR.
RESENT
STOCK PILES
SHED
MILITARY RD
HO.
CUL END
BIT.
CONC.
RES. ENT.
0 FEET 100

SITE 00

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	J.2

11:38:37 AM11/23/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_J02.sht

℄ US 61 Connector Road "A"

Curve Data
Δ = 23° 59' 39.67" (RT)
L = 95.63
T = 188.45
R = 450.00
E = 10.05

℄ Southwest Arterial

℄ US 61
Loop "C"

℄ US 61 Ramp "A"

℄ US 61

℄ US 61
Loop "B"

℄ US 61 Connector Road "B"

℄ US 61 Ramp "D"

℄ Olde Davenport Road

PC Sta 25+49.01
PI Sta 26+44.64
PT Sta 27+37.46
POT Sta 29+44.05
POT Sta 1519+08.66
PC Sta 1522+38.78
PI Sta 1524+01.64
PT Sta 1525+58.12
PC Sta 1528+46.71
PI Sta 1532+51.17
PC Sta 1536+00.00
PI Sta 1536+24.40
PT Sta 1536+48.79
PI Sta 3537+38.39
PC Sta 3517+75.00
PI Sta 3520+35.36
PT Sta 3523+23.00
PI Sta 3522+48.98
Point "F"
PCC Sta 3522+95.00
PT Sta 3529+94.64
PI Sta 515+25.44
Begin Taper
POT Sta 40+00.00
PC Sta 4517+38.72
US 61 Ramp D=
POT Sta 358+29.45
Southwest Arterial
PC Sta 4522+75.00
Point "G"
PI Sta 4523+56.98
PI Sta 4522+19.21
PC Sta 4520+66.41
POT Sta 4517+38.72
PI Sta 4529+44.07
PT Sta 4531+55.00
PC Sta 4527+23.25
PI Sta 4534+25.00
Point "G"

CURVE 20102
CURVE 20202
CURVE 20103
CURVE 20104
CURVE 20303
Curve 20403
Curve 20402

20 25 345 1520 1525 1530 1535 540 515 3520 3525 525 530 2525 4530 355 40 4520 35 360 8360 2530

0 FEET 100

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	K.1

For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.15.
For RCB Situation Plan, Precast option, Refer to Sheet V.18.
Note: CIP option shown on this sheet.

For Loop "C" Details
Refer to Sheet No. K.4

PI Sta 1519+08.66
US 61 Ramp A=
POT Sta 344+83.26
Southwest Arterial

POT Sta 1519+08.66

Begin Grading
Sta. 1519+44.67

PC Sta 1522+38.78

PI Sta 1524+01.64

PT Sta 1524+58.12

Sta. 1528+00.00
U.S. 61 Ramp "A"
Install 10' x 8' RCB
Skew = 30°Rt. Ahd.
F.L. = Lt. 709.99
Rt. 706.17

PC Sta 1528+46.71

CURVE 20102

℄ US 61 Connector
Road "A"

℄ Southwest
Arterial

℄ US 61 Loop "C"

℄ US 61 Ramp "A"

CURVE 20103

PT Sta 1532+51.17

℄ US 61

℄ US 61 Ramp "D"

For Mainline Details
Refer to D-Sheets

PC Sta 1536+24.40

PI Sta 1536+48.79

PT Sta 1536+73.00

15:1 Taper

CURVE 20104

End Grading
Sta. 542+59.93
US-61/151

Modified PV-410 Taper
See Sheet U.9 For Details

Sta. 1532+50.00
U.S. 61 Ramp "A"
Skew 25° L.A.
Install 114'-24" 2000D
F.L. = Lt. 718.87
Rt. 716.59

Resume Grading
Sta. 1535+50.00

Stop Grading
Sta. 1533+00.00

Curve 61RAMP-A-20101
Δ= 27°43'19.93" (RT)
T= 162.86
L= 319.34
R= 660.00
E= 19.80

Curve 61RAMP-A-20102
Δ= 51°41'19.98" (LT)
T= 404.45
L= 753.29
R= 835.00
E= 92.80

Curve 61RAMP-A-20103
Δ= 1°31'44.84" (LT)
T= 24.40
L= 48.79
R= 1,828.13
E= 0.16

N

0 FEET 100

U.S.-61 RAMP "A"

BEGIN PROFILE
Sta. 1519+44.67
762.30

VPI +20.000
Elv 760.80
L=103.09

-1.985%

-3.000%

Existing Ground at ℄ US 61 Ramp "A"

Proposed Profile Grade

+00
748.62

Ditch Grade Lt. -14.1%

+65
711.13

-0.57%

+33
710.18

Ditch Grade Lt. -4.1%

+10
717.45

2.02% Ditch Grade Lt.

+50
722.29

-5.08%

+50
717.21

VPI +25.000
Elv 721.65
K = 138
Len 500.00 ft

Stop Grading
Sta. 1533+00.00

-3.000%

+0.617%

0.33% Ditch Grade Lt.

+35
718.14

END PROFILE
Sta. 1536+23.00
Elev. 723.65

Resume Grading
Sta. 1535+50.00

770 760 750 740 730 720 710

Lt Med Rt

762.19 761.69 761.15 760.55 759.88 759.15 758.40 757.65 756.90 756.15 755.40 754.65 753.90 753.15 752.40 751.65 750.90 750.15 749.40 748.65 747.90 747.15 746.40 745.65 744.90 744.15 743.40 742.65 741.90 741.15 740.40 739.65 738.90 738.15 737.40 736.65 735.90 735.15 734.40 733.65 732.90 732.15 731.40 730.65 729.90 729.15 728.42 727.74 727.11 726.51 725.97 725.47 725.01 724.60 724.23 723.91 723.64 723.41 723.22 723.08 722.99 722.94 722.94 722.98 723.06 723.19 723.35 723.50

1520 1525 1530 1535

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	K.2

7:43:46 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_K01.sht

℄ US 61

For Ramp "D" Details
Refer to Sheet K.5

POT Sta 2522+75.00

15:1 Taper

2525

Begin Grading
Sta. 515+25.44
US-61/151

PI Sta 515+25.44
Begin Taper

10

PV-412 Taper

Granger Creek

PC Sta. 2522+75.00
Point M#

℄ US 61 Loop "B"

Curve 2020Z

℄ US 61 Ramp "D"

End Grading
Sta. 2530+32.27

Curve 61LOOP-B-20202
Δ= 173°33'11.29" (RT)
T= 1,439.01
L= 757.27
R= 250.00
E= 4,196.04

Granger Creek

℄ US 61 Connector Road "B"

℄ Olde Davenport Road

2530

0 FEET 100

U.S.-61 LOOP "B"

For Connector Road "B" Details
Refer to Sheet E.3

760 750 740 730 720 710 700 Lt Med Rt

BEGIN PROFILE
Sta. 2522+23.00
Elev. 725.15

Extend Profile to
Tie to Gore
(PV-412)

Proposed Profile Grade

END PROFILE
Sta. 2530+32.27
Elev. 734.34

Ramp D/Loop B
Gore Area

Existing Ground at
℄ US 61 Loop "B"

-0.258%

+3.378%

Existing Triple
12'x12' RCB

Granger Creek

VPI +15.000
Elv 723.62
Len 520.00 ft
K = 143

Preliminary backfill for RCB
El. 711.42, Q_{50}

725.14 725.08 725.02 724.95 724.89 724.82 724.76 724.69 724.63 724.56 724.50 724.44 724.37 724.31 724.26 724.25 724.28 724.36 724.49 724.65 724.86 725.12 725.42 725.76 726.15 726.57 727.05 727.56 728.12 728.73 729.38 730.07 730.80 731.58 732.41 733.25 734.09

2525 2530 2535

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	K.3

7:43:47 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_K01.sht

For Connector Road "A" Details
Refer to Sheet E.2

0 FEET 100

Curve 61L00P-C-20302
Δ= 17°26'54.17" (LT)
T= 260.36
L= 520.00
R= 4,000.00
E= 8.46

Curve 61L00P-C-20303
Δ= 160°20'50.60" (LT)
T= 1,443.39
L= 699.65
R= 250.00
E= 1,214.88

℄ US 61 Connector Rd. "A"

℄ Southwest Arterial

℄ Southwest Arterial

End Grading
Sta. 3529+94.64

℄ US 61 Ramp "A"

℄ US 61 Loop "C"

PC Sta 3517+75.00

PI Sta 3520+36.36

PI Sta 3522+48.98

Point of PCC Sta 3522+95.00

PT Sta 3529+94.64

CURVE 20302

CURVE 20303

3520

3525

Begin Grading
Sta. 510+85.37
US-61/151

PV-414 Taper

25:1 Taper

℄ US 61

U.S.-61 LOOP "C"

Existing Ground at ℄ US 61 Loop "C"

BEGIN PROFILE
Sta. 3522+48.98
Elev. 724.84

END PROFILE
Sta. 3529+94.65
Elev. 752.90

VPI +00.000
Elv 750.06
Len 100.00 ft
K = 60

VPI +50.000
Elv 724.41
Len 200.00 ft
K = 39

-0.423%

+4.664%

+3.000%

+6.119%

+49 Lt.
722.30

+0.50% Lt.
Ditch Grade

+60 Lt.
722.86

+40
742.34

+00
752.13

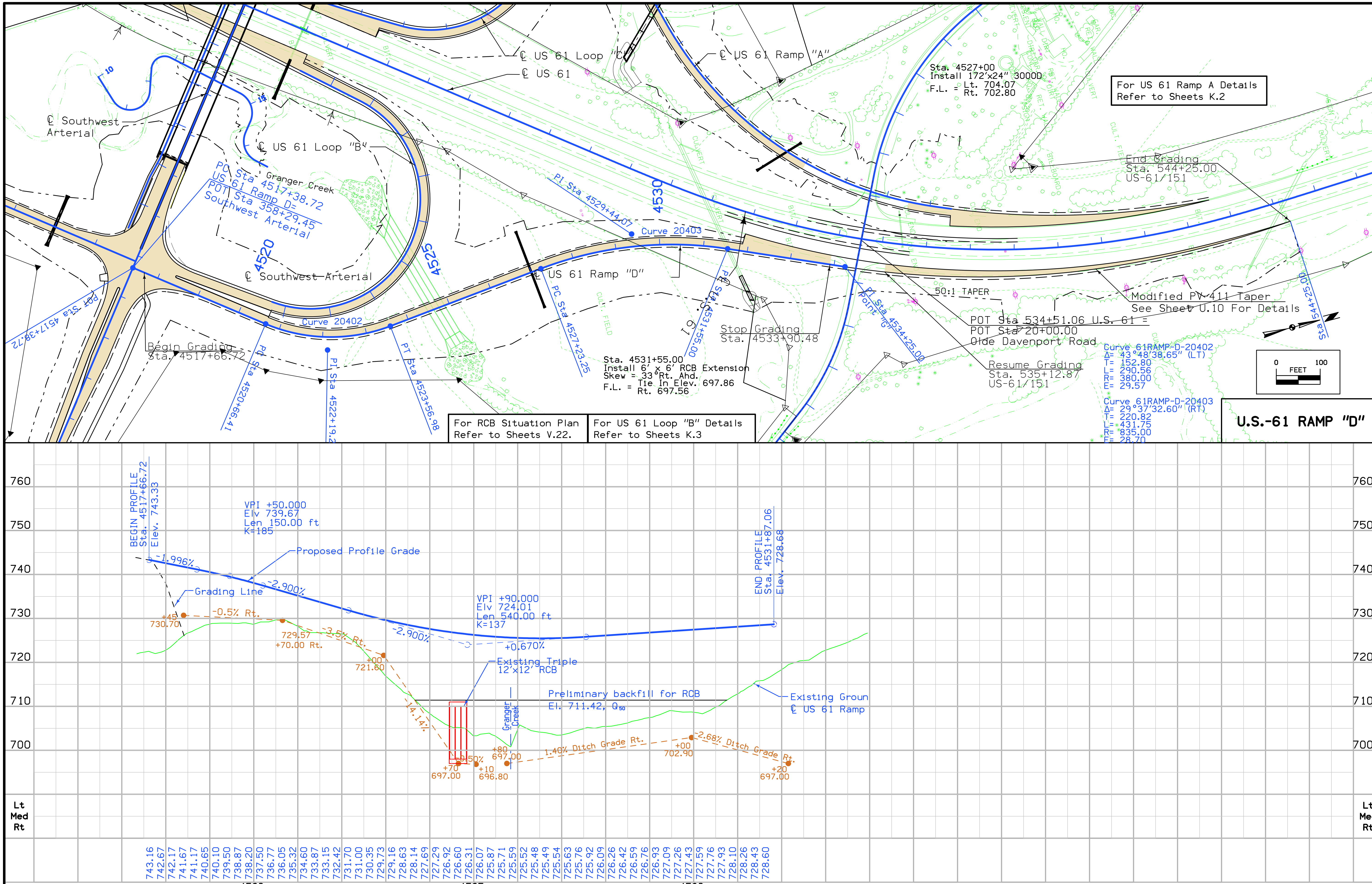
Proposed Profile Grade

Lt Med Rt	724.83	724.81	724.94	725.23	725.68	726.29	727.06	727.99	729.07	730.24	731.41	732.57	733.74	734.90	736.07	737.24	738.40	739.57	740.73	741.90	743.07	744.23	745.40	746.56	747.73	748.84	749.85	750.76	751.56	752.31	Lt Med Rt
770																															770
760																															760
750																															750
740																															740
730																															730
720																															720
710																															710

3520 3525 3530

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	K.4

7:43:49 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_K01.sht


℄ US 61 Loop "C"
℄ US 61
℄ US 61 Ramp "A"
Sta. 4527+00
Install 172'x24" 3000D
F.L. = Lt. 704.07
Rt. 702.80
For US 61 Ramp A Details
Refer to Sheets K.2
℄ Southwest Arterial
℄ US 61 Loop "B"
Granger Creek
PC Sta 4517+38.72
US 61 Ramp D=
POT Sta 358+29.45
Southwest Arterial
PI Sta 4529+44.07
4530
4520
4525
Curve 20403
Curve 20402
End Grading
Sta. 544+25.00
US-61/151
℄ US 61 Ramp "D"
℄ Southwest Arterial
POT Sta 4517+38.72
Begin Grading
Sta. 4517+66.72
PC Sta 4520+66.41
PI Sta 4522+19.2
PT Sta 4523+56.98
PC Sta 4527+23.25
PT Sta 4531+55.00
℄ U.S. 61
Stop Grading
Sta. 4533+90.48
PI Sta 4534+25.00
Point "G"
50:1 TAPER
Modified PV-411 Taper
See Sheet U.10 For Details
POT Sta 534+51.06 U.S. 61 =
POT Sta 20+00.00
Olde Davenport Road
Resume Grading
Sta. 535+12.87
US-61/151
Sta. 4531+55.00
Install 6' x 6' RCB Extension
Skew = 33°Rt. Ahd.
F.L. = Tie In Elev. 697.86
Rt. 697.56
Sta 544+25.00
Curve 61RAMP-D-20402
Δ= 43°48'38.65" (LT)
T= 152.80
L= 290.56
R= 380.00
E= 29.57
Curve 61RAMP-D-20403
Δ= 29°37'32.60" (RT)
T= 220.82
L= 431.75
R= 835.00
E= 28.70
0 FEET 100
For RCB Situation Plan
Refer to Sheets V.22.
For US 61 Loop "B" Details
Refer to Sheets K.3
U.S.-61 RAMP "D"
760
750
740
730
720
710
700
BEGIN PROFILE
Sta. 4517+66.72
Elev. 743.33
VPI +50.000
Elv 739.67
Len 150.00 ft
K=185
Proposed Profile Grade
-1.996%
-2.900%
Grading Line
+45
730.70
-0.5% Rt.
729.57
+70.00 Rt.
-3.5% Rt.
+00
721.60
-2.900%
VPI +90.000
Elv 724.01
Len 540.00 ft
K=137
+0.670%
Existing Triple
12'x12' RCB
-14.14%
Granger Creek
Preliminary backfill for RCB
El. 711.42, Q50
-0.50%
+70
697.00
+10
696.80
+80
697.00
1.40% Ditch Grade Rt.
+00
702.90
-2.68% Ditch Grade Rt.
+20
697.00
END PROFILE
Sta. 4531+87.06
Elev. 728.68
Existing Groun
℄ US 61 Ramp
Lt
Med
Rt
743.16 742.67 742.17 741.67 741.17 740.65 740.10 739.50 738.87 738.20 737.50 736.77 736.05 735.32 734.60 733.87 733.15 732.42 731.70 731.00 730.35 729.73 729.16 728.63 728.14 727.69 727.29 726.92 726.60 726.31 726.07 725.87 725.71 725.59 725.52 725.48 725.49 725.54 725.63 725.76 725.92 726.09 726.26 726.42 726.59 726.76 726.93 727.09 727.26 727.43 727.59 727.76 727.93 728.10 728.26 728.43 728.60
4520
4525
4530

ENGLISH | IOWA DOT | DESIGN TEAM | AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER K.5

7:43:51 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_K01.sht

343

Curve 61CRDA_RET_2-1

61CRDA_RET_2

Radius Point
Curve 61CRDA_RET_2-2
343+85.44 126.91 LT

Sta. 343+90.98 36.00 RT
= Sta. 30+00.00 61CRDA_RET_3

Radius Point
Curve 61CRDA_RET_3-1
343+90.70 136.00 RT

Curve 61CRDA_RET_3-1

36'

Radius Point
Curve 61CRDA_RET_3-2
343+95.73 116.68 RT

344

Sta. 344+02.74 48.73 LT
= Sta. 21+20.86 61CRDA_RET_3

61CRDA_RET_3

Sta. 28+43.87 26.76 LT 61CONRDA
= Sta. 31+13.15 61CRDA_RET_3

Radius Point
344+49.10
30.50 LT

Curve 61CRDA_RET_2-2

Sta. 1520+20.53 16.55 LT 61RAMP-A
= Sta. 22+14.03 61CRDA_RET_3

1520

1521

1522

1523

Sta. 27+37.46 14.00 LT 61CONRDA
= Sta. 32+20.58 61CRDA_RET_3

Radius Point
344+53.13 5.50 LT

Sta. 1520+59.01 12.00 LT 61RAMP-A
= Sta. 22+52.84 61CRDA_RET_3

28

29

Curve 61CRDA_RET_3-2

Curve 61CRDA_RET_2-3

Radius Point
344+77.47 62.12 LT

Curve 61CRDA_RET_3-3

12'

14'

Radius Point
344+78.13 30.50 LT

14'

345

45.92'

POT 345+02.79 Southwest Arterial
= Sta. 29+44.05 Connector Road "A"

POT 344+83.26 Southwest Arterial
= Sta. 1519+08.66 Ramp "A"

Curve 61CRDA_RET_4-1

Curve 61CRDA_RET_4-2

Begin Taper
27+37.46 14.00 RT
61CONRDA

132.40 ft 23:1 Taper

Curve 61CRDA_RET_1-1

Radius Point
345+30.59 5.50 RT

End Taper
1521+00.78 45.92 RT 61RAMP-A

Sta. 28+09.76 14.00 RT 61CONRDA
= Sta. 40+00.00 61CRDA_RET_4

Sta. 1520+03.08 55.45 RT 61RAMP-A
= Sta. 10+98.48 61CRDA_RET_1

Curve 61CRDA_RET_1-2

Sta. 28+39.87 17.84 RT 61CONRDA
= Sta. 40+30.44 61CRDA_RET_4

Sta. 345+82.01 47.50 RT
= Sta. 41+20.72 61CRDA_RET_4

Sta. 1522+33.05 51.68 RT 61RAMP-A
= Sta. 3529+94.64 61LOOP-C

61CRDA_RET_4

61CRDA_RET_1

Radius Point
Curve 61CRDA_RET_4-2
345+95.21 126.40 RT

346

Sta. 346+14.00 36.00 LT
= Sta. 12+03.38 61CRDA_RET_1

Curve 61CRDA_RET_4-3

Radius Point
Curve 61CRDA_RET_1-2
346+14.08 116.00 LT

Radius Point
Curve 61CRDA_RET_4-1
346+33.69 137.32 RT

0 20
FEET

347

GEOMETRIC DETAILS
Intersection of Southwest Arterial,
Ramp 'A' and Loop 'C'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.1

7:50:05 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht

0 FEET 20

343

+42.91
763.78

Sta. 20+60.43 61CRDA_RET_2
= Sta. 343+42.48 39.19 LT
762.82

2.5% 14.0′ | 2.0% 12.0′ | 1.5% 12.0 | 2.0% 12.0′ | 2.7% 14.0′

+90.98

61CRDA_RET_3

61CRDA_RET_2

+90.77
763.57

762.83

762.38

344

Sta. 21+67.45 61CRDA_RET_1
= Sta. 344+42.98 70.88 LT
761.59

Sta. 30+69.51 61CRDA_RET_3
= Sta. 344+53.51 61.48 RT
761.32

762.46

759.39

760.33

1520 1521 1522 1523

754.72

+38.78
754.24

+40.78
757.18

Sta. 31+66.87 61CRDA_RET_3
= Sta. 344+82.10 152.57 RT
761.43

762.71

+45.64
762.18

28

760.75

+08.10
762.194

29

+83.26
762.96

+00.00
761.15

Uniform Tansition | Constant 2% Slope | Uniform Tansition

Uni. Tans.

Uniform Transition | Constant 2% Slope | Uniform Transition

+59.01
759.63

Future Raised Median

345

+45.43
762.20

+45.03
762.07

+44.90
762.142

+44.44
761.89

+18.38
762.89

+18.37
761.26

761.11

760.97

+58.06
761.38

+08.84
761.96

+02.79
762.68

757.67

752.02

759.95

Sta. 40+75.58 61CRDA_RET_4
= Sta. 345+42.52 65.80 RT
760.75

760.55

61CRDA_RET_4

61CRDA_RET_1

Sta. 10+49.24 61CRDA_RET_1
= Sta. 345+27.54 143.88 LT
758.96

+14.08
761.67

346

4.0% 14.0′ | 2.0% 12.0′ | 4.5% 12.0′ | 2.0% 12.0′

+41.41
761.34

Sta. 11+50.97 61CRDA_RET_1
= Sta. 345+65.28 52.61 LT
761.21

761.00

2.5% 14.0′

760.61

Sta. 41+80.79 61CRDA_RET_4
= Sta. 346+39.34 39.24 RT
760.29

Uniform Transition | Constant 2% Slope | Constant 1.5% Slope | Constant 2% Slope | Constant 2.5% Slope

347

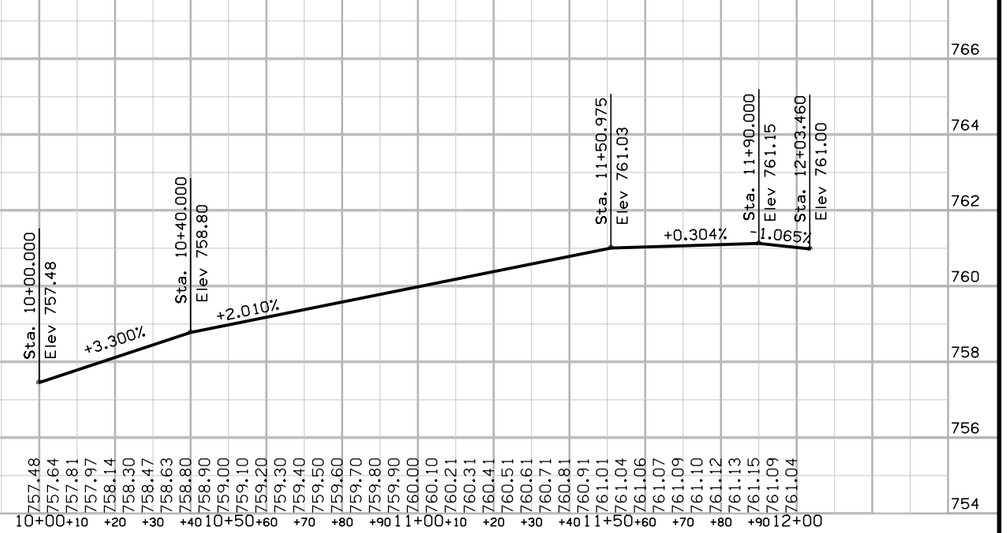
STAKING DETAILS
Intersection of Southwest Arterial,
Ramp 'A' and Loop 'C'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER L.2

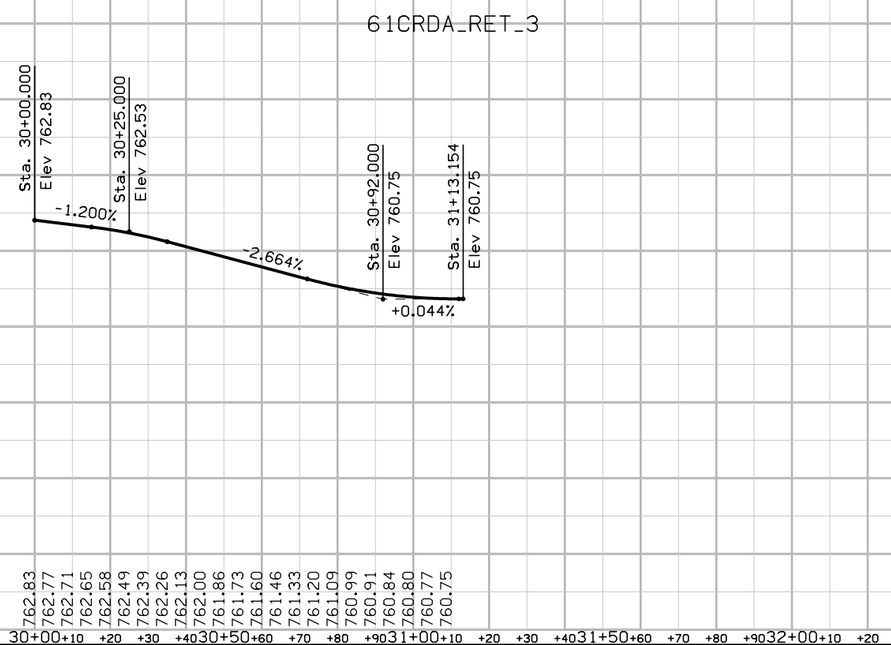
7:50:06 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht

61CRDA_RET_2

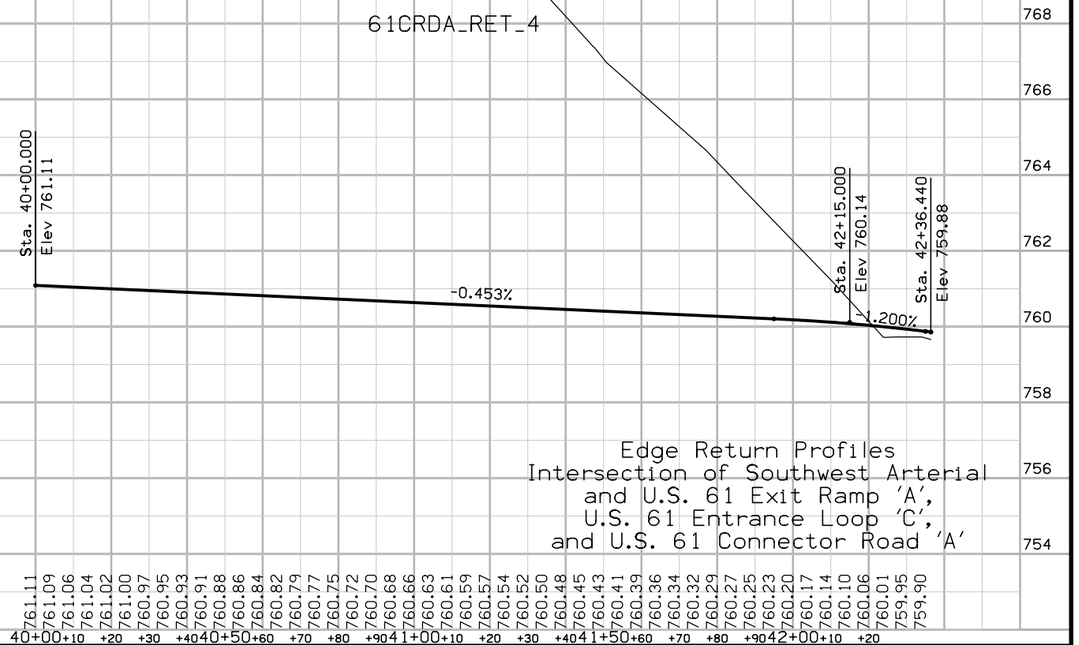
61CRDA_RET_1



61CRDA_RET_3



61CRDA_RET_4



Edge Return Profiles
Intersection of Southwest Arterial
and U.S. 61 Exit Ramp 'A',
U.S. 61 Entrance Loop 'C',
and U.S. 61 Connector Road 'A'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.3

18′

Sta. 356+26.32 18.00 LT
= Sta. 20+00.00 61CRDB_RET_2

Curve 61CRDB_RET_2-1

Sta. 357+10.82 30.00 RT
= Sta. 30+00.00 61CRDB_RET_3

357

Radius Point
Curve 61CRDB_RET_2-2
357+04.45 107.68 LT

30′

Radius Point
Curve 61CRDB_RET_3-1
357+10.82 110.00 RT

61CRDB_RET_2

61CRDB_RET_3

Sta. 357+23.98 30.11 LT
= Sta. 20+98.66 61CRDB_RET_2

Curve 61CRDB_RET_3-1

Sta. 39+02.77 23.30 LT 61CONRDB
= Sta. 31+12.75 61CRDB_RET_3

Curve 61CRDB_RET_2-2

Sta. 4518+33.29 46.08 LT 61RAMP-D
= Sta. 21+91.42 61CRDB_RET_2

Sta. 38+46.99 14.00 LT
61CONRDB
= Sta. 31+69.30
61CRDB_RET_3

39

Radius Point
357+81.42 0.00 RT

Sta. 4518+74.86 43.57 LT 61RAMP-D
= Sta. 22+33.14 61CRDB_RET_2

Curve 61CRDB_RET_2-3

4518

4519

185.47 ft 23:1 Taper

4520

4521

2530

56.55 ft 6:1 Taper

POT 358+29.45 Southwest Arterial
= Sta. 40+00.00 Connector Road "B"

358

14′

43.57′

14′

POT 358+29.45 Southwest Arterial
= Sta. 4517+38.72 Ramp "D"

Curve 61CRDB_RET_4-1

Radius Point
358+37.40 11.50 RT

Curve 61CRDB_RET_1-1

Sta. 38+77.51 14.00 RT
61CONRDB
= Sta. 40+00.00
61CRDB_RET_4

Sta. 4519+28.58 0.00 RT 61RAMP-D
= Sta. 10+00.00 61CRDB_RET_1

Curve 61CRDB_RET_1-2

Sta. 4518+27.38 14.95 RT 61RAMP-D
= Sta. 11+02.66 61CRDB_RET_1

Sta. 39+06.62 17.92 RT 61CONRDB
= Sta. 40+29.46 61CRDB_RET_4

Curve 61CRDB_RET_4-2

61CRDB_RET_4

61CRDB_RET_1

Sta. 359+01.02 34.33 LT
= Sta. 11+84.69 61CRDB_RET_1

Sta. 358+85.45 38.17 RT
= Sta. 41+10.46 61CRDB_RET_4

Curve 61CRDB_RET_4-3

359

Curve 61CRDB_RET_1-3

Radius Point
Curve 61CRDB_RET_4-2
359+10.43 122.85 RT

Radius Point
Curve 61CRDB_RET_1-2
359+20.98 111.80 LT

Radius Point
Curve 61CRDB_RET_4-1
359+36.98 122.95 RT

30′

28′

Sta. 359+42.03 30.00 RT
= Sta. 41+67.82 61CRDB_RET_4

Sta. 359+50.92 28.00 LT
= Sta. 12+35.12 61CRDB_RET_1

Radius Point
Curve 61CRDB_RET_1-3
359+50.92 228.00 LT

0 FEET 20

360

GEOMETRIC DETAILS
Intersection of Southwest Arterial,
Loop 'B' and Ramp 'D'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER L.4

7:50:08 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht

61CRDB_RET_3

61CRDB_RET_2

61CRDB_RET_4

61CRDB_RET_1

Sta. 30+56.37 61CRDB_RET_3
= Sta. 357+62.65 49.05 RT
742.09

Sta. 21+45.04 61CRDB_RET_2
= Sta. 357+63.29 53.48 LT
742.00

Sta. 40+69.96 61CRDB_RET_4
= Sta. 358+51.08 58.77 RT
742.35

Sta. 11+43.68 61CRDB_RET_1
= Sta. 358+65.59 54.07 LT
742.00

+26.32 743.95
+10.82 743.64
+61.78 743.02
+62.34 743.16
+62.48 743.21
+62.97 743.37
+29.45 743.87
+69.95 743.22
+13.44 743.70
+70.05 743.50
+38.47 740.84
+08.84 761.96
+42.03 745.77
+50.92 745.97

742.74 742.59 742.60 741.54 741.18 733.25 741.90 740.83 741.57 742.22 744.09 744.75 744.33 745.43 745.43 741.84 741.11 740.33 736.92 743.13 744.09

Constant 2.5% Slope
Constant 2% Slope
Constant 2% Slope
Constant 2.5% Slope
Constant 1.5% Slope
Constant 2% Slope
Constant 2.0% Slope

Uniform Transition
Future Raised Median

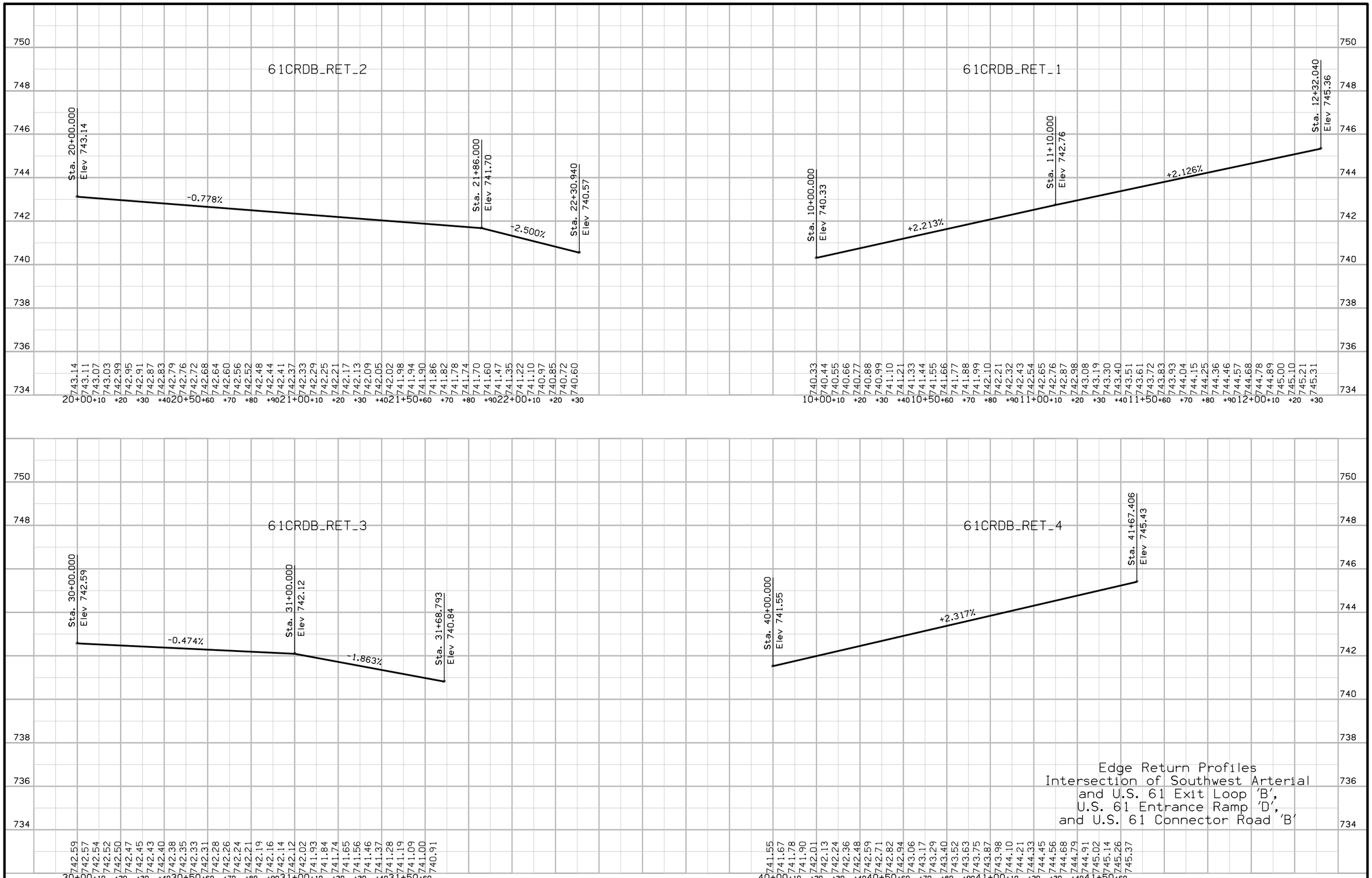
39 357 358 359 360 4518 4519 4520 4521 2530

0 FEET 20

STAKING DETAILS
Intersection of Southwest Arterial,
Loop 'B' and Ramp 'D'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER L.5

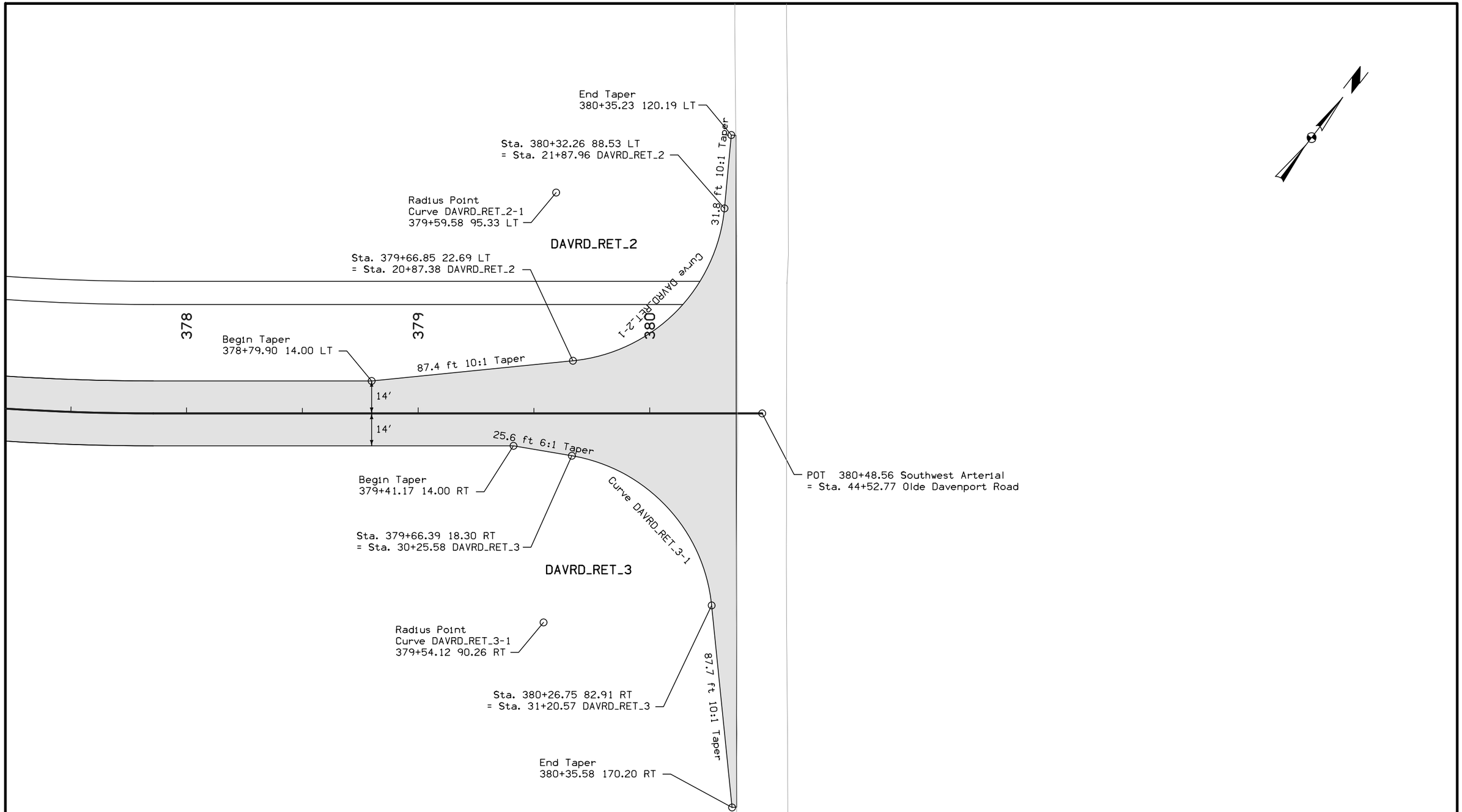
7:50:09 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht



Edge Return Profiles
Intersection of Southwest Arterial
and U.S. 61 Exit Loop 'B',
U.S. 61 Entrance Ramp 'D',
and U.S. 61 Connector Road 'B'

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.6

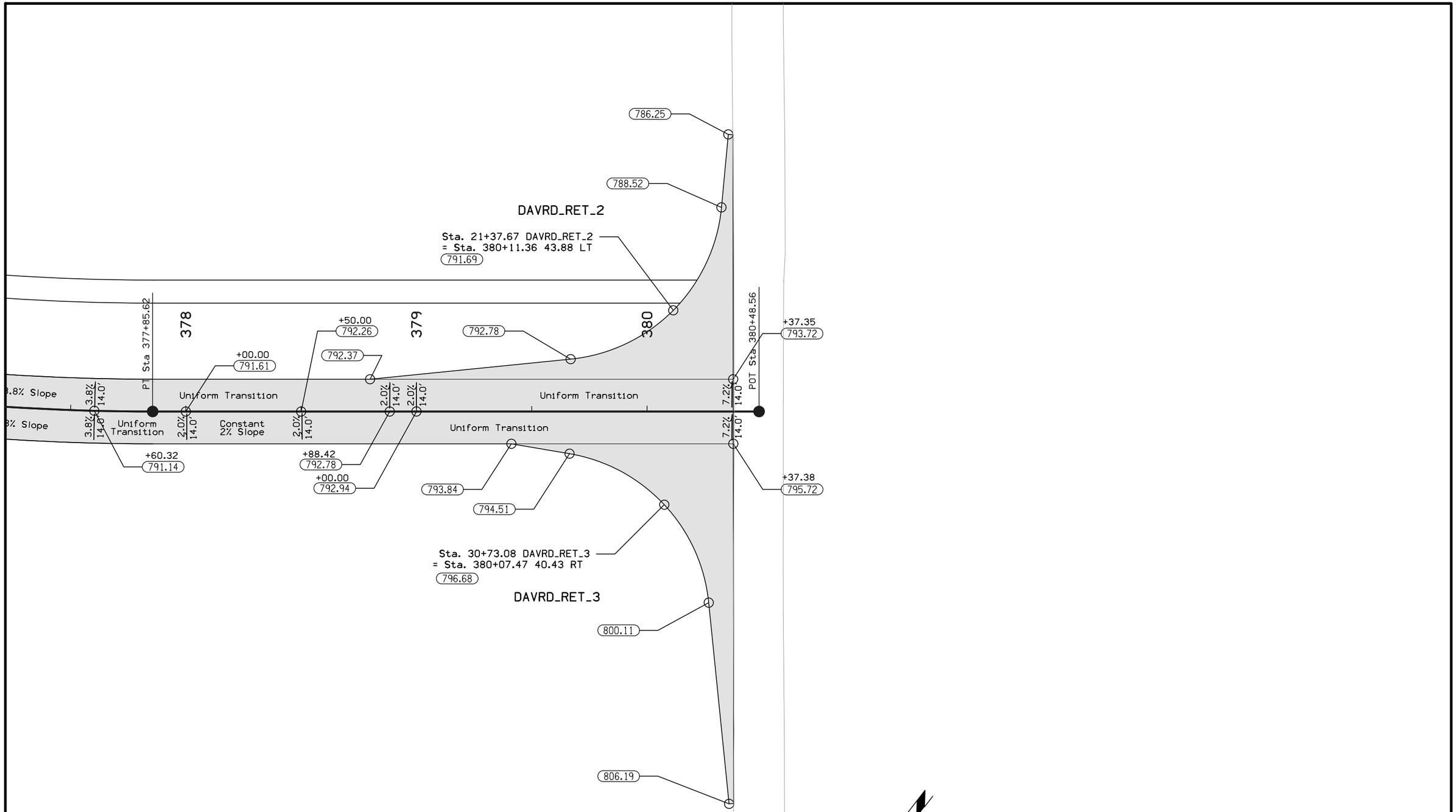
7:50:10 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht



GEOMETRIC DETAILS
Intersection of Southwest Arterial and Olde Davenport Road

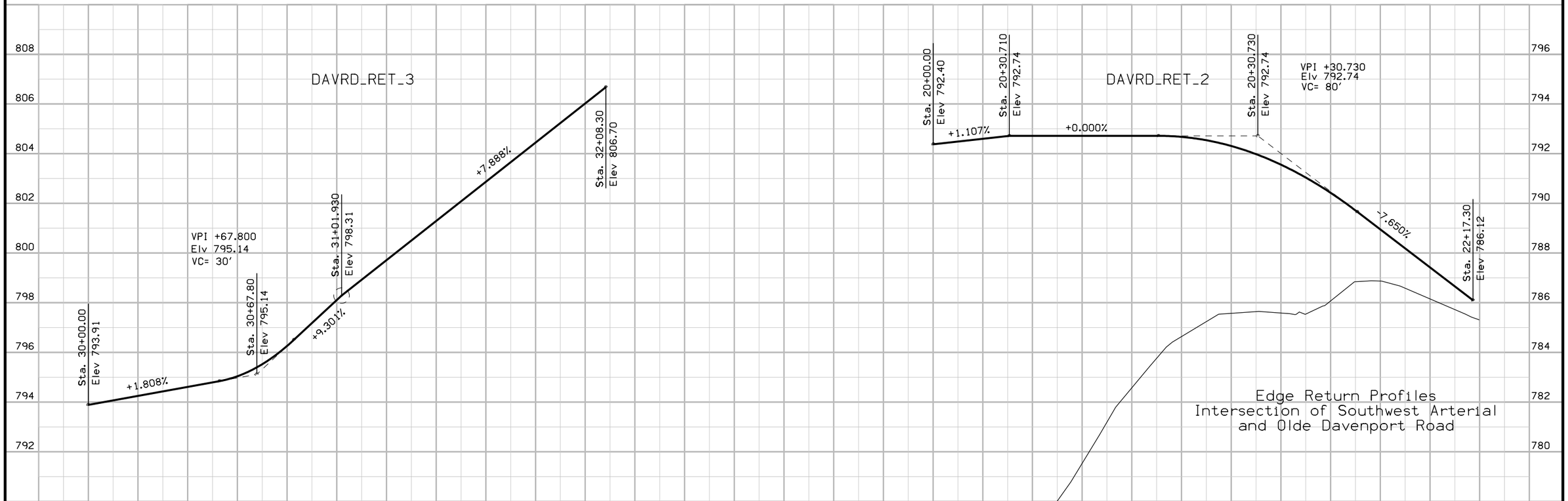
ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.7

7:50:11 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht



STAKING DETAILS
Intersection of Southwest Arterial
and Olde Davenport Road

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.8



ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	L.9

7:50:12 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_L01.sht

(1) Diameter or equivalent diameter
* Bid Item
** For SW-545

STORM SEWER

INTAKES AND UTILITY ACCESSES

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Extension Length** FT	Notes
316	316+00.00, 1.625' LT	SW-549	830.37	822.95		
320	320+00.00, CL	SW-547	809.11	801.8		
325	325+00.00, CL	SW-547	782.65	776.23		
329	329+00.00, CL	SW-547	765.66	758.35		
331	331+00.00, 1.625' RT	SW-549	761.46	754.63		
332	332+50.00, CL	SW-547	760.18	753.25		
333	332+94.00, CL	SW-547	760.12	752.81		
334	333+50.00, CL	SW-547	760.23	753.29		
335	334+50.00, 1.625' RT	SW-549	760.63	754.34		
337	336+50.00	SW-547	761.43	754.12		
		Total:				
		SW-547	7			
		SW-549	3			

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

Line Number	Intake/ Utility Access No. From	To	Class 'D'	Pipe Size (1) IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
P-316	I-316	O-316	2000	15	98	94.0	7.65	3	824.45	817.26	823.82	^	RCP Letdown
											817.37		1-15" Apron
													2-15° Elbows
													A=60', B=24'
													E=10', L=6.1'
P-320	I-320	O-320	2000	15	124	120.0	13.25	3	803.30	787.40	802.76	^	RCP Letdown
											787.70		1-15" Apron
													2-15° Elbows
													A=52', B=56'
													E=12', L=6.1'
P-325	I-325	O-325	2000	15	152	148.0	17.02	3	776.73	751.54	776.06	^	RCP Letdown
											751.82		1-15" Apron
													2-17° Elbows
													A=64', B=76'
													E=8', L=6.1'
P-329	I-329	0-329	2000	15	147	143.0	12.84	3	759.85	741.49	760.30	^	RCP Letdown
											741.28		1-15" Apron
													2-17° Elbows
													A=78', B=58'
													E=7', L=6.1'
P-331	O-331	I-332	2000	18	150	146.0	0.88	3	756.13	754.85		M.2	
P-332	O-332	I-333A	2000	18	44	40.0	0.85	3	754.75	754.41		M.2	
P-333	I-333	O-333	2000	24	120	116.0	13.603	3	754.31	738.53	753.72	M.2, ^	RCP Letdown
											738.96		1-24" Apron
													2-19° Elbows
													A=56', B=44'
													E=16', L=6.1'
P-334	O-334	I-333B	2000	18	56	52.0	0.7308	3	754.79	754.41		M.2	
P-335	O-335	I-334	2000	15	100	96.0	0.9896	3	755.84	754.89		M.2	
P-337	I-337	O-337	2000	15	88	84.0	6.4643	3	755.62	750.19		^	1-15" Apron
			Total:										
			2000	15	709								
			2000	18	250								
			2000	24	120								

^ See D-Sheets for further details.

For RCB Situation Plan, Cast-in-Place option, Refer to Sheet V.3.
For RCB Situation Plan, Precast option, Refer to Sheet V.6.
Note: CIP option shown on this sheet.

For 333 and P-333 Details, Refer to the D-Sheets and the W-Sheets.

0 FEET 20

℄ Southwest Arterial

330 331 332 333 334 335 336

O-333 P-333

O-331 331 P-331 I-332 332 P-332 O-332 I-333 I-333A 333 I-333B P-334 334 O-334 I-334 P-335 O-335

331
SW-549 RT
Sta. 331+00, 1.625'
FG 761.46
BW 754.63

332
SW-547 MED
Sta. 332+50, 0.0'
FG 760.18
BW 753.25

333
SW-547 MED
Sta. 332+94, 0.0'
FG 760.12
BW 752.81

334
SW-547 MED
Sta. 333+50, 0.0'
FG 760.23
BW 753.29

335
SW-549 RT
Sta. 334+50, 1.625'
FG 760.63
BW 754.34

766 764 762 760 758 756 754 752 750

F.L. 756.13
F.L. 754.85
F.L. 754.75
F.L. 754.41
F.L. 754.41
F.L. 754.79
F.L. 754.89
F.L. 755.84

P-331
146 LF
18" 2000D
0.88%

P-332
40 LF
18" 2000D
0.85%

P-334
52 LF
18" 2000D
0.73%

P-335
96 LF
15" 2000D
0.99%

330 331 332 333 334 335 336

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	M.2

12:49:18 PM12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_M01.sht

℄ US 61 Loop "B"

℄ US 61 Loop "B" San.

℄ US 61 Ramp "D"

℄ US 61 Ramp "C"

San. Sta. POT

Granger Creek

2525

4530

4525

530

535

CULVERT

CULVERT END

T2

F02

B1A

San.

CONCENTRIC

FUTURE R/W

PE FOR WATER/FO

PE FOR SANITARY/WATER

PE FOR CENTURYLINK 16.5'

PE FOR WATER/FO 20.0'

16.5' UTILITY ESMT. (TYP.)

20.0'

700

PALUSTRINE FORESTED WETLAND
MITIGATION 1.30 ACRES
EL. 696.5 BOTTOM

Monitoring Well #1

PALUSTRINE EMERGENT WETLAND
MITIGATION 1.16 ACRES
EL. 695 BOTTOM

Monitoring Well #2

ELEV. 696.00

ELEV. 692.00

20+94.11

Notes:

① Wetland Is To Be Finished With Minimum Of 18" Topsoil. The Bottom Shall Be Graded Irregularly With Crest and Valleys Varying From Plan Elevation By ±0.5'.

② Wetland Is To Be Constructed As Part Of This Project.

③ Plant 2.46 Acres Wetland Grass Seed Mix As Described In Iowa DOT Specifications 2601.3 And In Table 400-1 On Sheet C____. Plant 0.78 Acres Of Additional Seeding With Iowa DOT Native Grass Seeding Mix As Specified in Table 2601.03-5.

④ Plant 66 Bare Root Swamp White Oak Trees 1" Diameter, 66 Pin Oak Trees 1" Diameter, and 66 River Birch Trees 1" Diameter Evenly Spaced In The Forested Wetland. See Iowa DOT Standard Road Plans EC-501 for Planting Details.

195A
O'Rourke Farms, L.L.C.

195B
O'Rourke Farms, L.L.C.

Earthwork Quantities:
Cut - 30% = 24,350 CY
Fill = 24,350 CY

Legend:

Forested Wetland Mitigation = 1.30 Acres

Emergent Wetland Mitigation = 1.16 Acres

Additional Seeding = 0.78 Acres

0 50 100
FEET

WETLAND MITIGATION SITE

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER MIT.1

3:57:36 PM 11/16/2016 degenhardta P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\41_GE_MIT01.sht

LOG OF WELL NO. MW-1

Page 1 of 1

CLIENT: **AECOM**

SITE: **DUBUQUE, IOWA**

PROJECT: **SOUTHWEST ARETERIAL**

Approx. Boring Location: N 5682299, E 3634526

DESCRIPTION	
BOREHOLE DIA.:	in
WELL DIA.:	in
TOP OF PROTECTOR PIPE:	ft
TOP OF CASING:	ft
GROUND SURFACE ELEV.:	

DEPTH, ft	DESCRIPTION
2.5	**TOPSOIL: LEAN CLAY**, trace sand and organics Dark Brown
8 ▽	**LEAN CLAY**, trace sand Light Brown Gray
12	**FINE TO COARSE SAND** trace gravel, clay, and organics Black
12.5	**LIMESTONE***** Gray
	BOTTOM OF BORING Practical auger refusal on apparent limestone at 12.5 feet. ***Classification of rock material based on driller's observation of drilling characteristics during field operations and visual identification of samples obtained. Core Samples and/or petrographic analysis may indicate other rock types.

GRAPHIC LOG | WELL DETAIL | DEPTH, ft | USCS SYMBOL | SAMPLES: NUMBER, TYPE, RECOVERY, in., SPT - N BLOWS / ft. | TESTS: WATER CONTENT, %, DRY UNIT WT pcf

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 8	WD	▼
WL	▼		▼
WL			

Terracon

BORING STARTED	7-25-11		
BORING COMPLETED	7-25-11		
RIG	977	FOREMAN	SZ
APPROVED	TSM	JOB #	08099079

WELL 08099079 WELLS.GPJ TERRACON.GDT 7/26/11

Date	Groundwater Elevation	
	Well No. 1	Well No. 2
7-25-11	694.5	691.5
8-23-11	697.25	696.83
9-28-11	696.72	695.91
10-27-11	696.43	695.64
11-28-11	697.08	696.15
12-16-11	697.81	696.85
1-24-12	697.12	696.13
2-09-12	697.63	696.57
3-21-12	697.75	696.66
4-17-12	697.26	696.22
5-18-12	697.12	695.97
6-10-13		697.57

	Well Information	
	Well No. 1	Well No. 2
Station (U.S. 61)	532+49	532+48
Offset	291' Rt.	478' Rt.
North	5682299	5682460
East	3634526	3634431
Ground elev.	702.5	699.5
Top of pipe elev.	**705.63**	**701.86**

LOG OF WELL NO. MW-2

Page 1 of 1

CLIENT: **AECOM**

SITE: **DUBUQUE, IOWA**

PROJECT: **SOUTHWEST ARETERIAL**

Approx. Boring Location: N 5682460, E 3634431

DESCRIPTION	
BOREHOLE DIA.:	4 in
WELL DIA.:	2 in
TOP OF PROTECTOR PIPE:	ft
TOP OF CASING:	ft
GROUND SURFACE ELEV.:	

DEPTH, ft	DESCRIPTION
3	**TOPSOIL: LEAN CLAY**, trace sand and organics Dark Brown
8 ▽	**LEAN CLAY**, trace sand Light Brown Gray
12	**FINE TO COARSE SAND**with gravel and clay Brown
12.5	**LIMESTONE***** Gray
	BOTTOM OF BORING Practical auger refusal on apparent limestone at about 12.5 feet. ***Classification of rock material based on driller's observation of drilling characteristics during field operations and visual identification of samples obtained. Core Samples and/or petrographic analysis may indicate other rock types.

GRAPHIC LOG | WELL DETAIL | DEPTH, ft | USCS SYMBOL | SAMPLES: NUMBER, TYPE, RECOVERY, in., SPT - N BLOWS / ft. | TESTS: WATER CONTENT, %, DRY UNIT WT pcf

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft			
WL	▽ 8	WD	▼
WL	▼		▼
WL			

Terracon

BORING STARTED	7-25-11		
BORING COMPLETED	7-25-11		
RIG	977	FOREMAN	SZ
APPROVED	TSM	JOB #	08099079

WELL 08099079 WELLS.GPJ TERRACON.GDT 7/26/11

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	(227)	Topsoil
Green, Med	(227)	Slope Dressing Only
Orange	(6)	Loam
Brown, Dark	(238)	Class 10
Brown, Med	(237)	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
Water
Dry
Sample
Plugged
Moisture
Shelby
Blow Count
Dens. Core

Dig/Core
Treatment
Sand Blanket
Soil Remediation Area
Select Soil
Select Sand
Slope Dressing Only
Broken and Weathered Rock
Rock

Date(s) Drilled_____

Sandstone
Unsuitable A
Unsuitable B
Unsuitable C
Sandy Soil
Boulders
Shale

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
A/C 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.

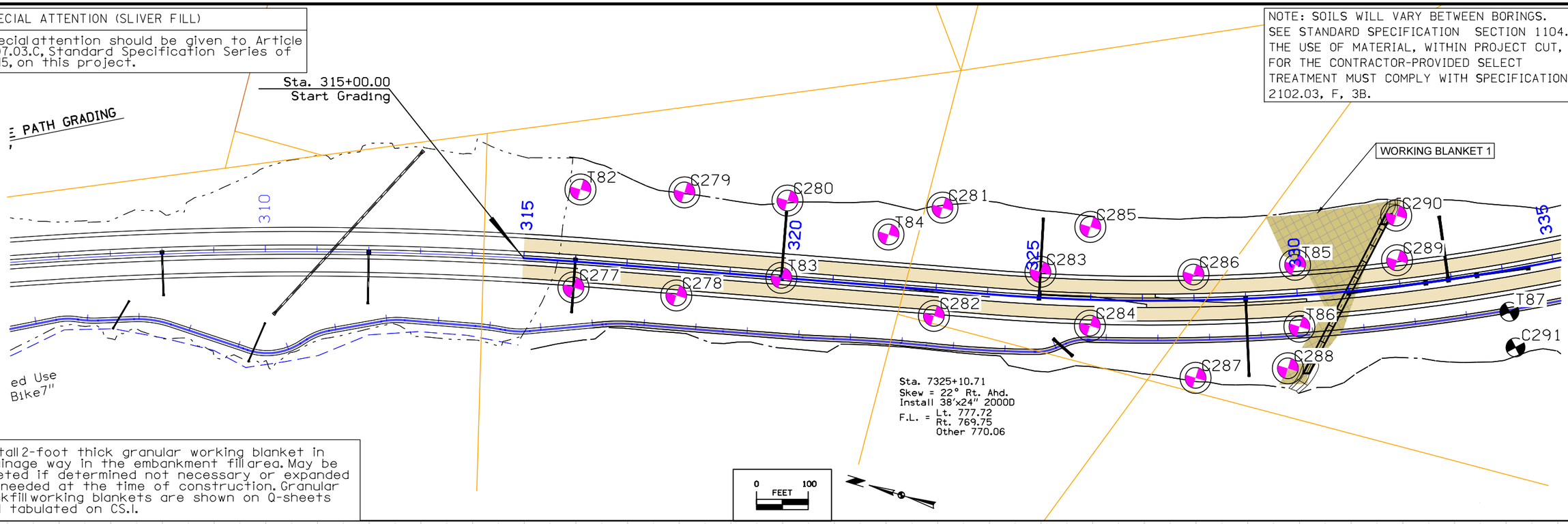
SOILS

(COVERS SHEET SERIES Q & R)

SPECIAL ATTENTION (SLIVER FILL)

Special attention should be given to Article 2107.03.C, Standard Specification Series of 2015, on this project.

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



Install 2-foot thick granular working blanket in drainage way in the embankment fill area. May be deleted if determined not necessary or expanded as needed at the time of construction. Granular backfill working blankets are shown on Q-sheets and tabulated on CS.1.

Refer to Next Q sheet For Soil Profile Information

305 310 315 320 325 330 335

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER Q.2

12:51:24 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

C-279	23,	17,	C-280	25,	25,	33,	C-281	24,	17,
	102,	103,		100,	99,	?,		100,	115,
	,	,		,	,	,		,	,

C-283	26,	C-286	26,	22,	
	99,		99,	106,	
	,		,	,	

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

SHELBY TUBE CORE DATA

CORE NO.	C281 A1	C285 B1	C289 B1
DEPTH IN FEET	4	4	3
CLASSIFICATION (AASHTO)	A-7-6(23)	A-6(19)	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--
TRIAXIAL COMPRESSION	UU	UU	UC
COHESION - PSF	640	1785	3335
FRICTION COEFF.	--	--	--
MOISTURE CONTENT %	30	18	15
DRY DENSITY - PCF	92	114	121

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

MAINLINE
WESTBOUND

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.3

12:51:25 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

	C-277	C-278	C-282	C-284
CUT MOISTURE	27, 19, 12,	25, 24,	26,	26, ,
CUT DENSITY (PCF)	94, 107, 121,	94, 98,	95,	97, ,
PLASTIC LIMIT	, , ,	, ,	,	, ,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730

C277 TOPSOIL; LEAN CLAY; LEAN CLAY TO SILT; 15 SILT; HIGHLY WEATHERED SILTSTONE

C278 TOPSOIL; C278 B1 LEAN CLAY; LEAN CLAY TO SILT; FAT CLAY; C278 E1; 52 SILTSTONE/HIGHLY WEATHERED SHALE

T83 TOPSOIL; SILTY CLAY; SILTY CLAY; SHALE; WEATHERED LIMESTONE

C282 LEAN CLAY TO SILT; 23 LEAN TO FAT CLAY; 18; 49 SILT/HIGHLY WEATHERED SILTSTONE

C284 LEAN CLAY TO SILT; LEAN TO FAT CLAY; 17 SILT/HIGHLY WEATHERED SILTSTONE

C287 C287 A1 LEAN CLAY TO SILT; C287 C1 LEAN TO FAT CLAY; LEAN CLAY TO SILTY CLAY; 50/4" HIGHLY WEATHERED SHALE; 50/2" MODERATELY WEATHERED SHALE; SILTY CLAY; SHALE; LIMESTONE

T86 SHALE

T87 TOPSOIL; SILTY CLAY; SILTY CLAY; SHALE

SHELBY TUBE CORE DATA

CORE NO.	C278 B1	C278 E1	C287 A1	C287 C1
DEPTH IN FEET	4	19	3	8
CLASSIFICATION (AASHTO)	A-7-6(25)	A-6(18)	-	-
COEFF.CONSOL. (SQ. FT /DAY)	SI CL LO	SI CL	-	-
TRIAXIAL COMPRESSION	UU	UC	UC	UC
COHESION - PSF	720	3500	1000	780
FRICTION COEFF.	-	-	-	-
MOISTURE CONTENT %	30	16	27	29
DRY DENSITY - PCF	92	117	96	88

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

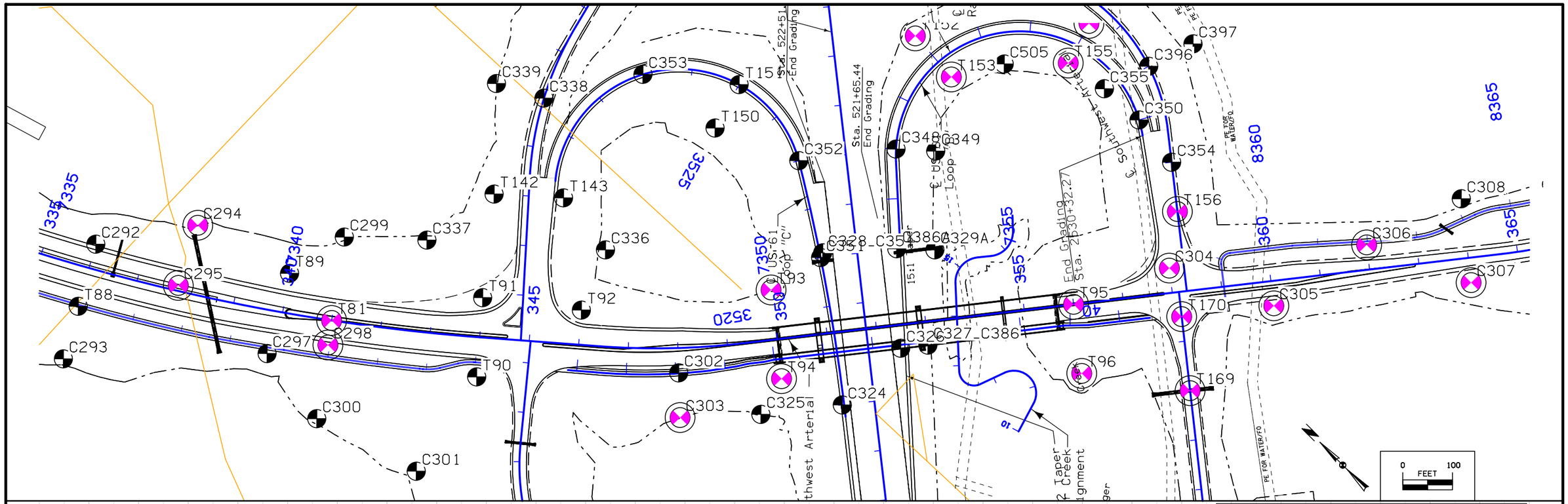
MAINLINE EASTBOUND

C277 50.0 | C278 50.0 | T83 0.0 | C282 50.0 | C284 50.0 | C287 150.0 | T86 60.0 | T87 80.0

305 310 315 320 325 330 335

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER Q.4

12:51:26 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

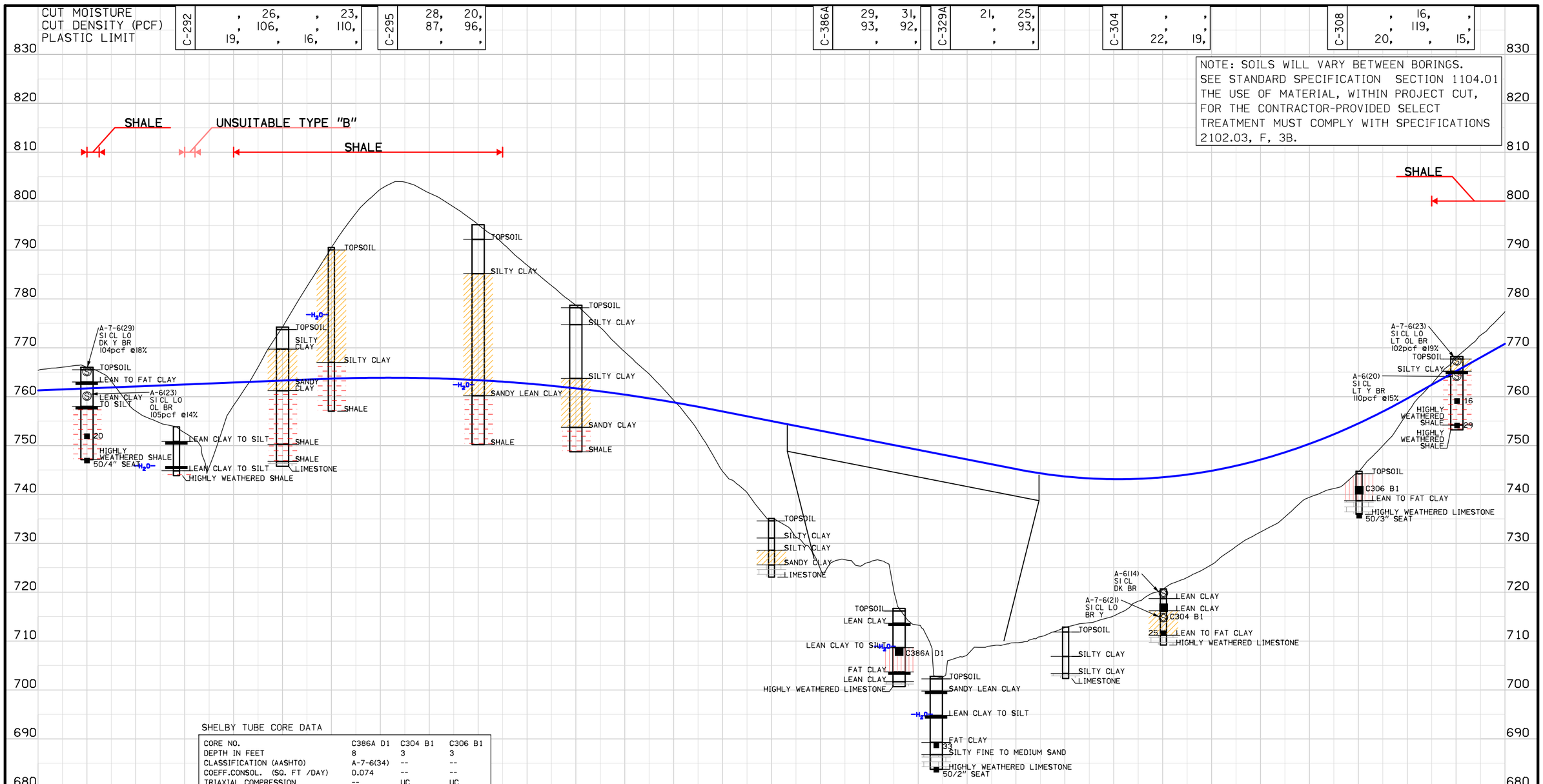
335 340 345 350 355 360 365

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER Q.5

12:51:28 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

	C-292	C-295	C-386A	C-329A	C-304	C-308
CUT MOISTURE	, 26, , 23,	28, 20,	29, 31,	21, 25,	, ,	, 16, ,
CUT DENSITY (PCF)	, 106, , 110,	87, 96,	93, 92,	, 93,	, ,	, 119, ,
PLASTIC LIMIT	19, , 16, ,	, ,	, ,	, ,	22, 19,	20, , 15,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

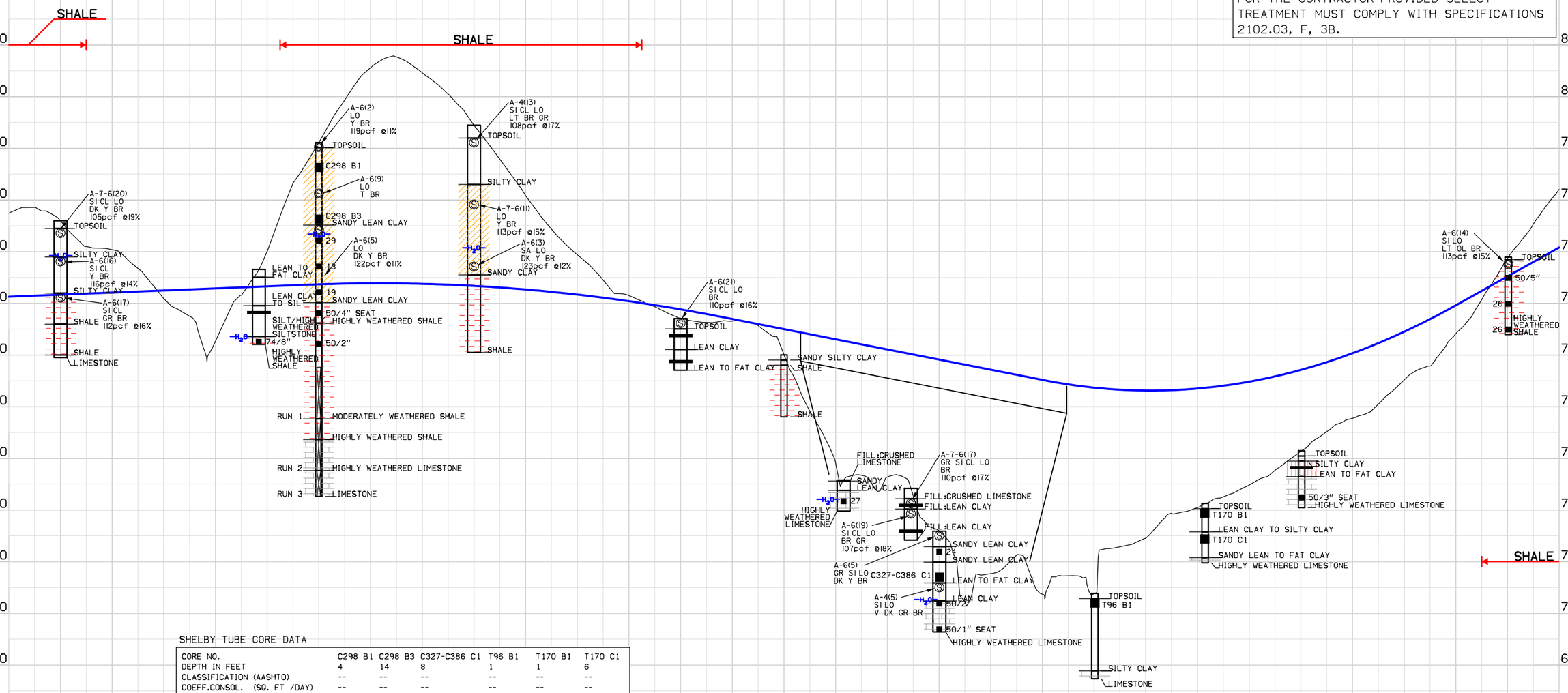
CORE NO.	C386A D1	C304 B1	C306 B1
DEPTH IN FEET	8	3	3
CLASSIFICATION (AASHTO)	A-7-6(34)	--	--
COEFF.CONSOL. (SQ. FT /DAY)	0.074	--	--
TRIAXIAL COMPRESSION	--	UC	UC
COHESION - PSF	--	1715	3025
FRICTION COEFF.	--	--	--
MOISTURE CONTENT %	34	18	16
DRY DENSITY - PCF	86	110	117

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER Q.6

	T88	C297	C298	T90	C302	C326	C327\C386	C305	C307
CUT MOISTURE	, , ,	32,	, , ,	, , ,	, 24, 24,	, ,	, ,	28,	,
CUT DENSITY (PCF)	, , ,	92,	, , ,	, , ,	, 94, 103,	, ,	, ,	92,	,
PLASTIC LIMIT	22, 16, 19,	,	16, 16, 13,	22, 15, 12,	17, , ,	15, 20,	21, 20,	,	16,

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C298 B1	C298 B3	C327-C386 C1	T96 B1	T170 B1	T170 C1
DEPTH IN FEET	4	14	8	1	1	6
CLASSIFICATION (AASHTO)	--	--	--	--	--	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UC	UC	UC	UC
COHESION - PSF	630	1490	920	625	835	1955
FRICTION COEFF.	--	--	--	--	--	--
MOISTURE CONTENT %	20	14	26	32	32	27
DRY DENSITY - PCF	107	117	94	82	86	91

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

ROCK CORE INFORMATION

Boring	Approx.Surf.El.(ft)	Run No.	Interval(ft)	Recovery(%)	RQD(%)
C298	791.5	1	43.5-53.5	97	90
C298	791.5	2	53.5-63.5	98	10
C298	791.5	3	63.5-68.5	100	100

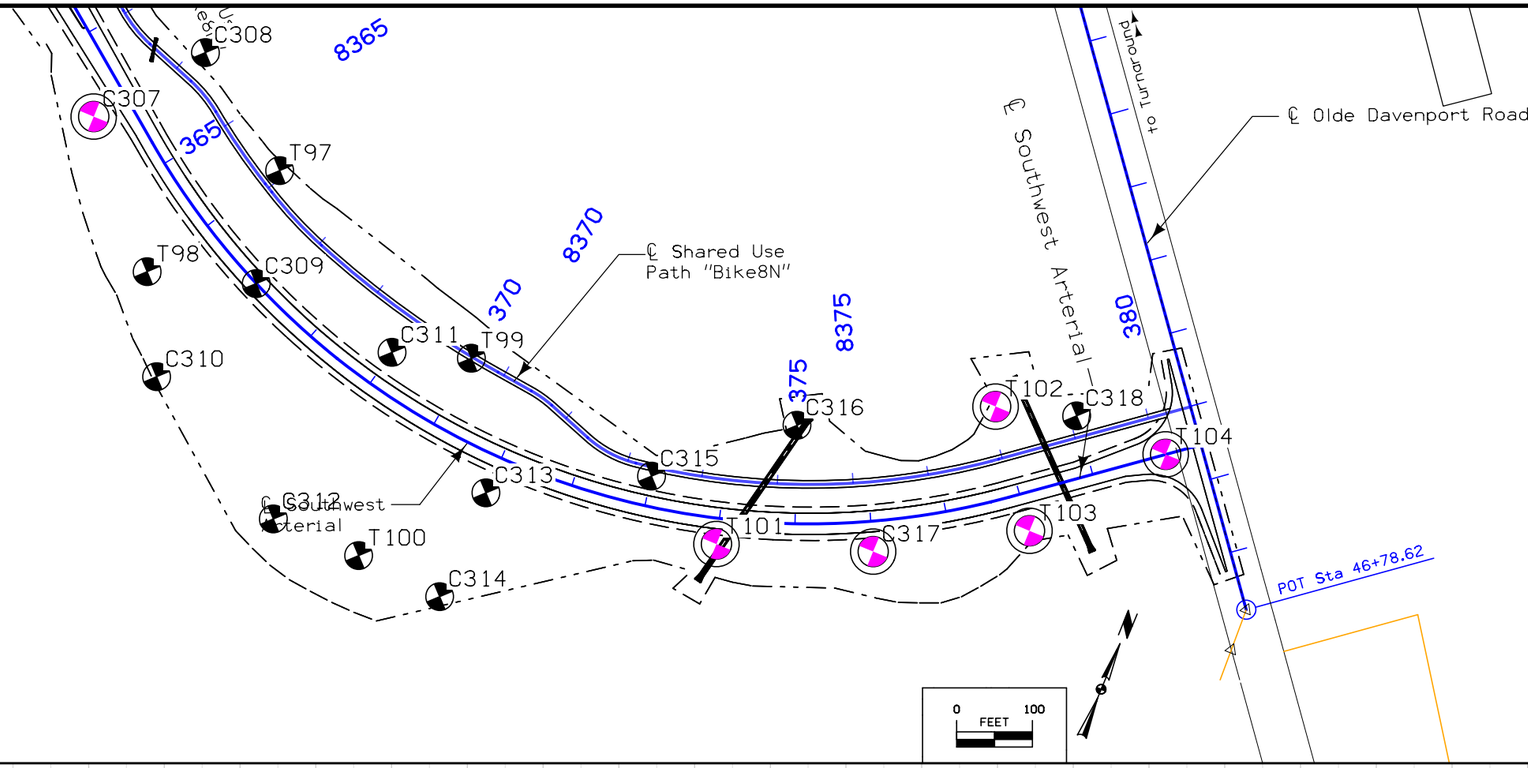
MAINLINE EASTBOUND

T88	C297	C298	T90	C302	T94	C324	C327_ C326 C386	T96	T170	C305	C307
80.0	87.0	50.0	80.0	50.0	80.0	146.8	47.1 47.2	140.0	50.0	50.0	50.0

335 340 345 350 355 360 365

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.7

12:51:30 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

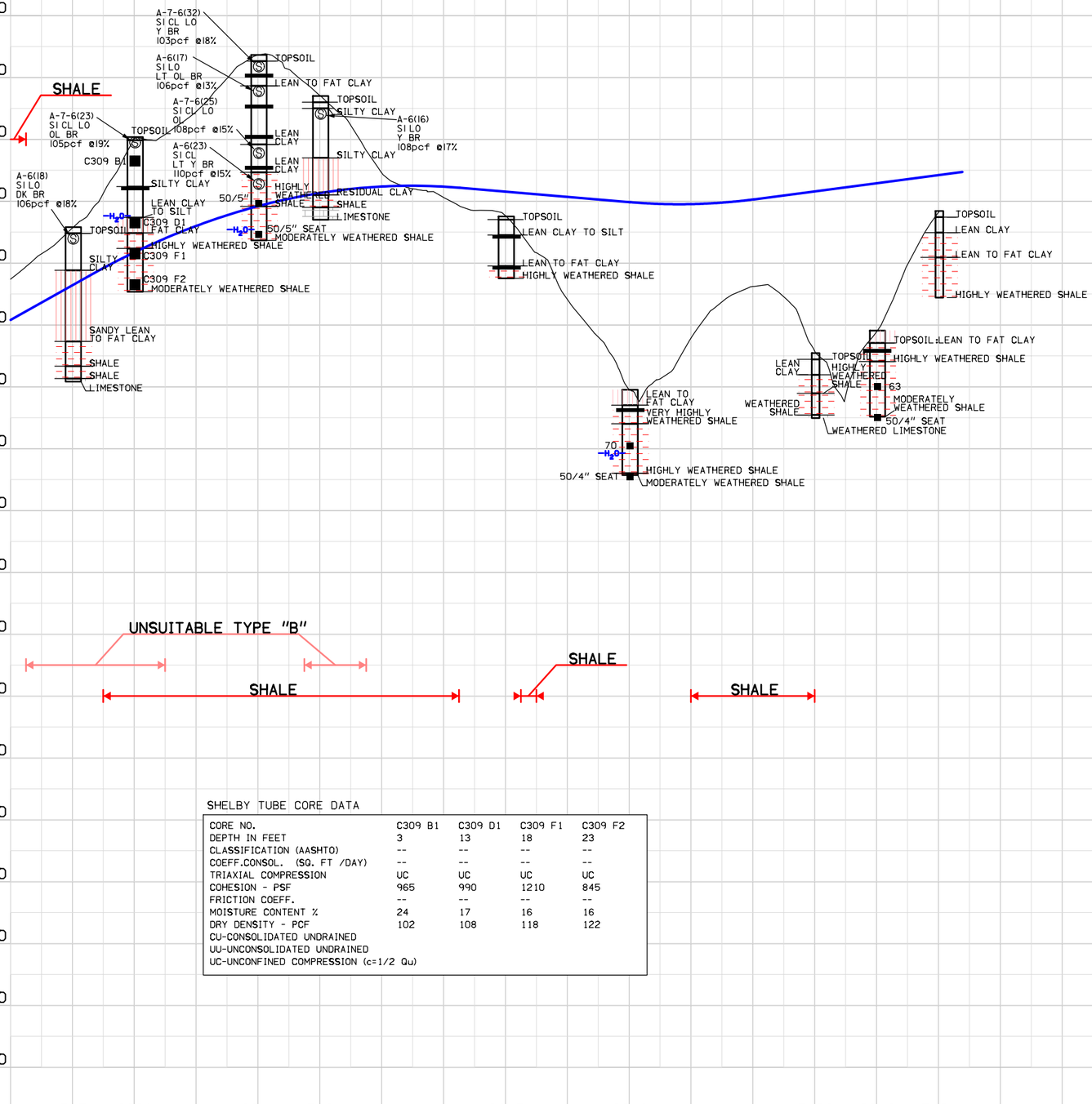
365 370 375 380

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.8

12:51:32 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

	T-97	C-309	C-311	T-99	C-315	C-316	C-318
CUT MOISTURE	,	, 19,	, 30, , 25,	,	24, 15,	17,	18,
CUT DENSITY (PCF)	,	, ,	, 91, , 101,	,	105, 120,	,	111,
PLASTIC LIMIT	21,	20, ,	19, , 18, ,	20,	, ,	,	,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C309 B1	C309 D1	C309 F1	C309 F2
DEPTH IN FEET	3	13	18	23
CLASSIFICATION (AASHTO)	--	--	--	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UC	UC
COHESION - PSF	965	990	1210	845
FRICTION COEFF.	--	--	--	--
MOISTURE CONTENT %	24	17	16	16
DRY DENSITY - PCF	102	108	118	122

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

MAINLINE
WESTBOUND

T97 -120.0 C309 0.0 C311 -50.0 T99 -100.0 C315 -40.0 C316 -130.0 T102 -120.0 C318 -80.0 T104 0.0

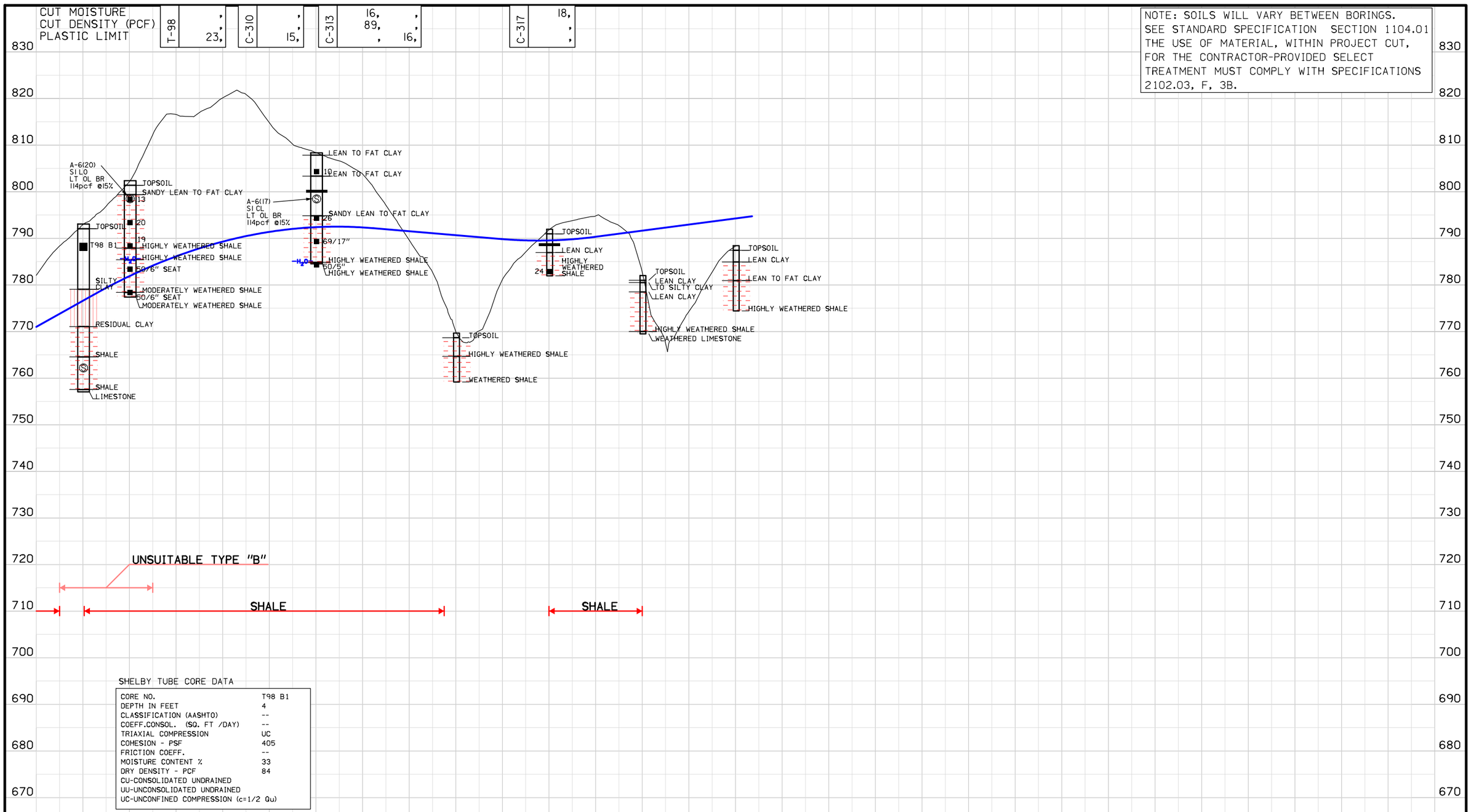
365 370 375 380

FILE NO.	ENGLISH	DESIGN TEAM	AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	Q.9

12:51:33 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

	T-98	C-310	C-313	C-317
CUT MOISTURE	,	,	16, ,	18,
CUT DENSITY (PCF)	,	,	89, ,	,
PLASTIC LIMIT	23,	15,	, 16,	,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

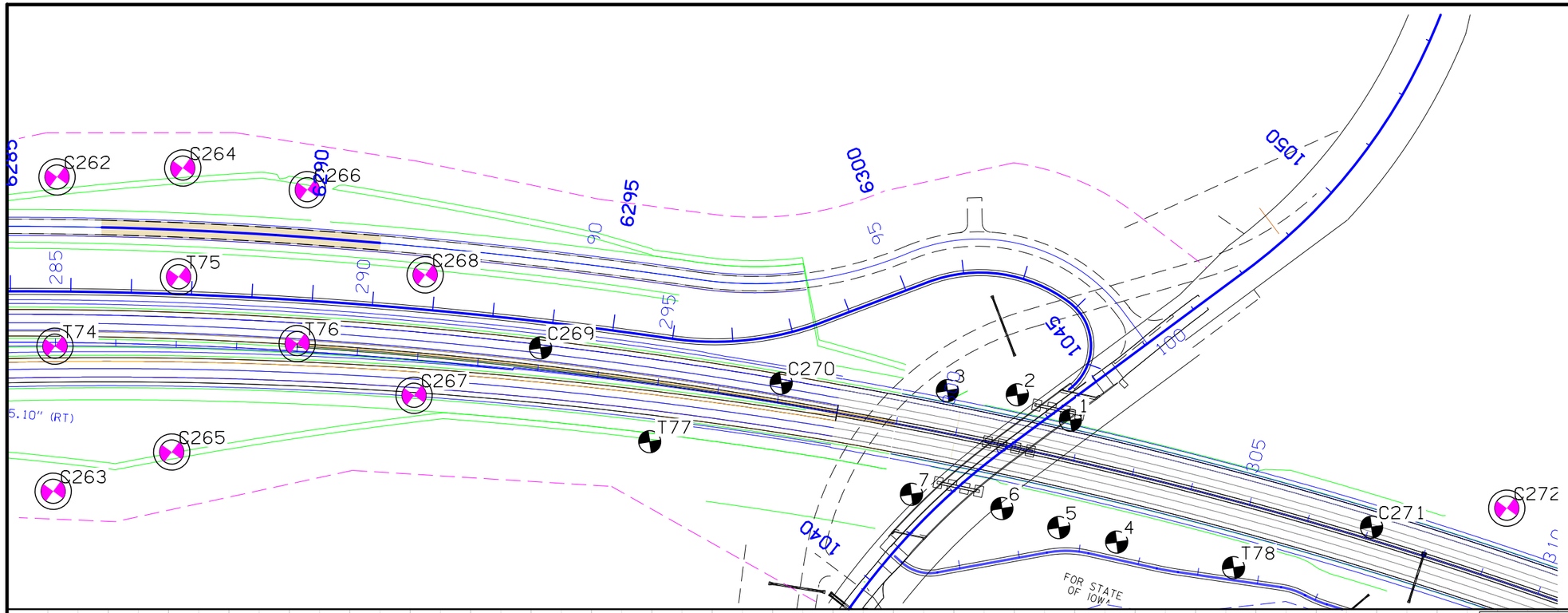
CORE NO.	T98 B1
DEPTH IN FEET	4
CLASSIFICATION (AASHTO)	--
COEFF.CONSOL. (SQ. FT /DAY)	--
TRIAXIAL COMPRESSION	UC
COHESION - PSF	405
FRICTION COEFF.	--
MOISTURE CONTENT %	33
DRY DENSITY - PCF	84

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

MAINLINE
EASTBOUND

FILE NO.	ENGLISH	DESIGN TEAM	AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-Ø32-1(36)--3H-31	SHEET NUMBER	Q.10

12:51:34 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



ACCESS ROAD "B"

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.

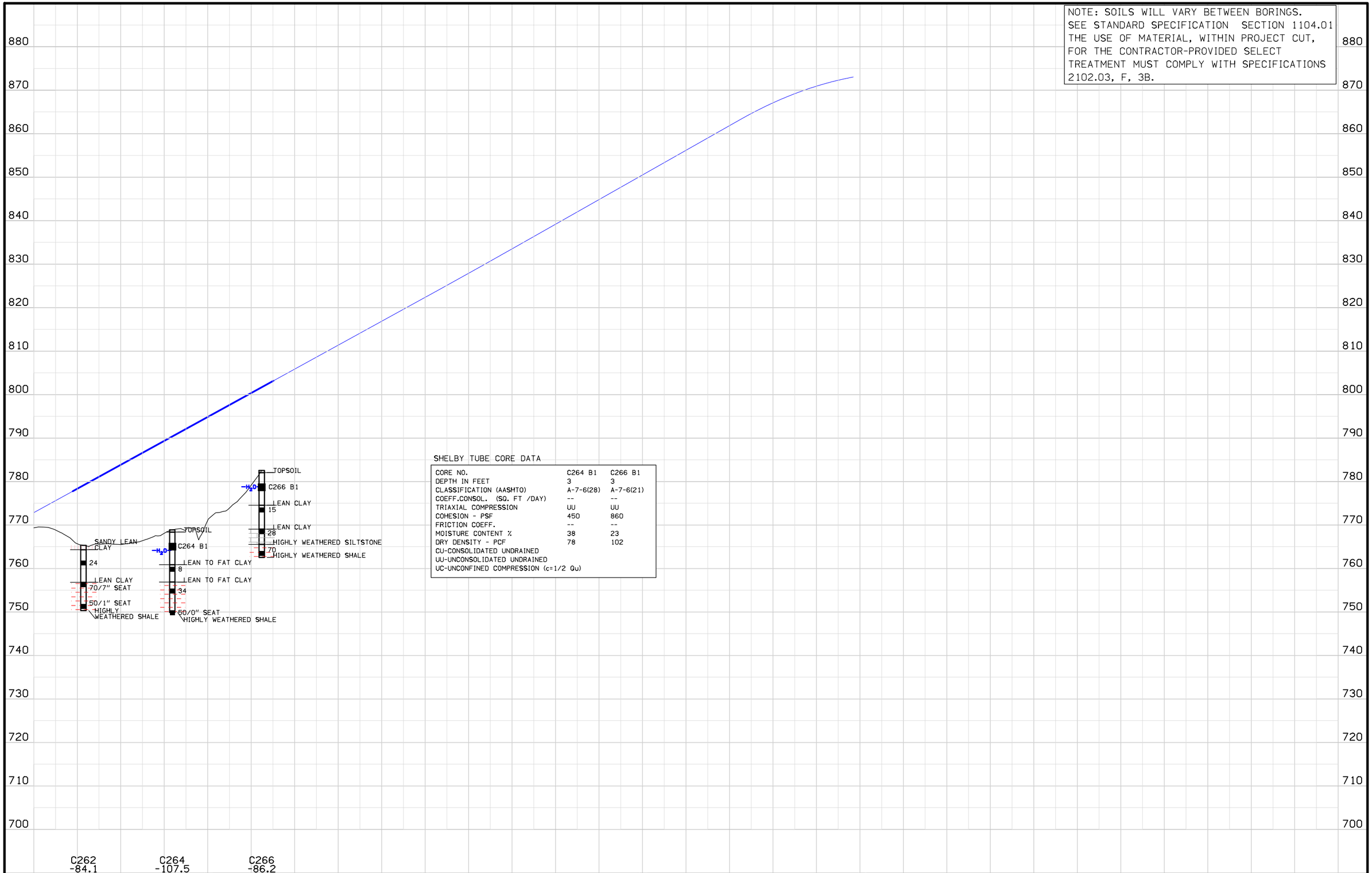
Refer to Next Q sheet For Soil Profile Information

85 90 95 100

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.11

12:51:35 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



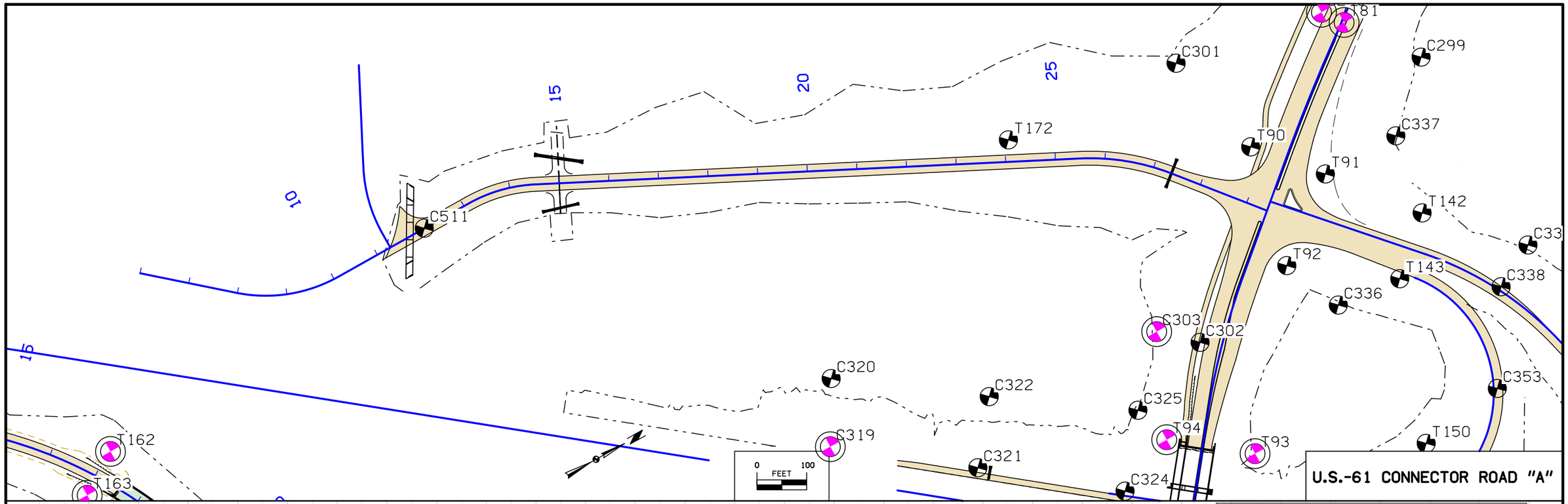
SHELBY TUBE CORE DATA

CORE NO.	C264 B1	C266 B1
DEPTH IN FEET	3	3
CLASSIFICATION (AASHTO)	A-7-6(28)	A-7-6(21)
COEFF.CONSOL. (SQ. FT /DAY)	--	--
TRIAXIAL COMPRESSION	UU	UU
COHESION - PSF	450	860
FRICTION COEFF.	--	--
MOISTURE CONTENT %	38	23
DRY DENSITY - PCF	78	102

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

FILE NO.	ENGLISH	DESIGN TEAM	AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	Q.12

12:51:36 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.13

12:51:37 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_Q01.sht

CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

C301	29,	26,	,	12,	,
	92,	106,	,	,	,
	,	,	,	,	,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

SHALE

Proposed Profile Grade

TOPSOIL
7
SILTY CLAY
20
HIGHLY WEATHERED LIMESTONE
50/6"

A-6(20)
SI CL LO
Y BR
109pcf @19%
LEAN CLAY TRACE SAND
LEAN CLAY TO SILTY
CLAY TRACE SAND
SANDY LEAN CLAY
TRACE GRAVEL

TOPSOIL
LEAN CLAY
15
C301 C4
C301-C5
SANDY LEAN CLAY
22
SANDY LEAN CLAY
HIGHLY WEATHERED SHALE
50/2" SEAT
50/3" SEAT
50/2" SEAT
WEATHERED SHALE
LIMESTONE

TOPSOIL
SILTY CLAY
SANDY CLAY
HIGHLY WEATHERED SHALE

SHELBY TUBE CORE DATA

CORE NO.	C301 C4	C301 C5
DEPTH IN FEET	24	29
CLASSIFICATION (AASHTO)		
COEFF.CONSOL. (SQ. FT /DAY)		
TRIAXIAL COMPRESSION		
COHESION - PSF		
FRICTION COEFF.		
MOISTURE CONTENT %		
DRY DENSITY - PCF		
CU-CONSOLIDATED UNDRAINED		
UU-UNCONSOLIDATED UNDRAINED		
UC-UNCONFINED COMPRESSION (c=1/2 Qu)		

U.S.-61 CONNECTOR ROAD "A"

C511
CL

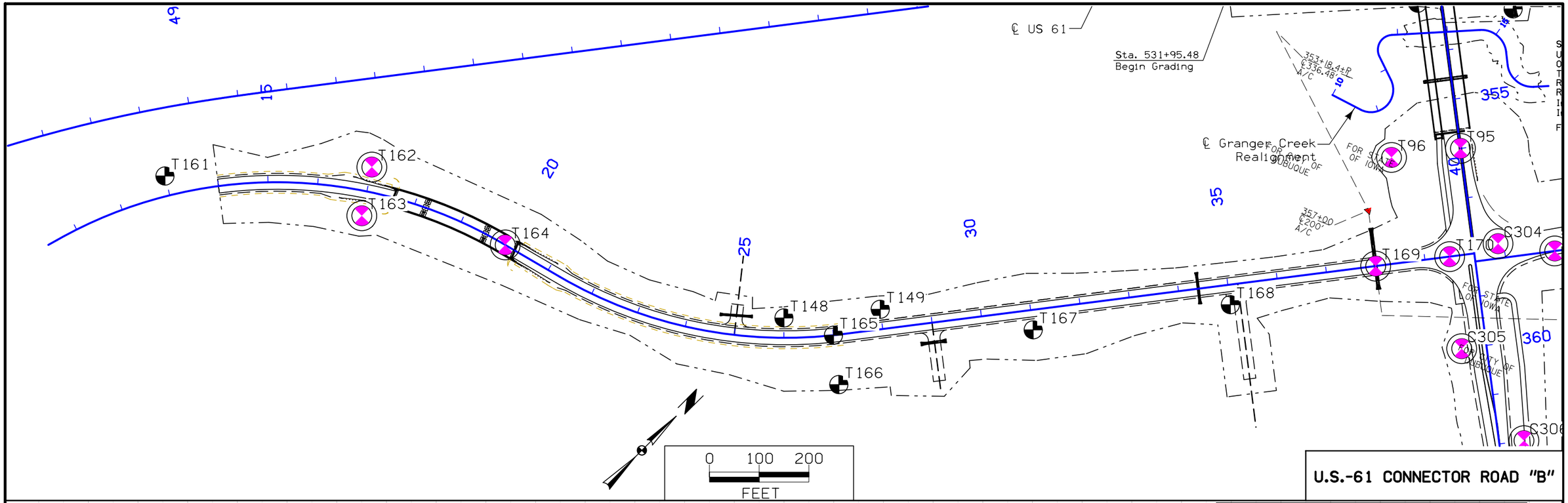
T172
LT.40

C301
LT.208

T90
LT.101

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.14

12:51:38 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



U.S.-61 CONNECTOR ROAD "B"

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.

Refer to Next Q sheet For Soil Profile Information

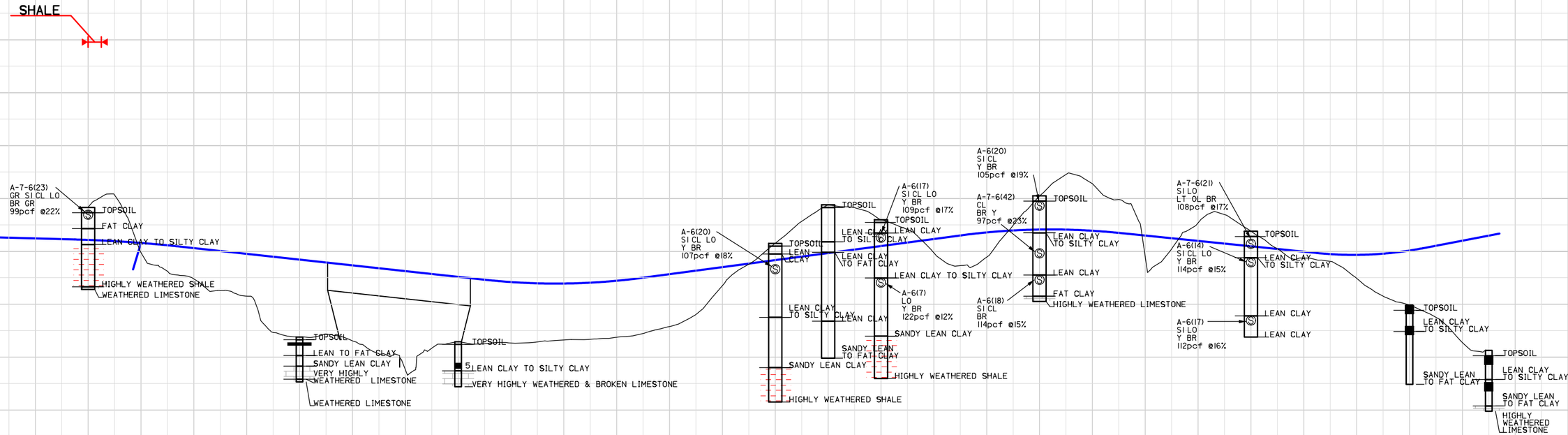
15 20 25 30 35 40

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.15

12:51:42 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

	T-161	T-162	T-148	T-149	T-167	T-168
CUT MOISTURE	,	39,	,	,	, , ,	, , ,
CUT DENSITY (PCF)	,	,	,	,	, , ,	, , ,
PLASTIC LIMIT	20,	,	20,	21, 14,	21, 16, 23,	20, 17, 17,

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



SHELBY TUBE CORE DATA

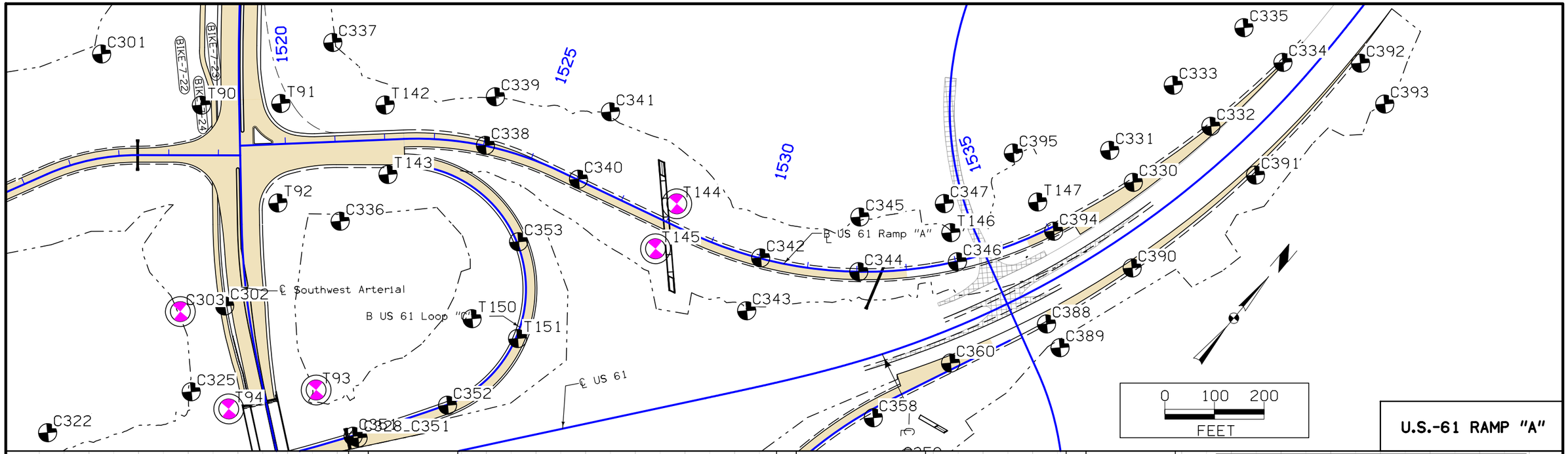
CORE NO.	T169 A1	T169 B1	T170 B1	T170 C1
DEPTH IN FEET	0	4	1	6
CLASSIFICATION (AASHTO)			--	--
COEFF.CONSOL. (SQ. FT /DAY)			--	--
TRIAXIAL COMPRESSION			UC	UC
COHESION - PSF			835	1955
FRICTION COEFF.			--	--
MOISTURE CONTENT %			32	27
DRY DENSITY - PCF			86	91

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

U.S.-61 CONNECTOR ROAD "B"

FILE NO.	ENGLISH	DESIGN TEAM	AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	Q.16

12:51:43 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



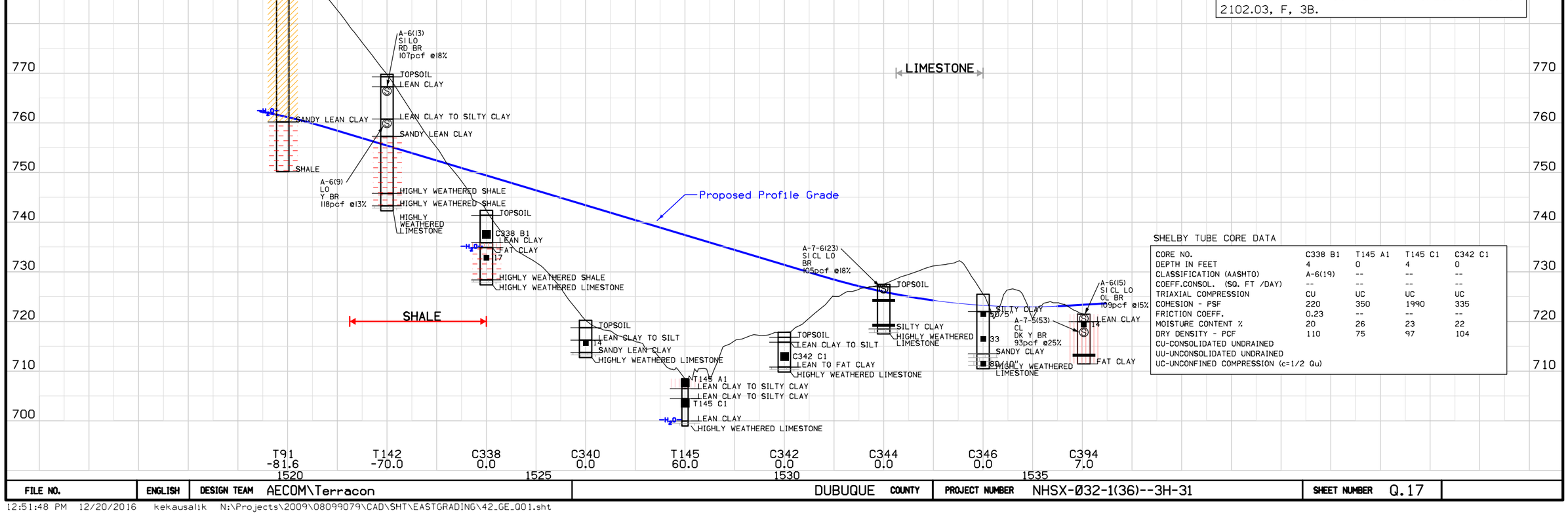
CUT MOISTURE
CUT DENSITY (PCF)
PLASTIC LIMIT

T-142	,	,	
	,	,	
	20,	15,	

C-344	,	28,	31,
	,	96,	84,
	21,	,	,

C-394	,	,	
	,	,	
	18,	30,	

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C338 B1	T145 A1	T145 C1	C342 C1
DEPTH IN FEET	4	0	4	0
CLASSIFICATION (AASHTO)	A-6(19)	--	--	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--	--
TRIAXIAL COMPRESSION	CU	UC	UC	UC
COHESION - PSF	220	350	1990	335
FRICTION COEFF.	0.23	--	--	--
MOISTURE CONTENT %	20	26	23	22
DRY DENSITY - PCF	110	75	97	104

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

FILE NO.	ENGLISH	DESIGN TEAM	AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-Ø32-1(36)--3H-31	SHEET NUMBER	Q.17

12:51:48 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht

For Connector Road "A" Details
Refer to Sheet E.2

℄ US 61 Connector Rd. "A"

℄ Southwest Arterial

℄ Southwest Arterial

℄ US 61 Loop "C"

℄ US 61 Ramp "A"

End Grading Sta. 352[illegible]4.64

Begin Grading Sta. 510+85.37 US-61/151

PV-414 Taper

25:1 Taper

℄ US 61

345

3520

3525

3500

7350

T90 T91 T92 T93 T94 T142 T143 T144 T145 T146 T147 T150 T151 T172

C303 C302 C320 C321 C322 C323 C324 C325 C326 C328_C351 C336 C337 C338 C339 C340 C341 C342 C343 C344 C345 C346 C347 C352 C353 C386A C394 C395

0 100 200
FEET

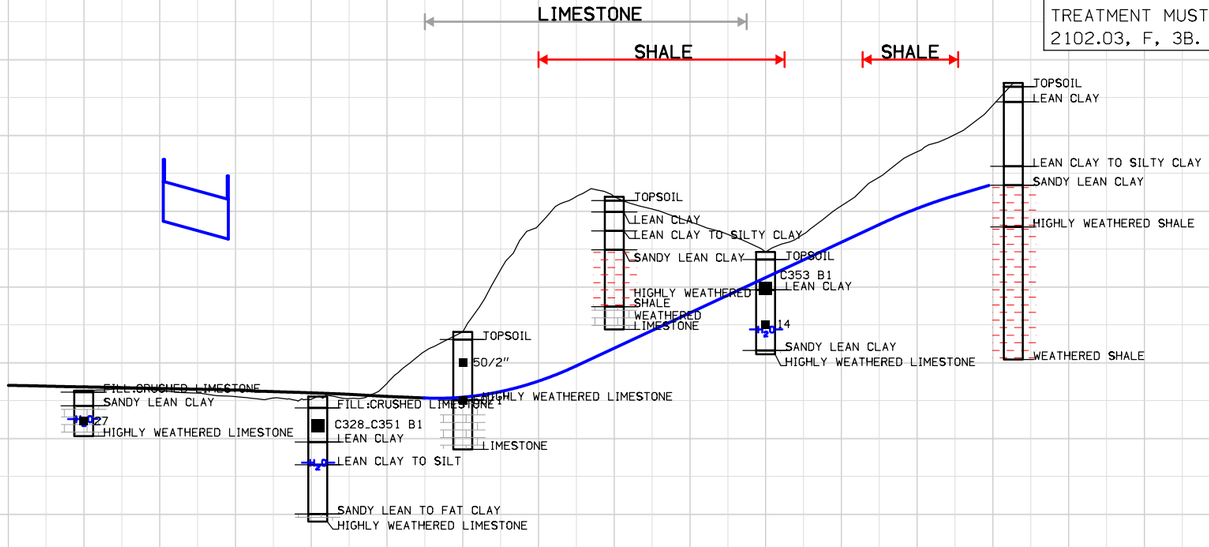
U.S.-61 LOOP "C"

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.

SHELBY TUBE CORE DATA

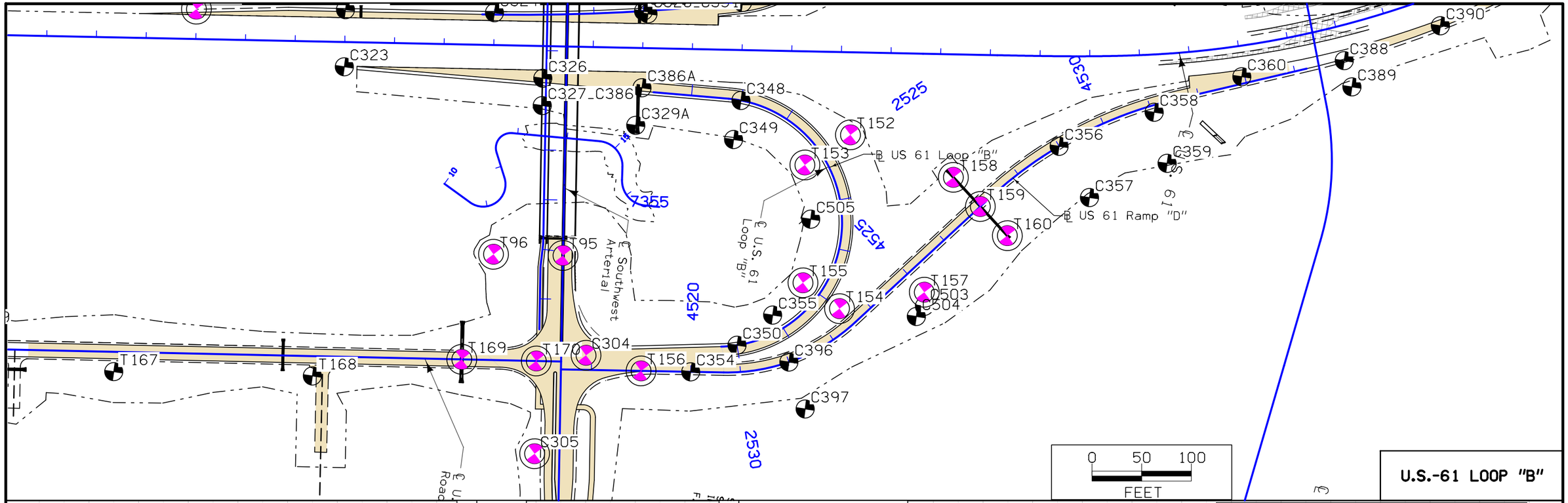
CORE NO.	C328-C351 B1	C353 B1
DEPTH IN FEET	3	4
CLASSIFICATION (AASHTO)	--	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--
TRIAXIAL COMPRESSION	UC	UC
COHESION - PSF	920	1900
FRICTION COEFF.	--	--
MOISTURE CONTENT %	26	19
DRY DENSITY - PCF	94	112

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)



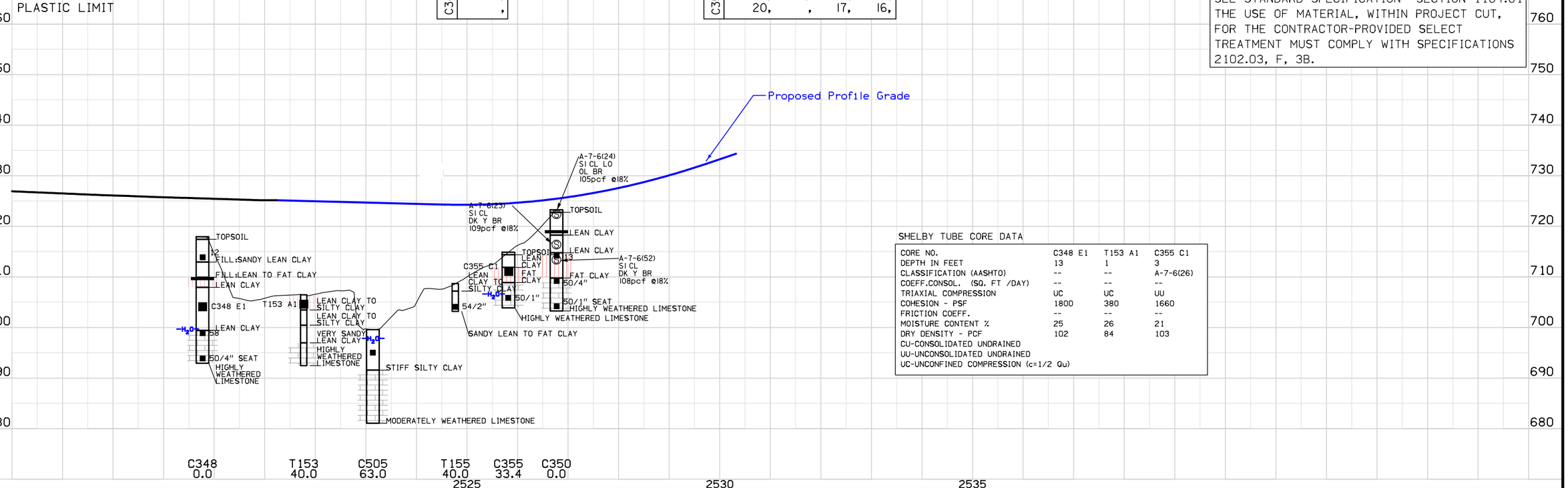
FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER Q.18

12:51:50 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



	C348	C350
CUT MOISTURE	27,	, 19, , ,
CUT DENSITY (PCF)	96,	, 113, , ,
PLASTIC LIMIT	,	20, , 17, 16,

NOTE: SOILS WILL VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION SECTION 1104.01 THE USE OF MATERIAL, WITHIN PROJECT CUT, FOR THE CONTRACTOR-PROVIDED SELECT TREATMENT MUST COMPLY WITH SPECIFICATIONS 2102.03, F, 3B.



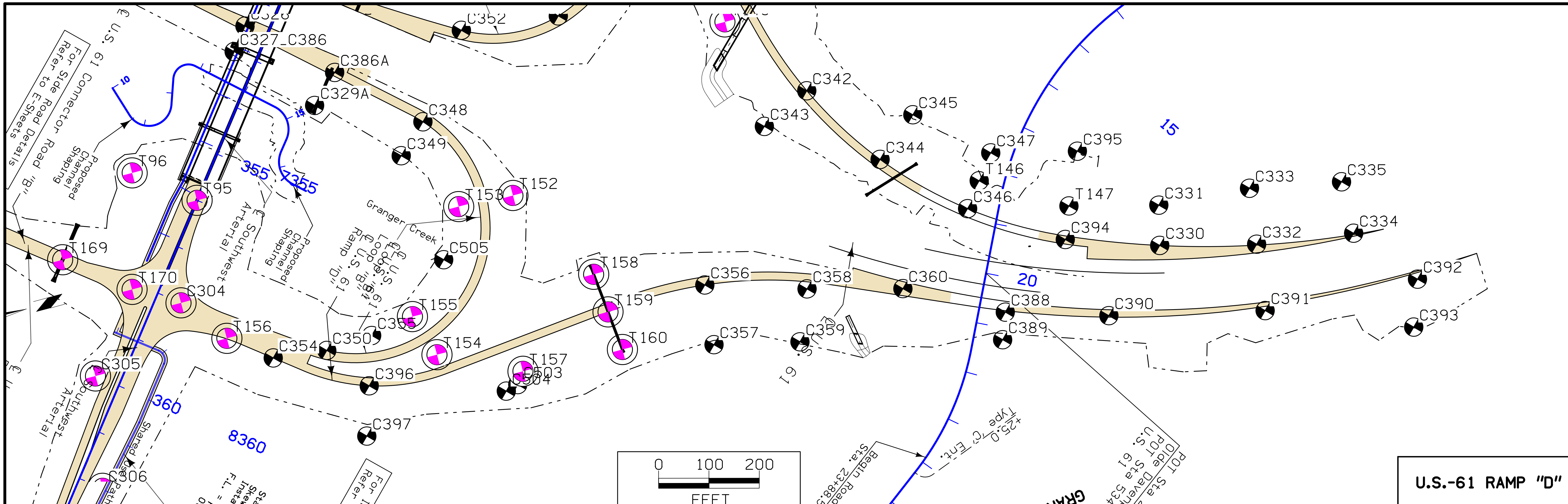
SHELBY TUBE CORE DATA

CORE NO.	C348 E1	T153 A1	C355 C1
DEPTH IN FEET	13	1	3
CLASSIFICATION (AASHTO)	--	--	A-7-6(26)
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UU
COHESION - PSF	1800	380	1660
FRICTION COEFF.	--	--	--
MOISTURE CONTENT %	25	26	21
DRY DENSITY - PCF	102	84	103

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

FILE NO.	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-Ø32-1(36)--3H-31	SHEET NUMBER Q.19

12:51:51 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SHT\EASTGRADING\42_GE_001.sht



CUT MOISTURE			
CUT DENSITY (PCF)			
PLASTIC LIMIT			

C-304	,	,
	,	,
	,	,

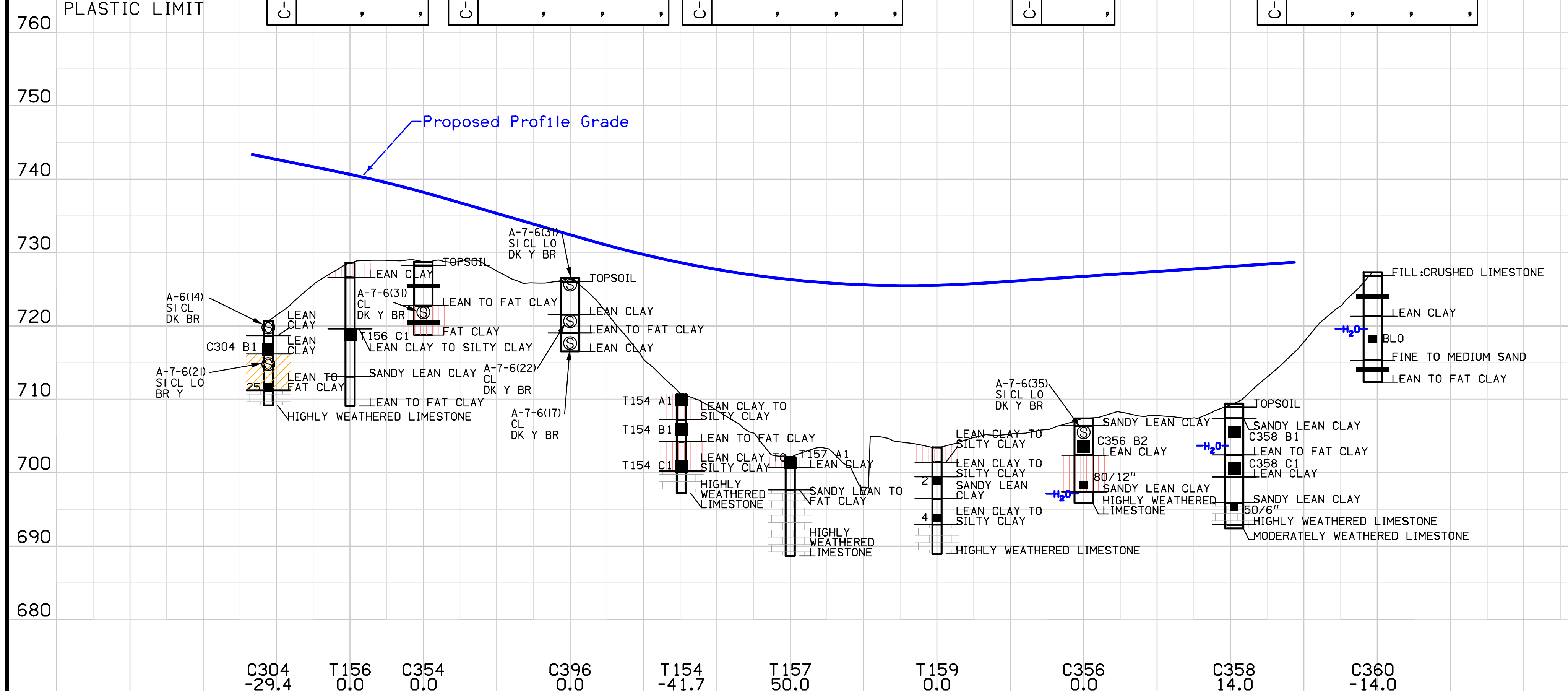
C-354	18,	,	20,
	108,	,	105,
	,	,	,

C-396	,	,	,
	,	,	,
	,	,	,

C-356	,
	,
	,

C-360	21,	,	24,
	105,	,	,
	,	,	,

NOTE: SOILS WILL VARY BETWEEN BORINGS.
SEE STANDARD SPECIFICATION SECTION 1104.01
THE USE OF MATERIAL, WITHIN PROJECT CUT,
FOR THE CONTRACTOR-PROVIDED SELECT
TREATMENT MUST COMPLY WITH SPECIFICATIONS
2102.03, F, 3B.



SHELBY TUBE CORE DATA

CORE NO.	C304 B1	T156 C1	T154 A1	T154 B1	T154 C1
DEPTH IN FEET	3	9	0	4	9
CLASSIFICATION (AASHTO)	--	--	--	--	--
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--	--	--
TRIAXIAL COMPRESSION	UC	UC	UC	UC	UC
COHESION - PSF	1715	2415	465	1405	295
FRICTION COEFF.	--	--	--	--	--
MOISTURE CONTENT %	18	17	30	26	27
DRY DENSITY - PCF	110	103	82	95	91
CU-CONSOLIDATED UNDRAINED					
UU-UNCONSOLIDATED UNDRAINED					
UC-UNCONFINED COMPRESSION (c=1/2 Qu)					

SHELBY TUBE CORE DATA

CORE NO.	T157 A1	C356 B2	C358 B1	C358 C1
DEPTH IN FEET	0	3	3	8
CLASSIFICATION (AASHTO)	--	A-7-6(35)	A-7-6(20)	A-7-6(23)
COEFF.CONSOL. (SQ. FT /DAY)	--	--	--	--
TRIAXIAL COMPRESSION	UC	UU	UU	UU
COHESION - PSF	1090	1470	1100	640
FRICTION COEFF.	--	--	--	--
MOISTURE CONTENT %	27	25	28	26
DRY DENSITY - PCF	95	95	90	97
CU-CONSOLIDATED UNDRAINED				
UU-UNCONSOLIDATED UNDRAINED				
UC-UNCONFINED COMPRESSION (c=1/2 Qu)				

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Earth Dam or Dike (Proposed)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Proposed Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Proposed Intake
- Existing Utility Access (Manhole)
- Proposed Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- ST Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Luminaire
- Traffic Signal
- Traffic Signal with Luminaire
- TP Telephone Pedestal
- TVP Television Pedestal
- Telephone Pole
- Telephone Pole (Second Company)
- Telephone Pole (Third Company)
- Telephone Pole (Fourth Company)
- Telephone Pole (Fifth Company)
- Power Pole
- Power Pole (Second Company)
- Power Pole (Third Company)
- Power Pole (Fourth Company)
- Power Pole (Fifth Company)
- Electrical Highline Tower (Metal or Concrete)
- Telephone Riser Pole
- Power Riser Pole
- Telegraph Pole
- Satellite TV Dish
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- EB Electric Box
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box

UTILITY LEGEND

G
Black Hills Energy
Brad Fleming
402-221-2714
brad.fleming@blackhillscorp.com

G3
BP Pipelines (North America) Inc.
David Sommerfeld
630-536-2729
david.sommerfeld@bp.com

E3
ITC Holdings
Chad Levi
319-297-6765
clevi@itctransco.com

E2
Maquoketa Valley Rural Electric
James Lauzon
319-462-3541
jlauzon@mvec.com

TV
Mediacom (cable TV)
Bob Frazor
563-387-6119
bfrazor@mediacomcc.com

T2
FO2
Centurylink (formerly Qwest Communications)
Steven Parker
515-265-0968
steven.parker4@centurylink.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE 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

SHADING	Design Color No.	
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Magenta	(5)	Detectable Warning
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading
Brown, Light	(236)	Grading Shading

- 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
- A/C Access Control

SIDEWALK LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES S)

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER S.1

7:51:17 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_S01.sht

For Shared Use Path Curve Details
Refer to G-Sheets

For Mainline Details
Refer to D-Sheets

E PATH GRADING

FOR CITY OF DUBUQUE

319+00
℄165'
(Future R/W)

FOR STATE OF IOWA

℄ Southwest Arterial

CULT. FIELD

324+00
℄200'
(Future R/W)

327+00
℄185'
(Future R/W)

329+83.7±R
℄195'
(Future R/W)

332+50
℄185'
(Future R/W)

333+60
℄160'
(Future R/W)

7305 7310 7315 7320 7325 7330

BIKE-7-12 BIKE-7-14 BIKE-7-15 BIKE-7-16 BIKE-7-17 BIKE-7-18 BIKE-7-19

℄ Shared Use Path "Bike7"

TABLE MOUND TWP.
T-88N R-2E
SEC. 11

Sta. 7316+00.00
Begin Shared Use Path Grading

Sta. 7325+10.71
Skew = 22° Rt. Ahd.
Install 38'x24" 2000
F.L. = Lt. 777.72
Rt. 769.75
Other 770.06

W.E. 751.4

EARTHEN DAM

DUBUQUE CO.
TABLE MOUND TWP.

"Bike7" Grading From Sta. 7299+00.53
to Sta. 7316+00.00 Completed by Others.
Refer to Project HDP-2100(664)--71-31

0 100 FEET

SHARED USE PATH "BIKE7"

Proposed Profile Grade
Shared Use Path
"Bike7"

VPI +20.00
Elv 865.36
Len 100.00 ft
-7.393%
-4.500%

VPI +00.00
Elv 852.76
Len 80.00 ft
-4.500%
-7.000%

VPI +00.00
Elv 838.76
Len 50.00 ft

Existing Ground
℄ Shared Use Path
"Bike7"

VPI +50.00
Elv 837.53
Len 50.00 ft
2.460%
-7.200%

VPI +60.00
Elv 822.41
Len 150.00 ft
-1.200%

VPI +60.000
Elv 820.01
Len 80.00 ft

Sta. 7316+00.00
Begin Shared Use Path Grading
Elev. 820.67

-5.500%
-2.260%
-5.500%

VPI +50.00
Elv 809.56
Len 60.00 ft

VPI +50.00
Elv 807.30
Len 40.00 ft

VPI +00.00
Elv 793.55
Len 80.00 ft

Existing Ground
℄ Shared Use Path
"Bike7"

VPI +40.00
Elv 789.07
Len 80.00 ft
-3.200%
-6.047%

Sta. 7325+85.73
774.20
4.700%

VPI +70.00
Elv 775.16
Len 40.00 ft

Existing Ground
℄ Shared Use Path
"Bike7"

820.42 819.88 819.01 817.81 816.43 815.06 813.68 812.31 810.94 809.80 809.00 808.43 807.86 807.13 805.92 804.55 803.17 801.80 800.42 799.05 797.67 796.30 794.95 793.78 792.78 791.95 791.15 790.35 789.44 788.30 786.95 785.44 783.93 782.41 780.90 779.39 777.88 776.37 774.96

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	S.2

7:51:19 PM 12/20/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_S01.sht

For Shared Use Path Curve Details
Refer to G-Sheets

TABLE MOUND TWP.
T-88N R-2E
SEC. 14

℄ U.S. 61
Loop "C"

℄ U.S. 61
Loop "B"

℄ Southwest
Arterial

Sta. 8363+60.06
Skew = 30° Rt. Ahd.
Install 18'x18" 2000D
F.L. = Lt. 758.42
Rt. 759.92
Other 758.54

℄ Shared Use
Path "Bike8N"

℄ U.S. 61 Connector
Road "B"

TABLE MOUND TWP.
T-88N R-2E
SEC. 13

BIKE-7-20
BIKE-7-21
BIKE-7-22
BIKE-7-23
BIKE-7-24

℄ Shared Use
Path "Bike7"

℄ U.S. 61 Connector
Road "A"

0 FEET 100

For Mainline, Loop, Ramp,
and Connector Road Details
Refer to D, E, and K Sheets

**SHARED USE PATH
"BIKE7" & "BIKE8N"**

Existing Ground
℄ Shared Use Path
"Bike7"

Proposed Profile Grade
Shared Use Path
"Bike7"

Proposed Profile Grade
Shared Use Path
"Bike8"

Shared Use Path Profile
Controlled by Typical
"PATH-2" From Mainline
(Southwest Arterial)

VPI +25.00
Elv 766.11
Len 50.00 ft

VPI +11.00
Elv 756.62
Len 50.00 ft

VPI +50.000
Elv 742.25

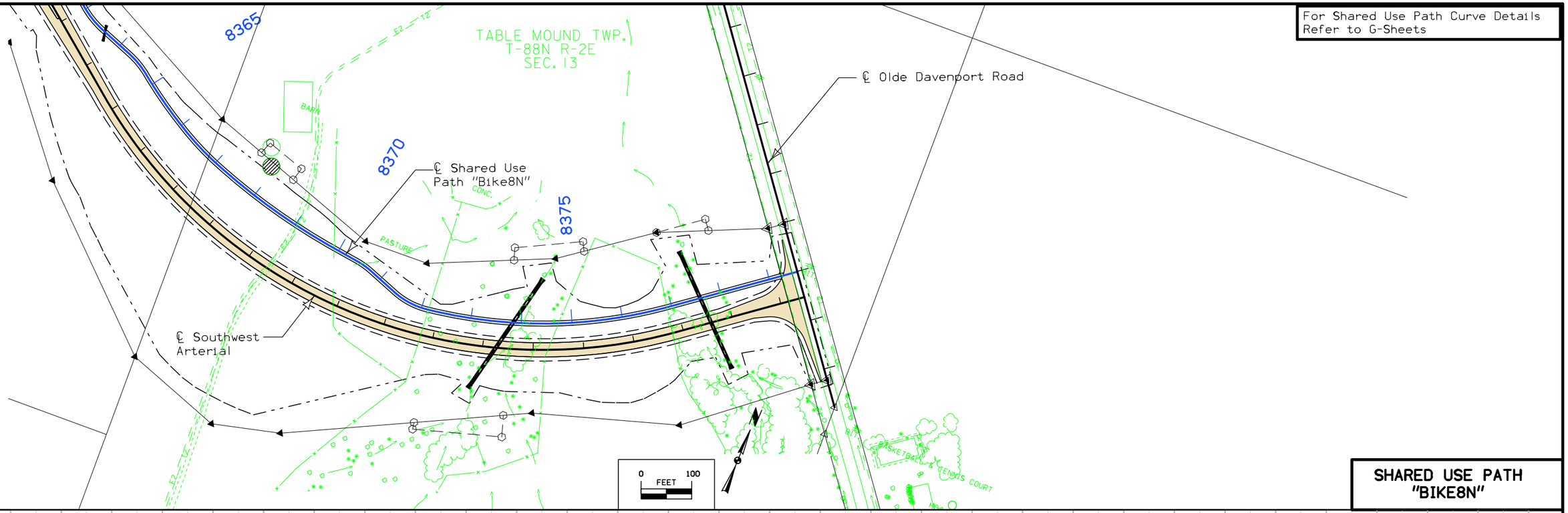
-1.388%
+2.740%
+5.524%
+8.324%

743.72
743.41
755.21

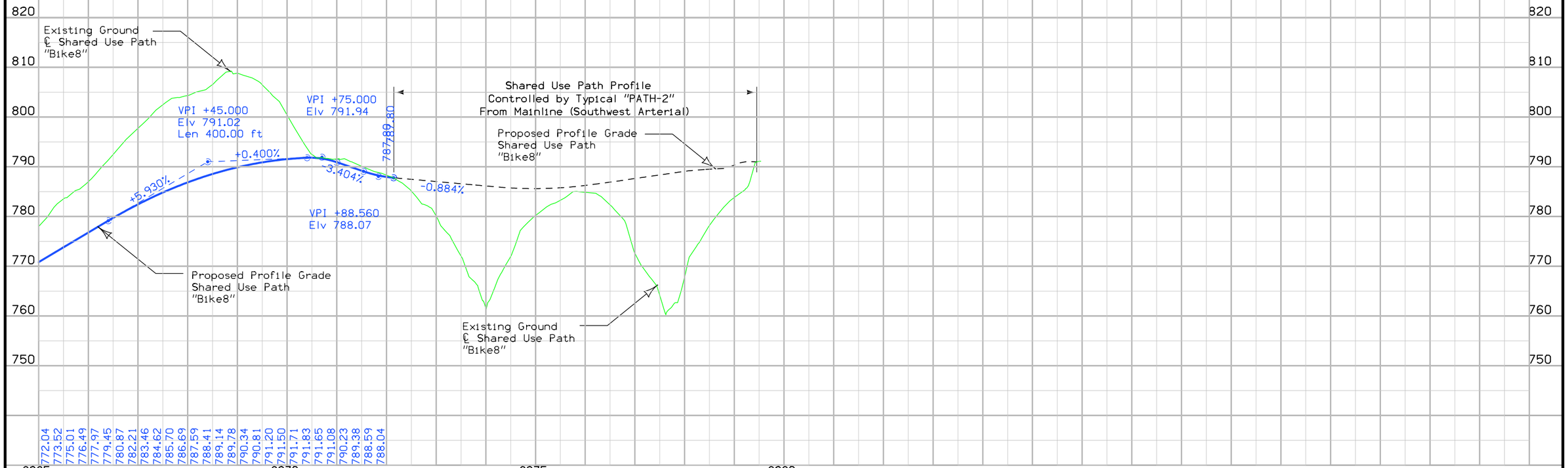
Existing Ground
℄ Shared Use Path
"Bike8"

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	S.3

For Shared Use Path Curve Details
Refer to G-Sheets



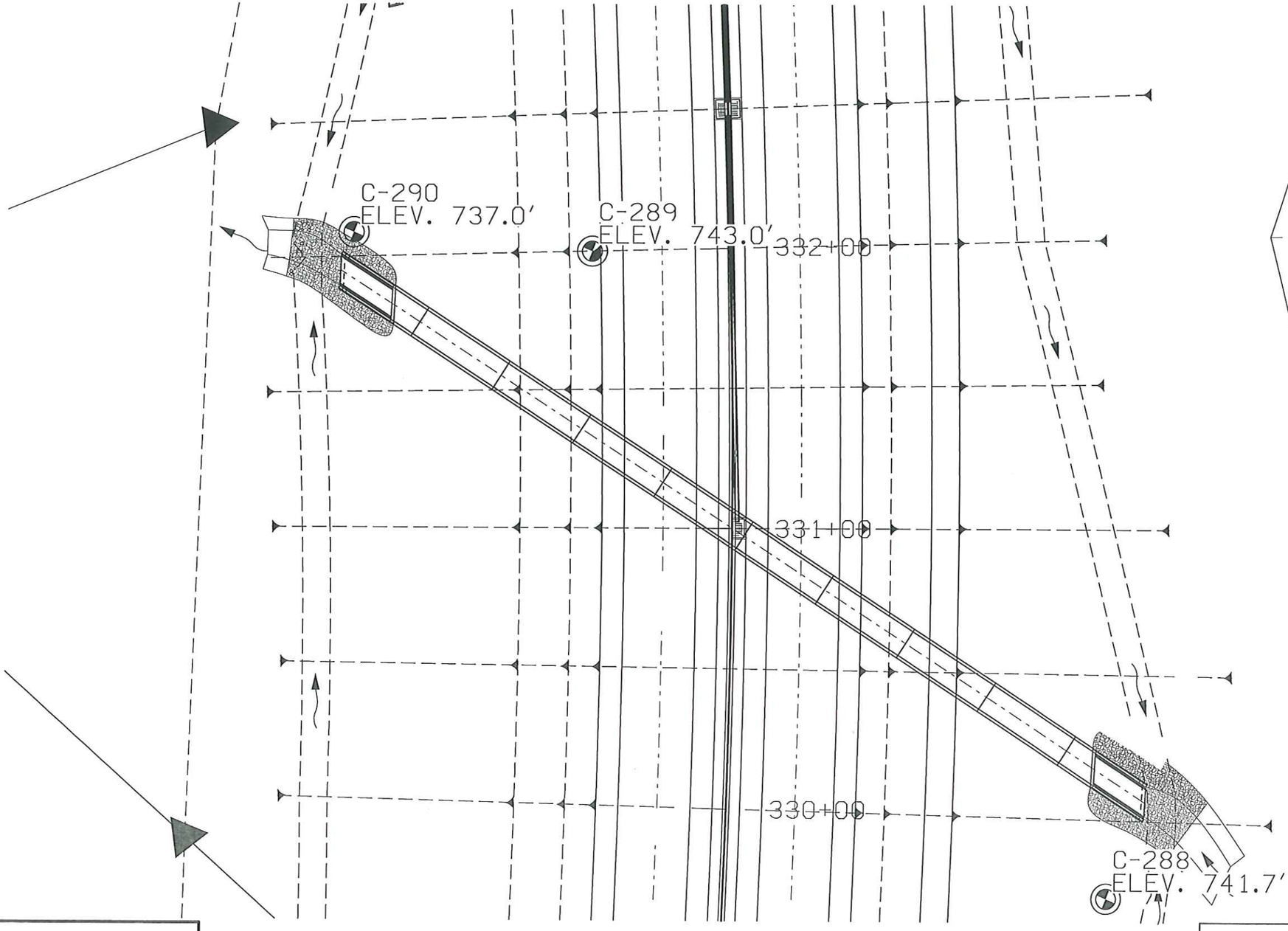
SHARED USE PATH "BIKE8N"



ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	S.4

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01



LOCATION

SW ARTERIAL (IA 32)
OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.437951 11/64
LONG. -90.6886064 33/64

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 _____ Date 12/22/16

THERESA STROMBERG-MURPHY
Printed or Typed Name

My license renewal date is December 31, 2017

Pages or sheets covered by this seal: SPS.1-SPS.5

0 FEET 40

DESIGN FOR 33° SKEW (L.A.)

10'x6'x302'-0 REINFORCED CONCRETE BOX CULVERT

SOILS PROFILE SHEET

STA. 331+00.00 MARCH, 2017

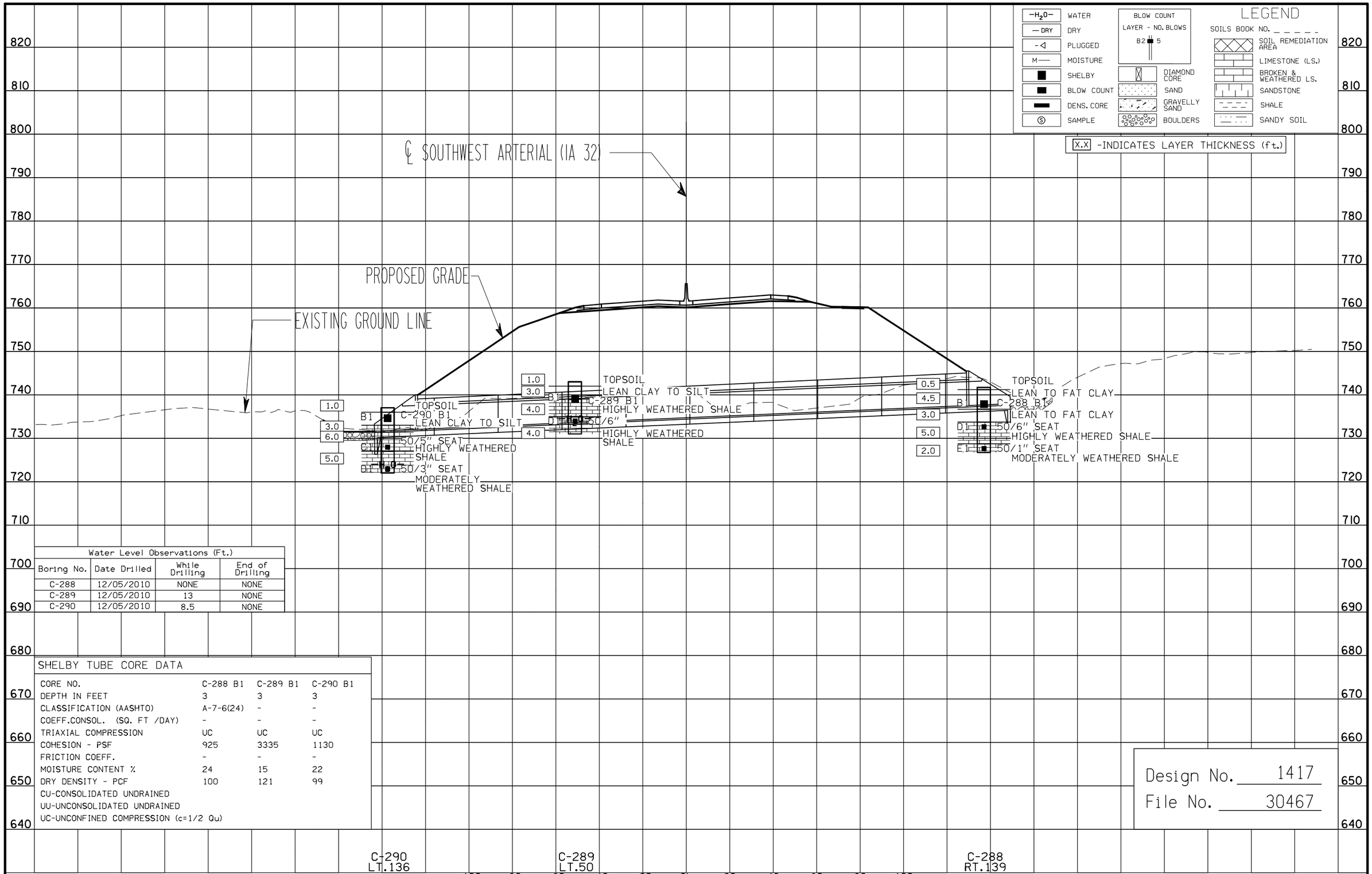
DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417

FILE NO. 30467	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-3(36)-3H-31	SHEET NUMBER SPS.1

3:56:57 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SPS\EASTGRADING\1063020.SPS



Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	End of Drilling
C-288	12/05/2010	NONE	NONE
C-289	12/05/2010	13	NONE
C-290	12/05/2010	8.5	NONE

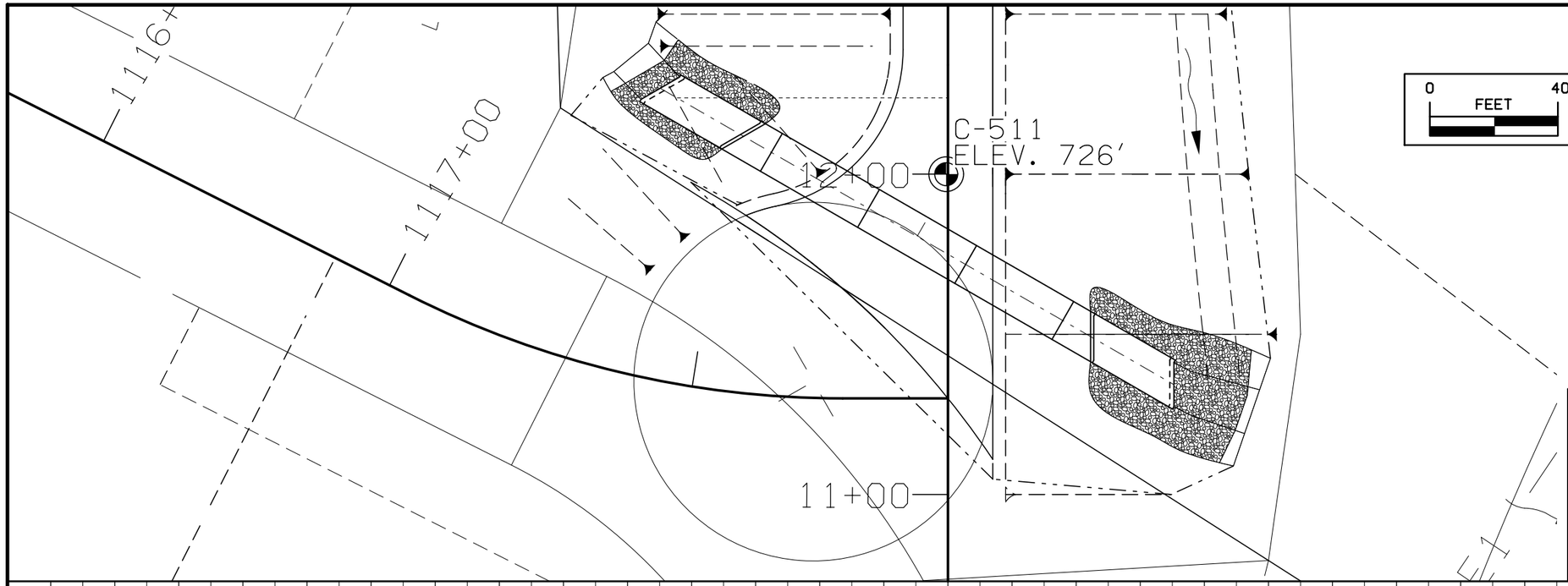
SHELBY TUBE CORE DATA			
CORE NO.	C-288 B1	C-289 B1	C-290 B1
DEPTH IN FEET	3	3	3
CLASSIFICATION (AASHTO)	A-7-6(24)	-	-
COEFF.CONSOL. (SQ. FT /DAY)	-	-	-
TRIAXIAL COMPRESSION	UC	UC	UC
COHESION - PSF	925	3335	1130
FRICTION COEFF.	-	-	-
MOISTURE CONTENT %	24	15	22
DRY DENSITY - PCF	100	121	99

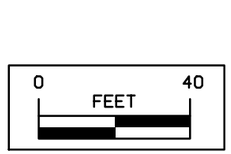
CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

Design No. 1417
File No. 30467

FILE NO. 30467	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-3(36)-3H-31	SHEET NUMBER SPS.2

3:57:10 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SPS\EASTGRADING\1063020.SPS





THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

DESIGN FOR 30° SKEW (L.A)

12'x8'x125'-Ø REINFORCED CONCRETE BOX CULVERT

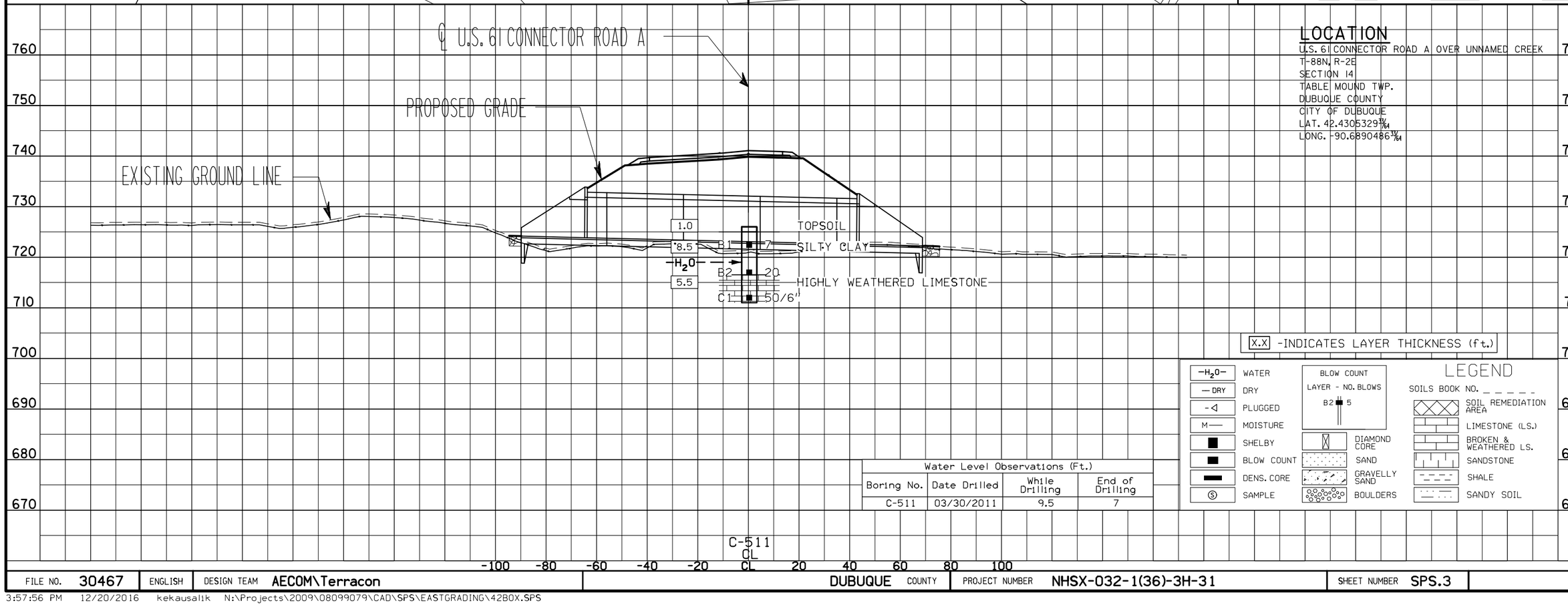
SOILS PROFILE SHEET

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 30467 DESIGN NO. 1517



LOCATION

U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4305329 33/64
LONG. -90.6890486 33/64

Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	End of Drilling
C-511	03/30/2011	9.5	7

X.X -INDICATES LAYER THICKNESS (ft.)

LEGEND

$-H_2O-$	WATER
— DRY	DRY
-◁	PLUGGED
M—	MOISTURE
■	SHELBY
■	BLOW COUNT
▬	DENS. CORE
Ⓢ	SAMPLE

BLOW COUNT
LAYER - NO. BLOWS
B2 5

	DIAMOND CORE
	SAND
	GRAVELLY SAND
	BOULDERS

SOILS BOOK NO. _ _ _ _ _

	SOIL REMEDIATION AREA
	LIMESTONE (LS.)
	BROKEN & WEATHERED LS.
	SANDSTONE
	SHALE
	SANDY SOIL

FILE NO. 30467	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)-3H-31	SHEET NUMBER SPS.3
---	---	---	---	---	---

3:57:56 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SPS\EASTGRADING\42BOX.SPS

LEGEND

SOILS BOOK NO. _ _ _ _ _

$-H_2O-$	WATER	SOIL REMEDIATION AREA	
— DRY	DRY	LIMESTONE (LS.)	
-◁	PLUGGED	BROKEN & WEATHERED LS.	
M——	MOISTURE	SANDSTONE	
■	SHELBY	SHALE	
■	BLOW COUNT	SANDY SOIL	
▬	DENS. CORE		
Ⓢ	SAMPLE		

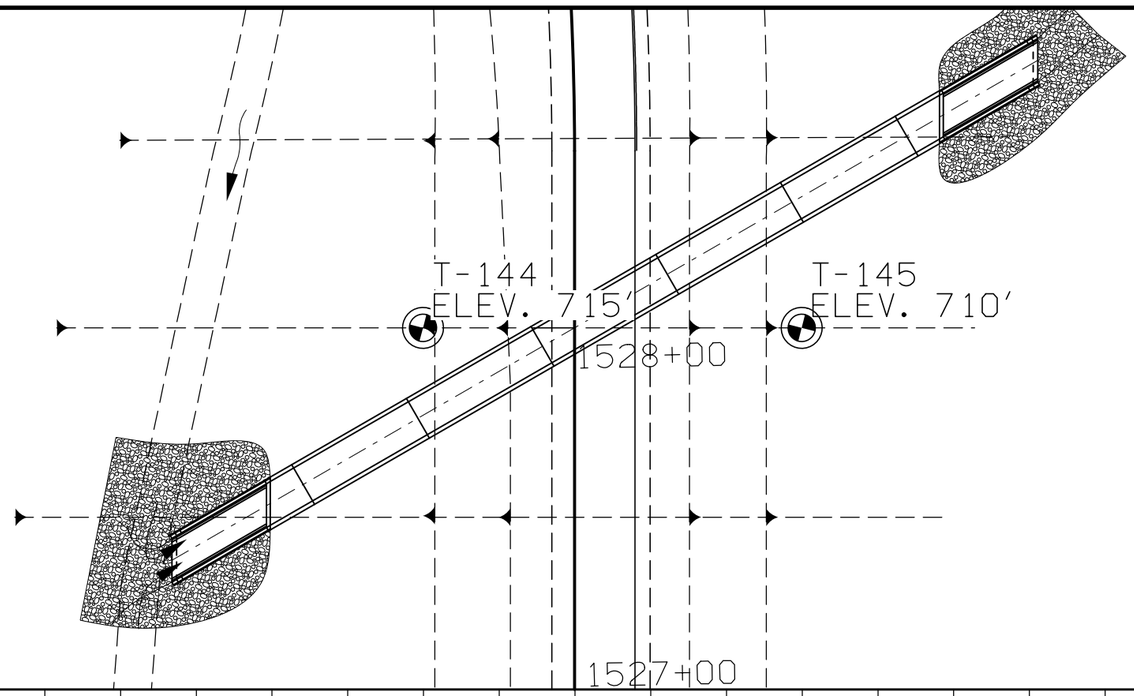
BLOW COUNT
LAYER - NO. BLOWS
B2 ■ 5

DIAMOND CORE
SAND
GRAVELLY SAND
BOULDERS

X.X -INDICATES LAYER THICKNESS (ft.)

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01



0 FEET 40

DESIGN FOR 30° SKEW (R.A.)

10'x8'x204'-0 REINFORCED CONCRETE BOX CULVERT

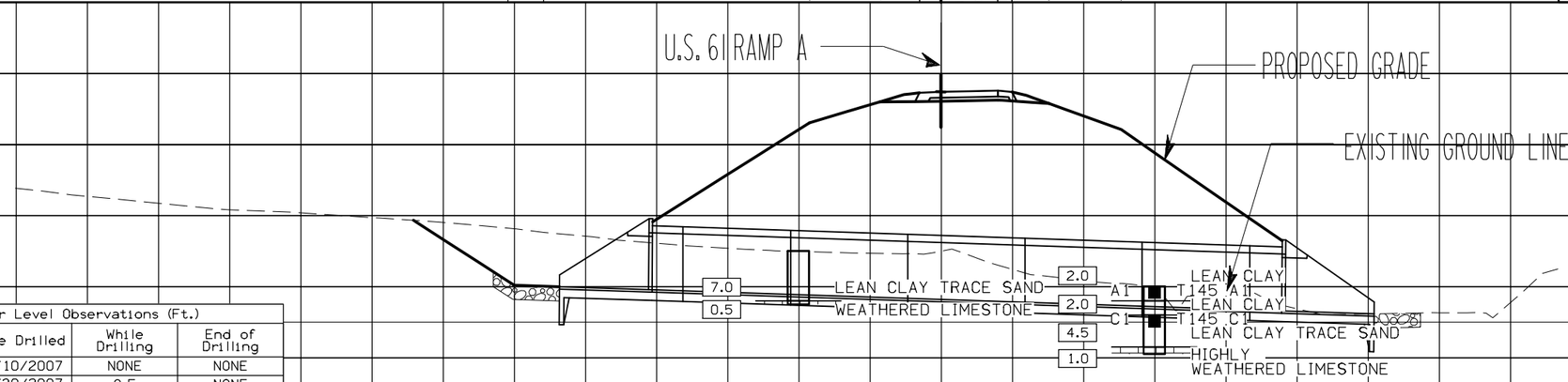
SOILS PROFILE SHEET

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417



LOCATION

U.S. 61 RAMP A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.435831 9/64
LONG. -90.683126 43/64

Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	End of Drilling
T-144	05/10/2007	NONE	NONE
T-145	03/30/2007	8.5	NONE

SHELBY TUBE CORE DATA

CORE NO.	T-145 A1	T-145 C1
DEPTH IN FEET	0	4
CLASSIFICATION (AASHTO)	-	-
COEFF.CONSOL. (SQ. FT /DAY)	-	-
TRIAXIAL COMPRESSION	UC	UC
COHESION - PSF	350	1990
FRICTION COEFF.	-	-
MOISTURE CONTENT %	26	23
DRY DENSITY - PCF	75	97

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

FILE NO. 30467	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)-3H-31	SHEET NUMBER SPS.4

3:56:26 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SPS\EASTGRADING\1082040.SPS

LEGEND

SOILS BOOK NO. _ _ _ _ _

$-H_2O-$	WATER		SOIL REMEDIATION AREA
— DRY	DRY		LIMESTONE (LS.)
-◁	PLUGGED		BROKEN & WEATHERED LS.
M——	MOISTURE		SANDSTONE
■	SHELBY		SHALE
■	BLOW COUNT		SANDY SOIL
▬	DENS. CORE		
Ⓢ	SAMPLE		

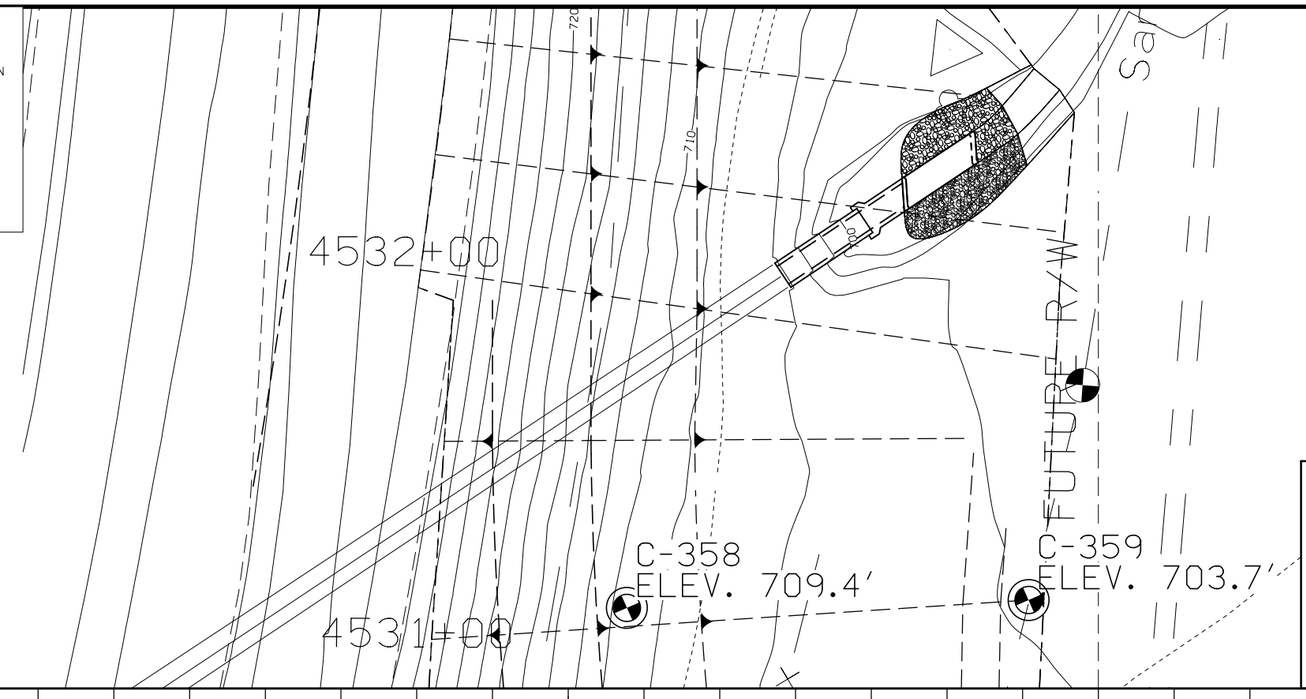
BLOW COUNT
LAYER - NO. BLOWS
B2 ■ 5

DIAMOND CORE
SAND
GRAVELLY SAND
BOULDERS

X.X -INDICATES LAYER THICKNESS (ft.)

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01



0 FEET 40

DESIGN FOR 33° SKEW (R.A.)

6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION

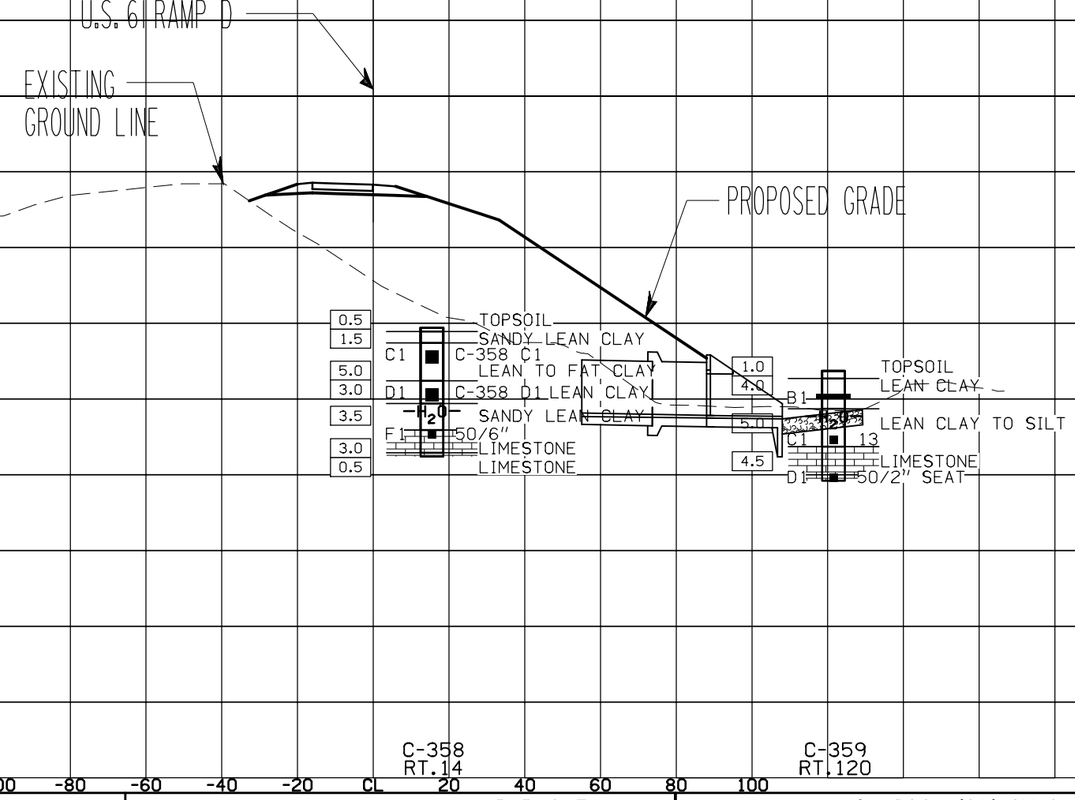
SOILS PROFILE SHEET

STA. 4534+55.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 4 FILE NO. 30467 DESIGN NO. 1717



Water Level Observations (Ft.)

Boring No.	Date Drilled	While Drilling	End of Drilling
C-358	01/20/2010	11	NONE
C-359	01/20/2010	6	NONE

SHELBY TUBE CORE DATA

CORE NO.	C-358 C1	C-358 D1
DEPTH IN FEET	3	8
CLASSIFICATION (AASHTO)	A-7-6(20)	A-7-6(23)
COEFF.CONSOL. (SQ. FT /DAY)	-	-
TRIAXIAL COMPRESSION	UU	UU
COHESION - PSF	1100	640
FRICTION COEFF.	-	-
MOISTURE CONTENT %	28	26
DRY DENSITY - PCF	90	97

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Qu)

LOCATION

U.S. 61 RAMP D OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.43584523°N
LONG. -90.68074503°W

FILE NO. 30467	ENGLISH	DESIGN TEAM AECOM\Terracon	DUBUQUE COUNTY	PROJECT NUMBER NHSX-032-1(36)-3H-31	SHEET NUMBER SPS.5

3:41:14 PM 12/20/2016 kekausalik N:\Projects\2009\08099079\CAD\SPS\EASTGRADING\6X6BOX.SPS

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
Stage 1																						
ML032_ACCRDB																						
285+75.00	128	29	99	0	0	0	0	29	1,618	75	1,693	2,099	-2,070	0	0	99	50	70	29			
286+00.00	108	14	94	0	0	0	0	14	1,738	76	1,814	2,249	-2,235	0	0	94	50	70	24			
286+25.00	98	14	83	0	0	0	0	14	1,786	70	1,856	2,302	-2,288	0	0	83	51	71	12			
286+50.00	91	17	74	0	0	0	0	17	1,807	65	1,872	2,321	-2,304	0	0	74	52	73	1			
286+75.00	91	17	74	0	0	0	0	17	1,829	65	1,894	2,349	-2,332	0	0	74	54	76	-2			
287+00.00	93	20	73	0	0	0	0	20	1,871	64	1,935	2,399	-2,379	0	0	73	56	78	-6			
287+25.00	98	24	74	0	0	0	0	24	1,933	64	1,997	2,476	-2,452	0	0	74	58	81	-7			
287+50.00	115	33	82	0	0	0	0	33	1,949	71	2,020	2,505	-2,472	0	0	82	61	85	-4			
287+75.00	131	48	84	0	0	0	0	48	1,866	71	1,937	2,402	-2,354	0	0	84	64	90	-6			
288+00.00	141	57	84	0	0	0	0	57	1,703	70	1,773	2,199	-2,142	0	0	84	67	94	-10			
288+25.00	116	36	81	0	0	0	0	36	1,529	70	1,599	1,983	-1,947	0	0	81	67	94	-13			
288+50.00	86	10	77	0	0	0	0	10	1,403	68	1,471	1,824	-1,814	0	0	77	62	87	-10			
288+75.00	83	11	72	0	0	0	0	11	1,314	63	1,377	1,708	-1,697	0	0	72	60	84	-12			
289+00.00	72	7	65	0	0	0	0	7	1,261	61	1,322	1,639	-1,632	0	0	65	55	77	-12			
289+25.00	62	1	61	0	0	0	0	1	1,199	59	1,258	1,560	-1,559	0	0	61	51	71	-10			
289+50.00	70	8	62	0	0	0	0	8	1,097	56	1,153	1,430	-1,422	0	0	62	53	74	-12			
289+75.00	93	29	63	0	0	0	0	29	1,010	53	1,063	1,318	-1,289	0	0	63	55	77	-14			
290+00.00	129	66	63	0	0	0	0	66	924	49	973	1,207	-1,141	0	0	63	55	77	-14			
290+25.00	98	98	0	0	0	0	0	98	837		837	1,038	-940	0	0	0	55	77	-77			
290+50.00																						
ML032_ACCRDB																						
Totals:	1,903	539	1,365	0	0	0	0	539	28,674	1,170	29,844	37,007	-36,468	0	0	1,365	1,076	1,506	-142			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.1

12/20/2016 3:23:36 PM VogelJ1 P:\60180237\900-CAD-GIS\31032010941Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
ML032-SEG2																						
315+25.00																						
315+50.00	366	176	189	0	0	0	0	176	4,108	143	4,251	5,271	-5,095	4,060	4,519	189	159	223	-34			
315+75.00	325	156	169	0	0	0	0	156	4,100	125	4,225	5,239	-5,083	4,050	4,510	169	155	217	-48			
316+00.00	311	145	166	0	0	0	0	145	3,822	123	3,945	4,892	-4,747	3,798	4,257	166	151	211	-45			
316+23.31	300	149	151	0	0	0	0	149	3,097	110	3,207	3,977	-3,828	2,971	3,399	151	136	190	-39			
316+25.00	23	12	11	0	0	0	0	12	204	8	212	263	-251	269	300	11	10	14	-3			
316+41.31	226	123	103	0	0	0	0	123	1,826	73	1,899	2,355	-2,232	1,659	1,959	103	91	127	-24			
316+50.00	123	68	54	0	0	0	0	68	871	38	909	1,127	-1,059	795	955	54	47	66	-12			
316+75.00	314	166	148	0	0	0	0	166	2,157	106	2,263	2,806	-2,640	1,720	2,179	148	126	176	-28			
317+00.00	256	119	137	0	0	0	0	119	1,757	102	1,859	2,305	-2,186	1,225	1,684	137	112	157	-20			
317+25.00	231	101	131	0	0	0	0	101	1,498	101	1,599	1,983	-1,882	913	1,371	131	104	146	-15			
317+25.31	4	1	2	0	0	0	0	1	17	2	19	24	-23	95	102	2	1	1	1			
317+50.00	222	96	126	0	0	0	0	96	1,321	99	1,420	1,761	-1,665	704	1,158	126	98	137	-11			
317+75.00	226	100	126	0	0	0	0	100	1,262	98	1,360	1,686	-1,586	618	1,078	126	97	136	-10			
318+00.00	231	106	125	0	0	0	0	106	1,227	96	1,323	1,641	-1,535	572	1,030	125	96	134	-10			
318+09.31	86	40	46	0	0	0	0	40	449	35	484	600	-560	250	422	46	36	50	-4			
318+25.00	147	69	78	0	0	0	0	69	758	59	817	1,013	-944	366	653	78	60	84	-6			
318+50.00	233	107	126	0	0	0	0	107	1,207	97	1,304	1,617	-1,510	537	996	126	98	137	-11			
318+75.00	224	96	129	0	0	0	0	96	1,230	99	1,329	1,648	-1,552	560	1,019	129	101	141	-12			
319+00.00	211	82	129	0	0	0	0	82	1,283	100	1,383	1,715	-1,633	622	1,081	129	101	141	-12			
319+25.00	195	69	126	0	0	0	0	69	1,362	99	1,461	1,812	-1,743	715	1,174	126	98	137	-11			
319+50.00	181	58	123	0	0	0	0	58	1,467	100	1,567	1,943	-1,885	0	0	123	94	132	-9			
319+75.00	235	53	182	0	0	0	0	53	1,576	161	1,737	2,154	-2,101	920	1,379	182	92	129	53			
320+00.00	248	63	186	0	0	0	0	63	1,669	162	1,831	2,271	-2,208	1,037	1,495	186	98	137	49			
320+25.00	264	44	194	0	0	0	27	71	1,718	167	1,885	2,337	-2,266	1,096	1,556	194	104	146	48			
320+50.00	258	16	196	0	0	0	46	62	1,762	170	1,932	2,396	-2,334	1,328	1,788	196	106	148	48			
320+75.00	193	29	144	0	0	0	20	49	1,838	120	1,958	2,428	-2,379	1,400	1,860	144	107	150	-6			
321+00.00	186	42	144	0	0	0	0	42	1,929	120	2,049	2,541	-2,499	1,510	1,969	144	108	151	-7			
321+25.00	158	31	127	0	0	0	0	31	2,012	108	2,120	2,629	-2,598	1,598	2,057	127	103	144	-17			
321+50.00	145	21	124	0	0	0	0	21	2,046	109	2,155	2,672	-2,651	1,513	1,972	124	99	139	-15			
321+75.00	154	24	130	0	0	0	0	24	2,019	112	2,131	2,643	-2,619	1,560	2,020	130	100	140	-10			
322+00.00	161	33	129	0	0	0	0	33	1,990	108	2,098	2,602	-2,569	1,481	1,941	129	100	140	-11			
322+25.00	176	51	126	0	0	0	0	51	2,012	104	2,116	2,624	-2,573	1,592	2,052	126	97	136	-10			
322+50.00	186	62	124	0	0	0	0	62	2,087	101	2,188	2,713	-2,651	1,681	2,140	124	94	132	-8			
322+64.55	112	40	72	0	0	0	0	40	1,268	58	1,326	1,644	-1,604	1,095	1,363	72	55	77	-5			
322+75.00	87	33	53	0	0	0	0	33	939	43	982	1,218	-1,185	734	926	53	41	57	-4			
323+00.00	210	82	128	0	0	0	0	82	2,315	103	2,418	2,998	-2,916	1,959	2,419	128	100	140	-12			
323+25.00	209	78	131	0	0	0	0	78	2,362	107	2,469	3,062	-2,984	2,017	2,476	131	104	146	-15			
323+36.55	93	32	61	0	0	0	0	32	1,092	50	1,142	1,416	-1,384	996	1,208	61	49	69	-8			
323+50.00	107	36	72	0	0	0	0	36	1,253	59	1,312	1,627	-1,591	1,040	1,287	72	58	81	-9			
323+75.00	213	77	136	0	0	0	0	77	2,167	112	2,279	2,826	-2,749	1,726	2,185	136	110	154	-18			
324+00.00	230	93	137	0	0	0	0	93	1,890	112	2,002	2,483	-2,390	1,430	1,889	137	112	157	-20			
324+08.55	81	34	47	0	0	0	0	34	582	38	620	769	-735	491	649	47	38	53	-6			
324+25.00	150	60	90	0	0	0	0	60	1,060	73	1,133	1,405	-1,345	758	1,060	90	73	102	-12			
324+33.55	74	28	46	0	0	0	0	28	526	38	564	699	-671	422	579	46	37	52	-6			
324+50.00	147	55	91	0	0	0	0	55	990	73	1,063	1,318	-1,263	671	973	91	75	105	-14			
324+75.00	231	89	142	0	0	0	0	89	1,482	111	1,593	1,975	-1,886	1,003	1,462	142	119	167	-25			
325+00.00	229	86	143	0	0	0	0	86	1,485	116	1,601	1,985	-1,899	1,008	1,467	143	120	168	-25			
325+25.00	234	66	144	0	0	0	24	90	1,479	119	1,598	1,982	-1,892	1,007	1,467	144	121	169	-25			
325+50.00	253	68	161	0	0	0	24	92	1,450	125	1,575	1,953	-1,861	976	1,435	161	118	165	-4			
325+75.00	277	89	188	0	0	0	0	89	1,400	140	1,540	1,910	-1,821	852	1,311	188	112	157	31			
326+00.00	288	90	198	0	0	0	0	90	1,343	148	1,491	1,849	-1,759	781	1,240	198	108	151	47			
326+25.00	282	88	194	0	0	0	0	88	1,330	143	1,473	1,827	-1,739	750	1,209	194	108	151	43			
326+50.00	257	94	163	0	0	0	0	94	1,367	123	1,490	1,848	-1,754	796	1,256	163	110	154	9			
326+75.00	234	97	137	0	0	0	0	97	1,470	110	1,580	1,959	-1,862	929	1,388	137	112	157	-20			
327+00.00	226	87	139	0	0	0	0	87	1,633	113	1,746	2,165	-2,078	1,125	1,583	139	114	160	-21			
327+25.00	218	78	140	0	0	0	0	78	1,825	115	1,940	2,406	-2,328	1,358	1,817	140	115	161	-21			
327+50.00	205	64	141	0	0	0	0	64	2,050	119	2,169	2,690	-2,626	1,633	2,092	141	117	164	-23			
327+75.00	201	58	143	0	0	0	0	58	2,306	122	2,428	3,011	-2,953	1,897	2,356	143	119	167	-24			
328+00.00	211	66	145	0	0	0	0	66	2,587	123	2,710	3,360	-3,294	2,228	2,687	145	122	171	-26			
328+25.00	219	72	147	0	0	0	0	72	2,873	124	2,997	3,716	-3,644	2,656	3,115	147	124	174	-27			
328+50.00	226	79	148	0	0	0	0	79	3,150	124	3,274	4,060	-3,981	3,005	3,465	148	127	178	-30			
328+75.00	235	85	150	0	0	0	0	85	3,441	126	3,567	4,423	-4,338	3,295	3,753	150	128	179	-29			
329+00.00	236	86	150	0	0	0	0	86	3,713	126	3,839	4,760	-4,674	3,643	4,103	150	129	181	-31			
329+25.00	232	81	151	0	0	0	0	81	3,969	128	4,097	5,080	-4,999	4,028	4,486	151	130	182	-31			
329+50.00	239	76	163	0	0	0	0	76	4,135	140	4,275	5,301	-5,225	4,232	4,691	163	130	182	-19			
329+75.00	447	58	389	0	0	0	0	58	4,170	372	4,542	5,632	-5,574	4,184	4,643	389	127	178	211			
330+00.00	710	73	637	0	0	0	0	73	4,130	613	4,743	5,881	-5,808	4,178	4,638	637	137	192	445			
Subtotals:	14,402	4,886	9,378	0	0	0	141	5,027	126,913	7,701	134,614	166,924	-161,897	102,115	128,749	9,378	6,678	9,349	28			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
330+00.00	862	205	657	0	0	0	0	205	4,055	618	4,673	5,795	-5,590	4,041	4,501	657	145	203	454			
330+25.00	713	283	431	0	0	0	0	283	4,043	390	4,433	5,497	-5,214	4,070	4,530	431	140	196	235			
330+50.00	506	323	183	0	0	0	0	323	3,996	146	4,142	5,136	-4,813	4,059	4,517	183	139	195	-12			
330+75.00	368	215	153	0	0	0	0	215	3,905	121	4,026	4,992	-4,777	3,952	4,412	153	137	192	-39			
331+00.00	295	150	146	0	0	0	0	150	3,309	122	3,431	4,255	-4,105	3,217	3,675	146	130	182	-36			
331+25.00	352	223	130	0	0	0	0	223	2,567	112	2,679	3,322	-3,099	2,304	2,764	130	120	168	-38			
331+50.00	392	229	163	0	0	0	0	229	2,179	127	2,306	2,860	-2,631	1,841	2,301	163	117	164	-1			
331+75.00	462	263	199	0	0	0	0	263	1,686	157	1,843	2,285	-2,022	1,241	1,700	199	110	154	45			
332+00.00	648	425	209	0	0	0	13	438	1,230	147	1,377	1,708	-1,270	668	1,128	209	113	158	51			
332+25.00	899	683	199	0	0	0	17	700	837	100	937	1,162	-462	156	616	199	125	175	24			
332+50.00	1,058	893	161	0	0	0	4	897	452	68	520	645	252	0	123	161	124	174	-13			
332+75.00	1,268	1,121	147	0	0	0	0	1,121	151	46	197	244	877	0	0	147	125	175	-28			
333+00.00	1,541	1,394	147	0	0	0	0	1,394	10	14	24	30	1,364	0	0	147	125	175	-28			
333+25.00	1,849	1,701	147	0	0	0	0	1,701	0	1	1	1	1,700	0	0	147	124	174	-27			
333+50.00	2,040	1,896	145	0	0	0	0	1,896	0		0	0	1,896	0	0	145	121	169	-24			
333+75.00	2,088	1,876	140	0	0	0	72	1,948	0		0	0	1,948	0	0	140	116	162	-22			
334+00.00	2,188	1,973	135	0	0	0	80	2,053	2		2	3	2,051	0	0	135	109	153	-18			
334+25.00	2,448	2,301	131	0	0	0	16	2,317	3		3	4	2,313	0	0	131	103	144	-13			
334+50.00	2,795	2,648	130	0	0	0	17	2,665	1		1	1	2,664	0	0	130	102	143	-13			
334+75.00	3,180	3,025	136	0	0	0	18	3,043	0		0	0	3,043	0	0	136	110	154	-18			
335+00.00	3,533	3,338	143	0	0	0	52	3,390	0		0	0	3,390	0	0	143	120	168	-25			
335+25.00	3,724	3,421	147	0	0	0	156	3,577	0		0	0	3,577	0	0	147	124	174	-27			
335+50.00	3,624	3,039	187	0	0	0	398	3,437	0		0	0	3,437	0	0	187	125	175	12			
335+75.00	3,292	2,201	233	0	0	0	858	3,059	0		0	0	3,059	0	186	233	124	174	59			
336+00.00	2,913	1,955	234	0	0	0	723	2,678	0		0	0	2,678	0	192	234	126	176	58			
336+25.00	2,545	2,185	191	0	0	0	170	2,355	0		0	0	2,355	0	0	191	130	182	9			
336+50.00	2,172	2,000	152	0	0	0	20	2,020	223	3	226	280	1,740	0	0	152	132	185	-33			
336+75.00	1,878	1,725	153	0	0	0	0	1,725	346	20	366	454	1,271	0	4	153	132	185	-32			
337+00.00	1,689	1,536	153	0	0	0	0	1,536	459	39	498	618	918	0	146	153	133	186	-33			
337+25.00	1,609	1,305	293	11	0	0	0	1,316	579	178	757	939	377	0	283	293	128	179	114			
337+50.00	1,422	984	427	11	0	0	0	995	586	338	924	1,146	-151	0	309	427	118	165	262			
337+75.00	1,110	653	430	26	0	0	0	679	827	355	1,182	1,466	-787	186	645	430	116	162	268			
338+00.00	736	353	315	68	0	0	0	421	875	229	1,104	1,369	-948	403	787	315	98	137	178			
338+20.90	125	31	49	19	0	0	26	76	187	31	218	270	-194	186	262	49	19	27	22			
338+25.00	558	217	160	50	0	0	130	397	612	36	648	804	-407	0	363	160	94	132	28			
338+45.90	99	83	15	0	0	0	0	83	133		133	165	-82	52	128	15	18	25	-10			
338+50.00	607	532	75	0	0	0	0	532	1,261	22	1,283	1,591	-1,059	547	1,007	75	110	154	-79			
338+75.00	609	543	67	0	0	0	0	543	915	18	933	1,157	-614	102	560	67	106	148	-81			
339+00.00	513	447	54	0	0	0	12	459	269	16	285	353	106	0	0	54	74	104	-50			
339+17.90	250	214	23	0	0	0	13	227	24	3	27	34	194	0	0	23	29	41	-18			
339+25.00	1,253	910	104	0	0	0	240	1,150	27	2	29	36	1,114	0	0	104	99	139	-35			
339+50.00	1,951	1,354	125	0	154	0	318	1,826	6		6	8	1,819	0	0	125	99	139	-14			
339+75.00	1,533	1,066	75	0	265	0	127	1,458	0		0	0	1,458	0	0	75	59	83	-8			
339+89.90	1,205	786	51	0	284	0	84	1,154	0		0	0	1,154	0	0	51	40	56	-5			
340+00.00	3,655	1,944	129	0	1,288	0	294	3,526	0		0	0	3,526	0	0	129	105	147	-18			
340+25.00	4,795	1,767	146	0	2,216	0	666	4,649	0		0	0	4,649	0	0	146	118	165	-19			
340+50.00	6,078	1,389	182	0	3,537	0	970	5,896	0		0	0	5,896	0	0	182	138	193	-11			
340+75.00	7,321	853	217	0	5,246	0	1,004	7,103	0		0	0	7,103	0	0	217	155	217	0			
341+00.00	8,627	1,098	240	0	6,185	0	1,104	8,387	0		0	0	8,387	0	0	240	170	238	2			
341+25.00	10,015	2,192	256	0	6,386	0	1,181	9,759	0		0	0	9,759	0	0	256	183	256	0			
341+50.00	11,318	3,280	265	0	6,441	0	1,332	11,053	0		0	0	11,053	0	0	265	192	269	-4			
341+75.00	12,468	4,231	271	0	6,370	0	1,595	12,196	0		0	0	12,196	0	0	271	199	279	-8			
342+00.00	13,420	5,048	273	0	6,366	0	1,734	13,148	0		0	0	13,148	0	0	273	205	287	-14			
342+25.00	14,129	5,667	277	0	6,442	0	1,743	13,852	0		0	0	13,852	0	0	277	216	302	-25			
342+50.00	14,432	5,863	279	0	6,606	0	1,684	14,153	0		0	0	14,153	0	0	279	225	315	-36			
342+75.00	14,294	5,610	250	0	6,798	0	1,636	14,044	0		0	0	14,044	0	0	250	210	294	-44			
343+00.00	13,573	5,944	202	0	6,620	0	808	13,372	0		0	0	13,372	0	0	202	171	239	-37			
343+25.00	12,251	5,935	308	0	6,008	0	0	11,943	0		0	0	11,943	0	0	308	127	178	130			
343+50.00	10,509	4,623	536	0	5,350	0	0	9,973	0		0	0	9,973	0	0	536	85	119	417			
343+75.00	8,605	3,303	600	0	4,702	0	0	8,005	0		0	0	8,005	0	0	600	56	78	522			
344+00.00	6,689	2,081	502	0	3,793	0	314	6,188	0		0	0	6,188	0	0	502	37	52	450			
344+25.00	3,892	1,008	302	0	2,211	0	372	3,591	0		0	0	3,591	0	0	302	14	20	282			
344+50.00	1,993	594	157	0	1,157	0	84	1,835	0		0	0	1,835	0	0	157	0	0	157			
344+75.00	1,786	627	91	0	1,036	0	33	1,696	0		0	0	1,696	0	0	91	0	0	91			
345+00.00	1,559	619	33	0	898	0	9	1,526	0		0	0	1,526	0	0	33	0	0	33			
345+25.00	1,350	560	33	0	755	0	2	1,317	0		0	0	1,317	0	0	33	0	0	33			
345+50.00	1,437	683	40	0	715	0	0	1,398	0		0	0	1,398	0	0	40	0	0	40			
345+75.00	1,667	875	53	0	739	0	0	1,614	0		0	0	1,614	0	0	53	5	7	46			
346+00.00																						
Subtotals:	250,765	118,499	13,387	185	98,568	0	20,129	237,381	35,755	3,459	39,214	48,627	188,754	27,024	35,140	13,387	7,399	10,359	3,028			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
346+00.00	2,269	1,354	82	0	803	0	30	2,187	0		0	0	2,187	0	0	82	44	62	20			
346+25.00	2,711	1,927	120	0	615	0	49	2,591	0		0	0	2,591	0	0	120	92	129	-9			
346+50.00	2,440	1,990	139	0	280	0	30	2,300	0		0	0	2,300	0	0	139	117	164	-25			
346+75.00	2,153	1,847	145	0	146	0	15	2,008	0		0	0	2,008	0	0	145	125	175	-30			
347+00.00	1,853	1,614	142	0	93	0	5	1,712	7	3	10	12	1,700	0	0	142	119	167	-25			
347+25.00	1,536	1,342	132	0	48	0	13	1,403	33	15	48	60	1,343	0	0	132	106	148	-16			
347+50.00	1,266	1,079	174	0	0	0	13	1,092	89	44	133	165	927	0	0	174	91	127	47			
347+75.00	1,025	789	236	0	0	0	0	789	169	87	256	318	472	0	0	236	83	116	120			
348+00.00	802	561	242	0	0	0	0	561	284	111	395	490	71	0	0	242	76	106	136			
348+25.00	617	427	190	0	0	0	0	427	427	99	526	652	-225	0	0	190	65	91	99			
348+50.00	492	371	121	0	0	0	0	371	556	71	627	778	-407	0	0	121	59	83	38			
348+75.00	416	322	94	0	0	0	0	322	637	59	696	863	-541	0	0	94	60	84	10			
349+00.00	436	339	98	0	0	0	0	339	622	54	676	838	-499	0	0	98	66	92	6			
349+25.00	562	440	114	0	0	0	7	447	524	51	575	713	-266	0	0	114	75	105	9			
349+50.00	667	516	143	0	0	0	7	523	439	64	503	624	-101	0	0	143	84	118	25			
349+75.00	630	480	150	0	0	0	0	480	392	68	460	570	-90	0	0	150	82	115	35			
350+00.00	532	336	196	0	0	0	0	336	1,075	133	1,208	1,498	-1,162	0	0	196	60	84	112			
350+40.00	40	0	40	0	0	0	0	0	393	40	433	537	-537	0	0	40	0	0	40			
350+50.00																						
ML032-SEG2																						
Totals:	285,614	139,119	25,323	185	100,553	0	20,439	260,296	168,315	12,059	180,374	223,669	36,628	129,139	163,889	25,323	15,481	21,674	3,649			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.4

12/20/2016 3:23:37 PM VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
61CONNRDA																						
7+00.00	91	86	5	0	0	0	0	86	0		0	0	86	0	0	5	14	20	-15			
7+09.48	327	307	20	0	0	0	0	307	0		0	0	307	0	0	20	53	74	-54			
7+45.48	38	35	3	0	0	0	0	35	0	1	1	1	34	0	0	3	7	10	-7			
7+50.00	227	209	18	0	0	0	0	209	6	3	9	11	198	0	0	18	45	63	-45			
7+81.48	107	97	10	0	0	0	0	97	9	2	11	14	83	0	0	10	25	35	-25			
8+00.00	99	89	10	0	0	0	0	89	12	3	15	19	70	0	0	10	24	34	-24			
8+18.48	163	146	17	0	0	0	0	146	32	5	37	46	100	0	0	17	41	57	-40			
8+50.00	212	184	28	0	0	0	0	184	71	9	80	99	85	0	0	28	67	94	-66			
9+00.00	147	119	28	0	0	0	0	119	102	11	113	140	-21	0	0	28	70	98	-70			
9+50.00	94	72	22	0	0	0	0	72	112	11	123	153	-81	0	0	22	55	77	-55			
9+88.64	27	20	6	0	0	0	0	20	40	3	43	53	-33	0	0	6	16	22	-16			
10+00.00	62	46	16	0	0	0	0	46	122	9	131	163	-117	0	0	16	41	57	-41			
10+25.64	61	45	16	0	0	0	0	45	220	11	231	287	-242	0	0	16	45	63	-47			
10+50.00	30	22	8	0	0	0	0	22	166	6	172	213	-191	0	0	8	23	32	-24			
10+61.64	72	46	26	0	0	0	0	46	784	21	805	998	-952	0	0	26	75	105	-79			
10+97.64	3	1	2	0	0	0	0	1	65	2	67	83	-82	0	0	2	5	7	-5			
11+00.00	155	115	41	0	0	0	0	115	1,861	33	1,894	2,349	-2,234	0	0	41	127	178	-137			
11+50.00	219	166	53	0	0	0	0	166	2,370	43	2,413	2,992	-2,826	0	0	53	156	218	-165			
12+00.00	104	77	27	0	0	0	0	77	1,085	21	1,106	1,372	-1,295	0	0	27	83	116	-89			
12+24.46	138	111	27	0	0	0	0	111	1,042	19	1,061	1,316	-1,205	0	0	27	90	126	-99			
12+50.00	57	46	11	0	0	0	0	46	432	8	440	546	-500	0	0	11	37	52	-41			
12+60.46	147	110	37	0	0	0	0	110	1,478	27	1,505	1,866	-1,756	0	0	37	123	172	-135			
12+96.46	10	8	3	0	0	0	0	8	144	2	146	181	-173	0	0	3	12	17	-14			
13+00.00	92	60	32	0	0	0	0	60	1,348	25	1,373	1,703	-1,643	0	0	32	106	148	-116			
13+33.46	39	23	15	0	0	0	0	23	655	12	667	827	-804	0	0	15	50	70	-55			
13+50.00	115	70	45	0	0	0	0	70	1,790	35	1,825	2,263	-2,193	0	0	45	146	204	-159			
14+00.00	126	100	26	0	0	0	0	100	828	19	847	1,050	-950	0	0	26	82	115	-89			
14+29.08	164	146	18	0	0	0	0	146	428	12	440	546	-400	0	0	18	58	81	-63			
14+50.00	166	152	14	0	0	0	0	152	217	8	225	279	-127	0	0	14	43	60	-46			
14+66.08	487	458	29	0	0	0	0	458	201	11	212	263	195	0	0	29	92	129	-100			
15+00.00	37	35	2	0	0	0	0	35	2		2	3	33	0	0	2	6	8	-6			
15+02.08	769	738	31	0	0	0	0	738	19	2	21	26	712	0	0	31	98	137	-106			
15+38.08	310	300	10	0	0	0	0	300	0		0	0	300	0	0	10	32	45	-35			
15+50.00	2,017	1,971	46	0	0	0	0	1,971	0		0	0	1,971	0	0	46	147	206	-160			
16+00.00	3,194	3,142	52	0	0	0	0	3,142	0		0	0	3,142	0	0	52	176	246	-194			
16+50.00	4,320	4,259	61	0	0	0	0	4,259	0		0	0	4,259	0	0	61	213	298	-237			
17+00.00	5,436	5,367	69	0	0	0	0	5,367	0		0	0	5,367	0	0	69	246	344	-275			
17+50.00	6,088	6,016	72	0	0	0	0	6,016	0		0	0	6,016	0	0	72	258	361	-289			
18+00.00	5,504	5,432	72	0	0	0	0	5,432	0		0	0	5,432	0	0	72	259	363	-291			
18+50.00	3,449	3,389	60	0	0	0	0	3,389	0		0	0	3,389	0	0	60	209	293	-233			
19+00.00	2,356	2,308	49	0	0	0	0	2,308	0		0	0	2,308	0	0	49	159	223	-174			
19+50.00	3,311	3,260	51	0	0	0	0	3,260	0		0	0	3,260	0	0	51	170	238	-187			
20+00.00	4,593	4,532	61	0	0	0	0	4,532	0		0	0	4,532	0	0	61	211	295	-234			
20+50.00	5,707	5,637	70	0	0	0	0	5,637	0		0	0	5,637	0	0	70	248	347	-277			
21+00.00	5,843	5,772	71	0	0	0	0	5,772	0		0	0	5,772	0	0	71	255	357	-286			
21+50.00	4,754	4,685	69	0	0	0	0	4,685	0		0	0	4,685	0	0	69	245	343	-274			
22+00.00	4,027	3,964	63	0	0	0	0	3,964	0		0	0	3,964	0	0	63	219	307	-244			
22+50.00	5,353	4,607	67	0	580	0	100	5,287	0		0	0	5,287	0	0	67	235	329	-262			
23+00.00	8,433	6,753	80	0	1,412	0	187	8,352	0		0	0	8,352	0	0	80	294	412	-332			
23+50.00	11,426	9,165	90	0	1,984	0	188	11,337	0		0	0	11,337	0	0	90	332	465	-375			
24+00.00	13,784	10,607	212	0	2,712	0	253	13,572	0		0	0	13,572	0	0	212	373	522	-310			
24+50.00	5,477	4,071	80	0	1,203	0	124	5,398	0		0	0	5,398	0	0	80	145	203	-123			
24+68.21	9,744	6,877	144	0	2,433	0	289	9,599	0		0	0	9,599	0	0	144	260	364	-220			
25+00.00	1,300	879	19	0	355	0	46	1,280	0		0	0	1,280	0	0	19	35	49	-30			
25+04.21	11,035	7,111	79	0	3,366	0	479	10,956	0		0	0	10,956	0	0	79	299	419	-340			
25+40.21	2,978	1,768	44	0	1,007	0	158	2,933	0		0	0	2,933	0	0	44	81	113	-69			
25+50.00	5,495	3,182	81	0	1,903	0	329	5,414	0		0	0	5,414	0	0	81	145	203	-122			
25+68.21	9,480	5,518	136	0	3,151	0	675	9,344	0		0	0	9,344	0	0	136	246	344	-208			
26+00.00	14,781	9,070	321	0	4,111	0	1,279	14,460	0		0	0	14,460	0	0	321	406	568	-247			
26+50.00	15,292	10,155	363	0	3,297	0	1,476	14,928	0	1	1	1	14,927	0	0	363	430	602	-239			
27+00.00	5,802	3,978	96	0	1,151	0	577	5,706	0		0	0	5,706	0	0	96	160	224	-128			
27+18.26	4,904	3,318	35	0	1,055	0	496	4,869	0		0	0	4,869	0	0	35	123	172	-137			
27+46.26	120	69	1	0	38	0	12	119	0		0	0	119	0	0	1	0	0	1			
27+50.00	1,030	564	11	0	354	0	102	1,020	0		0	0	1,020	0	0	11	0	0	11			
27+82.26	548	278	6	0	212	0	52	542	0		0	0	542	0	0	6	0	0	6			
28+00.00	530	243	6	0	232	0	48	523	0		0	0	523	0	0	6	0	0	6			
28+18.26	1,097	390	16	0	607	0	84	1,081	3		3	4	1,077	0	0	16	0	0	16			
28+50.00																						

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
29+00.00																						
61CONNRDA																						
Totals:	195,731	153,071	3,443	0	32,146	0	7,070	192,287	15,648	375	16,023	19,870	172,418	0	0	3,443	8,526	11,937	-8,494			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.6

12/20/2016 3:23:37 PM VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61RAMPA																						
1519+50.00																						
1520+00.00	2,786	971	202	0	1,610	0	2	2,583	0		0	0	2,583	0	0	202	0	0	202			
1520+50.00	2,932	932	259	0	1,740	0	1	2,673	0		0	0	2,673	0	0	259	0	0	259			
1520+92.78	2,395	849	164	0	1,381	0	1	2,231	0		0	0	2,231	0	0	164	0	0	164			
1521+00.00	371	139	27	0	205	0	0	344	0		0	0	344	0	0	27	0	0	27			
1521+40.78	4,668	2,293	339	0	1,945	0	92	4,330	0		0	0	4,330	0	0	339	117	164	175			
1521+50.00	1,602	817	154	0	589	0	42	1,448	0		0	0	1,448	0	0	154	52	73	81			
1522+00.00	7,353	3,683	1,109	0	2,244	0	318	6,245	0	5	5	6	6,239	0	0	1,109	256	358	751			
1522+38.00	3,292	1,822	514	0	733	0	223	2,778	0	3	3	4	2,774	0	0	514	131	183	331			
1522+38.78	38	24	4	0	7	0	3	34	0		0	0	34	0	0	4	2	3	1			
1522+50.00	507	335	41	0	85	0	45	465	0		0	0	465	0	0	41	25	35	6			
1522+80.78	1,078	818	104	0	99	0	58	975	0		0	0	975	0	0	104	63	88	16			
1523+00.00	460	394	60	0	4	0	3	401	0		0	0	401	0	0	60	36	50	10			
1523+50.00	726	617	109	0	0	0	0	617	23	16	39	48	569	0	0	109	102	143	-34			
1524+00.00	485	313	171	0	0	0	0	313	308	102	410	508	-195	0	0	171	127	178	-7			
1524+50.00	426	192	234	0	0	0	0	192	1,073	194	1,267	1,571	-1,379	0	0	234	147	206	28			
1525+00.00	344	58	286	0	0	0	0	58	2,124	255	2,379	2,950	-2,892	0	0	286	168	235	51			
1525+16.12	115	9	106	0	0	0	0	9	901	94	995	1,234	-1,225	0	0	106	60	84	22			
1525+50.00	248	12	236	0	0	0	0	12	2,225	213	2,438	3,023	-3,011	0	0	236	135	189	47			
1525+58.12	62	2	60	0	0	0	0	2	612	55	667	827	-825	0	0	60	35	49	11			
1526+00.00	374	46	328	0	0	0	0	46	3,683	288	3,971	4,924	-4,878	0	0	328	192	269	59			
1526+50.00	556	147	409	0	0	0	0	147	5,186	342	5,528	6,855	-6,708	0	0	409	241	337	72			
1526+56.12	78	26	51	0	0	0	0	26	673	42	715	887	-861	0	0	51	30	42	9			
1527+00.00	617	242	375	0	0	0	0	242	4,877	299	5,176	6,418	-6,176	0	0	375	222	311	64			
1527+04.12	63	27	36	0	0	0	0	27	459	28	487	604	-577	0	0	36	22	31	5			
1527+29.11	417	193	224	0	0	0	0	193	2,774	172	2,946	3,653	-3,460	0	0	224	133	186	38			
1527+50.00	369	180	189	0	0	0	0	180	2,292	143	2,435	3,019	-2,839	0	0	189	113	158	31			
1527+85.11	594	278	315	0	0	0	0	278	3,752	240	3,992	4,950	-4,672	0	0	315	188	263	52			
1528+00.00	239	76	133	0	0	30	0	106	1,561	102	1,663	2,062	-1,956	0	0	133	79	111	22			
1528+46.71	701	196	411	0	0	94	0	290	4,797	321	5,118	6,346	-6,056	0	0	411	245	343	68			
1528+50.00	46	17	29	0	0	0	0	17	330	23	353	438	-421	0	0	29	17	24	5			
1528+97.11	546	162	384	0	0	0	0	162	4,048	316	4,364	5,411	-5,249	0	0	384	226	316	68			
1529+00.00	27	5	22	0	0	0	0	5	207	19	226	280	-275	0	0	22	13	18	4			
1529+50.00	447	87	361	0	0	0	0	87	3,144	306	3,450	4,278	-4,191	0	0	361	208	291	70			
1530+00.00	477	134	343	0	0	0	0	134	2,562	279	2,841	3,523	-3,389	0	0	343	197	276	67			
1530+50.00	500	175	325	0	0	0	0	175	1,955	253	2,208	2,738	-2,563	0	0	325	185	259	66			
1531+00.00	568	277	292	0	0	0	0	277	1,026	198	1,224	1,518	-1,241	0	0	292	162	227	65			
1531+50.00	712	444	268	0	0	0	0	444	344	132	476	590	-146	0	0	268	146	204	64			
1532+00.00	1,149	774	255	0	0	120	0	894	90	56	146	181	713	0	0	255	150	210	45			
1532+50.00	1,972	1,274	280	0	0	417	0	1,691	7	7	14	17	1,674	0	0	280	167	234	46			
1533+00.00	2,510	1,443	308	0	0	759	0	2,202	0	2	2	3	2,200	0	0	308	173	242	66			
1533+50.00	2,217	1,036	285	0	0	895	0	1,931	26	30	56	70	1,862	0	0	285	156	218	67			
1534+00.00	1,423	417	238	0	0	768	0	1,185	80	55	135	167	1,018	0	0	238	124	174	64			
1534+50.00	966	346	0	0	0	334	286	966	54		54	67	899	0	0	0	121	169	-169			
1535+00.00	983	328	0	0	0	0	656	984	0		0	0	984	0	0	0	137	192	-192			
1535+49.60	1,765	365	286	0	0	178	934	1,477	11	16	27	34	1,444	0	0	286	188	263	23			
1535+50.00	20	5	3	0	0	3	9	17	0		0	0	17	0	0	3	2	3	0			
1536+00.00	2,981	858	374	0	0	448	1,301	2,607	14	36	50	62	2,545	0	0	374	250	350	24			
1536+45.00	3,071	1,037	348	0	0	485	1,201	2,723	3	23	26	32	2,691	0	0	348	236	330	18			
US61RAMPA																						
Totals:	56,276	24,875	11,051	0	10,642	4,531	5,175	45,223	51,221	4,665	55,886	69,301	-24,078	0	0	11,051	5,779	8,091	2,961			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.7

12/20/2016 3:23:37 PM VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61LOOPC																						
3522+50.00	2,539	2,183	258	0	0	86	13	2,282	0	4	4	5	2,277	0	0	258	140	196	62			
3522+94.99	308	260	30	0	0	15	3	278	0	1	1	1	277	0	0	30	17	24	6			
3523+00.00	2,373	2,022	217	0	0	54	80	2,156	0	3	3	4	2,152	0	0	217	124	174	43			
3523+36.09	1,020	808	91	0	0	51	70	929	0	1	1	1	928	0	0	91	51	71	20			
3523+50.00	4,560	2,927	364	0	0	446	822	4,195	0	2	2	3	4,193	0	0	364	208	291	73			
3524+00.00	6,027	3,161	399	0	0	624	1,843	5,628	0		0	0	5,628	0	0	399	231	323	76			
3524+50.00	6,863	2,896	440	0	0	916	2,611	6,423	0	1	1	1	6,422	0	0	440	258	361	79			
3525+00.00	6,490	2,501	453	0	0	753	2,783	6,037	0	1	1	1	6,036	0	0	453	265	371	82			
3525+50.00	5,476	2,578	435	0	0	199	2,264	5,041	0	1	1	1	5,040	0	0	435	253	354	81			
3526+00.00	4,453	2,684	413	0	0	4	1,352	4,040	0	1	1	1	4,039	0	0	413	241	337	76			
3526+50.00	3,157	2,327	359	0	0	4	467	2,798	0	1	1	1	2,797	0	0	359	205	287	72			
3527+00.00	1,903	1,557	301	0	5	0	40	1,602	15	28	43	53	1,549	0	0	301	166	232	69			
3527+50.00	1,517	1,133	283	0	86	0	15	1,234	15	28	43	53	1,181	0	0	283	153	214	69			
3528+00.00	1,784	1,240	409	0	130	0	6	1,376	0	151	151	187	1,189	0	0	409	137	192	217			
3528+50.00	1,902	1,375	379	0	147	0	0	1,522	0	151	151	187	1,335	0	0	379	117	164	215			
3529+00.00	1,864	1,312	219	0	332	0	0	1,644	0	1	1	1	1,643	0	0	219	110	154	65			
3529+50.00	145	89	22	0	34	0	0	123	0	7	7	9	114	0	0	22	8	11	11			
3529+53.54																						
US61LOOPC																						
Totals:	52,381	31,053	5,072	0	734	3,152	12,369	47,308	30	382	412	512	46,797	0	0	5,072	2,684	3,758	1,315			

FILE NO.	ENGLISH	DESIGN TEAM **AECOM**	**Dubuque** COUNTY	PROJECT NUMBER **NHSX-032-1(36)--3H-31**	SHEET NUMBER **T.8**

12/20/2016 3:23:37 PM VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61SB																						
506+70.00																						
507+00.00	78	24	54	0	0	0	0	24	44	39	83	103	-79	0	0	54	30	42	12			
507+50.00	131	39	92	0	0	0	0	39	70	67	137	170	-131	0	0	92	52	73	19			
508+00.00	129	40	89	0	0	0	0	40	72	64	136	169	-129	0	0	89	50	70	19			
508+50.00	124	40	84	0	0	0	0	40	69	59	128	159	-119	0	0	84	46	64	20			
509+00.00	128	41	87	0	0	0	0	41	51	58	109	135	-94	0	0	87	48	67	20			
509+50.00	163	60	103	0	0	0	0	60	52	55	107	133	-73	0	0	103	59	83	20			
510+00.00	194	39	109	0	0	26	20	85	43	44	87	108	-23	0	0	109	62	87	22			
510+50.00	235	0	118	0	0	51	67	118	22	34	56	70	49	0	0	118	67	94	24			
511+00.00	506	84	181	0	0	75	165	324	16	30	46	57	267	0	0	181	107	150	31			
511+50.00	737	140	237	0	0	122	237	499	15	25	40	50	449	0	0	237	144	202	35			
512+00.00	719	119	238	0	0	142	220	481	16	23	39	48	433	0	0	238	144	202	36			
512+50.00	748	134	235	0	0	158	220	512	16	20	36	45	467	0	0	235	141	197	38			
513+00.00	868	233	244	0	0	179	212	624	11	17	28	35	589	0	0	244	145	203	41			
513+50.00	913	267	232	0	0	197	218	682	5	13	18	22	660	0	0	232	136	190	42			
514+00.00	842	146	218	0	0	237	240	623	1	7	8	10	613	0	0	218	128	179	39			
514+50.00	668	105	200	0	0	208	155	468	0	2	2	3	466	0	0	200	118	165	35			
515+00.00	694	130	197	0	0	182	185	497	0	5	5	6	491	0	0	197	115	161	36			
515+25.44	436	70	110	0	0	104	152	326	1	5	6	8	319	0	0	110	63	88	22			
515+50.00	425	78	109	0	0	99	139	316	1	6	7	9	307	0	0	109	63	88	21			
516+00.00	823	136	226	0	0	199	261	596	0	9	9	11	585	0	0	226	131	183	43			
516+50.00	796	118	233	0	0	181	264	563	1	8	9	11	552	0	0	233	136	190	43			
517+00.00	867	187	242	0	0	162	276	625	1	8	9	11	614	0	0	242	142	199	43			
517+50.00	927	197	243	0	0	148	338	683	0	9	9	11	672	0	0	243	142	199	44			
518+00.00	1,028	232	255	0	0	185	356	773	0	9	9	11	762	0	0	255	150	210	45			
518+25.23	582	157	138	0	0	117	170	444	1	4	5	6	438	0	0	138	82	115	23			
518+44.90	480	132	110	0	0	105	133	370	1	2	3	4	366	0	0	110	64	90	20			
518+50.00	129	37	29	0	0	30	33	100	0	1	1	1	99	0	0	29	16	22	7			
518+91.74	607	157	138	0	0	156	155	468	1	2	3	4	464	0	0	138	67	94	44			
519+00.00	29	7	8	0	0	10	4	21	2		2	3	19	0	0	8	0	0	8			
519+50.00	160	63	51	0	0	46	0	109	8		8	10	99	0	0	51	1	1	50			
519+75.90	88	27	29	0	0	32	0	59	0		0	0	59	0	0	29	1	1	28			
520+00.00	293	95	68	0	0	105	26	226	0		0	0	226	0	0	68	28	39	29			
520+22.11	486	148	97	0	0	141	99	388	0		0	0	388	0	0	97	49	69	28			
520+42.47	447	137	88	0	0	103	120	360	0	1	1	1	359	0	0	88	45	63	25			
520+50.00	155	42	32	0	0	37	43	122	0		0	0	122	0	0	32	16	22	10			
521+00.00	828	194	201	0	0	178	255	627	3	16	19	24	603	0	0	201	101	141	60			
521+50.00	965	255	220	0	0	122	368	745	28	19	47	58	687	0	0	220	108	151	69			
521+65.44	463	122	80	0	0	55	205	382	16	2	18	22	360	0	0	80	40	56	24			
Gap	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0			
537+00.00	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0			
537+50.00	1,899	413	320	0	0	466	700	1,579	0	6	6	8	1,572	0	0	320	167	234	86			
538+00.00	1,525	337	264	0	0	635	289	1,261	0	2	2	3	1,259	0	0	264	133	186	78			
538+50.00	1,462	253	239	0	0	828	142	1,223	0		0	0	1,223	0	0	239	121	169	70			
539+00.00	1,707	215	246	0	0	973	274	1,462	10		10	12	1,450	0	0	246	130	182	64			
539+50.00	2,411	470	281	0	0	982	678	2,130	10	1	11	14	2,116	0	0	281	158	221	60			
540+00.00	2,868	743	303	0	0	852	971	2,566	0		0	0	2,566	0	0	303	177	248	55			
540+50.00	2,565	632	296	0	0	704	933	2,269	0	3	3	4	2,265	0	0	296	176	246	50			
541+00.00	1,977	282	281	0	0	608	806	1,696	0	8	8	10	1,686	0	0	281	170	238	43			
541+50.00	1,447	90	252	0	0	449	657	1,196	1	13	14	17	1,179	0	0	252	155	217	35			
542+00.00	899	25	220	0	0	218	436	679	3	19	22	27	652	0	0	220	138	193	27			
542+50.00	331	1	127	0	0	68	135	204	4	20	24	30	174	0	0	127	80	112	15			
US61SB																						
Totals:	37,982	7,693	8,254	0	0	10,675	11,357	29,725	595	735	1,330	1,652	28,074	0	0	8,254	4,642	6,499	1,756			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
Stage 2																						
ML032-SEG3																						
355+00.00	188	0	188	0	0	0	0	0	4,456	188	4,644	5,759	-5,759	3,941	4,607	188	0	0	188			
355+50.00	123	0	122	0	0	0	0	0	3,496	122	3,618	4,486	-4,486	2,672	3,968	122	48	67	55			
355+70.00	40	0	40	0	0	0	0	0	1,011	40	1,051	1,303	-1,303	760	1,255	40	24	34	6			
355+75.00	194	0	194	0	0	0	0	0	5,550	193	5,743	7,121	-7,121	3,435	6,516	194	130	182	12			
356+00.00	205	0	205	0	0	0	0	0	5,426	204	5,630	6,981	-6,981	3,427	6,355	205	128	179	26			
356+25.00	185	0	185	0	0	0	0	0	5,088	184	5,272	6,537	-6,537	3,421	5,930	185	118	165	20			
356+50.00	136	0	136	0	0	0	0	0	4,945	135	5,080	6,299	-6,299	3,421	5,752	136	115	161	-25			
356+75.00	130	0	130	0	0	0	0	0	4,762	129	4,891	6,065	-6,065	3,420	5,524	130	108	151	-21			
357+00.00	117	0	117	0	0	0	0	0	4,445	117	4,562	5,657	-5,657	3,420	5,131	117	85	119	-2			
357+25.00	91	0	91	0	0	0	0	0	3,730	91	3,821	4,738	-4,738	3,429	4,253	91	42	59	32			
357+50.00	69	0	69	0	0	0	0	0	2,209	69	2,278	2,825	-2,825	2,034	2,367	69	9	13	56			
357+75.00	72	0	72	0	0	0	0	0	1,141	72	1,213	1,504	-1,504	709	1,042	72	0	0	72			
358+00.00	75	0	75	0	0	0	0	0	1,057	75	1,132	1,404	-1,404	605	939	75	0	0	75			
358+25.00	55	0	55	0	0	0	0	0	995	55	1,050	1,302	-1,302	526	858	55	0	0	55			
358+50.00	100	0	100	0	0	0	0	0	1,830	100	1,930	2,393	-2,393	1,554	1,887	100	24	34	66			
358+75.00	212	31	181	0	0	0	0	31	2,718	161	2,879	3,570	-3,539	2,654	2,986	181	49	69	112			
359+00.00	258	65	193	0	0	0	0	65	2,568	155	2,723	3,377	-3,312	2,465	2,799	193	73	102	91			
359+25.00	236	63	174	0	0	0	0	63	2,240	140	2,380	2,951	-2,888	2,055	2,387	174	92	129	45			
359+50.00	261	91	170	0	0	0	0	91	2,001	131	2,132	2,644	-2,553	1,755	2,087	170	91	127	43			
359+75.00	303	133	170	0	0	0	0	133	1,842	125	1,967	2,439	-2,306	1,552	1,885	170	93	130	40			
360+00.00	321	164	157	0	0	0	0	164	1,694	116	1,810	2,244	-2,080	0	0	157	91	127	30			
360+25.00	336	205	131	0	0	0	0	205	1,548	94	1,642	2,036	-1,831	1,127	1,459	131	90	126	5			
360+50.00	327	219	108	0	0	0	0	219	1,405	73	1,478	1,833	-1,614	950	1,283	108	88	123	-15			
360+75.00	293	189	104	0	0	0	0	189	1,300	71	1,371	1,700	-1,511	820	1,152	104	83	116	-12			
361+00.00	228	129	99	0	0	0	0	129	1,248	70	1,318	1,634	-1,505	931	1,265	99	78	109	-10			
361+25.00	161	68	92	0	0	0	0	68	1,194	70	1,264	1,567	-1,499	843	1,177	92	71	99	-8			
361+50.00	129	41	88	0	0	0	0	41	1,094	69	1,163	1,442	-1,401	717	1,049	88	66	92	-5			
361+75.00	139	52	87	0	0	0	0	52	955	66	1,021	1,266	-1,214	528	861	87	67	94	-7			
362+00.00	165	78	87	0	0	0	0	78	815	63	878	1,089	-1,011	227	559	87	68	95	-8			
362+25.00	154	69	84	0	0	0	0	69	666	62	728	903	-834	124	456	84	65	91	-7			
362+50.00	113	36	78	0	0	0	0	36	506	60	566	702	-666	0	215	78	58	81	-3			
362+75.00	105	31	74	0	0	0	0	31	324	57	381	473	-442	0	73	74	54	76	-2			
363+00.00	127	53	74	0	0	0	0	53	156	47	203	252	-199	0	0	74	54	76	-2			
363+25.00	217	140	77	0	0	0	0	140	50	27	77	96	45	0	0	77	58	81	-4			
363+50.00	449	364	82	0	3	0	0	367	5	7	12	15	352	0	0	82	67	94	-12			
363+75.00	802	685	89	0	28	0	0	713	11		11	14	699	0	0	89	77	108	-19			
364+00.00	1,184	1,038	96	0	50	0	0	1,088	11		11	14	1,074	0	0	96	87	122	-26			
364+25.00	1,586	1,458	102	0	25	0	0	1,483	0		0	0	1,483	0	0	102	96	134	-32			
364+50.00	1,991	1,884	107	0	0	0	0	1,884	0		0	0	1,884	0	0	107	103	144	-37			
364+75.00	16	15	1	0	0	0	0	15	0		0	0	15	67	69	1	1	1	0			
364+75.18	2,342	2,200	143	0	0	0	0	2,200	0		0	0	2,200	0	0	143	108	151	-8			
365+00.00	2,059	1,900	159	0	0	0	0	1,900	0		0	0	1,900	0	0	159	88	123	36			
365+19.18	669	614	55	0	0	0	0	614	0		0	0	614	0	16	55	27	38	17			
365+25.00	3,071	2,830	242	0	0	0	0	2,830	0		0	0	2,830	0	0	242	121	169	73			
365+50.00	1,735	1,604	131	0	0	0	0	1,604	0		0	0	1,604	0	0	131	66	92	39			
365+63.18	1,621	1,502	119	0	0	0	0	1,502	0		0	0	1,502	0	0	119	60	84	35			
365+75.00	3,651	3,395	257	0	0	0	0	3,395	0		0	0	3,395	0	0	257	130	182	75			
366+00.00	487	454	33	0	0	0	0	454	0		0	0	454	105	148	33	17	24	9			
366+03.18	3,508	2,750	233	0	0	0	524	3,274	0		0	0	3,274	0	0	233	119	167	66			
366+25.00	4,383	2,785	278	0	0	0	1,320	4,105	0		0	0	4,105	0	0	278	144	202	76			
366+50.00	4,777	2,917	270	0	0	0	1,590	4,507	0	1	1	1	4,506	0	0	270	151	211	59			
366+75.00	5,168	2,983	259	0	0	0	1,926	4,909	0		0	0	4,909	0	0	259	159	223	36			
367+00.00	5,587	3,150	279	0	0	0	2,158	5,308	0		0	0	5,308	0	0	279	173	242	37			
367+25.00	6,032	3,445	323	0	0	0	2,263	5,708	0	1	1	1	5,707	0	0	323	186	260	63			
367+50.00	6,441	3,698	354	0	0	0	2,389	6,087	0		0	0	6,087	0	0	354	194	272	82			
367+75.00	6,777	3,876	365	0	0	0	2,536	6,412	0		0	0	6,412	0	0	365	201	281	84			
368+00.00	7,084	4,016	372	0	0	0	2,696	6,712	0		0	0	6,712	0	0	372	206	288	84			
368+25.00	7,502	4,258	378	0	0	0	2,865	7,123	0	1	1	1	7,122	0	0	378	210	294	84			
368+50.00	8,020	4,591	384	0	0	0	3,045	7,636	0	1	1	1	7,635	0	0	384	214	300	84			
368+75.00	8,543	4,919	389	0	0	0	3,235	8,154	0	1	1	1	8,153	0	0	389	217	304	85			
369+00.00	8,961	5,253	393	0	0	0	3,315	8,568	0	1	1	1	8,567	0	0	393	220	308	85			
369+25.00	8,963	5,314	352	0	0	0	3,297	8,611	0	1	1	1	8,610	0	0	352	221	309	43			
369+50.00	8,445	4,783	342	0	0	0	3,320	8,103	0		0	0	8,103	0	0	342	220	308	34			
369+75.00	7,568	3,796	381	0	0	5	3,386	7,187	0		0	0	7,187	0	0	381	217	304	77			
370+00.00	6,671	2,984	382	0	0	5	3,300	6,289	0		0	0	6,289	0	0	382	213	298	84			
370+25.00																						
Subtotals:	141,958	87,318	11,357	0	106	10	43,165	130,599	74,492	3,445	77,937	96,644	33,955	53,692	78,309	11,357	6,533	9,146	2,211			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.10

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
370+25.00	5,923	2,499	374	0	0	0	3,050	5,549	0	1	1	1	5,548	0	0	374	207	290	84			
370+50.00	5,184	2,043	321	0	0	0	2,820	4,863	0	1	1	1	4,862	0	0	321	198	277	44			
370+75.00	4,507	1,650	247	0	0	0	2,610	4,260	0	1	1	1	4,259	0	0	247	183	256	-9			
371+00.00	4,009	1,602	214	0	0	0	2,193	3,795	0	5	5	6	3,789	0	0	214	169	237	-23			
371+25.00	3,631	1,744	219	0	0	0	1,669	3,413	0	8	8	10	3,403	0	0	219	162	227	-8			
371+50.00	3,259	1,741	228	0	0	0	1,291	3,032	0	4	4	5	3,027	0	0	228	158	221	7			
371+75.00	2,854	1,660	211	0	0	5	977	2,642	0	1	1	1	2,641	0	0	211	145	203	8			
372+00.00	2,401	1,525	194	0	0	5	678	2,208	0	1	1	1	2,207	0	0	194	132	185	9			
372+25.00	1,965	1,360	187	0	0	0	418	1,778	0	1	1	1	1,777	0	0	187	127	178	9			
372+50.00	1,650	1,162	192	0	0	0	296	1,458	0	2	2	3	1,456	0	0	192	129	181	11			
372+75.00	1,331	983	197	0	0	0	151	1,134	15	17	32	40	1,094	0	0	197	128	179	18			
373+00.00	1,110	855	203	0	0	0	52	907	140	53	193	239	668	0	0	203	125	175	28			
373+25.00	968	704	222	0	0	0	43	747	407	97	504	625	122	0	181	222	124	174	48			
373+50.00	696	452	239	0	0	0	5	457	830	142	972	1,205	-748	377	711	239	121	169	70			
373+75.00	529	280	246	0	0	0	3	283	1,441	165	1,606	1,992	-1,709	1,137	1,469	246	125	175	71			
374+00.00	483	231	252	0	0	0	0	231	2,007	171	2,178	2,701	-2,470	1,844	2,176	252	128	179	73			
374+25.00	13	5	8	0	0	0	0	5	113	6	119	148	-143	260	273	8	5	7	1			
374+25.98	264	48	217	0	0	0	0	48	2,952	165	3,117	3,865	-3,817	3,050	3,370	217	130	182	35			
374+50.00	396	79	317	0	0	0	0	79	2,596	224	2,820	3,497	-3,418	2,579	2,913	317	118	165	152			
374+75.00	510	153	357	0	0	0	0	153	2,353	268	2,621	3,250	-3,097	2,278	2,611	357	121	169	188			
375+00.00	553	213	340	0	0	0	0	213	1,792	269	2,061	2,556	-2,343	1,586	1,918	340	119	167	173			
375+25.00	509	215	294	0	0	0	0	215	1,143	238	1,381	1,713	-1,498	781	1,114	294	112	157	137			
375+50.00	473	218	253	0	0	0	1	219	587	179	766	950	-731	94	428	253	109	153	100			
375+75.00	617	329	229	0	0	0	59	388	264	101	365	453	-65	0	41	229	111	155	74			
376+00.00	927	501	240	0	0	0	186	687	137	64	201	249	438	0	171	240	119	167	73			
376+25.00	1,178	605	248	0	0	0	324	929	68	53	121	150	779	52	384	248	124	174	74			
376+50.00	1,301	659	251	0	0	0	392	1,051	27	44	71	88	963	6	340	251	125	175	76			
376+75.00	1,424	710	258	0	0	0	455	1,165	24	45	69	86	1,079	0	53	258	130	182	76			
377+00.00	1,612	846	275	0	0	0	490	1,336	65	51	116	144	1,192	0	0	275	141	197	78			
377+25.00	1,711	985	292	0	0	0	435	1,420	169	71	240	298	1,122	0	0	292	153	214	78			
377+50.00	707	411	130	0	0	0	165	576	122	43	165	205	371	0	110	130	66	92	38			
377+60.42	920	519	194	0	0	0	207	726	266	75	341	423	303	6	200	194	93	130	64			
377+75.00	1,093	480	334	0	0	0	279	759	1,134	176	1,310	1,624	-865	771	1,104	334	154	216	118			
378+00.00	11	2	5	0	0	0	4	6	29	3	32	40	-34	216	222	5	2	3	2			
378+00.42	566	112	342	0	0	0	112	224	2,300	259	2,559	3,173	-2,949	2,256	2,583	342	143	200	142			
378+25.00	288	32	254	0	0	0	3	35	2,631	202	2,833	3,513	-3,478	2,719	3,029	254	104	146	108			
378+44.42	49	0	49	0	0	0	0	0	880	35	915	1,135	-1,135	830	1,073	49	27	38	11			
378+50.00	96	3	94	0	0	0	0	3	1,192	80	1,272	1,577	-1,574	1,038	1,400	94	39	55	39			
378+57.34	304	13	291	0	0	0	0	13	2,620	261	2,881	3,573	-3,560	2,377	2,941	291	98	137	154			
378+75.00	189	13	176	0	0	0	0	13	1,720	160	1,880	2,331	-2,318	1,709	1,887	176	65	91	85			
378+88.42	153	9	143	0	0	0	1	10	1,306	133	1,439	1,784	-1,774	0	0	143	49	69	74			
379+00.00	297	7	288	0	0	0	2	9	2,200	272	2,472	3,065	-3,056	0	0	288	94	132	156			
379+25.00	229	3	226	0	0	0	0	3	1,493	212	1,705	2,114	-2,111	0	0	226	76	106	120			
379+50.00	190	6	183	0	0	0	0	6	982	167	1,149	1,425	-1,419	0	0	183	72	101	82			
379+75.00	207	9	196	0	0	0	2	11	625	177	802	995	-984	0	0	196	70	98	98			
380+00.00	239	6	231	0	0	0	2	8	515	221	736	913	-905	0	0	231	41	57	174			
380+25.00																						
ML032-SEG3																						
Totals:	199,484	115,000	21,818	0	106	20	62,540	177,666	111,637	8,369	120,006	148,811	28,855	79,658	111,010	21,818	11,704	16,386	5,432			

FILE NO.	ENGLISH	DESIGN TEAM AECOM	Dubuque COUNTY	PROJECT NUMBER NHSX-032-1(36)--3H-31	SHEET NUMBER T.11

12/20/2016 3:23:37 PM VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\Excel\T-Sheets.xlsm

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
61CONNRDB																						
14+00.00																						
14+50.00	542	258	283	0	0	0	0	258	637	163	800	992	-734	0	0	283	145	203	80			
15+00.00	328	76	252	0	0	0	0	76	770	173	943	1,169	-1,093	0	0	252	123	172	80			
15+50.00	379	108	272	0	0	0	0	108	951	182	1,133	1,405	-1,297	0	0	272	137	192	80			
16+00.00	533	226	307	0	0	0	0	226	1,183	191	1,374	1,704	-1,478	0	0	307	161	225	82			
16+50.00	685	330	355	0	0	0	0	330	1,688	219	1,907	2,365	-2,035	0	0	355	185	259	96			
17+00.00	675	291	385	0	0	0	0	291	2,104	247	2,351	2,915	-2,624	0	0	385	201	281	104			
17+50.00	414	114	300	0	0	0	0	114	1,972	232	2,204	2,733	-2,619	0	0	300	144	202	98			
Gap	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0			
20+30.00	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0			
20+45.82	77	18	59	0	0	0	0	18	500	52	552	685	-667	0	0	59	37	52	7			
20+50.00	26	8	18	0	0	0	0	8	123	13	136	169	-161	0	0	18	12	17	1			
20+86.82	243	82	161	0	0	0	0	82	1,022	117	1,139	1,412	-1,330	0	0	161	107	150	11			
21+00.00	87	30	57	0	0	0	0	30	348	42	390	484	-454	0	0	57	37	52	5			
21+49.77	316	107	209	0	0	0	0	107	1,177	151	1,328	1,647	-1,540	0	0	209	135	189	20			
21+50.00	2	0	1	0	0	0	0	0	5	1	6	8	-8	0	0	1	1	1	0			
22+00.00	340	82	258	0	0	0	0	82	944	180	1,124	1,394	-1,312	0	0	258	128	179	79			
22+50.00	304	64	241	0	0	0	0	64	820	175	995	1,234	-1,170	0	0	241	116	162	79			
23+00.00	283	53	230	0	0	0	0	53	734	169	903	1,120	-1,067	0	0	230	109	153	77			
23+50.00	419	167	252	0	0	0	0	167	555	152	707	877	-710	0	0	252	124	174	78			
24+00.00	699	417	282	0	0	0	0	417	339	128	467	579	-162	0	0	282	143	200	82			
24+50.00	780	509	270	0	0	0	0	509	125	70	195	242	267	0	0	270	134	188	82			
25+00.00	1,235	982	254	0	0	0	0	982	6	12	18	22	960	0	0	254	124	174	80			
25+50.00	2,167	1,888	279	0	0	0	0	1,888	0	1	1	1	1,887	0	0	279	141	197	82			
26+00.00	2,798	2,484	314	0	0	0	0	2,484	0	1	1	1	2,483	0	0	314	165	231	83			
26+50.00	3,269	2,934	335	0	0	0	0	2,934	0		0	0	2,934	0	0	335	179	251	84			
26+94.65	3,212	2,981	231	0	0	0	0	2,981	0		0	0	2,981	0	0	231	166	232	-2			
27+00.00	391	363	28	0	0	0	0	363	0		0	0	363	0	0	28	20	28	0			
27+28.65	2,080	1,932	148	0	0	0	0	1,932	0	1	1	1	1,931	0	0	148	105	147	1			
27+50.00	1,549	1,440	108	0	0	0	0	1,440	0		0	0	1,440	0	0	108	78	109	-1			
27+69.65	1,401	1,300	100	0	0	0	0	1,300	0	1	1	1	1,299	0	0	100	71	99	1			
28+00.00	2,003	1,852	151	0	0	0	0	1,852	0		0	0	1,852	0	0	151	108	151	0			
28+10.65	644	592	52	0	0	0	0	592	0		0	0	592	0	0	52	37	52	0			
28+50.00	2,028	1,851	177	0	0	0	0	1,851	0		0	0	1,851	0	0	177	126	176	1			
29+00.00	1,346	1,113	234	0	0	0	0	1,113	12	13	25	31	1,082	0	0	234	111	155	79			
29+50.00	364	180	183	0	0	0	0	180	187	83	270	335	-155	0	0	183	77	108	75			
30+00.00	286	90	196	0	0	0	0	90	375	142	517	641	-551	0	0	196	87	122	74			
30+50.00	556	345	211	0	0	0	0	345	217	95	312	387	-42	0	0	211	96	134	77			
31+00.00	1,394	1,144	250	0	0	0	0	1,144	18	23	41	51	1,093	0	0	250	122	171	79			
31+50.00	2,452	2,149	303	0	0	0	0	2,149	0	1	1	1	2,148	0	0	303	157	220	83			
32+00.00	2,714	2,398	316	0	0	0	0	2,398	0	1	1	1	2,397	0	0	316	166	232	84			
32+50.00	2,094	1,801	293	0	0	0	0	1,801	0		0	0	1,801	0	0	293	152	213	80			
33+00.00	1,352	1,095	257	0	0	0	0	1,095	0		0	0	1,095	0	0	257	127	178	79			
33+50.00	827	604	223	0	0	0	0	604	33	36	69	86	518	0	0	223	104	146	77			
34+00.00	738	575	163	0	0	0	0	575	47	41	88	109	466	0	0	163	104	146	17			
34+50.00	1,232	1,106	126	0	0	0	0	1,106	13	6	19	24	1,082	0	0	126	124	174	-48			
35+00.00	1,292	1,161	130	0	0	0	0	1,161	3	4	7	9	1,152	0	0	130	129	181	-51			
35+50.00	743	623	120	0	0	0	0	623	104	29	133	165	458	0	0	120	116	162	-42			
36+00.00	451	340	111	0	0	0	0	340	201	52	253	314	26	0	0	111	103	144	-33			
36+50.00	402	297	106	0	0	0	0	297	177	50	227	282	16	0	0	106	96	134	-28			
37+00.00	294	193	101	0	0	0	0	193	244	59	303	376	-183	0	0	101	89	125	-24			
37+50.00	227	111	116	0	0	0	0	111	671	87	758	940	-829	0	0	116	111	155	-39			
38+00.00	324	127	197	0	0	0	0	127	1,145	150	1,295	1,606	-1,479	0	0	197	142	199	-2			
38+50.00	215	59	156	0	0	0	0	59	910	125	1,035	1,283	-1,224	0	0	156	74	104	52			
39+00.00	63	0	63	0	0	0	0	0	853	63	916	1,136	-1,136	0	0	63	0	0	63			
61CONNRDB																						
Totals:	49,275	39,050	10,224	0	0	0	0	39,050	21,213	3,733	24,946	30,935	8,116	0	0	10,224	5,786	8,101	2,124			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61RAMPD																						
4518+00.00	66	0	66	0	0	0	0	0	2,294	66	2,360	2,926	-2,926	0	0	66	0	0	66			
4518+50.00	192	68	124	0	0	0	0	68	2,220	109	2,329	2,888	-2,820	0	0	124	99	139	-15			
4519+00.00	378	179	199	0	0	0	0	179	2,864	165	3,029	3,756	-3,577	0	0	199	198	277	-78			
4519+50.00	431	231	200	0	0	0	0	231	2,588	160	2,748	3,408	-3,177	0	0	200	197	276	-76			
4520+00.00	449	252	197	0	0	0	0	252	2,253	154	2,407	2,985	-2,733	0	0	197	190	266	-69			
4520+50.00	175	79	95	0	0	0	0	79	642	74	716	888	-809	0	0	95	69	97	-2			
4520+66.41	336	144	192	0	0	0	0	144	789	150	939	1,164	-1,020	0	0	192	111	155	37			
4521+00.00	65	26	39	0	0	0	0	26	69	31	100	124	-98	0	0	39	13	18	21			
4521+06.91	424	218	206	0	0	0	0	218	444	152	596	739	-521	0	0	206	93	130	76			
4521+50.00	439	338	101	0	0	0	0	338	480	52	532	660	-322	0	0	101	111	155	-54			
4522+00.00	332	235	97	0	0	0	0	235	568	57	625	775	-540	0	0	97	100	140	-43			
4522+50.00	196	100	96	0	0	0	0	100	980	69	1,049	1,301	-1,201	0	0	96	100	140	-44			
4523+00.00	87	35	52	0	0	0	0	35	448	37	485	601	-566	0	0	52	37	52	0			
4523+16.48	291	174	117	0	0	0	0	174	1,110	94	1,204	1,493	-1,319	0	0	117	89	125	-8			
4523+50.00	72	45	27	0	0	0	0	45	266	21	287	356	-311	0	0	27	20	28	-1			
4523+56.98	431	254	177	0	0	0	0	254	2,103	140	2,243	2,781	-2,527	0	0	177	138	193	-16			
4524+00.00	532	362	170	0	0	0	0	362	3,626	170	3,796	4,707	-4,345	0	0	170	199	279	-109			
4524+50.00	18	10	8	0	0	0	0	10	127	7	134	166	-156	0	0	8	7	10	-2			
4524+51.48	515	176	338	0	0	0	0	176	4,050	271	4,321	5,358	-5,182	0	0	338	200	280	58			
4524+96.48	25	5	20	0	0	0	0	5	337	13	350	434	-429	0	0	20	16	22	-2			
4525+00.00	205	20	185	0	0	0	0	20	5,008	116	5,124	6,354	-6,334	0	0	185	218	305	-120			
4525+50.00	181	0	181	0	0	0	0	0	3,418	46	3,464	4,295	-4,295	0	0	181	206	288	-107			
4526+00.00	31	0	31	0	0	0	0	0	439	16	455	564	-564	0	0	31	23	32	-1			
4526+05.65	236	0	236	0	0	0	0	0	4,639	234	4,873	6,043	-6,043	0	0	236	183	256	-20			
4526+50.00	60	0	60	0	0	0	0	0	1,022	59	1,081	1,341	-1,341	0	0	60	47	66	-6			
4526+61.65	199	0	199	0	0	0	0	0	3,481	197	3,678	4,561	-4,561	0	0	199	156	218	-19			
4527+00.00	122	0	122	0	0	0	0	0	2,145	121	2,266	2,810	-2,810	0	0	122	96	134	-12			
4527+23.25	139	0	139	0	0	0	0	0	2,370	138	2,508	3,110	-3,110	0	0	139	109	153	-14			
4527+50.00	118	0	118	0	0	0	0	0	1,996	117	2,113	2,620	-2,620	0	0	118	94	132	-14			
4527+73.65	129	0	129	0	0	0	0	0	2,161	128	2,289	2,838	-2,838	0	0	129	101	141	-12			
4528+00.00	154	0	154	0	0	0	0	0	3,883	152	4,035	5,003	-5,003	0	0	154	181	253	-99			
4528+50.00	146	0	146	0	0	0	0	0	3,517	144	3,661	4,540	-4,540	0	0	146	171	239	-93			
4529+00.00	146	0	146	0	0	0	0	0	3,283	144	3,427	4,250	-4,250	0	0	146	170	238	-92			
4529+50.00	142	0	142	0	0	0	0	0	3,219	140	3,359	4,165	-4,165	0	0	142	164	230	-88			
4530+00.00	132	0	132	0	0	0	0	0	2,991	130	3,121	3,870	-3,870	0	0	132	151	211	-79			
4530+50.00	124	0	124	0	0	0	0	0	2,604	122	2,726	3,380	-3,380	0	0	124	140	196	-72			
4531+00.00	17	0	17	0	0	0	0	0	221	17	238	295	-295	0	0	17	12	17	0			
4531+04.60	161	0	161	0	0	0	0	0	2,031	159	2,190	2,716	-2,716	0	0	161	118	165	-4			
4531+50.00	17	0	17	0	0	0	0	0	208	17	225	279	-279	0	0	17	13	18	-1			
4531+55.00																						
US61RAMPD																						
Totals:	7,913	2,951	4,960	0	0	0	0	2,951	76,894	4,189	81,083	100,545	-97,594	0	0	4,960	4,340	6,076	-1,116			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
US61LOOPB																						
2522+75.00	102	0	102	0	0	0	0	0	515	101	616	764	-764	0	0	102	53	74	28			
2523+00.00	67	0	67	0	0	0	0	0	356	66	422	523	-523	0	0	67	36	50	17			
2523+16.10	38	0	38	0	0	0	0	0	210	38	248	308	-308	0	0	38	20	28	10			
2523+25.00	109	0	109	0	0	0	0	0	669	108	777	964	-964	0	0	109	59	83	26			
2523+50.00	115	0	115	0	0	0	0	0	824	114	938	1,163	-1,163	0	0	115	63	88	27			
2523+75.00	123	0	123	0	0	0	0	0	1,023	122	1,145	1,420	-1,420	0	0	123	68	95	28			
2524+00.00	126	0	126	0	0	0	0	0	1,250	125	1,375	1,705	-1,705	0	0	126	70	98	28			
2524+25.00	131	0	131	0	0	0	0	0	1,494	130	1,624	2,014	-2,014	0	0	131	74	104	27			
2524+50.00	144	0	144	0	0	0	0	0	1,682	143	1,825	2,263	-2,263	0	0	144	82	115	29			
2524+75.00	154	0	154	0	0	0	0	0	1,770	153	1,923	2,385	-2,385	0	0	154	89	125	29			
2525+00.00	159	0	159	0	0	0	0	0	1,780	158	1,938	2,403	-2,403	0	0	159	92	129	30			
2525+25.00	159	0	159	0	0	0	0	0	1,753	158	1,911	2,370	-2,370	0	0	159	92	129	30			
2525+50.00	158	0	158	0	0	0	0	0	1,720	157	1,877	2,328	-2,328	0	0	158	92	129	29			
2525+75.00	164	0	164	0	0	0	0	0	1,747	163	1,910	2,368	-2,368	0	0	164	96	134	30			
2526+00.00	180	1	179	0	0	0	0	1	1,896	175	2,071	2,568	-2,567	0	0	179	106	148	31			
2526+25.00	202	23	180	0	0	0	0	23	2,253	176	2,429	3,012	-2,989	0	0	180	106	148	32			
2526+50.00	186	22	165	0	0	0	0	22	2,678	164	2,842	3,524	-3,502	0	0	165	95	133	32			
2526+75.00	153	0	153	0	0	0	0	0	2,415	152	2,567	3,183	-3,183	0	0	153	88	123	30			
2527+00.00	143	0	143	0	0	0	0	0	1,887	142	2,029	2,516	-2,516	0	0	143	82	115	28			
2527+25.00	131	0	131	0	0	0	0	0	1,732	130	1,862	2,309	-2,309	0	0	131	73	102	29			
2527+50.00	123	0	123	0	0	0	0	0	1,632	122	1,754	2,175	-2,175	0	0	123	67	94	29			
2527+75.00	119	0	119	0	0	0	0	0	1,527	118	1,645	2,040	-2,040	0	0	119	66	92	27			
2528+00.00	117	0	117	0	0	0	0	0	1,364	116	1,480	1,835	-1,835	0	0	117	64	90	27			
2528+25.00	114	0	114	0	0	0	0	0	1,169	113	1,282	1,590	-1,590	0	0	114	62	87	27			
2528+50.00	110	0	110	0	0	0	0	0	997	109	1,106	1,372	-1,372	0	0	110	60	84	26			
2528+75.00	106	0	106	0	0	0	0	0	882	105	987	1,224	-1,224	0	0	106	57	80	26			
2529+00.00	103	0	103	0	0	0	0	0	797	102	899	1,115	-1,115	0	0	103	55	77	26			
2529+25.00	101	0	101	0	0	0	0	0	732	100	832	1,032	-1,032	0	0	101	51	71	30			
2529+50.00	99	0	99	0	0	0	0	0	679	98	777	964	-964	0	0	99	50	70	29			
2529+75.00																						
US61LOOPB																						
Totals:	3,736	46	3,692	0	0	0	0	46	39,433	3,658	43,091	53,434	-53,388	0	0	3,692	2,068	2,896	797			

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

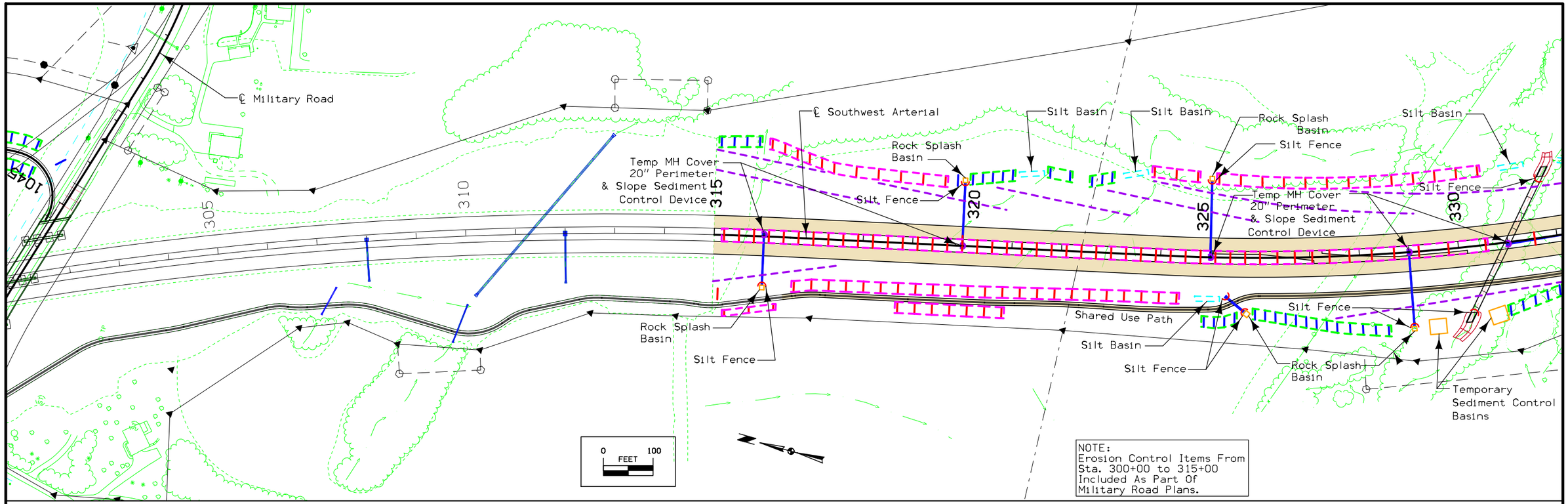
Station	Cut								Fill					Checks (EW-102)		Topsoil						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Select Loam Volume	Template Rock Volume	Template Shale Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.24 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink			
Summary:																						
Stage 1																						
ML032_ACCRDB	1,903	539	1,365	0	0	0	0	539	28,674	1,170	29,844	37,008	-36,469	0	0	1,365	1,076	1,507	-142			
ML032-SEG2	285,614	139,119	25,323	185	100,553	0	20,439	260,296	168,315	12,059	180,374	223,669	36,628	129,139	163,889	25,323	15,481	21,674	3,649			
61CONNRDA	195,731	153,071	3,443	0	32,146	0	7,070	192,287	15,648	375	16,023	19,870	172,418	0	0	3,443	8,526	11,937	-8,494			
US61RAMPA	56,276	24,875	11,051	0	10,642	4,531	5,175	45,223	51,221	4,665	55,886	69,301	-24,078	0	0	11,051	5,779	8,091	2,961			
US61LOOPC	52,381	31,053	5,072	0	734	3,152	12,369	47,308	30	382	412	512	46,797	0	0	5,072	2,684	3,758	1,315			
US61SB	37,982	7,693	8,254	0	0	10,675	11,357	29,725	595	735	1,330	1,652	28,074	0	0	8,254	4,642	6,499	1,756			
Stage 1 Subtotals:	629,887	356,350	54,508	185	144,075	18,358	56,410	575,378	264,483	19,386	283,869	352,012	223,370	129,139	163,889	54,508	38,188	53,466	1,045			
Stage 2																						
ML032-SEG3	199,484	115,000	21,818	0	106	20	62,540	177,666	111,637	8,369	120,006	148,812	28,855	79,659	111,011	21,818	11,704	16,386	5,433			
61CONNRDB	49,275	39,050	10,224	0	0	0	0	39,050	21,213	3,733	24,946	30,935	8,116	0	0	10,224	5,786	8,101	2,124			
US61RAMPD	7,913	2,951	4,960	0	0	0	0	2,951	76,894	4,189	81,083	100,545	-97,594	0	0	4,960	4,340	6,076	-1,116			
US61LOOPB	3,736	46	3,692	0	0	0	0	46	39,433	3,658	43,091	53,434	-53,388	0	0	3,692	2,068	2,896	797			
Stage 2 Subtotals:	260,408	157,047	40,694	0	106	20	62,540	219,713	249,177	19,949	269,126	333,726	-114,011	79,659	111,011	40,694	23,898	33,459	7,238			
Project Totals:	890,295	513,397	95,202	185	144,181	18,378	118,950	795,091	513,660	39,335	552,995	685,738	109,359	208,798	274,900	95,202	62,086	86,925	8,283			

Excavation, Class 10, Roadway & Borrow
795,091 - 18,378 - 118,950 = 657,763
[8] - [6] - [7]

Excavation, Class 12, Roadway & Borrow
18378 + 118950 = 137,328
[6] + [7]

Topsoil, Strip, Salvage and Spread
86,925
[18]

Topsoil, Strip and Stockpile
8,283
[19]



NOTE:
Erosion Control Items From Sta. 300+00 to 315+00 Included As Part Of Military Road Plans.

Notes:

1. Silt Fence for Ditch Checks, (or optional Slash Mulch Berms), shall be installed in locations shown in Tabulation 100-18 on the C-Sheets, where ditch grades are less than or equal to 6%. Items shall be removed once grading activities are complete.

2. Rock Check Dams shall be installed in locations shown in Tabulation 100-32 on the C-Sheets, where ditch grades are greater than 6%. Rock Check Dams shall be removed once grading activities are complete.

3. Rock Ditch Checks shall be installed, in combination with Turf Reinforcement Mat, to replace Rock Check Dams, once removed where ditch grades are greater than 6% and less than 10%. Rock Ditch Checks shall remain in place until Final Stabilization, (70% permanent growth), has been achieved. See Tabulation 100-23 for locations and material details.

4. Rock Ditches shall be installed, in combination with Turf Reinforcement Mat, to replace Rock Check Dams, once removed where ditch grades are greater than or equal to 10%. Rock ditches shall remain in place until Final Stabilization, (70% permanent growth), has been achieved. See Tabulation 100-23 for locations and material details.

5. 12" Wood Excelsior Perimeter and Slope Sediment Control Devices shall be installed, in combination with Special Ditch Control, (Wood Excelsior Mat), to replace Silt Fence for Ditch Checks, once removed, in medians. These items shall remain in place until Final Stabilization has been achieved. See Tabulation 100-19 on the C-Sheets for location and details.

6. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall be installed, in combination with Special Ditch Control, (Wood Excelsior Mat), to replace Silt Fence for Ditch Checks, once removed, in outside ditches. These items shall remain in place until Final Stabilization has occurred. See Tabulation 100-19 on the C-Sheets for location and details.

7. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall also be installed, to break up slopes greater than or equal to 33%. See Tabulation 100-19 on the C-Sheets for locations and details.

8. 20" Wood Excelsior Perimeter and Slope Sediment Control Devices shall also be installed around intakes which do not yet have tops in place. See Tabulation 100-19 on the C-Sheets for locations and details.

9. Special Ditch Control, (Wood Excelsior Mat), shall be installed, in combination with the 12" and 20" Perimeter and Slope Sediment Control Devices, along ditches with grades from 2% - 6%. The Special Ditch Control shall be installed after the Silt Fence for Ditch Checks have been removed. See Tabulation 100-22 on the C-Sheets for locations and details.

10. Turf Reinforcement Mat, (Type 2), shall be installed, in combination with RockDitch Checks, along ditches with grades of 6% or greater. The Turf ReinforcementMat shall be installed after the Rock Check Dams have been removed. See Tabulation 100-22 on the C-Sheets for locations and details.

11. Place Silt Basins in roadway ditches preceeding drainage structure inlets and at ditch outlets that flow offsite. Silt Basins shall be removed once Final Stabilization is reached. See Tabulation 100-14 on the C-Sheets for details and locations.

12. Temporary Sediment Control Basins are used to capture sediment before it leaves the right-of-way. They are required for drainage basins which involve 10 or more acres of disturbed area. Maintain Temporary Sediment Control Basins until the area upstream from the basin is fully vegetated. See Tabulation 100-33 on the C-Sheets for locations and details.

13. Silt Fence shall be installed around all inlets and outlets of pipe crossings and box culverts. Item may be removed once Final Stabilization has occurred. See Tabulation 100-17 on the C-Sheets for locations and details.

14. Install Rock Splash Basins at pipe outlets. See Tabulation 100-23 for material and location details.

15. Intercepting Ditches shall be required at the top of ditch backslopes where offsite drainage ties into the proposed roadside ditch. See Tabulation 100-16 on the C-Sheets for locations and details.

LEGEND

- TEMPORARY-SILT FENCE FOR DITCH CHECKS, (OR OPTIONAL SLASH MULCH BERMS), FINAL STABILIZATION-12" & 20" PERIMETER AND SLOPE SEDIMENT CONTROL DEVICES
- TEMPORARY-ROCK CHECK DAMS OR ROCK DITCHES FINAL STABILIZATION-ROCK DITCH CHECKS
- 20" PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
- TURF REINFORCEMENT MAT, TYPE 2
- SPECIAL DITCH CONTROL, (WOOD EXCELSIOR MAT)
- SILT BASIN
- SILT FENCE
- TEMPORARY SEDIMENT CONTROL BASIN
- ROCK SPLASH BASIN

EROSION CONTROL PLAN

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.1

9:30:57 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

℄ US 61 Ramp A

℄ Southwest Arterial

Silt Basin
Silt Fence
Rock Splash Basin
Silt Basin

Silt Basin
Silt Fence
Rock Splash Basin
Silt Basin

Silt Fence
Rock Splash Basin
Silt Basin

Shared Use Path

Silt Basin

Temporary Intake Cover &
20" Perimeter and Sediment Control Device

℄ Connector Road A

Silt Basin
Silt Fence
Rock Splash Basin

Silt Basin
Silt Fence

Silt Basin
Silt Fence
Rock Splash Basin

℄ Connector Road B

Silt Basin
Silt Fence
Rock Splash Basin

℄ US 61

Silt Basin
Silt Fence
Rock Splash Basin
Silt Basin

Silt Basin
Silt Fence

Silt Basin
Silt Fence

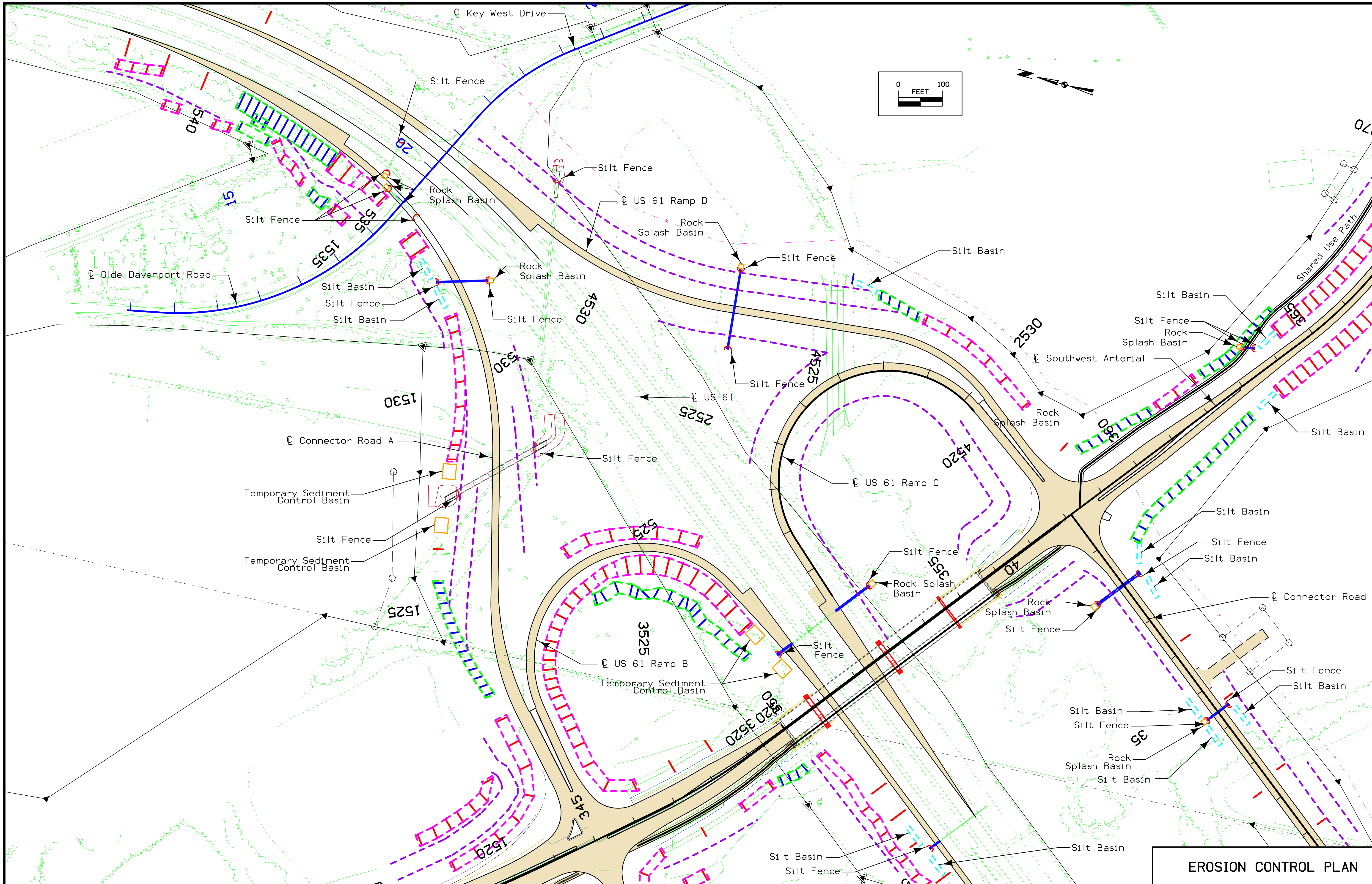
℄ Silverwood Drive

0 FEET 100

EROSION CONTROL PLAN

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.2

9:30:59 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht



℄ Key West Drive
Silt Fence
0 FEET 100
370
540
20
15
Silt Fence
Rock Splash Basin
℄ US 61 Ramp D
Rock Splash Basin
Silt Fence
Silt Basin
Silt Fence
535
1535
℄ Olde Davenport Road
Silt Basin
Silt Fence
Silt Basin
Rock Splash Basin
Silt Fence
4530
Silt Basin
Silt Fence
Rock Splash Basin
Shared Use Path
365
2530
℄ Southwest Arterial
4525
Silt Fence
530
1530
℄ US 61
2525
Rock Splash Basin
360
Silt Basin
℄ Connector Road A
Silt Fence
4520
℄ US 61 Ramp C
Temporary Sediment Control Basin
Silt Fence
Temporary Sediment Control Basin
525
Silt Basin
Silt Fence
Silt Basin
Silt Fence
355
40
Rock Splash Basin
Rock Splash Basin
Silt Fence
℄ Connector Road B
1525
3525
Silt Fence
℄ US 61 Ramp B
Temporary Sediment Control Basin
Silt Fence
Silt Basin
Silt Basin
Silt Fence
350
3520
35
Rock Splash Basin
Silt Basin
345
1520
Silt Basin
Silt Fence
Silt Basin

EROSION CONTROL PLAN

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.3

9:31:01 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

EROSION CONTROL PLAN

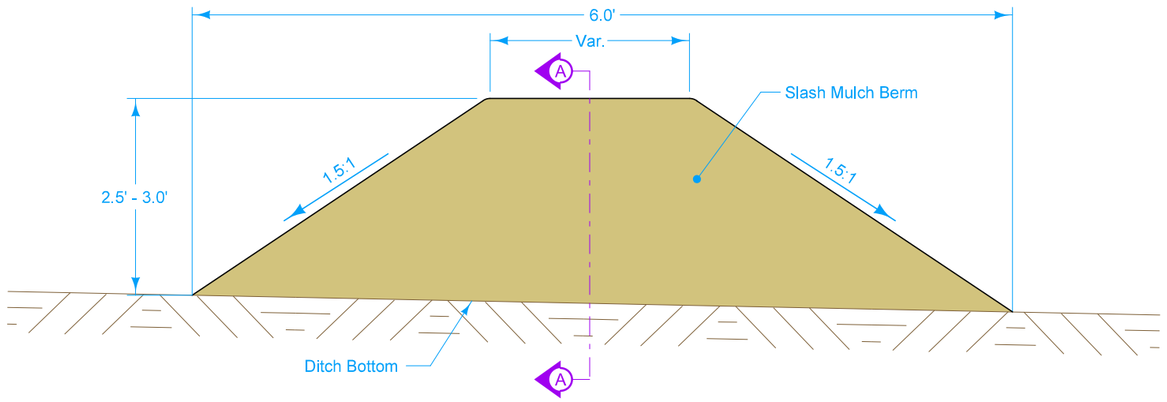
Silt Basin
Silt Fence
Rock Splash Basin
℄ US 61
℄ Southwest Arterial
℄ Connector Road B
0 FEET 100

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER U.4

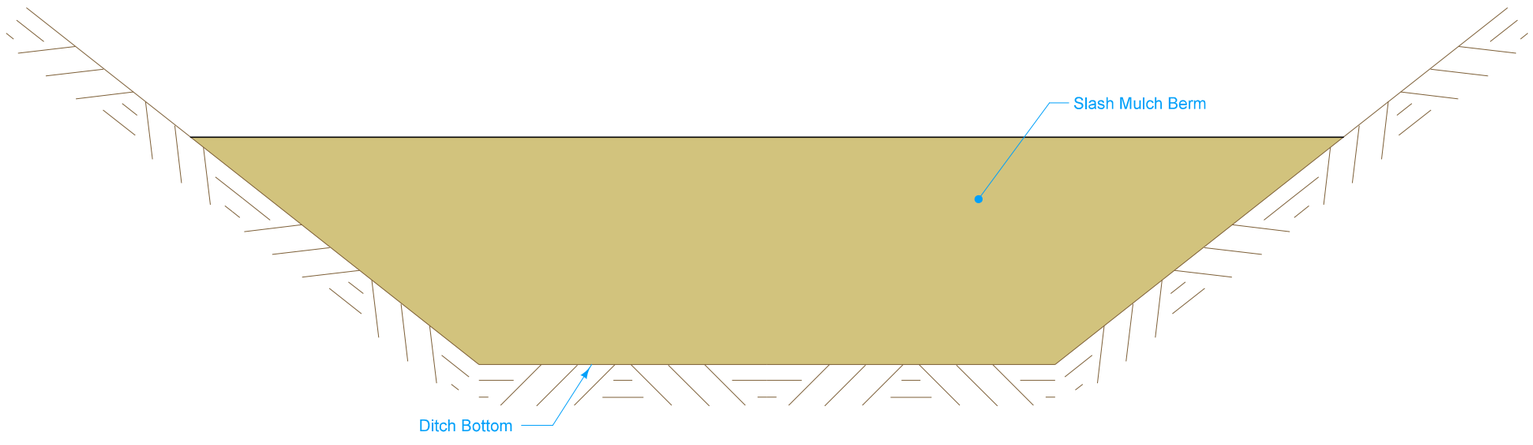
9:31:05 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

Slash mulch consists of waste material from clearing and grubbing. Use material with a maximum length of 20 inches and maximum width of 2 inches for individual pieces. Material will be accepted based on visual inspection.

Dispose of the slash mulch berm material off the project unless the Engineer approves a suitable site within the project limits.



DITCH PROFILE



SECTION A-A

REVISION	
1	10-18-16

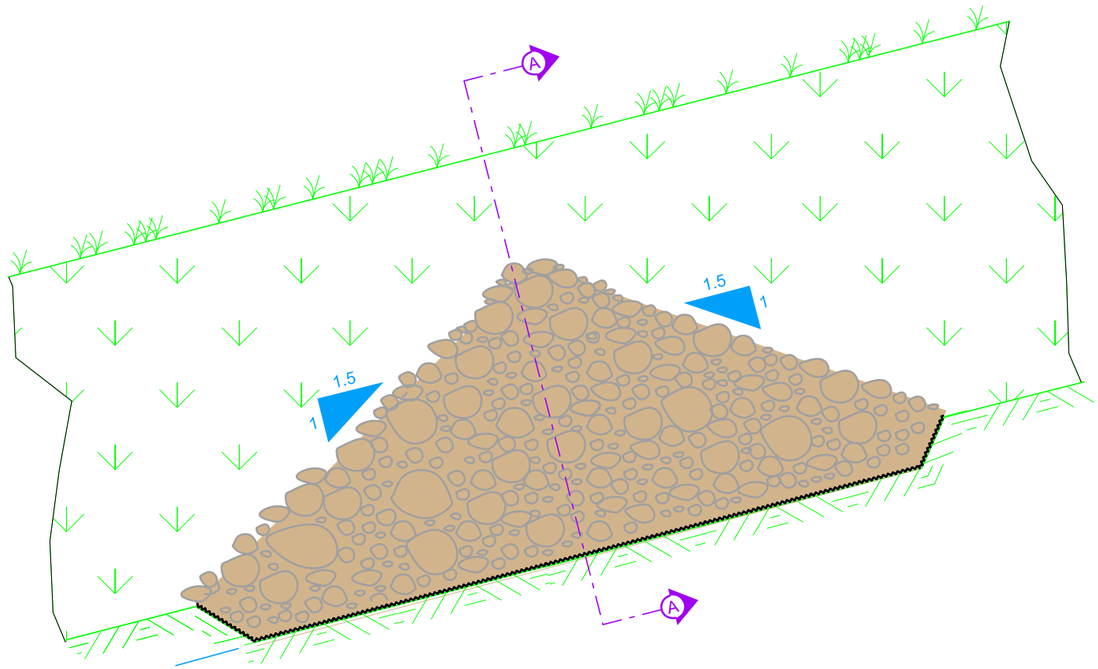
ROAD DESIGN DETAIL

570-1

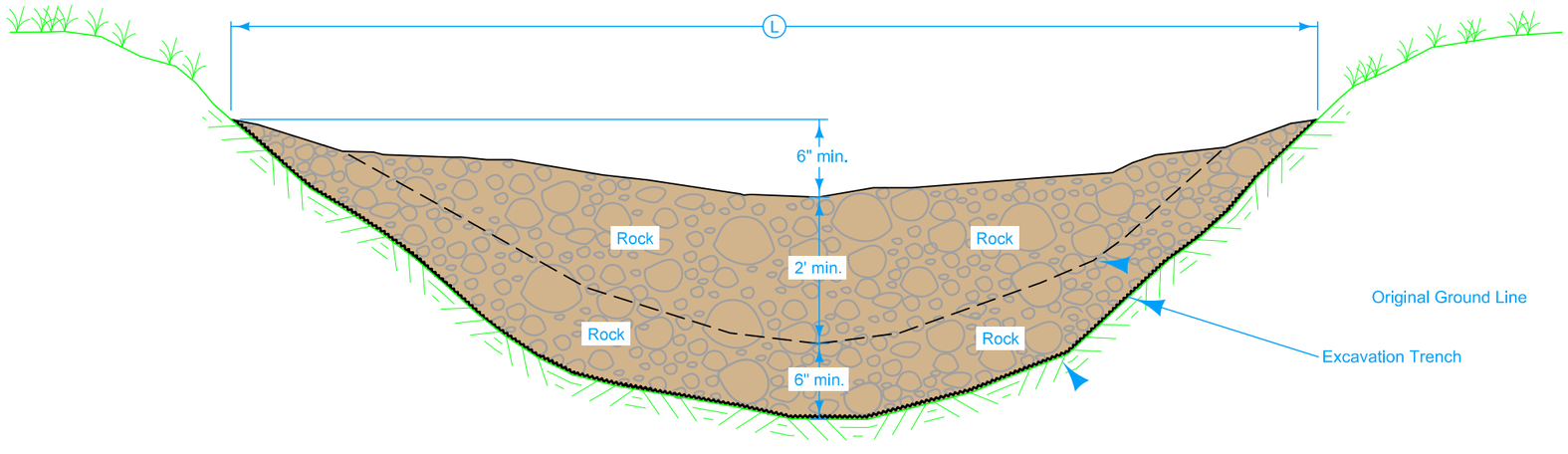
SHEET 1 of 1

REVISIONS: Corrected typo from 'much' to 'mulch' in general notes.

SLASH MULCH BERM



DITCH PROFILE



SECTION A-A

Use Class D Revetment to construct Rock Check Dam.

Method of Measurement for Rock Check Dam will be in linear feet to the nearest 0.1 feet.

Basis of Payment for Rock Check Dam will be the contract unit price per linear foot. Payment is full compensation for all materials, labor, and equipment required to construct the Rock Check Dam as shown. Class 10 excavation required to cut trench and engineering fabric installed prior to placing revetment are incidental and will not be paid for separately.

Method of Measurement for Maintenance of Rock Check Dam will be by count.

Basis of Payment for Maintenance of Rock Check Dam will be at the contract unit price for each occurrence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any repair that is needed during the project.

Method of Measurement for Removal of Rock Check Dam will be by count.

Basis of Payment for Removal of Rock Check Dam will be at the contract unit price for each Rock Check Dam removed. Payment is full compensation for all labor and equipment required to remove all rock and material above original ditch grade. Rock, silt, and engineering fabric that is flush with and/or below final ditch grade will be allowed to remain in the excavation trench.

Possible Contract Items:
- Rock Check Dam
- Maintenance of Rock Check Dam
- Removal of Rock Check Dam

Possible Tabulation:
- 100-32

REVISION	
NEW	04-19-16

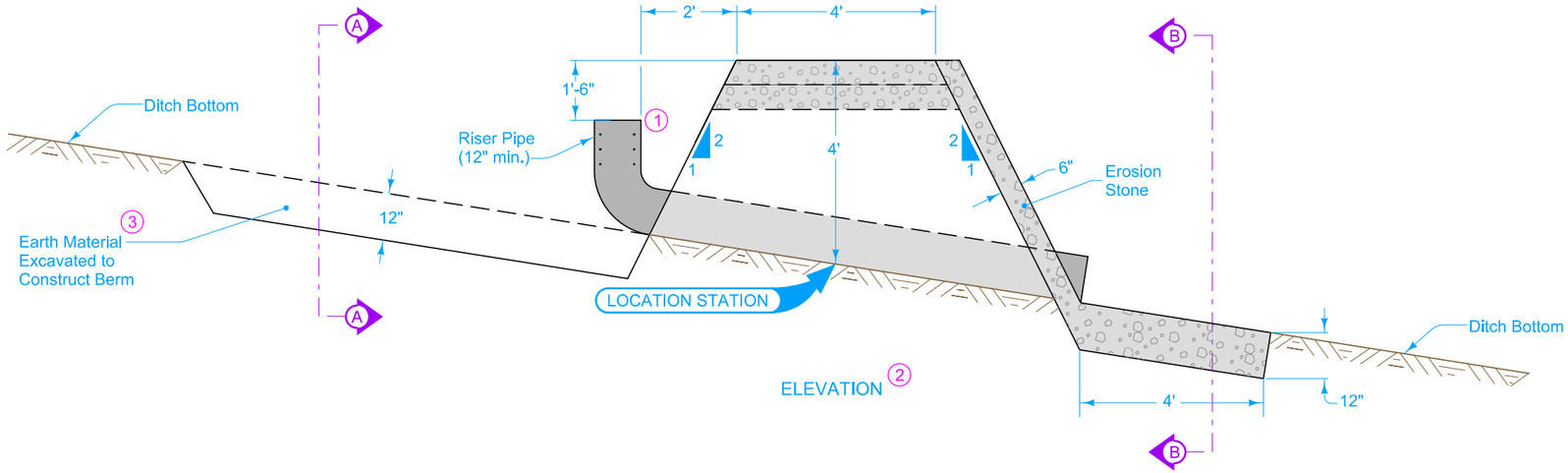
ROAD DESIGN DETAIL

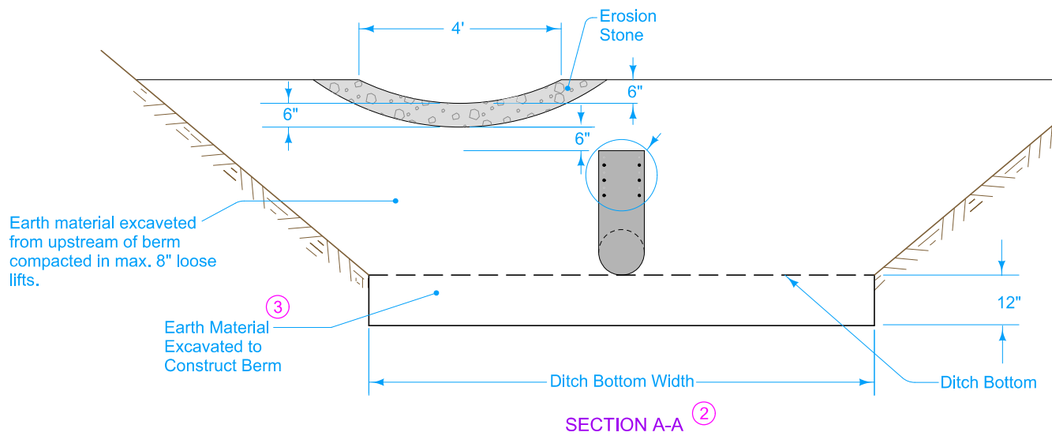
570-2

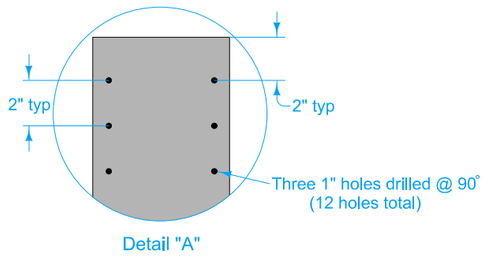
SHEET 1 of 1

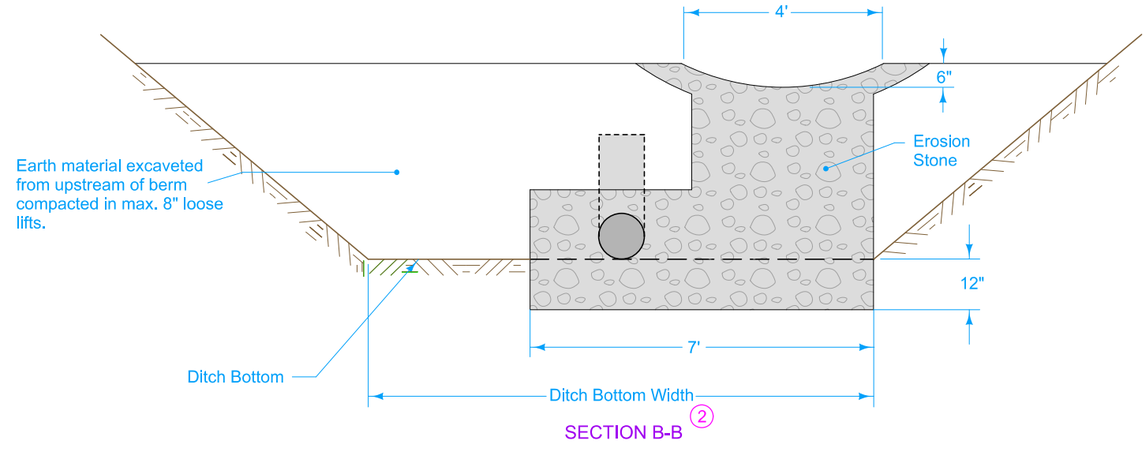
REVISIONS: New

ROCK CHECK DAM









Measurement for Temporary Sediment Control Basin will be by count.

Basis of Payment for Temporary Sediment Control Basin will be at the contract unit price for each device installed. Payment is full compensation for furnishing all equipment, labor, and materials required to construct the Temporary Sediment Control Basin as shown.

Method of Measurement for Maintenance of Temporary Sediment Control Basin will be by count.

Basis of Payment for Maintenance of Temporary Sediment Control Basin will be at the contract unit price for each occurence. Payment is full compensation for clean out and disposal of material when capacity reaches 50%, and for any other repair needed during the project.

Measurement for Removal of Temporary Sediment Control Basin will be by count.

Basis of Payment for Removal of Temporary Sediment Control Basin will be at the contract unit price for each device removed. Payment is full compensation for all labor and equipment required to remove all rock and material above designed ditch grade and to place topsoil per note 3 below. Rock and engineering fabric that is flush with and/or below designed ditch grade will be allowed to remain in place.

(1) Ensure Riser Pipe remains vertical.

(2) Dimensions shown are minimums.

(3) When Temporary Sediment Control Basin is removed, if basin has not silted in to designed ditch grade, use topsoil to bring up to designed ditch grade .

Possible Contract Items:
- Temporary Sediment Control Basin
- Maintenance of Temporary Sediment Control Basin
- Removal of Temporary Sediment Control Basin

Incidental to Temporary Sediment Control Basin:
- Erosion Stone
- Pipe
- Excavated Earth Material

Possible Tabulation:
- 100-30

REVISION	
NEW	04-19-16

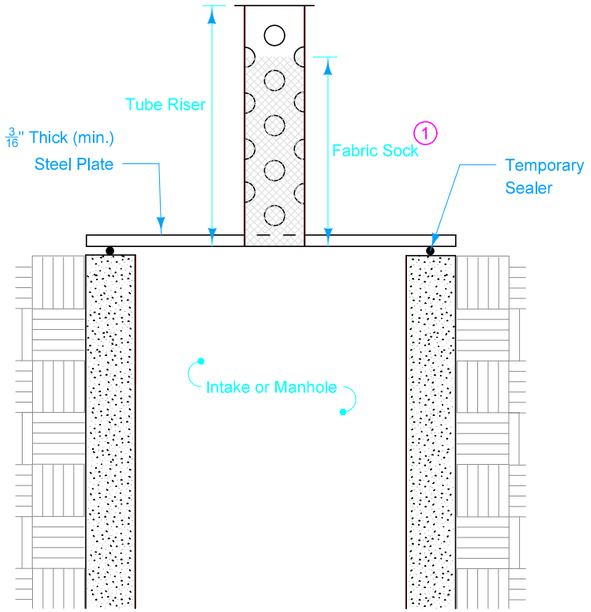
ROAD DESIGN DETAIL

570-3

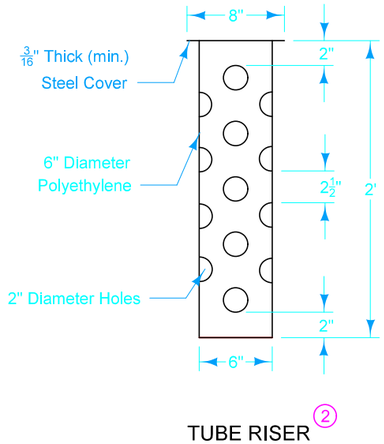
SHEET 1 of 1

REVISIONS: New

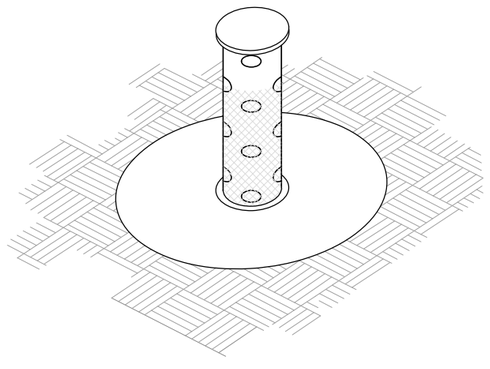
TEMPORARY SEDIMENT CONTROL BASIN



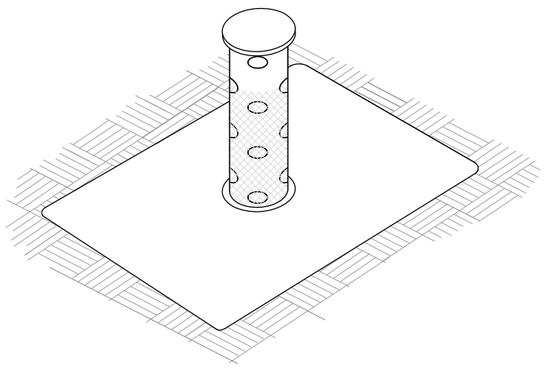
SECTION VIEW



TUBE RISER 2

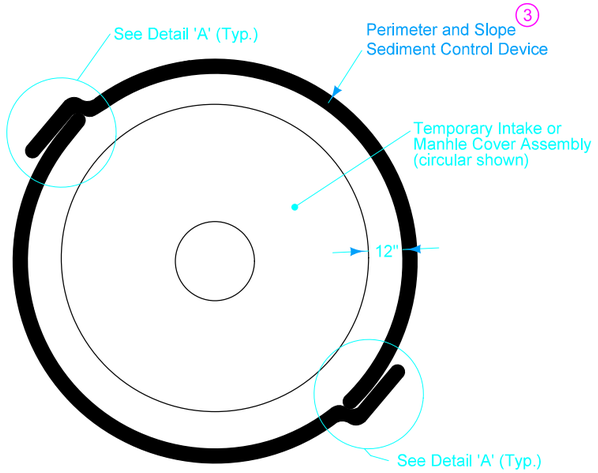


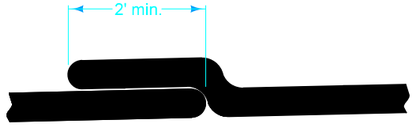
ISOMETRIC VIEW
(Circular)



ISOMETRIC VIEW
(Rectangular)

TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY





DETAIL 'A' 4
(Overlap Joint)

PERIMETER AND SLOPE SEDIMENT CONTROL

Method of Measurement for Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each device installed.

Method of Measurement for Maintenance of Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Maintenance of Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each occurance. Payment is full compensation for inspecting fabric sock and replacing when flow capicity has been reduced to 50%.

Method of Measurment for Removal of Temporary Intake or Manhole Cover Assembly will be by count.

Basis of Payment for Removal of Temporary Intake or Manhole Cover Assembly will be at the contract unit price for each device removed.

1. Wrap fabric sock around tube riser. Use fabric complying with Article 4196.01, B, 1 with a minimum flow rate of 90 gallons per minute per square foot. Ensure top of sock is below form grade elevation.
2. Tube riser may be such that it can be pushed down and pulled up.
3. Place Perimeter and Slope Sediment Control Devices around all intake or manhole wells. Use 20 inch diameter device.
4. Extra material required to install overlaps will not be included in the installation length.

Possible Contract Items:
- Temporary Intake or Manhole Cover Assembly
- Maintenance of Temporary Intake or Manhole Cover Assembly
- Removal of Temporary Intake or Manhole Cover Assembly
- Perimeter and Slope Sediment Control Device

Possible Tabulations:
- 100-11
- 100-19

REVISION	
1	04-18-17

ROAD DESIGN DETAIL

570-5

SHEET 1 of 1

REVISIONS: Add bid items for maintenance and removal. Added basis of payment and method of measurement.

EROSION CONTROL FOR INTAKE OR MANHOLE WELL

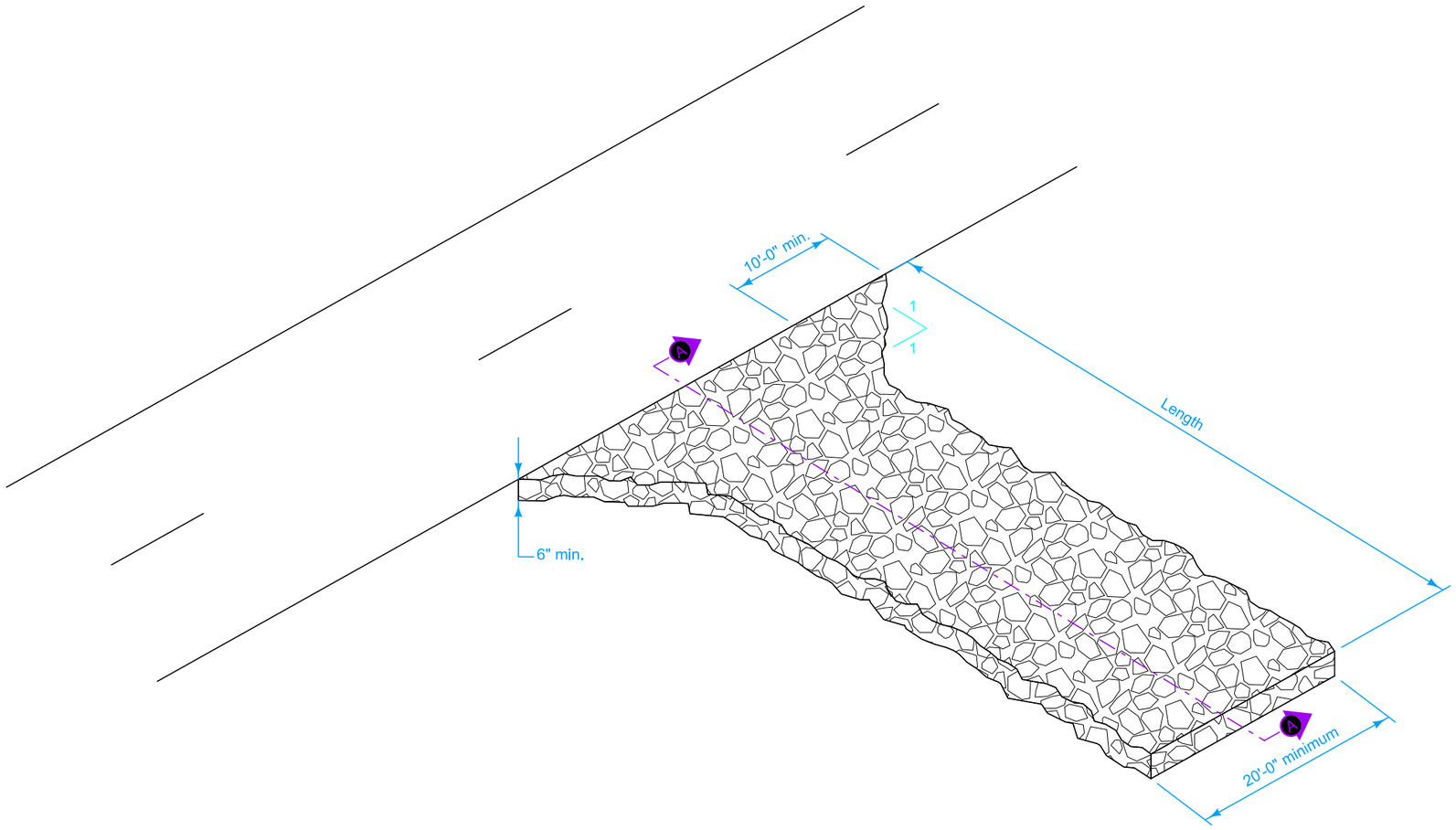
ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.8

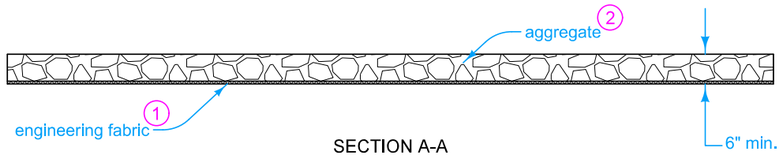
9:31:08 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

Obtain the Engineer's approval for location and length of stabilized entrances prior to constructing.

Method of Measurement for Stabilized Construction Entrance will be in linear feet measured along the length of the entrance at the entrance centerline.

Basis of Payment for Stabilized Construction Entrance will be at the contract unit price per linear foot. Payment is full compensation for furnishing all materials and work necessary for installation, maintenance, and removal of stabilized construction entrance. Maintenance includes installing additional material or cleaning required to maintain the entrance in a functional contdition.





SECTION A-A

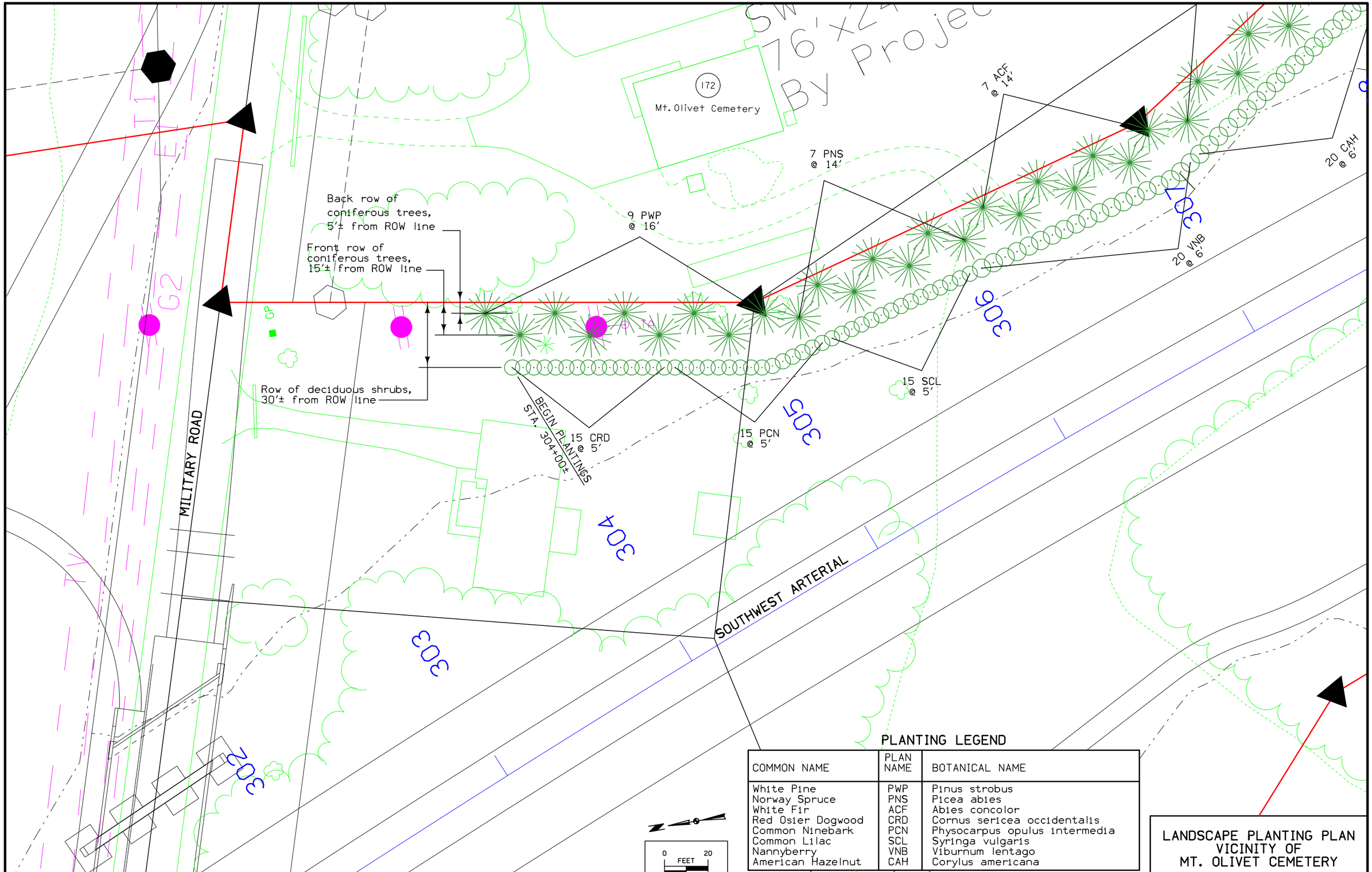
1) Place engineering fabric prior to placing aggregate. Use fabric for Embankment Erosion Control complying with Section 4196 of the Standard Specifications.

2) Use aggregate meeting Gradation No. 13 of Section 4109 of the Standard Specificaitons.

Possible Contract Item:
Stabilized Construction Entrance

	REVISION
	NEW 04-18-17
ROAD DESIGN DETAIL	570-10
	SHEET 1 of 1
REVISIONS: NEW	

STABILIZED CONSTRUCTION ENTRANCE



PLANTING LEGEND

COMMON NAME	PLAN NAME	BOTANICAL NAME
White Pine	PWP	Pinus strobus
Norway Spruce	PNS	Picea abies
White Fir	ACF	Abies concolor
Red Osier Dogwood	CRD	Cornus sericea occidentalis
Common Ninebark	PCN	Physocarpus opulus intermedia
Common Lilac	SCL	Syringa vulgaris
Nannyberry	VNB	Viburnum lentago
American Hazelnut	CAH	Corylus americana

LANDSCAPE PLANTING PLAN VICINITY OF MT. OLIVET CEMETERY

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.10

9:31:10 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

172
Mt. Olivet Cemetery

7 ACF
@ 14'

8 PWP
@ 16'

8 PNS
@ 14'

8 ACF
@ 14'

Back row of coniferous trees,
5'± from ROW line

Front row of coniferous trees,
15'± from ROW line

20 VNB
@ 6'

20 CAH
@ 6'

15 SCL
@ 5'

15 PCN
@ 5'

15 CRD
@ 5'

END PLANTINGS
STA. 310+38±

307
308
309
310
311
312

SOUTHWEST ARTERIAL

PLANTING LEGEND

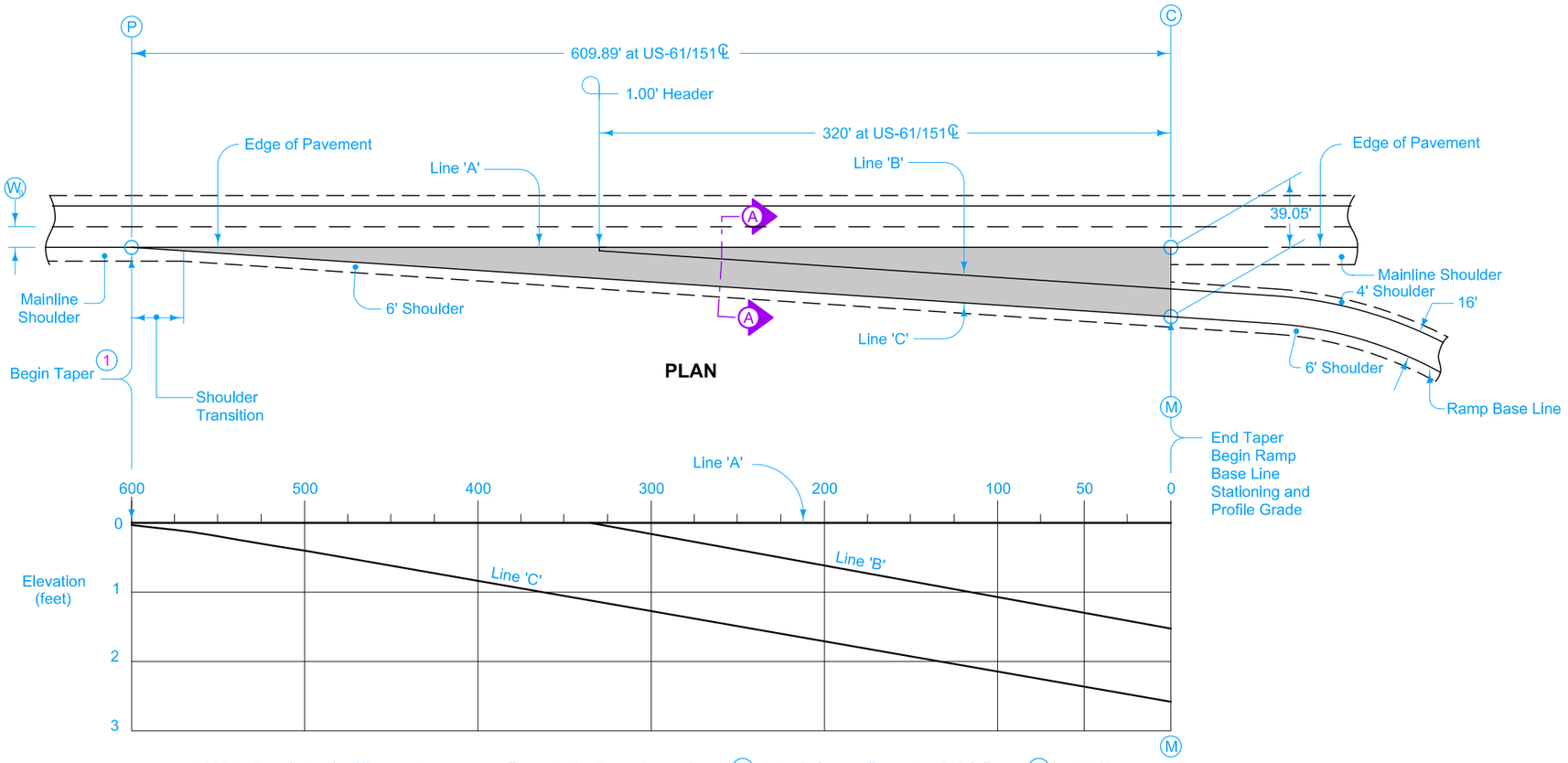
COMMON NAME	PLAN NAME	BOTANICAL NAME
White Pine	PWP	Pinus strobus
Norway Spruce	PNS	Picea abies
White Fir	ACF	Abies concolor
Red Osier Dogwood	CRD	Cornus sericea occidentalis
Common Ninebark	PCN	Physocarpus opulus intermedia
Common Lilac	SCL	Syringa vulgaris
Nannyberry	VNB	Viburnum lentago
American Hazelnut	CAH	Corylus americana

0 20
FEET

LANDSCAPE PLANTING PLAN
VICINITY OF
MT. OLIVET CEMETERY

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.11

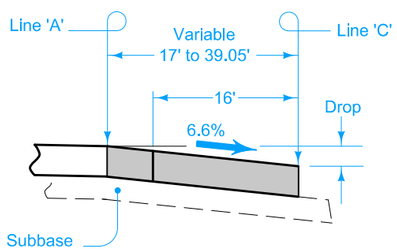
9:31:11 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht



Ⓒ

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																											
DISTANCE (Ft.)	609.89	600	575	550	525	513.70	500	475	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
OFFSET (Ft.)	0	0.53	1.90	3.28	4.69	5.33	6.11	7.56	9.03	10.53	12.04	13.58	15.14	16.72	18.32	19.94	21.58	23.24	24.93	26.63	28.35	30.09	31.84	33.62	35.41	37.22	39.02
SLOPE (%)	4.60	4.81	5.33	5.85	6.37	◄ Constant 6.6% Slope ►																					
DROP (Ft.)	0	0.03	0.10	0.19	0.30	0.35	0.40	0.50	0.60	0.70	0.79	0.90	1.00	1.10	1.21	1.32	1.42	1.53	1.65	1.76	1.87	1.99	2.10	2.22	2.34	2.47	2.58

Ⓜ



SECTION A-A

TABLE OF SHOULDER TRANSITION LENGTHS			
W_o	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	60'	90'
14'	30'	60'	NA

NOTE: W_o is the width of the outside lane to the Edge of Pavement.

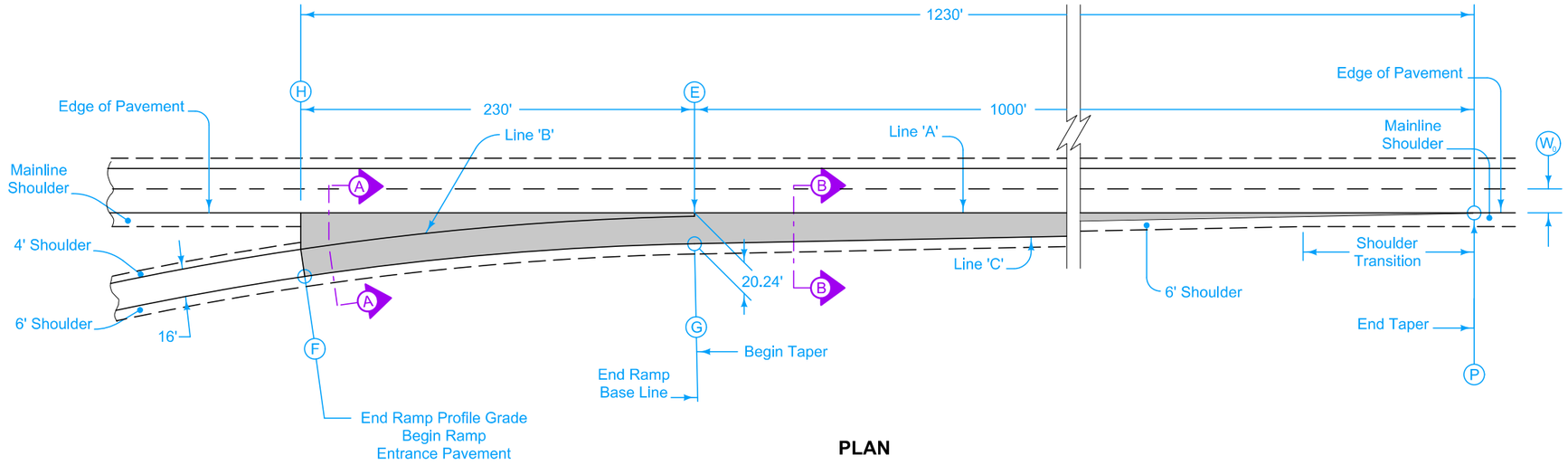
MODIFIED STANDARD ROAD PLAN

PV-410

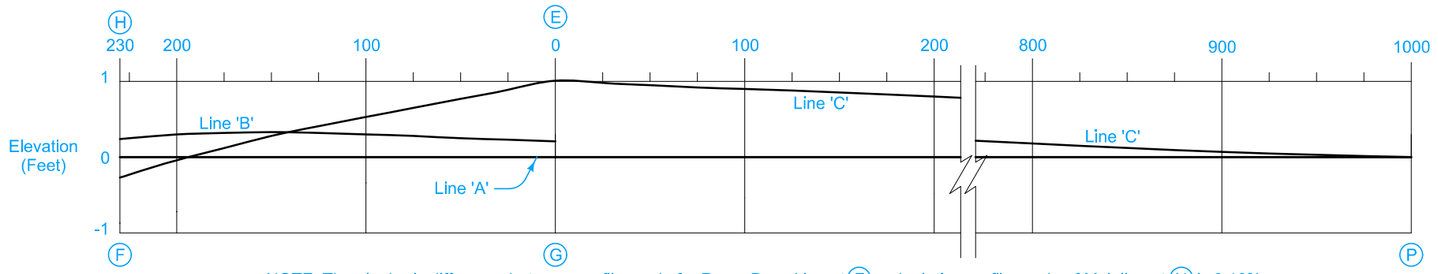
DECELERATION TAPER FOR 16' EXIT RAMP

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.12

9:31:12 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht



PLAN



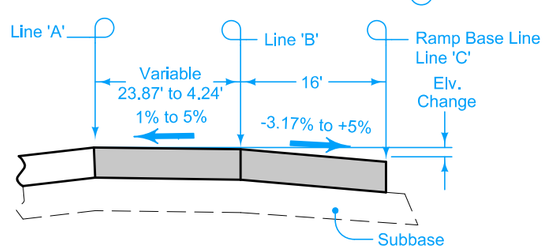
NOTE: The algebraic difference between profile grade for Ramp Base Line at (F) and relative profile grade of Mainline at (H) is 0.16%.

PROFILE

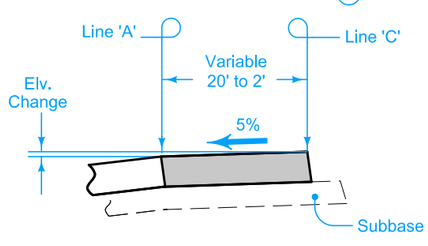
(H) (E)

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																										
Distance From Point (E) Along Line 'A' (Ft.)		230	225	200	175	150	125	100	75	50	25	0	25	50	75	100	200	300	400	500	600	700	739.02	800	900	1000
From Line 'A' To Line 'B'	Offset (Ft.)	23.87	23.13	19.67	16.55	13.78	11.35	9.26	7.50	6.08	4.99	4.24														
	Slope (%)	1.0	← Uniform Transition Slope →									5.0														
	Elv. Change (Ft.)	0.24	0.25	0.30	0.32	0.33	0.32	0.30	0.28	0.25	0.23	0.21														
From Line 'B' To Line 'C'	Offset (Ft.)	← Constant 16.0' Offset →																								
	Slope (%)	-3.17	← Uniform Transition Slope →									5.0														
	Elv. Change (Ft.)	-0.51	-0.48	-0.34	-0.20	-0.05	0.09	0.23	0.37	0.52	0.66	0.80														
From Line 'A' To Line 'C'	Offset (Ft.)												19.7	19.1	18.5	17.9	16.1	14.2	12.3	10.3	7.7	5.7	5.1	4.4	2.6	0.0
	Slope (%)												← Constant 5.0% Slope →											4.1	2.5	1.0
	Elv. Change (Ft.)	-0.27	-0.23	-0.04	0.12	0.28	0.41	0.53	0.65	0.77	0.89	1.01	0.98	0.95	0.92	0.90	0.80	0.71	0.61	0.52	0.38	0.28	0.26	0.18	0.07	0.0
Distance From Point (G) Along Line 'C' (Ft.)		237.94	232.67	206.53	180.47	154.50	128.59	102.74	76.94	51.18	25.00	0.00														

(F) (G) (P)



SECTION A-A



SECTION B-B

TABLE OF SHOULDER TRANSITION LENGTHS			
W_0	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	200'	300'
14'	100'	200'	NA

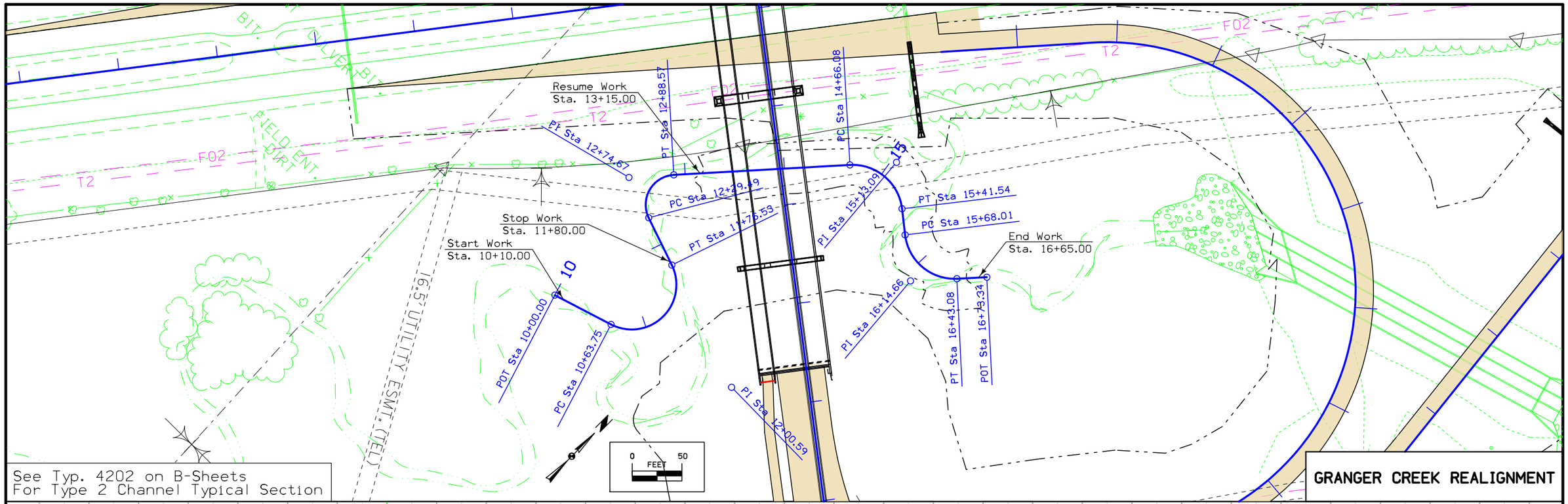
NOTE: W_0 is the width of the outside lane to the Edge of Pavement.

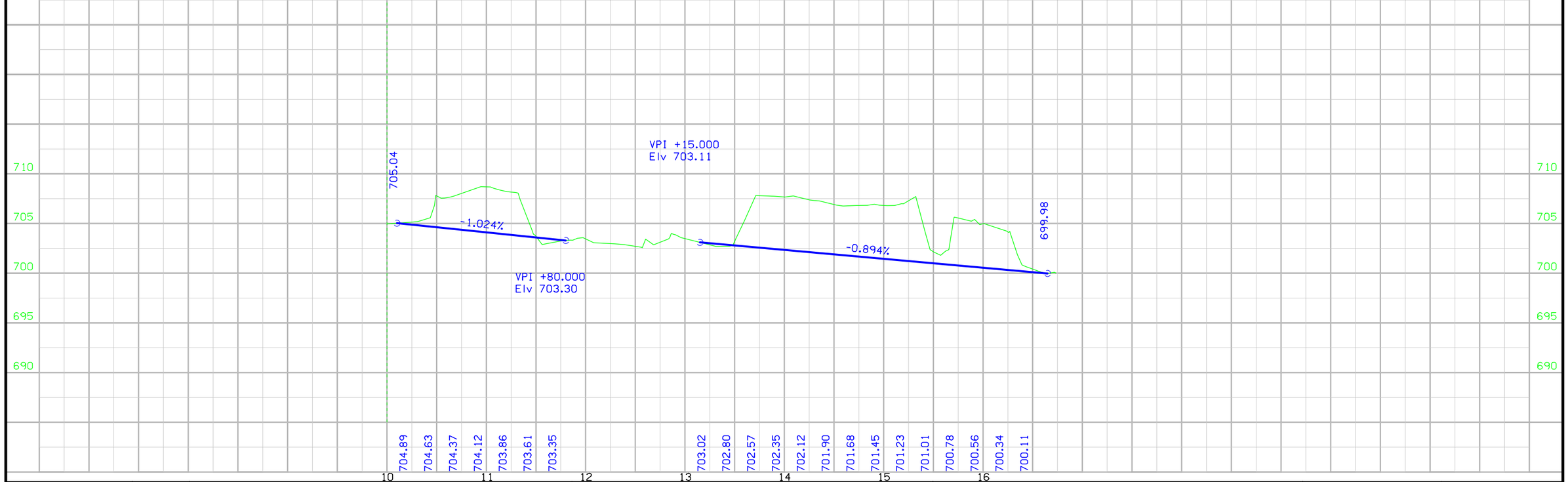
MODIFIED STANDARD ROAD PLAN

PV-411

ACCELERATION TAPER FOR 16' ENTRANCE RAMP

ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.13





ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	DUBUQUE COUNTY	PROJECT NUMBER	NHSX-032-1(36)--3H-31	SHEET NUMBER	U.14

9:31:15 AM 12/21/2016 VogelJ1 P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\SheetFiles\42_GE_U01.sht

ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1417

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	205.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	360.0	
3	2402-2722000	EXCAVATION, CLASS 22	CY	755.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	441.8	
5	2404-7775000	REINFORCING STEEL	LB	80,898.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	195.0	
8	2507-6800061	REVETMENT, CLASS E	TON	205.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1417

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE SITUATION PLAN. SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2402-2722000	**EXCAVATION, CLASS 22** IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, THE CURTAIN WALL IS TO EXTENDED INTO THE ROCK A MINIMUM OF 6". SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
4	2403-0100020	**STRUCTURAL CONCRETE (RCB CULVERT)** --
5	2404-7775000	**REINFORCING STEEL** INCLUDES ADJUSTING 5†1, 5†2, 5u1, AND 6p1 CURTAIN WALL BARS, AS NECESSARY, TO ACCOMMODATE CHANGES IN CURTAIN WALL DEPTH IF ROCK IS ENCOUNTERED.
6	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	**ENGINEERING FABRIC** SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

LICENSED PROFESSIONAL ENGINEER
MICHAEL P. CAVEN
16504
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 Date 12-20-16

MICHAEL P. CAVEN
Printed or Typed Name

My license renewal date is December 31, 2018

Pages or sheets covered by this seal: V.1-V.22

DESIGN FOR 33° SKEW (L.A.)

10'x6'x302'-0 REINFORCED CONCRETE BOX CULVERT

QUANTITIES

STA. 331+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417

12/20/2016 3:37:29 PM untitled P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\BRFinal\42_BOX-CULVERT.STR CCDDDDs001 11x17_pdf.pltcfg

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A SINGLE 10′ x 6′ x 302′-0 REINFORCED CONCRETE BOX CULVERT SKEWED 33° LEFT AHEAD AT STATION 331+00.00 (℄ SW ARTERIAL).

THE DESIGN FILL HEIGHT IS 21′.

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.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS A DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE CLASS 20 AND CLASS 22 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF PROJECTS LISTED ON SHEET J.1

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	2 AT 3,196	6,392
11′-0 END SECTION	2 AT 2,701	5,402
35′-0 BARREL SECTION	8 AT 8,593	68,744
5r1 x 3′-6 DOWEL BAR SET	9 AT 40	360
	TOTAL (LB)	80,898

CONCRETE PLACEMENT QUANTITIES

LOCATION	FLOOR	WALLS	SLAB	TOTAL
HEADWALL 30° SKEW	2 AT 13.6	2 AT 5.7	2 AT 1.5	41.6
11′-0 END SECTION	2 AT 6.1	2 AT 3.4	2 AT 5.0	29.0
35′-0 BARREL SECTION	8 AT 19.4	8 AT 11.0	8 AT 16.0	371.2
TOTAL (CY)	194.6	106.2	141.0	441.8

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 10-6-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-6-12	4-12	07-16

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET D.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 33° SKEW (L.A.)

10′x6′x302′-0 REINFORCED CONCRETE BOX CULVERT

GENERAL NOTES

STA. 331+00.00 MARCH, 2017

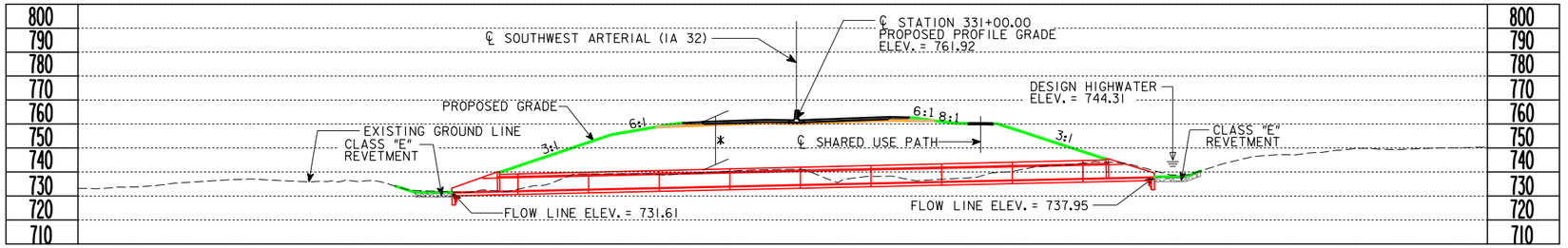
DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1417

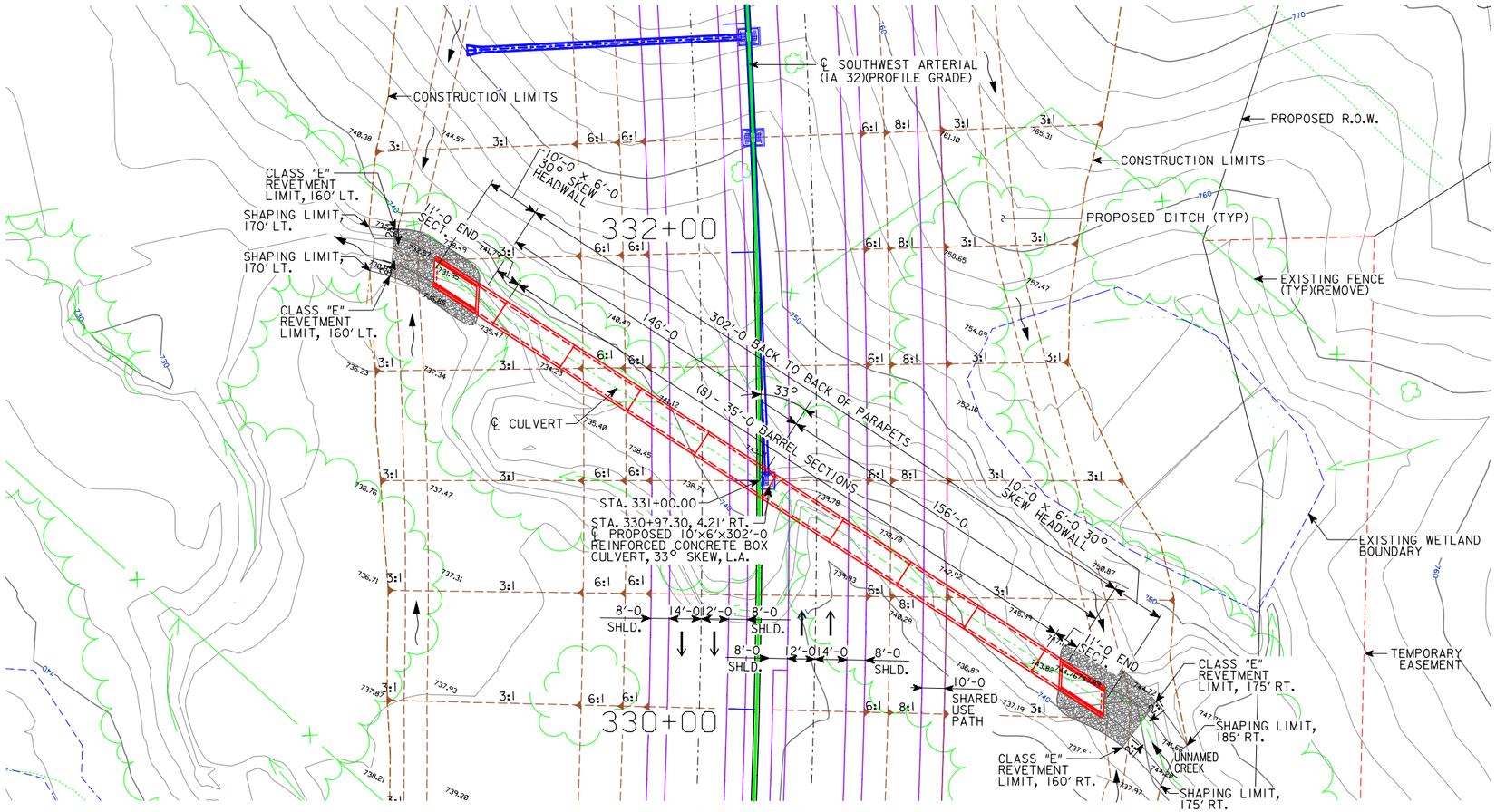
DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.2

12/20/2016 4:30:07 PM untitled P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\BRFinal\42_BOX-CULVERT.STR CCDDDDs002 11x17_pdf.pltcfg

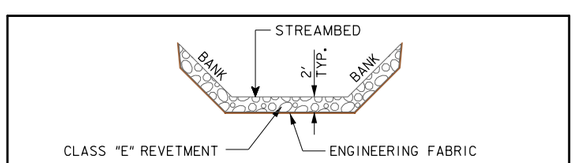


LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = 0.3"



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

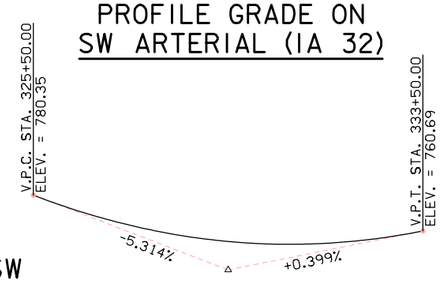
LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	105	100	70
OUTLET	100	95	65
TOTALS	205	195	135

* QUANTITY FOR EMBEDDED REVETMENT

BENCHMARK:

BM #14- 7" SPIKE IN CORNER POST 2000' SOUTH OF MILITARY ROAD ON EXTENSION OF DRIVE AT MT. ST. BERNARD ROAD AT NORTH-SOUTH FENCE / EAST-WEST FENCE T-INTERSECTION
3636697.07 NORTH, 5678865.76 EAST, ELEV. 769.84

PROFILE GRADE ON SW ARTERIAL (IA 32)



CURVE DATA SW ARTERIAL (IA 32)

ENTERING CURVE DATA
(CURVE 21007)
P.I. STA. 334+23.45
DELTA = 28° 35' 02.91" (LT)
DEGREE = 1° 25' 56.62"
TANGENT = 1,019.00'
LENGTH = 1,995.55'
RADIUS = 4,000.00'
EXTERNAL = 127.75'
LONG CHORD = 1,974.92'
MID. ORD. = 123.80'
P.C. STA. 324+04.45
P.T. STA. 344+00.00

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	16,000	V.P.D.
	TRUCKS	7	%

HYDRAULIC DATA

DRAINAGE AREA = 202 ACRES
DESIGN DISCHARGE, Q50 = 393 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 744.31

LOCATION

SW ARTERIAL (IA 32)
OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4379511°
LONG. -90.6886064°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.

DESIGN FOR 33° SKEW (L.A.)

10'x6'x302'-0 REINFORCED CONCRETE BOX CULVERT

C.I.P. SITUATION PLAN

STA. 331+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1417

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.3

ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1417

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	180.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	210.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	405.0	
4	2402-2722000	EXCAVATION, CLASS 22	CY	810.0	
5	2415-2111006	PRECAST CONCRETE BOX CULVERT, 10 FT. X 6 FT.	LF	306.0	
6	2415-2201006	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 6 FT.	EACH	2.0	
7	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
8	2507-3250005	ENGINEERING FABRIC	SY	200.0	
9	2507-6800061	REVETMENT, CLASS E	TON	220.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1417

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	**SPECIAL BACKFILL** SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2402-2722000	**EXCAVATION, CLASS 22** IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO 6" BELOW THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, EXCAVATION SHALL ACCOMMODATE THE NEW CURTAIN WALL. SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
5	2415-2111006	**PRECAST CONCRETE BOX CULVERT, 10 FT. X 6 FT.** - -
6	2415-2201006	**PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 6 FT.** - -
7	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
8	2507-3250005	**ENGINEERING FABRIC** SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
9	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 33° SKEW (L.A.)

10'x6'x312'-11 PRECAST CONCRETE BOX CULVERT

QUANTITIES

STA. 331+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1417

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 10'x6'x312'-11 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 33° LEFT AHEAD AT STATION 331+00.00 (℄ SW ARTERIAL)(IA 32).

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 PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 21 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF $\frac{3}{8}$ INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
D. A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF $\frac{3}{4}$ INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADII OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

SPECIFICATIONS:

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

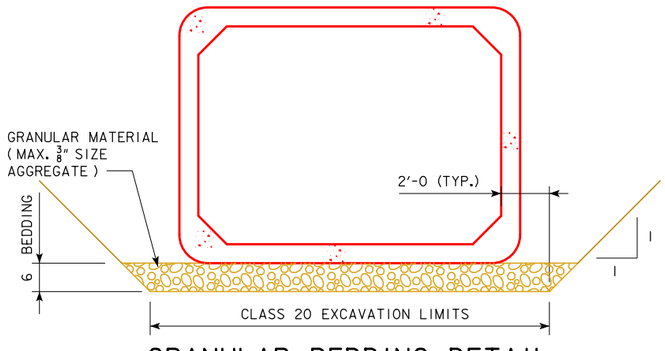
CONSTRUCTION:

IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010:

BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN f'c = 5 KSI.



GRANULAR BEDDING DETAIL

GRANULAR MATERIAL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET D.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB 10-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 33° SKEW (L.A.)

10'x6'x312'-11 PRECAST CONCRETE BOX CULVERT

GENERAL NOTES

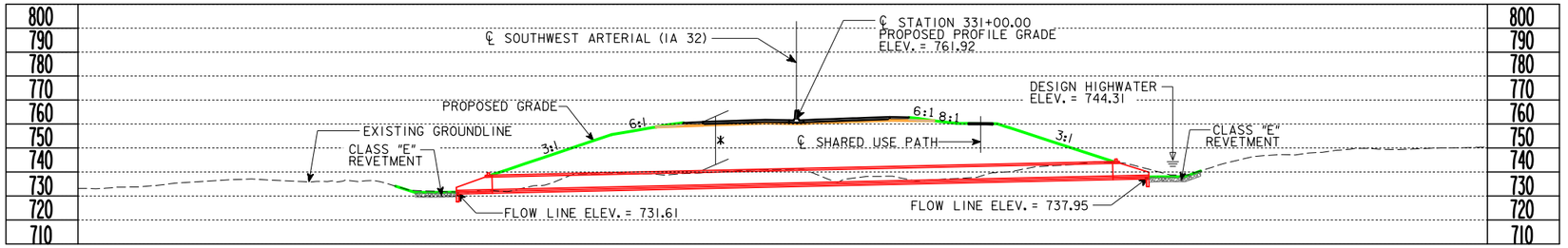
STA. 331+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

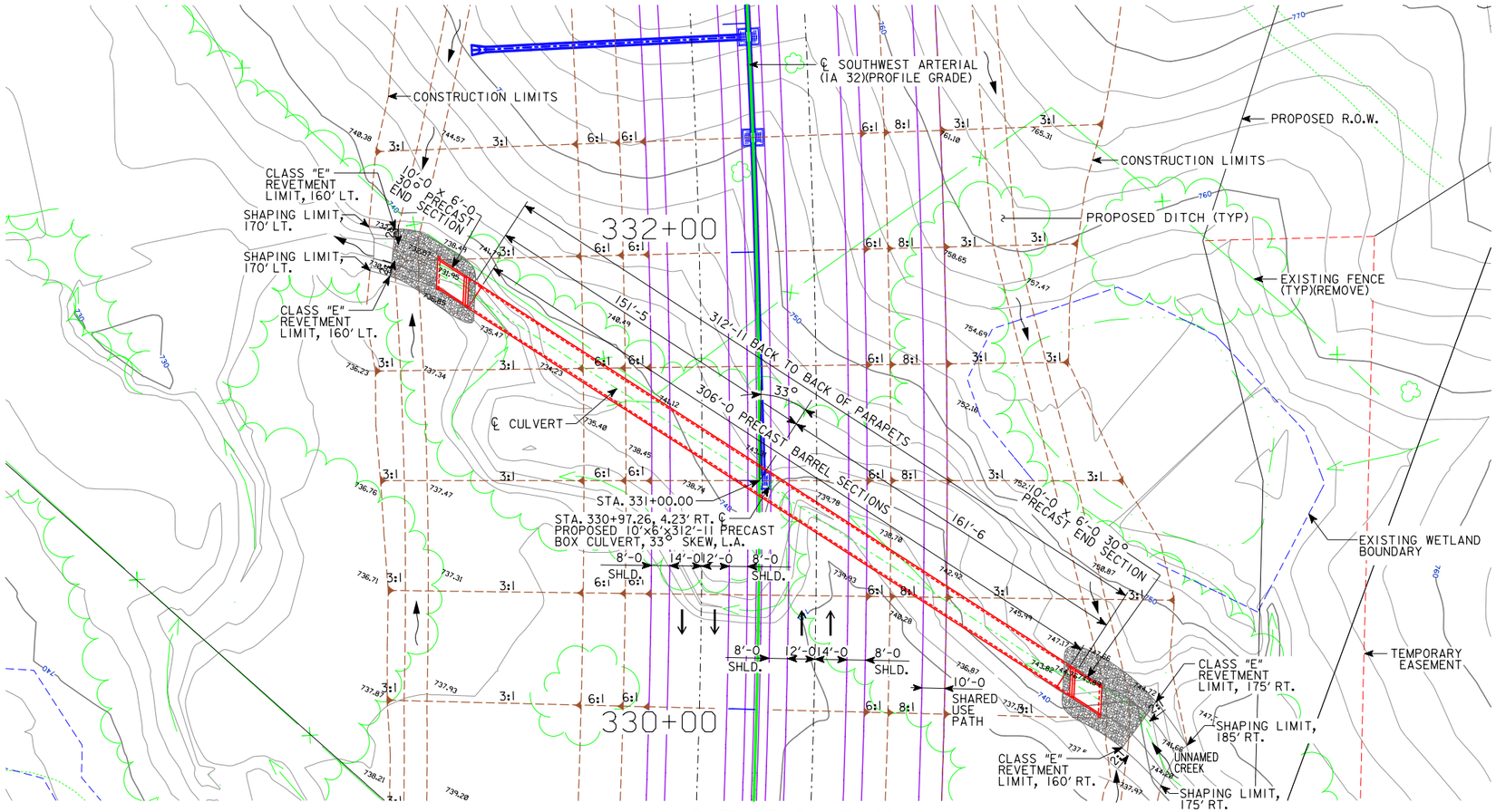
DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1417

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.5

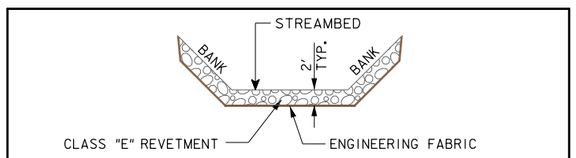


LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = 0.3"



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

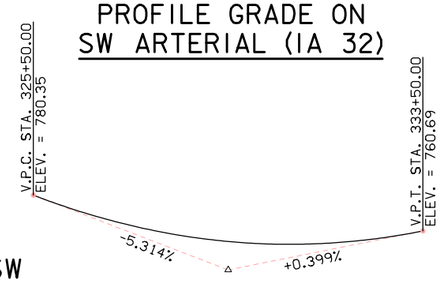
LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	120	110	75
OUTLET	100	90	65
TOTALS	220	200	140

* QUANTITY FOR EMBEDDED REVETMENT.

BENCHMARK:

BM #14- 7" SPIKE IN CORNER POST 2000' SOUTH OF MILITARY ROAD ON EXTENSION OF DRIVE AT MT. ST. BERNARD ROAD AT NORTH-SOUTH FENCE / EAST-WEST FENCE T-INTERSECTION
3636697.07 NORTH, 5678865.76 EAST, ELEV. 769.84

PROFILE GRADE ON SW ARTERIAL (IA 32)



P.V.I. STA. 329+50.00
ELEV. = 759.09
L.V.C. = 800'
M.O. = 5.71'
K = 140
DES. SP. = 60MPH

CURVE DATA SW ARTERIAL (IA 32)

ENTERING CURVE DATA
(CURVE 21007)
P.I. STA. 334+23.45
DELTA = 28° 35' 02.91" (LT)
DEGREE = 1° 25' 56.62"
TANGENT = 1,019.00'
LENGTH = 1,995.55'
RADIUS = 4,000.00'
EXTERNAL = 127.75'
LONG CHORD = 1,974.92'
MID. ORD. = 123.80'
P.C. STA. 324+04.45
P.T. STA. 344+00.00

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	16,000	V.P.D.
	TRUCKS	7	%

HYDRAULIC DATA

DRAINAGE AREA = 202 ACRES
DESIGN DISCHARGE, Q50 = 393 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 744.31

LOCATION

SW ARTERIAL (IA 32)
OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.437911°
LONG. -90.6886064°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.

N

DESIGN FOR 33° SKEW (L.A.)

10'x6'x312'-11 PRECAST CONCRETE BOX CULVERT

PRECAST SITUATION PLAN

STA. 331+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1417

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.6

ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1517

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	225.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	120.0	
3	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	236.0	
4	2404-7775000	REINFORCING STEEL	LB	44,332.0	
5	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
6	2507-3250005	ENGINEERING FABRIC	SY	250.0	
7	2507-6800061	REVETMENT, CLASS E	TON	265.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1517

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "C.I.P. SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2403-0100020	**STRUCTURAL CONCRETE (RCB CULVERT)** --
4	2404-7775000	**REINFORCING STEEL** --
5	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
6	2507-3250005	**ENGINEERING FABRIC** SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
7	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)

12'x8'x125'-0 REINFORCED CONCRETE BOX CULVERT

QUANTITIES

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1517

12/20/2016 4:30:23 PM untitled P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\BRFinal\42_BOX-CULVERT.STR CCDDDDs007 11x17_pdf.pltcfg

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A SINGLE 12′ x 8′ x 125′-0 REINFORCED CONCRETE BOX CULVERT SKEWED 30° LEFT AHEAD AT STATION 11+75.00 (℄ US 61 CONNECTOR ROAD A).

THE DESIGN FILL HEIGHT IS 9′.

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.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS A DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE CLASS 20 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF PROJECTS LISTED ON SHEET J.1

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	2 AT 4,979	9,958
10′-0 END SECTION	2 AT 2,735	5,470
35′-0 BARREL SECTION	3 AT 9,572	28,716
5r1 x 3′-6 DOWEL BAR SET	4 AT 47	188
	TOTAL (LB)	44,332

CONCRETE PLACEMENT QUANTITIES

LOCATION	FLOOR	WALLS	SLAB	TOTAL
HEADWALL 30° SKEW	2 AT 21.9	2 AT 10.4	2 AT 1.8	68.2
10′-0 END SECTION	2 AT 5.3	2 AT 4.2	2 AT 3.9	26.8
35′-0 BARREL SECTION	3 AT 18.7	3 AT 14.8	3 AT 13.5	141.0
TOTAL (CY)	110.5	73.6	51.9	236.0

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 12-8-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-5-12	4-12	07-16

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET E.3 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)

12′x8′x125′-0 REINFORCED CONCRETE BOX CULVERT

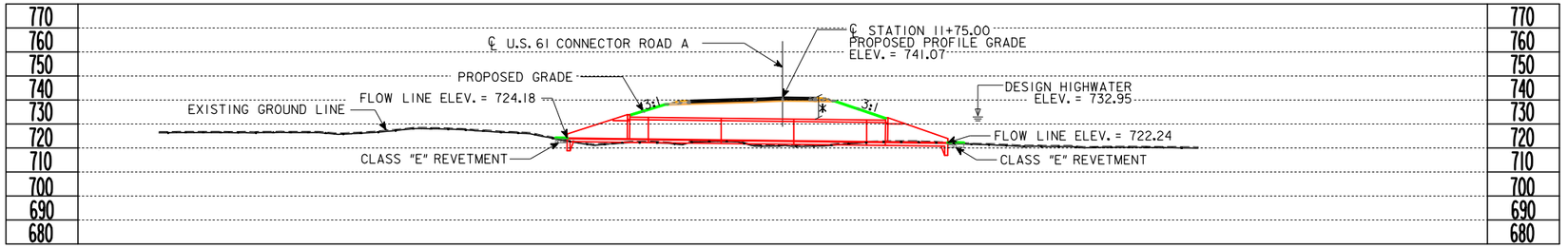
GENERAL NOTES

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

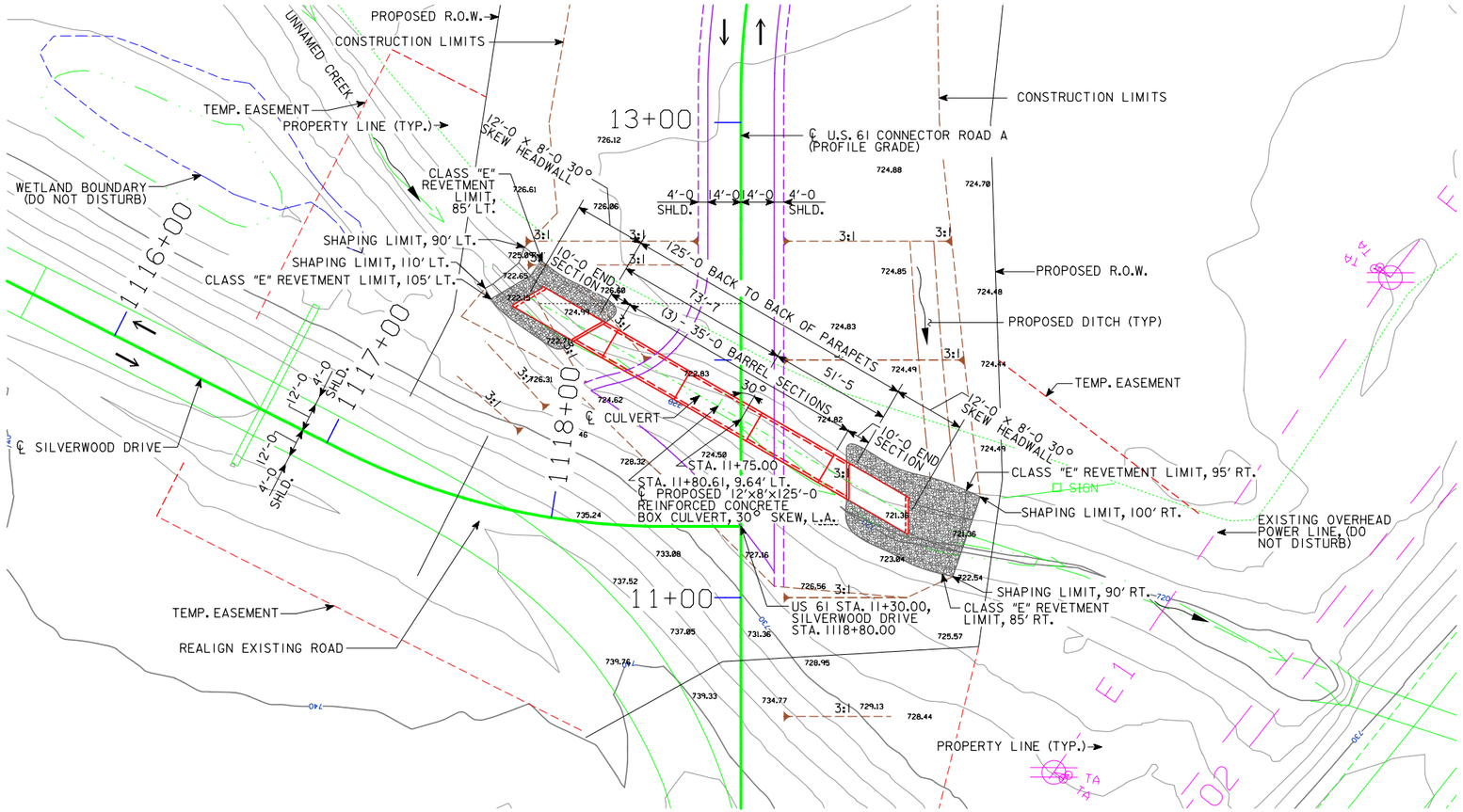
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1517

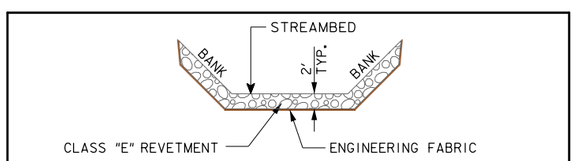


LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 9'
ANTICIPATED SETTLEMENT = 1"



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	85	80	55
OUTLET	180	170	115
TOTALS	265	250	170

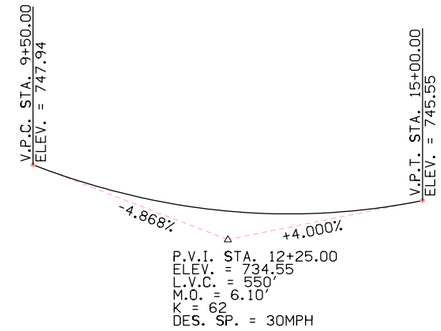
* QUANTITY FOR EMBEDDED REVETMENT.

BENCHMARK:

BM 61.1 - "X" CUT ON LIGHT POLE BASE AT INTERSECTION OF HWY 61 AND EAST TAMARACK DRIVE.
3631743.07 NORTH, 5679648.31 EAST, ELEV. 762.39

BM 61.2 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-6TH POWER POLE NORTH OF EAST TAMARACK DRIVE.
3632616.75 NORTH, 5680247.46 EAST, ELEV. 725.65

PROFILE GRADE ON U.S. 61 CONN. ROAD A



U.S. 61 CONNECTOR ROAD A ALIGNMENT

U.S. 61 CONN. ROAD A TANGENT
BETWEEN CURVES
PT STA. 10+10.54
PC STA. 13+11.56

HYDRAULIC DATA

DRAINAGE AREA = 613 ACRES
DESIGN DISCHARGE, Q50 = 763 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 732.95

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	3,300	V.P.D.
	TRUCKS	7	%

LOCATION

U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4305329°
LONG. -90.6890486°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
6. CALLOUTS BASED ON US 61 CONNECTOR ROAD A UNLESS OTHERWISE NOTED.

N

DESIGN FOR 30° SKEW (L.A)

12'x8'x125'-0 REINFORCED CONCRETE BOX CULVERT

C.I.P. SITUATION PLAN

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1517

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.9

12/20/2016 4:30:28 PM untitled P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\BRFinal\42_BOX-CULVERT.STR CCDDDDs009 11x17_pdf.pltcfg

ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1517

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	160.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	210.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	110.0	
4	2415-2111208	PRECAST CONCRETE BOX CULVERT, 12 FT. X 8 FT.	LF	126.0	
5	2415-2201208	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 12 FT. X 8 FT.	EACH	2.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	235.0	
8	2507-6800061	REVETMENT, CLASS E	TON	250.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1517

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	**SPECIAL BACKFILL** SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2415-2111208	**PRECAST CONCRETE BOX CULVERT, 12 FT. X 8 FT.** - -
5	2415-2201208	**PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 12 FT. X 8 FT.** - -
6	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	**ENGINEERING FABRIC** SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (L.A)

12'x8'x134'-1 PRECAST CONCRETE BOX CULVERT

QUANTITIES

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1517

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 12'x8'x134'-1 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 30° LEFT AHEAD AT STATION 11+75.00 (℄ US 61 CONNECTOR ROAD A).

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 PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 9 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF $\frac{3}{8}$ INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
D. A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF $\frac{3}{4}$ INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADII OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

SPECIFICATIONS:

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

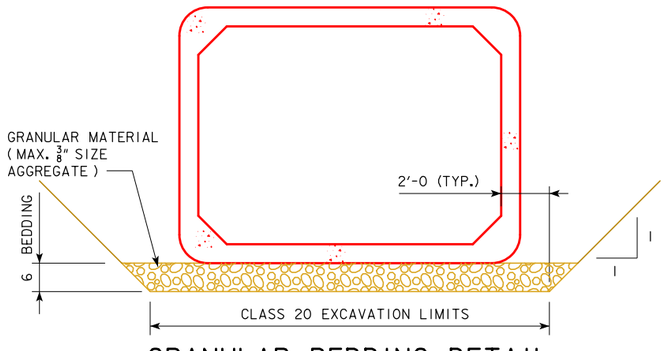
CONSTRUCTION:

IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010:

BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN f'c = 5 KSI.



GRANULAR BEDDING DETAIL

GRANULAR MATERIAL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET E.3 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB 12-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 30° SKEW (L.A)

12'x8'x134'-1 PRECAST CONCRETE BOX CULVERT

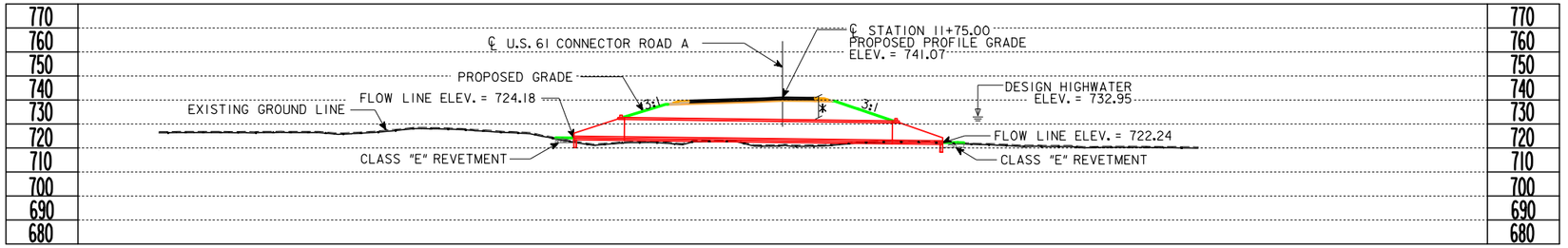
GENERAL NOTES

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

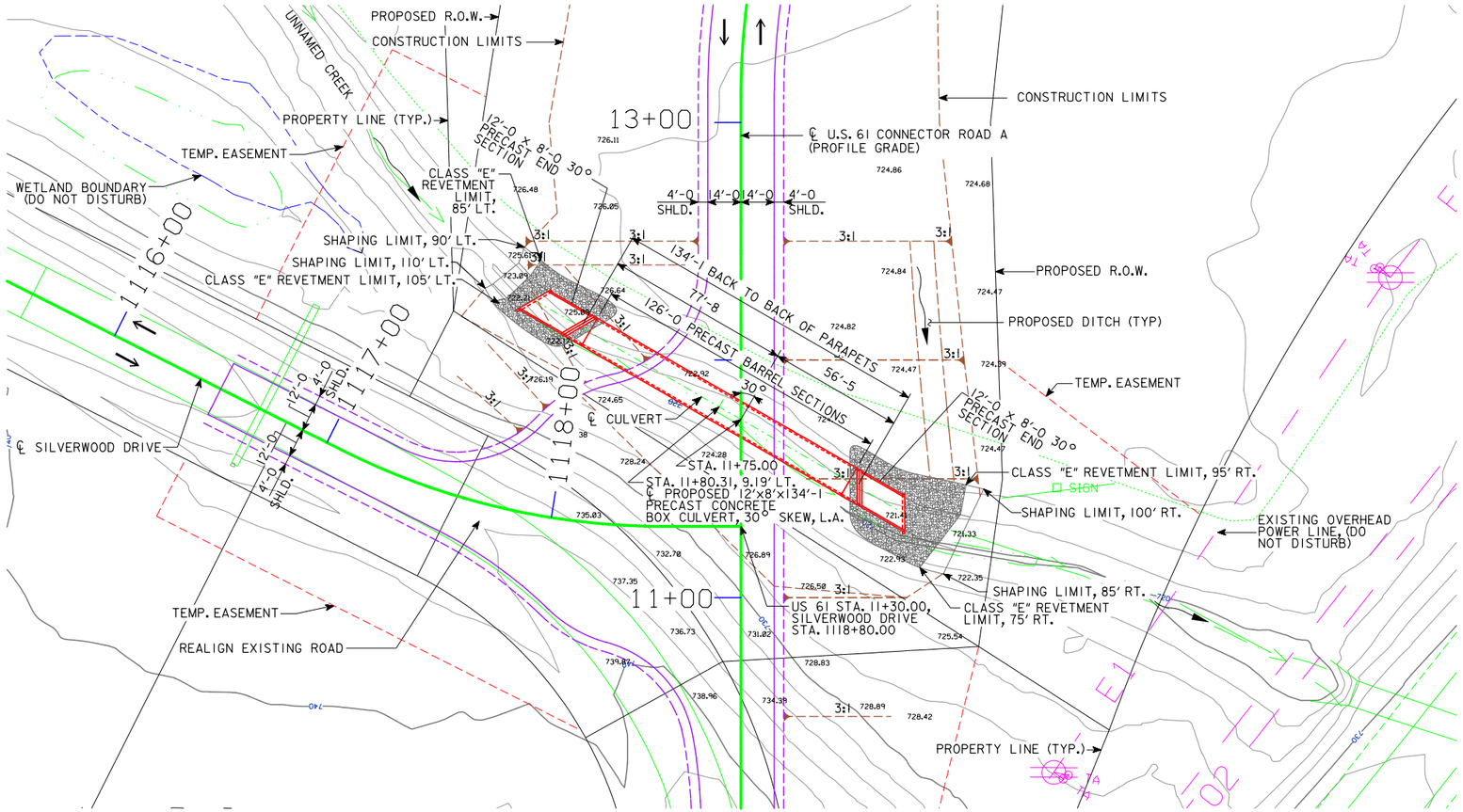
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1517

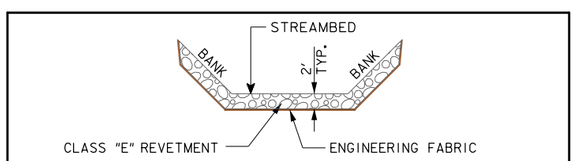


LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 9'
ANTICIPATED SETTLEMENT = 1"



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	90	85	55
OUTLET	160	150	100
TOTALS	250	235	155

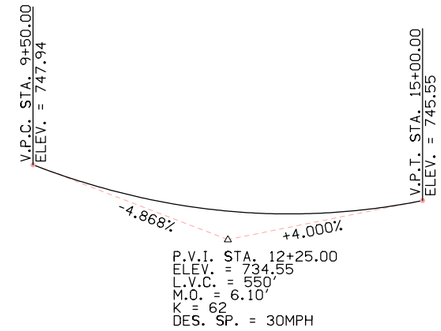
* QUANTITY FOR EMBEDDED REVETMENT.

BENCHMARK:

BM 61.1 - "X" CUT ON LIGHT POLE BASE AT INTERSECTION OF HWY 61 AND EAST TAMARACK DRIVE.
3631743.07 NORTH, 5679648.31 EAST, ELEV. 762.39

BM 61.2 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-6TH POWER POLE NORTH OF EAST TAMARACK DRIVE.
3632616.75 NORTH, 5680247.46 EAST, ELEV. 725.65

PROFILE GRADE ON U.S. 61 CONN. ROAD A



U.S. 61 CONNECTOR ROAD A ALIGNMENT

U.S. 61 CONN. ROAD A TANGENT
BETWEEN CURVES
PT STA. 10+10.54
PC STA. 13+11.56

HYDRAULIC DATA

DRAINAGE AREA = 613 ACRES
DESIGN DISCHARGE, Q50 = 763 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 732.95

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	3,300	V.P.D.
	TRUCKS	7	%

LOCATION

U.S. 61 CONNECTOR ROAD A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 14
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4305329°
LONG. -90.6890486°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
6. CALLOUTS BASED ON US 61 CONNECTOR ROAD A UNLESS OTHERWISE STATED.

N

DESIGN FOR 30° SKEW (L.A)

12'x8'x134'-1 PRECAST CONCRETE BOX CULVERT

PRECAST SITUATION PLAN

STA. 11+75.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1517

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.12

12/20/2016 4:30:36 PM untitled P:\60180237\900-CAD-GIS\3103201094\Design_(42)_East-Grade\BRFinal\42_BOX-CULVERT.STR CCDDDDs012 11x17_pdf.pltcfg

ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1617

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1,020.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	1185.0	
3	2402-2722000	EXCAVATION, CLASS 22	CY	55.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	363.4	
5	2404-7775000	REINFORCING STEEL	LB	65,089.0	
6	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
7	2507-3250005	ENGINEERING FABRIC	SY	665.0	
8	2507-6800061	REVETMENT, CLASS E	TON	715.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1617

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "C.I.P. SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
3	2402-2722000	**EXCAVATION, CLASS 22** IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, THE CURTAIN WALL IS TO EXTENDED INTO THE ROCK A MINIMUM OF 6". SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
4	2403-0100020	**STRUCTURAL CONCRETE (RCB CULVERT)** --
5	2404-7775000	**REINFORCING STEEL** INCLUDES ADJUSTING 5t1, 5t2, 5u1, AND 6p1 CURTAIN WALL BARS, AS NECESSARY, TO ACCOMMODATE CHANGES IN CURTAIN WALL DEPTH IF ROCK IS ENCOUNTERED.
6	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
7	2507-3250005	**ENGINEERING FABRIC** SEE "C.I.P. SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
8	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "C.I.P. SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)

10'x8'x204'-0 REINFORCED CONCRETE BOX CULVERT

QUANTITIES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1617

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A SINGLE 10′ x 8′ x 204′-0 REINFORCED CONCRETE BOX CULVERT SKEWED 30° RIGHT AHEAD AT STATION 1528+00.00 (℄ US RAMP A).

THE DESIGN FILL HEIGHT IS 21′.

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.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS A DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE CLASS 20 AND CLASS 22 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF PROJECTS LISTED ON SHEET J.1

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	2 AT 4,538	9,076
10′-0 END SECTION	2 AT 2,734	5,468
35′-0 BARREL SECTION	2 AT 9,569	19,138
38′-0 BARREL SECTION	3 AT 10,389	31,167
5r1 x 3′-6 DOWEL BAR SET	6 AT 40	240
	TOTAL (LB)	65,089

CONCRETE PLACEMENT QUANTITIES

LOCATION	FLOOR	WALLS	SLAB	TOTAL
HEADWALL 30° SKEW	2 AT 17.9	2 AT 10.4	2 AT 1.6	59.8
10′-0 END SECTION	2 AT 5.8	2 AT 4.5	2 AT 4.6	29.8
35′-0 BARREL SECTION	2 AT 20.2	2 AT 15.6	2 AT 16.2	104.0
38′-0 BARREL SECTION	3 AT 22.0	3 AT 17.0	3 AT 17.6	169.8
TOTAL (CY)	153.8	112.0	97.6	363.4

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 10-8-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-6-12	4-12	07-16

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET K.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)

10′x8′x204′-0 REINFORCED CONCRETE BOX CULVERT

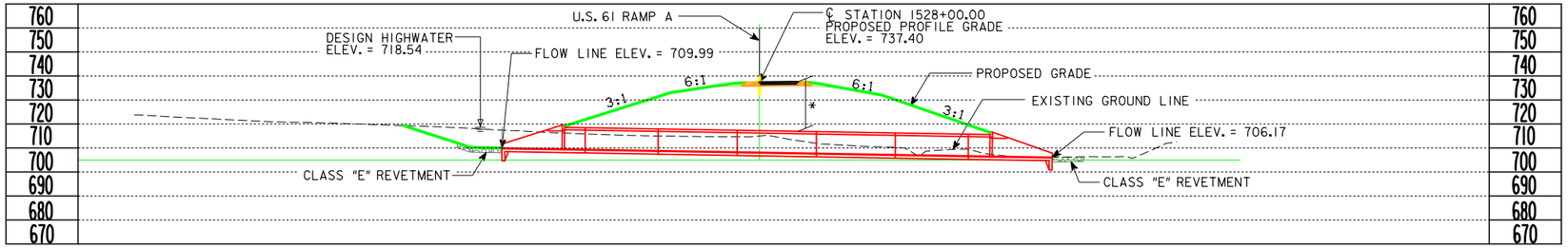
GENERAL NOTES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

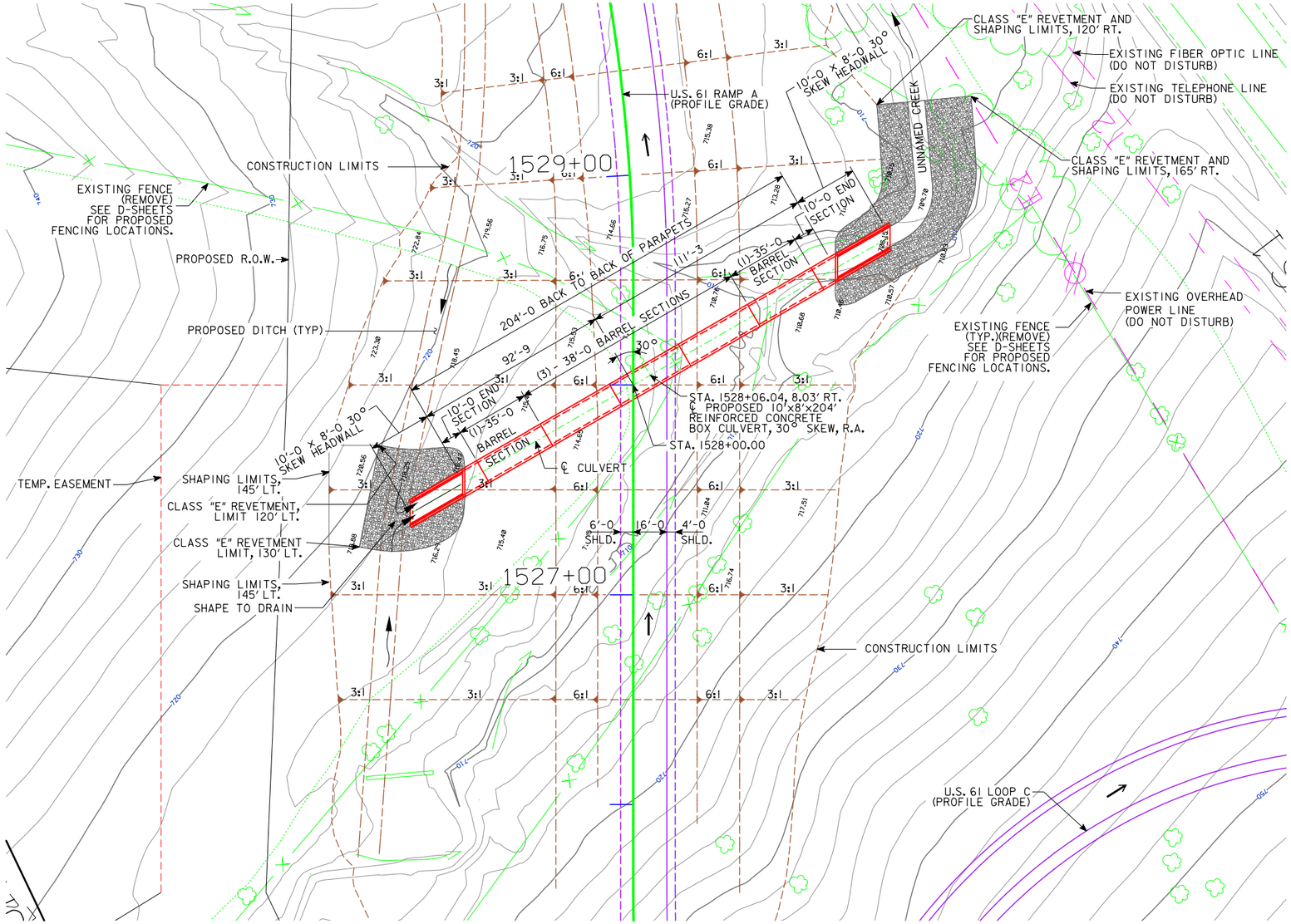
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1617



LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = NEGLIGIBLE



SITUATION PLAN

BENCHMARK:

BM 61.4 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-4TH POWER POLE SOUTH OF COUNTY ROAD Y38.
3634165.11 NORTH, 5681433.36 EAST, ELEV. 752.87

GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61-108'(+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5'(+/-) NORTHWEST OF EAST "DO NOT ENTER" SIGN.
3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86

PROFILE GRADE ON U.S. 61 RAMP A

V.P.T. STA. 1520+70.00
ELEV. = 759.30

-3.000%

V.P.C. STA. 1530+75.00
ELEV. = 729.15

U.S. 61 RAMP A ALIGNMENT

U.S. 61 RAMP A TANGENT BETWEEN CURVES
PT STA. 1525+58.12
PC STA. 1528+46.71

HYDRAULIC DATA

DRAINAGE AREA = 347 ACRES
DESIGN DISCHARGE, Q50 = 613 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 718.54

TRAFFIC ESTIMATE

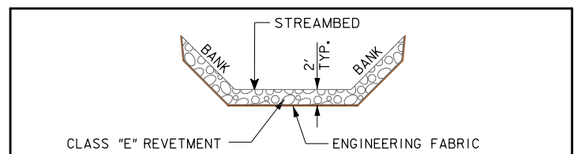
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,200	V.P.D.
	TRUCKS	7	%

LOCATION

U.S. 61 RAMP A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4358319°
LONG. -90.6831264°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	235	215	150
OUTLET	480	450	300
TOTALS	715	665	450

* QUANTITY FOR EMBEDDED REVETMENT.

DESIGN FOR 30° SKEW (R.A.)

10'x8'x204'-0 REINFORCED CONCRETE BOX CULVERT

C.I.P. SITUATION PLAN

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1617

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.15

ESTIMATED PRECAST CULVERT QUANTITIES (ALTERNATE)- DESIGN # 1617

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2102-0425070	SPECIAL BACKFILL	TON	135.0	
2	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	970.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	1155.0	
4	2402-2722000	EXCAVATION, CLASS 22	CY	95.0	
5	2415-2111008	PRECAST CONCRETE BOX CULVERT, 10 FT. X 8 FT.	LF	207.0	
6	2415-2201008	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 8 FT.	EACH	2.0	
7	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.0	
8	2507-3250005	ENGINEERING FABRIC	SY	660.0	
9	2507-6800061	REVETMENT, CLASS E	TON	710.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1617

ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-0425070	**SPECIAL BACKFILL** SEE GRANULAR BEDDING DETAILS. RECLAIMED ASPHALT PAVEMENT (RAP) AND RECLAIMED HMA SHALL NOT BE USED FOR THE SPECIAL BACKFILL.
2	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE "PRECAST SITUATION PLAN". SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
3	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT. INCLUDES EXCAVATION NECESSARY TO PLACE 6" BEDDING.
4	2402-2722000	**EXCAVATION, CLASS 22** IT IS ANTICIPATED THAT ROCK MAY BE ENCOUNTERED WHEN CONSTRUCTING THIS BOX CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE FLOOR OF THE CULVERT, THE ROCK IS TO BE REMOVED AT LEAST TO 6" BELOW THE BOTTOM OF THE FLOOR OF THE CULVERT. IF IT IS ENCOUNTERED IN THE AREA OF THE APRON CURTAIN WALLS, EXCAVATION SHALL ACCOMMODATE THE NEW CURTAIN WALL. SEE SPS SHEETS FOR ADDITIONAL INFORMATION.
5	2415-2111008	**PRECAST CONCRETE BOX CULVERT, 10 FT. X 8 FT.** - -
6	2415-2201008	**PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 10 FT. X 8 FT.** - -
7	2418-0000010	**TEMPORARY STREAM DIVERSION** SEE STANDARD ROAD PLAN EW-402.
8	2507-3250005	**ENGINEERING FABRIC** SEE "PRECAST SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
9	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "PRECAST SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 30° SKEW (R.A.)

10'x8'x214'-0 PRECAST CONCRETE BOX CULVERT

QUANTITIES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 30467 DESIGN NO. 1617

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO INSTALL A SINGLE 10'x8'x214'-0 PRECAST REINFORCED CONCRETE BOX CULVERT SKEWED 30° RIGHT AHEAD AT STATION 1528+00.00 (℄ US 61 RAMP A).

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 PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 21 FEET.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 AND CLASS 22 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS 22 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "GRANULAR BEDDING DETAIL".

A MINIMUM OF 6 INCH OF GRANULAR MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF $\frac{3}{8}$ INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE. THE 6 INCH GRANULAR BEDDING SHALL BE BID AS "SPECIAL BACKFILL".

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST BOX SECTIONS TO THE OFFICE OF BRIDGES AND STRUCTURES FOR ALL PROJECTS. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
D. A DETAIL OF THE PRECAST CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE OFFICE OF BRIDGES AND STRUCTURES PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER OR OTHER EQUIVALENT SOFTWARE CAN BE USED TO DESIGN THE PRECAST BOX CULVERT BARREL SECTIONS, PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF $\frac{3}{4}$ INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADII OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

SPECIFICATIONS:

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010.

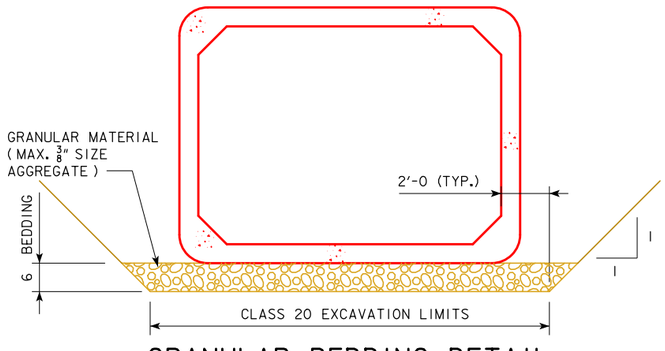
CONSTRUCTION:

IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH ED., SERIES OF 2010:

BAR REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60. WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH AASHTO LRFD SECTION 5. CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c FOR BARREL SECTIONS AS NOTED ON CULVERT BARREL DETAIL STANDARDS, FOR END SECTION DESIGN f'c = 5 KSI.



GRANULAR BEDDING DETAIL

GRANULAR MATERIAL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET K.2 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

STANDARDS:

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS:

STANDARD	ISSUED	REVISED
PRCB G1-13	1-13	07-16
PRCB G2-13	1-13	07-16
PRCB 10-13	1-13	--
PES 2-13-T3	1-13	07-16
PES 3-13-T3	1-13	07-16
PEP 1-13	1-13	12-15

DESIGN FOR 30° SKEW (R.A.)

10'x8'x214'-0 PRECAST CONCRETE BOX CULVERT

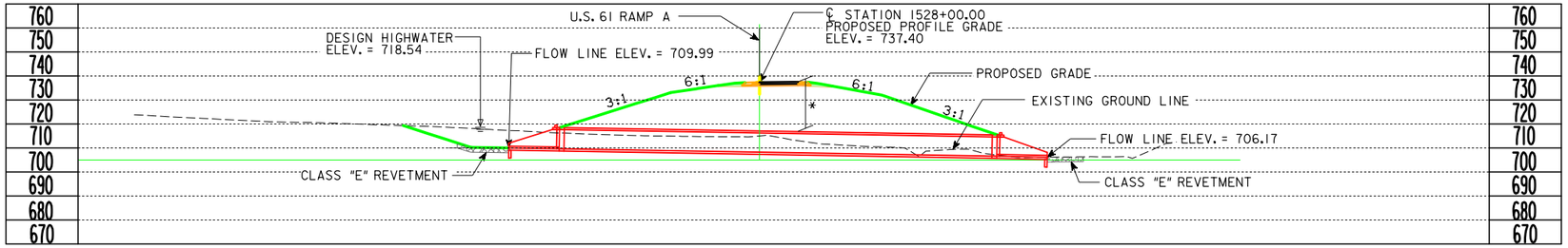
GENERAL NOTES

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 30467 DESIGN NO. 1617



LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 21'
ANTICIPATED SETTLEMENT = NEGLIGIBLE

BENCHMARK:

BM 61.4 - 12" SPIKE EAST SIDE POWER POLE-WEST SIDE OF HWY 61-
4TH POWER POLE SOUTH OF COUNTY ROAD Y38.
3634165.11 NORTH, 5681433.36 EAST, ELEV. 752.87

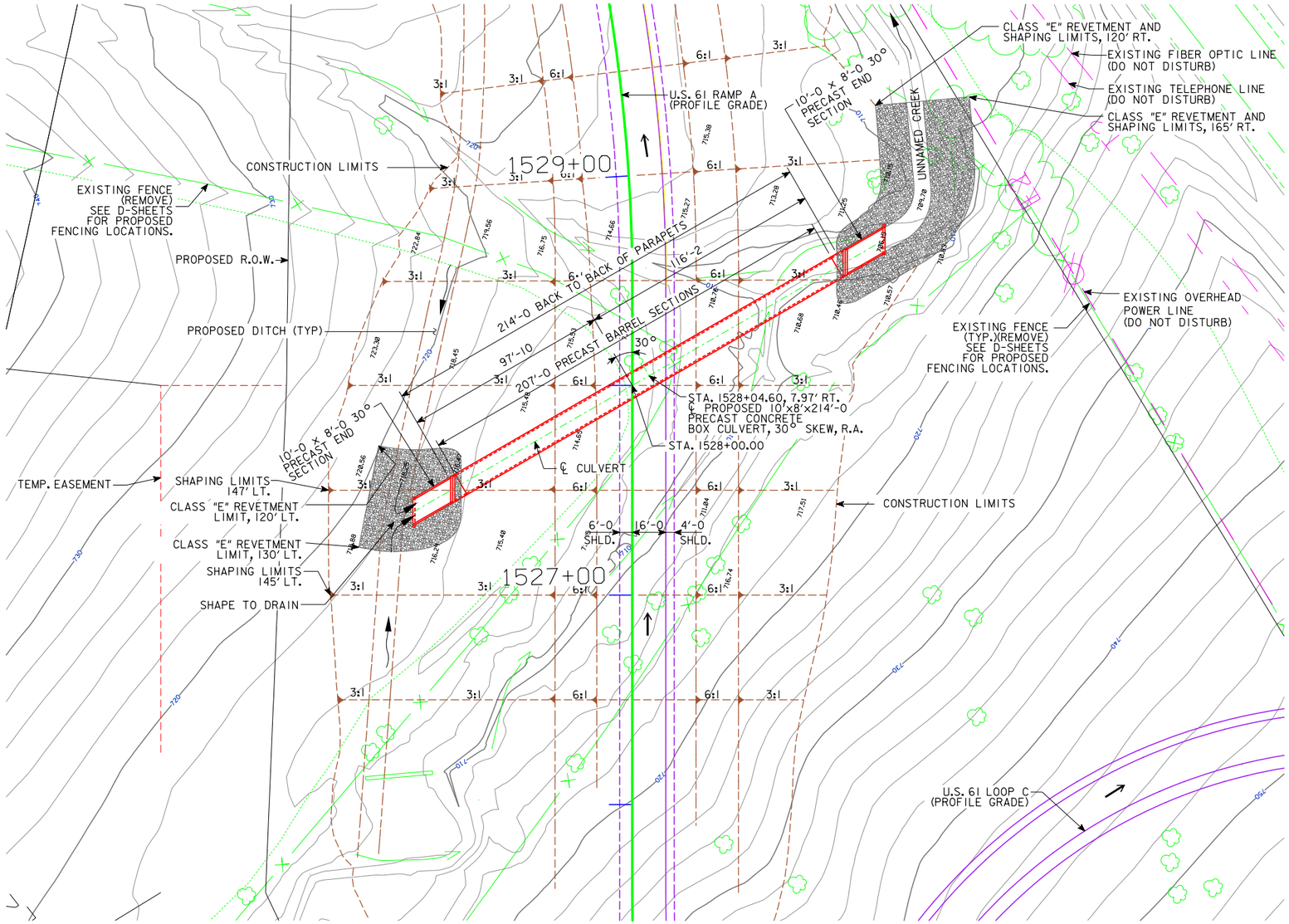
GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61-
108' (+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5' (+/-)
NORTHWEST OF EAST "DO NOT ENTER" SIGN.
3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86

PROFILE GRADE ON U.S. 61 RAMP A

V.P.T. STA. 1520+70.00
ELEV. = 759.30

-3.000%

V.P.C. STA. 1530+75.00
ELEV. = 729.15



SITUATION PLAN

U.S. 61 RAMP A ALIGNMENT

U.S. 61 RAMP A TANGENT BETWEEN CURVES
PT STA. 1525+58.12
PC STA. 1528+46.71

HYDRAULIC DATA

DRAINAGE AREA = 347 ACRES
DESIGN DISCHARGE, Q50 = 613 CFS
DESIGN HIGH WATER ELEVATION, Q50 = 718.54

TRAFFIC ESTIMATE

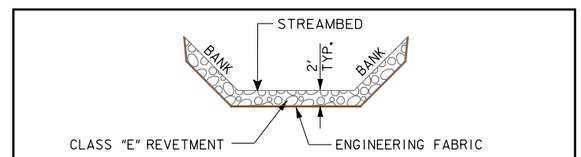
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,200	V.P.D.
	TRUCKS	7	%

LOCATION

U.S. 61 RAMP A OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4358319°
LONG. -90.6831264°

PLAN NOTES

1. SEE SHEET D.1 FOR UTILITY LEGEND.
2. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
3. SEE 'J' SHEETS FOR STAGING DETAILS.
4. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
5. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	240	220	150
OUTLET	470	440	295
TOTALS	710	660	445

* QUANTITY FOR EMBEDDED REVETMENT

DESIGN FOR 30° SKEW (R.A.)

10'x8'x214'-0 PRECAST CONCRETE BOX CULVERT

PRECAST SITUATION PLAN

STA. 1528+00.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 30467 DESIGN NO. 1617

ESTIMATED C.I.P. CULVERT QUANTITIES - DESIGN # 1717

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	85.0	
2	2401-6750001	REMOVALS, AS PER PLAN	LS	1.0	
3	2402-2720000	EXCAVATION, CLASS 20	CY	80.0	
4	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	49.7	
5	2404-7775000	REINFORCING STEEL	LB	7,920.0	
6	2507-3250005	ENGINEERING FABRIC	SY	85.0	
7	2507-6800061	REVETMENT, CLASS E	TON	95.0	

ESTIMATE REFERENCE INFORMATION - DESIGN # 1717

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN ON THE SITUATION PLAN. SUITABLE CHANNEL EXCAVATION MATERIAL MAY BE USED TO BACKFILL THE CULVERT AS DETAILED ON STANDARD ROAD PLAN DR-111. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2107. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
2	2401-6750001	**REMOVALS, AS PER PLAN** INCLUDES ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO REMOVE AND OFF-SITE DISPOSE OF EXISTING CULVERT HEADWALL AS SHOWN IN THESE PLANS. REMOVALS 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 ADDITIONAL COST.
3	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES FILLING AND COMPACTING LOW AREAS AROUND PROPOSED CULVERT.
4	2403-0100020	**STRUCTURAL CONCRETE (RCB CULVERT)** INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
5	2404-7775000	**REINFORCING STEEL** --
6	2507-3250005	**ENGINEERING FABRIC** SEE "SITUATION PLAN" FOR LIMITS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT. ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
7	2507-6800061	**REVETMENT, CLASS E** REVETMENT IS TO BE PLACED AT A THICKNESS OF 2'-0. SEE "SITUATION PLAN" FOR LIMITS. THE UNIT PRICE BID FOR "REVETMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS. ESTIMATED AT 1.6 TON/CY.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 33° SKEW (R.A.)

6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION

QUANTITIES

STA. 4531+55.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30467 DESIGN NO. 1717

GENERAL NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A C.I.P. EXTENSION TO AN EXISTING SINGLE 6′ x 6′ REINFORCED CONCRETE BOX CULVERT SKEWED 33° RIGHT AHEAD AT STATION 453I+55.00 (℄ US 6I RAMP D).

FAINT LINES ON PLANS INDICATE EXISTING STRUCTURE.

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.

THE R.C.B. CULVERT EXTENSION SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF 22 FEET. THIS DESIGN IS BASED ON LOAD AND RESISTANCE FACTOR DESIGN, ACCORDING TO THE 2010 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

VERTICAL EARTH PRESSURE, EV=0.120 kcf.

HORIZONTAL EARTH PRESSURE, EHmax = 0.060 kcf MAX, EHmin = 0.030 kcf.

THE CONTRACTOR MAY SUBMIT ALTERNATE FROST TROUGH DIMENSIONS FOR APPROVAL. ANY ADDITIONAL COSTS DUE TO CHANGE IN THE FROST TROUGH DIMENSIONS IS TO BE PAID FOR BY THE CONTRACTOR.

FLOOR OF BARREL IS TO BE FINISHED SMOOTH. SIDES OF FOOTING ARE TO BE FORMED TO INSURE CORRECT LINE AND GRADE.

THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED AT THE CONTRACTOR'S OPTION WITH ENGINEER'S APPROVAL.

THE VERTICAL BARS IN THE WALLS MAY BE SPLICED ABOVE THE FOOTING AT THE CONTRACTOR'S OPTION AS FOLLOWS:

BAR SIZE NUMBER	4	5	6	7	8
MINIMUM SPLICE LENGTH	17"	21"	31"	41"	51"

THIS SPLICE, IF USED WILL BE AT THE CONTRACTOR'S EXPENSE.

METAL BAR CHAIRS SPACED AT NOT OVER 3′-0 C.-C. IN EITHER DIRECTION ARE TO BE USED TO SUPPORT ALL SLAB AND FLOOR STEEL AS OUTLINED IN THE STANDARD SPECIFICATIONS.

THE REINFORCEMENT SUPPLIED FOR THIS STRUCTURE SHALL BE GRADE 60. REINFORCING BAR CLEARANCES WILL BE AS FOLLOWS:

EDGE CLEARANCES: 2" EXCEPT
- TOP OF FLOOR $2\frac{1}{4}$" TO NEAR TRANSV. REINF. BAR
- BOTTOM OF FLOOR $3\frac{1}{2}$" TO NEAR TRANSV. REINF. BAR

END CLEARANCES:
- VERTICAL TOP 2"
- VERTICAL BOTTOM 3" OR $3\frac{1}{2}$" IF OVERALL HEIGHT OF THE CULVERT IS NOT TO A FULL INCH
- TRANSVERSE 2"

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

CLASS 20 EXCAVATION QUANTITY IS BASED ON THE ASSUMPTION THAT AT THE START OF CULVERT CONSTRUCTION, THE EXISTING GROUNDLINE SHOWN ON THE "C.I.P. SITUATION PLAN" HAS REMAINED UNDISTURBED AND NO ROADWAY FILL HAS BEEN PLACED.

CLASS 20 EXCAVATION MATERIAL UNSUITABLE FOR BACKFILLING SHALL BE DISPOSED OF IN A MANNER THAT WILL LEAVE THE SITE IN A NEAT CONDITION.

THE PRICE BID FOR "REMOVALS AS PER PLAN" SHALL INCLUDE THE COST FOR REMOVALS OF PORTIONS OF THE EXISTING CULVERT, AND THE SETTING OF THE DOWEL REINFORCING BARS INTO EXISTING CONCRETE.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

REMOVAL OF THE EXISTING CULVERT SHALL BE ON A VERTICAL PLANE PARALLEL WITH AND AT THE FRONT FACE OF THE EXISTING PARAPET, AND TO THE WIDTH OF THE FLOOR OF THE PROPOSED EXTENSION. THE WALLS SHALL BE CUT NORMAL TO THE BARREL WALLS AND AS SHOWN ON THE "PART REMOVAL PLAN". THE REMOVAL LINE SHALL BE INITIATED WITH A 2 "± DEEP SAW CUT ON THE TOP AND BOTH SIDES OF EACH WALL, AND ACROSS THE TOP OF THE FLOOR. THIS SAW CUT SHOULD CUT THRU ANY EXISTING LONGITUDINAL REINFORCING THEREBY FACILITATING A NEAT NON-SPALLED BREAK LINE. IF EXISTING TOP OF PARAPETS WILL BE WITHIN 0′-6 OF PROPOSED SUBGRADE ELEVATION, THE PARAPETS SHALL BE REMOVED DOWN TO AN ELEVATION 1"± ABOVE THE TOP OF THE EXISTING SLAB. ANY EXISTING PARAPET VERTICAL BARS EXPOSED DURING PARAPET REMOVAL SHALL BE CUT OFF FLUSH WITH THE PARAPET REMOVAL LINE AND PAINTED WITH TWO COATS OF ZINC RICH PAINT.

ALL REMOVALS SHALL BE CAREFULLY ACCOMPLISHED AND ANY CONCRETE DAMAGED BY THE CONTRACTOR THAT IS NOT TO BE REMOVED SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE STATE. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.

THE PROPOSED CULVERT EXTENSION SHALL ABUT AGAINST THE FRONT FACE OF THE EXISTING PARAPET. 5z1 x 2′-6 DOWEL REINFORCING BARS WITH A 10" MINIMUM EMBEDMENT INTO EXISTING CONCRETE SHALL BE SET AROUND THE ENTIRE PERIPHERY OF THE EXISTING CULVERT. 5z1 DOWEL REINFORCING BARS SHALL BE CENTERED IN THE EXISTING SLAB, WALLS AND FLOOR. 5z1 DOWEL REINFORCING BARS SHALL BE AT 1′-0 MAXIMUM SPACING C.-C. OF DOWELS. 5z1 DOWEL REINFORCING BARS SHALL BE SET WITH POLYMER GROUT IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

SEE SHEET J.1 FOR TRAFFIC CONTROL PLANS

THE ROADWAY WILL BE OPEN TO TRAFFIC DURING CONSTRUCTION.

SINCE THE HIGHWAY WILL NOT BE CLOSED TO TRAFFIC DURING THIS CONSTRUCTION, THE CONTRACTOR MAY FEEL TEMPORARY SHORING (SHEET PILE OR OTHER) IS NECESSARY TO ENSURE THAT THE SHOULDER WILL NOT SLOUGH IN WHILE CULVERT IS BEING EXTENDED. HOWEVER, IF FOR ANY REASON SUCH SHORING IS DEEMED NECESSARY, THE CONTRACTOR WILL SUBMIT THE SHORING PLAN TO THE ENGINEER FOR APPROVAL. COST OF SHORING IF REQUIRED WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07, OF THE STANDARD SPECIFICATIONS, STILL APPLIES.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

TRAFFIC WILL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS SHOWN IN THESE PLANS.

TRAFFIC CONTROL ADJACENT TO THE CULVERT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR CONSTRUCTING THE CULVERT AND IS TO COORDINATE CONSTRUCTION OF THE CULVERT WITH THE CONTRACTOR DOING THE GRADING.

ANY DIMENSIONAL TRANSITION REQUIRED BETWEEN EXISTING STRUCTURE AND THE EXTENSION SHALL BE MADE IN THE FIRST 1′-0 OF NEW WORK.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

THE USE OF FOUNDATION TREATMENT MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS WILL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE COST FOR FURNISHING AND PLACING MATERIAL ALONG WITH ANY EXCAVATION SHALL BE INCIDENTAL TO OTHER BID ITEMS.

DURING CONSTRUCTION OF THIS PROJECT THE CULVERT CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION PROJECTS LISTED ON SHEET J.1

SPECIFICATIONS:

DESIGN: AASHTO LRFD 5th Ed, SERIES OF 2010.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SERIES, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5th Ed, SERIES OF 2010.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f′c = 4.0 KSI.

SUMMARY OF REINFORCING STEEL

LOCATION	QUANTITY	TOTAL
HEADWALL 30° SKEW	1 AT 2,455	2,455
12′-0 END SECTION	1 AT 1,519	1,519
26′-0 BARREL SECTION	1 AT 3,291	3,291
5r1 x 3′-6 DOWEL BAR SET	1 AT 26	26
BELL JOINTS	1 AT 629	629
	TOTAL (LB)	7,920

CONCRETE PLACEMENT QUANTITIES

LOCATION	FLOOR	WALLS	SLAB	TOTAL
HEADWALL 30° SKEW	1 AT 8.4	1 AT 5.7	1 AT 1.2	15.3
12′-0 END SECTION	1 AT 3.4	1 AT 3.8	1 AT 2.6	9.8
26′-0 BARREL SECTION	1 AT 7.4	1 AT 8.1	1 AT 5.7	21.2
BELL JOINTS	1 AT 1.3	1 AT 1.0	1 AT 1.1	3.4
TOTAL (CY)	20.5	18.6	10.6	49.7

STANDARDS

FOR DETAILS AND NOTES NOT SHOWN REFER TO THE FOLLOWING IOWA D.O.T. - CULVERT STANDARDS.

STANDARD	ISSUED	REVISED
RCB G1-12	4-12	07-16
RCB G2-12	4-12	03-16
RCB 6-6-12	4-12	--
PWH 30-1-12	4-12	--
PWH 30-2-12	4-12	--
PWH 30-3-12	4-12	07-16
PWH 30-4-12	4-12	--
PWH 30-8-12	4-12	07-16
CBJ 2-12	4-12	07-13
CBJ 4-12	4-12	

TRAFFIC CONTROL PLAN

NOTE: THIS STRUCTURE IS BEING CONSTRUCTED ON A NEW ALIGNMENT AND THE ROAD WILL NOT BE OPEN UNTIL AFTER COMPLETION OF CONSTRUCTION.

NOTE:
SEE SHEET K.5 FOR ADDITIONAL GRADING PLAN INFORMATION.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
2364	ORIGINAL DESIGN
1717	CULVERT EXTENSION

DESIGN FOR 33° SKEW (R.A.)

6′x6′ REINFORCED CONCRETE BOX CULVERT EXTENSION

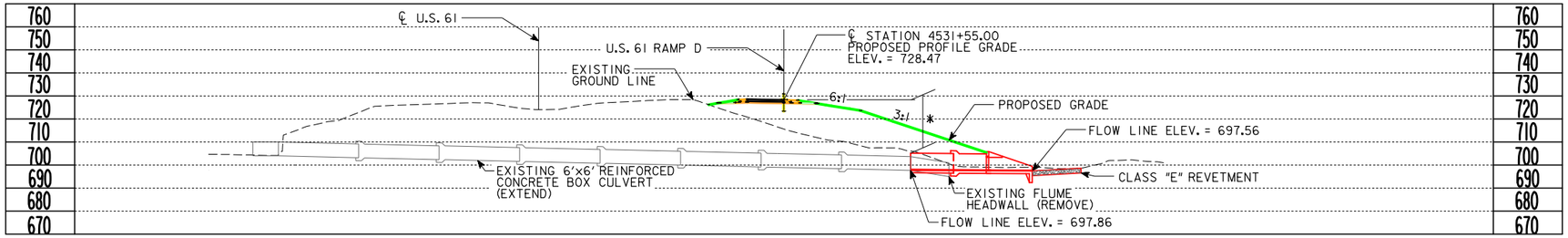
GENERAL NOTES

STA. 453I+55.00 MARCH, 2017

DUBUQUE COUNTY

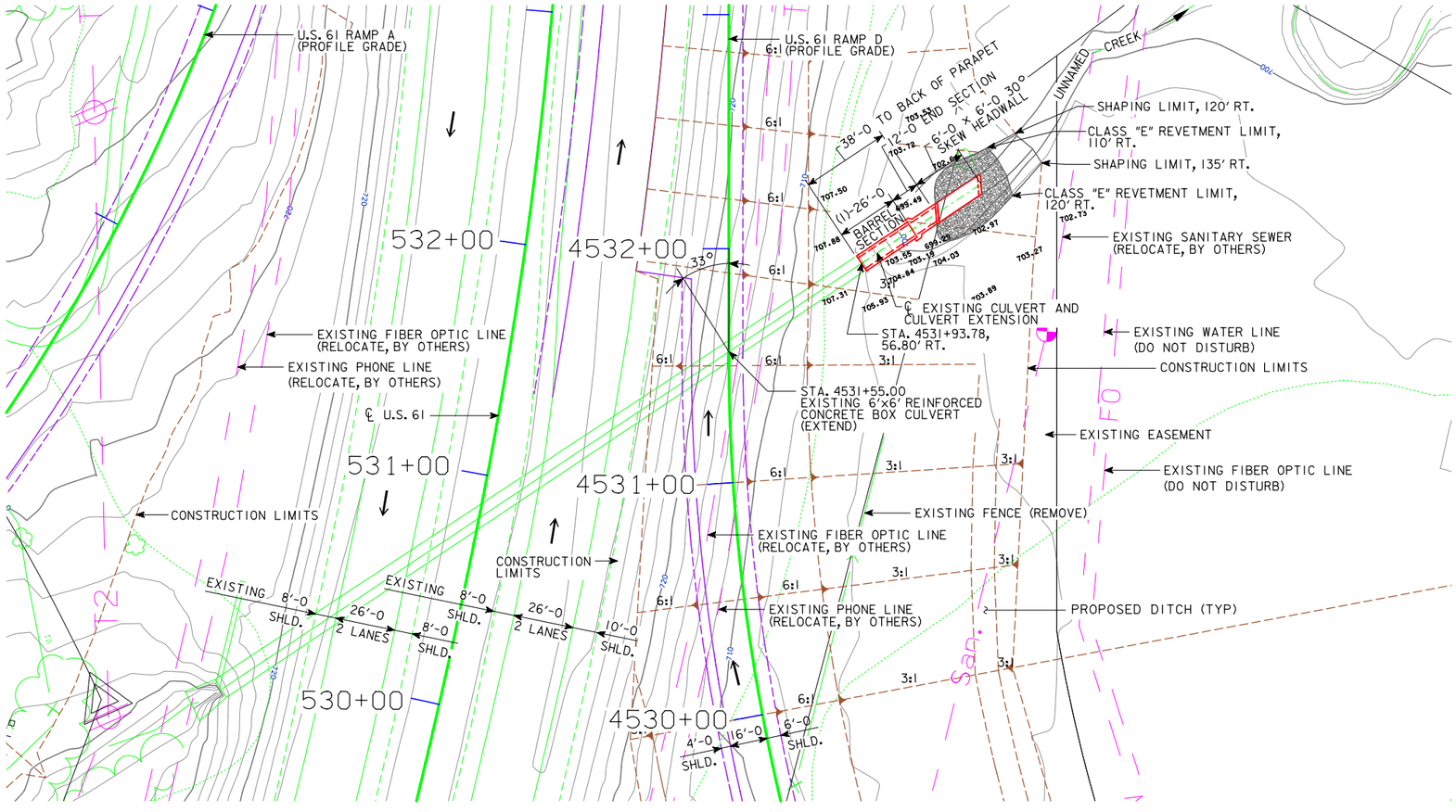
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 4 FILE NO. 30467 DESIGN NO. 1717

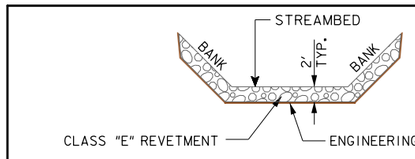


LONGITUDINAL SECTION ALONG ℄ BOX CULVERT

* DESIGN FILL = 22'
ANTICIPATED SETTLEMTENT = 0.5"



SITUATION PLAN



TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY) *
INLET	--	--	--
OUTLET	95	85	60
TOTALS	95	85	60

* QUANTITY FOR EMBEDDED REVETMENT.

BENCHMARK:

GO 36 - REBAR 6" DEEP IN EDGE OF SOUTHEAST SHOULDER OF HWY 61, 108' (+/-) SOUTH OF OLDE DAVENPORT ROAD CENTERLINE, 17.5' (+/-) NORTHWEST OF EAST "DO NOT ENTER" SIGN.
3634727.74 NORTH, 5682148.64 EAST, ELEV. 727.86.

BM 61.5 - 12" SPIKE WEST SIDE POWER POLE EAST SIDE OF HWY 61-3RD POWER POLE NORTH OF OLDE DAVENPORT ROAD.
3634933.50 NORTH, 5682309.86 EAST, ELEV. 722.79.

PROFILE GRADE ON U.S. 61 RAMP D

V.P.T. STA. 4527+50.00
ELEV. = 725.75
0.670%
V.P.C. STA. 4531+87.06
ELEV. = 728.68

CURVE DATA U.S. 61 RAMP D

ENTERING CURVE DATA
(CURVE 20403)
P.I. STA. 4529+44.07
DELTA = 29° 37' 32.60" (RT)
DEGREE = 6° 51' 42.37"
TANGENT = 220.82'
LENGTH = 431.75'
RADIUS = 835.00'
EXTERNAL = 28.70'
LONG CHORD = 426.96'
MID. ORD. = 27.75'
P.C. STA. 4527+23.25
P.T. STA. 4531+55.00

HYDRAULIC DATA

DRAINAGE AREA = 367 ACRES
DESIGN DISCHARGE, Q50 = 638 CFS

LOCATION

U.S. 61 RAMP D OVER UNNAMED CREEK
T-88N, R-2E
SECTION 13
TABLE MOUND TWP.
DUBUQUE COUNTY
CITY OF DUBUQUE
LAT. 42.4358452°
LONG. -90.6807450°

TRAFFIC ESTIMATE

2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	6,100	V.P.D.
	TRUCKS	7	%

PLAN NOTES

1. DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. SEE SHEET D.1 FOR UTILITY LEGEND.
3. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
4. SEE 'J' SHEETS FOR STAGING DETAILS.
5. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
6. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
7. CALLOUTS BASED ON U.S. 61 RAMP D STATIONING UNLESS OTHERWISE STATED.
8. BELL JOINTS SHALL BE PLACED ON THE UPSTREAM END OF THE BARREL SECTIONS TO MATCH EXISTING PLANS.

N

DESIGN FOR 33° SKEW (R.A.)

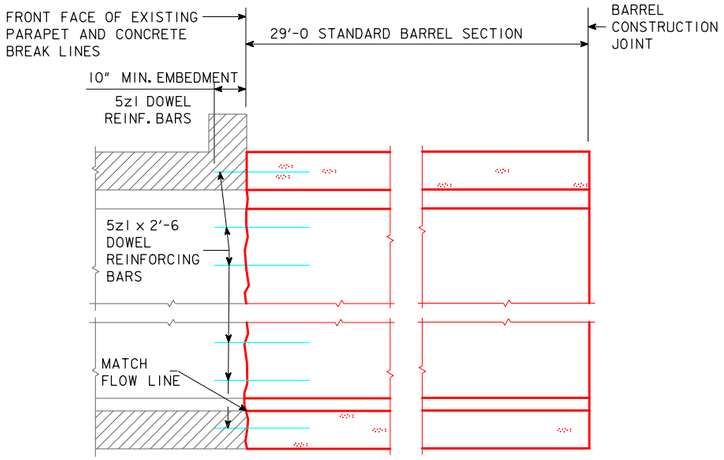
6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION

SITUATION PLAN

STA. 4531+55.00 MARCH, 2017

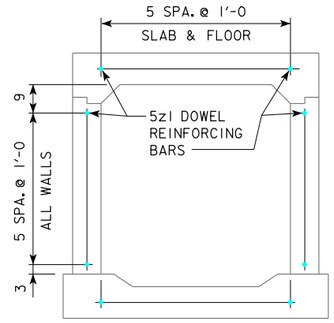
DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 4 FILE NO. 30467 DESIGN NO. 1717



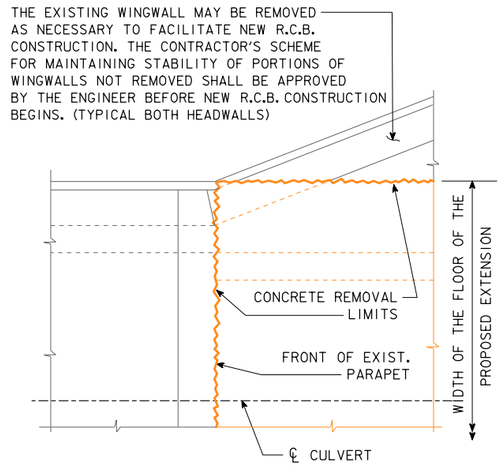
LONGITUDINAL WALL SECTION

(SHOWING 5zI DOWELS)

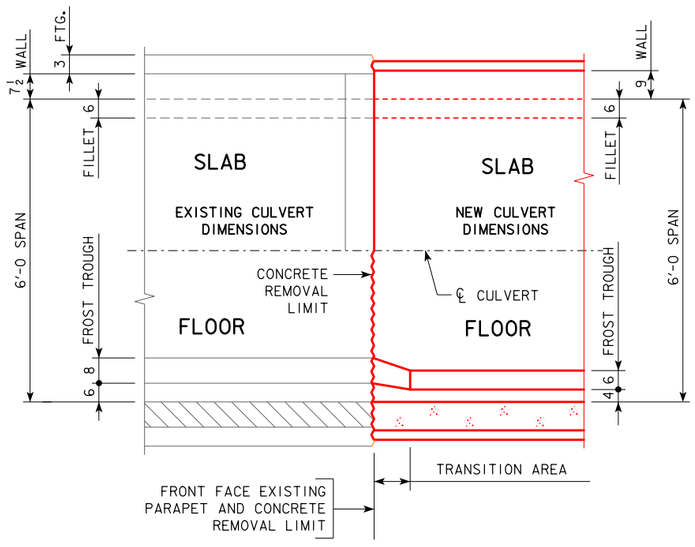


SECTION NEAR EXTENSION

(SHOWING SPACING OF 5zI DOWEL REINFORCING BARS)



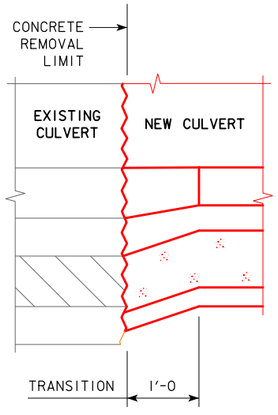
PART REMOVAL PLAN



CONCRETE TRANSITION DETAILS

(PLAN VIEW)

NOTE: CONTRACTOR SHALL FIELD VERIFY EXISTING CULVERT DIMENSIONS.



NEW BARREL CONCRETE THICKNESSES SHALL BE MAINTAINED MINIMALLY WHEN TRANSITIONING TO MEET EXISTING BARREL INTERIOR SURFACES. OUTSIDE CONCRETE SURFACES DO NOT HAVE TO BE TRANSITIONED TO MATCH EXISTING SURFACES.

CONCRETE TRANSITION DETAILS

(WALL TRANSITION SHOWN - TYPICAL FOR SLAB)

DESIGN FOR 33° SKEW (R.A.)

6'x6' REINFORCED CONCRETE BOX CULVERT EXTENSION

MISCELLANEOUS DETAIL

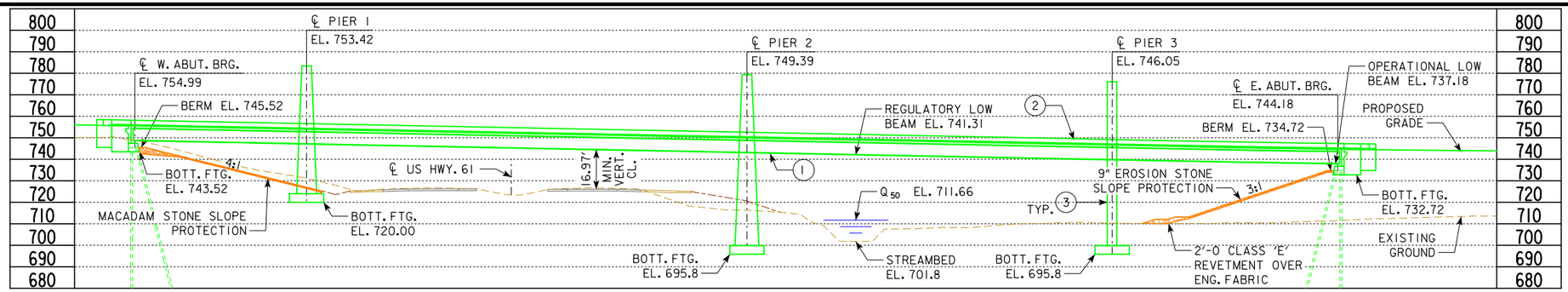
STA. 4531+55.00 MARCH, 2017

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

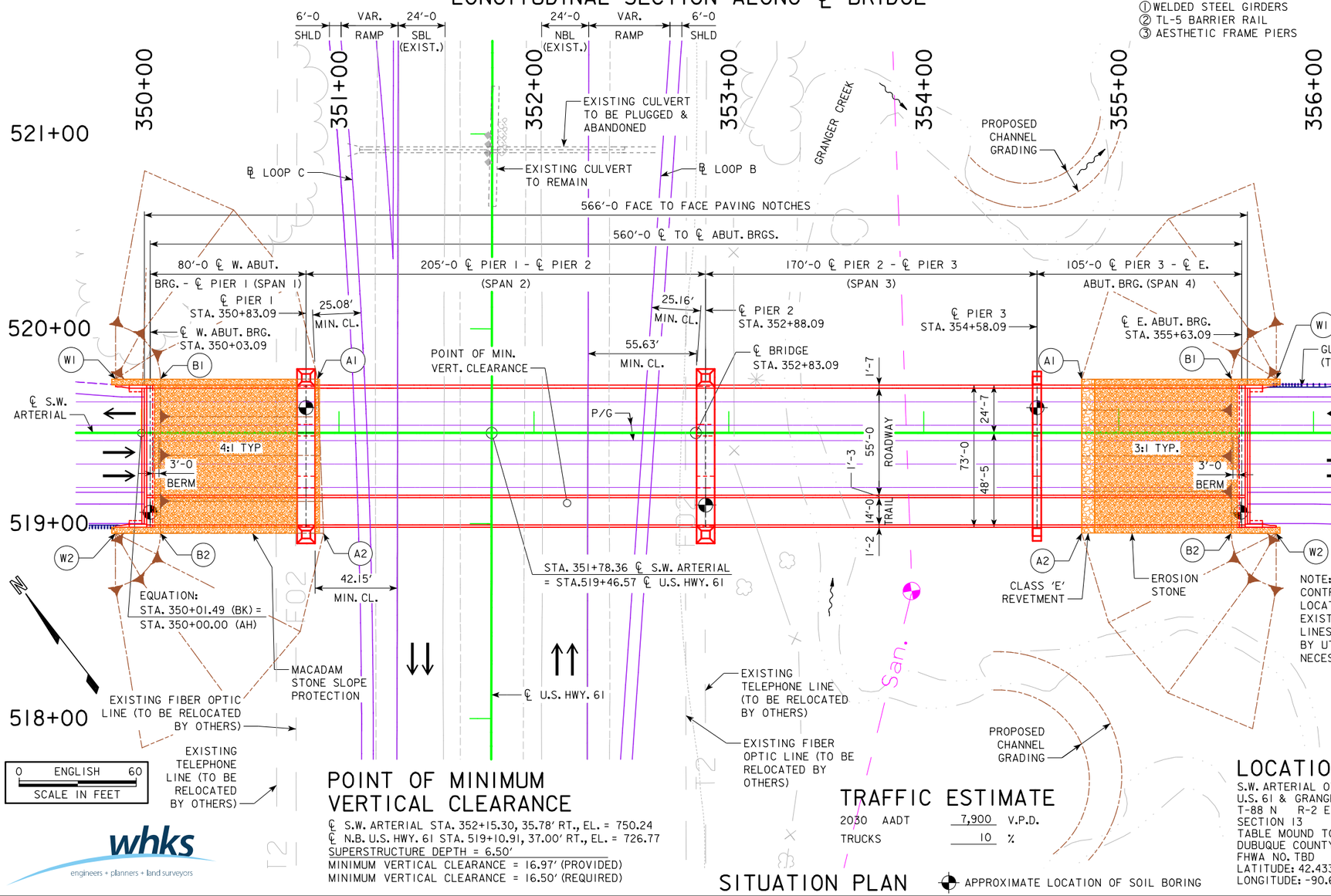
DESIGN SHEET NO. 4 OF 4 FILE NO. 30467 DESIGN NO. 1717

DESIGN TEAM AECOM | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.22



LONGITUDINAL SECTION ALONG ℄ BRIDGE

KEYNOTES:
① WELDED STEEL GIRDERS
② TL-5 BARRIER RAIL
③ AESTHETIC FRAME PIERS



NOTE:
TYPICAL APPROACH SECTION

NOTE:
CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY LINES. LINES SHALL BE RELOCATED BY UTILITY COMPANIES AS NECESSARY.

POINT OF MINIMUM VERTICAL CLEARANCE

℄ S.W. ARTERIAL STA. 352+15.30, 35.78' RT., EL. = 750.24
℄ N.B. U.S. HWY. 61 STA. 519+10.91, 37.00' RT., EL. = 726.77
SUPERSTRUCTURE DEPTH = 6.50'
MINIMUM VERTICAL CLEARANCE = 16.97' (PROVIDED)
MINIMUM VERTICAL CLEARANCE = 16.50' (REQUIRED)

TRAFFIC ESTIMATE

2030 AADT 7,900 V.P.D.
TRUCKS 10 %

SITUATION PLAN

℄ APPROXIMATE LOCATION OF SOIL BORING

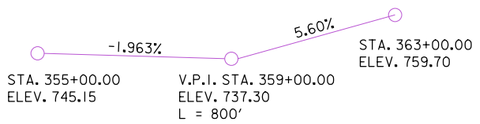
LOCATION

S.W. ARTERIAL OVER
U.S. 61 & GRANGER CREEK
T-88 N R-2 E
SECTION 13
TABLE MOUND TOWNSHIP
DUBUQUE COUNTY
FHWA NO. TBD
LATITUDE: 42.433160°
LONGITUDE: -90.683799°

BENCH MARK NO. 61.2: 12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 6TH POWER POLE NORTH OF EAST TAMARACK DRIVE, ELEV. 725.65.

BENCH MARK NO. 61.3: 12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 100'+ SOUTHEAST OF OLD 4-STALL GARAGE AT HOUSE NO. 9475, ELEV. 750.39.

BENCH MARK NO. 61.4: 12" SPIKE EAST SIDE POWER POLE - WEST SIDE OF HWY 61 - 5TH POWER POLE SOUTH OF COUNTY ROAD Y38, ELEV. 752.87.



S.W. ARTERIAL PROFILE GRADE

NOTE:

ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.

PIERS 1 AND 2 ARE BEYOND THE CLEAR ZONE FOR US 61 MAINLINE AND RAMPS.

BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.

TOP OF BRIDGE ELEVATIONS SHOWN ARE 0.08' ABOVE THE PROFILE GRADE.

NOTE TO FINAL DESIGN: BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT.

CLASS E REVETMENT IS NON-EMBEDDED.

SEE DESIGN SHEET 2 FOR UTILITY LEGEND.

HYDRAULIC DATA

DRAINAGE AREA= 7.9 mi^2
STREAM SLOPE= 25.2 FT./MI.

Q_{50} = 3,050 CFS
STAGE = 711.66
BACKWATER = 0.27 FT.
AVG. BRIDGE VELOCITY = 4.2 FPS

Q_{100} = 3,678 CFS
STAGE = 712.77
BACKWATER = 0.80 FT.
AVG. BRIDGE VELOCITY = 4.75 FPS

Q_{200} = 4,225 CFS
STAGE = 713.84

Q_{500} = 5,000 CFS
STAGE = 715.54

ROADWAY OVERTOP = 726.7

THIS SHEET FOR REFERENCE ONLY

PRELIMINARY

DESIGN FOR 0° SKEW

560'-0 X 55'-0 W/ 14'-0 TRAIL CONT. WELDED GIRDER BRIDGE

80'-0 & 105'-0 END SPANS 205'-0 & 170'-0 INTERIOR SPANS

SITUATION PLAN

STA. 352+83.09 (℄ SW ARTERIAL) DECEMBER, 2016

DUBUQUE COUNTY

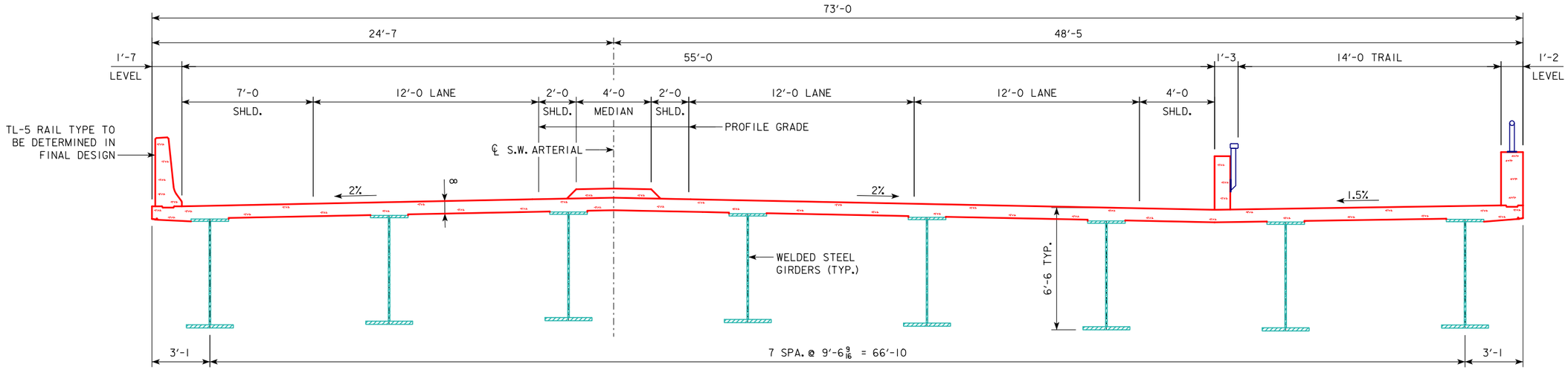
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. _____ DESIGN NO. _____

whks
engineers + planners + land surveyors

DESIGN TEAM DJT/JJO/WDB | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.23

12/20/2016 11:26:47 AM wb L:\DEPT\6\7222.1\10 SWA over US61\Drawings\31032634 - For Reference Only.str TSL_31_DDDDD1 11x17_pdf.pltcfg



TYPICAL SECTION

LOOKING UPSTATION

BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	350+89.07	27.65' LT	725.71	354+81.06	27.65' LT	709.77
A2	350+92.06	51.48' RT	725.86	354+81.06	51.48' RT	710.92
B1	350+08.34	27.65' LT	745.52	355+57.84	27.65' LT	734.72
B2	350+08.34	51.48' RT	745.52	355+57.84	51.48' RT	734.72
W1	349+86.83	27.65' LT	754.72	355+80.84	27.65' LT	743.33
W2	349+86.83	51.48' RT	754.77	355+80.84	51.48' RT	743.38

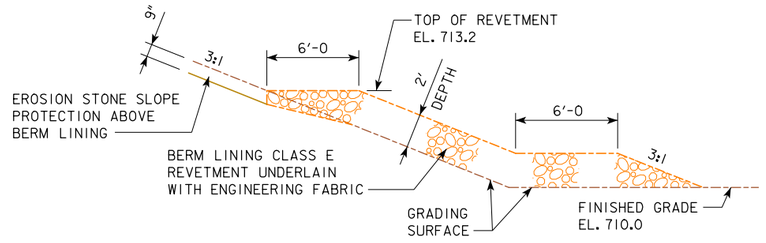
BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

STATION AND OFFSET BASED ON CENTERLINE SWA

ESTIMATED BERM ARMORING QUANTITIES

LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - EAST ABUT	157.9	249.1	770.9	155.7

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.



SECTION THRU NON-EMBEDDED REVETMENT BERM

(EAST BERM SLOPE)

UTILITIES LEGEND:

F02 — FIBER OPTIC CABLE 2 - CENTURYLINK

T2 — TELEPHONE 2 CABLE (COPPER) - CENTURYLINK

San. — SANITARY SEWER - CITY OF DUBUQUE

THIS SHEET FOR REFERENCE ONLY

DESIGN FOR 0° SKEW

560'-0 X 55'-0 W/ 14'-0 TRAIL CONT. WELDED GIRDER BRIDGE

80'-0 & 105'-0 END SPANS 205'-0 & 170'-0 INTERIOR SPANS

SITUATION PLAN

STA. 352+83.09 (℄ SW ARTERIAL) DECEMBER, 2016

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. _____ DESIGN NO. _____

whks engineers + planners + land surveyors

DESIGN TEAM DJT/JJO/WDB | DUBUQUE COUNTY | PROJECT NUMBER NHSX-032-1(36)--3H-31 | SHEET NUMBER V.24

12/20/2016 11:26:55 AM wb L:\DEPT\6\7222.1\10 SWA over US61\Drawings\31032634 - For Reference Only.str TSL_31_DDDDD2 11x17_pdf.pltcfg