IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District # 2

DATE: November 21, 2019

ATTENTION: Jon Ranney, P.E./P.L.S.
District Engineer

REF.: County: Allamakee
Project #
BRF-009-9(73)--38-03
PIN:
16-03-009-010

FROM: Kevin Eisenbeis, P.E.
Project Manager

OFFICE: Burns & McDonnell Engineering Co., Inc.

SUBJECT: Field Exam Review (D-2)
Date of review: November 6, 2019 (Plan Review & Field Review)

Attendees:

Bryan Bradley	Iowa DOT- Location & Environment
Shelby Ebel	Iowa DOT- Location & Environment
Emily Randall	Iowa DOT- Location & Environment
Nate Thede	Iowa DOT- Project Management
Ahmad Abu-Hawash	Iowa DOT- Bridges
Steve Seivert	Iowa DOT- Preliminary Bridge
Jeff Larson	Iowa DOT- Right of Way
Gregory Cagle	Iowa DOT- Right of Way
Nick Humpal	Iowa DOT- District 2
Jon Ranney	Iowa DOT- District 2
Krista Billhorn	Iowa DOT- District 2
Mary Kelly	Iowa DOT- District 2
Ron Loecher	Iowa DOT- District 2 (New Hampton RCE)
Mike LaPietra	FHWA- Iowa Division
Michael Cain	FHWA- Iowa Division
Kevin Eisenbeis	Burns & McDonnell
Samantha Wermager	Burns & McDonnell
Jonathan Tronson	Burns & McDonnell
Jeff Hillegonds	Stanley Consultants
Tony Bower	Stanley Consultants
Greg Shuger	Stanley Consultants

Project Description:
This project involves the proposed removal of the existing Black Hawk Bridge in Lansing, IA and replacement with a new Mississippi River crossing. The proposed alignment is parallel to, and just north of the existing alignment. The current design is for three spans of trusses with a three-span Pretensioned Prestressed Concrete Beam (PPCB) approach at the east end of the project. For the first span of the superstructure, a simply supported truss is proposed, whereas Spans 2&3 would be comprised of a continuous truss with a peak in the top chord over the pier. Additional steel truss elements will be added between truss units to provide an additional peak and imitate the appearance of the existing bridge. The total structure length of the proposed bridge is approximately 1727 ft, with a 40 ft wide deck consisting of (2) – 12-ft lanes and (2) –

8-ft shoulders. The proposed alignment includes a horizontal curve on Spans 5&6 which will require a superelevated deck. The remainder of the bridge deck will be crowned at the center with 2% slopes toward each barrier. The PennDOT PA bridge barrier (MASH TL-5) is proposed for the bridge and consists of a 2'-0" tall concrete parapet supporting a 2'-2" tall, two-tube steel rail. The existing bridge crosses the state line, carrying IA-9 and WI-82. The new crossing would keep these state highway designations.

Immediately to the west of the Iowa abutment resides a T-intersection, with IA-26 and IA-9 extending to the north and south, respectively. As part of this project, the T-intersection will be reconstructed to allow for easier truck turning movements and a painted island will be included. The design for truck turning movements at this location will be submitted to the Iowa DOT for intersection review. Reconstruction of Second Street in Lansing to tie into the proposed West Abutment will include the removal of the existing retaining wall from Hale St. to Henry St. and replacement with an MSE wall. This wall will wrap around the proposed abutment and could include themed aesthetic panels which complement the aesthetics of the bridge piers designs.

The standard cross section of IA-26/IA-9 (Second St. in Lansing) will consist of (2) – 12-ft lanes with curb/gutter or a combination of granular, HMA, or concrete with earth shoulder. The standard cross-section along WI-82 between the proposed East Abutment and the existing Big Slough Bridge will have (2) – 12-ft lanes and either paved or combination paved/granular shoulders of variable width and variable foreslopes at a design maximum of 3:1. A foreslope of 2:1 or flatter is proposed on the south side of WI-82 between the highway and the Big Slough Landing and Boat Ramp. This slope may require a design exception to avoid impacts to the existing parking lot. The guardrail was extended to the west to protect the steeper slope. This avoids impacts to a bulk of the existing parking lot, and guardrail was extended to the west to protect the steeper slope. A design variance was previously approved for the sag vertical curve in the proposed roadway profile of WI-82 near the East Abutment.

Western portions of Hale St. and Henry St. in Lansing will be reconstructed as part of this project, since fill will be added along a portion of Second St (approx. 3-ft depth maximum). The new profile of WI-82 will also necessitate reconstruction of the Big Slough Landing/Beneficial Use Site entrance and a small portion of the parking lot. The boat landing is property of the U.S. Fish and Wildlife Service (USFWS). The Beneficial Use Site, property of U.S. Army Corps of Engineers (USACE), is primarily used as storage of dredged sand.

For IA-9/WI-82 (east of IA-26 intersection), the 2025 ADT is estimated to be 2,900 vpd with 9% trucks. The 2045 ADT is estimated to be 3,000 vpd with 9% trucks.

For IA-9/IA-26 (a.k.a. Second St., Lansing), the 2025 ADT is estimated to be 1,400 vpd with 14% trucks. The 2045 ADT is estimated to be 1,500 vpd with 14% trucks.

Utilities:

The existing water main running along Second St. will be replaced/relocated further to the west as part of this project. New stormwater drainage along reconstructed Second St. will tie into existing storm sewers at Hale St. and Henry St., if their condition is deemed satisfactory. Burns & McDonnell and subconsultants will coordinate with the District 2 Utility Coordinator (Tracy Meise) and the State Utility Coordinator (Deanne Popp) following completion of the D2 process, to review project impacts to public and private utilities.

Traffic Control/Staging:
Access to private entrances will be maintained via local road network for the duration of the project. Note: Traffic control during removal of the existing bridge will be addressed in future stages of design.

Stage 1 – Traffic will be maintained on the existing Black Hawk Bridge and all connected roadways. The steel beam guardrail on the north side of the existing East Abutment will have to be partially removed to allow for construction of the proposed East Abutment. Temporary barrier rail (TBR) and temporary crash cushions will be placed along the north side of WI-82 near the abutment. Pedestrian traffic in proximity of the West Abutment will be detoured. The proposed bridge will be constructed adjacent to the existing bridge, as well as a portion of the new retaining wall at the proposed West Abutment.

Stage 2 – Second St. will be completely closed from Hale St. to north of Henry St., as will the existing Black Hawk Bridge and WI-82 to WI-35. Closure of Front St. between Henry St. and Hale S. shall not be allowed concurrent with closure of Second St. Truck traffic will be temporarily detoured using multiple routes within Iowa, Wisconsin and Minnesota. Local traffic may continue to use the local road network. Pedestrian traffic will continue to be detoured as sidewalks and retaining walls are reconstructed. Second St. improvements, Iowa bridge approach/MSE retaining wall, Wisconsin bridge approach, roadway tie-in to WI-82, and Big Slough Landing improvements will be completed during the closure period.

Right of Way:
Right of Way is required on this project. The T1 Design Event (Existing ROW, Property and Sections Lines in CADD) will be completed following an official determination on the preferred alternative.

Design Schedule:
The applicable upcoming milestone dates are shown below (from Burns & McDonnell and Subconsultants Scope):
- D3 Plans for Preliminary Bridge – 2/28/2020 (Time extension probable based on availability of geotechnical information)
- S2 Identification of Soils Related ROW Issues – 10/2/2020
- B1 Bridges and Structures Layout – 7/1/2020 (Time extension possible)
- D5 Plans to Right of Way – 12/4/2020

Access control:
N/A for this project.

ADA Accommodations:
Sidewalk will be designed as ADA compliant. Further design is needed at sidewalk ramps near intersections to achieve compliance.

Work by other Offices:
A cultural review of the need lines has been performed by the Office of Location and Environment (OLE). Per discussion at the field exam, FHWA review of the Draft Environmental Assessment is expected around December 2019.

Agreements/Permits/Easements:

For coordination during construction, removals and ROW activities, specific agreements/permits/easements may be required with:

- Wisconsin DOT
- City of Lansing
- Allamakee County, IA
- Crawford County, WI
- U.S. Coast Guard (USCG)
- Canadian Pacific Railroad
- USACE – Rock Island District (Regulatory) and St. Paul District (River System)
- USFWS – Illinois-Iowa Ecological Services Field Office and Upper Mississippi National Fish & Wildlife Refuge (NFWR)
- Iowa DNR
- Iowa Department of Cultural Affairs, Iowa State Historic Preservation Office
- Wisconsin DNR
- Wisconsin State Historic Preservation Office
- Allamakee County Historic Preservation Commission
- Crawford County Historical Society
- Tribes/Nations with an Interest in Allamakee and Crawford Counties

USCG Coordination:

The USCG has required a horizontal clearance of 750 ft at the navigation channel (Span 2, from Iowa bank at normal pool elevation to face of Pier 2). Based on discussions with the USCG, the latest correspondence with the USCG proposed minimum vertical clearances of 64 ft at the midspan and 60 ft measured 25 ft horizontally from the face of Piers 1 and 2. These vertical clearances are measured from the normal pool elevation. The DOT is awaiting a response from the USCG regarding the acceptance/rejection of these proposed vertical clearances. Additional coordination with the USCG will be necessary to determine allowable interruptions to navigation for construction and removal of the existing Black Hawk Bridge and protection dolphins. The selected contractor will also need USCG approval for additional temporary works in the river such as causeways and cofferdams.

Railroad:

The Canadian Pacific Railroad (CPRR) owns the railroad track in Lansing between N. Front St. and the Mississippi River. Discussions during the design of overhead structures will be necessary such that the CPRR is agreeable to the method of track protection from snow, debris, pedestrians, etc. Coordination with the CPRR will also be necessary during construction of Pier 1 and Span 1 as well as the removal of the existing Black Hawk Bridge.

Contractor furnished borrow required and preliminary quantity of material needed:

Excavation = 2,500 cy, Embankment in Place = 16,800 cy
Embankment in Place will be furnished by the Contractor.

Signage:

Removal/replacement plan for roadway signage will be coordinated during final design.

No plan sheets are included in this submittal; however, plan sheets may be viewed on the network at:
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\Design Events\D2\20191106_FieldExam\

Construction Schedule and Cost:

This project is currently scheduled for a July 2023 letting, with construction scheduled for completion in November 2025. The 2019 estimated cost of construction for the current estimate is $70,946,000 (rounded), with a breakout as follows:

Roadway: $2,071,000 (rounded)
Bridge: $64,380,000 (rounded)
Removals: $4,494,000 (rounded)

Machine Guidance Electronic Files Checklist

Add information to address any incomplete items below:

Yes	N/A	No	
☒	☐	☐	Horizontal and Vertical Alignments Complete
☒	☐	☐	Typical Templates showing proposed Pavement, Shoulder, Foreslope design
☒	☐	☐	Correct Feature Naming for Roadway Breaklines and Components

cc:

M. J. Sankey	S. J. Gent	M. J. Kennerly
W.A. Sorenson	E. C. Wright	T. Nicholson
K. D. Nicholson	D. Newell	K. K. Patel
K. Brink	J. E. Laaser-Webb	T. Crouch
V. A. Brewer	D. R. Tebben	S. Godbold
N. L. Cuva	M. A. Swenson	C. B. Brakke
D. E. Sprengeler	J.S. Nelson	D. A. Popp
A. Shell	M. Nop	D. R. Claman
J. McCollough	S. P. Anderson	B. Hofer
J. Garton	P. C. Keen	E. D. Gansen
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M. Hobbs (RR)	D. T. Ta	J. E. Bartholomew
E. Engle (RR)	N. Thede	E. J. Ranney
N. Humpal	K. Howe	T. Meise
R. Gelhaus	M. LaPietra, FHWA	M. Cain, FHWA
B. Bradley	S. Ebel	E. Randall
A. Abu-Hawash	S. Seivert	J. Larson
G. Cagle	K. Billhorn	M. Kelly
R. Loecher		

BRIDGE REPLACEMENT
BRF-009-9(73)--38-03

LETTING DATE
XX-XX-XXXX

ALLAMAKEE Co.

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
* A.3 - 9	Design Criteria Worksheets
B Sheets	**Typical Cross Sections and Details**
B.1 - 6	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Standard Road Plans
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 5	IA 9
E Sheets	**Side Road Plan and Profile Sheets**
* E.1 - 4	Second St
* E.5	Hale St
* E.6	Henry St
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4 - 5	Horizontal Control Tab. & Super for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
* J.2 - 11	Staging and Traffic Control
L Sheets	**Geometric, Staking and Jointing Sheets**
L.1	IA 9
* L.2	Turning Movement at IA 9 / IA 26 / Second St.
M Sheets	**Storm Sewer Sheets**
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3 - 6	Storm Sewer Plan and Profile Sheets "Second St."
MWM Sheets	**Water Main Sheets**
* MWM.1	Water Main Legend & Symbol Information Sheet
* MWM.2 - 5	Water Main Plan and Profile Sheets
MWM.6	Air Release Valve & Vault Detail Sheet
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1	500 Series, Modified Standards and Detail Sheets
V Sheets	**Bridge and Culvert Situation Plans**
* V.1 - 5	Bridge and Culvert Situation Plans
* V.6 - 8	Retaining Walls
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 23	IA 9
X Sheets	**Side Road Cross Sections**
X.1 - 18	Second St.
X.19 - 20	Henry St.
	* Color Plan Sheets

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

ALLAMAKEE COUNTY

BRIDGE REPLACEMENT

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

TOTAL 109
PROJECT IDENTIFICATION NUMBER
16-03-009-010
PROJECT NUMBER
BRF-009-9(73)--38-03
R.O.W. PROJECT NUMBER

IA 9/Wis 82
(East of IA 26 Intersection)

DESIGN DATA URBAN

2025 AADT	2,900	V.P.D.
2045 AADT	3,000	V.P.D.
2045 DHV	310	V.P.H.
TRUCKS	9	%
Total Design ESALs	1,400	

IA 9/IA 26
(AKA Second St., Lansing)

DESIGN DATA URBAN

2025 AADT	1,400	V.P.D.
2045 AADT	1,500	V.P.D.
2045 DHV	160	V.P.H.
TRUCKS	14	%
Total Design ESALs	1,300	

Need Verification on Interpretation of Total Design ESALs

PRELIMINARY EARTHWORK QUANTITY SUMMARY

Excavation (CY)	Embankment In Place (CY)
2,500	16,800

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

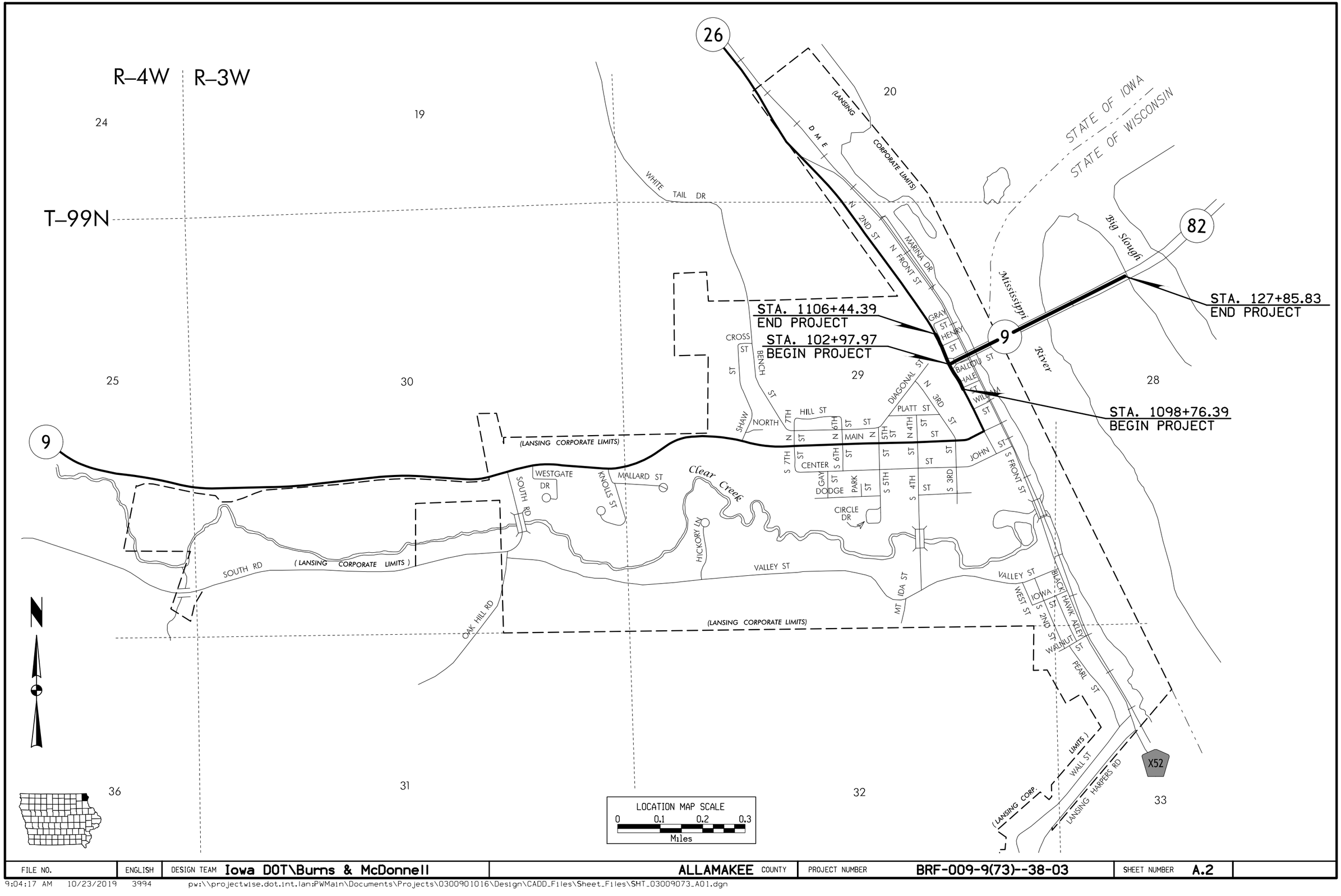
PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN – Date: Nov. 6, 2019

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER A.1

3:35:50 PM 10/23/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_A01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER A.2

9:04:17 AM 10/23/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_A01.dgn

Roadway	IA 9/Wis 82 from east side of proposed main span to existing Big Slough Bridge.			
PIN Number	0300901016		**Submittal Date**	
Project Number	BRF-009-9(73)--38-03			**Approval Date**
District	District 2	**Assistant District Engineer**	Nick Humpal	
County	ALLAMAKEE		**or**	
Route	IA 9 (non-NHS route)	**Office Director**		
Location	Lansing, IA			
Work Type	Bridge Replacement			
Segment Manager	Nick Humpal-District 2 A.D.E.			
Designer	Burns & McDonnell and Stanley Consultants			

Design Manual Section 1C-1
Last Updated: 04-29-19

Rural Two-Lane Highways (Rural Arterials)

Design Element		Preferred	Acceptable	Project Values
Design speed (mph)		60	50	40
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	6.0% (e-max)
Design lane width (ft)		12	12	12
Full depth paved width (ft)		12	12	12
Right turn lane (ft)		12	10	N/A
Climbing Lane (ft)		12	12	N/A
Left turn lane (ft)		12	10	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	N/A
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)		4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	4-inch sloped
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	4-inch sloped
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3:1
	Curbed roadways	2%	not steeper than 3:1	not steeper than 3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	2.5:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	V-ditch
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	40'
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	16.5
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	15
	Over railroad	23.3	23.3	23.3
	Sign trusses and pedestrian bridges	17.5	17	17.5
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	??
Level of Service		B	B	B

*FHWA notification via email is required if acceptable critera is not met on the NHS system (No formal design exeption is required)

Design year ADT = 2,010 (2017)

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Two-Lane Highways

Preferred (values shown in feet)			Acceptable (values shown in feet)			Project Values
	Rural Roadways	Urban Roadways		Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0	N/A
Turn lanes with curbs	6	See Section 3C-2	Turn lanes with curbs	6	0	N/A
	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0	N/A
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10				
On roadways approaching urban areas (due to increased bike traffic)	10	10	Design year ADT > 2000 vpd	8	0*	
On all curves with a superelevation rate of 7.0% or greater	10	10				
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*	8' Shldr, 2' Paved
On all other NHS	10	6				
On non-NHS routes with design year ADT > 3000	10	6	Design year ADT < 400 vpd	4	0*	
On non-NHS routes with design year ADT < 3000	8	0*				

*Requires safety edge-Refer to Section 3C-6

Curbs should be located beyond the outer edge of the effective shoulder width in rural areas

Refer to Section 3C-2 for curb offsets in urban areas

Notes:

Existing Big Slough Bridge is 26 ft wide (traveled way).

A 2' wide paved shoulder requires a safety edge.

Roadway Design Speed (mph) =	40

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Criteria for High Speed Roadways

Design Element			Preferred Criteria Design Speed, mph						Acceptable Criteria Design Speed, mph						Project Values
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	305
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e_{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1910 (at 3.4%)
		e_{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	N/A
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	120
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	44
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	64
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	64
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.5
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	--	--	--	N/A
		Rural roadways							5	5	4	4	4	4	6.25%
		Interstates							5	5	4	4	4	4	N/A
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						16

Roadway	IA 9 south of IA 9/IA 26 junction; IA 26 north of IA 9/IA 26 junction; IA 9 from IA 9/IA 26 junction to east of main span.			
PIN Number	0300901016		**Submittal Date**	
Project Number	BRF-009-9(73)--38-03			**Approval Date**
District	District 2	**Assistant District Engineer**	Nick Humpal	
County	ALLAMAKEE		**or**	
Route	IA 9 / IA 26 (non-NHS routes)	**Office Director**		
Location	Lansing, IA			
Work Type	Bridge Replacement			
Segment Manager	Nick Humpal-District 2 A.D.E.			
Designer	Burns & McDonnell and Stanley Consultants			

Design Manual Section 1C-1
Last Updated: 04-29-19

Urban Two-Lane Roadways (Urban Arterials)

Design Element		Preferred	Acceptable Criteria	Project Values
Design speed (mph)		The anticipated posted speed limit	30	30
Maximum superelevation rate (Refer to Section 2A-2)		4%	6%	4%
Design lane width (ft)		12	11	12
Full depth paved width (ft)		Design lane width + curb and gutter unit or 14 feet for roadways with shoulders	Match design lane width	12'+C&G
Right turn lane (ft)		12	10	N/A
Left turn lane (ft)	With raised or painted median	12 ft + median	10 ft + median	N/A
	With depressed median	12	10	N/A
Two-way left turn lane		14	11	N/A
Parking lane width (ft)		10	7	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	N/A
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)	Shoulders	4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
	Curb and gutter units	Match pavement cross-slope	6% maximum	Match Pvmt x-slope
	Parking lanes	1% greater than pavement cross-slope	6% maximum	N/A
Curb type (See Section 3C-2)	Design speed ≤ 45 mph	6-inch standard	any shape	6-inch standard
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3:1
	Curbed roadways	2%	not steeper than 3:1	No steeper than 3:1
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	2.5:1
Traverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (See Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	V-ditch
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths (curbed or uncurbed) or design lane width + 3 ft each side (curbed) which ever is greater	design lane widths + effective shoulder widths or curb-to-curb width in curb and gutter section**	40
	Bridge length > 200 ft	design lane widths + effective shoulder widths (curbed or uncurbed) or design lane width + 3 ft each side (curbed) which ever is greater	design lane widths + 4 ft offset each side for roadways with shoulders or curb-to-curb width in curb and gutter section**	40
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft left and right	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	16.5
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	15
	Over railroad	23.3	23.3	23.3
	Sign trusses and pedestrian bridges	17.5	17	17.5
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	??
Level of Service		C	D	C

*FHWA notification via email is required if acceptable critera is not met on the NHS system (No formal design exeption is required)

** If travel lanes are less than 12 ft wide contact the Methods Section for assistance.

Design year ADT = 2,940 (2017)

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Two-Lane Highways

Preferred (values shown in feet)			Acceptable (values shown in feet)			Project Values
	Rural Roadways	Urban Roadways		Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0	N/A
Turn lanes with curbs	6	See Section 3C-2	Turn lanes with curbs	6	0	N/A
	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0	N/A
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	Design year ADT > 2000 vpd	8	0*	Use Acceptable Values
On roadways approaching urban areas (due to increased bike traffic)	10	10				
On all curves with a superelevation rate of 7.0% or greater	10	10				
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*	
On all other NHS	10	6				
On non-NHS routes with design year ADT > 3000	10	6	Design year ADT < 400 vpd	4	0*	
On non-NHS routes with design year ADT < 3000	8	0*				

*Requires safety edge-Refer to Section 3C-6

Curbs should be located beyond the outer edge of the effective shoulder width in rural areas

Refer to Section 3C-2 for curb offsets in urban areas

Notes:

Roadway Design Speed (mph) =	30

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Criteria for Low Speed Roadways

Design Element			Preferred Criteria, Design Speed, mph					Acceptable Criteria, Design Speed, mph					Project Values
			25	30	35	40	45	25	30	35	40	45	
Stopping sight distance (ft) (Refer to Section 6D-1)			155	200	250	305	360	155	200	250	305	360	200
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections 2A-2 and 2A-3)	Method 2 superelevation and side friction distribution	e = 4% max	See Table 10 in Section 2A-3					--					250
	Method 5 superelevation and side friction distribution	e_{max} = 6%	144	231	340	485	643	144	231	340	485	643	N/A
		e_{max} = 8%	--	--	--	--	--	134	214	314	444	587	N/A
Minimum vertical curve length (ft) (Refer to Section 2B-1)			75	90	105	120	135	75	90	105	120	135	90
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		12	19	29	44	61	12	19	29	44	61	19
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	26	37	49	64	79	37
		roadways with fixed-source lighting	26	37	49	64	79	14	20	27	35	44	37
Minimum gradient (%)	(Refer to Section 2B-1)		0.5					0.3% with a curb, 0.0% without a curb					Acceptable
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	5					--	9	8	8	7	5.25%
		Rural roadways						--	--	--	6	6	N/A
Clear zone			See "Preferred Clear Zone" table in Section 8A-2					See "Acceptable Clear Zone" table in Section 8A-2					8

Roadway	Henry St. (Local/City roadway)		
PIN Number	0300901016	**Submittal Date**	
Project Number	BRF-009-9(73)--38-03	**Revison Date**	
District	District 2		
County	ALLAMAKEE		
Route	Henry St.		
Location	Lansing, IA		
Work Type	Bridge Replacement		
Segment Manager	Nick Humpal-District 2 A.D.E.		
Designer	Burns & McDonnell and Stanley Consultants		
Design year ADT =	200 (assumed)		

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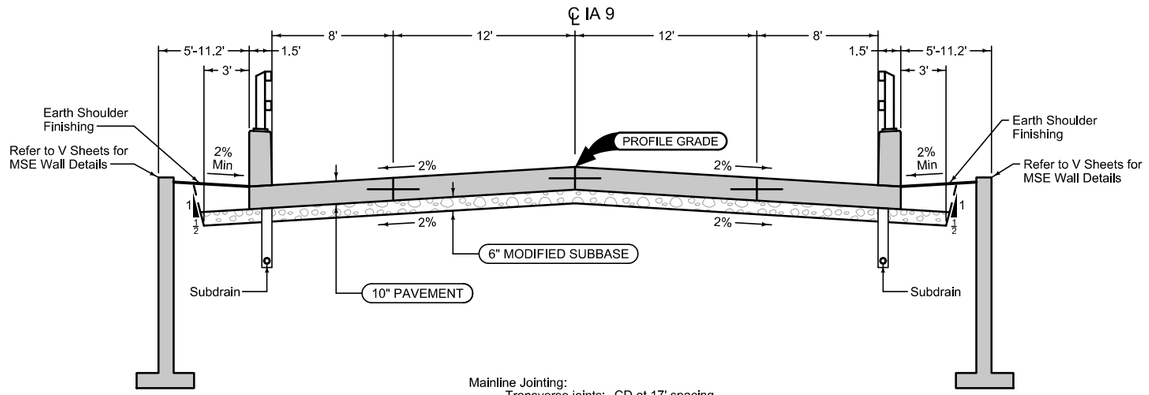
Last Updated: 04-29-19

Urban Local Road

Design Elements		Project value	SUDAS ~~Local Systems I.M. 3.210 value~~	Remarks
Design speed (mph)		15		
Design lane width (ft.)		10	SUDAS, Table 5C-1.02	
Roadway width without parking (ft.)		26	SUDAS, Table 5C-1.02	
Bridge width - new (ft.)		N/A		
Bridge width - existing (ft.)		N/A		
Maximum super elevation rate (%)		N/A		
Minimum radius (ft.)		N/A		
Stopping sight distance (ft.)		80	AASHTO Green Book	
Vertical curve length (ft.)		45	3 times the design speed.	
Minimum rate of vertical curvature (K)	Crest	3	AASHTO Green Book	
	Sag	10	AASHTO Green Book	
Minimum gradient (%)		0.50%		
Maximum gradient (%)		18%		match existing
Foreslope		N/A		
Backslope		N/A		
Transverse slopes		N/A		
Clearzone		5.5'	SUDAS, Table 5C-1.05	

Notes:



Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION
103+10.01	104+09.17

Refer to V Sheets for Limits of Bridge Construction, Sta.104+09.17 - Sta. 121+36.28

IA 9

Paved Shoulder at Guardrail

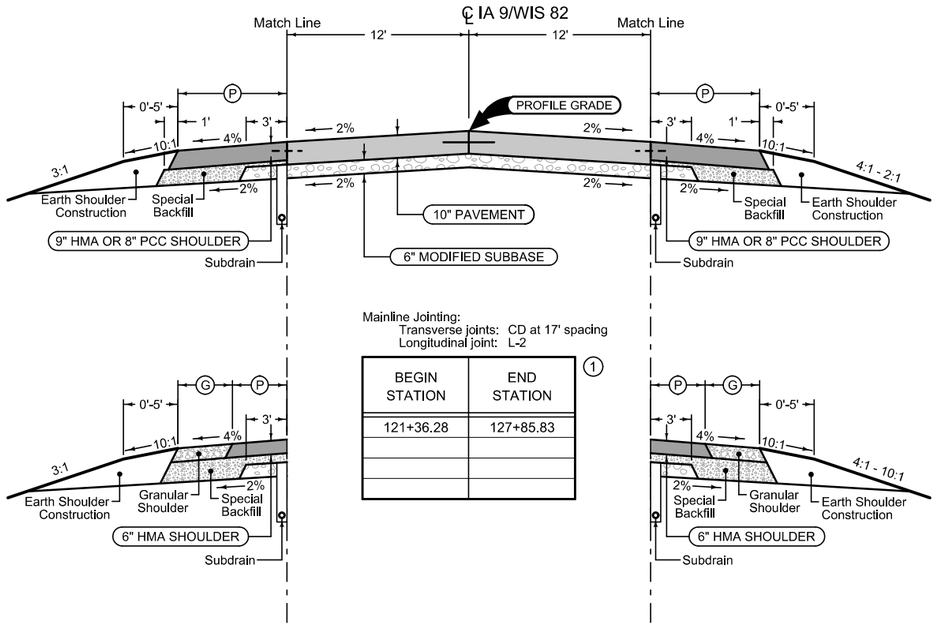
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_ 10-17-17		
STATION TO STATION		(P) Feet
121+36.28	122+55.46	8.0-10.6
126+94.55	127+85.83	3.3-3.2

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
122+55.46	126+74.48	2	6
126+74.48	126+94.55	3.3	4.7



Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION
121+36.28	127+85.83

(1)

Paved Shoulder at Guardrail

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

2_P_Guard_ 10-17-17		
STATION TO STATION		(P) Feet
121+36.28	122+60.84	8.0-10.6
124+42.15	127+85.83	11.8-2.0

Combination Shoulder

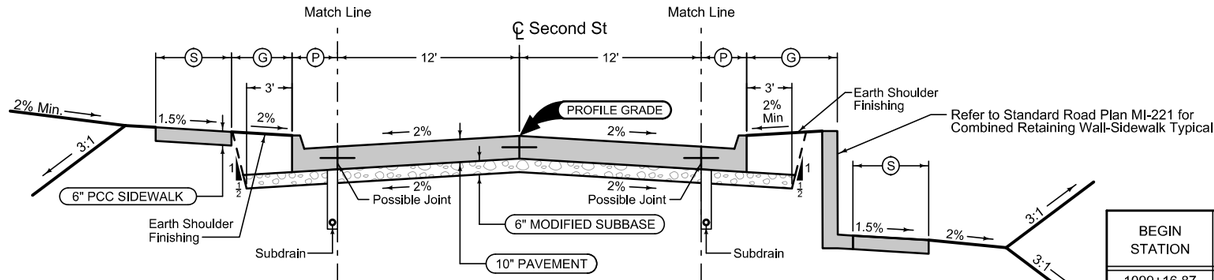
Shoulder Jointing:
Longitudinal joint: B

2_C_ 10-15-13			
STATION TO STATION		(P) Feet	(G) Feet
122+60.84	124+42.15	2	6

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

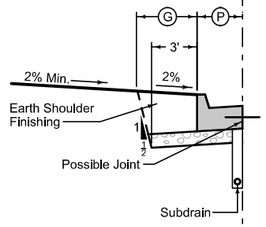
IA 9/WIS 82

BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1099+31.43	1104+68.78	5	4	3	6" Stnd

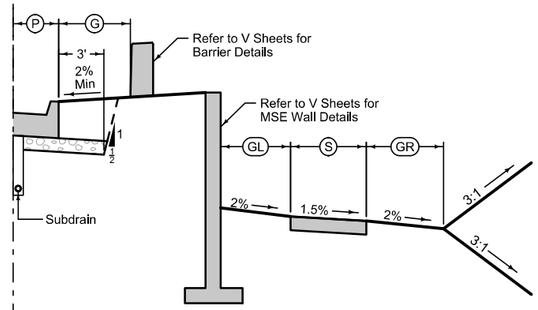


BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1099+16.87	1099+74.50	5	3	3	6" Stnd
1099+74.50	1100+25.00	5	3-6.5	3	6" Stnd
1104+00.00	1104+63.72	5	12.6-7	12-8	6" Stnd

BEGIN STATION	END STATION	(G) Feet	(P) Feet	Curb Type See PV-102
1104+68.78	1105+46.39	4	3	6" Stnd

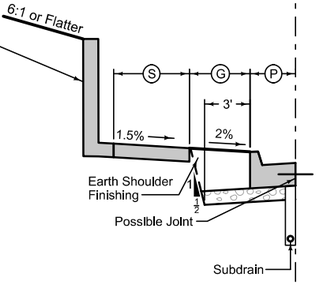


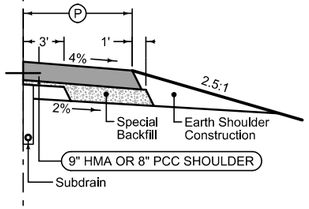
BEGIN STATION	END STATION
1098+76.39	1106+44.39



BEGIN STATION	END STATION	(S) Feet	(GL) Feet	(GR) Feet	Curb Type See PV-102
1100+25.00	1104+00.00	5	1-5	1-5	6" Stnd

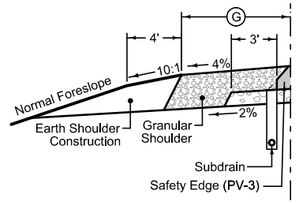
BEGIN STATION	END STATION	(S) Feet	(G) Feet	(P) Feet	Curb Type See PV-102
1098+76.39	1099+31.43	5	4	3	6" Stnd





BEGIN STATION	END STATION	(P) Feet
1105+73.56	1106+44.39	2

BEGIN STATION	END STATION	(G) Feet
1105+46.39	1106+44.39	6



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

SECOND STREET

Curbed Shoulder

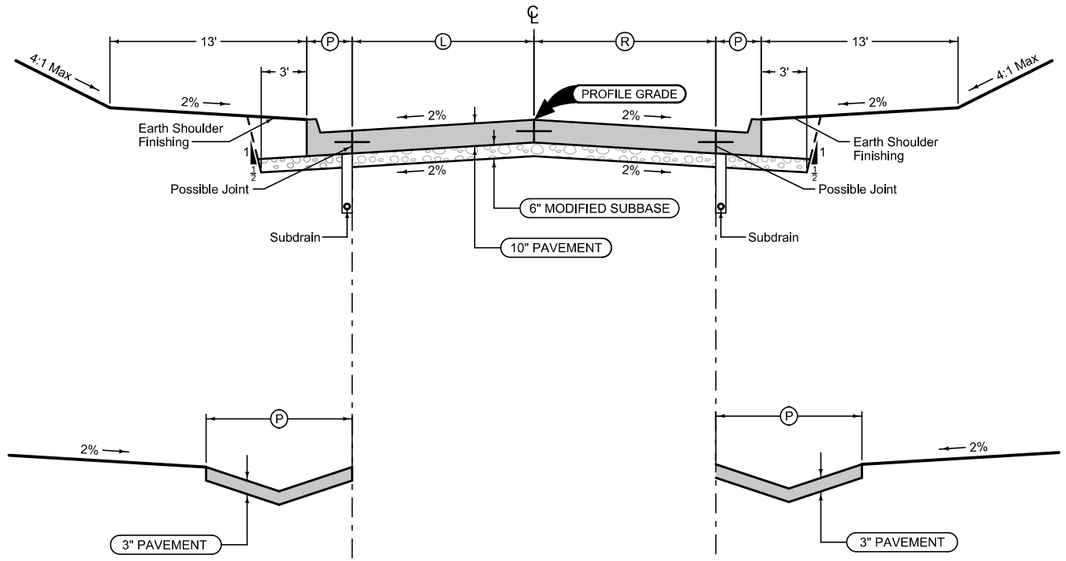
Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse:C at 17' spacing

ROAD	STATION TO STATION		(P) Feet	2_Curb_ MODIFIED Curb Type See PV-102
Hale Street	2099+08.78	2099+40.53	2.4	6" Stnd
Henry Street	3104+92.60	3105+50.00	1.5	6" Stnd
Henry Street	3105+50.00	3105+55.00	1.5-2.5	6" Stnd

Paved Ditch

ROAD	BEGIN STATION	END STATION	(P) Feet
Henry Street	3105+55.00	3105+85.57	1-8.1



ROAD	BEGIN STATION	END STATION	(L) Feet	(R) Feet
Hale Street	2099+08.78	2099+40.53	12	12
Henry Street	3104+92.60	3105+85.57	10	10

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

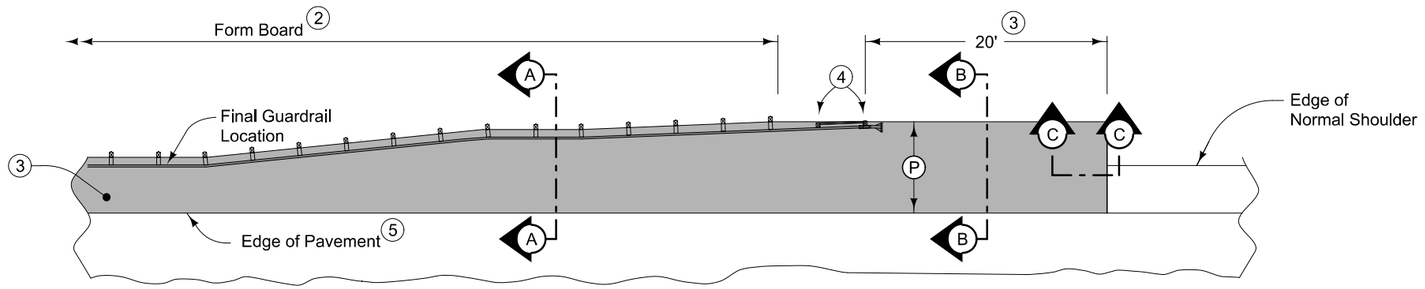
Single pour: L-2
Staged : KT-2
Transverse:C at 17' spacing

ROAD	STATION TO STATION		(P) Feet	2_Curb_ MODIFIED Curb Type See PV-102
Hale Street	2099+08.78	2099+40.53	2.9-2.4	6" Stnd
Henry Street	3104+92.60	3105+50.00	1.5	6" Stnd
Henry Street	3105+50.00	3105+55.00	1.5-2.5	6" Stnd

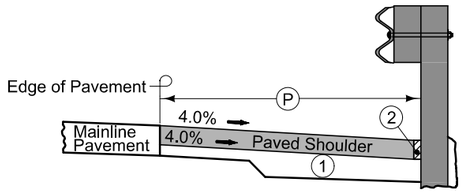
Paved Ditch

ROAD	BEGIN STATION	END STATION	(P) Feet
Henry Street	3105+55.00	3105+85.57	1-4.3

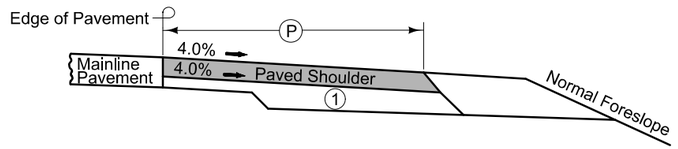
HALE STREET
HENRY STREET



PLAN VIEW

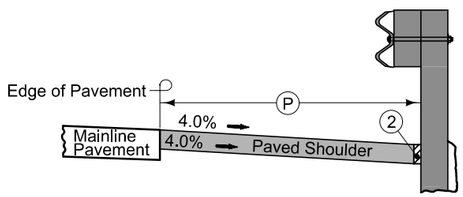


Section A-A

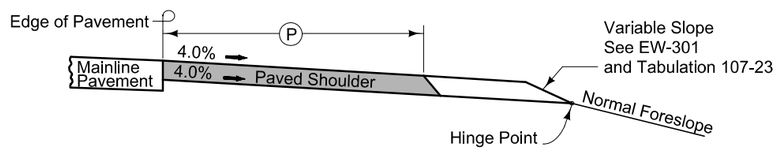


Section B-B

NEW CONSTRUCTION



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER INFO

7156
04-18-17

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

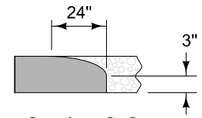
(1) For subgrade treatment, refer to other details in the plan.

(2) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.

(3) Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.

(4) Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

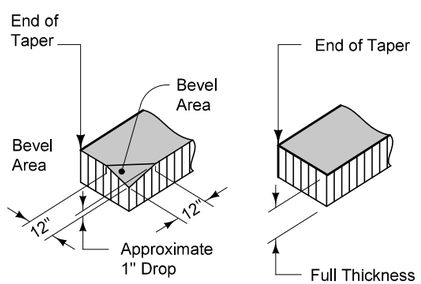
(5) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



Section C-C
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL

7101
10-19-10

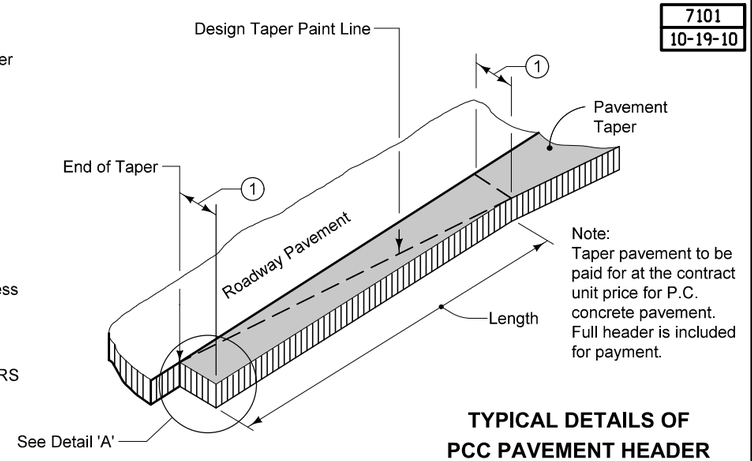


DETAIL 'A'

FOR
GRANULAR SHOULDERS

DETAIL 'A'

FOR
PAVED SHOULDERS



Note:
Taper pavement to be paid for at the contract unit price for P.C. concrete pavement. Full header is included for payment.

TYPICAL DETAILS OF PCC PAVEMENT HEADER

(1) Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

STANDARD ROAD PLANS

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

Number	Date	Title
BA-200	04-16-19	Steel Beam Guardrail Components
BA-201	04-18-17	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	04-19-16	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-250	10-18-16	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-401	10-15-19	Temporary Barrier Rail (Precast Concrete)
BR-203	10-17-17	Double Reinforced 12" Approach
DR-201	10-16-18	Concrete Aprons
DR-213	10-17-17	Pipe Apron Guard
MI-210	10-20-15	PCC Driveways and Alleys
MI-220	10-20-15	Detectable Warnings and Pedestrian Ramp
MI-221	10-20-15	Combined Retaining Wall - Sidewalk
PV-101	04-16-19	Joints
PV-102	10-18-16	PCC Curb Details
SW-104	04-17-18	Pressure Pipe Trench Bedding
SW-301	04-17-18	Circular Sanitary Sewer Manhole
SW-401	04-17-18	Circular Storm Sewer Manhole
SW-507	04-17-18	Single Open-Throat Intake, Small Box
SW-509	04-17-18	Double Open-Throat Curb Intake, Small Box
SW-546	04-17-18	Single Open-Throat Barrier Intake
SW-601	04-21-15	Castings for Sanitary Sewer Manholes
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-252	04-19-16	Routes Closed to Traffic
TC-601	10-15-19	Pedestrian Detour
WM-101	10-18-16	Thrust Blocks
WM-201	04-18-17	Fire Hydrant Assembly

SURVEY SYMBOLS

- CP Control Point
- PCT Photo Control Target
- BM Bench Mark
- GR Ground Shot (All Survey Points)
- ROW Right of Way Mark
- SIGN SI Sign
- GP GP Guard Post (Less Than 4 Posts)
- LP LP L.P. Tank
- Flg FLG Flag Poles
- BB BB Billboard
- TDC Tree Deciduous
- TEV Evergeen Tree
- PPA Power Pole (Alliant Energy)
- PR Electic Riser Pole
- EB EB Electrical Box
- LUM Luminaire
- WH WHD Water Hydrant
- WV WV Water Valve
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- TP TPD Telephone Pedestal

- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- SNP Unpaved Shoulder
- BL Topo Breakline
- GU Gutter In Front of Curb
- CU Back of Curb
- BRG Bridge
- RET Retaining Walls
- RIP Rip-Rap
- D Centerline Draw or Stream (Down)
- TER Terrace
- BLD Building or Foundation
- FW Wire Fence
- GDL Guard Rail Steel
- CON Concrete or A/C Slab
- PIP Pipe Culvert
- TLNL Tree Line Left
- SWK Sidewalk
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- FCL Chain Link and Security Fence
- ENP Edge Paved Entrance & Park Lot
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- EW Edge of Water
- TW Top of Water
- BNK Stream Bank
- EG Edge of Gravel Road

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- PPA Alliant Energy
- E1(C) EL1C Alliant Energy - Quality C
- W(C) WL1C City of Lansing (People's Service) - Quality C
- W WL1D City of Lansing (People's Service) - Quality D
- ST S(C) ST1C City of Lansing (People's Service) - Quality C
- SAN.(C) SA1C City of Lansing (People's Service) - Quality C
- TV(C) TV1C Mediacom - Quality C
- T1(C) TL1C Century Link - Quality C
- FO(C) FO1C Mediacom - Quality C

UTILITY LEGEND

Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

T1(C)
Centurylink
Tom Sturmer
700 W. Mineral
Littleton, CO 80120
720-578-8090

FO(C)
TV(C)
Mediacom
Brandon Thies
115 South Marquette
Prairie Du Chien, WI 53821
608-380-1083

E1(C)
Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

W(C)
W
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

ST S(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

SAN.(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

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
- Obliterate Old Roadbed

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)

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER D.1

3:13:16 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_D01.dgn

Gray St.

Henry St. (SRHENRY)

Second St. (SRSECOND)

N. Front St.

Hale St. (SRHALE)

Mississippi River

105

110

115

POT Sta 102+97.97 (IA 9)
=POT Sta 1102+97.97 (Second St.)

IA 9 (ML009)

Existing Bridge

Sta. 103+10.01
Begin Construction

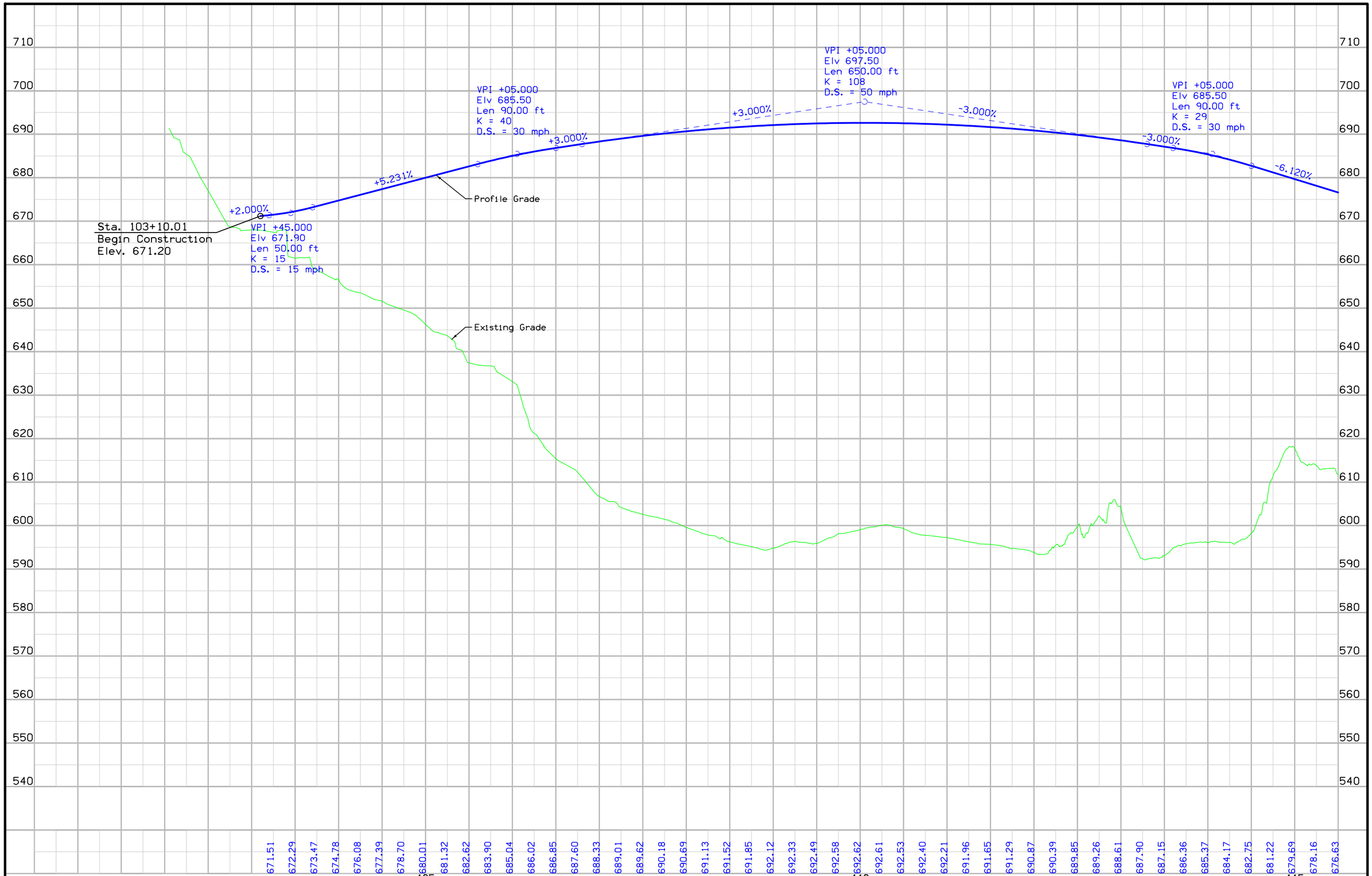
Approx. Limit
of SRP BR-203
Approach Pvmt.

For Side Road Details
Refer to Sheets No. E.1 - E.4

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER D.2

3:13:33 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_D02.dgn



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER D.3

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Note 1:
Transition superelevation of both lanes at constant rate between stations as follows:
Sta. 126+49, e = 3.4%
Sta. 126+79, e = 3.0%

Note 2:
Roadway is WIS 82 on east side of Mississippi River.

Mississippi River

Curve Data
Δ = 7° 38′ 00.28″ (RT)
T = 127.42
L = 254.47
R = 1,910.00
E = 4.25
e = 3.4%
L = 70
x = 41
D.S. = 40 mph

120

PI Sta 120+23.42

DR-402

Approx. Limit of SRP BR-203 Approach Pvmt.

PC Sta 123+75.26

125

PCC Sta 126+64.96

Approx. Limit of SRP BR-203 Approach Pvmt.

Sta. 127+85.83
End Construction

Big Slough

POC Sta 129+71.55

IA 9 (MLOOS)

Note 2

Note 1

Existing Bridge

DR-402

PT Sta 121+50.47

PC Sta 118+96.00

Mississippi River

+78 Prop. Type "C" Ent.

+91 Prop. Type "C" Ent.

Discuss Grading Out Existing Roadway Berm

Discuss Limits of Parking Lot Reconstruction

PI Sta 125+20.39

PI Sta 128+18.35

Existing Bridge

Curve Data
Δ = 4° 56′ 44.82″ (LT)
T = 153.39
L = 306.59
R = 3,551.76
E = 3.31
e = 3.0%
(on exist. bridge)

Dredge Pipe (2 ft dia.)

Curve Data
Δ = 8° 41′ 25.25″ (LT)
T = 145.13
L = 289.70
R = 1,910.00
E = 5.51
e = 3.4%
L = 70
x = 41
D.S. = 40 mph

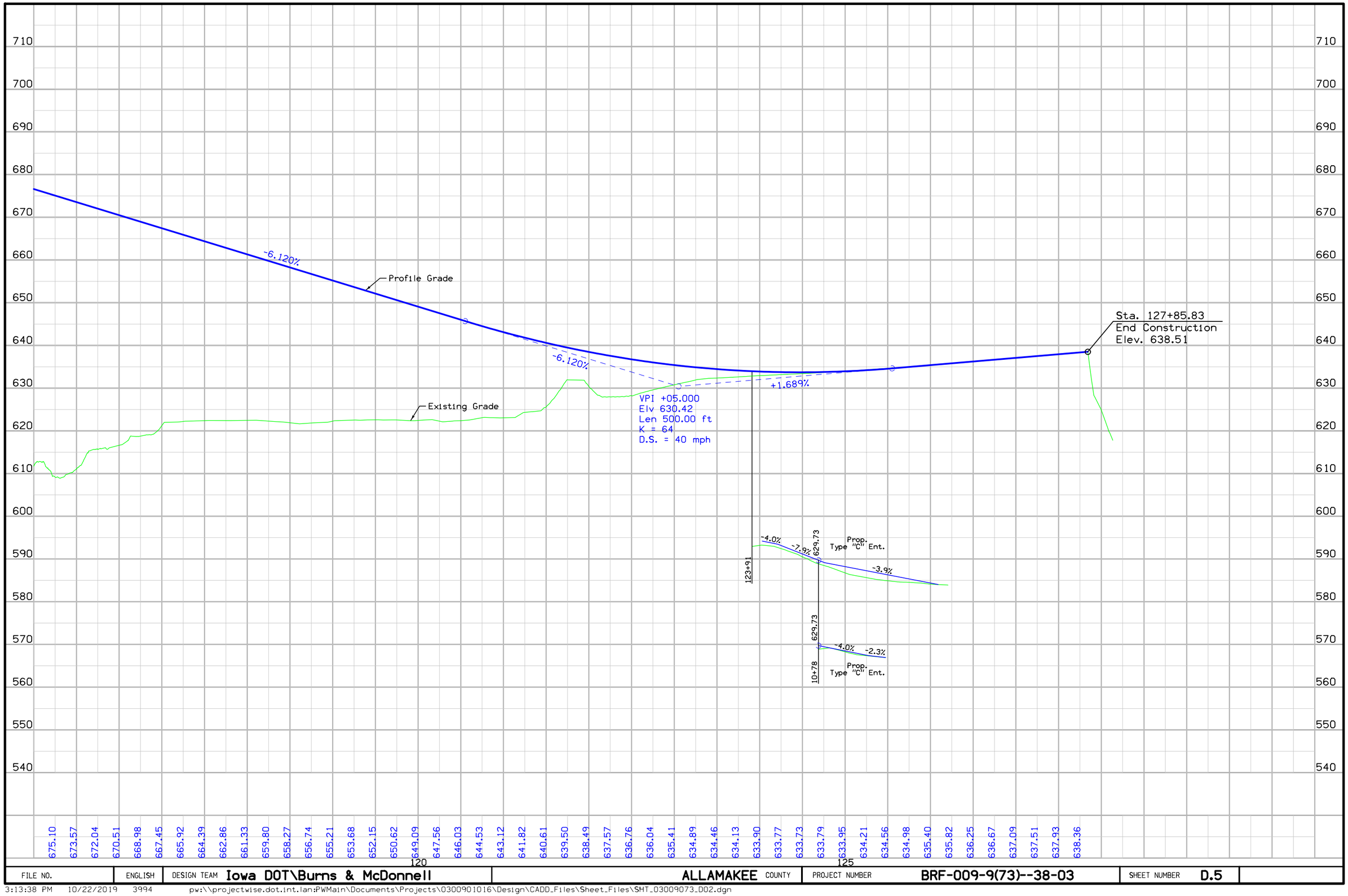
Dredge Pipe (2 ft dia.)

Big Slough

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER D.4

3:13:36 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_D02.dgn



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER D.5

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For Storm Sewer Details Refer to Sheets No. M.3 - M.6	For Water Main Details Refer to Sheets No. MWM.2 - MWM.5

Consider Alternate Intake Type

Discuss Proposed Inlet at Existing Terrace

Disposition of Roadway Lighting

POT Sta 1098+96.78 (Second St.)
=POT Sta 2098+96.78 (Hale St.)

Sta. 1098+76.39
Begin Construction

POT Sta 1097+36.39

1098

1099

+43 Prop. Type "C" Ent.

PC Sta 1099+74.50

1100

PRC Sta 1100+74.50

1101

Second St.
(SRSECOND)

Discuss Elev. Difference of Sidewalk & Curb

Consider Alternate Intake Type

Adjust or Reconstruct Sanitary Manhole

William St.

Hale St.
(SRHALE)

PI Sta 1100+24.76

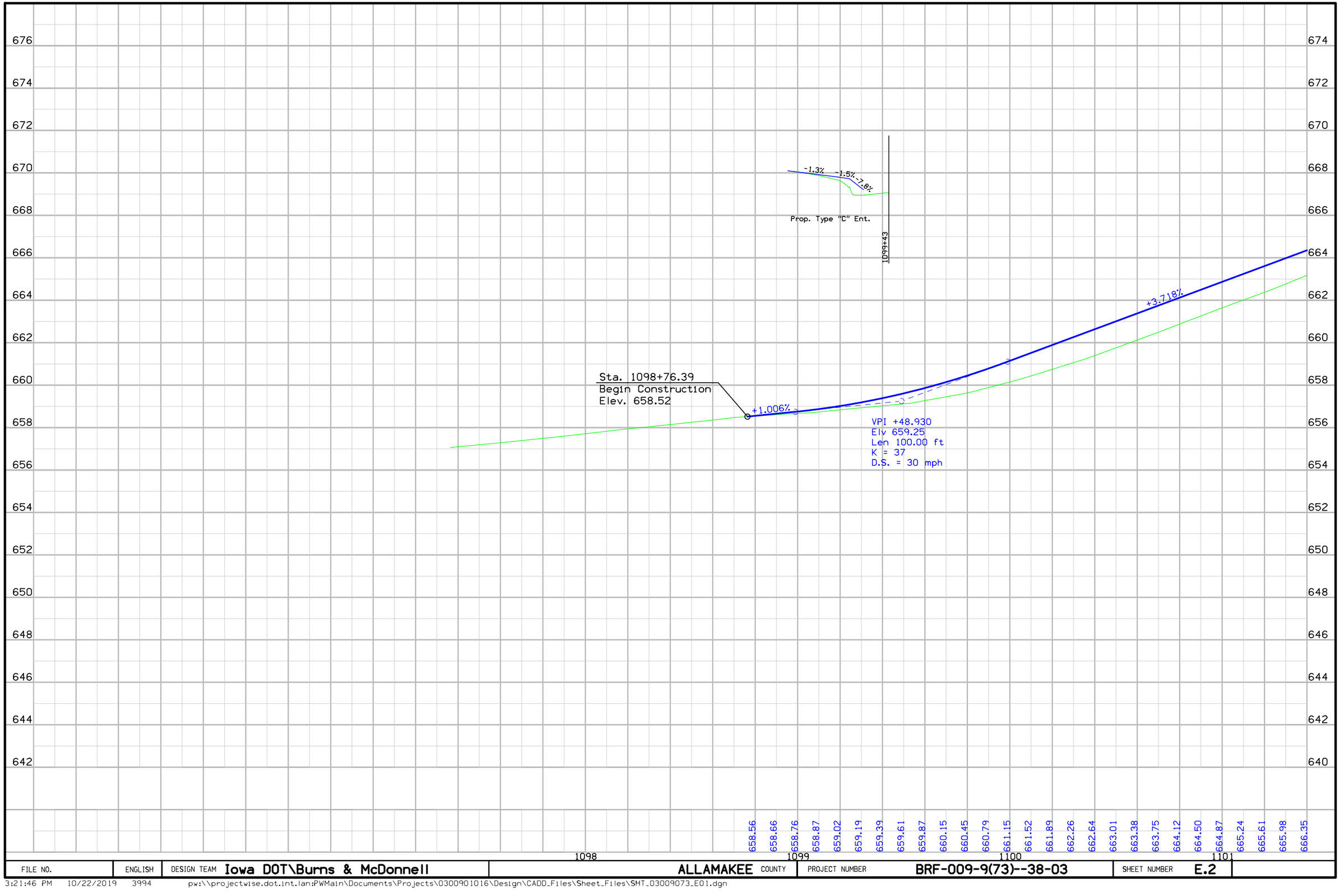
Curve Data
Δ = 14° 19' 26.20" (LT)
T = 50.26
L = 100.00
R = 400.00
E = 3.15
e = Normal Crown
D.S. = 30 mph

0 FEET 20

For Side Road Details
Refer to Sheet No. E.5

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.1

8:46:12 AM 10/23/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_E01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.2

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For Storm Sewer Details
Refer to Sheets No. M.3 - M.6

For Water Main Details
Refer to Sheets No. MWM.2 - MWM.5

Note 1:
Transition superelevation of NB lane as follows:
Sta. 1101+75, e = -2.0%
Sta. 1102+50, e = +2.0%

Maintain +2.0% x-slope in NB lane from Sta. 1102+50 to Sta. 1103+50.

Transition superelevation of NB lane as follows:
Sta. 1103+50, e = +2.0%
Sta. 1104+25, e = -2.0%

Curve Data
Δ = 25° 05′ 22.79″ (RT)
T = 155.76
L = 306.53
R = 700.00
E = 17.12
e = See Note 1
D.S. = 35 mph

PI Sta 1102+30.26

1102

1103

1104

1105

1106

POT Sta 1102+97.97 (Second St.)
=POT Sta 102+97.97 (IA 9)

POT Sta 1104+80.57 (Second St.)
=POT Sta 3104+80.57 (Henry St.)

PT Sta 1105+82.80

POT Sta 1106+98.84

Use of Existing Letdown Structures

Discuss Use of Penn DOT Barrier

Discuss On-Street Parking on Second St.

Second St. (SRSECOND)

Henry St. (SRHENRY)

PRC Sta 1103+81.03

PI Sta 1104+82.45

Curve Data
Δ = 14° 27′ 03.15″ (LT)
T = 101.42
L = 201.77
R = 800.00
E = 6.40
e = See Note 1
D.S. = 40 mph

+46 Prop. Type "C" Ent.

Sta. 1106+44.39
End Construction

Entrance/Alley Reconstruction Limits

Discuss use of Greenspace Above & Below MSE Wall

Investigate Sanitary Manhole

Disposition of Guy Pole

Discuss Storm Sewer System Under Bridge

IA 9 (ML009)

0 20
FEET

For Main Line Details
Refer to Sheet No. D.2

For Side Road Details
Refer to Sheet No. E.6

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.3

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VPI +96.390
Elv 672.17
Len 140.00 ft
K = 20
D.S. = 30 mph

+3.718%

-3.259%

VPI +16.390
Elv 665.00
Len 210.00 ft
K = 37
D.S. = 30 mph

+2.354%

Sta. 1106+44.39
End Cnstruction
Elev. 668.01

1105+46

-5.0%

Prop. Type "C" Ent.

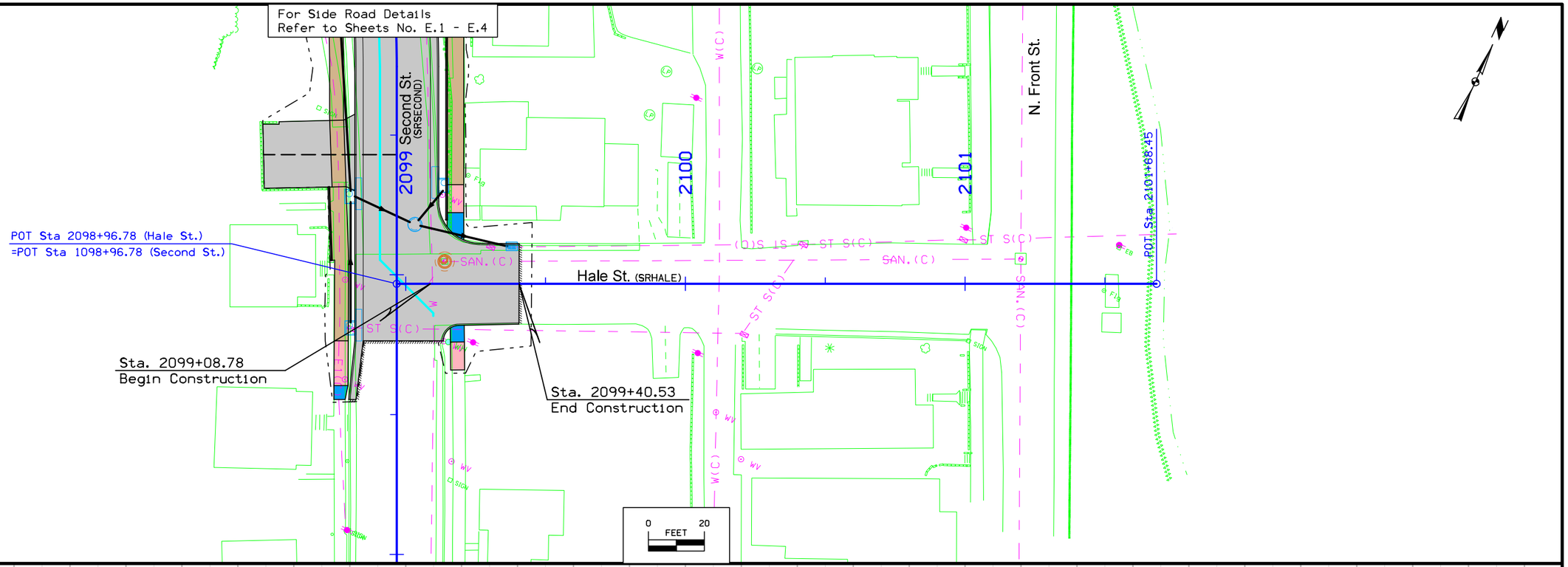
676 674 672 670 668 666 664 662 660 658 656 654 652 650 648 646 644 642

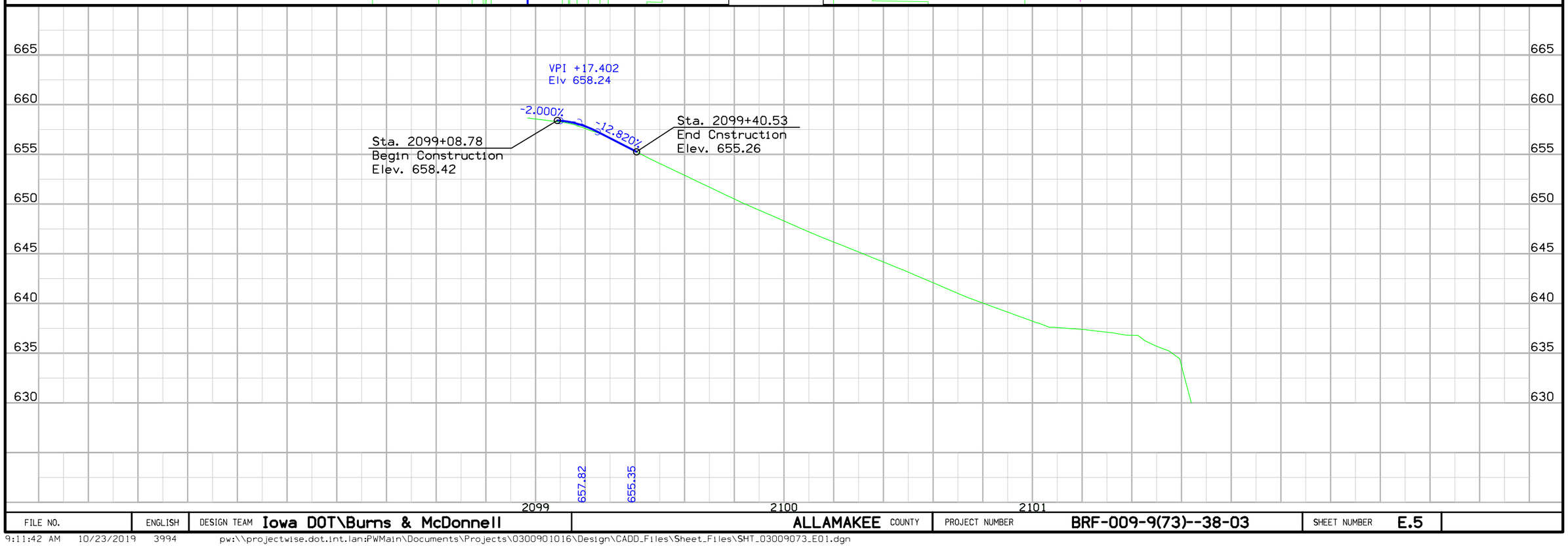
674 672 670 668 666 664 662 660 658 656 654 652 650 648 646 644 642 640

666.73 667.10 667.47 667.84 668.21 668.59 668.96 669.33 669.70 670.03 670.31 670.54 670.71 670.84 670.92 670.95 670.93 670.86 670.74 670.58 670.36 670.09 669.77 669.45 669.12 668.79 668.47 668.15 667.86 667.60 667.36 667.15 666.97 666.82 666.69 666.58 666.51 666.46 666.44 666.44 666.47 666.53 666.61 666.73 666.86 667.03 667.22 667.44 667.67 667.91

1102 1103 1104 1105 1106

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.4





FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.5

9:11:42 AM 10/23/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_E01.dgn

For Side Road Details
Refer to Sheets No. E.1 - E.4

Reconstruction of Existing Paved Swales

Sta. 3105+85.57
End Construction

Sta. 3104+92.60
Begin Construction

POT Sta 3104+80.57 (Henry St.)
=POT Sta 1104+80.57 (Second St.)

POT Sta 3107+55.91

3105

3106

3107

Henry St. (SRHENRY)

Second St. (SRSECOND)

N. Front St.

+68 Prop. Type "C" Ent.

Entrance Reconstruction Limits

0 FEET 20

VPI +12.570
Elv 666.17
Len 30.00 ft
K = 2
D.S. < 15 mph

-2.000%

-17.102%

Sta. 3104+92.60
Begin Construction
Elev. 666.57

Sta. 3105+85.57
End Cnstruction
Elev. 653.68

-3.4%

3105+68

Prop. Type "C" Ent.

670
665
660
655
650
645
640
635

666.40 665.83 664.75 663.19 661.48 659.77 658.06 656.35 654.63

3105 3106 3107

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER E.6

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ALLAMAKEE COUNTY
BRF-009-9(73)--38-03
MISSISSIPPI RIVER BRIDGE
LANSING, IOWA
PIN 16-03-009-010
SAP #414.6

Contact Information

Fieldwork performed by: Martin & Whitacre, Surveyors & Engineers, Inc.
1508 Bidwell Road
Muscatine, Ia 52761
POC: Matt Krause, P.L.S. 563-263-7691
EMAIL: MKRAUSE@MARTIN-WHITACRE.COM

Survey Data Submitted to: Burns & McDonnell
9400 Ward Parkway
Kansas City, Mo 64114
POC: Jonathon Tronson, P.E. 816-448-7491
EMAIL: JSTRONSON@BURNSMCD.COM

Party Personnel

Project Manager - Matt Krause, PLS
Field Supervisor - Seth Whitacre, PLS
Party Chiefs - Mike Sandsness, Joel Proffitt
Rodmen - Eric Allison

Date(s) of Survey

SAP#414.6 – Begin Date April 2019
End Date October 2019

General Information

This survey was completed to provide topographic survey information for the design of a new bridge over the Mississippi River at Lansing, Iowa.

Horizontal Control

The coordinate system used is NAD83(2011) (Epoch 2010.00) Iowa Regional Coordinate System Zone 3 – Elkader, U. S. Survey Feet.

Three Allamakee County GPS Monuments (#235, #236 & #228) were checked for this project using the Iowa RTN and IASPC North Zone NAD83(1996). Their published coordinate values were established in 2002 as part of the Allamakee County wide GPS Control Network. The average horizontal error of the published versus observed Northings was 0.11'. The average horizontal error of the published versus observed Eastings was .01'. Each of these monuments were observed with GPS for a 5 minute window using the Iowa RTN. Sixteen on-site control points were set on the Iowa side of the river and four on-site control points were set on the Wisconsin side of the river. The twenty on-site control points were observed with GPS for 3 minute windows on 4 separate occasions, with appropriate time spans in-between, using the Iowa RTN. All new Control Points were held at the observed Horizontal Positions.

Vertical Control

The vertical datum used is NAVD88 computed from GPS Observations and Geoid 12A.

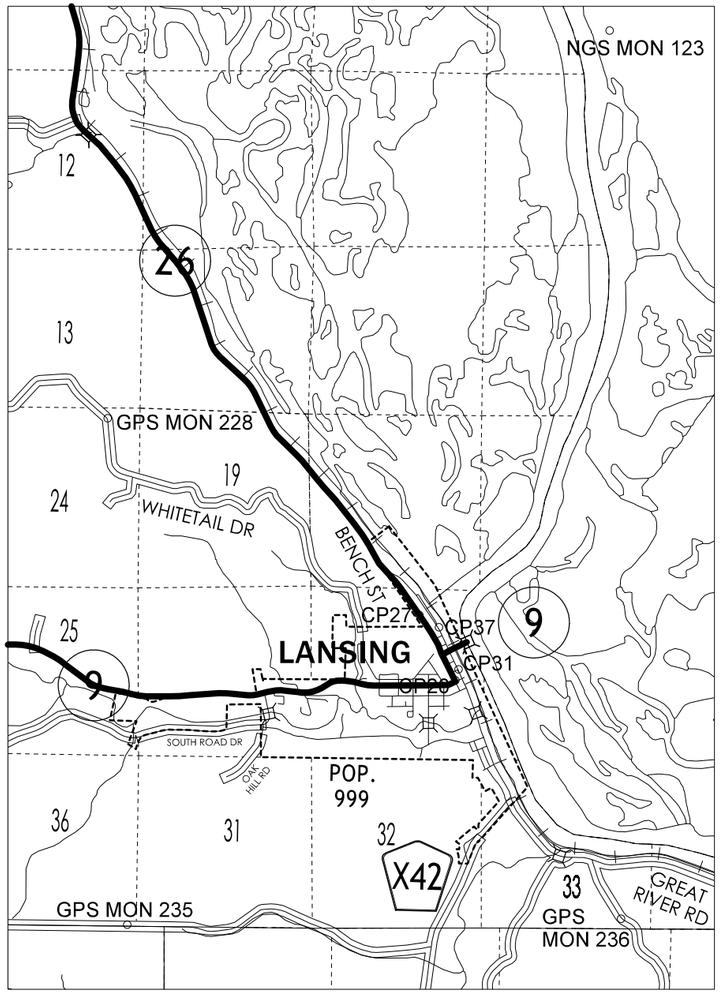
Benchmarks checked this project consisted of 1 NGS Benchmark (H123) and 3 Allamakee County GPS Monuments (#235, #236 & #228). The vertical error on the NGS Benchmark was -.07', and the average vertical error on the 3 County Monuments was -0.15'. Eleven Benchmarks were established on the Iowa side and 2 Benchmarks were established on the Wisconsin side of the river. The observed GPS elevations were "held" at 4 on-site control points, 2 on the Iowa Side and 2 on the Wisconsin side of the river. The elevations of these 4 Control Points were "held" based on the average differences between the Observed GPS elevations and the leveled elevations. Elevations were then transferred to the other 16 on-site Control Points and the 13 newly established Benchmarks with 3 dependent differential level loops. The maximum error of closure of these 3 loops was .005'.

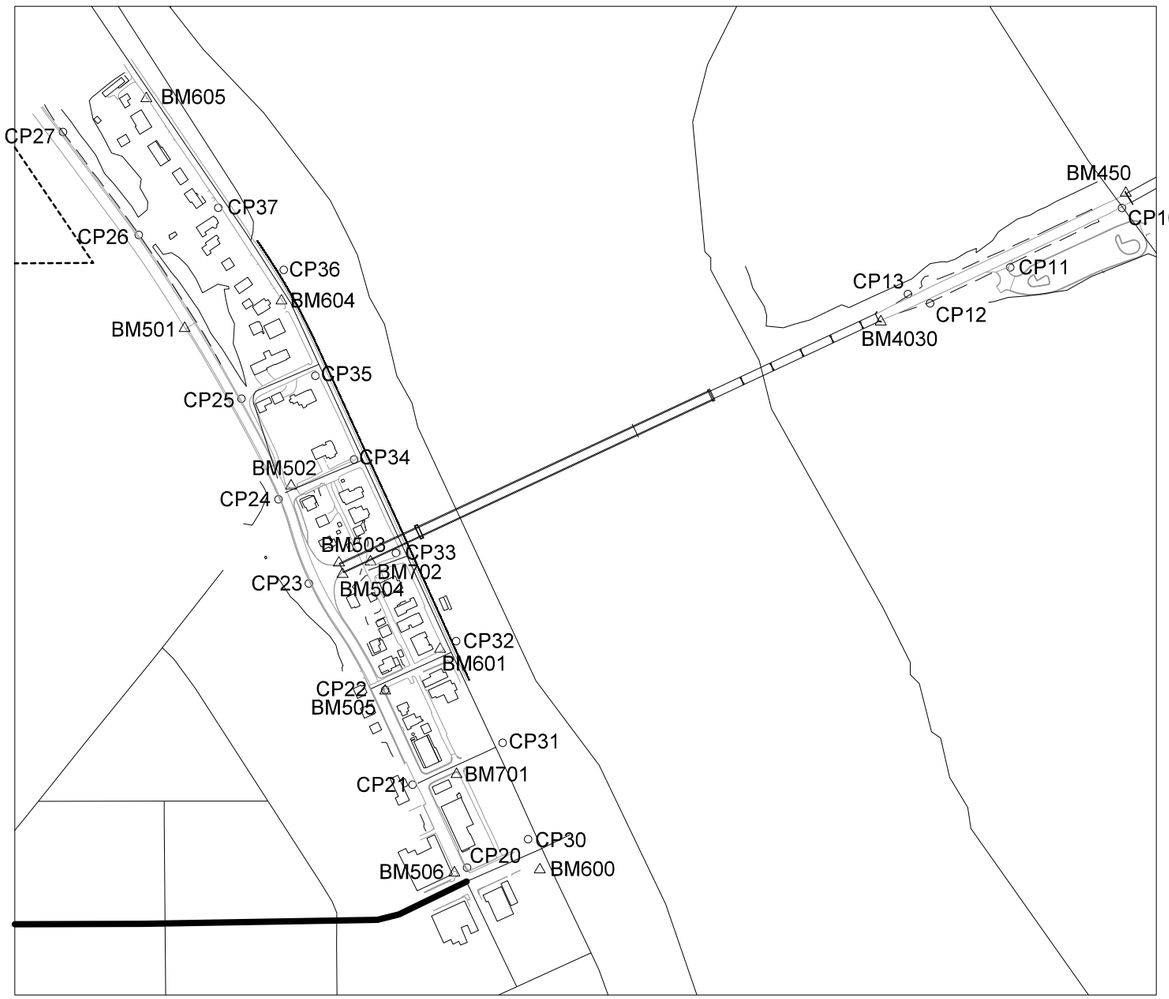
Alignment Information

No horizontal alignments for the existing roadways were computed for this survey.

CONTROL POINT VICINITY MAPS

This map is a guide to the vicinity of the primary project control points
Primary control is for use with RTK base stations and for RTN validation.
Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.





HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
VERT. DATUM: NAVD88
Ia. Regional Coordinate System Zone 3

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER G.2

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HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 3

Point #	Northing	Easting	Elevation	Description
10	9,435,956.03	13,497,654.58	638.47	FD 3/4" RBR W/WISC. DOT RED CAP
11	9,435,792.02	13,497,346.39	632.16	FD WISC DOT ALUM CAP
12	9,435,692.52	13,497,125.43	631.83	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
13	9,435,718.27	13,497,063.98	632.34	FD 3/4" RBR W/WISC. DOT RED CAP
20	9,434,136.03	13,495,847.64	650.90	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
21	9,434,364.89	13,495,697.40	656.86	SET CUT X IN CONC WALK
22	9,434,626.10	13,495,621.84	657.29	SET 1/2" x 36" REBAR
23	9,434,920.03	13,495,411.07	668.52	SET 1/2" x 36" REBAR
24	9,435,151.80	13,495,327.20	666.45	SET 1/2" x 36" REBAR
25	9,435,429.56	13,495,225.42	671.11	SET 1/2" x 36" REBAR
26	9,435,881.64	13,494,941.70	695.34	SET 1/2" x 36" REBAR
27	9,436,165.15	13,494,732.92	697.47	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
30	9,434,214.17	13,496,016.31	638.99	FOUND PROPERTY CORNER, ALUM CAP #20165
31	9,434,480.02	13,495,945.80	635.66	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
32	9,434,760.92	13,495,817.75	636.18	SET 1/2" x 36" REBAR
33	9,435,004.23	13,495,651.34	639.48	SET 1/2" x 36" REBAR
34	9,435,262.03	13,495,536.06	638.96	SET CUT X IN CONC WALK
35	9,435,492.74	13,495,429.12	639.22	SET CUT X IN CONC WALK
36	9,435,785.29	13,495,341.98	634.05	SET BERNTSEN 30" DRIVE-IN MON, 2-1/2" ALUM CAP
37	9,435,956.41	13,495,161.08	635.66	SET 1/2" x 36" REBAR
123	9454318.76	13500640.81	637.63	NGS MON H123
228	9442279.19	13485049.14	1122.87	COUNTY GPS MON 228
235	9426548.95	13485653.65	1118.11	COUNTY GPS MON 235
236	9426732.07	13500994.82	786.77	COUNTY GPS MON 236
450	9,435,996.52	13,497,665.24	638.64	CUT SQR ON NW BRIDGE ABUT, SLOUGH BRIDGE
501	9,435,623.92	13,495,068.53	688.10	IDOT BUTTON IN TOP OF BARRIER WALL
502	9,435,189.13	13,495,362.24	666.68	BOLT IN "CHATTANOOGA" ON HYD NE QUAD HENRY/2ND ST
503	9,434,976.61	13,495,494.34	672.11	BRASS DISC IN N. SIDE BRIDGE ABUT, IA END MISS. RIVER BRIDGE
504	9,434,945.42	13,495,504.18	671.69	CUT X IN S. SIDE BRIDGE ABUT, IA END MISS. RIVER BRIDGE
505	9,434,623.60	13,495,621.92	659.72	ARROW ON HYD SE QUAD HALE/2ND ST.
506	9,434,121.67	13,495,812.74	653.56	SW BOLT W/TAG ON HYD NW QUAD MAIN/2ND ST.
600	9,434,130.09	13,496,048.51	639.96	BOLT IN "MUELLER" ON HYD SW QUAD MAIN/FRONT ST.
601	9,434,738.59	13,495,773.35	638.76	YELLOW BENCH TIE IN PP, NW QUAD HALE/FRONT ST
604	9,435,699.71	13,495,335.54	638.60	ARROW ON HYD @ 541 N. FRONT ST.
605	9,436,257.85	13,494,962.84	636.74	SW BOLT W/TAG ON HYD AT 691 FRONT ST.
701	9,434,393.23	13,495,818.72	648.23	NE BOLT ON HYD SW QUAD WILLIAM/ALLEY
702	9,434,979.47	13,495,581.33	650.36	SE BOLT ON HYD UNDER BRIDGE
4030	9,435,642.17	13,496,989.16	636.86	CUT X IN SE WING WALL, WI END MISS. RIVER BRIDGE

ALIGNMENT COORDINATES

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)
1	ML009	100+00.00	9434856.62	13495130.02															
2	ML009							118+96.00	9435661.51	13496846.69	120+23.42	9435715.60	13496962.06	121+50.47	9435753.89	13497083.60			
3	ML009							123+75.26	9435821.44	13497298.00	125+20.39	9435865.05	13497436.42	126+64.96	9435929.07	13497566.67			
4	ML009							126+64.96	9435929.07	13497566.67	128+18.35	9435996.74	13497704.32	129+71.55	9436076.03	13497835.63			
1	SRSECOND	1097+36.39	9434489.49	13495663.49															
2	SRSECOND							1099+74.50	9434705.67	13495563.70	1100+24.76	9434751.31	13495542.63	1100+74.50	9434790.31	13495510.93			
3	SRSECOND							1100+74.50	9434790.31	13495510.93	1102+30.26	9434911.18	13495412.69	1103+81.03	9435062.31	13495374.97			
4	SRSECOND							1103+81.03	9435062.31	13495374.97	1104+82.45	9435160.72	13495350.42	1105+82.80	9435249.88	13495302.08			
5	SRSECOND	1106+98.84	9435351.90	13495246.77															
1	SRHENRY	3104+80.57	9435157.14	13495344.93															
2	SRHENRY	3107+55.91	9435274.69	13495593.92															
1	SRHALE	2098+96.78 R1	9434635.11	13495596.27															
2	SRHALE	2101+68.45 R1	9434748.97	13495842.93															
1	EntR123	10+00.00	9435826.27	13497313.12															
2	EntR123							10+61.93	9435767.52	13497332.70	10+85.60	9435745.07	13497340.19	11+06.14	9435736.62	13497362.30			
3	EntR123							11+06.14	9435736.62	13497362.30	11+55.83	9435718.90	13497408.72	12+01.88	9435733.37	13497456.25			
4	EntR123	12+32.74	9435742.36	13497485.78															
1	RETWALL01	1999+80.00	9434743.23	13495566.18															
2	RETWALL01	2000+12.01	9434772.29	13495552.77															
3	RETWALL01	2000+62.01	9434813.92	13495525.06															
4	RETWALL01	2002+12.58	9434949.02	13495458.60															
5	RETWALL01	2002+27.58	9434963.98	13495457.59															
6	RETWALL01	2002+52.58	9434982.17	13495474.75															
7	RETWALL01	2003+07.33	9435005.41	13495524.32															
8	RETWALL01	2003+72.66	9435064.56	13495496.59															
9	RETWALL01	2004+22.41	9435043.44	13495451.54															
10	RETWALL01	2004+42.41	9435047.05	13495431.87															
11	RETWALL01	2004+57.41	9435057.38	13495420.99															
12	RETWALL01	2005+13.84	9435108.55	13495397.20															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks
			Spiral Data								Curve Data				
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
C1	ML009										7°38'00.3"	127.42	254.47	1910.00	4.25	
C2	ML009										8°41'25.2"	145.13	289.70	1910.00	5.51	
C3	ML009										4°56'44.8"	153.39	306.59	3551.76	3.31	
C1	SRSECOND										14°19'26.2"	50.26	100.00	400.00	3.15	
C2	SRSECOND										25°05'22.8"	155.76	306.53	700.00	17.12	
C3	SRSECOND										14°27'03.1"	101.42	201.77	800.00	6.40	
C1	EntR123										50°40'01.8"	23.67	44.22	50.00	5.32	
C2	EntR123										37°49'47.1"	49.69	95.74	145.00	8.28	

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														
		FT	%	FT	FT														
ML009	C1	1910	3.4	70	41	PV-301	118+06.00	118+47.00	118+88.00	119+17.00			118+96.00						
							122+40.47	121+99.47	121+58.47	121+29.47			121+50.47						
ML009	C2	1910	3.4	70	41	PV-301	122+85.26	123+26.26	123+67.26	123+96.26			123+75.26						
																			Refer to Sheet D.4 for superelevation transition at end ML009 curve C2 (PCC Sta. 126+64.96)
SRSECOND	C1	400																	Normal Crown
SRSECOND	C2	700																	Refer to Sheet E.3 for superelevated transition
SRSECOND	C3	800																	Refer to Sheet E.3 for superelevated transition

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Second Street
-Maintain traffic during Stage 1.
-Close from Hale Street to north of Henry Street using TC-252 during Stage 2.

WI-82
-Place channelizers on north shoulder using Standard Road Plan TC-202 during Stage 1.
-Close using Standard Road Plan TC-252 during Stage 2.

Existing bridge
-Maintain traffic during Stage 1.
-Close to traffic during Stage 2.

Private entrances
-Maintain access via local road network for the duration of the project.

108-26A
08-01-08

STAGING NOTES

Stage 1:
-Existing bridge and all roadways remain open to traffic.

-Place 42” channelizers on north side of WI-82 using Standard Road Plan TC-202.

-Detour Pedestrian Traffic as shown in Standard Road Plan TC-601.

-Construct new bridge adjacent to existing bridge, including both abutments and a portion of the new retaining wall on the Iowa approach to the new bridge, as shown on sheet J.3.

Stage 2:
-Close Second Street from Hale Street to north of Henry Street, existing bridge, and WI-82 using Standard Road Plan TC-252. Closures of Front Street between Henry Street and Hale Street shall not be allowed concurrent with closure of Second Street.

-Detour traffic using detours identified in sheets J.5 through J.11.

-Detour Pedestrian Traffic as shown in Standard Road Plan TC-601.

-Construct Second Street improvements, Iowa bridge approach, Wisconsin bridge approach, roadway tie-in to WI-82, and Big Slough Landing improvements as shown on sheet J.4.

-Remove traffic control and open all lanes and new bridge to traffic.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
None.	

113-2
04-16-13

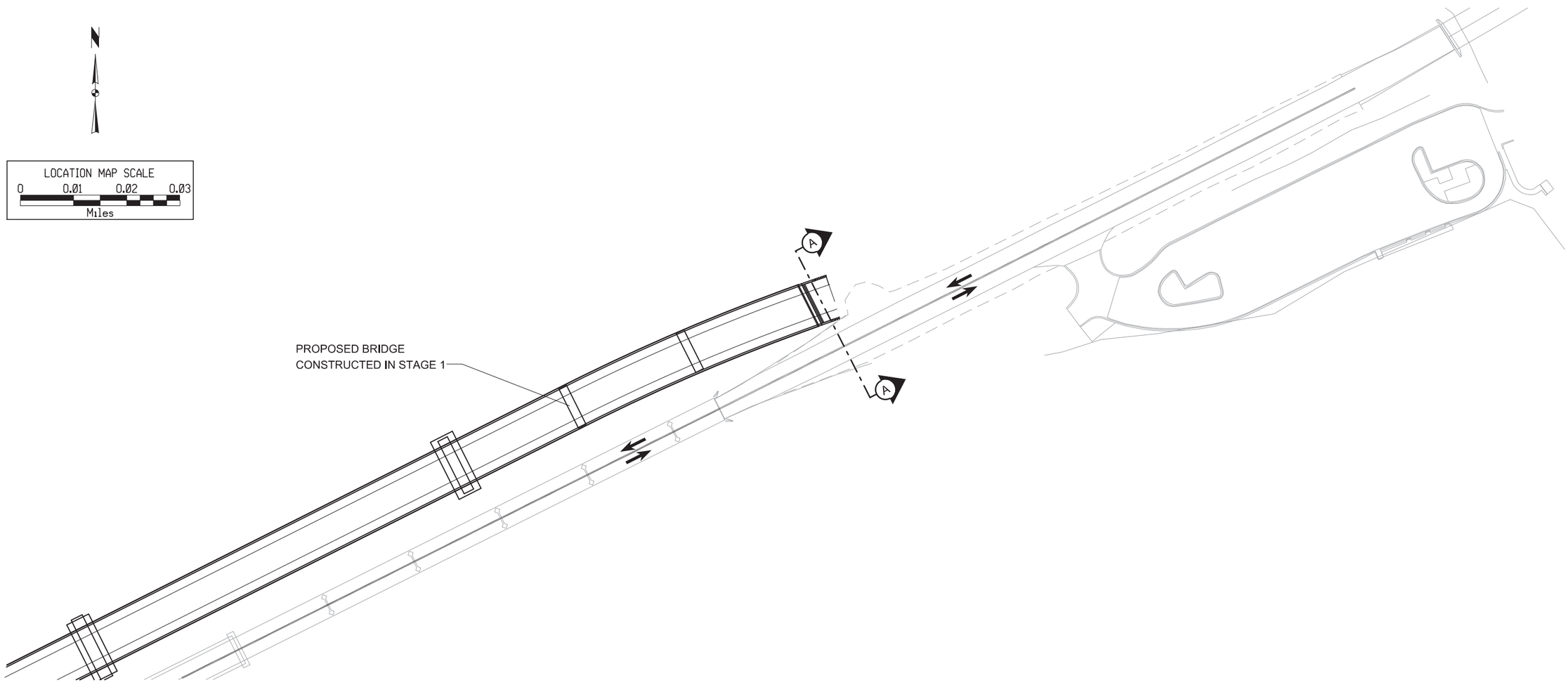
PEDESTRIAN PATH CLOSURES

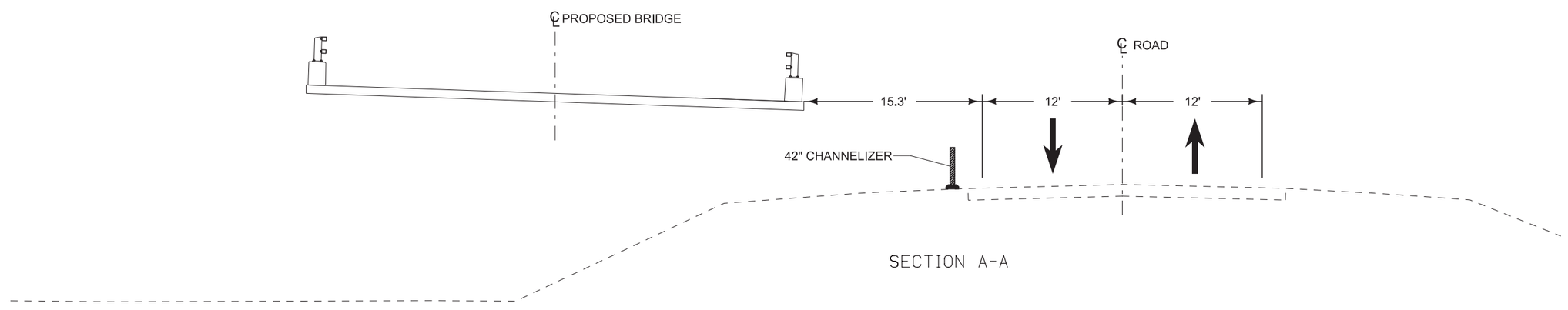
Refer to TC-601.

*Assumes 6 foot wide barricade.
Closures may need to be removed and re-established.

Location	Side	Type III Barricades* No.	Remarks

LOCATION MAP SCALE
0 0.01 0.02 0.03
Miles



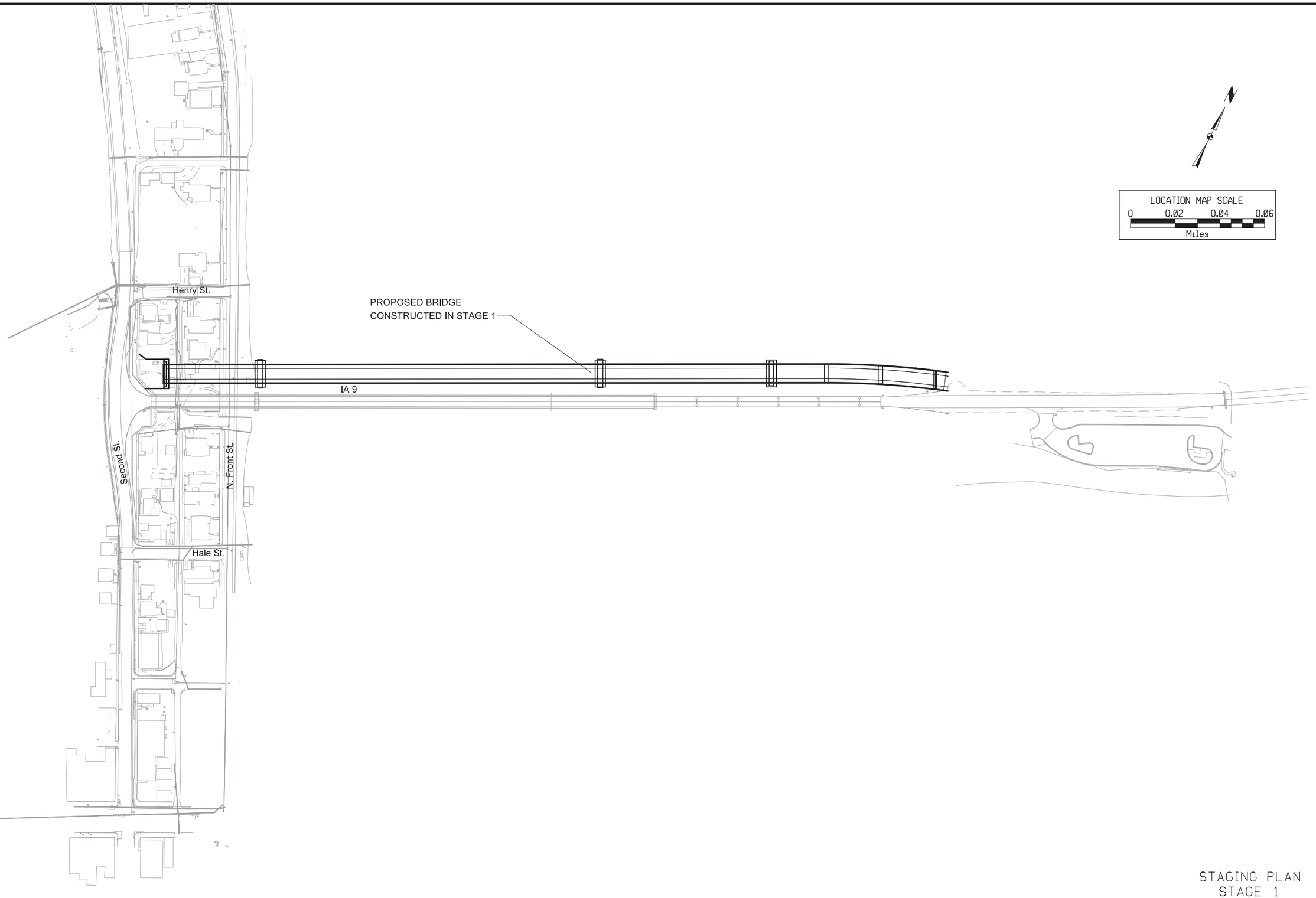


SECTION A-A

SECTION VIEW

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.2

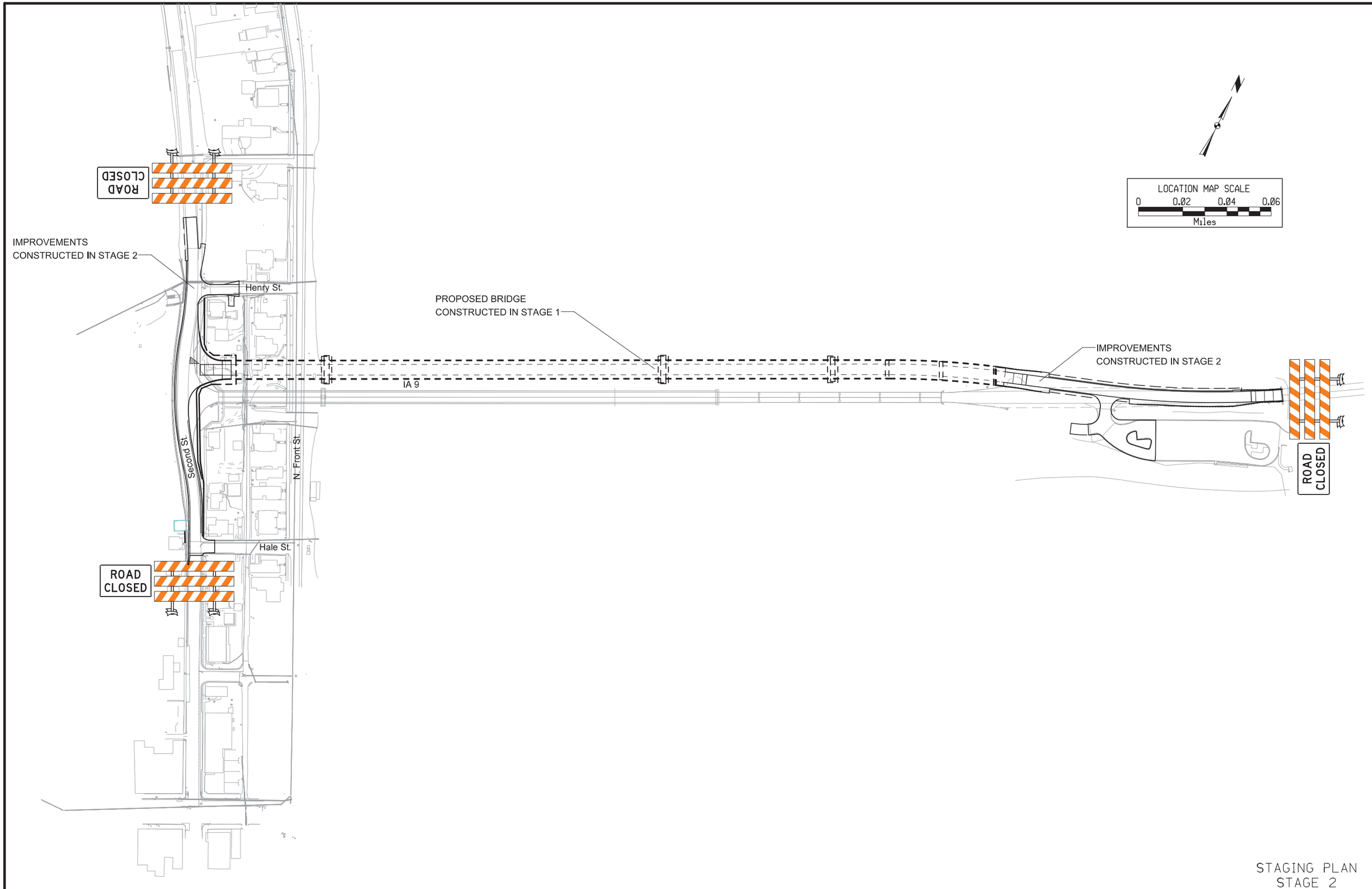
SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



STAGING PLAN
STAGE 1

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.3	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



STAGING PLAN
STAGE 2

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.4	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

LOCATION MAP SCALE
0 3 6
Miles

PROJECT LOCATION

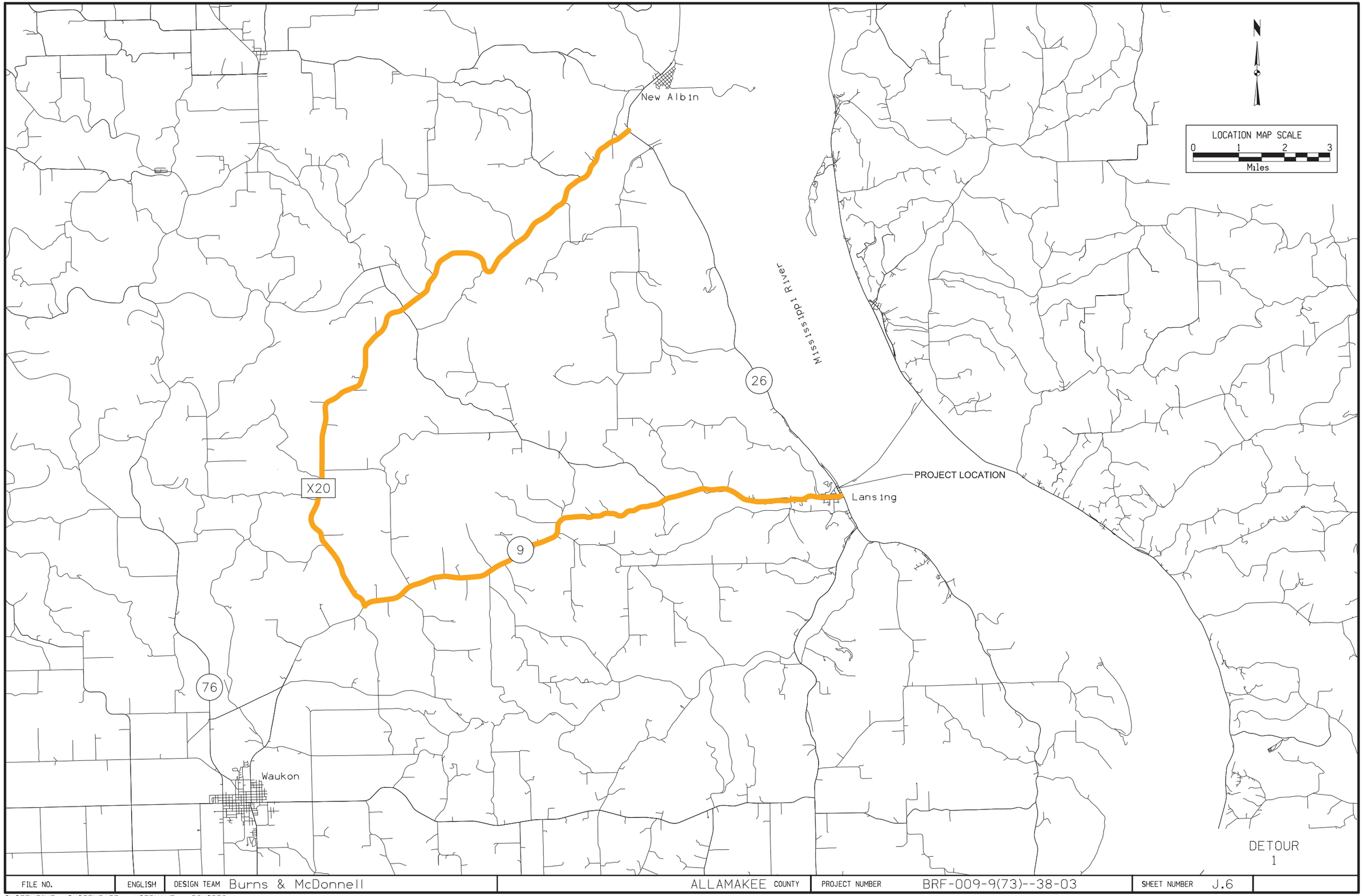
La Crosse
Brownsville
New Albin
Lansing
Harpers Ferry
Prairie du Chien
Marquette
Waukon
Caledonia
Houston
Spring Grove
Mississippi River

35
82
26
X52
76
9
X20
5

DETOUR KEY MAP

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.5	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.6	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

LOCATION MAP SCALE
0 1 2 3
Miles

Mississippi River

Harpers Ferry

X52

76

Prairie du Chien

Marquette

PROJECT LOCATION

Lansing

26

9

DETOUR
2

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.7	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

LOCATION MAP SCALE
0 1 2 3
Miles

Mississippi River

35

Harpers Ferry

X52

76

Prairie du Chien

Marquette

82

PROJECT LOCATION

Lansing

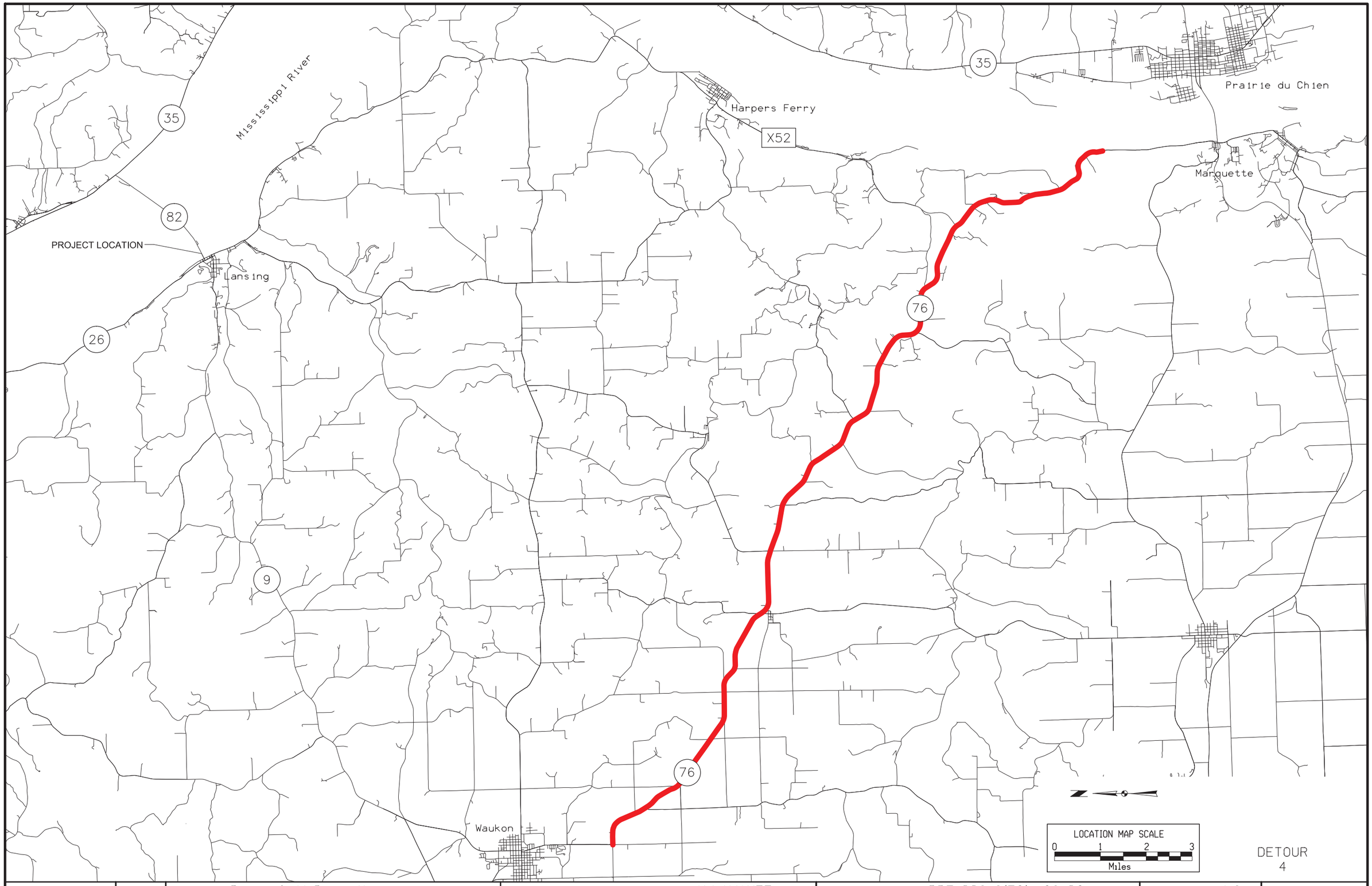
26

9

DETOUR
3

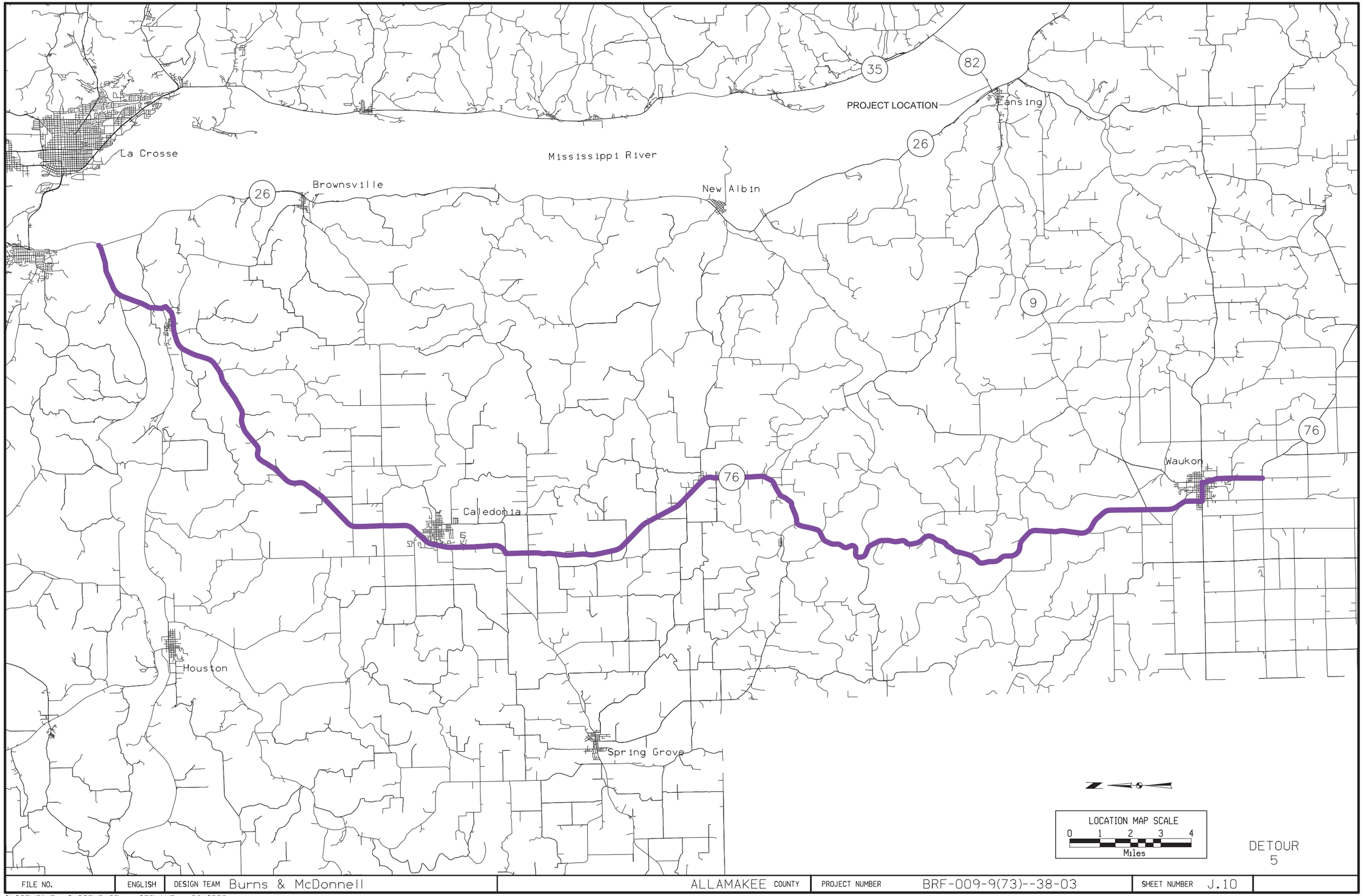
FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.8	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.9	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC



FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.10	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

LOCATION MAP SCALE
0 1 2 3
Miles

35
82
PROJECT LOCATION
35
La Crosse
Mississippi River
26
Brownsville
New Albin
Hokah
DETOUR
6

FILE NO.	ENGLISH	DESIGN TEAM Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER J.11	

SYSTEMTIME SYSTEMDATE USERNAME DGNSPEC

1101 1102 1102 1103 1104 1105 1106

POT Sta 1102+97.97 (Second St.)
=POT Sta 102+97.97 (IA 9)

POT Sta 1104+80.57 (Second St.)
=POT Sta 3104+80.57 (Henry St.)

1103

Second St. (SRSECOND)

3.00′
12.00′
12.00′
3.00′

Sta 1101+82.76
15.00 Rt Second St

Sta 103+38.05
36.82 Rt IA 9

94°18′35.22″

R 249.50′

R 49.50′

R 20.00′

1102+20.38
16.73 Rt Second St

Sta 103+39.00
37.98 Rt IA 9

Radius Point
103+51.68 53.45 Rt

Sta 103+43.26
35.31 Rt IA 9

Radius Point
1102+15.26 65.99 Rt

R 148.50′

IA 9 (ML009)

Sta 104+05.79
21.50 Rt IA 9

1104

1.50′
1.50′

8.00′
12.00′

8.00′
12.00′

Radius Point
104+05.79 170.00 Rt

Sta 1104+47.21
15.70 Rt Second St

94°07′51.75″

3105

R 398.50′

R 24.50′

Sta 1103+66.26
35.57 Rt Second St

Sta 1104+47.29
16.70 Rt Second St

Radius Point
3105+17.56 36.00 Rt

Sta 3105+17.56
11.50 Rt Henry St

R 48.50′

Sta 103+89.23
21.50 Lt IA 9

Radius Point
1103+89.23 70.00 Lt

Henry St. (SRHENRY)

R 24.50′

Sta 1105+22.68
17.31 Rt Second St

10.00′

Radius Point
3105+23.62 36.00 Lt

Sta 3105+23.62
11.50 Lt Henry St

3106

12.00′
12.00′

Note:
Dimensions shown are to the edge of pavement.
Refer to G sheets for horizontal alignment information.
Refer to appropriate Standard Road Plans for additional information.

Radius Point
1101+82.76 264.50 Rt

1105

0 FEET 20

Radius Point
1104+66.27 414.50 Rt

Geometric Details
Intersection of
IA 9 and Second St

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER L.1

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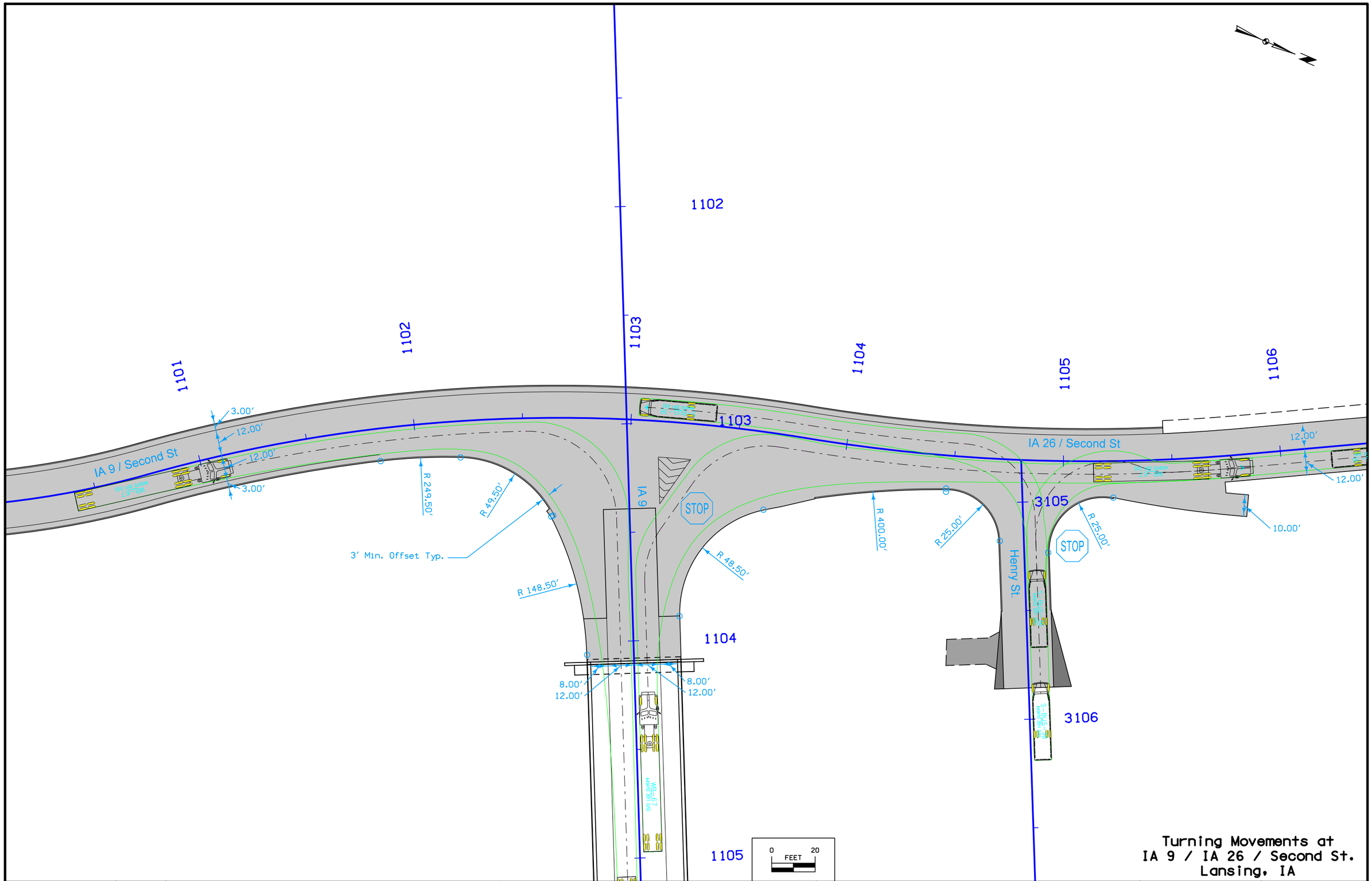

Turning Movements at IA 9 / IA 26 / Second St. Lansing, IA

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER L.2

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STORM SEWER

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

INTAKES AND UTILITY ACCESSES

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Extension Length** FT	Notes
I-1	103+68 26.3 Lt	SW-546R	672.88	667.50		
I-2	103+60 28.6 Rt	SW-546L	671.72	666.50		
I-3	1102+48 15 Lt	SW-507R	670.48	663.50		
I-4	1101+42 15 Lt	SW-507R	666.64	661.50		
I-5	1100+55 15 Lt	SW-507R	662.47	656.50		
I-6	1101+15 46 Lt	DR-201	670.62	666.18		
I-7	1100+55 15 Rt	SW-507L	662.46	660.10		
I-8	1099+28 15 Lt	SW-507R	659.35	653.65		
I-9	1098+81 15 Lt	SW-507R	658.77	655.00		
I-10	1099+32 15 Rt	SW-507L	659.43	653.50		
I-11	2099+37.91 14.5 Lt	SW-501	655.50	651.50		
MH1	103+52.87 5.46 Rt	SW-401 (48 in.)	671.36	665.50		
MH2	1100+55 30 Lt	SW-401 (48 in.)	662.71	658.30		
MH3	1099+18 6.5 Rt	SW-401 (48 in.)	658.85	652.50		
I-12	1103+45 15 Lt	SW-507L	670.67	664.40		
I-13	1104+50 15.67 Rt	SW-507R	667.43	662.68		
I-14	1105+40 25 Lt	DR-201	666.84	661.45		
I-15	1105+22 15 Lt	SW-509R	666.65	660.40		
MH4	1104+50 18 Lt	SW-401 (48 in.)	667.64	660.40		
MH5	1104+98 20 Lt	SW-401 (60 in.)	664.79	659.50		
MH6	1105+00 44 Rt	SW-401 (48 in.)	666.86	658.60		

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'	(1) Pipe Size 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-1	I-1	MH1	2000	15	42	37.2	4		668.00	666.50			
P-2	I-2	MH1	2000	15	31	26.3	1.9		667.00	666.50			
P-3	MH1	I-3	2000	15	90	85.5	2.2		666.00	664.10			
P-4	I-3	I-4	2000	15	113	108.4	1.8		664.00	662.10			
P-5	I-4	I-5	2000	15	92	87.7	4.2		662.00	658.30			
P-6	I-6	MH2	2000	15	67	62.3	13.2		666.70	658.50			
P-7	MH2	I-5	2000	15	19	14.2	6.4		658.40	657.50			
P-8	I-7	I-5	2000	15	37	32.5	1.2		657.50	657.10			
P-9	I-5	I-8	2000	15	128	123.5	2.2		657.00	654.30			
P-10	I-9	I-8	2000	15	51	47.0	2.7		655.50	654.25			
P-11	I-8	MH3	2000	15	29	25.0	4.4		654.20	653.10			
P-12	I-10	MH3	2000	15	22	17.2	5.2		654.00	653.10			
P-13	MH3	I-11	2000	15	40	35.3	1.7		653.00	652.40			
P-14	I-12	MH4	2000	15	405	401.0	3.7		664.90	661.00			
P-15	I-13	MH4	2000	15	39	35.0	6.5		663.18	660.90			
P-16	MH4	MH5	2000	15	52	47.1	1.7		660.90	660.10			
P-17	I-14	I-15	2000	15	26	22.0	4.3		661.95	661.00			
P-18	I-15	MH5	2000	15	28	23.7	3.4		660.90	660.10			
P-19	MH5	MH6	2000	15	67	62.9	1.3		660.00	659.10			

SURVEY SYMBOLS

- CP Control Point
- PCT Photo Control Target
- BM Bench Mark
- GR Ground Shot (All Survey Points)
- ROW Right of Way Mark
- SIGN SI Sign
- GP GP Guard Post (Less Than 4 Posts)
- LP LP L.P. Tank
- Flg FLG Flag Poles
- BB BB Billboard
- TDC Tree Deciduous
- TEV Evergeen Tree
- PPA Power Pole (Alliant Energy)
- PR Electic Riser Pole
- EB EB Electrical Box
- LUM Luminaire
- WH WHD Water Hydrant
- WV WV Water Valve
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- TP TPD Telephone Pedestal

- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- SNP Unpaved Shoulder
- BL Topo Breakline
- GU Gutter In Front of Curb
- CU Back of Curb
- BRG Bridge
- RET Retaining Walls
- RIP Rip-Rap
- D Centerline Draw or Stream (Down)
- TER Terrace
- BLD Building or Foundation
- FW Wire Fence
- GDL Guard Rail Steel
- CON Concrete or A/C Slab
- PIP Pipe Culvert
- TLNL Tree Line Left
- SWK Sidewalk
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- FCL Chain Link and Security Fence
- ENP Edge Paved Entrance & Park Lot
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- EW Edge of Water
- TW Top of Water
- BNK Stream Bank
- EG Edge of Gravel Road

SURVEYED UTILITY OWNER SYMBOL

Sub-Surface Utility Mapping Quality Level is in accordance
Standard Guidelines for the Collection and Depiction of Exi
Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- PPA Alliant Energy
- E1(C) EL1C Alliant Energy - Quality C
- W(C) WL1C City of Lansing (People's Service) - Quality C
- W WL1D City of Lansing (People's Service) - Quality D
- ST S(C) ST1C City of Lansing (People's Service) - Quality C
- SAN.(C) SA1C City of Lansing (People's Service) - Quality C
- TV(C) TV1C Mediacom - Quality C
- T1(C) TL1C Century Link - Quality C
- FO(C) FO1C Mediacom - Quality C

UTILITY LEGEND

Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

T1(C)
Centurylink
Tom Sturmer
700 W. Mineral
Littleton, CO 80120
720-578-8090

FO(C)
TV(C)
Mediacom
Brandon Thies
115 South Marquette
Prairie Du Chien, WI 53821
608-380-1083

E1(C)
Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

W(C)
W
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

ST S(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

SAN.(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Black	(17)	Proposed Storm Sewer Details, Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	Design Color No.	
Gray, Light	(48)	Proposed Pavement Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Ground Line Profile and Existing Utilities Information
Black	(17)	Proposed Pipes and Intakes

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Previously Constructed Pipe or Structure
- Direction of Pipe Flow

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Existing Ground
- Proposed Ground
- Previously Constructed Pipe or Structure
- Proposed Pipe or Structure

Reference Point
Station

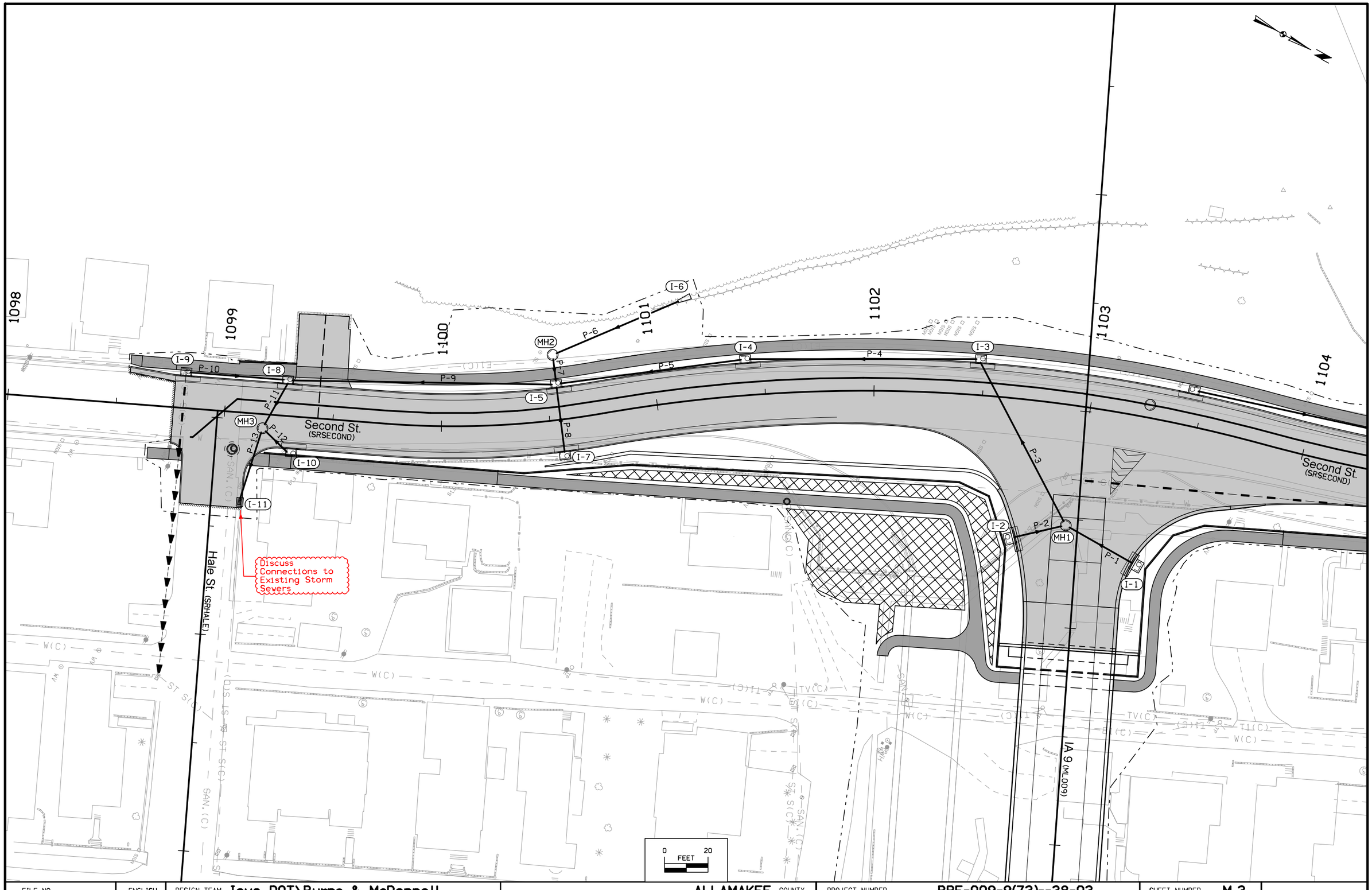
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal
- Obliterate Old Roadbed

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

STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES M)



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	M.3

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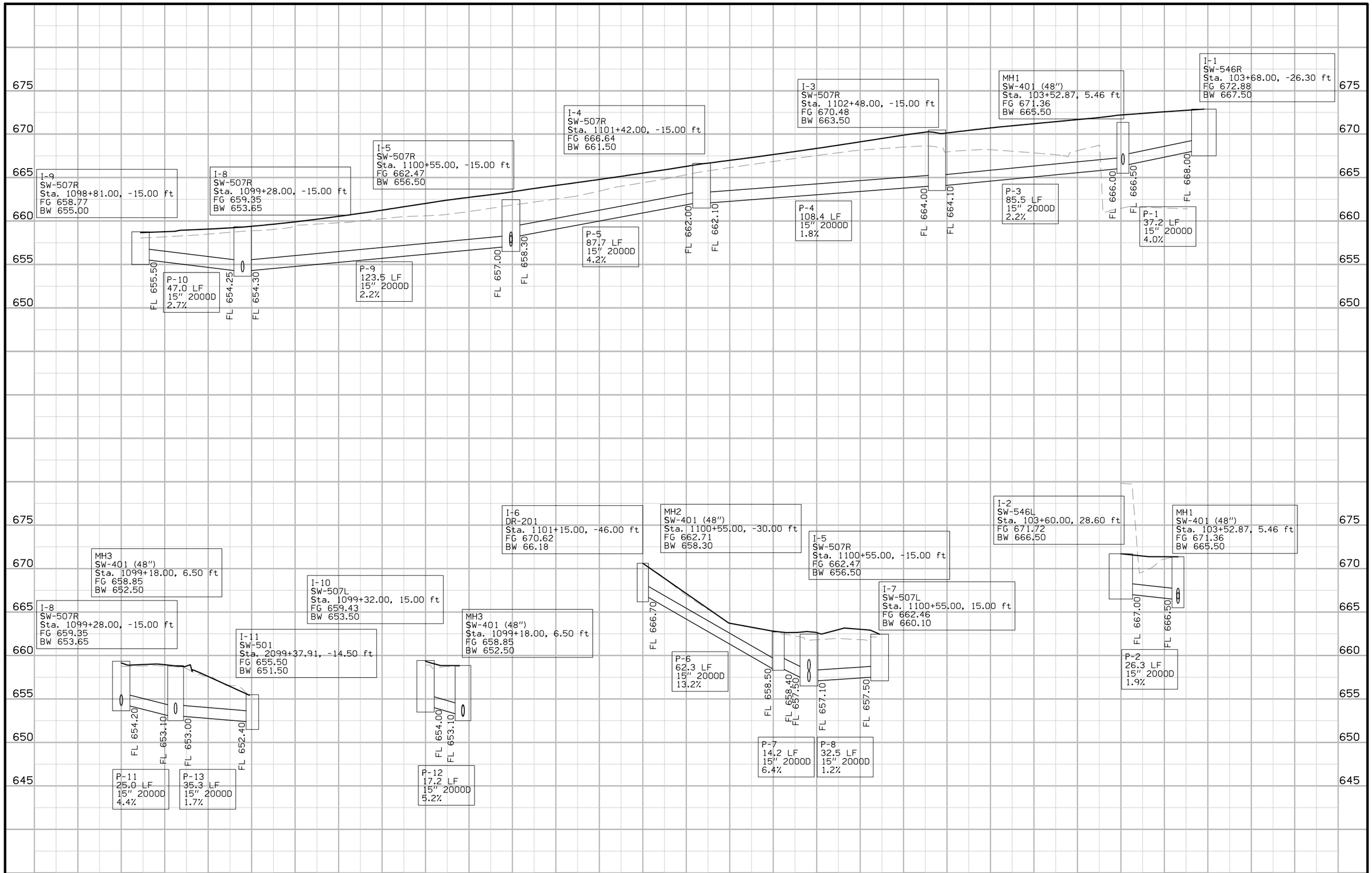
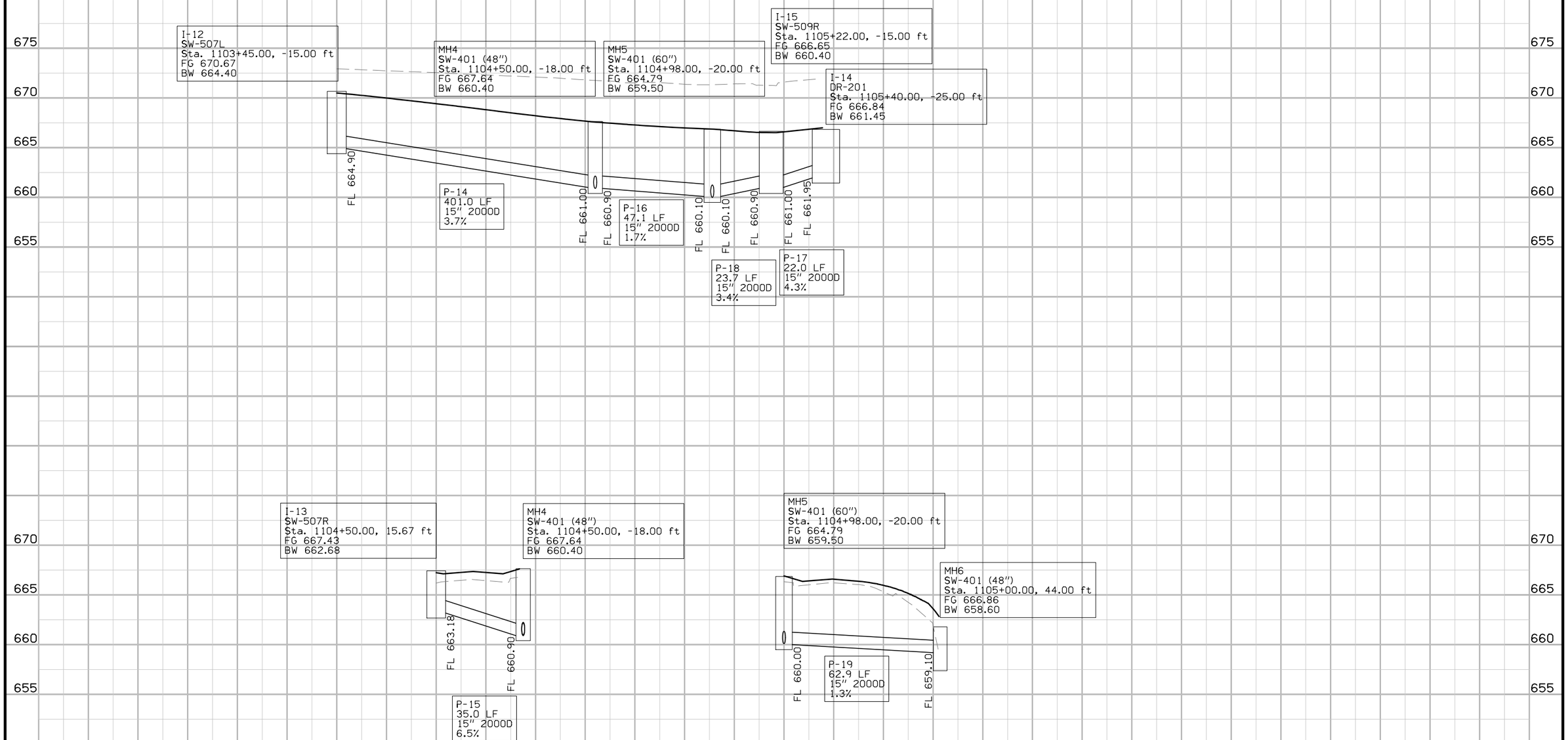


FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell		ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	M.4

1102
1103
1104
1105
1106
I-12
P-14
MH4
P-16
MH5
P-18
P-17
I-14
I-15
P-19
Second St.
(SRSECOND)
P-15
I-13
MH6
Henry St. (SRHENRY)
IA 9 (ML009)
Discuss Connections to Existing Storm Sewers
0 20
FEET

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER M.5

3:32:54 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_M03.dgn



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER M.6

SURVEY SYMBOLS

- CP Control Point
- PCT Photo Control Target
- BM Bench Mark
- GR Ground Shot (All Survey Points)
- ROW Right of Way Mark
- SIGN SI Sign
- GP GP Guard Post (Less Than 4 Posts)
- LP LP L.P. Tank
- Flg FLG Flag Poles
- BB BB Billboard
- TDC Tree Deciduous
- TEV Evergeen Tree
- PPA Power Pole (Alliant Energy)
- PR Electic Riser Pole
- EB EB Electrical Box
- LUM Luminaire
- WH WHD Water Hydrant
- WV WV Water Valve
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- TP TPD Telephone Pedestal

- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- SNP Unpaved Shoulder
- BL Topo Breakline
- GU Gutter In Front of Curb
- CU Back of Curb
- BRG Bridge
- RET Retaining Walls
- RIP Rip-Rap
- D Centerline Draw or Stream (Down)
- TER Terrace
- BLD Building or Foundation
- FW Wire Fence
- GDL Guard Rail Steel
- CON Concrete or A/C Slab
- PIP Pipe Culvert
- TLNL Tree Line Left
- SWK Sidewalk
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- FCL Chain Link and Security Fence
- ENP Edge Paved Entrance & Park Lot
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- EW Edge of Water
- TW Top of Water
- BNK Stream Bank
- EG Edge of Gravel Road

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- PPA Alliant Energy
- E1(C) EL1C Alliant Energy - Quality C
- W(C) WL1C City of Lansing (People's Service) - Quality C
- W WL1D City of Lansing (People's Service) - Quality D
- ST S(C) ST1C City of Lansing (People's Service) - Quality C
- SAN.(C) SA1C City of Lansing (People's Service) - Quality C
- TV(C) TV1C Mediacom - Quality C
- T1(C) TL1C Century Link - Quality C
- FO(C) FO1C Mediacom - Quality C

UTILITY LEGEND

Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

T1(C)
Centurylink
Tom Sturmer
700 W. Mineral
Littleton, CO 80120
720-578-8090

FO(C)
TV(C)
Mediacom
Brandon Thies
115 South Marquette
Prairie Du Chien, WI 53821
608-380-1083

E1(C)
Alliant Energy
Laura Barr
200 1st St. S.E. #1901
Cedar Rapids, IA 52401
319-286-1315

W(C)
W
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

ST S(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

SAN.(C)
City of Lansing
(People's Service)
Duane Estebo
P.O. Box 239
Lansing, IA 52151
563-277-2624

PLAN VIEW COLOR LEGEND OF WATER MAIN SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Cyan	(7)	Proposed Water Main Details
SHADING	**Design Color No.**	
Gray, Light	(48)	Proposed Pavement Shading

PROFILE VIEW COLOR LEGEND OF WATER MAIN SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Ground Line Profile and Existing Utilities Information
Cyan	(7)	Proposed Pipes

PLAN VIEW LINE STYLE LEGEND OF WATER MAIN SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Water Main Pipe
- WV Water Main Valve
- WH Water Main Fire Hydrate
- Water Main Air Release Valve & Vault

PROFILE VIEW LINE STYLE LEGEND OF WATER MAIN SHEETS

- Existing Ground
- Proposed Ground
- Proposed Pipe or Structure

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

RIGHT-OF-WAY LEGEND

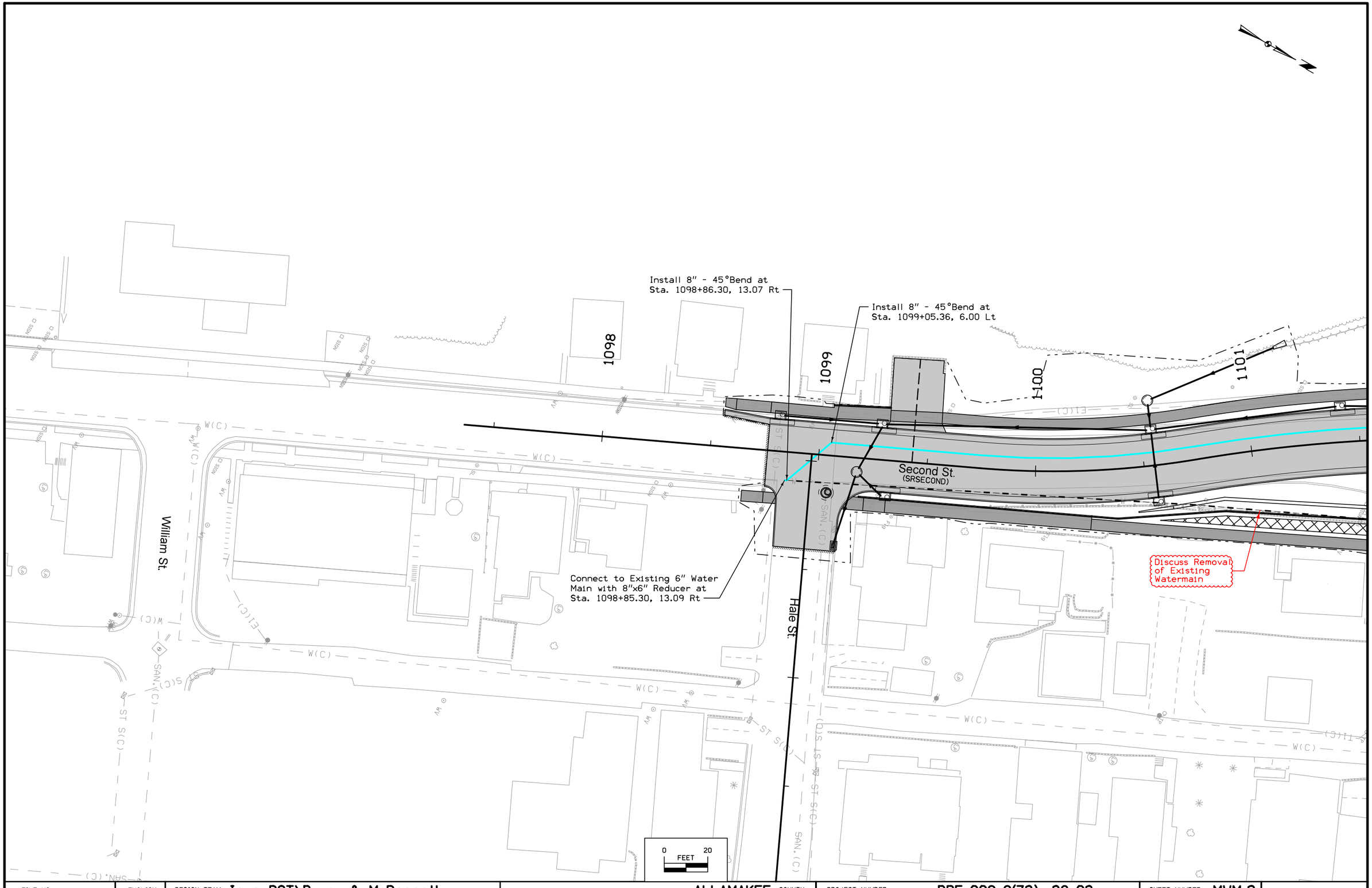
- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- A/C Access Control

WATER MAIN LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES MWM)

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER MWM.1

12:57:13 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_MWM01.dgn



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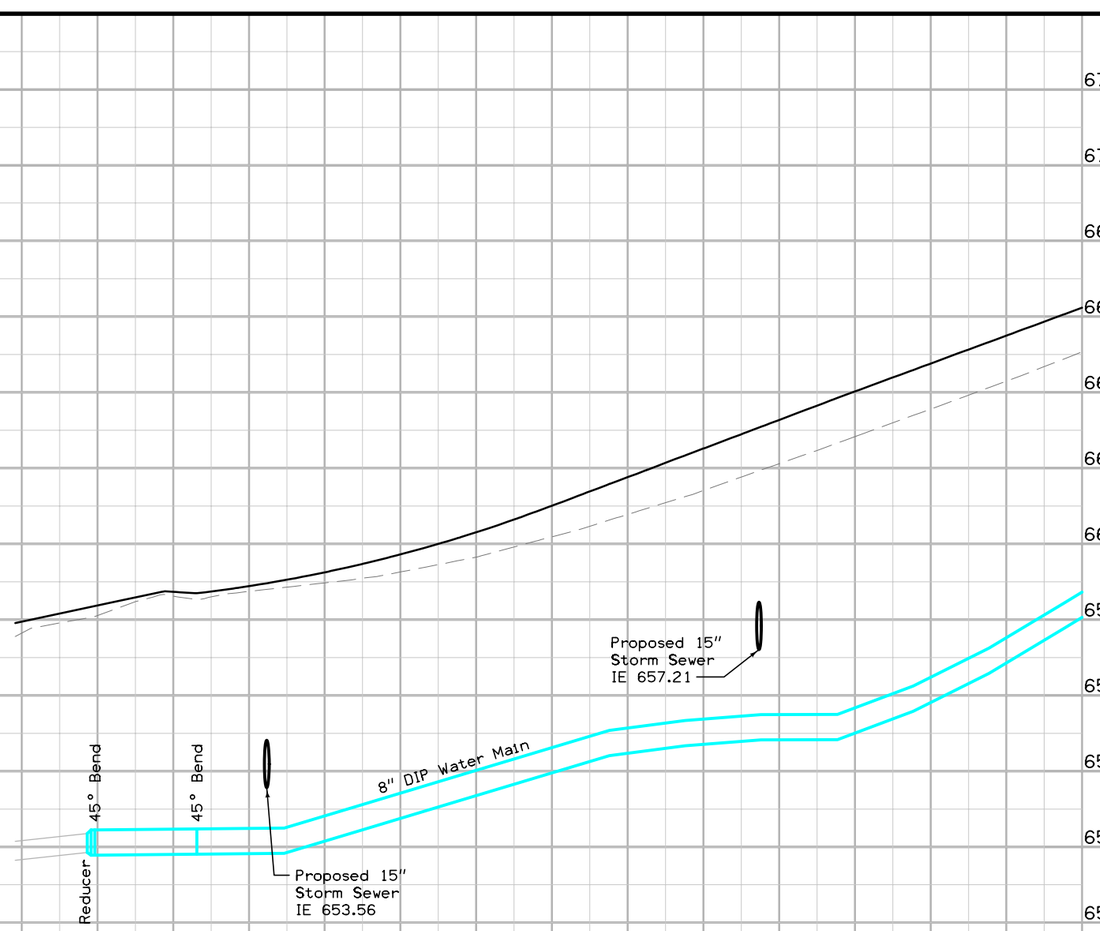


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER MWM.3

12:12:35 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_MWM02.dgn

1102

1103

1104

1105

1106

Install Air Release Valve & Vault
Sta. 1103+26.76, 5.93 Lt

Install 8" - 45°Bend at
Sta. 1104+84.53, 7.00 Lt

Install 8" - 45°Bend at
Sta. 1104+86.02, 5.64 Lt

Install 8"x8" Tee and Install
8"x6" Reducer and Relocated
Fire Hydrant Assembly at
Sta. 1105+07.83, 19.74 Rt

Second St.
(SRSECOND)

Discuss Removal
of Existing
Watermain

Install 8"x8" Tee
(Rotated 22 1/2° down
to the North) and
8"x6" Reducer and
Connect to Existing
6" Water Main to
the East

Install 8"x6" Reducer and Connect
to Existing 6" Water Main at
Sta. 1105+13.45, 19.51 Rt

Relocate and Install Existing
Fire Hydrant Assembly on New
8" Water Main

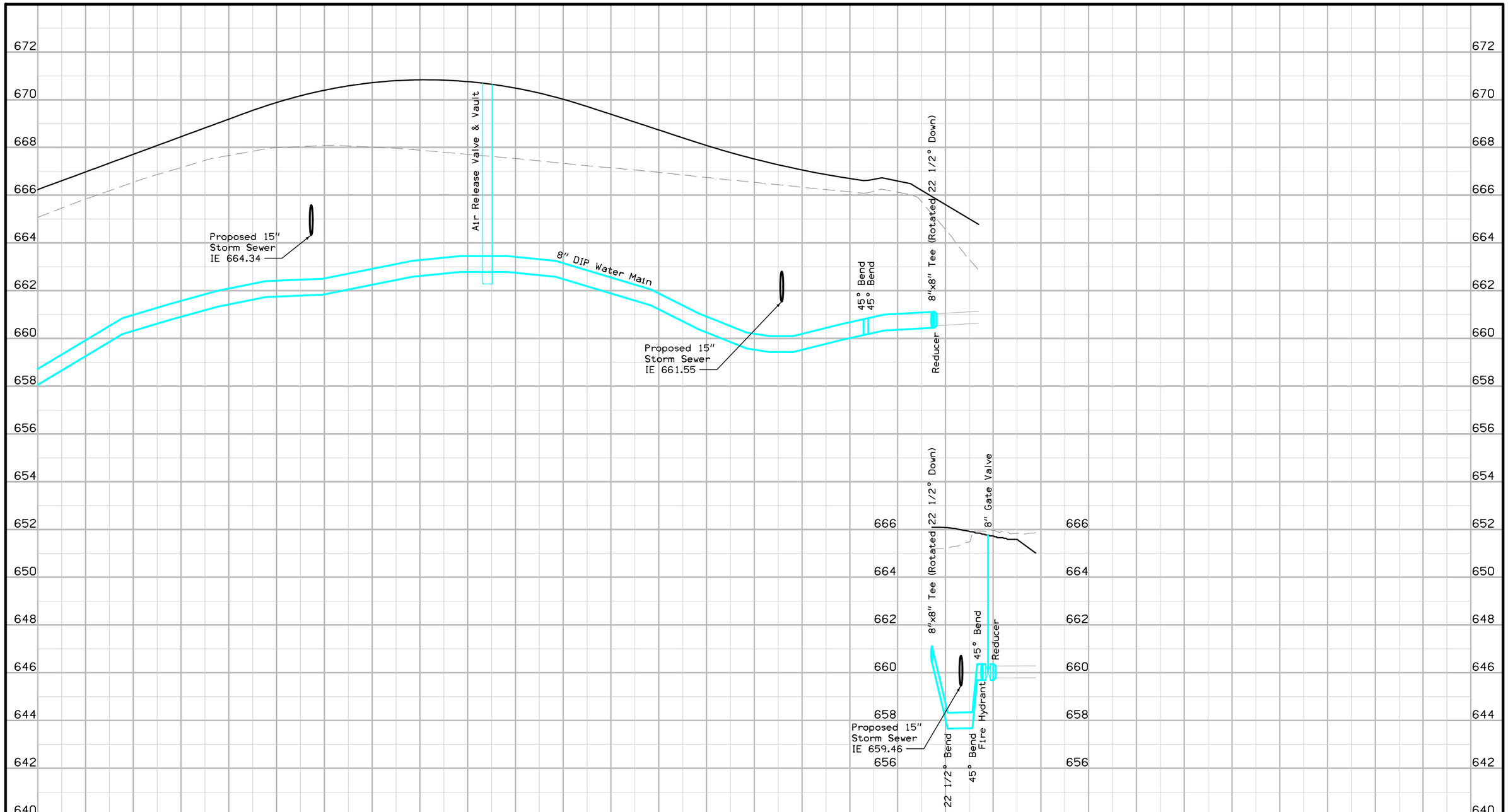
Henry St. (SRHENRY)

A9 (ML009)

0 20
FEET

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER MWM.4

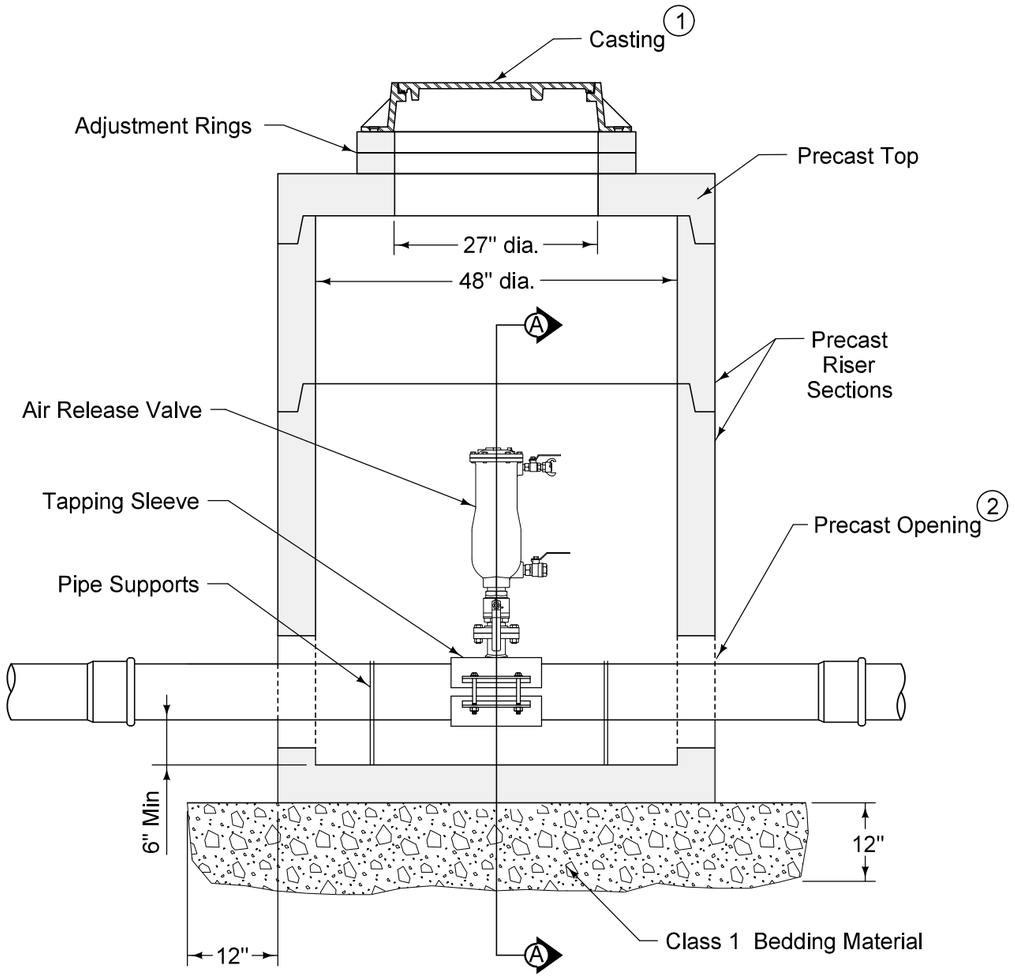
1:09:58 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_MWM02.dgn



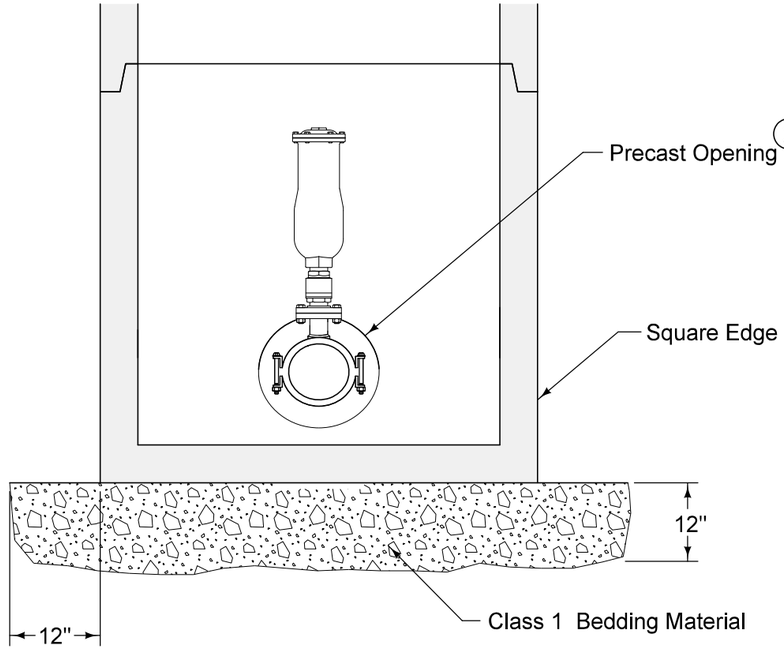
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER MWM.5

8:30:25 AM 10/23/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_MWM02.dgn

1. SW-601 Type C casting with the word "WATER" on the cover.
2. Prevent riser from bearing on pipe by providing a precast opening with a diameter up to 6 inches larger than pipe diameter.



TYPICAL SECTION



SECTION A-A

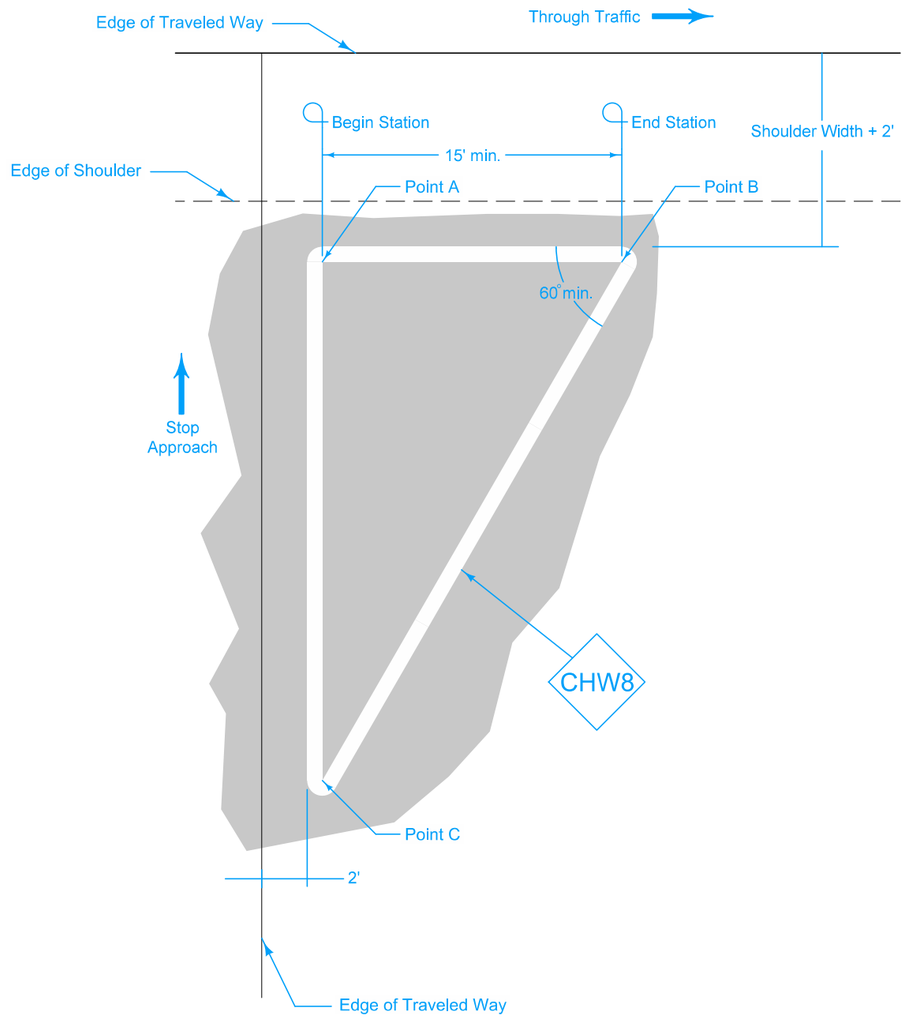
AIR RELEASE VALVE & VAULT

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER MWM.6

12:51:04 PM 10/22/2019 3994 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_MWM06.dgn

For pavement marking line types, see **PM-110**.

For stop line information, see **PM-120**.



Possible Contract Item:
Pavement Marking Line Items

Possible Tabulations:
101-10
108-22

IOWA DOT

REVISION	
NEW	04-21-15

ROAD DESIGN DETAIL

560-5

SHEET 1 of 1

REVISIONS: New.

PAINTED ISLANDS

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell		ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	U.1	

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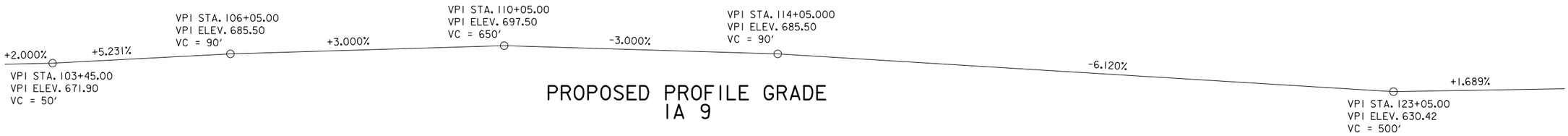
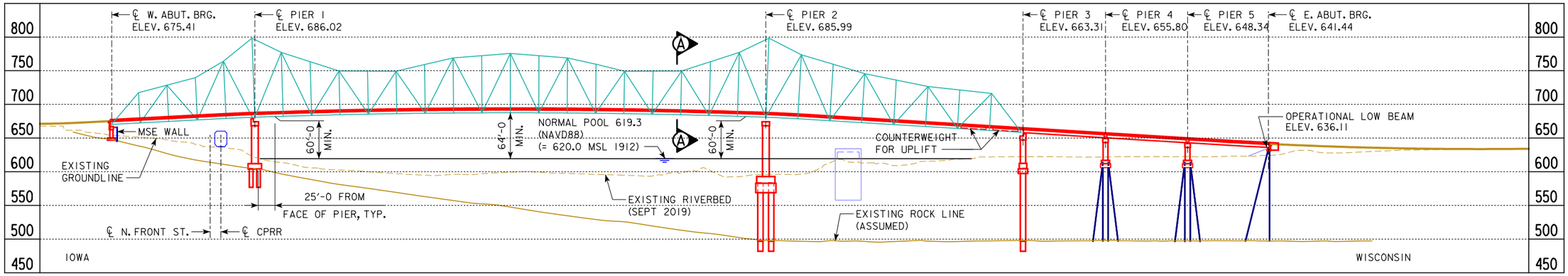
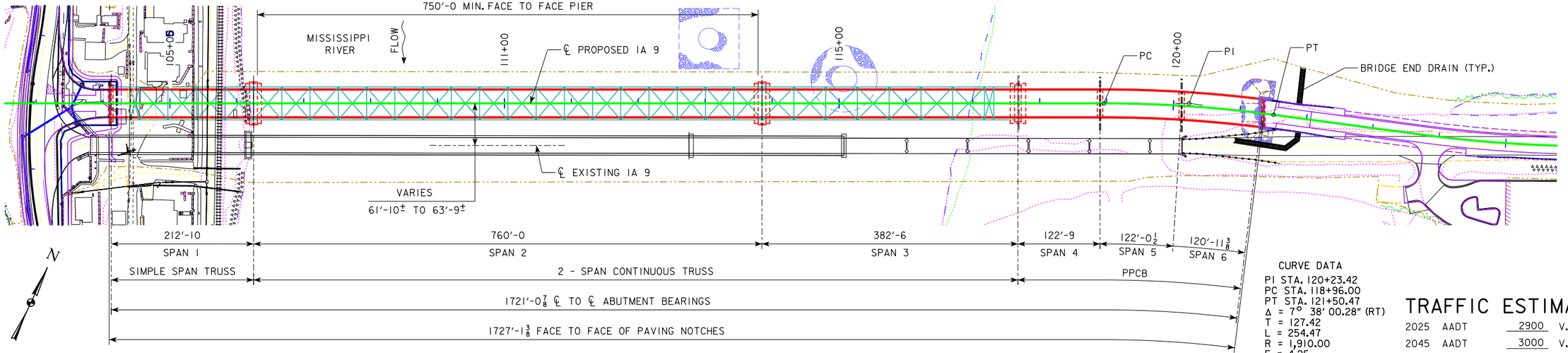


PROPOSED PROFILE GRADE
IA 9



LONGITUDINAL SECTION ALONG ℄ IA 9



GENERAL PLAN

NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.

PennDOT PA TL-5 BRIDGE BARRIER PROPOSED.

PIER TYPE - AESTHETIC PIERS

BEAM TYPE - TRUSS - SPANS 1 TO 3
BTD BEAMS - SPANS 4 TO 6

FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.

MAINTAIN TRAFFIC ON EXISTING BRIDGE WHILE NEW BRIDGE IS CONSTRUCTED.

FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.

VERTICAL DATUM NAVD 88.

TOP OF DECK ELEVATIONS AT ℄ ARE 0.03' LOWER THAN THE PGL TO ACCOUNT FOR CROWN ROUNDING.

THIS PROJECT MAY REQUIRE A SOVEREIGN LANDS PERMIT; IF SO, A BROKEN CONCRETE SUBSTITUTE FOR RIPRAP WILL NOT BE ALLOWED

BURNS & McDONNELL ENGINEERING CO., INC.
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114
816-333-9400
CERTIFICATE OF AUTHORITY NO.: 000165
BMCD PROJECT NO. 98920

HYDRAULIC DATA

DRAINAGE AREA = 65130 SQ. MI.
STREAM SLOPE = 0.249 FT./MI.
AVG. LOW WATER STAGE = 619.3

Q25 = 197,200 CFS
STAGE = 629.7

Q_{50} = 225,200 CFS
STAGE = 631.2
REGULATORY LOW BEAM = 674.6
BACKWATER = 0.1 FT.

Q_{100} = 250,100 CFS
STAGE = 632.6
OPERATIONAL LOW BEAM = 634.4
BACKWATER = 0.1 FT.
AVG. BRIDGE VELOCITY = 4.0 FPS

Q_{200} = 272,900 CFS
STAGE = 633.7
CALCULATED DESIGN SCOUR = ---

Q_{500} = 307,900 CFS
STAGE = 635.5
AVG. BRIDGE VELOCITY = 4.1 FPS
CALCULATED CHECK SCOUR = ---

ROADWAY OVERTOP ELEV STA. 633.73
STA. 124+46.88

EXTREME HW STAGE = 634.1
DATE = 04/24/1965

LOCATION

IA 9 OVER MISSISSIPPI RIVER
T-99N R-3W
SECTION 29
LANSING TOWNSHIP
ALLAMAKEE COUNTY, IA
CRAWFORD COUNTY, WI
CITY OF LANSING
LATITUDE: 43°21' 56.453621" N
LONGITUDE: 91°12' 50.325378" W
FHWA NO. 13521
BRIDGE MAINT. NO. 0361.IS009

0 ENGLISH 160
SCALE IN FEET

CURVE DATA

PI STA. 120+23.42
PC STA. 118+96.00
PT STA. 121+50.47
Δ = 7° 38' 00.28" (RT)
T = 127.42
L = 254.47
R = 1,910.00
E = 4.25
e = 3.4%
L = 70
x = 41
D.S. = 40 mph

TRAFFIC ESTIMATE

2025	AADT	2900	V.P.D.
2045	AADT	3000	V.P.D.
TRUCKS		9	%

PRELIMINARY

DESIGN FOR VARIABLE SKEW

1721'-0 7/8 x 40'-0 STEEL THROUGH-TRUSS & PPCB BRIDGE

112'-10 & 120'-11 3/8 END SPANS MULTIPLE LENGTH INTERIOR SPANS

GENERAL PLAN

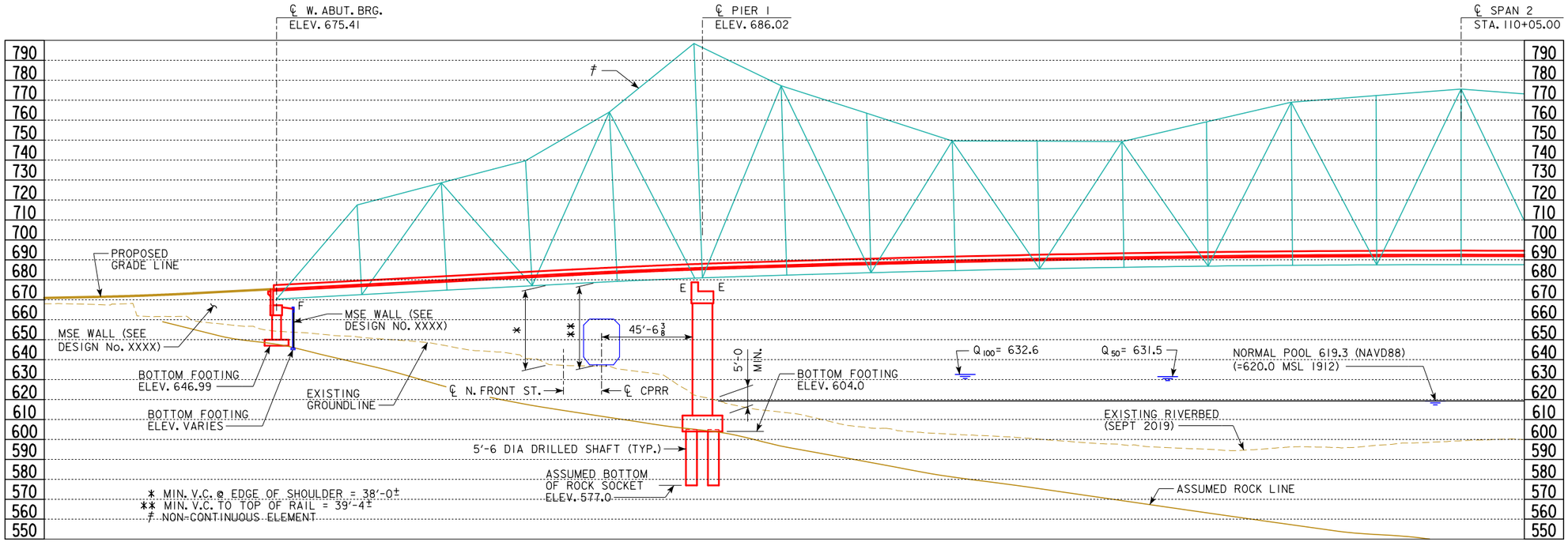
IA 9 STA. 112+72.71 OCTOBER 2019

ALLAMAKEE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

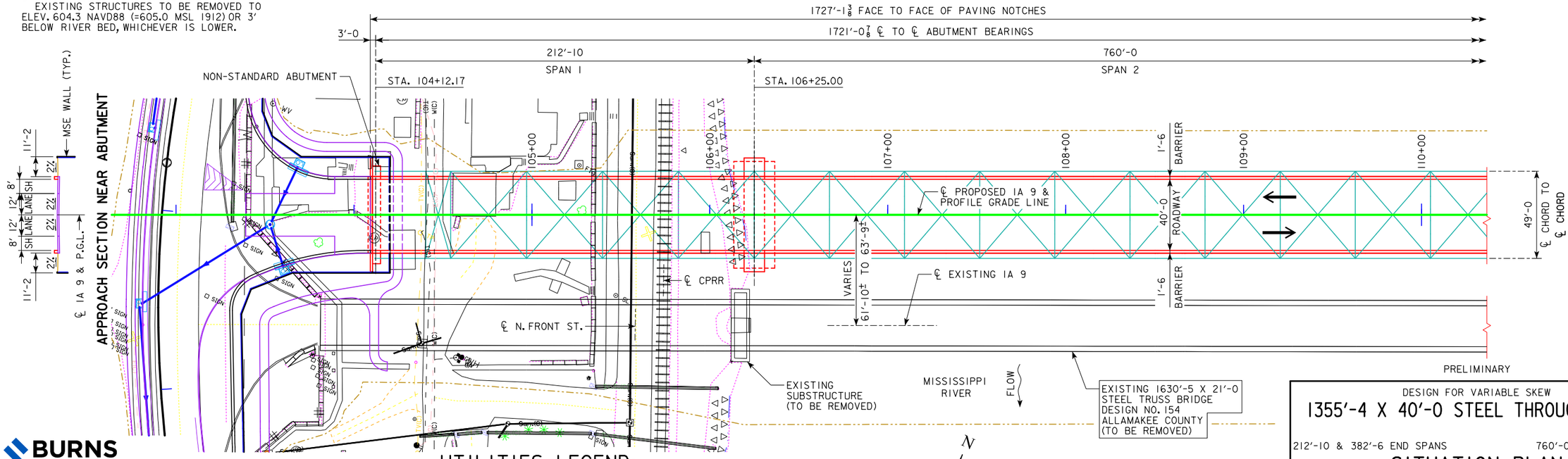
DESIGN SHEET NO. 1 OF 5 FILE NO. _____ DESIGN NO. _____

DESIGN TEAM BURNS & McDONNELL	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER V.1



LONGITUDINAL SECTION ALONG ℄ IA 9

NOTES:
FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.
EXISTING STRUCTURES TO BE REMOVED TO ELEV. 604.3 NAVD88 (=605.0 MSL 1912) OR 3' BELOW RIVER BED, WHICHEVER IS LOWER.



UTILITIES LEGEND:

- TV(C) — TV
- T(C) — TELEPHONE
- E(C) — ELECTRIC
- W(C) — WATER
- W(C) — SANITARY SEWER

SITUATION PLAN

N

0 ENGLISH 60
SCALE IN FEET

DESIGN FOR VARIABLE SKEW

1355'-4 X 40'-0 STEEL THROUGH TRUSS

212'-10 & 382'-6 END SPANS — 760'-0 INTERIOR SPAN

SITUATION PLAN

IA 9 STA. 112+72.71 — OCTOBER 2019

ALLAMAKEE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 5 FILE NO. _____ DESIGN NO. _____

BURNS McDONNELL
BURNS & McDONNELL ENGINEERING CO., INC.
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114
816-333-9400
CERTIFICATE OF AUTHORITY NO.: 000165
BMCD PROJECT NO. 98920

DESIGN TEAM BURNS & McDONNELL	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER V.2

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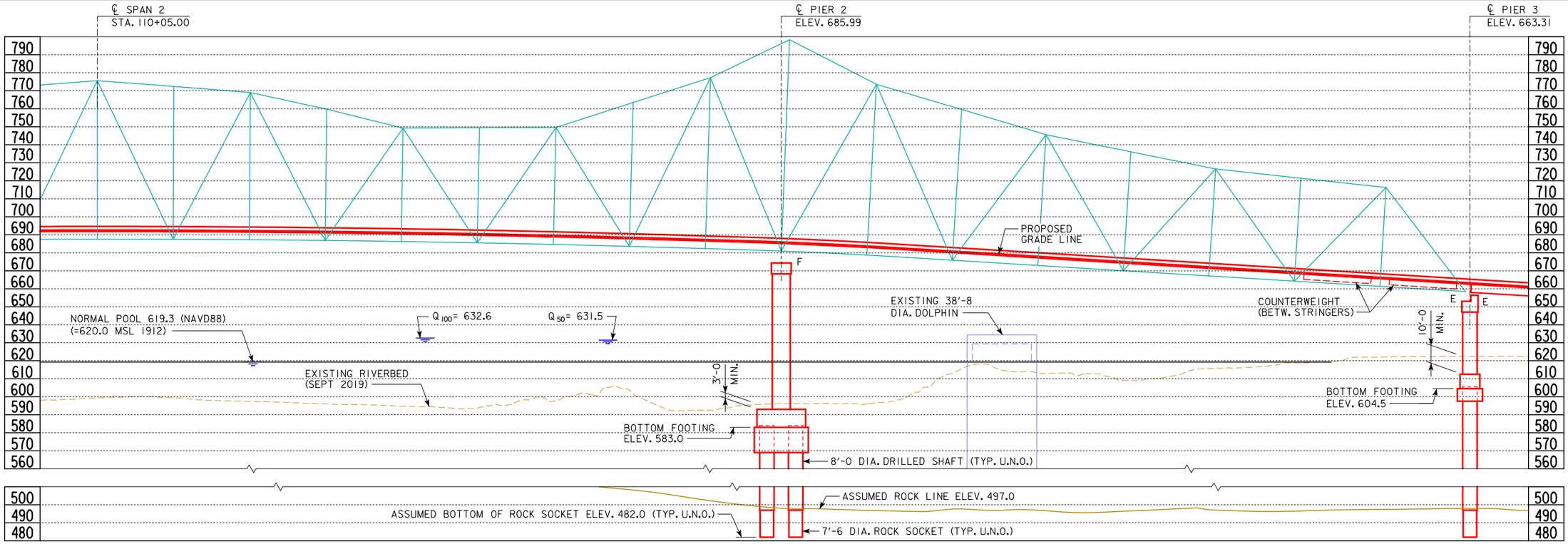

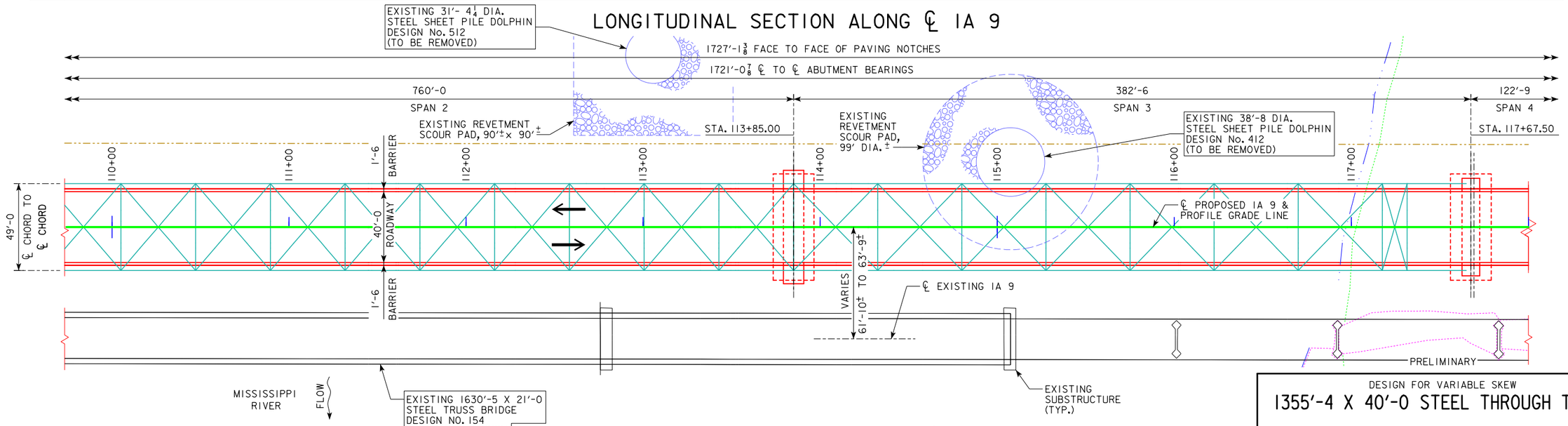

BURNS McDONNELL
BURNS & McDONNELL ENGINEERING CO., INC.
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114
816-333-9400
CERTIFICATE OF AUTHORITY NO.: 000165
BMCD PROJECT NO. 98920

NOTES:
FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.
EXISTING STRUCTURES TO BE REMOVED TO ELEV. 604.3 NAVD88 (=605.0 MSL 1912) OR 3' BELOW RIVER BED, WHICHEVER IS LOWER.

SITUATION PLAN

N

0 ENGLISH 60
SCALE IN FEET

DESIGN FOR VARIABLE SKEW

1355'-4 X 40'-0 STEEL THROUGH TRUSS

212'-10 & 382'-6 END SPANS — 760'-0 INTERIOR SPAN

SITUATION PLAN

IA 9 STA. 112+72.71 — OCTOBER 2019

ALLAMAKEE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 5 FILE NO. _____ DESIGN NO. _____

DESIGN TEAM BURNS & McDONNELL	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER V.3

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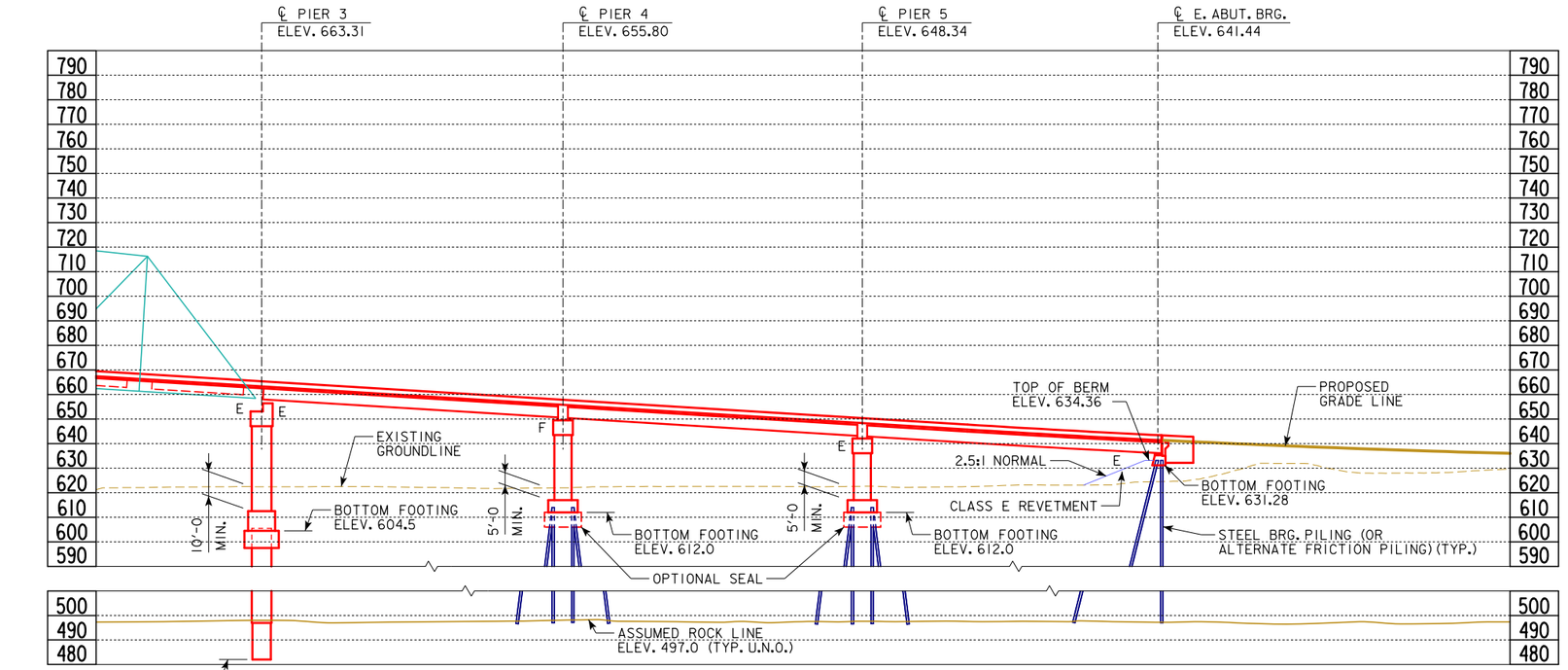
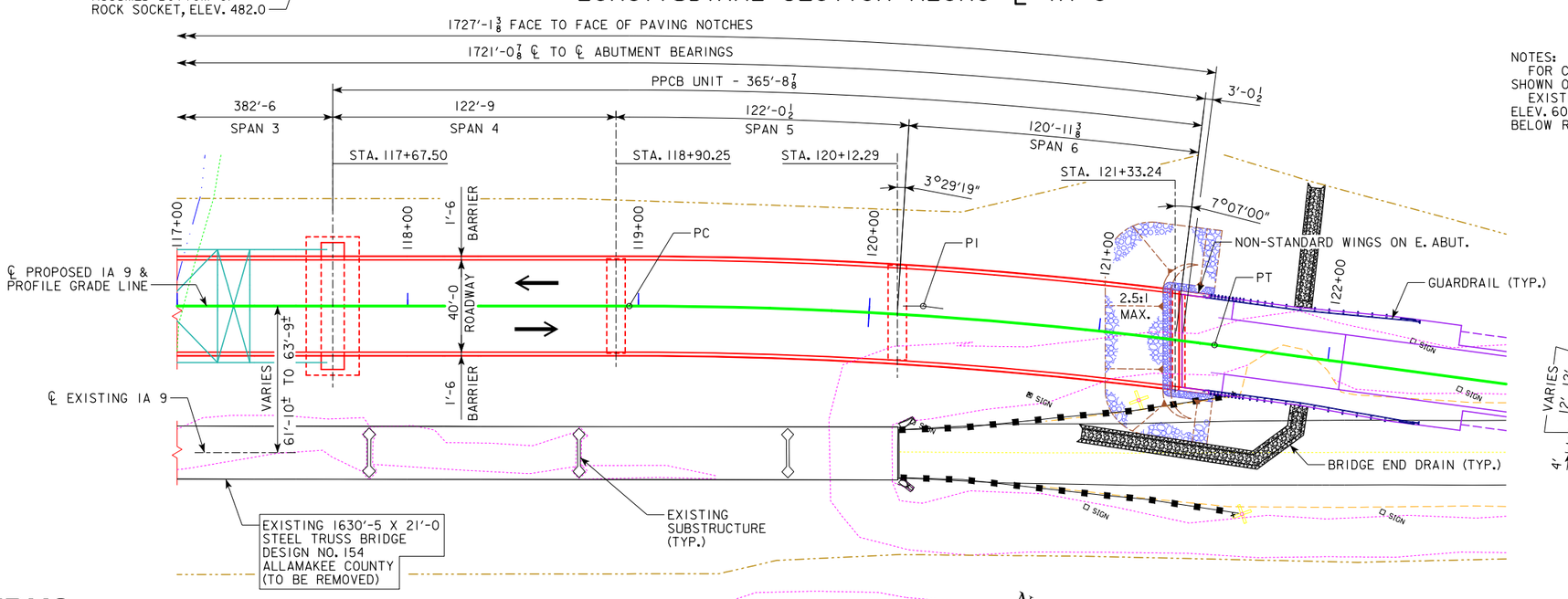


LONGITUDINAL SECTION ALONG ℄ IA 9



NOTES:
FOR CLARITY, EXISTING STRUCTURES NOT SHOWN ON LONGITUDINAL SECTION.
EXISTING STRUCTURES TO BE REMOVED TO ELEV. 604.3 NAVD88 (=605.0 MSL 1912) OR 3' BELOW RIVER BED, WHICHEVER IS LOWER.

SITUATION PLAN

0 ENGLISH 60
SCALE IN FEET

PRELIMINARY

DESIGN FOR VARIABLE SKEW

1721'-0 7/8 x 40'-0 STEEL THROUGH-TRUSS & PPCB BRIDGE

112'-10 & 120'-11 3/8 END SPANS MULTIPLE LENGTH INTERIOR SPANS

SITUATION PLAN

IA 9 STA. 112+72.71 OCTOBER 2019

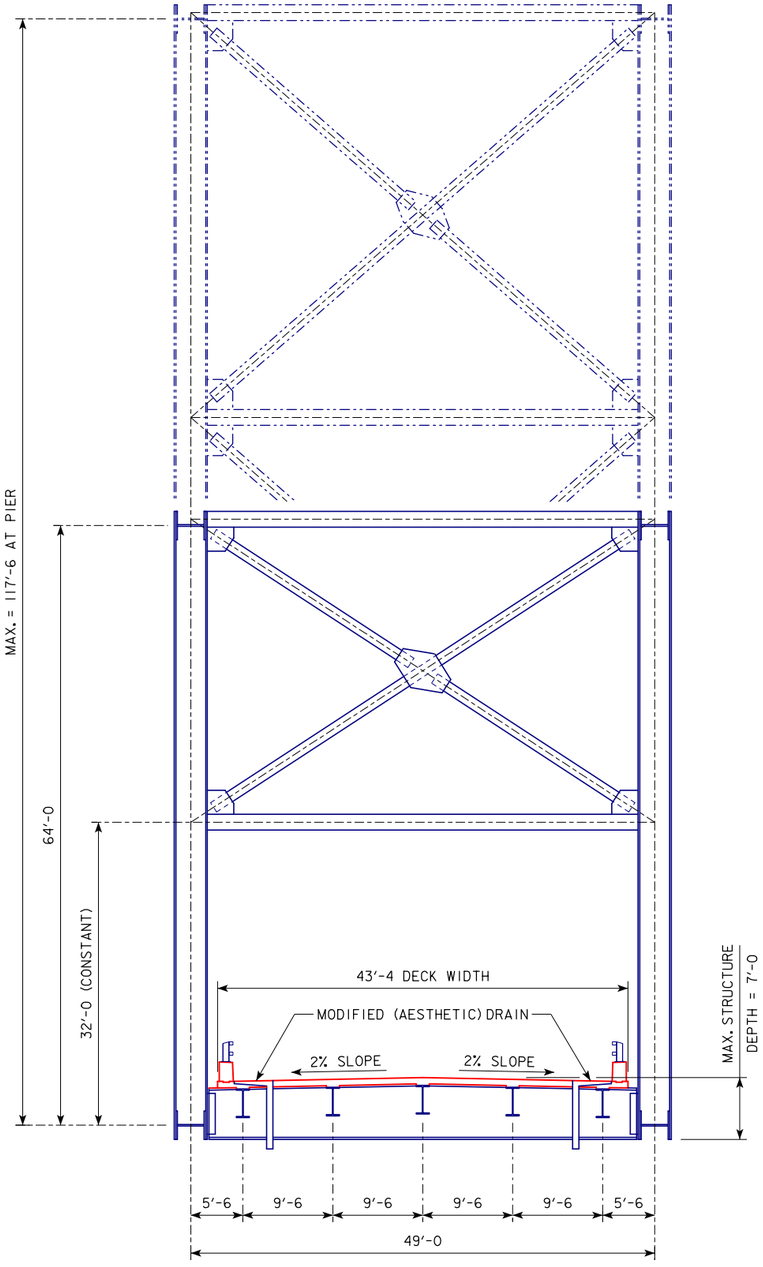
ALLAMAKEE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

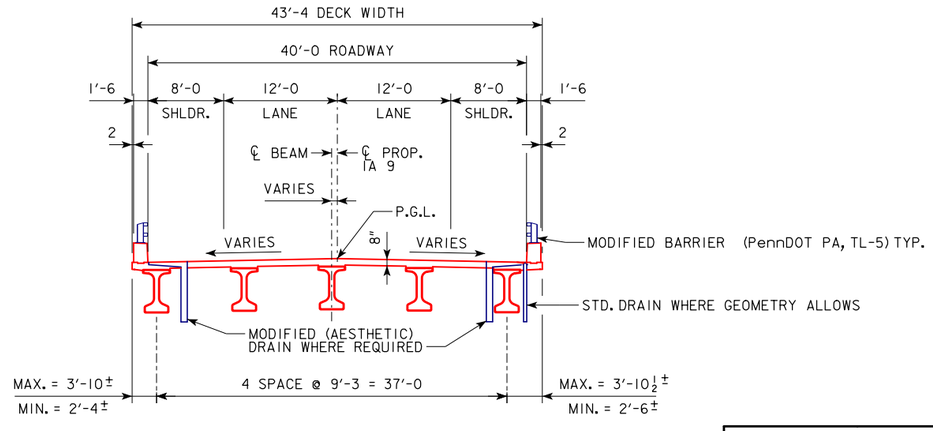
DESIGN SHEET NO. 4 OF 5 FILE NO. _____ DESIGN NO. _____

BURNS McDONNELL
BURNS & McDONNELL ENGINEERING CO., INC.
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114
816-333-9400
CERTIFICATE OF AUTHORITY NO.: 000165
BMCD PROJECT NO. 98920

DESIGN TEAM BURNS & McDONNELL	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER V.4



TRUSS SECTION A-A
(LOOKING UPSTATION)



APPROACH TYPICAL SECTION
(LOOKING UPSTATION)

BURNS McDONNELL
BURNS & McDONNELL ENGINEERING CO., INC.
9400 WARD PARKWAY
KANSAS CITY, MISSOURI 64114
816-333-9400
CERTIFICATE OF AUTHORITY NO.: 000165
BMCD PROJECT NO. 98920

PRELIMINARY

DESIGN FOR VARIABLE SKEW

172'-0 7/8 x 40'-0 STEEL THROUGH-TRUSS & PPCB BRIDGE

112'-10 & 120'-11 3/8 END SPANS MULTIPLE LENGTH INTERIOR SPANS

TYPICAL SECTIONS

IA 9 STA. 112+72.71 OCTOBER 2019

ALLAMAKEE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 5 FILE NO. _____ DESIGN NO. _____

For Side Road Details
Refer to Sheet No. E.5

For Side Road Details
Refer to Sheets No. E.1 - E.4

For Side Road Details
Refer to Sheet No. E.6

Second St.
(SRSECOND)

Hale St. (SRHALE)

Henry St. (SRHENRY)

2000

2001

2002

2003

2004

2005

PI Sta 2000+12.01

PI Sta 2000+62.01

PI Sta 2002+12.58

PI Sta 2002+27.58

PI Sta 2002+52.58

PI Sta 2003+07.33

PI Sta 2003+72.66

PI Sta 2004+22.41

PI Sta 2004+42.41

PI Sta 2004+57.41

Concrete Barrier

To Be Removed

IA 9 (ML009)

Refer to Standard Road Plan MI-221 For Combined Retaining Wall/Sidewalk Details

Sta. 2000+00.00 (RETWALL01)
Sta. 1100+25.00, 21.35' RT (SRSECOND)
Begin Wall Construction

Refer to Standard Road Plan MI-221 For Combined Retaining Wall/Sidewalk Details

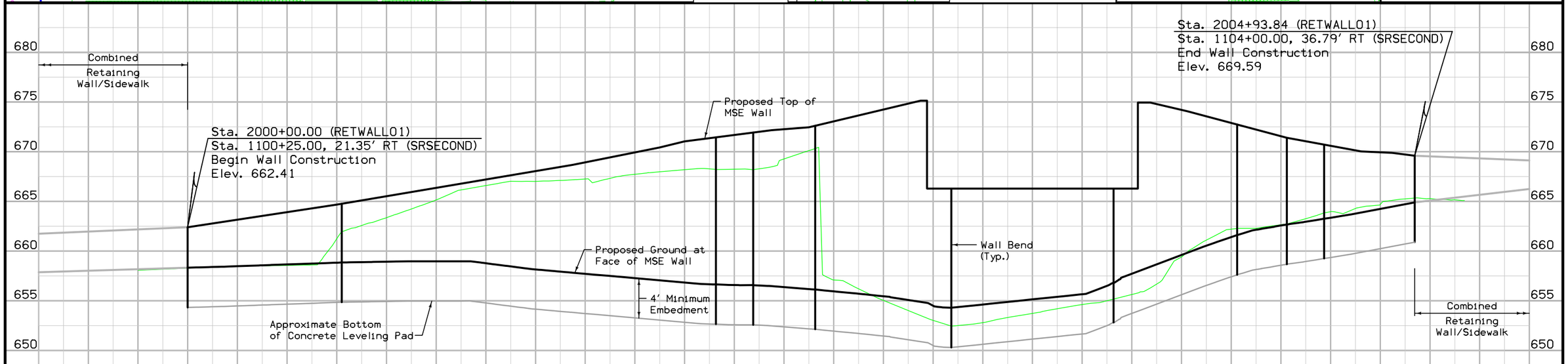
Sta. 2004+93.84 (RETWALL01)
Sta. 1104+00.00, 36.79' RT (SRSECOND)
End Wall Construction

Approximate Reinforced Zone

0 20 FEET

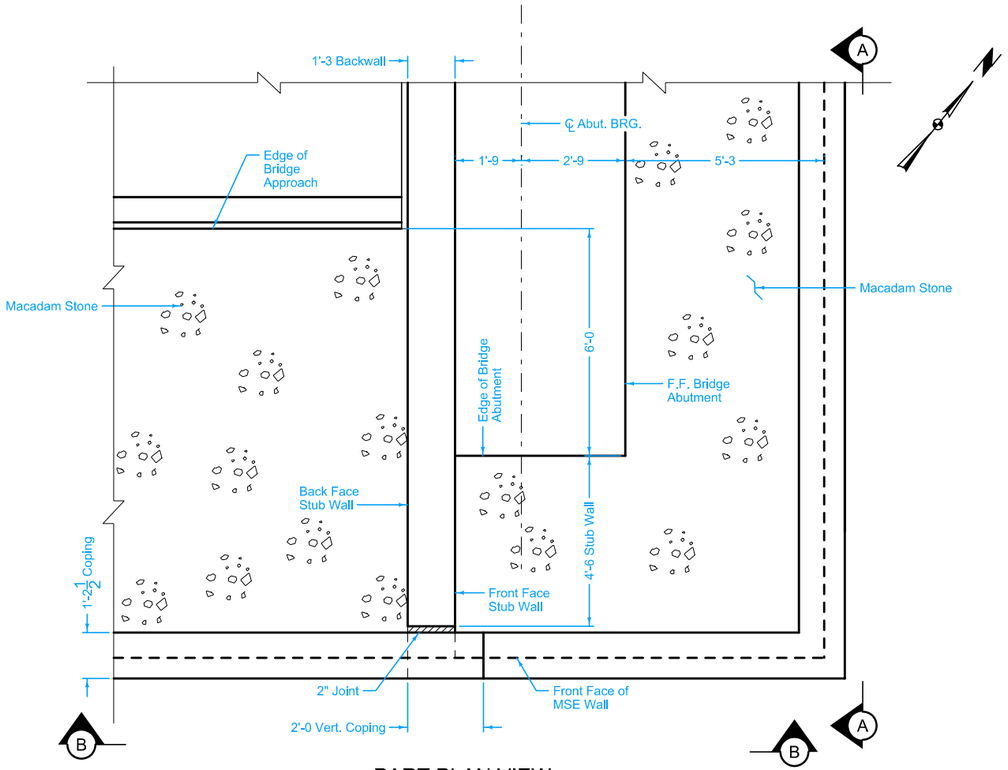
For Main Line Details
Refer to Sheet No. D.2

MSE Retaining Wall



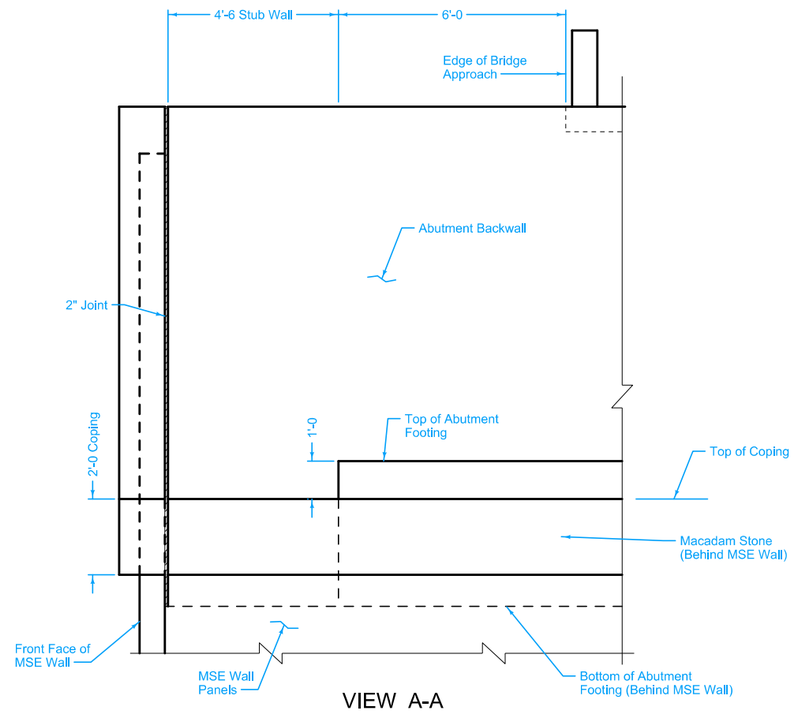
	2000	2001	2002	2003	2004	2005
PROPOSED TOP OF WALL ELEVATIONS	662.41	663.17	663.93	664.69	665.53	666.37	667.21	668.05	668.93	669.94	671.05	671.69	672.27	673.06	674.25	666.30	666.30	666.30	666.30	666.30	674.22	672.91	671.57	670.60	669.95
PROPOSED GROUND ELEVATIONS AT THE FACE OF WALL	658.34	658.48	658.66	658.84	658.94	658.98	658.78	658.16	657.72	657.28	656.84	656.59	656.37	655.95	655.46	654.51	654.63	655.14	655.66	657.73	659.62	661.42	662.58	663.36	664.25

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell		ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	V.6

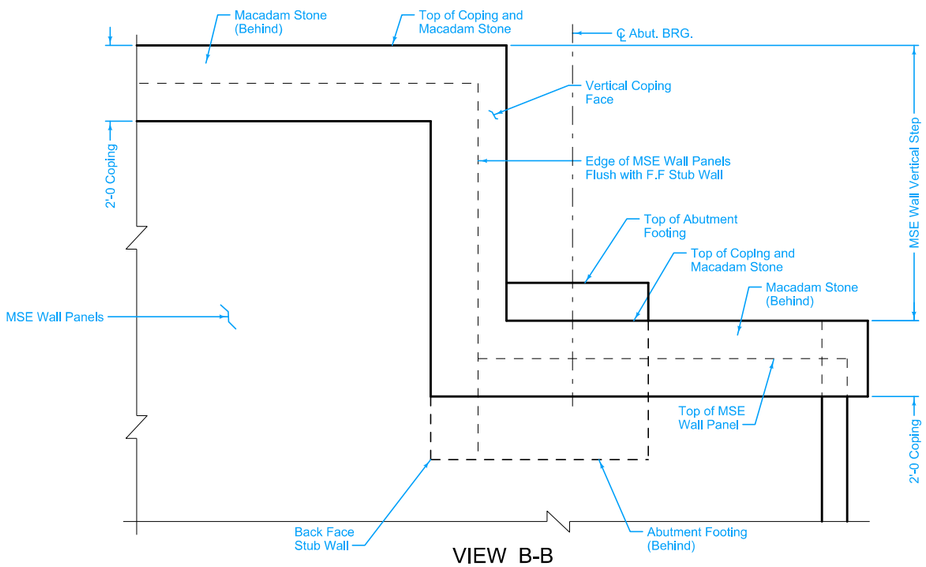


PART PLAN VIEW

At South Edge of West Abutment
(North Abutment Similar)



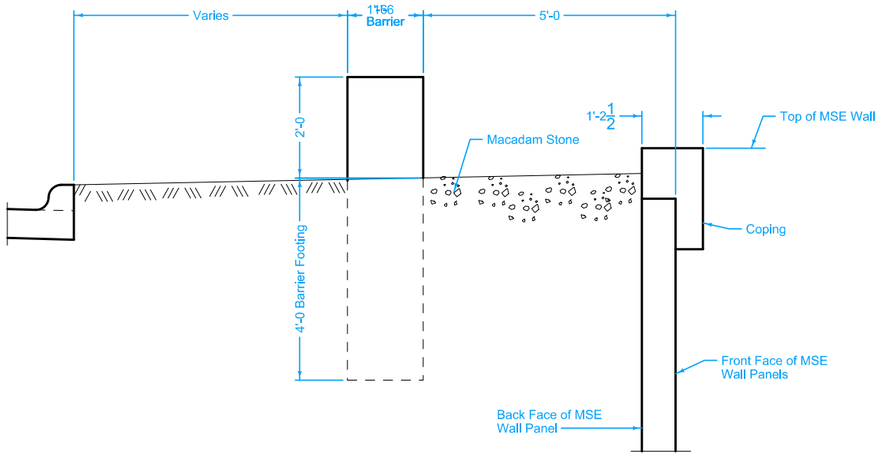
VIEW A-A



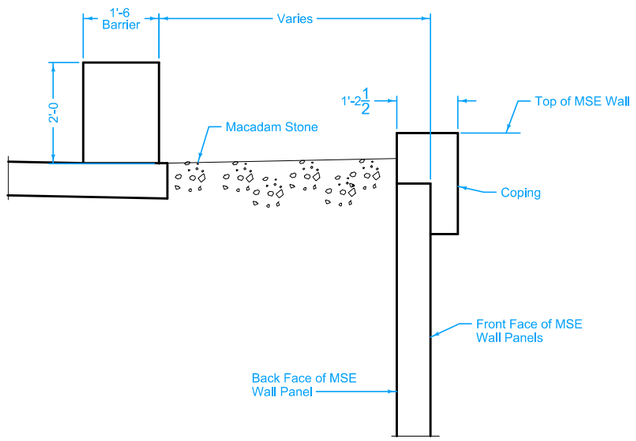
VIEW B-B

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER V.7

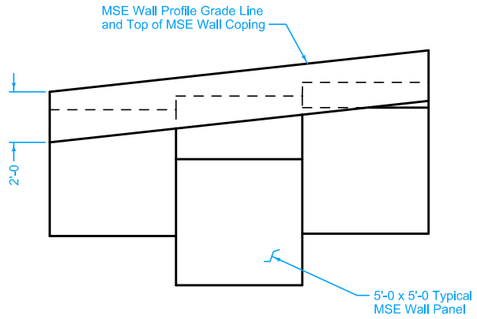
2:24:54 PM 10/22/2019 9209 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_V07.dgn



SECTION A-A

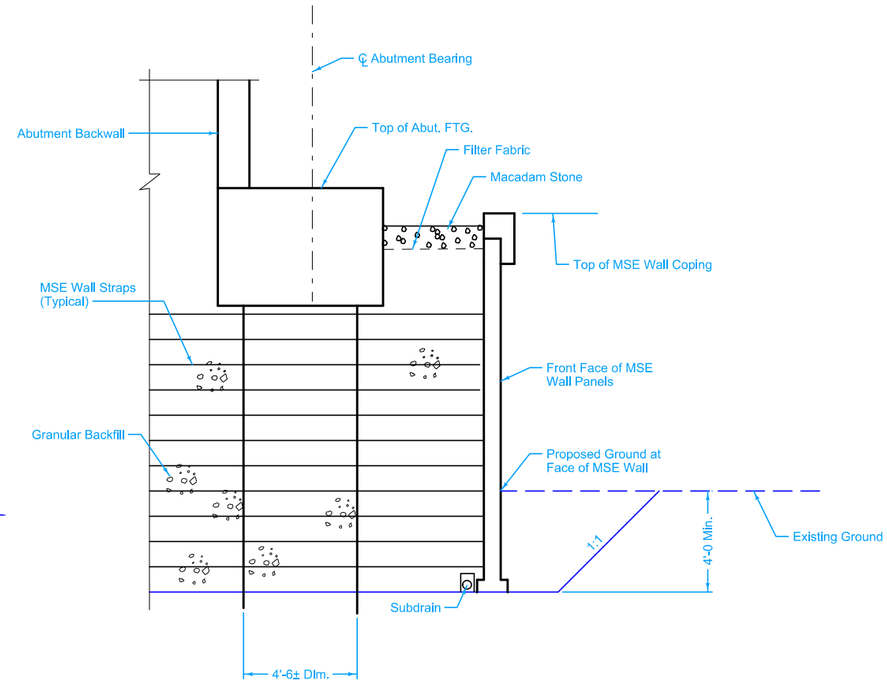


SECTION B-B



MSE WALL COPING ELEVATION DETAIL

TYPICAL MSE WALL CROSS SECTION



SECTION UNDER BRIDGE

NOTES:
1. SEE SHEET V.6 FOR LOCATIONS OF SECTIONS A-A AND B-B
2. SUBDRAIN OUTLET DETAILS TO BE DETERMINED.

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- Additional Topsoil Removal
- Subgrade Treatment
- Granular Shoulder
- Pavement
- Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS — Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10 — Class 10 Materials
- SEL LO — Select Loams And Clay-Loams
- SEL SA — Select Sand
- UNS A — Unsuitable Type A Disposal
- UNS B — Unsuitable Type B Disposal
- UNS C — Unsuitable Type C Disposal
- SHALE — Shale
- WASTE — Waste
- B&W LS — Broken and Weathered Rock
- ROCK — Solid Rock
- BLDRS — Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

Existing ROW — Existing Right-of-Way Limit

Proposed ROW — Proposed Right-of-Way Limit

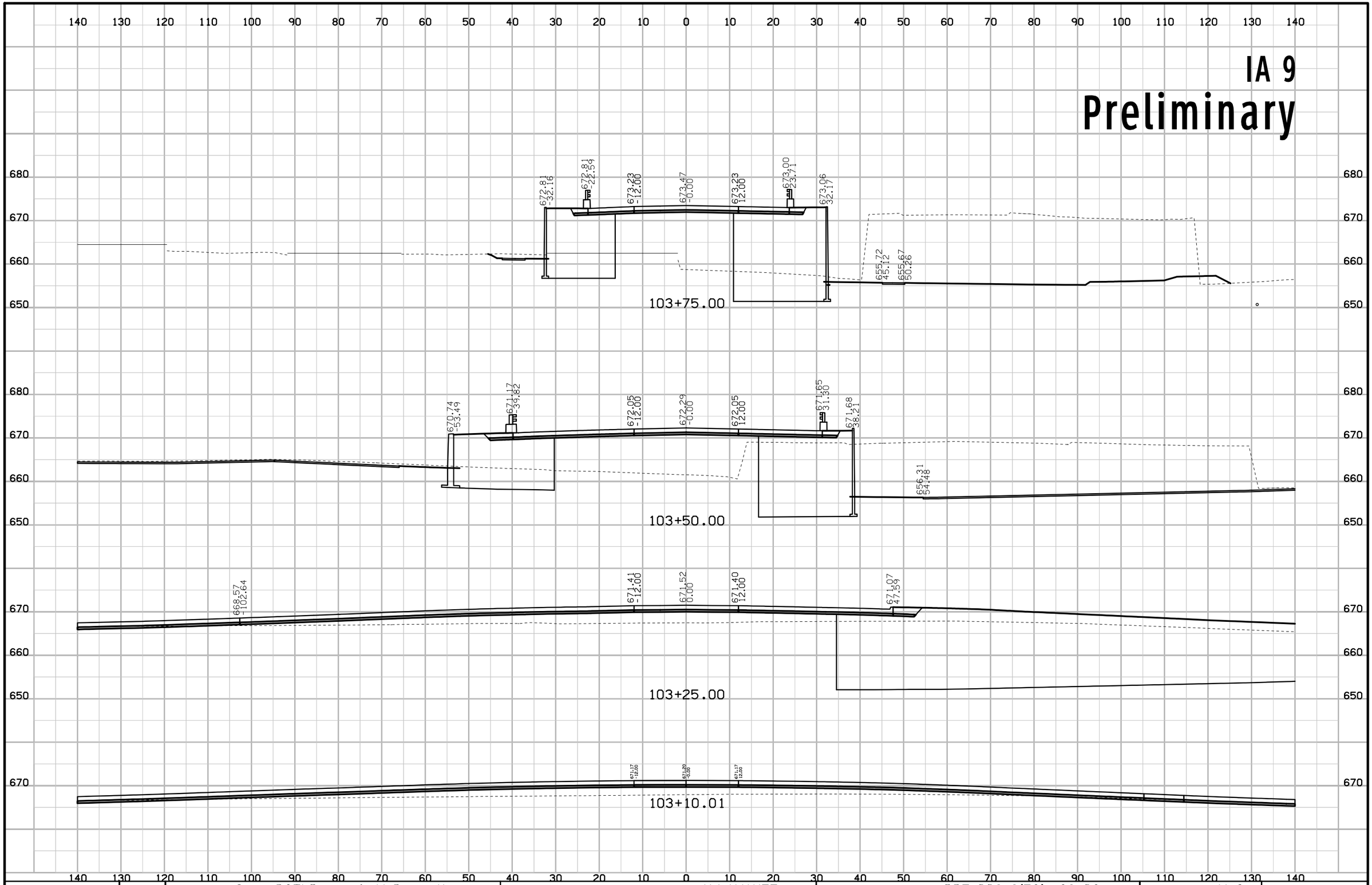
Temporary ROW — Temporary Right-of-Way Limit

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER W.1

IA 9
Preliminary



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IA 9

Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

680 670 660 650 640

677.15 -12.00 | 677.39 -0.00 | 677.15 12.00

104+50.00

675.84 -12.00 | 676.08 -0.00 | 675.84 12.00

654.23 38.93

104+25.00

674.38 -32.16 | 674.14 -20.50 | 674.54 -12.00 | 674.78 0.00 | 674.54 12.00 | 674.43 20.61 | 674.63 32.17

655.08 40.64 | 655.04 45.71

104+00.00

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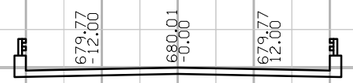
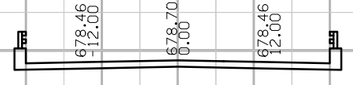
IA 9

Preliminary



105+00.00



104+75.00

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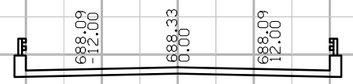
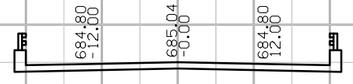
IA 9

Preliminary



107+00.00



106+00.00

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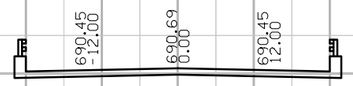
IA 9
Preliminary



108+00.00

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.6

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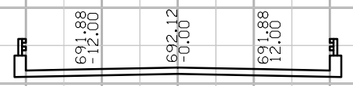
IA 9
Preliminary



109+00.00

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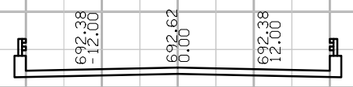
IA 9

Preliminary



110+00.00

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IA 9
Preliminary

111+00.00

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.9

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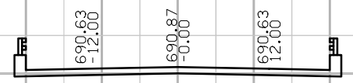
IA 9

Preliminary



112+00.00

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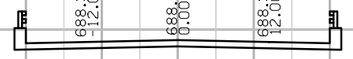
IA 9

Preliminary



140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

690
680
670
660
650
640
630
620
610
600

113+00.00

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.11

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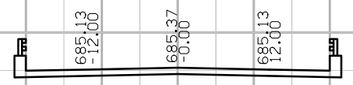
IA 9

Preliminary



114+00.00

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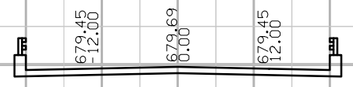
IA 9

Preliminary

116+00.00



115+00.00

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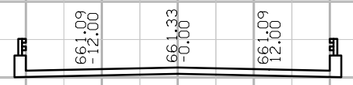
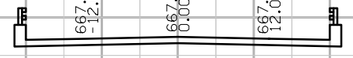
IA 9

Preliminary



118+00.00



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IA 9
Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

650 640 630 620

643.53 -12.00 | 643.12 0.00 | 642.72 12.00

121+00.00

649.49 -12.00 | 649.09 0.00 | 648.68 12.00

650 640 630 620

120+00.00

660 650 640 630 620

655.51 -12.00 | 655.21 0.00 | 654.90 12.00

119+00.00

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER W.15

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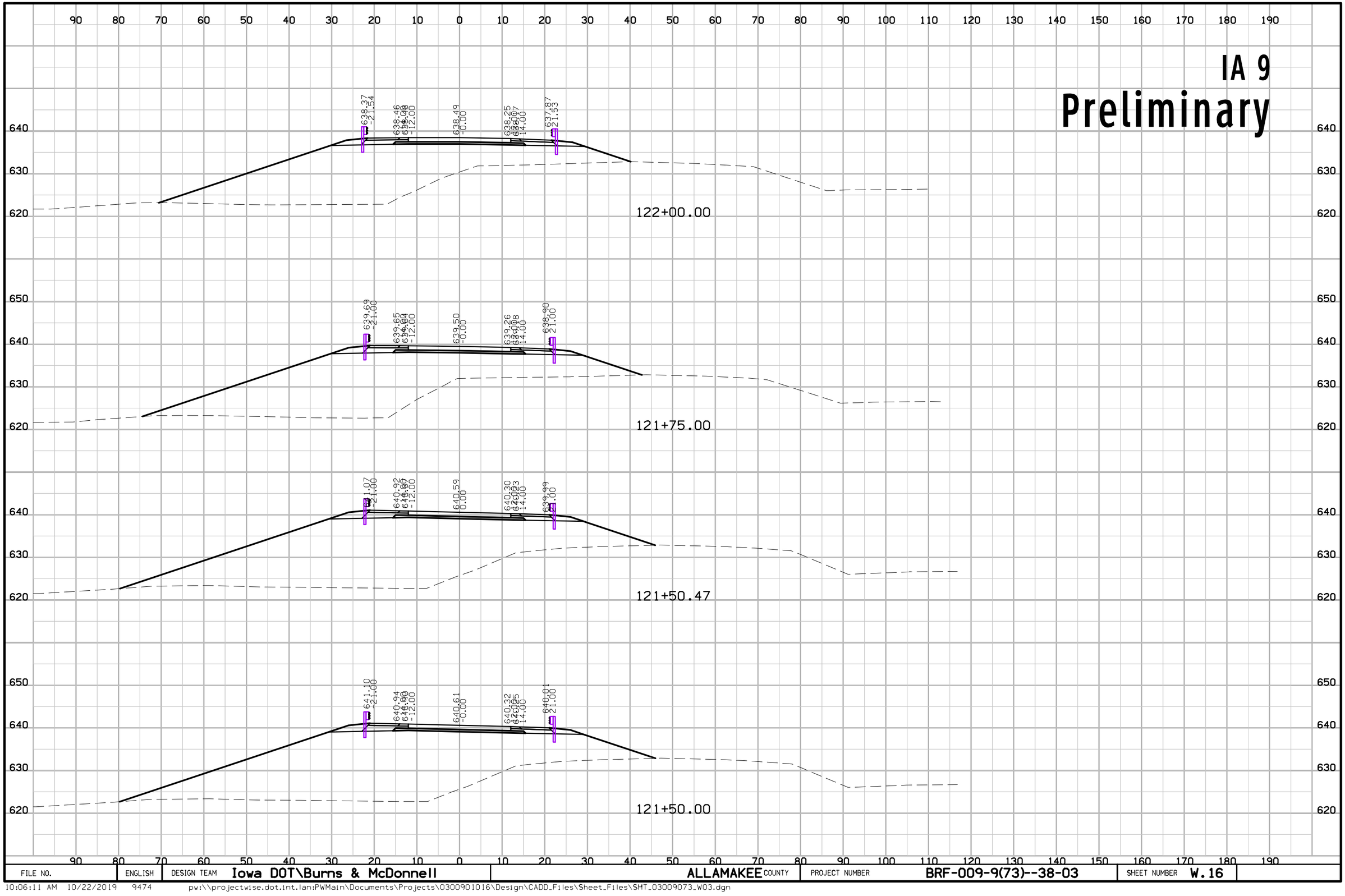
IA 9

Preliminary



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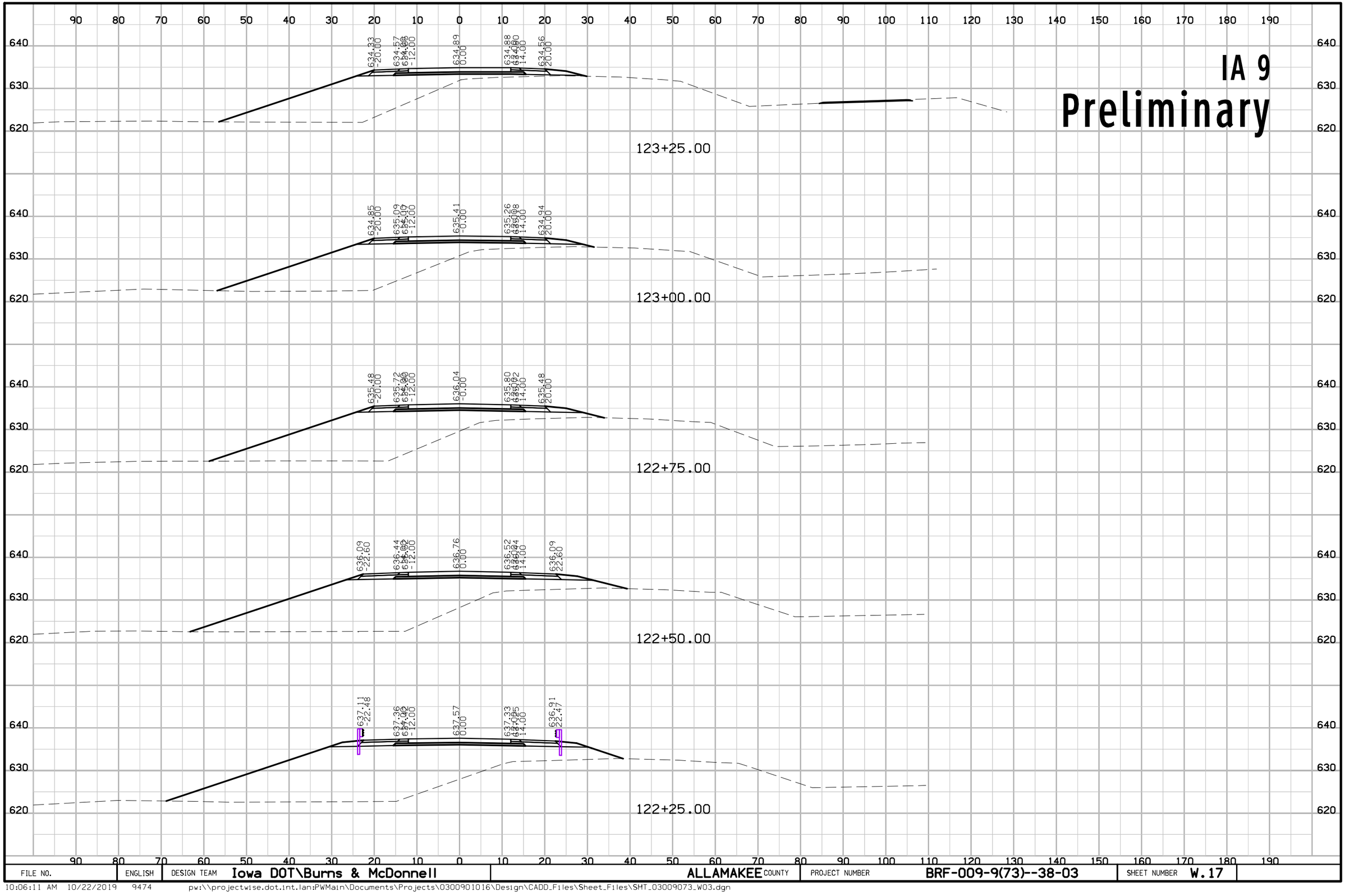
IA 9

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.17

IA 9
Preliminary

Boat Ramp & Beneficial Use Site Entrance from WIS 82

633.17 -20.00 | 633.41 -12.00 | 633.90 0.00 | 634.31 634.03 634.03 -14.00 | 633.99 20.00
4.6 % | 7.8 % | 5.3 % | 3.5:1

124+00.00

633.28 -20.00 | 633.60 -12.00 | 633.97 -0.00 | 634.35 12.00 | 634.03 20.00
+91 Prop. Type "C" Ent.
4.6 % | 7.8 % | 5.3 % | 628.74 103.79 | 3.5:1

123+91.00

633.52 -20.00 | 633.76 -12.00 | 634.13 0.00 | 634.41 634.03 634.03 -14.00 | 634.09 20.00

123+75.26

633.53 -20.00 | 633.77 -12.00 | 634.13 -0.00 | 634.42 634.04 634.04 -14.00 | 634.10 20.00
621.71 -54.49
3:1 | 12.1:1 | 32' | 628.17 103.14

123+75.00

633.90 -20.00 | 634.14 -12.00 | 634.46 -0.00 | 634.60 634.02 634.02 -14.00 | 634.28 20.00 | 632.7 29.46
622.15 -55.70
3:1 | 4:1 | 626.75 81.89 | 23' | 627.37 101.93

123+50.00

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.18

IA 9

Preliminary

125+20.39

Exist. Parking Lot Curb

95'

Exist. Parking Lot Curb

125+00.00

620.39
-58.43

633.22
-20.00

633.46
-12.00

633.95
-0.00

634.36
634.08
634.08
14.00

633.96
21.94

3:1

10:1

3.4:1

626.30
49.35

92'

1.7 %

1.5 %

2.5 %

622.20
155.91

124+75.00

620.32
-58.06

633.06
-20.00

633.30
-12.00

633.79
-0.00

634.20
634.02
634.02
14.00

633.74
23.39

3:1

10:1

3.6:1

626.61
50.85

87'

0.7 %

4.5 %

3.0:1

622.45
154.87

124+50.00

620.61
-56.91

633.00
-20.00

633.24
-12.00

633.73
0.00

634.14
634.06
634.06
14.00

633.67
23.80

3:1

10:1

4.8:1

628.19
52.68

78'

1.6 %

1.6 %

4.6 %

3.0:1

622.12
152.25

124+25.00

620.90
-56.04

633.04
-20.00

633.28
-12.00

633.77
-0.00

634.17
634.09
634.09
14.00

633.85
20.00

3:1

9.6:1

65'

4.1 %

3.4 %

3.4 %

3.1:1

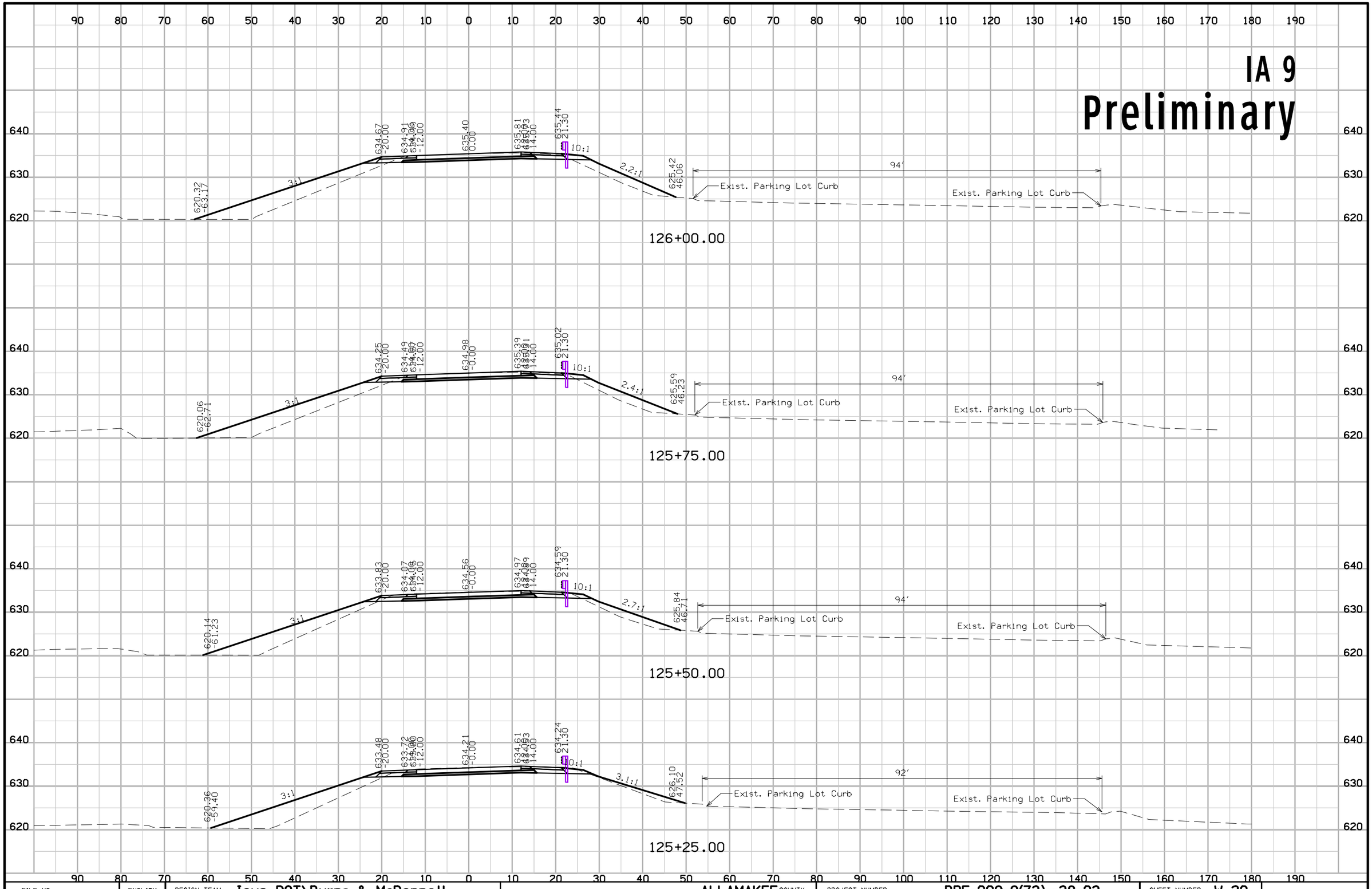
622.34
144.78

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER W.19

10:06:13 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_W03.dgn

IA 9

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER W.20

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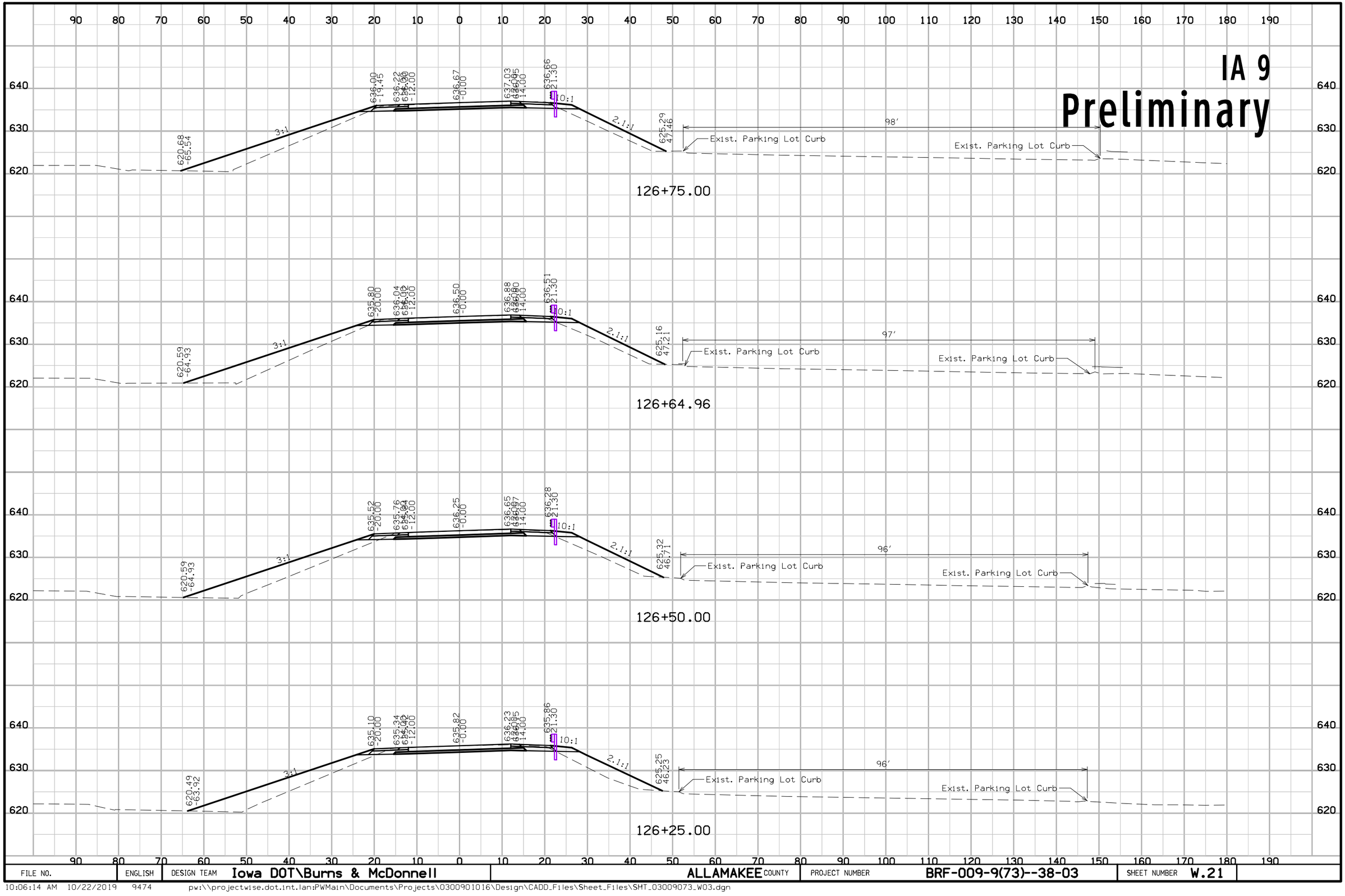
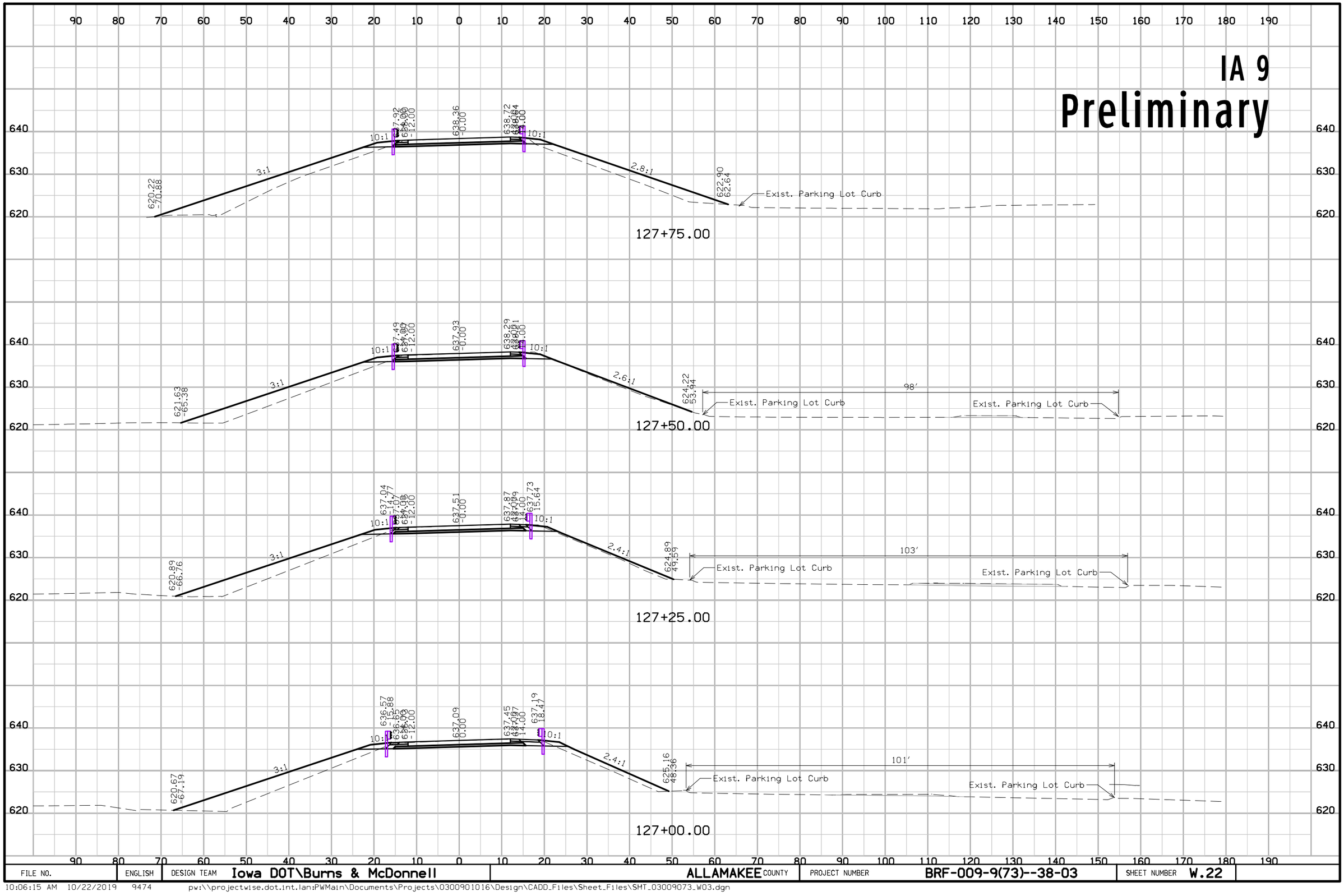
IA 9
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.21

IA 9

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.22

IA 9

Preliminary

640
630
620

127+85.83

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	W.23

10:06:16 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_W03.dgn

Second St.
Preliminary

+43 Prop.
Type "C" Ent.

1.2 %

659.80 -23.51
659.72 -18.51
659.65 -15.00
659.21 -12.00
659.45 -0.00
659.21 12.00
659.65 15.00
659.70 17.52
657.33 19.00
657.45 24.00

1099+43.00

659.43 -22.86
659.36 -17.86
659.30 -15.00
658.86 -12.00
659.10 0.00
658.86 12.00
659.30 15.00
659.35 17.52
657.34 19.00
657.46 24.00

1099+25.00

659.11 -24.00
659.04 -19.00
658.96 -15.00
658.52 -12.00
658.76 0.00
658.52 12.00

Hale St.

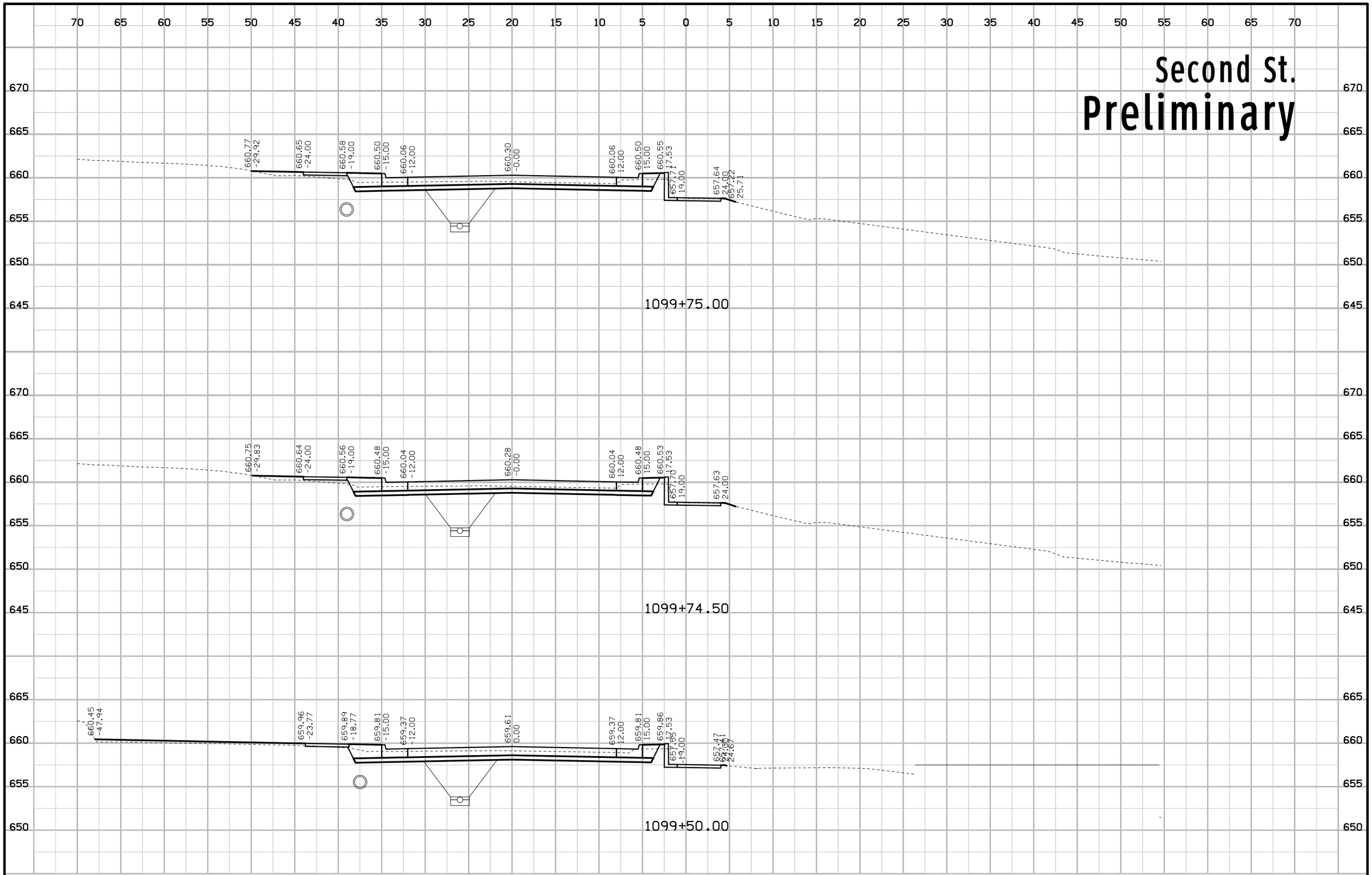
1099+00.00

1098+76.39

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	X.1

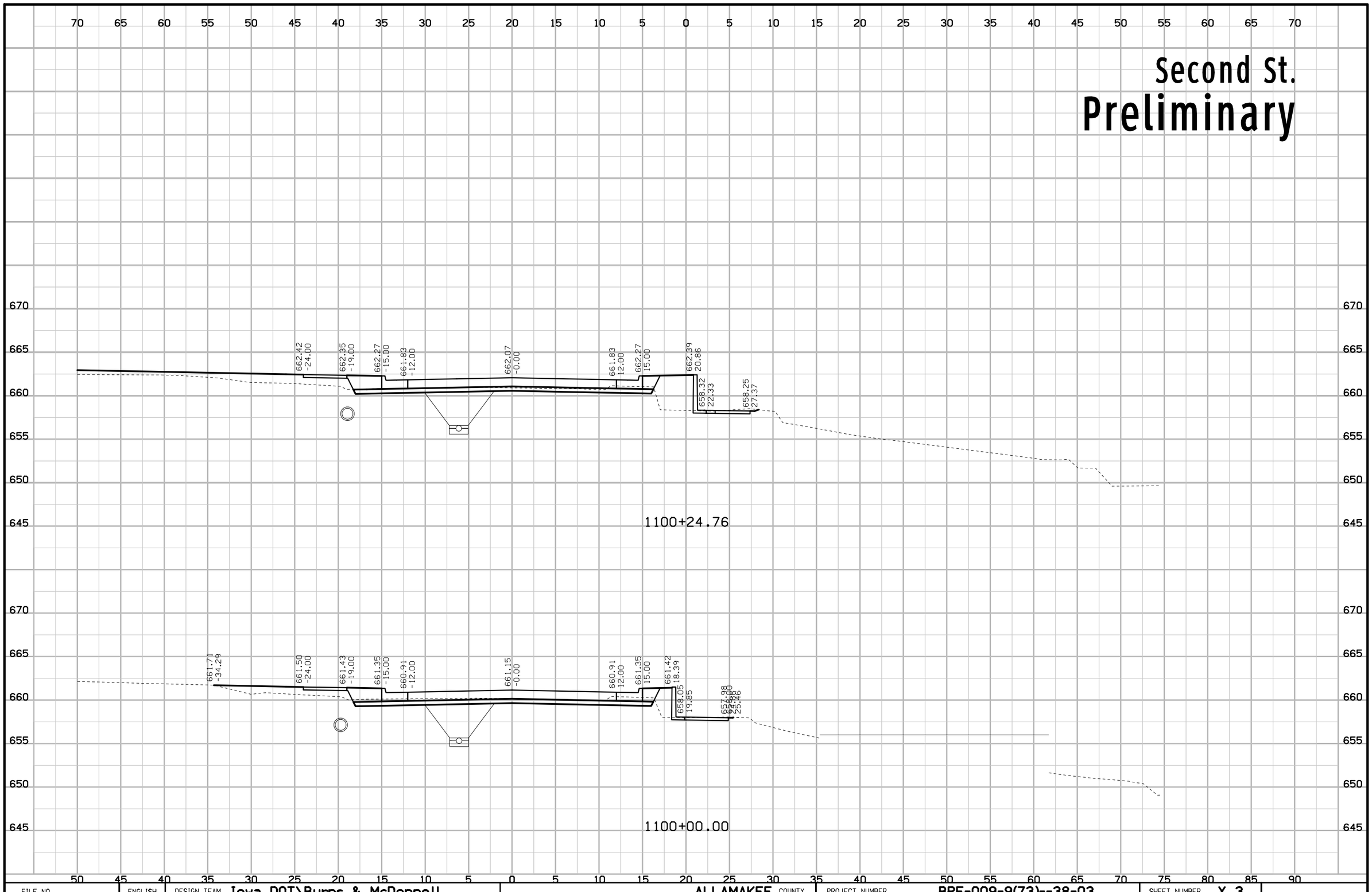
11:01:18 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X01_SRSecond.dgn

Second St.
Preliminary



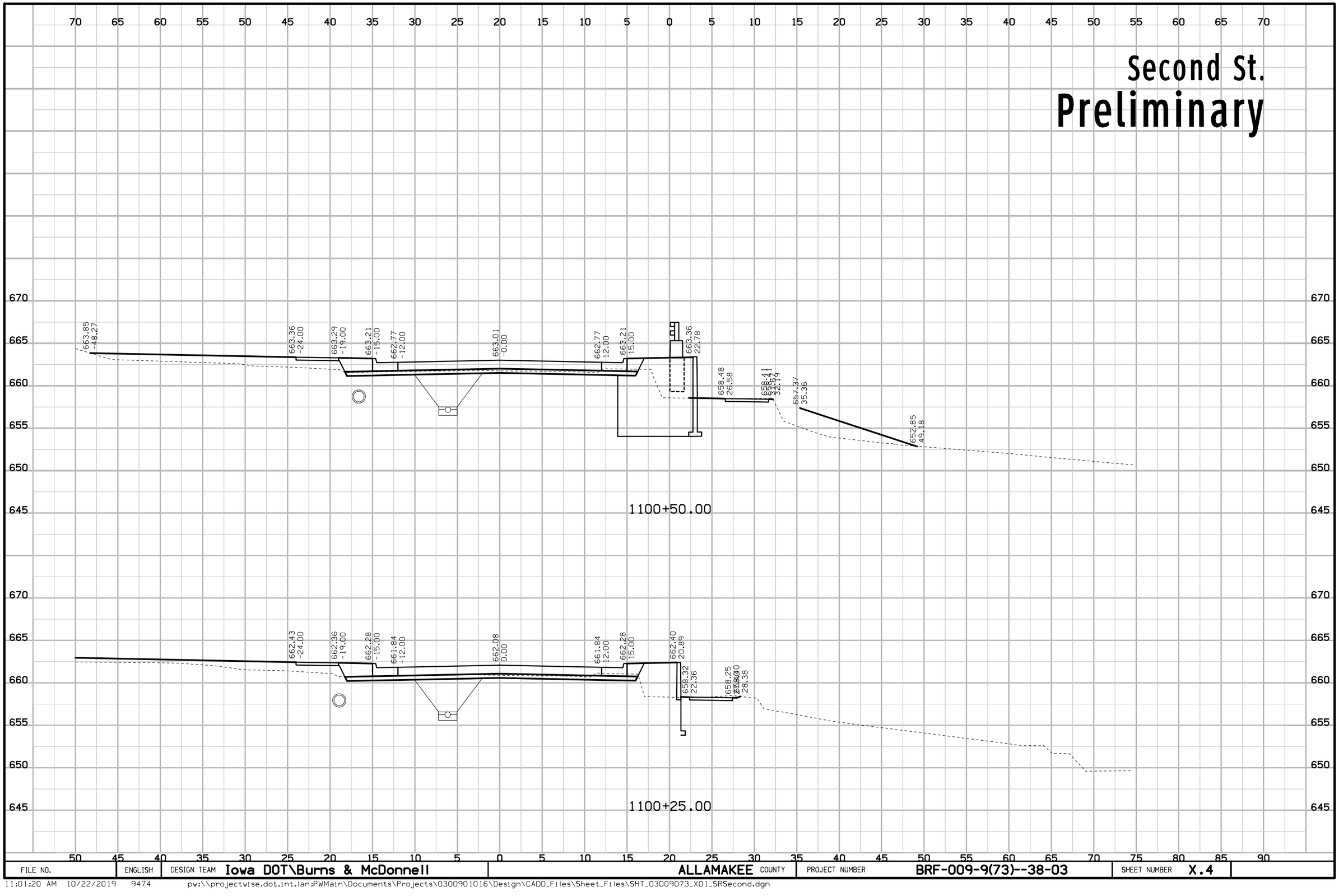
FILE NO.	ENGLISH	DESIGN TEAM			PROJECT NUMBER		SHEET NUMBER	
		Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY		BRF-009-9(73)--38-03		X.2	

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	X.3

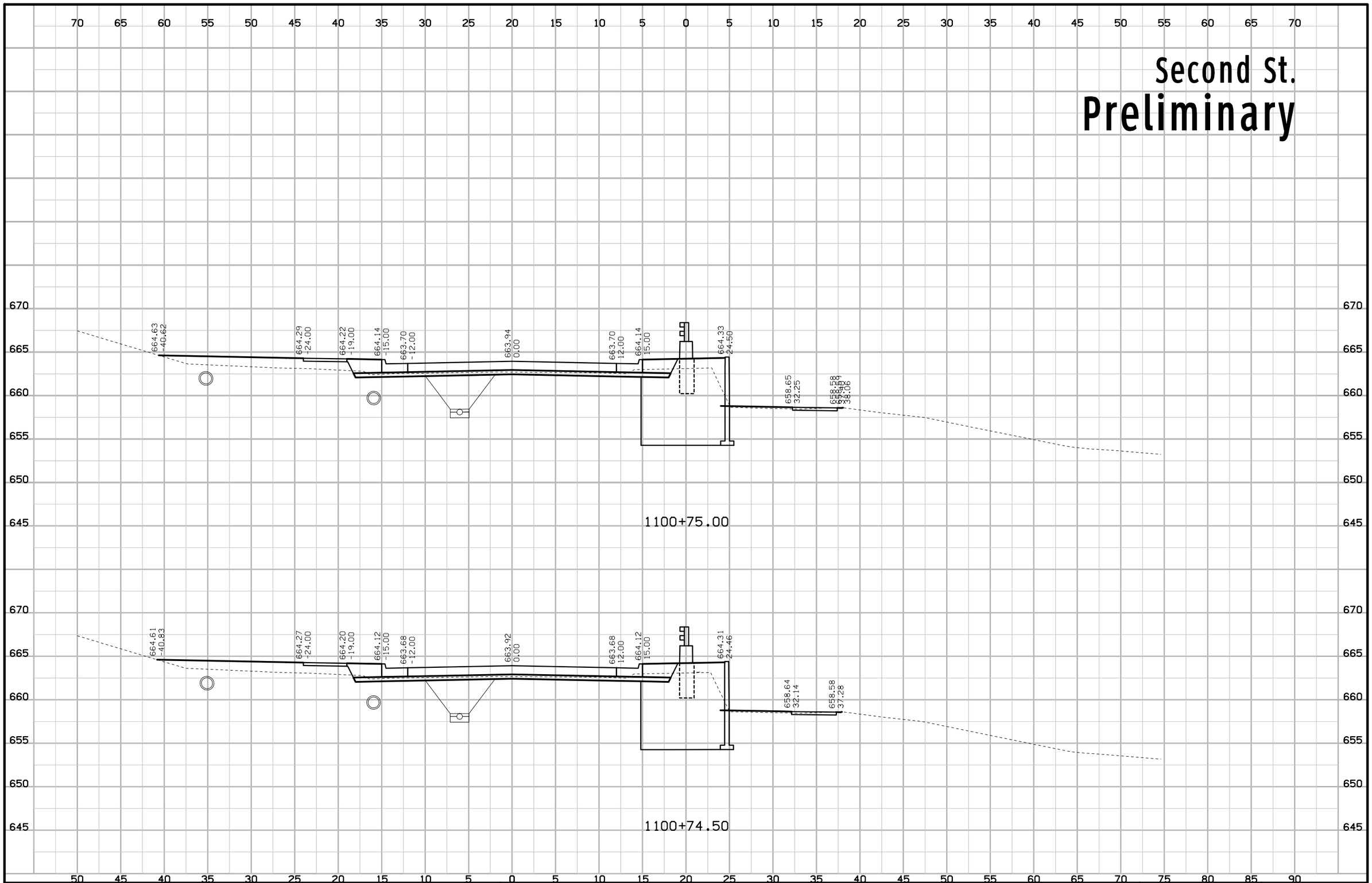
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.4

11:01:20 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X01_SRSecond.dgn

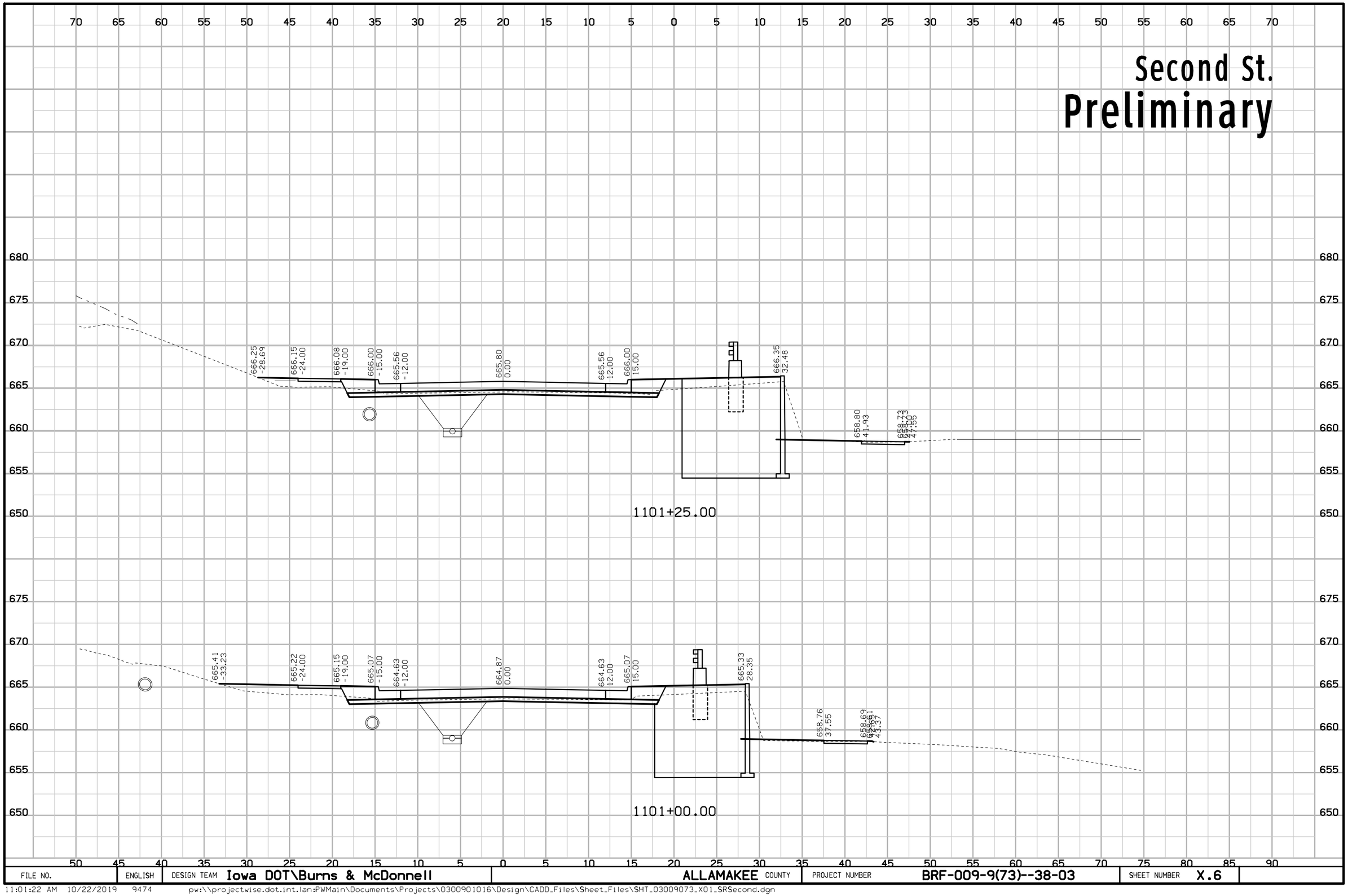
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	X.5

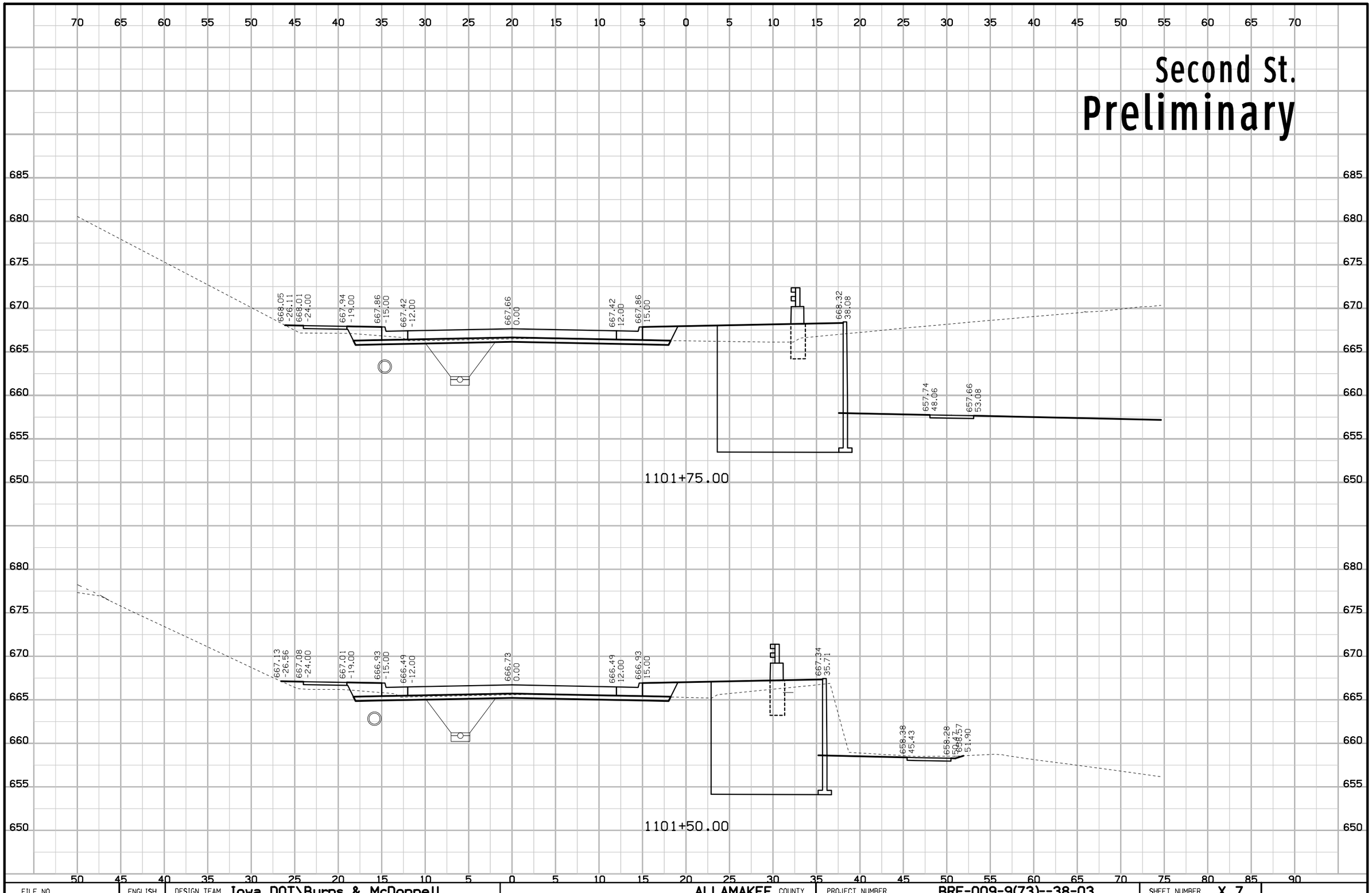
11:01:21 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X01_SRSecond.dgn

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.6

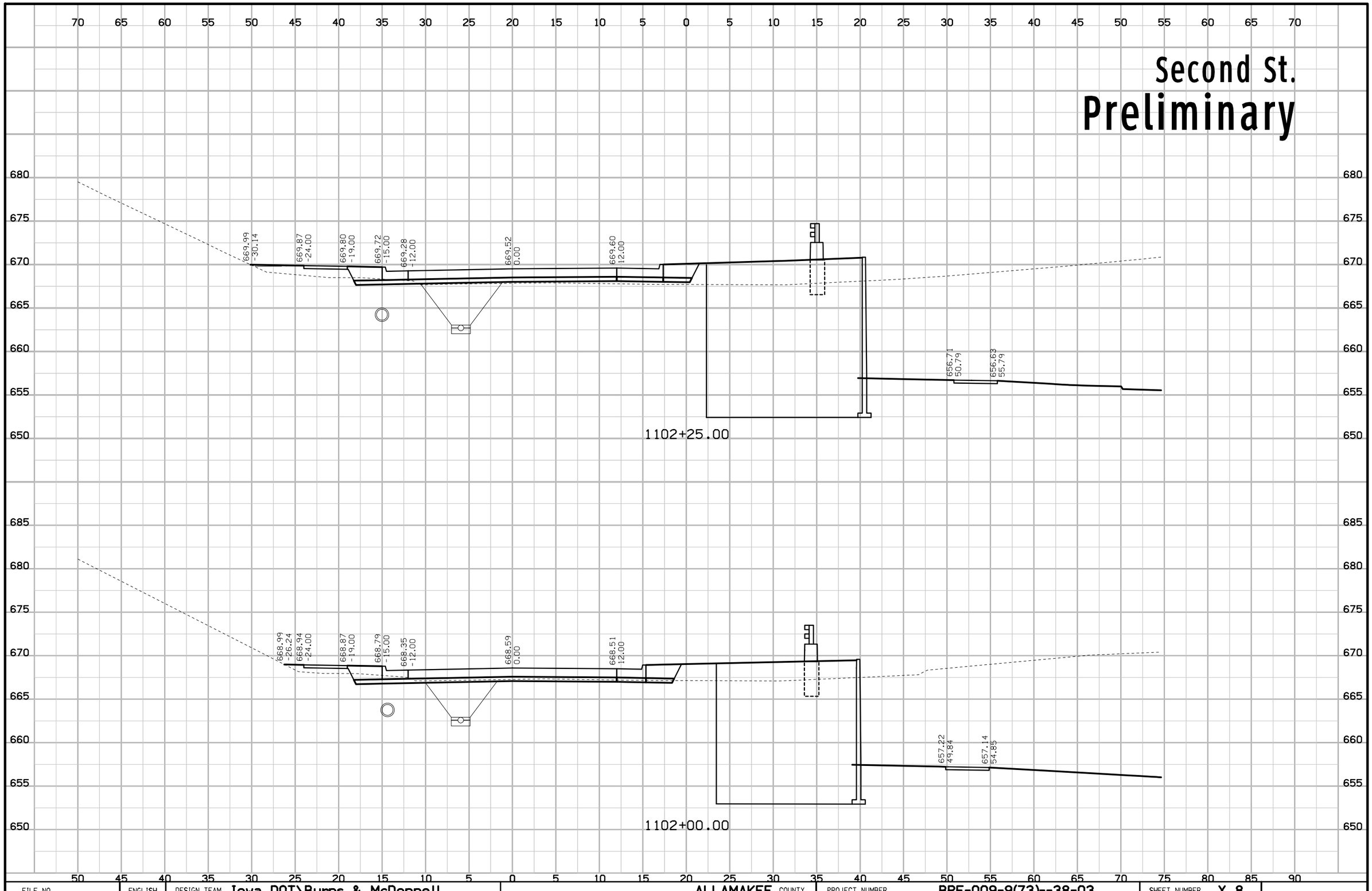
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	X.7

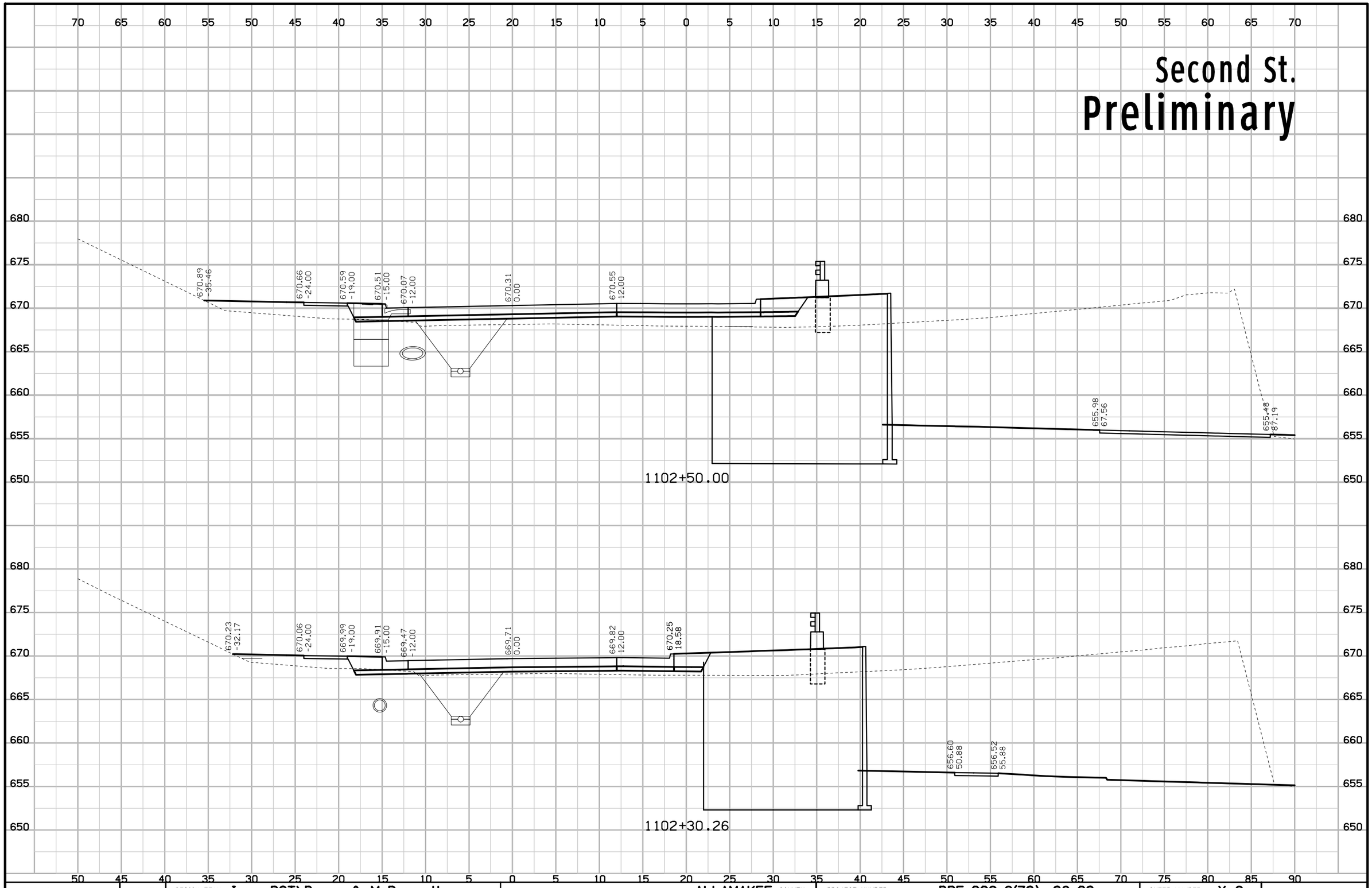
11:01:23 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X01_SRSecond.dgn

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER	BRF-009-9(73)--38-03	SHEET NUMBER	X.8

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.9

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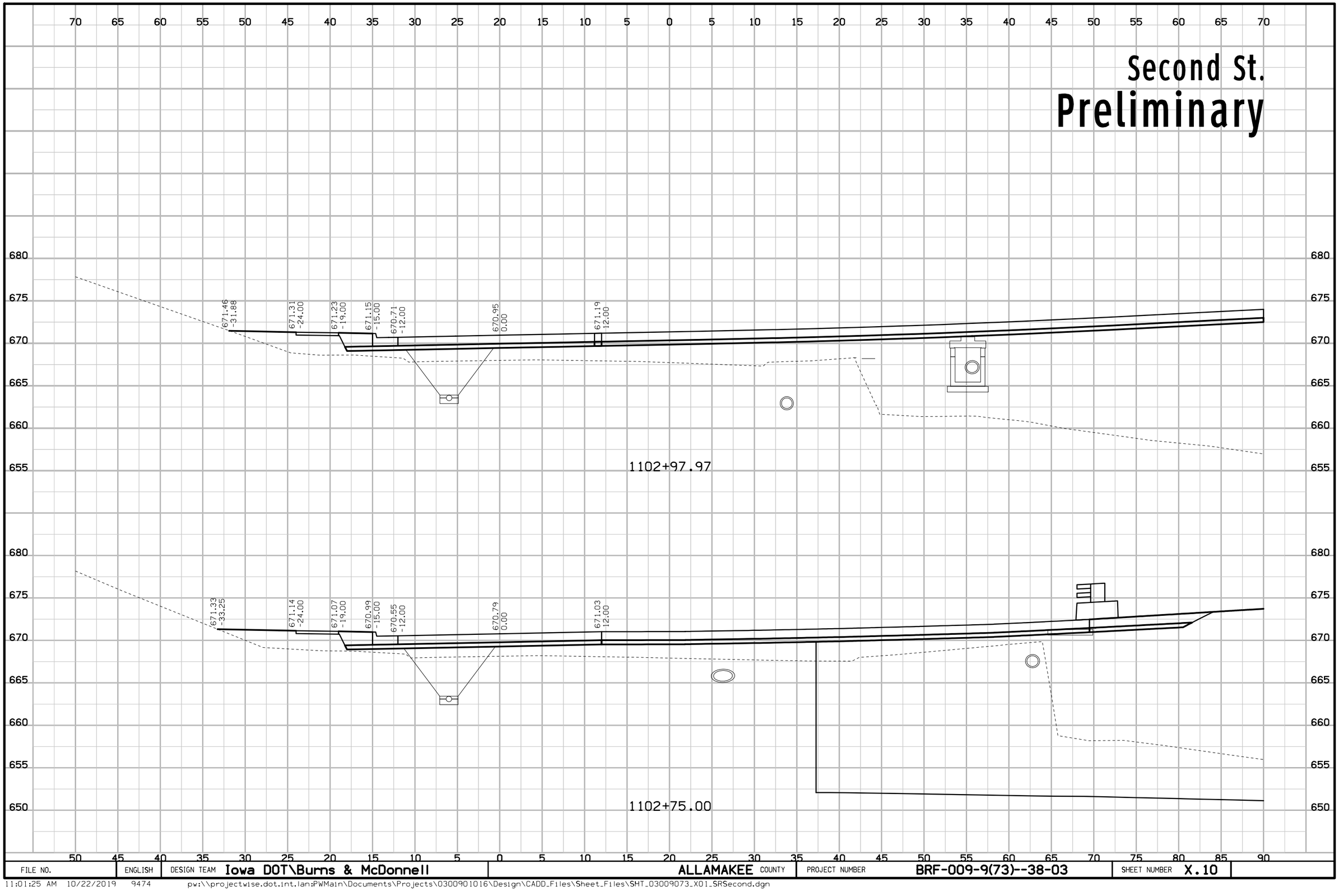
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.10

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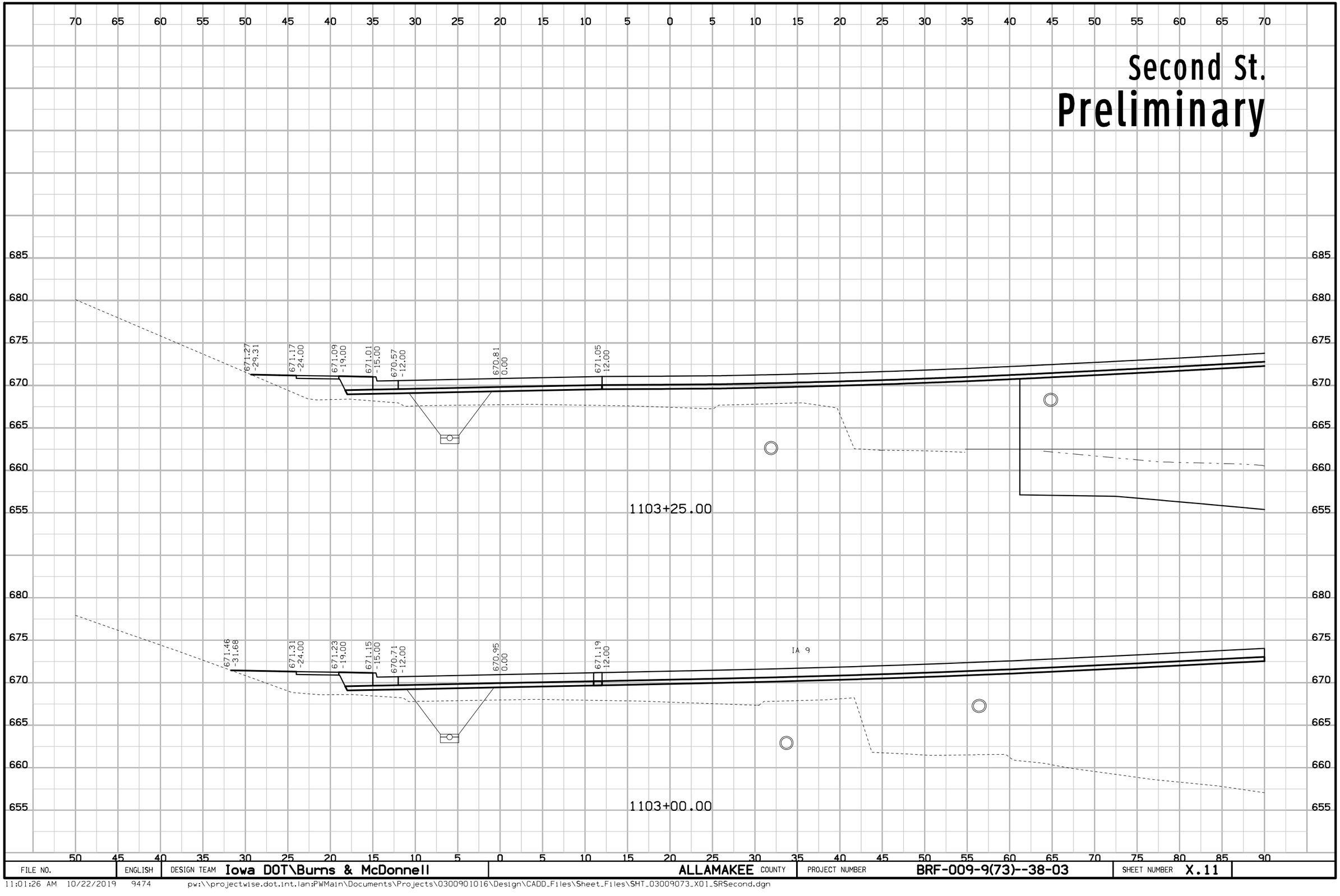
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.11

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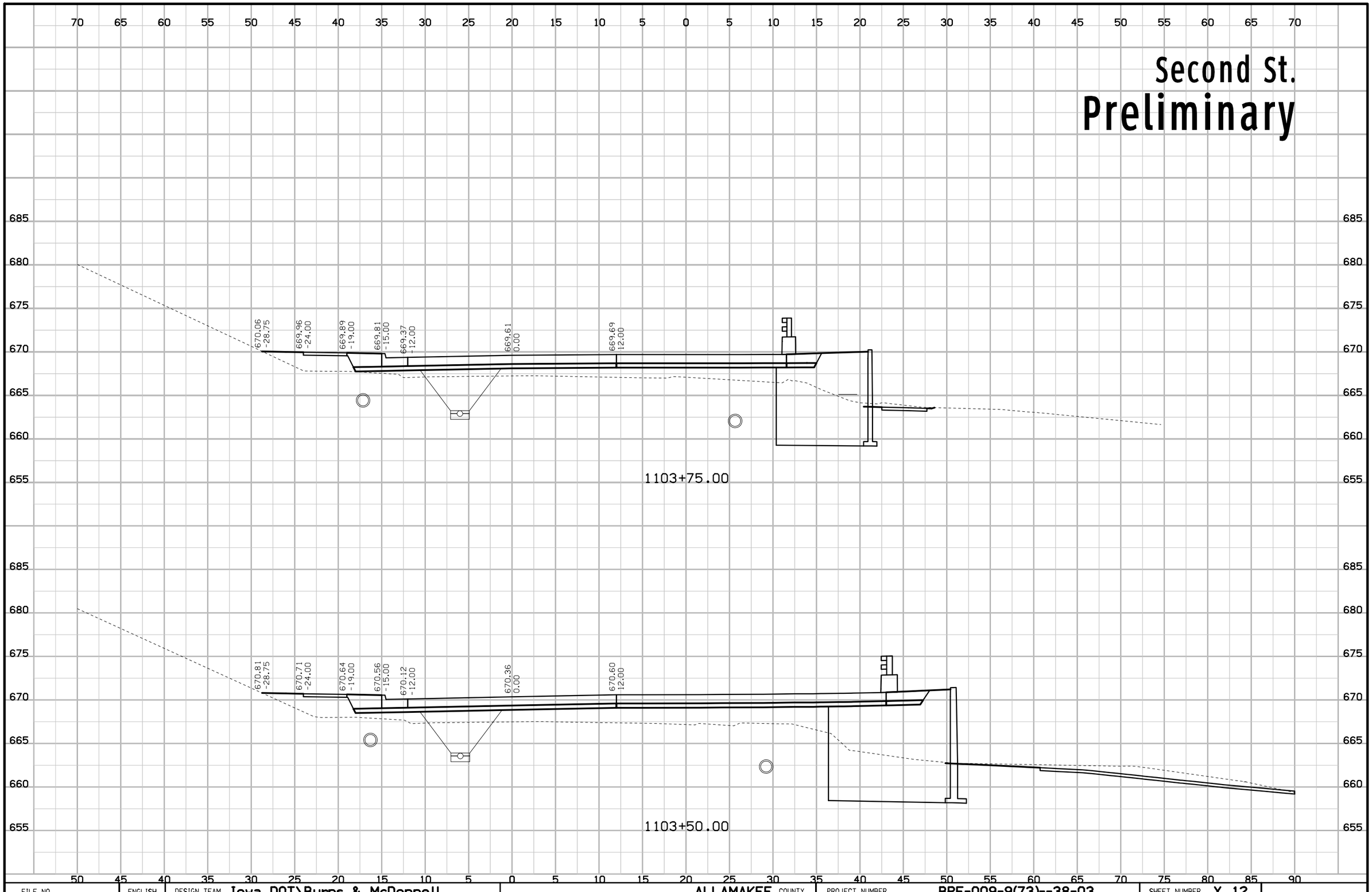
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.12

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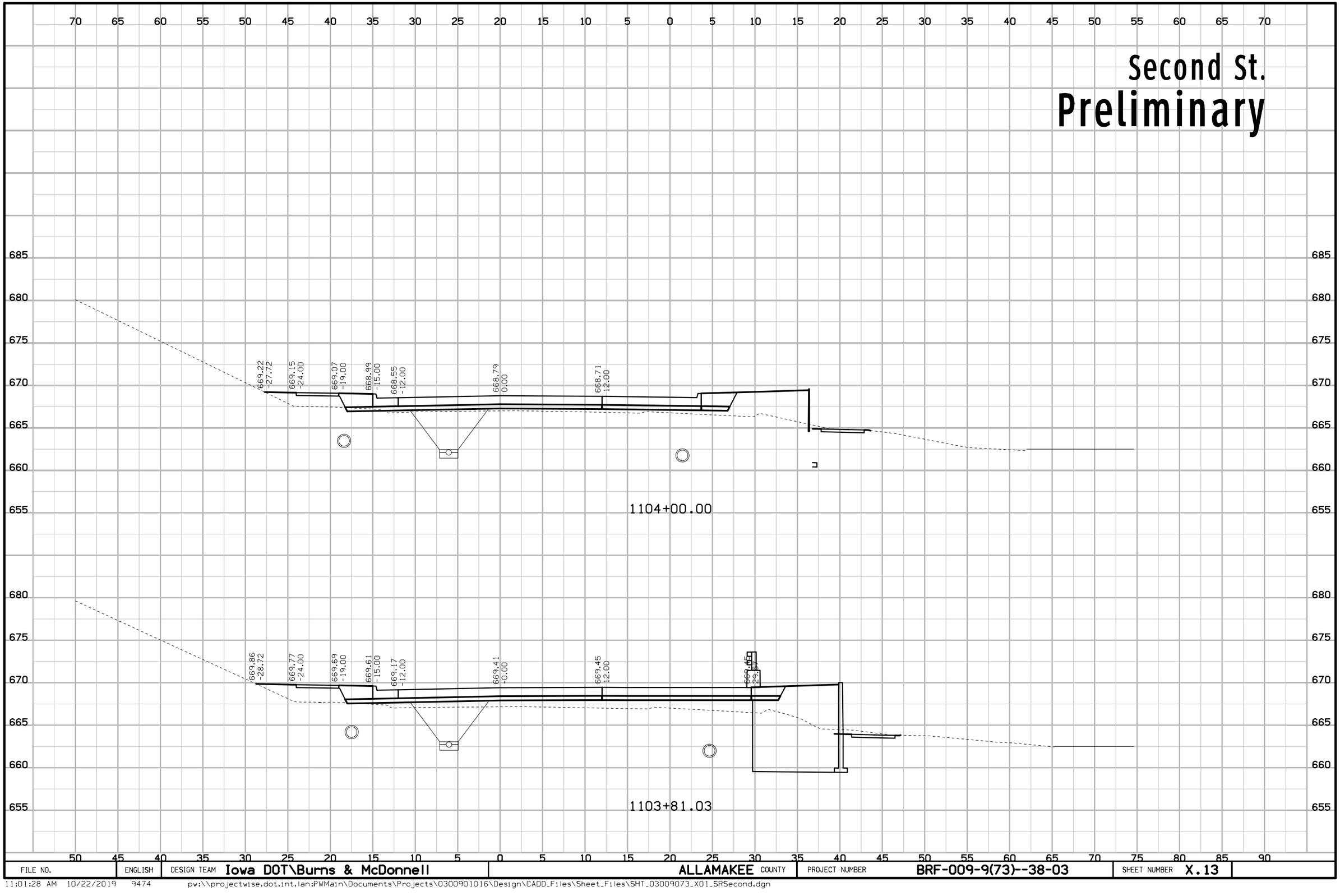
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.13

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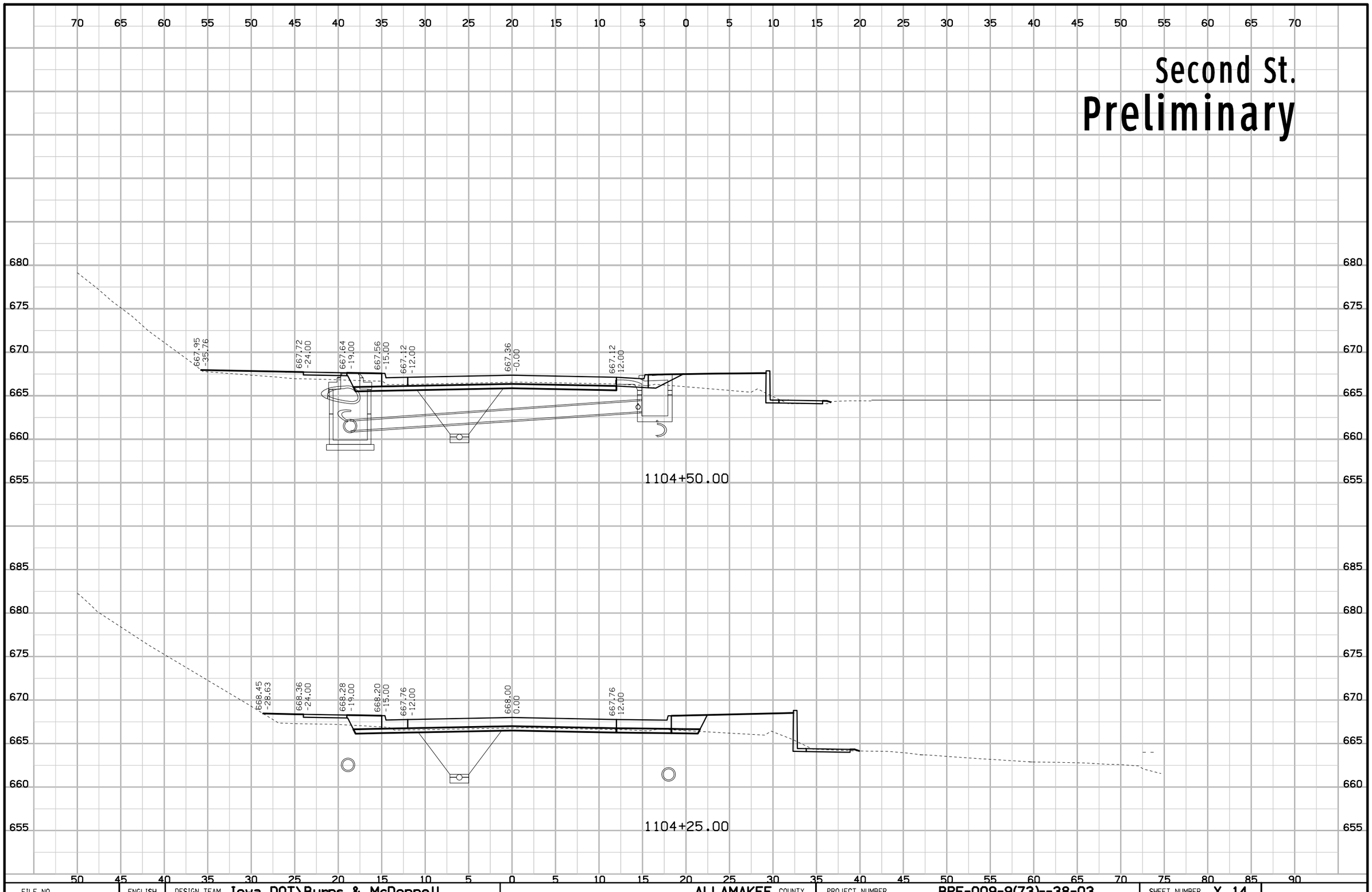
Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.14

11:01:29 AM 10/22/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X01_SRSecond.dgn

Second St.
Preliminary

667.81
-41.20

666.78
-15.00

666.34
-12.00

666.58
-0.00

666.34
12.00

1105+00.00

667.45
-36.95

667.01
-15.00

666.57
-12.00

666.81
-0.00

666.57
12.00

Henry St

1104+80.57

667.52
-36.71

667.09
-15.00

666.65
-12.00

666.89
-0.00

666.65
12.00

1104+75.00

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.15

Second St.
Preliminary

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

675 670 665 660 655 650

666.23 -12.00 | 666.47 -0.00 | 666.23 12.00

1105+50.00

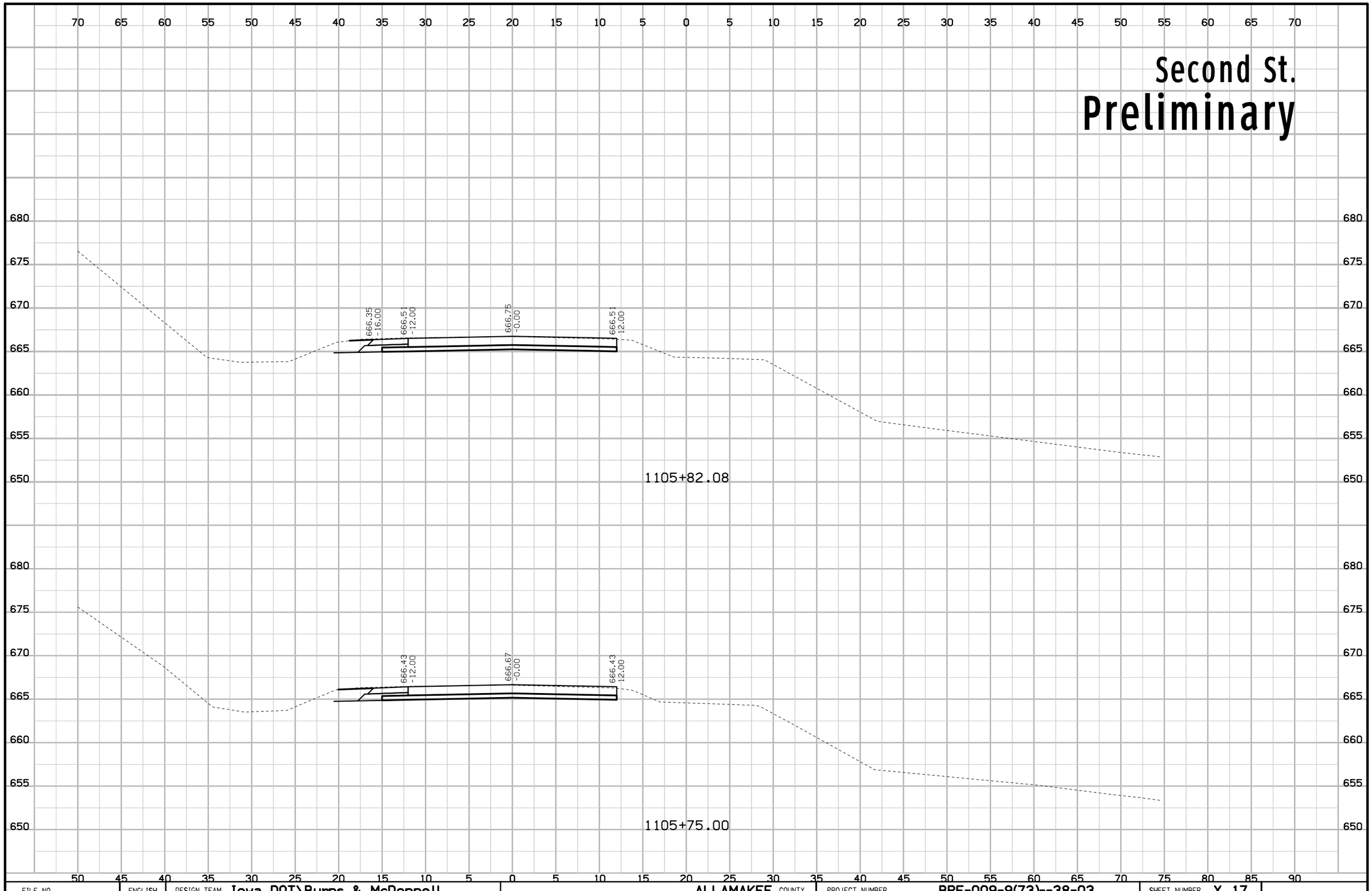
666.87 -26.49 | 666.64 -15.00 | 666.20 -12.00 | 666.44 -0.00 | 666.20 12.00

1105+25.00

50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90

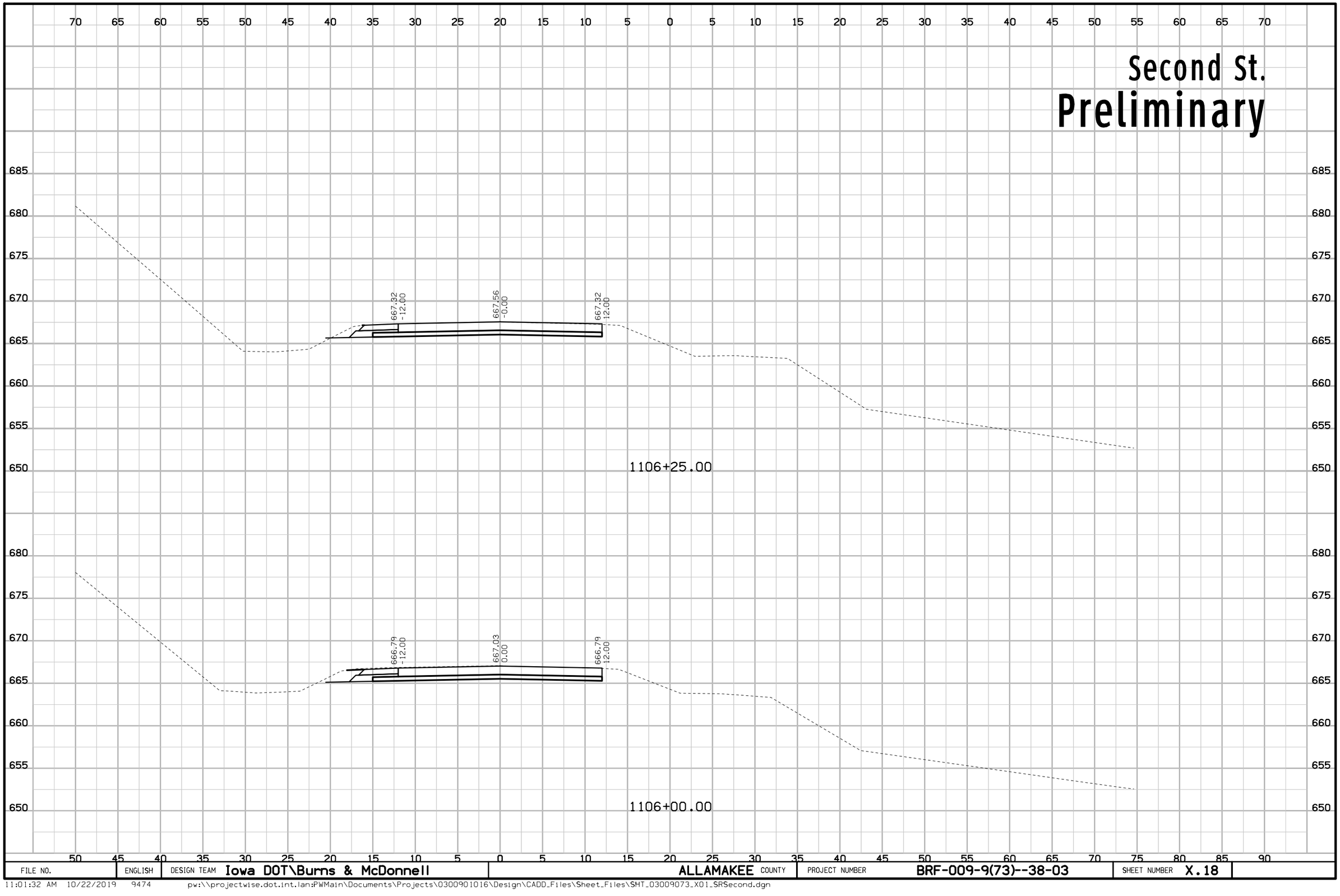
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.16

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.17

Second St.
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.18

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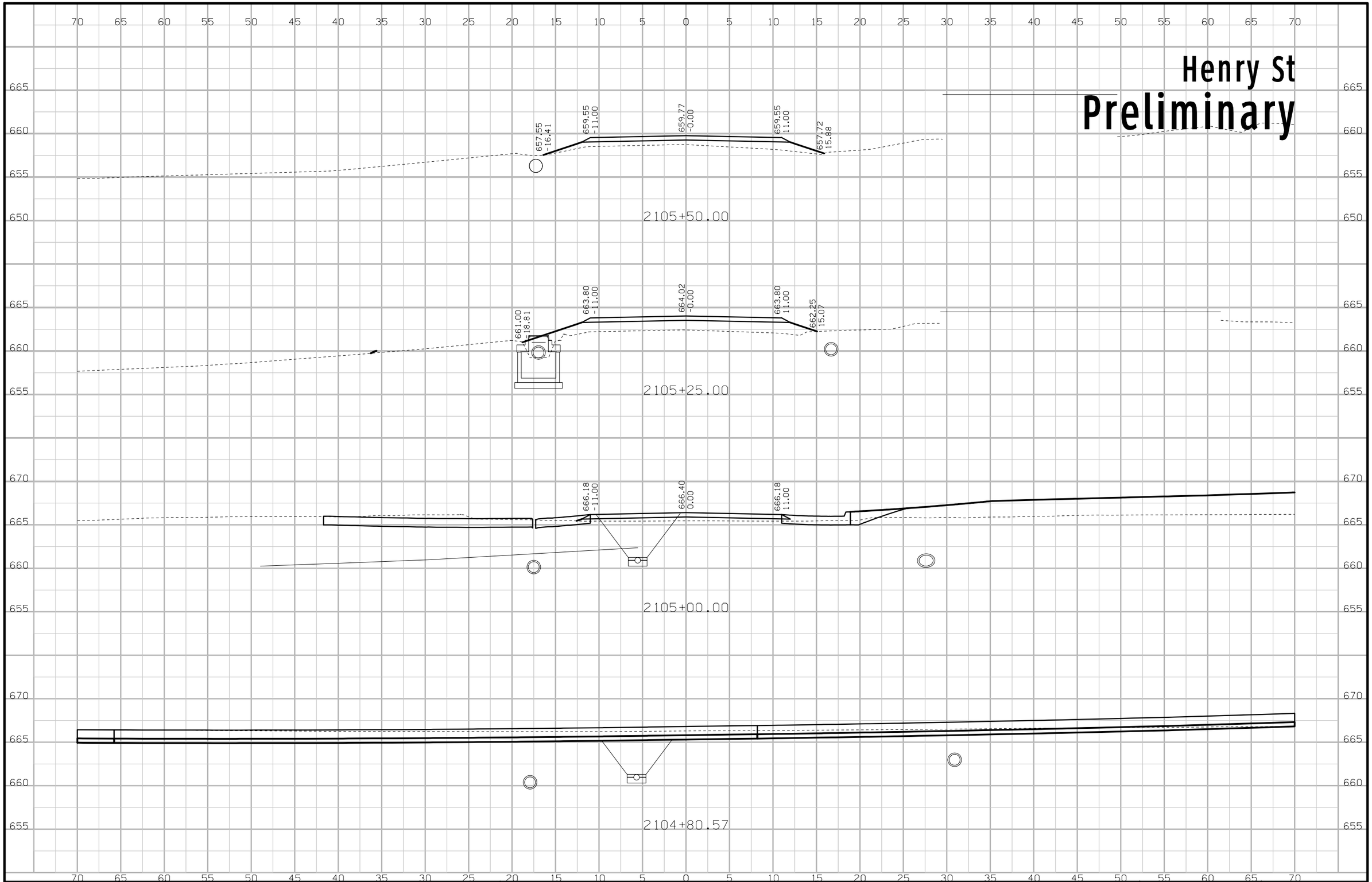
Henry St

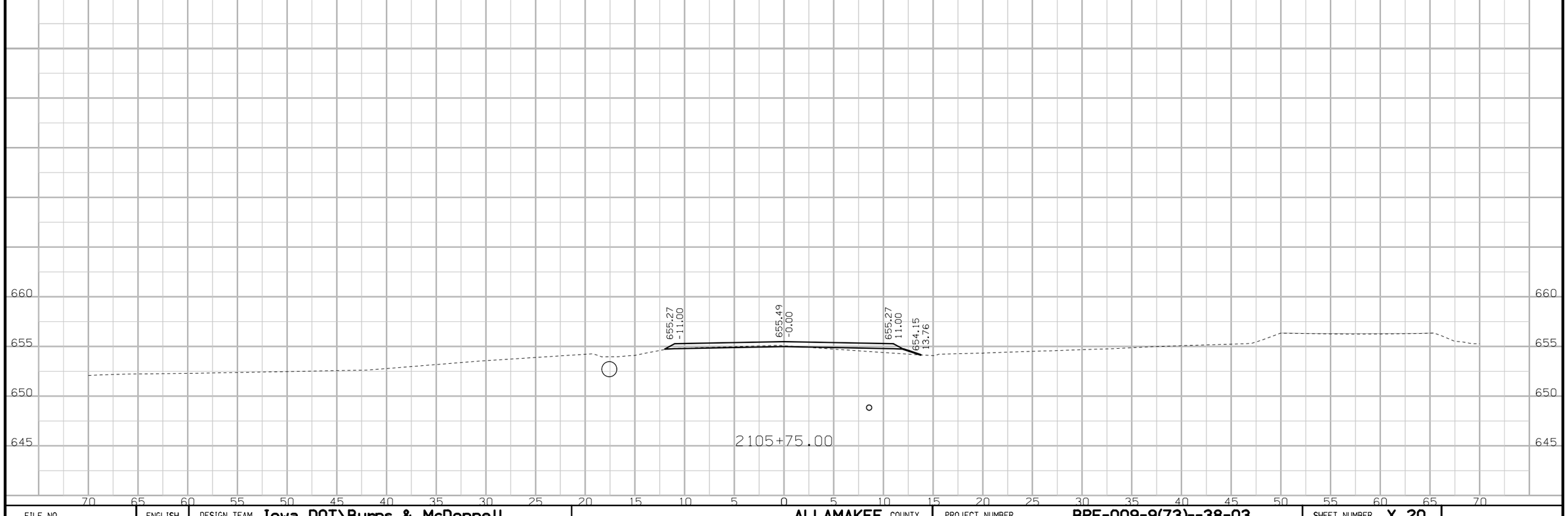
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.19

2:07:27 PM 10/15/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X02_SRHenry.dgn

Henry St
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\Burns & McDonnell	ALLAMAKEE COUNTY	PROJECT NUMBER BRF-009-9(73)--38-03	SHEET NUMBER X.20

2:07:27 PM 10/15/2019 9474 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0300901016\Design\CADD_Files\Sheet_Files\SHT_03009073_X02_SRHenry.dgn