PCC Pavement - Replace
NHSX-063-3(108)--3H-62
Mahaska COUNTY

LETTING DATE
July 21, 2026

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 6	Concept
B Sheets	**Typical Cross Sections and Details**
B.1	Typical Cross Sections and Details
D Sheets	**Mainline Plan and Profile Sheets**
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2 - 3	US 63
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1 - 5	500 Series, Modified Standards and Detail Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
Mahaska COUNTY
PCC Pavement - Replace
N of Co Rd G63 to
S of 293rd St - Various Locations

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

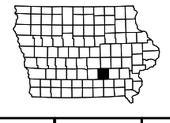
TOTAL
18
PROJECT IDENTIFICATION NUMBER
25-62-063-010
PROJECT NUMBER
NHSX-063-3(108)--3H-62
R.O.W. PROJECT NUMBER

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

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Date: 4-16-25



FILE NO.	ENGLISH	DESIGN TEAM Jia \ Schrock \ Altenhofen	Mahaska COUNTY	PROJECT NUMBER NHSX-063-3(108)--3H-62	SHEET NUMBER A.1

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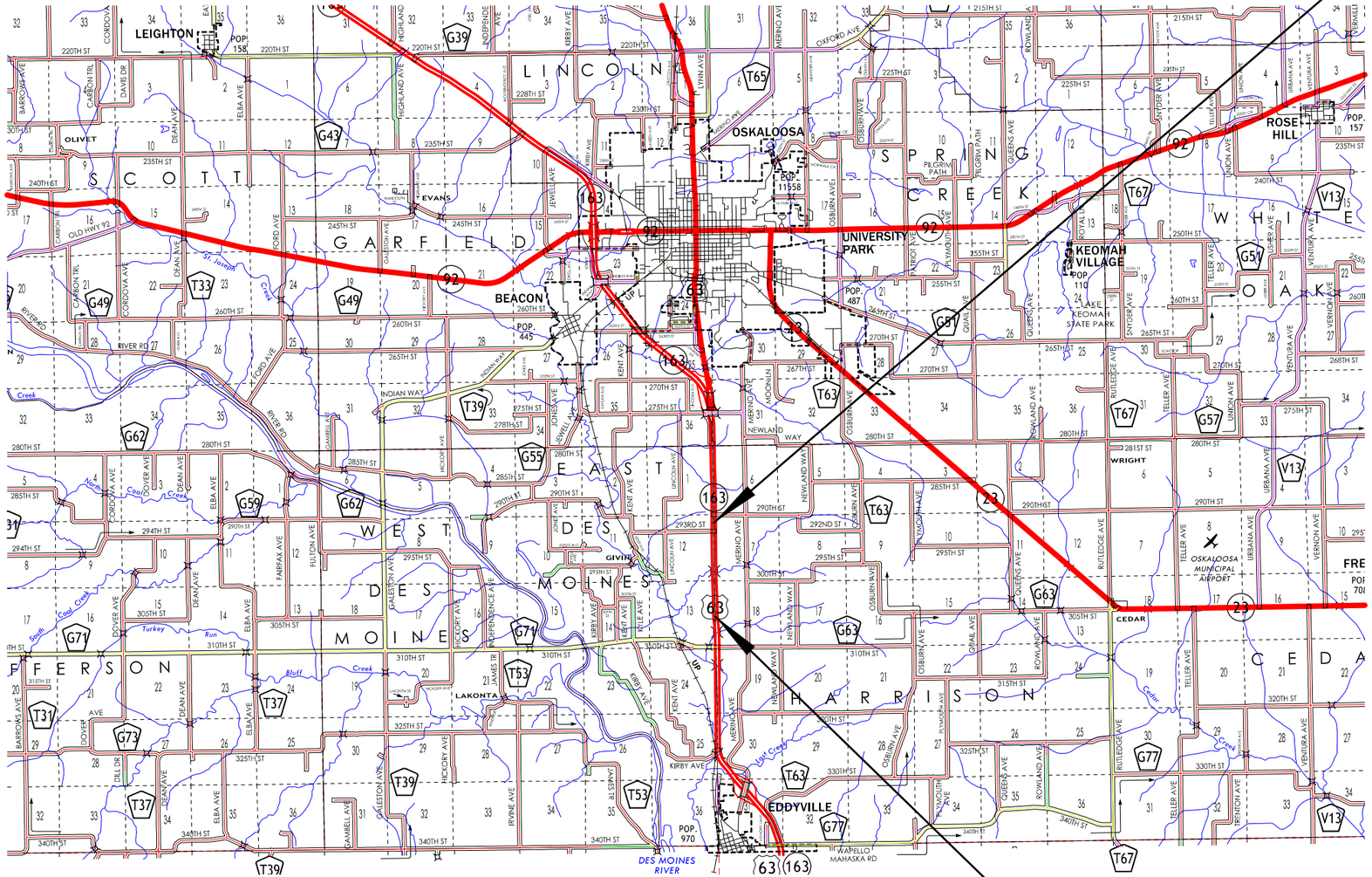
END CONSTRUCTION
M.P. 58.93
Sta. 1355+00



BEGIN CONSTRUCTION
M.P. 57.72
Sta. 1294+00

LOCATION MAP SCALE
0 1 2 3
Miles

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Schrock \ Altenhofen	Mahaska COUNTY	PROJECT NUMBER NHSX-063-3(108)--3H-62	SHEET NUMBER A.2

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IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 5

ATTENTION: Bob Younie

FROM: John Bartholomew

BUREAU: Design

SUBJECT: 2026 - NR Project Concept - **FINAL**

DATE: November 21, 2024

PROJECT: Mahaska County
NHSX-063-3(108)--3H-62
PIN: 25-62-063-010

MEETING: June 19, 2024
PARTICIPANTS: District 5 – Bob Younie and Steve McElmeel; Design – Kevin Patel, Mark Dell, Mike Kennerly, Grace Immel, David Heer, Masrur Mahedi, Trevor Rhedin, Eric Fagre, Cameron Hershey and Greg Moyle.
DATE OF REVIEW – Meeting on Microsoft Teams: September 10, 2024
PARTICIPANTS: Design - John Bartholomew, Hollie Richey, Kevin Patel, Mike Kennerly, Mark Dell, Grace Immel, Eric Fagre and Cameron Hershey.

This project involves the reconstruction of U.S. 63 at various locations using double reinforced pavement to minimize future pavement and shoulder subsidence as a result of underground mines.

There is only one alternative for this project. Reconstruct mainline at various locations with head to head traffic, utilizing staging and crossovers. The estimated cost of this project is **$7,799,800.**

PROJECT DATA:
ROUTE: U.S. 63
From: North of County Road G63 to south of 293rd St. – various locations
Project location adjusted: North of County Road G63 to south of 290th St.
LENGTH: 1.16 miles (approx. M.P. 57.73 to approx. M.P. 58.89)
PLANNING CLASSIFICATION: Commercial and Industrial
MAINTENANCE SERVICE LEVEL: B
TRAFFIC: 2023 --- 12,700 ADT with 19% trucks
PRESENT PAVEMENT SURFACE: NB Lanes - PCC and PCC with HMA, SB Lanes - PCC

PRESENT SHOULDER WIDTH:
NB Lanes – 6 ft. inside paved and 8 ft. outside (4 ft. paved and 4 ft. granular)
SB Lanes – 6 ft. inside paved and 10 ft. outside (4 ft. paved and 6 ft. granular)

Google Earth shows HMA shoulders for northbound and southbound lanes. 7/2018 imagery (NB) and 9/2024 imagery (SB). The as-builts don't reflect the paved shoulders as shown in Google Earth.

M.P. to M.P.	Dir.	Type	Avg. Str. No.	80% Str. No.	Jt. Str. No.	PCI	IRI	K Value
55.59 to 57.94	1	1	7	6	---	53	165	167
57.94 to 58.92	1	3	8	6	---	68	145	198
56.79 to 60.33	2	1	7	5	---	57	157	150

PAVEMENT HISTORY:

NORTHBOUND LANES
M.P. 55.59 to 57.94
ORIGINAL PAVEMENT: 24 ft. wide, 10 in. PCC
COARSE AGGREGATE SOURCE: Sully Mine
YEAR CONSTRUCTED: 1997

M.P. 57.94 to 58.92
ORIGINAL PAVEMENT: 22 ft. wide, 8 in. PC8
COARSE AGGREGATE SOURCE: Eddyville
YEAR CONSTRUCTED: 1949
RESURFACED AND WIDENED: 1995, 2 in., 24 ft. wide surface AAC with 4.5 base AAC, 6 - 7 ft. future inside granular and 7 to 10 ft. variable granular outside shoulder

SOUTHBOUND LANES
M.P. 56.79 to 60.33
ORIGINAL PAVEMENT: 26 ft. wide, 10 in. PCC
COARSE AGGREGATE SOURCE: Sully
YEAR CONSTRUCTED: 1998

EXISTING CONDITIONS AND CAUSES OF DISTRESS:

The northbound lanes were constructed in 1949 using 8 in. of PC8 PCC. Widening and resurfacing of 6.5 in. AAC occurred in 1995. The roadway was expanded from a 2 lane to 4 lane facility in 1998 with the addition of the southbound lanes. The southbound lanes were constructed using 10 in. PCC on variable thickness granular subbase (10 in. thick on centerline). This section of U.S. 63 had known underground and surface mines in this area and as a result of this has experienced 4 subsidence events. Three of these subsidence events can be classified as sags, while the other event was a 6 ft. diameter sinkhole, approximately 30 ft. - 40 ft. deep. An additional sinkhole opened up in the landfill area adjacent to the project site.

The southern most sag in the southbound lanes at M.P 57.75 was address by an HMA overlay. The sag featured at M.P. 58.65 of the southbound lanes was addressed by backfilling the mine voids under the roadway with a water/sand injection along with pavement replacement. A sag occurred on the northbound lanes at M.P. 58.85 which was addressed with an HMA overlay. The sinkhole that developed located at M.P. 58.2 of the southbound lanes was approximately 6 ft. in diameter and 30 ft. - 40 ft. deep and was filled by aggregate. This project is to use double reinforced pavement to minimize future pavement and shoulder subsidence as a result of these underground mines. The pavement limits were based upon information recommended by Marino Engineering Associates, a specialty subsidence and mining engineering consultant hired by the Iowa DOT, as well as Lidar pavement scans, in addition to in-house electrical resistivity testing.

SAFETY CONSIDERATION:

Crash History

During the five-year study period from January 1, 2019 through December 31, 2023, there were 11 crashes including, 3 personal injury crashes, and 8 personal property crashes. The intersection within this segment of U.S. 63 is currently listed as a negligible PCR level intersection with a 0.01 PCR value.

ALTERNATIVE 1 RECONSTRUCTION – Reconstruct mainline with head to head traffic with crossovers

This project is at various locations of the northbound and southbound lanes on U.S. 63, from approximately 0.65 miles north of County Road G71/G63 (approx. M.P. 57.73) to 0.20 miles south of 290th St. (approx. M.P. 58.89), a distance of approximately 1.16 miles. This roadway is a 4-lane divided highway with 6 ft. inside and 10 ft. outside shoulders and a 50 ft. median.

The existing mainline pavement and paved shoulders will be removed. The new roadway typical section will be a 40 ft. wide PCC pavement (6 ft. inside shoulder, two 12 ft. lanes and 10 ft. outside shoulder) section, consisting of 12 inches of double reinforced PCC pavement on 12 inches of modified subbase. New longitudinal subdrains and outlets will be installed.

Construction will take place within the following station limits:
1294+00 to 1297+00
1316+50 to 1323+50
1328+00 to 1339+00
1342+00 to 1345+00
1353+50 to 1355+00

Stage 1 will be constructed using staged construction. Stages 2 and 3 will utilize median crossovers. The crossovers will be constructed north of County Road G63/310th St. (approximate M.P. 57.2) and north of 290th St. (approximate M.P. 59.45). The crossovers will be left in place at the completion of this project. During construction it will be necessary to place temporary crash cushions on the trailing corners of the northbound bridge to accommodate the two lane, two way traffic.

Stage 1A: Construction of the right lane of northbound U.S. 63, Sta. 1353+50 to 1355+00 utilizing staged construction.
Stage 1B: Construction of the left lane of northbound U.S. 63, Sta. 1353+50 to 1355+00 utilizing staged construction.
Stage 2: Construction of southbound lanes of U.S. 63, utilizing crossovers.
Stage 3: Construction of the remainder of the northbound lanes of U.S. 63, utilizing crossovers.

Rumble strips will be ground into both inside and outside shoulders.

Right of way is not required.

ESTIMATED COST:

Item	Estimated Cost
Double Reinforced PCC Pavement 12 inch	$3,853,500
Removal of Pavement	194,500
Modified Subbase	650,500
Shoulder Construction, Earth	55,800
Crossovers	727,800
Pavement Markings, Multi-component	7,200
Excavation, Class 13 Waste	216,200
Longitudinal Subdrains (Includes Outlets)	119,300
Temporary Crash Cushions	2,700
Rumble Strips	11,600
Temporary Barrier Rail	10,700
Traffic Control (5%)	390,000
Mobilization (5%)	390,000
M & C (15%)	1,170,000
Total Alternative No. 1	**$7,799,800**

RECOMMENDATIONS:

The recommended method of rehabilitation for this project is reconstructing mainline pavement and shoulders in various locations. The estimated cost of this project is **$7,799,800.**

Right of way is not required.

The Water Resources section of the Location and Environment Bureau stated that this project may need a 404 permit if culvert work or clearing and grubbing will be done within a regulated waterbody. Depending on the extent of work, mitigation could be required.

SPECIAL CONSIDERATIONS

Traffic volumes during construction are not expected to be high enough to require special construction scheduling.

This will not be a traffic critical project.

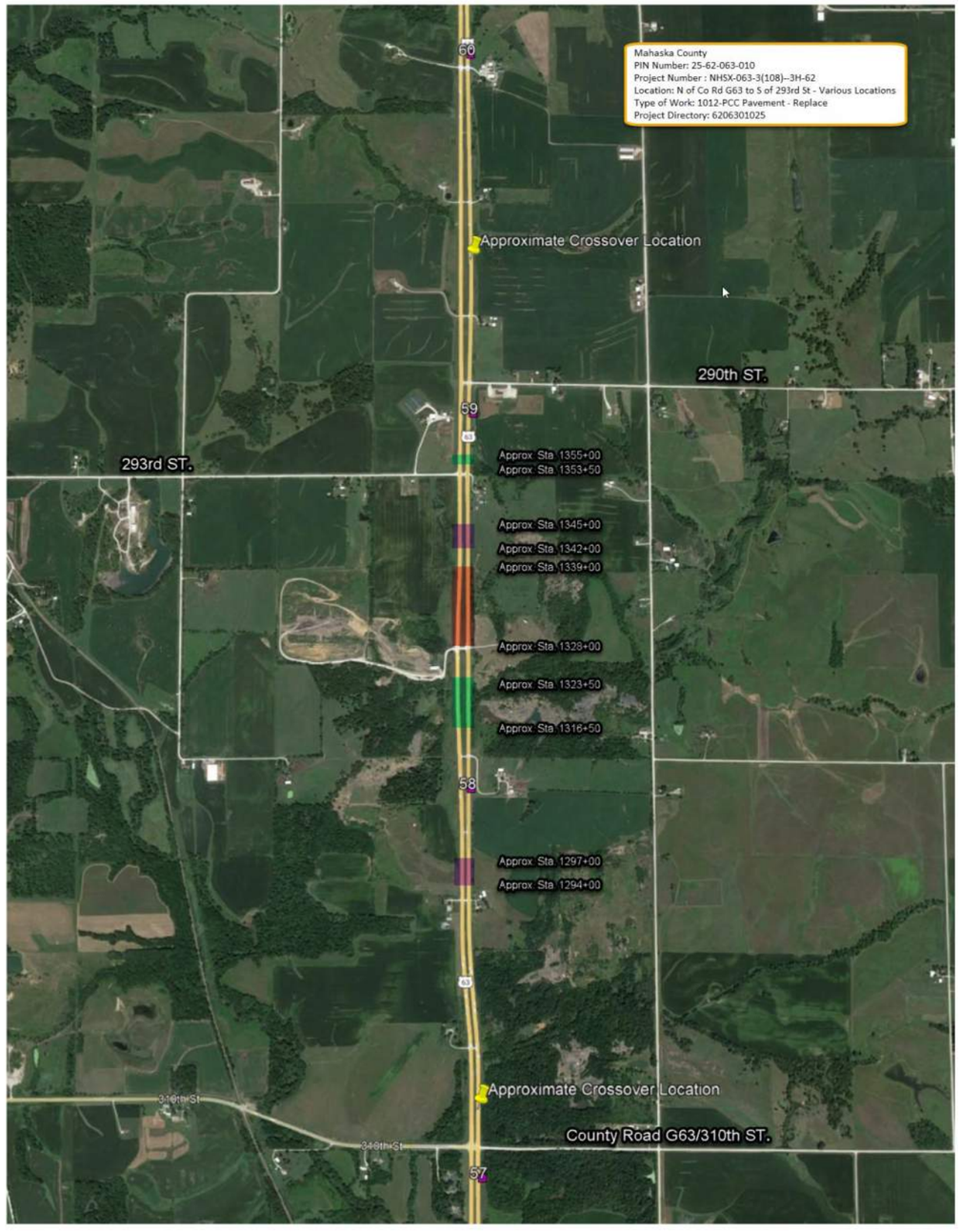
This area will need to be monitored due to a history of settlement issues due to the underground mines and soil conditions.

FUNDS PROGRAMMED:

This proposed NR project is not yet in the 2025-2029 program. It has been identified by the District 5 office for construction in FY 2026. A schedule of events for plan development will be determined following approval of the Project Concept.

JEB: hsr
cc:

C. Purcell	M. J. Kennerly	K. D. Nicholson
M. Dell	J. S. Nelson	M. Nop
M. A. Swenson	D. E. Sprengeler	C. C. Poole
S. Majors	A. Poole	K. Brink
D. L. Newell	B. Bradley	J. W. Laaser-Webb
W. A. Sorenson	E. C. Wright	M. E. Ross
A. A. Welch	J. Harris	M. Van Dyke
B. Hofer	G. Karssen	B. E. Azeltine
H. Naraghi	S. Anderson	D. Stokes
M. Gillette	K. K. Patel	R. Harris
M. Todsen	B. Dolan	T. Lovan
M. Solberg	T. Gustafson	D. Dudley
L. Armstrong	N. Abuissa	D. Zeimen
C. Brakke	A. Buss	P. Leanos
S. McElmeel	D. Bielser	B. Beavers
B. Lauderman	H. Torres-Cacho	J. Garton
J. Woodcock	B. M. Clancy	B. Porter
G. Immel	E. Fagre	C. Hershey
T. Rhedin	FHWA	



Utilities

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Aureon Technology

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(515) 240-2644 Mobile
jeff.klocko@aureon.com

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Steve Parker
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Manager of Engineering & Construct...

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Construction Manager

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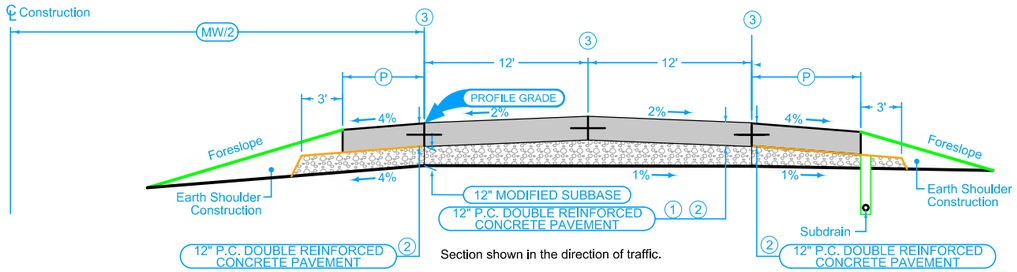
3650 SW 61st ST
Des Moines, IA 50321

Full Depth PCC Shoulder

Direction of Travel	BEGIN (4) STATION	END (4) STATION	(P) Feet
			4_P_FullPCC_MODIFIED
Both	1294+00	1297+00	4
Both	1316+50	1323+50	4
Both	1328+00	1339+00	4
Both	1342+00	1345+00	4
Both	1353+50	1355+00	4



Section shown in the direction of traffic.

Full Depth PCC Shoulder

Direction of Travel	BEGIN (4) STATION	END (4) STATION	(P) Feet
			4_P_FullPCC_MODIFIED
Both	1294+00	1297+00	6
Both	1316+50	1323+50	6
Both	1328+00	1339+00	6
Both	1342+00	1345+00	6
Both	1353+50	1355+00	6

Section shown in the direction of traffic.

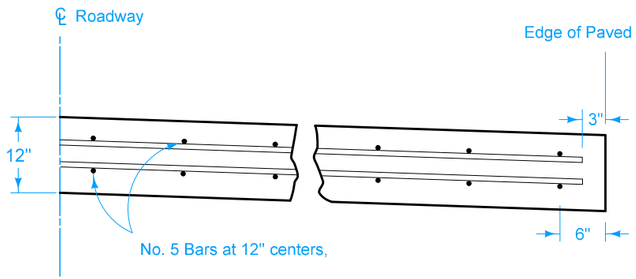
Direction of Travel	BEGIN (4) STATION	END (4) STATION	(MW) Feet
			4DH_Dprs_04-21-20
Both	1294+00	1297+00	Var
Both	1316+50	1323+50	Var
Both	1328+00	1339+00	Var
Both	1342+00	1345+00	Var
Both	1353+50	1355+00	Var

(1) Refer to Details below for Reinforced Bar Layouts and Jointing.

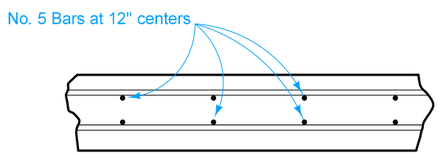
(2) Bid as Standard or Slip Form Double Reinforced Portland Cement Concrete Pavement, Class C, Class 3 Durability, 12 in.

(3) Longitudinal joint: Single pour - Saw cut joint per Detail B (PV-101)
Two pours - Use 'BT-6' joint

(4) Approximate Location. Final location to be verified by the Engineer prior to pavement removal.



Transverse Half Section



PARTIAL LONGITUDINAL SECTION

Provide min. 2" clearance for all reinforcement.

Place Pavement Joint no closer than 5 feet from existing joint.

Lap all bars 15 inches.

Place RD joints at both tie in to existing pavement.

Terminate double reinforcing bars 3' prior to RD joints.

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

U.S. 63

SURVEY SYMBOLS

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

UTILITY LEGEND

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.**		**Transparency**
Pink, Dark	(13)		Temporary Pavement Shading 50%
Yellow	(4)		Proposed Pavement Shading 50%
Orange	(6)		Proposed Granular Shading 50%
Orange	(70)		Proposed Shoulder Granular Shading 50%
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading 50%
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading 50%
Brown, Light	(236)		Grading Shading 50%
Orange, Light	(134)		Proposed Granular Entrance Shading 50%
Yellow	(220)		Proposed Paved Entrance Shading 50%
Tan	(8)		Proposed Sidewalk Shading 50%
Blue, Light	(230)		Proposed Sidewalk Landing Shading 50%
Pink	(11)		Proposed Sidewalk Ramp Shading 50%
Red	(3)		Proposed Structure Shading 50%
Red	(3)		Delineates Restricted Areas 0%

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

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

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Schrock \ Altenhofen	Mahaska COUNTY	PROJECT NUMBER NHSX-063-3(108)--3H-62	SHEET NUMBER D.1

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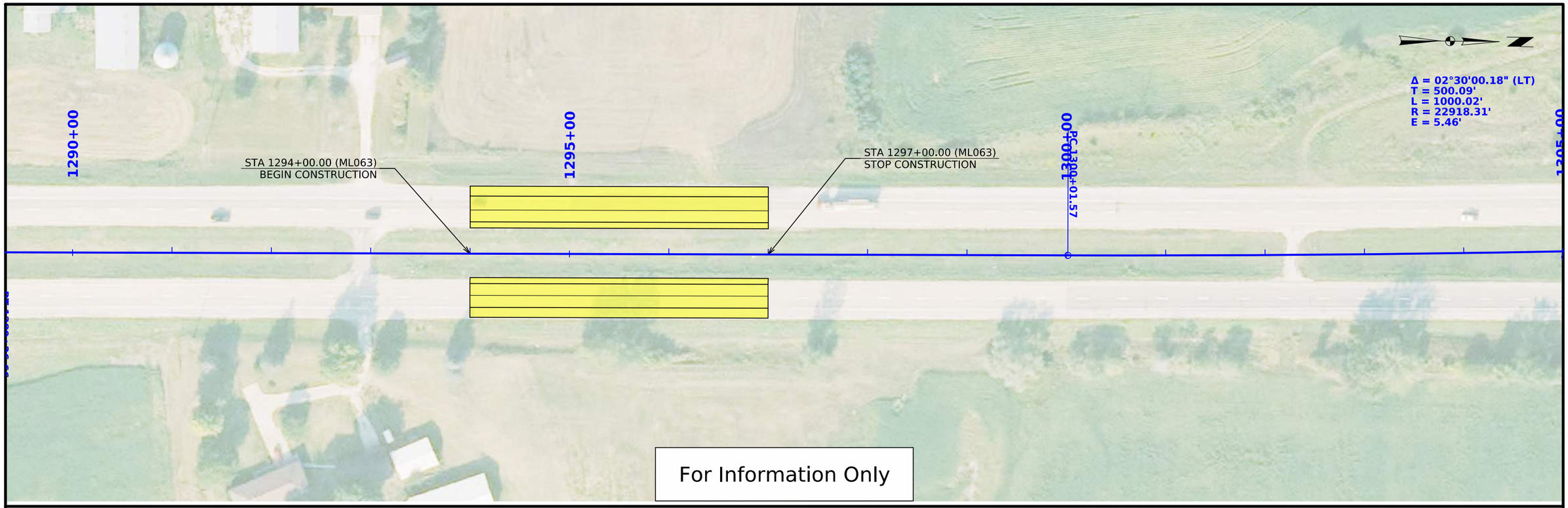

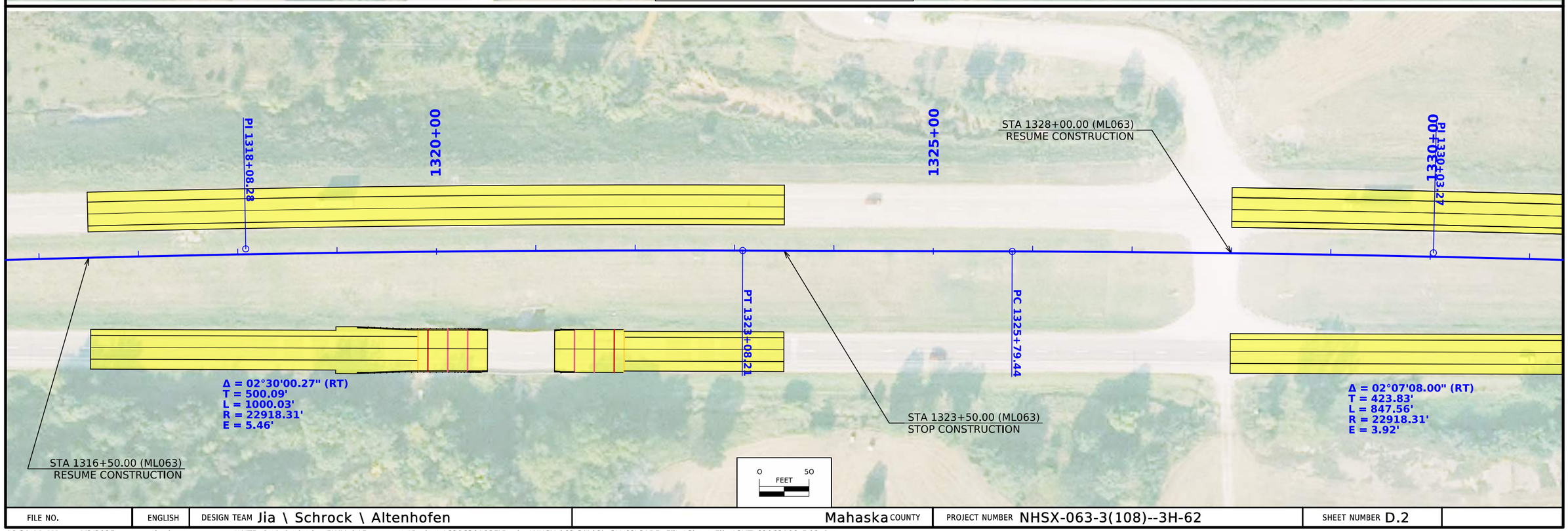

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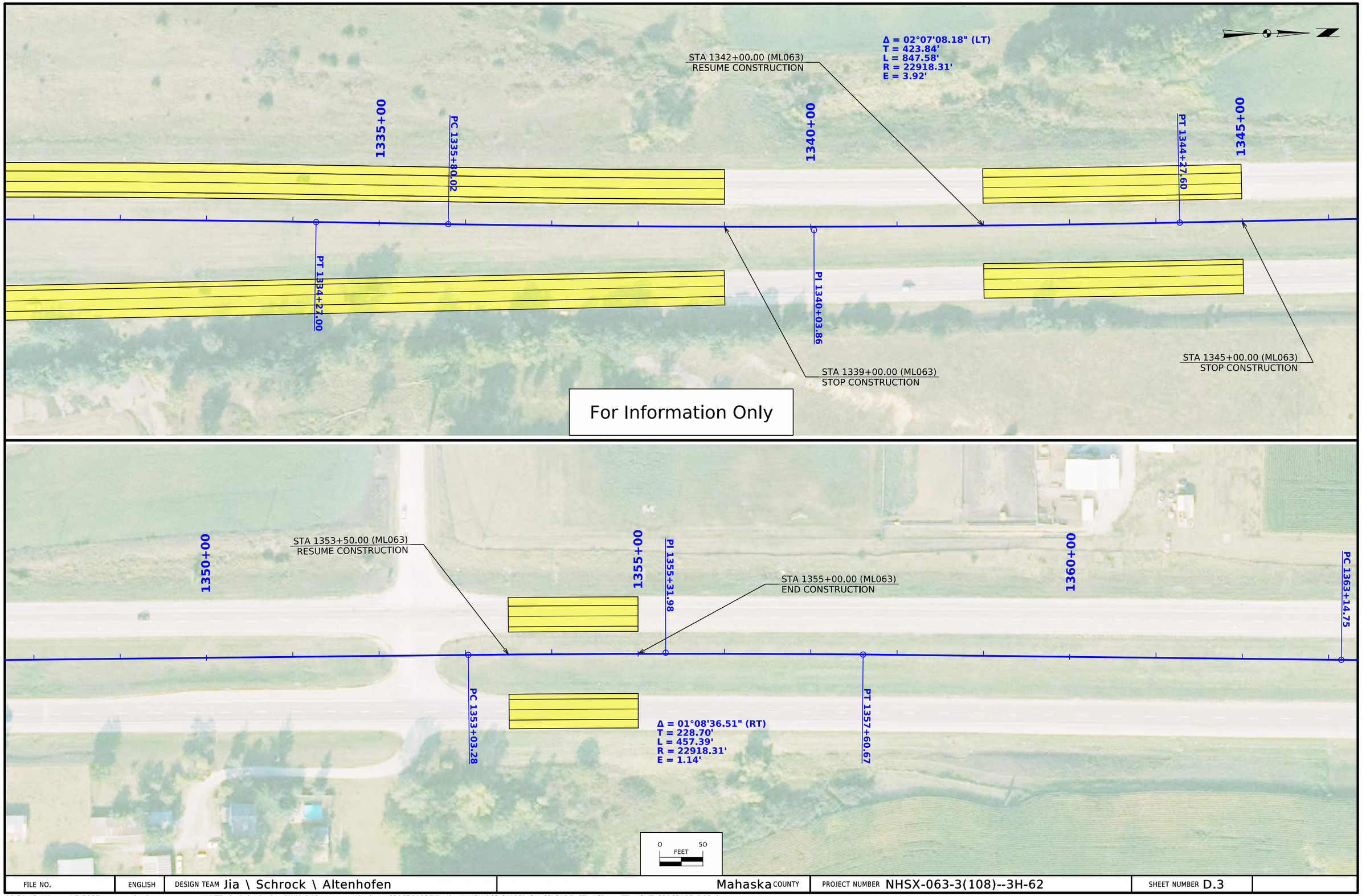

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SURVEY INDEX

County : Mahaska
Project Code : 25-62-063-010
Phase Number : NHSX-063-3(108)--3H-62
Location : N of Co Rd G63 to S of 293rd St - Various Locations
Work Code : 1012-PCC Pavement - Replace
Project Directory : 6206301025

Survey Personnel

Clayton Henningsen – Survey Party Chief
Jason Arn – Survey Party Chief

Date(s) of Survey

Begin Date	03/12/2025
End Date	03/31/2025

General Information

This survey is for US Hwy 63 at locations N of Co Rd G63 to S of 293rd St. This survey request was for the US Hwy 63 corridor only. This project is a Full Field DTM survey.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 09 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignments for U.S. Hwy 63 this survey is a retrace of PCC Plans No. NHS-137-3(19)—19-62. Survey stationing for SURMLA063 was equated to the plan POT at Sta. 1259+79.36 and carried ahead without equation throughout the south survey area. Survey stationing for SURMLB063 was equated to the plan POT at Sta. 1367+49.54 and carried ahead without equation throughout the south survey area. All points provided by district survey 5.

Survey stationing relates to as built plan stationing as follows:

SURMLA063
POT Sta. 1259+79.36 PCC Plans No. NHS-137-3(19)—19-62
Survey POT Sta. 1259+79.36

PC Sta. 1268+69.09 PCC Plans No. NHS-137-3(19)—19-62
Survey PC Sta. 1268+69.10

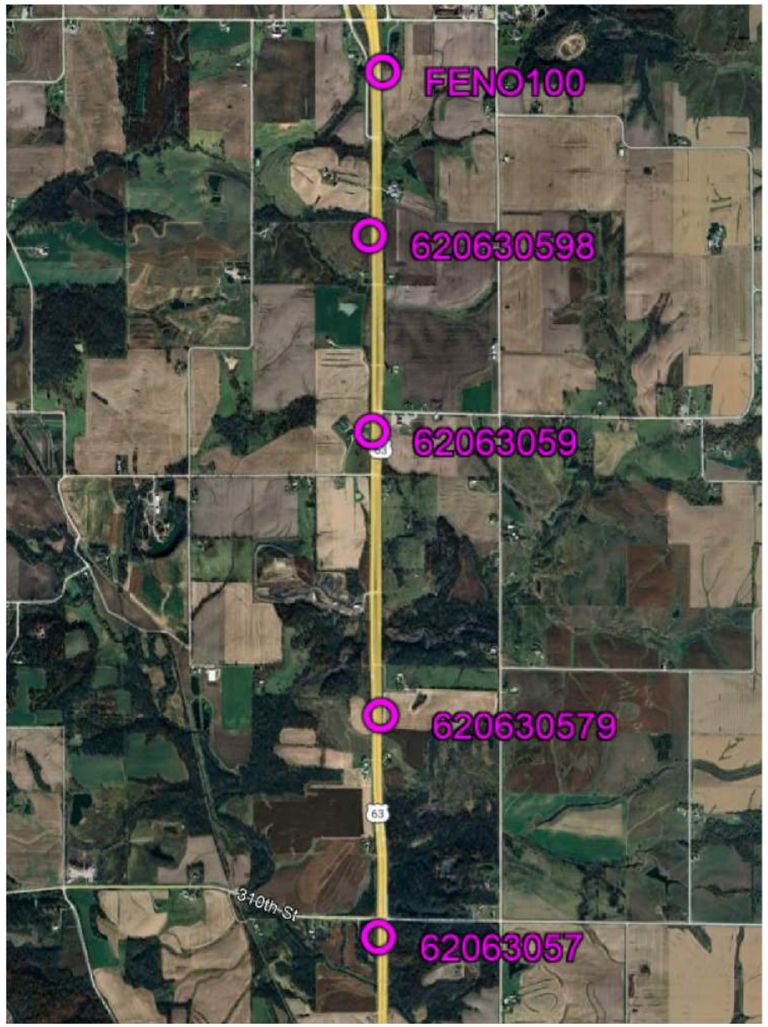
PT Sta. 1275+56.82 PCC Plans No. NHS-137-3(19)—19-62
Survey PT Sta. 1275+56.80

SURMLB063
POT Sta. 1367+49.54 PCC Plans No. NHS-137-3(19)—19-62
Survey POT Sta. 1367+49.54

POT Sta. 1401+05.21 PCC Plans No. NHS-137-3(19)—19-62
Survey POT Sta. 1401+05.13

CONTROL POINT VICINITY MAP

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.



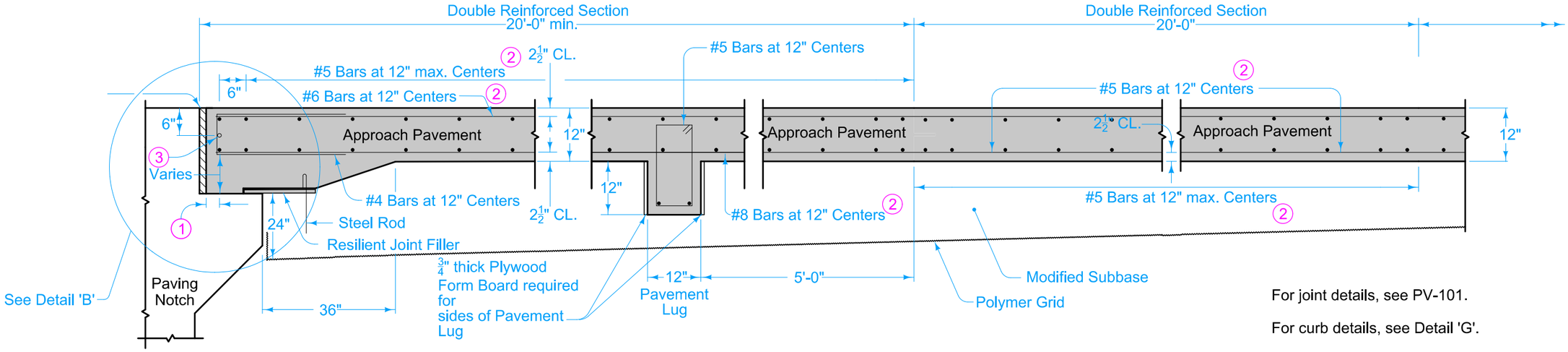
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 09 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

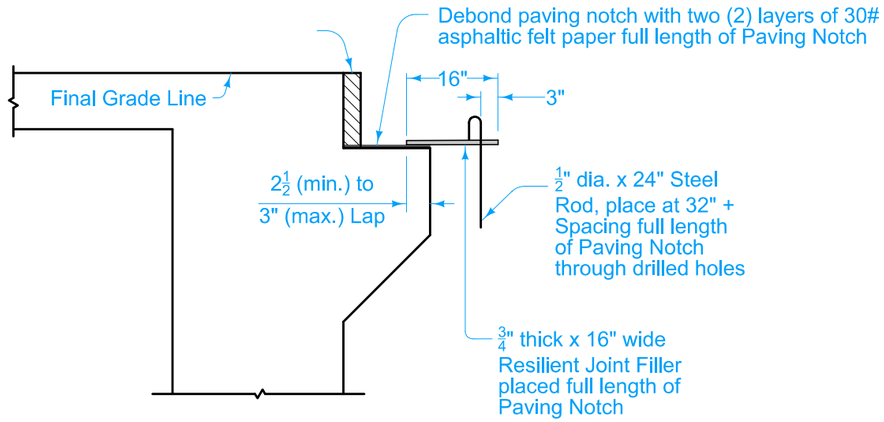
Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 09 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

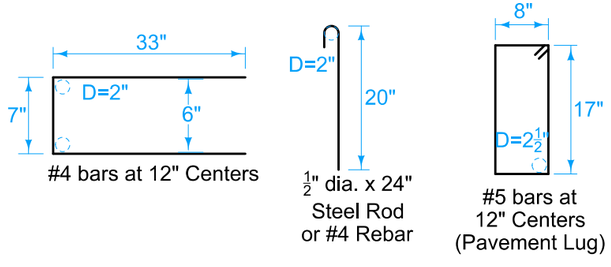
Point Name	Northing	Easting	Elevation	Feature Definition-Description
62063057	7547586.96	19548513.50	711.02	CP FENO MONUMENT
62063059	7558123.89	19548300.42	810.44	CP FENO MONUMENT
620630579	7552217.27	19548517.30	765.55	CP FENO MONUMENT
620630598	7562204.58	19548275.97	813.02	CP FENO MONUMENT
FENO100	7565613.06	19548466.78	816.87	CP FENO MONUMENT



DETAIL 'A'



DETAIL 'B'



BENT BAR SHAPES

MOVEABLE ABUTMENT

For joint details, see PV-101.

For curb details, see Detail 'G'.

All Transverse Bars are #5.

See BR-211 or BR-212 for shoulders.

(1) 2" to 2½" clear to bent bar.

(2) Minimum lap length: #5 bars - 18 inches
#6 bars - 27 inches
#8 bars - 48 inches

(3) If bridge is skewed, place additional #5 bar parallel to skewed face.

Possible Contract Item:
Bridge Approach, BR-204
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

MODIFIED

STANDARD ROAD PLAN

REVISION	
4	10-15-24

BR-204

SHEET 1 of 4

MODIFICATIONS: Removed HMA details, switched single and unreinforced to double reinforced, removed CD joints

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH

FILE NO.	ENGLISH	DESIGN TEAM **Jia \ Schrock \ Altenhofen**	**Mahaska** COUNTY	PROJECT NUMBER **NHSX-063-3(108)--3H-62**	SHEET NUMBER **U.1**

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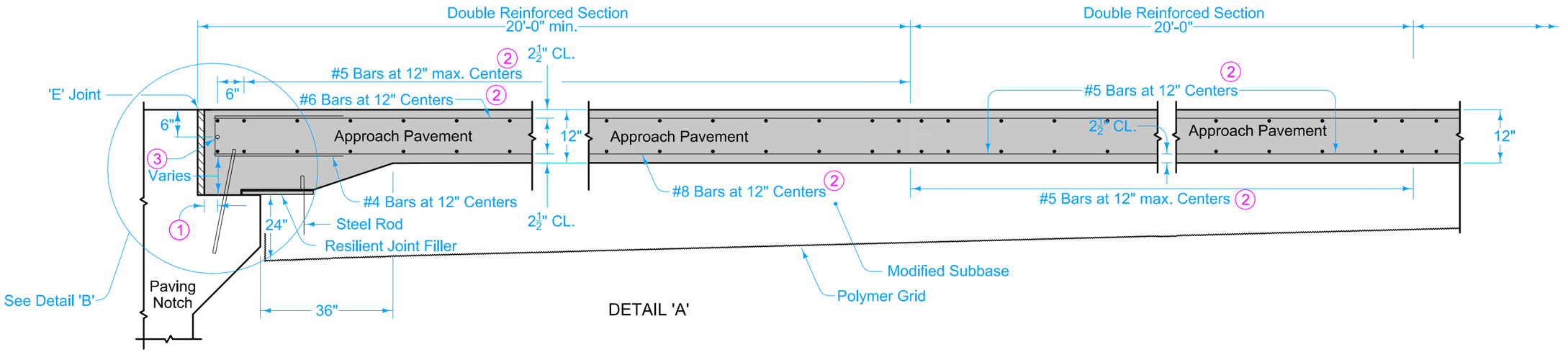

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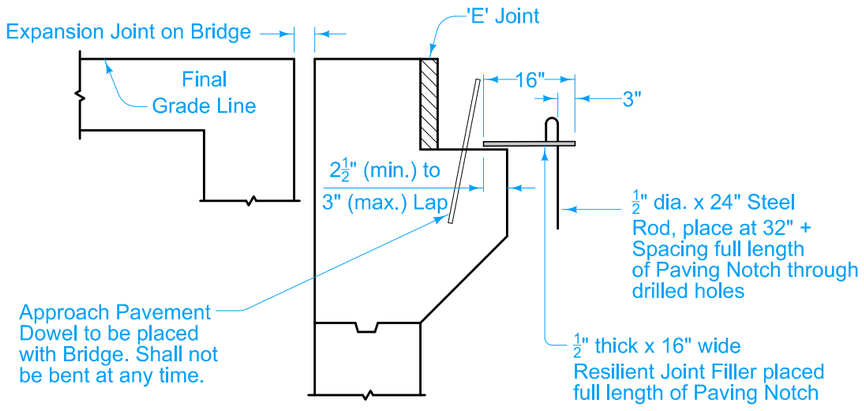
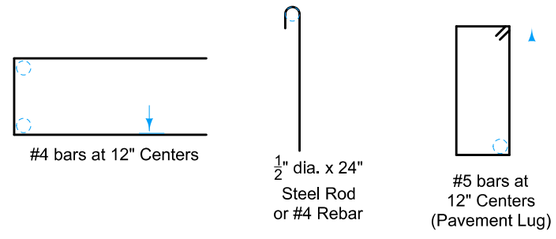


DETAIL 'B'



BENT BAR SHAPES

FIXED ABUTMENT

1. 2" to 2½" clear to bent bar.
2. Minimum lap length: #5 bars - 18 inches
   #6 bars - 27 inches
   #8 bars - 48 inches
3. If bridge is skewed, place additional #5 bar parallel to skewed face.

MODIFIED

STANDARD ROAD PLAN

REVISION	
4	10-15-24

BR-204

SHEET 2 of 4

MODIFICATIONS: Removed HMA details, switched single and unreinforced to double reinforced, removed CD joints

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH

FILE NO.	ENGLISH	DESIGN TEAM **Jia \ Schrock \ Altenhofen**	**Mahaska** COUNTY	PROJECT NUMBER **NHSX-063-3(108)--3H-62**	SHEET NUMBER **U.2**

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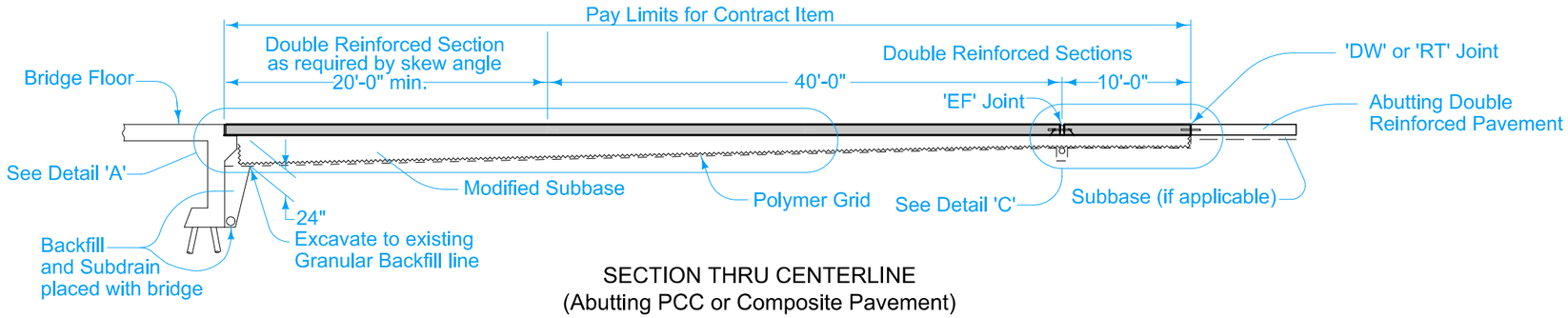
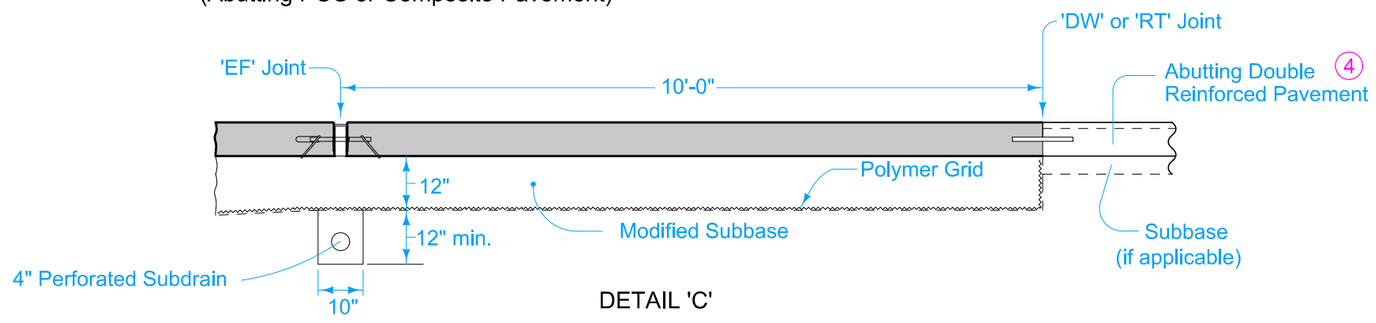
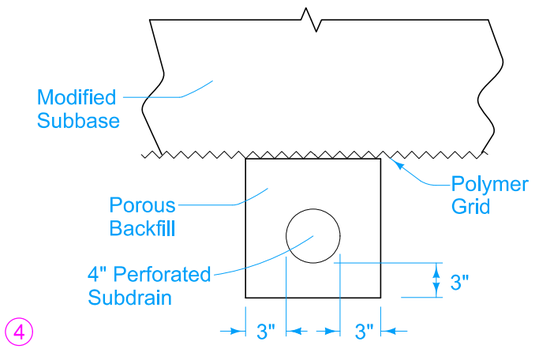


SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)



DETAIL 'C'



4" SUBDRAIN LOCATION

4 If abutting pavement (PCC or HMA) is not in place, refer to BR-213.

MODIFIED

STANDARD ROAD PLAN

REVISION	
4	10-15-24

BR-204

SHEET 3 of 4

MODIFICATIONS: Removed HMA details, switched single and unreinforced to double reinforced, removed CD joints

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH

FILE NO.	ENGLISH	DESIGN TEAM **Jia \ Schrock \ Altenhofen**	**Mahaska** COUNTY	PROJECT NUMBER **NHSX-063-3(108)--3H-62**	SHEET NUMBER **U.3**

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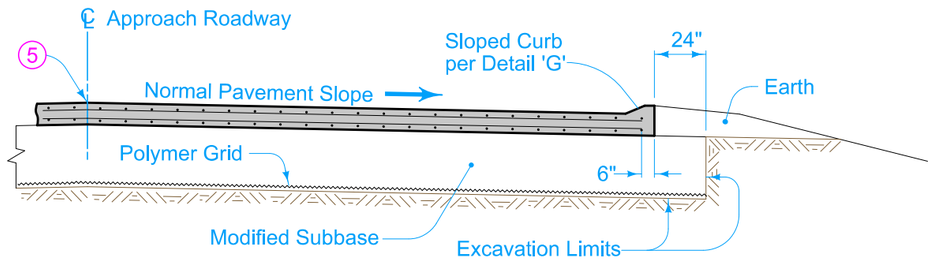
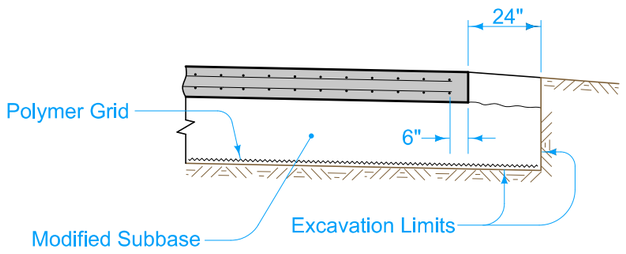
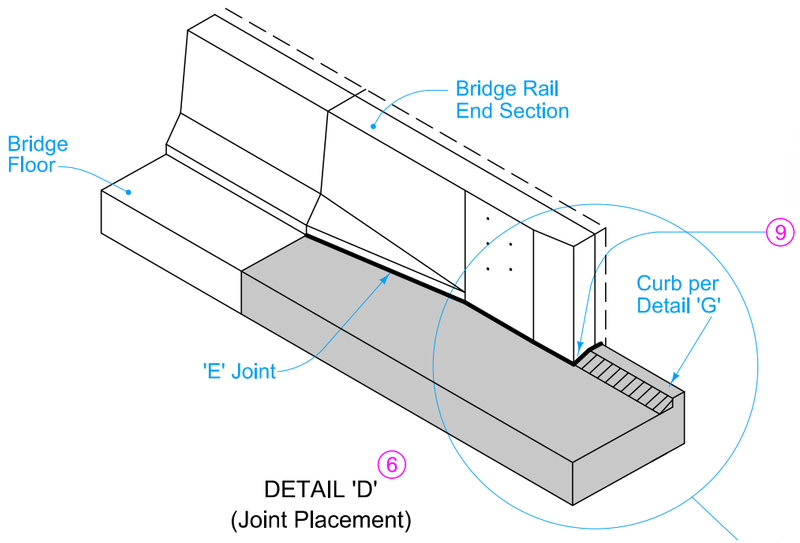


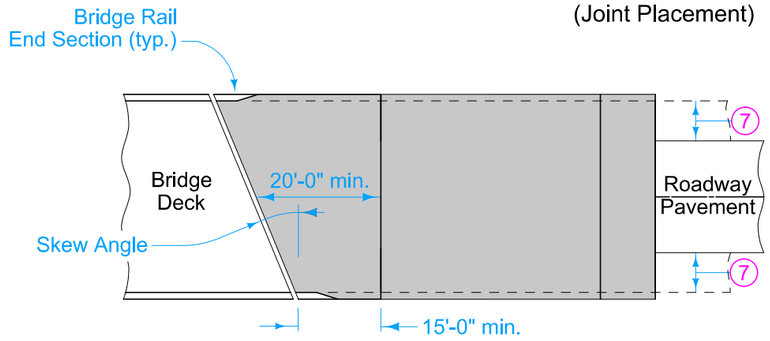
SECTION A-A (6)



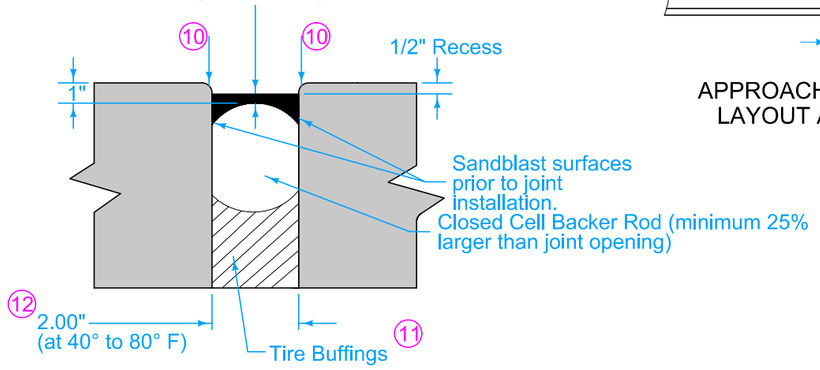
SECTION B-B (6)



DETAIL 'D' (6)
(Joint Placement)

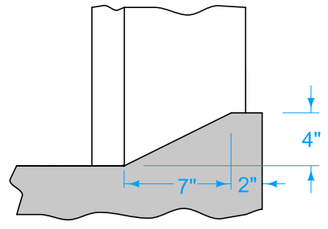


APPROACH PAVEMENT LAYOUT AT A SKEW

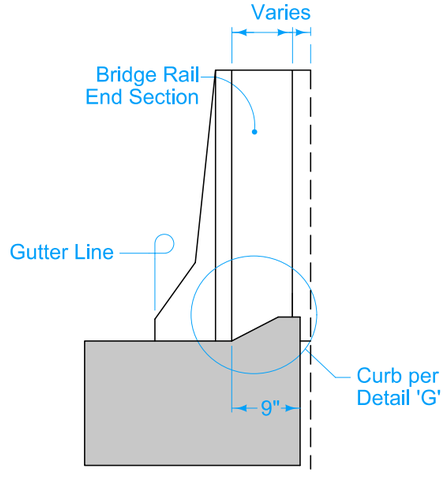


'BE'JOINT DETAIL

Table 2
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

(5) Longitudinal Joint (PV-101):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' Joint.

(6) Refer to BR-211, BR-212, or BR-231.

(7) Design shoulder width.

(9) Joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B of PV-101. Seal joint per Detail F of PV-101.

- Fixed Abutment Bridges: Type 'E' Joint.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4136 of the Standard Specifications. Set width of gap to 2 inches. Joint length as required to completely fill from back side of curb to front face of bridge wing.

(10) Edge with ¼ inch tool for length of joint indicated if formed edging not required when cut with diamond blade saw.

(11) Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.

(12) Setting Width Notes:

- Width is perpendicular to abutment.
- Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.
- This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

MODIFIED
STANDARD ROAD PLAN

REVISION	
4	10-15-24

BR-204
SHEET 4 of 4

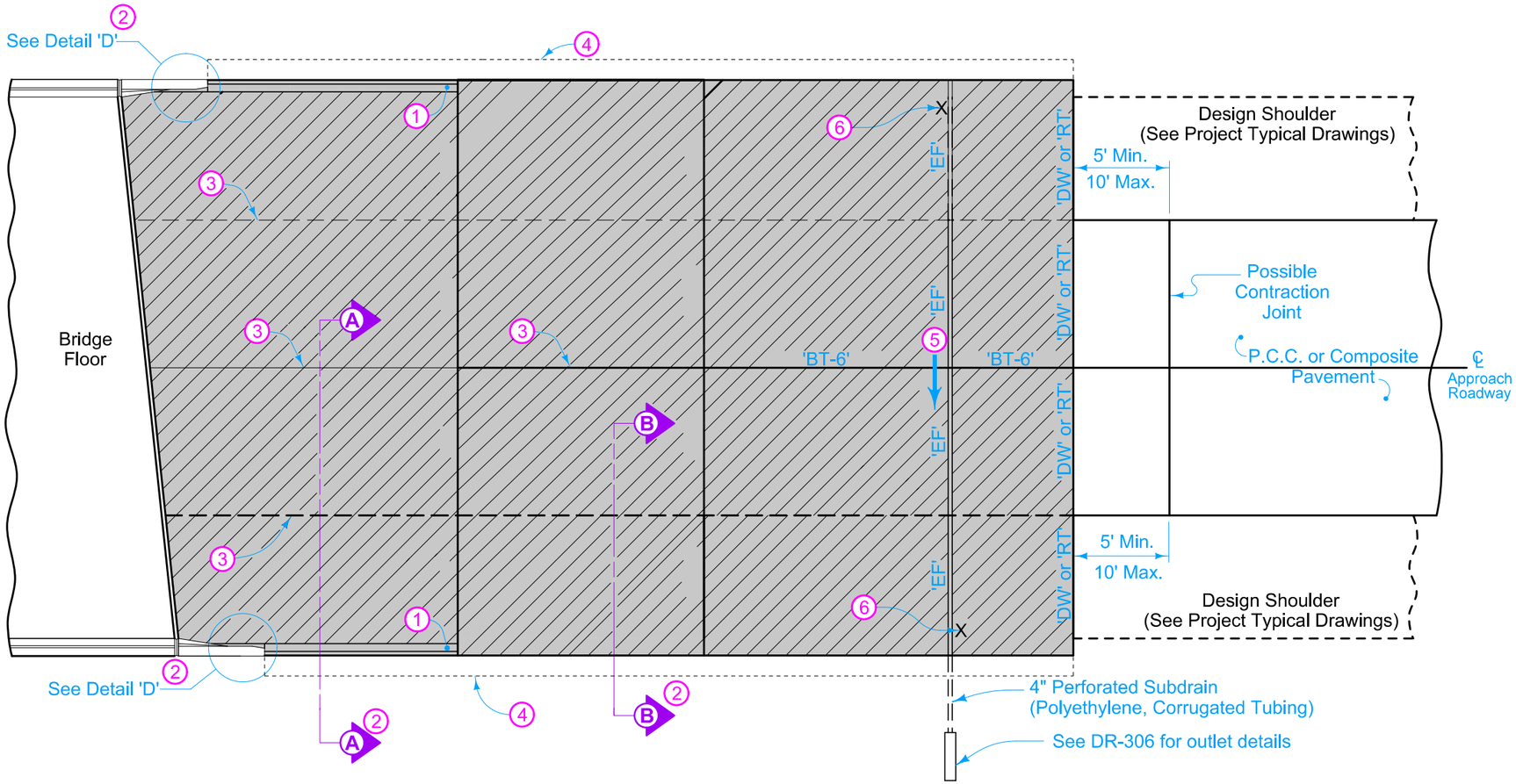
MODIFICATIONS: Removed HMA details, switched single and unreinforced to double reinforced, removed CD joints

APPROVED BY DESIGN METHODS ENGINEER

DOUBLE REINFORCED 12" APPROACH WITH VARIABLE DEPTH PAVING NOTCH

For joint details, see PV-101.

1. Build 4 inch Sloped Curb to end of Double Reinforced Section. Refer to PV-102 for curb and runout details.
2. See BR-201, BR-202, BR-203, or BR-204.
3. Longitudinal Joint (PV-101):
   Single Pour - Saw cut joint per Detail B .
   Two Pours - Use 'BT-6' joint (Single Reinforced Section).
4. Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge. See BR-201, BR-202, BR-203, or BR-204.
5. Slope subdrain to drain.
6. Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.



PLAN VIEW

Pay limits for contract item include the following areas:

- Double Reinforced Section
- Single Reinforced Section
- Non-Reinforced Section

MODIFIED

STANDARD ROAD PLAN

REVISION	
3	10-18-22

BR-211

SHEET 1 of 1

MODIFICATIONS: Changed Single and Non-Reinforced to Double Reinforced, removed CD joints

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH (ABUTTING PCC OR COMPOSITE PAVEMENT)

FILE NO.	ENGLISH	DESIGN TEAM **Jia \ Schrock \ Altenhofen**	**Mahaska** COUNTY	PROJECT NUMBER **NHSX-063-3(108)--3H-62**	SHEET NUMBER **U.5**

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