LETTING DATE 11-15-2022

HMA RESURFACING WITH MILLING
NHSX-092-5(70)--3H-91

WARREN COUNTY

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
WARREN COUNTY
HMA RESURFACING WITH MILLING
0.3 mi E of I-35 to Kennedy St

SCALES: As Noted

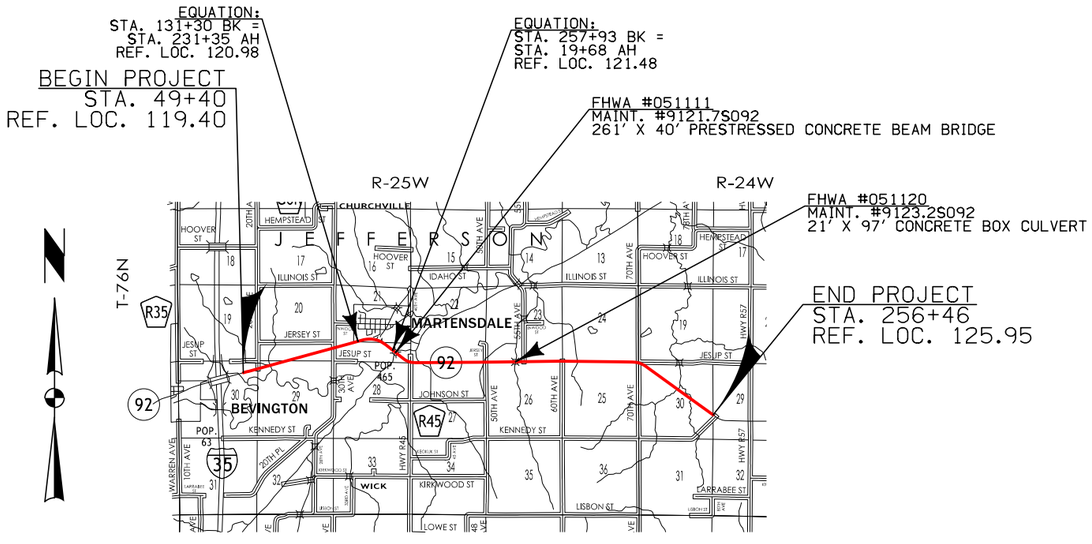
Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

TOTAL
..
PROJECT IDENTIFICATION NUMBER
22-91-092-010
PROJECT NUMBER
NHSX-092-5(70)--3H-91
R.O.W. PROJECT NUMBER

INDEX OF SHEETS



4/13/2022 FIELD EXAM NOTES:
Refer to 'D2 Questions - with Answers' on Sheets A.13 to A.17 for compilation of Notes taken during the 4/13/2022 Field Exam and subsequent follow-up information.

Project Design Events:
DM5 – 08–02–2022
D7 – 09–06–2022

WARREN COUNTY DESIGN DATA RURAL			
2023	AADT	3,863	V.P.D.
2043	AADT	5,021	V.P.D.
2043	DHV	520	V.P.H.
TRUCKS		11	%
Total Design ESALs		920,430	

INDEX OF SEALS

A.1	Jonathan W. Bahr	Primary Signature Block
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN – Date: 04–21–2022

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER A.1

8:15:15 AM 4/21/2022 jbahr1 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9109201022\Design\CADD_Files\Sheet_Files\SHT_91092070_A01_A17.dgn

TO OFFICE: District 5

ATTENTION: Bob Younie

FROM: Gary Kretlow

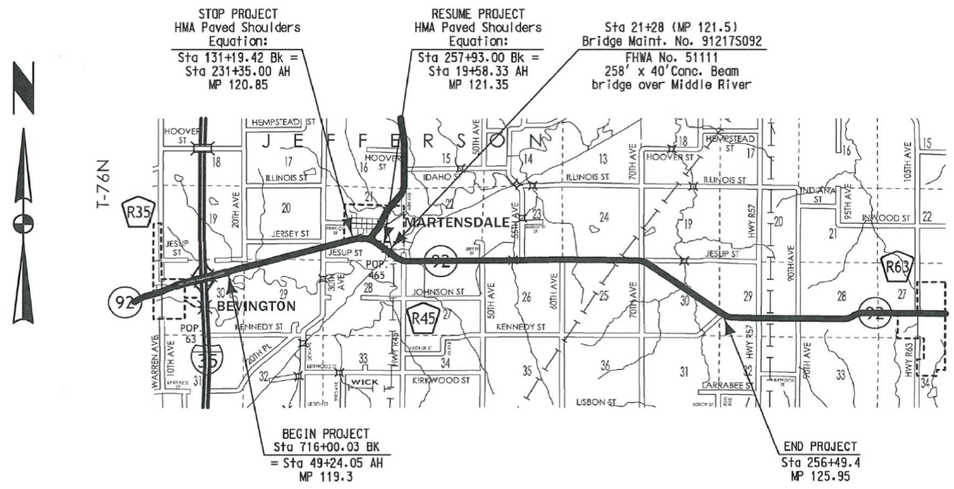
OFFICE: District 5

DATE: October 26, 2021

COUNTY: Warren County
PROJ. NO.: NHSX-092-5(70)--3H-91
PIN: 22-91-092-010
FOLDER: ProjectWise Link

SUBJECT: FY 2023 3R Concept Statement - **FINAL**

PROJECT LOCATION:



PROJECT DATA:
ROUTE: Iowa 92
LENGTH: 6.65 miles
PLANNING CLASSIFICATION: Other Principal Arterial
MAINTENANCE SERVICE LEVEL: C
NHS ROUTE: Yes
TRAFFIC: Current Year: 3900 ADT with 11% Trucks
Design Year: 5000 ADT with 11% Trucks

PURPOSE AND NEED:
The existing pavement has deteriorated and is in need of rehabilitation.

FEASIBLE ALTERNATIVES:
1a. CIP West of IA 28-$821,400
1b. CIP East of IA 28-$1,420,000
2a. Scarification & Resurfacing W. of IA 28-$516,600
2b. Scarification & Resurfacing E. of IA 28-$1,146,000

West of IA 28 Costs and Alternatives

HMA Mill and Fill (2" Scarification, 4" Overlay) Alternative 2A

ITEM#	ITEM DESCRIPTION		UNITS	QUANTITY	UNIT PRICE	TOTAL
1	2" SCARIFICATION		SY	19,800	$ 2.00	$ 39,600.00
2	4" HMA RESURFACING (24' x 2")		TON	4,300	$ 32.00	$ 137,600.00
3	ASPHALT BINDER		TON	260	$ 450.00	$ 117,000.00
4	CENTERLINE RUMBLE STRIPS, HMA		STA	100	$ 12.00	$ 1,200.00
5	LONGITUDINAL SUBDRAINS		LF	7400	$ 10.00	$ 74,000.00
6	PAINTED PAVEMENT MARKINGS		STA	300	$ 11.00	$ 3,300.00
7	TRAFFIC CONTROL		LS	1		$ 69,300.00
8	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 492,000.00
	Contingency				5%	$ 24,600.00
					TOTAL	**$ 516,600.00**

2" CIP & 4" HMA OVERLAY (Alternative 1A)

ITEM#	ITEM DESCRIPTION		UNITS	QUANTITY	UNIT PRICE	TOTAL
1	CIPR ASPHALT PAVEMENT, 2"		SY	19,800	$ 1.60	$ 31,680.00
2	ASPHALT STABILIZING AGENT (F.A.)		TON	90	$ 450.00	$ 40,500.00
3	HMA RESURFACING (24' x 4" THICK)		TON	4,300	$ 32.00	$ 137,600.00
4	ASPHALT BINDER		TON	260	$ 450.00	$ 117,000.00
5	LONGITUDINAL SUBDRAINS		LF	7,400	$ 10.00	$ 74,000.00
6	PAINTED PAVEMENT MARKINGS		STA	300	$ 11.00	$ 3,300.00
7	CENTERLINE RUMBLE STRIPS, HMA		STA	100	$ 12.00	$ 1,200.00
8	TRAFFIC CONTROL (Flaggers/Pilot Cars)		LS	1		$ 248,000.00
9	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 782,140.00
	Contingency				5%	$ 39,200.00
					TOTAL	**$ 821,340.00**

East of IA 28 Costs and Alternatives

HMA Mill and Fill (2" Scarification, 3" Overlay) Alternative 2B						
ITEM#	ITEM DESCRIPTION		UNITS	QUANTITY	UNIT PRICE	TOTAL
1	2" SCARIFICATION		SY	62,400	$ 2.00	$ 124,800.00
2	4" HMA RESURFACING (24' x 2")		TON	10,200	$ 32.00	$ 326,400.00
3	ASPHALT BINDER		TON	610	$ 450.00	$ 274,500.00
4	CENTERLINE RUMBLE STRIPS, HMA		STA	300	$ 12.00	$ 3,600.00
5	LONGITUDINAL SUBDRAINS		LF	23400	$ 10.00	$ 234,000.00
6	PAINTED PAVEMENT MARKINGS		STA	800	$ 11.00	$ 8,800.00
7	TRAFFIC CONTROL		LS	1		$ 69,300.00
8	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 1,091,400.00
	Contingency				5%	$ 54,600.00
					TOTAL	**$ 1,146,000.00**

2" CIP & 4" HMA OVERLAY (Alternative 1B)						
ITEM#	ITEM DESCRIPTION		UNITS	QUANTITY	UNIT PRICE	TOTAL
1	CIPR ASPHALT PAVEMENT, 2"		SY	62,400	$ 1.60	$ 99,840.00
2	ASPHALT STABILIZING AGENT (F.A.)		TON	140	$ 450.00	$ 63,000.00
3	HMA RESURFACING (24' x 2" THICK)		TON	6,800	$ 32.00	$ 217,600.00
4	ASPHALT BINDER		TON	410	$ 450.00	$ 184,500.00
5	LONGITUDINAL SUBDRAINS		LF	23,400	$ 10.00	$ 234,000.00
6	PAINTED PAVEMENT MARKINGS		STA	300	$ 11.00	$ 3,300.00
7	CENTERLINE RUMBLE STRIPS, HMA		STA	100	$ 12.00	$ 1,200.00
8	TRAFFIC CONTROL (Flaggers/Pilot Cars)		LS	1		$ 248,000.00
9	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 1,350,680.00
	Contingency				5%	$ 67,600.00
					TOTAL	**$ 1,418,280.00**

RECOMMENDATIONS:
Options 2a and 2b are recommended at a cost of $1,662,600.

FUNDS PROGRAMMED:
This project will be funded with FY 2023 3R funds.

PROJECT IMPACTS:
Designed by: District/Design/Consultant

Design Impact	Assistance Requested (Y/N)	Remarks
ADA:	N	
Agreements/Notification Letters:	Y	Warren County-Agreement Martensdale-Notification
Bridges and Structures:	Y	See culverts & pipes section

Consultant:	N	
Contracts:	N	
Design/Methods:	Y	
Location and Environment:	Y	Preliminary Review
Maintenance: (Martensdale)	Y	Update culvert inventory
Project Management:	N	
Railroad:	N	
RCE: (Chariton)	Y	Patching, Guardrail, and Clearing & Grubbing
Right of Way:	N	
Soils:	N	
Survey/Photogrammetry:	N	
Systems Planning:	N	
Traffic and Safety:	N	
Utilities:	N	
Other:		

CONCEPT ANALYSIS & SUPPORTING DATA:

Necessary supporting data may be linked in the analysis to ProjectWise.

Date of Field Review:
May 18th, 2021

Participants:
Todd Netley-Martensdale HMS
Gary Kretlow-District 1

PAVEMENT:

Existing Conditions:
The current IA 92 pavement is distressed and has multiple transverse and longitudinal cracks. The current IRI for the project is between 112 and 121.

Pavement History:
See attached sheets.

PMIS Data:
See attached sheet.

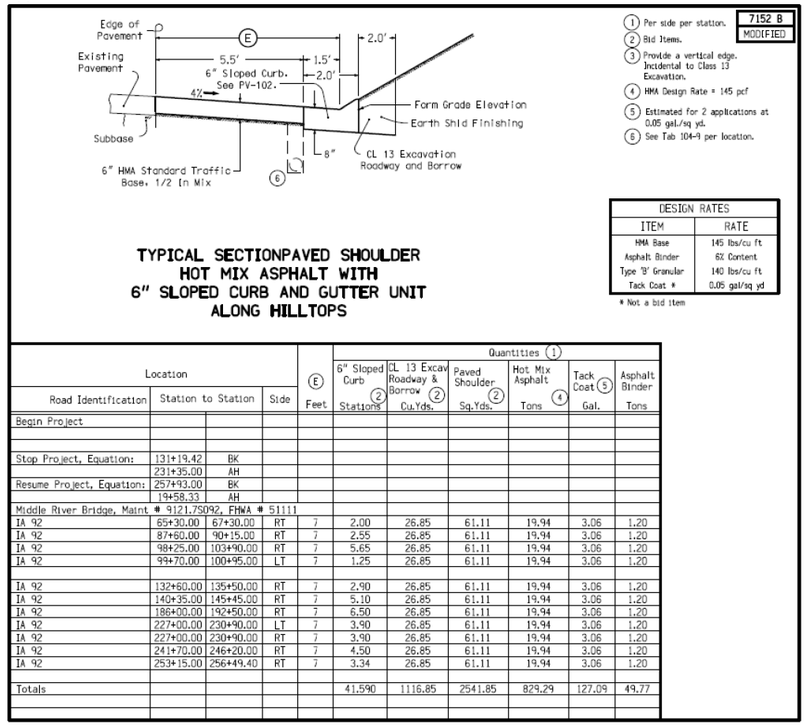
Pavement Design & dTIMS Recommendation:
The pavement design section is recommending a 4” overlay from 119.45 to 120.85 and from 121.46 to 125.94 is recommending 2.5”. dTims is recommending CIR for both sections.

The gap from 120.85 to 121.46 is a newer PCC section from when the intersection with IA 28 was reconstructed. It will be UAC'd with this project.

This project will be 24' wide lanes with a 4' wide paved and 4' granular shoulder. The 4' paved shoulder will be UAC'd.

See the typical 7152 B below. The proposed HMA scarification/overlay is to have a longitudinal runout along the edge of the PCC gutter. HMA overlay is not to be placed onto the PCC gutter pan, nor the face of the curb.

There are 11 locations along hilltops where there is no ditch, and the backslope previously eroded onto the prior granular shoulder. The locations placed a 5.5 ft width HMA paved shoulder with a 2.0 ft sloped PCC curb at those locations and tied the backslopes/hilltop to the top of the curb similar to typical 7152 B below.



TYPICAL SECTIONPAVED SHOULDER HOT MIX ASPHALT WITH 6" SLOPED CURB AND GUTTER UNIT ALONG HILLTOPS

Location				(E)	Quantities (1)					
Road Identification	Station to Station		Side	Feet	6" Sloped Curb (2) Stations	CL 13 Excav Roadway & Borrow (2) Cu.Yds.	Paved Shoulder (2) Sq.Yds.	Hot Mix Asphalt (4) Tons	Tack Coat (5) Gal.	Asphalt Binder Tons
Begin Project										
Stop Project, Equation:	131+19.42	BK								
	231+35.00	AH								
Resume Project, Equation:	257+93.00	BK								
	19+58.33	AH								
Middle River Bridge, Maint # 9121.7S092, FHWA # 51111										
IA 92	65+30.00	67+30.00	RT	7	2.00	26.85	61.11	19.94	3.06	1.20
IA 92	87+60.00	90+15.00	RT	7	2.55	26.85	61.11	19.94	3.06	1.20
IA 92	98+25.00	103+90.00	RT	7	5.65	26.85	61.11	19.94	3.06	1.20
IA 92	99+70.00	100+95.00	LT	7	1.25	26.85	61.11	19.94	3.06	1.20
IA 92	132+60.00	135+50.00	RT	7	2.90	26.85	61.11	19.94	3.06	1.20
IA 92	140+35.00	145+45.00	RT	7	5.10	26.85	61.11	19.94	3.06	1.20
IA 92	186+00.00	192+50.00	RT	7	6.50	26.85	61.11	19.94	3.06	1.20
IA 92	227+00.00	230+90.00	LT	7	3.90	26.85	61.11	19.94	3.06	1.20
IA 92	227+00.00	230+90.00	RT	7	3.90	26.85	61.11	19.94	3.06	1.20
IA 92	241+70.00	246+20.00	RT	7	4.50	26.85	61.11	19.94	3.06	1.20
IA 92	253+15.00	256+49.40	RT	7	3.34	26.85	61.11	19.94	3.06	1.20
Totals					41.590	1116.85	2541.85	829.29	127.09	49.77

Subdrains:
IA 92 currently has 50% coverage with all longitudinal subdrain along the eastbound lane. To get 100%, approximately 33,000 linear feet of subdrain would need to be installed along the westbound lane.

Patching/Curb Repairs:
During the field review, maintenance asked to review current curbed sections for possible extensions to help with erosion issues. There is specifically an issue at the addresses of 7600-7602 IA 92 on the south side that when it rains, water doesn't drain to the entrance pipe but goes over the driveway. Looks like an area for a possible shoulder fillet. A patch tab will need to be put together by the Chariton RCE office.

ADA/Sidewalk/Trails:
Complete streets analysis.

SAFETY:

3R Design Criteria:

Acceptable Values for 3R Roadway Features						Project Values
DESIGN ELEMENT	FREEWAY	NON-FREEWAY				
Regulatory Speed (mph)	65/55	55	45	35	25	**55**
Minimum Vertical Curve (mph)	65/55	35	25	15	5	**35**
Maximum Horizontal Curve (degrees)	3	6	8	14	28	**6**
Maximum Gradient	3%	6%	7%	10%	13%	**6%**
Lane Width (feet)	12	12	11	11	11	**12**
Parking Lane Width (feet)	--	--	8	8	8	**N/A**
Shoulder Width (feet)	10/6	6	4	4	2	**6**
Foreslopes	3:1	3:1	3:1	--	--	**3:1**
Transverse Slopes	6:1	6:1	6:1	--	--	**6:1**
Horizontal Clearance (feet)						
Bridge Width	Approach Lanes + Shoulder Width			Approach Lanes + Offset		
Vertical Clearance - Over NHS (feet)	16.5	16.5	16.5	16.5	16.5	**N/A**
Vertical Clearance - Over Local (feet)	14.5	14.5	14.5	14.5	14.5	**N/A**

Crash Analysis:
ICAT quick report with 5 year crash history summary and intersection diagrams in this link.
W:\Highway\District1\Design\District 5 Concepts\Warren 92\Crash

Corridor Crash History:
There were 55 crashes within the project limits between 2016-2020. There were 0 fatal crashes, 1 suspected serious injury crash, and 7 minor/possible injury crashes. 27 of the 55 crashes were animal related. The next major cause was 7 run off the road right or left.

Intersection Crash History:
All the intersections within the project limits are Tier 2 locations on the PCR (potential for crash reduction) website.

Intersection Analysis:
Review the need for turn lanes at County Road R45 (St. Marys Road).

Additional Safety & Operation Considerations:
Identify impacts to District Road Safety Plan, 4-to 3 lane conversion, rumble strips, safety dikes, Super 2 Highway, freight bottle neck, etc.

STRUCTURES and DRAINAGE:

Bridges: (from Scoping Tool or SIIMS)

FHWA No.	Maint. No.	Size/Type	Year Built	BDO/Rehab Year	Bridge Rail Height	End Post Type	Vertical Clearance	Future Projects
051111	9121.7s092	261' x 40' Prestres Conc. Beam	1982		32"	Concrete Vertical Face	N/A	None
051120	9123.2s092	21' x 97' Concrete Box Culvert	1928	1966 and 1992	N/A	N/A	N/A	None

Bridges are in good shape. Do not appear to need any work at this time.

Culverts/Pipes:
Here is a link to the culvert/pipe inventory from the database.
W:\Highway\District1\Design\District 5 Concepts\Warren 92\EastCulverts.xlsx
W:\Highway\District1\Design\District 5 Concepts\Warren 92\WestCulverts.xlsx

BSB is requested to review the structure at Station 65 (MM 119.7) based on recent review by the Martensdale garage staff.

Guardrail:
Here is a link to the steal beam guardrail within the project limits.
W:\Highway\District1\Design\District 5 Concepts\Warren 92\Steel Beam Guardrail.xlsx

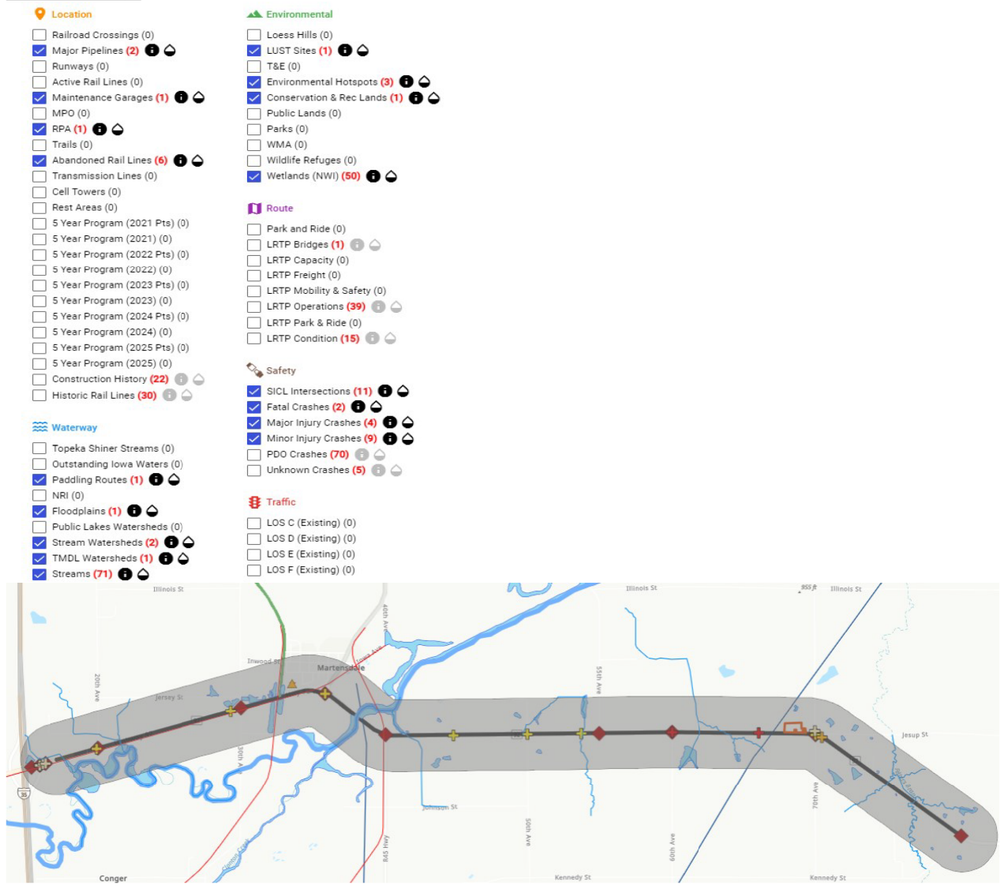
Paved shoulders were installed in 2017. Updated guardrail was installed at that time. Will want to review to make sure guardrail is meeting current standards.

Drainage District:
No known drainage districts within the project limits.

County | Project Number | Date

PROJECT IMPACTS:

Impacts Map:



Environmental:
Clearing and grubbing will be needed within the project limits. Chariton RCE will need to tabulate limits by January 1, 2022.

TSMO/Traffic Control:
IA 92 traffic will be maintained at all times via flagger and/or pilot cars.

ROW:
No right of way needs are anticipated.

Agreements/Notification Letters:
An agreement may be needed with Warren county if they elect to pave any unpaved side road approaches. The city of Martensdale will need a notification letter.

Project Coordination:
No coordination anticipated.

Previous Projects List:

klFA-365	1932	PCC 7”
P-1023(2)	1956	HMA 4”
FN-92-5(20)21-91	1982	BSC
FN-92-5(31)21-91	1992	HMA 3”

Future Projects List:
No future projects anticipated.

FEASIBLE ALTERNATIVES & RECOMMENDATION:

FEASIBLE ALTERNATIVES:

1a. CIP West of IA 28-$821,400
1b. CIP East of IA 28-$1,420,000
2a. Scarification & Resurfacing W. of IA 28-$516,600
2b. Scarification & Resurfacing E. of IA 28-$1,146,000

West of IA 28 Costs and Alternatives

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9	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 782,140.00
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East of IA 28 Costs and Alternatives

HMA Mill and Fill (2" Scarification, 3" Overlay) Alternative 2B						
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					SUBTOTAL	$ 1,091,400.00
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					TOTAL	**$ 1,146,000.00**
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9	MOBILIZATION		LS	1		$ 50,000.00
					SUBTOTAL	$ 1,350,680.00
	Contingency				5%	$ 67,600.00
					TOTAL	**$ 1,418,280.00**

RECOMMENDATIONS:
Options 2a and 2b are recommended at a cost of $1,662,600.

FUNDS PROGRAMMED:
This project will be funded with FY 2023 3R funds.

Development Schedule:
Development schedule will be completed by District 5 after final concept.

Cc:

M. J. Dillavou	C. Purcell	M. J. Kennerly
K. D. Nicholson	S. J. Megivern	J. S. Nelson
M. Nop	M. A. Swenson	R. A. Younie
S. Majors	A. Poole	K. Brink
D. L. Newell	B. Bradley	J. W. Laaser-Webb

County | Project Number | Date

W. A. Sorenson	E. C. Wright	M. E. Ross
A. A. Welch	J. Harris	C. C. Poole
B. Hofer	J. Vortherms	G. Cagle
S. J. Gent	S. Anderson	D. Stokes
K. K. Patel	S. Godbold	S. Seivert
D. R. Claman	S. Neubauer	M. Buttz
C. Brakke	T. Hanson	F. Todey
S. McElmeel	J. R. Webb	B. Beavers
B. Lauderman	J. R. Phillips	J. Garton
J. Woodcock	B. M. Clancy	B. Porter
H. Torres-Cacho	D. E. Sprengeler	J. Schmitt
L. Finnarty		

PMIS Section Report

PMIS Key: 09231119 45120 8591

National Highway System: Y | County: 91 | Begin Milepost: 119 45 | Direction: 1
Tested Section: | Route: 92 | End Milepost: 120 85 | PMIS Year: 2018
Section Description: From 0.5 Mi E Of JCT IA 92/I-35 East To WCL Martensdale

Location:
- District:
- Total Lanes: 2
- Median: N
- Urban Area Code:
- City Number: 0

Construction:
- Constructed: 1932
- Resurfaced: 1992
- Surface Treatment: / AC
- Pavement Type: 3
- Speed Limit: 55

Surface:
- Type:
- Multi Surface: N
- Width (ft): 24
- Thickness (in): 13
- Widened Drive Lane:

Shoulders and Curb (Left/Right):

Type:	PG	/ PG
Width (ft):	4	/ 4
Thickness (in):		/
Tied:	N	/ N
Curb and Gutter:	N	/ N
Curb:		
Dropoff		

Planning:
- Planning Class: 3
- Special Section:
- PCI:
- Program Year:
- Program Comments:
- PIN:

Subdrains:
- Project Number: HES-92-5(27)--2H-91
- Percentage: 100
- Multiple Subdrain

Field Survey:
- Structural Number:
- IRI: 143.02 /
- Friction: 39 /
- FWD Test Date:
- Road Rater Test Date:

Relative Indexes:
- IRI:
- Crack and Patch:
- RDR:
- RPI:
- Coverage (%) 100

Road Rater:
- Average Struct Rating: 3.59
- Average K Rating: 140
- Thickness (in): 13
- 80% Structural Rating: 3.04
- Ave Struct Rating At Joints:
- Relative Strength Ratio:

Crack and Patch:
- Default:
- Provider:
- Test Date: 6/7/2017 12:00:00 AM
- Rut Depth: 0.24
- Faulting: /
- PatchA (Bad): 0
- PatchA (Good): 0
- Patches: 0

	High	Medium	Low
LCrack	281	2,649	4,206
LCr WP	9	1,575	6,549
TCrack	3	101	896
AlligC	0	43	301
DCrack	0	0	
Jspall	0	0	

Construction:

	Year	Project Number	Type	Surface	(in)	Base	(in)	SubBase	(in)
1	1992	FN-92-5(31)--21-91		AAC	3				
2	1983	FN-92-5(20)--21-91		BSC					
3	1956	P-1023(2)		AAC	2	AAC	2		
4	1932	FA-365		PC7	7				
5									
6									
7									
8									

	Agg Source	Agg Type	Class	Removal	(in)	Remarks
1	UNIVERSITY	GRAVEL		MIL	1	
2						
3	GENDLER	C.LST.				
4	WINTERSET	GRAVEL	1			
5						
6						
7						
8						

Asphalt Age Rating: Agg Rating:

Maintenance:
- Service Level: C
- Maintenance District: 5
- Area: 6
- Garage:
- Fed Func Class: 3
- Concurrent Routes: /

Traffic Count:
- Year: 2018
- AADT: 4,400
- Trucks: 416
- Percent Trucks: 9

ESALS:
- Predicted Lifetime:
- Annual:
- Accum Since Resurf:
- Accum Since Constr:
- Percent Life Used:

Kmpoints:
- Base Rec Begin:
- Base Rec End
- Trav Way Begin:
- Trav Way End:
- BR Route:
- Length:

Coordinates:
- Begin X:
- End X:
- Begin Y:
- End Y:

Longitude / Latitude:
- Begin LONG:
- End LONG:
- Begin LAT:
- End LAT:

Base Records:
- Begin Sequence: 2018
- End Sequence: 4400

PMIS Section Report

PMIS Key: 09231120 85121 4691

National Highway System: Y | County: 91 | Begin Milepost: 120 85 | Direction: 1

Tested Section: | Route: 92 | End Milepost: 121 46 | PMIS Year: 2018

Section Description: From WCL Martensdale east to 0.22mi E of INT IA 28

Location:

District:
Total Lanes: 2
Median: N
Urban Area Code:
City Number: 4805

Construction:

Constructed: 2017
Resurfaced:
Surface Treatment: / PC
Pavement Type: 1
Speed Limit: 45

Surface:

Type:
Multi Surface:
Width (ft): 31
Thickness (in): 9.5
Widened Drive Lane:

Shoulders and Curb (Left/Right):

Type:	G	/ G
Width (ft):	9	/ 9
Thickness (in):		/
Tied:	N	/ N
Curb and Gutter:	N	/ N

Curb:
Dropoff

Planning:

Planning Class: 3
Special Section:
PCI:
Program Year:
Program Comments:
PIN:

Subdrains:

Project Number:
Percentage:
Multiple Subdrain

Field Survey:

Structural Number:
IRI: 101.14 /
Friction: /
FWD Test Date:
Road Rater Test Date:

Relative Indexes:

IRI:
Crack and Patch:
RDR:
RPI:
Coverage (%) 0

Road Rater:

Average Struct Rating:
Average K Rating:
Thickness (in): 9.5
80% Structural Rating:
Ave Struct Rating At Joints:
Relative Strength Ratio:

Crack and Patch:

Default:
Provider:
Test Date:

Rut Depth: 0
Faulting: 0 /
PatchA (Bad): 0
PatchA (Good): 0
Patches: 0

	High	Medium	Low
LCrack	0	0	0
LCr WP	0	0	0
TCrack	0	0	0
AlligC	0	0	0
DCrack	0	0	
Jspall	0	0	

Construction:

	Year	Project Number	Type	Surface	(in)	Base	(in)	SubBase	(in)
1	2017	NHSN-092-5(56)--2R-91	O	PCC	10	SBF	12		
2									
3									
4									
5									
6									
7									
8									

	Agg Source	Agg Type	Class	Removal	(in)	Remarks
1						
2						
3						
4						
5						
6						
7						
8						

Asphalt Age Rating: Agg Rating:

Maintenance:

Service Level: C
Maintenance District: 5
Area:
Garage:
Fed Func Class: 3
Concurrent Routes: /

Traffic Count:

Year: 2018
AADT: 3,865
Trucks: 351
Percent Trucks: 9

ESALS:

Predicted Lifetime:
Annual:
Accum Since Resurf:
Accum Since Constr:
Percent Life Used:

Kmpoints:

Base Rec Begin:
Base Rec End
Trav Way Begin:
Trav Way End:
BR Route:
Length:

Coordinates:

Begin X:
End X:
Begin Y:
End Y:

Longitude / Latitude:

Begin LONG:
End LONG:
Begin LAT:
End LAT:

Base Records:

Begin Sequence: 2018
End Sequence: 3865

PMIS Section Report

PMIS Key: 09231120 85125 9791

National Highway System: Y | County: 91 | Begin Milepost: 120 85 | Direction: 1

Tested Section: | Route: 92 | End Milepost: 125 97 | PMIS Year: 2018

Section Description: From 0.22mi E of INT IA 28 East To WCL Indianola

Location:

- District:
- Total Lanes: 2
- Median: N
- Urban Area Code:
- City Number: 0

Construction:

- Constructed: 1930
- Resurfaced: 1992
- Surface Treatment: / AC
- Pavement Type: 3
- Speed Limit: 55

Surface:

- Type:
- Multi Surface: Y
- Width (ft): 24
- Thickness (in): 13
- Widened Drive Lane:

Shoulders and Curb (Left/Right):

Type:	PG	/ PG
Width (ft):	4	/ 4
Thickness (in):		/
Tied:	N	/ N
Curb and Gutter:	N	/ N
Curb:		
Dropoff		

Planning:

- Planning Class: 3
- Special Section:
- PCI:
- Program Year:
- Program Comments:
- PIN:

Subdrains:

- Project Number: HES-92-5(27)--2H-91
- Percentage: 28
- Multiple Subdrain

Field Survey:

- Structural Number:
- IRI: 161.93
- Friction: 43 /
- FWD Test Date:
- Road Rater Test Date:

Relative Indexes:

- IRI:
- Crack and Patch:
- RDR:
- RPI:
- Coverage (%) 100

Road Rater:

- Average Struct Rating: 4
- Average K Rating: 198
- Thickness (in): 13
- 80% Structural Rating: 3.31
- Ave Struct Rating At Joints:
- Relative Strength Ratio:

Crack and Patch:

- Default:
- Provider:
- Test Date: 6/7/2017 12:00:00 AM

Rut Depth: 0.27
Faulting: 0.3 /
PatchA (Bad): 338
PatchA (Good): 0
Patches: 5

	High	Medium	Low
LCrack	366	2,195	2,601
LCr WP	58	2,363	4,744
TCrack	11	193	774
AlligC	5	103	93
DCrack	0	0	
Jspall	6	1	

Construction:

	Year	Project Number	Type	Surface	(in)	Base	(in)	SubBase	(in)
1	1992	FN-92-5(31)--21-91		AAC	3				
2	1983	FN-92-5(20)--21-91		BSC					
3	1952	P-1023W		BAC	2	TBB	2		
4	1930	P-569		PC7	7				
5									
6									
7									
8									

	Agg Source	Agg Type	Class	Removal	(in)	Remarks
1	UNIVERSITY	GRAVEL		MIL	1	
2						
3						
4	EARLHAM	GRAVEL	1			
5						
6						
7						
8						

Asphalt Age Rating: Agg Rating:

Maintenance:

- Service Level: C
- Maintenance District: 5
- Area: 6
- Garage:
- Fed Func Class: 3
- Concurrent Routes: /

Traffic Count:

- Year: 2018
- AADT: 3,625
- Trucks: 353
- Percent Trucks: 10

ESALS:

- Predicted Lifetime:
- Annual:
- Accum Since Resurf:
- Accum Since Constr:
- Percent Life Used:

Kmpoints:

- Base Rec Begin:
- Base Rec End
- Trav Way Begin:
- Trav Way End:
- BR Route:
- Length:

Coordinates:

- Begin X:
- End X:
- Begin Y:
- End Y:

Longitude / Latitude:

- Begin LONG:
- End LONG:
- Begin LAT:
- End LAT:

Base Records:

- Begin Sequence: 2018
- End Sequence: 3625

PMIS Section Report

PMIS Key: 09231125 97129 9291

National Highway System: Y | County: 91 | Begin Milepost: 125 97 | Direction: 1
Tested Section: | Route: 92 | End Milepost: 129 92 | PMIS Year: 2018
Section Description: From WCL Martensdale East To WCL Indianola

Location:
- District:
- Total Lanes: 2
- Median: N
- Urban Area Code: 821
- City Number: 3680

Construction:
- Constructed: 2015
- Resurfaced:
- Surface Treatment: / AC
- Pavement Type: 1
- Speed Limit: 55

Surface:
- Type:
- Multi Surface: Y
- Width (ft): 26
- Thickness (in): 10
- Widened Drive Lane:

Shoulders and Curb (Left/Right):

Type:	G	/ G
Width (ft):	4	/ 4
Thickness (in):		/
Tied:	N	/ N
Curb and Gutter:	Y	/ Y
Curb:		
Dropoff		

Planning:
- Planning Class: 3
- Special Section:
- PCI:
- Program Year:
- Program Comments:
- PIN:

Subdrains:
- Project Number: HES-92-5(27)--2H-91
- Percentage: 28
- Multiple Subdrain

Field Survey:
- Structural Number:
- IRI: 85.59 /
- Friction: 42 /
- FWD Test Date:
- Road Rater Test Date:

Relative Indexes:
- IRI:
- Crack and Patch:
- RDR:
- RPI:
- Coverage (%) 100

Road Rater:
- Average Struct Rating: 5.68
- Average K Rating: 130
- Thickness (in): 10
- 80% Structural Rating: 4.5
- Ave Struct Rating At Joints:
- Relative Strength Ratio:

Crack and Patch:
- Default:
- Provider:
- Test Date: 6/7/2017 12:00:00 AM

Rut Depth: 0.18
Faulting: 0 /
PatchA (Bad): 0
PatchA (Good): 128
Patches: 2

	High	Medium	Low
LCrack	3	19	53
LCr WP	0	0	5
TCrack	2	1	12
AlligC	0	40	0
DCrack	0	0	
Jspall	0	0	

Construction:

	Year	Project Number	Type	Surface	(in)	Base	(in)	SubBase	(in)
1	2015	NHSX-092-5(51)--3H-91		PCC	10	GSB	6	SBF	6
2									
3									
4									
5									
6									
7									
8									

	Agg Source	Agg Type	Class	Removal	(in)	Remarks
1						
2						
3						
4						
5						
6						
7						
8						

Asphalt Age Rating: Agg Rating:

Maintenance:
- Service Level: C
- Maintenance District: 5
- Area: 6
- Garage:
- Fed Func Class: 3
- Concurrent Routes: /

Traffic Count:
- Year: 2018
- AADT: 7,110
- Trucks: 410
- Percent Trucks: 6

ESALS:
- Predicted Lifetime:
- Annual:
- Accum Since Resurf:
- Accum Since Constr:
- Percent Life Used:

Kmpoints:
- Base Rec Begin:
- Base Rec End
- Trav Way Begin:
- Trav Way End:
- BR Route:
- Length:

Coordinates:
- Begin X:
- End X:
- Begin Y:
- End Y:

Longitude / Latitude:
- Begin LONG:
- End LONG:
- Begin LAT:
- End LAT:

Base Records:
- Begin Sequence: 2018
- End Sequence: 7110

Roadway	IA 92		
PIN Number	22-91-092-010	**Submittal Date**	03/24/22
Project Number	NHSX-092-5(70)--3H-91		**Approval Date**
District	District 5	**Assistant District Engineer**	Steven McElmeel
County	Warren	**or**	
Route	IA 92	**Office Director**	
Location	0.3 mi E of I-35 to Kennedy St		
Work Type	HMA RESURFACING WITH MILLING		
Segment Manager	Jason Holst		
Designer	Jonathan Bahr		

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	60
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	6% & 8% (note 1)
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	n/a
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	6" sloped (note 2)
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 (note 3)
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	0.5" per foot (to center of ditch)
	Curbed roadways	2%	not steeper than 3:1	unknown (note 2)
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	1.5:1 (note 4)
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1 (note 5)
	w/o drainage structures	10:1	6:1	unknown (note 5)
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	2 x 2 (note 6)
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	n/a
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right	40'
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	n/a
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	n/a
	Over railroad	23.3	23.3	n/a
	Sign trusses and pedestrian bridges	17.5	17	n/a
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	n/a
Level of Service		B	B	C

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

Note 1: Record Drawings (1932) indicate IA 92 was constructed with a maximum superelevation rate of 8% west of IA 28. Resurfaced roadway shall match existing superelevation rate.

Record Drawings (2017) indicate IA 92 was constructed with a maximum superelevation rate of 6% at the intersection of IA 28 and IA 92. Resurfaced roadway shall match existing superelevation rate.

Record Drawings (1931) indicate IA 92 was constructed with a maximum superelevation rate of 8% east of the intersection of IA 28 and IA 92. Resurfaced roadway shall match existing superelevation rate.

Note 2: Existing Curb is located at 11 locations through the project cooridor per 2017 As-Builts. The curb was installed to mitigate erosion along hilltops.

Note 3: Record Drawings (1932) indicate IA 92 was constructed with a foreslope of 3:1.

Note 4: Record Drawings (1932) indicate IA 92 was constructed with a backslope of 1.5:1.

Note 5: 1991 Record Drawings indicate the 8:1 Transverse Slopes were installed at Culvert Extensions. Transverse Slopes will not be impacted by this project.

Note 6: 1932 Record Drawings indicate 2' minimum depth and 2' minimum width of existing dithes. Ditches will not be impacted by this project unless there is 'reshaping' to bring them to their original condition.

Design year ADT = See Note 7.

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 accommcdated	10	10	Design year ADT > 2000 vpd	8	0*	4' paved, 4' granular (note 7)
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:

Note 7: 4' Paved + 4' Granular shoulders were installed in 2014.

IA 92 is a NHS route and has a 2043 Design Year ADT of 5,021 VPD.

D2 Questions for District 5 – with Responses in GREEN Text:
Date 4/13/2022
Times: 8:30am to 10:00am at Maintenance Garage. 3:00pm to 4:15pm within Project Limits.
Description: D2 Field Exam
Location: Iowa DOT Martensdale Maintenance Garage (West of IA 92/IA 28 Intersection) and Project Limits

Attendees:
Jonathan Bahr (Ames Road Design)
William McNamara (Ames Road Design)
Kari Jackson (Ames Road Design)
Steven McElmeel (District 5 Assistant District Engineer)
Jim Phillips (District 5 Design Staff)
Jared Klein (District 5 Design Staff)
Liz Finarty (District 5 RCE)
Todd Netley (Martensdale Highway Maintenance Supervisor)
Nicholas Koeppe (Martensdale Garage Operations Assistant)

1. PROJECT LIMITS
    a. Beginning of Project is at a HMA transition joint 0.37 miles east of the midpoint of the IA 92 bridge over I-35. Please verify.
        i. 2022-04-13 Field Exam Response: CONFIRMED. Beginning of Project location shall be located at a HMA transition joint 0.37 miles east of the midpoint of the IA 92 bridge over I-35.
    b. End of Project is at a transition from HMA to PCC, 0.40 miles west of the intersection of IA 92 and Kennedy Street. Please verify.
        i. 2022-04-13 Field Exam Response: CONFIRMED. End of Project location shall be located at a transition from HMA to PCC, 0.40 miles west of the intersection of IA 92 and Kennedy Street.
    c. Review Milling and Resurfacing "STOP" and "RESUME" locations around the intersection of IA 92 and IA 28.
        i. 2022-04-13 Field Exam Response: "STOP" and "RESUME" locations CONFIRMED.
            1. "STOP" location is at a HMA/PCC Transition location at the entrance to the Iowa DOT's Martensdale Maintenance Garage (located west of the intersection of IA 92 and IA 28, MP 120.98, STA 131+30).
            2. "RESUME" location is at the PCC/HMA transition location on the east end of the east 70' long PCC Approach of Bridge FHWA 51111 (MP 121.55, STA 23+38).

2. TYPE OF WORK
    a. The Type of Work Description in PSS is "HMA Resurfacing/Cold-in-Place Recycling". However, the Project Concept did not select the CIR option as the Recommended Treatment. Please confirm that the Type of Work should be revised to "HMA Resurfacing with Milling".
        i. 2022-04-13 Field Exam Response: Ames Road Design will contact Contracts and suggest revising the "Type of Work" to "HMA Resurfacing with Milling".

3. ROADWAY RESURFACING TREATMENT WEST OF THE INTERSECTION OF IA 92 AND IA 28
    a. Page 2 of the Project Concept section for "West of IA 28 Cost" for Alternative 2A has the DESCRIPTION "HMA Mill and Fill (2" Scarification, 4" Overlay)" and has the following for ITEM #2: 4" HMA RESURFACING (24' x 2"). Page 4 of the Project Concept indicates the following: "The pavement design section is recommending a 4" overlay from 119.45 to 120.85 (West of IA 28) and from 121.46 to 125.94 (East of IA 28) is recommending 2.5". dTims is recommending CIR for both sections." Page 5 of the Project Concept goes on to indicate that "This project will be 24' wide lanes with a 4' wide paved and 4' granular shoulder. The 4' paved shoulder will be UAC'd." Please verify the pavement composition. Here are a couple of options:
        i. KEEP DESCRIPTION and ITEM #1 as 2" SCARIFICATION and REVISE ITEM #2 to 4" HMA RESURFACING (24'x2" Intermediate Course AND 32'x2" Surface Course). This option assumes the 2" scarification is only over the 24' wide Traveled Way. Since the 24' wide Roadway Profile is being raised 2", then the existing 4' paved shoulders will need to be overlayed with the 2" Surface Course, hence the 32' wide x 2" Surface Course.
        ii. KEEP DESCRIPTION and ITEM #1 as 2" SCARIFICATION and REVISE ITEM #2 to 4" HMA RESURFACING (32'x1.5" Intermediate Course AND 32'x1.5" Surface Course). This is assuming the 2" scarification is projected over the entire 32' wide Roadway (24' Traveled Way and 4' Paved Shoulders). This option maintains a 1.5" Intermediate Course and 1.5" HMA Surface Course.
        iii. 2022-04-13 Field Exam Response: The resurfacing treatment to the west of the intersection of IA 92 and IA 28 shall be revised to the following: 32'x1.5" Pavement Scarification + 32'x1.5" HMA Intermediate Course + 32'x2" HMA Surface Course. District Staff confirmed the use of HMA Intermediate Course as opposed to Interlayer.
            1. The additional width of the scarifying operation and the HMA courses over the entire length of the project will increase the cost of this project (an estimated increase of $360,000 was calculated during the meeting using unit costs from the Concept Estimate). To reduce the increase in cost the scarification depth was reduced from 2" to 1.5" and the total resurfacing thickness was reduced from 4" to 3.5". Also, reducing the amount of scarification by a 0.5" helps to counteract the impact to the overall Structural Number that would be brought about by reducing the total resurfacing thickness.
            2. FYI; Scarifying the 24' Traveled Way and not scarifying the Paved Shoulders would result in a 'bathtub' effect in the traveled way (the Shoulder pavement elevation would be higher than the scarified surface of the Traveled Way and would prevent runoff from escaping the Traveled Way). One way to mitigate the bathtub effect would be to mill channels/troughs at strategic locations (every couple hundred feet and at low points) in the shoulder to allow runoff from the Traveled Way to escape the roadway. This mitigation option does not work well on relatively flat stretches of road (like IA 92 west of the intersection of IA 92 and IA 28).

4. ROADWAY RESURFACING TREATMENT EAST OF THE INTERSECTION OF IA 92 AND IA 28
    a. Page 3 of the Project Concept section for “East of IA 28 Cost” for Alternative 2B has the DESCIRIPTION “HMA Mill and Fill (2" Scarification, 3" Overlay)”, but has ITEM #2 as the following 4" HMA RESURFACING (24' x 2"). Page 4 of the Project Concept indicates the following: “The pavement design section is recommending a 4” overlay from 119.45 to 120.85 (West of IA 28) and from 121.46 to 125.94 (East of IA 28) is recommending 2.5”. dTims is recommending CIR for both sections.” Page 5 of the Project Concept goes on to indicate that “This project will be 24’ wide lanes with a 4’ wide paved and 4’ granular shoulder. The 4’ paved shoulder will be UAC’d.” Please verify the pavement composition. Here are a couple of options:
        i. KEEP DESCRIPTION and ITEM #1 as 2” SCARIFICATION and REVISE ITEM #2 to 3" HMA RESURFACING (24'x2" Intermediate Course AND 32'x1" Surface Course). This option assumes the 2” scarification is only over the 24’ wide Traveled Way. Since the 24’ wide Roadway Profile is being raised 1”, then the existing 4’ paved shoulders will need to be overlayed with the 1” Surface Course, hence the 32’ wide x 1” Surface Course. A 1” Surface Course may be considered too thin.
        ii. REVISE DESCRIPTION and ITEM #1 to indicate 3” SCARIFICATION and REVISE ITEM #2 to 3" HMA RESURFACING (24'x1.5" Intermediate Course AND 24'x1.5" Surface Course). This will allow for the UAC of the existing paved shoulders since the roadway profile would not be raised. This option maintains a 1.5” Intermediate Course and 1.5” HMA Surface Course.
        iii. KEEP DESCRIPTION and ITEM #1 as 2” SCARIFICATION and REVISE ITEM #2 to 3" HMA RESURFACING (32'x1.5" Intermediate Course AND 32'x1.5" Surface Course). This is assuming the 2” scarification is projected over the entire 32’ wide Roadway (24’ Traveled Way and 4’ Paved Shoulders). This option maintains a 1.5” Intermediate Course and 1.5” HMA Surface Course.
        iv. 2022-04-13 Field Exam Response: The general resurfacing treatment to the east of the intersection of IA 92 and IA 28 shall be revised to the following: 32’x1.5” Pavement Scarification + 32’x1.5” HMA Intermediate Course + 32’x1.5” HMA Surface Course. See GUARDRAIL section below for Typical Section exception at FHWA 51111. See ROADWAY RESURFACING TREATMENT WEST OF THE INTERSECTION OF IA 92 AND IA 28 section above for additional discussion.

5. GRANULAR SHOULDER
    a. The Concept Estimates on Pages 2 and 3 of the Project Concept did not indicate the placement of Granular Shoulder Material on this project. Shall we assume that Granular Shoulder will need to be placed on this project? This question is parallel with the ‘ROADWAY RESURFACING TREATMENT’ Sections above.
        i. 2022-04-13 Field Exam Response: Add Granular Shoulder Material on this project. The addition of Granular Shoulder Material will increase the estimated cost of the project. FYI, the Concept Estimate included a 5% contingency for the overall project.
    b. Shall we assume Granular Shoulder is 1” below existing edge of pavement due to washout?
        i. 2022-04-13 Field Exam Response: Add 1” of Granular Shoulder Material to account for washout of the existing granular shoulder.

6. SHOULDER AND CENTERLINE RUMBLES
    a. The Concept Estimates on Pages 2 and 3 of the Project Concept only indicate the installation of ‘CENTERLINE RUMBLE STRIPS, HMA’. Please confirm that Shoulder Rumble Strips should also be utilized on this project. FYI, there are existing shoulder rumble strips along IA 92. This question is parallel with the ‘ROADWAY RESURFACING TREATMENT’ Sections above (Road Design Team assumes that if the existing 4’ wide paved shoulders are overlayed then the new shoulder rumble strips would need to be installed).
        i. 2022-04-13 Field Exam Response: Add Shoulder Rumble Strips to the project. Also, confirmed the use of Shoulder Rumble Strips as opposed to Shoulder Rumble Stripes.
    b. Should the centerline rumbles (and shoulder rumbles if applicable) be skipped in the relatively residential area just west of the west end of the project (MP 126, west of Kennedy Street)? FYI, there are existing shoulder rumble strips along IA 92 in this area.
        i. 2022-04-13 Field Exam Response: Maintain Centerline Rumbles and Shoulder Rumbles through the Project Limits. There are relatively new existing rumbles in the more developed area east of Kennedy Street.

7. LONGITUDINAL SUBDRAINS
    a. Page 5 of the Project Concept indicates that the proposed improvement includes 50% placement of additional subdrains on the westbound lane (existing coverage is 50% on the eastbound lane). Please confirm that the District would like to install the additional 50% of subdrain on the westbound lane.
        i. 2022-04-13 Field Exam Response: Remove longitudinal subdrain from the scope of the project. The existing longitudinal subdrain was installed adjacent to the Traveled Way pavement when the roadway was widened, however the existing pavement would need to be trenched and replaced to install new subdrain for this project; which dramatically increases the cost of installation of new longitudinal subdrain. Installing new longitudinal subdrain outside of the existing shoulders would not provide the function intended if the Traveled Way Pavement is a different thickness than the Shoulder Pavement. The intended function would be to drain the subgrade at the joint where the Traveled Way and Shoulder Pavement meet. Removing the longitudinal subdrain is a cost savings of $308,000 per the Concept Estimate.

8. STRUCTURES
    a. FHWA 51111, Maint. 9121.7S092 (261'X40' Prestressed Concrete Beam Bridge, STA 21+28, MP 121.52). Page 7 of the Project Concept indicates this Bridge is in good shape. Review traveled way and shoulder paving limits during Field Meeting. This bridge is east of the intersection of IA 92 and IA 28. See "ROADWAY RESURFACING TREATMENT" section above and the "GUARDRAIL" section below.
    b. FHWA 51120, Maint. 9123.2S092 (21'X97' Concrete Box Culvert, STA 106+97, MP 123.12). Page 7 of the Project Concept indicates this Culvert is in good shape. There don't appear to be any traveled way and shoulder paving limits that need to be reviewed during the Field Meeting.
        i. 2022-04-13 Field Exam Response: There are no issues with maintaining the Roadway Typical Section over the FHWA 51120 Concrete Box Culvert. District Staff reviewed the culvert during the site visit and determined that District Maintenance staff shall grout culvert joints (the grouting of the culvert joints will NOT be associated with the 3R Project).

9. GUARDRAIL
    a. Page 7 of the Project Concept indicates "Paved shoulders were installed in 2017. Updated guardrail was installed at that time. Will want to review to make sure guardrail is meeting current standards." All the guardrail within this project corridor is located at the four quadrants of FHWA 51111 (Maint. 9121.7S092, 261'X40' Prestressed Concrete Beam Bridge, STA 21+28, MP 121.52). The two guardrails attached to the west end of the bridge are within a gapped area of the resurfacing for this project. The two guardrails attached to the east of may be impacted by a rise in roadway profile elevation (See "ROADWAY RESURFACING TREATMENT" section above and "STRUCTURES" section above). Has this location been reviewed?
        i. 2022-04-13 Field Exam Response: The existing guardrail at all four quadrants of FHWA 51111 are up to current standards. The resurfacing treatment at the PCC/HMA transition location on the east end of the east 70' long PCC Approach of Bridge FHWA 51111 (MP 121.55, STA 23+38) shall be: 32'x1.5" Pavement Scarification + 32'x1.5" HMA Surface Course to eliminate the net profile change. The HMA Intermediate Course will be tapered out from the General Typical Section (See "ROADWAY RESURFACING TREATMENT EAST OF THE INTERSECTION OF IA 92 AND IA 28" section above). A Runout Detail will be added to the plans.

10. CULVERTS/PIPES
    a. Page 7 of the Project Concept indicates "BSB is requested to review the structure at Station 65 (MM 119.7) based on recent review by the Martensdale garage staff." Has this location been reviewed? What is the scope and responsibilities? Are there any potential ROW/Easements/Environmental Impact needs associated with this potential work?
        i. 2022-04-13 Field Exam Response: Culvert is located at STA 66+51 (MP 119.74). The location was reviewed during the site visit. There is limited space for erosion mitigation. Jim Phillips (District 5) gathered dimensions and will add them to Field Tabulations.
            1. Rip Rap/Erosion Stone will be added to the outlet (south) side of the culvert.
            2. Revetment will be added to armor the curve in the bank on the outlet (south) side of the culvert.
            3. Erosion mitigation (possibly Rip Rap / Erosion Stone) may be added to the inlet (north) side of the culvert.

11. ADA/SIDEWALK/TRAILS
    a. Page 6 of the Project Concept states "Complete streets analysis." Has this analysis been performed?
        i. 2022-04-13 Field Exam Response: Jim Phillips (District 5) shall contact Milly Ortiz-Pagan (Office of Systems Planning) to confirm needs for "Complete Streets Analysis". There are 10' paved shoulders east of Kennedy Street, but the D2 Discussion Group does not believe there is available ROW or shoulder space for this corridor to include 10' wide paved shoulders for a Bicycle Path. Such an addition would be an exponential increase to the cost of the project.
        ii. 2022-04-19 Follow-Up Correspondence: Milly Ortiz-Pagan (Office of Systems Planning) confirmed in an e-mail reply to Jim Phillips (District 5) that "The cost of additional paved shoulder width would be excessively disproportionate to the need or probable use per Section 2.4 of the Complete Streets Policy." There will be no change in the Concepted Shoulder Width.

12. INTERSECTION CRASH HISTORY AND ANALYSIS
    a. Page 7 of the Project Concept states "All the intersections within the project limits are Tier 2 locations on the PCR (potential for crash reduction) website." and "Review the need for turn lanes at County Road R45 (40th Ave/St. Mary's Road)." Has this analysis been performed?
        i. 2022-04-13 Field Exam Response: County Road R45/40th Ave/St. Mary's Road (MP 121.75) is a Tier 3 intersection according to the current PCR website. District shall look at Turn Volumes, but there probably is not enough Volume plus Crashes to warrant Turn Lanes. If a Turn Lane was added, then it would probably be a Right Turn Lane for Eastbound IA 92 approaching County Road R45 (ROW would be required for construction of this Right Turn Lane).

13. ADDITIONAL SAFETY & OPERATION CONSIDERATION
    a. Page 7 of the Project Concept states "Identify impacts to District Road Safety Plan, 4-to-3 lane conversion, rumble strips, safety dikes, Super 2 Highway, freight bottle neck, etc." Has this analysis been performed?
        i. 2022-04-13 Field Exam Response: No additional analysis is required. FYI, the District Road Safety Plan is becoming outdated and is being replaced with up-to-date Safety Analysis via the Potential for Crash Reduction (PCR) Website (see the INTERSECTION CRASH HISTORY AND ANALYSIS section above).
            1. IA 92 is not a Super 2 Highway. There aren't any candidate locations for Safety Dikes at Tee Intersections. A 4-to-3 lane conversion is not applicable. Rumble Stripes are being installed.

14. EXISTING DRAINAGE PROBLEMS
    a. Are there existing drainage problems within towns or in rural areas that may need to be mitigated (shoulder washout, standing water, etc.)?
    b. Page 6 of the Project Concept states "During the field review, maintenance asked to review current curbed sections for possible extensions to help with erosion issues. There is specifically an issue at the addresses of 7600-7602 IA 92 on the south side that when it rains, water doesn't drain to the entrance pipe but goes over the driveway. Looks like an area for a possible shoulder fillet. A patch tab will need to be put together by the Chariton RCE office." Review this location during the Field Meeting.
        i. 2022-04-13 Field Exam Response: Reviewed the erosion issue location near the addresses of 7600-7602 IA 92 (south side, near STA 230+90, MP 125.46) during the site visit. 10' of the existing curb will be removed (the team decided that removing the curb to an existing joint location ~20 feet from the east end of the curb was excessive). An erosion stone flume (ditch reshaping and rock ditch) shall be constructed in the area and shall be aligned to outlet to the entrance culvert for 7600-7602 IA 92. The entrance culvert for 7600-7602 IA 92 is scheduled to be removed and replaced with a new culvert.

15. STOCKPILED MATERIALS:
    a. Confirm that Maintenance would like the following Stockpiled Materials:
        i. HMA Millings: 2022-04-13 Field Exam Response: Yes, District Maintenance would like to stockpile HMA Millings.
        ii. Class 13 Excavation: 2022-04-13 Field Exam Response: Not Applicable; Class 13 Excavation is not included in this project.
        iii. Steel Beam Guardrail (see "GUARDRAIL" section above): 2022-04-13 Field Exam Response: Not Applicable; Guardrail is not being removed for this project. FYI, District Maintenance rejected stockpiling of Steel Beam Guardrail for the concurrent FY 2023 IA 28 Warren County Project (STP-028-1(16)--2C-91).
        iv. Steel Beam Guardrail Posts (see "GUARDRAIL" section above) 2022-04-13 Field Exam Response: Not Applicable; Guardrail is not being removed for this project. FYI, District Maintenance rejected stockpiling of Steel Beam Guardrail for the concurrent FY 2023 IA 28 Warren County Project (STP-028-1(16)--2C-91).
    b. Verify the location of Stockpiled Materials (Primary Location? Secondary location? Is there a preferred distribution of materials across the sites)
        i. Primary Location: 2022-04-13 Field Exam Response: District Maintenance Staff requested that all of the stockpiled HMA Millings be delivered to the Iowa DOT's Martensdale Maintenance Garage regardless if the total amount is over the 2,500 ton cap (a quick-calc of HMA Milling tonnage yielded 3,040 tons of stockpiled material after 50% was removed for RAP. The tonnage will be recalculated as the Project progresses.). District Staff instructed the Road Design Team to include the District Note regarding the height of Stockpiled Materials in the Estimate Reference Note for Contractor Stockpiled Shoulder Material (Contractor Stockpiled Shoulder Material is the bid item associated with the Stockpiling of HMA Millings). District Maintenance indicated that the District prefers that Class A Stone be delivered instead of HMA Millings (it's still the Contractor's choice, per the specification). Road Design Team shall add a note to the Delivery and Stockpile tab that indicates the District Maintenance preference for Class A Stone.
        ii. Secondary Location: 2022-04-13 Field Exam Response: There is a secondary location 5 miles south of Indianola on US 65 (near the US 65/US 69 junction for Lake Ahquabi State Park). District Staff instructed the Road Design Team NOT to include the Secondary Location in the Delivery and Stockpile Tab.
    c. Maintenance Contact Person and Phone Number: 2022-04-13 Field Exam Response: Todd Netley, 515-250-3374.

16. CONTINGENCY PERCENTAGES
    a. HMA Pavement Contingency for Irregularities: 5.0% is Typical. Confirm. 2022-04-13 Field Exam Response: Confirmed, 5% HMA contingency for irregularities.
    b. Granular Shoulder: 20% has been used on recent projects. Confirm. 2022-04-13 Field Exam Response: Confirmed, 20% Granular Shoulder contingency.
    c. Patches Contingency: 15% is Typical. Confirm. 2022-04-13 Field Exam Response: Confirmed, 15% contingency for Patches.

17. LETTING DATE
    a. Letting Date is currently scheduled for 11/15/2022. Road Design Team suggests keeping the Letting Date as 11/15/2022. The Road Design recommends revising the FY 2023 IA 28 Warren County (STP-028-1(16)--2C-91) Project's 10/18/2022 Letting Date to match the 11/15/2022 Letting Date of this FY 2023 IA 92 Warren County Project (NHSX-092-5(70)--3H-91). This IA 92 Warren County passes by the beginning of the IA 28 Warren County project. This allows for the possibility to Tie the two projects as well as to stagger other District 5 Projects the Road Design Team is working on.
        i. 2022-04-13 Field Exam Response: District Staff confirmed moving the IA 28 Warren County (STP-028-1(16)--2C-91) Letting Date to 11/15/2022 (FY 2023 IA 92 Warren County Project (NHSX-092-5(70)--3H-91) will stay as 11/15/2022). Road Design will Contact the Contract's Bureau and request the adjustment of the Letting Date for IA 28 Warren County.
        ii. 2022-04-13 Field Exam Response: District Staff indicated that it was OK to assume the FY 2023 IA 28 Warren County (STP-028-1(16)--2C-91) and the FY 2023 IA 92 Warren County Project (NHSX-092-5(70)--3H-91) will be Tied. The Road Design Team will confirm the Tied status of the two projects as the Design progresses.

18. SPECIAL FEATURES
    a. Are there any special features not shown on the plans (Schools or businesses with particular entrance needs, mailboxes, signage, structures, traffic signal detector loops at signalized intersections) that need to be taken into consideration, either design or Traffic Control-wise? 2022-04-13 Field Exam Response: No Special Features or Traffic Control issues were identified.

19. SPECIAL EVENTS
    a. Are there any Special Events that need to be identified? If so, what are their schedules?
        i. 2022-04-13 Field Exam Response: No Special Events for Martensdale or Norwalk are expected to impact construction.

20. FIELD MAINTENANCE TABS
    a. Please confirm that the FIELD Tabs (Tree Clearing, patching, curb repairs, culverts, etc.) are pending collection, review, and distribution to Road Design.
        i. 2022-04-13 Field Exam Response: The Field Maintenance Tabs are being finalized by District Staff. Field Maintenance Tabs will be forwarded to Road Design Staff once they have been completed.

21. SIDEROAD AND ENTRANCE TREATMENT
    a. Discuss Treatment of Existing Sideroads and Entrances throughout the Project Limits.
        i. 2022-04-13 Field Exam Response: District Staff confirmed that entrance fillets for existing gravel entrances that extend beyond the paved shoulder shall be removed and replaced with shoulder stone. Sideroads will have paved fillets that go to the "Full Shoulder Design Width" (outside of combination shoulder).

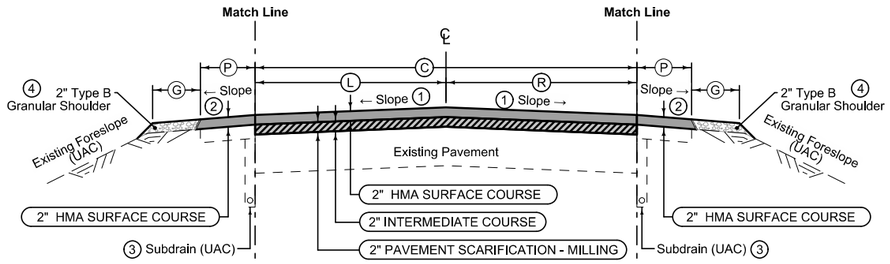
22. CURB TREATMENT
    a. Discuss Treatment of Existing Curb throughout the Project Limits (see Page 5 of the Project Concept).
        i. 2022-04-13 Field Exam Response: A Detail for Longitudinal/Tapered Milling adjacent to the lip of the gutter pan will be added to the plans to illustrate that the resurfacing will tie in to the existing elevation at the lip of the gutter pan (no HMA will be placed on the gutter pan). The tapered milling does not need to begin at the edge line of the Traveled Way (the Tapered Milling can begin closer to the lip of the gutter pan).

23. ADDITIONAL TOPICS TO BE RESOLVED AS THE PROJECT PROGRESSES
    a. Project Coordination
    b. Tied Projects
    c. Pavement Specifications
    d. Traffic Control
    e. OLE Information
    f. City and County Agreements

Combination Shoulder

3R_Shldr_C_Milling_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
49+24.05	119+60	4	4
119+60	131+19.42*	4	8

EQUATION: STA 131+19.42 (BK) = 231+35 (AH)



3R_Overlay_ 04-19-11				
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
49+24.05	131+19.42	24	12	12

EQUATION: STA 131+19.42 (BK) = 231+35 (AH)

Combination Shoulder

3R_Shldr_C_Milling_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
49+24.05	119+60	4	4
119+60	131+19.42*	4	8

EQUATION: STA 131+19.42 (BK) = 231+35 (AH)

1. Finished slope shall match existing pavement except the maximum allowable slope is 3.0% and the minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.
2. Finished slope of Shoulder shall have a minimum allowable slope of 4% and a maximum allowable slope of 6%. Section may be modified as directed by the Engineer through areas of special shaping.
3. UAC existing subdrain. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be in contact with the granular material below the existing mainline pavement (see Tab 104-9 on CS sheets for proposed locations).
4. The surface of the existing granular shoulder is estimated to be 1.0" below the surface of the edge of the existing pavement.

Notes:

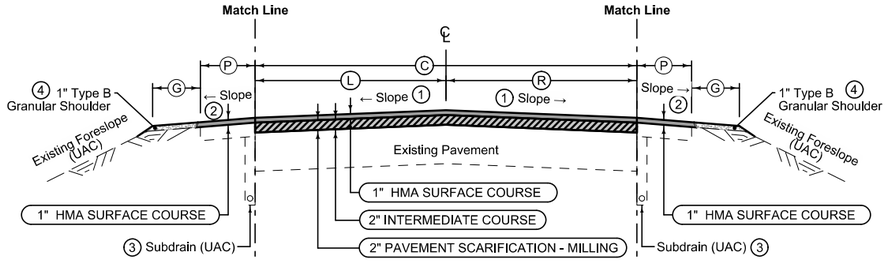
1. Stationing on typical sections does not include gapping for bridges, sideroads, or entrances. Refer to tabulations and details for precise stationing and quantities.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 Mainline Milling & HMA Resurfacing

(Beginning of Project to West of IA 28 in Martensdale)

Combination Shoulder

STATION TO STATION		3R_Shldr_C_Milling_ 04-19-11 Ⓟ Feet	Ⓖ Feet
25+65	65+55	8	0
65+55	99+70	4	4
100+95	227+00	4	4
230+90	256+49.40	4	4



STATION TO STATION		3R_Overlay_ 04-19-11 Ⓒ Feet	Ⓛ Feet	Ⓡ Feet
23+74.50	253+15	24	12	12

Combination Shoulder

STATION TO STATION		3R_Shldr_C_Milling_ 04-19-11 Ⓟ Feet	Ⓖ Feet
23+74.50	25+65	8	0
25+65	65+30	4	4
67+30	87+60	4	4
90+15	98+25	4	4
103+90	132+60	4	4
135+50	140+35	4	4
145+45	186+00	4	4
192+50	227+00	4	4
230+90	241+70	4	4
246+20	253+15	4	4

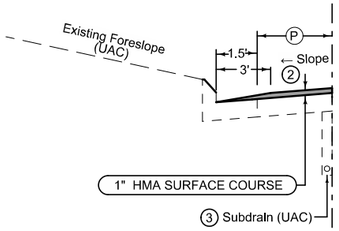
1. Finished slope shall match existing pavement except the maximum allowable slope is 3.0% and the minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.
2. Finished slope of Shoulder shall have a minimum allowable slope of 4% and a maximum allowable slope of 6%. Section may be modified as directed by the Engineer through areas of special shaping.
3. UAC existing subdrain. All existing subdrain shall remain functional at all times (do not plug or crush). New subdrain shall be in contact with the granular material below the existing mainline pavement (see Tab 104-9 on CS sheets for proposed locations).
4. The surface of the existing granular shoulder is estimated to be 1.0" below the surface of the edge of the existing pavement.

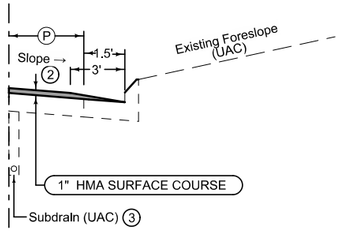
Curbed Shoulder

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

STATION TO STATION		2_Curb_ 04-21-20 Ⓟ Feet	Curb Type See PV-102
99+70	100+95	5.5	UAC
227+00	230+90	5.5	UAC





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

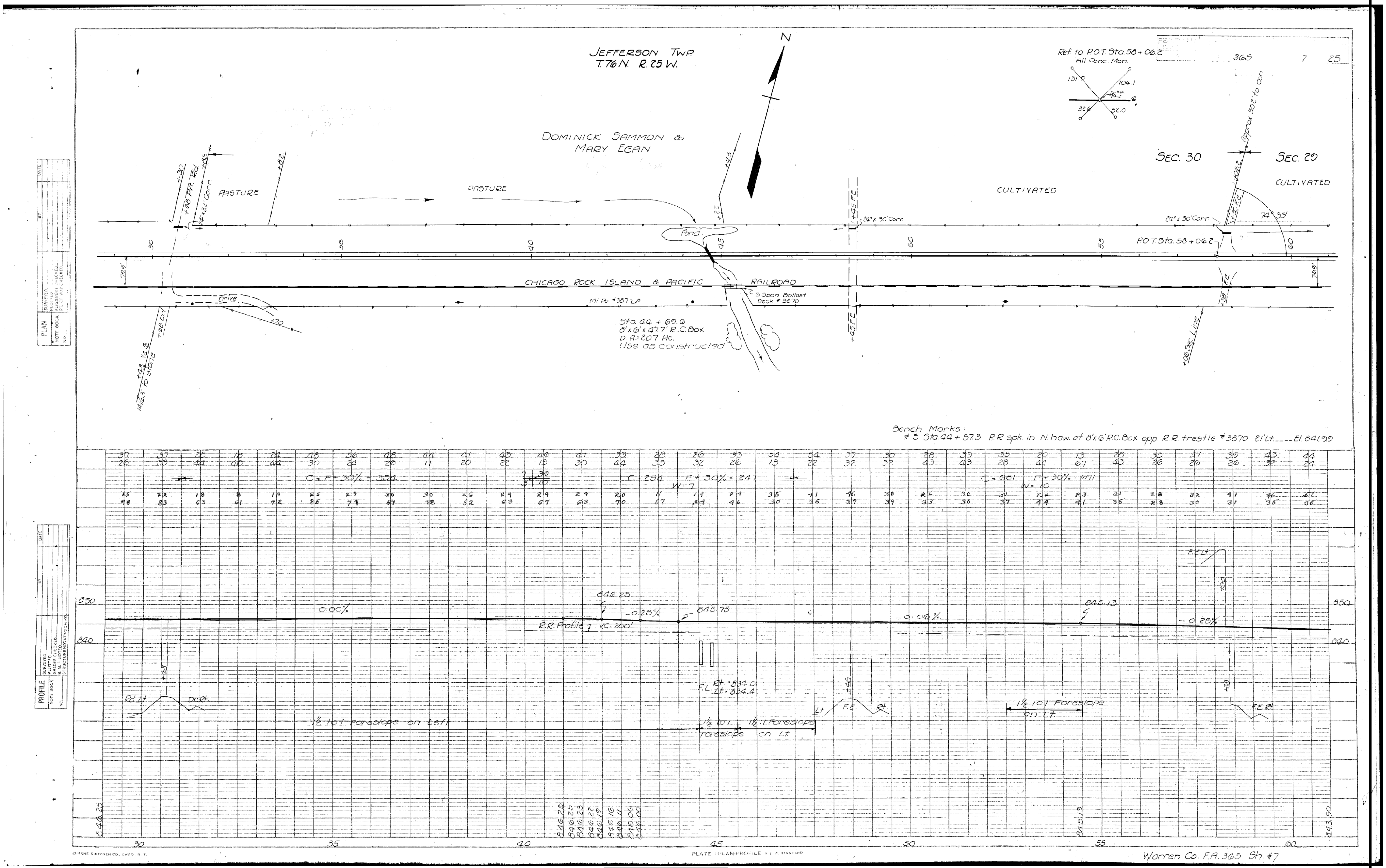
STATION TO STATION		2_Curb_ 04-21-20 Ⓟ Feet	Curb Type See PV-102
65+30	67+30	5.5	UAC
87+60	90+15	5.5	UAC
98+25	103+90	5.5	UAC
132+60	135+50	5.5	UAC
140+35	145+45	5.5	UAC
186+00	192+50	5.5	UAC
227+00	230+90	5.5	UAC
241+70	246+20	5.5	UAC
253+15	256+49.4	5.5	UAC

Notes:

1. Stationing on typical sections does not include gapping for bridges, sideroads, or entrances. Refer to tabulations and details for precise stationing and quantities.
2. See Tab 100-25 for Pavement quantities.
3. See Tab 112-9 for Granular Shoulder quantities.

IA 92 Mainline Milling & HMA Resurfacing

(East of IA 28 in Martensdale to End of Project)



This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.1

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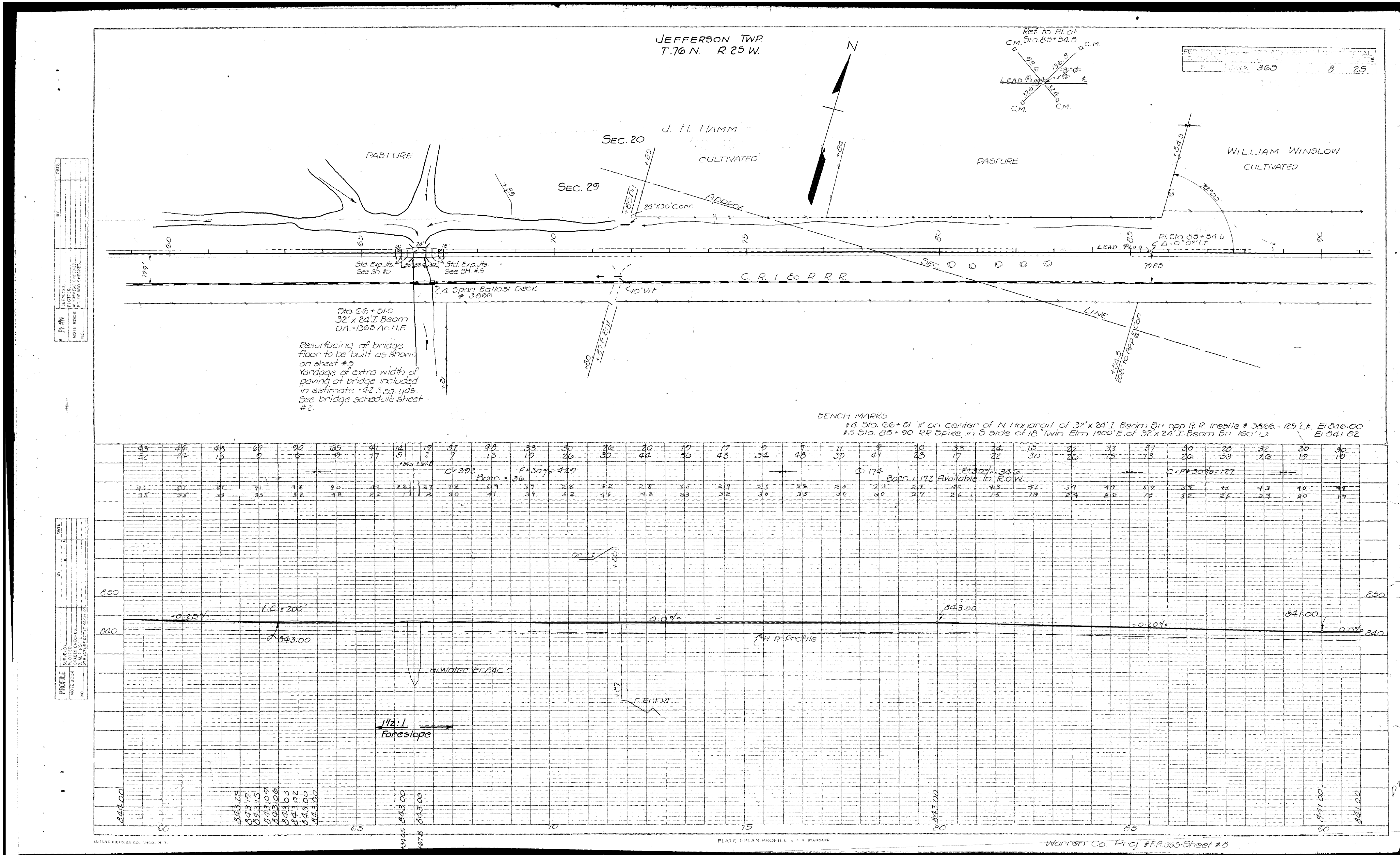
JEFFERSON TWP.
T.76 N. R.25 W.
Ref. to P.I. at Sta 85+54.5
C.M.
LEAD PLUG
J. H. HAMM
SEC. 20
SEC. 29
PASTURE
CULTIVATED
WILLIAM WINSLOW
CULTIVATED
24"x30' Corr.
APPROX
SEC
LINE
C. R. I. & P. R. R.
Std. Exp. Jts.
See Sh. #5
24 Span Ballast Deck
3866
10" Vit
Sta 66+51.0
32' x 24' I Beam
DA. = 1365 Ac. H.F.
Resurfacing of bridge floor to be built as shown on sheet #5.
Yardage of extra width of paving at bridge included in estimate = 42.3 sq. yds.
See bridge schedule sheet #2.
P.I. Sta 85+54.5
Δ = 0°02' Lt
BENCH MARKS
#4 Sta. 66+51 'X' on center of N. Handrail of 32'x 24' I. Beam Br. opp R.R. Trestle # 3866 - 125' Lt. El 846.00
#5 Sta. 85+90 R.R. Spike in S. side of 18" Twin Elm 1900' E. of 32'x 24' I. Beam Br. 160' Lt. El 841.82
C. 393
Borr. = 36
F+30% = 429
C. 174
F+30% = 346
Borr. = 172 Available in R.O.W.
C. F+30% = 127
V.C. = 200'
-0.25%
843.00
0.0%
843.00
-0.20%
841.00
0.0%
R.R. Profile
H. Water El. 846 C
F. Ent. Rt.
1½:1
Foreslope
850
840
PLATE 1-PLAN-PROFILE
Warren Co. Proj. #F.A. 365-Sheet #8
PLAN
PROFILE

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.2

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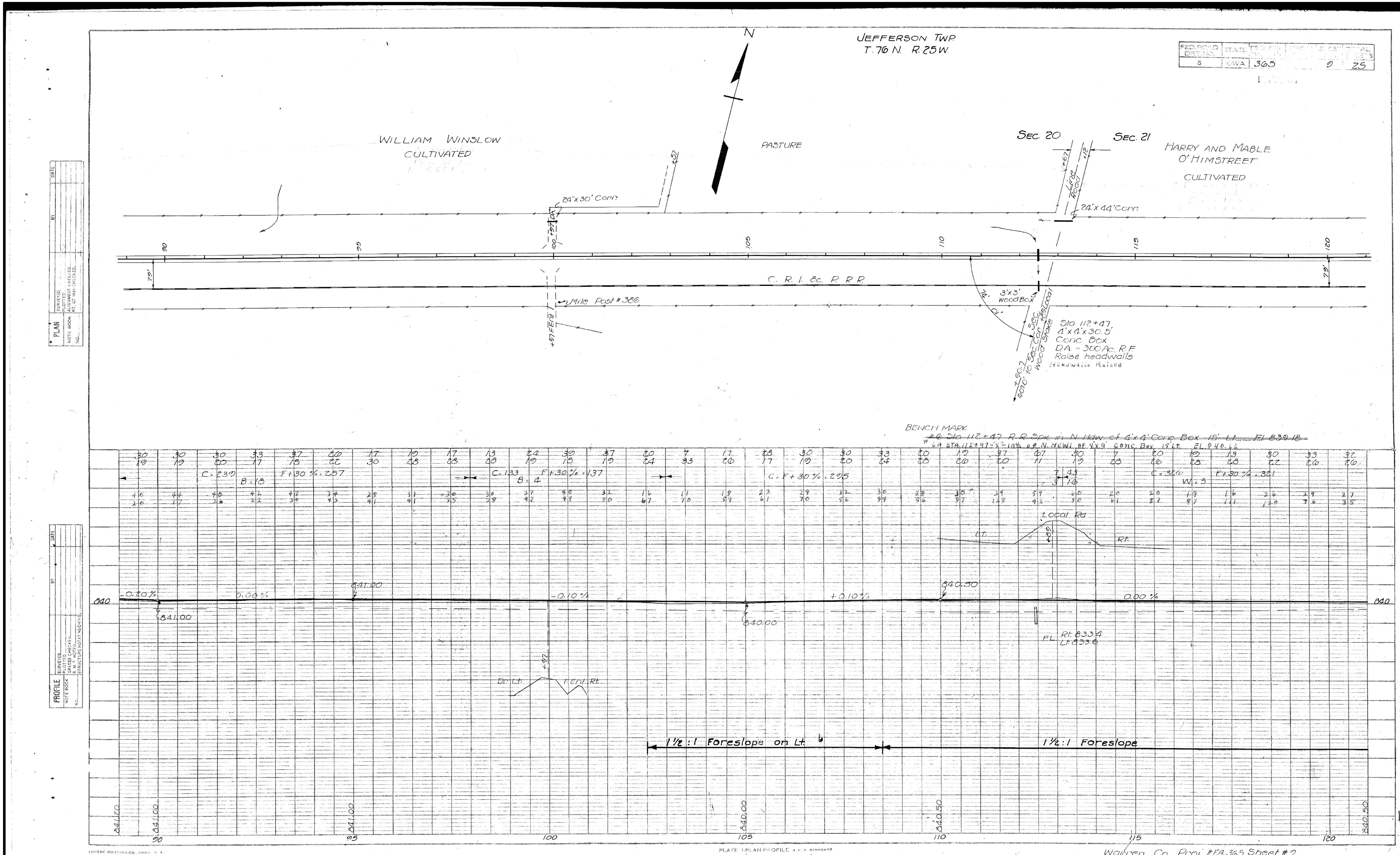
JEFFERSON TWP
T. 76 N. R. 25 W
N
WILLIAM WINSLOW
CULTIVATED
PASTURE
SEC. 20
SEC. 21
HARRY AND MABLE O'HIMSTREET
CULTIVATED
24"x30' Corr.
24"x44' Corr.
C. R. I. & P. R. R.
Mile Post # 386
3'x3' Wood Box
Sta. 112+47, 4'x4'x30.5' Conc. Box
D.A. - 300 Ac. R.F.
Raise headwalls
Headwalls Raised
Local Rd
BENCH MARK
Lt.
Rt.
-0.30%
0.00%
-0.10%
+0.10%
0.00%
841.00
840.00
840.50
840
Fl. Rt. 833.4 Lt. 833.6
1½:1 Foreslope on Lt.
1½:1 Foreslope
90
95
100
105
110
115
120
PLATE 1 PLAN-PROFILE
Warren Co. Proj. # FA 365 Sheet # 9

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.3

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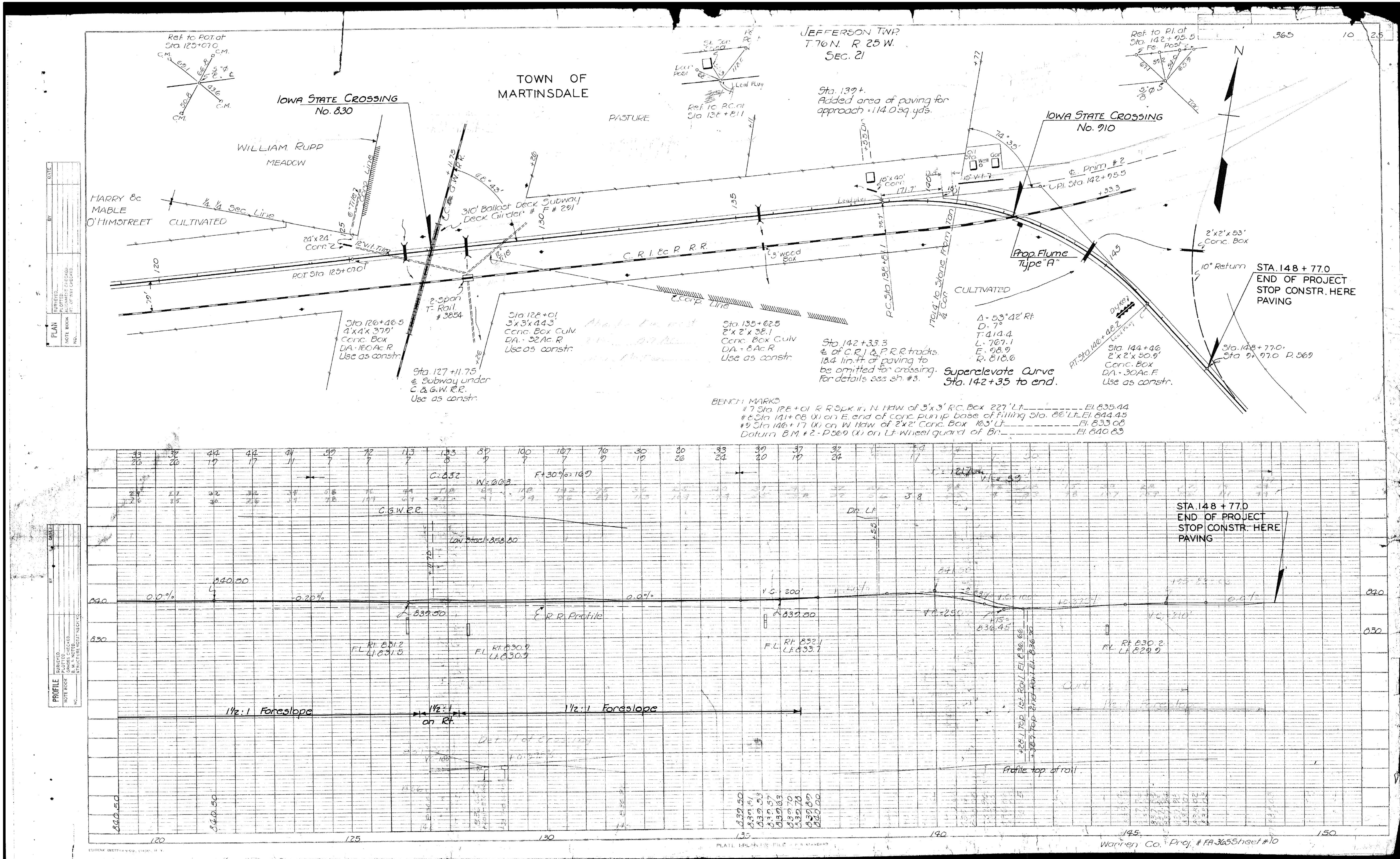
JEFFERSON TWP.
T 76 N. R 25 W.
SEC. 21
TOWN OF MARTINSDALE
IOWA STATE CROSSING No. 830
IOWA STATE CROSSING No. 910
WILLIAM RUPP
MEADOW
HARRY & MABLE O'HIMSTREET
CULTIVATED
PASTURE
C.R.I. & P. R.R.
Sta. 139+ Added area of paving for approach +114.0 sq. yds.
Sta. 126+46.5 4'x4'x 37.9' Conc. Box DA.=160 Ac. R Use as constr.
Sta. 127+11.75 ℄ Subway under C. & G.W. R.R. Use as constr.
Sta. 128+01 3'x3'x44.3' Conc. Box Culv. DA.=52 Ac. R Use as constr.
Sta. 135+62.5 2'x2'x38.1 Conc. Box Culv. DA.=8 Ac. R Use as constr.
Sta. 142+33.3 ℄ of C.R.I. & P. R.R. tracks. 18.4 lin. ft. of paving to be omitted for crossing. For details see sh. #3.
Superelevate Curve Sta. 142+35 to end.
Δ=53°42' Rt. D=7° T=414.4 L=767.1 E=98.9 R=818.6
Sta. 144+46 2'x2'x50.9' Conc. Box DA.=30 Ac. F. Use as constr.
Prop. Flume Type "A"
STA. 148+77.0 END OF PROJECT STOP CONSTR. HERE PAVING
BENCH MARKS
#7 Sta. 128+01 R.R. Spk. in N. Hdw. of 3'x3' R.C. Box 227' Lt. El. 835.44
#8 Sta. 141+08 (X) on E. end of conc. pump base of filling Sta. 86' Lt. El. 844.45
#9 Sta. 146+17 (X) on W. Hdw. of 2'x2' Conc. Box 163' Lt. El. 833.08
Datum B.M. #2 - P.569 (X) on Lt. Wheel guard of Br. El. 840.83
1½:1 Foreslope
Profile top of rail
Warren Co. Proj. # FA 365 Sheet #10

This Sheet
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FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.4

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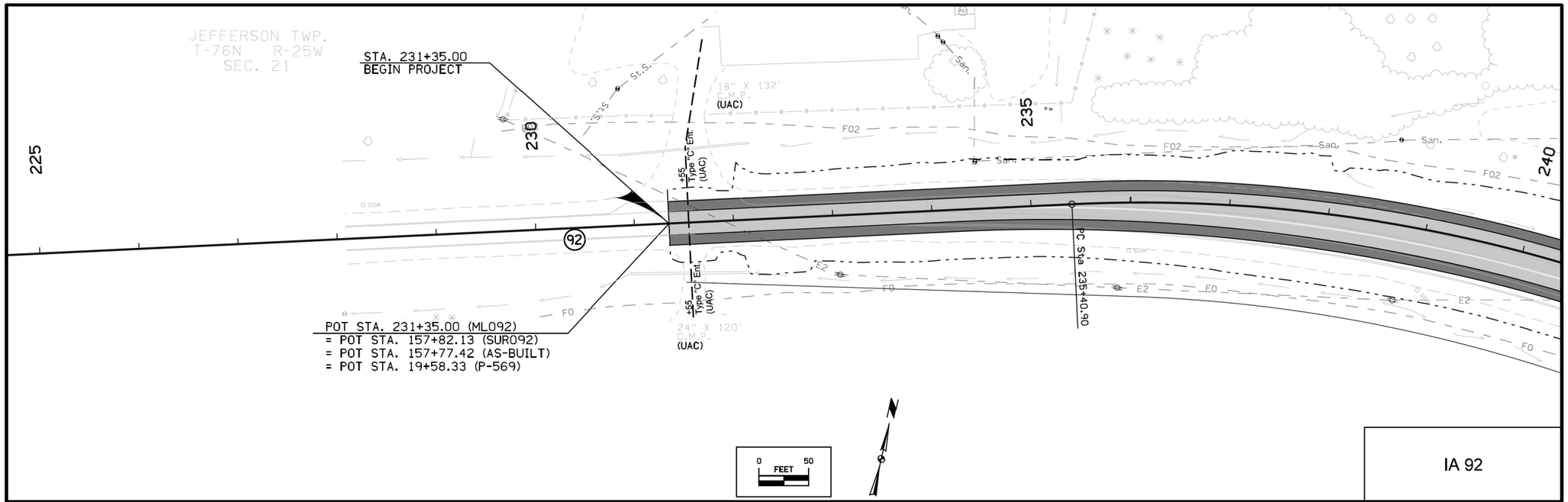

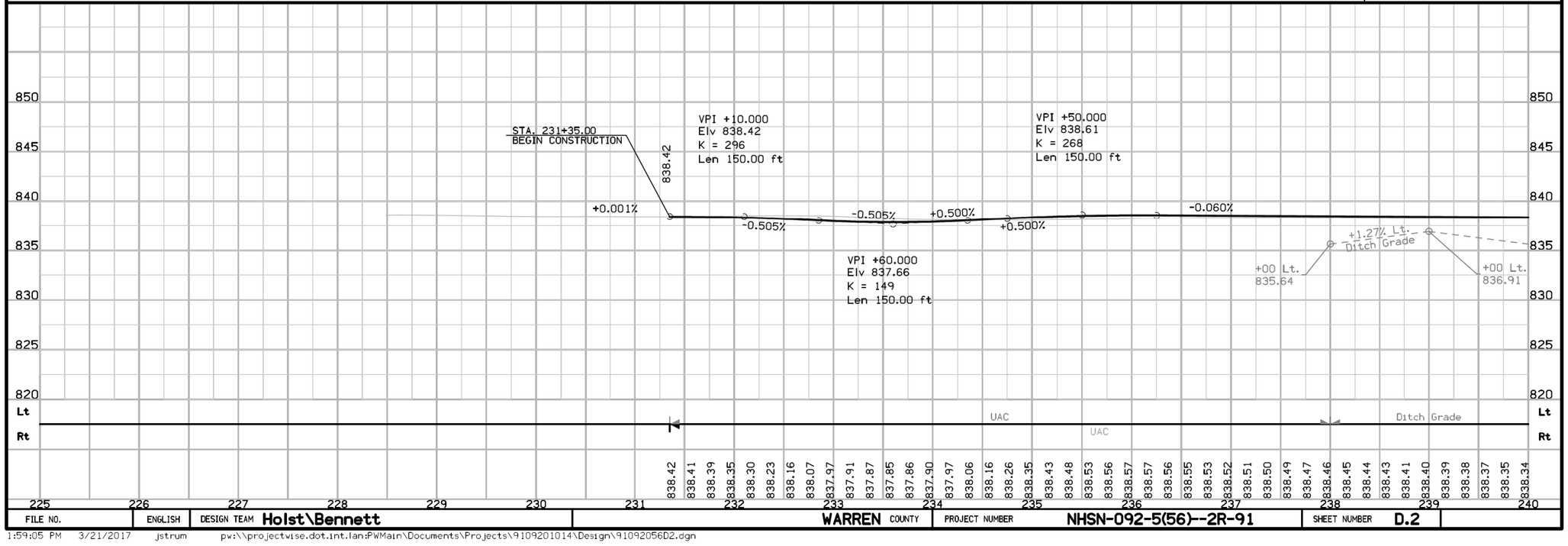

FILE NO.	ENGLISH	DESIGN TEAM Holst\Bennett	WARREN COUNTY	PROJECT NUMBER NHSN-092-5(56)--2R-91	SHEET NUMBER D.2

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FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.5

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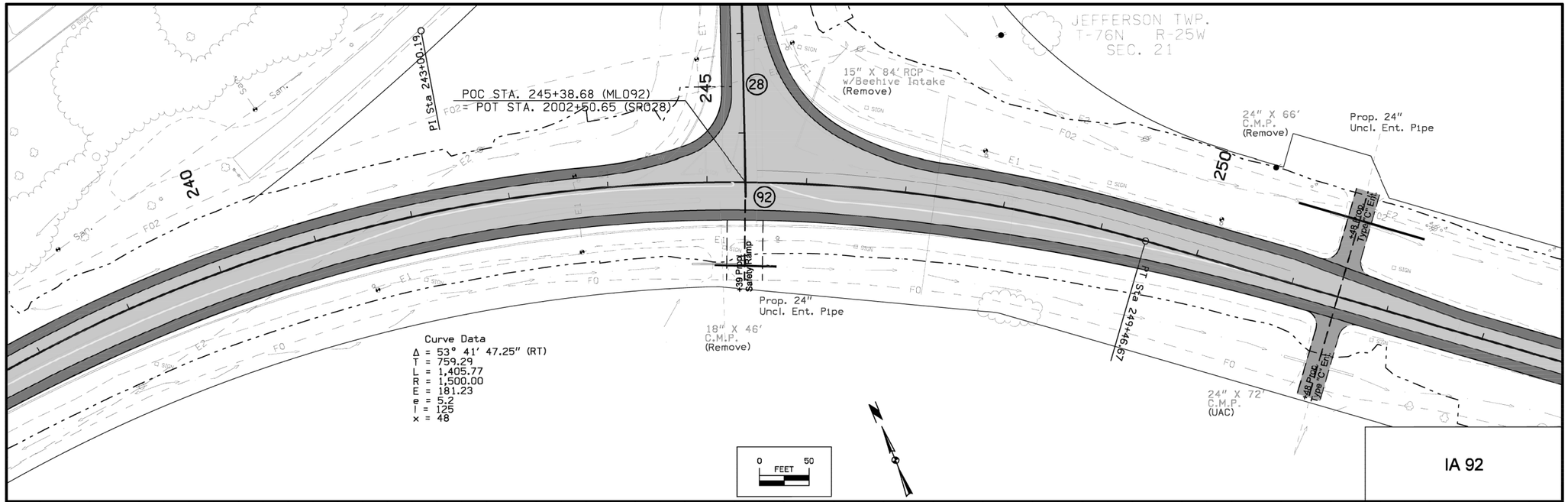

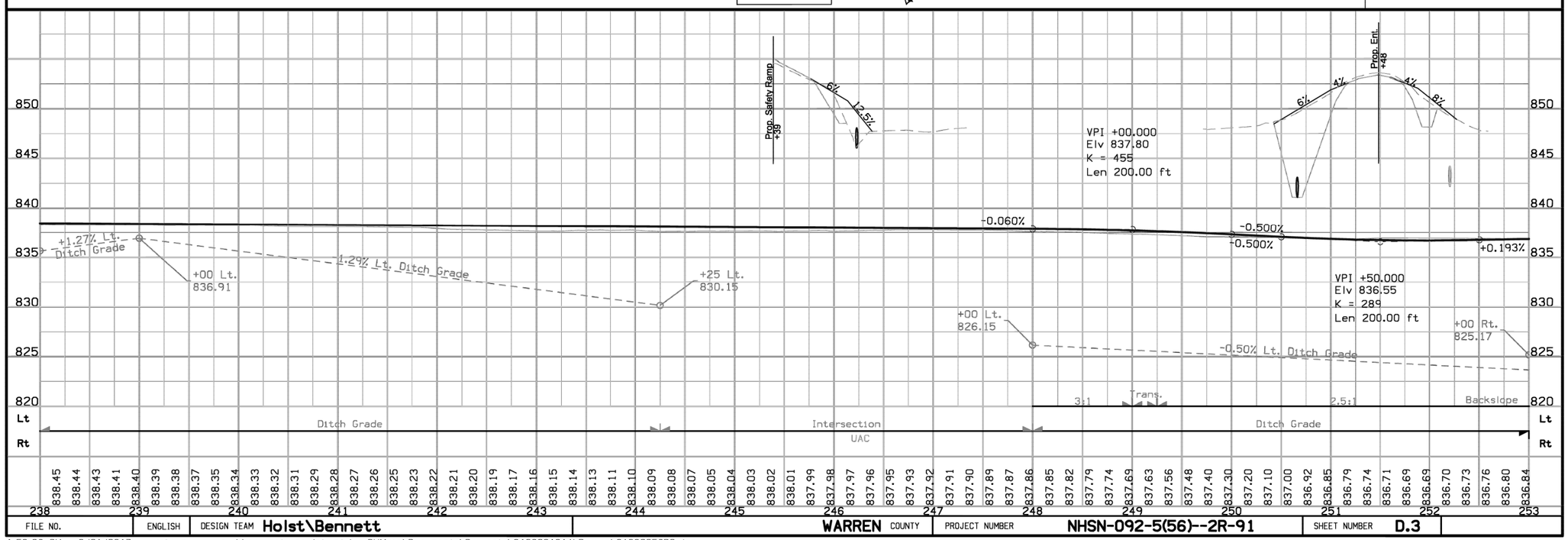

FILE NO.	ENGLISH	DESIGN TEAM Holst\Bennett	WARREN COUNTY	PROJECT NUMBER NHSN-092-5(56)--2R-91	SHEET NUMBER D.3

1:59:06 PM 3/21/2017 jstrum pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\9109201014\Design\91092056D2.dgn

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For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.6

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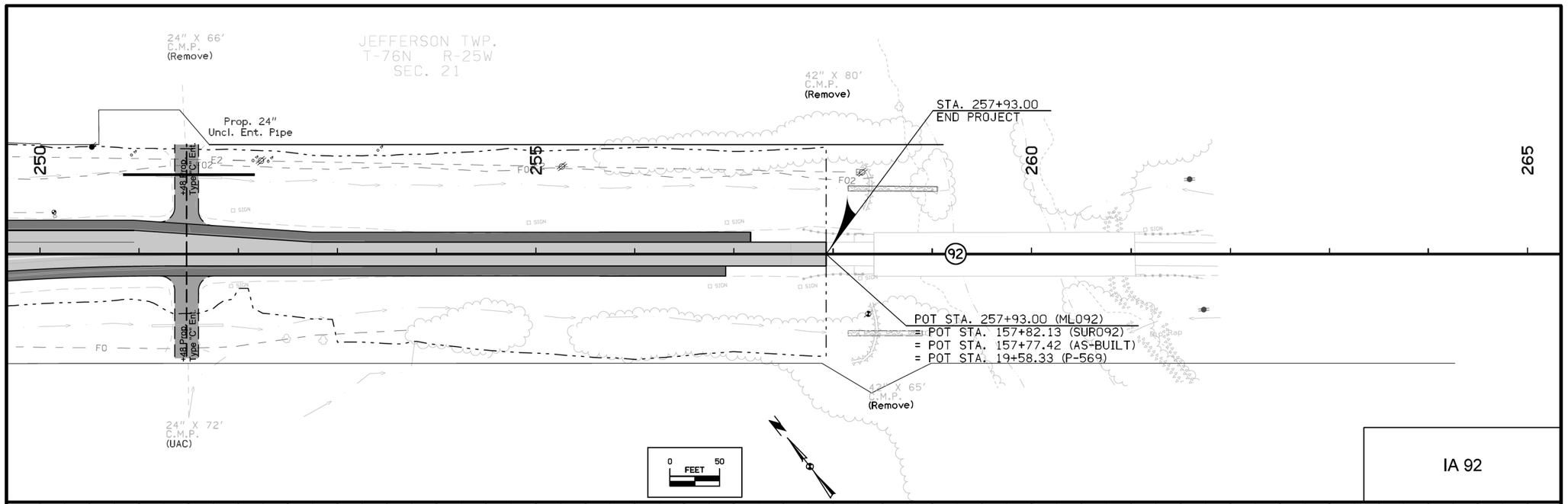

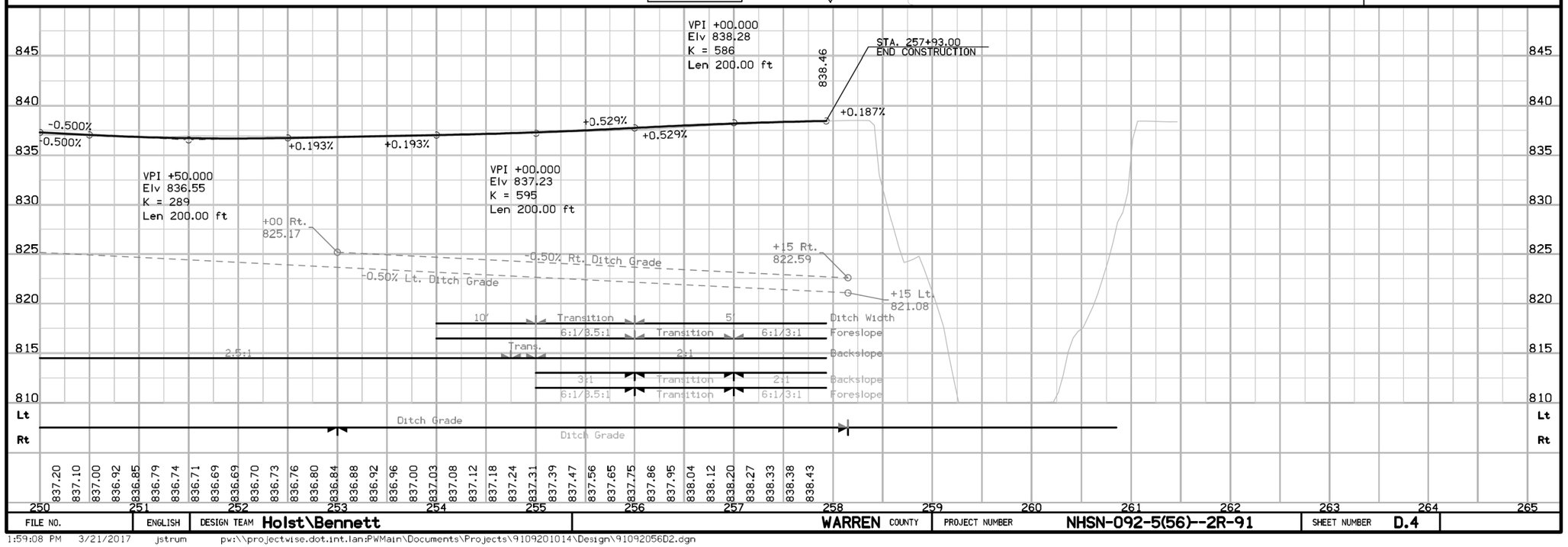

FILE NO.	ENGLISH	DESIGN TEAM Holst\Bennett	WARREN COUNTY	PROJECT NUMBER NHSN-092-5(56)--2R-91	SHEET NUMBER D.4

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For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.7

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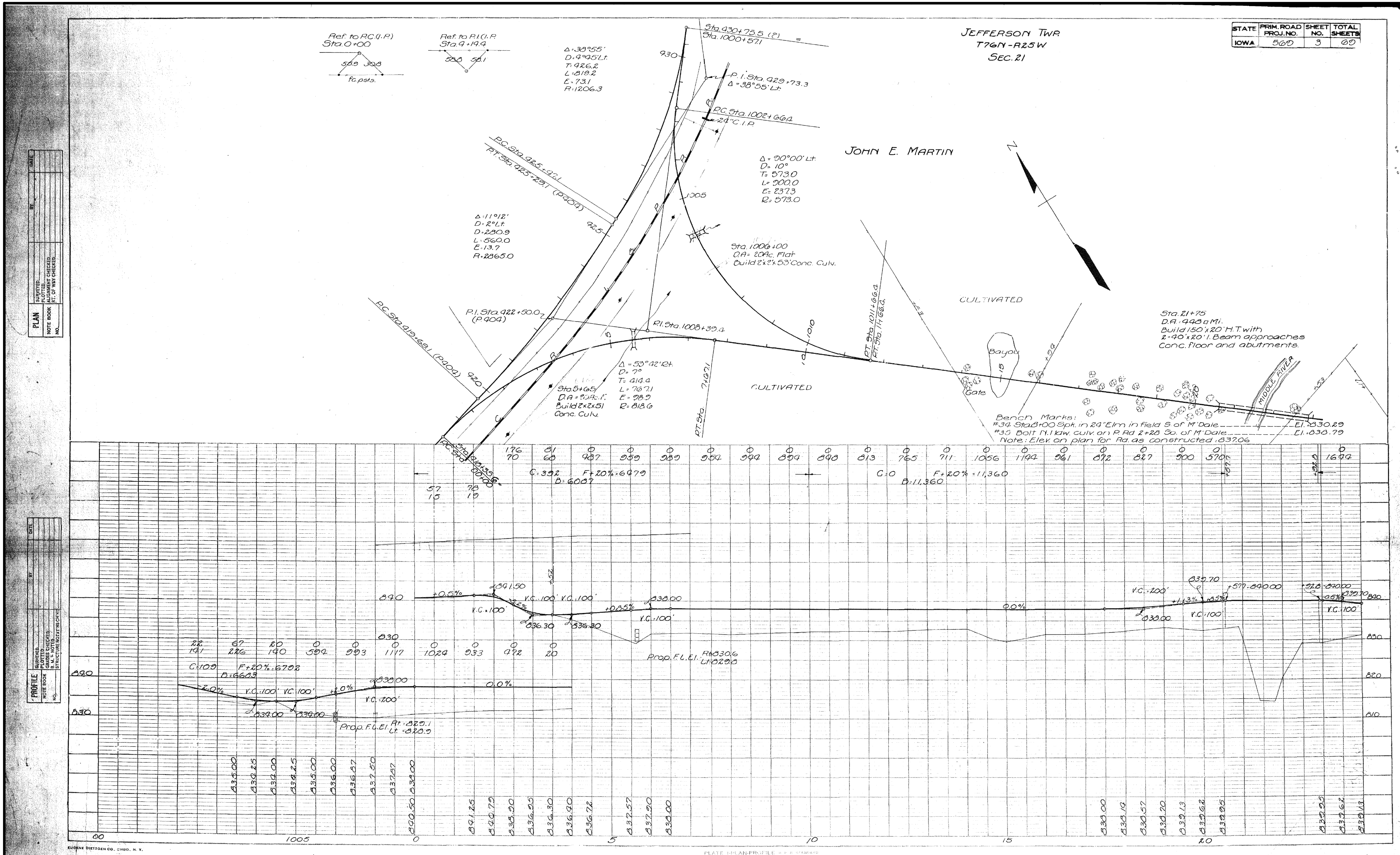

STATE | PRIM. ROAD PROJ. NO. | SHEET NO. | TOTAL SHEETS
IOWA | 569 | 3 | 69
JEFFERSON TWP.
T76N-R25W
SEC. 21
JOHN E. MARTIN
Ref. to P.C.(I.P.) Sta. 0+00
Fc. psts.
Ref. to P.I.(I.P.) Sta. 9+19.4
Δ=39°55' D=4°45' Lt. T=426.2 L=819.2 E=73.1 R=1206.3
Sta. 930+75.5 (P)
Sta. 1000+57.1
P.I. Sta. 929+73.3 Δ=38°55' Lt.
P.C. Sta. 1002+66.4
24" C.I.P.
Δ=90°00' Lt. D=10° T=573.0 L=900.0 E=237.3 R=573.0
P.C. Sta. 925+92.1
P.T. Sta. 925+29.1 (P404)
Δ=11°12' D=2° Lt. D=280.9 L=560.0 E=13.7 R=2865.0
Sta. 1006+00
D.A.=20 Ac. Flat
Build 2'x2'x53' Conc. Culv.
P.I. Sta. 922+50.0 (P404)
P.C. Sta. 919+69.1 (P404)
P.I. Sta. 1008+39.4
CULTIVATED
Bayou
Gate
Sta. 5+65
D.A.=30 Ac.
Build 2'x2'x51' Conc. Culv.
Δ=53°42'24" D=7° T=414.4 L=767.1 E=93.9 R=818.6
P.T. Sta. 1011+66.6
P.T. Sta. 11+66.6
Sta. 21+75
D.A.=448 Sq. Mi.
Build 150'x20' H.T. with 2-40'x20' I. Beam approaches
Conc. floor and abutments.
MIDDLE RIVER
Bench Marks:
#34 Sta. 8+00 Spk. in 24" Elm in field S. of M'Dale — El. 830.29
#35 Bolt N.1 law. culv. on P. Rd 2+28 So. of M'Dale — El. 838.79
Note: Elev. on plan for Rd. as constructed = 837.06
C.392 F+20%=6979 B=6087
C.0 F+20%=11,360 B=11,360
C.109 F+20%=6792 B=6603
+0.5% +841.50 -3.2% V.C.=100' V.C.=100' +0.85% 838.00 V.C.=100' 0.0%
836.30 836.80
V.C.=200' +1.3% 839.70 +577=840.00 +92.8=840.00 V.C.=100' 838.00
-2.0% V.C.=100' V.C.=100' +2.0% 838.00 0.0% V.C.=200'
839.00 839.00
Prop. F.L. El. Rt. 830.6 Lt. 829.8
Prop. F.L. El. Rt. 829.1 Lt. 828.9
PLAN
PROFILE
EUGENE DIETZGEN CO. CHGO. N.Y.
PLATE 1 PLAN-PROFILE

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.8

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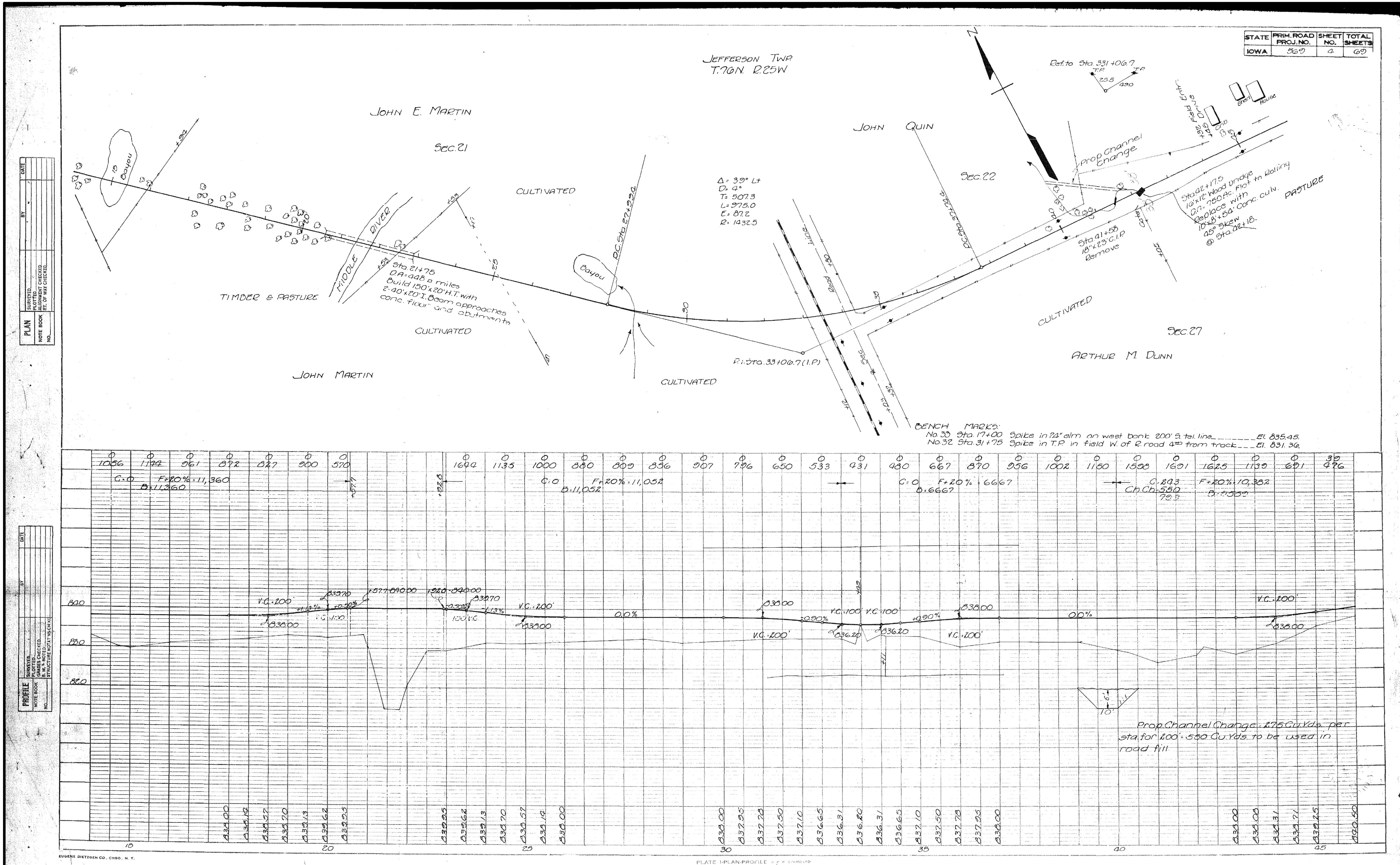

STATE | PRIM. ROAD PROJ. NO. | SHEET NO. | TOTAL SHEETS
IOWA | 569 | 4 | 69
JEFFERSON TWP. T.76N. R.25W.
JOHN E. MARTIN
Sec. 21
JOHN QUIN
Sec. 22
CULTIVATED
TIMBER & PASTURE
MIDDLE RIVER
Bayou
Sta. 21+75 D.A. 448 ± miles Build 150'x20' H.T. with 2-40'x20' I. Beam approaches conc. floor and abutments
JOHN MARTIN
Δ = 39° Lt. D = 4° T = 507.3 L = 975.0 E = 87.2 R = 1432.5
P.C. Sta. 27+98.4
R.I. Sta. 33+06.7 (I.P.)
Ref. to Sta. 33+06.7
Prop. Channel Change
Sta. 41+58 18"x23' C.I.P. Remove
Sta. 42+17.5 16'x12' Wood Bridge D.A. 750 Ac. Flat to Rolling Replace with 10'x8'x54' Conc. culv. 45° Skew @ Sta. 42+18.
PASTURE
CULTIVATED
Sec. 27
ARTHUR M. DUNN
Shed
House
BENCH MARKS:
No. 33 Sta. 17+00 Spike in 24" elm on west bank 200' S. tel. line — El. 835.45.
No. 32 Sta. 31+75 Spike in T.P. in field W. of R. road 4th from track — El. 831.36.
C.0 F+20% 11,360 B. 11,360
C.0 F+20% 11,052 B. 11,052
C.0 F+20% 6667 B. 6667
C. 893 Ch. Ch. 550 F+20% 10,382
V.C. 200'
0.0%
V.C. 100
+0.90%
-0.90%
838.00
836.20
Prop. Channel Change 275 Cu. Yds. per sta. for 200' - 550 Cu. Yds. to be used in road fill
15
20
25
30
35
40
45
EUGENE DIETZGEN CO. CHGO. N.Y.
PLATE 1-PLAN-PROFILE

This Sheet
For Information Only

FILE NO. | ENGLISH | DESIGN TEAM HOLST / BAHR / JACKSON | WARREN COUNTY | PROJECT NUMBER NHSX-092-5(70)--3H-91 | SHEET NUMBER D.9

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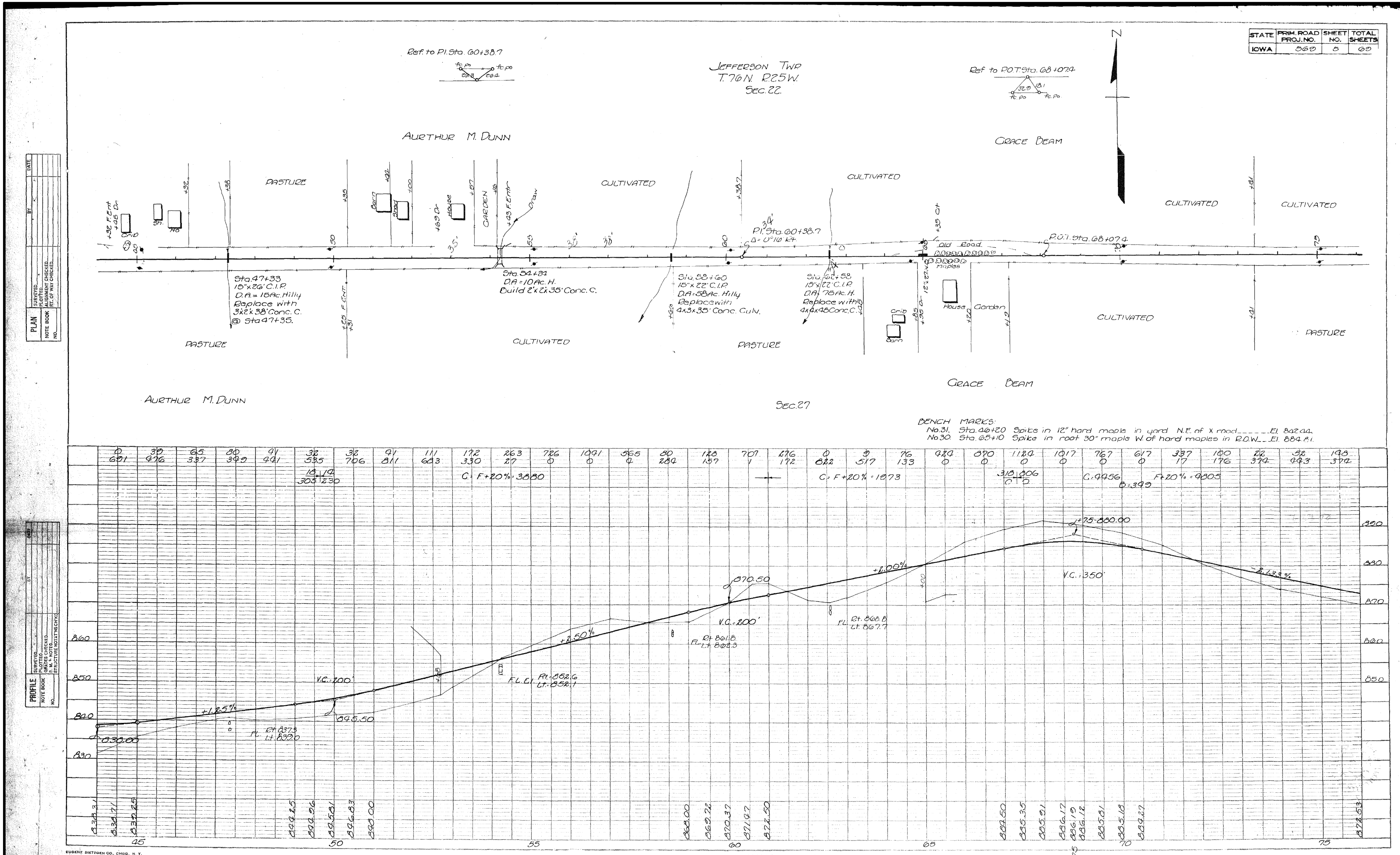
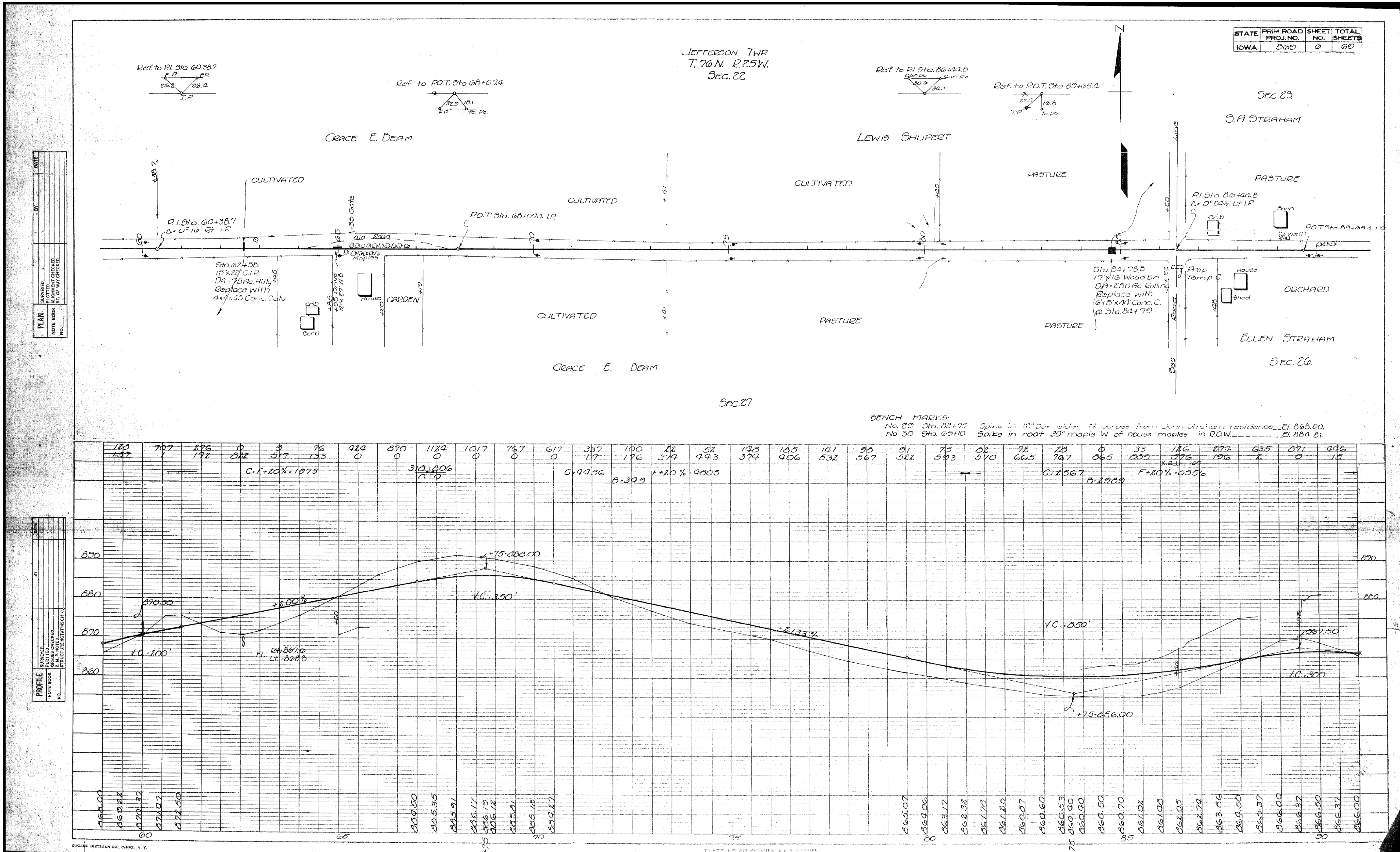


STATE | PRIM. ROAD PROJ. NO. | SHEET NO. | TOTAL SHEETS
IOWA | 569 | 5 | 69
Ref. to P.I. Sta. 60+38.7
JEFFERSON TWP
T.76N. R.25W.
SEC. 22.
Ref. to P.O.T. Sta. 68+07.4
N
AURTHUR M. DUNN
GRACE BEAM
PASTURE
CULTIVATED
GARDEN
Sta. 47+33
15"x26' C.I.P.
D.A.= 18 Ac. Hilly
Replace with
3x2x38' Conc. C.
@ Sta 47+35.
Sta. 54+24
D.A.=10 Ac. H.
Build 2'x2'x35' Conc. C.
Sta. 58+60
15"x22' C.I.P.
D.A.=58 Ac. Hilly
Replace with
4x3x35' Conc. Culv.
Sta. 62+58
15"x22' C.I.P.
D.A. 78 Ac. H.
Replace with
4x4x48 Conc. C.
P.I. Sta. 60+38.7
Δ= 0°10' Rt.
P.O.T. Sta. 68+07.4
Old Road
Maples
House
Garden
Crib
Barn
SEC. 27
BENCH MARKS:
No. 31. Sta. 46+20 Spike in 12" hard maple in yard N.E. of X road ______ El. 842.44.
No. 30. Sta. 65+10 Spike in root 30" maple W. of hard maples in R.O.W. __ El. 884.81.
C. F+20% 3880
C. F+20% 1973
C. 4456 F+20% 4803
+1.25%
V.C. 200'
+3.50%
V.C. 200'
870.50
+2.00%
+75 880.00
V.C. 350'
-2.33%
830.00
845.50
PLATE 1-PLAN-PROFILE
EUGENE DIETZGEN CO. CHGO. N.Y.
PLAN
PROFILE

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON		WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.10



This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.11

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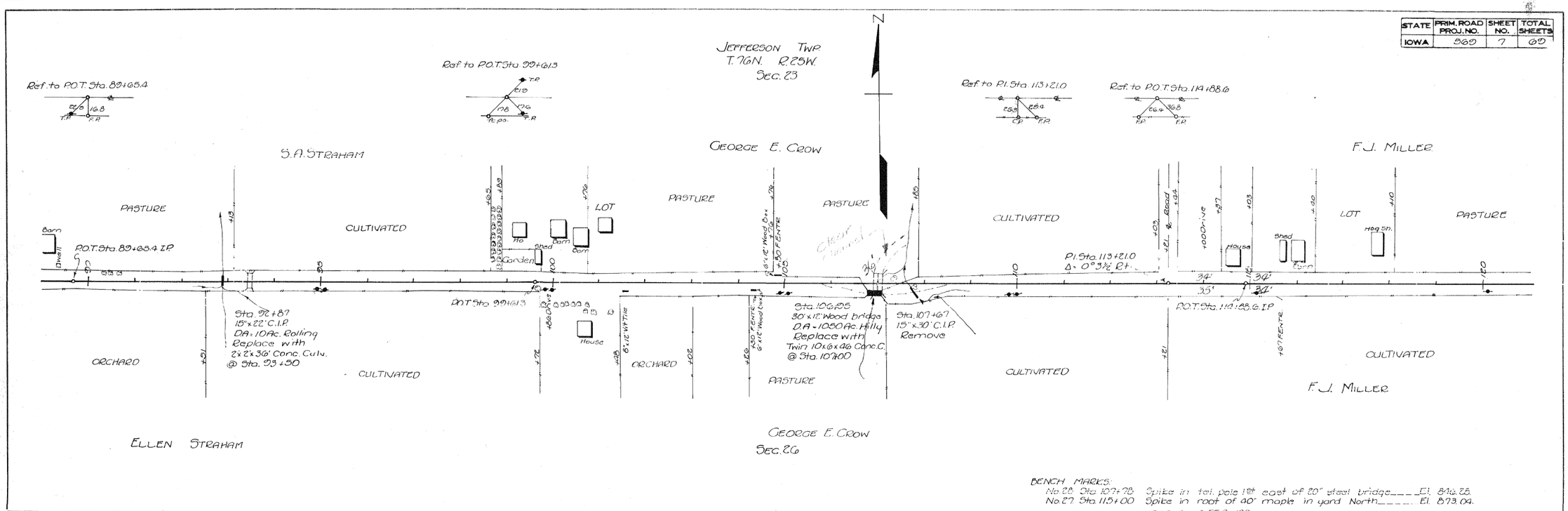
STATE	PRIM. ROAD PROJ. NO.	SHEET NO.	TOTAL SHEETS
IOWA	560	7	60



BENCH MARKS:
No. 28 Sta. 107+78 Spike in tel. pole 18' east of 20' steel bridge_____El. 846.26.
No. 27 Sta. 115+00 Spike in root of 40" maple in yard North_____El. 873.04.

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FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.12

9:17:36 AM 3/24/2022 kjackso pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9109201022\Design\CADD_Files\Sheet_Files\SHT_91092070_D01_D17.dgn

STATE	PRIM. ROAD PROJ. NO.	SHEET NO.	TOTAL SHEETS
IOWA	569	8	69

JEFFERSON TWP.
T76N-R25W

Ref. to P.O.T. Sta 126+60.7
F.P. 28.6 19.2 F.P.

Ref. to P.O.T. Sta 134+56.0
F.P. 32.6 28.6 F.P.

Ref. to P.I. Sta 139+99.7
F.P. 36.1
T.P. 31.1

Ref. to P.O.T. Sta 142+61.8
Tree 28.5 62.1 Tree
T.P. 28.8

F. J. MILLER — S. A. STRAHAN — SEC. 23 — SEC. 24 — NANNIE J. J. TAYLOR

PASTURE — CULTIVATED — CULTIVATED — PASTURE

P.O.T. Sta 126+60.7 (½-½ Stone)

P.O.T. Sta 139+56.0 (I.P.)

P.I. Sta 139+99.7
Δ = 102°9' Rt. (I.P.)

P.O.T. Sta 142+61.8 (I.P.)

Well

Sta. 122+57
24"x22' C.I.Φ
D.A. = 40 Ac. Rolling
Build 3x3x44 Conc. Culv.

Sta. 129+64.5
15'x22' Corr Φ
D.A. = 10 Ac. Rolling
Build 2x2x41 Conc. C.
@ Sta. 129+60

Sta 137+11.0
10'x18' Corr Φ
D.A. = 5 Ac. Rolling
Replace with
2x2x47 Conc. C.

Prop temp culvert

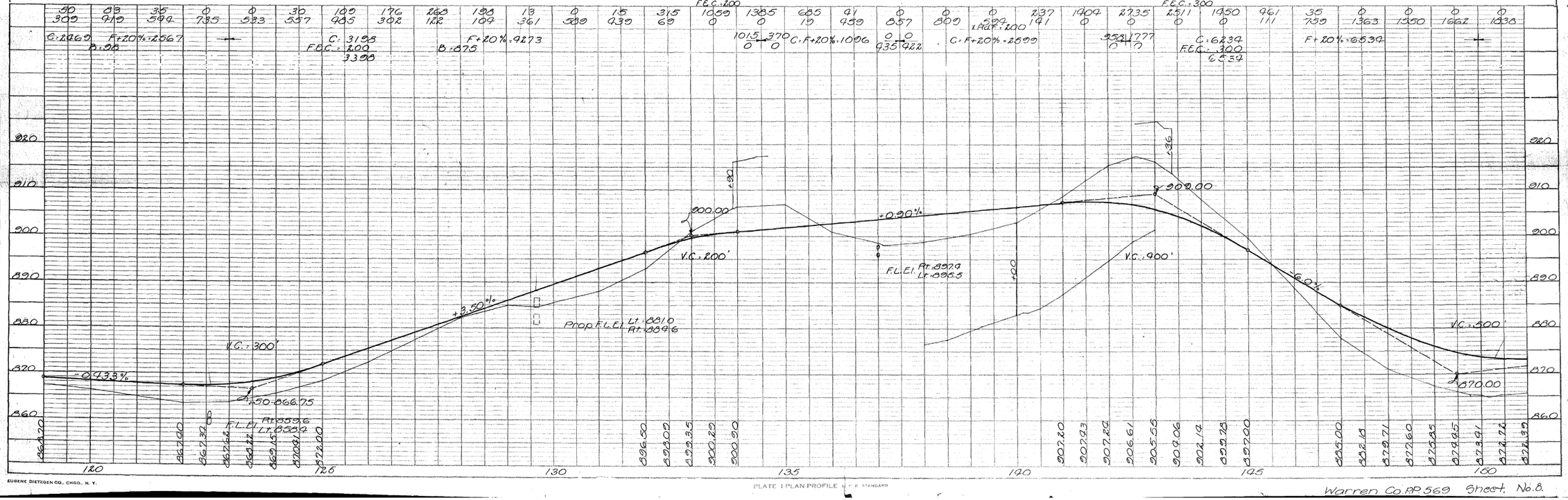
Sta 150+16.8
6'x6'x60 Conc. Box
D.A. = 580 Ac. Hilly
Replace with
10'x8'x67 Conc. C.
@ Sta. 150+20.

CULTIVATED — PASTURE — ORCHARD — CULTIVATED — ORCHARD — GARDEN — GROVE — PASTURE — PASTURE

F. J. MILLER — S. A. STRAHAN — SEC. 26 — SEC. 25 — ILO B. WALLACE & HARRY L. BROWNE

Bench Marks:
#24 Sta. 137+76 Spk. in T.P.S. at Root of Big Hill _____ El.: 872.60
#25 Sta. 142+60 Spk. in 36" Maple in Hog yard. Top of Hill _____ El.: 918.08
#26 Sta. 126+50 Spk. in 30" Elm in N ¼ Mi. W of Rd. N _____ El.: 870.30

E.C.C.: 200 — E.C.C.: 300



EUGENE DIETZGEN CO., CHGO., N. Y.

PLATE I PLAN PROFILE E. P. R. STANDARD

Warren Co. AP. 569 Sheet No. 8.

This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.13

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STATE	PRIM. ROAD PROJ. NO.	SHEET NO.	TOTAL SHEETS
IOWA	569	9	69

JEFFERSON TWP.
T76N - R25W
SEC. 24

Ref to P.I. Sta 166+98.4
218 33.9
L.F.A.

Ref to P.O.T. Sta 174+67.8
22A 22.3 39.2
A.P. T.P.

N

F. H. SARCHETT

THEO SARCHETT

PASTURE | PASTURE | MEADOW | CULTIVATED | CULTIVATED

Sta. 150+16.8
6'x6'x60' Conc. Box
D.A. = 580 Ac. Hilly
Replace with
10'x8'x67' Conc. culv.
@ Sta. 150+28

Sta. 159+76
29'x29' Corr. ϕ
D.A. = 110 Ac. Hilly
Replace with
5'x5'x76' Conc. culv.
@ Sta. 159+72
45° Skew

Sta. 166+00
D.A. = 15 Ac. Rolling
Corrug.

P.I. Sta 166+98.4
Δ = 0°2' Rt (I.P.)

Sta. 169+94.5
15'x22' Corr ϕ
D.A. = 10A Hilly
Replace with
3'x2'x44' Conc. Culv.
@ Sta 170+00.

P.O.T. Sta. 174+67.8 (I.P.)

Sta. 178+00
D.A. = 2Ac. Rolling
Build 2'x2'x37' Conc. Culv.

PASTURE | PASTURE | PASTURE | CULTIVATED

ILO B. WALLACE &
HARRY L. BROWNE

LEVI MYERS

SEC. 25

Bench Marks:
#22 Sta 173+00 Spk. in T.P. 5½ Mi. W of Cor. El. = 937.36
#23 Sta 160+00 Spk. in T.P. 5 in draw ½ Mi. W of Cor. El. = 879.22

ϕ	ϕ	ϕ	901	1152	1356	1615	973	232	10	ϕ	ϕ	ϕ	ϕ	ϕ	82	187	219	227	78	ϕ	ϕ	94	915	811	702	307	111	35	13	113	282
1662	1038	820	167	0	0	0	0	399	810	859	850	730	791	709	606	383	117	61	170	952	557	482	85	℄	0	82	296	913	937	261	84

C = 2939 F = 20% = 3390 B = 901 | C = 2439 F = 20% = 3996 B = 607 | C = 569 F = 20% = 3959 B = 3385 | C = F + 20% = 2099 | C = F + 20% = 506

625.77 | 1124 | 154 | 150

V.C. = 500' | V.C. = 300' | V.C. = 200'

+1.12% | +9.0% | +3.00%

ϕ 150 = 870.00 | 004.00 | 036.00

F.L.El. Rt. = 853.1 Lt. = 853.8 | F.L.El. Rt. = 871.0 Lt. = 860.6 | F.L.El. Rt. = 909.9 Lt. = 911.0 | Prop. F.L.El. Lt. = 915 Rt. = 890

870.95 | 874.05 | 877.15 | 880.25 | 883.35 | 886.45 | 889.55 | 892.65 | 895.75 | 898.85 | 901.95 | 905.05 | 908.15 | 911.25 | 914.35 | 917.45 | 920.55 | 923.65 | 926.75 | 929.85 | 932.95 | 936.00 | 938.99 | 942.00 | 945.00 | 948.00 | 951.00 | 954.00 | 957.00 | 960.00

930 | 920 | 910 | 900 | 890 | 880 | 870 | 860 | 960 | 950 | 940 | 930

150 | 155 | 160 | 165 | 170 | 175 | 180

EUGENE DIETZGEN CO., CHGO., N. Y.

PLATE 1-PLAN-PROFILE 6 P. R. STANDARD

Warren Co. P.R.-569 Sheet No. 9.

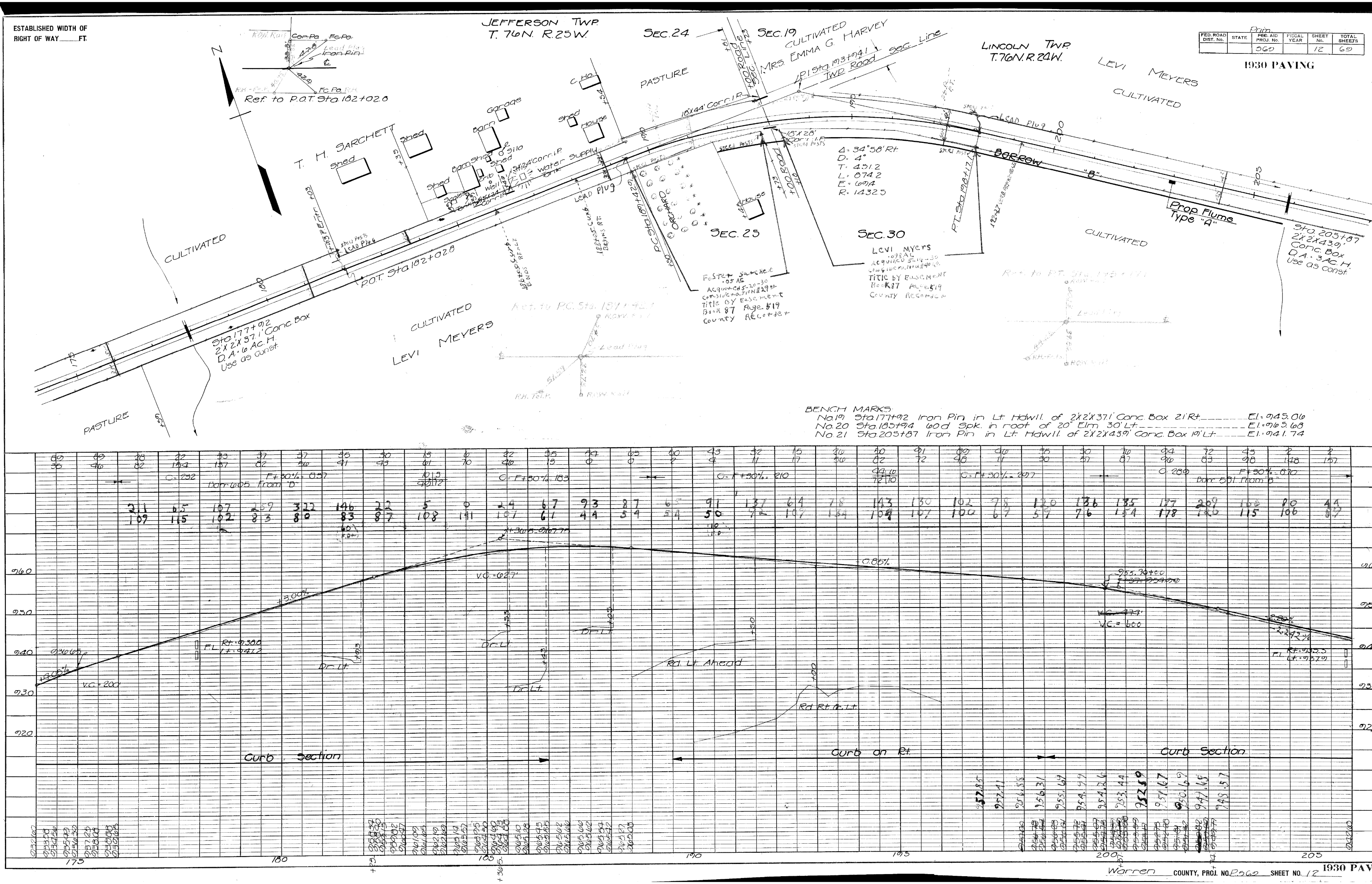
PLAN: DATE | BY | REVISED | NOTE BOOK | NO. | ALIGNMENT CHECKED | RT. OF WAY CHECKED

PROFILE: SURVEYED | PLOTTED | NOTE BOOK | GRADES CHECKED | NO. | STRUCTURE NO(S) | STRUCTURE NO(S) CHKD.

This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.14

9:17:45 AM 3/24/2022 kjackso pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9109201022\Design\CADD_Files\Sheet_Files\SHT_91092070_D01_D17.dgn


ESTABLISHED WIDTH OF RIGHT OF WAY ___ FT.
JEFFERSON TWP T. 76N. R.25W.
SEC. 24
SEC. 19
LINCOLN TWP. T.76N. R.24W.
FED. ROAD DIST. No. | STATE | FED. AID PROJ. No. | FISCAL YEAR | SHEET No. | TOTAL SHEETS
569 | 12 | 69
1930 PAVING
Ref. to P.O.T. Sta. 182+02.8
T. H. SARCHETT
MRS EMMA G. HARVEY
LEVI MEYERS
CULTIVATED
PASTURE
Shed
Barn
Garage
House
Silo
Crib
Well
Water Supply
ORCHARD
SEC. 25
SEC. 30
P.O.T. Sta. 182+02.8
P.I. Sta. 193+94.1
Two Road
Sec. Line
Δ = 34°58' Rt.
D. 4°
T. 451.2
L. 874.2
E. 69.4
R. 1432.5
BORROW "B"
Prop. Flume Type "A"
Sta. 177+92 2'x2'x37.1' Conc. Box D.A. 6 Ac. H. Use as Const.
Sta. 205+87 2'x2'x43.9' Conc. Box D.A. 3 Ac. H. Use as Const.
Levi Meyers
Title by Easement Book 87 Page 519 County Recorder
BENCH MARKS
No.19 Sta.177+92 Iron Pin in Lt. Hdwll. of 2'x2'x37.1' Conc. Box 21' Rt. El. 945.06
No.20 Sta.185+94 60d Spk. in root of 20" Elm 30' Lt. El. 965.68
No.21 Sta.205+87 Iron Pin in Lt. Hdwll. of 2'x2'x43.9' Conc. Box 19' Lt. El. 941.74
+3.00%
-0.85%
V.C. = 627'
V.C. = 200'
V.C. = 600
F.L.
Dr. Lt.
Rd. Lt. Ahead
Rd. Rt. & Lt.
Curb Section
Curb on Rt.
Curb Section
960
950
940
930
920
175
180
185
190
195
200
205
Warren COUNTY, PROJ. NO. P569 SHEET NO. 12
1930 PAVING

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.15

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ESTABLISHED WIDTH OF RIGHT OF WAY.....FT.

LINCOLN TWP
T. 76N. R. 24W.
SEC. 30

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
		Prim. 569		13	60

1930 PAVING

Ref to P.O.T. Sta. 210+89.8
Wood Hub, Fe. Pe. Nail, Iron Pin, Wood Hub

Ref to P.O.T. Sta. 229+00
Fe. Pe., Iron Pin, Spk. in 10" Oak

LEVI MEYERS
CULTIVATED
LOWERENCE LAMB
MEADOW
CORA P. McADOR
PASTURE
TIMBER
CULTIVATED
LEVI MEYERS
LOWERENCE LAMB
PASTURE
ELLIS BON ARDEN

Prop. Flume Type "A"
P.O.T. Sta. 210+89.8
Lead Plug
2 Prop. Flumes Type "A"
12'x20' Corr.
Fairfield
Borrow "B"
Borrow "C"
P.O.T. Sta. 229+00
2 Prop. Flumes Type "B"
Taken up
2 Prop. Flumes Type "B"
Sta. 225+20
12'X12'X71.7'
Conc. Box
D.A.=1000 Ac. H.
Use as const

Sta. 205+87
2'x2'x43.9'
Conc. Box
D.A. = 3 Ac. H.
Use as const

Sta. 209+86
2'x2'x42.1' Conc Box
D.A. = 3 Ac. H.
Use as const

Sta. 232+78
2'X2'X60.7' Conc. Box
D.A.=2 Ac. Mount.
Use as const.

BENCH MARKS

No. 21	Sta. 205+87	Iron Pin in Lt. Hdwll. of 2'x2'x43.9' Conc. Box 19' Lt.	El. = 941.74
No. 22	Sta. 209+86	Iron Pin in Lt. Hdwll. of 2'x2'x42.1' Conc. Box 17' Lt.	El. = 933.65
No. 23	Sta. 217+14	Spk. in Braced Gate Post on Lt. 40' Lt.	El. = 894.36
No. 24	Sta. 226+53	Spk. in Cor. Po. on Lt. 50' Lt.	El. = 883.54
No. 25	Sta. 232+79	Iron Pin in Rt. Hdwll. of 2'X2'X60.7' Conc. Box 21' Rt.	El. = 879.34

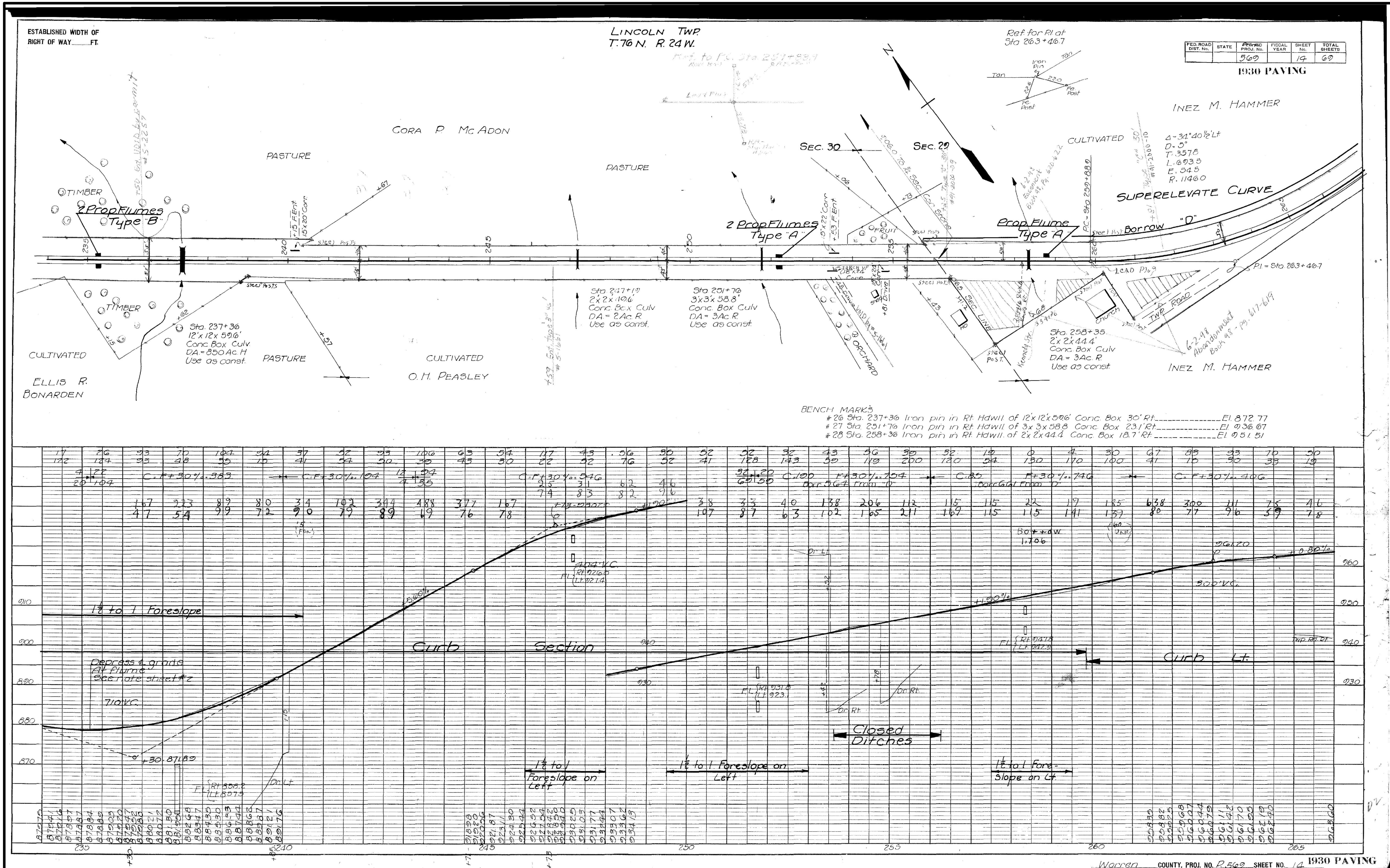
1½:1' Foreslope
1½:1' Foreslope on Rt
1½:1' Foreslope Curb Section
Closed Ditches
1½:1' Foreslope on Lt.
Depress 4" Grat Flume See note Sh. # 2
Dr. Rt.
Dr. Lt.
F.L. Elev. Rt. = 879.10
F.L. Elev. Lt. = 865.8
V.C. = 710'
V.C. = 571'
V.C. = 560'

Warren COUNTY, PROJ. NO. B360 SHEET NO. 13 1930 PAVING

This Sheet For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.16

9:17:53 AM 3/24/2022 kjackso pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9109201022\Design\CADD_Files\Sheet_Files\SHT_91092070_D01_D17.dgn



ESTABLISHED WIDTH OF RIGHT OF WAY____FT.
LINCOLN TWP.
T. 76 N. R. 24 W.
Ref for P.I. at Sta 263+46.7
1930 PAVING
CORA P MC ADON
PASTURE
INEZ M. HAMMER
CULTIVATED
SEC. 30
SEC. 29
SUPERELEVATE CURVE
TIMBER
2 Prop Flumes Type "B"
2 Prop Flumes Type "A"
Prop Flume Type "A"
Borrow "D"
P.I. = Sta 263+46.7
Sta. 237+36 12'x12'x 59.6' Conc Box Culv DA = 850 Ac. H Use as const.
Sta. 247+10 2'x2'x 40.6' Conc Box Culv DA = 2 Ac. R. Use as const.
Sta. 251+76 3'x3'x 58.8' Conc. Box Culv DA = 3 Ac. R. Use as const.
Sta. 258+35 2'x2'x44.4' Conc Box Culv DA = 3 Ac. R. Use as const.
ORCHARD
Church
TWP. ROAD
CULTIVATED
ELLIS R. BONARDEN
O.H. PEASLEY
INEZ M. HAMMER
BENCH MARKS
#26 Sta. 237+36 Iron pin in Rt. Hdwll. of 12'x12'x59.6' Conc. Box 30' Rt. El. 872.77
#27 Sta. 251+76 Iron pin in Rt. Hdwll. of 3'x3'x58.8' Conc. Box 23.1' Rt. El. 936.67
#28 Sta. 258+36 Iron pin in Rt. Hdwll. of 2'x2'x44.4' Conc. Box 18.7' Rt. El. 951.51
1½ to 1 Foreslope
Depress grade At Flume See note sheet #2
710' V.C.
Curb Section
Curb Lt.
404' V.C.
300' V.C.
Closed Ditches
1½ to 1 Foreslope on Left
1½ to 1 Foreslope on Left
1½ to 1 Foreslope on Lt.
Warren COUNTY, PROJ. NO. P. 569 SHEET NO. 14 1930 PAVING

This Sheet
For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON		WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.17

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Through traffic on IA 92 shall be maintained at all times.

2. Access to all properties shall be maintained at all times.

3. The detail on J.2 is the Traffic Control Plan for Centerline Rumble Strip installation on HMA surfaces. Pavement markings shall be replaced within 48 hours of removal.

4. If necessary to complete sideroad pavement replacement; lane closures and street closures shall be in accordance with TC-212, TC-251, and TC-252. Safety Closures or Type III barricades placed to protect work area will not be counted or paid for separately.

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 anticipated	

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
IA 92	BOTH	Warren	0.3 mi E of I-35 to Kennedy St		Traffic Control Device		Horizontal	N/A	12'	11'	N/A	(1)

(1) Restriction is during milling and paving operations.

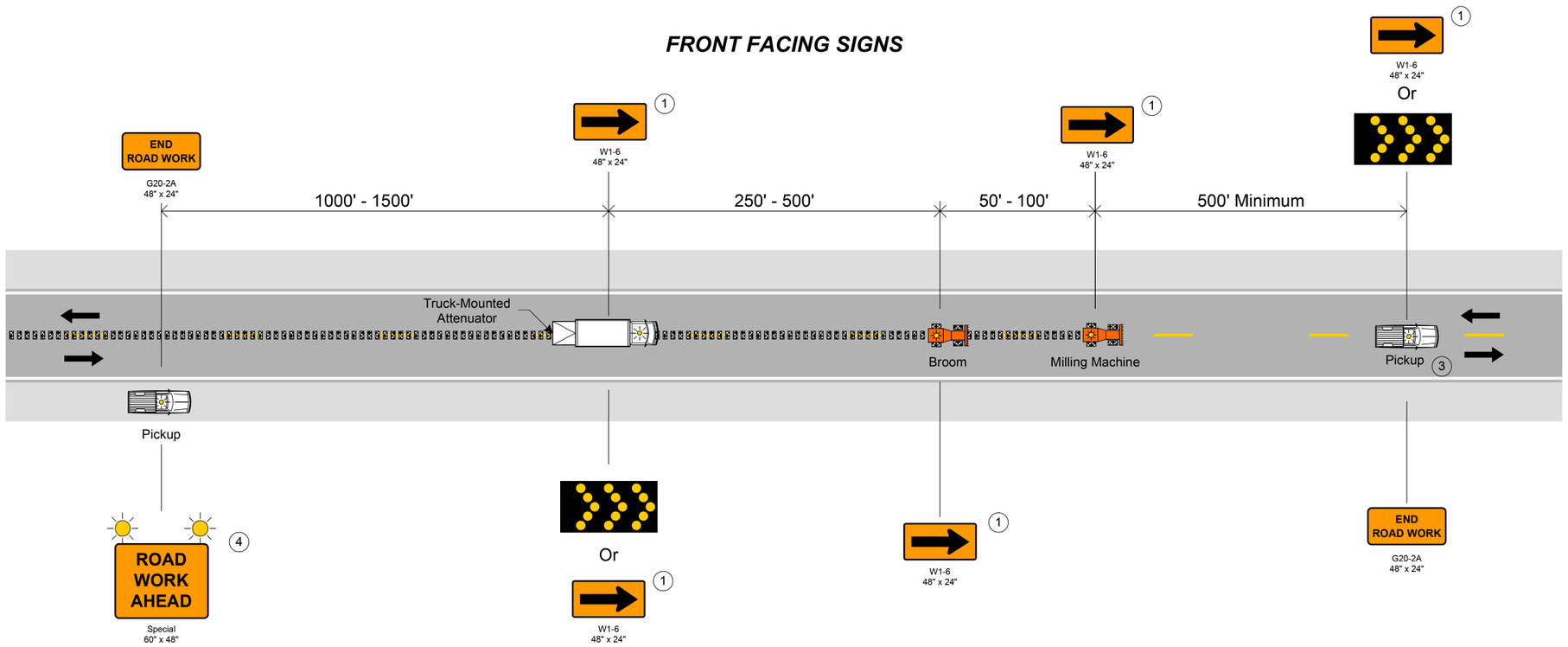
108-26A
08-01-08

STAGING NOTES

FILE NO.	ENGLISH	DESIGN TEAM HOLST\BAHR\JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER J.1

3/24/2022 10:20:23 AM jbahr1 W:\Highway\Design\DesignSections\Rural1_Active_Projects\91092070\SHT_91092070_J01.xlsm

FRONT FACING SIGNS



REAR FACING SIGNS

All vehicles shall be equipped with an amber revolving light or an amber strobe light.

(1) Optional SYG sign background

(2) This arrow display may be operated in a four-corner caution mode.

(3) This vehicle should move to the shoulder to accommodate passing traffic.

(4) A vehicle-mounted CMS may be used in lieu of this sign.

01-17-19

CENTERLINE
RUMBLE STRIPS
TWO-LANE

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.1

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Jersey St

105+00

110+00

30th Ave

115+00

120+00

125+00

Approximate Corporate Limits

130+00

IA 92

STOP RESURFACING
EQUATION STA 131+30 (BK) =
231+35 (AH)

End IDOT RURAL Funding
Begin IDOT URBAN Funding
STA. 127+75
REF. LOC.

Approximate Corporate Limits

30th Ave

Walnut Dr

Walnut Dr

Walnut Dr

Center St

240+00

245+00

IA 28

250+00

Approximate Corporate Limits

255+00

IA 92

20+00

25+00

235+00

End IDOT URBAN Funding
Begin IDOT RURAL Funding
STA. 149+00
REF. LOC.

STATION EQUATION
257+93 (BK) =
19+61 (AH)

BEGIN GRANULAR SHOULDERS
STA. 25+78
REF. LOC.

STA. 21+34
UAC
FHWA #051111
MAINT. #9121.7S092
261'X40' PRESTRESS CONC. BEAM
REF. LOC.

RESUME RESURFACING
STA. 23+38
REF. LOC.

0 100
FEET

This Sheet
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FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.2

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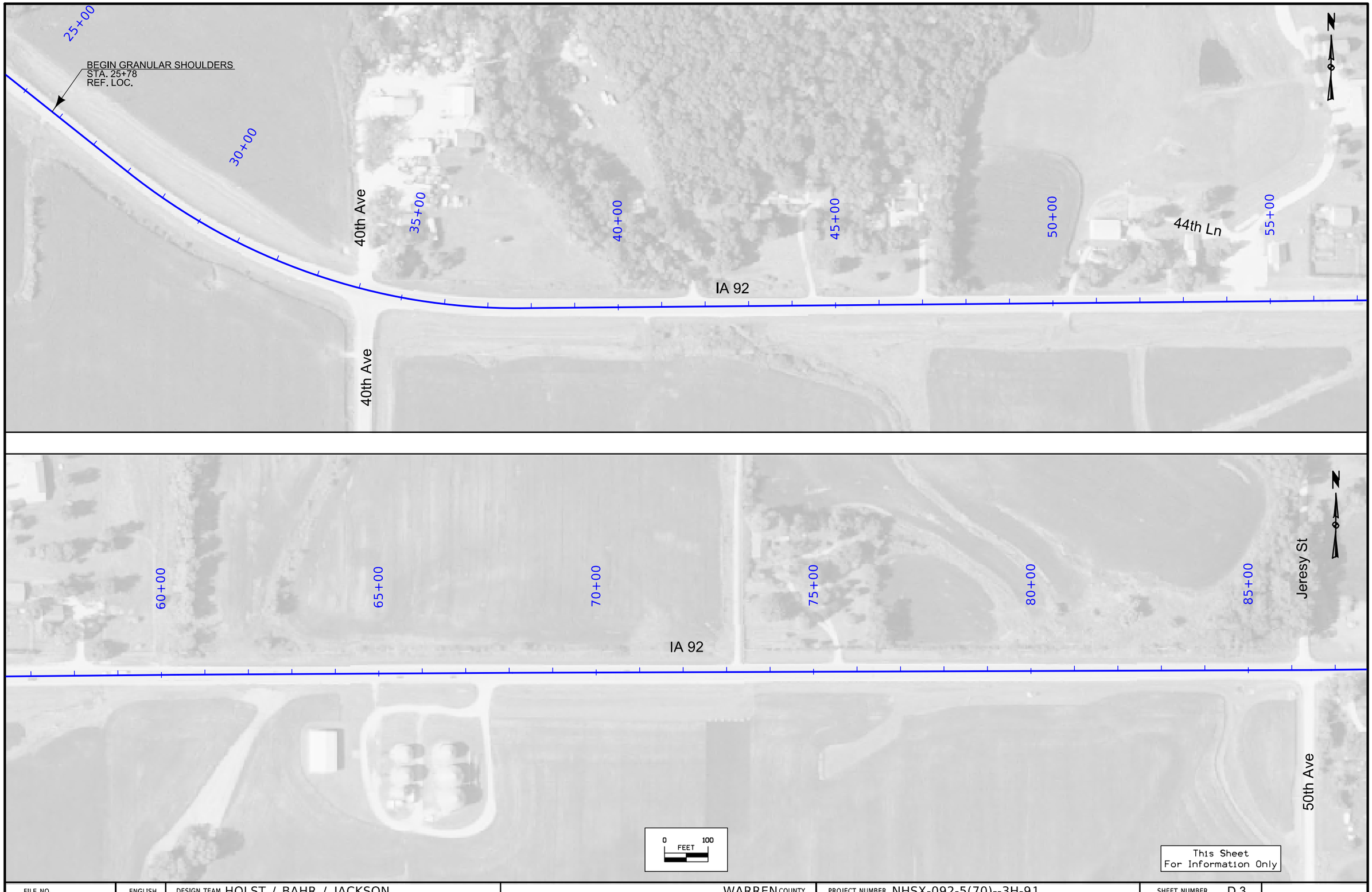

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.3	

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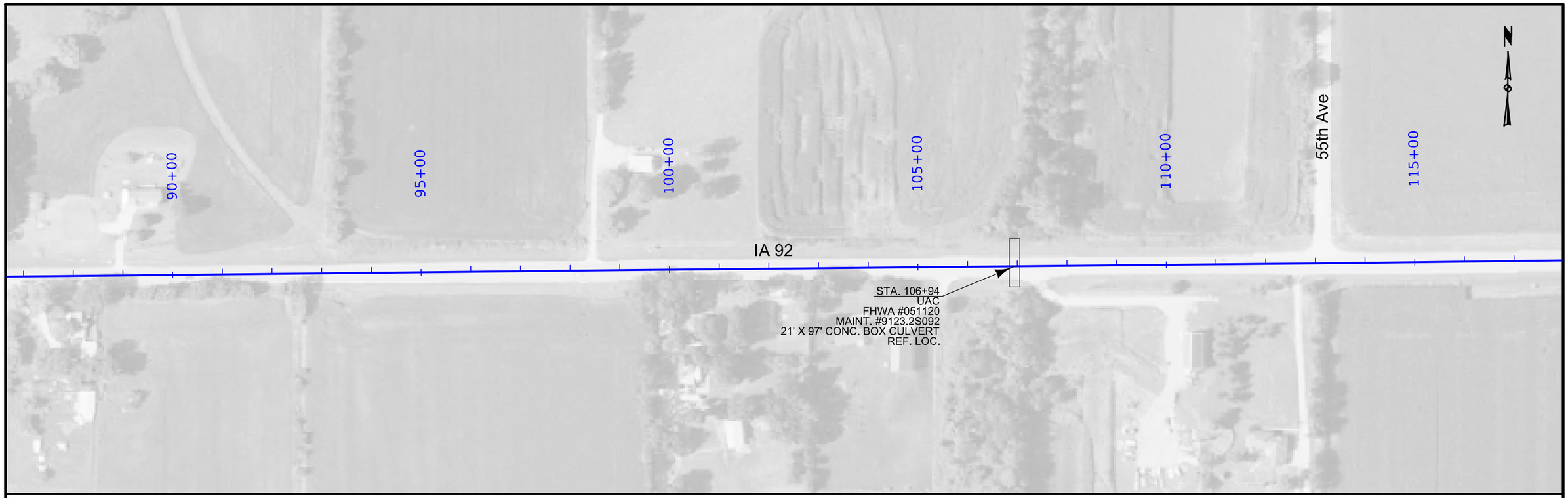

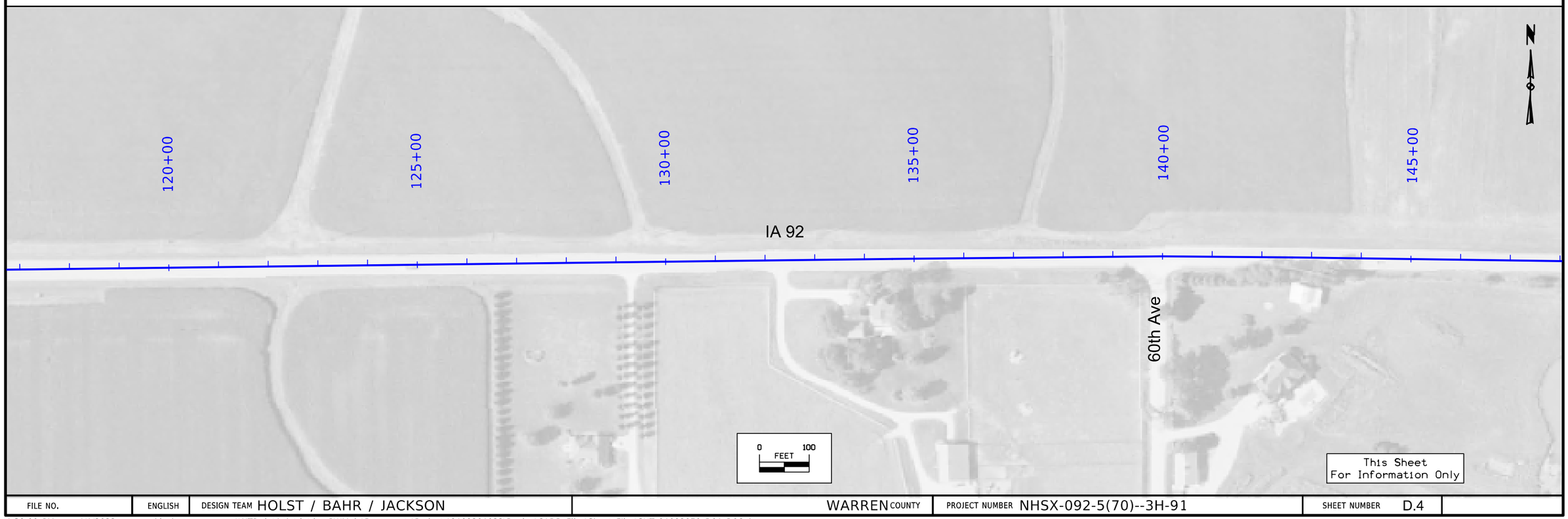

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.4

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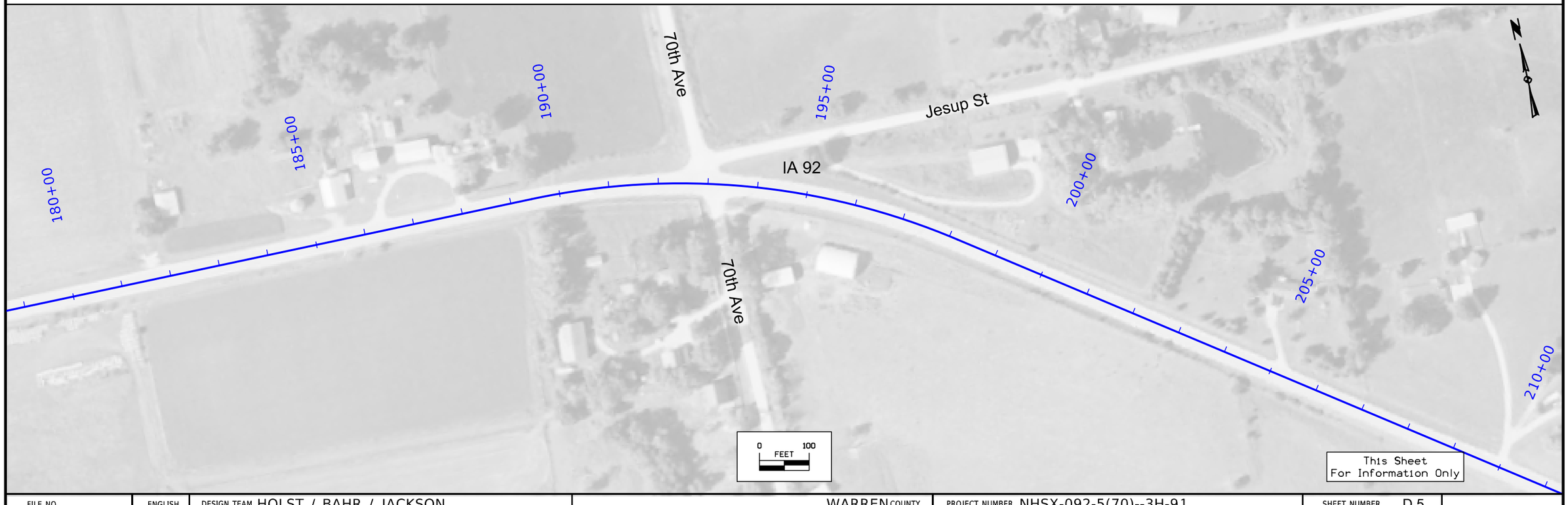

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.5

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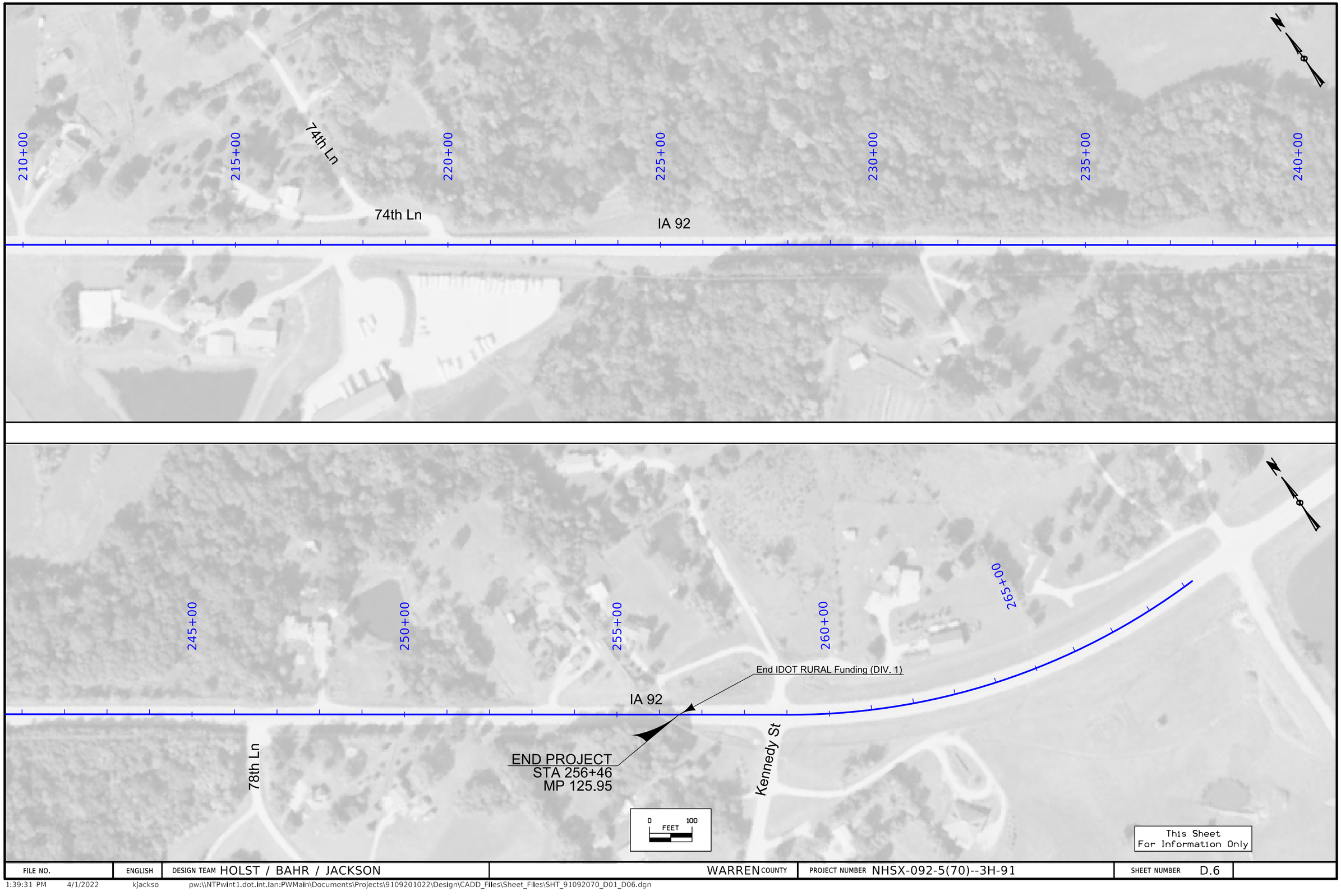

FILE NO.	ENGLISH	DESIGN TEAM HOLST / BAHR / JACKSON	WARREN COUNTY	PROJECT NUMBER NHSX-092-5(70)--3H-91	SHEET NUMBER D.6

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